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1 PROVISION FOR TRAFFIC

1.01 SCOPE

This Section of the specification covers all work necessary to provide for the safe movement of traffic and the protection of persons and property through and/or around the work site for the duration of the project.

The extent of work includes the design, construction, maintenance and removal of temporary roadways and side tracks, the provision of traffic controllers, lights, barriers, ramps, signs, road markings, fences, detours and any other items required and shall apply where any public place or road is affected by the works. Unless otherwise specified all temporary traffic arrangements required by works under the Contract are included under this Specification.

The Contractor must conform with the requirements of AS 1742.3, this Specification, and the drawings when planning and carrying out traffic control.

1.02 STANDARDS

Work carried out under this Section of the Specification shall comply with the requirements of the following Standards to the extent that they are relevant and that they are not overridden by the Specification.

Australian Standards

AS 1165	Traffic Hazard Warning Lamps
AS 1742.3	Traffic Control Devices for Works on Roads
AS 1743	Road Signs
AS 1744	Standard Alphabets for Road Signs
AS 1906	Retro-reflective Materials and Devices for Road Traffic Control Purposes
AS 3845	Road safety barrier systems

Legislation

Road Transport (Safety and Traffic Management) Act 1999

Road Transport (General) Act 1999

Occupational Health and Safety Act 1989

Other References

SAA HB81 Standards Australia - Field Guides for Traffic Control at Works on Roads

DS 9 ACT Government Draft Design Guidelines - Traffic Control Devices

AUSTROADS Publications

Guide to Traffic Engineering Practice – Part 5 – Intersections at Grade

Guide to the Geometric Design of Rural Roads

1.03 DEFINITIONS

APPROVED TEMPORARY TRAFFIC MANAGEMENT PLAN(S):	An arrangement of temporary signs and devices to warn traffic and guide it through or past a work area or temporary hazard that has been approved for use by the relevant Statutory Officer under the appropriate Legislation
REGULATORY TRAFFIC CONTROL DEVICE:	Any sign, signal, marking, or installation indicating an obligation to comply with a legally enforceable instruction.
WORK AREA:	The specific area where work is being done.
WORK SITE:	An area which includes the work area(s) and any additional length of road required for advance signing, tapers, side tracks or other areas needed for associated purposes.
OBSTRUCTION:	Any works or otherwise on or adjacent to an existing carriageway that requires modification to the existing traffic control arrangements.
SIDE TRACK:	A length of temporary pavement constructed for detour of traffic to allow safe construction of the works.
DETOUR:	Diversion of traffic on existing roadways because of obstruction of the existing roadway required to facilitate safe construction of the works.
DELINEATION BARRIER:	A barrier used to define hazards and guide traffic through the work site.
PHYSICAL BARRIER:	A temporary safety barrier required to provide a strong physical barrier between the travelled way and the work area.

1.04 GENERAL**1.04.1 Construction Operations**

Conduct operations so as to offer the least possible obstruction and inconvenience to the public. The length or amount of work under construction at any one time shall not exceed that which can be properly managed having due regard for the rights of the public. Unless otherwise specified or permitted, all traffic (both vehicular and pedestrian) shall be allowed to pass through the works.

The Contractor's attention is drawn to the requirements of the following relevant Legislation:

- Road Transport (Safety and Traffic Management) Act 1999;
- Road Transport (General) Act 1999; and
- Occupational Health and Safety Act 1989..

The Contractor should note that wherever the word 'should' occurs in AS 1742.3 the word 'shall' applies and the required action is the Contractor's responsibility.

The Contractor shall place, erect, alter or remove road signs only in accordance with the approved Temporary Traffic Management Plan(s) or AS 1743.3 .The Contractor shall liaise with the Australian Federal Police with regard to the control of traffic and other matters within their jurisdiction as appropriate.

1.04.2 Temporary Traffic Management Plan

The Contractor shall obtain all necessary approvals from the relevant authorities for temporary traffic arrangements except where specified otherwise.

