

Appendix J

Utilities Management Framework



NARROMINE TO NARRABRI PROJECT

Environmental Impact Statement
Utilities Management Framework

October 2020



APPENDIX



J

Utilities management framework

NARROMINE TO NARRABRI ENVIRONMENTAL IMPACT STATEMENT



The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

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Appendices

Appendix A Utility register

1 Introduction

Construction work for the proposal would require the relocation or adjustment of utilities due to conflicts with the location of infrastructure. Utilities would also require protection from potential impacts during construction of the proposal, including potential contact with underground utilities during excavation or collision of plant and equipment with aboveground services.

If utilities are not managed adequately, by adjusting, relocating, or protecting them prior to construction, there would be the potential for rupture or breakage of connections. This could lead to service disruptions and/or pose a hazard in the form of electrocution, release of sewage from a wastewater main, or fire if a gas main is impacted.

Preliminary investigations and consultation have identified that a number of utilities would need to be relocated, adjusted or protected as part of construction of the proposal, with affected utilities including:

- ▶ electricity (ie Essential Energy and TransGrid)
- ▶ gas (ie Jemena, APA Group and Santos)
- ▶ telecommunications (ie Telstra, Nextgen and AARNet)
- ▶ water and wastewater (ie Narrabri Shire Council).

These utility relocations and adjustments would generally be contained within the proposal site and have therefore been considered as part of the environmental impact assessment undertaken in the EIS. However, consultation with utility providers is ongoing and confirmation of the final treatment solution would occur during detailed design. Therefore, there may be instances where a utility needs to be relocated outside of the proposal site. To identify potential impacts associated with these works, a risk based approach has been adopted and is contained within this utilities management framework (UMF).

This document provides an overview of the type and location of utilities potentially affected by construction and operation of the proposal and the principles and practices that would apply to the management of utilities during the construction of the proposal. It includes a list of active utilities located within and/or crossing the proposal site with the potential to be affected by construction of the proposal, and outlines the approach to management of these utilities at a strategic level.

Generally low impact activities such as utilities relocation and adjustments are considered outside the definition of construction for the purposes of planning approval, unless, for example, the potential exists for impact to heritage items or threatened species, in which case the activity would be addressed as a construction matter in the construction environmental management plan (CEMP). Should the proposal be approved, it is anticipated that conditions of approval for the proposal would require preparation of a CEMP, requiring details of the required utilities-related activities (ie relocation, adjustment and protection works) during the construction phase.

This UMF provides a mechanism for identifying, assessing and minimising impacts to the public because of the required utility relocations, adjustments or protection.

2 Utilities overview

The location of utilities has been determined by the design team to the current stage of design, within the proposed rail corridor only. The location was confirmed based on Dial Before You Dig plans, and field investigations involving utility cable location or pot holing.

Appendix A provides a detailed list of the utilities that were identified as either crossing or being located within the rail corridor, based on this methodology. A summary of the number of utilities that either cross the rail corridor, or are located within the rail corridor, is provided in Table 2.1 and Table 2.2, respectively.

Table 2.1 Utilities crossing alignment

SERVICE TYPE	NUMBER OF CROSSINGS	ASSET OWNER
Gas	4	APA Gas, Santos Gas
Electricity	68	Essential Energy, TransGrid
Communications	85	Telstra, AARNet
Water/Wastewater	7	Narrabri Shire Council

Table 2.2 Utilities within rail corridor

SERVICE TYPE	NUMBER WITHIN RAIL CORRIDOR	ASSET OWNER
Electricity	12	Essential Energy
Communications	193	Telstra, AARNet, NextGen

The majority of utilities that would require protection, adjustment or relocation are located within or near the town centres of Narrabri and Narromine, however existing utilities are located throughout the proposed rail corridor.

3 Approach to utilities management

To ensure a consistent approach across all proposal activities the following steps would be undertaken to determine the utilities management requirements for the proposal:

- ▶ confirm utilities requiring relocation or protection works
- ▶ confirm preferred approach and design refinement
- ▶ detailed assessment
- ▶ ongoing consultation with asset owners and relevant stakeholders
- ▶ construction management.

These stages are described in further detail in the sections below.

3.1 Confirm utilities with the potential to be impacted

Dial Before You Dig data sources were reviewed and field investigations were undertaken (ie utility cable locating and potholing) to determine the location of services within, or crossing the rail corridor. Utilities identified in this manner were mapped using a web based GIS program. This mapping was overlain with the proposed rail corridor, which was established as 20 metres either side of the proposed rail centreline. Major utilities within the rail corridor were identified as potentially requiring protection, adjustment or relocation works and further information regarding these utilities was then obtained, including owner and type.

This information is provided in Appendix A, with further assessment to be completed to confirm those major utilities that require relocation or protection works where they are in conflict with the proposed design. In addition, further assessment would need to be undertaken to identify those utilities located outside the rail corridor but within the proposal site, that have the potential to be impacted by the proposal.

3.2 Confirm preferred approach

The design team has determined a proposed treatment for those utilities within the rail corridor with the potential to be impacted by the proposal. This proposed treatment will be further refined in consultation with the utility owners as the design progresses. As noted above, no initial assessment has been undertaken of those utilities located outside the rail corridor but within the proposal site.

However, one or more of the following would likely need to be undertaken for utilities located within the proposal site:

- ▶ diverting the utility around the proposal site
- ▶ adjusting the utility, including for example, raising of overhead power lines to meet minimum clearance requirements or replacement of electricity poles
- ▶ relocating the utility either vertically or horizontally
- ▶ wrapping and supporting the utility to provide mechanical protection
- ▶ providing physical protection where the utility is not directly impacted by works but has the potential to be impacted either due to construction vibration or accidental impact. This could include:
 - ▶ demarcating the location of the utility, either through fencing or marking, to minimise the potential for accidental damage
 - ▶ providing a barrier between the location of the utility and the works location such as a piled wall or steel plates
- ▶ modifying construction methods to avoid impacting nearby utilities, such as using hand excavation or compaction tools.

