



CONTRACT: 2022/23 RE-SHEETING PROGRAM

RE-SHEETING SECTIONS OF THE FOLLOWING:	DIMENSIONS IN METRES (APPROXIMATE)		
Abelia Street	109.2	x	4
Alomes Road	656.2	x	6
Annie Street	105.7	x	4
Church Street	305.7	x	4.5
Elm Street	86	x	5
Eularminner Street	227.9	x	4.2
Heatherbell Road	1779.7	x	4.5
Josephs Road	2465.3	x	5.75
Marchwiell Road	3111.4	x	5
Matthews Road	324.4	x	6.5
McGinness Road	163.5	x	4
Mill Road	2895	x	4.5
Nugent Road	6358.5	x	5.7
Orielton Road	1408	x	5
Parker Street	127.8	x	5
Pengana Street	145.2	x	6
Reardons Road	1549.1	x	4
River Street	325.5	x	4.5
Rosendale Road	579.3	x	5.15
Shrub End Road	934	x	5
Stokes Road	924.7	x	4.75
Topley Drive	443.2	x	4.8
Wiggins Road	4884.3	x	4.4

**The above dimensions are calculated using approximate averages.
Please read the “tenderers to inform themselves” section of the
Conditions of Tendering Document to ensure accuracy with the
tender price.**

SORELL COUNCIL

CLOSE OF TENDERS:

Wednesday 17th August 2022, 2.00pm

Tender Box, Sorell Council

CONTENTS

Conditions of Tendering

Schedules of Works:

Tender Form & AS 2124 Annexure Part A including Separable Portions

Form of Instrument of Agreement (only to be completed by successful Tenderer/s)

Schedule 1 – Proposed Sub-Contractors

Schedule 2 – Schedule of Non-compliance

Schedule 3 – Schedule of Previous Experience

Schedule 4 - Methodology Statement – Traffic Management

Document A - Specification: Part 1 Preliminaries and General Requirements

Document B – Resheet Asset ID Measurements

Attachment A - A3 Locality Plans

Attachment B - Municipal Standard Drawings (IPWEA 2012)

Attachment C - DIER R40.A5 Specification: Unsealed Road and Unsealed Shoulders
97/2014

Conditions of Tendering

NATURE OF CONTRACT

The Contract for which a Tender in accordance with these conditions is to be made will be a Lump Sum Contract. The Lump Sum Tender is for the completion of the whole of the Works described and intended in the Tender Documents (described below) and executed in accordance therewith.

No adjustments will be made to the Contract price to cover rise and fall in labour, material and other costs.

TENDER DOCUMENTS

The Tender Documents shall be these Conditions of Tendering, AS2124-1992 General Conditions of Contract, the Tender Form, the Schedules, the Specification including Bill of Quantities, the Drawings and any drawings and written statements required by any of the aforesaid documents to be submitted by the Tenderer.

CONSTRUCTION PROGRAMME

Tenderers are required to provide a Gantt chart with their Tender which indicates their delivery of the various components of the Works.

Tenders requiring alterations to the proposed timetable must offer an alternative and give reasons.

CONTENTS OF TENDER

The Tender submitted shall be prepared in accordance with the following requirements.

- (i) The Tender shall be submitted upon the Tender Form provided and all the Tender Documents shall be deemed to form part of the Tender. The Tenderer shall sign the Tender, or if the Tenderer be a Corporation, affix its common seal in the manner prescribed by its Articles of Association or otherwise have the Tender signed appropriately and formally.
- (ii) Each Tender shall contain a postal and an email address for service of any notice required to be given to the Tenderer in connection with their Tender.

Notwithstanding any other Conditions of Tendering the following documents shall be submitted with the Tender:

- Signed Tender Form
- Completed Bill of Quantities
- Signed Schedule of any proposed sub-contractors
- Signed Schedule of non-compliance for any alternative Tender including relevant drawings
- Signed Schedule of previous experience on similar work
- Construction programme including separate methodology statement of construction whilst keeping sports grounds operational
- Work Health & Safety and Environmental Management Plans

These shall be completed and signed in original ink.

SPECIFIC GRAVEL SUPPLIERS TO BE USED AS DESCRIBED BELOW:

Nugent Road will be our test sites for 3 different gravel sources. Lengths of test site to be marked out prior works commencing.

We would like the awarded contractor to use ALL 3 of these quarry's to source their gravel from please:

1. McConnon's Quarry, Buckland Rd, Buckland.
2. Mt. Calder Quarry – 188 Montgomerys Rd, Runnymede.
3. Successful Tenderer

Equal quantities of gravel from each quarry to be used at the test locations for Nugent Road.

For the remainder of the re-sheet program, the contractor may use a gravel quarry of their choosing.

TENDERERS TO INFORM THEMSELVES

Tenderers are required to be aware of all matters relating to the Contract, including the availability of all necessary materials, prior to submitting their Tender. The Principal will not accept claims for extra costs or extensions of time for delays caused by the unsuitability of material resources.

Tenderers shall be deemed to have inspected the site, to have assessed the conditions relating to the site, and to have allowed for such conditions in their Tender. This shall include investigation of suitable access roads for the safe transport of all materials and components required for the completion of the Works.

BILL OF QUANTITIES

The Bill of Quantities has been prepared by the consultant and Sorell Council to assist Tenderers in the preparation of their Tender.

The items and quantities are not warranted as correct and any bids submitted must be based on the Tenderer's own investigation and enquiries. In particular, Tenderers must allow for all work shown on the Drawings and included in the Specification including all work necessarily arising therefrom and should revise or amend, before tendering, the quantities and/or items contained in the Bill of Quantities if, in the opinion of the Tenderer the Bill does not correctly or fully represent all of the Works.

ANOMALIES, INTERPRETATION AND OMITTED ITEMS

All items, either indicated on the Drawings or written in the Specification, form part of the Contract.

Where a Tenderer has any doubt about the meaning of any portion of the Tender Documents or where a discrepancy exists between the Drawings and Specification, the Tenderer shall either:

- (i) ask for clarification, which shall only be valid if issued to the Tenderer in writing; or
- (ii) include a statement of interpretation upon which the Tender has been based.

Any clarification given in (i) may be issued to all prospective Tenderers as an addendum (Notice to Tenderers).

Provided that the Bill of Quantities omits an item(s), which should reasonably have been anticipated by an experienced and competent Tenderer, necessary for the satisfactory completion and performance of the Works, the Tenderer shall insert such omitted item(s) in the Bill with a price for each item. In the event of the failure of the Tenderer to do so, the cost of such item(s) will be deemed to be included within other items.

ALTERNATIVE TENDERS

Tenderers may submit proposals for alternatives to the design as documented or for other specified items as long as a conforming tender is also submitted.

Any alternative to the Tender must be listed separately, clearly identifying the changes offered (on the Schedule of Non-compliance form) and the revised Lump Sum.

ENQUIRIES

All enquiries during the Tender period shall be directed to Mr Ken Grierson 0417 012 426.

LODGEMENT OF TENDERS

Tenders in writing are invited and will be received at the Sorell Council Office, 47 Cole Street, Sorell, Tasmania, up until 2pm, Wednesday 17th August 2022.

Tenders must be submitted in a sealed envelope and clearly marked "**Confidential - Tender No. 2022/23 Re-Sheeting Program**" and lodged in the Tender Box provided in the foyer of the Sorell Council or forwarded through Australia Post for delivery prior to the above date and time.

Late tenders or tenders submitted by facsimile machine or e-mail will **not** be accepted. **The lowest (nor any) tender will not necessarily be accepted.**

Tenders forwarded through Australia Post shall be addressed as follows:

"Tender No 2022/23 Re-Sheeting Program"

Sorell Council
PO Box 126
Sorell TAS 7172

LATE TENDERS

Late Tenders will not be accepted.

OPENING OF TENDERS

Tenders will be opened as soon as possible after the closing time. Tenderers will not be present at the opening.

INFORMAL TENDERS

Any Tender which does not comply with the requirements of the Tender Documents is likely to be rejected.

ERRORS IN TENDERS

Any errors in extension or addition (or both) discovered in the Bill of Quantities at evaluation of Tenders shall be corrected in a manner agreed to between the Principal and the Tenderer so that the total in the Bill of Quantities continues to equal the tendered Lump Sum.

Failure to reach agreement shall result in the Tender being rejected.

SELECTION CRITERIA

The evaluation process will be undertaken with the aim of determining the lowest price acceptable conforming tender, or an acceptable alternative tender that demonstrates best value for money. Tender will be assessed against the following evaluation criteria:

Complying tenders will be assessed by scoring and weighting of the following criteria:

1. **Previous Experience (20%)** - Tenderers with more extensive experience in work similar to that described in the specification and drawings will be more favourably scored. Details of relevant projects completed by the Tenderer, and/or individual staff, will enable the level of experience to be more accurately assessed.
2. **Supervision and Quality Assurance (15%)**
 - **Supervision** - Tenderers are to provide details of the qualifications and experience of all supervisory staff to be utilised on the Contract, including the degree and nature of the supervision to be provided by each nominated staff member. The more comprehensive supervision will be more favourably scored.
 - **Quality Assurance** – Tenderers with third party ISO 9002 accreditation will be more favourably scored. In the absence of such accreditation details of any quality scheme in place to aid in achieving

compliance with the Contract should be provided, including detail of projects where the Tenderer has successfully utilised the quality scheme previously.

3. **Workplace Health Safety & Environment (W.H.S. & E.) (15%)** - Documented procedures to identify and exercise all necessary precautions for the health and safety of all personnel on site and be aware of and discharge its obligations under the Work Health and Safety Act 2012 and the related Regulations currently in force. Documented procedures to support Environmental relevant compliance with the Act and Codes of Practice.
4. **Price (50%)** - A weighting price score is calculated using the average price, the tenderers price and the price percentage. During the period of the evaluation process, we may negotiate with individuals or businesses quoting to vary their quotes either on the grounds of technical capability, cost effectiveness, or matters relating to the combination of one part of the quote with another part of the quote. We also reserve the right to negotiate with several individuals or businesses to finalise the commercial terms to form a contract.

No less than 6 can be scored for the *Workplace Health Safety & Environment* sub-criteria for the tender to be considered further.

The following scores will be used to assess the above criteria:

Score	Description	Full Description
9-10	Superior	Demonstrated strengths in all issues and few if any weaknesses. Offers many benefits. Low risk and/or risks can be managed with low cost.
6-8	Good	Demonstrated strengths in most issues and few weaknesses. Offers many benefits. Low-moderate risk and/or risks can be managed with low-moderate cost.
4-5	Adequate	Demonstrated strengths in some issues and some weaknesses. Offers some benefits. Moderate risk and/or risks can be managed with moderate cost.
1-3	Poor to deficient	Demonstrated little strength and many weaknesses. Offers few benefits. Moderate-high risk and/or risks can be managed with moderate-high cost.
0	Unacceptable	Provides little if any information that can be assessed. Contains many errors and/or omissions. Doesn't address criteria.

Tenderers are requested to provide sufficient additional information in their tender submission to enable detailed assessment of the above-mentioned criteria. Failure to provide such information will be interpreted as acknowledgment that the Tenderer has not reached a satisfactory standard in that area, and may incur the minimum score. There is no obligation on the Principal to pursue the Tenderer to provide additional information to that included in the tender.

START DATE

Start and finish dates for this project will be negotiated with the successful tenderer. Ideally the project will be completed by the end of November/ early December 2022. You will need to provide a program that conforms to this, but alternatives may be considered.

COMPLETION TIME

The period for completion of the works is stated in the Annexure to the General conditions of contract conditions, AS2124-1992

The tenderer may submit different prices for different completion times.

VALIDITY PERIOD

Tenders shall remain valid for a period of **90 days** after the date of closing of Tenders.

AWARDING OF CONTRACT

Before accepting a Tender, the Principal may require the Tenderer to submit any or all of the following:

- proof of his resources and ability to carry out the Works;
- an estimated monthly cash flow; and
- evidence of safety, environmental and quality systems of work.

Should the Tenderer fail to submit any of the required information in the time specified by the Principal, the Tender may be rejected.

A Tender shall be deemed to be accepted when a notice in writing of such acceptance is delivered to the successful Tenderer.

The Tender submissions can be split and jobs awarded to separate contractors.

The Contract/s shall come into force on the date of acceptance of the Tender as the written acceptance constitutes the Contract until a formal agreement is executed or on a date acceptable (in writing) to both parties.

Notwithstanding the foregoing, the Principal shall not be bound to accept the lowest or any other Tender.

SORELL COUNCIL

ROAD RE-SHEETING 2022/2023

Abelia Street: 109.2M x 4M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Alomes Road: 656.2M x 6M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
Sub-total					\$0.00
GST (10%)					\$0.00
Total					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Annie Street: 105.7M x 4M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Church Street: 305.7M x 4.5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00
Individual Hourly Rates - Provisional Quantities					

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Elm Street: 86M x 5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00
Individual Hourly Rates - Provisional Quantities					
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Eularminner Street: 227.9M x 4.2M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
					\$0.00
					\$0.00
					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Heatherbell Road: 1779.7M x 4.5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
				Sub-total	<hr/> \$0.00
				GST (10%)	\$0.00
				Total	<hr/> \$0.00 <hr/>

SORELL COUNCIL

ROAD RE-SHEETING

Josephs Road: 2465.3M x 5.75M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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1.0 ROADWORKS

1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00

Sub-total	\$0.00
GST (10%)	\$0.00
Total	\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Marchwiel Road: 3111.4M x 5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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1.0 ROADWORKS

1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00

					\$0.00
					\$0.00
					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Matthews Road: 324.4M x 6.5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
	Sub-total				\$0.00
	GST (10%)				\$0.00
	Total				\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

McGinness Road: 163.5M x 4M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
Sub-total					\$0.00
GST (10%)					\$0.00
Total					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Mill Road: 2895M x 4.5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
					<hr/>
					Sub-total \$0.00
					GST (10%) \$0.00
					<hr/>
					Total \$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Nugent Road: 6358M x 5.7M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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1.0 ROADWORKS

1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00

					<hr/>
		Sub-total			\$0.00
		GST (10%)			\$0.00
		Total			<hr/>
					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Orielton Road: 1408M x 5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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1.0 ROADWORKS

1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00

	Sub-total				\$0.00
	GST (10%)				\$0.00
	Total				\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Parker Street: 127.8M x 5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00
Individual Hourly Rates - Provisional Quantities					
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Pengana Street: 145.2M x 6M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
					<hr/>
					Sub-total \$0.00
					GST (10%) \$0.00
					<hr/>
					Total \$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Reardons Road: 1549.1M x 4M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
Sub-total					\$0.00
GST (10%)					\$0.00
Total					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

River Street: 325.5M x 4.5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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1.0 ROADWORKS

1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00

	Sub-total				<hr/> \$0.00
	GST (10%)				\$0.00
	Total				<hr/> \$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Rosendale Road: 579.3M x 5.15M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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1.0 ROADWORKS

1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
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2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00

					<hr/>
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	<hr/>
					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Shrub End Road: 934M x 5M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
	Sub-total				\$0.00
	GST (10%)				\$0.00
	Total				\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Stokes Road: 924.7M x 4.75M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
	Sub-total				<u>\$0.00</u>
	GST (10%)				<u>\$0.00</u>
	Total				\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Topley Drive: 443.2M x 4.8M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
Sub-total					\$0.00
GST (10%)					\$0.00
Total					\$0.00

SORELL COUNCIL

ROAD RE-SHEETING

Wiggins Road: 4884.3M x 4.4M

SCHEDULE OF WORKS

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.0 ROADWORKS					
1.1	Site establishment, provision of toilet facilities, site shed, barricades, signs, traffic management plan, traffic control and maintenance of site	1	Item		
1.2	Reshape existing pavement by grading, watering and compacting with a smooth drum roller (approx. 7 tonne)		m2		\$0.00
1.3	Supply, place, water and compact to 100mm thick "red gravel" material as per		m3		\$0.00

Individual Hourly Rates - Provisional Quantities

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
2.0	Site Supervisor		hrs		\$0.00
2.1	Labourer		hrs		\$0.00
2.2	5-7 tonne Excavator or Backhoe		hrs		\$0.00
2.3	Grader		hrs		\$0.00
2.4	Truck and trailer		hrs		\$0.00
2.5	10 yd truck		hrs		\$0.00
2.6	7-10 tonne roller		hrs		\$0.00
2.7	Water Cart		hrs		\$0.00
					<hr/>
				Sub-total	\$0.00
				GST (10%)	\$0.00
				Total	<hr/> \$0.00

THIS AGREEMENT is made on the day of 2022.

PARTIES:

SORELL COUNCIL (ABN 12 690 767 695) of 47 Cole Street, Sorell in Tasmania
 (“**Council**”)

AND

(“**Contractor**”)

BACKGROUND

- A. The Council seeks to engage a suitable entity to provide the Services as an independent contractor.
- B. The Contractor seeks to be engaged by Council to provide the Services.
- C. The Council agrees to engage the Contractor to provide the Services in the capacity of an independent contractor in accordance with the terms and conditions of this Agreement.

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions

- a. **Agreement** is a reference to this Formal Instrument of Agreement and includes any documents expressly incorporated by reference, schedules and annexures and to this Agreement, including but not limited to:
 - i. Annexure Part A to AS 2124 - 1992 (Principal Administered) which is annexed hereto as Appendix 1 (**‘Standard Terms’**);
 - ii. The submitted Tender of the Contractor which is annexed hereto as Appendix 2;
 - iii. Letter of acceptance from Council to the Contractor dated.....which is annexed hereto as Appendix 3.
- b. **Business Day** means a day, which is not a Saturday, Sunday or Public Holiday as taken under the *Statutory Holiday Act 2000* limited to the greater Hobart area;
- c. **Contractor** means the Contractor, and where appropriate its employees, sub-contractors, agents and any other persons or entities under the control or direction of the Contractor;

- d. **Principal** in the Standard Terms means the Council;
- e. **Services** is a collective reference to the works described and specified in the Tender;
- f. **Tender** means the tender document dated and provided by the Council which is annexed hereto as Appendix 4.

1.2 Interpretation

In this Agreement except to the extent that the context requires otherwise or the contrary intention appears:

- a. references to any legislation or to any provision of any legislation shall include any modification, consolidation or re-enactment of, or any provision substituted for, and all statutory instruments issued under such legislation or provisions;
- b. where in this Agreement a period of time dating from a given day, act or event is specified or allowed for any purpose, the time shall be reckoned exclusive of that day or of the day on which the act or event occurred but inclusive of the day on which that period expires or in the event that any day on which the work or payment is to be done is not a Business Day such act, matter or thing shall be done on the immediately succeeding Business Day;
- c. words importing the singular or plural shall include the plural and the singular respectively;
- d. words importing any gender shall include every gender;
- e. a reference to a person includes a reference to a corporation, firm, authority, government or governmental agent;
- f. clause headings do not affect the interpretation of this Agreement;
- g. where a word or phrase is given a particular meaning in this Agreement, other cognate parts of speech and grammatical forms of that word or phrase shall have a corresponding meaning;
- h. references to a clause, paragraph, schedule, annexure or part shall be a reference to a clause, paragraph, schedule, annexure or part of this Agreement;
- i. every contract or undertaking expressed or implied by which more than one person is bound shall bind those persons and any two or greater number of them jointly and each of them severally;

- j. references to a party shall include that party's executors, administrators and permitted assigns, or being a Council, its successors and permitted assigns and any other person deriving title under those persons or Councils;
- k. reference to time shall be reference to Tasmanian time.

2. **AGREEMENT TO PROVIDE SERVICES**

- 2.1 The Contactor agrees to provide the Services in accordance with the terms and conditions of this Agreement.
- 2.2 In consideration for providing the Services, the Council agrees to remunerate the Contractor in accordance with this Agreement.
- 2.3 The Contractor warrants that it:
 - a. is competent and has the skills, qualifications, expertise and experience appropriate to perform the duties and obligations of the Contractor under this Agreement and to provide the Services; and
 - b. has an Australian Business Number and is registered for GST.

3. **INDEPENDENT CONTRACTOR RELATIONSHIP**

- 3.1 The parties agree that the Contractor is engaged under this Agreement as an independent contractor and that the Contractor in performing its duties and obligations under this Agreement in no way is, or is intended to be, an employee, servant or agent of the Council.
- 3.2 The parties agree that the engagement of the Contractor is not an exclusive engagement. Whilst the Contractor does not provide the Services exclusively to the Council and is free to enter into other contracts with third parties, those other contracts:
 - a. must not place the Contractor in a conflict of interest, or possible conflict of interest, between the Contractor's obligations to the Council under this Agreement and the Contractor's obligations to the third party; and
 - b. must not take priority over the obligations of the Contractor under this Agreement.
- 3.3 When performing the Services the Contractor will adhere to the Council's policies regarding occupational health and safety, anti-discrimination, sexual harassment, drugs and alcohol, and any other matter as advised by the Council.
- 3.4 The Contractor will not, on behalf of its employees, sub-contractors, agents and any other persons or entities under the control or direction of the Contractor, claim upon the Council in respect of any leave entitlements, including (but not limited to) annual leave, public holidays, sick leave, long service leave, other entitlements or otherwise in respect of any claims under any relevant workers' compensation legislation, superannuation legislation or any other legislation or regulations affecting or relating to the relationship between an employer and employee.

4. **CONDUCT OF THE CONTRACTOR'S EMPLOYEES**

- 4.1 The Contractor, at all times whilst engaged in the provision of Services, must ensure that its employees, sub-contractors, agents and any other persons or entities under its control or direction:

- a. conduct themselves in a sober, civil, obliging and inoffensive manner;
- b. perform the Services in as efficient a manner as possible;
- c. be attired in a manner suitable to the performance of work being undertaken.

4.2 The Council is entitled to require any employee, sub-contractor, agent or any other persons or entity under the Contractor's control or direction to be excluded from any involvement with the provision of the Services if of the opinion the person concerned has persistently failed to comply with clause 4.1 of this Agreement.

5. **INSURANCE**

5.1 For the purposes of this Agreement the Contractor must take out and keep current at all times throughout the Term the following policies of insurance:

- a. A public liability policy of insurance in respect of the Contractors performance or non-performance of its obligations under this Agreement for an amount of \$20,000,000.
- b. A workers compensation policy of insurance in accordance with the *Workers Rehabilitation and Compensation Act 1988* for any employees, sub-contractors, agents and any other persons or entities under the control or direction of the Contractor;
- c. Compulsory third party insurance for injury to a person resulting from a motor vehicle accident.

5.2 The insurance policies required by clause 5.1 shall be taken out with an insurance company approved by the Council however the Council is not to unreasonably withhold approval.

5.3 If requested by the Council, the Contractor shall provide the Council with copies of the policies referred to in clause 5.1 from time to time and with the certificates of currency for such policies.

5.4 The Contractor shall not do or permit to be done anything as a result of which any insurance taken out by the Contractor or the Council may be rendered void or avoidable or which would cause the premium payable on any such insurance to increase.

6. **CONTRACTOR'S INDEMNITY**

6.1 The Contractor agrees to indemnify and keep indemnified, and to hold harmless the Council, its servants and agents, and each of them from and against all actions, costs, claims, charges, expenses and damages whatsoever which may be brought or made or claimed against them arising out of, or in relation to:

- a. any negligent act or omission of the Contractor in the provision of the Services;
- b. any loss or damage to property or any person, including the employees, sub-contractors, agents and any other persons or entities under the control or direction of the Contractor, incurred in the provision of the Services;
- c. any loss, expense or damage incurred by the Council, its employees or agents as a result of the provision of the Services;

- d. any material loss, expense or damage incurred by the Council arising out of or in relation to any breach of this Agreement by the Contractor;

provided that the Contractor's liability to indemnify the Council will be reduced proportionately to the extent that any act or omission of the Council or employees or agents of the Council may have contributed to the loss, death or injury.

6.2 This clause does not merge upon the expiration or completion of this Agreement.

7. **CONTRACTOR'S WARRANTIES**

7.1 The Contractor acknowledges that it has made and given the Warranties set out in this clause 7 with the intention of inducing the Council to enter into this Agreement and that the Council has entered into this Agreement in full reliance on the Warranties.

7.2 The Contractor hereby expressly warrants to the Council that:

- a. the Contractor will exercise reasonable professional skill and care when carrying out its obligations under this Agreement;
- b. the Contractor, its employees and agents are possessed of the necessary skills and expertise required to fulfil its obligations under this Agreement;
- c. the Contractor is possessed of, or is readily able to obtain, all plant, equipment and labour required in order to fulfil its obligations under this Agreement;
- d. the Contractor is apprised of all industry standards applicable to the delivery of the Services under this Agreement and will perform its obligations under this Agreement strictly in accordance those industry standards;
- e. the Contractor will maintain all of the policies of insurance required by clause 5 of this Agreement;
- f. the Contractor will be solely responsible for the health and safety of the Contractor's employees, sub-contractors, agents and any other persons or entities under its control or direction and will at all times comply with all statutory requirements and industry standards regarding the health and safety of its employees.

(collectively referred to as the "**Warranties**").

7.3 The Contractor hereby indemnifies the Council against any claim or loss incurred or suffered by or brought or made or recovered against the Council (directly or indirectly) in connection with any inaccuracy in or any breach of any of the Warranties.

7.4 For the avoidance of doubt, the Warranties set out in this clause 7 are continuing in nature.

8. **DISRUPTION OF SERVICES**

8.1 If for whatever reason:

- a. the Contractor is unable to provide the Services in accordance with this Agreement; and
- b. such inability lasts for a period in excess of 14 days,

Council may engage any one or more third parties of its choosing to perform the Services until such time as the Contractor is able to reinstate provision of the Services.

8.2 All costs and expenses of engaging third parties pursuant to clause 8.1 (including legal costs and expenses on a full indemnity basis) ('Costs') will, at the option of the Council, be payable by the Contractor.

9. COMPLIANCE WITH LEGISLATION

9.1 The Contractor must observe and comply with any legislation, regulations, by-laws or statutory requirements which are relevant to the performance of the Services under this Agreement including, but not limited to:

- a. *Local Government Act 1993;*
- b. *Environmental Management and Pollution Control Act 1994;*
- c. *Traffic Act 1925;* and
- d. *Work Health and Safety Act 2012.*

10. ASSIGNMENT

10.1 The Contractor must not assign its obligations under this Agreement without first obtaining the prior written approval of the Council to do so.

10.2 Prior to performing any assignment of its obligations under this Agreement, the Contractor must satisfy the following conditions:

- a. any monies payable by the Contractor to the Council under this Agreement must have been paid in full;
- b. the Contractor must not be in breach of this Agreement;
- c. the Contractor must obtain the execution by the assignee of an appropriate assignment or document in a form approved by the Council;
- d. the Contractor must pay all costs incurred in the preparation of the assignment; and
- e. where the proposed assignee is a company then the Council may require the directors and/or controlling shareholders of the company to enter into a deed guaranteeing the performance by that company of the terms of the assignment. Such guarantee must be in a form acceptable to the Council and the costs incurred by the Council in the preparation and execution of the guarantee shall be paid by the Contractor.

11. NOTICES

11.1 Any notice or other document required to be given or served under this Agreement:

- a. shall be signed by the party giving the notice or by that party's solicitor;
- b. shall be in writing addressed to the address of the recipient shown in this Agreement or to such other address as it may have notified the sender; and
- c. will be deemed to be duly given or made:

- i. in the case of personal delivery, when delivered to the recipient;
- ii. in the case of a letter which is posted, three (3) Business Days after posting to the last known place of business or abode of the recipient or the recipient's registered office if the recipient is a Council; or
- iii. in the case of a facsimile or email, when dispatched, but if such delivery or receipt is later than 4.00 p.m. (local time) on a day on which business is generally carried on in the place to which such communication is sent, it shall be deemed to have been duly given or made at the commencement of business on the next Business Day in that place.

12. GENERAL PROVISIONS

12.1 Governing law

This Agreement shall be governed by the laws of Tasmania and the parties agree to submit to the non-exclusive jurisdiction of the Courts of Tasmania.

12.2 Remedies cumulative

Remedies provided in this Agreement in favour of Council or the Contractor arising because of an event of default by the Contractor or the Council or after a repudiation of this Agreement by the Contractor or the Council will not be deemed to be exclusive but will be cumulative and will be in addition to all other remedies existing at law, in equity or in bankruptcy. The election at any time to enforce any such remedies will in no way bar the later enforcement from time to time of any other such remedies.

12.3 No merger

None of the terms or conditions of this Agreement, nor any act, matter or thing done under or by virtue of, or in connection with this Agreement will operate as a merger of any of the rights and remedies of Council in or under this Agreement or otherwise. All such rights and remedies of Council will continue in full force and effect.

12.4 Delay

No failure or delay on the part of a party to exercise any power or right under this Agreement will operate as a waiver of that power or right. Nor will any single or partial exercise of any power or right under this Agreement preclude any other or further exercise of that power or right. A party will only be taken to have waived any power or right under this Agreement, including (without limitation) any right in respect of any event of default by the other party, to the extent that the right or power has been expressly waived in writing by a director, secretary or other officer of that party, irrespective of any previous waiver of any other breach of the same or any other provision of this Agreement.

12.5 Entire Agreement

This Agreement is the entire agreement between the parties and may only be varied if such variation is in writing and signed by both parties.

12.6 Legal costs

Each party shall pay its own legal costs of and incidental to the preparation of this Contract.

12.7 Severance

Any provision of this Agreement which is prohibited, invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition, invalidity or unenforceability but that shall not invalidate the remaining provisions of this Agreement or affect the validity or enforceability of such provision in any other jurisdiction.

EXECUTION CLAUSES

EXECUTED by the parties on the date of this Agreement

THE COMMON SEAL of THE)
SORELL COUNCIL)
was affixed in the presence of)

Witness sign

Witness name

CONTRACTOR)
)

Either

Witness sign

Witness name

OR

EXECUTED for and on behalf }
of }
CONTRACTOR }
in accordance with Section }
127 of the *Corporations Act* }
2001 (if applicable) }

.....
*Name of director/company secretary

.....
*Signature of director/company secretary

.....
*Name of director/company secretary

.....
*Name of director/company secretary

TENDER FORM

Name of person,
firm or company
tendering:
(USE BLOCK LETTERS)

Address: _____ of _____

hereby tender(s) to perform the work for.

