

## **Clarence Correctional Centre 132kV Transmission Line Variation to Activity Described in Review of Environmental Factors**

This report has been prepared for consideration by INSW in relation to a request by Transgrid for an extension to the approved working hours during the construction phase of the project.

The purpose of the report is to:

- outline the background to the project;
- describe the nature of and need for the proposed variation;
- identify and assess the potential environmental impacts associated with the proposed variation; and
- identify any additional safeguards and management measures which are required to be implemented to minimise impacts.

It is anticipated that this report and any subsequent approval granted by INSW would form an Addendum to the Review of Environmental Factors (REF) prepared by MG Planning<sup>1</sup>.

### **1 Background**

On 11 April 2019 the INSW Chief Executive approved the proposal to construct, operate and maintain a new 12.5km long 132kV electricity transmission line to service the Clarence Correctional Centre (CCC) subject to:

1. *Compliance with (including implementation of) the following conditions of approval, required to prevent, minimise and / or offset adverse environmental impacts:*
  - (a) *Safeguards and Mitigation Measures detailed in section 8.2 of Review of Environmental Factors - Clarence Correctional Centre 132kV Transmission Line dated 08.04.2019, Revision 04; and*
  - (b) *All relevant statutory requirements, including approvals, licences, notifications, permits and authorisations.*

*Note: Any aspect of the proposal which does not comply with the specified mitigation measures are in breach of this determination.*

### **2 Proposed Variation**

Transgrid has submitted a request to INSW in its capacity as the determining authority, for approval to extend the working hours during the construction phase in order to complete the works by early October 2019. The REF (as approved) currently provides that:

*"Noise generating works would be limited to the recommended standard hours for construction work being:*

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<sup>1</sup> *Review of Environmental Factors Clarence Correctional Centre 132kV Transmission Line, Rev. 04 dated 8.04.2019, prepared by MG Planning Pty Ltd.*

*Monday to Friday 7:00 am to 6:00 pm  
Saturday 8:00 am to 1:00 pm  
No works on Sundays or Public Holidays. "*

TransGrid seeks approval to extend the construction hours to enable works to occur on Saturday afternoons and Sunday and seeks an amendment to the approved hours to:

Monday to Sunday 7:00 am to 6:00 pm

TransGrid has advised that it intends to undertake a range of transmission line construction activities during these periods including:

- vegetation clearing
- access track construction
- hole boring
- excavation for foundations
- pile driving
- steel fixing
- concrete delivery and placement
- Pole deliveries
- pole dressing
- pole standing
- delivery of conductor drums and winches
- establishment of winching sites
- conductor winching
- conductor stringing activities
- clipping in of conductors
- site restoration

It is noted that Transgrid has advised that the piling rig and hole boring operations will not be undertaken near sensitive receivers on Sundays.

### 3 Environmental Assessment

The following table sets out the potential environmental impacts (as identified in Section 6 of the REF) and provides a brief commentary as to whether the proposed extension of construction hours will result in any additional impact. Where there is a potential for additional impact, this is discussed in further detail at the end of the table.

**Table 3.1** Assessment of Impact

Environmental Attribute	Likelihood of Additional Impact
Land Use	The extended construction hours are limited to the construction phase. However, they will not alter the physical extent (footprint) and intensity of the Activity.  As such no further safeguards or mitigation measures, beyond those specified in the REF (and approved by INSW on 11 April 2019), are deemed necessary.
Soils	
Water Quality	
Flooding	
Biodiversity	
Aboriginal Cultural Heritage	
Non-Aboriginal Heritage	

Environmental Attribute	Likelihood of Additional Impact
<b>Noise and Vibration</b>	<p>Extended construction hours can reasonably be expected to have an impact on the amenity of sensitive (residential) receivers in the vicinity.</p> <p>Refer discussion at Section 3.1 below.</p>
<b>Traffic and Access</b>	<p>The extended hours of construction will not increase the number of vehicles or the volume of traffic associated with the construction. It is noted that no change is proposed to the hours Monday to Friday (7.00am – 6.00pm) and as a consequence there will be no additional traffic impact during peak periods.</p> <p>However, it is anticipated that there will be an additional impact associated with the extended hours in that vehicles would require access to /from the work sites 7 days per week until 6.00pm.</p> <p>Refer discussion at Section 3.2 below.</p>
<b>Bushfire</b>	<p>As described above, the extended construction hours will not alter the physical extent (footprint) and intensity of the Activity.</p> <p>No further safeguards or mitigation measures are deemed necessary.</p>
<b>Air Quality</b>	
<b>Visual Impact</b>	
<b>Electric and Magnetic Fields</b>	
<b>Climate Change</b>	
<b>Waste</b>	
<b>Cumulative Impacts</b>	

