

TRANSPORT FOR NSW (TfNSW)

SPECIFICATION D&C G40

CLEARING AND GRUBBING

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CLEARING AND GRUBBING

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FOREWORD

TfNSW COPYRIGHT AND USE OF THIS DOCUMENT

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When this document forms part of a deed

This document should be read with all the documents forming the Project Deed.

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BASE SPECIFICATION

This document is based on Specification TfNSW G40 Edition 1 Revision 2.

TfNSW SPECIFICATION D&C G40

CLEARING AND GRUBBING

1 GENERAL

1.1 SCOPE

The work to be executed under this Specification consists of the clearing of all vegetation, both living and dead, all minor built structures (such as fences and livestock yards), all rubbish and other materials which are unsuitable for use in the Project Works, and the grubbing of trees and stumps from the area defined in Clause 2.

The work includes the mulching of native trees, stockpiling the mulch, and the removal from the Construction Site and disposal of all materials from built structures, rubbish, weeds and exotic plants.

List any additional work such as trimming and stockpiling the trunks and stumps of native trees as required by the EIS or REF, Representations Report, Concurrence Report, Decision Report/Planning Approval, any Conditions of Approval and the landscape drawings.

In advance of, or in conjunction with, clearing and grubbing operations, effective erosion and sediment control measures must be implemented as required in the Specification for SOIL AND WATER MANAGEMENT.

The clearing and grubbing required for boundary fencing is included in Specification TfNSW D&C R201 and does not form part of the work under this Specification TfNSW D&C G40.

1.2 STRUCTURE OF THE SPECIFICATION

This Specification includes a series of annexures that detail additional requirements.

1.2.1 Project Requirements

Project Requirements are shown in Annexure G40/A.

1.2.2 Measurement and Payment

The method of measurement and payment must comply with Annexure G40/B.

Work and materials must be rejected unless they conform to the requirements of this Specification.

1.2.3 Schedules of HOLD POINTS and Identified Records

The schedules in Annexure G40/C list the **HOLD POINTS** that must be observed. Refer to Specification TfNSW D&C Q6 for the definition of **HOLD POINTS**.

The records listed in Annexure G40/C are **Identified Records** for the purposes of TfNSW D&C Q6 Annexure Q/E.

1.2.4 Planning documents

The PROJECT QUALITY PLAN must include each of the documents and requirements listed in Annexure G40/D and must be implemented.

1.2.5 Referenced Documents

Standards, specifications and test methods are referred to in abbreviated form (e.g. AS 2350). For convenience, the full titles are given in Annexure G40/M.

1.3 DEFINITIONS

The terms “you” and “your” mean “the Contractor” and “the Contractor’s” respectively.

The following interpretations apply to terms used in this Specification:

| | |
|--------------------|--|
| Ecologist | Ecologists are people whose qualifications and experience in botany, environmental science, landscaping or bush regeneration and experience in identifying weeds and other plant species are accepted by the Principal. |
| Hazard line | A line shown on the Design Documentation drawings to indicate the outer limits of the roadside zone which must remain free of hazards. In this context a tree with a trunk diameter exceeding 100 mm is considered a hazard. |
| Tree | In this Specification the term “tree” includes a shrub. |
| Weeds | Weed species include but are not necessarily limited to, those listed by the relevant local government authority as noxious categories W1, W2, W3, or W4 under the Noxious Weeds Act 1993. Also included under this definition are agricultural and horticultural weed species and in particular invasive grasses such as <i>Chloris gayana</i> (Rhodes Grass), <i>Phalaris sps.</i> , <i>Eragrostis curvula</i> complex (African Lovegrass), <i>Andropogon virginicus</i> (Whisky Grass) and <i>Nassella trichotoma</i> (Serrated Tussock). Where necessary, advice must be sought from an Ecologist in order to determine whether the type and/or proportion of weed cover are significant for the purposes of this definition. |

2 CLEARING

2.1 AREA TO BE CLEARED FOR THE FORMATION

Unless shown otherwise on the Design Documentation drawings, the area to be cleared for the formation is that which will be occupied by the completed formation plus a clearance of 4 m beyond tops of cuts and toes of embankments where the natural fall of the ground is towards the roadway and 2 m beyond the tops of cuts and toes of embankments where the natural fall of the ground either slopes away from the roadway or is level.