Description **RE-SHEETING SECTIONS OF COUNCILS ROADS**
in accordance with the following documents:
Specification:

- **DIER R40.A5 SPECIFICATION:UNSEALED ROAD AND UNSEALED SHOULDERS 97/2014**
- **Standard Specifications and Municipal Standard Drawings**

List Documents **Drawing Nos: A3 LOCALITY PLANS x 81**

AS 2124-1992, AS 2125-1992 & AS 2127-1992

When the tender documents provide that the tender is to be a lump sum only

1. For the lump sums of
RE-SHEETING OF SECTIONS COUNCILS GRAVEL ROAD

Abelia Street
Alomes Road
Annie Street
Church Street
Elm Street
Eularminner Street
Heatherbell Road
Josephs Road
Marchwiell Road
Matthews Road
McGinness Road
Mill Road
Nugent Road
Orielton Road
Parker Street
Pengana Street
Reardons Road
River Street
Rosendale Road
Shrub End Road
Stokes Road
Topley Drive
Wiggins Road

(\$..... – exc. GST)

If Tenderer is a firm the full names of the Individual members of the firm must be stated here.

Insert date **DATED this day of2022**

.....
Signature of Tenderer

ANNEXURE to the Australian Standard
General Conditions of Contract

PART A

This Annexure shall be issued as part of the tender documents and is to be attached to the General Conditions of Contract and shall be read as part of the Contract.

The law applicable is that of the State or Territory of: (Clause 1)	TASMANIA
Payments under the Contract shall be made at: (Clause 1)	HOBART
The Principal: (Clause 2):	SORELL COUNCIL
The address of the Principal:	47 COLE STREET SORELL, TAS, 7172
The Superintendent: (Clause 2)	RUSSELL FOX C/- SORELL COUNCIL
The address of the Superintendent:	47 COLE STREET SORELL, TAS, 7172
Limits of accuracy applying to quantities for which the Principal accepted rates: (Clause 3.3 (b))	No Limit
Bill of Quantities - the alternative applying: (Clause 4.1)	Alternative 1
The time for lodgement of the priced copy of the Bill of Quantities: (Clause 4.2)	Not Applicable
# Contractor shall provide security in the amount of: (Clause 5.2)	Refer claus 42.3 (a) below
# Principal shall provide security in the amount of:(Clause 5.2)	Nil
The period of notice required of a party's intention to have recourse to retention moneys and/or to convert security: (Clause 5.5)	7 DAYS

The percentage to which the entitlement to security and retention moneys is reduced: (Clause 5.7)	5.0%
Interest on retention moneys and security - that alternative applying: (Clause 5.9)	Alternative 2
The number of copies to be supplied by the Principal: (Clause 8.3)	2
The number of copies to be supplied by the Contractor: (Clause 8.4)	Not Applicable
The time within which the Superintendent must give a decision and return the Contractor's copies (Clause 8.4)	Not Applicable
Work which cannot be sub-contracted without approval: (Clause 9.2)	Nil
The percentage for profit and attendance: (Clause 11 (b))	Nil
The amount or percentage for profit and attendance (Clause 11 (c))	Nil
Insurance of the Works - the alternative applying (Clause 18)	Alternative 1
The assessment for insurance purposes of the cost of demolition and removal of debris: (Clause 18 (ii))	\$10,000.00
The assessment for insurance purposes of consultants fees: (Clause 18 (iii))	10% of Contract Value
The value of materials to be supplied by the Principal: (Clause 18 (iv))	Nil
The additional amount or percentage: (Clause 18 (v))	33 1/3%
Public Liability Insurance - the alternative applying (Clause 19)	Alternative 1
The amount of Public Liability Insurance shall be not less than: (Clause 19)	\$20,000,000.00 any one occurrence
The time for giving possession of	One week from date of notification of

the Site: (Clause 27.1)	acceptance of tender, or as agreed by both parties
# The time for Practical Completion: (Clause 35.2)	12 weeks from possession of site to complete the works.
# Liquidated Damage per day: (Clause 35.6)	\$200.00
# Limit of Liquidated Damages: (Clause 35.7)	No Limit
# Bonus per day for early Practical Completion: (Clause 35.8)	Nil
# Limit of bonus: (Clause 35.8)	Not Applicable
Extra costs for Delay or Disruption: (Clause 36)	Nil
# The Defects Liability Period (Clause 37)	52 calendar weeks
The day charge for overheads, profit etc. for Daywork: (Clause 41(f))	To be stated by Tenderer
Times for payment claims: (Clause 42.1)	Monthly
Unfixed plant and materials for which payment claims may be made notwithstanding that they are not on the Site: (Clause 42.1 (ii))	Nil
Retention Moneys on: (Clause 42.3) (a)	work incorporated into the Works and any work or items for which a different amount of retention is not provided: 10% of the value until 5% of the Contract Sum is held;
(b)	items on Site but not yet incorporated into the Works: n/a;
(c)	items off Site but in Australia: n/a;
(d)	items not in Australia : n/a;
(e)	disbursements incurred by the contractor for customs duties, freight, marine insurance, primage, landing and transport in respect of the work under the Contract : n/a

Unfixed Plant or Materials - the alternative applying: (Clause 42.4)

Alternative 2

The rate of interest on overdue payments: (Clause 42.9)

8%

The delay in giving possession of the Site which shall be a substantial breach: (Clause 44.7)

Four weeks

The alternative required in proceeding with dispute resolution: (Clause 47.2)

Alternative 1

The person to nominate an arbitrator: (Clause 47.3)

Chairman, Institution of Engineers

Location of arbitration: (Clause 47.3)

Tasmania Division

Hobart

(AS2124-1992)

SCHEDULE 2 – STATEMENT OF NON-COMPLIANCE

CONTRACT NO. 2022/23 RE-SHEET PROGRAM

The Tenderer is to signify whether or not its Tender conforms to the requirements of the Tender Documents by striking out below ** that which is not applicable.

*This Tender ** does/does not conform*

Should the Tender not conform with the requirements of the Tender Documents, the Tenderer shall list below all areas of non-conformance and the reasons for such non-conformance.

Area of Non-Conformance and Reason

Tenderers Name:
Signed:
Dated:

DOCUMENT A – SPECIFICATION

SECTION 1 - PRELIMINARIES AND GENERAL REQUIREMENTS

1.1 CONTRACT

All Works are to be carried out in accordance with the Australian Standard General Conditions of Contract A.S2124-1992 together with A.S2125-1992 and A.S2127-1992, the Standard Specifications attached, the drawings nominated below and to the satisfaction of the Superintendent. The Contractor shall obtain and make themselves familiar with all relevant Council By-Laws.

This contract shall be a lump sum contract not subject to Rise and Fall.

Clauses in this specification where appropriate shall over-ride clauses in the General Conditions of Contract and notes and details on the contract drawings shall over-ride this specification.

The term Engineer, Consulting Engineer, Supervisor shall be read to be the Superintendent in all parts of the Contract Documents, similarly the term Builder shall be read to be Contractor.

Refer Annexure to the General Conditions of Contract, Part A included with these documents, for a summary of contractual information applicable to this contract.

1.2 EXTENT OF CONTRACT

This contract includes the construction of gravel roads and associated site works as specified in this document and shown on the drawings.

1.3 SITE

Measurements are in Metres:

Abelia Street	109.2	x	4
Alomes Road	656.2	x	6
Annie Street	105.7	x	4
Church Street	305.7	x	4.5
Elm Street	86	x	5
Eularminner Street	227.9	x	4.2
Heatherbell Road	1779.7	x	4.5
Josephs Road	2465.3	x	5.75
Marchwiell Road	3111.4	x	5
Matthews Road	324.4	x	6.5
McGinness Road	163.5	x	4
Mill Road	2895	x	4.5
Nugent Road	6358.5	x	5.7
Orielton Road	1408	x	5
Parker Street	127.8	x	5
Pengana Street	145.2	x	6
Reardons Road	1549.1	x	4
River Street	325.5	x	4.5
Rosendale Road	579.3	x	5.15
Shrub End Road	934	x	5
Stokes Road	924.7	x	4.75
Topley Drive	443.2	x	4.8
Wiggins Road	4884.3	x	4.4

See attached locality plans for extent of works

1.4 EXTENT OF SITE

The Contractor shall confine their activities, construction sheds etc. to areas adjacent to the works and to the approval of the Superintendent.

1.5 INSURANCES

The Contractor shall effect insurance in the joint names of the Principal, the Contractor and Sub-Contractors required by clauses 18 to 20 of the General Conditions of Contract.

The amounts of insurance cover shall be:-

- Insurance of works for full contract amount, plus an amount of \$10,000.00 for demolition and removal of debris, plus an additional percentage of 10% of the Contract Amount for fees.
- Public Liability Insurance for an amount of not less than \$20,000,000 per event.
- Workers Compensation Insurance as per the Workers Compensation Act in force in Tasmania and the Common Law Section of the policy shall be increased to an unlimited amount.

The Contractor will be required to produce all policies for inspection prior to any work commencing, and shall not proceed until approval of the policies has been granted.

The policies will be maintained until the Contractors liabilities and obligations cease, that is until the issue of the Final Certificate of Payment.

1.6 WORKER INDUCTION & TRAINING

Council will coordinate with successful contractors to ensure that a site specific induction and online induction is provided for all workers, including sub-contractors, before commencing works.

Contractor will:

- ensure workers are trained and competent for the work to be carried out;
- ensure workers are trained to deal with any risks associated with the work and understand the control measures in place;
- ensure all the workers have had relevant "White Card" training (or other appropriate training from another jurisdiction);
- ensure on-site training and supervision is provided;
- organise external training for specific tasks where required;
- seek high risk licences for all high risk work and maintain a register of licences; and
- communicate with other contractors to ensure their workers are appropriately trained and competent.

1.7 EXTENSION OF TIME FOR INCLEMENT WEATHER

The Contractor shall implement a system, mutually agreed with the Superintendent for recording lost time due to the inclement weather or conditions resulting from inclement weather.

Such lost time shall be recorded daily by the contractor when it occurs and he shall present his record to the Superintendent within two days of the event. The Superintendent will initial the record and confirm whether or not he agrees with the claim.

Should a record as above not be made then it shall be deemed that no lost time has occurred.

The number of rain delay claims to be based on the average amount of significant weather events, during the period of the contract – September to December.

1.8 USE OF EXPLOSIVES

Should the Contractor elect to make use of explosives during any stage of the works, then such use shall be subject to the requirements and the permission of all relevant Authorities and the approval of the Superintendent.

Use of explosives shall be at the sole risk of the Contractor.

1.9 INSPECTIONS

The Contractor shall give the Superintendent not less than 48 hours forward notice of all inspections required by Council. No additional work shall be done to cover up the work requiring inspection until that inspection has been carried out.

Should the Contractor neglect to give such notice, the Superintendent may at his discretion order any completed work to be demolished so that an inspection can be made and, in this event, the whole responsibility and cost for such demolition, and for any making good which may be required shall be the Contractors.

Should the Superintendent not order such demolition, the whole responsibility for any error, or omission found in or arising out of the work at any subsequent time and the cost of making it good shall be the Contractor's.

When directed, the Contractor shall open up or cut away any part of work for inspection.

If the work is found defective, it shall be removed and made good at the Contractor's expense, including cost of opening up.

The Engineer may require test pieces cut from any or all of the pieces of material, and may direct that certain tests be made to ascertain conformity with this specification.

The Contractor shall bear all costs involved in taking such test specimens and making such test and making any required restitution to the work as the Engineer may direct.

1.10 DRAWINGS

Nil – Only site locality plans have been made available (40 x A3).

The extent of works shown in the plans will be marked out on the ground at each site.

1.11 DURATION OF THE CONTRACT

All work included in this contract shall be completed within twelve (12) weeks from the day that the Contractor takes possession of the site.

Work shall be undertaken as per the EPA guidelines - between the following hours:

Monday - Friday	7.00am - 6.00pm
Saturday	9.00am-6.00pm
Sunday/ Public Holidays	10.00am-6.00pm

The contract period is inclusive of all holiday periods. No work to be undertaken on Sundays or Public Holidays, without written permission of the Superintendent or their representative.

1.12 TEMPORARY SERVICES

The Contractor shall arrange for connection of any temporary services he may require and shall pay all charges in connection with installation and use.

1.13 CONTINGENCY SUM

The procedure for approval of variations to the contract shall be strictly in accordance with Item 1.18 of this document.

1.14 DAMAGES FOR NON-COMPLETION

The amount of liquidated and ascertained damages for delay in completion in accordance with Clause 35.6 of the General Conditions of Contract shall be \$500-00 per day for each separable portion of the works.

1.15 PROGRAMME OF WORKS

Within 14 calendar days of notification of acceptance of the tender the Contractor shall provide three (3) copies of a chart showing the proposed planned construction programme. This shall be in an acceptable bar chart form showing planned weekly progress and have provision for entering comparative actual progress. If at any time during the carrying out of the works the actual progress for any item of work shown is less than that forecast by the bar chart, or the Superintendent considers that the bar chart does not show a satisfactory programme, the Contractors shall provide within 3 calendar days, a revised and satisfactory programme.

If it is necessary for the Contractor to work overtime to maintain the contract schedule all the additional costs caused by overtime or shift work shall be borne in full by the Contractor or the Sub-Contractor.

1.16 SITE MEETINGS

The Superintendent shall arrange, chair and minute site meetings at intervals to be nominated for the duration of the Contract Period. (Usually fortnightly)

All minutes shall be enumerated and brought forward to the next meeting until satisfactorily discharged.

1.17 FIELD INSTRUCTIONS

During the currency of the contract any instructions and/or approvals shall be issued on the Superintendent's standard form for that purpose.

Should the Contractor and/or Sub-Contractor consider that any direction involves any time or cost variation, he shall so inform the Superintendent forthwith and before complying with the direction.

1.18 VARIATIONS TO THE CONTRACT

Should any variation to the works be directed, or otherwise arise, associated cost variations will only be taken into account if the pertinent matter has been specifically the subject of a variation order issued by the Superintendent;

- i. Prior to the issue of a V.O. the Contractor shall submit a price for the work intended to be varied. For this purpose the Superintendent will give the Contractor a copy of a Site Instruction on which will be described the work which is intended to be the subject of the V.O.

The Site Instruction will include full information detailing the variation under consideration and will be accompanied by such drawing and other additional information as will be required for the execution of the proposed variation and for the detailed pricing of it by the Contractor.

- ii. The Contractor shall submit a detailed quotation on the variation to the Superintendent within 14 days of the date of issue of the Site Instruction, unless such time is not appropriate, in which case the quotation shall be submitted by such date as the Superintendent shall nominate. The quotation shall include or be accompanied by full supporting details on the pricing of individual items. The quotation shall use the rates quoted in the schedule of works, where applicable.
- iii. No work included in the proposed variation shall be commenced by the Contractor until such time as a duly certified Variation Order is issued to him. However, the issue of a Site Instruction will signify the intention to have such work carried out and the Contractor shall not continue nor commence any work which is in conflict with the variation under construction.
- iv. If a Site Instruction is issued with respect to a variation to the work of a nominated Sub-Contractor the foregoing procedure shall be adopted. However, a copy of the Nominated Sub-Contractor's quotation shall be forwarded to the Superintendent.

1.19 FEES AND REGULATIONS

The costs of all necessary permits and connections fees to all concerned authorities and the obtaining of these permits to cater for the works required in this tender shall be included in this quotation.

The Contractor shall pay all fees and comply with all regulations as detailed in Clause 14 of the General Conditions of Contract.

The whole of the work is to be carried out in accordance with all By-Laws and Regulations of any Authorities having jurisdiction over the works.

1.20 BARRIERS

The Contractor shall provide, erect and maintain all necessary temporary barriers around footways and all trenches for the protection of the public. This work shall be completely removed at the completion of the Works.

1.21 EXISTING SERVICES

The Contractor shall be responsible to prevent damage to any existing services on site. Any damage caused shall be made good to the satisfaction of the Superintendent.

1.22 ROCK EXCAVATION

Tenders are to be submitted on the basis that all excavation is to be in all materials including rock. No additional payment is to be made for rock excavation.

To enable any extra works ordered by the superintendent to be priced, the Tenderers shall submit with their tenders, a rate for excavation in rock and a rate for excavation in other than rock.

Rock shall be defined as material which cannot be removed using a 20 tonne excavator with a

600 mm bucket.

1.23 RETENTION MONIES

Contractor to lodge two Bank Guarantees valued at 2.5% each to cover retention funds required during the course of the contract and/or the defects liability period.

The Bank Guarantees to be submitted prior to works commencing.

One of the Bank Guarantees will be released upon practical completion.

1.24 SAFETY

The Contractor shall carry out the whole of the works in a thoroughly safe manner and in particular shall conform to the requirements of all work health and safety standards including relevant Acts and Statutes of Parliament, Regulations, By-Laws or Orders relating to the safety of persons on or about the site.

The Contractor shall ensure that all equipment necessary for execution of the works is of adequate strength and otherwise safe for use, and shall remove from the site any equipment which becomes, or is likely to become unsafe.

Please Note

- All machinery must be fitted with Burst Hose Protection on all hydraulic cylinders and fitted with a Roll Over Protection System (ROPS) or Fall Over Protection System (FOPS) Canopy.
- All trucks must have a roadworthy certificate, rotating safety lights.
- All submitted plant and machinery must comply with Workplace Health and Safety standards and undergo daily pre-start.
- All materials must be NATA certified.

Contractor shall submit a Safety Management Plan prior to works commencing on-site, which will address the following:

- WHS requirements (e.g. policies, procedures, incident notification, etc.)
- WHS roles and responsibilities of the contractor (including their management teams)
- Procedures for handling non-compliance with WHS policies, procedures and agreed work methods
- Process for eliminating or reducing WHS risks as far as practicable and maintaining a risk register
- Reporting expectations, including:
 - Health and safety performance (e.g. incidents, near misses and hazards)
 - Site inductions and training
 - Minutes of consultation arrangements and issue resolution
 - Changing agreed actions or controls
- Procedures for handling changes to processes, procedures or controls
- Scheduling and procedures for inspections and audits of work
- Principal and contractor communications
- The requirement for Contractors to inform the Principal that their personnel are on-site
- Induction and training processes
- Methods or processes for dealing with:
 - Unexpected or previously unidentified hazards (such as sub surface asbestos) and the expectation that contractors shall implement effective risk management practices as per WHS regulatory requirements
- There will be high risk work associated with this contract which includes, but not limited to working at heights and electrical installation.
- Maintaining safe work method statements

Standard of Plant, Machinery and Material

Sorell Council requires that all plant and machinery operating on designated works sites meet all statutory requirements relating to registration and insurance and are free from defects that may affect their safe operation. Plant and machinery that do not meet these requirements may be banned from the work site until the matter is remedied.

All materials supplied to Council need to conform with Australian Standards where applicable and proof of such qualification may be required prior to the material being accepted on the work site.

Any breaches of these standards may result in the issue of a non-conformance to the contractor or supplier.

1.25 APPROVED SUB-CONTRACTORS

The Contractor, shall submit for approval, a list of all Sub-Contractors to whom they intend subletting any portion of the works.

Any Sub-Contractor not approved shall not undertake any of the works covered by this Contract.

1.26 MAKING GOOD

The Contractor shall be responsible for making good any damage to fencing, drains, roads, footpaths and surfaces generally, and any other works which may be disturbed or injured by cartage or any other operation in carrying out this Contract.

1.27 SITE VISIT

The lodging of a tender shall infer that the Contractor has previously visited the site and become familiar with all work involved in this contract, together with existing conditions on and surrounding the site.

No claim for extra work or time will be considered as a result of neglect of the above provision.

1.28 DIMENSIONS ON DRAWINGS

The Contractor shall check all dimensions before setting out any work on the site. Any discrepancies shall be referred immediately to the Superintendent. The drawings shall not be scaled.

1.29 MATERIALS AND WORKMANSHIP

Where applicable the latest SAA Code (with amendments) shall define the acceptable standards for materials and workmanship.

Where no standard exists the Contractor shall refer to the Superintendent for advice. The Superintendent reserves the right to reject any such work that does not meet with his approval.

All materials shall be new and to the approval of the Superintendent.

1.30 SAMPLES

When requested, the Contractor shall furnish to the Superintendent for approval samples of all materials to be used in the execution of the works and of the finishes to be applied.

Materials and finishes used in the works, must be in accordance with and equal to the approved samples.

1.31 CONTRACTOR TO SUPPLY

The Contractor shall supply all equipment, labour and materials as may be required to ensure the proper execution of the whole of the works, unless noted elsewhere in the contract documents. All items shown on the drawings and/or specified are to be included in the Contract.

1.32 FOREMAN

The Contractor shall appoint a competent Foreman, Deputy or representative to whom instructions can be issued by the Superintendent for the duration of the Contract. The appointment shall be approved by the Superintendent and the Foreman shall not be changed without approval. The Foreman shall be available on site during working hours and be responsible for the Workplace Health and Safety management on the site.

1.33 CLEANING AND FINISHING

During building operations the Contractor shall at all times keep the site and works clean and tidy. Spoil and debris must be removed as work proceeds and not allowed to accumulate.

On completion of works and prior to handing over to the Principal:-

- Remove all temporary structures, fences, services, plant and equipment.
- Remove all surplus materials and debris.
- Make good all damage and bring all surfaces to the specified finish.
- Clean the site.

1.34 OBVIOUS WORK

Where a construction or item of work is to be obviously inferred or is usual and proper in the class of work generalised in this Specification the same is to be included notwithstanding that such construction or such necessary item is not specially mentioned in this Specification or shown on the drawings.

1.35 SEALED CONTAINERS

No manufactured material or products which is sold in closed or sealed containers is to be taken onto the site of the works or on to any place where any part of the works is being carried out unless still in the original container and with the manufacturer's seal intact. Failure to comply with this requirement will result in rejection of the material or product.

1.36 MOUNTED DRAWINGS

One set of all drawings required by the Contract is to be kept on the site of works by the Contractor and shall be suitably mounted and protected.

1.37 IMPORT DUTY

The Contract Sum shall be deemed to include allowance for Customs Duty (where same applied) on all imported goods, materials and fittings required or used in or forming part of the works.

1.38 POISONOUS AND OTHER INJURIOUS SUBSTANCES

Adequate precautions shall be taken to keep all poisonous and other injurious substances in places secured against access by unauthorised persons.

1.39 EXISTING TREES AND SHRUBS

Every endeavour must be made to preserve existing trees and shrubs. The Contractor is required to slash all vegetation with a trunk diameter less than 150mm, and to remove slashed material off site.

1.40 AS CONSTRUCTED DRAWINGS

As constructed drawings aren't required, however, Council will take levels from a temporary benchmark prior to works commencing, to ensure 100mm (+/-) of compacted red gravel has been installed.

1.41 CHARGES AND FEES

All charges of whatever description are deemed to be included in rates tendered in the contract schedules.

All Municipal fees and other lawful charges due or requisite on account of the work of contract shall be paid by the Contractor as part of his contract unless the Contractor ascertains specifically from the relevant authority that the work is free of payment of such fees or dues.

TCBIB fee to be paid and receipt provided to Council before possession of site will be arranged.

1.42 PROVISION FOR TRAFFIC AND SERVICES

The Contractor is responsible for lodging an approved Traffic Management Plan with Sorell Council before start of works. The road re-sheeting works should be carried out with minimal interference to the travelling public. It is expected that at least one lane will remain open at all times with some delays up to 15 minutes maximum only. Total closure of the road for periods greater than 15 minutes is not expected.

The Contractor shall, as part of the Contract, provide, construct and maintain all necessary temporary bridges, footways, drains, supports and protections over and around all open excavations and obstacles so as to ensure that normal traffic will not be interrupted and that convenient and safe access will be maintained to all properties. He shall also provide, erect and maintain such signage, temporary fences, barriers, etc. as may be necessary to protect the general public and property and in this respect shall comply with any direction from the Superintendent.

The Contractor shall accept full responsibility for any accidents arising from the neglect of any necessary precaution whether specified herein or not during the contract time until the end of the maintenance. He shall obey all directions given to him with regard to the provision of lighting and barriers but shall not be thereby relieved of responsibility for any accidents or damage.

On completion of the works or any section thereof all drains and surrounding surfaces shall be made good and restored to their original condition. In the event of the Contractor's refusal or failure to carry out any of these works the Superintendent may, after twenty-four (24) hours' notice in writing have such works carried out at the Contractor's expense.

The cost of the above-mentioned work shall be deemed to be included in the scheduled rates for excavation.

1.43 ALTERATION OF SERVICES

The Contractor shall promptly arrange for the alteration, lowering etc. of any water, gas, or other service or drainage pipe from properties which may require adjustment owing to construction of these works.

The Contractor shall, however, as part of his Contract, expose all pipes, mains and fittings to be altered, excavate for all new trenches as directed, backfill and consolidate all trenches and maintain the whole work as specified. Arrangements to lift or lower any manhole cover, inspection shaft, fireplug or valve must be made by the Contractor with the Authority concerned and all costs of alterations shall be deemed to be included in the Contract.

1.44 SUFFICIENT EMPLOYEES, PLANT ETC

The Contractor shall engage and have at work sufficient employees to enable the Contract to be completed within the time of completion. The Contractor shall have sufficient plant and arrange an adequate supply of tools, materials, etc., together with a satisfactory rate of delivery of culvert and drainage pipes etc. to maintain a rate of progress satisfactory to the Superintendent.

If, in the opinion of the Superintendent, the Contractor fails to employ an adequate number of workmen, or has not sufficient plant, materials, equipment, etc. to keep up a satisfactory rate of progress then the Principal may withhold all progress payments wholly or in part until the Superintendent's requirements have been complied with.

1.45 PRIME COST ITEMS AND PROVISIONAL SUMS

Tenderers shall include in their tenders the prime costs items and/or provisional sum items scheduled. Transaction regarding such items shall be made only after the Contractor has received written instructions from the Superintendent authorising expenditure on such items. Payment for such works shall be made after official receipts for payments made the contractor have been lodged with the Superintendent.

1.46 WORK OUTSIDE NORMAL HOURS

No works of the contract shall proceed outside normal working hours without the prior written approval of the Superintendent and such other Statutory Authorities as may be required. This applies to work before 7.00 a.m. on any day or later than 5.00 p.m. on any day, and on Saturdays, Sundays, Public Holidays and Bank Holidays. The Contractor shall pay the costs of any additional supervision or inspections made necessary by work outside the times specified.

1.47 CORNER PEGS

Corner pegs disturbed, buried or removed during construction of works are to be replaced by the Principal's Surveyor. The Contractor shall check all lot dimensions against site measurements before using any corner pegs to set out works. Any discrepancies shall be referred immediately to the Superintendent.

1.48 SPECIFICATION

Prior to any relevant works the Contractor shall refer immediately to the Superintendent any differences between this specification and the current specification of the relevant authority.

No claims for variations to the contract sum will be considered for any work resulting from a conflict between the above mentioned specifications.

1.49 SETTING OUT OF THE WORKS

The Contractor is responsible for setting out the works as shown on the drawings. The Principal's Surveyor will provide digital information for use by plant mounted with working GPS technology.

The Contractor is responsible for offsetting or repositioning temporary marks to allow construction to proceed.

1.50 SOIL AND WATER MANAGEMENT

The Contractor is responsible for carrying out effective soil and water management practices in accordance with “Water Sensitive Urban Design in Engineering Procedures for Stormwater Management Procedures in Southern Tasmania” from www.derwentestuary.org.au and in accordance with the Soil and Water Management Drawing for this contract.

1.51 HOLD POINTS

Hold Points will be negotiated with the successful tenderer at the pre-construction meeting.

1.52 STATUTORY DECLARATION

The Contractor shall provide to Council prior to Practical Completion being given, a Stat Dec stating that all subcontractors and material suppliers have been paid.