### 3.1 Noise and Vibration

Existing Environment (as described in Section 6.8.1 of the REF)

The background noise levels along the investigation area are generally low, as is typical of rural and rural residential areas, with low population density and little background noise from traffic or other noise sources. The exception to this is the Pacific Highway which would experience elevated noise levels from passing light and heavy vehicles.

The noise pattern would generally be diurnal in nature with higher background levels during the day and evening periods, decreasing at night.

Four locations along proposed transmission line have residential receivers within 250m of the easement, access tracks and laydown areas. These are presented in Table 8. Locations of access track upgrades and construction would be determined during detailed design; however, it is likely that these tracks would be in close proximity to residential receivers around the proposed transmission line.

No other sensitive receivers, such as schools, hospitals, childcare facilities, aged care facilities or places of worship were identified within 250m of the proposed activity.

## Impact Assessment

The potential for impact associated with the extended hours of operation is limited to the construction phase of the project and only for the additional hours, namely Saturday afternoons and Sundays. This translates to an additional 16 hours per week.

Transgrid has provided an analysis of the potential noise impact (refer **Attachment 1**), which includes a graphic representation of 10 dwellings within the line of sight of various sections of the transmission line. The most affected receivers, identified as House Nos. 5, 6 and 7, are located between approximately 200 and 500 metres from specific transmission line structures. These dwellings are highlighted in yellow on the distances to houses sheet of the Excel spreadsheet included at **Attachment 1**.

Transgrid has utilised the RMS Noise Calculator to identify the likely noise impacts (the results of which are also included at **Attachment 1**). A rural land use scenario was adopted for the purposes of the Calculator, with the noisiest plant selected as a bored piling machine (114dB). The results indicate that at a distance of approximately 190 metres, the noise contribution of the piling rig is within the background noise level for both standard working hours and out-of-hours daytime working hours.

House No. 5 is located 210 metres from the nearest transmission line structure (G4). Based on the information presented in the RMS Noise Calculator, the noise impact to this property is within the background noise level and as such, the noise impact associated with the extended hours is expected to be within reasonable limits.

Furthermore, the duration of the construction at each structure is finite, although it will vary depending on the ground conditions at each site.

Notwithstanding the above, Transgrid has indicated that piling equipment and hole boring will be restricted to Mondays – Saturdays (i.e. will not occur on Sundays) unless it is located well away from any sensitive receivers.

## Safeguards and Mitigation Measures

- Transgrid shall employ best endeavours to program noisy works to be carried out during normal working hours.
- Piling works and hole boring shall generally be restricted to Mondays – Saturdays, unless it is scheduled to occur more than 190 metres from the nearest residential receiver.

## **3.2 Traffic and Access**

Existing Environment (as described in Section 6.9.1 of the REF)

The main roads surrounding the investigation area are:

Pacific Highway to the west  
Eight Mile Lane to the south  
Centenary Drive to the west  
Avenue Road to the east.

Local roads within the investigation area are:

Washpool Road  
Tancreds Lane

Four Mile Lane  
Swan Lane  
Duncans Road  
Timbs Lane  
Six Mile Lane.

The Activity also intersects numerous private access tracks.

### Impact Assessment

A Traffic Impact Assessment was undertaken by Arup which informed the REF for the Activity.

The Assessment concluded that the volume of traffic associated with the construction would be distributed on different roads and is considered a minor volume in the context of existing traffic conditions. All access roads proposed to be used for the construction of the transmission line have the capacity to accommodate these vehicle movements. The additional vehicles passing through key intersections in the investigation area are considered to have a negligible impact on the performance of the road network.

The proposed extended hours of construction will not increase the number of vehicles or the volume of traffic associated with the construction. It is noted that no change is proposed to the hours Monday to Friday (7.00am – 6.00pm) and as a consequence there will be no additional traffic impact during peak periods.

However, it is anticipated that there will be an additional impact associated with the extended hours in that vehicles would require access to /from the work sites 7 days per week until 6.00pm.

