



EcOz
Environmental
Services

WesternDesert
RESOURCES

Draft EIS - Appendix T Draft Haul Road Traffic Management Plan

Western Desert Resources Limited
Roper Bar Iron Ore Project



2012



Draft Haul Road Traffic Management Plan

WDRL Haul Road, Roper Bar Iron Ore Project

Western Desert Resources Ltd

Project No: GC120004

Project Name: WRDL Bing Bong Haul Road

Document No: GC120004-C0703-T-R-OTMP-01

Report Date: June 2012

Document Control Record

Prepared by:	Catherine King
Position:	Traffic Engineer
Signed:	
Date:	June 2012

Approved by:	Mariya Otten-Andrew
Position:	Manager – Traffic And Transport
Signed:	
Date:	June 2012

REVISION STATUS

Revision No.	Description of Revision	Date	Approved
0	First Issue - Draft	15.06.12	

Recipients are responsible for eliminating all superseded documents in their possession.

VDM Engineering (Eastern Operations) Pty Ltd
ACN: 087 601 296

Level 8, Australia Fair Tower
42 Marine Parade
SOUTHPORT QLD 4215

PO Box 3766, Australia Fair
Southport Qld 4215

Telephone: +61 7 5509 6400
Facsimile: +61 7 5509 6411
Email: goldcoast@vdmgroup.com.au
Internet: www.vdmconsulting.com.au



RELIANCE, USES and LIMITATIONS

This report is copyright and is to be used only for its intended purpose by the intended recipient, and is not to be copied or used in any other way. The report may be relied upon for its intended purpose within the limits of the following disclaimer.

This study, report and analyses have been based on the information available to VDM Consulting at the time of preparation. VDM Consulting accepts responsibility for the report and its conclusions to the extent that the information was sufficient and accurate at the time of preparation. VDM Consulting does not take responsibility for errors and omissions due to incorrect information or information not available to VDM Consulting at the time of preparation of the study, report or analyses.

Contents

1	Introduction	5
1.1	Objective	5
1.2	Scope	5
1.3	Relevant Management Plans.....	6
1.4	Implementation	6
2	Project and Extents.....	7
2.1	Roper Bar Iron Ore Project	7
2.2	Location	7
2.3	Surrounding Road Network	8
3	Traffic Management Structure	10
4	Haul Road.....	11
4.1	General	11
4.2	Operational Protocols	11
4.3	River Crossings	11
4.4	Traffic Composition.....	12
5	Intersection with Savannah Way	14
5.1	Configuration	14
5.2	Operation	14
5.3	Restricting Access	15
5.4	Intersection Signage.....	15
6	Construction Phase	17
6.1	Permits and Documentation	18
6.2	Implementation of WTMP	19
6.3	Traffic Control Diagrams.....	19
6.4	Implementation of TCDs	23
6.5	Inspections and Records	23
6.6	Out-of-Hours Representatives	23
6.7	Dust Control.....	23
6.8	Traffic Controllers	23
6.9	Traffic Accidents	24
7	References	25

Appendices

Appendix A – Savannah Way / Haul Road Intersection Concept Design

Figures

Figure 2.1 Location of Roper Bar Iron Ore Project.....	7
Figure 2.2 Site Locality Plan (Google Earth extract)	8
Figure 2.3 Extent of Works – Aerial (Google Earth Extract).....	8
Figure 2.4 Surrounding Road Network (Extract of <i>Annual Traffic Report 2010</i> , Northern Territory Government, 2010, fig 11)	9
Figure 3.1 Traffic Management Structure	10
Figure 4.1 Signing arrangement for single lane bridges (AS1742.2 Figure 4.12)	12
Figure 4.2 Typical profile of Haul Vehicle (MCV)	13
Figure 5.1 Intersection Traffic Control Layout	14
Figure 5.2 “Stop” (R1-1B), “No Turns” (R2-7B) and “Stop Sign Ahead” (W3-1C) signs	15
Figure 5.3 “Cross Road” (W2-1C), “Trucks” (W2-22C) and “Crossing Ahead” (W8-22C) signs	15
Figure 5.4 “No Entry” (R2-4C) and “Authorised Vehicles Excepted” (R9-4C) signs	16
Figure 6.1 Shoulder Closure, 60 km/h Work Zone Speed Limit	20
Figure 6.2 Lane Closure – Single Lane Operation, 60 km/h Work Zone Speed Limit with Give-way Sign	21
Figure 6.3 Lane Closure – Two Lane Operation (6 m trafficable surface) 60 km/h Work Zone Speed Limit .	22

DRAFT

1 Introduction

VDM Consulting has been engaged by Western Desert Resources Limited (WDRL) to prepare a draft Traffic Management Plan (TMP) for the construction and operation of the WDRL Haul Road (the Haul Road) and more specifically, its intersection with the Savannah Way. This draft TMP has been prepared in support of the proposed Roper Bar Iron Ore mining project (the Project). The Haul Road forms an integral part of the Project.

This draft TMP outlines the general traffic management strategies and protocols which will be implemented on the Haul Road and at its intersection with the Savannah Way throughout the operation of the Project. The final TMP that will be prepared subsequent to the approval of the Project will address these matters in more detail. This document addresses site specific conditions, treatments and schemes to ensure the continued safe and efficient operation of the road network during the construction and operation of the Haul Road.

The Haul Road is located within a remote area of the Northern Territory and connects the WDRL stockyard at Bing Bong (which is approximately 50 km north of Borroloola) to the Roper Bar Iron Ore facility. The Haul Road has a total length of approximately 165 km. The Haul Road includes only one (1) intersection with a public road, Savannah Way. The Haul Road is not open for public use, and will be for mine traffic only.

1.1 Objective

The safe operation of traffic associated with the Project both on and off site is a primary concern for WDRL. The objective of this document is to ensure that all travel on the Haul Road occurs in a safe manner and that all interactions with the public road network are managed so as to minimise disruption to the travelling public.

1.2 Scope

This draft TMP addresses the following:

- Project environment and extents;
- WDRL traffic management structure for the Project;
- Provision of a Traffic Superintendent;
- Details of WDRL's organisational structure for traffic management issues;
- Haul road function and operation;
- Savannah Way intersection with the Haul Road including traffic arrangements which do not unnecessarily obstruct the operation of the Savannah Way;
- Operational protocols for Haul Road and intersection with Savannah Way to provide for the safety of all vehicular traffic;
- Traffic composition;
- Construction traffic management; and
- Schedule of typical Traffic Control Diagrams (TCDs).

The TMP for the project will address these items in detail.

1.3 Relevant Management Plans

Traffic management is only one facet of safe and efficient operations for the Project. The TMP will be implemented in conjunction with other management plans and processes within the Project's operational framework, including but not limited to:

- WDRL Roper Bar Iron Ore Project Operational Traffic Management Plan;
- Induction process for employees, contractors and visitors;
- Occupational Health and Safety;
- Safe Transport of Hazardous Materials;
- Emergency Response; and
- Vehicle Recovery.

1.4 Implementation

The TMP will form part of the induction process for all WDRL staff that will use the Haul Road and for the Haulage Contractor. Adherence to the TMP will be a requirement of employment and engagement of sub-contractors. Deviating from the protocols of the TMP will be grounds for immediate dismissal.

A Traffic Superintendent will be appointed by WDRL for the Project. The implementation, monitoring and enforcement of this TMP will be the responsibility of the Traffic Superintendent. The TMP will be a live document and will be reviewed regularly at not more than one year intervals. The TMP will be updated as required to take into account mine and haulage operations and impacts of Haul Road operation on the Savannah Way.

2 Project and Extents

2.1 Roper Bar Iron Ore Project

The Project involves developing an iron ore mine and associated infrastructure on the subject site. It is intended to extract 3 MT per annum of direct shipping ore. The site will include a storage facility, crushing plant and a run-of-mine (ROM) pad. There is an existing airstrip and this will be extended as part of the Project.