DOCUMENT B - RESHEET ASSET ID MEASUREMENTS

Asset Name	Unique Asset ID	Road Length	Measured Road Width	Sqm
Abelia Street	RD105053	109.2	4	436.8
Alomes Road	RD103758	328.1	6	1968.6
	RD103760	328.1	6	1968.6
Annie Street	RD105056	64	4	256
	RD105061	41.7	4	166.8
Church Street	RD105068	305.7	4.5	1375.65
Elm Street	RD105075	86	5	430
Eularminner Street	RD105077	227.9	4.2	957.18
Heatherbell Road	RD103879	490	5.2	2548
	RD103883	470.7	4.8	2259.36
	RD103885	409.5	4.5	1842.75
	RD103887	409.5	4.2	1719.9
	RD103884	18.6	4.5	83.7
Josephs Road	RD103898	456.9	5.5	2512.95
	RD103901	387.6	5.5	2131.8
	RD103902	457	5.75	2627.75
	RD103904	69.3	5.5	381.15
	RD103905	457	5	2285
	RD103906	318.7	6.5	2071.55
	RD103912	318.8	6.5	2072.2
Marchwiell Road	RD103941	499.9	3.5	1749.65
	RD103938	305.9	5	1529.5
	RD103937	500	5	2500
	RD103936	305.8	5.5	1681.9
	RD103940	499.9	5	24995
	RD103939	499.9	5	2499.5
	RD103942	500	4.25	2125
Matthews Road	RD103962	324.5	6.5	2109.25
McGinness Road	RD103957	163.5	4	654
Mill Road	RD103958	482.5	4	1930
	RD103959	482.5	4.3	2074.75
	RD103960	482.5	4	1930
	RD103961	482.5	4	1930
	RD103963	482.5	5	2412.5
	RD103964	482.5	4	1930
Nugent Road	RD103995	476.3	5.5	2619.65
	RD104000	94.4	5	472
	RD104002	451.1	5.75	2593.825
	RD103997	25.3	5.75	145.475
	RD104005	354.9	4.75	1685.775
	RD104006	355	5.2	1846
	RD104004	171.8	4	687.2
	RD103978	453.1	6.2	2809.22
	RD103980	453	6.8	3080.4
	RD104010	375.1	5.2	1950.52
	RD103984	453	6	2718
	RD103985	453.1	6	2718.6
RD103986	453.1	6	2718.6	

	RD103988	453	6	2718
	RD103990	453.1	6	2718.6
	RD103566	290.5	6	1743
	RD103989	257.2	6	1543.2
	RD103991	360.8	6	2154.8
Orierton Road	RD104008	290.9	5	1454.5
	RD104009	291	5	1455
	RD104014	413	5	2065
	RD104015	413.1	5	2065.5
Parker Street	RD105150	127.8	5	639
Pengana Street	RD105147	145.2	6	871.2
Reardons Road	RD104035	477.3	4.5	2147.85
	RD104036	452.4	4.5	2035.8
	RD104040	452.4	3.5	1583.4
	RD104039	167	3.5	584.5
River Street	RD105167	325.5	4.5	1464.74
Rosendale Road	RD104037	289.7	5.5	1593.35
	RD104043	289.6	4.8	1390.08
Shrub End Road	RD104047	467	5	2335
	RD104050	467	5	2335
Stokes Road	RD104055	462.3	4.5	2080.35
	RD104054	462.4	5	2312
Topley Drive	RD104062	443.2	4.8	2127.36
Wiggins Road	RD104087	488.4	4	1953.6
	RD104088	488.5	4	1954
	RD104089	488.4	4.5	2197.8
	RD104090	488.4	4.5	2197.8
	RD104091	488.4	4.5	2197.8
	RD104092	488.4	4.5	2197.8
	RD104093	488.5	4.5	2198.25
	RD104094	488.4	4.5	2197.8
	RD104095	488.5	4.5	2198.25
	RD104096	488.4	4	1953.6

ATTACHMENT A – A3 LOCALITY PLANS

Locality Plans – Re-Sheeting Program 2022/2023

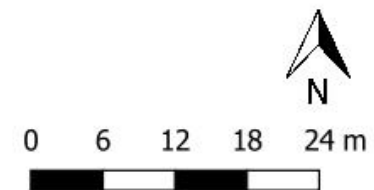


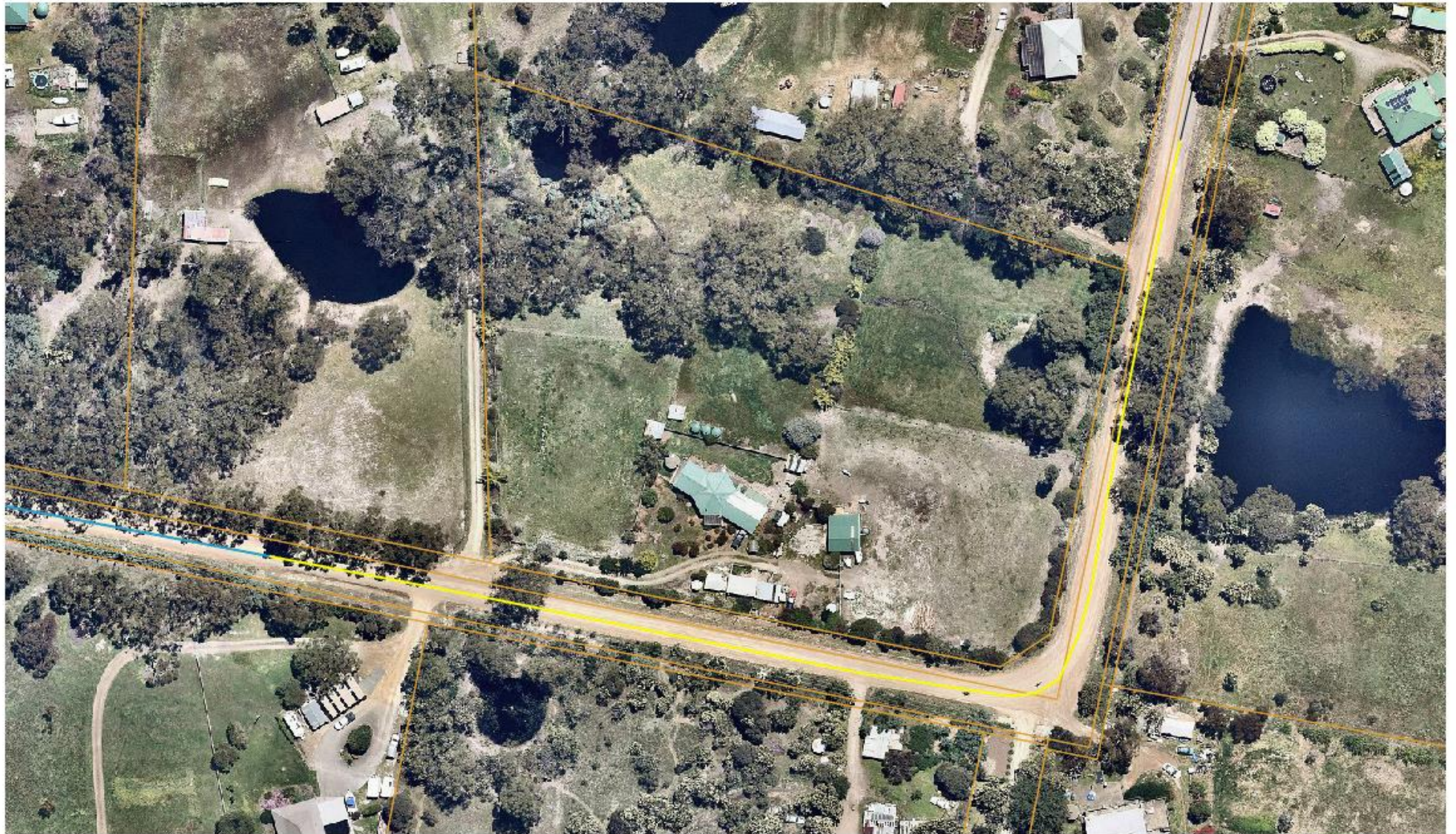
Sorell Council Resheeting - Abelia Street RD105053

Abelia Street Segment - 1

Segment Length - 109.2m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






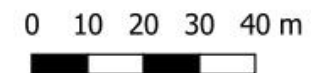


Sorell Council Resheeting - Alomes Road RD103758

Alomes Road Segment - 3

Segment Length - 328.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






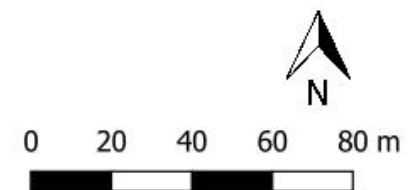


Sorell Council Resheeting - Alomes Road RD103760

Alomes Road Segment - 2

Segment Length - 328.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



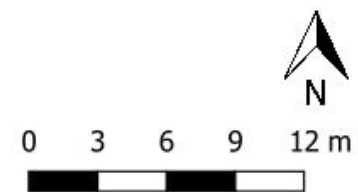


Sorell Council Resheeting - Annie Street RD105056

Annie Street Segment - 2

Segment Length - 64m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






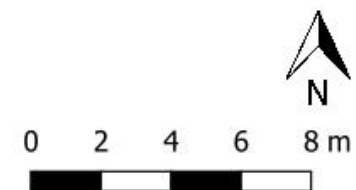


Sorell Council Resheeting - Annie Street RD105061

Annie Street Segment - 3

Segment Length - 41.7m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





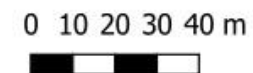


Sorell Council Resheeting - Church Street RD105068

Church Street Segment - 1

Segment Length - 305.7m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






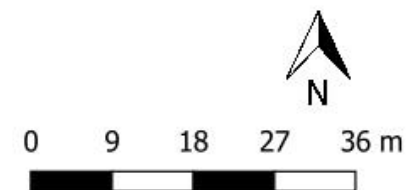


Sorell Council Resheeting - Elm Street RD105075

Elm Street Segment - 1

Segment Length - 86m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



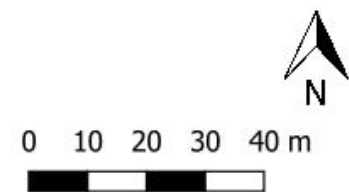


Sorell Council Resheeting - Eularminner Street RD105077

Eularminner Street Segment - 1

Segment Length - 227.9m

- Current Resheet Segment
- All Resheet Segments
- Council Roads





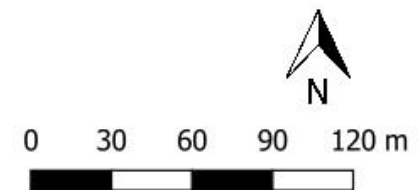


Sorell Council Resheeting - Heatherbell Road RD103879

Heatherbell Road Segment - 1

Segment Length - 490m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






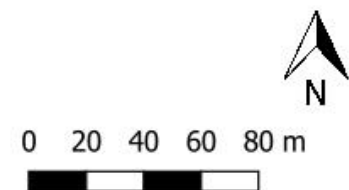


Sorell Council Resheeting - Heatherbell Road RD103883

Heatherbell Road Segment - 2

Segment Length - 470.7m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





Sorell Council Resheeting - Heatherbell Road RD103884

Heatherbell Road Segment - 3

Segment Length - 18m

- Current Resheet Segment
- All Resheet Segments
- Council Roads



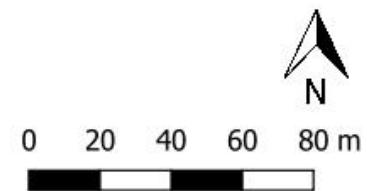


Sorell Council Resheeting - Heatherbell Road RD103885

Heatherbell Road Segment - 5

Segment Length - 409.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






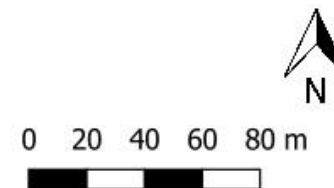


Sorell Council Resheeting - Heatherbell Road RD103887

Heatherbell Road Segment - 4

Segment Length - 409.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



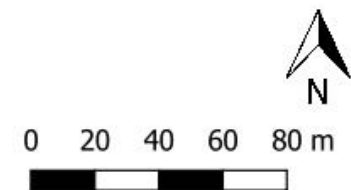


Sorell Council Resheeting - Josephs Road RD103898

Josephs Road Segment - 1

Segment Length - 456.9m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



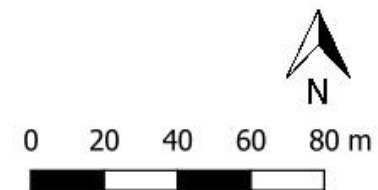


Sorell Council Resheeting - Josephs Road RD103901

Josephs Road Segment - 3

Segment Length - 387.6m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



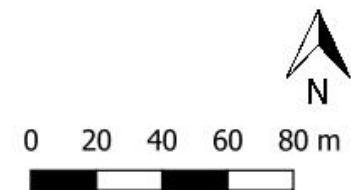


Sorell Council Resheeting - Josephs Road RD103902

Josephs Road Segment - 2

Segment Length - 457m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





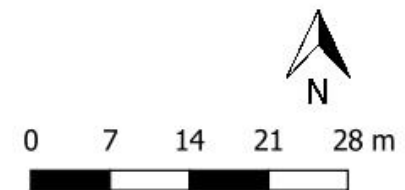


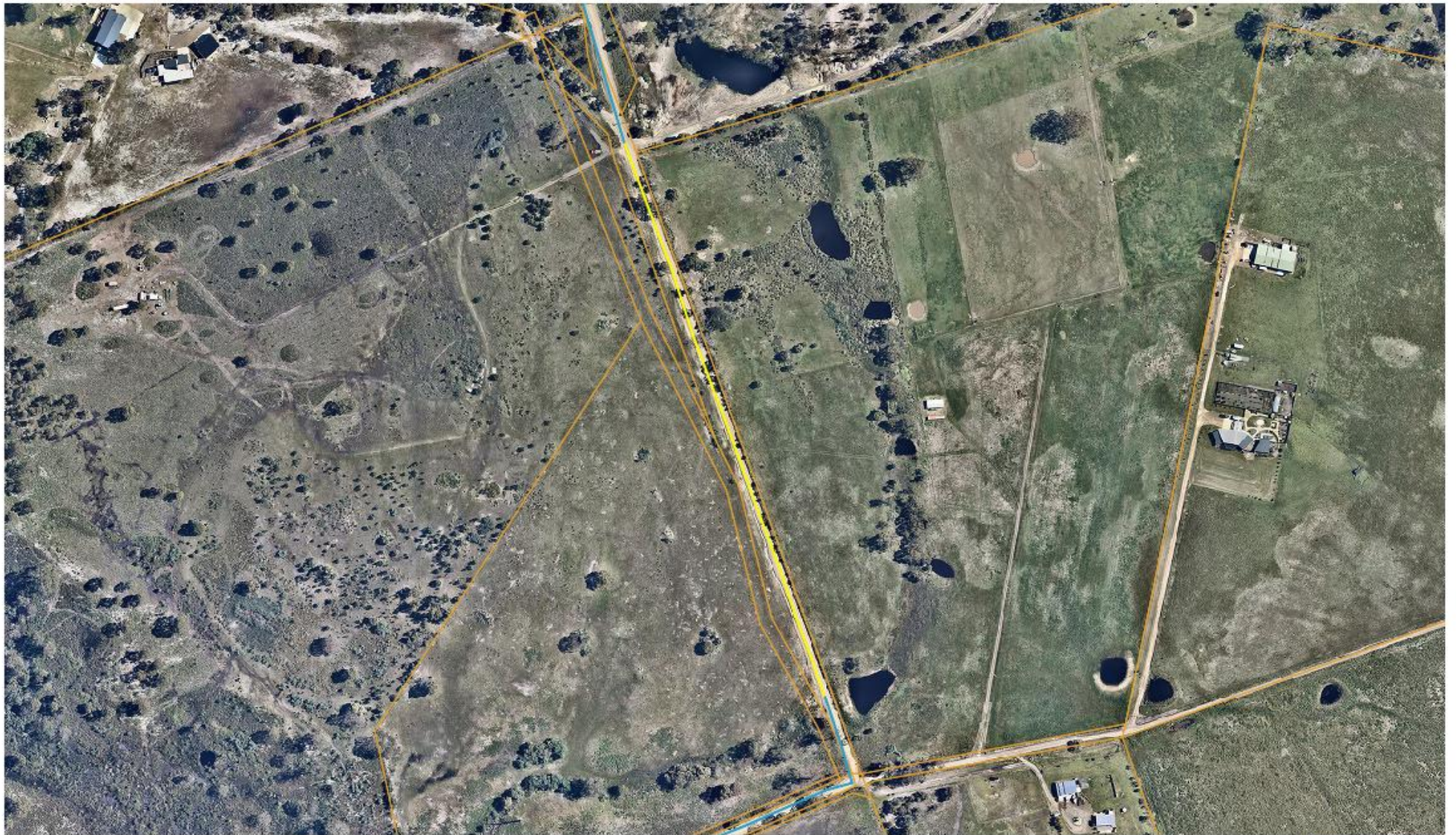
Sorell Council Resheeting - Josephs Road RD103904

Josephs Road Segment - 4

Segment Length - 69.3m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



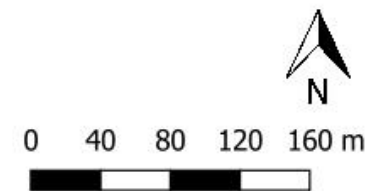


Sorell Council Resheeting - Josephs Road RD103905

Josephs Road Segment - 5

Segment Length - 457m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






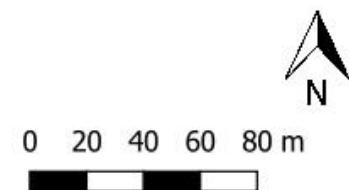


Sorell Council Resheeting - Josephs Road RD103906

Josephs Road Segment - 6

Segment Length - 318.7m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



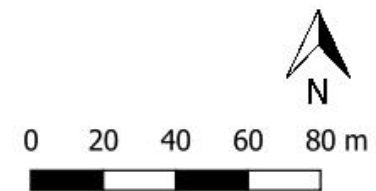


Sorell Council Resheeting - Josephs Road RD103912

Josephs Road Segment - 7

Segment Length - 318.8m

- Current Resheet Segment
- All Resheet Segments
- Council Roads



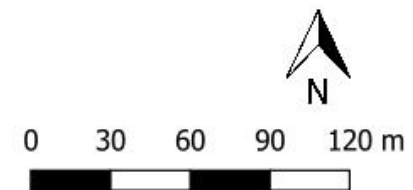


Sorell Council Resheeting - Marchwiell Road RD103936

Marchwiell Road Segment - 2

Segment Length - 305.8m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





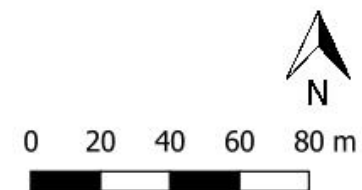


Sorell Council Resheeting - Marchwiel Road RD103937

Marchwiel Road Segment - 3

Segment Length - 500m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



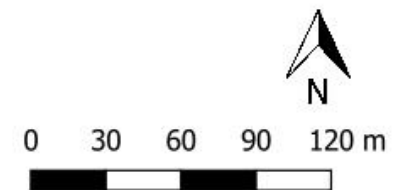


Sorell Council Resheeting - Marchwiell Road RD103938

Marchwiell Road Segment - 1

Segment Length - 305.9m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






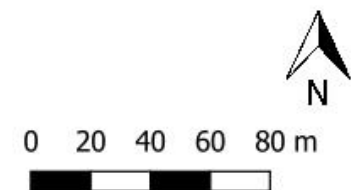


Sorell Council Resheeting - Marchwiell Road RD103939

Marchwiell Road Segment - 4

Segment Length - 499.9m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



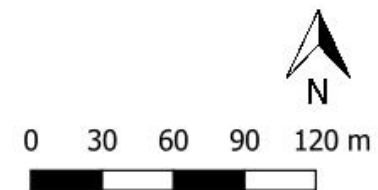


Sorell Council Resheeting - Marchwiell Road RD103940

Marchwiell Road Segment - 5

Segment Length - 499.9m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



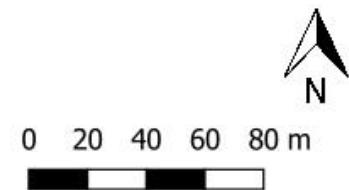


Sorell Council Resheeting - Marchwiël Road RD103941

Marchwiël Road Segment - 7

Segment Length - 499.9m

- Current Resheet Segment
- All Resheet Segments
- Council Roads



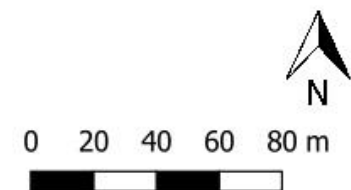


Sorell Council Resheeting - Marchwiell Road RD103942

Marchwiell Road Segment - 6

Segment Length - 500m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



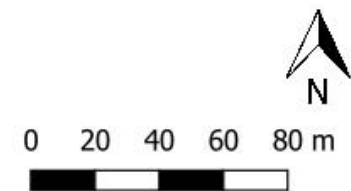


Sorell Council Resheeting - Matthews Road RD103962

Matthews Road Segment - 3

Segment Length - 324.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads








Sorell Council Resheeting - McGinness Road RD103957

McGinness Road Segment - 1

Segment Length - 163.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





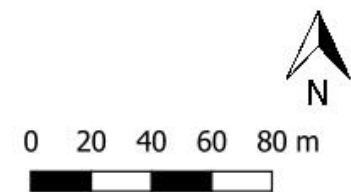


Sorell Council Resheeting - Mill Road RD103958

Mill Road Segment - 4

Segment Length - 482.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



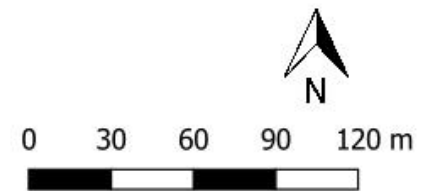


Sorell Council Resheeting - Mill Road RD103959

Mill Road Segment - 1

Segment Length - 482.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads



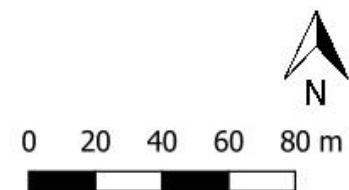


Sorell Council Resheeting - Mill Road RD103960

Mill Road Segment - 5

Segment Length - 482.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






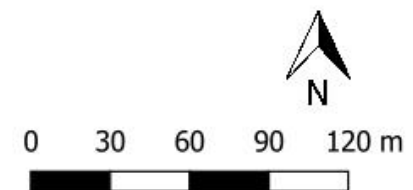


Sorell Council Resheeting - Mill Road RD103961

Mill Road Segment - 3

Segment Length - 482.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



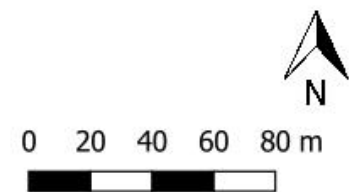


Sorell Council Resheeting - Mill Road RD103963

Mill Road Segment - 2

Segment Length - 482.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads



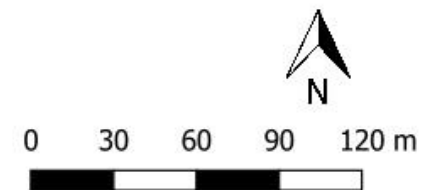


Sorell Council Resheeting - Mill Road RD103964

Mill Road Segment - 6

Segment Length - 482.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



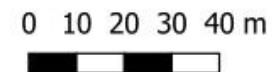


Sorell Council Resheeting - Nugent Road RD103566

Nugent Road Segment - 39

Segment Length - 290.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



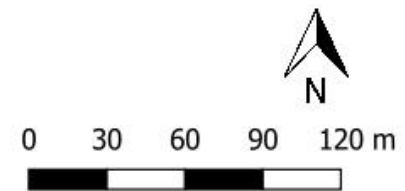


Sorell Council Resheeting - Nugent Road RD103978

Nugent Road Segment - 33

Segment Length - 453.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



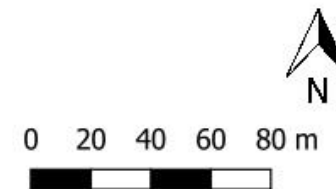


Sorell Council Resheeting - Nugent Road RD103980

Nugent Road Segment - 32

Segment Length - 453m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






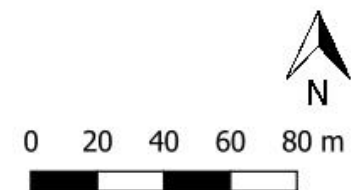


Sorell Council Resheeting - Nugent Road RD103984

Nugent Road Segment - 34

Segment Length - 453m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






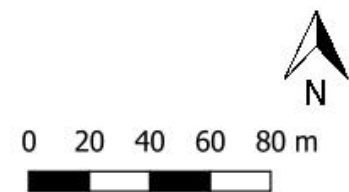


Sorell Council Resheeting - Nugent Road RD103985

Nugent Road Segment - 35

Segment Length - 453.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



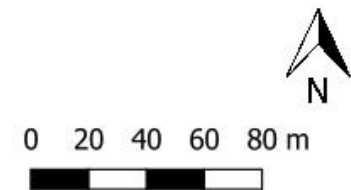


Sorell Council Resheeting - Nugent Road RD103986

Nugent Road Segment - 36

Segment Length - 453.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






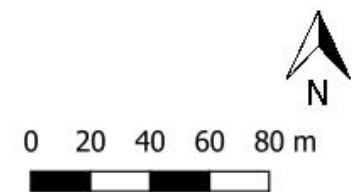


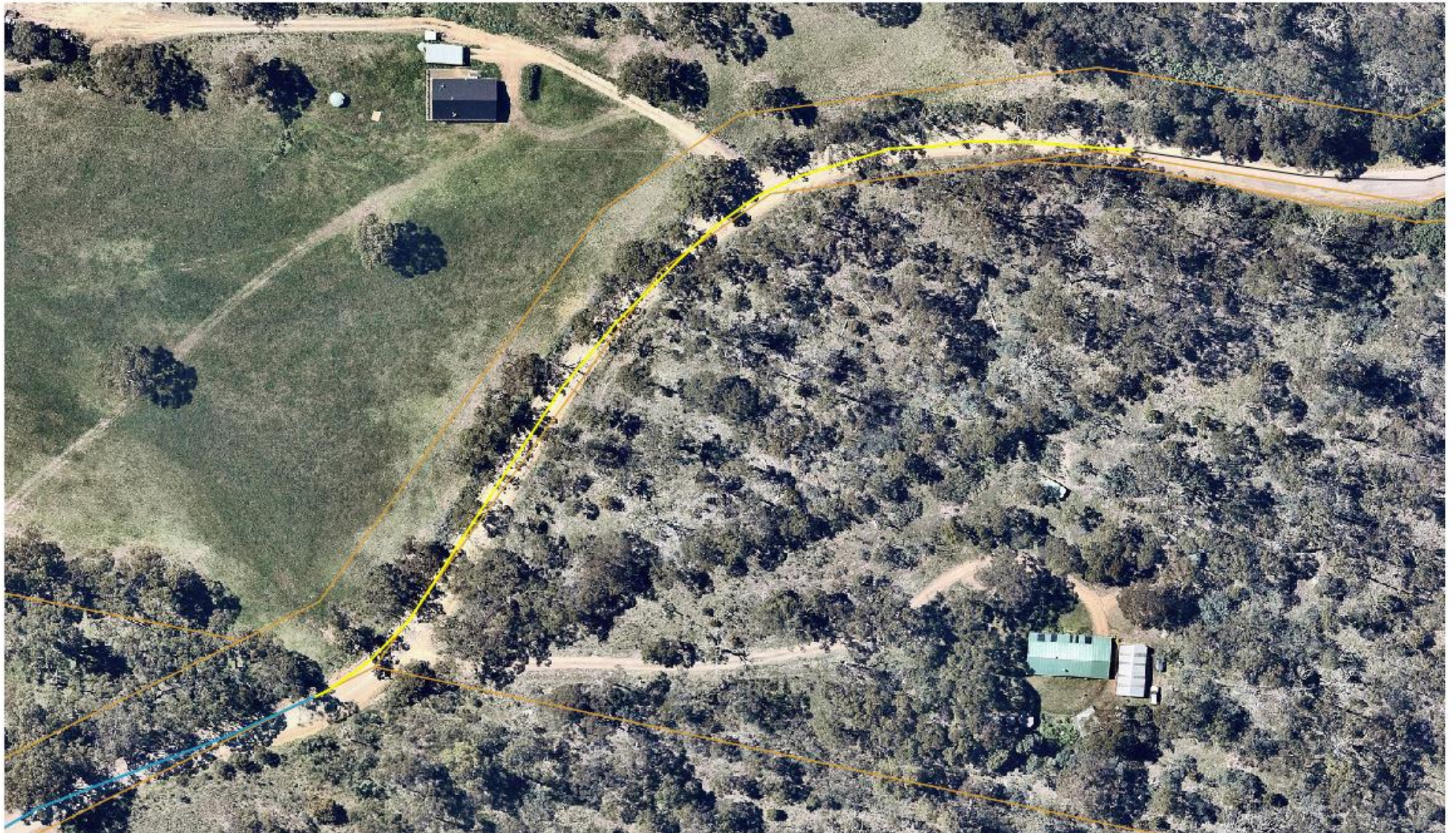
Sorell Council Resheeting - Nugent Road RD103988