The original REF included an assessment of the volume of traffic as being minor in the context of existing traffic conditions and furthermore, all access roads proposed to be used during the construction phase were determined to have the capacity to accommodate the construction traffic.

The additional vehicles passing through key intersections in the investigation area are considered to have a negligible impact on the performance of the road network.

However, traffic movements on access tracks on Saturday afternoons and Sundays may have some impact on sensitive residential receivers in the vicinity.

Having regard to the above, the potential additional impact is considered to be negligible, however it is recommended that the following additional safeguard / mitigation measure be imposed in order to protect the amenity of sensitive residential receivers:

### Safeguards and Mitigation Measures

- Passage of trucks and equipment will not occur before 7.00am or after 6.00pm on Sundays.

## **4 Conclusion**

In considering the proposal to extend the construction hours, this report and the supporting documentation provided by Transgrid has examined and taken into account to the fullest extent possible, the potential effect on the environment by reason of those extended hours as they relate to the approved Activity. This assessment is considered to be in accordance with the factors required to be considered under clause 228 of the Environmental Planning and Assessment Regulation 2000.

It is concluded that whilst the extended construction hours will result in some minor impacts in terms of amenity of certain residential properties in the visual curtilage of the transmission line, it is unlikely that any significant or long-term adverse impact would eventuate.

The extended construction hours will not alter the assessed impact of the Activity in terms of its effect on the environment or threatened species, populations, ecological communities or their habitats, nor is there expected to be any significant impacts on matters of national environmental significance or any impacts on Commonwealth land.

Having regard to the above, it is considered that the variation to the construction hours is acceptable, provided the additional safeguards and mitigation measures identified in this report are implemented.

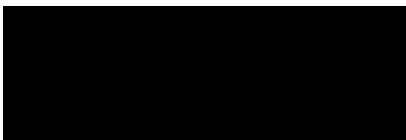
## **5 Recommendation**

It is recommended that the proposal to extend the construction hours associated with the approved Activity (for the construction, operation and maintenance of a new 132kV electricity line to service the new Clarence Correctional Centre as described in the REF) be approved, subject to:

- (i) the implementation of all safeguards and mitigation measures identified in Section 8.2 of the REF;
- (ii) compliance with all relevant statutory approvals, licences, permits and authorisations; and
- (iii) implementation of the following additional safeguards and mitigation measures:
  - Transgrid shall employ best endeavours to program noisy works to be carried out during normal working hours;
  - Piling works and hole boring shall generally be restricted to Mondays – Saturdays, unless it is scheduled to occur more than 190 metres from the nearest residential receiver; and
  - Passage of trucks and equipment will not occur before 7.00am or after 6.00pm on Sundays.

Accordingly the proposal is referred to the Chief Executive for determination.