3.3 Detailed assessment

Designs would be further developed in consultation with the utility owners. Work plan packages would be issued to each utility owner and would include typical utility relocation sketches as well as information regarding the following:

- ▶ proposal name
- ▶ proposal location
- ▶ utility owner details
- ▶ the proposed utility protection/relocation methods that would be utilised.

Following receipt of this package the utility owner would confirm whether the proposed treatment approach is acceptable, or whether further refinement is required to meet the relevant utility owner's specification.

3.4 Ongoing consultation with asset owners and relevant stakeholders

To manage integration with utility owners, ARTC has established an enabling works team to manage utility interfaces.

Ongoing consultation with all relevant utility owners and other stakeholders, including the Narromine, Narrabri, Gilgandra, Coonamble and Warrumbungle shire councils would be undertaken as the design progresses, through the enabling works team. ARTC would ensure a point of contact is obtained for Essential Energy, Transgrid, APA Group, Santos, Telstra, Nextgen and AARNet.

Construction works with the potential to directly or indirectly impact utilities would be coordinated with the relevant utility owners. This would include consideration of any proposed utility upgrades and access requirements, to ensure that access to utilities within the proposal site is maintained, where required.

4 Environmental assessment and approval

Adjustments and relocations within the proposal site would be undertaken in accordance with a work method statement provided in the CEMP. For relocations outside the proposal site, the need for additional assessment and approval would be determined in line with the approach to design refinements for the proposal, described in chapter D5 of the EIS.

4.1 Overview and context

As noted in section 2, a number of utilities are present in the proposal site and would need to be adjusted, relocated and/or protected to enable construction. In addition, there is the potential for unidentified underground utilities to be present within the proposal site. If utilities are not adequately managed prior to construction the potential rupture of underground utilities during excavation or collision of plant and equipment with aboveground services could pose risks to public safety. Rupture or contact with services during works could also result in releases and/or short-term outages, as could the relocation of utilities and services.

4.1.1 Potential impacts on utilities

Construction would have the potential to impact on utilities as a result of works along the length of the proposal site, but primarily in the vicinity of towns (ie Narromine, Curban, and Narrabri) and when crossing roads and existing rail corridors.

In most cases, utility impacts would be minimised by protecting utilities in place, or, where required, constructing a replacement utility ahead of re-connection, thus minimising the duration of outages. Connection activities would be undertaken during planned periods of disruption, which would be notified in advance to affected communities. However, there is also the possibility of accidental damage or incidents if utilities are uncovered in locations not previously identified, leading to unplanned disruptions. Such disruptions can result in impacts to the operation of utility networks.

All works would be undertaken in accordance with the requirements of the relevant asset owners, which would be determined following consultation.

4.1.2 Utilities relocation/adjustment

The preliminary investigations have only identified utilities within the proposed rail corridor that would likely be impacted by the proposal. There are likely to be other utilities that have not been identified yet that would require relocation or adjustment outside of the rail corridor. However, the majority of utilities that would require relocation or adjustment are likely to be relocated within the proposal site. Therefore, the works associated with relocating these utilities would be consistent with the typical construction activities identified and assessed in the EIS.

There is potential that some utilities which have not been identified yet would require relocation outside of the proposal site. In addition, depending on the utility and the utility owner's requirements, it may not always be possible to divert the utility at the point of intersection with the proposal, requiring consideration of impacts upstream and downstream from the proposal site. These impacts would be considered on a case by case basis, using the risk based approach discussed in section 4.2.

4.2 Risk-based environmental assessment

A risk based approach would be used to assess the potential impacts associated with utility works. This approach would consider the type and location of the proposed utility works and the potential impacts associated with the utility works and then assign a risk rating to the works which would guide the mitigation and management measures to be applied.

Typical environmental impacts that could result from utility works are identified in Table 4.1. This list is not exhaustive and should be used as a guide only for likely matters to consider.

Table 4.1 Potential environmental impacts associated with utility works

ASPECT	POTENTIAL IMPACTS
Traffic, transport and access	<ul style="list-style-type: none"> ▶ Construction traffic impacts, including temporary delays to local and regional traffic. ▶ Impacts to emergency services through delays in access due to works. ▶ Impacts on access to private properties during construction. ▶ Impacts to rural roads through closure and/or deviations during construction.
Biodiversity	<ul style="list-style-type: none"> ▶ Clearing of native vegetation resulting in loss of fauna habitat, habitat fragmentation and loss of connectivity. ▶ Impacts to tree protection zones where works are in proximity to trees. ▶ Increased potential for the occurrence and spread of pest plants and animals from movement of vehicles, machinery and material. ▶ Indirect impacts due to increased dust, sedimentation and erosion, noise and light. ▶ Fauna mortality from vehicle strikes.
Noise and vibration	<ul style="list-style-type: none"> ▶ Noise impacts on local residents and sensitive receivers from construction activities. ▶ Noise impacts on local residents and sensitive receivers from construction traffic. ▶ Vibration impacts due to utility removal/installation techniques eg horizontal directional drilling or trenching.
Air quality	<ul style="list-style-type: none"> ▶ Generation of dust during construction (from exposed soil/stockpiles, excavation, and vehicle movements). ▶ Emissions from vehicles or plant during construction.
Soils and water quality	<ul style="list-style-type: none"> ▶ Impacts associated with the disturbance of potentially contaminated soils or acid sulphate soils during construction. ▶ Increased erosion and sedimentation due to excavation activities and vehicle movement. ▶ Contamination due to spills and leaks during construction.
Aboriginal heritage	<ul style="list-style-type: none"> ▶ Potential disturbance to identified items/sites of Aboriginal heritage significance. ▶ Potential disturbance to identified areas of potential archaeological deposits. ▶ Unexpected finds during utility relocation/adjustment works.
Non-Aboriginal heritage	<ul style="list-style-type: none"> ▶ Potential intrusion within heritage curtilage. ▶ Potential indirect impacts to heritage buildings/fabric from vibration.
Landscape and visual	<ul style="list-style-type: none"> ▶ Adverse impacts on landscape character during construction, due to erection of fencing, barricades and lighting. ▶ Light impacts from out-of-hours work during construction. ▶ Rehabilitation of land following the utility works. ▶ Adverse visual impacts during operation due to the presence of, or changes to utility infrastructure.
Land use and property	<ul style="list-style-type: none"> ▶ Temporary impacts on land use during construction. ▶ Potential changes to, or requirements for, easement arrangements for utilities. ▶ Impacts on agricultural practices during construction activities as a result of changes to access, noise, and air pollution. ▶ Impacts on businesses, land users and landowners/occupiers, due to outages during works.
Health and safety	<ul style="list-style-type: none"> ▶ Impacts associated with abrasive blasting including the potential contamination of soil/water and exposure to asbestos. ▶ Potential for fire or injury to personnel due to welding.

