



Ergon Energy Corporation Limited

Specification for

CLEARING AND ACCESS WORKS

FOR OVERHEAD POWERLINES

RSC04

Abstract: Requirements for clearing and removal of vegetation and construction of access for construction and future maintenance of new powerlines up to 132 kV.

This specification only applies to Ergon Energy owned powerlines in rural areas and covers bare wire and insulated cable. It is not applicable to clearing and removal of vegetation on existing lines.

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1. Overview

1.1 Purpose

This specification describes the site preparation of the routes of proposed overhead power lines in rural areas; and the provision of access for construction and future maintenance.

1.2 Scope

This specification provides for the clearing of the routes of proposed overhead power lines in rural areas; the heaping of fallen timber and vegetation along the routes, the provision of access tracks along the centreline and from existing public roadways or property access roads and the provision of access gates. The level of clearing is identified as either of the **two Standard** clearing profiles which form part of the specification.

This specification only applies to Ergon Energy owned powerlines in voltages up to 132 kV and covers bare wire and insulated cable. It is not applicable to clearing and removal of vegetation on existing lines.

2. References

2.1 Ergon Energy controlled documents

ES000905R100. Environmental Planning for Work Guide

ES000906F100. Cultural Heritage Assessment

ES000906R111. Discovery of Indigenous Cultural Heritage

NA000403R376. Access Tracks Construction Standards and Specifications

NA000403R420. Standard Field Gate Requisitioning and Installation Guideline

PW000702R103. Guidelines for Site Markings used by Distribution Line

Designers STNM002. Standard for Vegetation Clearing Profile

2.2 Other documents

[ENA Guidelines ENA 023 2009 Safe Vegetation Work near Live Overhead Lines,](#)

[ENA 019 2008 National Land Management Guidelines,](#)

[Survey and Infrastructure Act 2003](#)

[Work Health and Safety Act 2011 \(Qld\),](#)

[Environmental Protection Act 1994, Electricity Act 1994,](#)

[Electrical Safety Act 2002](#)

[Explosives Act 1999](#)

[Fire and Rescue Service Act 1990](#)

[Integrated Planning Act, 1997](#)

Aboriginal [Cultural Heritage Act 2003](#)

[Torres Strait Islander Cultural Heritage Act 2003](#)

[GUIDELINE – Activities in a watercourse, lake or spring carried out by an entity \(ss. 49–51 of the Water Regulation 2002\)](#)

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[Vegetation Management Act, 1999](#)

AS 4373-2007 Pruning of Amenity Trees

3. Definitions, Acronyms, and Abbreviations

3.1 Definitions

For the purposes of this standard, the following definitions apply.

3.1.1 Contractor: The Contractor, sub-contractor/s, agent/s, and includes all their staff undertaking work to this Standard. (In the case of land holders undertaking the works:- the actual participant/s in the Rural Project who stand to benefit from a supply of electricity being made available, who shall be deemed to have accepted the responsibility of carrying out clearing of the line route in accordance with this Standard).

3.1.2 Environmental Plan (including Cultural Heritage): Plan provided in a works folder to guide the environmental and cultural heritage aspects of the project. It may be a Simple Project Risk Management Plan, Environmental Management Plan, Cultural Heritage Assessment/Field Inspection or Environmental Work Plan, prepared in accordance with ES000905R100: Environmental Planning for Work. The type and form of the plan will be dependent on the scale of the project.

3.1.3 Liaison Person: The Ergon Energy Officer(s) who will supervise and audit the work to accept the site preparation work against this specification and the Main Specification.

3.1.4 Landholder: The owner, occupier or Authority having jurisdiction over the particular parcel of land, easement, road reserve or similar.

3.1.5 Drawings: The route plan, construction plan or similar, including schedules and/or clearing instructions, where supplied.

3.1.6 Complete Clearing: The complete removal from the ground where access is required (structure sites and access tracks) of trees, stumps, logs, undergrowth, protruding rocks, large surface roots and debris, to the satisfaction of the Liaison Person. Elsewhere within the corridor (as directed) vegetation that may impact on the electrical safety and safe maintenance of the asset (vegetation >4m mature height) shall be removed. Removal of vegetation and preparation of the site can be achieved using a combination of techniques. Mechanical clearing using machinery that minimises soil disturbance such as slashers, mega-mulchers, tree-grabs and groomers is encouraged. The use of one or more bulldozers fitted with a tree pushing attachment, hydraulically operated stick rake interchangeable with a standard front mounted blade where permitted, and rippers may be warranted in some situations. The type of equipment to be used for clearing should be appropriate for the conditions of the site and shall be approved in writing by the Liaison Person before commencement of work.