Also clear areas that will be occupied by ancillary earth features shown on the Design Documentation drawings, including sediment basins and traps, open drains and diversion banks.

2.2 AREA TO BE CLEARED OUTSIDE THE FORMATION

Any area outside the area to be cleared for the formation as defined in clause 2.1 and which the Principal has approved as a site for the Contractor's facilities, the Principal's accommodation, stockpiles, borrow pits or any other purpose connected with the contract must be cleared to the extent required for the approved purpose. The area cleared must be the minimum consistent with the intended use.

All trees, stumps and logs of the sizes listed below which are outside the area to be cleared for the formation as defined in clause 2.1 but which are within the hazard line shown on the Design Documentation drawings must be removed with a minimum of disturbance to adjacent trees and other vegetation. The sizes of the trees, stumps and logs that must be removed are shown in Table G40.1.

Table G40.1 - Trees, Stumps and Logs to be Removed

| Item | Size | Action |
|--|--|---|
| Tree | Trunk diameter 100 mm or more at a point 1.5 m above the adjacent ground level | Remove tree and stump for disposal in accordance with Clause 4. |
| Stump projecting 1.5 m or more above the adjacent ground level | Trunk diameter 100 mm or more at a point 1.5 m above the adjacent ground level | Remove stump for disposal in accordance with Clause 4. |
| Stump projecting less than 1.5 m above the adjacent ground level | Trunk diameter 100 mm or more at the top of the remaining trunk | Remove stump for disposal in accordance with Clause 4. |
| Log | Diameter 100 mm or more at any point | Remove entire log for disposal in accordance with Clause 4. |

All minor built structures within the road reserve must be removed unless otherwise shown on the drawings or marked to be preserved.

2.3 AREA TO BE CLEARED FOR BRIDGES

At bridges all trees and stumps and all built structures must be removed within the area specified in Annexure G40/A except:

- (a) where shown otherwise on the Design Documentation drawings; or
- (b) marked to be preserved; or
- (c) within 5 metres of the bank of any stream or other waterway.

Trees outside this area but having branches overhanging the bridge must have their branches lopped to be 3 metres clear of the bridge.

Trees within 10 metres of the centreline of the bridge and within 5 metres of the bank of any stream or other waterway must be cleanly cut off between 300 and 600 mm above the adjacent ground level so that stable vegetation is retained on the banks. This work must be undertaken in consultation with the Principal.

2.4 CLEARING

Before clearing commences, identify the limits of clearing by clearly visible markers placed at 25 m intervals on each side of the road formation and bridges as shown on the Design Documentation drawings. Also provide a report which:

- (a) includes a statement from an Ecologist that identifies the species and location of any weeds growing anywhere in the road reserve over the length to be cleared and grubbed;
- (b) identifies all locations of threatened flora species and trees which have been marked or otherwise identified for preservation; and
- (c) lists any trees outside the limits of clearing which are unsound and likely to fall upon the roadway or onto private property.

Plan and carry out all operations to ensure that there is no damage to any trees outside the limits of clearing specified.

Trees nominated in (c) above must be marked and identified in the clearing and grubbing plan in a manner which allows them to be identified as one of the listed trees and whether pruning or removal is recommended. Areas of weed infestation identified in the ecologist report (Clause 2.4 (a) must be marked).

HOLD POINT

| | |
|------------------------|--|
| Process Held. | Clearing any area of work. |
| Submission Details. | Clearing and Grubbing Plan (Annexure G40/D) and report on the presence of weeds and unsound trees together with written notice that limits of clearing and areas of weed infestation identified in the ecologist report (Clause 2.4 (a) are marked), at least seven days before starting any clearing. |
| Release of Hold Point. | The Nominated Authority will consider the submitted documents, inspect and mark trees or built structures for preservation, prior to authorising the release of the Hold Point. |

Before commencing clearing and grubbing all soil erosion and sedimentation controls required for this phase of construction must be installed in accordance with Specification TfNSW D&C G38. All staff must be made aware of the Noxious Weeds present on-site and requirements related to the listing under the Noxious Weeds Act 1993.