This risk based approach is underpinned by the principles of the Australian and New Zealand standard (AS / NZS) ISO 31000:2009 Risk Management – Principles and Guidelines (Standards Australia, 2009). The definitions of consequences and likelihood that would be applied are provided in Table 4.2 and Table 4.3, respectively. The risk rating would then be determined by combining the consequence and likelihood to identify the level of risk as shown in Table 4.4.

Table 4.2 Consequences of occurrence

Consequence level	Definition
Extreme	<ul style="list-style-type: none"> ▶ Multiple but localised fatalities occur ▶ More than 5 days track closure ▶ More than 5% of programme budget (ie > \$500 million in \$10 billion) ▶ More than 10% of project budget (eg > \$10 million in \$100 million) ▶ Widespread long term or permanent environmental damage – remediation required ▶ Prosecution of the company and/or its office holders ▶ Corporate loss of shareholder and/or customer support (tangible business impact >3 years) ▶ Influences schedule >10% of programme approved schedule period ▶ Influences schedule >20% of project approved schedule period
Major	<ul style="list-style-type: none"> ▶ Single fatality occurs ▶ More than 48 hours to 5 days track closure ▶ More than 1.5% to 5% of programme budget (ie >\$150 million to \$500 million in \$10 billion) ▶ More than 2.5% to 10% of project budget (eg \$2.5 million to \$10 million in \$100 million) ▶ Considerable environmental damage requiring remediation ▶ Prohibition notice or fine(s) ▶ Strategic intervention required (more than 18 months to 3 years) ▶ Influences schedule more than 5% to 10% of programme approved schedule period ▶ Influences schedule more than 10% to 20% of project approved schedule period
Moderate	<ul style="list-style-type: none"> ▶ Serious injury occurs ▶ More than 24 hours to 48 hours track closure ▶ More than 0.5% to 1.5% of programme budget (ie more than \$50 million to \$150 million in \$10 billion) ▶ More than 0.5% to 2.5% of project budget (eg more than \$500,000 to \$2.5 million in \$100 million) ▶ Localised/clustered environmental damage – requiring remediation ▶ Improvement notice or threatened action ▶ Tactical (business unit/divisional) intervention required (more than 3 months to 18 months) ▶ Influences schedule (more than 2.5% to 5% of programme approved schedule period ▶ Influences schedule more than 5% to 10% of project approved schedule period
Minor	<ul style="list-style-type: none"> ▶ Lost time injury results OR medical treatment required ▶ More than 6 hours to 24 hours track closure ▶ More than 0.05% to 0.5% of programme budget (ie > \$5 million to \$50 million in \$10 billion) ▶ More than 0.1% to 0.5% of project budget (eg > \$100,000-\$500,000 in \$100 million) ▶ Isolated environmental damage – minimal ARTC remediation required ▶ Notice to produce information ▶ Management intervention required (more than 7 days to 3 months) ▶ Influences schedule more than 1% to 2.5% of programmed approved schedule period ▶ Influences schedule more than 2% to 5% of project approved schedule period

Consequence level	Definition
Not significant	<ul style="list-style-type: none"> ▶ No medical treatment required ▶ Up to 6 hours track closure ▶ Up to 0.05% of programme budget (ie to \$4 million in \$10 billion) ▶ Up to 0.1% of project budget (eg to \$100,000 in \$100 million) ▶ Contained environmental damage – fully recoverable (no cost or ARTC action required) ▶ Minimal or no regulatory involvement ▶ Isolated event able to be resolved (up to 7 days) ▶ Influences schedule up to 1% of programme approved schedule period ▶ Influences schedule up to 2% of project approved schedule period

Table 4.3 Likelihood and probability of occurrence

Likelihood	Description	Frequency of occurrence	Percentile
Almost certain	Expected to occur in most circumstances	Once per month	> 90%
Likely	Probably occur in most circumstances	Between once a month and once a year	60% - 90%
Possible	Might occur at some time	Between once a year and once in five years	30% - < 60%
Unlikely	Could occur at some time	Between once in five years and once in 20 years	10% - < 30%
Rare	May occur in exceptional circumstances	Once in more than 20 years	< 10%

Table 4.4 Environmental risk assessment matrix

Likelihood	Consequence				
	Not significant	Minor	Moderate	Major	Extreme
Almost certain	Medium	Medium	High	Very high	Very high
Likely	Low	Medium	High	Very high	Very high
Possible	Low	Low	Medium	High	High
Unlikely	Low	Low	Low	Medium	Medium
Rare	Low	Low	Low	Low	Medium

The risk approach would follow the below steps:

- ▶ **Step 1** – Identify the activities required to undertake the utility works, including the following:
 - ▶ the location
 - ▶ the proposed plant and equipment
 - ▶ whether additional construction compounds are required
 - ▶ whether changes in access are required
 - ▶ the duration/hours of works and the need for night time works.
- ▶ **Step 2** – With reference to the potential environmental impacts listed in Table 4.1 and the activities identified during Step 1, undertake a risk assessment using the consequence, likelihood and risk ratings shown in Table 4.2, Table 4.3 and Table 4.4.
- ▶ **Step 3** – Based on the overall risk rating identified in Step 2, apply relevant mitigation measures as per those identified in Table 5.1 to reduce the risk.