3.1.7 Marginal Trees: All trees outside the cleared corridor, within the Risk Management Zone, any part of which could fall to within the following safe distances from the centreline of the power line, unless otherwise specified:

- 132kV 3.0 metres;
- 66kV 2.5 metres;
- 33 kV, 22kV or 11kV 2 metres;
- 19.1kV, 12.7kV or 11kV Single Wire Earth Return (S.W.E.R.) line 1 metre;
- Low Voltage line 1.5 metres.

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These trees will be flagged/marked with fluorescent pink tape or paint prior to the commencement of work and the cost of treatment of these trees will be included in the scope of the work.

3.1.8 Watercourse: is defined in the *Water Act 2000* as “a river, creek or stream in which water flows permanently or intermittently -

- (a) in a natural channel, whether artificially improved or not; or
- (b) in an artificial channel that has changed the course of the watercourse;”

and “includes the bed and banks and any other element of a river, creek or stream confining or containing water.”

3.2 Acronyms and Abbreviations

The following acronyms and abbreviations appear in this standard.

SWER Single Wire Earth Return line

EMP Environmental Management Plan specifically prepared for powerline construction or maintenance operations within land managed by Queensland Parks & Wildlife Service or Wet Tropics Management Authority.

4. Main Specification to Take Precedence

Where a Main Specification accompanies this specification and differs from this specification, the Main Specification shall take precedence.

5. Identification of Route and level of Clearing

Route plans or construction plans for the power line are included, with selected structure positions of existing and proposed power line/s (where applicable) clearly marked. Plans include details of the clearing Profile which applies to the various sections of the clearing and access works. The attached Environmental Plan details specific clearing standards / methods and access works to be taken (if any) in identified areas along the route and these take precedence over the requirements of this Standard.

6. Scope of Works

Works required under this specification include:

- 6.1 Clearing to the nominated profile including removal by machinery, hand felling and chemical treatment of trees, the treatment of flagged trees and felling or directional pruning of marginal trees as directed.
- 6.2 The provision of access tracks suitable for traffic by pneumatic tyred conventional two wheel drive vehicles and articulated vehicles.
- 6.3 The heaping or removal of fallen trees and other vegetation to the specified requirements.
- 6.4 Where directed, burning of timber heaped along the line route as detailed in the Standard.
- 6.5 Removal of timber from site for disposal, where nominated on the Drawings.
- 6.6 Stacking of commercial and useable timber.
- 6.7 The installation of access gates in existing fences where shown on the Drawings and as nominated by the Liaison Person.

6.8 Clean up and reinstatement as necessary to the satisfaction of Landholders and the Liaison Person.

7. Marking of Line Route

The actual route to be cleared will be shown on a Construction or Route Plan or Sketch. Ergon Energy may establish pole positions beforehand or alternatively the line route will be clearly conveyed by the Liaison Person.

The centreline of proposed power lines will normally be marked by pegs. Structure and stay pegs may also be marked. Offset finder stakes may also be used to show the limits of the clearing. These items will be completed as described in "PW000702R103 - Guidelines for Site Markings used by Distribution Line Designers".

7.1 Environmental Plan (including Cultural Heritage)

Where a project has an area or particular item identified that requires special consideration then it shall be noted on the Environmental Plan. These items will be also be flagged/marked, unless otherwise stated on the Environmental Plan, with Blue tape or paint beforehand by the Designer, Liaison Person, Environmental Representative or Cultural Heritage Officer.

8. Details of requirements for Clearing

8.1 Profile of Clearing

Unless directed otherwise in writing by the Liaison Person, the profile of clearing shall be either Full Width or Narrow Width in accordance with the requirements of the attached drawings for the nominated clearing profile and the Environmental Plan as specified. Narrow Width clearing shall only be adopted following prior written approval by the Regional Asset Manager.

8.1.1 Clearing Width

A nominated clearing width for relevant voltages is given below. These widths may be varied depending on local conditions such as the species and mature height of trees, climate and topography and in accordance with the Environmental Plan.

Line Voltage	Clearing Width on each side of the centreline
132kV	20 metres
66kV	15 metres
33 kV, 22kV or 11kV	10 metres
19.1kV, 12.7kV or 11kV Single Wire Earth Return Line	7.5 metres
Low Voltage Open Wire Line	5 metres

Table 1: Clearing Widths Bare Conductor

Line Voltage	Clearing Width on each side of the centreline
33 kV, 22kV or 11kV	3 metres
Low Voltage ABC Line	1.5 metres (The clearing width may be extended to 3 metres on one side where vehicular access is required)

Table 2: Clearing Widths Aerial Bundled Cable and Covered Conductor

8.1.2 Full Width clearing

The clearing profile shall be in accordance with the attached drawing 1569 (Annex A) and includes the complete clearing to the nominated clearing width either side of the centreline as applicable for the specified line voltage.