Nugent Road Segment - 37

Segment Length - 453m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





Sorell Council Resheeting - Nugent Road RD103989

Nugent Road Segment - 40

Segment Length - 257.2m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






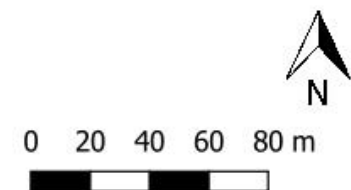


Sorell Council Resheeting - Nugent Road RD103990

Nugent Road Segment - 38

Segment Length - 453.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






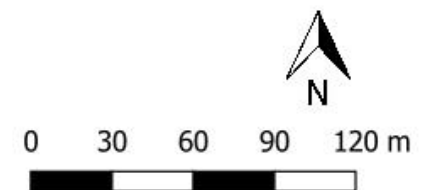


Sorell Council Resheeting - Nugent Road RD103991

Nugent Road Segment - 47

Segment Length - 360.8m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



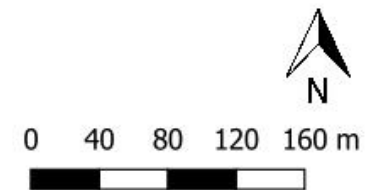


Sorell Council Resheeting - Nugent Road RD103995

Nugent Road Segment - 52

Segment Length - 476.3m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






Sorell Council Resheeting - Nugent Road RD103997

Nugent Road Segment - 53

Segment Length - 25m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



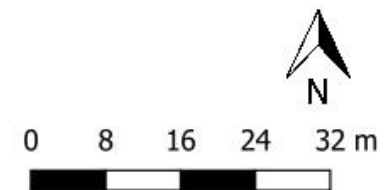


Sorell Council Resheeting - Nugent Road RD104000

Nugent Road Segment - 57

Segment Length - 94.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



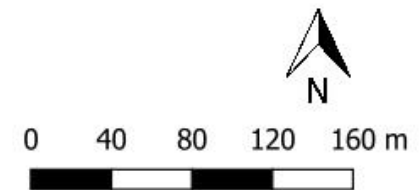


Sorell Council Resheeting - Nugent Road RD104002

Nugent Road Segment - 54

Segment Length - 451.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



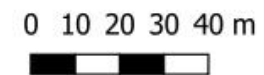


Sorell Council Resheeting - Nugent Road RD104004

Nugent Road Segment - 62

Segment Length - 171.8m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



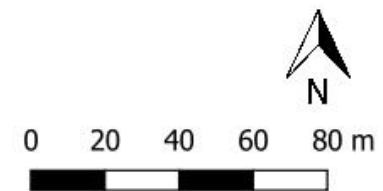


Sorell Council Resheeting - Nugent Road RD104005

Nugent Road Segment - 64

Segment Length - 354.9m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



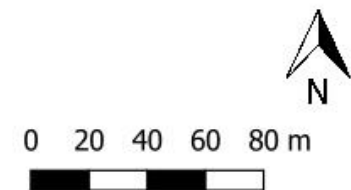


Sorell Council Resheeting - Nugent Road RD104006

Nugent Road Segment - 65

Segment Length - 355m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



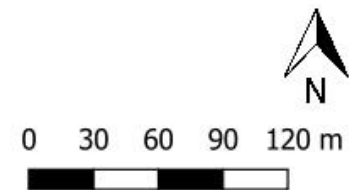


Sorell Council Resheeting - Nugent Road RD104010

Nugent Road Segment - 68

Segment Length - 375.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



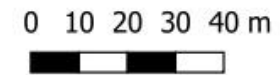


Sorell Council Resheeting - Orielton Road RD104008

Orielton Road Segment - 2

Segment Length - 290.9m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






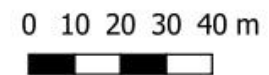


Sorell Council Resheeting - Orielson Road RD104009

Orielson Road Segment - 3

Segment Length - 291m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



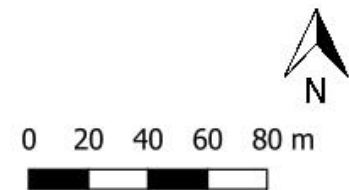


Sorell Council Resheeting - Orielson Road RD104014

Orielson Road Segment - 5

Segment Length - 413m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






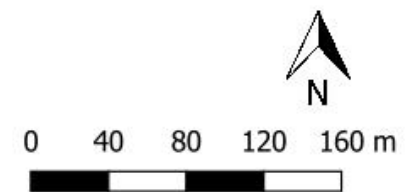


Sorell Council Resheeting - Orielson Road RD104015

Orielson Road Segment - 6

Segment Length - 413.1m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



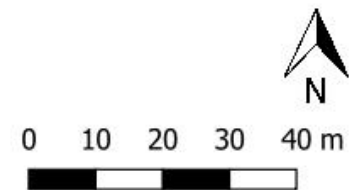


Sorell Council Resheeting - Parker Street RD105150

Parker Street Segment - 1

Segment Length - 127.8m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





Sorell Council Resheeting - Pengana Street RD105147

Pengana Street Segment - 1

Segment Length - 145.2m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






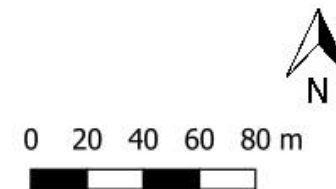


Sorell Council Resheeting - Reardons Road RD104035

Reardons Road Segment - 5

Segment Length - 477.3m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



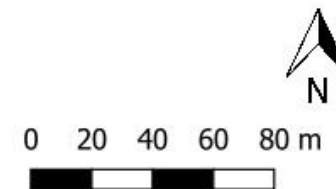


Sorell Council Resheeting - Reardons Road RD104036

Reardons Road Segment - 6

Segment Length - 452.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





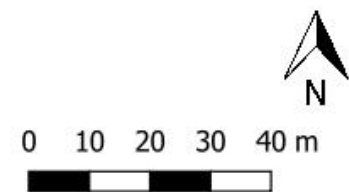


Sorell Council Resheeting - Reardons Road RD104039

Reardons Road Segment - 8

Segment Length - 167m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



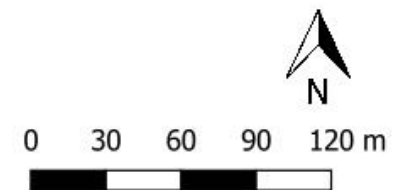


Sorell Council Resheeting - Reardons Road RD104040

Reardons Road Segment - 7

Segment Length - 452.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



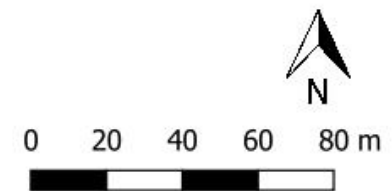


Sorell Council Resheeting - River Street RD105167

River Street Segment - 1

Segment Length - 325.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






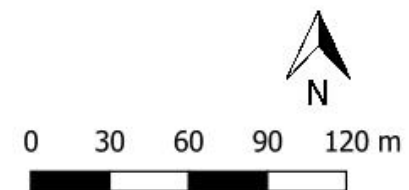


Sorell Council Resheeting - Rosendale Road RD104037

Rosendale Road Segment - 2

Segment Length - 289.7m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



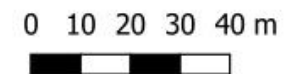


Sorell Council Resheeting - Rosendale Road RD104043

Rosendale Road Segment - 3

Segment Length - 289.6m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads





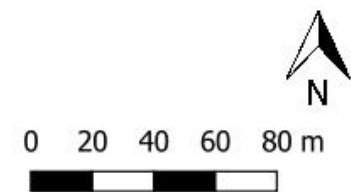


Sorell Council Resheeting - Shrub End Road RD104047

Shrub End Road Segment - 7

Segment Length - 467m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



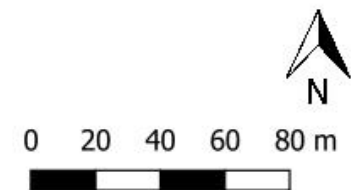


Sorell Council Resheeting - Shrub End Road RD104050

Shrub End Road Segment - 8

Segment Length - 467m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



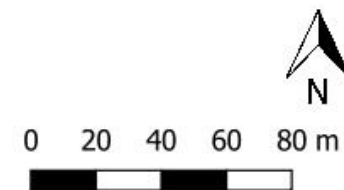


Sorell Council Resheeting - Stokes Road RD104054

Stokes Road Segment - 1

Segment Length - 462.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



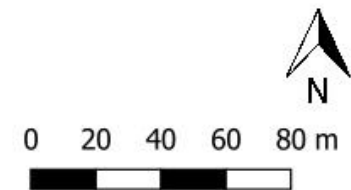


Sorell Council Resheeting - Stokes Road RD104055

Stokes Road Segment - 2

Segment Length - 462.3m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






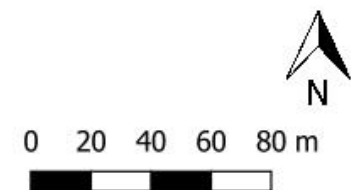


Sorell Council Resheeting - Topley Drive RD104062

Topley Drive Segment - 1

Segment Length - 443.2m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



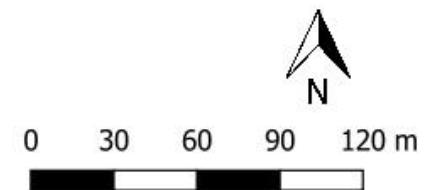


Sorell Council Resheeting - Wiggins Road RD104087

Wiggins Road Segment - 1

Segment Length - 488.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






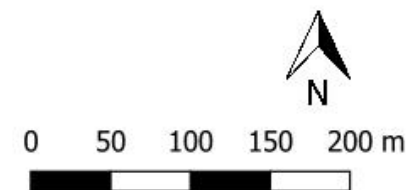


Sorell Council Resheeting - Wiggins Road RD104088

Wiggins Road Segment - 6

Segment Length - 488.5m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



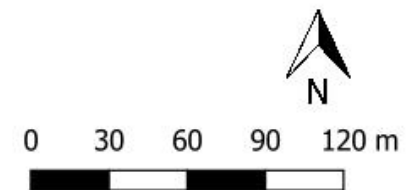


Sorell Council Resheeting - Wiggins Road RD104089

Wiggins Road Segment - 7

Segment Length - 488.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



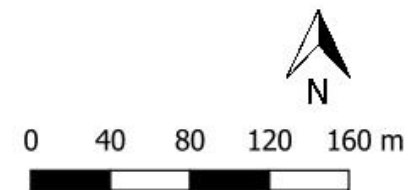


Sorell Council Resheeting - Wiggins Road RD104090

Wiggins Road Segment - 4

Segment Length - 488.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






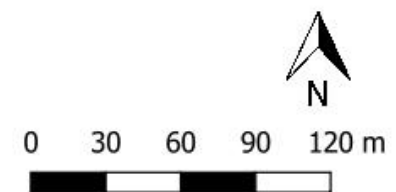


Sorell Council Resheeting - Wiggins Road RD104091

Wiggins Road Segment - 5

Segment Length - 488.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads






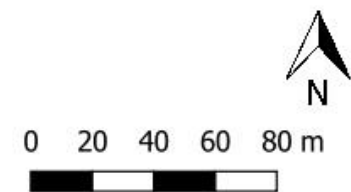


Sorell Council Resheeting - Wiggins Road RD104092

Wiggins Road Segment - 3

Segment Length - 488.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



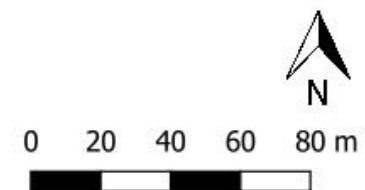


Sorell Council Resheeting - Wiggins Road RD104093

Wiggins Road Segment - 2

Segment Length - 488.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






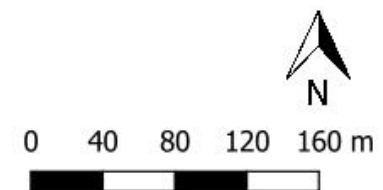


Sorell Council Resheeting - Wiggins Road RD104094

Wiggins Road Segment - 8

Segment Length - 488.4m

-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



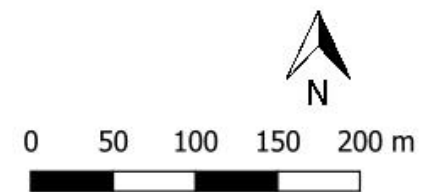


Sorell Council Resheeting - Wiggins Road RD104095

Wiggins Road Segment - 9

Segment Length - 488.5m

- Current Resheet Segment
- All Resheet Segments
- Council Roads






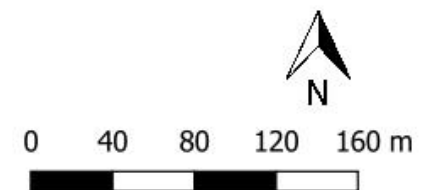


Sorell Council Resheeting - Wiggins Road RD104096

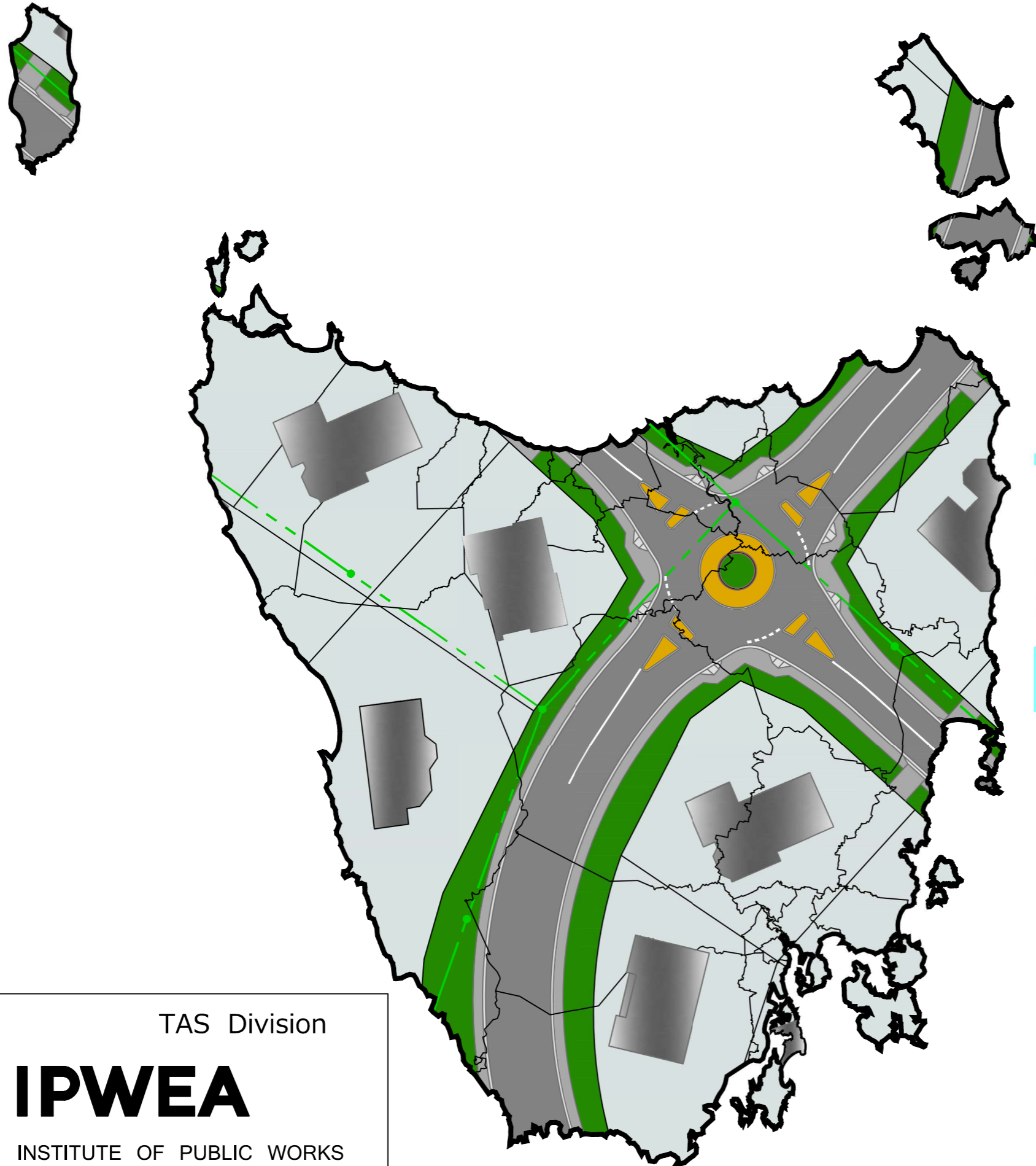
Wiggins Road Segment - 10

Segment Length - 488.4m

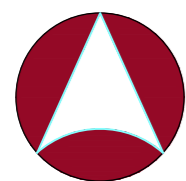
-  Current Resheet Segment
-  All Resheet Segments
-  Council Roads



ATTACHMENT B – MUNICIPAL STANDARD DRAWINGS



TASMANIAN STANDARD DRAWINGS



IPWEA

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ENGINEERING AUSTRALIA

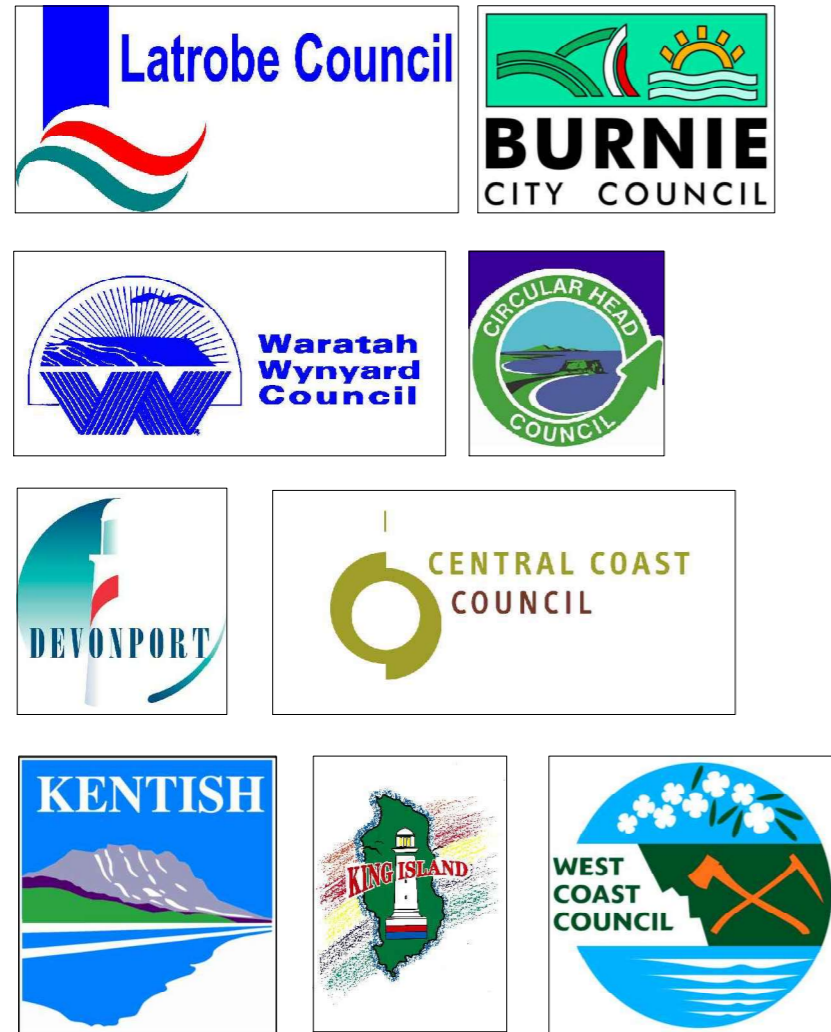
TAS Division



Local Government Association Tasmania

PARTICIPATING LOCAL COUNCILS

Cradle Coast Region



Northern Region



Southern Region



SHEET INDEX

GENERAL DRAWINGS

- TSD-G01.v2 TRENCH REINSTATEMENT FLEXIBLE PAVEMENTS
- TSD-G02.v2 URBAN ROADS TYPICAL SERVICE LOCATIONS
- TSD-G03.v2 TRENCH EXCAVATION LIMITS ADJACENT TO FOOTINGS
- TSD-G04.v2 REFERENCE POINTS

STANDARD ROAD DRAWINGS

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- TSD-R02.v2 RURAL ROADS SEALED
- TSD-R03.v2 RURAL ROADS TYPICAL PROPERTY ACCESS'
- TSD-R04.v2 RURAL ROADS TYPICAL DRIVEWAY PROFILE
- TSD-R05.v2 TRUCK ACCESS TO RURAL PROPERTIES 'TYPE A'
- TSD-R06.v2 URBAN ROADS TYPICAL SECTION AND PAVEMENT WIDTHS
- TSD-R07.v2 URBAN ROADS CUL-DE-SAC TURNING HEADS
- TSD-R08.v2 TYPICAL CUL-DE-SAC DETAILS URBAN AND RURAL
- TSD-R09.v2 URBAN ROADS DRIVEWAYS
- TSD-R10.v2 URBAN ROADS DRIVEWAYS WATER SENSITIVE DESIGN
- TSD-R11.v2 URBAN ROADS FOOTPATHS
- TSD-R12.v2 SUB SOIL DRAINS CONSTRUCTION DETAILS
- TSD-R13.v2 SUB SOIL DRAINS PIT CONNECTION TYPE FD
- TSD-R14.v2 CONCRETE KERBS AND CHANNELS DIMENSION
- TSD-R15.v2 CONCRETE KERBS AND CHANNELS CONSTRUCTION DETAILS
- TSD-R16.v2 CONCRETE KERBS AND CHANNELS VEHICULAR CROSSINGS
- TSD-R17.v2 CONCRETE KERBS AND CHANNELS GRATED WEDGE CROSSINGS
- TSD-R18.v2 CONCRETE KERBS AND CHANNELS ACCESS RAMPS
- TSD-R19.v2 BLUESTONE KERBS AND CHANNELS CONSTRUCTION DETAILS
- TSD-R20.v2 TRAFFIC ISLANDS
- TSD-R21.v2 ROAD HUMPS, THRESHOLDS AND ROUNDABOUTS
- TSD-R22.v2 BUS BAYS
- TSD-R23.v2 SIGNS
- TSD-R24.v2 LINE MARKING PARKING CONTROL AND SIGNAGE
- TSD-R25.v2 GUIDE POSTS
- TSD-R26.v2 DELINEATORS
- TSD-R27.v2 CLEAR ZONE, TREATED PINE FENCE
- TSD-R28.v2 W-BEAM INSTALLATION DETAILS
- TSD-R29.v2 W-BEAM TERMINAL TREATMENT (DELETED)
- TSD-R30.v2 W-BEAM APPROACH/DEPARTURE FLARES (DELETED)
- TSD-R31.v2 BARRIERS/GUARDS RAIL RIGID BOLLARDS
- TSD-R32.v2 BARRIERS/GUARDS RAIL LOCKABLE BOLLARDS
- TSD-R33.v2 STONEWALLS/ROCK PITCHING
- TSD-R34.v2 STAIRWAY CONSTRUCTION
- TSD-R35.v2 PEDESTRIAN FENCES
- TSD-R36.v2 TREE/SHRUB PLANTING

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- TSD-SW02.v2 MANHOLES 100 – 600 DIA. PIPES GENERAL ARRANGEMENTS
- TSD-SW03.v2 MANHOLES 100 – 600 DIA. PIPES BENCHING DETAILS
- TSD-SW04.v2 SIDE ENTRY PITS GRATED AND FRAME DETAILS
- TSD-SW05.v2 SIDE ENTRY PITS (SEP)
- TSD-SW06.v2 SIDE ENTRY PITS (SEPS)
- TSD-SW07.v2 SIDE ENTRY PITS TYPE 1
- TSD-SW08.v2 SIDE ENTRY PITS TYPE 2
- TSD-SW09.v2 SIDE ENTRY PITS TYPE 3
- TSD-SW10.v2 SIDE ENTRY PITS TYPE 4
- TSD-SW11.v2 SIDE ENTRY PITS KERB TRANSITIONS
- TSD-SW12.v2 SIDE ENTRY PITS TYPE 5
- TSD-SW13.v2 SIDE ENTRY PITS TABLE DRAIN PIT CONSTRUCTION
- TSD-SW14.v2 STORMWATER (GVP)
- TSD-SW15.v2 STORMWATER (GP)
- TSD-SW16.v2 SIDE ENTRY PITS TYPE 6
- TSD-SW17.v2 OUTLET HEADWALLS 300 – 600 DIA PIPES
- TSD-SW18.v2 OUTLET HEADWALLS 1050 – 1350 DIA PIPES
- TSD-SW19.v2 CONCRETE ENDWALL PLAIN (300 – 450 DIA)
- TSD-SW20.v2 OUTLET HEADWALLS GROUTED STONE (300 – 450 DIA)
- TSD-SW21.v2 INLET HEADWALLS GRATED INLET 300 – 900 DIA PIPES
- TSD-SW22.v2 INLET HEADWALLS RAISED GRATED INLET (SQUARE)
- TSD-SW23.v2 INLET HEADWALLS RAISED GRATED INLET (DOMED)
- TSD-SW24.v2 HEADWALLS INLET GRATED AND FENCE REQUIREMENTS
- TSD-SW25.v2 STORMWATER PROPERTY CONNECTIONS TO MAINS
- TSD-SW26.v2 SADDLE CONNECTION TO STORMWATER DRAIN
- TSD-SW27.v2 REPAIRS/NEW CONNECTION TO STORMWATER DRAIN
- TSD-SW28.v2 GUIDELINES FOR SEDIMENT CONTROL
- TSD-SW29.v2 KERB CONNECTION
- TSD-SW30.v2 LARGE SIDE ENTRY PIT
-
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- TSD-RF02.v2 SIGHT DISTANCE REQUIREMENTS
- TSD-RF03.v2 LINE MARKING TRAFFIC CONTROL
- TSD-RF04.v2 SIDE ENTRY PITS HYDRAULIC CAPACITY CURVES
- TSD-E01.v2 NATURE STRIP DETAILS
- TSD-E02.v2 EXCLUSIONS 1
- TSD-A01.v2 EXCLUSIONS 2
- AMENDMENTS

SCALES: AS SHOWN
(All scales are correct at A3)

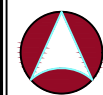
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REFERENCES

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TAS Division

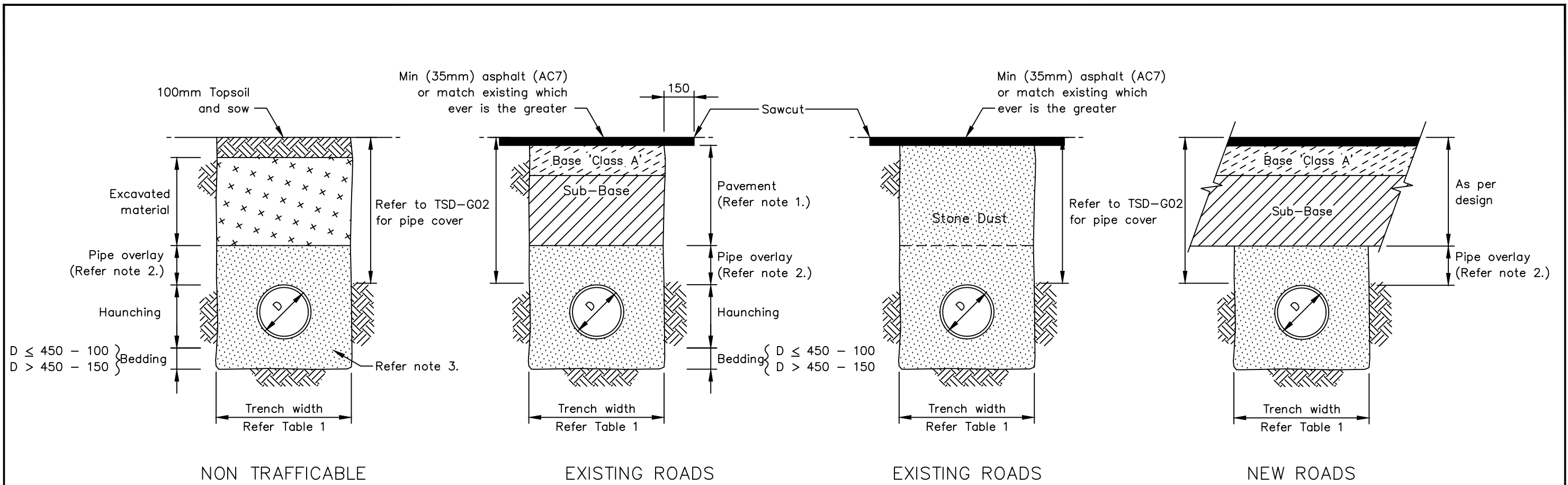


STANDARD DRAWING
INDEX SHEET

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ISSUE DATE: 27-04-2020

DWG No. TSD-INDEX-v2



NON TRAFFICABLE

EXISTING ROADS

EXISTING ROADS

NEW ROADS

- CLASS 4 LOCAL ROADS

- PARKING LANES – ALL ROADS
- FOOTPATHS / DRIVEWAYS

TABLE 1 – TRENCH WIDTH

PIPE TYPE	NOM. DIA. (D)	TRENCH WIDTH*
Concrete	≤ 1500	D + 300
	> 1500	Design required
Other pipes	100	300
	150	450
	225 – 300	600
	450	750
	450 – 1500	D + 600
	> 1500	Design required

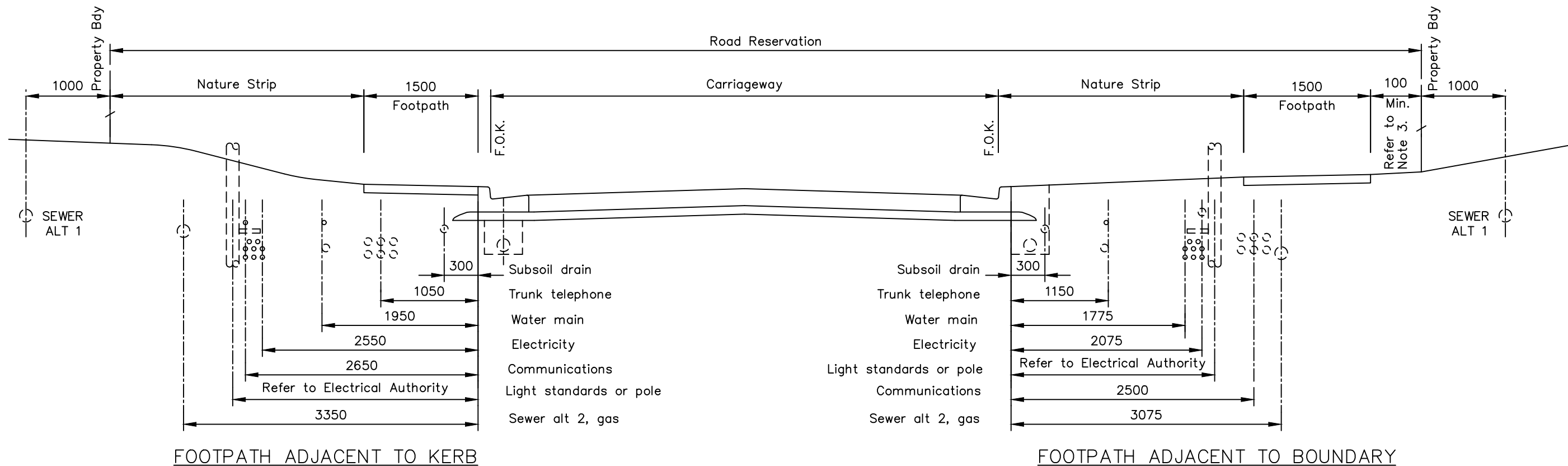
* Minimum trench widths may be varied above the pipe overlay zone to meet 'Workplace Standards' requirements. (i.e. Trenches greater than 1.5m deep) Excavations over 1.5m may require risk assessment.

NOTES

1. Pavement = 300 min. Granular or match existing which ever is the greater.
2. Pipe overlay depth – Min. 150mm
3. Refer to manufacturers recommendations for bedding, haunching and overlay requirements.
4. Compaction of pipe bedding, haunching and overlay – Refer Table 2.
5. Refer to AS/NZS 3725–2007 Table B1 (H2/HS2 Bedding Support Type)

TABLE 2

MATERIAL TYPE	TEST METHOD	TRAFFICABLE	NON-TRAFFICABLE
Non-cohesive (i.e. Granular)	Density Index (I_D) AS 1289.5.6.1	70	60
Cohesive	Dry Density Ratio (R_D) AS 1289.5.4.1 and AS 1289.5.1.1	95	90



MINIMUM DEPTH REQUIREMENTS – FOR UNDERGROUND PUBLIC SERVICES

LOCATION			MINIMUM PIPECOVER REQUIRED (mm)			
			Stormwater	*Water Mains/Connections		Services
				(dia 100mm or greater)	(dia < 100mm)	
PRIVATE PROPERTY	Not subject to vehicular loading	Backyards, Gardens areas	450	-	-	For electricity, communications and other services, contact the relevant authority for advice.
	Subject to vehicular loading	Driveways, Parking areas	600	-	-	
PUBLIC PROPERTY	Not subject to vehicular loading	Footpaths, Nature strip	600	600	450	
	Subject to vehicular loading	Vehicular crossing over footpath	600	600	450	
		Non-arterial roads	900	750	600	
		Arterial roads	1200	900	750	
		Gas	-	-	-	
	Electricity	-	-	-	750	
	Communications	-	-	-	600	

* Refer to local water authority for additional cover requirements.

NOTES

1. Conduits may be required for future services, refer to relevant authorities.
2. For electricity, telephone and other services, contact the relevant authorities.
3. May need to increase to accommodate services eg. underground power.
4. All cover is subject to installation design.
5. Refer to AS/NZS 3725-2007.

