

Figure 3 - Map legend

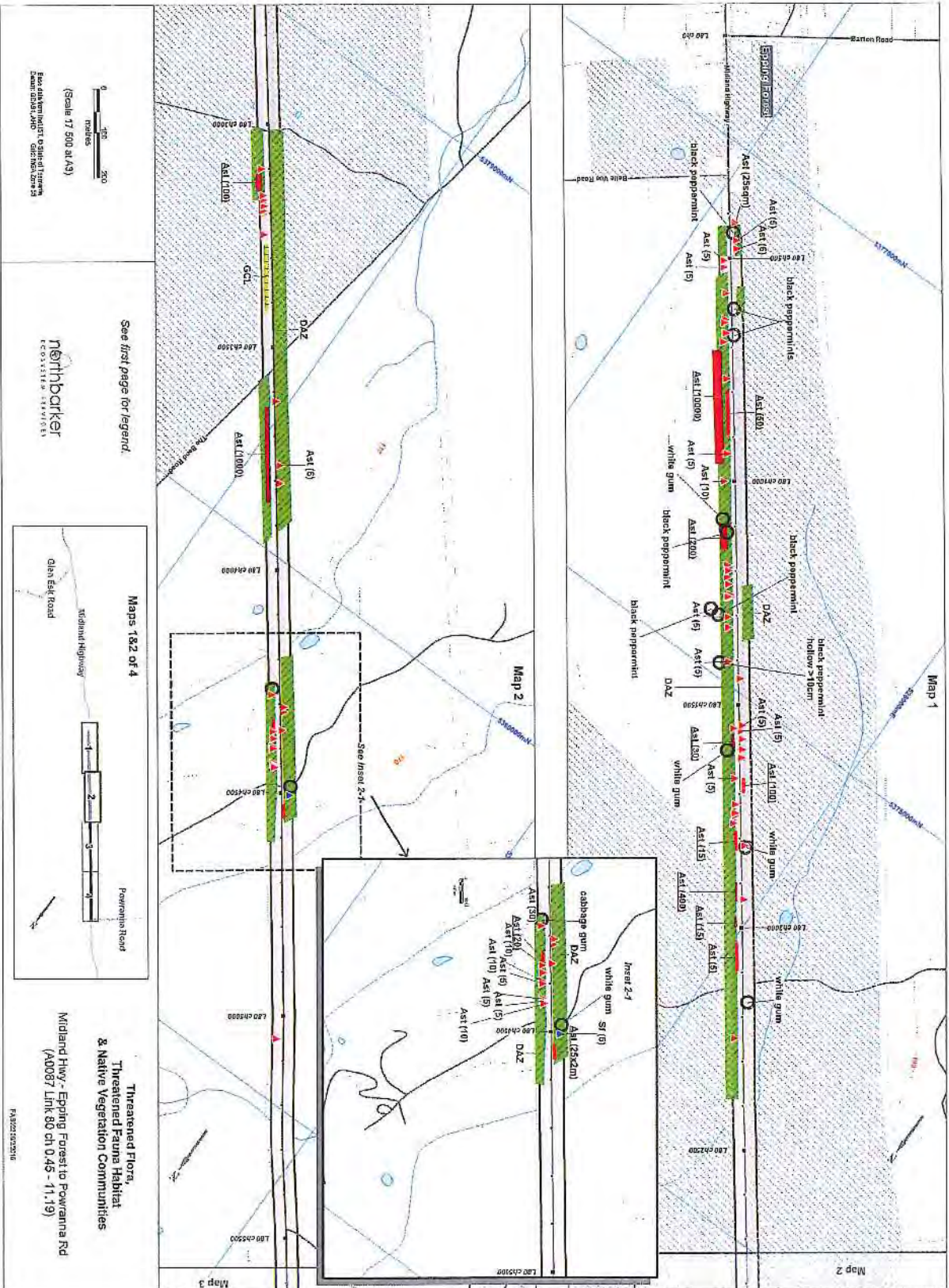
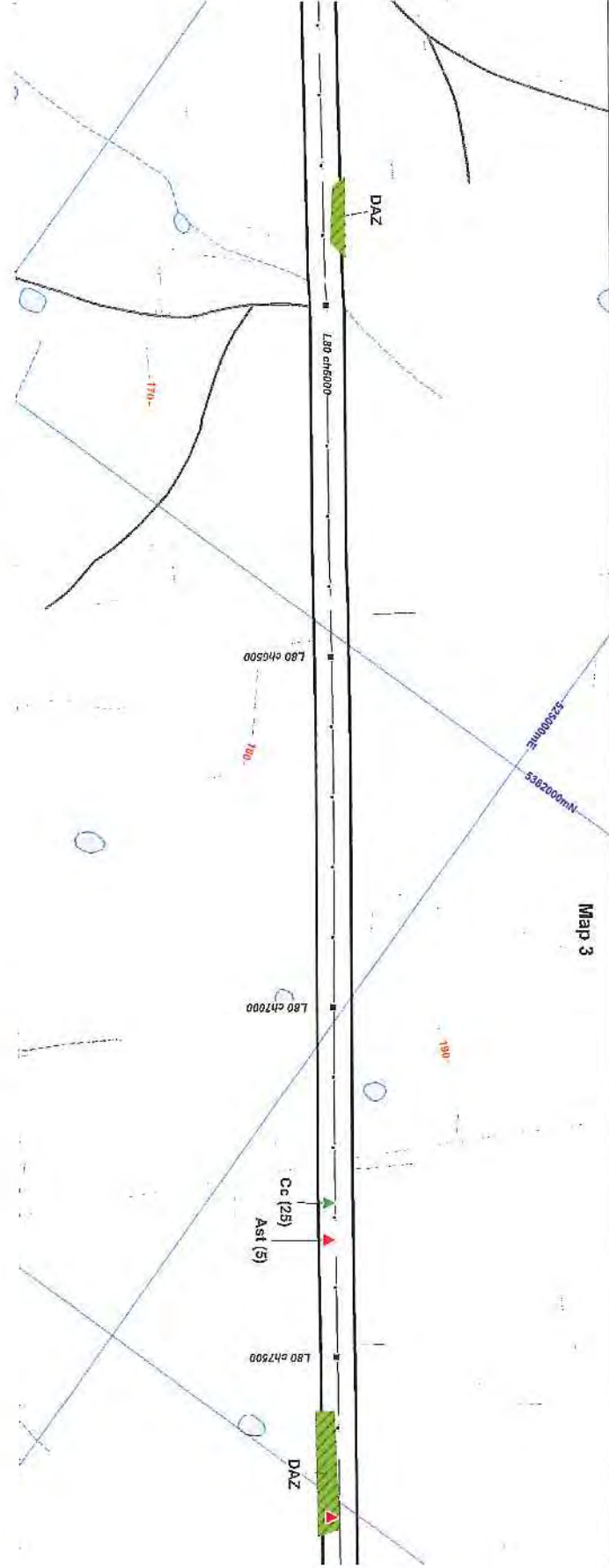
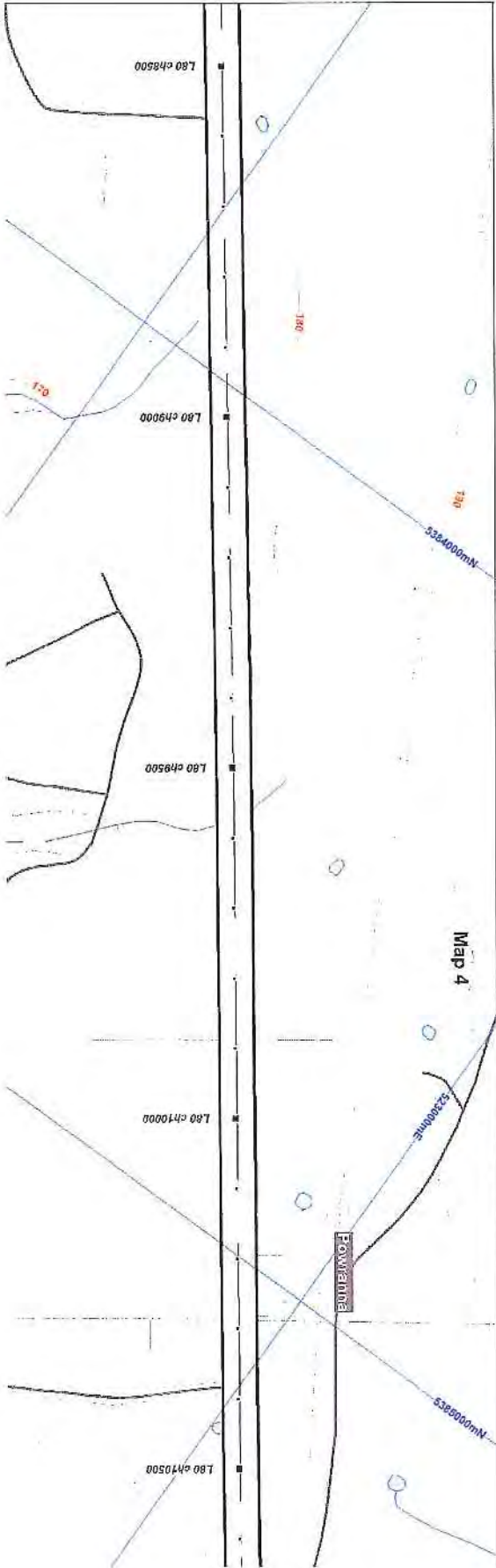


Figure 4 - Observations of threatened flora and vegetation (Map 1 of 2)



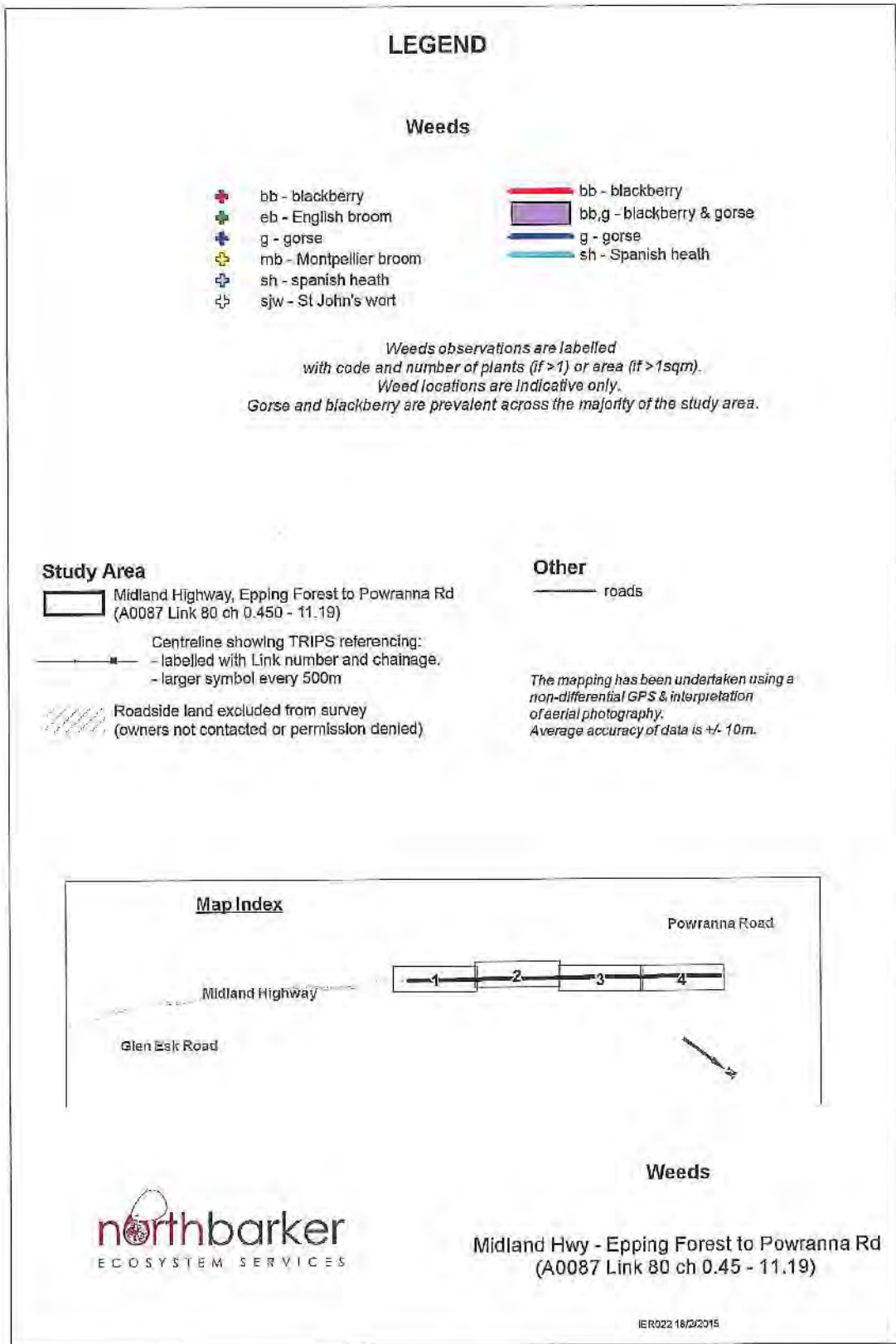


Figure 6 - Weeds Legend

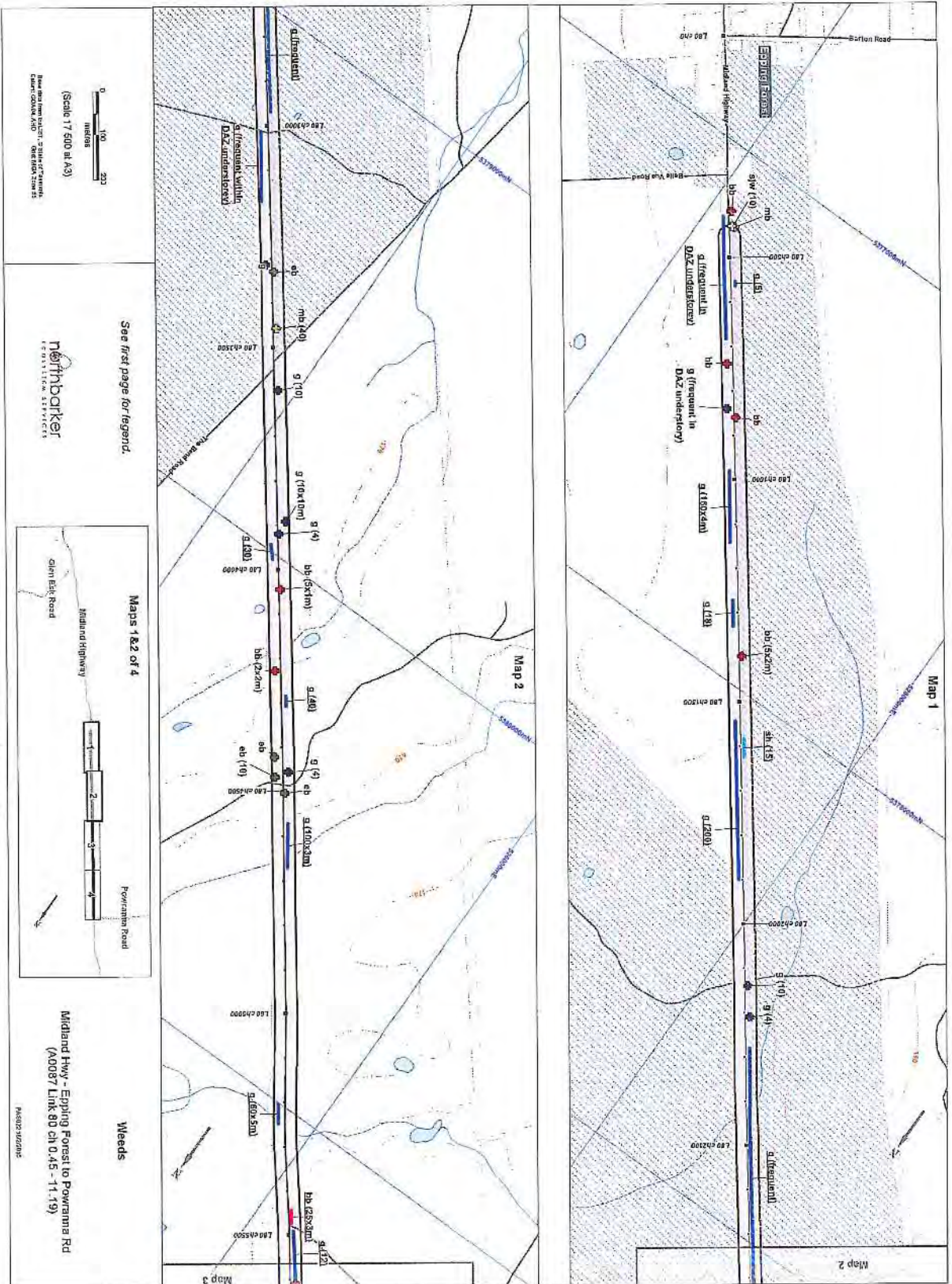
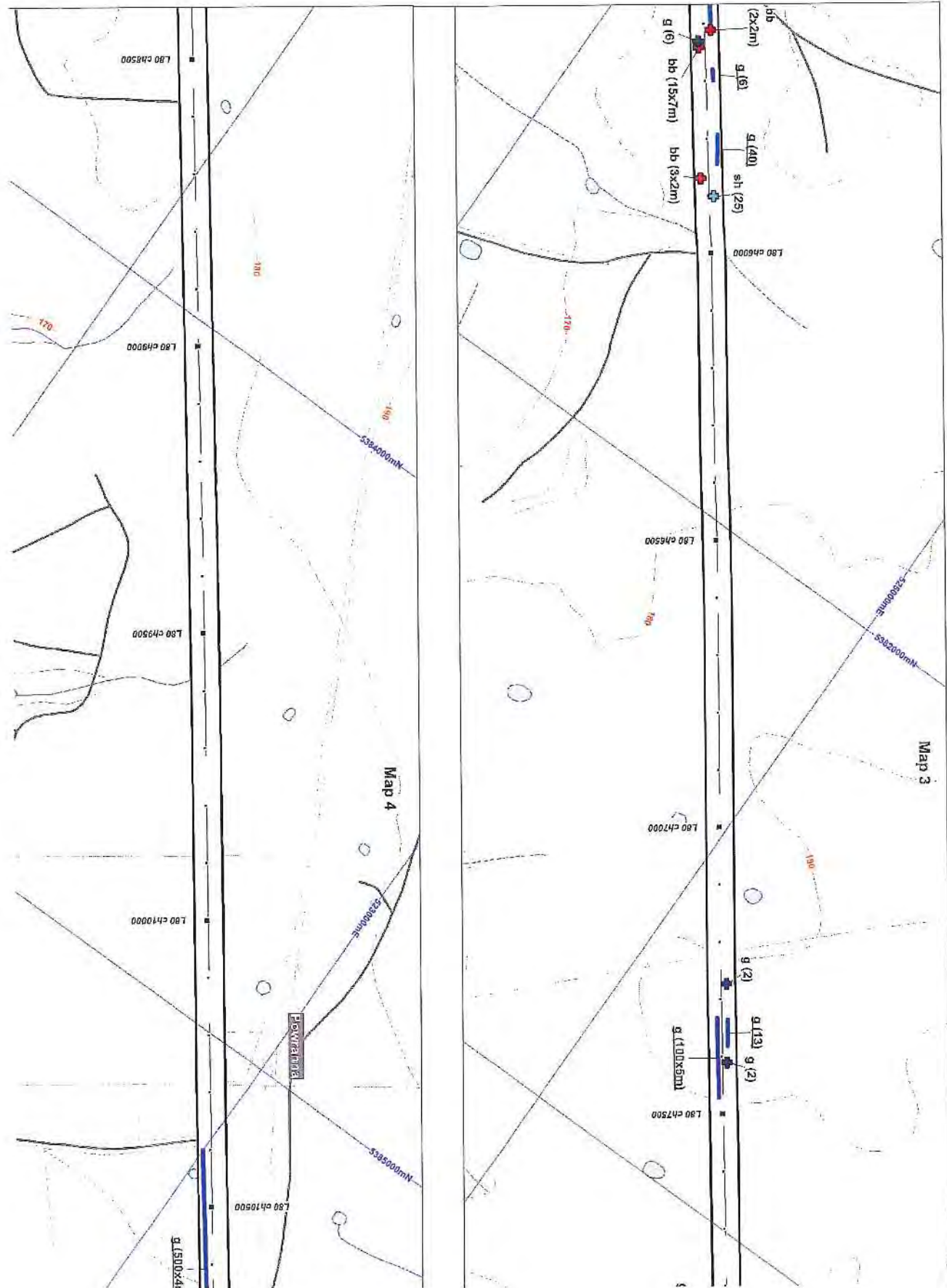


Figure 7 - Indicative locations of weeds (Map 1 of 2)



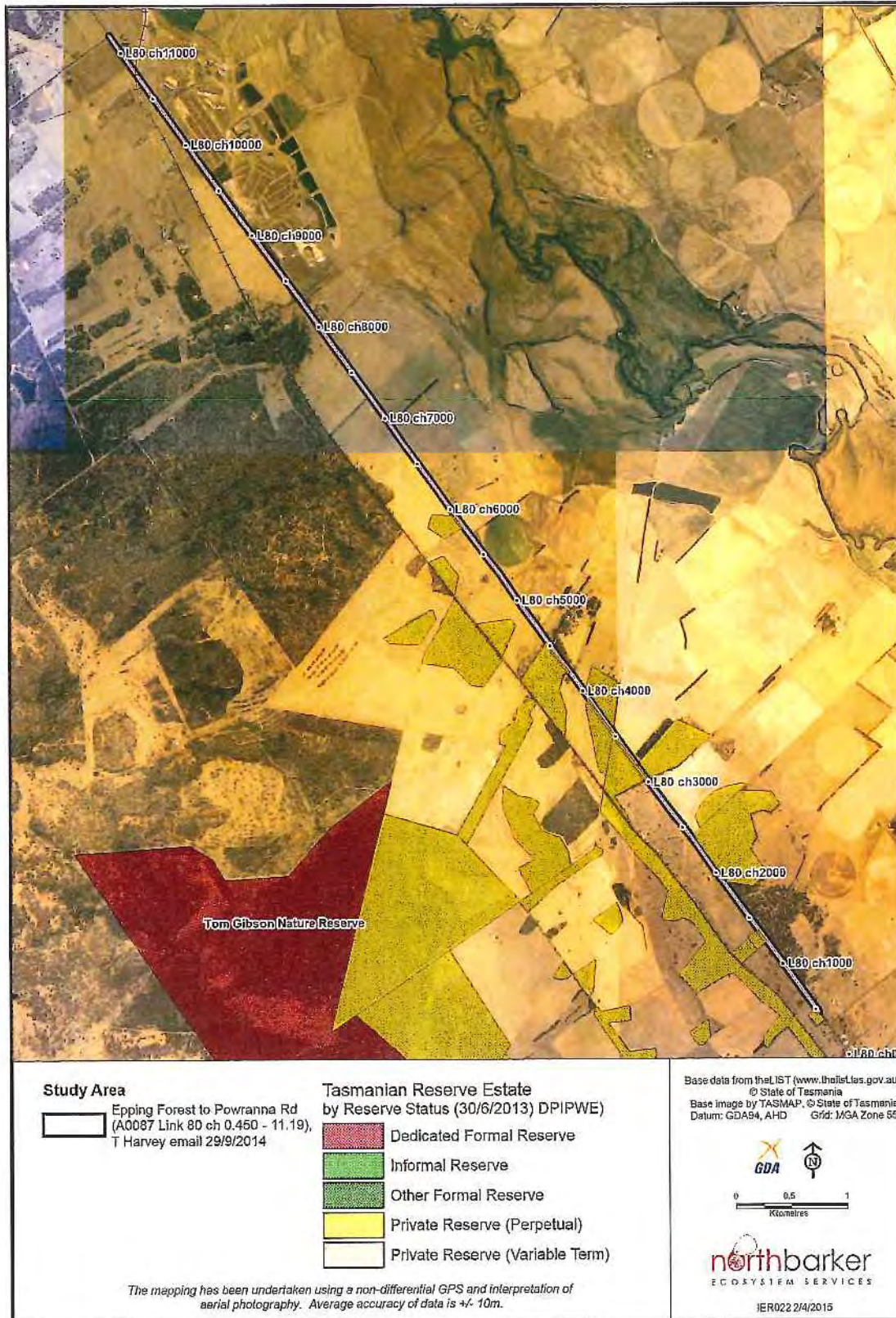


Figure 9 - Location of Reserves

## 4. POTENTIAL IMPACTS OF EACH PROJECT

The planning for construction within the Epping Forest to Powranna Rd section of the Midland Highway is still in the concept design stage and therefore field surveys were undertaken prior to any design considerations. Consequently it is not possible to quantify likely impacts accurately. This section identifies key issues that construction may trigger.

Table 5 provides a summary of key issues.

Two state listed rare (*Arthropodium strictum* and *Caesia calliantha*) and one state listed vulnerable (*Scleranthus fasciculatus*) flora species recorded from this site. The population of *A. strictum* is not likely to be deemed significant given it is up for delisting and offsets also unlikely for this reason. Offset requirements however possible for *S. fasciculatus*, although maximum impact is to 6 plants.

A final count of numbers impacted would be beneficial post design to finalise actual impact and application for Permit under the TSPA.

Habitat for the nationally vulnerable masked owl and spotted-tailed quoll is present in the form of hollows in mature trees. An additional survey to determine the presence/absence of the masked owl (and quoll) was undertaken with no evidence of current occupation found for either species. Two mature trees were found to offer hollows that may potentially be used at some time with a number of additional trees that have habitat value however considering the large amount of suitable habitat in the surrounding landscape, road upgrades are unlikely to have any meaningful impact on these species. Impact to identified habitat trees however is recommended to be minimised.



Table 5: Key issues

EPBC MNES	Comment	TSPA Flora /Fauna	Comment	Conclusion
<p>Potential habitat for : spotted tailed quoll (vulnerable) masked owl (vulnerable)</p>	<p>Some mature trees occur within the study area. Limited potential for spotted-tailed quoll dens and no evidence of presence was recorded. No evidence of usage by masked owls was made. Some habitat trees with potential nest hollows within study area. Minimising impact to these trees is recommended.</p>	<p>Two flora species listed as rare <i>Arthropodium strictum</i> (c 12500 plants) at various locations <i>Caesia calliantha</i> – one location of 25 plants. <i>A. strictum</i> is currently awaiting the Ministers approval for delisting. One flora species listed as vulnerable <i>Scleranthus fasciculatus</i> – one location of 6 plants Habitat for one TSPA endangered fauna (mature tree hollows) and one TSPA rare fauna (also in the form of tree hollows) - spotted-tailed quoll (rare) - masked owl (endangered)</p>	<p>TSPA permit likely requirement. Offsets may be required depending on final impacts for <i>Scleranthus fasciculatus</i> however only a small number are present. Offsets unlikely for chocolate lily as the species is awaiting the Ministers approval for delisting Quantity final impacts post design. Avoid impact to majority of habitat trees where possible.</p> <p><b>NOTE</b> Majority of private land containing DAZ community is under privately managed conservation covenants</p>	<p>Few constraining issues with care in design Potential for offsets to <i>S. fasciculatus</i> although maximum impact is small (6 plants) Permit to take will be required Prior to construction, consider another tree inspection of habitat trees identified for removal to ensure no impact to masked owl (owls may occupy available habitat post the initial survey)</p>

## 5. LEGISLATIVE IMPLICATIONS

### 5.1 COMMONWEALTH *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999*

Referral under the EPBC Act is necessary if an action is likely to have a significant impact on listed threatened species and / or ecological communities.

Regarding listed **threatened species**, the Act states:

'An action has, will have, or is likely to have a significant impact on a critically endangered, endangered or vulnerable species if it does, will or is likely to (amongst other things):

- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or
- adversely affect habitat critical to the survival of a species.

No nationally listed flora species were recorded. Habitat in the form of mature trees with hollows is present for the masked owl and spotted-tailed quoll (both vulnerable). No evidence of their presence was recorded during both surveys undertaken.

### 5.2 TASMANIAN *THREATENED SPECIES PROTECTION ACT 1995*

Three threatened flora species were recorded within the study area. These are as follows:

- *Arthropodium strictum* (chocolate lily) rare - up for delisting
- *Caesia calliantha* (blue grass lily) - rare
- *Scleranthus fasciculatus* (spreading knawel) vulnerable

A review of impact post design is required to quantify impacts in order to apply for a "permit to take" from DPIW. Offsets may be required depending on final impact.

### 5.3 TASMANIAN *WEED MANAGEMENT ACT 1999*

Canary/Montpellier & English broom, blackberry and gorse are classed as Zone B 'declared weeds' in the Southern Midlands Municipality while St John's wort and Spanish heath are classed as Zone A.

According to the provisions of the *Weed Management Act 1999*, Zone A municipalities are those which are either free of the weed or host small isolated infestations which are considered eradicable. The principle management objective should be their eradication. Zone B municipalities are those that host infestations of the 'declared weed' that are not deemed eradicable because the feasibility of effective management is low at this time. Therefore, the objective is containment of infestations. The objective includes preventing spread of the 'declared weed' from the municipality and preventing spread to properties currently free of them. There is a requirement to prevent spread of the 'declared weeds' to properties containing sites for significant flora, fauna and vegetation communities.

Roadside sites are particularly strategic when considering weed management. The road system presents a network for weed spread along roadsides exacerbated by standard roadside management practices such as slashing and the passing traffic which has the potential to act as vectors for weed spread.

### 5.4 TASMANIAN *LAND USE AND PLANNING APPROVALS ACT 1993*

LUPAA states that 'in determining an application for a permit, a planning authority must (amongst other things) seek out the objectives set out in Schedule 1'.

Schedule 1 includes 'The objectives of the Resource Management and Planning System of Tasmania' which are (amongst other things):

'To promote sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity'.

Sustainable development includes 'avoiding, remedying or mitigating any adverse effects of activities on the environment'.

Threatened species issues are adequately dealt with through other legislation. Regulation for impacts to significant vegetation is addressed by the *Southern Midlands Planning Scheme 1998*.

Regulation for impacts to significant vegetation are addressed by the *Northern Midlands Interim Planning Scheme 2013*. The Biodiversity Code (Clause of E8) of the Scheme aims to

"protect, conserve and enhance the region's biodiversity in consideration of the extent, condition and connectivity of critical habitats and priority vegetation communities, and the number and status of vulnerable and threatened species; and ensure that development is carried out in a manner that assists the protection of biodiversity by:

- i) minimising vegetation and habitat loss or degradation; and
- ii) appropriately locating buildings and works; and
- iii) offsetting the loss of vegetation through protection of other areas where appropriate.

The provisions of the Biodiversity Code extend to areas identified as Priority Habitat Zones which can be found along the study area (largely in association with the DAZ communities).

E8.6.1 P1: "Clearance or disturbance of native vegetation within priority habitat may be allowed where a flora and fauna report prepared by a suitably qualified person demonstrates that development does not unduly compromise the representation of species or vegetation communities in the bioregion".

Linear development such as highway upgrades only impact on narrow portions of the priority habitat and so are unlikely to 'unduly compromise the representation of the species or community'.

Assessment against the Biodiversity Code will be necessary following development design.

## 6. RECOMMENDATIONS

### At concept design stage

1. Give careful consideration to impact on threatened species while undertaking design.
2. Ensure any investigations such as geotechnical and archaeological works, which involve excavations, do not impact on threatened species sites or habitats.
3. Ensure mature trees that are retained are not impacted within the trees drip line and minimise impact to habitat trees mapped in this report.

### At detailed design stage

1. Undertake an analysis of impact to threatened species to accurately plot and quantify impacts to key threatened flora.
2. Review final impact under *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).
3. Prepare a permit application in accordance with the *Tasmanian Threatened Species Protection Act 1995* (TSPA).
4. Ensure no impact to surrounding creeks water quality by construction (ie: sediment and erosion control).

### In the works contract

1. Prepare a *Vegetation Management Plan* for the Contract Area to ensure retained sites of threatened flora are protected and managed during the period of the Contract. Protect the significant plant species, vegetation communities and significant trees in the immediate vicinity of works. Specifically:
  - a. identify significant sites in Contract Specifications,
  - b. if avoidance is feasible, top/flag off the locations of the patches of threatened species habitat that occur within the Contract area to prevent any incursion by machinery or soil material. It is recommended that an experienced Botanist is present during initial site setup to ensure adequate protection of threatened species. This is particularly important in relation to protection of *Lepidium hyssopifolium*.
  - c. avoid dumping of fill under trees or root compaction by machinery within 4 m of significant trees.
2. Prepare a *Weed Management Plan* that controls 'declared' and environmental weeds. Specifically:
  - a. plan for targeted herbicide spraying of weed infestations that fall outside the footprint of the earthworks prior to commencement of construction work,
  - b. ensure excavated topsoil from weed affected sites is not spread to weed free areas and preferably buried beneath 0.5 m of fill, and
  - c. include targeted weed treatment on completion of the works.

### Ongoing commitment by State Growth

Ensure ongoing control of 'declared weeds'. This should include annual dedicated follow up on the site for four years following completion of works to specifically target weeds likely to have exploited the disturbances associated with earthworks.

1. Undertake any auditing and reporting in accordance with relevant permit conditions. Ideally involvement of the environmental auditor is made from the beginning of the project rather than after completion.

### Additional Considerations

1. Any specific measures in the Contract for protecting threatened species habitat or native vegetation, revegetating with native species or managing weeds should be reviewed by an ecologist.
2. Additional areas determined by the Contractor that may be impacted upon should be assessed appropriately. These could include, but may not be limited to, sites for dumping surplus fill, sources of additional fill (quarries), site office, temporary storage and parking areas and site access roads.
3. Ensure the areas of sensitivity are clearly shown and explained to the Contractor. Ensure compliance by the Contractor with conditions on any relevant permits.
4. Subsequent to any further survey this report should be updated to reflect the further information.
5. Consider a pre-construction tree survey of those habitat trees that are marked for removal. Masked owls may have occupied a hollow after the initial surveys and this check will ensure no impact if clearance of habitat trees occurs.

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## APPENDIX 1 – SPECIES CONSERVATION VALUES

### SPECIES OF NATIONAL SIGNIFICANCE

#### Listed in Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The *EPBC Act* has six categories of threat status for species:

1. **Extinct** - If at a particular time there is no reasonable doubt that the last member of the species has died.
2. **Extinct in the wild** - If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or if it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
3. **Critically endangered** - If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
4. **Endangered** - If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
5. **Vulnerable** - If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
6. **Conservation dependent** - If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

### SPECIES OF STATE SIGNIFICANCE

#### Listed in Tasmanian *Threatened Species Protection Act 1995 (TSP Act)*

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (extinct or endangered), 4 (vulnerable) or 5 (rare). These three categories are defined in Section 15 of the Act.