Marginal trees are to be felled or directionally pruned as directed.

These trees shall be flagged/marked with fluorescent pink tape or paint and the specific requirements shall be stated on the drawing and/or in the clearing instructions.

An access track is to be prepared which is trafficable by conventional 2-wheel drive vehicles and also articulated heavy vehicles, as per access track standards in Section 9. The location of access tracks will be marked in the field before commencement of clearing

At structure positions the access track shall divide to allow vehicles to drive each side of the structure to allow for construction and maintenance activities.

8.1.3 Narrow Width Clearing

The clearing profile shall be in accordance with the attached drawing 1569 (C24). Tree species nominated by the Liaison Person, of which the mature height is not greater than 4 metres, may be left inside the area 5 metres from the centre line. These trees will be flagged/marked with blue tape or paint beforehand by the Liaison Person.

Trees outside the 5 metre area and within the specified clearing width are to be assessed on a mature height basis. (If the mature height of the tree is greater than the distance from the centre line then the tree is to be cut stump or stem injected, depending on the current height of the tree.)

Marginal trees are to be felled or directionally pruned as directed.

These trees shall be flagged/marked with fluorescent pink tape or paint and the specific requirements shall be stated on the drawing and/or in the clearing instructions.

An access track is to be prepared which is trafficable by conventional 4-wheel drive vehicles and also articulated heavy vehicles, as per access track standards in Section 9. The location of access tracks will be marked in the field before commencement of clearing

At structure positions the access track shall divide to allow vehicles to drive each side of the structure to allow for construction and maintenance activities.

8.2 General Requirements

The overriding principle is to reduce the extent of bare earth and topsoil disturbance and to encourage low growing vegetation that does not impact on line clearances and access areas. Clearing by chain saw or by using slashers, megamulchers or groomers that minimise soil disturbance are preferred. Machine clearing methods using the front mounted stick-rake may be used for vegetation clearing works on larger projects. Large rubber tyred articulated machines are preferred to minimise soil disturbance and maintain grass and shrub ground cover where practicable. The method used for clearing each section of line shall be agreed and specified before work commences. Provision is required for a follow up herbicide application to regrowth approximately 3 – 6 months after any mechanical clearing technique to ensure effective control of vegetation. These areas will be identified on a plan at the completion of the initial clearing to assist the herbicide applicator.

Remove all stumps within the width nominated in the clearing profile, with the following exceptions:

- The banks of watercourses;
- Terrain which is too steep or inaccessible for Machine Clearing;
- Areas subject to erosion or where danger of erosion exists;

beyond 5 metres each side of the centreline, stumps of large trees (approx. 400mm diameter) away from the centreline clearing required for conductor stringing may remain if cut off at stump height (1.0 metre to 1.2 metres above ground) and treated with herbicide as specified in Clause 8.1.

There should be no remaining stumps within 3 metres of the centreline to ensure that line stringing and future maintenance access is not impeded.

Fill all large holes and other damage to the ground surface created by the clearing activities with soil from the adjacent disturbed area and leave the surface generally in such condition as to present no hazard to livestock, vehicles or horsemen.

Felled trees and other vegetation shall be removed from any firebreak, fence line or access track and from the firebreak between standing timber and the heaps stacked along the power line, and shall not be left caught-up in or leaning on any standing timber.

Shade or ornamental trees and wind breaks may require special treatment as directed on-site by the Landholder and the Liaison Person.

Fire shall not be used by the Contractor as a clearing tool. Any use of fire shall be authorised beforehand by the Liaison Person and necessary permits obtained as required under *Fire and Rescue Authority Act 1990*.

8.3 Water Courses, Areas Subject to Erosion, and Steep Terrain

Machine clearing shall not be undertaken within a zone of 10 metres from the banks of any watercourse. Within such zones, hand clearing procedures shall be adopted and trees felled at stump height. All fallen timber is to be snigged or winched above the flood zone. Pushing or falling of trees and debris into a watercourse is prohibited.

Clear only the minimum amount of vegetation required below the banks of any watercourse. Only vegetation that has the potential to breach safe electrical clearances shall be removed, as directed by the Liaison Person.