SCALES: AS SHOWN
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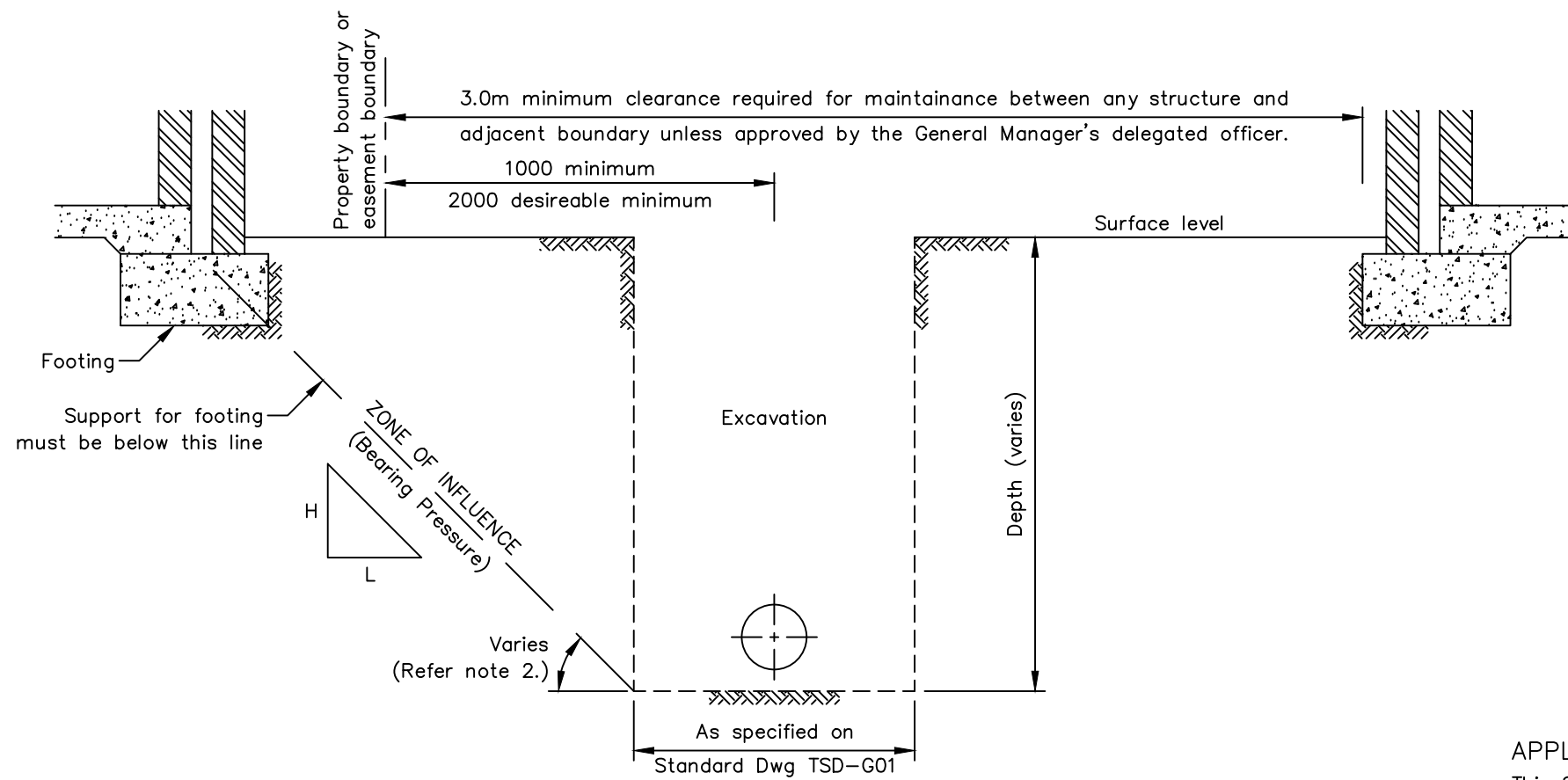


STANDARD DRAWING
URBAN ROADS TYPICAL SERVICE LOCATIONS

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TSD-G02.v2



PIPELINE – TYPICAL SECTION
(BUILDING ADJACENT TO PIPELINE)
(Shoring not shown for clarity)
N.T.S.

TABLE 1

SOIL TYPE	ANGLE OF SLOPE (H : L)	
	Compacted Fill	Cut
Stable rock*	2:3	8:1
Sand*	1:2	1:2
Silt**	1:4	1:4
Firm clay	1:2	1:1
Soft clay	Not suitable	2:3
Soft soils**	Not suitable	Not suitable

* Most sand and rock sites with little or no ground movement from moisture changes.

** Sites include soft soils, such as soft clay or loose sands, landslip, mine subsidence, collapsing soils, soils subject to erosion, reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise.

*** Note: excavations over 1.5m may require benching and or shoring – refer to risk assessment.

OBJECTIVES

Minimise the risk of:

1. damage caused by an adjacent trench excavation to an existing structure due to;
 - a reduction in support of the footing(s)
 - a change in the moisture content in the vicinity of the footing(s).
2. failure of a pipeline resulting from forces from an adjacent footing in addition to the anticipated backfill and 'In Service' loads on the pipeline.
3. trench collapse and injury to workers during a pipeline installation as a result of forces applied to the trench sides from an adjacent footing.

APPLICATION

This Standard Drawing applies to Public Utility Pipelines (P.U.P'S including supply mains, drains and conduits).

References:

- AS NZS 3500.2 : 2003 'Plumbing and Drainage' for other pipelines as applicable.
- BCA Housing Provisions
- L.G.A.T. Standard Drawing TSD-G01

NOTES

1. All foundation designs and proposed P.U.P's. must be submitted for approval prior to the commencement of works.
2. The design of footings and pipelines in the vicinity of footings, must be prepared by a suitably qualified and competent person and consider (but not restricted to) the following:
 - footing type and associated loading
 - existing soil types and properties
 - method of construction (footing/pipeline)
 - pipe class, trench support, trench backfill and 'In Service' loading to meet the objectives listed.
3. Table 1, adopted from the B.C.A. Housing Provisions, provides an indication of the range of the 'Zone of Influence' angle associated with different soil types for Cut/Fill situations.

SCALES: AS SHOWN
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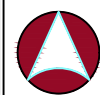
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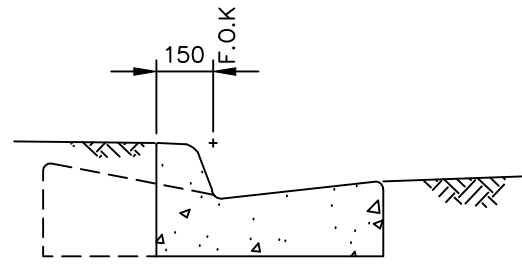
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STANDARD DRAWING
GUIDE TO TRENCH EXCAVATION LIMITS
ADJACENT TO FOOTINGS

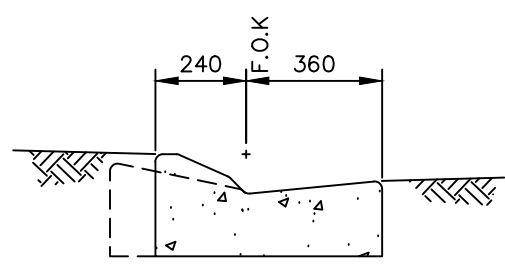
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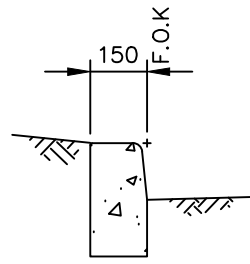
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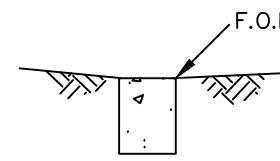
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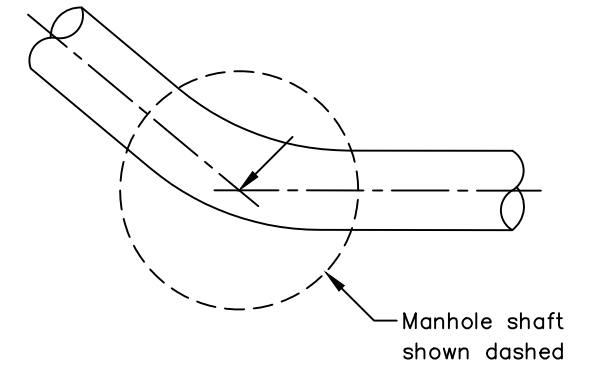
TYPE KCM



TYPE BK



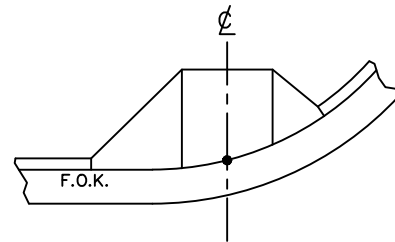
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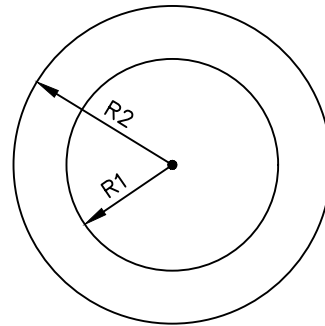
MANHOLE
(INTERSECTION OF PIPELINES)



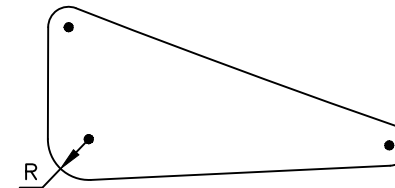
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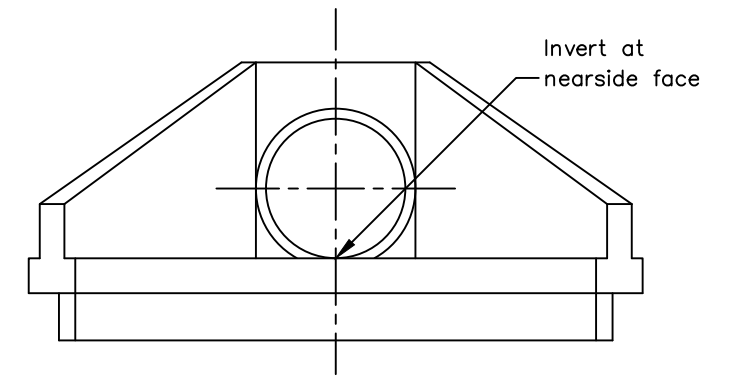
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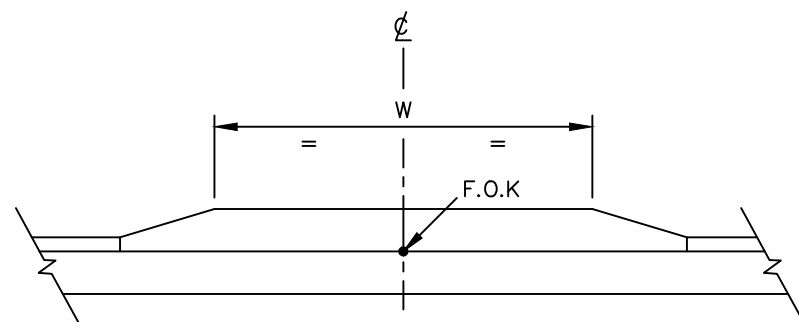
ROUNDBABOUT
(CENTRE OF RADII)



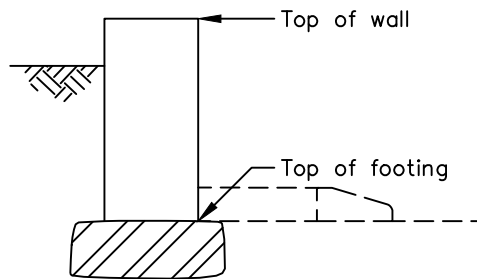
TRAFFIC ISLANDS
(CENTRE OF RADII)



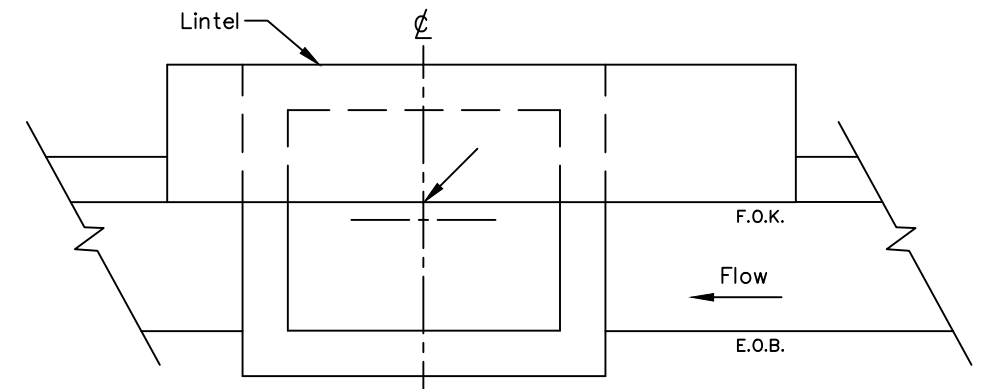
HEADWALL



VEHICULAR CROSSING



RETAINING WALL



SIDE ENTRY PIT – AS SHOWN
(OTHER PITS – PIT CENTRE UNLESS NOTED)

SCALES: AS SHOWN
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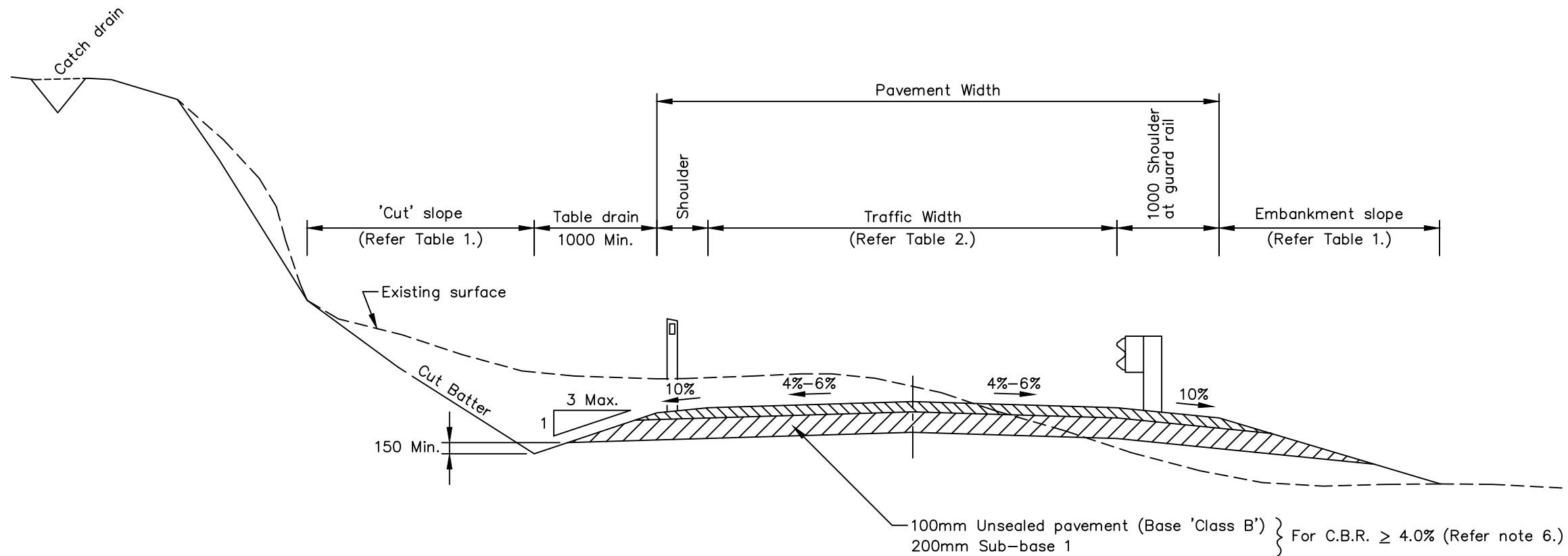
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TYPICAL CROSS SECTION
SCALE 1 : 50

TABLE 1

SOIL / ROCK TYPE	EMBANKMENT		CUTTING	
	Vertical	Horizontal	Vertical	Horizontal
Solid Rock	—	—	1.00	0.25
Loose Rock	1.00	2.00	1.00	1.33
Sand	1.00	3.00	1.00	3.00
Stiff Clay	1.00	1.00	1.00	1.00
Soft Clay	1.00	3.00	1.00	1.50

TABLE 2

CODE*	A.A.D.T.	(w) TRAFFIC WIDTH	GRAVEL SHOULDER	VERGE	PAVEMENT WIDTH	LOGGING ROUTE	HEAVY VEHICLES	BUS ROUTE	Bends with < 60m sight line
US1	<30	4000 (S)	500	NO	5	NO	< 5%	NO	w + 1000
US2	30 – 100	4000 (S)	1000	NO	6	YES < 5%	< 5 %	YES	w + 1000
US3	100 – 300	5500 (D)	1000	NO	7.5	YES	< 10%	YES	w + 500
US4	> 300	6000 (D)	1000	NO	8	YES	> 10%	YES	w + 500

*To satisfy a Road Class (eg. US3) the capability to comply with A.A.D.T, LOGGING ROUTE, HEAVY VEHICLE and BUS ROUTE is necessary.
(S) – SINGLE LANE
(D) – DUAL LANE

NOTES

- Alignment to satisfy min. Design speed.
- Roadside table drains, cut off drains and culverts to be installed to suit topography.
- Provision for widening or passing bays may be required where sight distance requirements cannot be met or there are limited options for vehicles to pull off the road.
- Refer Sheets TSD-R25, TSD-R28, TSD-R29 and TSD-R30 for Guide Post / Guard Rail installation.
- Refer to Austroads AGRD-10 Part 6: Roadside Design, Safety and Barriers
- Design of pavements to consider project traffic loading, sub-grade strength and comply with the procedures in either:
 - A.R.R.B. A.P.R.G. Report no. 21, A Guide to the Design of New Pavements for Light Traffic.
 - Austroads – Pavement Design (2004) 'A Guide To The Structural Design Of Road Pavements'

SCALES: AS SHOWN
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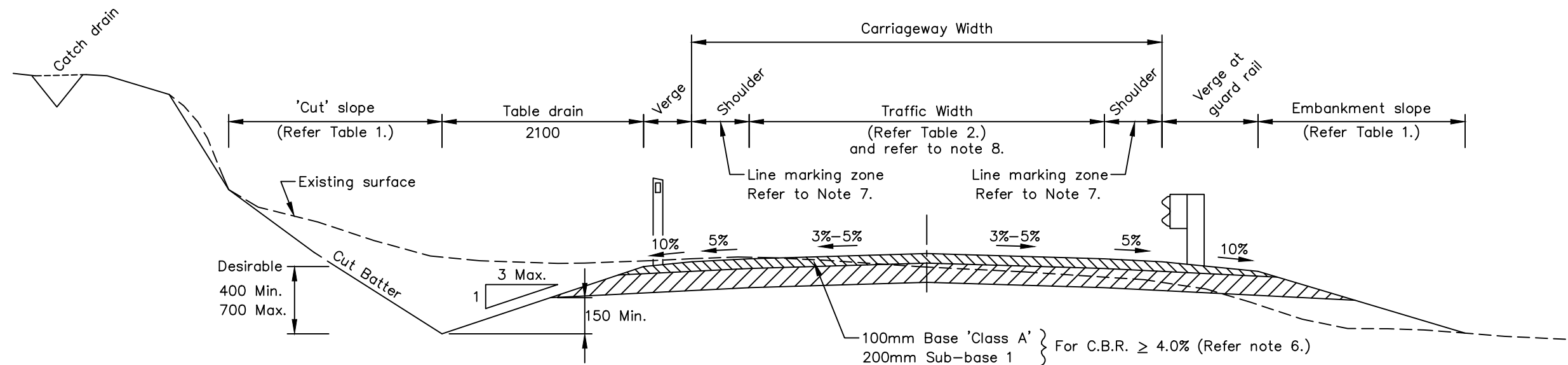
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TYPICAL CROSS SECTION

SCALE 1 : 50



NOTES

- Alignment to satisfy min. Design speed.
- Roadside table drains, cut off drains and culverts to be installed to suit topography.
- Provision for widening or passing bays may be required where sight distance requirements cannot be met or there are limited options for vehicles to pull off the road.
- Refer Sheets TSD-R25, TSD-R28, TSD-R29 and TSD-R30 for Guide Post/ Guard Rail installation.
- Refer to Austroads AGRD-10: Part 6 Roadside Design, Safety and Barriers.
- Design of pavements to consider project traffic loading, sub-grade strength and comply with the procedures in either:
 - A.R.R.B. A.P.R.G. Report no. 21, A Guide to the Design of New Pavements for Light Traffic.
 - Austroads - Pavement Design (2011) 'A Guide To The Structural Design Of Road Pavements'
- 0.4 metres of shoulder sealed if edge line is to be installed.
- Two coat 'Hot Bitumen' spray seal. Aggregate 10/7 or 14/7 optional.
- Surface type to be determined with consideration to, Vehicle types/turning movement, location and grade.

TABLE 1

SOIL / ROCK TYPE	EMBANKMENT		CUTTING	
	Vertical	Horizontal	Vertical	Horizontal
Solid Rock	-	-	1.00	0.25
Loose Rock	1.00	2.00	1.00	1.33
Sand	1.00	3.00	1.00	3.00
Stiff Clay	1.00	1.00	1.00	1.00
Soft Clay	1.00	3.00	1.00	1.50

TABLE 2

CODE*	A.A.D.T.	EXISTING INFRASTRUCTURE	NEW DEVELOPMENT	SEALED SHOULDER	GRAVEL SHOULDER	VERGE	CARRIAGEWAY WIDTH	LOGGING ROUTE	HEAVY VEHICLES	BUS ROUTE	Bends with < 60m sight line
		(w) SEALED TRAFFIC WIDTH	(w) SEALED TRAFFIC WIDTH								
S1	< 30	4000 (S)	-	-	500	NO	5000	NO	< 5%	NO	w + 1000
S2	30 - 100	4000 (S)	-	-	1000	NO	6000	YES < 5%	< 5%	YES	w + 1000
S3	100 - 300	5500 (D)	5500 (D)	400 ^{Refer Note 7.}	500	500	6500	YES	< 10%	YES	w + 500
S4	300 - 2000	6000 (D)	6000 (D)	400 ^{Refer Note 7.}	500	500	7000	YES	> 10%	YES	w + 500
S5	> 2000	7000 (D)	7000 (D)	500	500	500	9000	YES	> 10%	YES	w + 500

*To satisfy a Road Class (eg. S3) the capability to comply with all A.A.D.T, LOGGING ROUTE, HEAVY VEHICLE and BUS ROUTE is necessary.

(S) - SINGLE LANE
(D) - DUAL LANE

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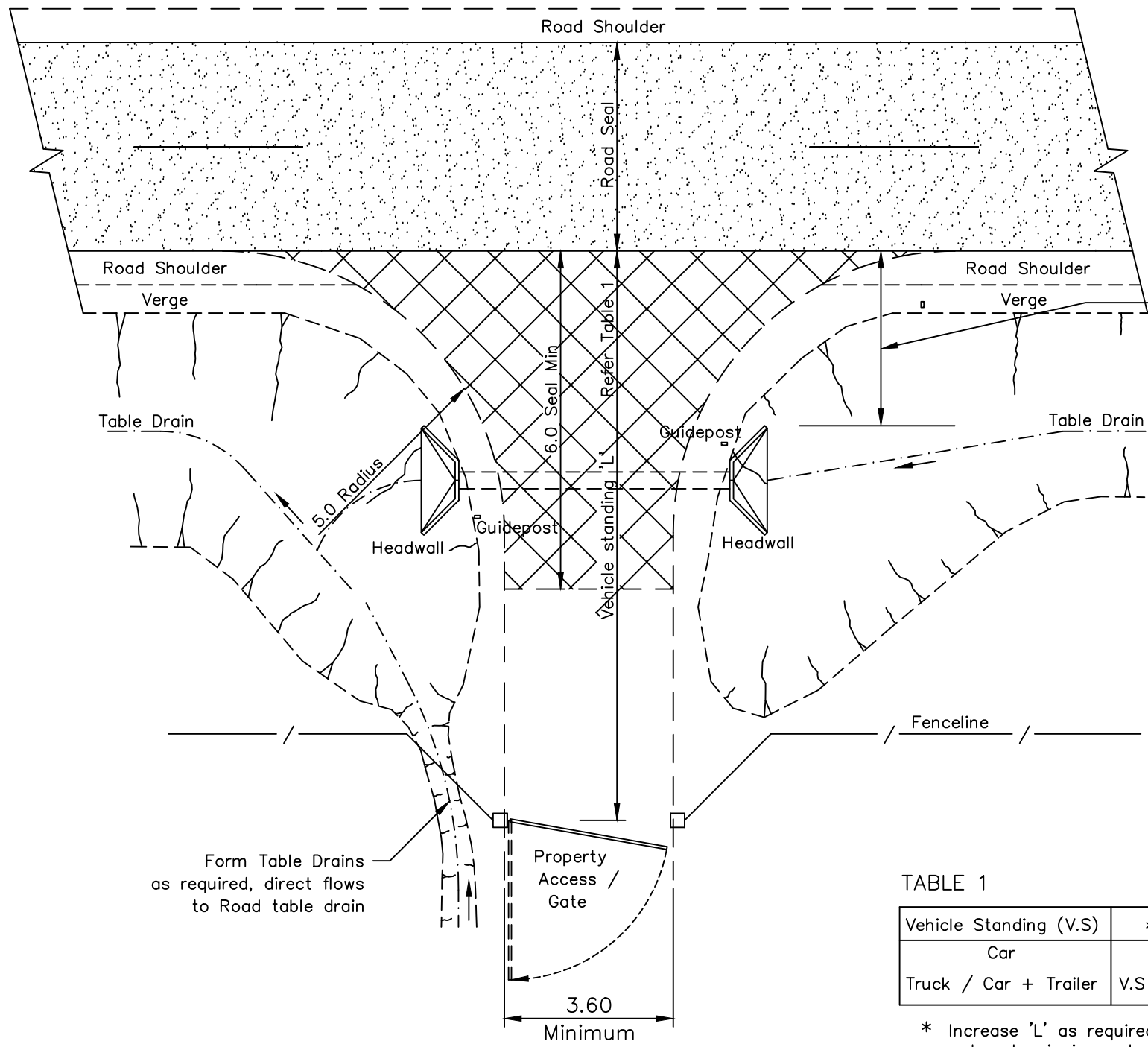
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TSD-R02-v2



Clear zone. Refer note 6

NOTES

1. Property Access Seal Types:
 - Adopt the seal type on the adjacent road (Asphalt / hot Sprayed bituminous surfacing).
 - Seal is not required for property access off unsealed roads.
2. Offset property entrance gate to provide adequate vehicle standing area clear of road edge, as required.
3. Install guideposts at :
 - culvert end walls.
 - the start of the access ('nearside' lane approach only').
4. Pipe Culvert.
 - Pipe size, type, class, cover and grade shall be determined by consideration of the drainage catchment, rainfall I.F.D. data and road grade for an AEP 10 years (min).
 - Minimum pipe size - 300 dia.
 - Minimum grade - 1 in 100 (1%).
5. Shallow dish crossing may be used as an alternative.
6. Refer to Department of State Growth Road Hazard Management Guide - Figures 6 and 7 for clear zone determination. Headwalls inside clear zone are to be driveable.

TABLE 1

Vehicle Standing (V.S)	* 'L' m
Car	6.0
Truck / Car + Trailer	V.S Length + 1.0

* Increase 'L' as required to suit outward swinging gates.

TYPE HW
SCALE 1: 10

KEY

- HW - Head Wall
- DCE - Driveable Culvert Endwall

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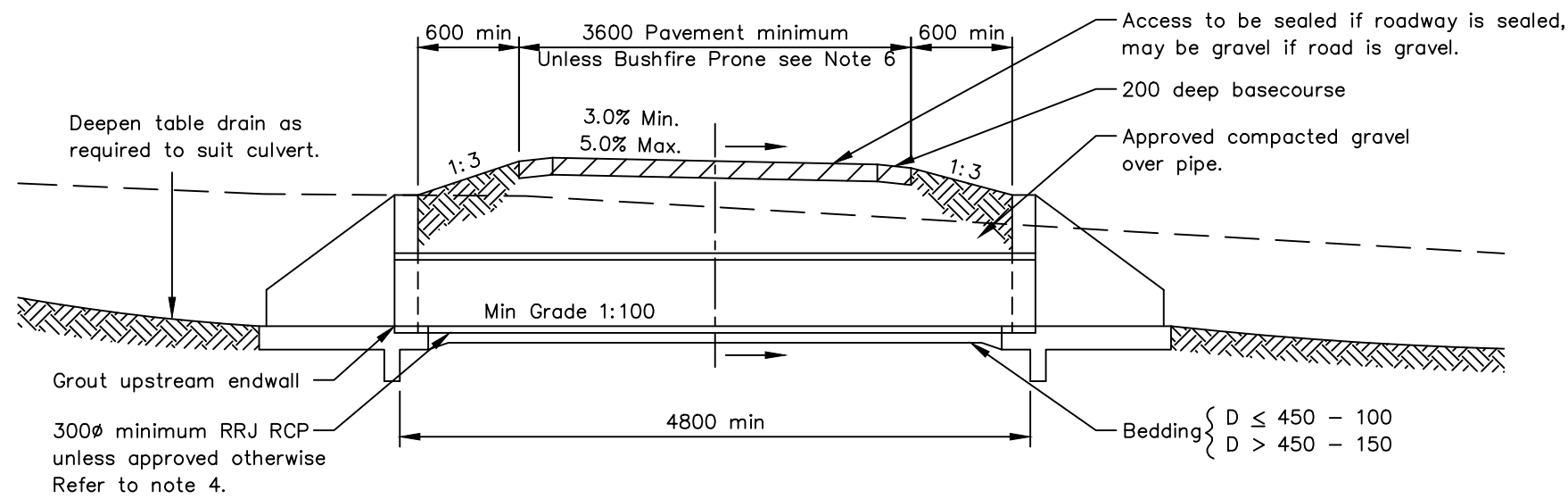
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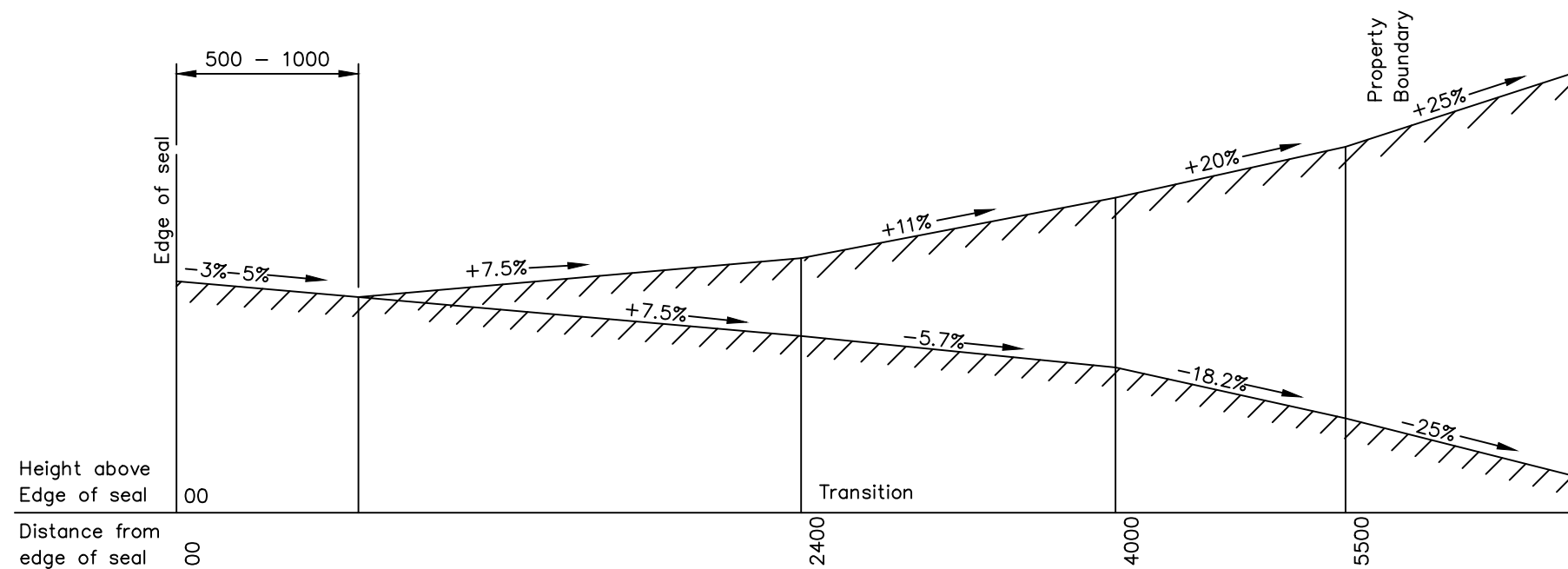
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CROSS SECTION



DRIVEWAY PROFILE

Culvert removed for clarity

NOTES

1. All dimensions in millimetres (mm) unless noted
2. Precast endwall to be winged type or other approved type.
3. Shallow dish crossing may be used as an alternative
4. Min clear cover over driveway culverts shall be:

Pipe Class:	Min Cover:
-Class 2 (Concrete)	600
-Class 3 (Concrete)	400
-Class 4 (Concrete)	300

 (All other pipes refer to manufacturers recommendations.)
5. Install guideposts at culvert ends.
6. Minimum pavement width of 4 metres where access is required for a fire appliance. Additional width may be required for the provision of passing bays.