5 Construction management

Construction, including utility works, would be managed in accordance with the requirements of ARTC's Construction Environmental Management Framework and the CEMP for the proposal (see section D5.2 and Appendix I of the EIS). The CEMP and associated issue-specific sub plans would include the mitigation measures identified in the EIS, the relevant conditions of approval and any construction management measures required to manage construction related impacts, including those associated with utility works.

Notwithstanding this, typical construction management measures that could be adapted to specific utilities work are provided in Table 5.1.

Table 5.1 Example management measures

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
Traffic, transport and access	<ul style="list-style-type: none"> ▶ A road condition survey would be undertaken on any roads with the potential to deteriorate as a result of the proposal, before and after construction. Defects arising from construction access would be rectified. ▶ Maintenance works to re-instate road surfaces would be undertaken as soon as practicable following trenching works. ▶ Potentially affected property owners and residents would be contacted before the commencement of works. Residents would be notified via door knocks, newsletters or letter box drops providing information on the proposed works, working hours and a contact name and number should any complaints wish to be registered. ▶ Property access would be maintained at all times unless otherwise agreed with affected property owners. Where changes to access arrangements are necessary, owners and tenants would be advised and consulted in regard to alternative access. ▶ Open trenches would be filled or covered using road plates at the end of each day to minimise impacts on vehicular access to properties. ▶ The requirements of the <i>Roads Act 1993</i> would be followed at all times prior to and during all work (that is, notice requirements, consultation and consent/concurrence requirements for work within public and classified roads). ▶ Trenching across roads would be undertaken progressively to ensure that one trafficable lane remains open at all times. ▶ Vehicles use will be restricted to designated access tracks as per the Traffic Management Plan, under the CEMP. ▶ Appropriate speed limits for construction traffic on unsealed roads and access tracks would be implemented to minimise dust generation. ▶ Temporary hoardings, barriers, traffic management and signage would be removed when they are no longer required during the construction phase.
Biodiversity	<ul style="list-style-type: none"> ▶ Where vegetation clearing is required, pre-clearing surveys would be undertaken prior to construction. The surveys and inspections, and any subsequent relocation of species, would be undertaken and in accordance with the biodiversity management sub-plan in the CEMP. The extent of clearing would be limited to that required to undertake the works. ▶ The clearing extents/ site boundary/ limit of works would be clearly defined with flagging or marking tape, signage or other suitable means to delineate no go areas. This delineation and marking process would be incorporated and align with the project flagging/marking tape process and specifications, to ensure that it aligns with the greater project processes and does not conflict or contradict any of their demarcation. ▶ Clearing of mature and hollow-bearing trees would be avoided, where possible. ▶ If excavations are unattended, or are required to remain open for a period of time, barricading would be placed around the excavation to prevent the ingress of fauna. Steel plates may be used to cover smaller excavations. Escape ramps would be provided for fauna in larger excavations. ▶ Open trenches would be checked each morning, prior to the commencement of construction, to salvage any fauna that have fallen in, and move them to a safe (and appropriate) nearby location. ▶ Fauna, including injured fauna which may have fallen in trenches, would be handled by an appropriately experienced wildlife carer or licensed ecologist. ▶ Habitat features (eg Hollow logs, branches and woody debris) would be salvaged and relocated, where possible.

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
	<ul style="list-style-type: none"> ▶ Priority weeds would be managed in accordance with the <i>Biosecurity Act 2015</i>. Weeds of national significance would be managed in accordance with the Weeds of National Significance: weed management guides. ▶ Any herbicides would be applied such that impacts on surrounding agricultural properties are avoided.
Noise and vibration	<ul style="list-style-type: none"> ▶ Noise generating activities would be undertaken at appropriate times, avoiding early morning and late afternoon when background noise levels are lower. ▶ Respite periods would be provided if high noise levels are generated. ▶ The spread (or area of land occupied) of plant and equipment would be minimised. ▶ All plant and equipment would be maintained in good working order and regularly serviced. Where practical, plant and equipment would be fitted with noise abatement devices such as mufflers, silencers and screens. ▶ Vibration monitoring would be required at locations where the potential for building/structural damage risk is identified. ▶ Surrounding residents would be informed by mail of planned works prior to the works commencing. ▶ The ARTC Community Engagement Team or service provider would provide a community liaison phone number and permanent site contacts so that noise and/or vibration related complaints or inquiries can be received and addressed in a timely manner. ▶ The site would be organised to avoid unnecessary use of reversing alarms on vehicles. ▶ Truck drivers would use approved access routes to the site. ▶ Equipment would be turned off when not in use and idling machinery or trucks near sensitive receivers would be avoided. ▶ Vehicles, obstacles and stockpiles on site would be used to provide shielding to receivers, where possible. ▶ Dropping tools or materials from height, striking materials or making metal-metal contact would be avoided. ▶ Workers would be educated on the importance of minimising noise and avoid creating short duration high noise level events. ▶ Equipment such as a compactor and tipper trucks would be selected based on lower noise emissions and equipment would be used that has lower noise levels.
Air quality	<ul style="list-style-type: none"> ▶ Air quality impacts relating to dust generated during construction (eg vehicles on unsealed roads) would be visually monitored by construction staff. ▶ If dust generation is evident, measures such as road watering, minimising vehicle movements and reducing vehicle speed limits would be carried out to minimise dust impacts. ▶ Stabilisation and revegetation of disturbed areas would be undertaken as soon as practicable. ▶ Sealed access roads would be used where they are available. Access points would be inspected to determine whether material is being transferred to the surrounding road network. Roads would be swept as required to control dust generation. ▶ Any dust complaints would be investigated as soon as possible and measures taken to manage any impacts identified. ▶ Plant and machinery would be turned off when not in use as much as possible and would be fitted with emission control devices complying with Australian Design Standards. ▶ Construction plant and equipment would be maintained in good working condition.