1. **Extinct** - If no occurrence of the taxon in the wild can be confirmed during the past 50 years.
2. **Endangered** - If it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
3. **Vulnerable** - If it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
4. **Rare** - If it has a small population in Tasmania that is not endangered or vulnerable but is at risk."

Species that have been nominated and approved by the Scientific Advisory Committee for listing in the Act.

### SPECIES OF REGIONAL OR GENERAL SIGNIFICANCE

The following definitions are from three publications: Flora Advisory Committee 1994, Vertebrate Advisory Committee 1994, Invertebrate Advisory Committee 1994.

Flora only - Species listed as rare but not necessarily 'at risk' (r3).

Fauna only – Species requiring monitoring (m).

Both – Species of unknown risk status (k) in Tasmania, or thought to be uncommon within region, or a species having a declining range or populations within the area.

Species considered being outside its normal range or of an unusual form as determined and justified in the body of the report.

Species identified in regional studies as being of conservation significance that are not listed in current legislation.

Species that have been recognised, but have not been formally described in a published journal, that are thought to be significant as determined and justified in the body of the report.

Plant species that are not known to be reserved. To be so it must be known to exist in at least one secure Reserve. Secure reserves include reserves and parks requiring the approval of both Houses of Parliament for their revocation. They include: National Parks, Aboriginal Sites, Historic Sites, Nature Reserves, State Reserves, Game Reserves, Forest Reserves, Wellington Park, and insecure reserves in the World Heritage Area which is protected by international agreement under the World Heritage Convention.



**APPENDIX 3 – VASCULAR PLANT SPECIES**

**Species list - project: IER022**

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

**Sites:**

1	DAZ - E528717, N5377499	17/11/2014 Dave Sayers
2	FAG - E527555, N5379058	18/11/2014 Dave Sayers
3	GCL - E527179, N5379535	18/11/2014 Dave Sayers
4	DAZ with <i>E. peuciflora</i> locally dominant - E526440, N5380419	18/11/2014 Dave Sayers

Site	Name	Common name	Status
	<b>DICOTYLEDONAE</b>		
	<b>APIACEAE</b>		
1	<i>Daucus glochidiatus</i>	australian carrot	
	<b>ASTERACEAE</b>		
2	<i>Arctotheca calendula</i>	capeweed	i
1	<i>Cassinia aculeata</i> subsp. <i>aculeata</i>	dollybush	
1 2 3	<i>Chrysocephalum apiculatum</i>	common everlasting	
1	<i>Chrysocephalum semipapposum</i>	clustered everlasting	
2	<i>Cirsium vulgare</i>	spear thistle	i
1	<i>Coronidium scorpioides</i>	curling everlasting	
2	<i>Cotula coronopifolia</i>	water buttons	i
2	<i>Euchiton japonicus</i>	common cottonleaf	
1 2 3 4	<i>Hypochaeris radicata</i>	rough catsear	i
1	<i>Leptorhynchos squamatus</i>	scaly buttons	
2	<i>Senecio quadridentatus</i>	cotton fireweed	
	<b>BRASSICACEAE</b>		
2	<i>Raphanus raphanistrum</i>	wild radish	i
	<b>CAMPANULACEAE</b>		
1 2	<i>Wahlenbergia</i> sp.	bluebell	
	<b>CARYOPHYLLACEAE</b>		
4	<i>Scleranthus fasciculatus</i>	spreading knawel	v
	<b>CASUARINACEAE</b>		
1 2	<i>Allocasuarina littoralis</i>	black sheoak	
	<b>CHENOPODIACEAE</b>		
2	<i>Chenopodium album</i>	fat hen	i
	<b>CLUSIACEAE</b>		
1 2	<i>Hypericum gramineum</i>	small st johns-wort	
2	<i>Hypericum perforatum</i> subsp. <i>veronense</i>	perforated st johns-wort	d
	<b>CONVOLVULACEAE</b>		
2	<i>Convolvulus angustissimus</i> subsp. <i>angustissimus</i>	blushing bindweed	
	<b>DILLENIACEAE</b>		
2	<i>Hibbertia procumbens</i>	spreading guineaflower	

1	<i>Hibbertia serpyllifolia</i>	thyme guineaflower	
	<b>DROSERACEAE</b>		
2	<i>Drosera pygmaea</i>	dwarf sundew	
1	<i>Drosera sp.</i>	sundew	
	<b>EPACRIDACEAE</b>		
1 2 3 4	<i>Astroloma humifusum</i>	native cranberry	
1	<i>Epacris impressa</i>	common heath	
1	<i>Leucopogon virgatus var. virgatus</i>	twiggy beardheath	
2	<i>Lissanthe strigosa</i>	peach berry	
	<b>ERICACEAE</b>		
2	<i>Erica lusitanica</i>	spanish heath	d
	<b>FABACEAE</b>		
1	<i>Bossiaea prostrata</i>	creeping bossiaea	
4	<i>Cytisus scoparius</i>	english broom	d
1 4	<i>Daviesia latifolia</i>	hop bitterpea	
1 2	<i>Dillwynia glaberrima</i>	smooth parrotpea	
2	<i>Genista monspessulana</i>	canary broom	d
1	<i>Hovea heterophylla</i>	winter purplepea	
1	<i>Kennedia prostrata</i>	running postman	
1 2 3	<i>Platylobium triangulare</i>	arrow flatpea	
3	<i>Pultenaea pedunculata</i>	matted bushpea	
1 2	<i>Trifolium campestre</i>	hop clover	i
1 2	<i>Trifolium dubium</i>	suckling clover	i
1	<i>Trifolium pratense</i>	red clover	i
2	<i>Trifolium repens</i>	white clover	i
2	<i>Trifolium subterraneum</i>	subterranean clover	i
1 2 3	<i>Ulex europaeus</i>	gorse	d
1	<i>Vicia sativa subsp. sativa</i>	common vetch	i
	<b>GENTIANACEAE</b>		
1	<i>Centaurium erythraea</i>	common centaury	i
	<b>GERANIACEAE</b>		
2	<i>Erodium moschatum</i>	musky heronsbill	i
2	<i>Geranium dissectum</i>	cutleaf cranesbill	i
2	<i>Geranium retrorsum</i>	grassland cranesbill	
	<b>GOODENIACEAE</b>		
4	<i>Goodenia lanata</i>	trailing native-primrose	
1	<i>Goodenia ovata</i>	hop native-primrose	
	<b>HALORAGACEAE</b>		
1 2	<i>Gonocarpus tetragynus</i>	common raspwort	
	<b>LAMIACEAE</b>		
1	<i>Leonotis leonurus</i>	lions ear	i
	<b>LAURACEAE</b>		
1	<i>Cassytha pubescens</i>	downy dodderlaurel	
	<b>LINACEAE</b>		
1	<i>Linum bienne</i>	pale flax	it
	<b>LYTHRACEAE</b>		
2	<i>Lythrum hyssopifolia</i>	small loosestrife	
	<b>MIMOSACEAE</b>		
1 3 4	<i>Acacia dealbata subsp. dealbata</i>	silver wattle	
1	<i>Acacia mearnsii</i>	black wattle	

<b>MYRTACEAE</b>			
1 2 3	<i>Eucalyptus amygdalina</i>	black peppermint	en
1	<i>Eucalyptus ovata</i> var. <i>ovata</i>	black gum	
1 2 4	<i>Eucalyptus pauciflora</i> subsp. <i>pauciflora</i>	cabbage gum	
1 4	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	white gum	
<b>OXALIDACEAE</b>			
1 4	<i>Oxalis perennans</i>	grassland woodsorrel	
2	<i>Oxalis purpurea</i>	largeflower woodsorrel	i
<b>PITTOSPORACEAE</b>			
1	<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	prickly box	
<b>PLANTAGINACEAE</b>			
2	<i>Plantago coronopus</i>	buckshorn plantain	i
2	<i>Plantago major</i>	great plantain	i
<b>POLYGONACEAE</b>			
2	<i>Acetosella vulgaris</i>	sheep sorrel	i
2	<i>Rumex crispus</i>	curled dock	i
<b>PRIMULACEAE</b>			
2	<i>Lysimachia arvensis</i>	scarlet pimpernel	i
<b>PROTEACEAE</b>			
1 4	<i>Banksia marginata</i>	silver banksia	
<b>ROSACEAE</b>			
1 3 4	<i>Acaena echinata</i>	spiny sheeps burr	
1	<i>Acaena novae-zelandiae</i>	common buzzy	
2	<i>Aphanes arvensis</i>	parsley piert	i
2	<i>Cotoneaster glaucophyllus</i> var. <i>serotinus</i>	largeleaf cotoneaster	i
2	<i>Rosa rubiginosa</i>	sweet briar	i
2	<i>Rubus fruticosus</i>	blackberry	d
1 2	<i>Sanguisorba minor</i>	salad burnet	i
<b>RUBIACEAE</b>			
1	<i>Asperula conferta</i>	common woodruff	
<b>SANTALACEAE</b>			
1 2	<i>Exocarpos cupressiformis</i>	common native-cherry	
<b>SAPINDACEAE</b>			
1	<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>	broadleaf hopbush	
<b>SCROPHULARIACEAE</b>			
1	<i>Parentucellia latifolia</i>	broadleaf glandweed	i
1	<i>Veronica gracilis</i>	slender speedwell	
<b>STYLIDIACEAE</b>			
1 2 3 4	<i>Stylidium graminifolium</i>	narrowleaf triggerplant	
<b>THYMELAEACEAE</b>			
1 2 3	<i>Pimelea glauca</i>	smooth riceflower	
1 2	<i>Pimelea humilis</i>	dwarf riceflower	
<b>GYMNOSPERMAE</b>			
<b>CUPRESSACEAE</b>			
1	<i>Cupressus macrocarpa</i>	monterey cypress	i
<b>PINACEAE</b>			
1 4	<i>Pinus radiata</i>	radiata pine	i
<b>MONOCOTYLEDONAE</b>			

<b>CENTROLEPIDACEAE</b>			
2	<i>Centrolepis strigosa</i>	hairy centrolepis, bristlewort	
<b>CYPERACEAE</b>			
1	<i>Carex breviculmis</i>	shortstem sedge	
1	<i>Cyperus eragrostis</i>	drain flatsedge	i
1 2	<i>Eleocharis acuta</i>	common spikesedge	
1 2	<i>Isolepis levynsiana</i>	fan clubsedge	?i
1	<i>Lepidosperma gunnii</i>	narrow swordedge	
1 2	<i>Schoenus apogon</i>	common bogedge	
<b>IRIDACEAE</b>			
2	<i>Ixia maculata</i>	yellow ixia	i
1 2	<i>Romulea rosea var. australis</i>	lilac oniongrass	i
<b>JUNCACEAE</b>			
1 2	<i>Juncus articulatus</i>	jointed rush	i
1	<i>Juncus astreptus</i>	rigid rush	en
2	<i>Juncus australis</i>	southern rush	
1 2	<i>Juncus bufonius</i>	toad rush	
1	<i>Juncus effusus</i>	soft rush	i
1 2	<i>Juncus holoschoenus</i>	jointleaf rush	
1	<i>Juncus pallidus</i>	pale rush	
1	<i>Juncus planifolius</i>	broadleaf rush	
<b>LILIACEAE</b>			
1	<i>Arthropodium milleflorum</i>	pale vanilla-lily	
1	<i>Arthropodium minus</i>	small vanilla-lily	
1 2 3	<b>Arthropodium strictum</b>	<b>chocolate lily</b>	r
1	<i>Bulbine glauca</i>	bluish bulbine-lily	
2	<i>Burchardia umbellata</i>	milkmaids	
2	<b>Caesia calliantha</b>	<b>blue grasslily</b>	r
1 2	<i>Dianella revoluta</i>	spreading flaxlily	
4	<i>Hypoxis glabella var. glabella</i>	tiny yellowstar	
<b>ORCHIDACEAE</b>			
1	<i>Diuris pardina</i>	leopard orchid	
1	<i>Diuris sulphurea</i>	tiger orchid	
1	<i>Eriochilus cucullatus</i>	autumn orchid	
2	<i>Microtis sp.</i>	onion orchid	
2	<i>Thelymitra pauciflora</i>	slender sun-orchid	
1	<i>Thelymitra sp.</i>	sun-orchid	
<b>POACEAE</b>			
1 2 3 4	<i>Aira caryophyllea</i>	silvery hairgrass	i
1	<i>Anthosachne scabra</i>	rough wheatgrass	
1 2 4	<i>Anthoxanthum odoratum</i>	sweet vernalgrass	i
1 2 3 4	<i>Austrostipa mollis</i>	soft speargrass	
2 3	<i>Austrostipa pubinodis</i>	tall speargrass	
2 4	<i>Austrostipa semibarbata</i>	fibrous speargrass	
2	<i>Austrostipa stiposa</i>	corkscrew speargrass	
1	<i>Avena fatua</i>	wild oat	i
1 2 3 4	<i>Briza maxima</i>	greater quaking-grass	i
2	<i>Briza minor</i>	lesser quaking-grass	i
2 4	<i>Bromus diandrus</i>	great brome	i
2	<i>Bromus hordeaceus</i>	soft brome	i
2	<i>Cynosurus echinatus</i>	rough dogstail	i
1 2 4	<i>Dactylis glomerata</i>	cocksfoot	i

1	<i>Festuca arundinacea</i>	tall fescue	i
1 2 4	<i>Holcus lanatus</i>	yorkshire fog	i
2	<i>Hordeum marinum</i>	sea barleygrass	i
1 4	<i>Lolium perenne</i>	perennial ryegrass	i
3	<i>Lolium rigidum</i>	wimmera ryegrass	i
1	<i>Phalaris aquatica</i>	toowoomba canarygrass	i
1 2	<i>Poa labillardierei</i>	silver tussockgrass	
2	<i>Poa pratensis</i>	kentucky bluegrass	i
1	<i>Poa sp.</i>	poa	
2 3 4	<i>Rytidosperma sp.</i>	wallabygrass	
1 2 3 4	<i>Themeda triandra</i>	kangaroo grass	
2	<i>Vulpia bromoides</i>	squirreltail fescue	i
2	<i>Vulpia myuros</i>	ratstail fescue	i
<b>XANTHORRHOACEAE</b>			
1 2 3 4	<i>Lomandra longifolia</i>	sagg	
1 2	<i>Lomandra nana</i>	dwarf mat-rush	
<b>PTERIDOPHYTA</b>			
<b>DENNSTAEDTIACEAE</b>			
1 2 4	<i>Pteridium esculentum subsp. esculentum</i>	bracken	

Exhibited

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Midland Highway – Epping Forest to Powranna Rd

**ADDENDUM TO FLORA AND FAUNA HABITAT SURVEY**  
**Including additional turning facilities**

For Department of State Growth

1<sup>st</sup> November 2016

IER022

## ACKNOWLEDGMENTS

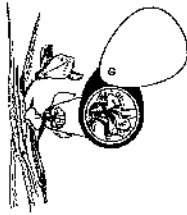
1-423

Fieldwork: Dave Sayers and Grant Daniels, NBES

Report preparation: Dave Sayers, NBES

Mapping: Dave Sayers, NBES

Photographs: Dave Sayers and Grant Daniels, NBES



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1-424



**1. PROJECT DETAILS****1-425**

**Background:** The Department of State Growth commissioned environmental investigations at the Epping Forest to Powranna Rd section of the Midland Highway. To assist with this planning, North Barker Ecosystem Services (NBES) were engaged by the Department of State Growth to undertake natural values surveys along this section of the Midland Highway. These initial investigations were completed prior to design therefore an additional survey was completed to survey areas not previously investigated and to complete monitoring of habitats identified for threatened fauna.

This addendum documents the results of the assessment and should be read in conjunction with the flora and fauna habitat assessment report<sup>1</sup>.

**Date of Field Survey:** 10<sup>th</sup> and 11<sup>th</sup> October 2016.

**Field Survey, Report and Photos:** Dave Sayers and Grant Daniels.

**Methods:** Plant species composition of the potential impact footprint<sup>2</sup> was surveyed using an area search based on the Timed Meander Search Procedure<sup>3</sup>. Boundaries of TASVEG 3.0 units were determined with the aid of aerial imagery. Trees hollow presence was only assessed from ground layer where applicable.

Masked owl - Song Meter call analysis

A Song Meter SM3 was placed near a tree with potentially suitable hollows between 10/10/2016 and 26/10/2016. The Song Meter was programmed to record calls within the potential frequency range of the Tasmanian masked owl<sup>4</sup> between half an hour before sunset and up to 2.5 hours after sunset, as well as within the time between half an hour either side of sunrise. The results were then analysed using Song Scope software and a call recogniser compiled from calls collected across Tasmania<sup>5</sup>.

**Limitations:** The field survey was undertaken in mid Spring. Values that are seasonal may have been overlooked or absent; the potential for this is considered where relevant in the discussion. The presence of tree hollows was assessed from ground level only.

**Study area:**

Midland Highway A0087 between Epping Forest and Powranna Rd (Link 80 Ch 0.45 to end of Link 80).

This survey focused on land where no landholder permission was given to access land during the 2014 surveys as well as additional areas of impact for turning facilities (Figure 1 and 2). Some small areas of additional impact outside of the 2014 study area were also rechecked largely for new property entrances.

<sup>1</sup> Flora and Fauna Habitat assessment, NBES (2015)

<sup>2</sup> Limit of impact was derived from the design drawing received from Tory Harvey (Dept of State Growth)

<sup>3</sup> Goff *et al.* 1982

<sup>4</sup> As taken from Todd 2012, *Ecology and habitat of a threatened nocturnal bird, the Tasmanian Masked Owl*. Unpublished Doctor of Philosophy thesis, submitted to the University of Tasmania.

<sup>5</sup> Ibid

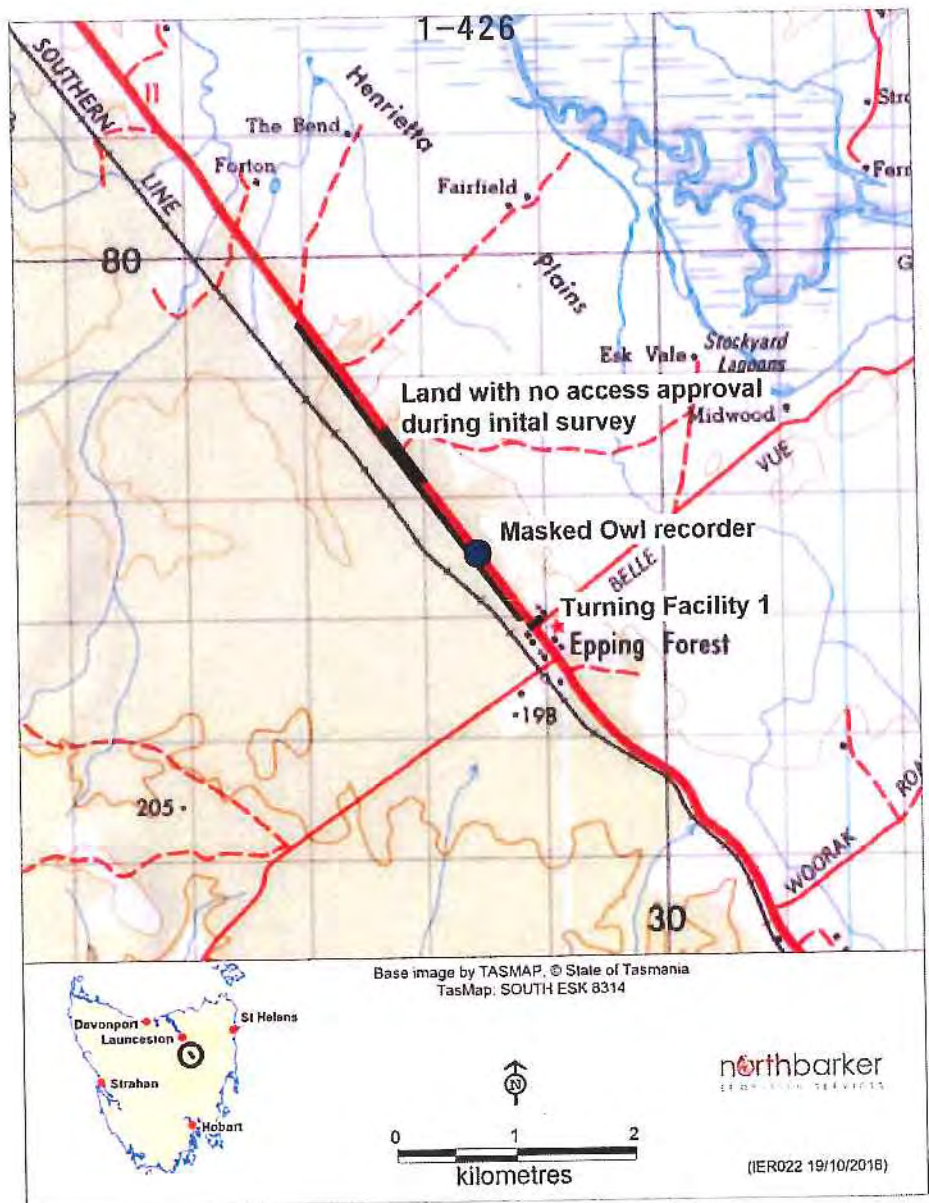


Figure 1 – survey locations (map 1)



Figure 2 - survey locations (map 2)

## 2. SITE VALUES

### Vegetation (Figure 3 to 6):

The vegetation within the additional survey areas is dominated by introduced species typically associated with agricultural land (FAG). The only change to this is the additional land where no landholder permission was previously granted. The vegetation within this additional area is consistent with findings of the initial report and is *Eucalyptus amygdalina* inland forest and woodland on Cainozoic deposits (DAZ). The DAZ also occurs near the proposed new entrances to the Fairfield property (Figure 6).

Where DAZ occurs, the canopy is dominated by *Eucalyptus amygdalina* (black peppermint) as well as *Eucalyptus viminalis* (white gum). *Eucalyptus pauciflora* (cabbage gum) is also present. Where the understorey is not dominated by gorse, the more common shrub species include *Bossiaea prostrata* (creeping bossiaea), *Lomandra longiflora* (sagg), *Daviesia latifolia* (hop bitterpea), *Platylobium*

*obtusangulum* (common flatpea), *Hippochaeris prostrata* (prostrate guineaflower), *Dillwynia cinerascens* (grey parrotpea), *Goodenia ovata* (hop native primrose), *Astroloma humifusum* (native cranberry) and *Epacris impressa* (common heath). The more common herbs and graminoids include *Arthropodium strictum* (chocolate lily), *Asperula conferta* (common woodruff), *Chrysocephalum apiculatum* (common everlasting), *Leptorhynchus squamatus* (scaly buttons), *Oxalis* spp. (woodsorrel), *Stylidium graminifolium* (narrowleaf triggerplant), *Austrostipa stiposa* (corkscrew spear grass), *Austrostipa mollis* (soft spear grass), *Austrostipa* sp. (spear grasses), *Rytidosperma* sp. (wallaby grass) and *Dianella revoluta* (spreading flaxlily). Occasionally the understorey is also dominated by *Allocasuarina littoralis* (black sheoak).

The turning facility at Bell Vue road also contains an infestation of *Ulex europaeus* (gorse) which has been mapped as weed infestation (FWU).

DAZ is listed as a threatened community under the Tasmanian Nature Conservation Act 2002 (NCA) but is not listed as a threatened ecological community under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBCA). FAG and FWU are human altered communities and thus not listed.



Plate 1: gorse infestation at the turning facility for corner of Bell Vue Rd and Midland Highway



Plate 2- typical introduced species dominate the turning facilities.



Plate 3 - the turning facility at the corner of Powranna Rd and Midland Highway contains introduced species with some tree planting



Figure 3 - natural values (turning facility 1)



Figure 4 - natural values (turning facility 2 & 3)



Figure 5 - turning facility 4 (corner Powranna Rd)





Figure 6 - new entrances to the Fairfield property

**Plant Species of Conservation Significance:** 220 vascular plant taxa were recorded within the whole study area (Appendix 1). No additional threatened flora species were observed in this survey. *Arthropodium strictum* and *Hypoxis vaginata* are both present but have been delisted from the TSPA.

The Tasmanian *Natural Values Atlas*<sup>6</sup> lists observations of numerous species recorded within 5km of the study area. Given it has been two years since the original survey; an updated report was downloaded and interrogated for new species records. The following table discusses new records not previously considered in the original report.

**Table 1: Additional flora species of conservation significance previously recorded within a 5 km radius of the sites<sup>7</sup>**

Species	Status TSPA/EPBCA	Potential to Occur*	Observations and Preferred Habitat
<b>Known from within 5 km</b>			
<i>Alternanthera denticulata</i> lesser joyweed	Endangered/	none	This low scrambling herb occurs in a few riparian sites in the central north. No suitable habitat occurs across study area.

Since the 2014 survey, *Arthropodium strictum* (chocolate lily) has been delisted from the TSPA and is therefore no longer a threatened species. *Hypoxis vaginata* was also recorded at the Bell Vue Rd turning facility however this has also been delisted.

No new threatened flora species were recorded during this survey.

**Threatened Fauna:** The 2014 survey identified some habitat trees with potential hollows for use by masked owl or to a lesser degree spotted-tailed quolls (next to a Highway is not ideal).

A **masked owl** song meter was left near a tree observed with potentially suitable nesting habitat. This tree contains a hollow which is estimated at over 10cm in width and thus suitable for nesting. This tree is outside of the planned impact area however. One distant call was detected by the Song Meter between 21/8/2015 and 30/12/2015.

Given the number of maturing trees in the surrounding landscape, it is expected that masked owls frequent the area; however one distant call indicates the habitat tree surveyed is not currently being used for nesting. The balances of trees surveyed do not contain hollows large enough for masked owls with the majority of better habitat trees to remain.

No additional habitat values considered critical to the conservation status of listed threatened fauna were record.

**Weeds:** No new declared weeds were recorded in this survey. As per the 2014 survey, gorse is very common.

<sup>6</sup> Natural Values Report nvr\_1\_19-Oct-2016 - DPIPWE 2015

<sup>7</sup> Natural Values Report nvr\_1\_19-Oct-2016 - DPIPWE 2015

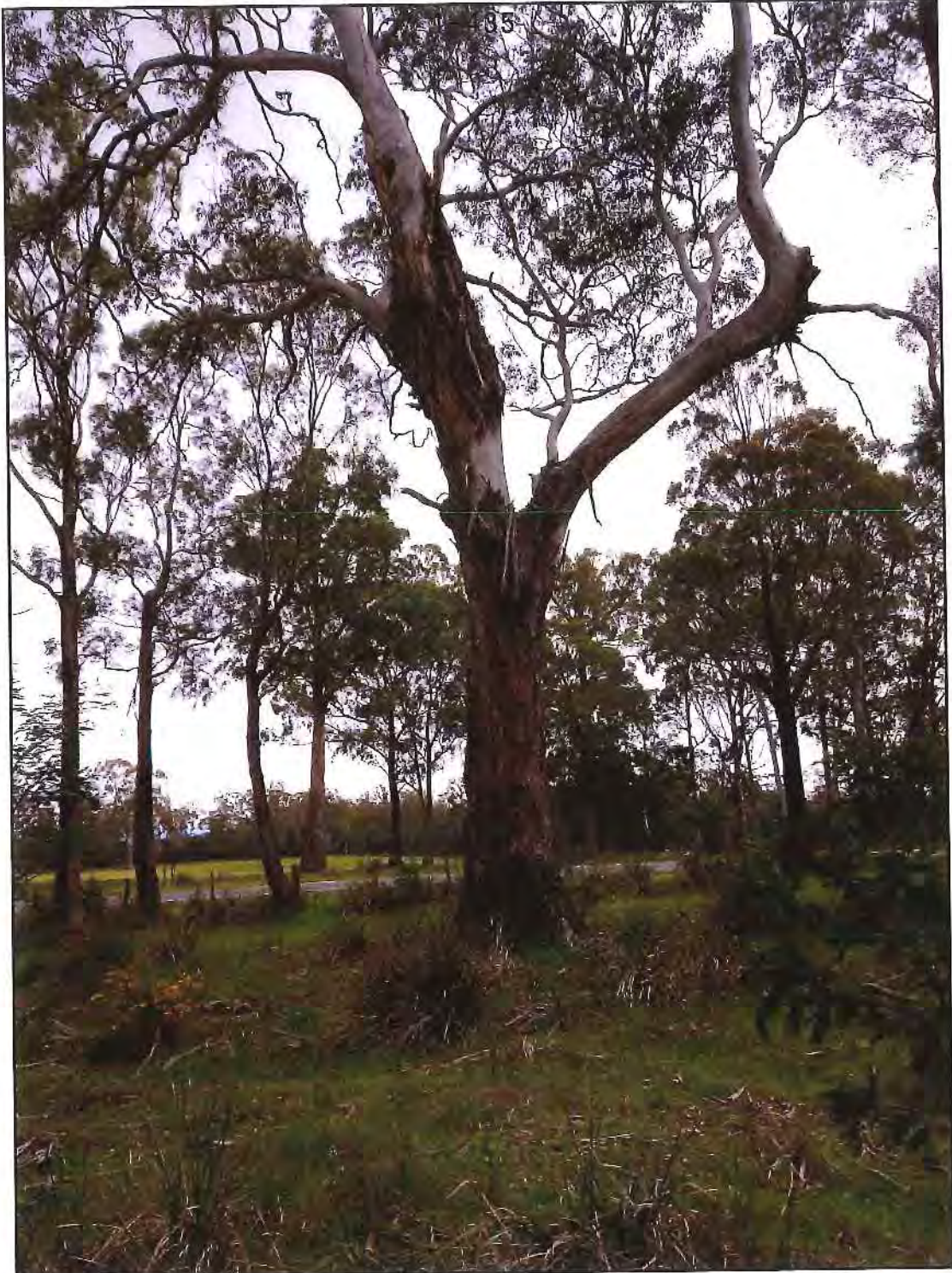


Plate 4 – one of the habitat trees with hollows on private land targeted by the masked owl song meter.



Plate 5- song meter in place



Plate 6: gorse is common within the survey area

### 3. IMPACT ASSESSMENT AND OFFSET FOR MITIGATION

#### Vegetation Communities

The final design will have some impact to DAZ which is a threatened vegetation community listed under the NCA.

A maximum extent of 2.9 ha of DAZ has been estimated for impact based on the design. The impact is generally a couple of meters of the current vegetation edge up to 9m in some small sections. Based on an estimated extent of over 17,300 ha of DAZ within the Northern Midlands Council area, this equates to a loss of 0.017%.

To offset this impact to some degree, it is recommended that assistance is considered for weed management work in removal or control of gorse within the DAZ understorey. Gorse is currently quite extensive in locations affecting the value and long term integrity of the vegetation.

Note that much of the DAZ is currently secured under Conservation Covenants.

#### Threatened Flora Species

The road upgrade will result in the removal of:

- 6 plants of *Scleranthus fasciculatus* (spreading knawel) TSPA: Vulnerable
- 25 plants of *Caesia calliantha* (blue grasslily) TSPA: Rare

A permit to take will be required to remove these plants and offsetting for spreading knawel may be required.

#### Threatened Fauna Habitat and Trees

The road upgrade will result in the removal of a number of trees. Of those marked as providing some current or future potential habitat; seven trees are within the limit of impact as follows:

- 3 *Eucalyptus viminalis* (white gum)
- 3 *Eucalyptus amygdalina* (black peppermint)
- 1 *Eucalyptus pauciflora* (cabbage gum)

The trees with larger hollows or hollows forming are outside of impact. It is inevitable that the road upgrade will impact on some habitat values provided by the trees that are present, however the impact is considered minor given the much larger extent of habitat present in the surrounding landscape and the retention of the trees with larger hollows recorded.

#### Weeds

Earthworks on site are likely to stimulate germination of the declared weeds observed. Detailed Vegetation and Weed Management Plans should be prepared prior to construction works begin.

**4. RECOMMENDATIONS****1-438**In the works contract

1. Prepare a *Vegetation and Weed Management Plan* for the Contract Area to ensure weeds are controlled effectively, vegetation communities and trees are protected in the immediate vicinity of works. Specifically:
  - a. Identify limit of impact near bushland and anything outside of this should be excluded from impact. Ensure habitat trees that are to be retained are protected with exclusion fencing.
  - b. avoid dumping of fill under trees or roof compaction by machinery within 4 m of significant trees.
  - c. plan for targeted herbicide spraying of weed infestations that fall outside the footprint of the earthworks prior to commencement of construction work,
  - d. ensure excavated topsoil from weed affected sites is not spread to weed free areas and preferably buried beneath 0.5 m of fill, and
  - e. include targeted weed treatment on completion of the works.
  - f. A suitably qualified Ecologist should assist in overseeing the above.

Ongoing commitment by State Growth

Ensure ongoing control of 'declared weeds'. This should include annual dedicated follow up on the site for four years following completion of works to specifically target weeds likely to have exploited the disturbances associated with earthworks.

1. Undertake any auditing and reporting in accordance with relevant permit conditions. Ideally involvement of the environmental auditor is made from the beginning of the project rather than after completion.

Additional Considerations

1. Any specific measures in the Contract for protecting threatened species habitat or native vegetation, revegetating with native species or managing weeds should be reviewed by an ecologist.
2. Additional areas determined by the Contractor that may be impacted upon should be assessed appropriately. These could include, but may not be limited to, sites for dumping surplus fill, sources of additional fill (quarries), site office, temporary storage and parking areas and site access roads.
3. Ensure the areas of sensitivity are clearly shown and explained to the Contractor. Ensure compliance by the Contractor with conditions on any relevant permits.
4. This addendum should be read in conjunction with the initial flora and fauna habitat survey report prepared by North Barker Ecosystem Services.
5. Should design change and additional habitat trees require clearing, a review of these trees values should in undertaken by an experienced Ecologist.

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1-440

**APPENDIX 1 – SPECIES CONSERVATION VALUES****SPECIES OF NATIONAL SIGNIFICANCE****Listed in Commonwealth *Environment Protection and Biodiversity Conservation Act 1999***

The EPBC Act has six categories of threat status for species:

1. **Extinct** - If at a particular time there is no reasonable doubt that the last member of the species has died.
2. **Extinct in the wild** - If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or if it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
3. **Critically endangered** - If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
4. **Endangered** - If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
5. **Vulnerable** - If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
6. **Conservation dependent** - If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

**SPECIES OF STATE SIGNIFICANCE****Listed in Tasmanian *Threatened Species Protection Act 1995 (TSP Act)***

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (extinct or endangered), 4 (vulnerable) or 5 (rare). These three categories are defined in Section 15 of the Act.

1. **Extinct** - If no occurrence of the taxon in the wild can be confirmed during the past 50 years.
2. **Endangered** - If it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
3. **Vulnerable** - If it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
4. **Rare** - If it has a small population in Tasmania that is not endangered or vulnerable but is at risk."

Species that have been nominated and approved by the Scientific Advisory Committee for listing in the Act.

**SPECIES OF REGIONAL OR GENERAL SIGNIFICANCE**

The following definitions are from three publications: Flora Advisory Committee 1994, Vertebrate Advisory Committee 1994, Invertebrate Advisory Committee 1994.