### **Recommended by:**



**Helen Mulcahy**

Director

Helen Mulcahy Urban Planning Pty Ltd

Date: 21 May 2019

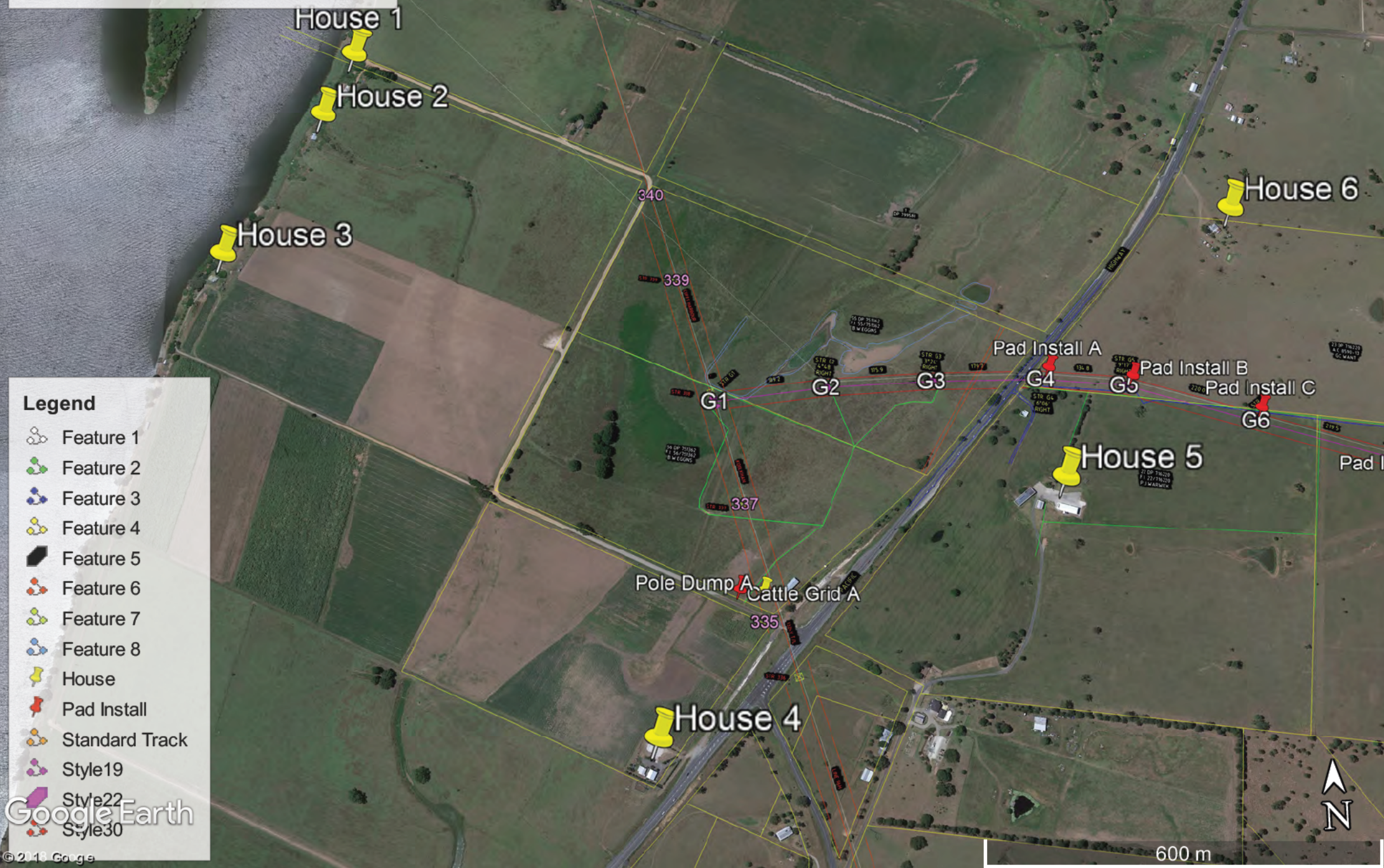
# **Attachment 1**

## **Noise Impact Assessment**

### **Transgrid**

# Clarence - Houses 1 to 6

Write a description for your map.



## Legend

- Feature 1
- Feature 2
- Feature 3
- Feature 4
- Feature 5
- Feature 6
- Feature 7
- Feature 8
- House
- Pad Install
- Standard Track
- Style19
- Style22
- Style30



# Clarence - Houses 5 to 7

Write a description for your map.

## Legend

- Feature 1
- Feature 2
- Feature 3
- Feature 4
- Feature 5
- Feature 6
- Feature 7
- Feature 8
- House
- Pad Install
- Standard Track
- Style19
- Style22
- Style30