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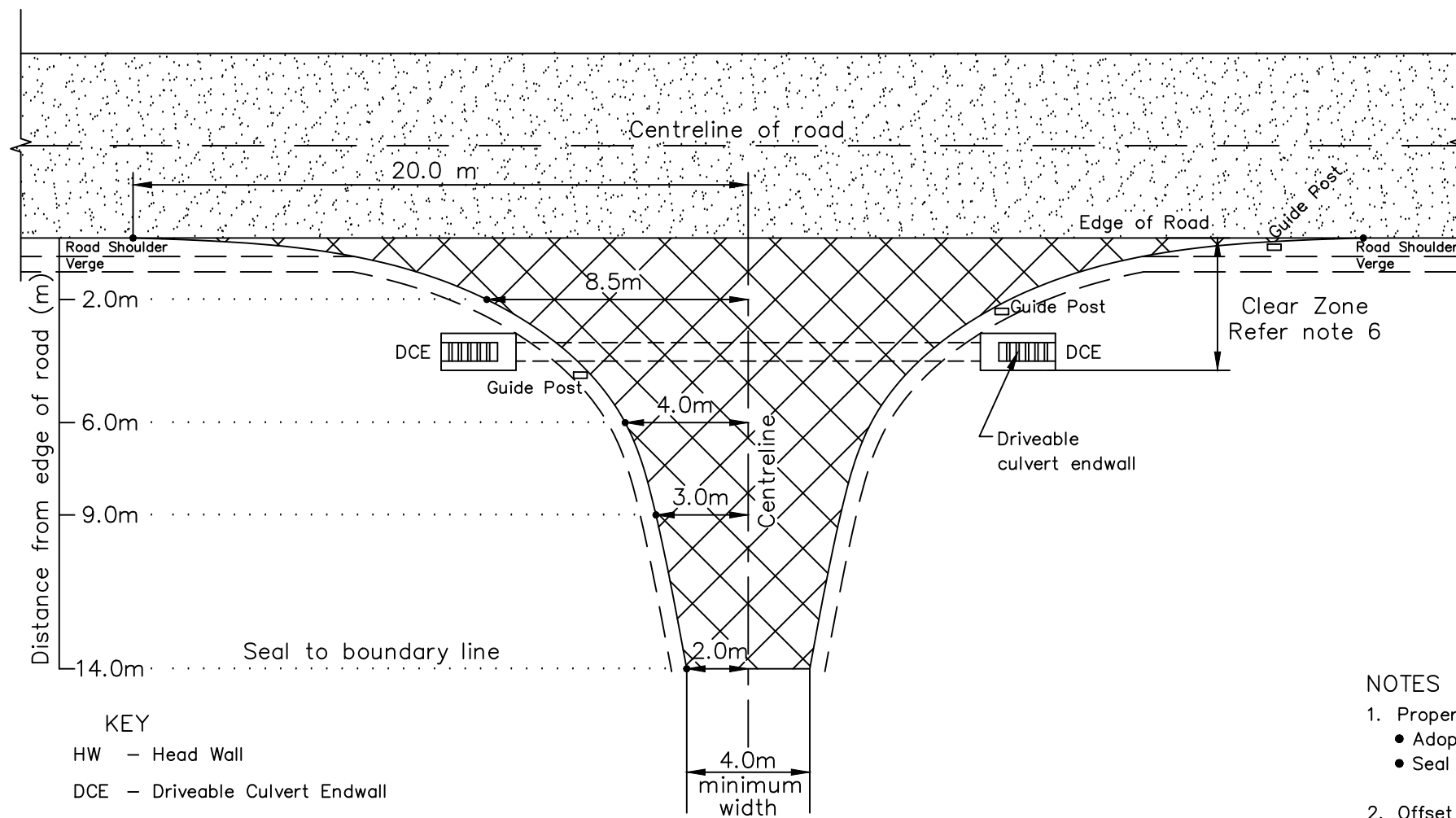
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TYPICAL DRIVEWAY PROFILE

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KEY
 HW - Head Wall
 DCE - Driveable Culvert Endwall

DRIVEWAY TYPE 'A' CATERS FOR:	LENGTH
Long Rigid Trucks	12.5m
Long Mini B-Doubles	19.0m
Truck + Trailer Combinations	19.0m

STANDARD OBJECTIVES

1. Maximise road safety.
2. Reduce the extent of debris being tracked onto the roadway.
3. Provide vehicle standing area clear of the road edge.
4. Contain stormwater runoff within the road table drains.

NOTES

1. Property Access Seal Types:
 - Adopt the seal type on the adjacent road (Asphalt / Hot Sprayed bituminous surfacing).
 - Seal is not required for property access off unsealed roads.
2. Offset property entrance gate to provide adequate vehicle standing area clear of road edge, as required.
3. Install guideposts at :
 - culvert end walls.
 - the start of the access ('nearside' lane approach only).
4. Pipe Culvert.
 - Pipe size, type, class, cover and grade shall be determined by consideration of the drainage catchment, rainfall I.F.D. data and road grade for an A.R.I. of 5 years (min).
 - Minimum pipe size - 300 dia.
 - Minimum grade - 1 in 100 (1%).
5. References.
 - DIER drawing No.3402-2/P35-2.
6. Refer to Department of State Growth Hazard Management Guide - Figures 6 and 7 for clear zone determination. Headwalls inside clear zone are to be driveable

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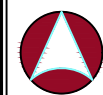
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STANDARD DRAWING
 TRUCK ACCESS TO RURAL
 PROPERTIES 'TYPE A'

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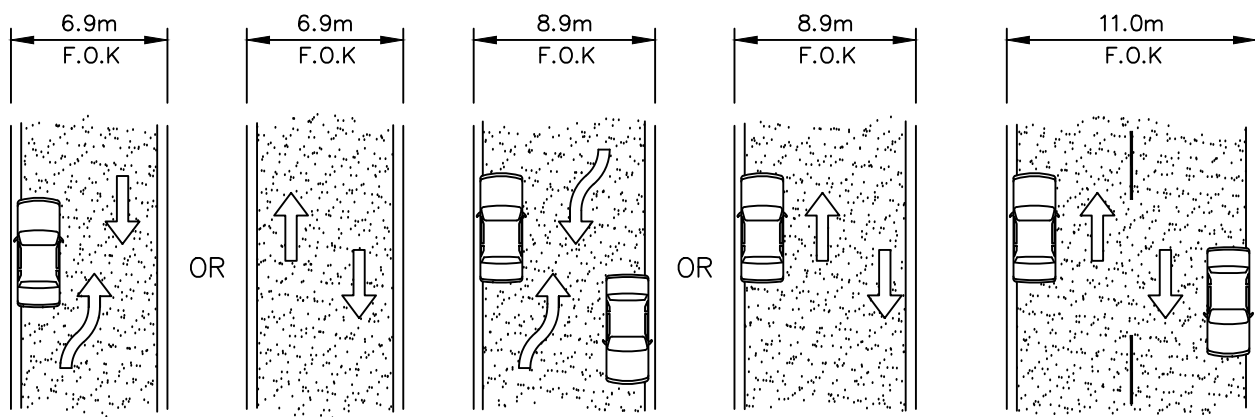
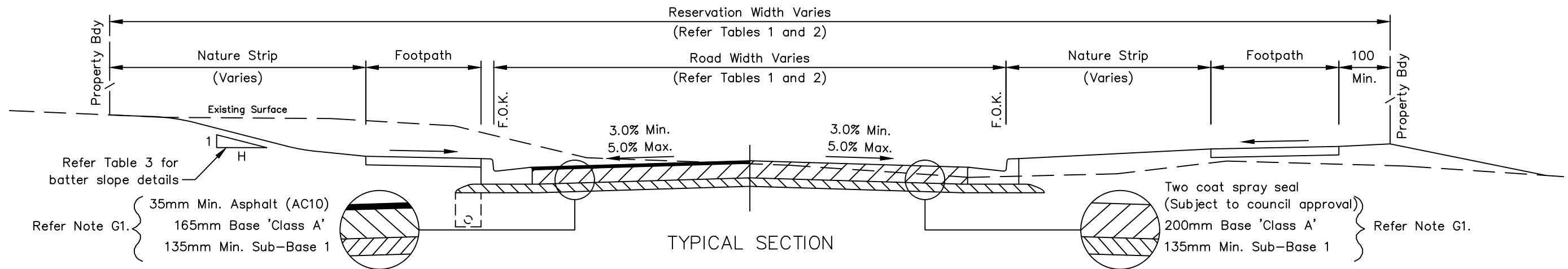
TSD-R05-v2

TABLE 1 – ROAD REQUIREMENTS (RESIDENTIAL)

ROAD TYPES	ROAD TYPE	ROAD LENGTH / NUMBER OF TENEMENTS	MINIMUM ROAD WIDTH	MINIMUM RESERVATION WIDTH	MINIMUM FOOTPATH REQUIREMENTS	NOTES (TABLE 1) a. Road and reservation widths shown are the minimum required. Increased widths for any road class may be required to accommodate any or all of the following: • high numbers of commercial vehicles e.g. Buses, Semi Trailers and B-Doubles • high traffic volumes • provision for bicycles b. Intermediate road widths between the following ranges are not permitted. • 6.9m and 8.9m (F.O.K) • 8.9m and 11.0m c. The General Manager's delegated officer, may approve variations to any of the requirements in this Table to suit specific project outcomes. d. Council bylaws apply.
1 – Arterial	Detail design required					
2 – Sub Arterial						
3 – Collector	Through Road	Any length	11.0m	20.0m	Both Sides	
4 – Local	Through Road	Any length	8.9m	18.0m	One Side Only	
	Cul-De-Sac	Length > 150m	8.9m	18.0m	One Side Only	
	Cul-De-Sac	Length ≤ 150m and / or No. of equiv. tenements ≤ 15	6.9m	15.0m	One Side Only	

TABLE 2 – ROAD REQUIREMENTS (COMMERCIAL / INDUSTRIAL)

ROAD CLASS	ROAD TYPE	ROAD LENGTH / NUMBER OF TENEMENTS	MINIMUM ROAD WIDTH	MINIMUM RESERVATION WIDTH	MINIMUM FOOTPATH REQUIREMENTS	NOTES (TABLE 2) 1. Footpath provision to suit Commercial / Industrial development. 2. Notes a. and c. from Table 1.
3 – Collector	Through Road	Detail design required				
4 – Local	Through Road or Cul-De-Sac	Lot Size < 10,000m ²	11.0m	18.0m	(Refer note)	
		Lot Size ≥ 10,000m ²	10.0m	18.0m	(Refer note)	



TYPICAL LANE CONFIGURATIONS

TABLE 3 – MAXIMUM BATTER SLOPES

MATERIAL TYPE	EMBANKMENT		CUTTING	
	VERT.	HORIZ.	VERT.	HORIZ.
Solid Rock	1	0.25	1	0.25
Loose Rock	1	1.33	1	1.33
Soil	1	1.50	1	1.50
Sand	1	3.00	1	3.00

NOTES

- G1. Pavement depths shown are the minimum required. Final depths are determined by structural calculations based on the actual sub-grade C.B.R. and design traffic loads, in accordance with the Austroads publication: 'A Guide To The Structural Design Of Road Pavements'. The base course is shown to facilitate ease of construction. It may be reduced to a minimum of 100mm, provided the overall pavement depth (including seal) is ≥ 300mm.
- G2. References:
 • TSD-R09 & TSD-R10 – Driveways
 • TSD-R11 – Footpaths
- G3. References: Road crossfall greater than 5% must be approved by the General Manager's delegated officer.
- G4. Surfacing type to consider grades/vehicle type and turning movements.

SCALES: AS SHOWN
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REFERENCES

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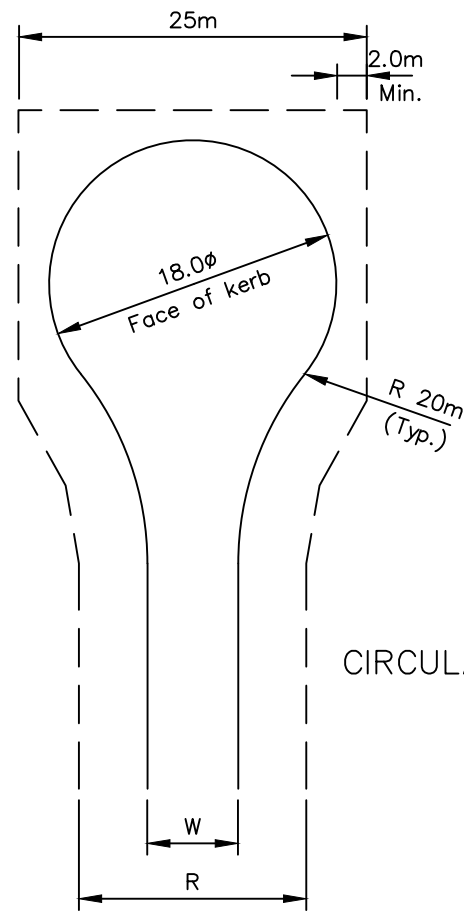
STANDARD DRAWING
 URBAN ROADS
 TYPICAL SECTION AND PAVEMENT WIDTHS

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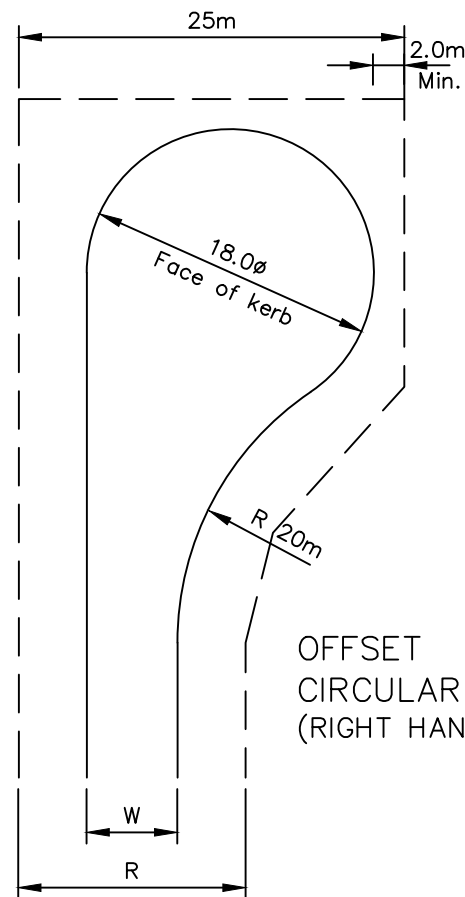
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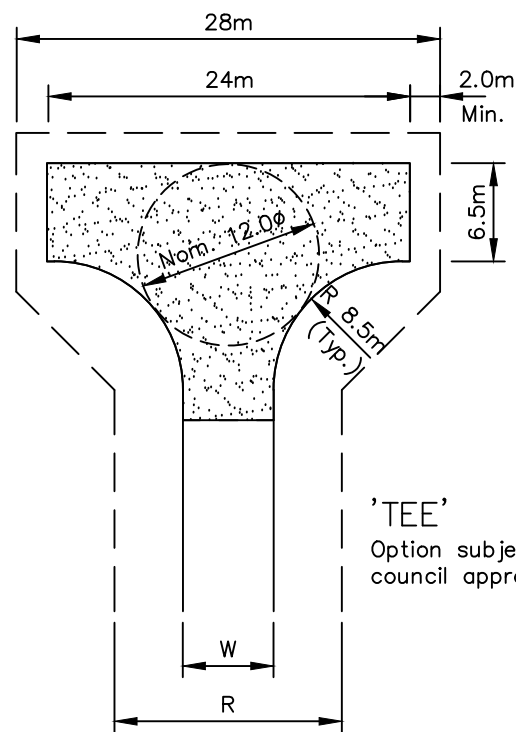
CIRCULAR



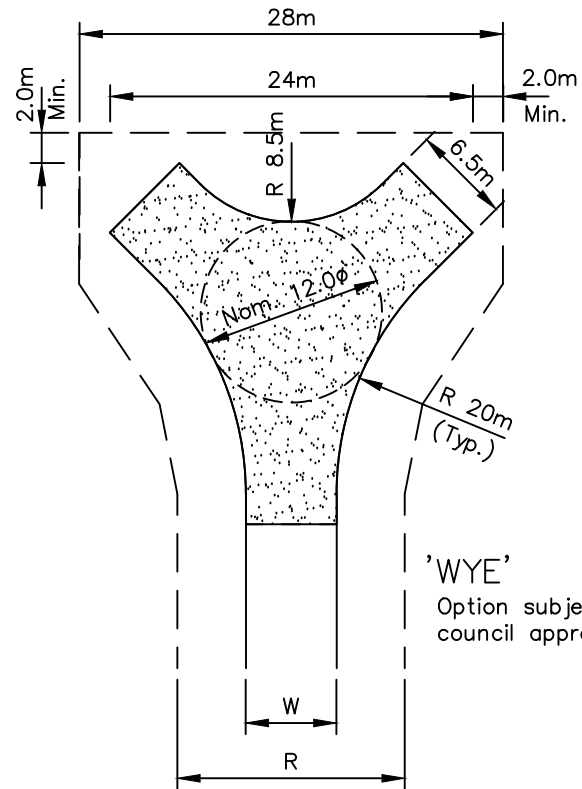
OFFSET
CIRCULAR
(RIGHT HAND SHOWN)

NOTES

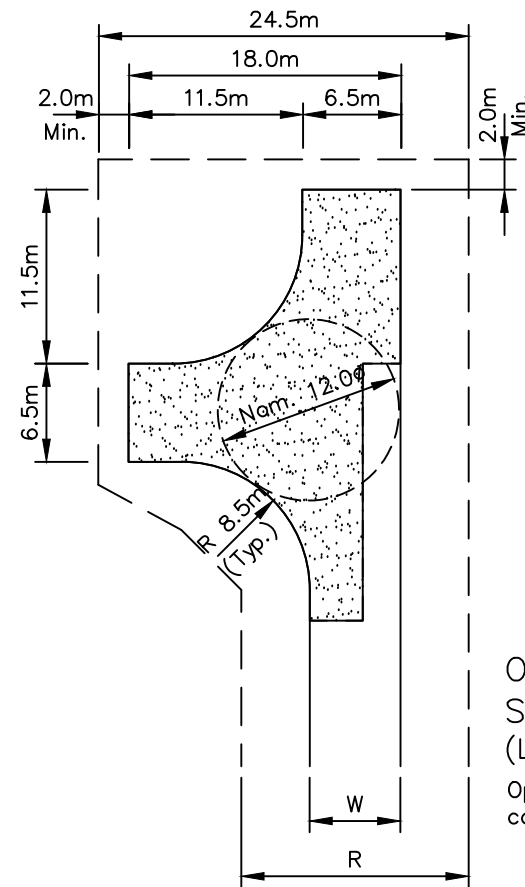
- The general layout and dimensions accommodate the wheelpaths for a:
 - Single Movement Turn by a design car – turning circle 12.0m
 - Three Point Turn by a design service vehicle – 8.8m long
- The road pavement shown represents the:
 - extent of pavement construction (No barrier kerbs).
 - face of kerb (barrier kerb type).
 - The minimum 2.0m clearance from the extent of the turning head to the road reserve boundary provides for service conduits, signage, vehicle overhang, pedestrian movement etc.
- Refer Sheet TSD-R06 for:
 - Road width (W) face of kerb to face of kerb.
 - Road reserve width (R)



'TEE'
Option subject to council approval.



'WYE'
Option subject to council approval.



OFFSET
SQUARE
(LEFT HAND SHOWN)
Option subject to council approval.

KEY

- ROAD RESERVE
- ▨ NO PARKING ZONE

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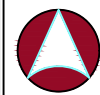
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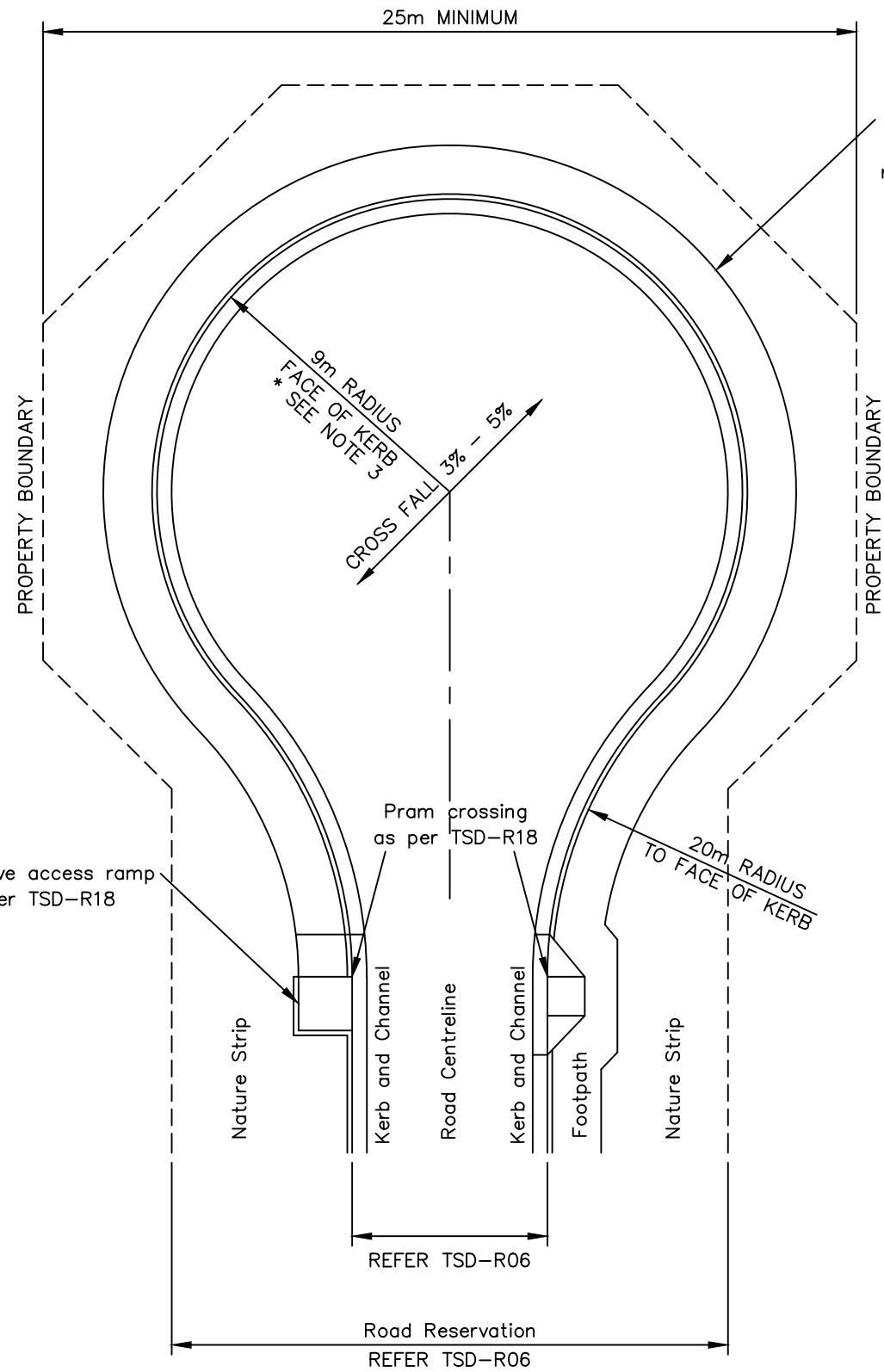


STANDARD DRAWING
URBAN ROADS
CUL-DE-SAC TURNING HEADS

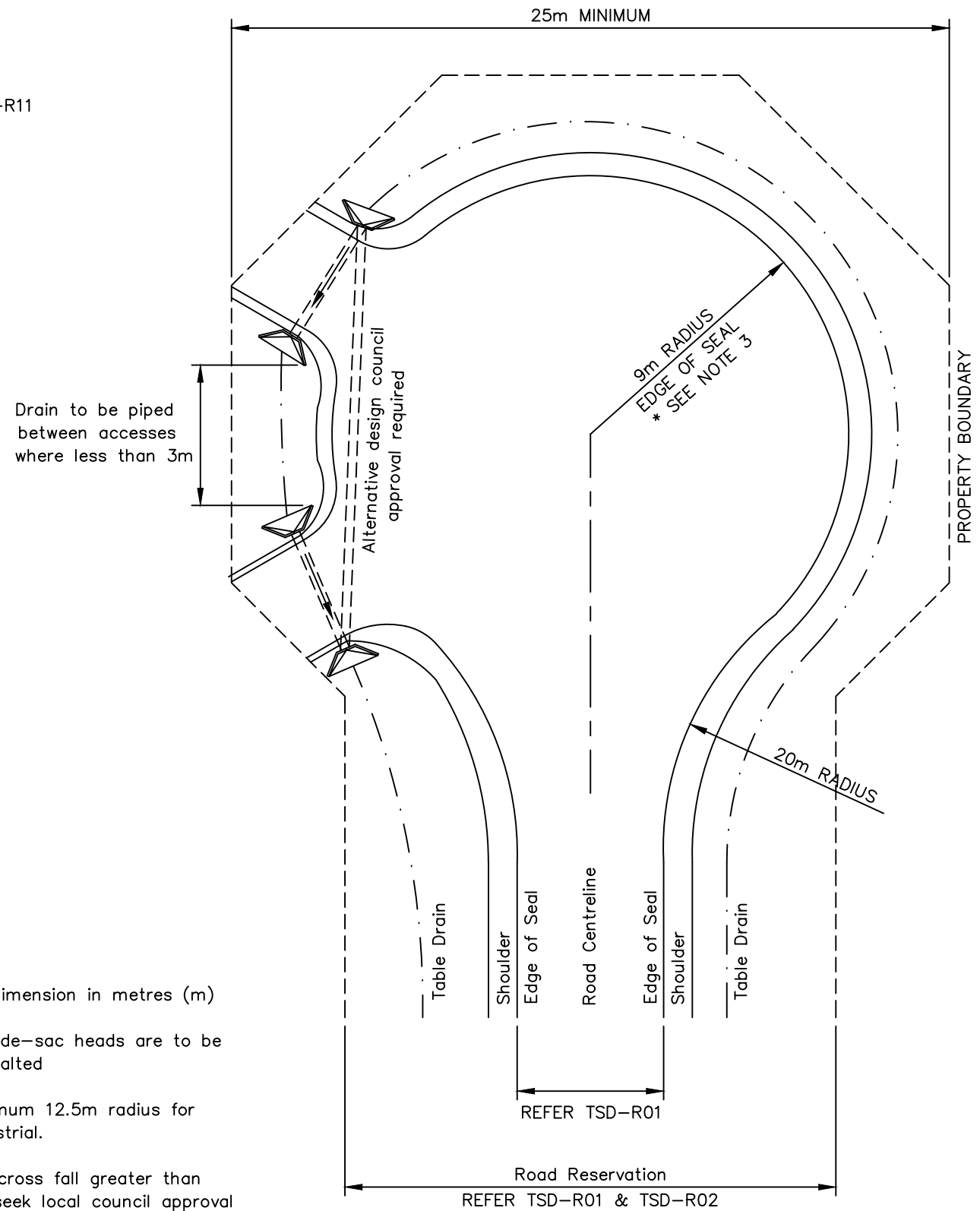
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URBAN TYPE CUL-DE-SAC



RURAL TYPE CUL-DE-SAC

NOTES

1. All dimension in metres (m)
2. Cul-de-sac heads are to be asphalted
3. Minimum 12.5m radius for industrial.
4. For cross fall greater than 5% seek local council approval
5. Where required on a bushfire management plan the radius to be increased to 12 metre radius. Increase reservation width from 25 metres to 31 metres.