Flora only - Species listed as rare but not necessarily 'at risk' (r3).

Fauna only – Species requiring monitoring (m).

Both – Species of unknown risk status (k) in Tasmania, or thought to be uncommon within region, or a species having a declining range or populations within the area.

Species considered being outside its normal range or of an unusual form as determined and justified in the body of the report.

Species identified in regional studies as being of conservation significance that are not listed in current legislation.

Species that have been recognised, but have not been formally described in a published journal, that are thought to be significant as determined and justified in the body of the report.

Plant species that are not known to be reserved. To be so it must be known to exist in at least one secure Reserve. Secure reserves include reserves and parks requiring the approval of both Houses of Parliament for their revocation. They include: National Parks, Aboriginal Sites, Historic Sites, Nature Reserves, State Reserves, Game Reserves, Forest Reserves, Wellington Park, and insecure reserves in the World Heritage Area which is protected by international agreement under the World Heritage Convention.



## APPENDIX 2 – LEGISLATIVE IMPLICATIONS OF THREATENED SPECIES

### Tasmanian Threatened Species Protection Act 1995

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (endangered) and 4 (vulnerable) of the Threatened Species Protection Act, 1995. Rare species that are considered to be 'at risk' are listed in Schedule 5 of the Act. These three categories are defined in Section 15 of the Act.

1. "An extant taxon of native flora or fauna may be listed as **endangered** if it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
2. A taxon of native flora or fauna may be listed as **vulnerable** if it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
3. A taxon of native flora or fauna may be listed as **rare** if it has a small population in Tasmania that is not endangered or vulnerable but is at risk."

The Act provides mechanisms for protecting these species from threatening processes the implementation of 'recovery plans', 'threat abatement plans', 'land management plans', public authority agreements', and 'interim protection orders'.

Section 51 (a) of the TSPA states that: "A person must not knowingly, without a permit - take, trade in, keep or process any listed flora or fauna". The Act defines 'take' as including: "kill, injure, catch, damage, destroy and collect. A land manager is therefore required to obtain a permit from the Development and Conservation Assessment Branch (DCAB) of the Tasmanian Department of Primary Industries and Water (DPIW) to carry out management that may adversely affect any of the species listed in the Act.

### Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act establishes a process for assessing actions that are likely to have impacts of *national environmental significance*. Such impacts include World Heritage Areas, RAMSAR Wetland sites of international importance, migratory species protected under international agreements, nuclear actions, the Commonwealth marine environment and **nationally threatened species and communities**.

Threatened species are defined in several categories:

#### 1. Extinct

- If at a particular time there is no reasonable doubt that the last member of the species has died.

#### 2. Extinct in the wild

- If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
- If it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

#### 3. Critically endangered

- If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

#### 4. Endangered

- If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

#### 5. Vulnerable

- If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

#### 6. Conservation dependent

- If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

An action that is likely to affect species that are listed in any of the above categories may require ministerial approval unless the Commonwealth Environment Minister has granted an exemption. The Act establishes a **referral process** to Environment Australia to determine whether an action requires a formal approval and thus would be required to proceed through the **assessment and approval process**.

A referral must provide sufficient information to allow the Minister to make a decision. The Minister is then required to make a decision within 20 business days of the referral. The Minister may decide an approval is not necessary if the action is taken in a specified manner. The action may not require approval but may require a **permit** if undertaken on Commonwealth land. If an approval is required then an **environmental assessment** must be carried out. In such instances the environmental assessment approach will be determined by the Minister and may vary from preliminary documentation to a full public inquiry depending on the scale and complexity of the impact.

**APPENDIX 3 – VASCULAR PLANT SPECIES**

Site Report for Project: IER022 (Replaces original survey list)

Site: 1 DAZ

Grid Reference: 528717E, 5377499N

Accuracy: GPS (within 10 metres)

Recorder: Dave Sayers

Date of Survey: 17 Nov 2014

Trees: *Bursaria spinosa* subsp. *spinosa*, *Eucalyptus amygdalina*, *Eucalyptus ovata* var. *ovata*, *Eucalyptus pauciflora* subsp. *pauciflora*, *Eucalyptus viminalis* subsp.

Tall Shrubs: *Acacia dealbata* subsp. *dealbata*, *Acacia mearnsii*, *Allocasuarina littoralis*, *Banksia marginata*, *Dodonaea viscosa* subsp. *spatulata*, *Exocarpos cupressiformis*

Shrubs: *Bossiaea prostrata*, *Cassinia aculeata* subsp. *aculeata*, *Daviesia latifolia*, *Dillwynia cinerascens*, *Epacris impressa*, *Goodenia ovata*

Low Shrubs: *Astroloma humifusum*, *Hibbertia serpyllifolia*, *Leucopogon virgatus* var. *virgatus*, *Pimelea glauca*, *Pimelea humilis*, *Platylobium obtusangulum*

Herbs: *Acaena echinata*, *Acaena novae-zelandiae*, *Arthropodium milleflorum*, *Arthropodium minus*, *Arthropodium strictum*, *Asperula conferta*, *Bulbine glauca*, *Chrysocephalum apiculatum*, *Chrysocephalum semipapposum*, *Coronidium scorpioides*, *Daucus glochidiatus*, *Dianella revoluta*, *Diuris pardina*, *Diuris sulphurea*, *Drosera peltata*, *Eriochilus cucullatus*, *Gonocarpus tetragynus*, *Hovea heterophylla*, *Hypericum gramineum*, *Kennedia prostrata*, *Leptorhynchus squamatus*, *Oxalis perennans*, *Stylidium graminifolium*, *Thelymitra* sp., *Veronica gracilis*, *Wahlenbergia* sp.

Graminoids: *Carex breviculmis*, *Eleocharis acuta*, *Juncus astreptus*, *Juncus bufonius*, *Juncus holoschoenus*, *Juncus pallidus*, *Juncus planifolius*, *Lepidosperma gunnii*, *Lomandra longifolia*, *Lomandra nana*, *Schoenus apogon*

Grasses: *Anthosachne scabra*, *Austrostipa mollis*, *Poa labillardierei*, *Poa* sp., *Themeda*

Ferns: *Pteridium esculentum* subsp. *esculentum*

Climbers: *Cassytha pubescens*

Weeds: *Aira caryophyllee*, *Anthoxanthum odoratum*, *Avena fatua*, *Briza maxima*, *Centaurium erythraea*, *Cupressus macrocarpa*, *Cyperus eragrostis*, *Dactylis glomerata*, *Festuca arundinacea*, *Holcus lanatus*, *Hypochaeris radicata*, *Isolepis levynsiana*, *Juncus articulatus*, *Juncus effusus*, *Leonotis leonurus*, *Linum bienne*, *Lolium perenne*, *Parentucellia latifolia*, *Phalaris aquatica*, *Pinus radiata*, *Romulea rosea* var. *australis*, *Sanguisorba minor*, *Trifolium campestre*, *Trifolium dubium*, *Trifolium pratense*, *Ulex europaeus*, *Vicia sativa* subsp. *sativa*

**Site: 2 FAG****1-443**

Grid Reference: 527555E, 5379058N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 18 Nov 2014

Trees: *Eucalyptus amygdalina*, *Eucalyptus pauciflora* subsp. *pauciflora*  
 Tall Shrubs: *Allocasuarina littoralis*, *Exocarpos cupressiformis*  
 Shrubs: *Dillwynia cinerascens*  
 Low Shrubs: *Astroloma humifusum*, *Hibbertia procumbens*, *Lissanthe strigosa* subsp. *subulata*,

Herbs: *Pimelea glauca*, *Pimelea humilis*, *Platylobium obtusangulum*  
*Arthropodium strictum*, *Burchardia umbellata*, *Caesia calliantha*, *Centrolepis strigosa*, *Chrysocephalum apiculatum*, *Convolvulus angustissimus* subsp. *angustissimus*, *Dianella revoluta*, *Drosera pygmaea*, *Euchiton japonicus*, *Geranium retrorsum*, *Gonocarpus tetragynus*, *Hypericum gramineum*, *Lythrum hyssopifolia*, *Microtis* sp., *Senecio quadridentatus*, *Stylidium graminifolium*, *Thelymitra pauciflora*, *Wahlenbergia* sp.

Graminoids: *Eleocharis acuta*, *Juncus australis*, *Juncus bufonius*, *Juncus holoschoenus*, *Lomandra longifolia*, *Lomandra nana*, *Schoenus apogon*

Grasses: *Austrostipa mollis*, *Austrostipa pubinodis*, *Austrostipa semibarbata*, *Austrostipa stuposa*, *Poa labillardierei*, *Rytidosperma* sp., *Themeda triandra*

Ferns: *Pteridium esculentum* subsp. *esculentum*

Weeds: *Acetosella vulgaris*, *Aira caryophyllea*, *Anthoxanthum odoratum*, *Aphanes arvensis*, *Arctotheca calendula*, *Briza maxima*, *Briza minor*, *Bromus diandrus*, *Bromus hordeaceus*, *Chenopodium album*, *Cirsium vulgare*, *Cotoneaster glaucophyllus* var. *serotinus*, *Cotula coronopifolia*, *Cynosurus echinatus*, *Dactylis glomerata*, *Erica lusitanica*, *Erodium moschatum*, *Genista monspessulana*, *Geranium dissectum*, *Holcus lanatus*, *Hordeum marinum*, *Hypericum perforatum* subsp. *veronense*, *Hypochaeris radicata*, *Isolepis levynsiana*, *Ixia maculata*, *Juncus articulatus*, *Lysimachia arvensis*, *Oxalis purpurea*, *Plantago coronopus*, *Plantago major*, *Poa pratensis*, *Raphanus raphanistrum*, *Romulea rosea* var. *australis*, *Rosa rubiginosa*, *Rubus fruticosus*, *Rumex crispus*, *Sanguisorba minor*, *Trifolium campestre*, *Trifolium dubium*, *Trifolium repens*, *Trifolium subterraneum*, *Ulex europaeus*, *Vulpia bromoides*, *Vulpia myuros*

**Site: 3 GCL**

Grid Reference: 527179E, 5379535N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 18 Nov 2014

Trees: *Eucalyptus amygdalina*  
 Tall Shrubs: *Acecia dealbata* subsp. *dealbata*  
 Low Shrubs: *Astroloma humifusum*, *Pimelea glauca*, *Platylobium obtusangulum*, *Pulteneea pedunculata*

Herbs: *Acaena echinata*, *Arthropodium strictum*, *Chrysocephalum apiculatum*, *Stylidium graminifolium*

Graminoids: *Lomandra longifolia*

Grasses: *Austrostipa mollis*, *Austrostipa pubinodis*, *Rytidosperma* sp., *Themeda triandra*

Weeds: *Aira caryophyllea*, *Briza maxima*, *Hypochaeris radicata*, *Lolium rigidum*, *Ulex europaeus*

**Site: 4 DAZ with *E pauciflora* locally dominant**

Grid Reference: 526440E, 5380419N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 18 Nov 2014

Trees: *Eucalyptus pauciflora* subsp. *pauciflora*, *Eucalyptus viminalis* subsp. *viminalis*  
 Tall Shrubs: *Acacia dealbata* subsp. *dealbata*, *Banksia marginata*  
 Shrubs: *Daviesia latifolia*  
 Low Shrubs: *Astroloma humifusum*  
 Herbs: *Acaena echinata*, *Goodenia lanata*, *Hypoxis glabella* var. *glabella*, *Oxalis perennans*, *Scleranthus fasciculatus*, *Stylidium graminifolium*

Graminoids: *Lomandra longifolia*  
 Grasses: *Austrostipa mollis*, *Austrostipa semibarbata*, *Rytidosperma* sp., *Themeda triandra*  
 Ferns: *Pteridium esculentum* subsp. *esculentum*  
 Weeds: *Aira caryophyllea*, *Anthoxanthum odoratum*, *Briza maxima*, *Bromus diandrus*, *Cytisus scoparius*, *Dactylis glomerata*, *Holcus lanatus*, *Hypochaeris radicata*, *Lolium perenne*, *Pinus radiata*

**Site: 5 additional species - DAZ**

Grid Reference: 528404E, 5377844N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 10 Oct 2016

Trees: *Eucalyptus pauciflora* subsp. *pauciflora*  
 Low Shrubs: *Hibbertia prostrata*  
 Herbs: *Caladenia carnea*, *Craspedia rosulata*, *Crassula decumbens* var. *decumbens*, *Cyrtostylis reniformis*, *Glossodia major*, *Linum marginale*, *Lotus australis*, *Millotia tenuifolia* var. *tenuifolia*, *Plantago varia*, *Poranthera microphylla*, *Senecio* sp., *Wurmbea dioica* subsp. *dioica*

Graminoids: *Isolepis marginata*, *Luzula flaccida*  
 Weeds: *Genista monspessulana*, *Gladiolus tristis*

**Site: 6 FWU (weed infestation) Turning facility 1 - corner Bell Vue Rd**

Grid Reference: 529016E, 5377117N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 10 Oct 2016

Trees: *Eucalyptus amygdalina*  
 Tall Shrubs: *Acacia dealbata* subsp. *dealbata*, *Allocasuarina littoralis*, *Exocarpos*  
 Low Shrubs: *Hibbertia hirsuta*, *Lissanthe strigosa* subsp. *subulata*  
 Herbs: *Acaena ovina*, *Arthropodium strictum*, *Centrolepis monogyna*, *Crassula decumbens* var. *decumbens*, *Drosera peltata*, *Euchiton japonicus*, *Gonocarpus tetragynus*, *Hypoxis vaginata* var. *vaginata*, *Rumex* sp., *Thelymitra* sp.

Graminoids: *Isolepis marginata*, *Lepidosperma inops*, *Lepidosperma laterale*, *Lomandra*  
 Grasses: *Austrostipa* sp., *Poa labillardierei*, *Themeda triandra*  
 Weeds: *Acetosella vulgaris*, *Agrostis stolonifera*, *Anthoxanthum odoratum*, *Aphanes arvensis*, *Arctotheca calendula*, *Cerastium* sp., *Cirsium vulgare*, *Dactylis glomerata*, *Festuca arundinacea*, *Holcus lanatus*, *Hypochaeris radicata*, *Isolepis levynsiana*, *Juncus capitatus*, *Leontodon saxatilis*, *Lolium perenne*, *Lysimachia arvensis*, *Medicago polymorpha*, *Moenchia erecta*, *Narcissus tazetta*, *Panicum capillare*, *Pinus radiata*, *Plantago coronopus*, *Plantago lanceolata*, *Poa pratensis*, *Polygonum aviculare*, *Romulea rosea* var. *australis*, *Rubus fruticosus*, *Sonchus asper* subsp. *asper*, *Trifolium repens*, *Trifolium subterraneum*, *Ulex europaeus*

**Site: 7      FAG - new entrances      1-445**

Grid Reference: 527382E, 5379213N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 10 Oct 2016

Trees: *Eucalyptus amygdalina*, *Eucalyptus pauciflora* subsp. *pauciflora*, *Eucalyptus viminalis* subsp. *viminalis*  
 Tall Shrubs: *Acacia dealbata* subsp. *dealbata*  
 Low Shrubs: *Hibbertia prostrata*, *Lissanthe strigosa* subsp. *subulata*, *Pimelea humilis*  
 Herbs: *Acaena echinata*, *Acaena novae-zelandiae*, *Arthropodium strictum*, *Crassula decumbens* var. *decumbens*, *Crassula sieberiana*, *Daucus glochidiatus*, *Drosera peltata*, *Euchiton involucratus*, *Isolepis* sp., *Kennedia prostrata*  
 Graminoids: *Lomandra longifolia*  
 Grasses: *Austrostipa* sp., *Themeda triandra*  
 Ferns: *Pteridium esculentum* subsp. *esculentum*  
 Weeds: *Acetosella vulgaris*, *Anthoxanthum odoratum*, *Arctotheca calendula*, *Bromus diandrus*, *Cardamine hirsuta*, *Cerastium* sp., *Cirsium vulgare*, *Dactylis glomerata*, *Dysphania pumilio*, *Festuca arundinacea*, *Galium aparine*, *Hypochaeris radicata*, *Lolium perenne*, *Moenchia erecta*, *Myosotis discolor*, *Papaver somniferum*, *Plantago lanceolata*, *Poa annua*, *Poa bulbosa*, *Poa compressa*, *Raphanus raphanistrum*, *Sanguisorba minor*, *Sinapis arvensis*, *Sonchus asper*, *Sonchus asper* subsp. *asper*, *Trifolium repens*, *Trifolium subterraneum*, *Triticum aestivum*, *Ulex europaeus*

**Site: 8      FAG - turning facility 2 and 3**

Grid Reference: 524393E, 5383257N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 10 Oct 2016

Trees: *Eucalyptus viminalis* subsp. *viminalis*  
 Tall Shrubs: *Acacia dealbata* subsp. *dealbata*  
 Low Shrubs: *Lissanthe strigosa* subsp. *subulata*, *Pimelea humilis*  
 Herbs: *Acaena ovina*, *Arthropodium strictum*, *Chrysocephalum apiculatum*, *Oxalis* sp., *Plantago varia*, *Rumex* sp.  
 Graminoids: *Isolepis marginata*, *Lomandra longifolia*, *Lomandra nana*  
 Grasses: *Austrostipa* sp.  
 Weeds: *Acetosella vulgaris*, *Agrostis stolonifera*, *Anthoxanthum odoratum*, *Arctotheca calendula*, *Bromus diandrus*, *Cerastium* sp., *Dactylis glomerata*, *Festuca arundinacea*, *Malva* sp., *Moenchia erecta*, *Poa compressa*, *Raphanus raphanistrum*, *Romulea rosea* var. *australis*, *Rosa rubiginosa*, *Spergularia* sp., *Trifolium subterraneum*, *Triticum aestivum*, *Ulex europaeus*

**Site: 9 FAG - turning facility 4 corner Powanna Rd**

Grid Reference: 522512E, 5385754N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 10 Oct 2016

Trees: *Eucalyptus pauciflora* subsp. *pauciflora*

Tall Shrubs: *Acacia mearnsii*

Low Shrubs: *Pimelea humilis*

Herbs: *Crassula decumbens* var. *decumbens*, *Crassula sieberiana*, *Rumex* sp.

Graminoids: *Juncus australis*, *Juncus bufonius*, *Schoenus apogon*

Grasses: *Austrostipa* sp., *Ehrharta stipoides*

Weeds: *Aira caryophylla*, *Anthoxanthum odoratum*, *Arctotheca calendula*, *Avena barbata*,

*Brassica Xnapus*, *Briza minor*, *Bromus diandrus*, *Cardamine hirsuta*, *Gerastium* sp., *Dactylis glomerata*, *Erodium cicutarium*, *Festuca arundinacea*, *Geranium dissectum*, *Hordeum* sp., *Isolepis levynsiana*, *Juncus capitatus*, *Lactuca serriola* f. *serriola*, *Lolium perenne*, *Malva* sp., *Medicago polymorpha*, *Parentucellia latifolia*, *Petrorhagia* sp., *Plantago coronopus*, *Plantago lanceolata*, *Poa bulbosa*, *Polycarpon tetraphyllum*, *Raphanus raphanistrum*, *Sisymbrium* sp., *Sonchus asper*, *Trifolium subterraneum*, *Ulex europaeus*, *Vicia sativa* subsp. *sativa*

**Site: 10 FAG - corner of Leighlands Rd**

Grid Reference: 517765E, 5394899N  
 Accuracy: GPS (within 10 metres)  
 Recorder: Dave Sayers  
 Date of Survey: 10 Oct 2016

Trees: *Acacia melanoxylon*

Tall Shrubs: *Acacia mearnsii*

Herbs: *Craspedia* sp., *Isolepis* sp., *Rumex* sp.

Graminoids: *Juncus sarophorus*

Weeds: *Acetosella vulgaris*, *Anthoxanthum odoratum*, *Arctotheca calendula*, *Avena barbata*, *Brassica Xnapus*, *Bromus diandrus*, *Cirsium vulgare*, *Conyza bonariensis*, *Dactylis glomerata*, *Dipsacus fullonum*, *Erodium cicutarium*, *Festuca arundinacea*, *Fumaria* sp., *Galium murale*, *Geranium dissectum*, *Holcus lanatus*, *Hypochaeris radicata*, *Lolium perenne*, *Lysimachia arvensis*, *Malva* sp., *Papaver somniferum*, *Poa annua*, *Poa pratensis*, *Polycarpon tetraphyllum*, *Raphanus raphanistrum*, *Rosa rubiginosa*, *Sanguisorba minor*, *Sonchus asper*, *Sonchus oleraceus*, *Taraxacum officinale*, *Trifolium subterraneum*, *Ulex europaeus*, *Vicia* sp.

**Species list - project: IER022 1-447****Status codes:**

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

**Sites:**

1	DAZ - E528717, N5377499	17-11-2014	Dave Sayers
2	FAG - E527555, N5379058	18-11-2014	Dave Sayers
3	GCL - E527179, N5379535	18-11-2014	Dave Sayers
4	DAZ with <i>E pauciflora</i> locally dominant - E526440, N5380419	18-11-2014	Dave Sayers
5	additional species - DAZ - E528404, N5377844	10-10-2016	Dave Sayers
6	FWU (weed infestation) Turning facility 1 - corner Bell Vue Rd - E529016, N5377117	10-10-2016	Dave Sayers
7	FAG - new entrances - E527382, N5379213	10-10-2016	Dave Sayers
8	FAG - turning facility 2 and 3 - E524393, N5383257	10-10-2016	Dave Sayers
9	FAG - turning facility 4 corner Powranna Rd - E522512, N5385754	10-10-2016	Dave Sayers
10	FAG - corner of Leighlands Rd - E517765, N5394899	10-10-2016	Dave Sayers

Site Status	Name	Common name	
	<b>DICOTYLEDONAE</b>		
	<b>APIACEAE</b>		
1 7	<i>Daucus glochidiatus</i>	australian carrot	
	<b>ASTERACEAE</b>		
2 6 7 8 9 10	<i>Arctotheca calendula</i>	capeweed	i
1	<i>Cassinia aculeata subsp. aculeata</i>	dollybush	
1 2 3 8	<i>Chrysocephalum apiculatum</i>	common everlasting	
1	<i>Chrysocephalum semipapposum</i>	clustered everlasting	
2 6 7 10	<i>Cirsium vulgare</i>	spear thistle	i
10	<i>Conyza bonariensis</i>	flaxleaf fleabane	i
1	<i>Coronidium scorpioides</i>	curling everlasting	
2	<i>Cotula coronopifolia</i>	water buttons	i
5	<i>Craspedia rosulata</i>	billybuttons	en
10	<i>Craspedia sp.</i>	billy-buttons	
7	<i>Euchiton involuocratus</i>	star cottonleaf	
2 6	<i>Euchiton japonicus</i>	common cottonleaf	
1 2 3 4 6 7 10	<i>Hypochaeris radicata</i>	rough catsear	i
9	<i>Lactuca serriola f. serriola</i>	prickly lettuce	i
6	<i>Leontodon saxatilis</i>	hairy hawkbit	i
1	<i>Leptorhynchus squamatus</i>	scaly buttons	
5	<i>Millotia tenuifolia var. tenuifolia</i>	soft bowflower	
2	<i>Senecio quadridentatus</i>	cotton fireweed	
5	<i>Senecio sp.</i>	groundsel	
7 9 10	<i>Sonchus asper</i>	bluegreen prickly sowthistle	i
6 7	<i>Sonchus asper subsp. asper</i>	green prickly sowthistle	i
10	<i>Sonchus oleraceus</i>	common sowthistle	i

10	<i>Taraxacum officinale</i>	1-448	common dandelion	i
<b>BORAGINACEAE</b>				
7	<i>Myosotis discolor</i>		changing forgetmenot	i
<b>BRASSICACEAE</b>				
9 10	<i>Brassica Xnapus</i>		rape	i
7 9	<i>Cardamine hirsuta</i>		hairy bittercress	i
2 7 8 9 10	<i>Raphanus raphanistrum</i>		wild radish	i
7	<i>Sinapis arvensis</i>		charlock	i
9	<i>Sisymbrium sp.</i>		hedge-mustard	i
<b>CAMPANULACEAE</b>				
1 2	<i>Wahlenbergia sp.</i>		bluebell	
<b>CARYOPHYLLACEAE</b>				
6 7 8 9	<i>Cerastium sp.</i>		mouse-ear chickweed	i
6 7 8	<i>Moenchia erecta</i>		erect chickweed	i
9	<i>Petrorhagia sp.</i>		pink	i
9 10	<i>Polycarpon tetraphyllum</i>		fourleaf allseed	i
4	<i>Scleranthus fasciculatus</i>		spreading knawel	v
8	<i>Spergularia sp.</i>		sand-spurrey	i
<b>CASUARINACEAE</b>				
1 2 6	<i>Allocasuarina littoralis</i>		black sheoak	
<b>CHENOPODIACEAE</b>				
2	<i>Chenopodium album</i>		fat hen	i
7	<i>Dysphania pumilio</i>		clammy goosefoot	i
<b>CLUSIACEAE</b>				
1 2	<i>Hypericum gramineum</i>		small st johns-wort	
2	<i>Hypericum perforatum subsp. veronense</i>		perforated st johns-wort	d
<b>CONVOLVULACEAE</b>				
2	<i>Convolvulus angustissimus subsp. angustissimus</i>		blushing bindweed	
<b>CRASSULACEAE</b>				
5 6 7 9	<i>Crassula decumbens var. decumbens</i>		spreading stonecrop	
7 9	<i>Crassula sieberiana</i>		stone-crop	
<b>DILLENIACEAE</b>				
6	<i>Hibbertia hirsuta</i>		hairy guineaflower	en
2	<i>Hibbertia procumbens</i>		spreading guineaflower	
5 7	<i>Hibbertia prostrata</i>		prostrate guineaflower	
1	<i>Hibbertia serpyllifolia</i>		thyme guineaflower	
<b>DIPSACACEAE</b>				
10	<i>Dipsacus fullonum</i>		wild teasel	i
<b>DROSERACEAE</b>				
1 6 7	<i>Drosera peltata</i>		pale sundew	
2	<i>Drosera pygmaea</i>		dwarf sundew	
<b>EPACRIDACEAE</b>				
1 2 3 4	<i>Astroloma humifusum</i>		native cranberry	
1	<i>Epacris impressa</i>		common heath	
1	<i>Leucopogon virgatus var. virgatus</i>		twiggy beardheath	
2 6 7 8	<i>Lissanthe strigosa subsp. subulata</i>		peachberry heath	
<b>ERICACEAE</b>				



2	<i>Erica lusitanica</i>	1-449	spanish heath	d
	<b>EUPHORBIACEAE</b>			
5	<i>Poranthera microphylla</i>		small poranthera	
	<b>FABACEAE</b>			
1	<i>Bossiaea prostrata</i>		creeping bossiaea	
4	<i>Cytisus scoparius</i>		english broom	d
14	<i>Daviesia latifolia</i>		hop bitterpea	
12	<i>Dillwynia cinerascens</i>		grey parrotpea	
25	<i>Genista monspessulana</i>		canary broom	d
1	<i>Hovea heterophylla</i>		winter purplepea	
17	<i>Kennedia prostrata</i>		running postman	
5	<i>Lotus australis</i>		australian trefoil	r
69	<i>Medicago polymorpha</i>		burr medick	i
123	<i>Platylobium obtusangulum</i>		common flatpea	
3	<i>Pultenaea pedunculata</i>		matted bushpea	
12	<i>Trifolium campestre</i>		hop clover	i
12	<i>Trifolium dubium</i>		suckling clover	i
1	<i>Trifolium pratense</i>		red clover	i
267	<i>Trifolium repens</i>		white clover	i
26789	<i>Trifolium subterraneum</i>		subterranean clover	i
10				
12367	<i>Ulex europaeus</i>		gorse	d
8910				
19	<i>Vicia sativa subsp. sativa</i>		common vetch	i
10	<i>Vicia sp.</i>		vetch, tare	i
	<b>FUMARIACEAE</b>			
10	<i>Fumaria sp.</i>		fumitory	i
	<b>GENTIANACEAE</b>			
1	<i>Centaurium erythraea</i>		common centaury	i
	<b>GERANIACEAE</b>			
910	<i>Erodium cicutarium</i>		common heronsbill	i
2	<i>Erodium moschatum</i>		musky heronsbill	i
2910	<i>Geranium dissectum</i>		cutleaf cranesbill	i
2	<i>Geranium retrorsum</i>		grassland cranesbill	
	<b>GOODENIACEAE</b>			
4	<i>Goodenia lanata</i>		trailing native-primrose	
1	<i>Goodenia ovata</i>		hop native-primrose	
	<b>HALORAGACEAE</b>			
126	<i>Gonocarpus tetragynus</i>		common raspwort	
	<b>LAMIACEAE</b>			
1	<i>Leonotis leonurus</i>		lions ear	i
	<b>LAURACEAE</b>			
1	<i>Cessytha pubescens</i>		downy dodderlaurel	
	<b>LINACEAE</b>			
1	<i>Linum bienne</i>		pale flax	it
5	<i>Linum marginale</i>		native flax	
	<b>LYTHRACEAE</b>			
2	<i>Lythrum hyssopifolia</i>		small loosestrife	
	<b>MALVACEAE</b>			

8 9 10	<i>Malva sp.</i>	1-450 mallow	i
<b>MIMOSACEAE</b>			
1 3 4 6 7	<i>Acacia dealbata subsp. dealbata</i>	silver wattle	
8			
1 9 10	<i>Acacia mearnsii</i>	black wattle	
10	<i>Acacia melanoxylon</i>	blackwood	
<b>MYRTACEAE</b>			
1 2 3 6 7	<i>Eucalyptus amygdalina</i>	black peppermint	en
1	<i>Eucalyptus ovata var. ovata</i>	black gum	
1 2 4 5 7	<i>Eucalyptus pauciflora subsp. pauciflora</i>	cabbage gum	
9			
1 4 7 8	<i>Eucalyptus viminalis subsp. viminalis</i>	white gum	
<b>OXALIDACEAE</b>			
1 4	<i>Oxalis perennans</i>	grassland woodsorrel	
2	<i>Oxalis purpurea</i>	largeflower woodsorrel	i
8	<i>Oxalis sp.</i>	woodsorrel	
<b>PAPAVERACEAE</b>			
7 10	<i>Papaver somniferum</i>	opium poppy, poppy	i
<b>PITTOSPORACEAE</b>			
1	<i>Bursaria spinosa subsp. spinosa</i>	prickly box	
<b>PLANTAGINACEAE</b>			
2 6 9	<i>Plantago coronopus</i>	buckshorn plantain	i
6 7 9	<i>Plantago lanceolata</i>	ribwort plantain	i
2	<i>Plantago major</i>	great plantain	i
5 8	<i>Plantago varia</i>	variable plantain	
<b>POLYGONACEAE</b>			
2 6 7 8 10	<i>Acetosella vulgaris</i>	sheep sorrel	i
6	<i>Polygonum aviculare</i>	creeping wireweed	i
2	<i>Rumex crispus</i>	curled dock	i
6 8 9 10	<i>Rumex sp.</i>	dock	
<b>PRIMULACEAE</b>			
2 6 10	<i>Lysimachia arvensis</i>	scarlet pimpernel	i
<b>PROTEACEAE</b>			
1 4	<i>Banksia marginata</i>	silver banksia	
<b>ROSACEAE</b>			
1 3 4 7	<i>Acaena echinata</i>	spiny sheeps burr	
1 7	<i>Acaena novae-zelandiae</i>	common buzzy	
6 8	<i>Acaena ovina</i>	downy sheepsburr	
2 6	<i>Aphanes arvensis</i>	parsley piert	i
2	<i>Cotoneaster glaucophyllus var. serotinus</i>	largeleaf cotoneaster	i
2 8 10	<i>Rosa rubiginosa</i>	sweet briar	i
2 6	<i>Rubus fruticosus</i>	blackberry	d
1 2 7 10	<i>Sanguisorba minor</i>	salad burnet	i
<b>RUBIACEAE</b>			
1	<i>Asperula conferta</i>	common woodruff	
7	<i>Galium aparine</i>	cleavers	i
10	<i>Galium murale</i>	small bedstraw	i
<b>SANTALACEAE</b>			

1 2 6	<i>Exocarpos cupressiformis</i>	1-451	common native-cherry	
	<b>SAPINDACEAE</b>			
1	<i>Dodonaea viscosa subsp. spatulata</i>		broadleaf hopbush	
	<b>SCROPHULARIACEAE</b>			
1 9	<i>Parentucellia latifolia</i>		broadleaf glandweed	i
1	<i>Veronica gracilis</i>		slender speedwell	
	<b>STYLIDIACEAE</b>			
1 2 3 4	<i>Stylidium graminifolium</i>		narrowleaf triggerplant	
	<b>THYMELAEACEAE</b>			
1 2 3	<i>Pimelea glauca</i>		smooth riceflower	
1 2 7 8 9	<i>Pimelea humilis</i>		dwarf riceflower	
	<b>GYMNOSPERMAE</b>			
	<b>CUPRESSACEAE</b>			
1	<i>Cupressus macrocarpa</i>		monterey cypress	i
	<b>PINACEAE</b>			
1 4 6	<i>Pinus radiata</i>		radiata pine	i
	<b>MONOCOTYLEDONAE</b>			
	<b>CENTROLEPIDACEAE</b>			
6	<i>Centrolepis inonogyna</i>		cushion bristlewort	en
2	<i>Centrolepis strigosa</i>		hairy centrolepis, bristlewort	
	<b>CYPERACEAE</b>			
1	<i>Carex breviculmis</i>		shortstem sedge	
1	<i>Cyperus eragrostis</i>		drain flatsedge	i
1 2	<i>Eleocharis acuta</i>		common spikesedge	
1 2 6 9	<i>Isolepis levynsiana</i>		fan clubsedge	?i
5 6 8	<i>Isolepis marginata</i>		little clubsedge	
7 10	<i>Isolepis sp.</i>		club rush	
1	<i>Lepidosperma gunnii</i>		narrow swordedge	
6	<i>Lepidosperma inops</i>		fan sedge	en
6	<i>Lepidosperma laterale</i>		variable swordedge	
1 2 9	<i>Schoenus apogon</i>		common bogsedge	
	<b>IRIDACEAE</b>			
5	<i>Gladiolus tristis</i>		evening gladiolus	i
2	<i>Ixia maculata</i>		yellow ixia	i
1 2 6 8	<i>Romulea rosea var. australis</i>		lilac oniongrass	i
	<b>JUNCACEAE</b>			
1 2	<i>Juncus articulatus</i>		jointed rush	i
1	<i>Juncus astreptus</i>		rigid rush	en
2 9	<i>Juncus australis</i>		southern rush	
1 2 9	<i>Juncus bufonius</i>		toad rush	
6 9	<i>Juncus capitatus</i>		capitate rush	i
1	<i>Juncus effusus</i>		soft rush	i
1 2	<i>Juncus holoschoenus</i>		jointleaf rush	
1	<i>Juncus pallidus</i>		pale rush	
1	<i>Juncus planifolius</i>		broadleaf rush	
10	<i>Juncus sarophorus</i>		broom rush	
5	<i>Luzula flaccida</i>		pale woodrush	
	<b>LILIACEAE</b>			
1	<i>Arthropodium milleflorum</i>		pale vanilla-lily	