House 6

Culvert Install A

Install A Pad Install B

G5

Pad Install C

G6

Pole Dump B

Pad Install D

G8

G9

Pad Install E Single Gate A

G10

Pad Install F

Pole Dump C

G11

Double Gate B

Pole Dump D

G13A

House 5

House 7

Google Earth

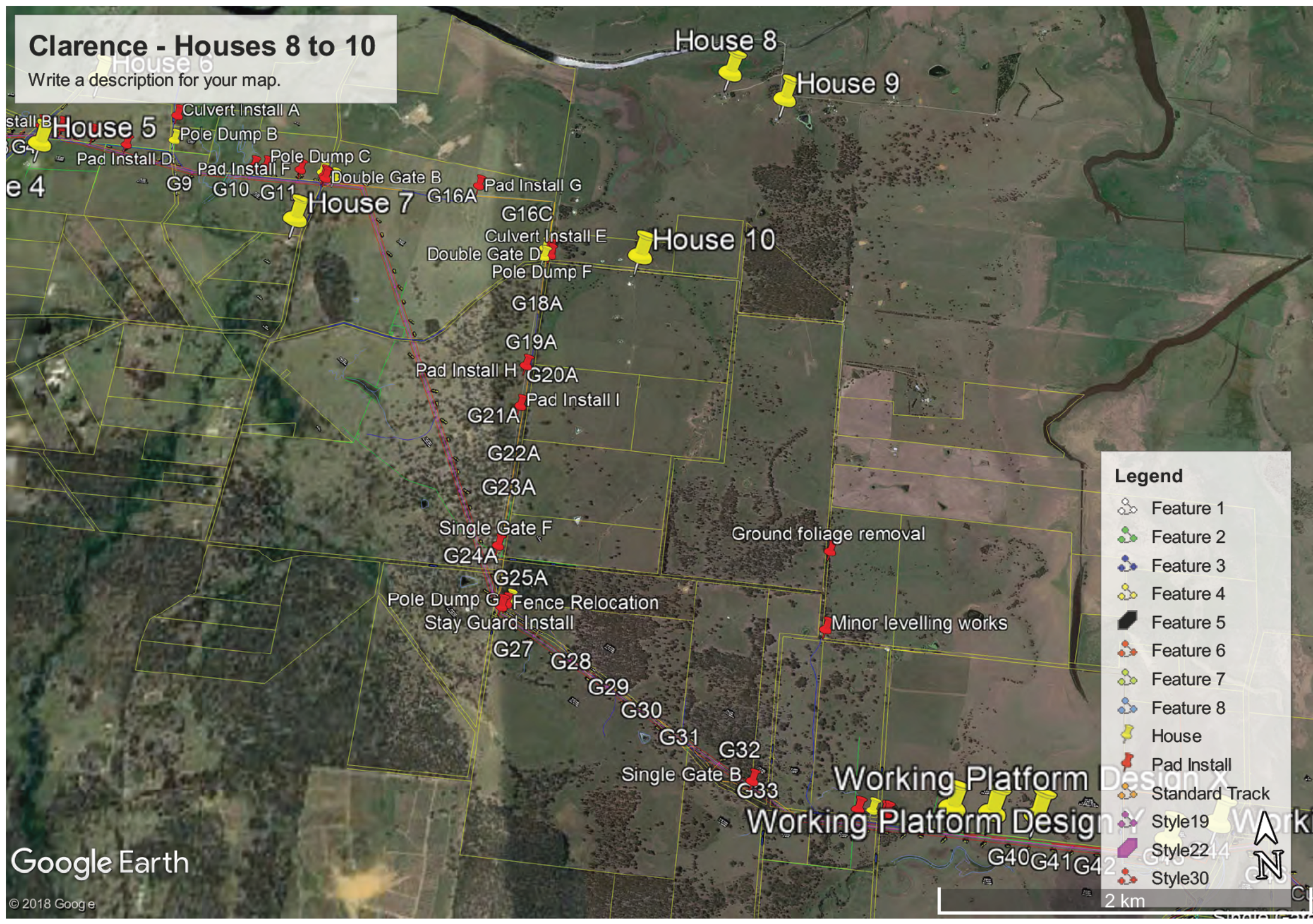
© 2018 Google

600 m



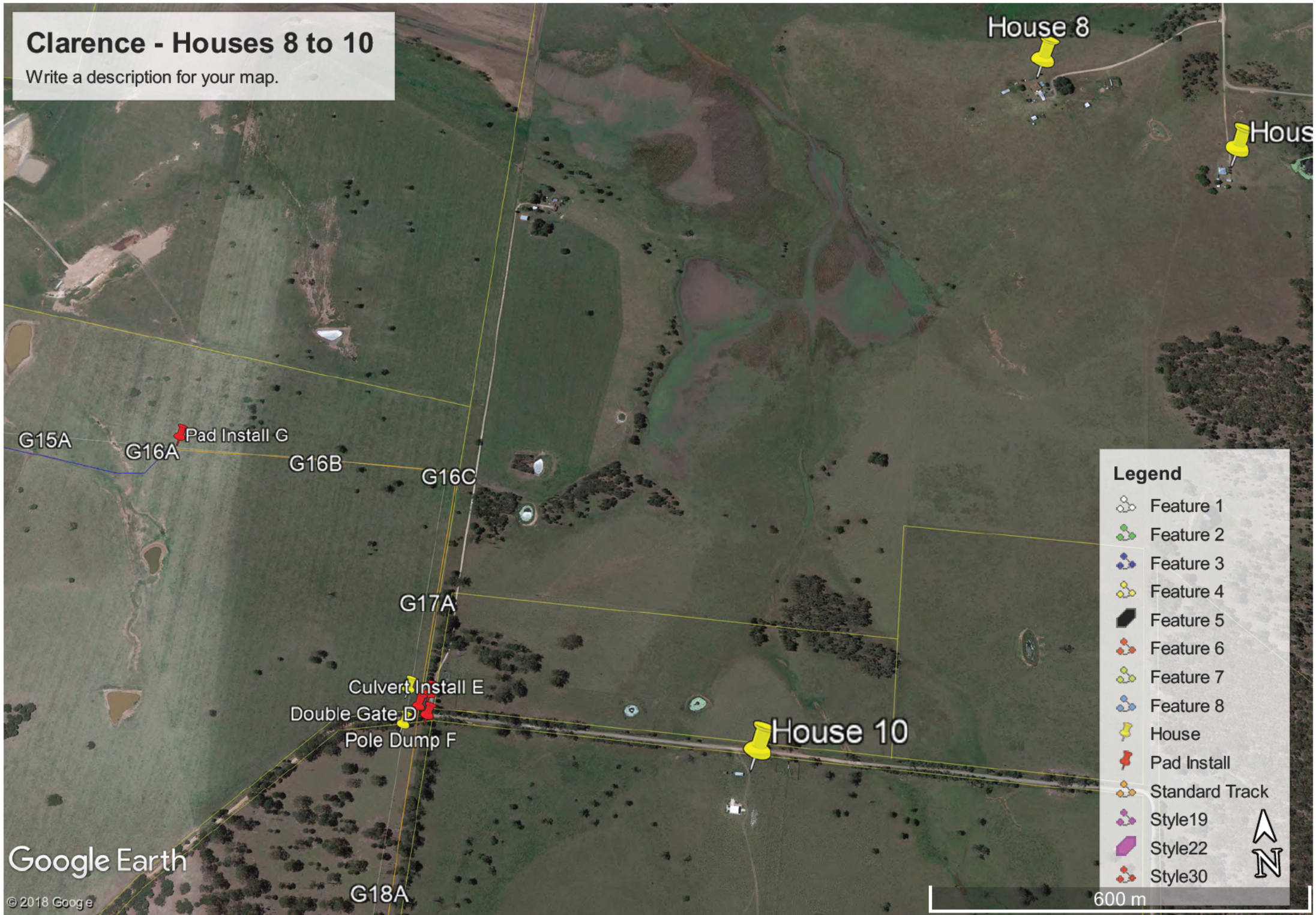
# Clarence - Houses 8 to 10

Write a description for your map.



# Clarence - Houses 8 to 10

Write a description for your map.







Distanced Based Assessment (Noisier Plant)

- 1. Describe the proposed plant and the location of the noise source and the proposed noise barrier.
2. Describe the proposed noise barrier.
3. Describe the proposed plant and the location of the noise source and the proposed noise barrier.
4. Describe the proposed noise barrier.
5. Describe the proposed plant and the location of the noise source and the proposed noise barrier.
6. Describe the proposed noise barrier.
7. Describe the proposed plant and the location of the noise source and the proposed noise barrier.
8. Describe the proposed noise barrier.
9. Describe the proposed plant and the location of the noise source and the proposed noise barrier.
10. Describe the proposed noise barrier.

Table with 2 columns: Measurement, Measure. It lists various noise measurement points and the corresponding mitigation measures.

Note that each measurement of noise levels and individual readings are not required for projects with less than 3 weeks impact duration.

Table for Residential receiver. It contains columns for Receiver, Distance, and various noise metrics (LAeq, Lmax, etc.) for different noise sources and receptors.

Table for Non-residential receiver. It contains columns for Receiver, Distance, and various noise metrics for different noise sources and receptors.

Table for Residential receiver. It contains columns for Receiver, Distance, and various noise metrics for different noise sources and receptors.

Table for Non-residential receiver. It contains columns for Receiver, Distance, and various noise metrics for different noise sources and receptors.

Table for Residential receiver. It contains columns for Receiver, Distance, and various noise metrics for different noise sources and receptors.