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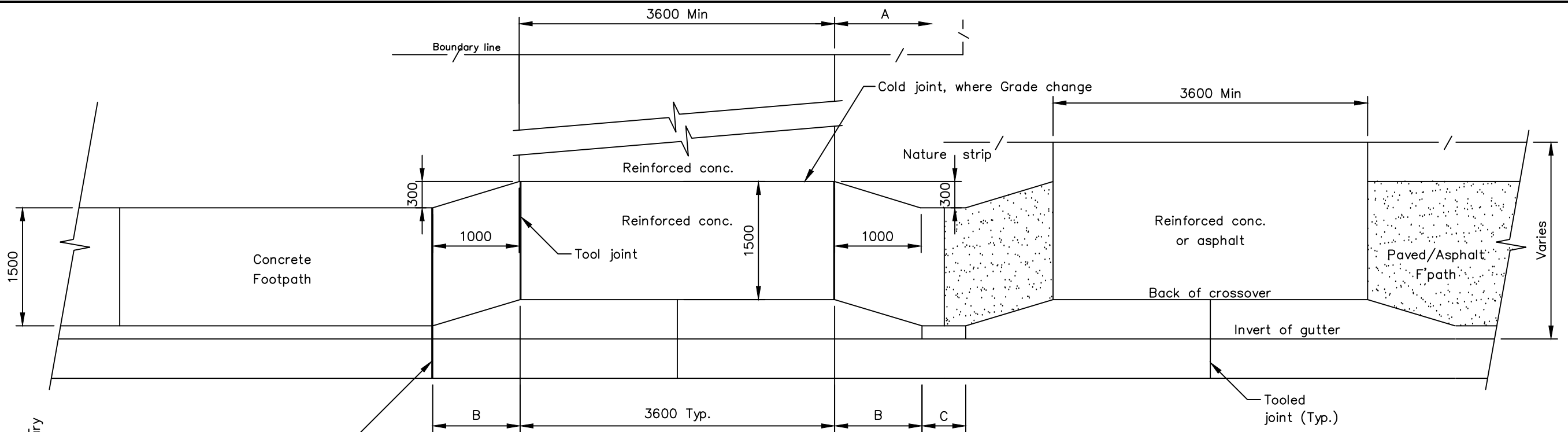
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STANDARD DRAWING
TYPICAL CUL-DE-SAC DETAILS URBAN AND RURAL

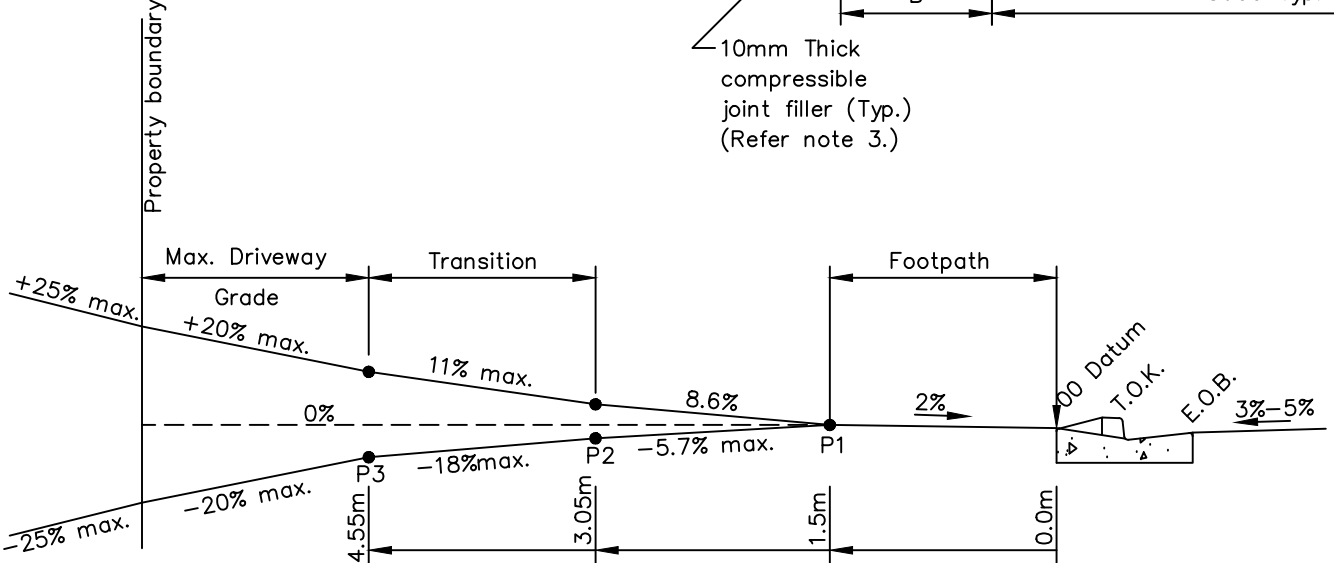
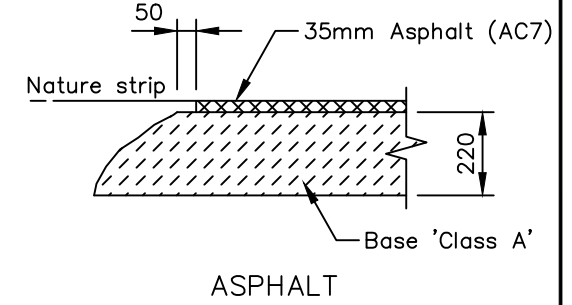
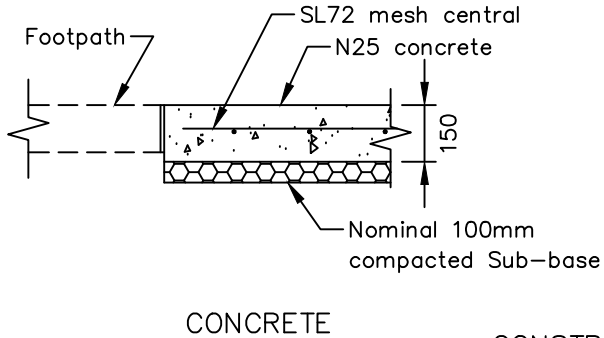
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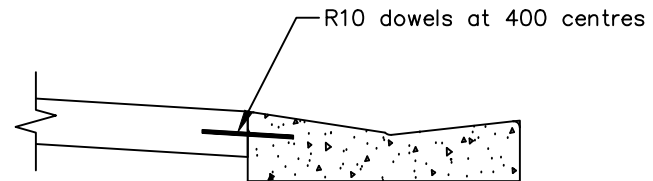
TSD-R08-v2



TYPICAL PLAN (DOMESTIC)
(‘TYPE KC’ KERB SHOWN)



TYPICAL DRIVEWAY PROFILE
SUITS ‘B85’ / ‘B99’ VEHICLES
(‘TYPE KC’ KERB / FOOTPATH AT KERB SHOWN)



DIMENSION TABLE – PLAN VIEW		
Dim.	Description	Notes
A	Boundary Offset	New Subdivisions – 1000mm min. Established areas – Match existing
B	Transition (Wing)	Types ‘KC’ and ‘KCM’: B = 1000mm
C	Min. kerb Length	Delete transitions and construct continuous crossing if ‘C’ IS < 500mm

CONSTRUCTION NOTES

1. Concrete surfaces – Edge tooled, broom finish.
2. The Principal may increase depth of base course(s) for subgrade strength (C.B.R. < 4.0%)
3. Extend 10mm compressible joint filler through concrete footpaths only (Refer sheet TSD-R11, Footpaths).

DESIGN NOTES

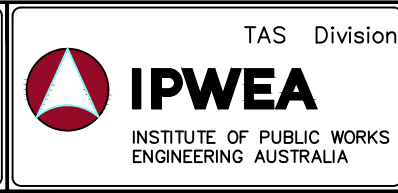
4. Design driveway profiles (tabulated) are in accordance with the requirements of ‘AS/NZS 2890.1 : 2004’ using ‘Standard Design Vehicles’:
 - B85 Vehicle – Domestic driveways (including 1 – 2 units)
 - B99 Vehicle – Light commercial, large unit development.
5. An approved engineering design is required for varying site conditions and for driveways used by ‘Non Standard’ vehicles, detailing the structural, plan geometry and vertical profile requirements.
6. Maximum driveway width to be determined by a Council Officer
7. Fibre reinforcement is permissible but must be approved by the General Manager’s delegated officer and the local council

SCALES: AS SHOWN
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REFERENCES

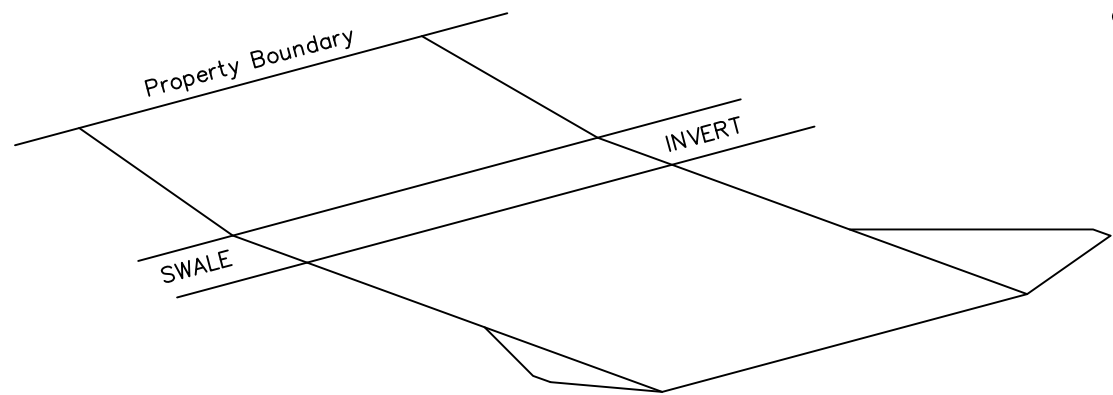
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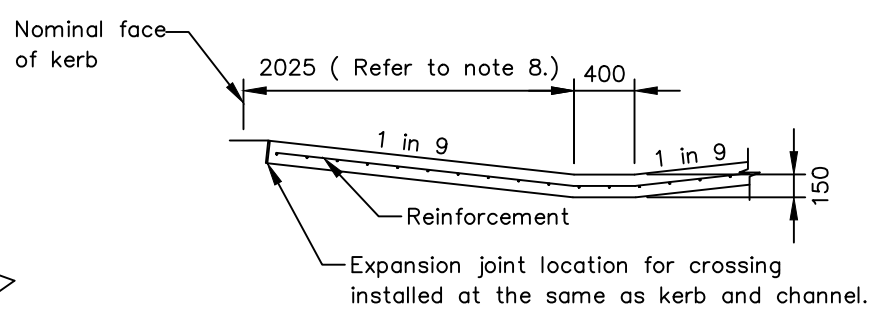
STANDARD DRAWING
URBAN ROADS
DRIVEWAYS

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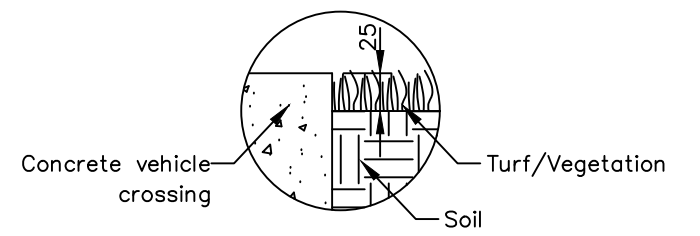
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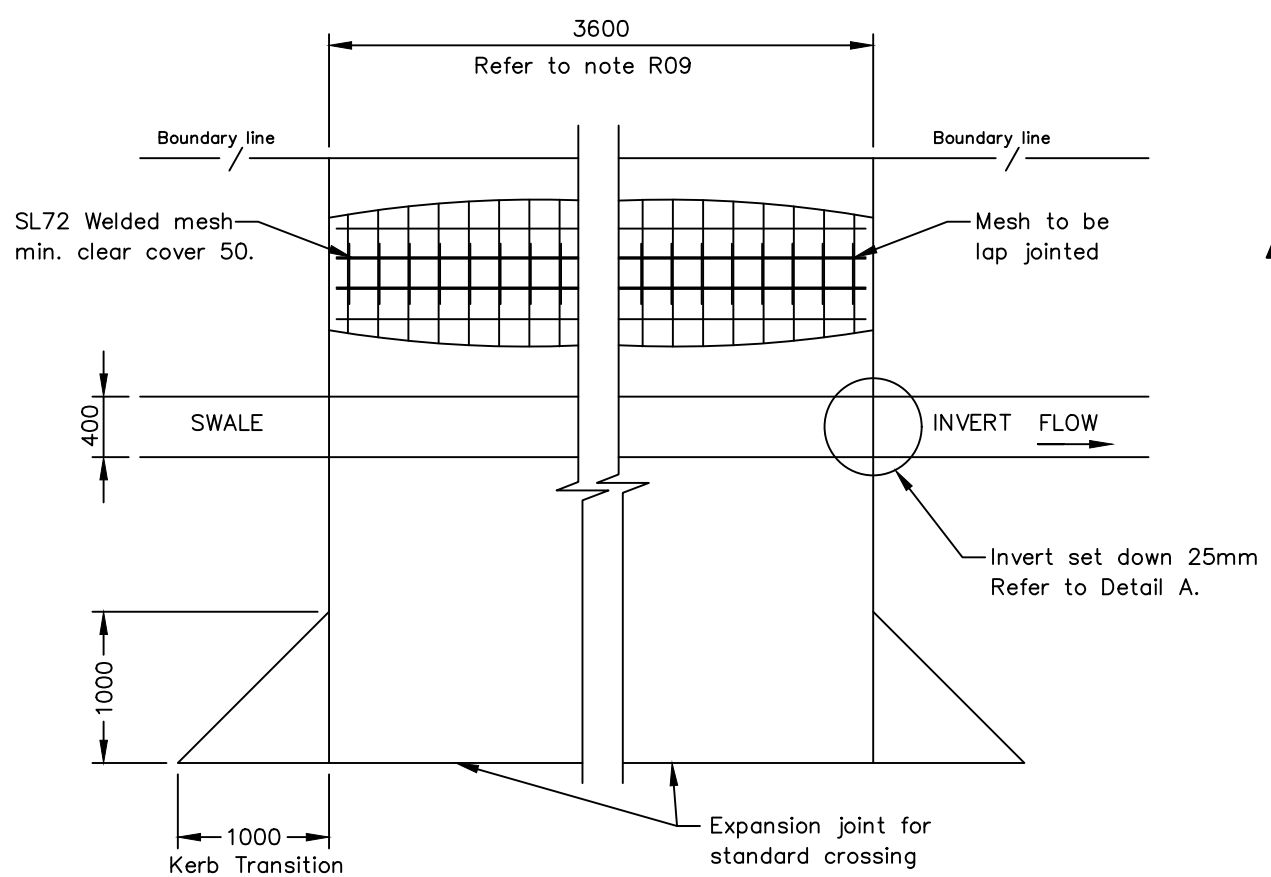
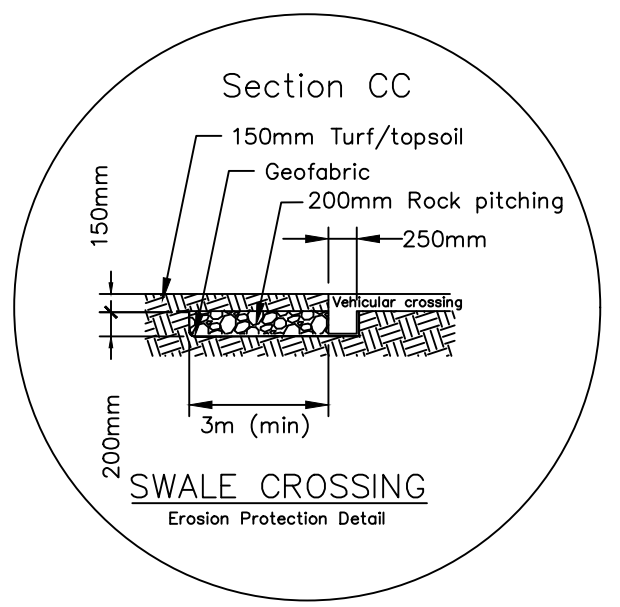
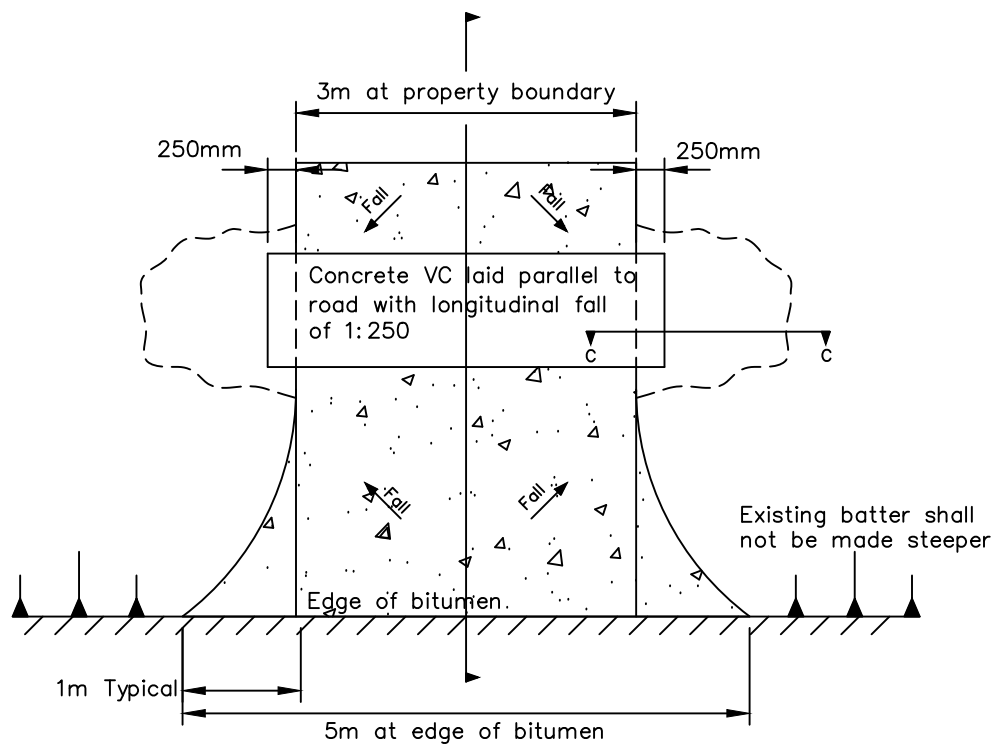
PERSPECTIVE VIEW



TYPICAL SECTION (DOMESTIC)



DETAIL A



PLAN

CONSTRUCTION NOTES

1. Concrete surfaces – Edge tooled, broom finish.
2. The Principal may increase depth of base course(s) for subgrade strength (C.B.R. < 4.0%)
3. Extend 10mm compressible joint filler through concrete footpaths only (Refer sheet TSD-R11, Footpaths).
4. The thickness of decorative surfacing, where approved, is additional to thickness shown.
5. An approved engineering design is required for varying site conditions and for driveways used by 'Non Standard' vehicles, detailing the structural, plan geometry and vertical profile requirements.
6. This crossing is not for commercial vehicles.
7. All concrete to be grade N25 (min)
8. Distance from nominal face of kerb may vary with swale width. Grades are recommended maximums for vehicle access.
9. Dimensions in millimetres (U.N.O)

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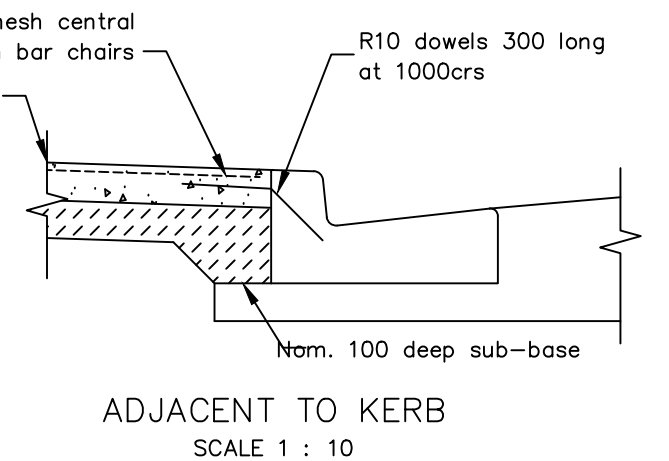
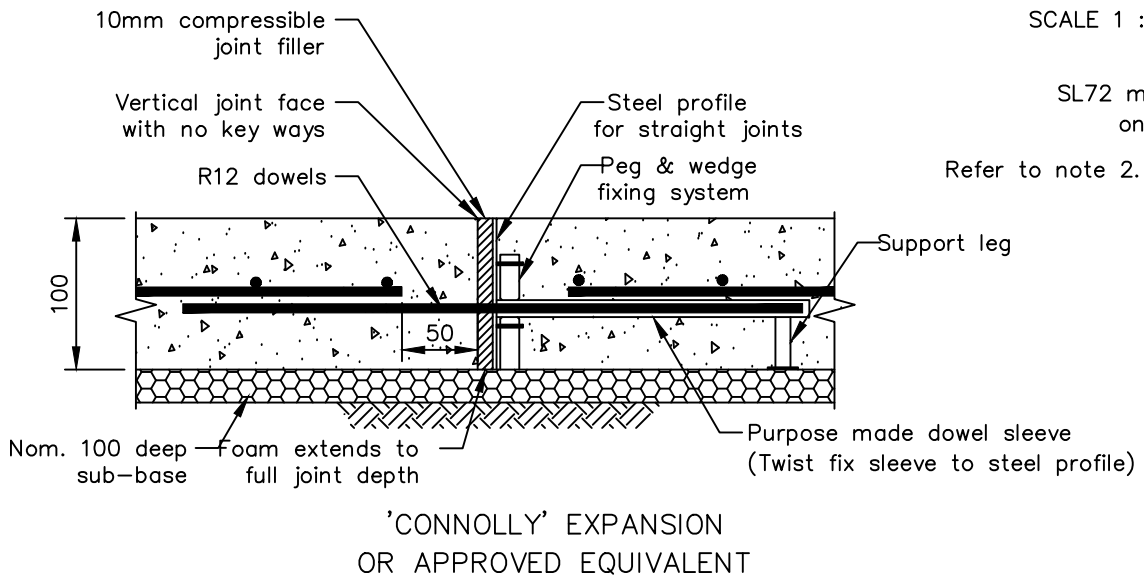
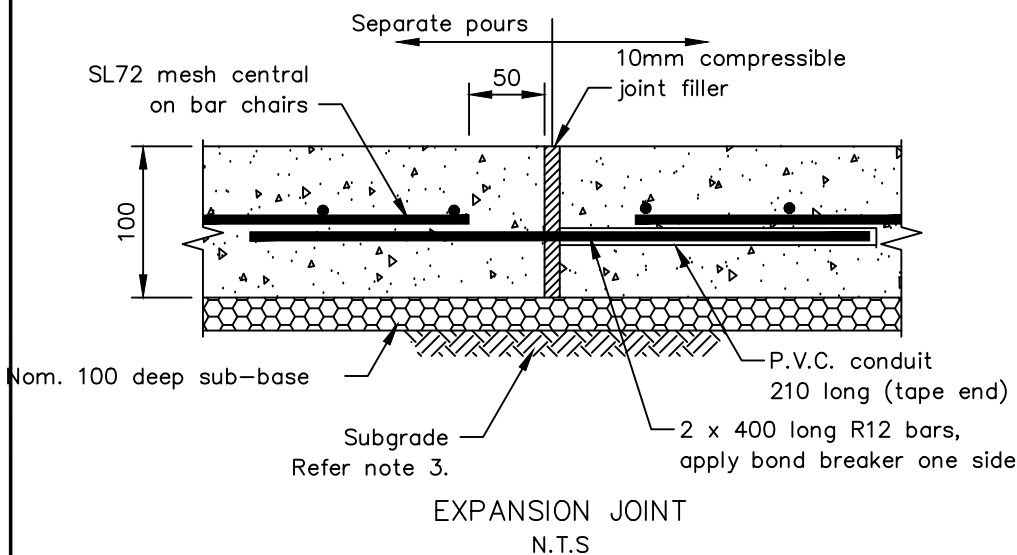
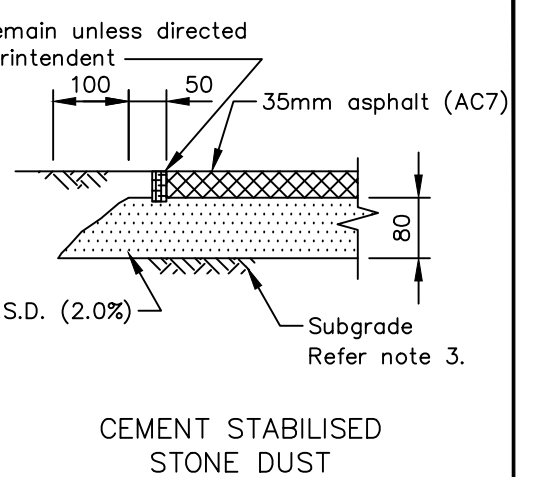
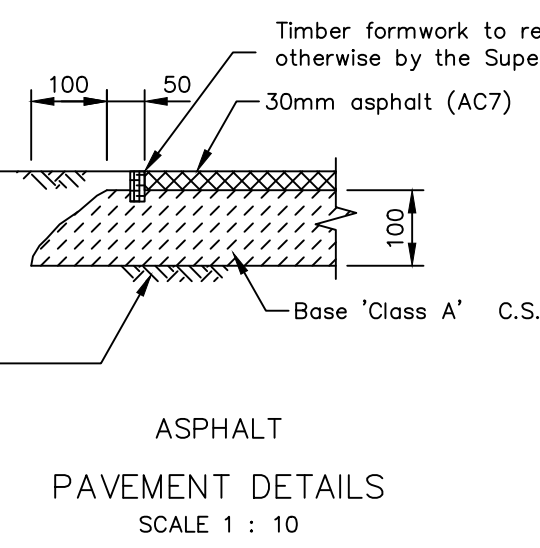
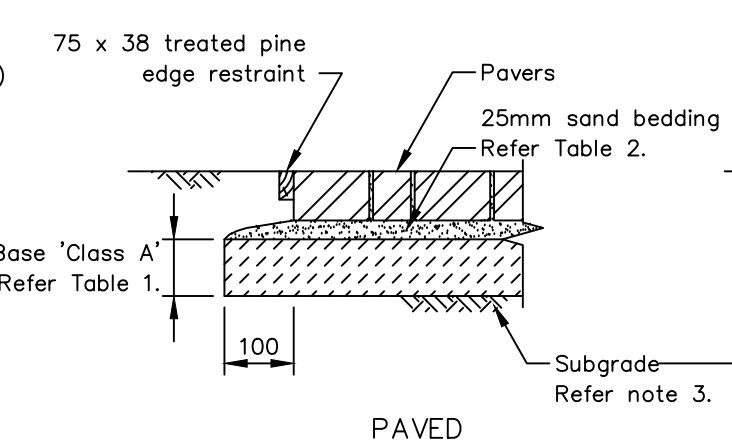
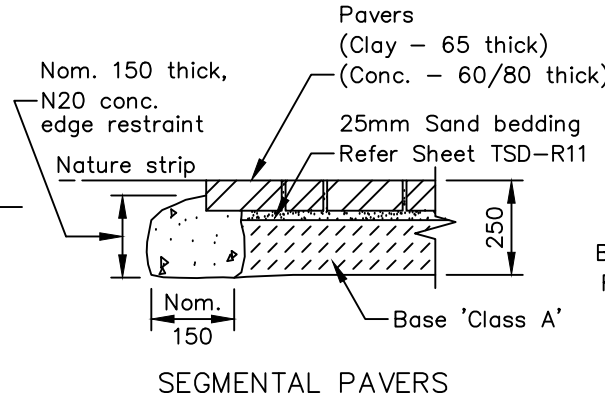
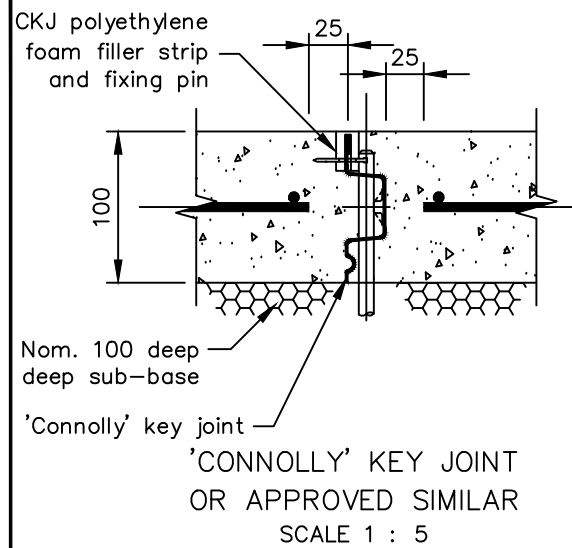
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STANDARD DRAWING
URBAN ROADS DRIVEWAYS
WATER SENSITIVE DESIGN

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- NOTES
- Concrete - N25, nominal 60 slump continuously broom finish surface.
 - Generally 'W' = 1.5m when footpath is adjacent to kerb and channel and elsewhere. The General Manager's delegated officer may:
 - Approve reduced footpath width where pedestrian traffic is low or where physical constraints exist. Min width 1.2m.
 - Require increased footpath width where pedestrian traffic is high.
 - Require increased footpath width to 1.8m around head of culs-de-sac adjacent to kerb and channel.
 - The General Manager's delegated officer may:
 - Approve crossfalls to a maximum of 4% where physical constraints exist.
 - Increase depth of base course(s) for sub-grade strength (C.B.R. < 4.0%)
 - Treated pine to comply with 'AS.1604-1997' (Timber - Preservative Treated - Sawn and Round).
 - Fibre reinforcement are permissible but must be approved by general manager's delegated officer of local council.

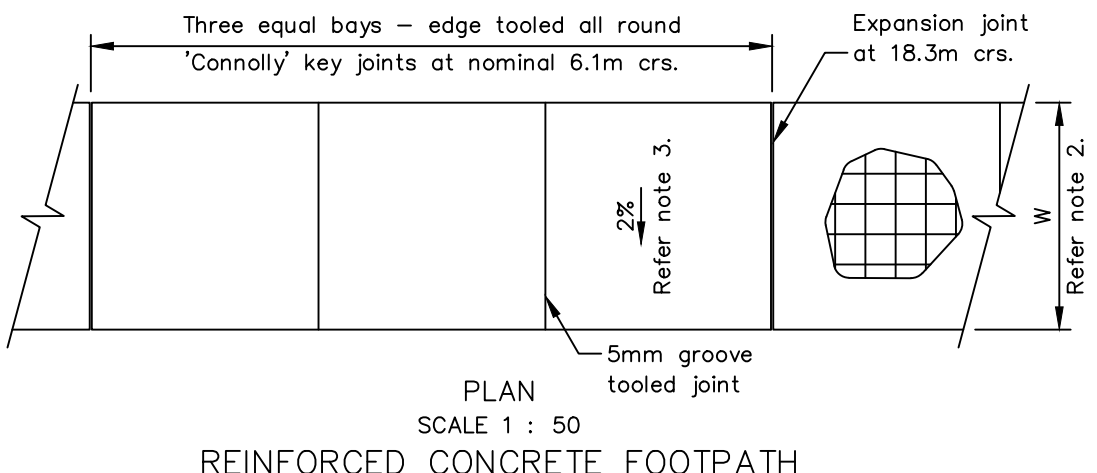
TABLE 1

PAVER TYPE	BASE 'CLASS A'
65mm Clay	75mm
40mm Concrete	100mm
60mm Concrete	80mm

TABLE 2 - SAND GRADINGS FOR PAVERS

AS. SIEVE SIZE (mm)	BEDDING SAND		JOINTING SAND	
	CONCRETE	CLAY	CONCRETE	CLAY
	% PASSING		% PASSING	
9.52	100	100		
4.75	95 - 100	90 - 100		
2.36	80 - 100	75 - 100	100	100
1.18	50 - 85	55 - 90	90 - 100	75 - 95
600 Microns	25 - 60	35 - 59	60 - 90	50 - 80
300 Microns	10 - 30	8 - 30	30 - 60	20 - 45
150 Microns	5 - 15	0 - 10	15 - 30	5 - 15
75 Microns	0 - 10	0 - 5	5 - 10	0 - 5

* Refer 'Approved Products List' for jointing sand stabilisers and paving sealants.