1	<i>Arthropodium minus</i>	1-452	small vanilla-lily	
1 2 3 6 7	<i>Arthropodium strictum</i>		chocolate lily	
8				
1	<i>Bulbine glauca</i>		bluish bulbine-lily	
2	<i>Burchardia umbellata</i>		milkmaids	
2	<i>Caesia calliantha</i>		blue grasslily	r
1 2	<i>Dianella revoluta</i>		spreading flaxlily	
4	<i>Hypoxis glabella</i> var. <i>glabella</i>		tiny yellowstar	
6	<i>Hypoxis vaginata</i> var. <i>vaginata</i>		sheathing yellowstar	
6	<i>Narcissus tazetta</i>		daffodil	i
5	<i>Wurmbea dioica</i> subsp. <i>dioica</i>		early nancy	
	<b>ORCHIDACEAE</b>			
5	<i>Caladenia carnea</i>		pink fingers	
5	<i>Cyrtostylis reniformis</i>		small gnat-orchid	
1	<i>Diuris perdina</i>		leopard orchid	
1	<i>Diuris sulphurea</i>		tiger orchid	
1	<i>Eriochilus cucullatus</i>		autumn orchid	
5	<i>Glossodia major</i>		waxlip orchid	
2	<i>Microtis</i> sp.		onion orchid	
2	<i>Thelymitra pauciflora</i>		slender sun-orchid	
1 6	<i>Thelymitra</i> sp.		sun-orchid	
	<b>POACEAE</b>			
6 8	<i>Agrostis stolonifera</i>		creeping bent	i
1 2 3 4 9	<i>Aira caryophyllea</i>		silvery hairgrass	i
1	<i>Anthosachne scabra</i>		rough wheatgrass	
1 2 4 6 7	<i>Anthoxanthum odoratum</i>		sweet vernalgrass	i
8 9 10				
1 2 3 4	<i>Austrostipa mollis</i>		soft speargrass	
2 3	<i>Austrostipa pubinodis</i>		tall speargrass	
2 4	<i>Austrostipa semibarbata</i>		fibrous speargrass	
6 7 8 9	<i>Austrostipa</i> sp.		speargrass	
2	<i>Austrostipa stuposa</i>		corkscrew speargrass	
9 10	<i>Avena barbata</i>		bearded oat	i
1	<i>Avena fatua</i>		wild oat	i
1 2 3 4	<i>Briza maxima</i>		greater quaking-grass	i
2 9	<i>Briza minor</i>		lesser quaking-grass	i
2 4 7 8 9	<i>Bromus diandrus</i>		great brome	i
10				
2	<i>Bromus hordeaceus</i>		soft brome	i
2	<i>Cynosurus echinatus</i>		rough dogstail	i
1 2 4 6 7	<i>Dactylis glomerata</i>		cocksfoot	i
8 9 10				
9	<i>Ehrharta stipoides</i>		weeping grass	
1 6 7 8 9	<i>Festuca arundinacea</i>		tall fescue	i
10				
1 2 4 6 10	<i>Holcus lanatus</i>		yorkshire fog	i
2	<i>Hordeum marinum</i>		sea barleygrass	i
9	<i>Hordeum</i> sp.		barley, barley grass	i
1 4 6 7 9	<i>Lolium perenne</i>		perennial ryegrass	i
10				
3	<i>Lolium rigidum</i>		wimmera ryegrass	i

6	<i>Panicum capillare</i>	1-453	common witchgrass	i
1	<i>Phalaris aquatica</i>		toowoomba canarygrass	i
7 10	<i>Poa annua</i>		winter grass	i
7 9	<i>Poa bulbosa</i>		bulbous meadowgrass	i
7 8	<i>Poa compressa</i>		flatstalk meadowgrass	i
1 2 6	<i>Poa labillardierei</i>		silver tussockgrass	
2 6 10	<i>Poa pratensis</i>		kentucky bluegrass	i
1	<i>Poa sp.</i>		poa	
2 3 4	<i>Rytidosperma sp.</i>		wallabygrass	
1 2 3 4 6	<i>Themeda triandra</i>		kangaroo grass	
7				
7 8	<i>Triticum aestivum</i>		wheat	i
2	<i>Vulpia bromoides</i>		squirreltail fescue	i
2	<i>Vulpia myuros</i>		ratstail fescue	i
<b>XANTHORRHOEACEAE</b>				
1 2 3 4 6	<i>Lomandra longifolia</i>		sagg	
7 8				
1 2 8	<i>Lomandra nana</i>		dwarf mat-rush	
<b>PTERIDOPHYTA</b>				
<b>DENNSTAEDTIACEAE</b>				
1 2 4 7	<i>Pteridium esculentum subsp. esculentum</i>		bracken	

1-454



Exhibited

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Midland Highway – Epping Forest to Powranna Rd  
A0087 Link 80 CH 0.45 to CH 11.20

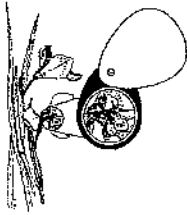
**COMPLIANCE STATEMENT**  
under Northern Midlands Interim Planning Scheme 2013

For Department of State Growth

1<sup>st</sup> November 2016

IER022

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The Department of State Growth is planning to undertake road upgrades of the Midland Highway between Epping Forest and Powranna Rd. To assist with this project, North Barker Ecosystem Services (NBES) was engaged to undertake natural values surveys which began in November 2014 with an additional survey post design in October 2016. NBES have also undertaken targeted orchid and fauna surveys between these dates.

Based on the final design of road upgrades, NBES have been engaged to prepare this compliance statement in consideration of the *Northern Midlands Interim Planning Scheme 2013*, specifically the Biodiversity Code.

### **NORTHERN MIDLANDS PLANNING SCHEME – BIODIVERSITY CODE (E8)**

The purpose of this code (E8.1) is stated as to

- a) protect, conserve and enhance the region's biodiversity in consideration of the extent, condition and connectivity of critical habitats and priority vegetation communities, and the number and status of vulnerable and threatened species; and
- b) ensure that development is carried out in a manner that assists the protection of biodiversity by:
  - minimising vegetation and habitat loss or degradation; and
  - appropriately locating buildings and works; and
  - offsetting the loss of vegetation through protection of other areas where appropriate.

Under the Interpretation section (Part B 4), critical habitat and priority vegetation are not defined. Critical habitat is defined in various legislation including the *Tasmanian Threatened Species Act 1995* where it means "an area of land defined on a map under section 23 which the Secretary determines as a critical habitat of a listed taxon of flora or fauna". Priority vegetation is considered to exist where the community is listed under the *Tasmanian Nature Conservation Act 2002* and / or where the vegetation provides important habitat for threatened species under either State or Commonwealth legislation.

In regards to critical habitat within the road upgrade, the definition under the TSPA is ambiguous. The vegetation community (*Eucalyptus amygdalina* inland forest and woodland on Cainozoic deposits (DAZ)) is threatened under the NCA and provides habitat for various threatened flora and fauna therefore is considered as Priority Habitat as well as some hollow bearing eucalypts.

Threatened vegetation under the code is defined as "a threatened native vegetation community that is listed in Schedule 3A of the *Tasmanian Nature Conservation Act 2002* or a threatened native ecological community that is listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*."

The Biodiversity Code applies (E8.2.1):

- a) within the area identified as priority habitat on the planning scheme maps; or
- b) for the removal of native vegetation

The Priority Habitat overlay occurs over the majority of mapped DAZ vegetation and native vegetation will be removed therefore both (a) and (b) occur hence the Biodiversity Code applies in these situations.



Threatened flora species recorded within the study area include:

- *Caesia calliantha* (blue grass lily) – TSPA: Rare 25 plants
- *Scleranthus fasciculatus* (spreading knawel) TSPA: vulnerable (6 plants)

The following two species have been recently delisted from the Schedules and are present within the study area:

- *Arthropodium strictum* (chocolate lily)
- *Hypoxis vaginata var vaginata* (yellow star)

Regarding threatened fauna, potential habitat is present for a variety of species (see NBES fauna and fauna habitat report) however no critical habitat occurs within the road upgrade corridor. Potential habitat is present for the masked owl and spotted-tailed quoll in the form of hollow bearing trees with the trees with suitable sized hollows outside of impact (see Addendum to Flora and Fauna Habitat report for masked owl survey).



Figure 1 - Priority Habitat overlay

There are no exemptions to Code E8 therefore E8.6 Development Standards applies.

## E8.6.1 HABITAT AND VEGETATION MANAGEMENT

<b>Objective</b>	
<p>To ensure that:</p> <p>a) vegetation identified as having conservation value as habitat has priority for protection and is appropriately managed to protect those values; and</p> <p>b) the representation and connectivity of vegetation communities is given appropriate protection when considering the impacts of use and development.</p>	
<b>Acceptable Solution A1</b>	<b>Comment</b>
<p>A1.1 Clearance or disturbance of priority habitat is in accordance with a certified Forest Practices Plan or;</p> <p>A1.2 Development does not clear or disturb native vegetation within areas identified as priority habitat.</p>	<p>A1.1 – No certified Forest Practice Plan exists therefore this does not apply.</p> <p>Under the <i>Forest Practices Regulations 2007</i>, s 16(6) (iv) states a forest practices plan is not required for the construction and maintenance of public roads.</p> <p>A1.2 – native vegetation will be cleared or disturbed in the planned road upgrades.</p> <p>Therefore the Acceptable Solutions are unable to be met and the Performance Criteria apply.</p>
<b>Performance Criteria P1</b>	<b>Comment</b>
<p>P1 Clearance or disturbance of native vegetation within priority habitat may be allowed where a flora and fauna report prepared by a suitably qualified person demonstrates that development does not unduly compromise the representation of species or vegetation communities in the bioregion having regard to the:</p> <p>a) quality and extent of the vegetation or habitat affected by the proposal, including the maintenance of species diversity and its value as a wildlife corridor; and</p> <p>b) means of removal; and</p> <p>c) value of riparian vegetation in protecting habitat values; and</p> <p>d) impacts of siting of development (including effluent disposal) and vegetation clearance or excavations, in proximity to habitat or vegetation; and</p> <p>e) need for and adequacy of proposed vegetation or habitat management; and</p> <p>f) conservation outcomes and long-term security of any offset in accordance with the General Offset Principles for the RMPS, Department of Primary Industries, Parks, Water and Environment</p>	<p>P1 - A flora and fauna habitat survey has been prepared by NBES prior to design with an addendum report post design to investigate additional areas not originally surveyed. Targeted flora and fauna surveys were also completed with results incorporated into the reports. Overall the small impacts from road widening and additional turning facilities and entrances will not unduly compromise representation of species or vegetation communities in the bioregion.</p> <p>Small edge impacts will occur to DAZ however this level of impact will be insignificant in the context of the surrounding extent of the community. Impacts to threatened flora have been reduced since the delisting of <i>Arthropodium strictum</i> (chocolate lily) with removal to the following species:</p> <ul style="list-style-type: none"> <li>• <i>Caesia calliantha</i> (25 plants)</li> <li>• <i>Scleranthus fasciculatus</i> (6 plants)</li> </ul> <p>No trees with observed hollows suitable for masked owls are within the impact area. One masked owl call was recorded on the sound recorder that was left out for two weeks. No definitive evidence was found of nesting within suitable trees close to the project area. Some habitat for spotted tailed quoll is present however given the level of</p>

1-459	<p>habitat that is present in the area this small widening is deemed very minor with quality habitat remaining.</p> <p>In summary there are no trees within the works footprint that have hollows of sufficient size for masked owl nesting. There is also limited breeding habitat within the works footprint for spotted-tailed quoll.</p> <p>Out of the habitat trees recorded, 7 trees are within the impact area including:</p> <ul style="list-style-type: none"> <li>• White gums 3</li> <li>• Cabbage gum 1</li> <li>• Black peppermint 3</li> </ul> <p>None of these trees contain suitable hollows for masked owls or spotted tailed quolls.</p> <p>It is estimated that up to 2.9 ha of DAZ will be affected by the road upgrades with the impact restricted to generally less than 9m of the edge of the forest. An estimated 17,300 ha of DAZ remains within the Northern Midlands Council and less than 0.017% will be impacted.</p> <p>It is not considered necessary that reserving additional DAZ offsite as an offset is required for the road upgrade given the impacts to DAZ are small. It would be beneficial however for some weed management to be provided to assist landholders in controlling <i>Ulex europaeus</i> (gorse) infestations. These infestations are an ongoing issue for the conservation values of DAZ. A weed management plan for the project to effectively control gorse and other declared weeds should also be implemented so that infestations are not made worse post construction.</p>
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Based on the values recorded within the study area and surveys undertaken to date, the road upgrades will not compromise the integrity of threatened flora and fauna values to any significant degree. As mentioned there would be a benefit to assisting landholders adjacent to the road upgrade in controlling gorse infestations within and adjacent to the study area as a form off offsetting impacts to the DAZ community.



# MIDLAND HIGHWAY (A0087) EPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES

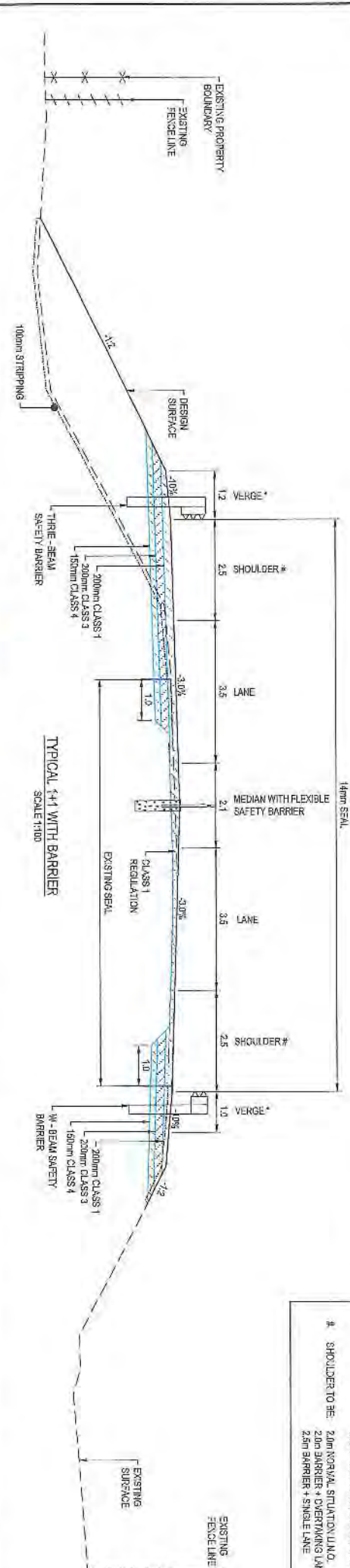
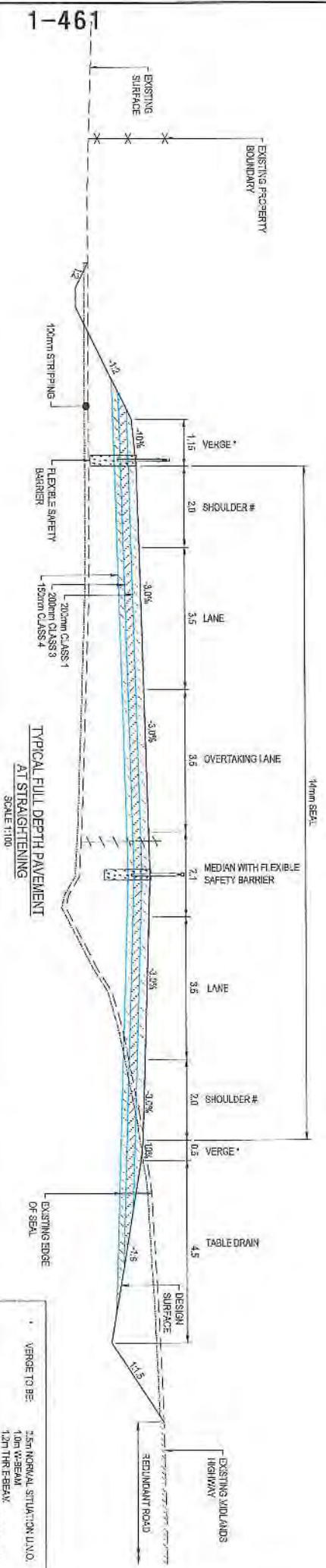
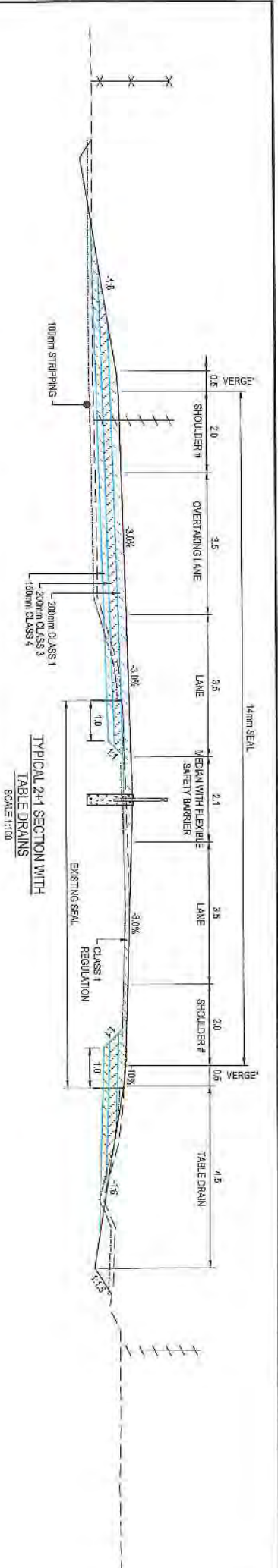
1-460

## CONTRACT NO. 2367

## DESIGN



<b>SETOUT REVIEW</b>	<b>DESIGNED</b>	<b>THESE DRAWINGS HAVE BEEN CHECKED, TAKEN TO SITE AND VERIFIED THAT THEY ARE APPROPRIATE FOR SITE CONDITIONS AND CONSTRAINTS. THE DRAWINGS ARE RECOMMENDED FOR ACCEPTANCE.</b>	
SIGNED: .....	SIGNED: .....	<b>DESIGN MANAGER</b> DESIGN ORGANISATION: .....	<b>PRINCIPAL</b> DESIGN ORGANISATION: .....
NAME: .....	NAME: .....	<b>Department of State Growth</b>	
DATE: .....	DATE: .....	<b>ACCEPTED</b>	
<b>STRUCTURAL REVIEW</b>	<b>DESIGN REVIEW</b>	<b>Department of State Growth</b>	
SIGNED: .....	SIGNED: .....	<b>ACCEPTED</b>	
NAME: .....	NAME: .....	<b>Department of State Growth</b>	
DATE: .....	DATE: .....	<b>ACCEPTED</b>	
<b>CONTRACT NO.</b>	<b>DRAWING</b>	<b>PRINTED DATE</b>	<b>No. of SHEETS</b>
2367	16/01/01-12/00	17-Nov-16, 5:50 AM	71
<b>REGISTRATION NUMBER</b>		<b>SHEET No.</b>	
A0087.037		200	
<b>ROAD LINK No.</b>		<b>REVISION C</b>	
80/028			
<b>START:</b> 80/028			
<b>FINISH:</b> 80/1119			



- \* VERGE TO BE: 2.5m NORMAL SITUATION (U.V.O.)
- 1.0m W-BEAM
- 1.2m TTR EB&M
- 1.19m FLEXIBLE SAFETY BARRIER
- # SHOULDER TO BE: 2.0m NORMAL SITUATION (U.V.O.)
- 2.0m BARRIER + OVERTAKING LANE
- 2.5m BARRIER + SINGLE LANE

1-461

No.	Amendment Description	Date	Co-ordinate System
A	PRELIMINARY DESIGN	12/11/2018	NAD 83
B	DEVELOPMENT APPLICATION ISSUE	07/11/2018	NAD 83
C	DEVELOPMENT APPLICATION ISSUE	04/11/2018	NAD 83
D	DEVELOPMENT APPLICATION ISSUE	12/11/2018	NAD 83

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SCALES

1:100 (A3)

SCALE IN TITLE BAR

DESIGNED BY: LALLEN

REVIEWED BY: NIJVER

Department of State Growth

MIDLAND HIGHWAY (A0087)

EPPING FOREST TO POWRANNA

ROAD IMPROVEMENTS AND SAFETY UPGRADES

DEVELOPMENT APPLICATION

TYPICAL CROSS SECTIONS - DRG 1 OF 8

CONTRACT No. 2887

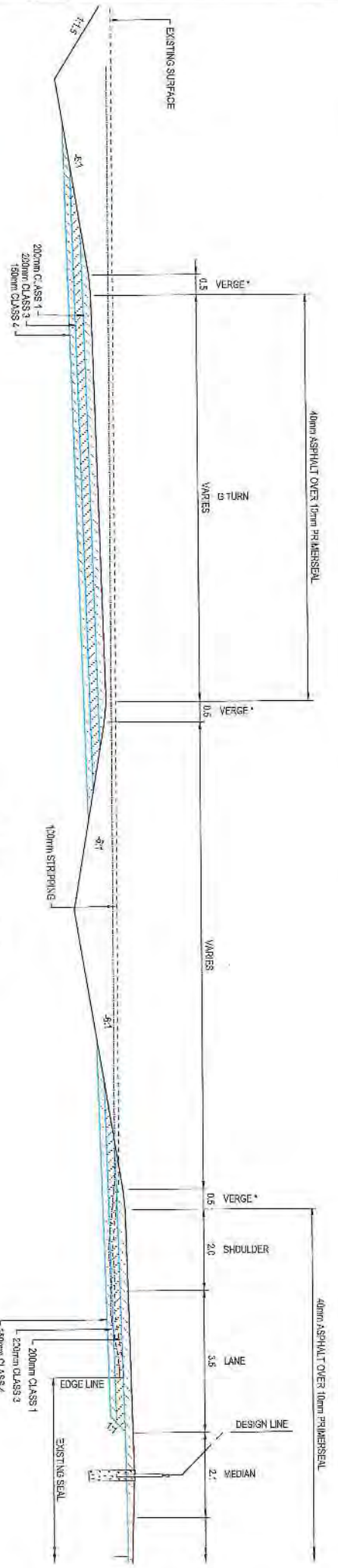
DRAWING No. HB18191-CD01

PRINTED DATE 17-Nov-18, 5:52 PM

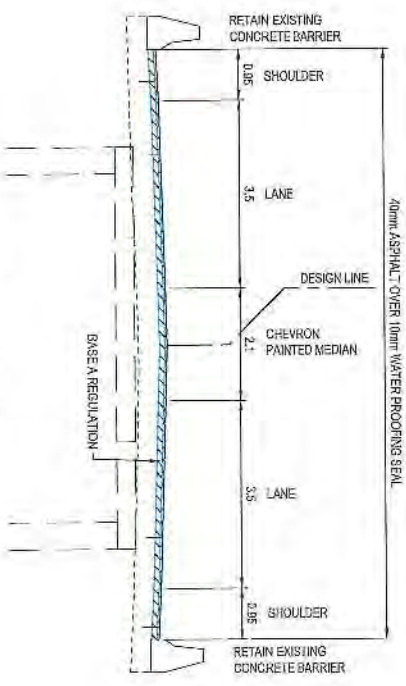
REGISTRATION NUMBER A0087.037

SHEET No. 201

REVISION C



G TURN FACILITY CH 7980  
RESHAPING  
SCALE 1:100 (A3)



2.1m PAINTED MEDIAN  
RESHAPING  
(POWRANNA RAIL UNDERPASS)  
SCALE 1:100 (A3)

* VERGE TO BE	0.5m NORMAL SITUATION L.H.D.
	1.5m W-BEAM
	1.2m THIRI-BEAM
	1.15m FLEXIBLE SAFETY BARRIER
# SHOULDER TO BE	2.0m NORMAL SITUATION L.H.D.
	2.0m BARRIER + OVERWINKING LANE
	2.5m BARRIER + SINGLE LANE

SCALES 1:100 (A3) SCALE HERE - DIM Height Dimension A.H.D.		DESIGNED: LAULÉN REVIEWED: NÄYVÄ		Department of State Growth MIDLAND-HIGHWAY (A0087) EPPING FOREST TO POWRANNA DEVELOPMENT AND SAFETY UPGRADES TYPICAL CROSS SECTIONS - DRG 2 OF 2		CONTRACT No. 2387 DRAWING HB-1519-C202 PRINTED DATE 17-Nov-16, 3:00 PM REGISTRATION NUMBER <b>A0087.037</b>		SHEET No. <b>202</b> REVISION C	
DEVELOPMENT APPLICATION ISSUE NÄYVÄ 07/17/2016		PRELIMINARY DESIGN NÄYVÄ 13/12/2016		No. Initial Date		Amendment Description		The sheet may be prepared using colour and may be incomplete if soiled.	



R. V. R. & C. M. HIGGINS  
I.D. - 8226187  
TITLE - 1103824

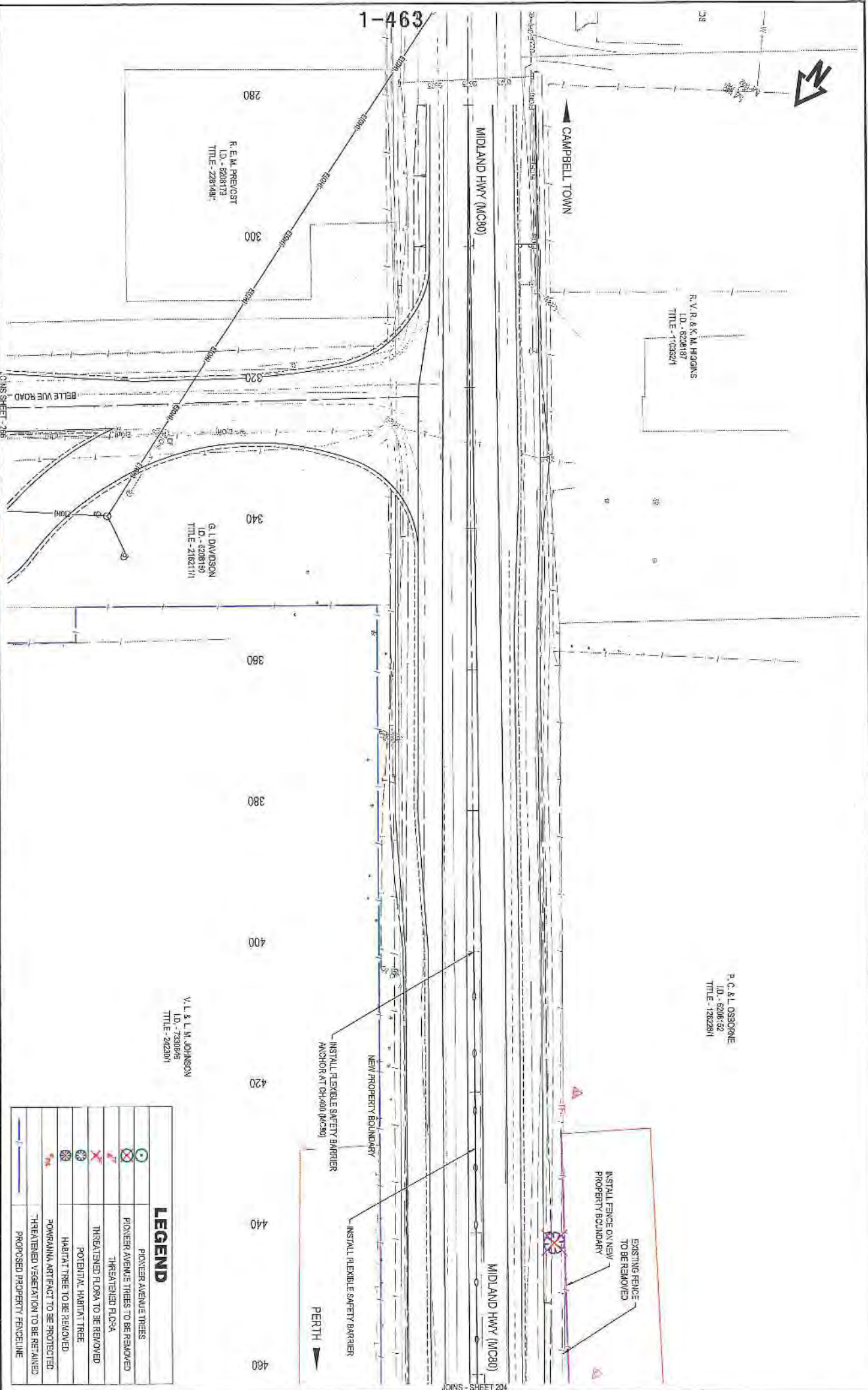
P. C. & L. OSBORNE  
I.D. - 8208132  
TITLE - 1202281

CAMPBELL TOWN

MIDLAND HWY (MC80)

MIDLAND HWY (MD80)

1-463



R. E. M. PREICST  
I.D. - 8208173  
TITLE - 2281487

G. I. DAVIDSON  
I.D. - 8208160  
TITLE - 2162111

V. L. & L. M. JOHNSON  
I.D. - 7320096  
TITLE - 2622001

CIMS SHEET - 286

INSTALL FLEXIBLE SAFETY BARRIER  
ANCHOR AT CH400 (MC280)

INSTALL FLEXIBLE SAFETY BARRIER

NEW PROPERTY BOUNDARY

EXISTING FENCE TO BE REMOVED

INSTALL FENCE ON NEW PROPERTY BOUNDARY

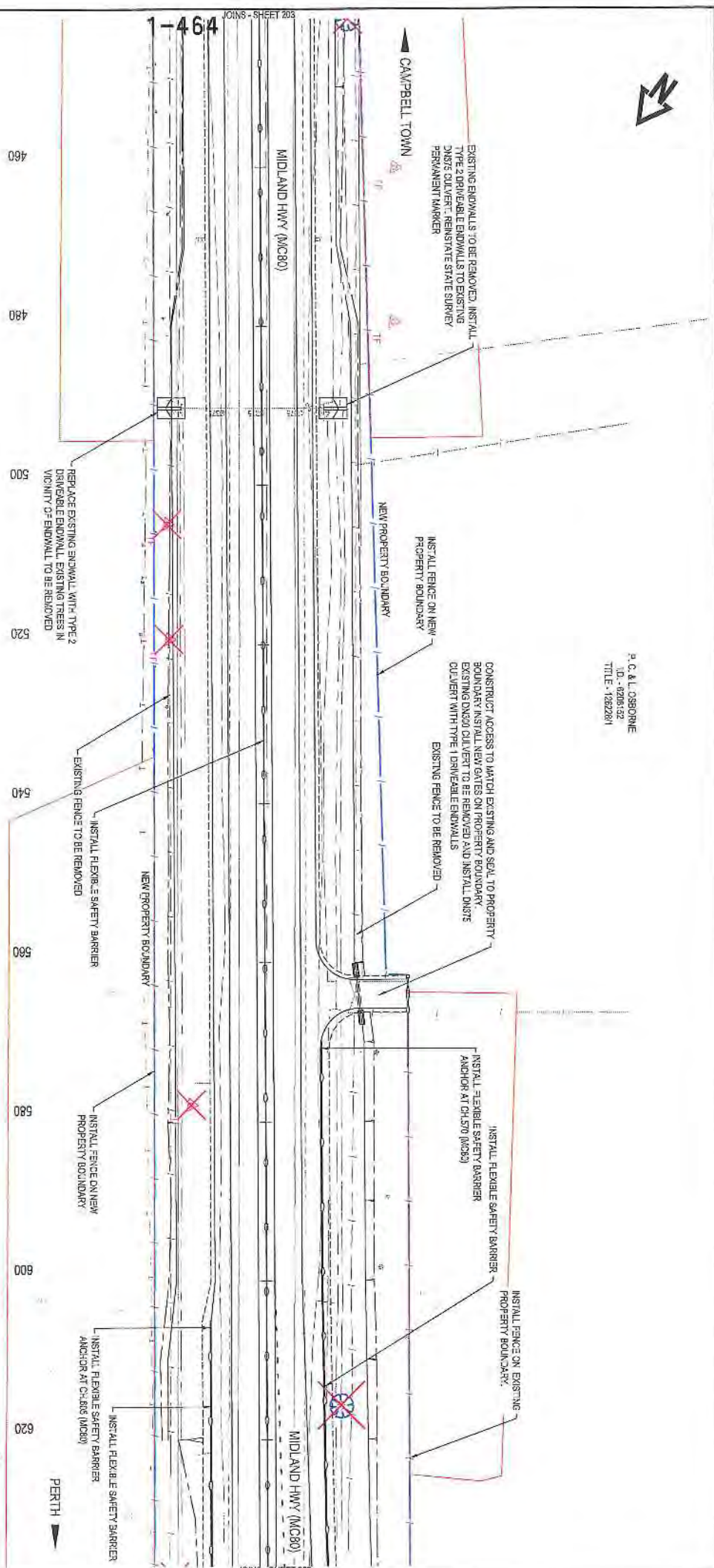
PERTH

LEGEND	
	POWRIER AVENUE TREES
	POWRIER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRIER AVENUE ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FORESTS TO POWRIER AVENUE</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>GENERAL ARRANGEMENT - DRG 1 OF 83</p>		<p>CONTRACT NO.</p> <p>2387</p>	<p>DRAWING</p> <p>2816191-C203</p>	<p>PRINTED DATE</p> <p>17-Nov-16, 3:50 PM</p>	<p>SHEET NO.</p> <p>203</p>
<p>DESIGNED</p> <p>L. ALLEN</p> <p>REVIEWED</p> <p>N. DWYER</p>		<p>REGISTRATION NUMBER</p> <p>A0087.037</p>		<p>REVISION D</p>	
<p>UNPACKED JOHN'S SHEET NUMBER</p> <p>N. DWYER 17/11/2016</p>		<p>SCALE IN METRES - 1:500 (A3)</p>		<p>Amendment Classification</p> <p>Initials Date</p>	
<p>DEVELOPMENT APPLICATION ISSUE</p> <p>N. DWYER 04/11/2016</p>		<p>SCALE IN METRES - 1:500</p>		<p>This sheet may be prepared using colour and may be incomplete if copied</p>	
<p>DEVELOPMENT APPLICATION ISSUE</p> <p>N. DWYER 07/11/2016</p>		<p>Height Datum: A.M.S.L.D.</p>			
<p>PRELIMINARY DESIGN</p> <p>N. DWYER 18/10/2016</p>		<p>Co-ordinate System: MGA ZONE 55</p>			



P. C. & L. OSBORNE  
 I.D. - 0206132  
 TITLE - 1282281



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POMRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDARY

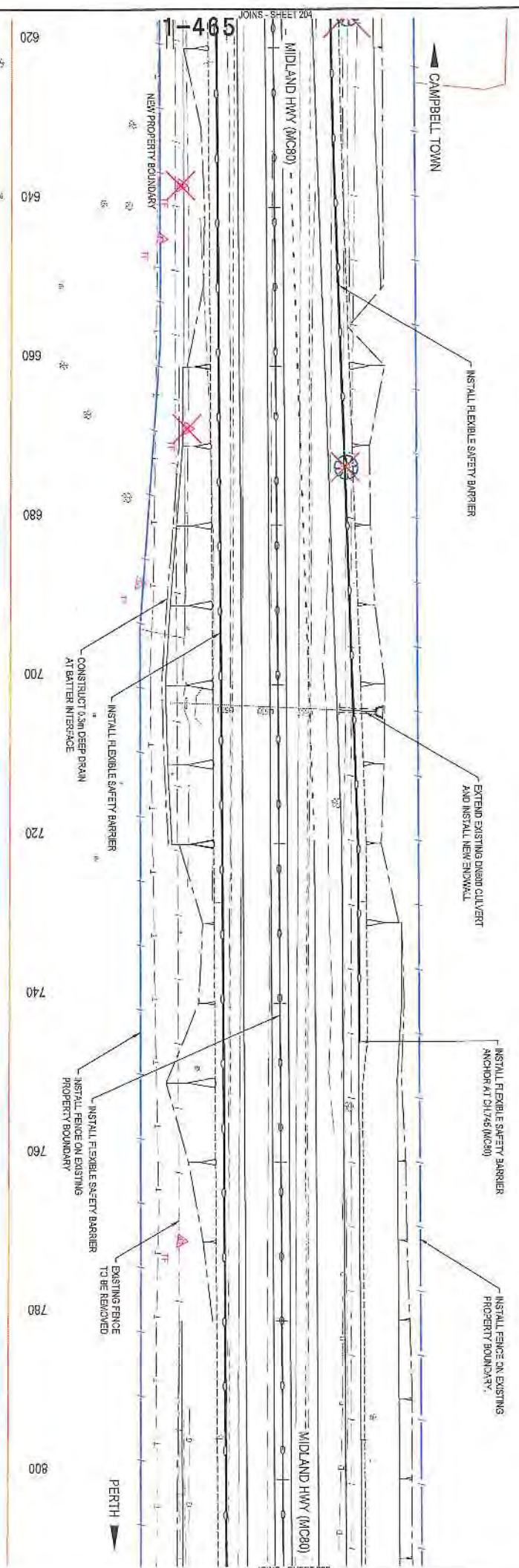
V. L. & C. M. JOHNSON  
 I.D. - 1633549  
 TITLE - 2423351

<b>Department of State Growth</b> MIDLAND HIGHWAY (A0087) EPPING FOREST TO POMRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 2 OF 63		CONTRACT NO. 2387	DRAWING HB-6191-C204	PRINTED DATE 17-Nov-16, 3:50 PM	SHEET NO. <b>204</b>
SCALES 1:500 (A3) SCALE BAR: 0 5 10 20 METRES	DESIGNED LALLEN	REVIEWED NEWVER	DEVELOPMENT APPLICATION ISSUE NEWVER 04/11/2016	DEVELOPMENT APPLICATION ISSUE NEWVER 07/12/2016	DEVELOPMENT APPLICATION ISSUE NEWVER 07/12/2016
No. 1 Amendment Description Initial	No. 2 Amendment Description Initial	No. 3 Amendment Description Initial	No. 4 Amendment Description Initial	No. 5 Amendment Description Initial	No. 6 Amendment Description Initial
AS ORIGINAL This sheet may be prepared using colour and may be incomplete if applied					





P. C. & L. OSBORNE  
 LD - 6268162  
 TITLE - 1292281



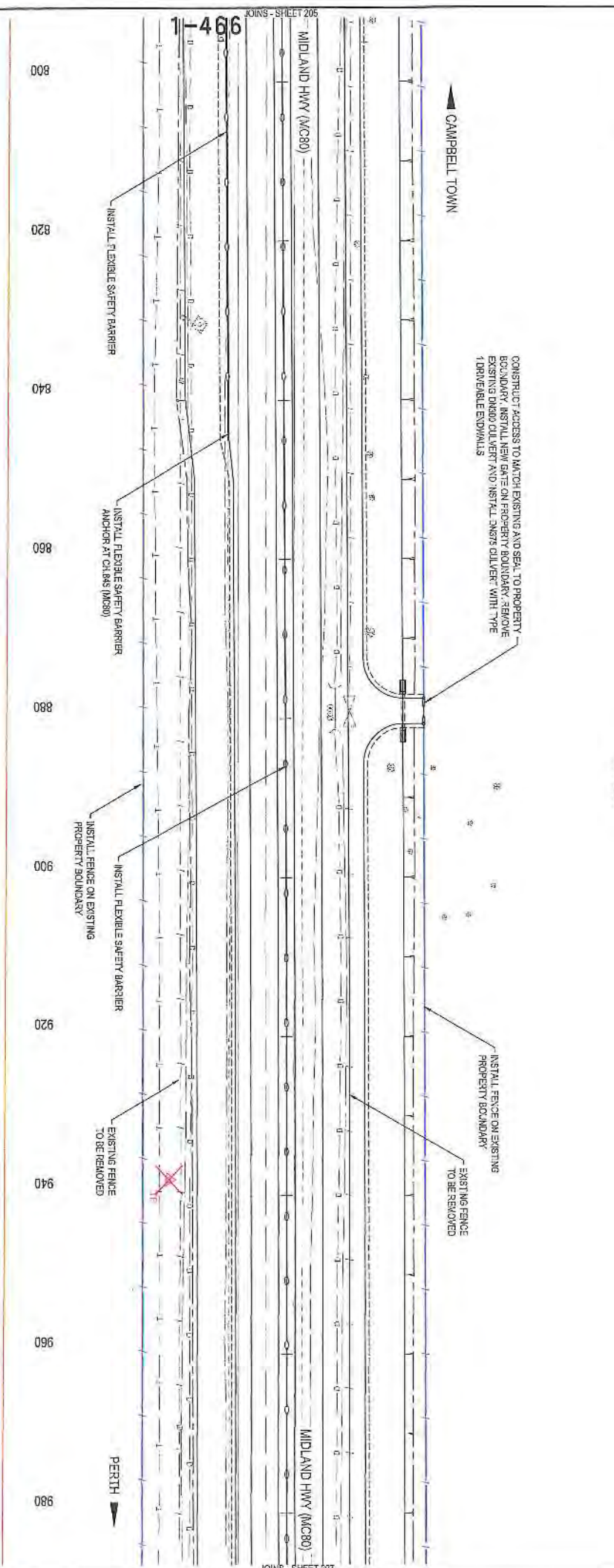
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCE LINE

V. L. & L. M. JOHNSON  
 LD - 733046  
 TITLE - 2102301

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 3 OF 63</p>		<p>CONTRACT NO.</p> <p>2087</p>	<p>DRAWING</p> <p>HE-151-1205</p>	<p>PRINTED DATE</p> <p>17-Nov-16, 3:59 PM</p>	<p>SHEET NO.</p> <p>205</p>
<p>DESIGNED</p> <p>L. ALLEN</p>	<p>REVIEWED</p> <p>N. DWYER</p>	<p>SCALES</p> <p>1:500 (A3)</p> <p>SOLID LINE = 1:500</p>	<p>DESIGNED BY</p> <p>PLANNING</p>	<p>REVIEWED BY</p> <p>PLANNING</p>	<p>REVISION C</p>
<p>NO. 1</p> <p>DEVELOPMENT APPLICATION ISSUE</p> <p>DATE 01/11/2016</p>	<p>NO. 2</p> <p>PRELIMINARY DESIGN</p> <p>DATE 13/12/2016</p>	<p>NO. 3</p> <p>AMENDMENT DESCRIPTION</p> <p>INITIALS</p> <p>DATE</p>	<p>NO. 4</p> <p>AMENDMENT DESCRIPTION</p> <p>INITIALS</p> <p>DATE</p>	<p>NO. 5</p> <p>AMENDMENT DESCRIPTION</p> <p>INITIALS</p> <p>DATE</p>	<p>NO. 6</p> <p>AMENDMENT DESCRIPTION</p> <p>INITIALS</p> <p>DATE</p>
<p>AS ORIGINAL THIS SHEET MAY BE PRESENT USING EITHER AND MAY BE INCOMPLETE IF APPLIED</p>					



P.C. & I. OSBORNE  
ID. - 2208152  
TITLE - 1282224/



**LEGEND**

	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

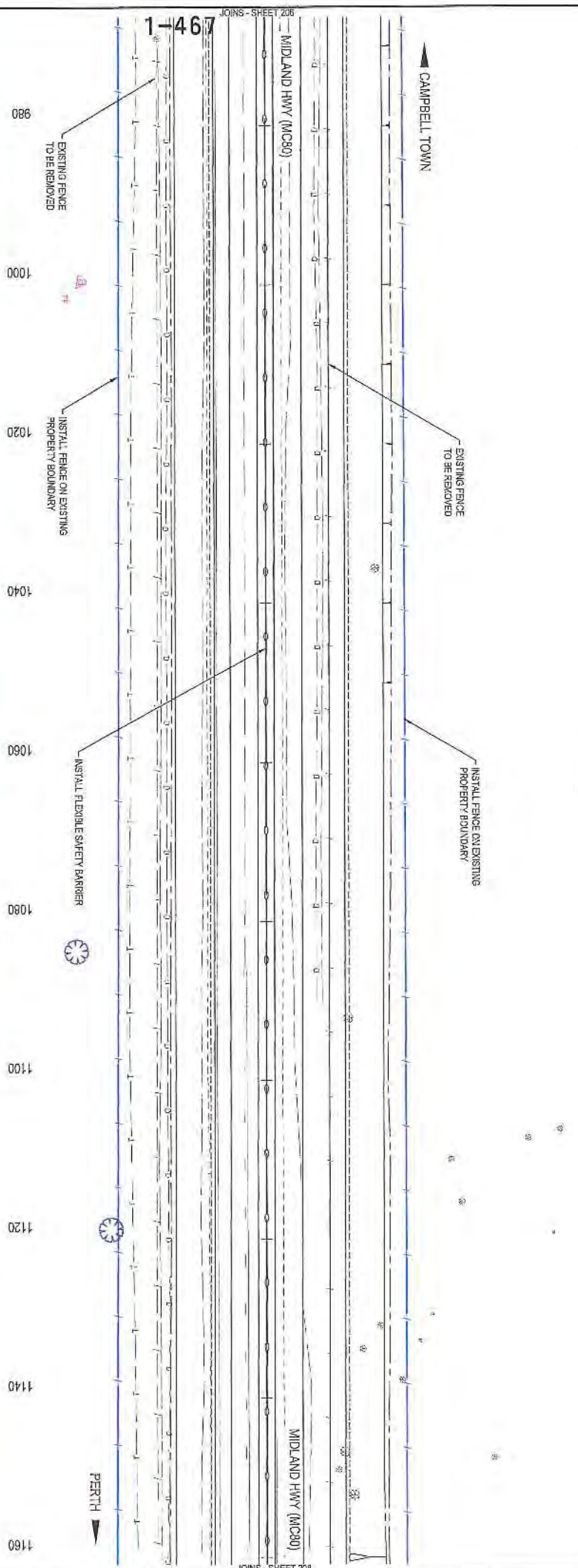
Y. L. & L. M. JOHNSON  
I.D. - 7330846  
TITLE - 2422001

<b>Department of State Growth</b> MIDLAND HIGHWAY (A0087) EPPING FORESTS TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 4 OF 63		CONTRACT NO. 2387	DRAWING HB1919-0206	PRINTED DATE 17 Nov '16, 3:51 PM	SHEET NO. <b>206</b>
SCALES 1:500 (A3) 1:100 (A4)	DESIGNED L. ALLEN REVIEWED R. DWYER	REGISTRATION NUMBER <b>A0087.037</b>	REVISION C		

No.	Amendment Description	Initials	Date
B	DEVELOPMENT APPLICATION ISSUE	R. DWYER	07/11/2016
A	PRELIMINARY DESIGN	R. DWYER	27/10/2015
As original This sheet may be prepared using colour and may be scanned in colour			



P. C. & L. OSBORNE  
 I.D. - 6204192  
 TITLE - 1282261



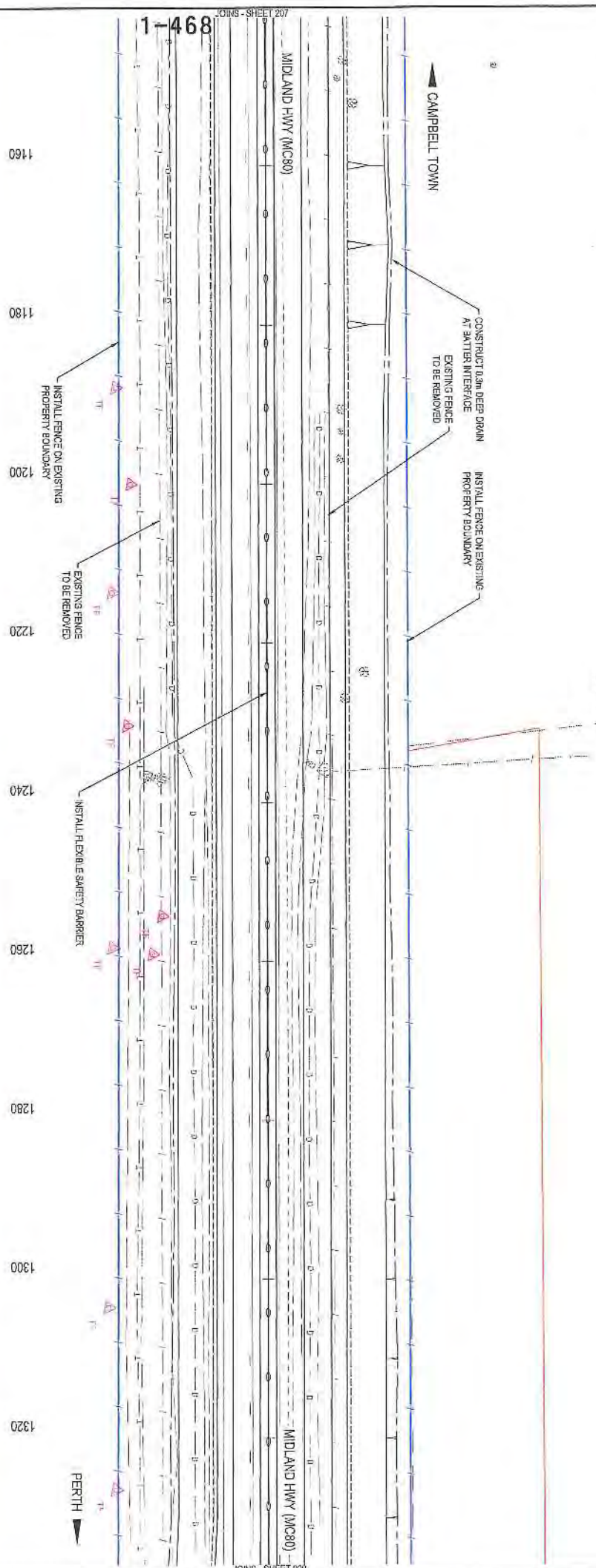
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLOORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWERRANGA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE REMAINED
	PROPOSED PROPERTY FENCELINE

V. L. & L. M. JOHNSON  
 I.D. - 7230848  
 TITLE - 242301

<p>Amendment Description:</p> <p>No. Initial Date</p>		<p>1:500 (A3)</p> <p>SCALE: METRES - 1:500</p>		<p>DESIGNED: L. LALLEN</p> <p>REVIEWED: N. DWYER</p>		<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EMPPING FORESTS TO POWERRANGA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 5 OF 63</p>		<p>CONTRACT NO. 2487</p> <p>DRAWING: HB-5191-0207</p> <p>PRINTED DATE: 17-Nov-16, 3:51 PM</p>		<p>SHEET NO. 207</p> <p>REVISION C</p>	
<p>AS original</p> <p>This sheet may be presented using colour and may be incorporated if applied</p>		<p>Coordinate System: MGA ZONE 55</p> <p>Height Datum: AHD</p>		<p>DESIGNED: L. LALLEN</p> <p>REVIEWED: N. DWYER</p>		<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EMPPING FORESTS TO POWERRANGA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 5 OF 63</p>		<p>CONTRACT NO. 2487</p> <p>DRAWING: HB-5191-0207</p> <p>PRINTED DATE: 17-Nov-16, 3:51 PM</p>		<p>SHEET NO. 207</p> <p>REVISION C</p>	



P. C. & L. OSBORNE  
I.D. - 6308162  
TITLE - 12622/1



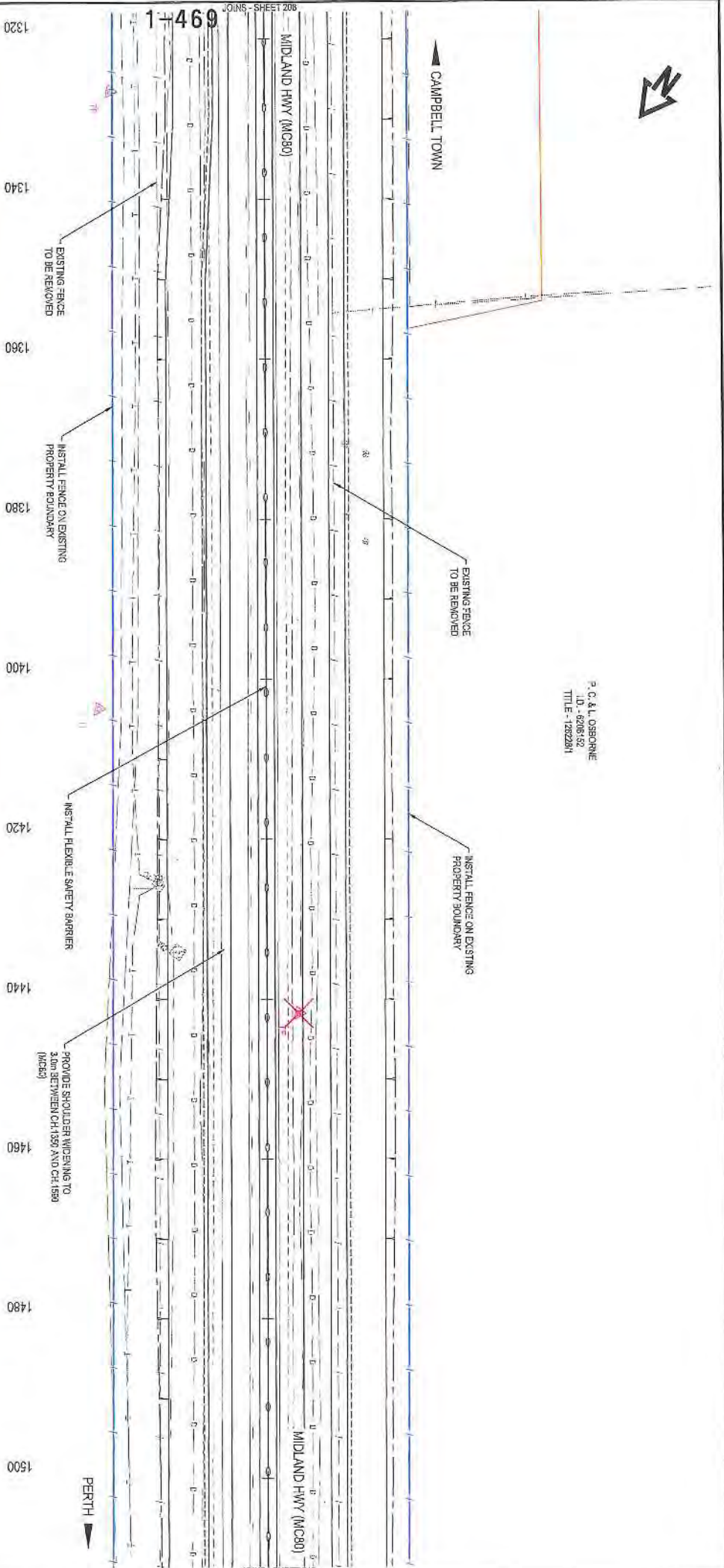
LEGEND	
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	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED F-CORR TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	PONRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE REMAINED
	PROPOSED PROPERTY FENCELINE

V. L. & L. N. JOHNSON  
I.D. - 7333466  
TITLE - 24252/1

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO PONRANNA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 6 OF 63</p>		<p>CONTRACT No.</p> <p>2387</p>	<p>DRAWING</p> <p>-R16191-C208</p>	<p>PRINTED DATE</p> <p>17-Nov-16, 3:51 PM</p>	<p>SHEET No.</p> <p>208</p>
<p>DESIGNED</p> <p>L. ALLEN</p>	<p>REVIEWED</p> <p>N. DWYER</p>	<p>SCALES</p> <p>1:500 (A3)</p> <p>5 10 15 20 25 30</p> <p>5 METRE METRES - 1:1000</p>	<p>REGISTRATION NUMBER</p> <p>A0087.037</p>	<p>REVISION C</p>	
<p>Development Application Issue</p> <p>N. DWYER 01/11/2016</p>		<p>Development Description</p> <p>N. DWYER 13/10/2016</p>			
<p>PRELIMINARY DESIGN</p> <p>N. DWYER 13/10/2016</p>		<p>Arrangement Description</p> <p>N. DWYER 13/10/2016</p>			
<p>A3 original This stage may be prepared using colour and may be incomplete if copied</p>					



P. C. & L. OSBORNE  
 ID - 020832  
 TITLE - 1282261



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HAITAT TREE
	HAITAT TREE TO BE REMOVED
	POWRANNA ARTIPACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDLINE

V. L. & L. M. JOHNSON  
 I.D. - 7930946  
 T.T.F. - 242304

SCALES	
1:500 (A3)	SCALE IN METRES - 1:500
1:1000 (A4)	SCALE IN METRES - 1:1000

Amendment Description	Tracked	Date
Development Application Issue	N Dwyer	01/11/2021
Preliminary Design	N Dwyer	13/10/2016

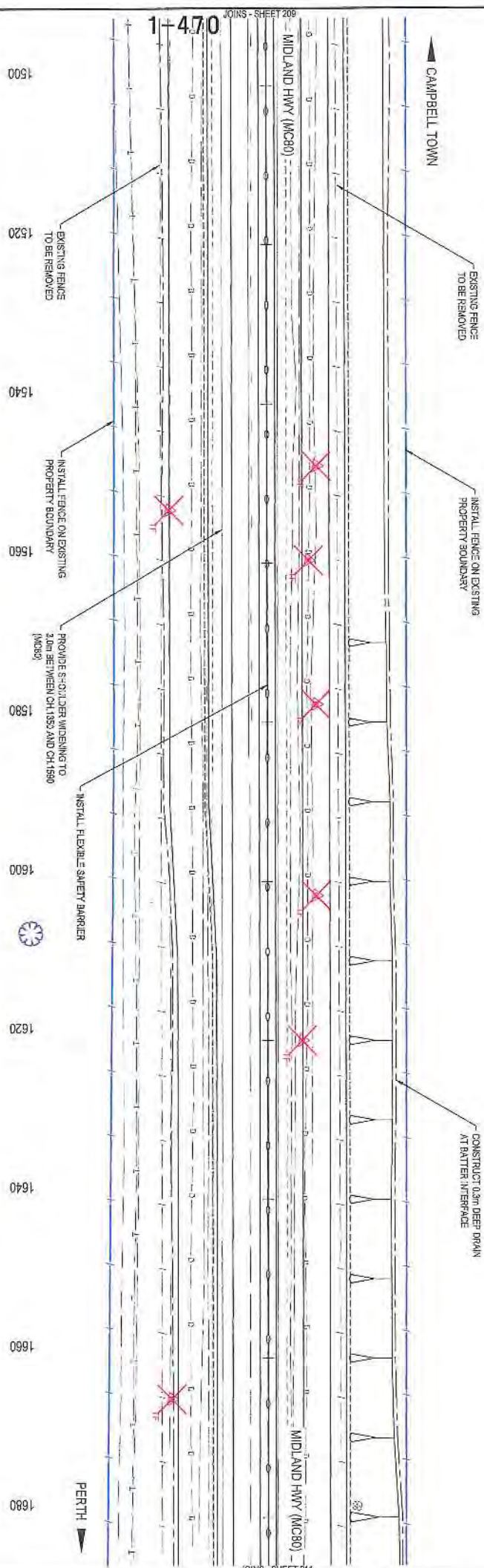
DESIGNED	REVIEWED
L. ALLEN	N. DWYER

Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FOREST TO POWRANNA  
 ROAD IMPROVEMENTS AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 7 OF 83

CONTRACT No. 2987	DRAWING 1818191-C206	PRINTED DATE 17-Nov-16, 3:51 PM	SHEET No. 209
REGISTRATION NUMBER A0087.037		REVISION C	



P. C. & L. OSBORNE  
 LD - 6208162  
 TITLE - 1262284



V. L. & L. M. JOHNSON  
 LD - 733046  
 TITLE - 262301

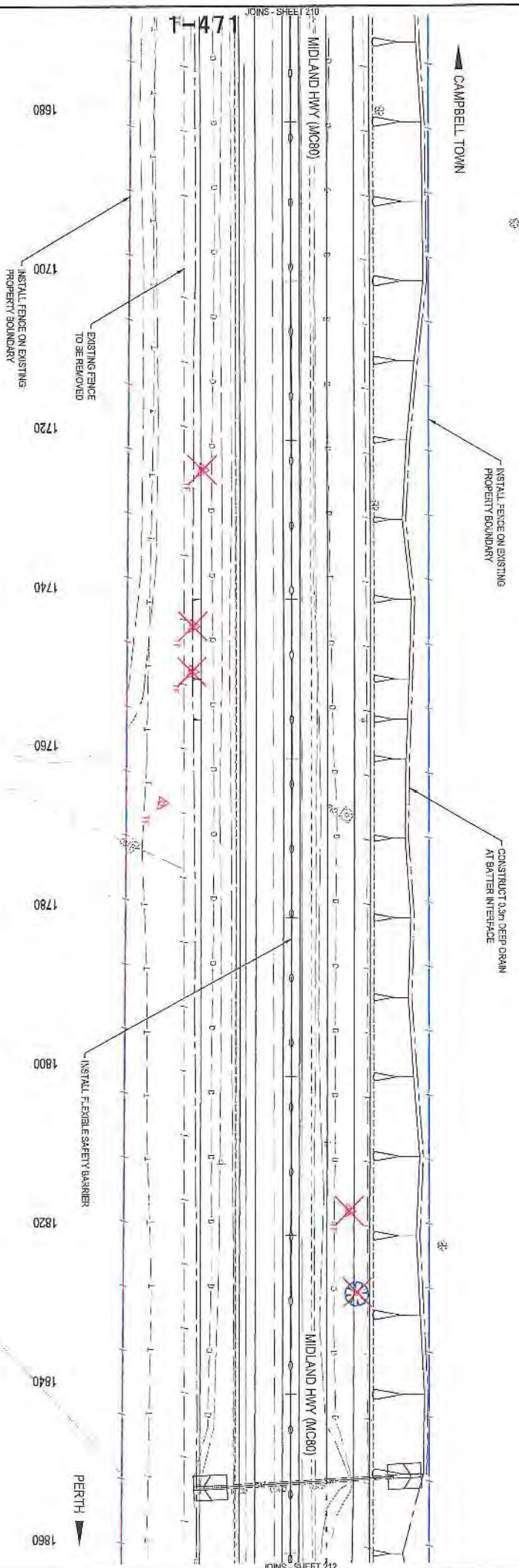
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POVSANVA ANT BACT. TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

<p>Amendment Description</p> <p>No. Initials Date</p>		<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE HEIGHTS: 1:50</p>		<p>DESIGNED</p> <p>REVIEWED</p>		<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>ERPING FOREST TO POVRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 8 OF 63</p>		<p>CONTRACT No.</p> <p>2887</p>		<p>ISSUING</p> <p>H81931-0210</p>		<p>PRINTED DATE</p> <p>17-Nov-15, 3:51 PM</p>		<p>SHEET No.</p> <p>210</p>	
<p>A PRELIMINARY DESIGN</p> <p>NADWYER 13/10/2015</p>		<p>B DEVELOPMENT APPLICATION ISSUE</p> <p>NADWYER 01/11/2016</p>		<p>DESIGNED</p> <p>L. ALLEN</p>		<p>REVIEWED</p> <p>NADWYER</p>		<p>REGISTRATION NUMBER</p> <p>A0087.037</p>		<p>REVISION C</p>					

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P. C. & L. OSBORNE  
 ID - 6205 632  
 TITLE - 1262281



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWARRANK ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

V. L. & L. M. JOHNSON  
 ID - 7532848  
 TITLE - 2422371

No.	Description	Author	Date
B	DEVELOPMENT APPLICATION ISSUE	N. DWYER	01/11/2016
A	PRELIMINARY DESIGN	N. DWYER	12/02/2016

AS origin: This sheet may be prepared using either metric or imperial units as indicated.

SCALES	
1:500 (A3)	SCALE IN METRES - 1:500

DESIGNED: LALLEN  
 REVIEWED: N. DWYER

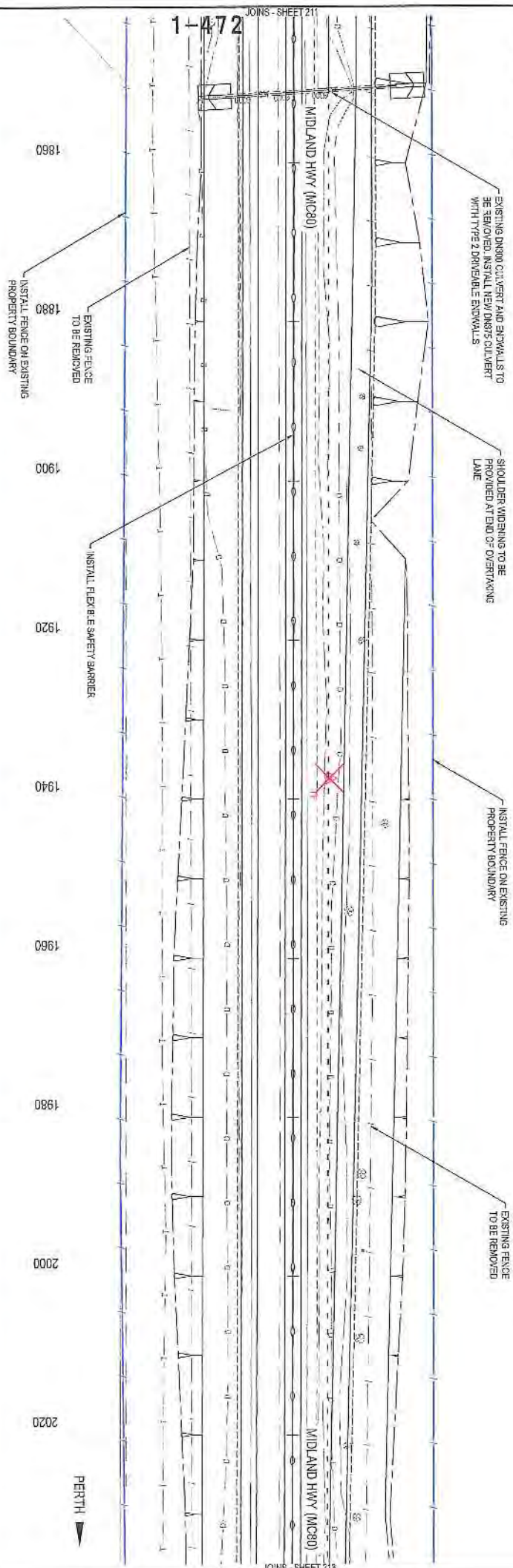
Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FOREST TO POWARRANKA  
 ROAD IMPROVEMENTS AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 9 OF 63

CONTRACT NO. 2067	DRAWING NB1619-0211	PRINTED DATE 17-Nov-16, 3:51 PM	SHEET NO. 211
REGISTRATION NUMBER <b>A0087.037</b>			REVISION C



P. C. & L. OSBORNE  
 LD - 6306152  
 TITLE - 1282281

CAMPBELL TOWN



DOWNLING HOLDINGS  
 (TRUS) PTY LTD.  
 LD - 3172987  
 TITLE - 1853941

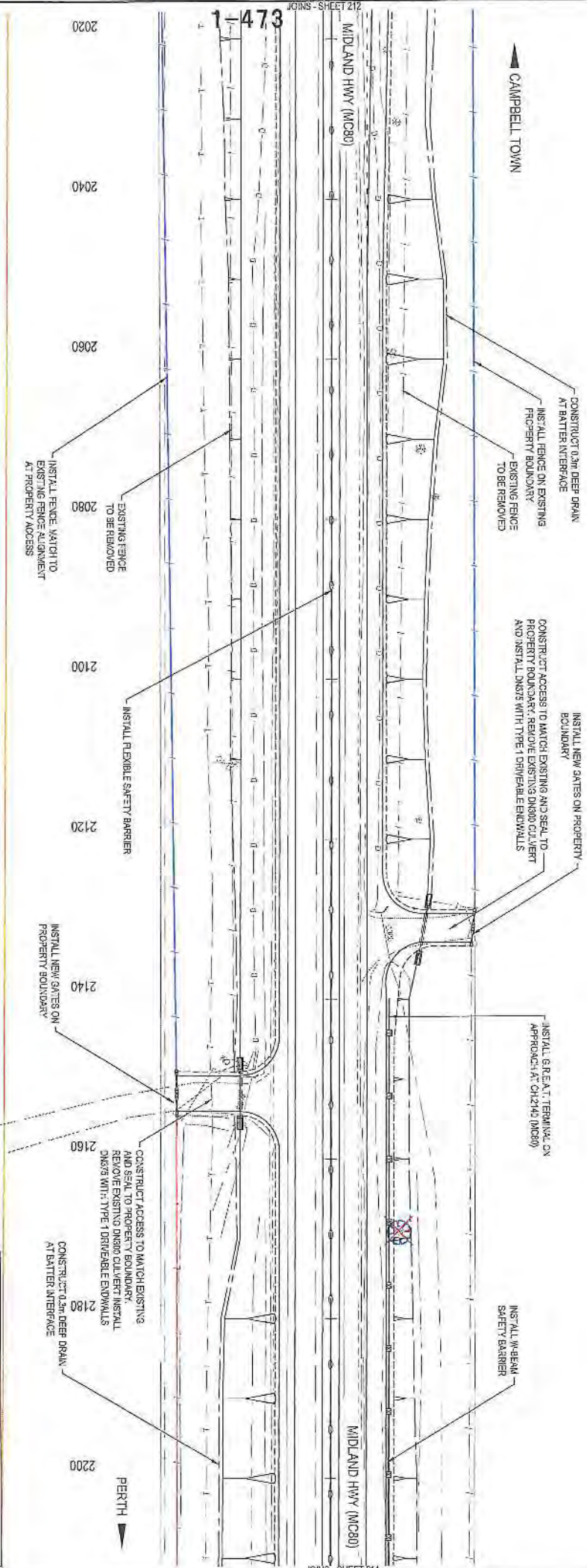
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