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
	<ul style="list-style-type: none"> ▶ No burning of any materials would occur. ▶ During transportation, loads would be adequately covered. ▶ Exhaust emissions from stationary equipment such as generators would be directed away from residential properties.
Soils and contamination	<ul style="list-style-type: none"> ▶ Sediment and erosion controls would be installed before the commencement of earthworks. ▶ The following would be adopted in relation to stockpile management: <ul style="list-style-type: none"> ▶ Stockpiles would be located within designated areas only, away from drainage lines. ▶ Stockpiles would be positioned up-slope of sediment control barriers. ▶ Stockpile height would be limited to 2.5 m. ▶ The stockpiles would be covered or their surface stabilised with a suitable material to prevent erosion and sediment loss. (Note: This is mainly for medium to long-term storage, not short-term). ▶ Erosion and sedimentation controls would be checked and maintained regularly and would be maintained until ground stability is achieved. ▶ High risk soil erosion activities such as earthworks would not be undertaken immediately before or during high rainfall or wind events. ▶ During excavations, topsoil and subsoil would be removed and stockpiled separately (preferably on the uphill side of the excavation). Subsoil would be backfilled into the excavation first, and topsoil then respread over the disturbed area to aid in rehabilitation to provide suitable soil material for establishment of groundcover vegetation. ▶ The period for which temporary excavations are left open would be minimised. ▶ Work would cease during heavy rainfall events when there is a risk of sediment loss off-site or ground disturbance due to water logged conditions. ▶ Dry street sweepers or hand-held brooms would be used to clean access roads, in the event of tracked sediment. ▶ Equipment, plant and materials would be placed in designated lay-down areas where they are least likely to cause erosion or damage to vegetation. ▶ Erosion control devices, and any sediment trapped by the devices, would be removed once work is complete. ▶ Activities resulting in the removal or disturbance of soil and groundcover vegetation would be assessed to determine rehabilitation requirements. Rehabilitation would be undertaken as soon as practicable following works to promote ground stability, and should include as a minimum re-instating ground cover (may include applying hydromulch or laying turf). ▶ Prior to the acceptance of any imported fill onsite (regardless of volume), the following actions would be taken to reduce the risk of receiving contaminated material: <ul style="list-style-type: none"> ▶ All fill used would be checked to confirm it is virgin excavated natural material (VENM) (eg clay, gravel, sand, soil or rock) or excavated natural material (ENM) (eg naturally occurring rock and soil) that is not mixed with any other waste. ▶ The supplier would provide formal certification that the fill material is clean VENM or ENM. ▶ The supplier would provide information on what activities previously occurred onsite where their fill was sourced. ▶ For ENM, a NSW EPA excavated natural material order would be obtained and conditions implemented. ▶ Signs of contamination would be checked for, such as odours (chemical/petrol), staining from chemicals, and rubbish such as bricks, timber, and masonite.

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
	<ul style="list-style-type: none"> ▶ The delivery of the material would be supervised to check the material received matches the material ordered. ▶ Material from a known or potentially contaminated site would not be accepted without EPA approval. ▶ All required documents and records would be maintained. ▶ An unexpected findings protocol pertaining to contamination would be included in the CEMP for the proposed utilities work. The protocol would include procedures for the assessment and management of unexpected contamination encountered (if any) during construction. Awareness training would be provided for all onsite staff to assist in the identification of potentially contaminated material. ▶ Should suspected soil contamination be found on-site, works would be stopped immediately. Unexpected soil contamination could include, but not be limited to: <ul style="list-style-type: none"> ▶ unexpected staining or odours ▶ potential ACM ▶ unexpected underground storage tanks, buried drums or machinery, etc. ▶ In areas of known or potential soil contamination, soil stockpiles would be contained to prevent the spread of soil to surrounding land and water, and excess soil would be disposed of at an EPA approved and licensed waste facility in accordance with EPA waste guidelines. ▶ Spill containment kits would be present and maintained on site during all activities. ▶ All staff would be inducted about incident and emergency procedures and made aware of the locations of spill containment kits. Information regarding the correct and safe storage and handling of fuels and chemicals would be communicated to personnel. ▶ Material contaminated as a result of a spill (eg soil) would be removed (ie dug out), placed in an appropriate container to prevent further contamination and disposed of at an EPA approved and licensed waste facility in accordance with EPA waste guidelines. ▶ In the event of a minor spill occurring that can be immediately and safely contained by on-site personnel, the spill would be reported internally to the Project Manager and work practices reviewed and modified as necessary. ▶ Any mulch generated as part of the proposal would be re-used within appropriate timeframes and manners as specified in the Erosion and Sediment Control Plan.
Water quality	<ul style="list-style-type: none"> ▶ The horizontal direction drilling contractor would prepare and implement a Fluid Management Plan. The fluid management plan is to include as minimum the following: <ul style="list-style-type: none"> ▶ fluid volumes and storage requirements ▶ routine monitoring and inspection requirements ▶ incident management in the event of a drilling fluid spill. ▶ The volume of liquid material (fuel, oil, lubricant) required on-site for operation and maintenance activities would be minimised to reduce the risk of spills occurring. ▶ All materials that have the potential to contaminate surface water or groundwater would be stored at least 40 m away from any waterways and on flat grades.