At least five (5) working days prior to undertaking any work which would involve any obstruction whatsoever to traffic, the Contractor shall prepare and submit Temporary Traffic Management Plan(s) to the Superintendent for endorsement. When endorsed by the Superintendent, the Contractor shall submit the Temporary Traffic Management Plan(s) to the delegate of the road transport authority, Department of Urban Services, Australian Capital Territory or other person so empowered by the relevant Legislation for written approval.

The endorsement of the Superintendent does not relieve the Contractor of the obligations of the relevant Legislation.

Where the approved Temporary Traffic Management Plan(s) involve regulatory traffic control devices, the Contractor shall forward copies of the approved plans to the Australian Federal Police so that such traffic regulations may be enforced.

The Temporary Traffic Management Plan(s) shall include:

- (a) Design drawings for any temporary roadways and side tracks in accordance with Clause 1.06 showing pavement, wearing surface and drainage details.
- (b) Details of arrangements for construction under traffic in accordance with SAA HB81
- (c) A signpost layout plan showing:
 - location, size and legend of all temporary signs;
 - temporary regulatory signs and temporary speed zones; and
 - all traffic control devices such as temporary traffic signals, road marking, pavement reflectors, guideposts, safety barrier systems, barrier boards etc.

Special consideration shall be given in the preparation of the Temporary Traffic Management Plan(s) to the safety of pedestrians, cyclists and workers. Particular care shall be taken when requiring reversal of traffic flows or the separation of unidirectional flow by medians or other physical separation.

Where Temporary Traffic Management Plans are included as part of the drawings, they shall be used as the basis for preparation of Temporary Traffic Management Plans

No extension of time will be granted or allowed relative to any delay associated with the obtaining of the necessary approvals unless it is shown to the satisfaction of the Superintendent that all necessary steps have been taken by the Contractor within the specified timeframe.

Hold Point 1.1

Process Held: Work which would involve any obstruction whatsoever to traffic.

Submission Details: At least five (5) working days prior to proposed submission of the Temporary Traffic Management Plan(s) to the relevant Statutory Officer for approval under the appropriate Legislation, the Contractor shall submit the Temporary Traffic Management Plan(s) to the Superintendent for endorsement.

Release of Hold Point: The Superintendent is to be provided with a copy of the Temporary Traffic Management Plan(s) approved by the relevant Statutory Officer under the appropriate Legislation prior to authorising the release of the Hold Point.

1.04.3 Access to Adjacent Property and Side Roads

The Contractor shall maintain safe and convenient passage for pedestrians and vehicles to and from entrances and buildings at all times as detailed on the approved Temporary Traffic Management Plan(s). Temporary connections to intersecting roadways shall be provided and maintained as necessary. Any areas of excavation adjacent to pedestrian and vehicular accesses shall be suitably fenced and sign posted. Star picket fence posts shall be capped.

Prior to the commencement of construction the Contractor shall provide written notice to all traders and occupants of adjacent properties where access to or from those properties is affected by the works to be undertaken. It shall be sufficient for this purpose to place a notice in the letterbox of each affected block outlining the extent of the work to be undertaken and the intended program.

Short term incidental works which affect the use of side roads, vehicular and pedestrian access shall not be undertaken without providing adequate alternative provisions in accordance with this specification.

1.04.4 Night, Weekend and Holiday Traffic

Where specified or directed, the site shall be maintained in a safe and trafficable condition for its full length at night, during weekends and on public holidays. Subject to the requirements of the approved Temporary Traffic Management Plan, traffic may be carried on detours, sidetracks or part of the existing pavement for the whole or portion of the works.

1.04.5 Plant and Equipment

Where traffic is permitted to use the whole or portion of existing roads, all plant items and similar obstructions shall be removed from the roads at night, and parked so as not to create a hazard.

Parked plant shall not obstruct sight lines, be within the clear zones required for an errant vehicle, or within 6m of a carriageway edge, unless parked behind physical barriers.