Areas subject to erosion or inaccessible for machine clearing, including a 10 metre perimeter, shall be cleared by hand clearing procedures and trees felled at stump height. Every endeavour shall be made to fell all timber into a position that will not concentrate the flow of runoff. The Liaison Person shall direct the extent of any additional erosion prevention measures or techniques required. Payment for additional works directed by the Liaison Person shall be made at the hourly rates nominated in the Applicable Schedule.

The Liaison Person may instruct the Contractor in writing to fell trees in other areas at stump height, at no price variation.

Vegetation cleared by hand is to be cut as close as possible to the ground (<150mm). Higher stumps may be retained if required by the landholder. Felling of trees at stump height shall be by axe or saw, without sharp protrusions being left on stumps.

With the exception of stumps remaining in a watercourse, all stumps must be treated with an approved herbicide in accordance with the manufactures recommended method of application. Stumps remaining in a watercourse are to be swabbed with Roundup Bioactive at the recommended dose immediately after cutting to reduce the potential for regrowth.

8.4 Steep Side Slopes

Where land slopes steeply across the route of the line (greater than 15 degrees) and no instruction is given on the plans, the Liaison Person may direct:

- 8.4.1** The clearing width be displaced towards the higher side of the centreline and the Contractor shall then clear the full displaced width; or
- 8.4.2** The clearing width is displaced towards the higher side of the centreline and selective clearing be employed on the lower side of the centreline

8.5 Deep Gullies

In areas such as deep gullies and valleys where the line conductors will be high above the tops of mature trees, only a portion of the gully may require clearing or no clearing may be required. In these cases instructions are provided in the Environmental Plan. The extent of clearing shall be to the satisfaction of the Liaison Person.

8.6 Structure Sites (If pegged)

Even though a narrower width of clearing may be specified for a general area, Complete Clearing including the removal of all stumps is required at each structure site to allow for construction and maintenance activities.

Unless shown otherwise on the Drawings or directed otherwise by the Liaison Person, the following clearing is required:

- 8.6.1** On Road Easements – the felling or Directional Pruning of trees and other vegetation as directed by the Liaison Person
- 8.6.2** All Other Locations – clearing and levelling of the following size, centred about the structure location:
- 66kV line 900 square metres (30mX30m)
 - 33kV, 22kV or 11kV line 400 square metres (20mX20m)
 - 19.1kV or 12.7kV Single Wire Earth Return 225 square metres (15mX15m)
 - Low Voltage line 100 square metres (10mx10m)

8.7 Clearing Works Required Outside the Defined Clearing Width

The Contractor shall fell or directional prune as directed, marginal trees, irrespective of the direction in which they may at present be leaning. Refer marginal trees definition.

Trees and other vegetation felled outside the defined clearing width shall be removed from any firebreak, fence line or access track and from the firebreak between standing timber as described in clause 8.2.

8.8 Clearing on Roads, State land and Freehold land

On main roads and local authority roads, preservation of trees is required where possible. Subject to the relevant Authority's requirements, the Liaison Person may direct particular trees and other vegetation to be felled or directionally pruned.

8.8.1 Main Roads

The Contractor shall comply with the conditions of the agreement granted to Ergon Energy by the Department of Main Roads for clearing works along Highways.

8.8.2 Local Authority Roads

The Contractor shall comply with the conditions of the agreement granted to Ergon Energy from a Local Authority to clear along roads under their jurisdiction.

8.8.3 State Controlled Land

Timber on roads and certain leasehold land and reserves etc. remains the property of the Crown. The contractor will comply with any specifications and directions regarding the salvage and disposal of merchantable timber provided to Ergon Energy by the responsible State Government Agency. (DERM, DPI or Main Roads)

8.8.4 Freehold Land

The Contractor shall comply with the conditions of the permit granted to Ergon Energy from the Department of Environment and Resource Management for clearing on freehold land where required in accordance with the *Sustainable Planning Act, 2009* and the *Vegetation Management Act, 1999*.

The Liaison Person will reinforce with the Contractor the requirements of relevant Authorities, contained in permits or authorisations.

8.9 Heaping or windrowing (if agreed by the land holder)

Gather together all fallen timber including marginal trees, branches, scrub, undergrowth and combustible material resulting from the clearing operation together with any leaf litter and logs, and stack in neat compact heaps (compressing the heaps after stacking). Stick rakes or other approved equipment shall be used to minimise ground surface disturbance and soil content in the heaped material. Trunks, tops, limbs and roots shall be trimmed and the heaps formed parallel to the centre line clear of all road works, drains, watercourses, banks, fences, gates or structures.