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
	<ul style="list-style-type: none"> ▶ Fuels, chemicals and liquids would be stored according to the following requirements: <ul style="list-style-type: none"> ▶ Would be stored on an impervious base that must be able to withstand fuel or chemical spills without degradation. ▶ The fuels and chemicals stored must be compatible (ie would not react with each other). The safety data sheets would be consulted in this regard. ▶ The storage facility would be undercover. ▶ All containers would be labelled with the details of the contents. ▶ Safety data sheets would be available at the site. ▶ The storage facility would inspected for compliance to the above requirements. ▶ Spill kits would be kept at all permanent and temporary fuel, oil and chemical storage locations. ▶ The refuelling of plant and planned maintenance of machinery and plant would be undertaken 40 m away from waterways at a designated location, on a hardstand or within a bunded area. ▶ Chemical use would be minimised where practicable. In the event of chemical application (such as herbicide for weed control) the landowner would be notified before application. ▶ All work sites would be kept in a clean and tidy condition to prevent waste/litter from entering watercourses. ▶ Visual monitoring of local water quality (ie turbidity, hydrocarbon spills/slicks) would be undertaken on a regular basis in accordance with the surface water monitoring framework to identify any potential spills or deficient erosion and sediment controls. A record would be kept of these inspections.
Aboriginal heritage	<ul style="list-style-type: none"> ▶ If suspected Aboriginal objects are located during construction, an archaeologist would be notified to assess the nature and significance of the find. If the find is an Aboriginal object, further investigation and permits may be required before works commence. If the find is an Aboriginal object, then DPIE and the relevant Local Aboriginal Land Council (LALC) would be notified. ▶ If suspected human skeletal remains were uncovered at any time within the area of the utility works, the following actions would need to be followed: <ul style="list-style-type: none"> ▶ immediately cease all excavation activity in the vicinity of the remains ▶ notify NSW Police ▶ notify DPIE via the Environment Line on 131 555 to provide details of the remains and their location ▶ no recommencement of activity in the vicinity of the remains unless authorised in writing by DPIE.
Non-Aboriginal heritage	<ul style="list-style-type: none"> ▶ The presence or potential presence of a heritage item or archaeological deposit would inform the construction method adopted, for instance underboring using HDD may be preferable to trenching in some sensitive locations. ▶ In the event of an unexpected find of a non-Aboriginal heritage item (or suspected item), all works in the vicinity of the find must cease and the site supervisor is to be contacted immediately for advice on how to proceed.

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
Landscape and visual	<ul style="list-style-type: none"> ▶ The footprint for construction works would be kept to a minimum to minimise earthworks and maintain existing groundcover vegetation wherever possible. ▶ Sites disturbed by earthworks would be reinstated and revegetated as soon as possible after construction. ▶ The proposal site would be kept in a tidy condition, free of rubbish and waste materials. ▶ Cut-off and directed lighting would be used to ensure glare and light spill are minimised lit during night work periods (where this is required).
Land use and property	<ul style="list-style-type: none"> ▶ In consultation with utility providers, the ongoing maintenance and access requirements would be identified and the potential impact to an existing easement or need for a new easement considered. ▶ The proposal would not permanently restrict any future access to residential, commercial, industrial or recreational land uses. ▶ Construction compounds and ancillary facilities will be located, constructed and operated to ensure there are minimal impacts upon adjoining landholders.
Waste management	<ul style="list-style-type: none"> ▶ The proposal site would be maintained free of litter at all times. ▶ Garbage receptacles would be provided and clearly labelled and recycling of materials encouraged. ▶ Solid and liquid wastes would be managed and classified in accordance with the EPA guideline Waste Classification Guidelines, Part 1: Classifying Waste, 2014 and disposed of to an appropriately licensed facility by an appropriately licensed waste contractor. ▶ For all hazardous waste (including gases and flammable liquids), safe and secure storage areas are to be provided to prevent environmental harm, contamination or human exposure. Hazardous wastes would be collected, transported and disposed of by suitably approved and licensed waste contractors in accordance with EPA waste guidelines. Controlled waste certificates would be maintained. ▶ A waste register would be retained. The register would include copies of waste dockets/receipts from the waste facility where the waste was transported to. ▶ Drilling fluids used during underboring or horizontal directional drilling would be appropriately stored in accordance with a drilling fluid management plan. ▶ Disposal of clean excavating natural materials to landfill will be avoided. All excavated, natural, non-contaminated soil, aggregate or rock (ie suitable material) will be stockpiled separately and re-used on site where possible.

ENVIRONMENTAL ASPECT	TYPICAL MANAGEMENT MEASURES TO BE ADOPTED, AS REQUIRED
Health and safety	<ul style="list-style-type: none"> ▶ Hazardous substances would only be used onsite as required, in accordance with the manufacturer/ supplier instructions. ▶ Contractors would operate under an appropriate Work Health and Safety Plan. ▶ All activities undertaken during the Bushfire Danger Period (1 October to 31 March, but can vary in different areas) are to be conducted in accordance with the requirements of regulatory and local fire authorities. The Rural Fire Service would be consulted on requirements for works during the Bushfire Danger Period. ▶ All vehicles and machinery would carry as a minimum a 20 litre water knapsack or a nine litre fire extinguisher. All fire extinguishers must have a current inspection tag. ▶ The undersides of vehicles and machinery would be inspected regularly, and any build-up of ignitable debris removed (such as grass and vegetation debris around the radiator and in the engine bay).