2.2 Location

WDRL operates the Roper Bar Mine camp located 230 km east of Katherine, it is between the Towns River and Little Towns River and approximately 30 km from the coast as shown in Figure 2.1.



Figure 2.1 Location of Roper Bar Iron Ore Project

The Haul Road extends from the WDRL stockyard at Bing Bong in the Gulf of Carpentaria to the Roper Bar Iron Ore Mine which is approximately 165 km north-east of Bing Bong. The Haul Road Intersection is located on the Savannah Way, approximately 20 km north of Limmen. The nominal alignment of the Haul Road and the location of the intersection is shown in Figure 2.1 and at larger scale in Figure 2.2. A more detailed aerial image of the approximate location of the intersection is presented in Figure 2.3. As shown, the surrounding area is currently vacant and unimproved.

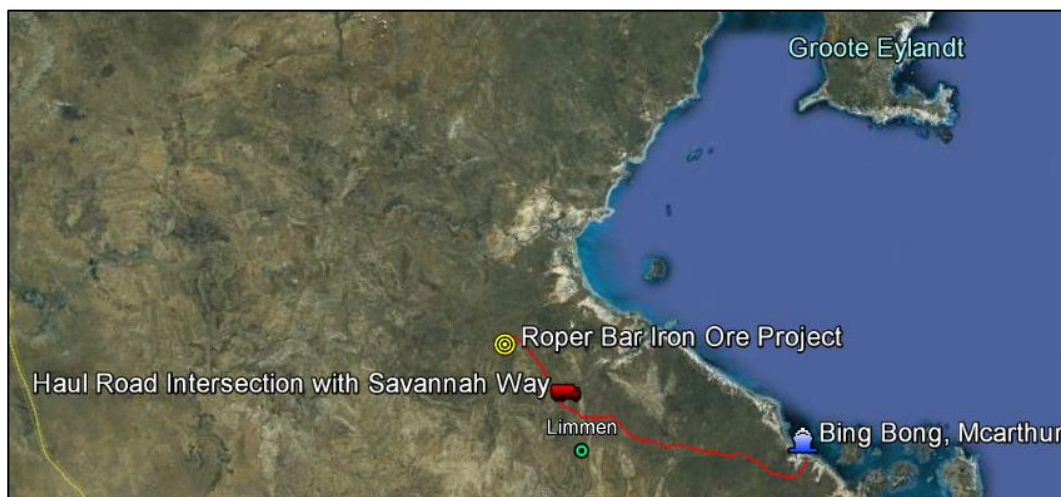


Figure 2.2 Site Locality Plan (Google Earth extract)



Figure 2.3 Extent of Works – Aerial (Google Earth Extract)

2.3 Surrounding Road Network

The surrounding road network is shown in Figure 2.4 with the indicative extents of the haul road shown in red (*Annual Traffic Report 2010*, Northern Territory Government, 2010, fig 11). The road network in this area of the Northern Territory is characterised by extremely low traffic volumes and unsealed roads.

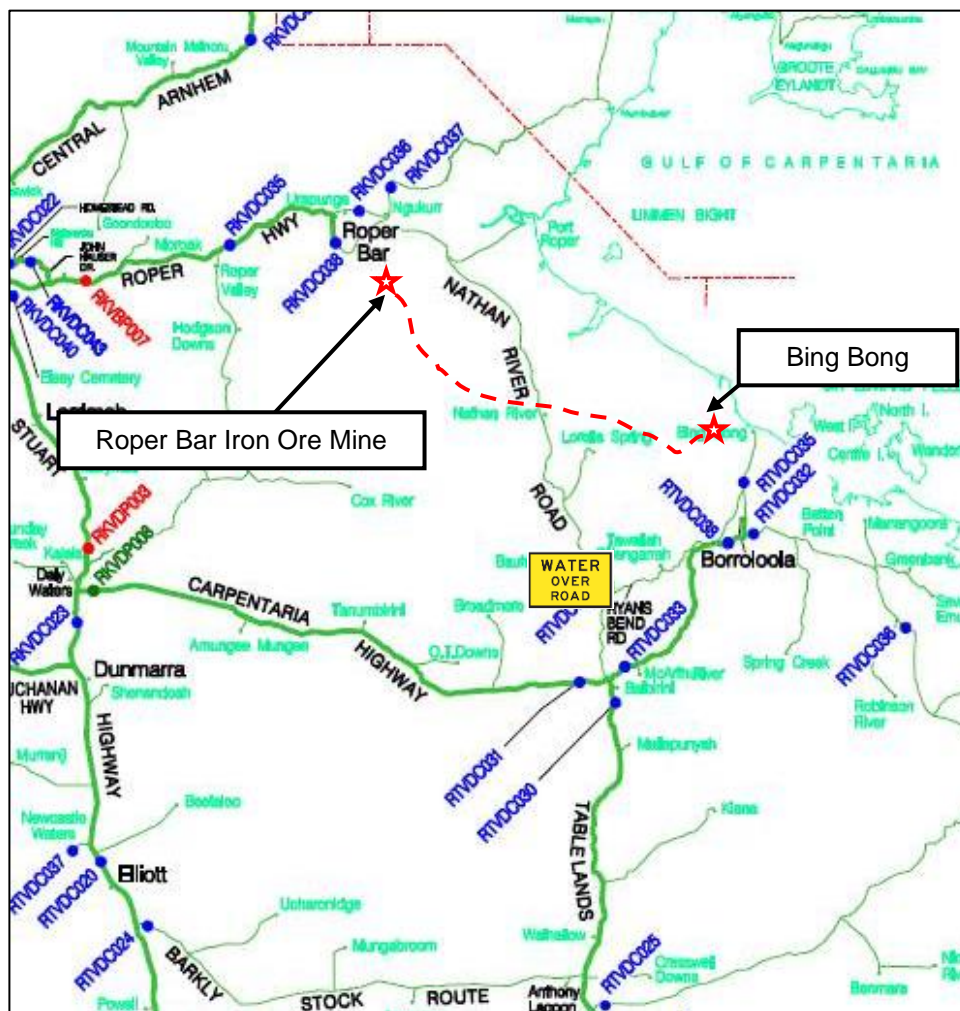


Figure 2.4 Surrounding Road Network (Extract of *Annual Traffic Report 2010*, Northern Territory Government, 2010, fig 11)

2.3.1 Savannah Way

The Savannah Way is a series of roads which link Cairns in North Queensland with Broome in Western Australia via the Northern Territory. The Savannah Way comprises public roads. In the Northern Territory it falls under the jurisdiction of the Northern Territory Department of Lands and Planning (DLP), Road Network Division (RND). In the vicinity of the Project, the Savannah Way is known as Nathan River Road (refer Figure 2.4) and is unsealed with a typical formation width ranging from 9 m to 10 m.

According to RND records, the average daily traffic demands on the Savannah Way in this area are around 20 vehicles per day and this road is subject to flooding in the Ryans Bend Road section to the south of the Haul Road intersection (refer Figure 2.4), particularly between December and April. Records show that even when open, this road is often suitable for 4WD vehicles only following water damage from flooding (*Annual Traffic Report 2010*, Northern Territory Government, 2010, tab 4D – 12 of 14). There is a high proportion of tourist traffic on the Savannah way.

2.3.2 Existing Access Road

There is an unsealed access road which provides connection between the Roper Bar Iron Ore Mine site and the Savannah Way to the north.

3 Traffic Management Structure

The Project’s organisational structure for traffic management issues is shown below. The Traffic Superintendent shall be responsible for the preparation and implementation of Traffic Control Diagrams (TCDs). The Traffic Superintendent shall be appropriately qualified and registered with Department of Construction and Infrastructure (DCI). The Traffic Superintendent will be responsible for liaison with the NLC and the Northern Territory Department of Lands and Planning (DLP), Road Network Division (RND) as required.