Locate heaped material clear of power lines and at least 10m clear of all drains and watercourses or their flood banks, to prevent obstruction to water flow. Stacking shall be carried out in such a manner that any flow of water shall not dislodge the heaps. Where practicable, without contravening any other provision of this Specification the heaps should be located on the lower side of the centre line only, and where any danger of flooding exists the heaps shall be located on the downstream side of the centre line and any structure.

Heaps shall not be in a continuous unbroken line but shall be not more than 20 metres long and 3 metres high, with 5 metre gaps provided between heaps to permit the passage of stock and vehicles. The heaps shall be left in such a way that burning may be carried out without further stacking and without danger to any adjacent property or to the overhead power line.

A definite fire break shall be required between the heaps and standing vegetation, the gap distance to be determined in consultation with the property owner. The Contractor shall liaise with the Landholder for any special instructions regarding access to the site before clearing work commences on the property.

All large loose stones, rocks or boulders shall be moved to the edge of the cleared area, or to specific positions within the cleared area as directed by the Liaison Person. Location of all heaps of rubble is subject to the approval of the Liaison Person.

8.10 Preservation of Timber of Commercial Value

The Contractor shall trim any logs of commercial value to currently accepted standards and any other timber required by Landholders for their own use and leave neatly and compactly stacked. Locate clear of the centre track, power lines and clear of heaps of fallen timber, to the approval of the Liaison Person.

8.11 Trimming or Pruning of Remaining Trees

Where trees are to be retained and pruned, the pruning shall be carried out to AS 4373-2007 Pruning of Amenity Trees. The Standard details techniques that reduce the risk of hazard development, branch failure, fungal infection or premature tree death. The procedures in the Standard are based on the widely accepted theories of compartmentalisation of decay in trees.

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9. Access Tracks

9.1 General

The Contractor shall provide vehicular access to the whole line route, with additional access tracks from existing public roadways or property access roads where detailed on the Drawings and marked in the field. Designated avoidance areas such as Cultural Heritage sites, steep slopes or riparian zones shall also be marked in the field. Access track location and construction shall be in accordance with NA000403R376 Access Tracks Construction Standards and Specifications.

The centre line access track shall be as straight as practical, and generally follow the power line centre line for the entire line route except in areas of cultivation and where, because of steep slopes, impassable creeks or other obstructions, the track would not be trafficable by conventional four-wheel drive pneumatic tyred vehicles and articulated vehicles. At structure positions the track shall divide to allow vehicles to drive each side of the structure to allow for construction and maintenance activities.

Construction of access tracks shall be finished by power grader or by bulldozer blade where an adequate travel surface standard to the satisfaction of the Liaison Person can be achieved. Every effort shall be made to preserve existing grass cover and no windrows of soil or debris are to be left on the lower side of the track or across drainage lines. Drainage is to be directed away from the centre line of the route.

Access tracks shall be free of stumps, stakes, timber, protruding rocks, holes or any unevenness which could restrict the progress of vehicles along the route during construction, patrol or maintenance of the power line. In addition, overhanging branches shall be removed up to 5 metres above tracks to provide clear access for vehicles. Table 3 details the minimum standard for construction of access tracks constructed under this specification.

The Contractor is responsible for ensuring that existing access tracks are adequate and safe for use by all users during the course of the clearing works, and is responsible for upgrading if required, at no cost to Ergon Energy. All access tracks and crossings shall be maintained in a good trafficable condition, and where damage is caused by activities of the Contractor, reconstructed as necessary on completion of works. Such maintenance and reconstruction shall be to the satisfaction of and at no cost to Ergon Energy.

9.2 Access Track Standards and Specifications

Design parameter	Standard
Formation	Crowned with cross fall of 1-3 degrees on ridge top or flat ground Outsloped with 1-3 degrees outfall in side cut locations
Pavement surface	Natural weathered surface with patch gravelling on clay soils to improve traffic-ability. The desirable surface is short grass to minimise erosion.
Pavement width	2.8 metres minimum, 4 metres maximum
Shoulder width	0.6 metres
Clearing width for track, if track is away from powerline easement	1 metre either side of earthworks (track formation)
Maximum gradient	10 degrees but may be steeper where construction results in less disturbance and the surface provides good traction.
Formation in Wet Tropics, National Parks and State Forest	3 metre wide formation. 4 metre high to vegetation.