5.1 Rehabilitation and re-instatement

All disturbed areas not required for ongoing operations would be rehabilitated. Finishing and rehabilitation would be undertaken progressively and would include the following typical activities:

- ▶ levelling of the area of disturbance to the required gradient in unsealed areas, using graders and/or excavators
- ▶ replacement or restoration of turf and/or bitumen/gravel surfaces so they are flush with the surrounds
- ▶ revegetation of any areas where vegetation has been removed or landscaping, if required
- ▶ dismantling of site compounds and stockpile locations and removal of all plant, equipment and materials, including excess spoil, from the site.

Site rehabilitation would be carried out in accordance with the rehabilitation strategy and the requirements of individual landowners.

5.2 Communications and notifications

Throughout construction, ARTC and the contractors would work closely with stakeholders and the community to ensure they are well informed regarding the construction works, including any utility works.

The communication tools and activities used during the construction phase would include:

- ▶ development of a communication management sub-plan detailing a complaints handling process
- ▶ proposal email address
- ▶ 1800 phone number
- ▶ updates to the Inland Rail website
- ▶ targeted consultation and notifications such as letters, notifications, and face to face communication
- ▶ construction signage.

The communication management sub-plan would be prepared by as part of the CEMP including a detailed list of the measures that would be implemented during construction to communicate with, and respond to community concerns. The plan would include, as a minimum:

- ▶ requirements to provide details and timing of proposed activities to affected residents, the local community and businesses
- ▶ consultation actions in relation to access arrangements and servicing requirements
- ▶ a complaints handling procedure
- ▶ procedures to notify adjacent land users for any changed conditions during the construction period such as traffic, pedestrian or driveway access.

Local residents, businesses and other stakeholders would be notified before work starts, and would be regularly informed of construction activities.

6 Conclusion

This framework represents an input and reference point for the development of the CEMP for the proposal, ensuring a consistent approach to the management of utility works and the associated impacts and ensuring integration with utility providers and relevant stakeholders during the construction phase of the proposal.

APPENDIX



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Utilities management framework

Appendix A Utility register

NARROMINE TO NARRABRI ENVIRONMENTAL IMPACT STATEMENT



The Australian Government is delivering
Inland Rail through the Australian
Rail Track Corporation (ARTC), in
partnership with the private sector.

Revision Date: 25-Feb-20

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
506.000	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
513.000	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
531.000	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
547.028	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING OUTSIDE OF TRACK ALIGNMENT AND PROVIDE PROTECTION.
547.398	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
547.728	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
552.053	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
558.838	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
559.338	TELSTRA [OC]	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
560.211	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
560.212	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
560.929	ESSENTIAL ENERGY	132kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
561.037	TELSTRA [OC]	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
561.911	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
561.971	APAGAS	NATURAL GAS (HP)	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
561.980	TELSTRA [OC]	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
562.370	TELSTRA [OC]	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
562.449	ESSENTIAL ENERGY	132kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
565.053	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
567.167	TELSTRA [OC]	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND ROAD AND PROVIDE PROTECTION.
571.338	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
577.025	ESSENTIAL ENERGY	22kV	NARROMINE	RELOCATE NORTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
577.343	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
577.352	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
577.586	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
578.580	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
578.584	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
578.604	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
578.723	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
579.420	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
580.358	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
580.650	ESSENTIAL ENERGY	132kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
583.373	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
584.185	ESSENTIAL ENERGY	22kV	NARROMINE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. ASSUMED NEW POLE ON EASTERN SIDE.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
590.500	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE TO PROJECT BOUNDARY AT MINIMUM COVER.
591.480	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
591.487	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
591.838	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
594.914	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
594.938	TELSTRA	COMMUNICATIONS CABLE	NARROMINE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
595.647	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE TRANSVERSE CONDUIT TO MINIMUM COVER OUTSIDE RAIL CORRIDOR.
596.106	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE PARALLEL CONDUIT TO MINIMUM COVER OUTSIDE RAIL CORRIDOR.
596.407	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
598.147	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
598.195	ESSENTIAL ENERGY	LV	GILGANDRA	ASSUMED ≤33KV. RELOCATE NORTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
598.976	ESSENTIAL ENERGY	11kV	GILGANDRA	RELOCATE EASTERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
599.105	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
599.776	ESSENTIAL ENERGY	11kV	GILGANDRA	RELOCATE NORTHERN POLE (ASSUMED) OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
600.653	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
602.816	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
603.040	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
603.092	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
609.932	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
610.281	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
616.537	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
622.279	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
622.391	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
628.070	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
628.083	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
628.115	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
628.253	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
629.496	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
629.974	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. POLE IN CENTER OF TRACK RELOCATED WEST.
633.181	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
633.515	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
633.516	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
633.541	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
633.566	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
633.592	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
648.030	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
648.030	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER THEN OUTSIDE OF TRACK ALIGNMENT AND PROVIDE PROTECTION.
648.806	ESSENTIAL ENERGY	66kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
650.514	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
650.514	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
650.552	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
650.552	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
652.438	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
652.674	ESSENTIAL ENERGY	22kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
652.938	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
654.141	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
654.407	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
655.199	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
655.962	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
656.365	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
657.117	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
657.454	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
658.858	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
659.105	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE PARALLEL CONDUIT TO MINIMUM COVER OUTSIDE RAIL CORRIDOR.
659.177	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. RELOCATE EASTERN POLE OUTSIDE OF PROJECT BOUNDARY.
659.509	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. POLE RELOCATED OUTSIDE OF PROJECT BOUNDARY.
661.125	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
662.396	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER OUTSIDE RAIL CORRIDOR.
666.949	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
667.200	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
667.224	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
669.467	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
669.649	ESSENTIAL ENERGY	11kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
669.667	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
677.316	ESSENTIAL ENERGY	22kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
677.738	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
678.996	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
679.257	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
679.277	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
684.785	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
684.932	ESSENTIAL ENERGY	22kV	GILGANDRA	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
685.749	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
685.749	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
685.758	ESSENTIAL ENERGY	22kV	GILGANDRA	RELOCATE EASTERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
685.842	TELSTRA	COMMUNICATIONS CABLE	GILGANDRA	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
686.036	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
687.784	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
693.849	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
693.934	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
697.176	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
697.742	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
701.197	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
702.193	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
703.389	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
703.625	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
703.912	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
709.740	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
716.175	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
716.562	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
717.323	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. RELOCATE SOUTHERN POLE OUTSIDE OF PROJECT BOUNDARY.
719.445	ESSENTIAL ENERGY	22kV	COONAMBLE	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
719.621	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
731.795	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
733.032	ESSENTIAL ENERGY	12.7kV	WARRUMBUNGL	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
734.270	ESSENTIAL ENERGY	12.7kV	WARRUMBUNGL	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
734.710	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
734.711	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
734.774	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
734.780	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
735.966	ESSENTIAL ENERGY	22kV	WARRUMBUNGL	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. ASSUMED NORTHERN POLE SHIFTS NORTH.
738.196	ESSENTIAL ENERGY	12.7kV	WARRUMBUNGL	RELOCATE WESTERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
738.761	ESSENTIAL ENERGY	12.7kV	WARRUMBUNGL	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
739.627	ESSENTIAL ENERGY	12.7kV	WARRUMBUNGL	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
741.909	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
744.813	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.