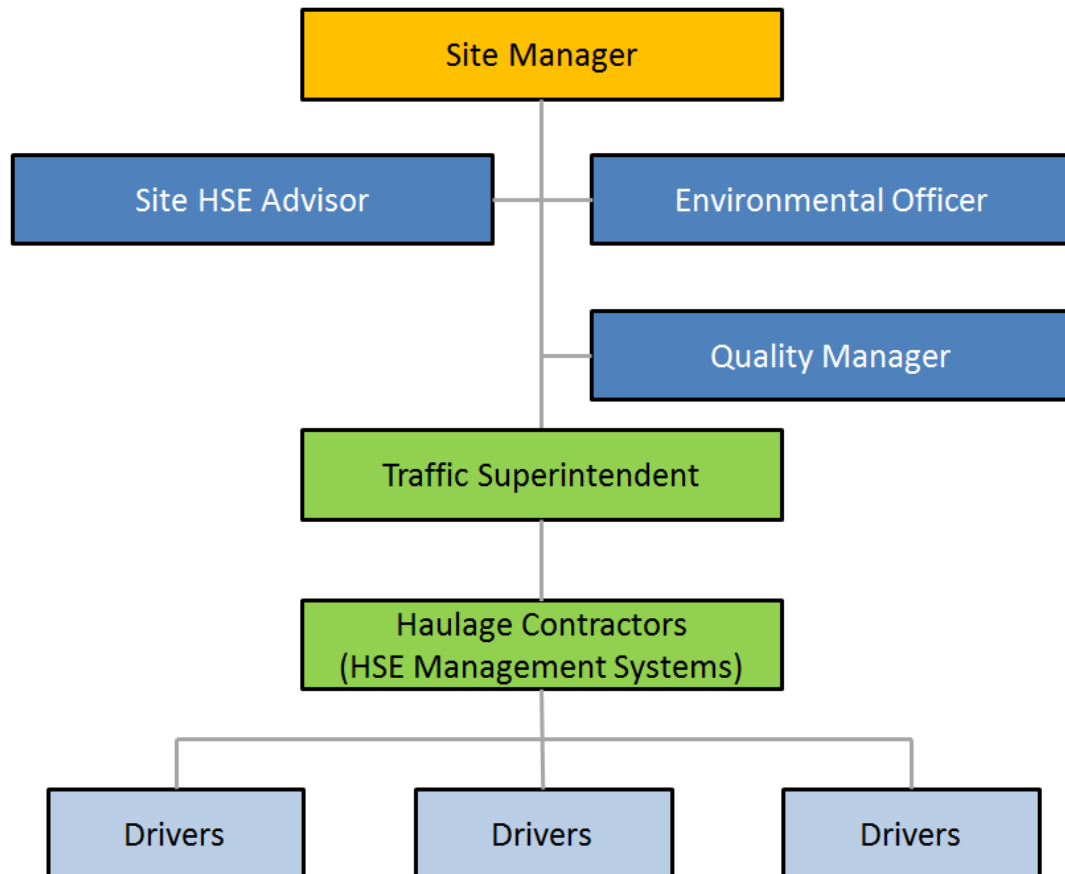


Figure 3.1 Traffic Management Structure

The haul vehicle drivers will be employed by the Haulage Contractors and operate under the Haulage Contractors’ HSE Management Systems, including but not limited to: Risk Assessment, Job Safety Analysis, Safe Work Methods and Procedures, Emergency Procedures, Investigation and Reporting requirements.

All personnel involved in traffic management must hold a current valid WorkSafe NT White Card or an equivalent recognised by WorkSafe NT. Only persons qualified in nationally accredited units of competency in Workzone Traffic Management will be utilised for traffic management at worksites. The relevant levels of accreditation are:

- Workzone Traffic Controller (WZ 2);
- Workzone Traffic Supervisor (WZ 3); and
- Traffic Management Plan Designer (WZ 1).

4 Haul Road

4.1 General

The Haul Road will be used by haul vehicles only. General mine related traffic will not be permitted on the Haul Road. The Haul Road will be a two-lane, two-way private road. It is proposed to seal the lanes and a portion of the shoulders. The alignment will be delineated using road edge guide posts and retroreflective pavement marking (centre line and edge lines), in accordance with *AS1742.2 Manual or Uniform Traffic Control Devices (MUTCD) Part 2: Traffic Control Devices for General Use* (Standards Australia, 2009, cl. 4.6.2.2).

The Haul Road has a single intersection with a public road (the Savannah Way). This is the only location along the route where WDRL vehicles will interact with the public. The geometry and structure of the road will be designed taking into account road width requirements of the haul vehicles. A posted speed limit of 80 km/h will apply.

This road is for exclusive use of mine haul vehicles. The road will be used for haulage 24 hours per day. There will not be a peak hour of operation, i.e. traffic demands will be consistent throughout the day and night. Anticipated daily traffic volumes are in the order of 120 - 140 articulated haul vehicles per day.

4.2 Operational Protocols

The following operational protocols shall apply to all vehicles using the haul road:

- Radio contact shall be maintained at all times;
- Haul vehicles will follow the Australian Road Rules;
- There shall be no overtaking;
- Inbound vehicles (travelling Bing Bong to Mine Site) shall give-way to outbound vehicles (travelling Mine Site to Bing Bong) on all bridges;
- Haul vehicles must come to a complete stop at the intersection with Savannah Way and give-way to any traffic on the Savannah Way; and
- Maintenance inspections shall be scheduled at least 48 hours in advance:
 - All haul vehicle drivers working during the inspection period shall be notified that a maintenance inspection vehicle will be travelling on the Haul Road during the scheduled inspection period; and
 - All haul vehicle drivers working during the inspection period shall be notified when the maintenance inspection vehicle has completed inspections and has departed from the Haul Road.

4.3 River Crossings

There will be in the order of 10 river crossings along the route. The final number will not be known until the detailed design of the Haul Road is completed. These will be single lane structures comprising in the order of five (5) bridges and five (5) culverts. Priority will be signed, with outbound vehicles (i.e. loaded vehicles travelling towards Bing Bong) having right of way.

The signage and pavement marking arrangements will be in accordance with the *MUTCD* (Standards Australia, 2009, cl. 4.2.2.1) as illustrated in Figure 4.1.