Table 3: Access Track Standards and Specifications

9.3 Gullies and Watercourses

Where the access track crosses gullies or watercourses the Contractor shall make the approaches so that, as far as possible, no scouring will occur during flooding or heavy rain. Where cutting is required, a wide mound of earth (whoa-boy) should be left at the head of the cutting to prevent runoff water being funnelled into the cutting. Crossings should neither be built up above nor undercut below the bed of the watercourse or gully at the crossing. Placing of logs, stones, pipes, etc. is generally not required. If the watercourse or gully is such that, in the opinion of the Liaison Person a track constructed across it would not be or remain trafficable, then no track shall be provided. If clearing or access tracks impact on the bed or banks of a watercourse, work should be conducted under the conditions of a Riverine Protection Permit issued under part 8 of the *Water Act 2000*.

In such cases an access track not nominated on the plan may be required around the obstacle and advised in writing by the Liaison Person.

9.4 Steep Terrain

Where the access track has to be located off the contour or directly down a slope, the grade of the track should not exceed 10 degrees. When the natural slope is over 10 degrees, the track may be cut around the side of the hill or ridge to gain extra length to achieve the required grade. In areas of side slope where cutting is required, the track shall be constructed with a slight out slope so that runoff water discharges along the full outer edge of the track, as per table 3.

9.5 Drainage Control

'Whoa-boys' (earth mounds) shall be constructed on tracks of 6% (1 in 16) (3.5 degrees) or greater slope to prevent water flowing along the track. The height of 'whoa-boys' should be approximately 300mm (compacted) and the spacing in metres along the track may be calculated by using the formula:

$$200 / \% \text{ Grade}$$

For example: On a 10% grade, 'whoa-boys' would be 20 metres apart.

On small grades, 'whoa-boys' should be constructed from the downhill side with either a grader or bulldozer, so the topsoil and vegetation on the uphill side of the mound remains undisturbed. On steep grades, 'whoa-boys' may be constructed from the uphill side provided the soil is collected gradually so as not to leave a deep gutter next to the mound. All 'whoa-boys' shall be rolled with the wheels or tracks of the machine to help stabilise the newly constructed mound.

Where required, discharge drains shall be constructed from the lower end of 'whoa-boys', extended where necessary to discharge onto a stable vegetated area, and also to prevent runoff water flowing onto other sections of the access track.

Where earth is excavated to construct benching for crane operations on steep sites topsoil from the excavation shall be stockpiled and spread over the banks to encourage stabilisation, to enable future use of the benching by maintenance plant. Provision may be made for stabilisation of these disturbed sites with grass seed or other recognised soil stabilisation techniques, to be nominated in the Main Specification.

10. Access Gates

The Contractor shall install access gates of the size and style nominated in either the Drawings or in the Main Specification, along the route of the power line. Gates, posts and fittings shall be supplied and delivered by Ergon Energy to a single site along the line route to be agreed beforehand by the Liaison Person and the Contractor.

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Installation includes cutting of the existing fence and removal of posts where necessary, the piecing, re-tensioning and retying including repair if necessary, to restore the fence to as good as or better condition as existed prior to the erection of the gate in accordance with NA000403R420 Standard Field Gate Requisitioning and Installation Guideline.

11. Burning

The extent of heaped timber to be burnt shall be nominated in either the Drawings or in the Environmental Plan and shall only be burnt if required by the Landholder.

Along Highways, Local Authority roads and Non Freehold Tenures, timber shall only be burnt where directed and authorised in writing by the relevant Authority. Refer Clause 8.8.

Burning of timber where required shall be carried out at a suitable time after timber has been stacked. Combustible material shall be burnt to ashes and residue of earth, stones or ashes shall be evenly spread in the vicinity by bulldozer stick rake. Any combustible material not burnt to ashes in the initial burning shall be re-heaped and burnt to ashes.

All burning shall be carried out with the permission of the Landholder and in accordance with a permit issued under the *Fire and Rescue Service Act 1990* and associated regulations or any order or direction given pursuant thereto. The Liaison Person shall be notified at least 2 working days before it is intended to burn, and all precautions shall be taken by the Contractor to prevent escape or the start of uncontrolled fires. All burning must be completed prior to construction works commencing unless otherwise approved in writing by the Liaison Person.

12. Additional Works and Variation of Clearing

The Contractor shall undertake such additional clearing and access works not provided for in the previous Clauses, as may be directed by the Liaison Person in writing during the course of the contract, under the terms and conditions of the Specification. Payment for such works shall be at the rates tendered in the applicable Schedule.

13. Damage to Property

13.1 General

For the purpose of clearing and access work this clause shall take precedence over the 'Damage to Property' clause in other Standard Specifications.