1.04.6 Clothing for Work Personnel

In addition to the requirements of AS 1742.3 and the relevant Legislation the following requirements shall apply to all personnel working in close proximity to traffic:

(i) Safety Vests

High visibility safety vests shall be worn.

For night conditions, safety vests shall have retroreflective silver tape front and back. The tape shall be of minimum width 50mm and cover not less than 30 percent of the outside of the garment.

(ii) Overalls

For night conditions white overalls shall be worn that have three hoops of 50mm wide retroreflective silver tape on each sleeve and around the body and two hoops of 50mm wide retroreflective silver tape around each leg.

(iii) Wet Weather Clothing

All wet weather clothing shall be made of fluorescent high visibility material.

Under night conditions the clothing shall have two hoops of 50mm wide retroreflective silver tape on each sleeve and around the body and two hoops of 50mm wide retroreflective silver tape around each leg of wet weather trousers.

1.05 TRAFFIC CONTROL DEVICES

1.05.1 Use of Traffic Control Devices

All traffic control devices in use for temporary traffic management shall be maintained in accordance with AS 1742.3, so that they are in good order and in the correct positions day and night. Traffic control devices shall be neat, clean, and signs shall be clear and legible at all times.

The Contractor may need to be in attendance outside normal working hours to arrange for adjustments or maintenance of traffic control devices. The Contractor shall notify the Superintendent and the Police where necessary, in writing, the names, addresses and means of communicating with personnel nominated for this purpose, and to maintain such information as current.

The arrangements and placement of traffic control devices shall be carried out in accordance with the approved Temporary Traffic Management Plan(s) and AS 1742.3. AS 1742.3 Figures 4.1 to 4.11 inclusive are indicative and should be regarded as minimum requirements. Arrangements used in particular cases must provide fully for the guidance and safety of vehicles, cyclists and pedestrians. Where a temporary speed limit has been incorporated on the approved Temporary Traffic Management Plan(s), the Contractor shall arrange for the supply of the appropriate signage in accordance with AS 1742.3, including posts and fittings, for erection. The Contractor shall erect these signs, cover the signs when the speed zone is not in use and remove the signs when the speed zone is no longer required as part of the provision for traffic.

1.05.2 Signs

Signs shall be manufactured and erected in accordance with the Standards listed. Post mounted signs shall be erected as detailed.

Fluorescent materials shall be in accordance with AS 1742.3.

Signs shall be maintained in a neat, clean and legible condition at all times.

Notwithstanding anything else contained in this Specification the Contractor shall only place, erect, or remove road signs in accordance with the approved Temporary Traffic Management Plan(s), for roads used by the public.

All proposals for alterations to signs shown of the approved Temporary Traffic Management Plan(s) shall be submitted in accordance with Clause 1.04.2.

1.05.3 Barriers

(i) *Delineation Barriers*

Barrier boards shall comply with AS 1742.3.

Trestles supporting barrier boards shall be constructed of metal, sawn timber or other suitable materials and shall be yellow. Trestles shall serve as firm support for the barrier board but the bases of the trestles shall not protrude beyond the ends of the boards. The trestles shall be kept in place by sandbags or other suitable means.

Tapes, mesh fencing, interconnected lightweight units and bollard fences may all be used as delineation barriers.

(ii) *Physical Barriers*

Where physical barriers are required to undertake safe construction of the works they shall be designed in accordance with AS 1742.3 and with regard to the relevant Legislation.

1.05.4 Traffic Signals

Traffic Signals for the control of traffic, either portable or temporary may be used in accordance with AS 1742.3, as described below:

(i) Portable Traffic Signals for Controlling Traffic

Portable traffic signals may be used for shuttle control where a single lane has to be used alternately by traffic from opposite directions or at road crossings or intersections. They are intended for relatively short term applications.

(ii) Temporary Fixed Traffic Signals

Temporary fixed traffic signals may be used for long term shuttle operations or for non-shuttle control of intersecting traffic flows.