<p>Amendment Description</p> <p>No. 9 DEVELOPMENT APPLICATION ISSUE</p> <p>A PRELIMINARY DESIGN</p> <p>Inchits N. DWYER 13/10/2016</p> <p>Date 13/10/2016</p> <p>AS original This sheet may be prepared using colour and may be incomplete if copied</p>		<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE IN METRES: 1:100</p>		<p>DESIGNED L. MALLER</p> <p>REVIEWED M. DWYER</p>		<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>ERPING FOREST TO POWRANNA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 10 OF 63</p>		<p>CONTRACT No. 2387</p> <p>DRAWING No. H41818-C272</p> <p>PRINTED DATE 17-Nov-16 3:51 PM</p>		<p>REGISTRATION NUMBER A0087.037</p> <p>SHEET No. 212</p> <p>REVISION C</p>	
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P. C. & L. OSBORNE  
 I.D. - 6205152  
 TITLE - 12522081



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HAWKAY TREE
	HAWKAY TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDARY

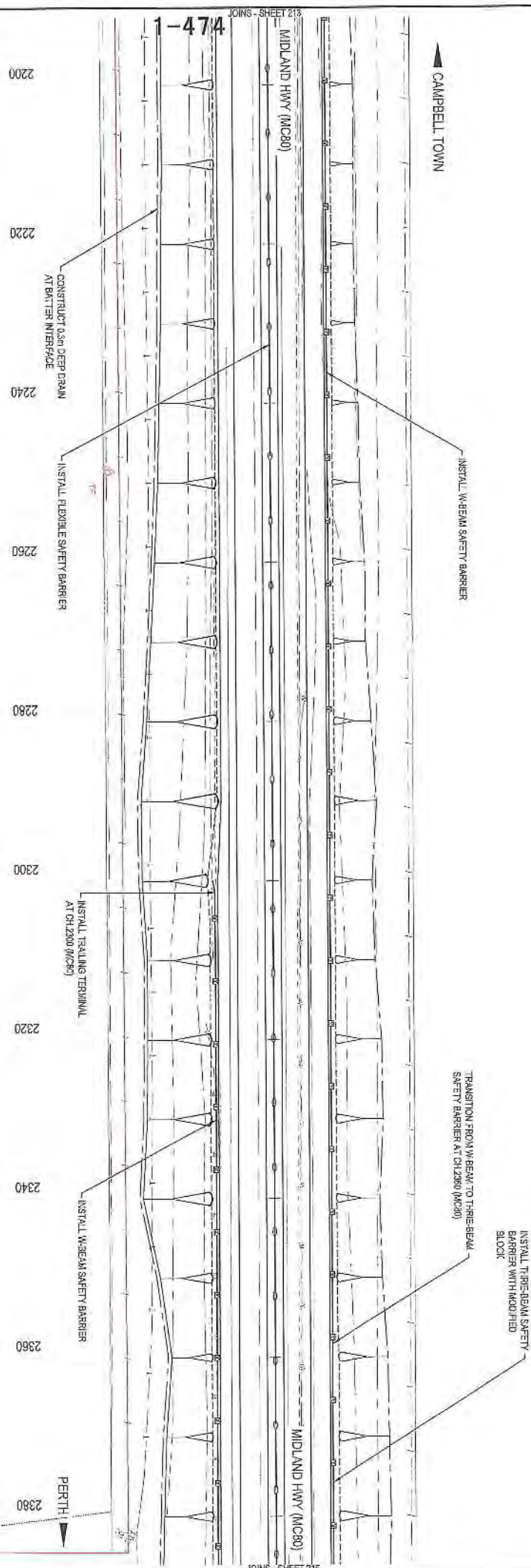
COYLING HOLDINGS  
 (TKAS) PTY. LTD.  
 U.O. - 3772557  
 TITLE - 1638941

<p>Department of State Growth          MIDLAND HIGHWAY (A0087)          ERPPING FORESTS TO POWRANNA          ROAD IMPROVEMENTS AND SAFETY UPGRADES          DEVELOPMENT APPLICATION          GENERAL ARRANGEMENT - DRG 11 OF 83</p>		<p>CONTRACT NO. 2387</p>	<p>DRAWING NO. H8-514-2713</p>	<p>PRINTED DATE 17-Nov-16, 3:51 PM</p>	<p>SHEET NO. 213</p>
<p>DESIGNED LALLEN</p>	<p>REVIEWED NEWYER</p>	<p>SCALE 1:500 (A3) SCALE HEREIN - 1:500</p>	<p>SCALES</p>	<p>AMENDMENT NO. 01/15/2016</p>	<p>DATE 01/15/2016</p>
<p>NO. 1</p>	<p>AMENDMENT DESCRIPTION PRELIMINARY DESIGN</p>	<p>NO. 1</p>	<p>NO. 1</p>	<p>NO. 1</p>	<p>NO. 1</p>
<p>AS ORIGINAL This sheet may be prepared using colour and may be incomplete if scaled</p>					



P. C. & L. OSBORNE  
 LD - 4296152  
 TITLE - 1262281

CAMPBELL TOWN



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREES TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

POWELL HOLDINGS  
 (TAS) PTY LTD.  
 LD - 872681  
 TITLE - 1639341

No.	Amendment Description	Issue	Date
A	PRELIMINARY DESIGN	S. DRYER	13/07/2016
B	DEVELOPMENT APPLICATION ISSUE	S. DRYER	01/11/2016

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SCALES	1:500 (A3)
Coordinate System	MGA ZONE 55
Height Datum	A.M.D.

DESIGNED:

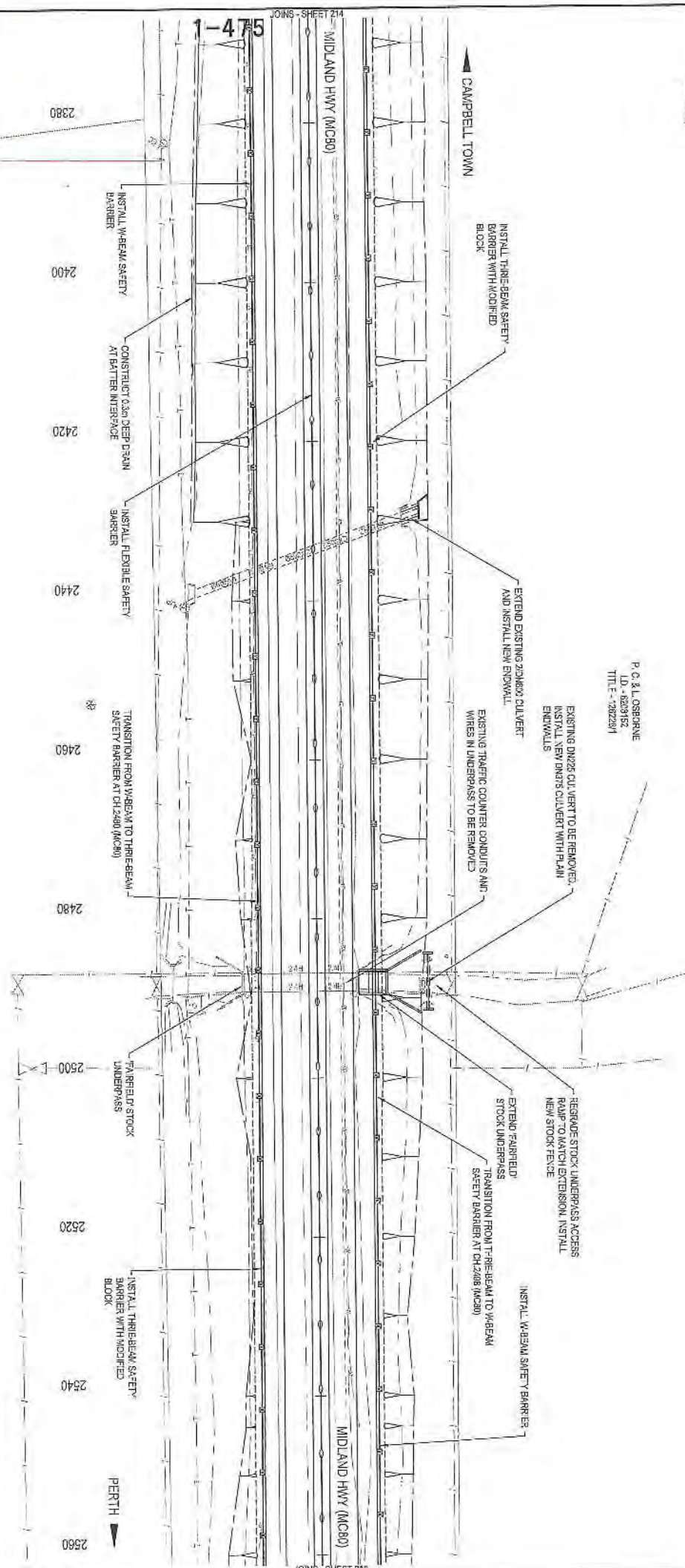
REVIEWED:

Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FORESTS TO POWANNA  
 ROAD IMPROVEMENTS AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 12 OF 63

CONTRACT No.	2387	DRAWING	1816191-0214	PRINTED DATE	17 Nov 16, 5:51 PM	SHEET No.	214
REGISTRATION NUMBER				A0087.037		REVISION C	



P. C. & L. OSBORNE  
 LD - 6209152  
 TITLE - 202281



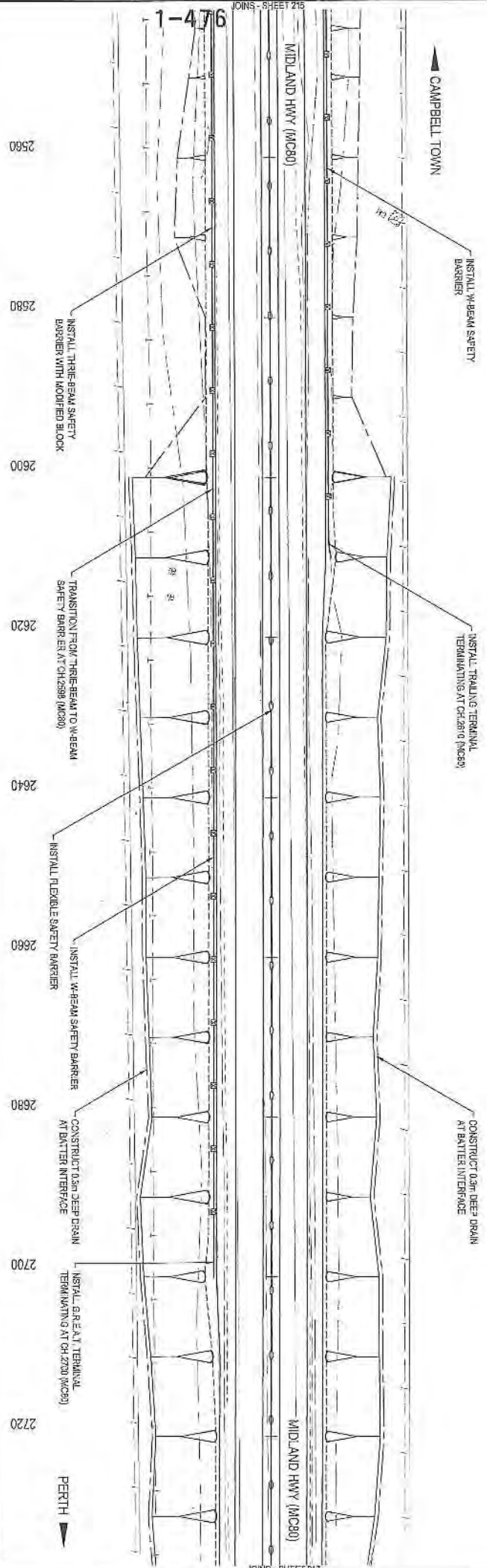
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

P. C. & L. OSBORNE  
 LD - 6209152  
 TITLE - 122281

<b>Department of State Growth</b> MIDLAND HIGHWAY (A0087) LEPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 13 OF 63		CONTRACT No. 2387	DRAWING H810191-0215	PRINTED DATE 17-10-2016 3:52 PM	SHEET No. <b>215</b>
SCALES 1:500 (A3) SCALE IN METERS - 1:500	DESIGNED LALLEN	REVIEWED N.D.WYER	DEVELOPMENT APPLICATION ISSUE A PRELIMINARY DESIGN N.D.WYER 13/09/2016	No. Amendments Description 03 original This sheet may be prepared using colour and may be incomplete if copied	COORDINATE SYSTEM MGA ZONE 55



P. C. & L. OSBORNE  
 I.D. - 623162  
 TITLE - 1262281



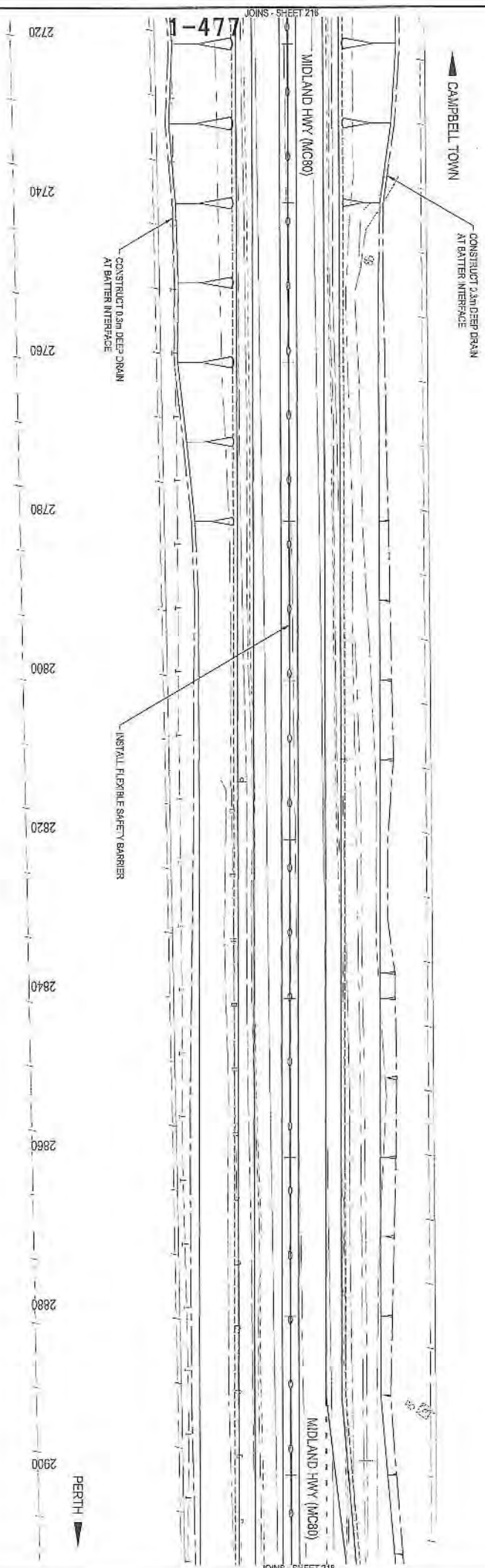
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HAZARD TREE
	HAZARD TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY ENCLOSURE

P. C. & L. OSBORNE  
 I.D. - 623162  
 TITLE - 1262281

SCALES 1:500 (A3) 5 10 15 20 25 30 METRES - 1:100		DESIGNED: L. ALLEN REVIEWED: M. DWYER	Department of State Growth MIDLAND HIGHWAY (A0087) EPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 14 OF 83	CONTRACT No. 2087	DRAWING 1916191-5215	PRINTED DATE 17-Nov-16, 5:02 PM	SHEET No. <b>216</b>
No. 3 DEVELOPMENT APPLICATION ISSUE N. DWYER 01/11/2016	No. A PRELIMINARY DESIGN N. DWYER 19/10/2016	No. A3 Original This sheet may be prepared using colour and may be incomplete if copied	Co-ordinate System: MGA ZONE 55 Height Datum: A.M.S.L.	REGISTERED NUMBER <b>A0087.037</b>	REVISION C		



P. C. AL OSGORNE  
 ID - 2006152  
 TITLE - 128228/1



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWARANKA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCE, WE

P. C. AL OSGORNE  
 ID - 2006152  
 TITLE - 128228/1

SCALES 1:500 (A3) 	
DESIGNED L. ALLEN N. Dwyer	REVIEWED N. Dwyer
Department of State Growth MIDLAND HIGHWAY (A0087) EPING FOREST TO POWARANKA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 15 OF 63	
CONTRACT NO. 2967	DRAWING L18181-0217
PRINTED DATE 17-Nov-16, 5:52 PM	SHEET NO. 217
REGISTRATION NUMBER A0087.037	REVISION C
Amendment Description: Initials Date A3 original This sheet may be amended using colour and may be inconsistent if applied	

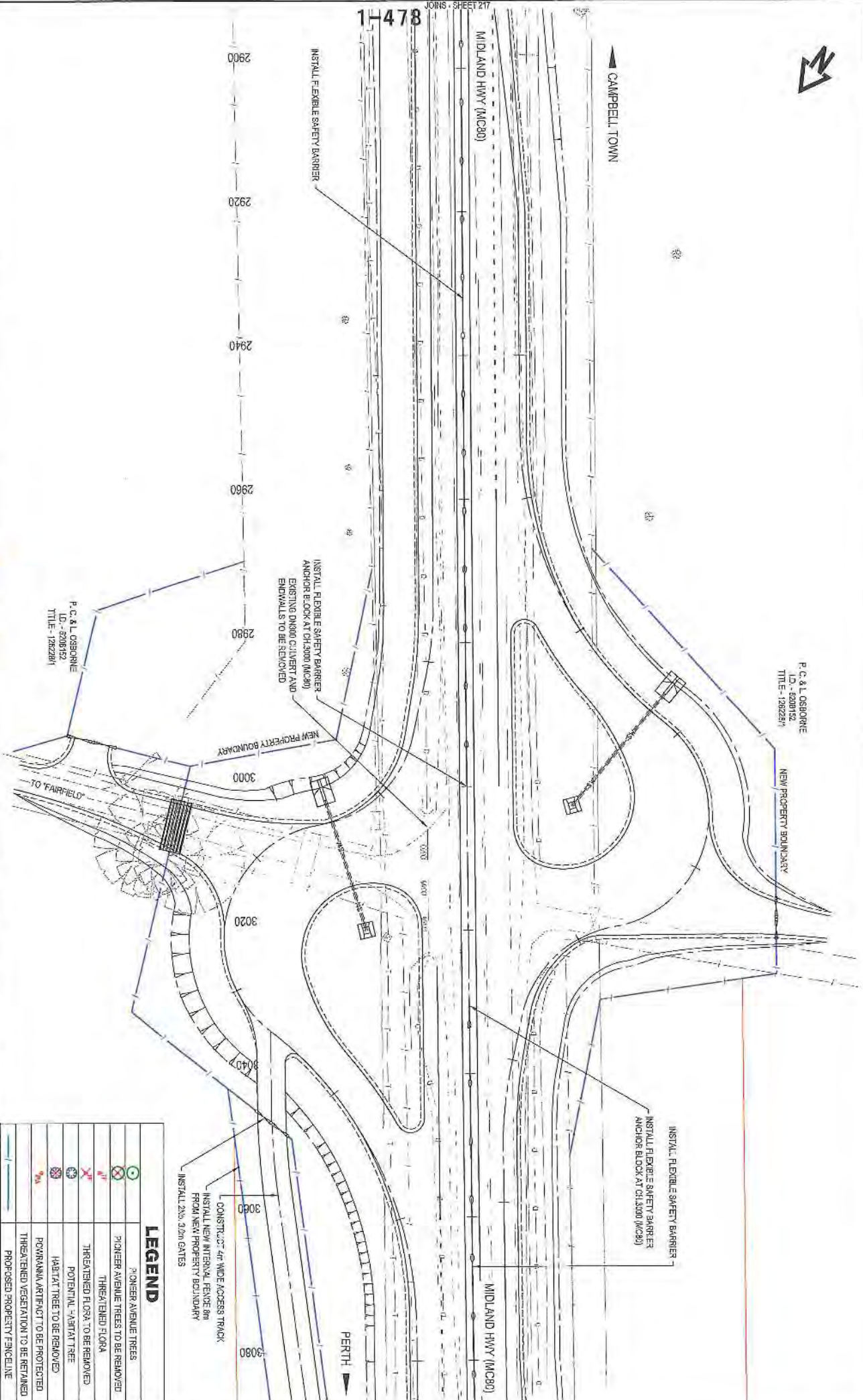


CAMPBELL TOWN

MIDLAND HWY (M030)

1-478

2900 2920 2940 2960 2980 3000 3020 3040 3060 3080



P. C. & L. OSBORNE  
 L.D. - 6208152  
 T.T.E. - 1262287

P. C. & L. OSBORNE  
 L.D. - 6208152  
 T.T.E. - 1262287

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POVRANKA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE REMAINED
	PROPOSED PROPERTY FENCELINE

SCALES		1:500 (A3)	
DESIGNED		L. ALLEN	
REVIEWED		M. DWYER	
CONTRACT No.		2887	
DRAWINGS		HAB/16-C-273	
PRINTED DATE		17-Nov-16, 3:52 PM	
REGISTRATION NUMBER		A0087.037	
SHEET No.		218	
REVISION		C	

Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FOREST TO POVRANKA  
 ROAD IMPROVEMENTS AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 15 OF 83

Amendment Description  
 No. A  
 PRELIMINARY DESIGN  
 N. DWYER  
 13/10/2016  
 Initials  
 Date

Coordinate System: WAZ ZONE 55  
 Height Datum: A.M.D.

This sheet may be prepared using colour and may be incomplete if copied



P. C. & L. OSBORNE  
 I.D. - 8208162  
 TITLE - 12022814

CAMPBELL TOWN

PROVIDE SHOULDER WIDENING TO 3.0m  
 BETWEEN CH 3100 AND CH 3180 (MC80)

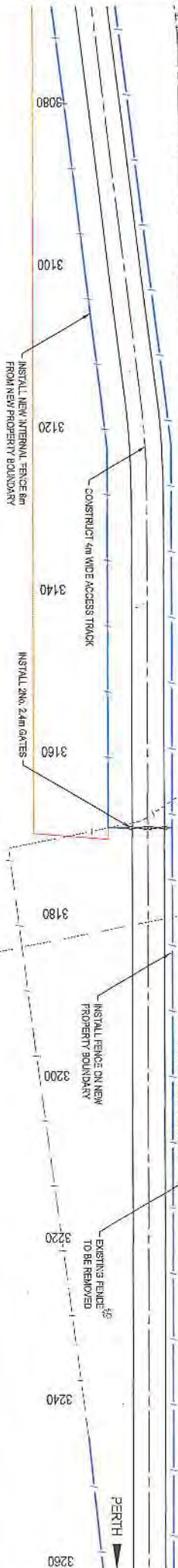
INSTALL FLEXIBLE SAFETY BARRIER

MIDLAND HWY (MC80)

MIDLAND HWY (MC80)

JOINS SHEET 218

1-476



P. C. & L. OSBORNE  
 I.D. - 8208162  
 TITLE - 12022814

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWERRAMA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE REMOVED
	PROPOSED PROPERTY BOUNDARY

<p>SCALES</p> <p>1:500 (A3)</p> <p>50m</p> <p>SCALE IN METRES - 1:500</p>		<p>DESIGNED</p> <p>L. ALLEN</p>	<p>CONTRACT No.</p> <p>2287</p>	<p>DRAWING</p> <p>HR16131-C219</p>	<p>PRINTED DATE</p> <p>17-Nov-15, 2:58 PM</p>	<p>SHEET No.</p> <p>219</p>
<p>A3 original</p> <p>This sheet may be prepared using colour and may be incompatible if copied</p>	<p>Amendment Description</p> <p>Initials</p> <p>Date</p>	<p>REVIEWED</p> <p>N. DWYER</p>	<p>REGISTRATION NUMBER</p> <p>A0087.037</p>	<p>REVISION</p> <p>C</p>		
<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO POWERRAMA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 17 OF 63</p>						



F. C. & L. OSBORNE  
 I.D. - 6208182  
 TITLE - 1282281

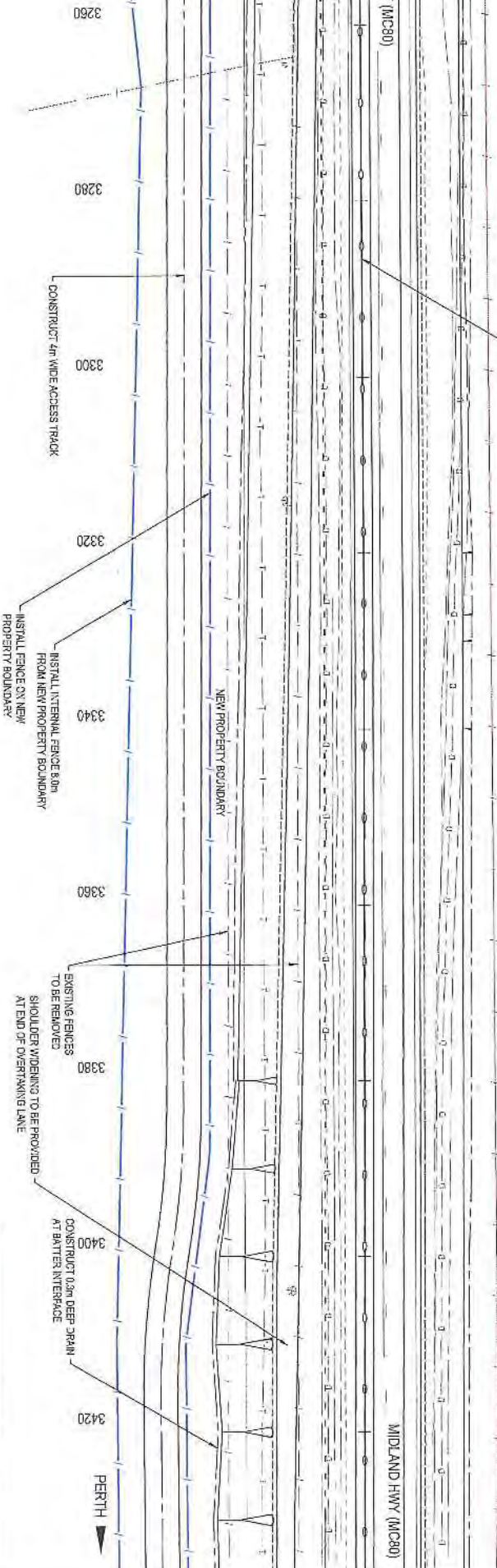
CAMPBELL TOWN

INSTALL FLEXIBLE SAFETY BARRIER

MIDLAND HWY (MC90)

MIDLAND HWY (MC90)

1480



F. C. & L. OSBORNE  
 I.D. - 6208182  
 TITLE - 1282281

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREES TO BE REMOVED
	PORNANA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

No.	Revision/Description	Date
C	DEVELOPMENT APPLICATION ISSUE	04/11/2016
B	DEVELOPMENT APPLICATION ISSUE	07/11/2016
A	PRELIMINARY DESIGN	13/10/2016

SCALES	1:500 (A3)
DESIGNED	L. ALLEN
REVIEWED	N. DWYER

Department of State Growth
MIDLAND HIGHWAY (A0087)
ERPPING FOREST TO PORNANA
ROAD IMPROVEMENTS AND SAFETY UPGRADES
DEVELOPMENT APPLICATION
GENERAL ARRANGEMENT - DRG 18 OF 63

CONTRACT No.	DRAWING	PRINTED DATE
2887	H16181-022X	17-Nov-16, 3:58 PM

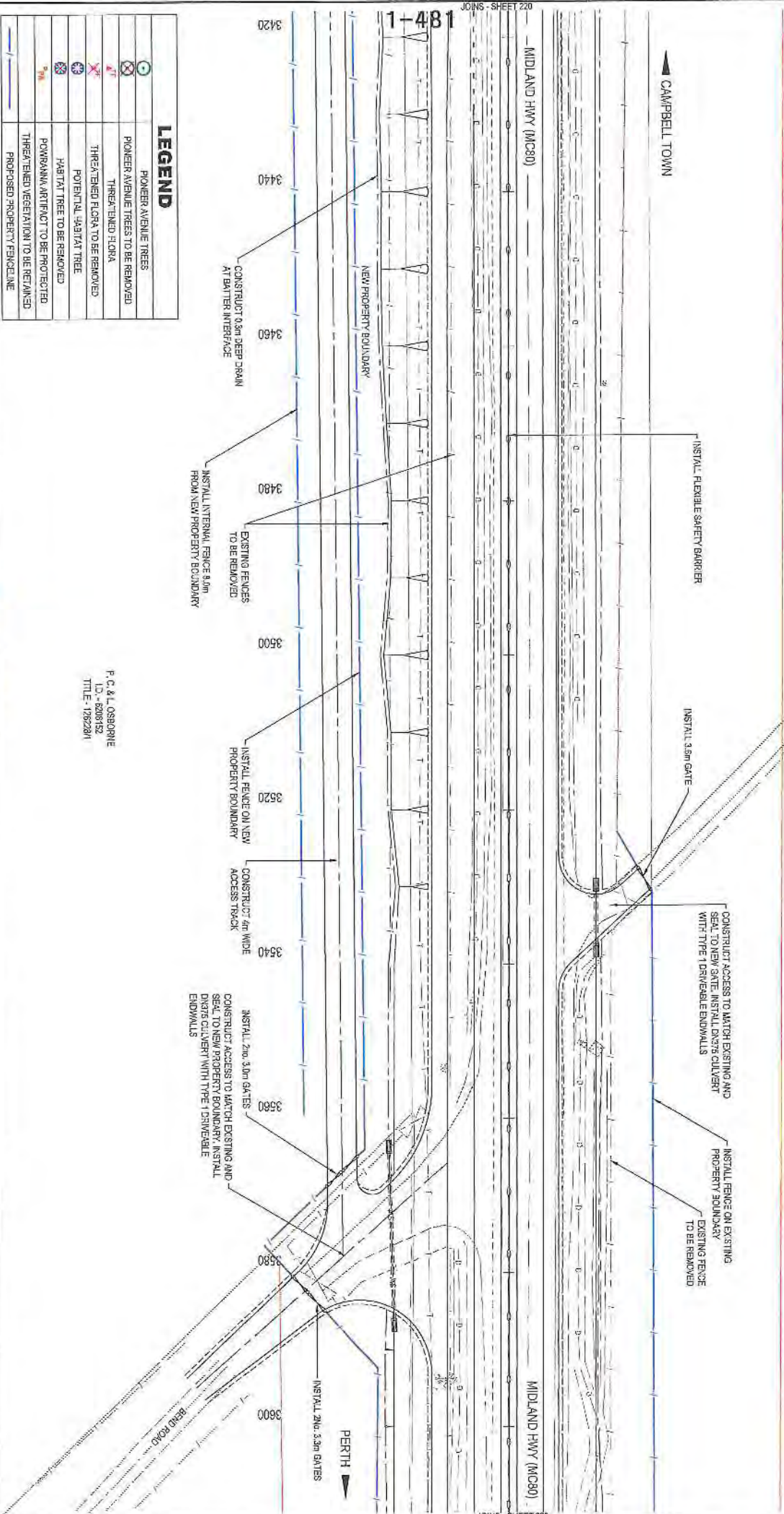
REGISTRATION NUMBER	SHEET No.
A0087.037	220

REVISION C





A. M. R. GUNN  
 I.D. - 63987/4  
 TITLE - 19887/1



**LEGEND**

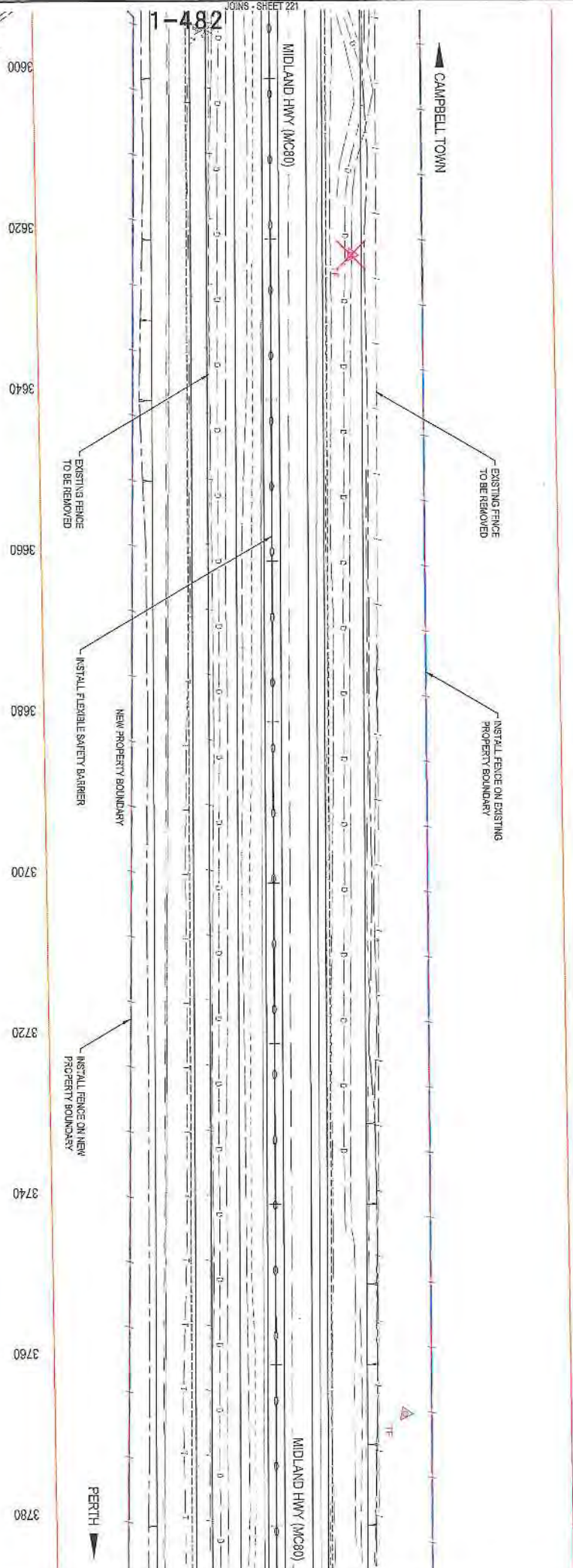
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANKA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

F. C. & L. OSBORNE  
 I.D. - 62081/2  
 TITLE - 12822/1

<p>As original This sheet may be prepared using colour and may be incorporated if applied</p>		<p>Co-ordinate System: MGA 2004 66</p>		<p>Height Datum: A.M.D.</p>	
<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE BAR: 0 5 10 M</p>		<p>DESIGNED: LALLEN</p> <p>REVIEWED: NADWYER</p>		<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO POWRANKA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 19 OF 83</p>	
<p>CONTRACT NO. 2387</p>		<p>DRAWING: HB-5191-C221</p>		<p>PRINTED DATE: 17-Nov-16, 3:52 PM</p>	
<p>REGISTRATION NUMBER: A0087.037</p>		<p>SHEET NO. 221</p>		<p>REVISION: C</p>	