The Contractor shall plan and carry out the work under this specification in such a manner as to minimise the occurrence of damage to or loss of any property, improvements, services, livestock, poultry, cultivation, crops, etc. Any such damage or loss (including time spent searching for straying livestock, payment of pound fees, etc.) caused by the Contractor or plant shall be at the expense of the Contractor and shall be immediately repaired, replaced or otherwise rectified by the Contractor to the satisfaction of the Liaison Person and Landholder.

Failing restoration of damaged property or payment of adequate compensation to the injured party, the Contractor shall indemnify Ergon Energy against all actions, proceedings, claims, demands, damages, penalties, costs, charges and expenses of any description in respect of or arising out of such damage.

13.2 Improvements and Services

The Contractor shall be responsible for locating and avoiding damage being caused to water mains, cables, drains, culverts, roads, grids, bridges, power lines, telephone lines and other improvements or services.

13.3 Fencing and Gates

Gates and fences shall be kept stock proof at all times, and timber shall be felled and disposed of so that damage to fencing or gates is avoided. No timber or debris shall be left lying on or adjacent to any fence or gate. Any damage caused to fencing or gates shall be immediately repaired to the satisfaction of the Liaison Person and the Landholder. If the Contractor requires removing fences to obtain working space, the Contractor shall immediately provide and install, at no cost to Ergon Energy, suitable temporary stock-proof fencing of sound construction to the satisfaction of the Liaison Person and the Landholder.

Gates shall be left as found and where closed shall be closed and fastened immediately after ingress or egress. All temporary fences or gates shall be removed by the Contractor immediately they are no longer required and the original fence shall be restored by the Contractor to the satisfaction of the Liaison Person and the Landholder.

13.4 Hedges and Other Barriers

Other than work agreed to by the Liaison Person and Landholder, any damage to hedges and other barriers between properties or paddocks within properties shall be immediately rectified by installation of a suitable fence at the expense of the Contractor and to the satisfaction of the Liaison Person and Landholder

13.5 Crops and Cultivated Areas

The Contractor shall ensure that the work under this Specification is carried out in such a manner that damage to cultivated areas and crops, including pasture grass and fruit trees, is kept to a minimum. In levelled cultivated areas no access track dozing or grading shall be required. Where possible, access tracks shall be located to avoid such cultivated areas, crops etc., and vehicles and plant shall travel around and not through such areas except when necessary to carry out actual work within their confines.

Any damage or loss caused by the Contractor or Contractor's plant to cultivated areas and crops etc., which in the opinion of the Liaison Person could reasonably have been avoided, shall be at the expense of the Contractor

14. Obstructions to Roads & Bridges

Any obstructions to roads, bridges, tracks, watercourses, dams that prevent normal access, caused during clearing shall be removed immediately, and the original conditions restored without delay.

15. Straying Livestock

The Contractor at all times shall be entirely responsible for ensuring that livestock do not stray on roadways or from their confined pastures due to any fault, negligence or damage caused by the Contractor, or the Contractor's plant. If any claim shall arise in respect of any livestock which have strayed as a direct or indirect cause of any work performed by or on behalf of the Contractor, then such claim shall be the responsibility of the Contractor, whether such claim arises during the execution of the work or at any later date.

16. Permission to enter properties

Where work is to be carried out on private property Ergon Energy will obtain an easement, a wayleave or alternatively "Consent to Enter" form PW000803F101, before work is commenced. On major projects a schedule setting out the real property description of all land to be crossed by the power line, together with any special requirements of the Landholder that are known to Ergon Energy, will be provided to the Contractor prior to the commencement of field work.

Before entering any property the Contractor shall notify the respective Landholder of the intention to enter the property for the purpose of carrying out clearing or access works and for ascertaining any additional requirements concerning work on the particular property. Such notice shall be given at least forty-eight (48) hours before commencing clearing or access work on that property.

17. Benchmarks & Reference Trees

It is an offence under the [Survey and Mapping Infrastructure Act 2003](#) to interfere with a recognised permanent survey mark. Before interfering with any marked trees associated with the powerline survey the Contractor shall advise the Liaison Person of the intentions. Care should also be taken to avoid disturbance to trees that may have indigenous cultural heritage value (scar trees). Management of these trees shall be in accordance with the requirements of ES000906R111 Discovery of Indigenous cultural heritage. Any trees carrying bench marks that are required to be removed shall be cut one metre above such marks, where practicable, and the cut must have a slope of 25mm/300mm. After cutting, the exposed end grain shall be protected by a galvanised iron or sheet aluminium cap securely fixed to the stump.