1.05.5 Warning Lamps

Warning lamps shall be of robust construction complying with AS 1165. Photometric performance shall comply with the requirements of Part 1 of that Standard for the intended application.

1.05.6 Traffic Guidance Flaps and Cones

Traffic Cones, bollards and Guidance Flaps shall comply with the requirements of AS 1742.3. At no time shall cones or flaps be used as a substitute for barriers and signs at any location within the work site.

Traffic guidance cones shall not be left in position at night unless there is a watchman in attendance who can reposition cones dislodged by traffic. Otherwise they shall be removed and replaced with flaps or barriers. Flaps fixed to the pavement may be left in position at night.

Traffic guidance cones to be used at night shall be reflective in accordance with AS 1742.3.

1.05.7 Use of Signs for Blasting Operations

During blasting operations, stop traffic at a safe distance, but not less than 200m from the site of the blasting. Barricade the road and erect signs in accordance with AS 1742.3. A traffic controller shall always be in attendance at each barricade to ensure that all traffic is halted. In the event of a large queue a second traffic controller should be assigned to walk ahead of the queue to warn approaching vehicles of the traffic stoppage.

Where electric detonators are being handled or used, within 100m of a road, erect additional sign T4-2 "BLASTING AREA, SWITCH OF RADIO TRANSMITTERS".

1.05.8 Delineation of Excavations

Where traffic is operating in a lane immediately adjacent to an excavation greater than 150mm deep, delineate the lane edge in accordance with the requirements of AS 1742.3.

1.06 OBSTRUCTIONS AND SIDE TRACKS**1.06.1 General**

Unless otherwise specified or shown on the drawings it shall be the responsibility of the Contractor to design, construct and operate any side tracks, detours or obstructions to traffic, to maintain these in good condition, to remove these when finished and restore the area to match existing or as required by the Contract.

Where an arrangement for a side track, detour or obstruction is specified or shown on the drawings, and the Contractor chooses to utilise that arrangement, this in no way relieves the responsibility of the Contractor with respect to the adequacy in all respects of the design, construction and operation of any side track, detour or obstruction.

1.06.2 Side Tracks

(i) Design Standards

Where side tracks not detailed on the approved Temporary Traffic Management Plan(s) are proposed, the standard of alignment and grading adopted shall be in accordance with the current edition of the AUSTRROADS publication "Rural Road Design – Guide to the Geometric Design of Rural Roads". Intersections shall be designed in accordance with the current edition of the AUSTRROADS publication "Guide to Traffic Engineering Practice – Part 13 – Intersections at Grade".

Unless otherwise approved, pavements shall be at least 6.4m wide with appropriate shoulders and widening as necessary at horizontal curves. The minimum design speed of 40 km/h shall be adopted unless otherwise approved.

Hold Point 1.2

Process Held:	Construction of temporary side tracks not detailed on the approved Temporary Traffic Management Plan(s).
Submission Details:	At least ten (10) working days prior to proposed construction of the side track the Contractor shall submit the design of temporary side track for assessment by the Superintendent.
Release of Hold Point:	The Superintendent will review the design for compliance with the relevant standards prior to authorising the release of the Hold Point.

(ii) Drainage

Drainage structures and drains shall be constructed in accordance with Section 3 of this Specification.

Drainage shall be provided so as to prevent water flowing over the road in any storm of intensity less than 1 in 5 year occurrence. No temporary formation shall be constructed so as to dam water at any time.

Pavements shall be designed and constructed so as not to pond any water at any point. Drainage structures shall be provided to prevent ponding if necessary.

Subsurface drainage shall be installed where the risk and consequence of side track pavement failure due to subsurface moisture is considered high.

(iii) Surfacing

Provide a wearing surface of a standard suitable for the traffic using the road being side tracked.

The wearing surface type and pavement design shall be in accordance with the drawings or approved Traffic management Plan. It shall be firm, even and skid resistant under all weather conditions and shall be designed to remain sound for the duration of its use.