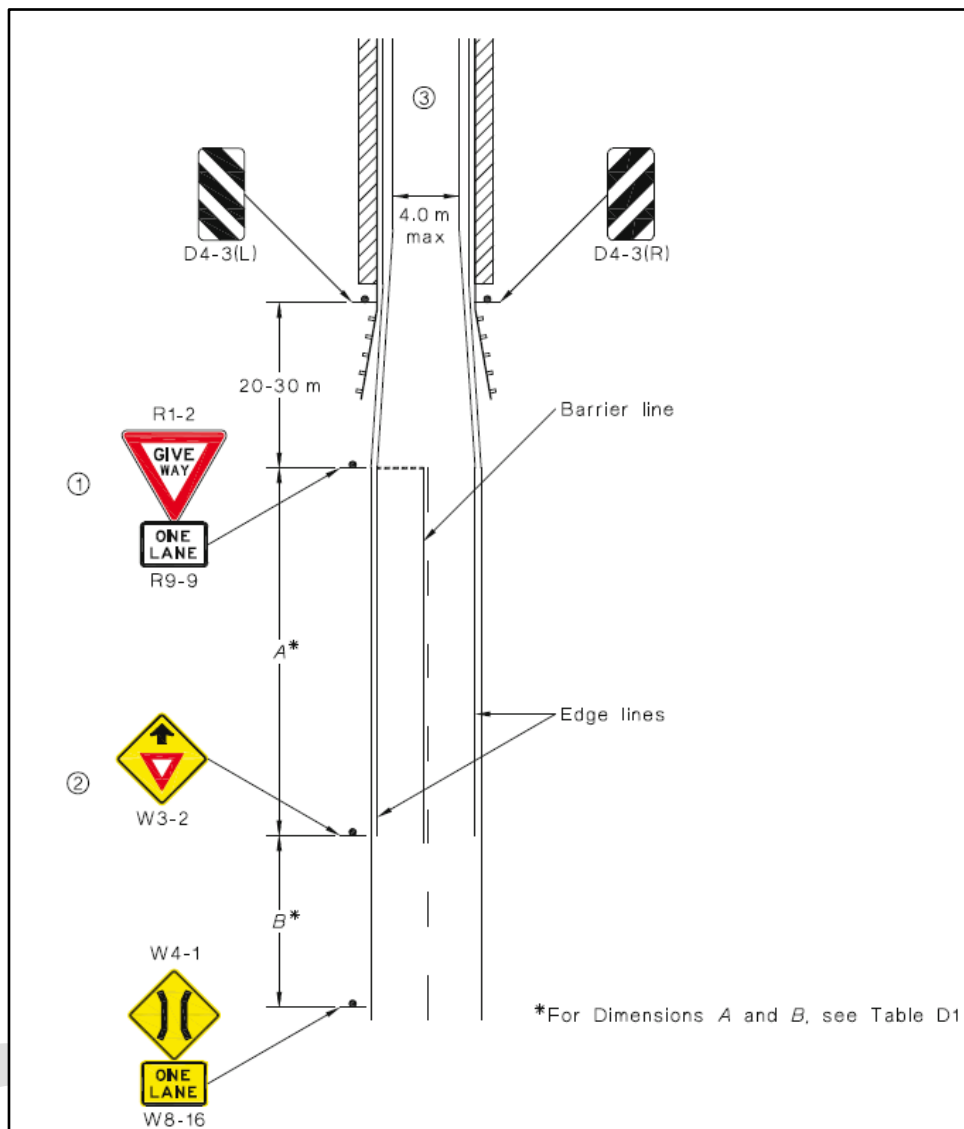


Figure 4.1 Signing arrangement for single lane bridges (AS1742.2 Figure 4.12)

4.4 Traffic Composition

No public traffic will be permitted on the road. No general Project traffic will be permitted on the road. The road is for the exclusive use of Haul Vehicles. Regular inspections and repairs will be carried out by a WDRL road maintenance crew. All WDRL vehicles will be fitted with flashing / rotating warning lights, two-way radio and radio call sign identification. All vehicles will carry traffic control equipment.

4.4.1 Haul Vehicles

It is proposed to use Multi-Combination Vehicles (MCVs) as haul vehicles. These will be triple trailer combinations (Austroads Class 12) with a total length in the order of 45 m (eg A-Triple or Modified B-Triple). Haul vehicles will carry a payload of 150 tonnes. The haul vehicles will be registered. Haulage rates are anticipated to be in the order of 9,000 to 10,000 tonnes per day which equates to 60 to 70 return vehicle trips per day.

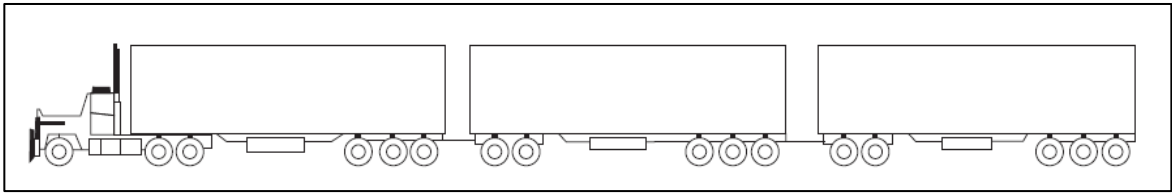


Figure 4.2 Typical profile of Haul Vehicle (MCV)

4.4.2 Maintenance Vehicles

Road condition inspections will be carried out on a regular basis using a single WDLR mine vehicle. When road maintenance is required, plant and equipment will be floated to the subject road segment.

DRAFT

5 Intersection with Savannah Way

5.1 Configuration

The intersection with Savannah Way will be a four-way crossroads, operating under priority control. Savannah Way will have priority. The Haul Road will cross the Savannah Way with an intersection angle of 90 degrees in accordance with intersection design best practice (*Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections*, Austroads, 2010, sec. 2.1.1).

The Haul Road design will incorporate speed attenuation measures (such as reverse curves) on both approaches to the intersection to facilitate speed reduction well in advance of the intersection.

5.2 Operation

All Haul Road traffic will be required to come to a complete stop at the intersection. Advance warning signs will be provided on all approaches to ensure that all drivers are aware of the upcoming intersection. The proposed intersection layout and associated signage is shown in Figure 5.1 and at larger scale in Appendix A. Based on the 24 hour per day operation with 60 to 70 return trips per day, there will be six (6) vehicle crossings (three (3) inbound and three (3) outbound) per hour.