Weeds must be removed and disposed of in accordance with the requirements of the local Council. Removal of weeds growing in the area to be cleared and grubbed must be carried out at your cost. Removal and disposal of weeds growing in the road reserve outside the area to be cleared and grubbed may be directed by the Principal as a Variation to the deed unless the Principal elects to have this work carried out by others.

Take protective measures during the operations of clearing and road construction to avoid damaging or destroying threatened flora species and trees which have been marked or otherwise identified for preservation. These measures must include but are not limited to:

- (i) fencing around trees clear of the canopy line;
- (ii) ensuring no materials are stockpiled and no vehicles are parked under the canopy;
- (iii) avoiding excavation or the placing of fill near any tree without advice from an ecologist; and

(iv) routing haul roads and access tracks clear of the canopy.

If any tree, which must be preserved, is found to be within the area to be covered by embankment, protective measures for the tree and safety barriers of a type not specifically shown on the drawings will be directed as a Variation to the deed.

Those trees remaining within the road reserve, but outside the limits of clearing, which the Principal has agreed are unsound and likely to fall upon the roadway or onto private property must be cleared or pruned in accordance with AS 4373.

Any branch, which overhangs the road formation, must be cut back flush with the tree trunk in accordance with AS 4373.

Every precaution must be taken to prevent timber from falling on private property and dispose of any timber so fallen or produce the written consent of the owner to its remaining there.

Existing trees, grasses and other ground cover must be retained within 15 metres of rivers, creeks and watercourses and in all drainage lines until immediately before construction commences in the area. An access track may be constructed across these areas on an alignment that will minimise erosion. Notwithstanding the retention of the ground cover all soil erosion and sedimentation controls for the area must be installed in accordance with TfNSW D&C G38. All trees in these areas must be felled manually, leaving grasses and small understorey species wherever possible.

Damage of any kind, including damage to fencing or trees or other vegetation outside the limits of clearing, which occurs during clearing operations, must be made good by you.

Holes left following the removal of trees and stumps must be backfilled and vegetated as described in clause 3.

2.5 CLEARING OF BUILT STRUCTURES

Built structures other than marked or otherwise identified for preservation must be completely removed, including footings. Built structures which are only discovered during clearing and grubbing are to be retained until the Principal authorises their removal. Holes must be backfilled and vegetated as described in clause 3.

3 GRUBBING

All trees and stumps, on or within the limits of clearing defined in clauses 2.1, 2.2 and 2.3, and which are unable to be felled and removed by the clearing methods used by you, must be removed by grubbing.

Grubbing operations must be carried out both to a depth of 0.5 m below the natural surface and 1.5 m below the top of the Selected Material Zone.

Holes remaining after trees and stumps have been grubbed must be backfilled promptly with sound material to prevent the infiltration and ponding of water. The backfilling material must be compacted to at least the relative compaction of the material existing in the adjacent ground. In the area defined in Clause 2.2 the final 50 mm of backfilling must be topsoil and the area must be vegetated within 7 days of removal of the stump. Topsoil and vegetation must comply with Specification TfNSW D&C R178.

4 PRODUCTION AND STOCKPILING OF MULCH

4.1 MULCH

Native trees removed during clearing and grubbing may be used in conjunction with soil erosion and sediment control measures. All other native trees removed must be converted to mulch and stockpiled for use during landscape planting under the Contract. This requirement is subject to the following constraints:

- (a) Where the native vegetation on site is insufficient to provide the quantities of mulch needed during landscape planting, all native trees removed during clearing and grubbing must be mulched and stockpiled. Under no circumstances must the extent of clearing and grubbing be extended or weeds or exotic species used to make up any shortfall of mulch.
- (b) Where the quantity of mulch produced would exceed the quantity required under the Contract the excess mulch shall become your property and removed from the Construction Site.

Alternatively, you may propose to reuse or dispose of timber for other purposes through the production of a Timber Reuse and Disposal Plan. The proposal must detail the reuse and/or disposal options and the benefits to the Principal those options have over reuse as mulch. Include the Plan in the CEMP if the proposal is accepted.