The wearing surface widths shall extend across the full width of the traffic lanes and shoulders.

The wearing surface shall be carried onto any existing connecting roadway so as to finish square to the existing roadway centreline.

For deviations expected to operate for less than forty eight (48) hours, the requirement for sealing may be waived subject to the employment of dust control measures.

Provide line marking, delineation and safety barriers in accordance with the approved Traffic Management Plan.

(iv) SAFETY BARRIERS

Safety barrier systems in accordance with the approved Temporary Traffic Management Plan, and conforming to AS 3845, shall be erected on all temporary embankments where the slope of embankment is steeper than 25 percent and vertical height between the edge of the shoulder and the intersection of the embankment batter slope and natural surface exceeds 2m.

1.06.3 Opening of Side Track to Traffic

All sign posting, pavement marking, safety barriers and traffic control devices shall be completed before the opening of side tracks to traffic.

Hold Point 1.3

Process Held:	Opening of side tracks to traffic (including portable or temporary traffic signals sites)
Submission Details:	At least one (1) working day prior to proposed opening of the side track provide notice that work is conforming and ready for inspection .
Release of Hold Point:	The Superintendent will inspect the site for compliance with the specification prior to authorising the release the Hold Point.

Unless otherwise approved by the Superintendent, sections of existing roadway being replaced shall not be disturbed for at least two (2) days after opening a side track to traffic. In the event that failure of the temporary roadway or detour occurs traffic is to be redirected back onto the existing roadway. The need to redirect traffic shall be determined by the Superintendent. The costs associated with the redirection of traffic back onto the existing roadway shall be borne by the Contractor.

1.06.4 Maintenance

The Contractor shall be responsible for the maintenance of side tracks and shall ensure the road surface is kept safe for traffic. Any potholes or other failures shall be repaired without delay.

1.06.5 Obstructions

Where a side track or a detour is not provided or available, then construction under or adjacent to traffic may be permitted.

Operation and control of obstructions in existing carriageways shall be planned in accordance with the principles laid down in AS 1742.3 and SAA HB81 which give specific guidance as to the minimum requirements for arrangement and placement of warning devices for lane closure(s) and single lane operations in various circumstances.

In addition to measures which may be indicated or specified in AS 1742.3 or SAA HB81, unless specified or approved otherwise the following requirements shall apply.

- (a) Single lane operation will not be permitted at night or at times when work is not in progress.
- (b) In all cases of single lane operation, the minimum lane width shall be 3.0m

- (c) On multi-lane roads, closure of more than one lane in the direction of peak traffic flow will not be permitted during peak periods. At least one lane shall be left open for traffic travelling in the direction opposite to the peak flow.
- (d) Where it is noted on the drawings that the simultaneous closure of several lanes of a multi-lane road would cause undue disruption to traffic, then all or part of the work concerned shall be done during off peak periods or at weekends or at night.

The Contractor shall ensure the carriageway(s) is restored to a safe and trafficable state for through traffic prior to cessation of work each day.

All permanent sign posting, pavement markings, safety barriers and traffic signals where required under the Contract shall be completed or reinstated prior to opening completed work to traffic.

1.06.6 Traffic Controllers

The Contractor shall advise the Superintendent of the names of proposed traffic controllers with a signed declaration that they are appropriately trained in the duties of traffic controllers in accordance with AS 1742.3 and SAA HB81.

Hold Point 1.4

Process Held: Traffic Control by Traffic Controllers.

Submission Details: At least two (2) working days prior to proposed traffic control utilising traffic controllers provide to the Superintendent names of the proposed traffic controllers and the training undertaken.

Release of Hold Point: The Superintendent will consider the submitted document prior to authorising the release of the Hold Point.

1.07 REMOVAL OF TEMPORARY WORKS

Upon completion of the Work the temporary roadways and/or detour arrangements shall be removed and the area restored in the following manner:

- (a) within the area of the permanent works finish as specified;
- (b) areas outside the permanent works which were formerly developed in any way shall be reinstated to a condition equivalent to that which existed at commencement of the Contract;
- (c) undeveloped areas outside the permanent works shall be reinstated as specified for "Dryland Grassing".