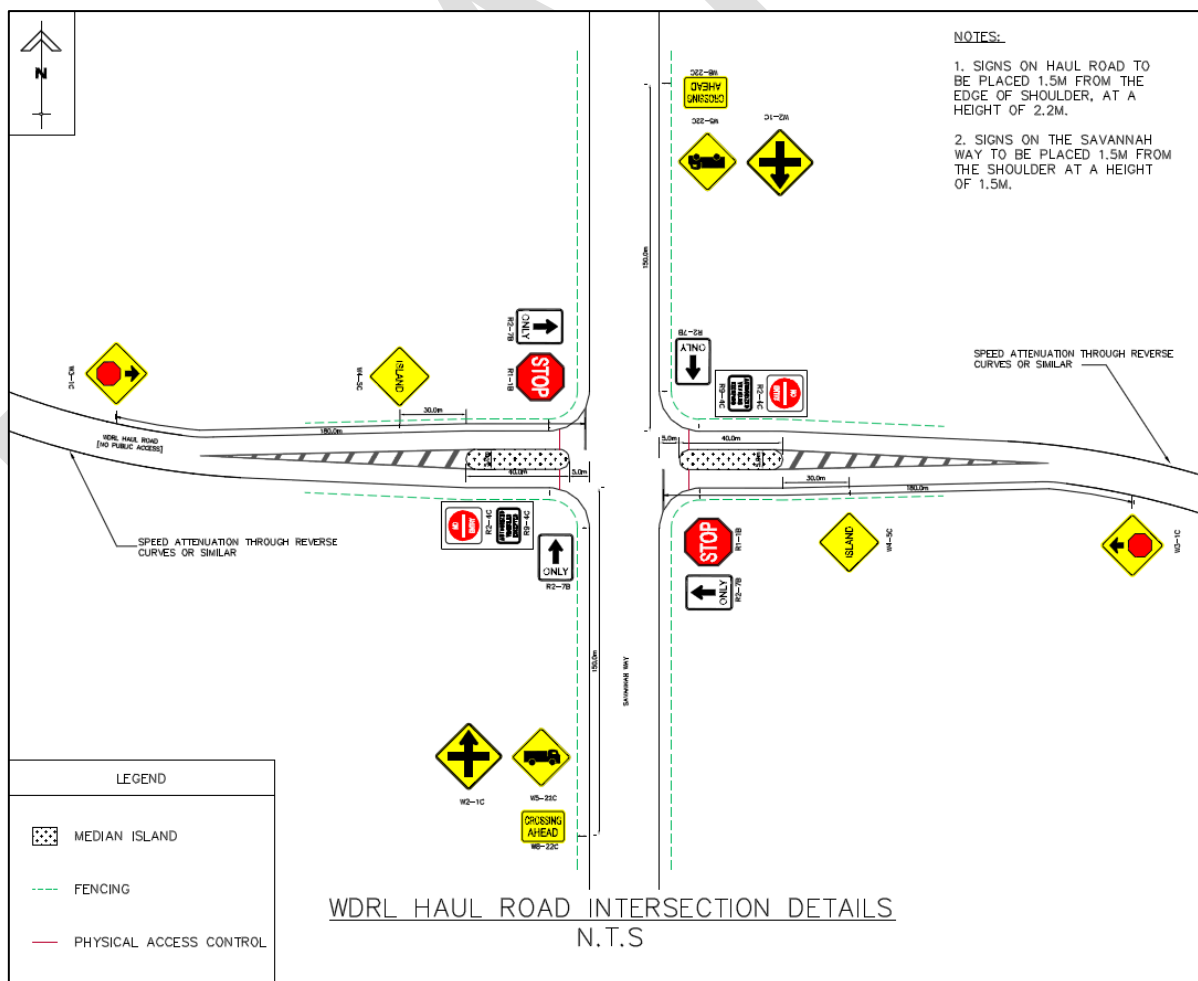


Figure 5.1 Intersection Traffic Control Layout

5.3 Restricting Access

Roadside fencing will be installed on the Haul Road and Savannah Way in the proximity of the intersection to deter the public from accessing the Haul Road, as indicated on Figure 5.1. Physical controls (eg boom gates) will be installed on the Haul Road at the intersection to prevent public vehicles from entering the haul road. The form and operation of the physical control will be determined during the design development and finalised at completion of the detailed design.

5.4 Intersection Signage

All signs installed at the Haul Road and Savannah Way intersection are to be placed 1.5 m from the edge of the shoulder. All signs will be regularly maintained to ensure they are reflective, not obscured by vegetation or dust and that they are replaced if they become too worn.

“Stop” signs (R1-1B) with “No Turns” sign (R2-7B) will be installed on the Haul Road at the intersection. Advanced warning using the “Stop Sign Ahead” sign (W3-1C) will be installed on the Haul Road on both approaches to the Savannah Way intersection. These signs will be placed on the Haul Road with a mounting height of 2.2 m. The “Stop Sign Ahead” sign (W3-1C) is to be located 180 m from the stop bar at the intersection. These signs are presented in Figure 5.2.



Figure 5.2 “Stop” (R1-1B), “No Turns” (R2-7B) and “Stop Sign Ahead” (W3-1C) signs

In order to warn the public travelling on Savannah Way, the following signs will be used, located 120 m prior to the intersection:

- “Cross Road” sign (W2-1C);
- “Trucks (Crossing or Entering)” sign (W5-22C); and
- “Crossing Ahead” sign (W8-22C),

These signs will be placed 1.5 m from the edge of the Savannah Way shoulder with a mounting height of 1.5 m. These signs are presented in Figure 5.3.



Figure 5.3 “Cross Road” (W2-1C), “Trucks” (W2-22C) and “Crossing Ahead” (W8-22C) signs

To reinforce to the public that access to the Haul Road is prohibited, a “No Turns” sign (R2-7B) will be used on both Savannah Way approaches to the intersection, immediately in advance of the crossroads (refer Figure 5.2).

On the departure lanes for the Haul Road the “No Entry” (R2-4C) and “Authorised Vehicles Excepted” (R9-4C) signs will be installed to reinforce to the public that they are prohibited to travel on the Haul Road. These signs will be placed 1.5 m from the edge of the Haul Road shoulder with a mounting height of 1.5 m. These signs are presented in Figure 5.4.



Figure 5.4 “No Entry” (R2-4C) and “Authorised Vehicles Excepted” (R9-4C) signs

DRAFT

6 Construction Phase

This section summarises the overall traffic management methodology intended for the construction of the Savannah Way intersection with the Haul Road. A detailed Construction Traffic Management Plan (CTMP) will be prepared prior to the commencement of works on the Savannah Way intersection. The CTMP will be prepared in accordance with the requirements of *Application Procedures for a Permit to Work within NT Government Road Reserves* (DCI, 2012). The CTMP will be designed by a Northern Territory accredited Traffic Management Plan Designer and will include the details of the TMP Designer's name, accreditation number and date of expiry of accreditation. The document will address the following:

Project Information

- Purpose, scope and location;
- Site constraints/impacts;
- Traffic management objectives and strategies;
- Principal for the Works; Principal Contractor/Design Consultant including contact details;
- Responsibilities including role responsibility and authority of key personnel, management hierarchy including site representatives and contact details of the responsible personnel; and
- Prior approvals (if any) granted by the Road Authority with relevant reference number.

Works on Roads

- Project scope inclusive of works to be undertaken, staging of works and duration of works (work hours);
- Existing traffic and speed environment;
- Roles and responsibilities;
- Traffic management responsibility hierarchy;
- Project representatives; and
- Traffic management administration.

Statutory Requirements

- Occupational Health and Safety including Work Health and Safety Act and Regulations when in effect;
- Provide details on the TMP of responsibilities and authorities of all key personnel on the project including project manager, line managers (site engineers, supervisors etc), contractors and workers, safety personnel and traffic management personnel;
- Requirements of personal protective equipment, plant and equipment; and
- Procedures for incidents or accidents.

Monitoring and Measurement

- Site Inspections and Record Keeping; and
- TMP Auditing.

Management Review

- TMP review and improvement;
- Variations to standards and plans; and
- Attention to hazards for non-motorised road users.

Planning

- Risk identification and assessment;
- Legal and other;
- Traffic assessment (vehicular traffic);
- Volume and composition;
- Existing and proposed speed zones;
- Intersection capacity;
- High wide loads;
- Special events and other works;
- Site assessment;
- Environmental conditions;
- Impact on adjoining road network;
- Works programming;
- Work sequence;
- Night works;
- Emergency planning;
- Consultation and communication;
- Approvals;
- Public notification; and
- Notification to other agencies.

Implementation

- Hazard identification, risk assessment and control;
- Traffic control diagrams;
- Traffic control devices;
- Signs;
- Pavement markings;
- Variable message signs;
- Delineation;
- Temporary speed zones;
- Emergency arrangements; and
- Site access.

A brief summary of the traffic management throughout the construction period is provided below.

6.1 Permits and Documentation

Prior to commencing Haul Road construction in the vicinity of the Savannah Way, a 'Permit to Work within the NT Government Road Reserve' will be obtained from the DCI.

A Workzone Traffic Management Plan (WTMP) including TCDs will be prepared in accordance with *MUTCD* (Standards Australia, 2009) The WTMP will be made available to DCI and DCI will be provided details of any changes to the WTMP that are made during the Project. WDRL shall implement only the approved WTMP throughout the duration of the construction activities.

Road and bridge construction equipment will be transported to the site by the public road network. Where the equipment constitutes an oversize and / or overmass vehicle / load, a Permit will be obtained in accordance with *Permit Guidelines for Oversize and Overmass Vehicles* (DLP RND, 2011).

6.2 Implementation of WTMP

The effectiveness of this WTMP will be monitored by the Traffic Superintendent using inspections described in Section 6.5. If it is determined at any time that the Savannah Way is potentially unsafe and un-trafficable, it is the responsibility of the Traffic Superintendent to coordinate and expedite immediate rectification to ensure the safety of the public and personnel. In addition to any recommendations raised by inspections carried out by Traffic Superintendent, the WTMP may be required to be revised and updated for the following:

- When any new TCDs are developed;
- When a WDRL Audit identifies the need for improvement; or
- When an Audit carried out by DCI identifies the need for improvement.