Table for Non-residential receiver. It contains columns for Receiver, Distance, and various noise metrics for different noise sources and receptors.

Table for Residential receiver. It contains columns for Receiver, Distance, and various noise metrics for different noise sources and receptors.

Activity	Description of Activity	Plant/ Equipment	L <sub>max</sub> SWL	L <sub>max</sub> at 7m	Assumptions: not applicable		Activity total L <sub>eq</sub> SWL		
					No. Units	total L <sub>max</sub> SWL			
		Truck (medium rigid)	103	78	4 per hour	115		116	
Mobilisation & Site Establishment	Installing construction boundary hoardings/ fences and traffic barriers	Road truck	108	83	4 per hour				
		Scissor Lift	98	73	1				
		Franna crane	98	73	1				
		Excavator (tracked) 35t	110	85	1	116		116	
		Dump truck	110	85	4 per hour				
Utility, property, service adjustment	Adjustment of property boundaries (where required), relocation of services	Franna crane 20t	98	73	1				
		Pneumatic hammer	113	88	-				
		Concrete saw	118	93	1				
		Vacuum truck	109	84	-				
		Backhoe	111	86	-				
		Power generator	103	78	1				
		Bulldozer D9	116	91	1	121			
Corridor Clearing	General land clearing, tree and stump removal, topsoil stripping, loading	Excavator (tracked) 35t	110	85	1				
		Chainsaw 4-5hp	114	89	2			Not recommended as OOHW	
		Tub grinder/ mulcher 40-50hp	116	91	1				
		Dump truck	110	85	4 per hour				
		Excavator (tracked) 35t	110	85	1	122			
	House/ building demolition	As above + hydraulic hammer	122	97	1				
		Front end loader 23t	112	87	1			Not recommended as OOHW	
		Dump truck	108	83	4 per hour				
		Rock crusher	118	93	1	118			
		Bulldozer D9	116	91	1			Not recommended as OOHW	
Bulk earthworks	Formation of road alignment, excavation of soil and rock, hammering/rock breaking, drilling, loading, haulage, compaction of fill areas, grading	Excavator (tracked) 35t	110	85	1	123			
		Scraper 65t	110	85	1				
		Excavator (tracked) 35t	110	85	1				
		As above + hydraulic hammer	122	97	1				
		Grader	113	88	1			Not recommended as OOHW	
	Drainage infrastructure	Excavation of trenches and pits; Delivery and placement of precast pipes and pits, filling and compacting	Dump truck	110	85	8 per hour			
			Compactor	106	81	1			
			Roller (large pad foot)	109	84	-			
			Water cart	107	82	-			
			Backhoe	110	85	-	115		
Franna crane 20t			98	73	1				
Bridge works	Casting concrete piers; Placement of pre-cast elements; Piling (mainly bored); and Demolition.	Excavator (tracked) 35t	110	85	1				
		Concrete truck	109	84	4 per hour				
		Truck compressor	75	50	1				
		Vibratory roller	109	84	1				
		Road truck	108	83	4 per hour				
		Franna crane 20t	98	73	1	120			
		Piling rig - driven	116	91	-				
		Piling rig - bored	112	87	1				
		Power generator	100	75	1				
		Concrete pump	102	77	1			(Piling not recommended as OOHW)	
Retaining walls/ noise walls	Construction of retaining walls & noise walls	Concrete truck	109	84	4 per hour				
		Compressor	109	84	1				
		Pneumatic hammer	115	90	-				
		Welding equipment	105	80	-				
		Piling rig - bored	112	87	1	119			
		Power generator	103	78	1				
		Mobile crane	113	88	1				
		Concrete vibrator	113	88	1				
		Concrete pump	109	84	1			(Piling and air track drill not recommended as OOHW)	
		Welding equipment	105	80	-				
Paving/ asphaltting (inc concrete sawing)	Delivery of raw materials. Placement of surface material. Saw cutting.	Excavator (tracked) 35t	112	87	1				
		Air track drill	124	99	-				
		Pavement laying machine	114	89	1	118			
		Dump truck	110	85	4 per hour				
		Asphalt truck & sprayer	103	78	1				