1.08 CONFORMANCE CRITERIA

1.08.1 Monitoring and Records

(i) Records

The Contractor shall undertake daily inspection of all Traffic Control Devices and temporary deviations to ensure all installations are in accordance with the approved Temporary Traffic Management Plan(s).

The Contractor shall keep records of all inspections. These records shall record all deficiencies and subsequent actions to correct deficiencies in addition to all subsequent amendments to the approved Temporary Traffic Management Plan(s) for the duration of the works.

A diary recording installation dates, operation times, and subsequent removal of temporary speed zones shall be kept by the Contractor on a daily basis and at any change in the approved Temporary Traffic Management Plan(s).

(ii) Traffic Incidents

The Superintendent is to be notified of any traffic incidents that occur within the work site without delay and not more than 24 hours after the Contractor becomes aware of the incident.

A Traffic Incident Report is to be prepared by the Contractor providing full details of the traffic incident. The Traffic Incident Report is to be submitted to the Superintendent and shall include the following information:

- (a) time, date and exact location within the work site;
- (b) weather conditions at the time of the incident;
- (c) approved Temporary Traffic Management Plan(s) in use at the location and time of the incident;
- (d) a written statement that at the time of the incident all traffic control devices were in accordance with the approved Temporary Traffic Management Plan(s) and if not, details of any nonconformance to be submitted as nonconformance reports;
- (e) number of vehicles involved, injuries if any and actions taken by the Contractor.

Where a traffic incident within the work site involves injury to any parties the Traffic Incident Report shall be submitted to the Superintendent within 24 hours.

1.08.2 Nonconforming Work

(i) Traffic Control Devices

The Contractor shall, immediately and without delay, unless otherwise directed by the Superintendent take corrective action to repair or replace all nonconforming Traffic Control Devices, in accordance with the approved Temporary Traffic Management Plan(s).

A nonconformance report shall be forwarded to the Superintendent within 24 hours for nonconformance not immediately rectified and where disposition approval is required from the Superintendent.

Where the Contractor fails to provide and maintain adequate traffic control devices as specified, the Superintendent may arrange to have such items provided and maintained.

The cost of providing and maintaining adequate traffic control devices arranged by the Superintendent shall be borne by the Contractor.

1.09 MEASUREMENT AND PAYMENT

Payment shall be made for all activities associated with completing the work detailed in this Section of the Specification in accordance with Pay Item 101P1.

Measurement and payment defined in other Sections shall exclude works only carried out to comply with this Section of the Specification.

Pay Item 101P1 Provision for Traffic

This shall be a Lump Sum item.

This pay item is to include the design, construction, maintenance and removal of temporary roadways and side tracks, opening to traffic, the provision of traffic controllers, signposting, floodlighting where necessary, road pavement markings, raised pavement markers, lights, barriers, signposting for temporary speed zoning and any other items required for the safe movement of traffic and the protection of persons and property in accordance with the approved Temporary Traffic Management Plan(s), AS 1742.3 and other requirements of the appropriate legislation.

All pavement works associated with the construction of temporary roadways and side tracks including supply of materials, placement and compaction in accordance with Clause 4.03-4.05 of this Specification are to be included as part of this pay item.

Any damage caused to the shoulder, verge, or any other area outside the scope of these works, shall be repaired in accordance with the relevant Section(s) of this Specification, at the Contractor's expense.

Progress payments shall be made on a pro-rata basis of work performed as part of this pay item, having due regard to the duration of the Contract.

1.10 SCHEDULE OF HOLD POINTS

Hold Points	Clause	Description
1.1	1.04.2	Approval of Temporary Traffic Management Plan(s)
1.2	1.06.2	Design of temporary side track
1.3	1.06.3	Opening of side tracks and detours to traffic
1.4	1.06.6	Traffic control by traffic controllers