6.3 Traffic Control Diagrams

The bulk of construction work in the vicinity of the Savannah Way will be offset from the public road and will not impact on its operation. Where works are in close proximity to the Savannah Way, traffic management will be employed in accordance with *MUTCD* (Standards Australia, 2009).

Construction of the Savannah Way intersection will require the implementation of minor changes to existing traffic arrangements. A series of TCDs will be prepared which will clearly detail the revised traffic arrangements. Each TCD will be prepared in accordance with *MUTCD* (Standards Australia, 2009) by suitably qualified and experienced persons and shall be submitted by the Traffic Superintendent to DCI in accordance with the requirements of *Application Procedures for a Permit to Work within NT Government Road Reserves* (DCI, 2012). Each TCD shall show proposed temporary signing and other traffic control device layouts to a suitable scale and be fully dimensioned.

As the formation width of Savannah Way is at least 9 m wide in the vicinity of the intersection, it will be possible to maintain two way traffic movement throughout the intersection construction for the most part. It is anticipated that construction of the pavement across the Savannah Way will be complete in two stages, at which time the Savannah Way will be reduced to a single lane. Based on the short length of the intersection and the straight alignment of Savannah Way, there will be clear visibility between both approaches to the lane closure. It is therefore anticipated that this single lane will operate under Give-way conditions.

Arrangement diagrams for typical traffic guidance schemes which would be implemented are provided in Figure 6.1 through to Figure 6.3. It is anticipated the following will be required to facilitate the intersection construction:

- Shoulder closure; and
- Lane closure.

The speed limit on Savannah Way will be reduced to a minimum of 60 km/h in accordance with *Application Procedures for a Permit to Work within NT Government Road Reserves* (DCI, 2012). Workers and plant will be separated from traffic in accordance with the requirements of *MUTCD* (Standards Australia, 2009).