A.M.R. QUINN  
 ID - 638674  
 TITLE - 1988714



No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be assembled if 29 of		

SCALES	
1:500 (A3)	SCALE IN FEET - 150'

DESIGNED: CALLEN  
 REVIEWED: N.D.WYER

Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FOREST TO POWBANKNA  
 ROAD IMPROVEMENTS AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 20 OF 83

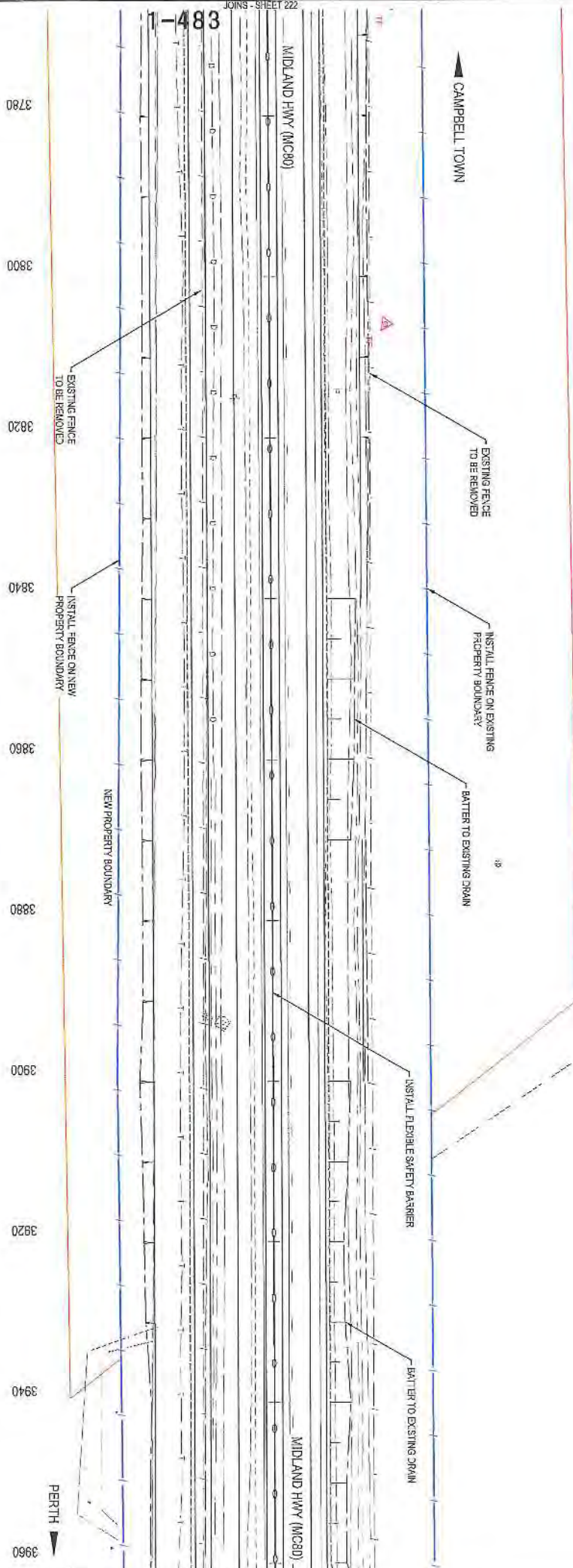
CONTRACT No.	2387	DRAWING	H91610-2222	PRINTED DATE	17-Nov-16, 3:58 PM	SHEET No.	222
REGISTRATION NUMBER				A0087.037		REVISION C	

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL YABBIT TREE
	POTENTIAL YABBIT TREE TO BE REMOVED
	POWBANKNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCE LINE

A.M.R. QUINN  
 ID - 638674  
 TITLE - 1988714



A. M. R. GUNN  
I.D. - 039974  
TITLE - 13837/1



No.	Amendment Description	Initials	Date
C	DEVELOPMENT APPLICATION ISSUE	N.D.WYER	20/11/2016
B	DEVELOPMENT APPLICATION ISSUE	N.D.WYER	21/11/2016
A	PRELIMINARY DESIGN	N.D.WYER	13/10/2016

As original	This sheet may be prepared using colour and may be incorporated if required
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DESIGNED	L. ALLER
REVIEWED	N.D.WYER

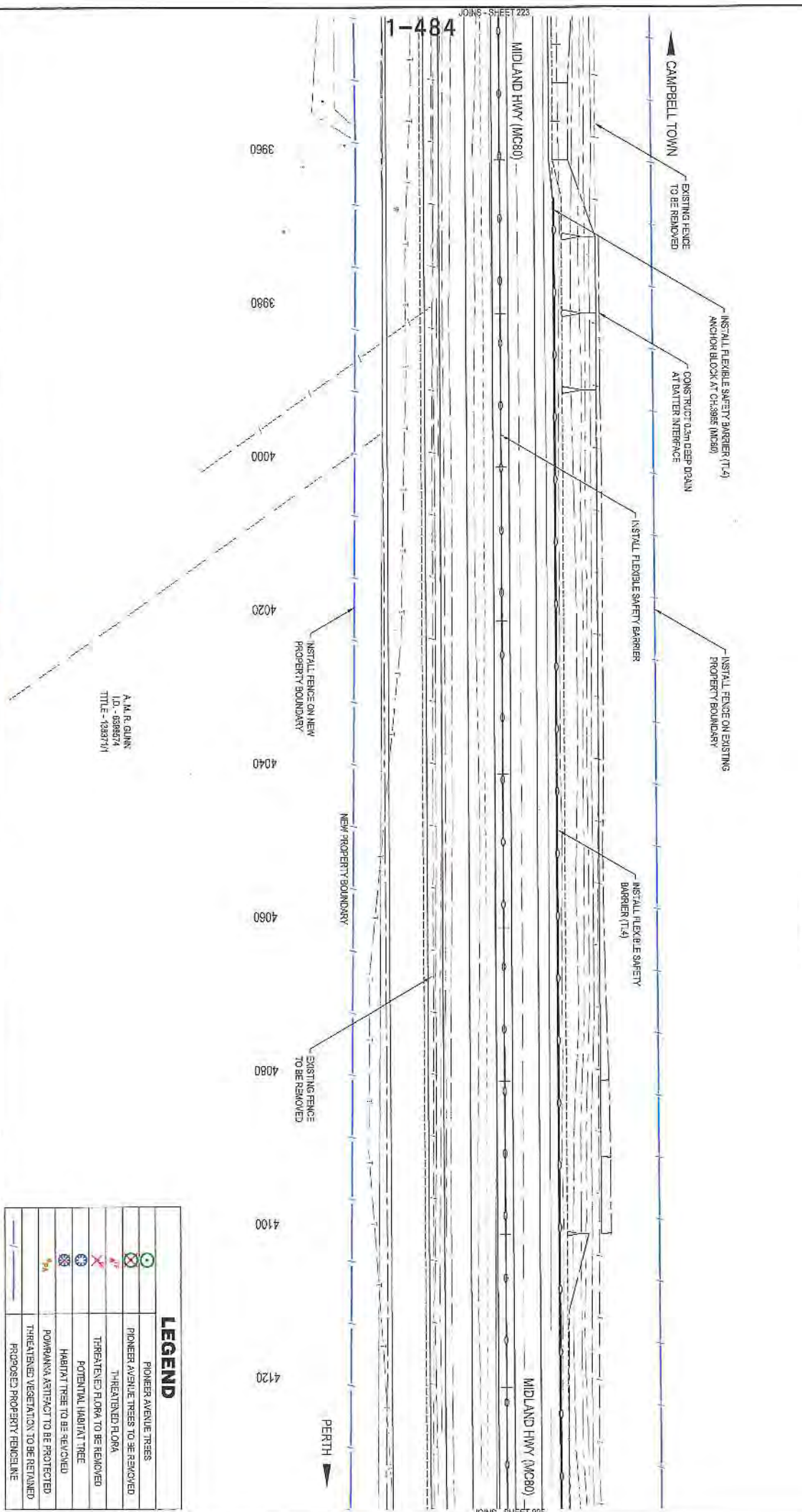
Department of State Growth  
MIDLAND HIGHWAY (A0087)  
EPPING FOREST TO POWRANNA  
ROAD IMPROVEMENTS AND SAFETY UPGRADES  
DEVELOPMENT APPLICATION  
GENERAL ARRANGEMENT - DRG 21 OF 83

CONTRACT No.	2487	DRAWING	H16161-0223	PRINTED DATE	17-Nov-16, 3:53 PM	SHEET No.	223
REGISTRATION NUMBER	A0087.037	REVISION	C				

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE



A. W. R. GUNN  
I.D. - 0396574  
TITLE - 13837/11



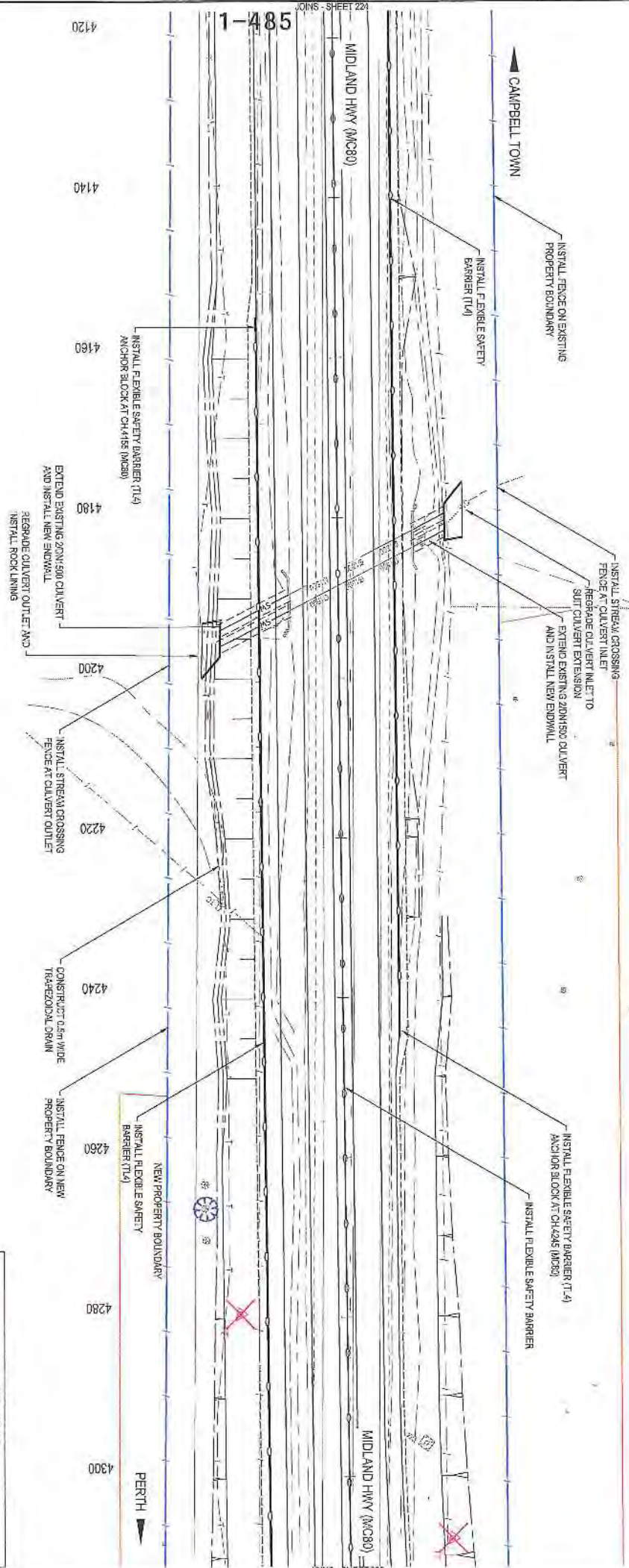
A. W. R. GUNN  
I.D. - 0396574  
TITLE - 13837/11

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDARY

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 22 OF 63</p>		<p>CONTRACT NO.</p> <p>2287</p>	<p>DRAWING</p> <p>H615151-0224</p>	<p>PRINTED DATE</p> <p>17-Nov-16, 3:50 PM</p>	<p>SHEET NO.</p> <p>224</p>
<p>DESIGNED</p> <p>L. ALLEN</p>	<p>REVIEWED</p> <p>M. DWYER</p>	<p>REGISTRATION NUMBER</p> <p>A0087.037</p>			
<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE RIFES - 1:100</p>		<p>REVISION C</p>			
<p>Amendment Description</p> <p>Infile</p> <p>Date</p>		<p>AD original This sheet may be prepared using eplan and may be incompatible if copied</p>			



A. M. R. GUNN  
 I.D. - 6386574  
 TITLE - 10837/11



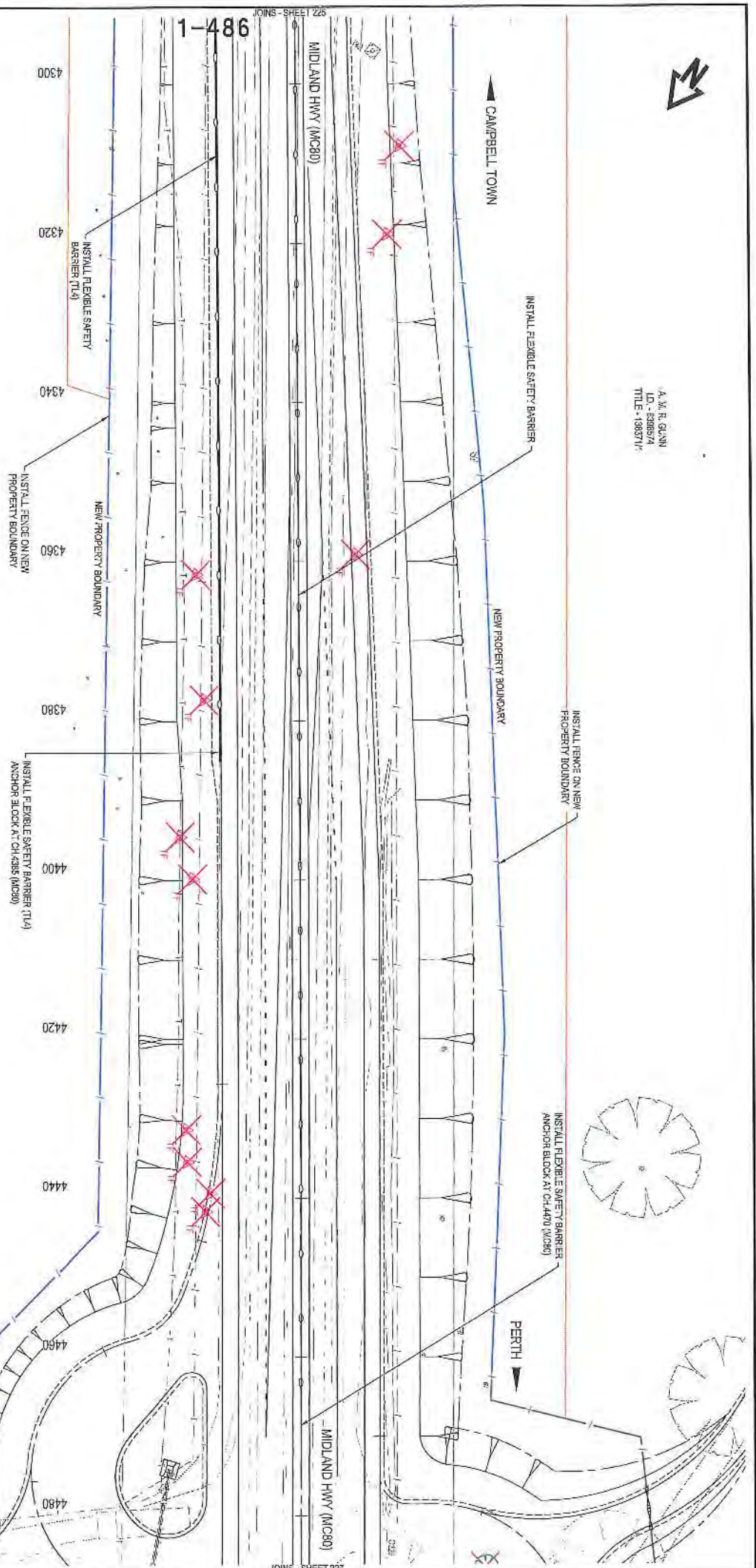
A. M. R. GUNN  
 I.D. - 6386574  
 TITLE - 10837/11

LEGEND	
	PONDER AVENUE TREES
	PONDER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWARRANA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO POWARRANA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 23 OF 03</p>		<p>CONTRACT NO. 2887</p> <p>DRAWING NO. H8-0191-0225</p> <p>PRINTED DATE 17 Nov 18, 3:58 PM</p>	<p>SHEET NO. 225</p>
<p>DESIGNED L. ALLEN</p> <p>REVIEWED N. DWYER</p>	<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE HEREIN: 1:50</p>	<p>AMENDMENT DESCRIPTION</p> <p>No. 0 Initial Date</p>	<p>REVISION C</p>



A. M. R. GLINN  
I.D. - 698674  
TITLE - 1983717



LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANK ARTIFACT TO BE RETAINED
	THREATENED VEGETATION TO BE REMOVED
	PROPOSED PROPERTY FENCE LINE

A. M. R. GLINN  
I.D. - 698674  
TITLE - 1983717

No.	Amendment Description	Inhibits	Date
C	DEVELOPMENT APPLICATION ISSUE	NADWYER	04/12/07
B	DEVELOPMENT APPLICATION ISSUE	NADWYER	07/17/07
A	PRELIMINARY DESIGN	NADWYER	07/02/07

SCALES

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1:2000 (A5)

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DESIGNED: L. ALLEN

REVIEWED: NADWYER

Department of State Growth

MIDLAND HIGHWAY (A0087)

ERRING FOREST TO POWRANKA

ROAD IMPROVEMENTS AND SAFETY UPGRADES

DEVELOPMENT APPLICATION

GENERAL ARRANGEMENT - DRG 24 OF 63

CONTRACT No. 2887

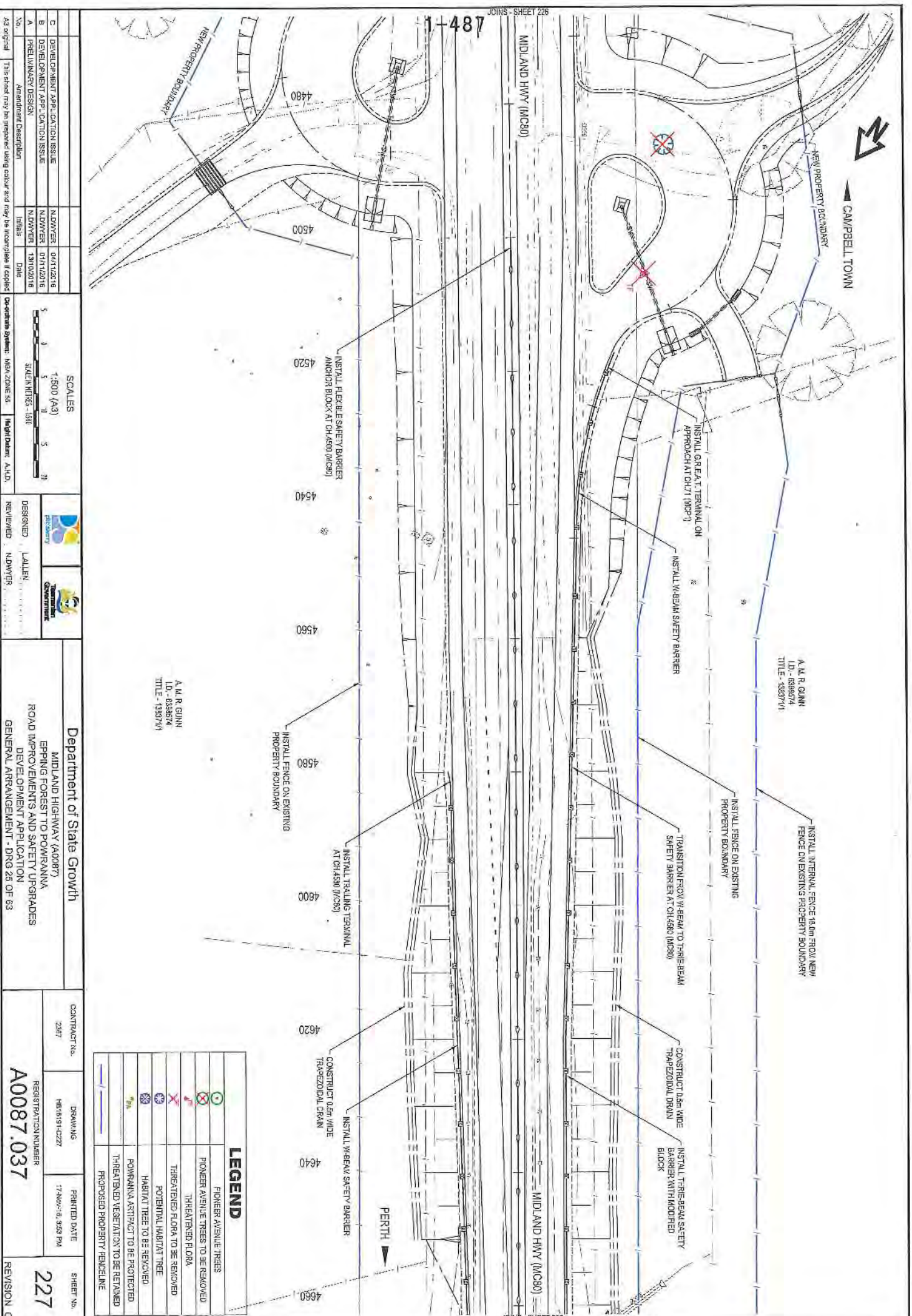
DRAWING H1818V-4226

PRINTED DATE 17-Nov-16, 3:58 PM

REGISTRATION NUMBER A0087.037

SHEET No. 226

REVISION C



CAMPBELL TOWN

A. M. R. GUNN  
 I.D. - 0399574  
 TITLE - 1937741

INSTALL INTERNAL FENCE 18.0m FROM NEW FENCE ON EXISTING PROPERTY BOUNDARY

INSTALL FENCE ON EXISTING PROPERTY BOUNDARY

TRANSITION FROM W-BEAM TO T-BEAM SAFETY BARRIER AT CH 4580 (MC80)

INSTALL T-BEAM SAFETY BARRIER WITH MODIFIED BLOCK

CONSTRUCT 0.6m WIDE TRAPEZOIDAL DRAIN

INSTALL W-BEAM SAFETY BARRIER

INSTALL GREAT TERMINAL ON APPROACH AT CH 471 (MC80)

MIDLAND HWY (MC80)

MIDLAND HWY (MC80)

487

PERTH

INSTALL FLEXIBLE SAFETY BARRIER ANCHOR BLOCK AT CH 4500 (MC80)

INSTALL FENCE ON EXISTING PROPERTY BOUNDARY

INSTALL TRAILING TERMINAL AT CH 4580 (MC80)

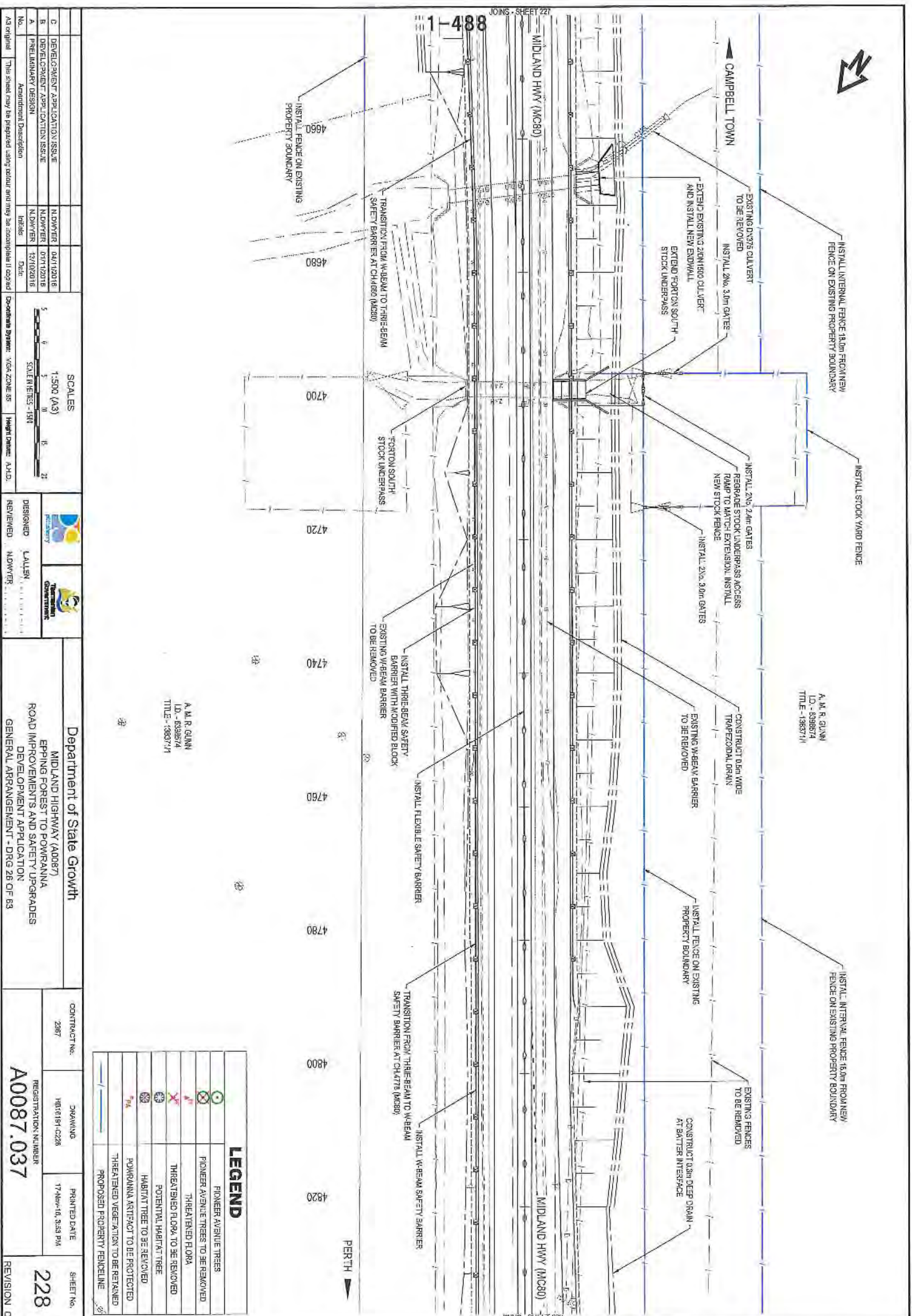
CONSTRUCT 0.6m WIDE TRAPEZOIDAL DRAIN

INSTALL W-BEAM SAFETY BARRIER

A. M. R. GUNN  
 I.D. - 0399574  
 TITLE - 1937741

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWANNANA ARTISTRACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDLINE

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A00087)</p> <p>EPPING FORESTS TO POWANNANA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 28 OF 63</p>		<p>CONTRACT NO. 2987</p> <p>DRAWING NO. H618191-02287</p> <p>PRINTED DATE 17-Nov-18, 9:59 PM</p> <p>SHEET NO. 227</p>
<p>DESIGNED: LALLEN</p> <p>REVIEWED: NADWYER</p>	<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE HEIGHTS - 19M</p>	<p>REGISTRATION NUMBER A0087.037</p> <p>REVISION C</p>



A. M. R. GUNN  
 LD - 639874  
 TITLE - 19877/1

A. M. R. GUNN  
 LD - 639874  
 TITLE - 19877/1

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWARRANNA ATTIKACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PRIORITY FENCELINE

Department of State Growth MIDLAND HIGHWAY (A0087) EPPING FOREST TO POWARRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 26 OF 63		CONTRACT NO. 2087	DRAWING H616191-0226	PRINTED DATE 17-Nov-16, 3:58 PM	SHEET NO. <b>228</b>
A3 original This sheet may be prepared using eDraw and may be incomplete if copied	No. 1 Description AMENDMENT DESIGN Initials Date	No. 2 Description DEVELOPMENT APPLICATION ISSUE Initials Date	No. 3 Description DEVELOPMENT APPLICATION ISSUE Initials Date	No. 4 Description DEVELOPMENT APPLICATION ISSUE Initials Date	No. 5 Description DEVELOPMENT APPLICATION ISSUE Initials Date

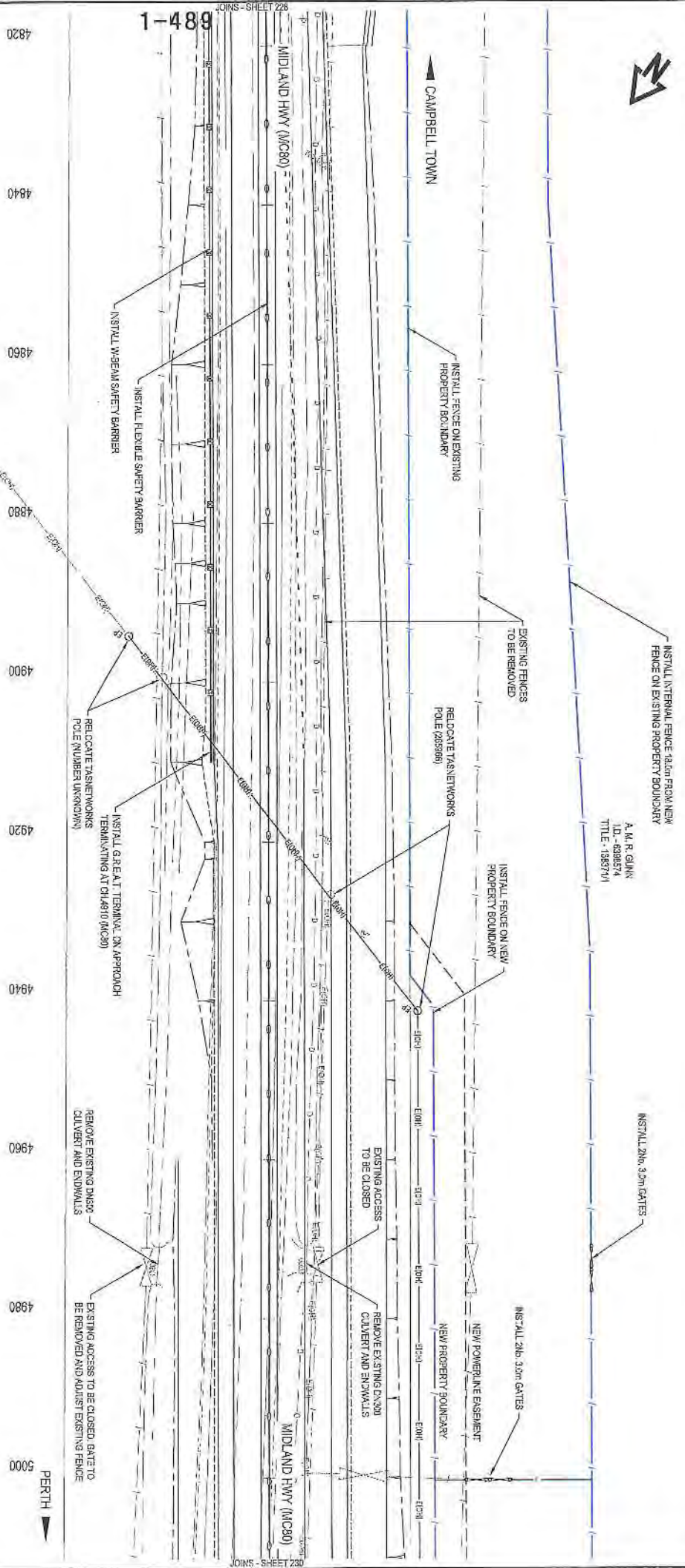




A. M. R. GUNN  
I.D. - 6386574  
TITLE - 1983711

INSTALL 2m, 3m GATES

INSTALL 2m, 10m GATES



1-488  
SHEET 222

No.	Amendment Description	Initials	Date
C	DEVELOPMENT APPLICATION ISSUE	N.D.WYER	04/11/2016
B	DEVELOPMENT APPLICATION ISSUE	N.D.WYER	01/11/2016
A	PRELIMINARY DESIGN	N.D.WYER	18/02/2016

**SCALES**

1:500 (A3)

SCALE BAR: 0 1 2 3 4 5 6 7 8 9 10 METRES

Coordinate System: MGA 2011 UTM 58

Map Projection: A U.T.M.