4.2 MULCH STOCKPILES

All stockpiles must be on the Construction Site of the Project Works as described elsewhere in the documents. Obtain written consent from the Principal to the use of any stockpile site which is not shown on the Design Documentation drawings. Such requests must be made at least ten working days before stockpiling is due to commence, specifying the maximum dimensions of the proposed stockpile.

Stockpile sites must be located away from drainage lines and watercourses and must be arranged to minimise damage to natural vegetation and trees. The stockpile sites must be positioned so that the stockpiled material may be transported away at any time. Any clearing and grubbing required for these sites must be carried out in accordance with this Specification. Temporary erosion and sediment control measures must be taken in accordance with TfNSW D&C G38.

Restoration of stockpile sites following completion of the work must be carried out in accordance with Specification TfNSW D&C R178.

Stockpiles must be monitored and turned over as required to avoid spontaneous combustion.

Mulch in excess of the quantity required for landscape planting must not be stockpiled on Construction Site.

5 DISPOSAL OF MATERIALS

Unless otherwise specified, all materials cleared, pruned and grubbed in accordance with this Specification shall become your property and must be removed from the Construction Site for recycling or disposal. Disposal must be in accordance with your Waste Management Plan.

Disposal of timber and other combustible materials by burning must comply with the requirements of Specification TfNSW D&C G36.

ANNEXURE G40/A – PROJECT REQUIREMENTS

A1 CLEARING FOR BRIDGEWORKS

The area to be cleared for bridgeworks must be as follows:

| Bridge | Distance (Metres) To Be Cleared Beyond: | | |
|---------------|--|----------|----------------------------------|
| | Abutment | | Outside Faces Of Parapets |
| | A | B | |
| | | | |
| | | | |
| | | | |

ANNEXURE G40/B – (NOT USED)

ANNEXURE G40/C – SCHEDULES OF HOLD POINTS AND IDENTIFIED RECORDS

Refer to Clause 1.2.3.

C1 SCHEDULE OF HOLD POINTS

| Clause | Description |
|---------------|--|
| 2.4 | Written notification of intention to clear any area. |

C2 SCHEDULE OF IDENTIFIED RECORDS

The records listed below are Identified Records for the purposes of TfNSW D&C Q6 Annexure Q/E.

| Clause | Description of Identified Record |
|---------------|---|
| 2.2 | Report on the presence of weeds and unsound trees |

ANNEXURE G40/D – PLANNING DOCUMENTS

Provide a CLEARING AND GRUBBING PLAN which must include, but not be limited to, the following information:

- (a) methods used to identify and mark areas of weeds to be removed and methods for their removal (clause 2.4);
- (b) procedure for the disposal of weeds and exotics (clause 2.4);
- (c) procedure for protecting threatened flora species and trees marked for preservation (clause 2.4);
- (d) methods used for identifying, marking and removing or pruning unsound trees likely to fall upon the roadway or onto private property (clause 2.4); and
- (e) procedure for identifying and removing trees, stumps and logs above the specified size and within the hazard line (clause 2.2).

Include in the WASTE MANAGEMENT PLAN (refer to TfNSW D&C G36 procedures for the disposal of weeds and exotics and for the recycling and disposal of all other materials from clearing and grubbing operations).

The CLEARING AND GRUBBING PLAN and the WASTE MANAGEMENT PLAN must be consistent with the requirements of the other TfNSW specifications and must supplement your ENVIRONMENTAL MANAGEMENT PLAN (CEMP) as set out in TfNSW D&C G36.

ANNEXURES G40/E TO G40/L – (NOT USED)

ANNEXURE G40/M – REFERENCED DOCUMENTS

Refer to Clause 1.2.5.

TfNSW Specifications

| | |
|----------------|---------------------------|
| TfNSW D&C G36 | Environmental Protection |
| TfNSW D&C G38 | Soil and Water Management |
| TfNSW D&C Q6 | Quality Management System |
| TfNSW D&C R201 | Fencing |
| TfNSW D&C R178 | Vegetation |

Australian Standards

| | |
|---------|--------------------------|
| AS 4373 | Pruning of Amenity Trees |
|---------|--------------------------|