		Concrete truck	109	84	1				
		Smooth drum roller	107	82	1				
		Concrete saw	118	93	1				
		Front end loader	91	66	1	114			
		Excavator (tracked) 35t	110	85	-				
Compounds	Deliveries. Plant and equipment. Maintenance. Office areas. Storage areas.	Road truck	108	83	4 per hour				
		Compressor	109	84	1				
		Welding equipment	105	80	1				
		Light vehicles	88	63	12 per hour				
		Power generator	103	78	1				
Road furniture installation	Signposting and line marking	Road truck	108	83	4 per hour	110		116	
		Scissor lift	98	73	1				
		Franna crane 20t	98	73	1				
		Line marking truck	108	83	1				
Construction Compound Site Establishment	Chainsaw 4-5hp. Pneuatic hammer. Fixed crane. Front end loader. Excavator (tracked) 35t. Grader. Vibratory roller. Concrete truck. Dump truck. Water cart. Concrete vibrator. Concrete pump. Power generator. Light vehicles (eg 4WD).	Chainsaw 4-5hp	114	89	2	119			
		Pneuatic hammer	113	88	-				
		Fixed crane	113	88	1				
		Front end loader	112	87	1				
		Excavator (tracked) 35t	110	85	-				
		Grader	113	88	1				
		Vibratory roller	109	84	-				
		Concrete truck	109	84	4 per hour			Not recommended as OOHW	
		Dump truck	110	85	4 per hour				
		Water cart	107	82	-				
Local Roads Works	Bulldozer D9. Excavator (tracked) 35t. Chainsaw 4-5hp. Tub grinder/ mulcher 40-50hp. Front end loader. Scraper 65t. Backhoe. Compactor. Dump truck. Road truck. Water cart. Daymakers. Pavement profiler.	Concrete vibrator	113	88	1				
		Concrete pump	109	84	1				
		Power generator	103	78	1				
		Light vehicles (eg 4WD)	103	78	1				
		Bulldozer D9	116	91	1	120			
		Excavator (tracked) 35t	110	85	-				
		Chainsaw 4-5hp	114	89	2				
		Tub grinder/ mulcher 40-50hp	116	91	1				
		Front end loader	112	87	1				
		Scraper 65t	110	85	1				
Re-surfacing works	Milling the asphalt to expose the underlying concrete, then laying new asphalt	Backhoe	111	86	-				
		Compactor	106	81	1				
		Dump truck	110	85	4 per hour				
		Road truck	108	83	4 per hour				
		Water cart	107	82	-				
		Daymakers	98	73	2	118			
		Pavement profiler	117	92	1				
		Dump truck	110	85	4 per hour				
		Front end loader	112	87	1				
		Pavement laying machine	114	89	1				
Other	Diamond Grinding. 13.5T Excavator With Hammer. 13.5T Excavator. 5T Excavator With Hammer. 5T Excavator. 2.5T Smoothdrum Roller. Plate Wacker. Hand Power Tool. Jumping Jack. Soft Cut Saw. Brushcutter. Blower. Vacuum Truck. Kanga Hammer. Pole Saw. Flocon. Bobcat with Planer. Bobcat. Compressor (Towable) / Lawn Mower. Hand Power Tools (2-3 Items). Abrasive Blasting. Truck Mounted Borer. Microdrilling Rig (Solmec SM-5). Microdrilling Rig (Solmec SM-14). Excavator Dumping Rubbles.	Asphalt truck & sprayer	106	81					
		Smooth drum roller	107	82					
		Airtrack Drill	126	101					
		Diamond Grinding	126	101					
		13.5T Excavator With Hammer	122	97					
		13.5T Excavator	104	79					
		5T Excavator With Hammer	119	94					
		5T Excavator	100	75					
		2.5T Smoothdrum Roller	105	80					
		Plate Wacker	104	79					
		Hand Power Tool	105	80					
		Jumping Jack	107	82					
		Soft Cut Saw	105	80					
		Brushcutter	110	85					
		Blower	104	79					
		Vacuum Truck	106	81					
		Kanga Hammer	108	83					
		Pole Saw	107	82					
		Flocon	106	81					
		Bobcat with Planer	110	85					
Bobcat	104	79							
Compressor (Towable) / Lawn Mower	100	75							
Hand Power Tools (2-3 Items)	110	85							
Abrasive Blasting	117	92							
Truck Mounted Borer	107	82							
Microdrilling Rig (Solmec SM-5)	115	90							
Microdrilling Rig (Solmec SM-14)	105	80							
Excavator Dumping Rubbles	114	89							