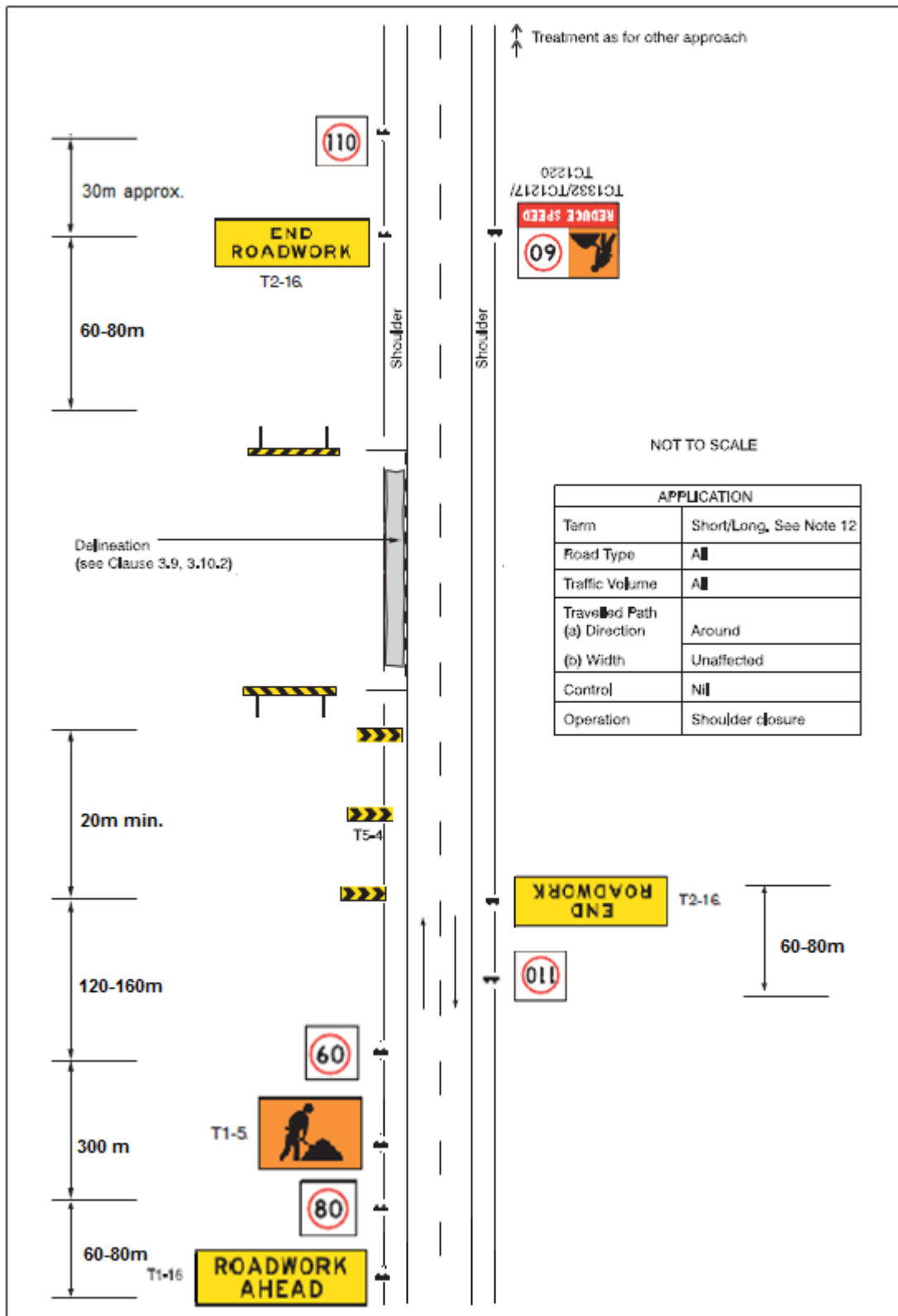


Figure 6.1 Shoulder Closure, 60 km/h Work Zone Speed Limit

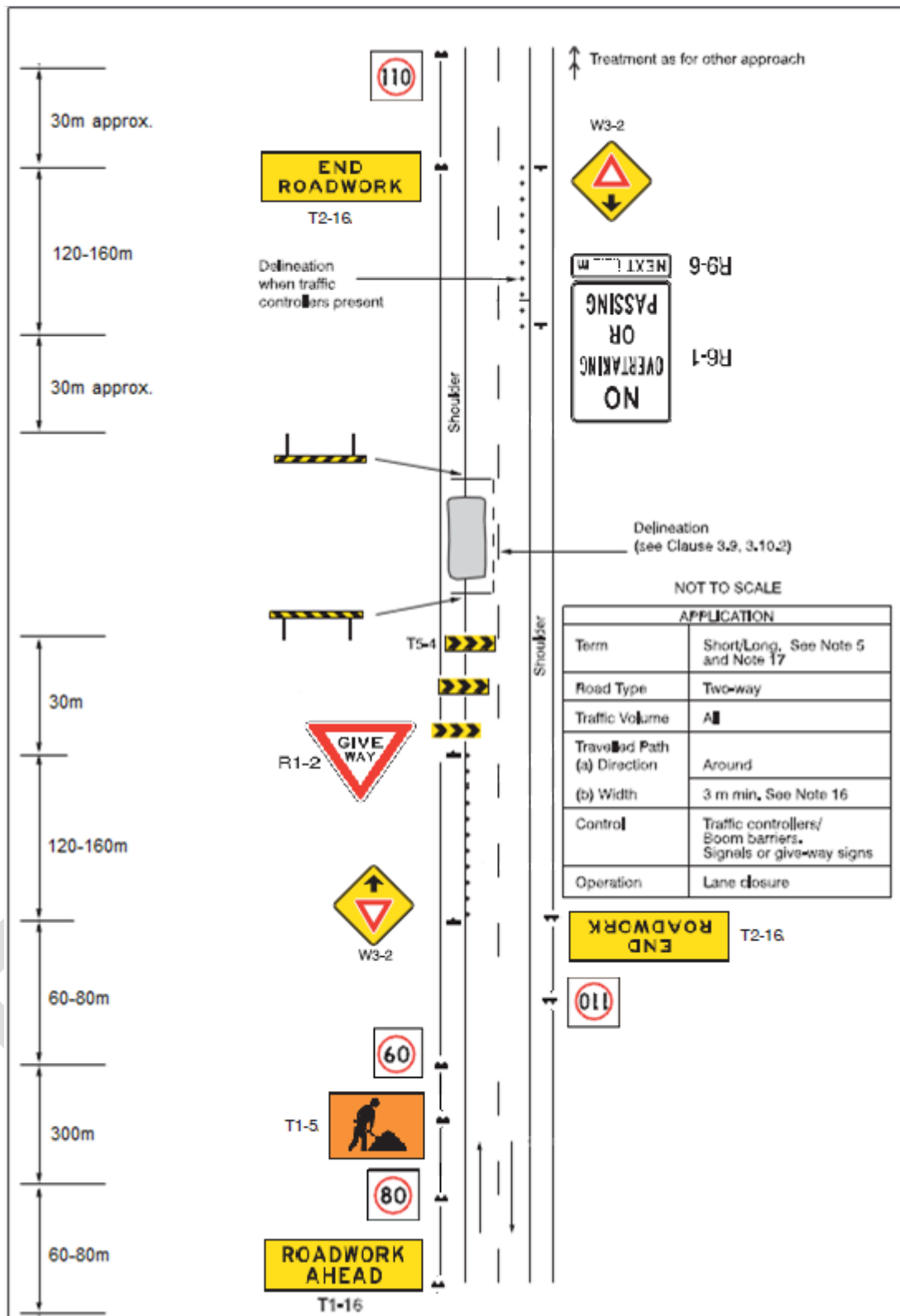


Figure 6.2 Lane Closure – Single Lane Operation, 60 km/h Work Zone Speed Limit with Give-way Sign

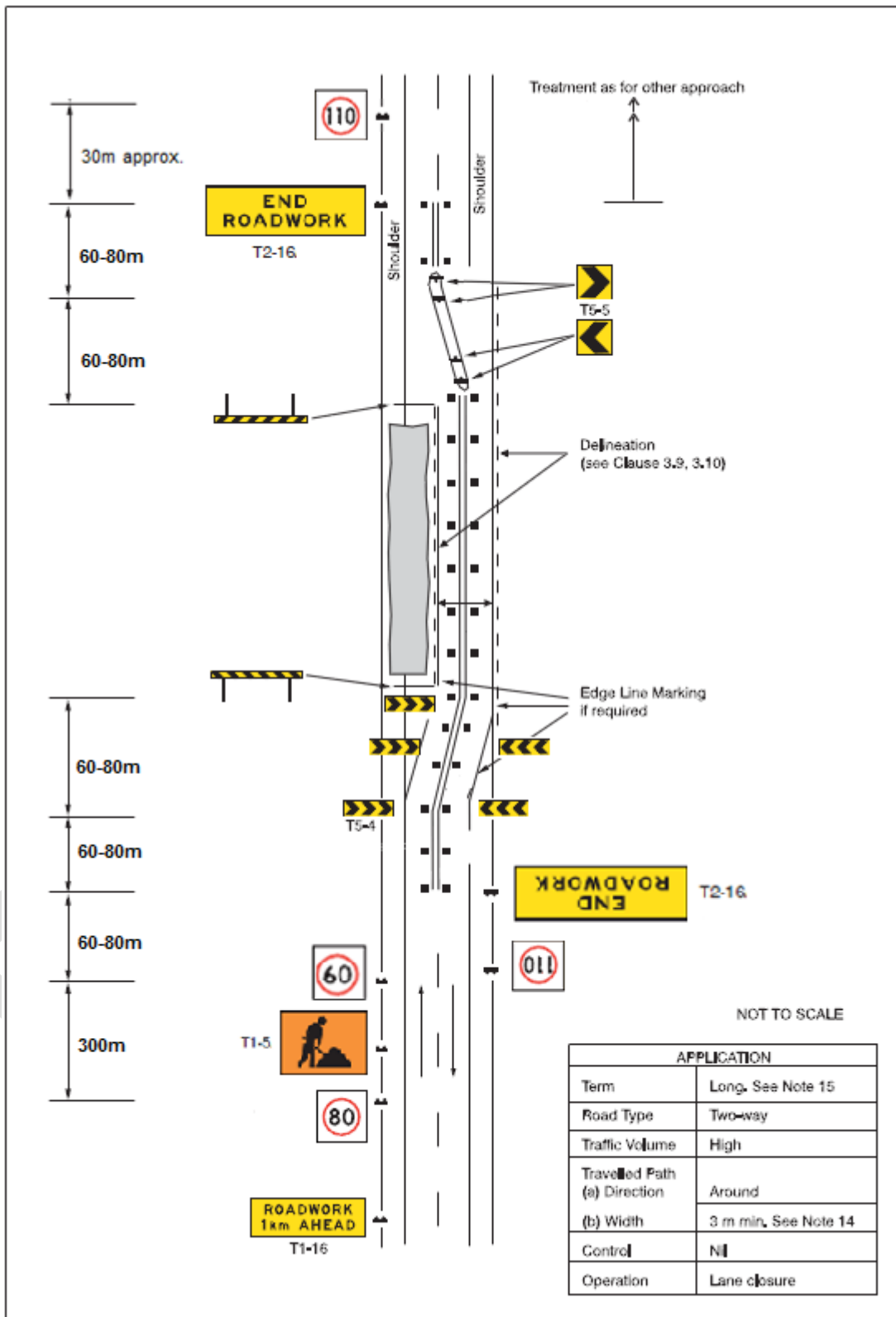


Figure 6.3 Lane Closure – Two Lane Operation (6 m trafficable surface) 60 km/h Work Zone Speed Limit

6.4 Implementation of TCDs

WDRL shall implement only traffic management arrangements that have been deemed suitable by DCI. If WDRL determines that it will be necessary to depart from such arrangements an amended TCD shall be submitted to DCI for approval prior to implementation of any new arrangements.

Prior to implementing any change to existing traffic arrangements, WDRL will ensure that the traffic management arrangements conform to the approved TCD. WDRL will maintain the installation and monitor for continued effectiveness. The TCD will be revised in response to incidents and / or traffic disruptions as required.

A monthly report including a summary of all road and lane closures and temporary speed restrictions will be provided to DCI. The summary will state the location, extent of works, dates and times and temporary speed restrictions for any works located within the road reserves of the affected areas.

WDRL will ensure that all applicable traffic redirection and / or warning measures and safety requirements are implemented prior to proceeding with any relevant work. This will be checked on a daily basis with a record kept (refer Section 6.5).

6.5 Inspections and Records

All changes to regulatory signage and traffic control devices will be recorded; this information will include location and time of change. A twice daily traffic control device check will be carried out to ensure the devices are maintained in accordance with the approved TCDs. Records of these inspections will be collected by the Site Supervisors and any rectifications required will be carried out in collaboration with the Traffic Superintendent. These records will be made available to DCI upon request. All complaints received will be registered and provided to DCI on a weekly basis.

6.6 Out-of-Hours Representatives

A minimum of two (2) out-of-hours representatives with the authority to address traffic management issues will be nominated prior to the commencement of works. Full contact details (name, address and telephone number) of these persons will be provided to DCI.

6.7 Dust Control

WDRL will take all appropriate measures to ensure minimisation of dust generated from construction activities. Dust control measures will be included in all relevant Job Hazard Analysis. Dust from construction activities will be controlled as appropriate which may include the use of water trucks. All traffic control devices with reflective materials will be cleaned at regular intervals to maintain reflectivity.