Reinstatement of any marked trees disturbed or removed by the Contractor shall be at the Contractor's expense.

18. Pegs & Survey Marks

The Contractor shall be held responsible for any pegs or survey marks destroyed, removed or disturbed during clearing operations and shall bear the cost of resurvey where necessary and replacing of such pegs or survey marks, including any survey pegs previously placed by Ergon Energy to indicate the proposed power line. The Contractor shall immediately advise the Liaison Person in writing of any pegs disturbed.

19. Working in Proximity to Electrical Parts

The Contractor shall ensure that all workers observe the exclusion zones (in most cases, at least 3 metres) prescribed under the *Electrical Safety Regulation, 2002* and the Code of Practice for Work in proximity to Electrical Parts. All workers shall be treated as untrained persons for exclusion zones purposes unless they have been specifically designated as Authorised Persons pursuant to section 59 of the *Electrical Safety Regulation, 2002*.

Trees (or any parts of trees) that are considered to be within these exclusion zones are to be avoided and reported to the Liaison Person immediately.

The Contractor shall ensure by mechanical restraint that falling trees do not infringe on the exclusion zones.

When using rope as a restraint, use a fibre or synthetic rope of adequate strength in preference to a steel wire rope for increased electrical safety in situations of marginal clearances.

A tree branch or limb shall only be cut when it is below the conductors or would not fall onto the conductors when cut. Where there is no such assurance the line shall be de-energised prior to undertaking tree trimming work.

20. Use of Explosives

Explosives may be used only in special circumstances and only with the approval of the Liaison Person.

Care must be taken to ensure that the use of explosives complies with the provisions of the [Explosives Act 1999](#) and Regulation, including Part 2, Division 2 of the Regulation and is in accordance with the S.A.A. Explosives Code, which is available for inspection at Ergon Energy's Office.

Specification for Clearing and Access Work for Overhead Powerlines



The use of explosives shall not cause damage to or interfere with power lines located near the blast site.

21. State Forests, National Parks, Conservation Parks

Under no circumstances shall the Contractor undertake any work within a State Forest, National Park or Conservation Park, without first having obtained explicit instructions from the Liaison Person. Operations here will be under a specific EMP and boundaries will be clearly identified. Site specific inductions to communicate the requirements of the EMP will be conducted for all workers before work commences on these sites.

22. Acts, Regulations, By-Laws, Approvals

The Contractor shall comply with the current edition of all relevant Acts, Regulations, and By-Laws, and shall observe the requirements of any Government or Semi-Government Department, Local Authority, owner or lessee of property through which the route passes or adjoins.

In particular, the provisions of the [Work Health and Safety Act 2011 \(Qld\)](#), [Environmental Protection Act 1994](#), [Electricity Act 1994](#), [Electrical Safety Act 2002](#) and Regulations, [Explosives Act 1999](#) and Regulations, the S.A.A. Explosives Code, and the [Fire and Rescue Service Act 1990](#) shall be strictly enforced

Specification for Clearing & Access Work for Overhead Powerlines



Annex A - Clearing Profiles

FULL WIDTH CLEARING

VEGETATION THAT CANNOT FALL INTO THE POWERLINE CAN REMAIN

X = The nominated clearing width see table 1.

Notes:
These widths may require to be varied depending on span lengths, local conditions, tree species or topography in accordance with the Environment Management plan

TABLE 1

VOLTAGE OF CONDUCTOR	CLEARING WIDTH ON EACH SIDE OF CENTRELINE (X)
132kV	20m
66kV	15m
33kV, 22kV, 11kV	10m
19.1kV, 12.7kV or 11kV SWER	7.5m
Low voltage line	5m

NARROW WIDTH CLEARING

VEGETATION THAT CANNOT FALL INTO THE POWERLINE CAN REMAIN

X = The nominated clearing width see table 1.

Notes:
Vegetation with a mature height less than four meters may remain under the powerline.
A canopy of low growing vegetation will allow connectivity of wildlife habitat.
In fire prone areas density of vegetation will be managed to prevent accumulation of fuel.
Safe access must be provided for maintenance vehicles.

A	ORIGINAL ISSUE	 Ergon Energy Corporation Ltd ABN 50 087 646 062	APPROVED <i>J. Brooke</i> DATE 8.10.08 PASSED <i>A. Craft</i> DRAWN <i>C. Wassner</i>	OVERHEAD DISTRIBUTION CONSTRUCTION PRACTICES POWERLINE CLEARANCE FOR RURAL AND SUB-TRANSMISSION
			FILE: 5 10 1569-1	Dwg 1569 Sh