DESIGNED: L. ALLISTON

REVIEWED: N.D.WYER

Department of State Growth

MIDLAND HIGHWAY (A0087)

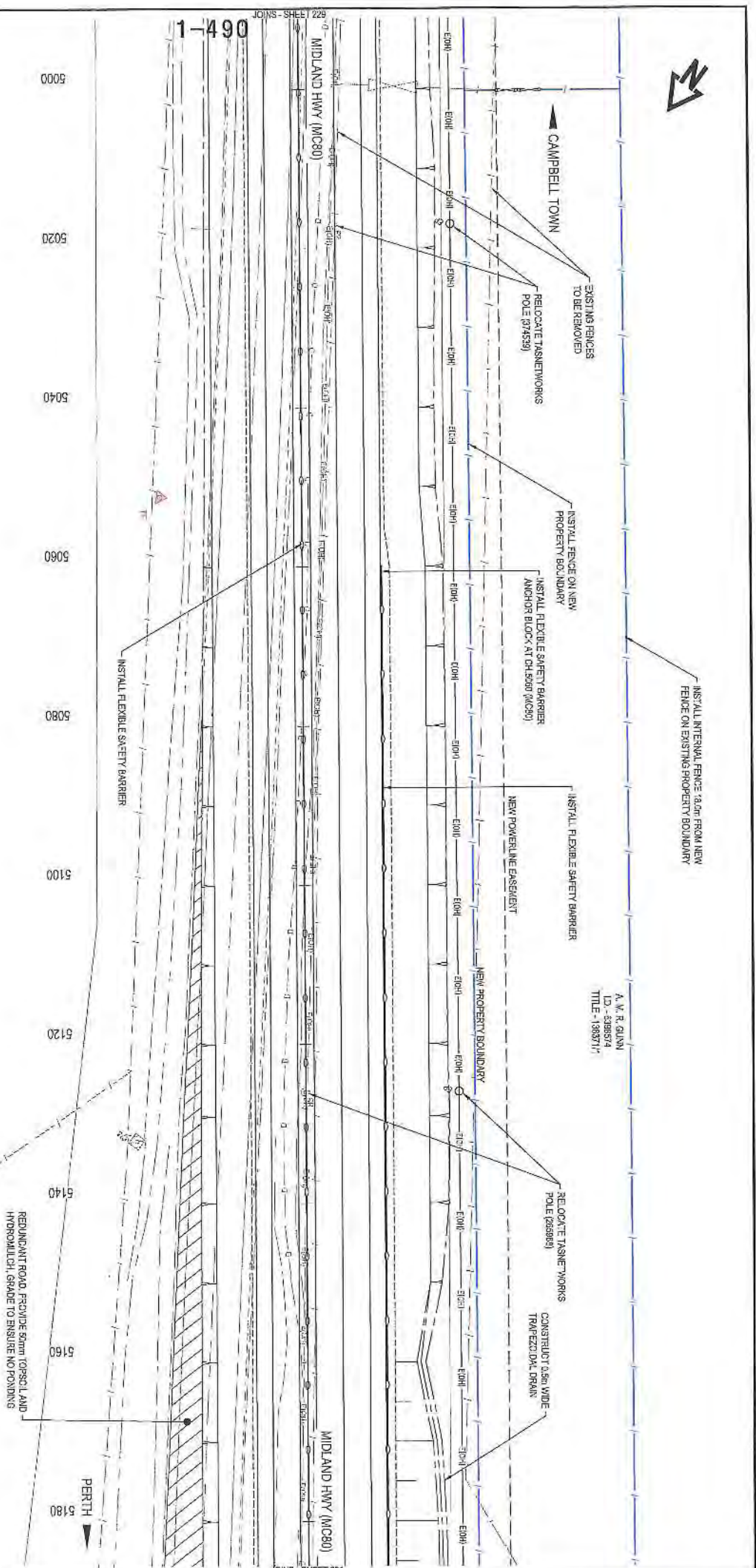
EPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION

GENERAL ARRANGEMENT - DRG 27 OF 63

CONTRACT No.	2367	DRAWING	1818191-C229	PRINTED DATE	17-Nov-15, 3:53 PM	SHEET No.	229
REVISION NUMBER				A0087.037		REVISION C	

**LEGEND**

	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRA VIA ARTTRACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCE LINE



A. M. R. GUNN  
 ID - 538874  
 TITLE - 158874

A. M. R. GUNN  
 I.D. - 838874  
 TITLE - 158874

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	FORNANA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDARY LINE

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>ERRING FORESTS TO POWRANNA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 28 OF 83</p>		<p>CONTRACT No.</p> <p>2387</p>	<p>DRAWING</p> <p>H816191-C230</p>	<p>PRINTED DATE</p> <p>17-NOV-16 3:54 PM</p>	<p>SHEET No.</p> <p>230</p>
<p>DESIGNED</p> <p>L. ALLEN</p>		<p>REVIEWED</p> <p>K. DWYER</p>		<p>REGISTRATION NUMBER</p> <p>A0087.037</p>	
<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE RIBBONS - 1310</p>		<p>Amendment Description</p> <p>7/16/16</p> <p>Date</p>		<p>REVISION C</p>	
<p>DESIGNER</p> <p>pitcon Pty Ltd</p>		<p>APPROVED</p> <p>K. DWYER</p>		<p>REVISION C</p>	
<p>Amendment Description</p> <p>7/16/16</p> <p>Date</p>		<p>Coordinate System</p> <p>MGA ZONE 55</p>		<p>Project Datum</p> <p>AHD</p>	
<p>No.</p> <p>A3 original</p>		<p>This sheet may be prepared using colour and may be incomplete if copied</p>			



INSTALL INTERNAL FENCE 1.0M FROM NEW FENCE ON EXISTING PROPERTY BOUNDARY

CAMPBELL TOWN

EXTEND EXISTING DRAINAGE COLLECTOR AND INSTALL NEW ENDWALL

A.M.R. GUNN  
I.D. - 0008574  
TITLE - 13887/1

NEW POWERLINE EASEMENT

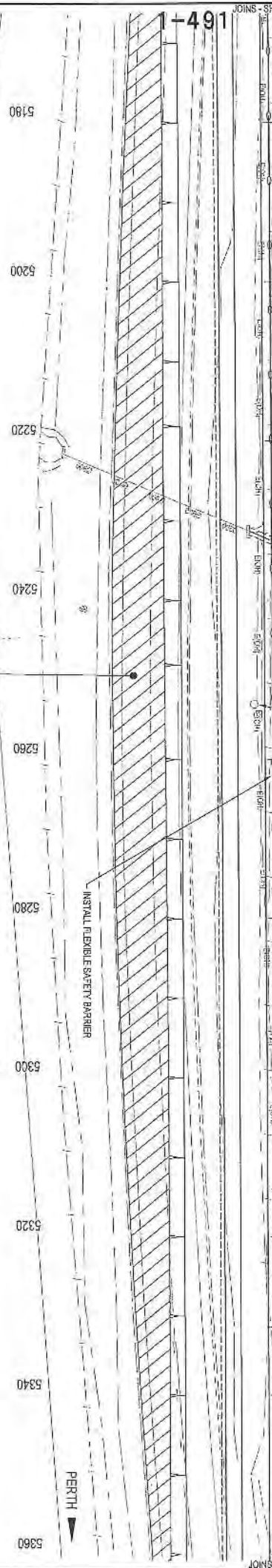
INSTALL FENCE ON NEW PROPERTY BOUNDARY  
RELOCATE TAPENETWORKS  
POLE (274540)

CONSTRUCT DRAIN WIDE TRAPEZOIDAL DRAIN  
A.M.R. GUNN  
I.D. - 0008585  
TITLE - 1266572

INSTALL FLEXIBLE SAFETY BARRIER

MIDLAND HWY (MC80)

MIDLAND HWY (MC80)



REDUNDANT ROAD, PROVIDES 60M TOPSOIL AND HYDROMULCH GRASS TO ENSURE NO PONDING

INSTALL FLEXIBLE SAFETY BARRIER

PERTH

A.M.R. GUNN  
I.D. - 0008574  
TITLE - 13887/1

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POMORNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCE LINE

<p>Department of State Growth MIDLAND HIGHWAY (A0087) EPPING FOREST TO POMORNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 28 OF 63</p>		<p>CONTRACT NO. 237</p>	<p>DRAWING HB/16/1/02/1</p>	<p>PRINTED DATE 17 Nov 2018, 3:24 PM</p>	<p>SHEET NO. 231</p>
<p>DESIGNED LALLEY</p>	<p>REVIEWED N.D.WYER</p>	<p>REGISTRATION NUMBER <b>A0087.037</b></p>			
<p>Department of State Growth MIDLAND HIGHWAY (A0087) EPPING FOREST TO POMORNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 28 OF 63</p>		<p>REVISION C</p>			

<p>Amendment Description</p>	
No.	Date
C	02/11/2018
B	01/11/2018
A	13/10/2018

<p>SCALES</p>	
1:500 (A3)	1:500 (A3)
SCALE METERS - 50M	SCALE METERS - 50M



<p>DESIGNED LALLEY</p>	
<p>REVIEWED N.D.WYER</p>	

<p>Department of State Growth MIDLAND HIGHWAY (A0087) EPPING FOREST TO POMORNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 28 OF 63</p>	
<p>CONTRACT NO. 237</p>	<p>DRAWING HB/16/1/02/1</p>
<p>PRINTED DATE 17 Nov 2018, 3:24 PM</p>	<p>SHEET NO. 231</p>
<p>REGISTRATION NUMBER <b>A0087.037</b></p>	
<p>REVISION C</p>	



CAMPBELL TOWN

INSTALL FLEXIBLE SAFETY BARRIER  
ANCHOR BLOCK AT CH 3375 (MC80)

RELOCATE TNS NETWORKS  
POLE (074541)

EXISTING FENCES  
TO BE REMOVED

NEW POWERLINE EASEMENT

NEW PROPERTY BOUNDARY

INSTALL FENCE ON NEW  
PROPERTY BOUNDARY

INSTALL 200x300  
GATES

CONSTRUCT ACCESS TO MATCH EXISTING AND SEAL TO NEW  
PROPERTY BOUNDARY. REMOVE EXISTING DN075 CULVERT AND  
INSTALL DN075 CULVERT WITH TYPE 1 DRIVEABLE ENDWALLS

RELOCATE TNS NETWORKS  
POLE (074542)

REDUNDANT ROAD, PROVIDE 50mm TOP SOIL AND  
HYDROBALL CL. GRADE TO ENSURE NO PONING

MIDLAND HWY (MC80)

MIDLAND HWY (MC80)

1-492

5420

5440

5460

5480

5500

5520

CONSTRUCT 300mm DEEP  
DRAIN AT BATTER INTERFACE  
CONSTRUCT ACCESS TO MATCH EXISTING AND SEAL  
TO EXISTING GATE. INSTALL DN075 CULVERT WITH  
TYPE 1 DRIVEABLE ENDWALLS

INSTALL FENCE FROM EXISTING GATE TO  
EXISTING PROPERTY BOUNDARY

PERTH

A.M.R. QUINN  
LD - 638856  
TITLE - 1286572

A.M.R. QUINN  
LD - 638874  
TITLE - 388771

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	POTENTIAL HABITAT TREE TO BE REMOVED
	POMPANNA ARTEFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

SCALES

1:500 (A3)



No.	Amendment Description	Initials	Date
C	DEVELOPMENT APPLICATION ISSUE	N.DWYER	06/11/2016
B	DEVELOPMENT APPLICATION ISSUE	N.DWYER	07/12/2016
A	PRELIMINARY DESIGN	N.DWYER	18/10/2016

Co-ordinate System: WGA ZONE 48  
Height Datum: AHD

DESIGNED: LALLEN  
REVIEWED: N.DWYER

Department of State Growth  
MIDLAND HIGHWAY (A0087)  
EPPING FORESTS TO POMPANNA  
ROAD IMPROVEMENTS AND SAFETY UPGRADES  
DEVELOPMENT APPLICATION  
GENERAL ARRANGEMENT - DRG 30 OF 63

CONTRACT No. 2387	DRAWING 5416191-0232	PRINTED DATE 17-Nov-16, 3:54 PM	SHEET No. 232
REGISTRATION NUMBER A0087.037		REVISION C	



INSTALL INTERVAL FENCE 20.0m FROM NEW FENCE ON EXISTING PROPERTY BOUNDARY

A.M.R. GUNN  
ID - 6346683  
TITLE - 1288572

EXISTING FENCES TO BE REMOVED

CAMPBELL TOWN

INSTALL FENCE ON NEW PROPERTY BOUNDARY

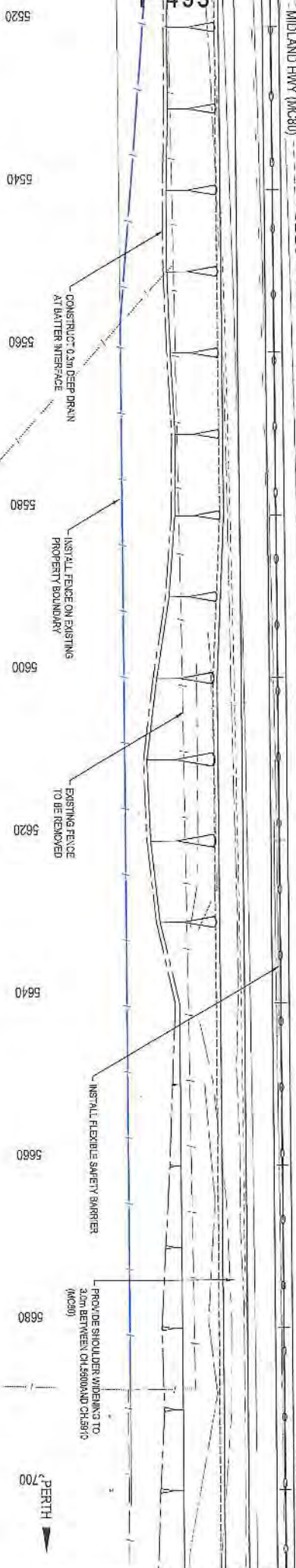
NEW POWERLINE EASEMENT

RELOCATE TASNENETWORKS POLE (77Mx3)

NEW PROPERTY BOUNDARY

MIDLAND HWY (MC80)

MIDLAND HWY (MC80)

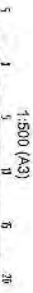


### LEGEND

	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	T-THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDARY

A.M.R. GUNN  
ID - 6088574  
TITLE - 1883711

### SCALES



No.	Amendment Description	File	Date
A	PRELIMINARY DESIGN	N.DWYER	12/01/2018
B	DEVELOPMENT APPLICATION ISSUE	N.DWYER	04/11/2018
C	DEVELOPMENT APPLICATION ISSUE	N.DWYER	04/11/2018

Contractor	MOA GROUP PTY. LTD.
Designer	L.AULEN
Reviewer	N.DWYER



Department of State Growth  
MIDLAND HIGHWAY (A087)  
EPPING FOREST TO POWRANNA  
ROAD IMPROVEMENTS AND SAFETY UPGRADES  
DEVELOPMENT APPLICATION  
GENERAL ARRANGEMENT - DRG 31 OF 63

CONTRACT NO.	2957
DRAWING	HE16191-C233
PRINTED DATE	17-AUG-18 3:54 PM
REGISTRATION NUMBER	A0087.037

SHEET No. **233**  
REVISION C

JOINS - SHEET 232

72 LEHS - SMO



INSTALL INTERM. FENCE 20.0m FROM NEW FENCE ON EXISTING PROPERTY BOUNDARY

A. M. R. GUNN  
I.D. - 6398589  
TITLE - 0208572

CAMPBELL TOWN

EXISTING FENCE TO BE REMOVED

RELOCATE TASNETWORKS POLE (275244)

NEW POWERLINE EASEMENT

NEW PROPERTY BOUNDARY

INSTALL FENCE ON NEW PROPERTY BOUNDARY

EXISTING FENCE TO BE REMOVED



MIDLAND HWY (MC80)

MIDLAND HWY (MC80)

1-494

5700 5720 5740 5760 5780 5800 5820 5840 5860 5880

PERTH

EXISTING TASNETWORKS POLE (228223)

PRODUCE SHOULDER WIDENING TO 3.0m BETWEEN CH.550.00 AND CH.1497.0

INSTALL FLEXIBLE SAFETY BARRIER

A. M. R. GUNN  
I.D. - 6398574  
TITLE - 0385714

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE REMOVED
	PROPOSED PROPERTY FENCE LINE

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>EPPING FOREST TO POWRANNA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 32 OF 63</p>		<p>CONTRACT No. 2387</p> <p>DRINKING 191819-C234</p> <p>PRINTED DATE 17-Nov-16, 3:54 PM</p>	<p>SHEET No. 234</p>
<p>DESIGNED LALEN</p> <p>REVIEWED N.D.WYER</p>	<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE RATHER - 1:50</p>	<p>REGISTRATION NUMBER A0087.037</p>	<p>REVISION C</p>
<p>NO. 1</p> <p>DESCRIPTION: AMENDMENT DESIGN</p> <p>DATE: 13/02/2016</p>	<p>NO. 1</p> <p>DESCRIPTION: AMENDMENT DESIGN</p> <p>DATE: 13/02/2016</p>	<p>This sheet may be prepared using colour and may be incomplete if printed</p>	



A.M.R. GUNN  
I.D. - 6396983  
TITLE - 1296572

CAMPBELL TOWN

RELOCATE TASKNETWORKS  
POLE 678649

NEW POWERLINE EASEMENT  
NEW PROPERTY BOUNDARY

REMOVE EXISTING FENCE  
INSTALL FENCE ON NEW  
PROPERTY BOUNDARY

CONSTRUCT 0.5m WIDE  
TRAPEZOIDAL DRAIN

EXTEND EXISTING 200x800 CULVERT  
AND INSTALL NEW ENDWALL

SHOULDER WIDENING TO BE  
PROVIDED IN END OF OVERSIGHTING  
LANE

MIDLAND HWY (MC80)

MIDLAND HWY (MC80)

1-495

PROVIDE S-CULVERT WIDENING TO  
3.0m BETWEEN CH-5800 AND CH-5910  
(MC83)

INSTALL FLEXIBLE SAFETY BARRIER

EXTEND EXISTING 200x800 CULVERT  
AND INSTALL NEW ENDWALL

CONSTRUCT 0.5m DEEP DRAIN  
AT BATTER INTERFACE

CONSTRUCT ACCESS TO MATCH EXISTING AND SEAL TO  
EXISTING GATE EXISTING 800x CULVERT TO BE  
REMOVED AND INSTALL 0.5x5 CULVERT WITH TYPE 1  
DRIVEABLE ENDWALLS

PERTH

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWARRANA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

A.M.R. GUNN  
I.D. - 6396974  
TITLE - 1292711

A.M.R. GUNN  
I.D. - 6396985  
TITLE - 1296571

No.	Amendment Description	Scale	Date
C	DEVELOPMENT APPLICATION ISSUE	N/D	04/11/2016
B	DEVELOPMENT APPLICATION ISSUE	N/D	01/11/2016
A	PRELIMINARY DESIGN	N/D	19/02/2016

SCALES	
1:500 (A3)	1:500 (A3)
1:1000 (A4)	1:1000 (A4)
1:2000 (A5)	1:2000 (A5)

DESIGNED BY: LALENI  
REVIEWED BY: NADYER

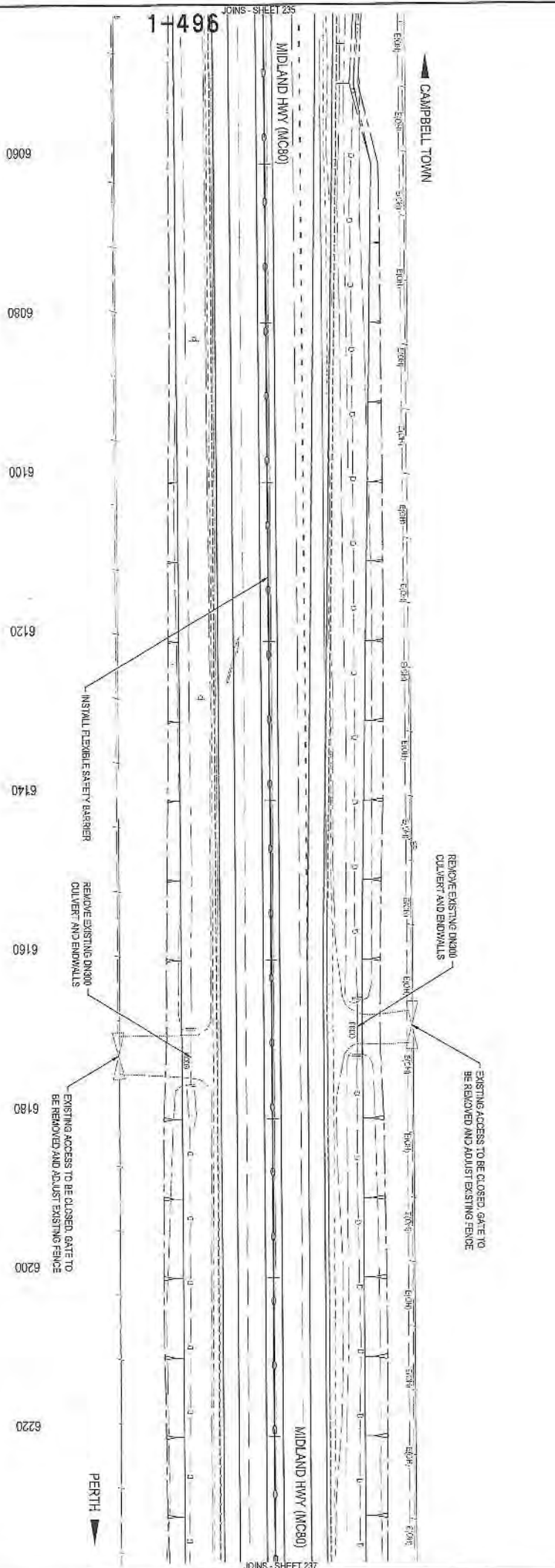
Department of State Growth  
MIDLAND HIGHWAY (A0087)  
EPPING FOREST TO POWARRANA  
ROAD IMPROVEMENTS AND SAFETY UPGRADES  
DEVELOPMENT APPLICATION  
GENERAL ARRANGEMENT - DRG 33 OF 63

CONTRACT NO. 2967	DRAWING HE15191-C285	PRINTED DATE 17-Nov-16 3:54 PM
REGISTRATION NUMBER <b>A0087.037</b>		SHEET NO. <b>235</b>

REVISION C



A.M. R. GUNN  
 ID - 839856  
 TITLE - 1286572



1-496

A.M. R. GUNN  
 I.D. - 839856  
 TITLE - 1286571

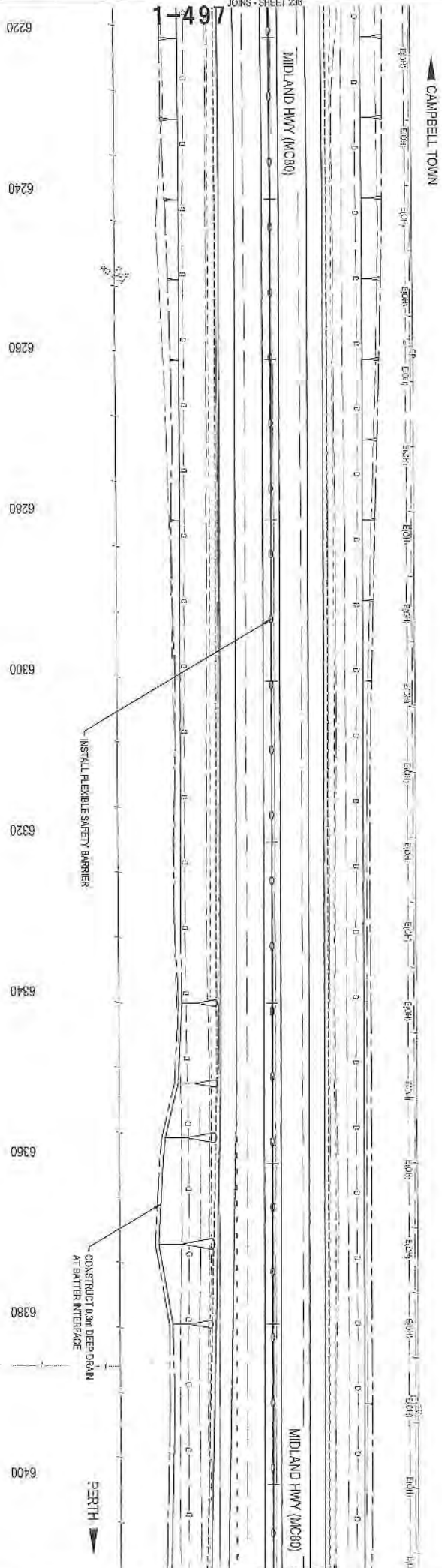
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED F.O.R.A.
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POMORANKA ATTRACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY BOUNDARY

SCALES 1:500 (A3) SCALE IN METRES - 500 		DESIGNED L. ALLEN REVIEWED NDWYER		Department of State Growth MIDLAND HIGHWAY (A0087) EPPING FOREST TO POMORANKA ROAD IMPROVEMENTS AND SAFETY UPGRADES DEVELOPMENT APPLICATION GENERAL ARRANGEMENT - DRG 34 OF 63		CONTRACT No. 2267		DRAWING HB1311-C238		PRINTED DATE 17-Nov-16, 3:54 PM		SHEET No. <b>236</b>	
DEVELOPMENT APPLICATION ISSUE NDWYER 04/11/2016		DEVELOPMENT APPLICATION ISSUE NDWYER 01/11/2016		PRELIMINARY DESIGN NDWYER 13/10/2016		No.		Arrangement Description I-1616		Date		This sheet may be prepared using colour and may be incomplete if copied	





A. M. R. GUNN  
 ID - 698539  
 TITLE - 1288972



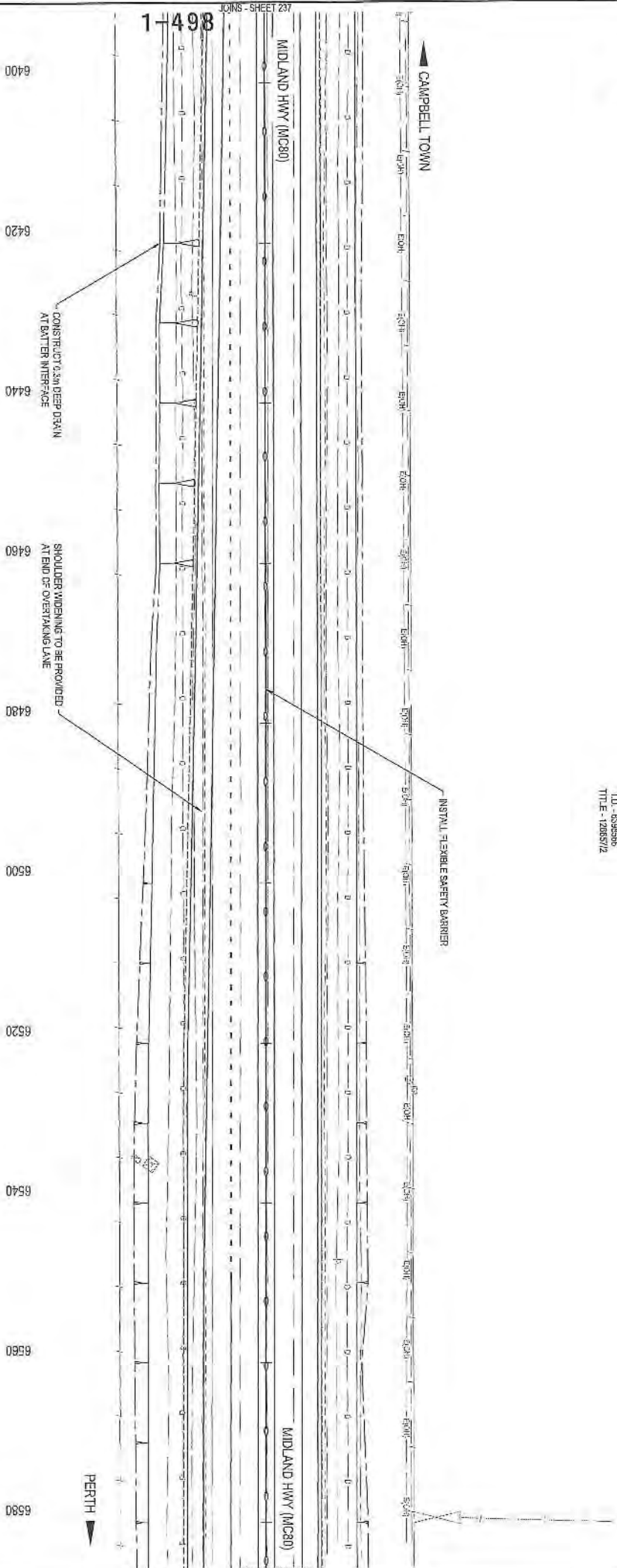
LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWERLINE ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

A. M. R. GUNN  
 ID - 698539  
 TITLE - 1288972

<p>DEVELOPMENT APPLICATION ISSUE</p> <p>DEVELOPMENT APPLICATION ISSUE</p> <p>PRELIMINARY DESIGN</p>		<p>N.D.WYER 04/11/2016</p> <p>N.D.WYER 07/11/2016</p> <p>N.D.WYER 13/10/2016</p>	<p>1:500 (A3)</p> <p>SCALE IN METERS - 1:500</p>	<p>DESIGNED LAUREN</p> <p>REVIEWED N.D.WYER</p>	<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)</p> <p>ERPPING FOREST TO POWRANNA</p> <p>ROAD IMPROVEMENTS AND SAFETY UPGRADES</p> <p>DEVELOPMENT APPLICATION</p> <p>GENERAL ARRANGEMENT - DRG 35 OF 83</p>	<p>CONTACT No. 2287</p> <p>DRAWING H91019-C237</p> <p>REGISTRATION NUMBER A0087.037</p>	<p>PRINTED DATE 17:40:16, 25/4/14</p> <p>SHEET NO. 237</p>
<p>No. 23 original</p> <p>This sheet may be reprinted using colour and may be reproduced if copied</p>		<p>Change Management: Max Zones 55</p> <p>Height Datum: A.H.D.</p>					



A. M. R. GUNN  
 I.D. - 6595565  
 TITLE - 12857/2



A. M. R. GUNN  
 I.D. - 6595565  
 TITLE - 12857/1

LEGEND	
	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLOSA
	THREATENED FLOSA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	PONDEROSA ASPECT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

<p>Department of State Growth</p> <p>MIDLAND HIGHWAY (A0087)          EPPING FOREST TO POMERANNA          ROAD IMPROVEMENTS AND SAFETY UPGRADES          DEVELOPMENT APPLICATION          GENERAL ARRANGEMENT - DRG 38 OF 63</p>		<p>CONTRACT No. 2387</p>	<p>DRAWING HB15191-0286</p>	<p>PRINTED DATE 17 Nov '16 3:56 PM</p>	<p>SHEET No. <b>238</b></p>
<p>DESIGNED L ALLEN</p>	<p>REVIEWED N OWYER</p>	<p>DESIGNED L ALLEN</p>	<p>REVIEWED N OWYER</p>	<p>REGISTRATION NUMBER <b>A0087.037</b></p>	<p>REVISION C</p>
<p>SCALES</p> <p>1:500 (A3)</p> <p>SCALE IN METRES: 1:500</p>	<p>Height Datum: AHD</p>	<p>Coordinate System: MGA ZONE 45</p>	<p>Amendment Description</p>	<p>No. of original: 1</p>	<p>This sheet may be prepared using colour and may be inseparable if critical</p>
<p>Amendment Description</p>	<p>No. of original: 1</p>	<p>This sheet may be prepared using colour and may be inseparable if critical</p>	<p>Amendment Description</p>	<p>No. of original: 1</p>	<p>This sheet may be prepared using colour and may be inseparable if critical</p>



A. M. R. GILMAN  
 I.D. - 6539586  
 TITLE - 12685712

CAMPBELL TOWN

INSTALL FLEXIBLE SAFETY BARRIER

PROVIDE SHOULDER WIDENING TO  
 3.0m BETWEEN CH.1870 AND CH.18780  
 (MCRB)

MIDLAND HWY (MCRB)

MIDLAND HWY (MCRB)

1-499

6580 6600 6620 6640 6660 6680 6700 6720 6740 6760

CONSTRUCT 0.3m DEEP DRAIN  
 AT BATTER INTERFACE

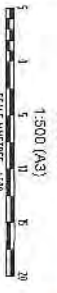
PERTH

**LEGEND**

	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE RETAINED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	ROWANOKA ARTIFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCELINE

A. M. R. GILMAN  
 I.D. - 6539586  
 TITLE - 12685712

**SCALES**



No.	Amendment Description	Initials	Date
C	DEVELOPMENT APPLICATION ISSUE	N.DWYER	04/11/2016
B	DEVELOPMENT APPLICATION ISSUE	N.DWYER	01/11/2016
A	PRELIMINARY DESIGN	N.DWYER	19/02/2015

Check other maps for proposed using colour and may be inoperative if copied

DESIGNED: LALEN  
 REVIEWED: N.DWYER

Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FOREST TO POWRANNA  
 DEVELOPMENT AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 37 OF 63

CONTRACT No.	2387	DRAWING	HE18191-C283	PRINTED DATE	17-Nov-16 3:55 PM	SHEET No.	239
REGISTRATION NUMBER	A0087.037	REVISION	C				



A. M. R. GUINN  
 I.D. - 833583  
 TITLE - 1285572

CAMPBELL TOWN

PROVIDE SHOULDER WIDENING TO  
 3.0M BETWEEN CH 6870 AND CH 6790  
 (MOC80)

PERTH

MIDLAND HWY (MOC80)

MIDLAND HWY (MOC80)

6780

6780

6800

6820

6840

6860

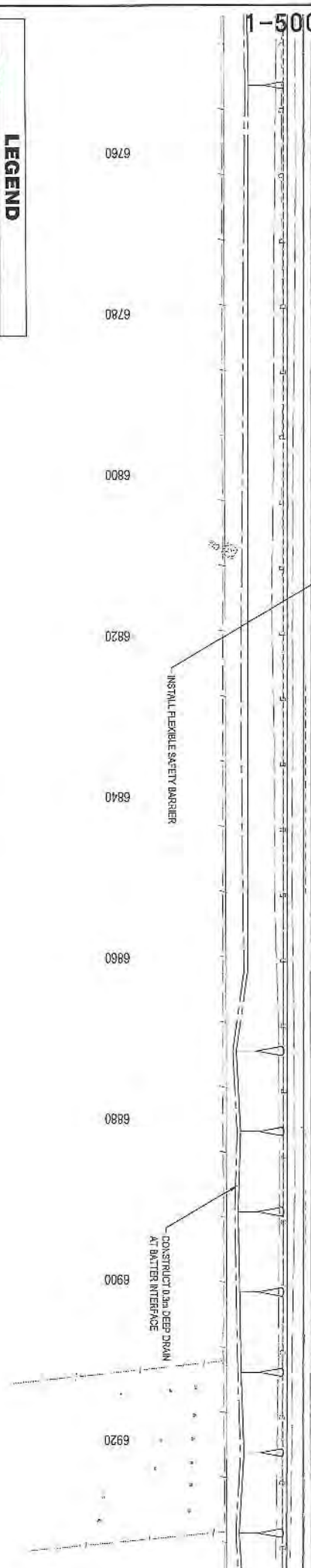
6880

6900

6920

INSTALL FLEXIBLE SAFETY BARRIER

CONSTRUCT DEEP DRAIN  
 AT BATTER INTERFACE



**LEGEND**

	PIONEER AVENUE TREES
	PIONEER AVENUE TREES TO BE REMOVED
	THREATENED FLORA
	THREATENED FLORA TO BE REMOVED
	POTENTIAL HABITAT TREE
	HABITAT TREE TO BE REMOVED
	POWRANNA ARTEFACT TO BE PROTECTED
	THREATENED VEGETATION TO BE RETAINED
	PROPOSED PROPERTY FENCE LINE

A. M. R. GUINN  
 I.D. - 833583  
 TITLE - 1285572

**SCALES**

1:500 (A3)



No.	Amendment Description	Initials	Date
A	PRELIMINARY DESIGN		
B	DEVELOPMENT APPLICATION ISSUE		
C	DEVELOPMENT APPLICATION ISSUE		

As original	This sheet may be prepared using colour and may be incomplete if copied
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DESIGNED: LALEN  
 REVIEWED: NDYER

Department of State Growth  
 MIDLAND HIGHWAY (A0087)  
 EPPING FOREST TO POWRANNA  
 ROAD IMPROVEMENTS AND SAFETY UPGRADES  
 DEVELOPMENT APPLICATION  
 GENERAL ARRANGEMENT - DRG 38 OF 63

CONTRACT No.	2887	DRAWING	HE18191-C340	PRINTED DATE	17-Nov-16 3:55 PM	SHEET No.	240
REGISTRATION NUMBER				A0087.037		REVISION C	

JOINS - SHEET 239

JOINS - SHEET 241