APPROXIMATE CHAINAGE	UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	PROPOSED WORK PLAN (ALL SUBJECT TO ARTC UTILITY OWNER VALIDATION)
747.102	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
747.120	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
747.143	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
747.255	ESSENTIAL ENERGY	22kV	WARRUMBUNGL	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
758.964	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
758.964	TELSTRA	COMMUNICATIONS CABLE	COONAMBLE	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
822.491	SANTOS GAS	GAS	NARRABRI	LOWER TO MINIMUM COVER AND PROVIDE PROTECTION.
825.070	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
826.022	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING OUTSIDE OF TRACK ALIGNMENT.
826.076	ESSENTIAL ENERGY	12.7kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
826.558	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE PARALLEL CONDUIT TO MINIMUM COVER OUTSIDE RAIL CORRIDOR.
826.968	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
827.003	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
827.003	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
827.003	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
827.054	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
827.082	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
828.723	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
830.039	AARNET	OPTIC FIBRE	NARRABRI	PROVIDE PROTECTION.

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830.046	ESSENTIAL ENERGY	12.7kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
833.000	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
833.665	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
834.763	ESSENTIAL ENERGY	12.7kV	NARRABRI	RELOCATE EASTERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
835.701	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
839.549	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
839.823	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
843.612	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	PROVIDE PROTECTION UNDER BRIDGE. RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH ROAD AND PROVIDE PROTECTION.
843.620	SANTOS GAS	GAS	NARRABRI	PROVIDE PROTECTION UNDER BRIDGE. LOWER TO MINIMUM COVER UNDER ROAD. DISCUSS WITH SANTOS GAS AND FUTURE PLAN AT THIS LOCATION.
844.111	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. ASSUMED EASTERN POLE RELOCATED.
844.111	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. ASSUMED EASTERN POLE RELOCATED.
844.118	SANTOS GAS	GAS	NARRABRI	PROVIDE PROTECTION. DISCUSS WITH SANTOS GAS AND FUTURE PLAN AT THIS LOCATION.
844.164	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
844.164	NARRABRI	WATERMAIN	NARRABRI	WATER MAIN TO REMAIN IN PLACE. APPROX 8m DEPTH. PROVIDE PROTECTION.
846.443	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE. TWO NEW POLES ASSUMED.
846.662	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	PROVIDE PROTECTION.
847.787	ESSENTIAL ENERGY	22kV	NARRABRI	RELOCATE EASTERN POLE OUTSIDE PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
847.801	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	PROVIDE PROTECTION.
847.813	NARRABRI	WATERMAIN	NARRABRI	PROVIDE PROTECTION.

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847.815	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	PROVIDE PROTECTION.
847.899	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	PROVIDE PROTECTION.
847.899	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	PROVIDE PROTECTION.
848.831	ESSENTIAL ENERGY	22kV	NARRABRI	RELOCATE SOUTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
848.847	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
848.905	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.069	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.088	ESSENTIAL ENERGY	22kV	NARRABRI	RELOCATE SOUTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.100	ESSENTIAL ENERGY	22kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.184	ESSENTIAL ENERGY	66kV	NARRABRI	RELOCATE NORTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.259	ESSENTIAL ENERGY	66kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.302	TRANSGRID	132kV	NARRABRI	RELOCATE SOUTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.327	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER OUTSIDE RAIL CORRIDOR.
849.365	NARRABRI	WATERMAIN	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
849.365	NARRABRI	GRAVITY MAIN	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
849.375	ESSENTIAL ENERGY	22kV	NARRABRI	RELOCATE SOUTHERN POLE OUTSIDE OF PROJECT BOUNDARY. RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
849.395	NARRABRI	SEWER RISING	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
849.423	NARRABRI	SEWER RISING	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.

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849.433	NARRABRI	WATERMAIN	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
850.888	TELSTRA [OC]	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
850.953	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
851.527	ESSENTIAL ENERGY	11kV	NARRABRI	RAISE OVERHEAD POWERLINES TO MEET MINIMUM CLEARANCE.
851.740	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.
852.101	TELSTRA	COMMUNICATIONS CABLE	NARRABRI	RELOCATE CROSSING TO MINIMUM COVER UNDERNEATH TRACK AND PROVIDE PROTECTION.