6.8 Traffic Controllers

All Traffic Controllers used will hold an appointment as an accredited Workzone Traffic Controller (WZ 2) in accordance with the requirements of DCI. Traffic controllers will be utilised as necessary to assist in implementation of the TCDs and management of traffic movement through the project.

6.9 Traffic Accidents

If an incident occurs during construction within, adjacent to, on approach to or departure from the work site, WDRL will make a photographic record of the traffic control devices, site conditions, placement of plant and equipment etc, as soon as practical after the event. WDRL will act in accordance with the requirements of *Application Procedures for a Permit to Work within NT Government Road Reserves* (DCI, 2012) for traffic accidents.

DRAFT

7 References

Australian Standards 2009, *AS1742.2 Manual of Uniform Traffic Control Devices Part 2: Traffic Control Devices for General Use (MUTCD)*, Standards Australia, Sydney.

Austrroads 2010, *Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections*, Austrroads Incorporated, Sydney.

Department of Construction and Infrastructure (DCI) 2012, *Application Procedures for a Permit to Work within NT Government Road Reserves*, Northern Territory Government, Darwin.

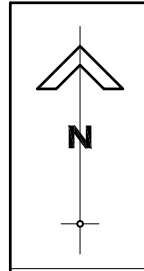
Northern Territory Department of Lands and Planning (DLP) Road Network Division (RND) 2011, *Permit Guidelines for Oversize and Overmass Vehicles*, Northern Territory Government, Darwin.

Northern Territory Government 2010, *Annual Traffic Report 2010*, Northern Territory Government, Darwin.

DRAFT

Appendix A – Savannah Way / Haul Road Intersection Concept Design

DRAFT



NOTES:

- SIGNS ON HAUL ROAD TO BE PLACED 1.5M FROM THE EDGE OF SHOULDER, AT A HEIGHT OF 2.2M.
- SIGNS ON THE SAVANNAH WAY TO BE PLACED 1.5M FROM THE SHOULDER AT A HEIGHT OF 1.5M.

ROPER BAR
IRON ORE PROJECT
FOR
WESTERN DESERT
RESOURCES LTD

VER.	DESCRIPTION	APPR.	DATE
A	PRELIM DRAFT	MOA	15.06.12

REVISIONS

COPYRIGHT (C)
This drawing is copyright and the property of VDM. It must not be retained, copied or used without the authority of VDM.

DISCLAIMER
This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were intended. VDM will not accept responsibility for any consequences arising from the use of the drawing for other than its intended purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party.

NOTE
This is an uncontrolled document issued for information purposes only, unless the checked sections are signed or completed. Figured dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.



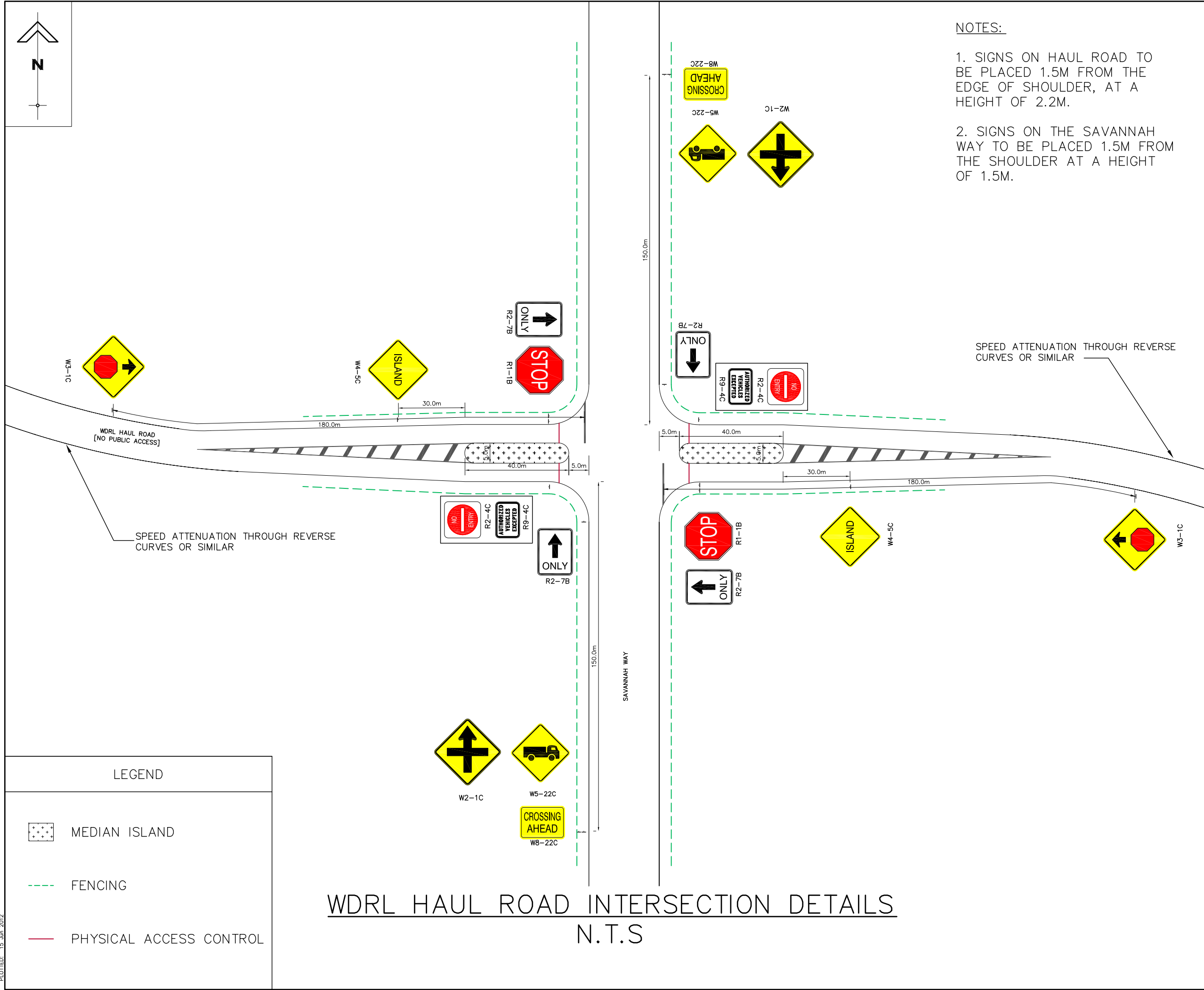
GOLD COAST
Level 8, Australia Fair Tower
42 Marine Parade, Southport QLD 4215
PO Box 3766, Australia Fair, Southport QLD 4215
Phone: +61 7 5509 6400
Fax: +61 7 5509 6411
Email: goldcoast@vdmgroup.com.au
VDM Engineering (Eastern Operations) Pty Ltd
ABN 91 087 601 296

DRAWING TITLE :

**FIGURE T001 -
PRELIMINARY INTERSECTION
DETAILS
SAVANNAH WAY / WDRL HAUL ROAD**

DEVEL. APPLIC. No. :	DATE : 15.06.12
PROJECT LEADER : PHILLIP BELL	
DESIGNER :	
DRAFTSPERSON : CATHERINE KING	
CHECKED : MARIYA OTTEN-ANDREW	
APPROVED FOR AND ON BEHALF OF VDM ENGINEERING (EASTERN OPERATIONS) PTY LTD	ACN 087 601 296
RPEQ No. :	
SCALE : N.T.S	DATUM : FULL SIZE : A3
PROJECT No. : GC120004	DRAWING No. : T001
	VERSION : A

LEGEND	
	MEDIAN ISLAND
	FENCING
	PHYSICAL ACCESS CONTROL



WDRL HAUL ROAD INTERSECTION DETAILS
N.T.S

PLOTTED: 15 Jun 2012

This page has been intentionally left blank.