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URBAN ROADS
FOOTPATHS

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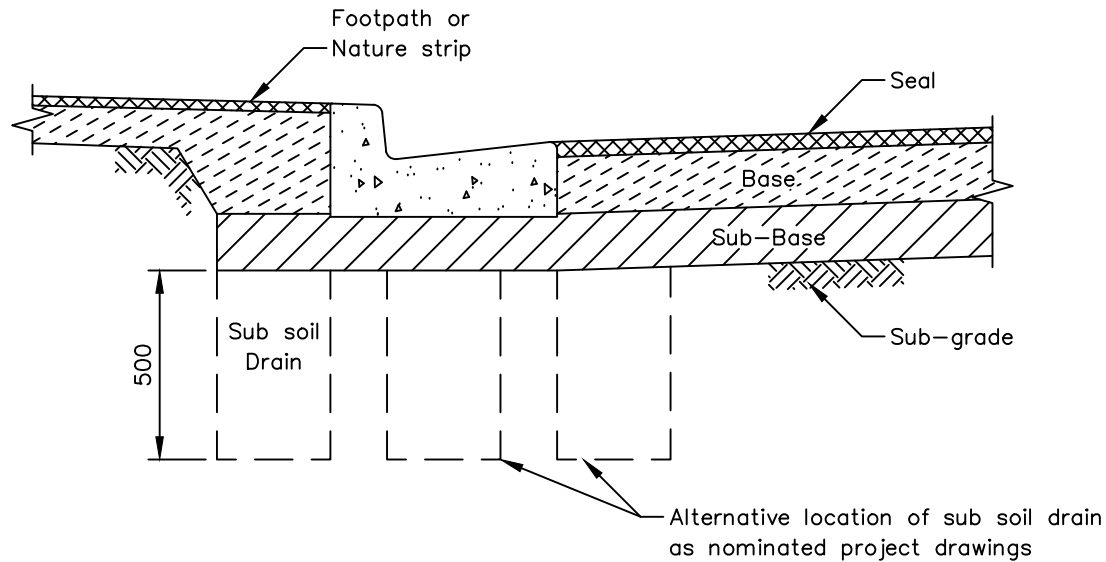
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SUBGRADE CLASSIFICATION

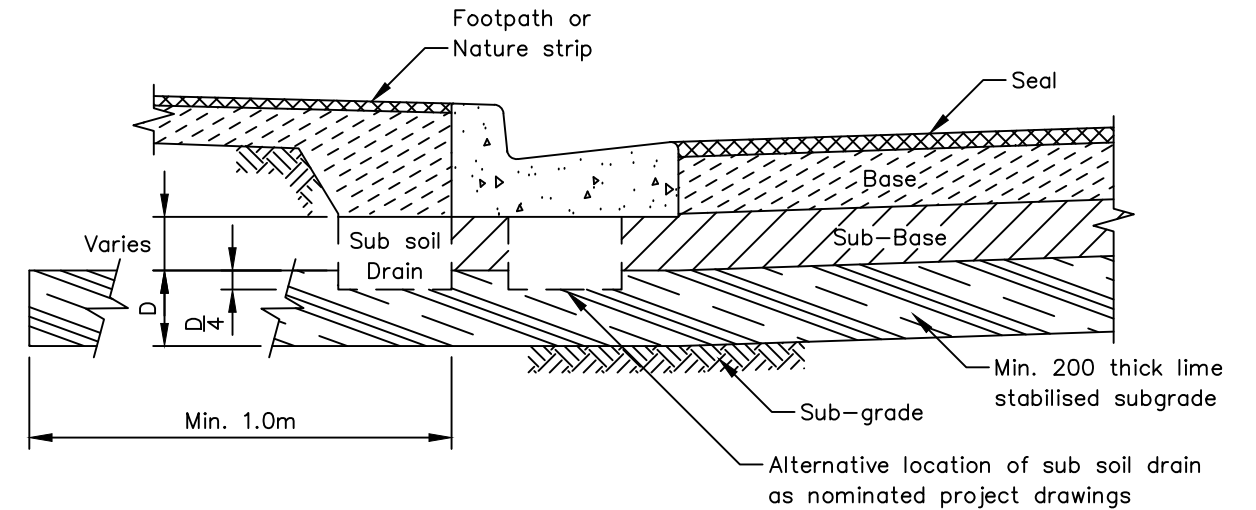
EXPANSIVE NATURE	LIQUID LIMIT (%)	PLASTICITY INDEX	P.I. x % < 0.425mm	POTENTIAL SWELL (%)
Very high	> 70	> 45	> 3200	> 5.0
High	> 70	> 45	2200 – 3200	2.5 – 5.0
Moderate	50 – 70	25 – 45	1200 – 2200	0.5 – 2.5
Low	< 50	< 25	< 1200	< 0.5

NOTES

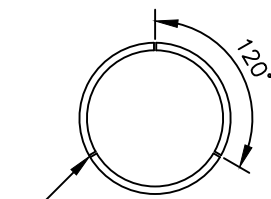
1. Sub-base more permeable than base.
2. Refer 'Vic Roads' Technical Bulletin 37 (September 1993) for additional information.



LOW EXPANSIVE CLAY SUBGRADES
'TYPE CR' SHOWN



MEDIUM TO HIGH EXPANSIVE CLAY SUBGRADES
'TYPE CR' SHOWN

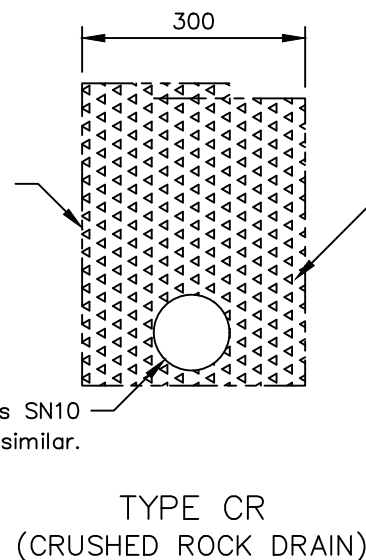


150 long x 3 wide slots at 400 crs.

PIPE SLOTS
DETAIL

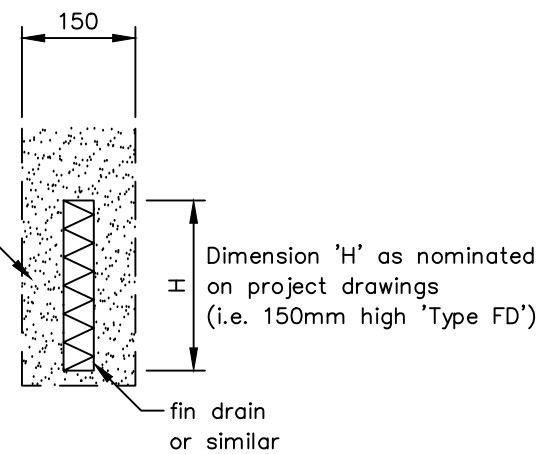
'G' Rating of around 1700+ minimum requirement geotextile (100 lap)

Slotted 100 dia. class SN10 P.V.C. pipe or similar.



TYPE CR
(CRUSHED ROCK DRAIN)

Filter material Refer Table



TYPE FD
(FIN DRAIN)

NOTE

1. 'Type CR' and 'Type FD' may be used for either situation.

FILTER MATERIAL

TYPE CR
Coarse gravel or crushed rock (no fines or organic matter) Partical size: • Maximum – 19mm • < 5% by mass passing 4.75mm sieve

TYPE FD	
AS. Sieve Size	% Material passing
4.75 mm	95 – 100
2.36 mm	65 – 95
600 um	15 – 65
300 um	5 – 15
150 um	0 – 5
75 um	0 – 5

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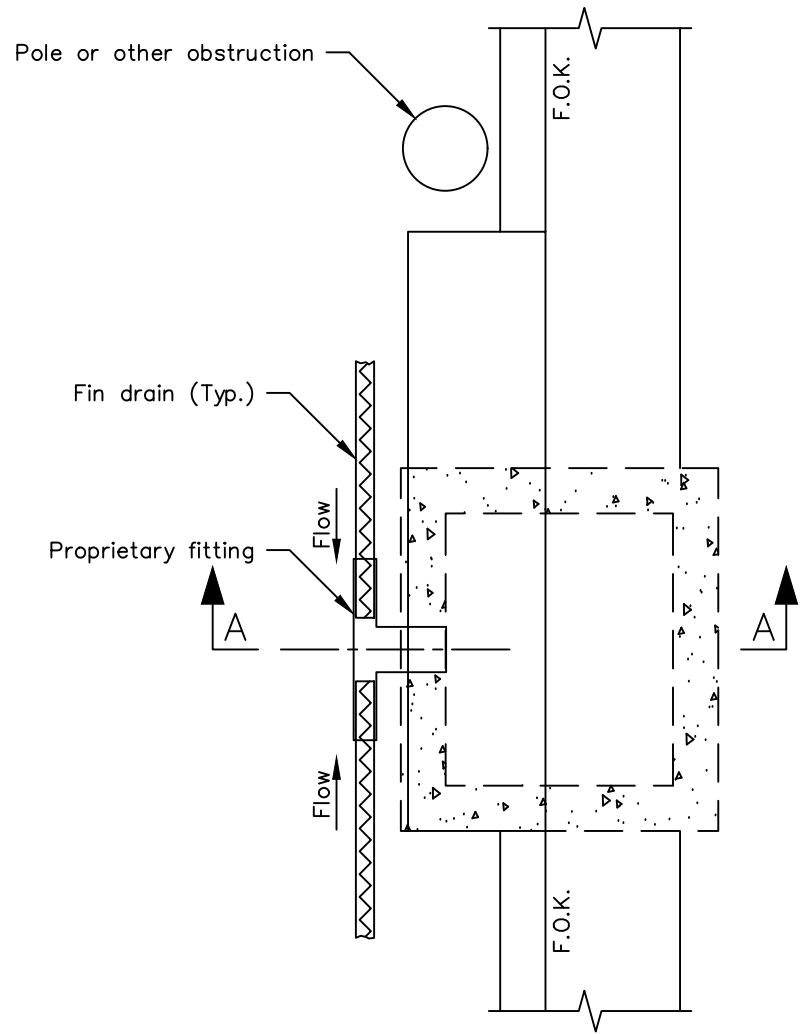


STANDARD DRAWING
SUB SOIL DRAINS
CONSTRUCTION DETAILS

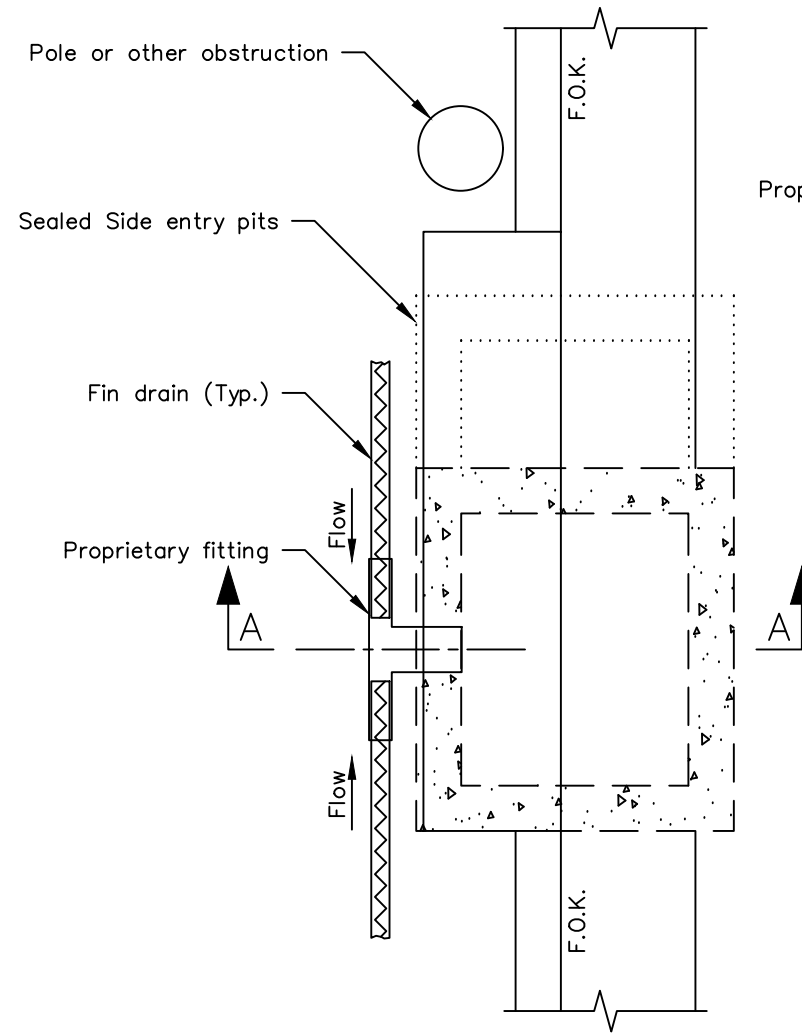
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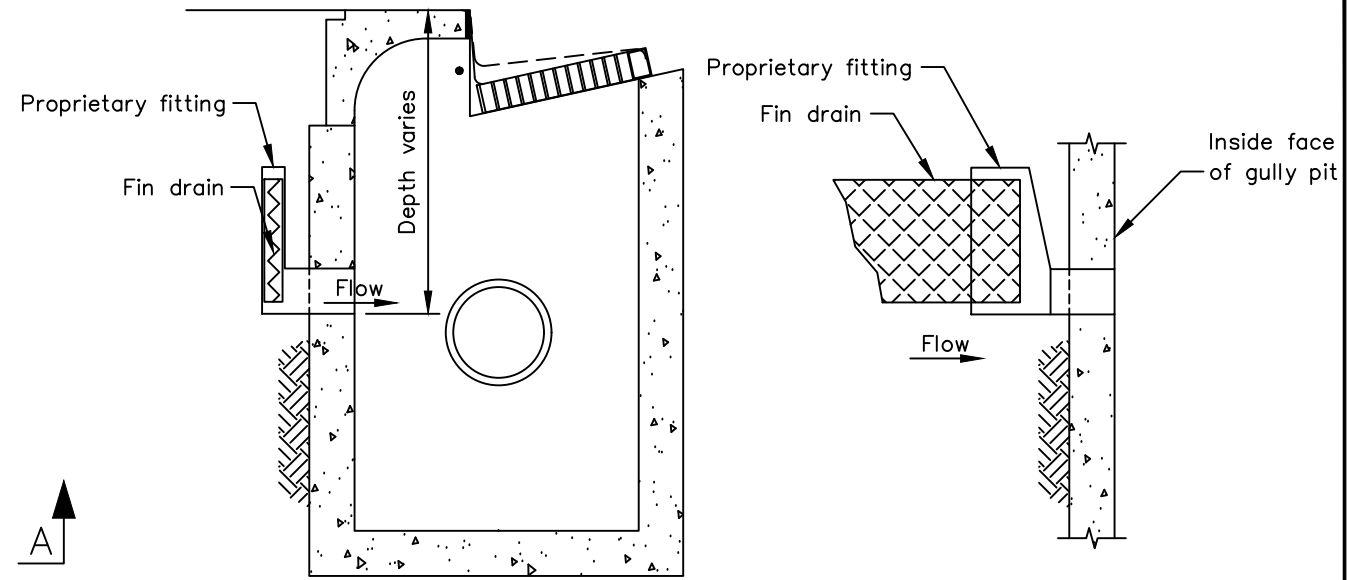
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SIDE OUTLET

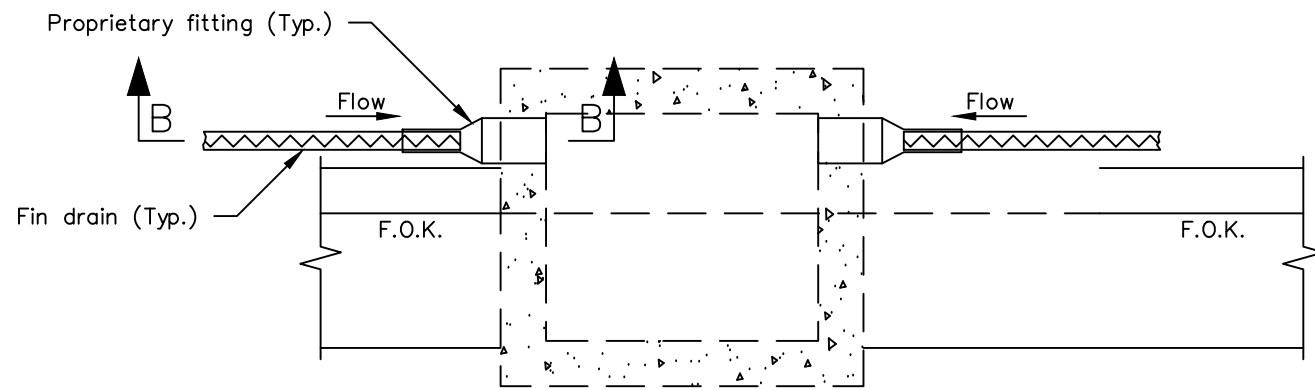


SIDE OUTLET

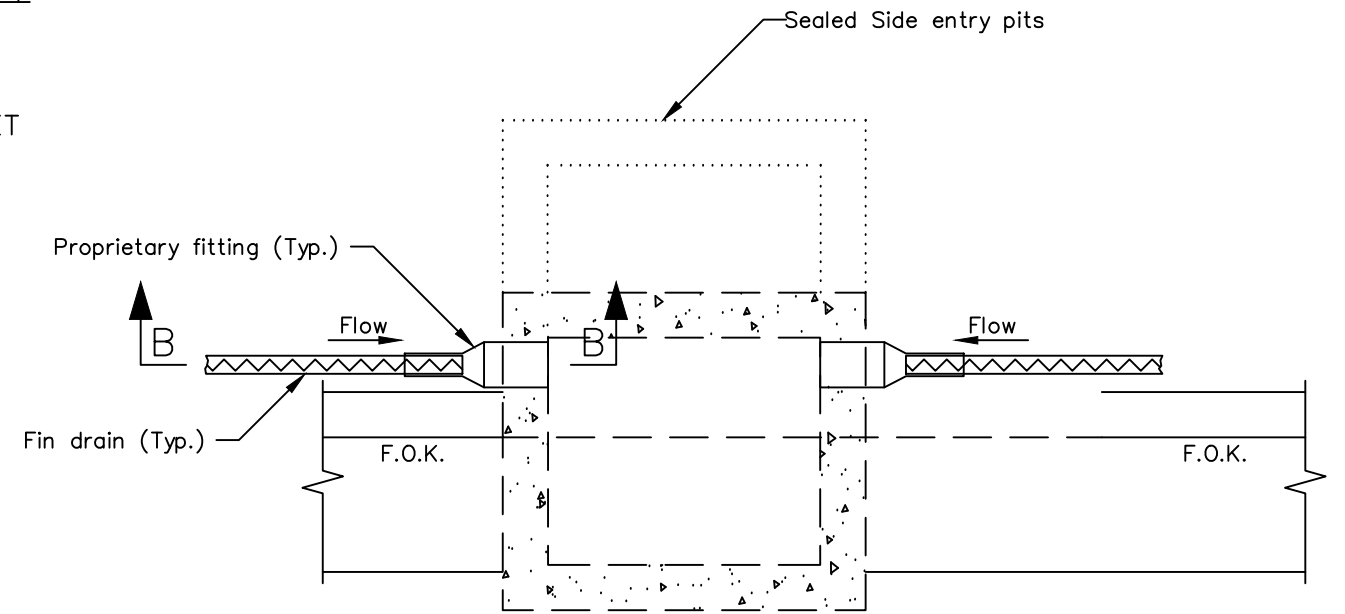


SECTION A-A

SECTION B-B



END OUTLET



END OUTLET

FIN DRAIN CONNECTION DETAILS
(AT SIDE ENTRY PITS)

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-R13-v2.dwg

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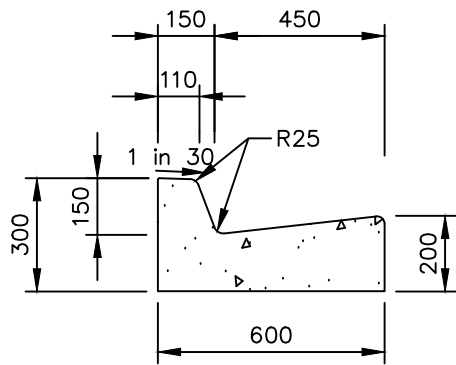
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Association
Tasmania

STANDARD DRAWING
SUB SOIL DRAINS
PIT CONNECTION - TYPE FD

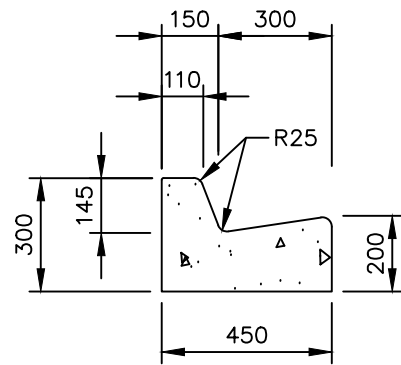
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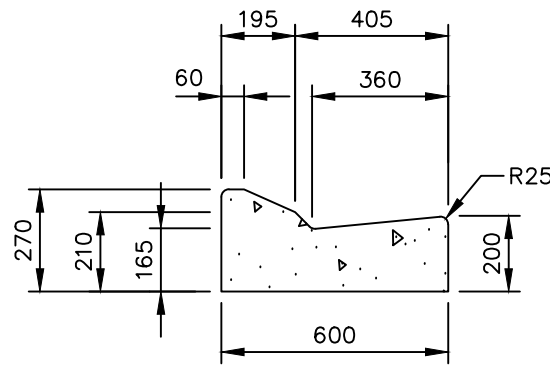
TSD-R13-v2



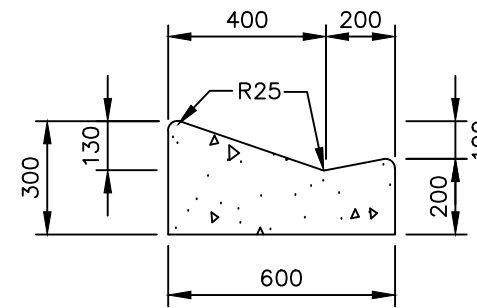
TYPE KC
(KERB AND CHANNEL)
SCALE 1 : 20



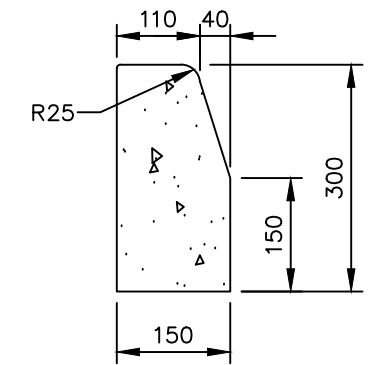
TYPE KCS
(SMALL)
SCALE 1 : 20



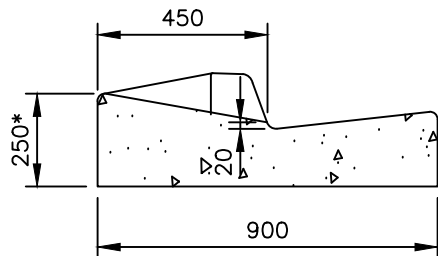
TYPE KCM
(MOUNTABLE)
SCALE 1 : 20



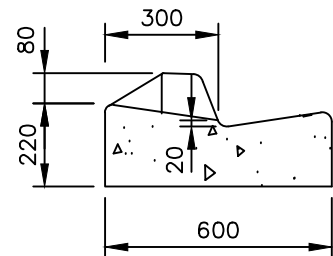
TYPE KCM2
(MOUNTABLE)
SCALE 1 : 20



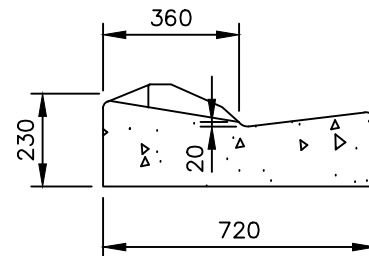
TYPE BK
(BARRIER)
SCALE 1 : 10



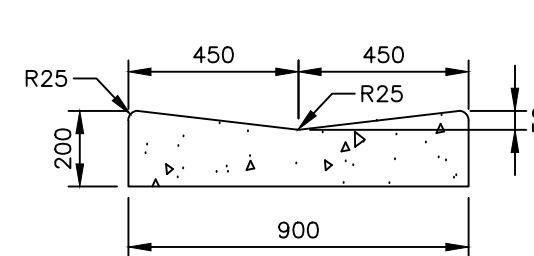
TYPE KC
VEHICULAR CROSSING
SCALE 1 : 20
* Refer note 2.



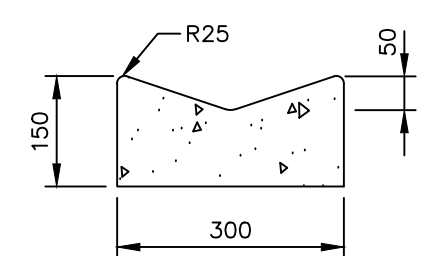
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VEHICULAR CROSSING
SCALE 1 : 20



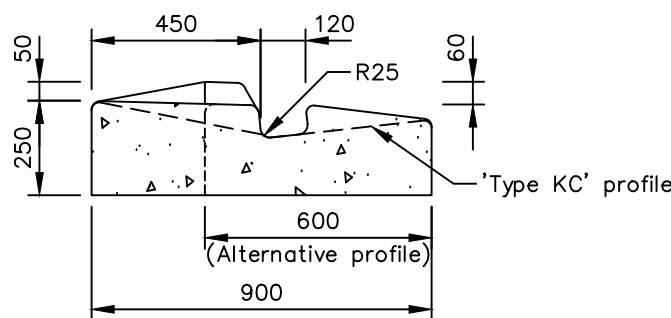
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VEHICULAR CROSSING
SCALE 1 : 20



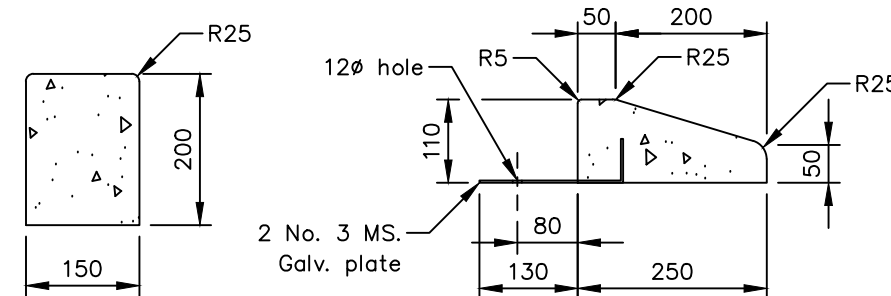
VEE CHANNEL
VEHICULAR CROSSING
SCALE 1 : 20



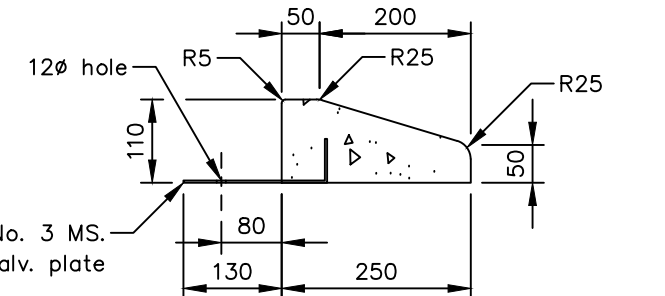
TYPE DD
(DISH DRAIN)
SCALE 1 : 10



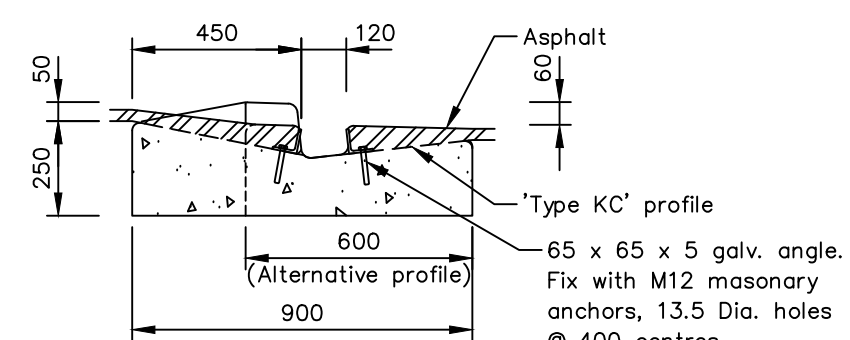
OPEN WEDGE
VEHICULAR CROSSING
SCALE 1 : 20



TYPE FK
(FLUSH)
SCALE 1 : 10



TYPE PCM
(PRECAST MOUNTABLE or Poured ON SITE)
SCALE 1 : 10

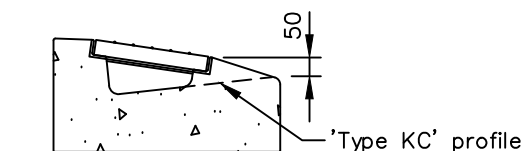


ASPHALT WEDGE
VEHICULAR CROSSING
SCALE 1 : 20

(Approval needed by General manager's delegated officer)

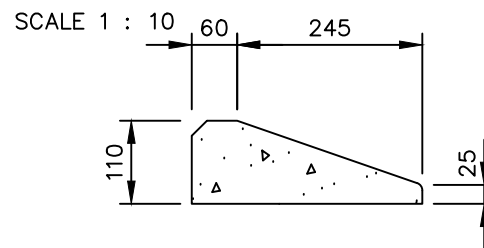
NOTES

- Radius (25mm) all exposed edges unless otherwise noted.
 - The height of the 'Type KC' crossover may be reduced from 250mm, by up to 50mm to improve vehicle clearance,
 - All concrete kerb and channel shall be constructed in accordance with AS2878-2000
 - Provide tooled contraction joints at 3m max centres.
 - Jointing Requirements - Typical for all, provide expansion joints at 21m centres and at structures such as access ramps, vehicular crossings, gully pits and tangent points at intersection kerb returns.
- confirming, by calculation, the flow contained within the road reserve OR
 - Provision of additional drainage.



GRATED WEDGE
VEHICULAR CROSSING
SCALE 1 : 20

Refer Sheet TSD-R17 for grate details



M3 (State Growth)
VEHICULAR CROSSING
SCALE 1 : 20

SCALES: AS SHOWN
(All scales are correct at A3)

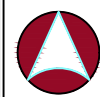
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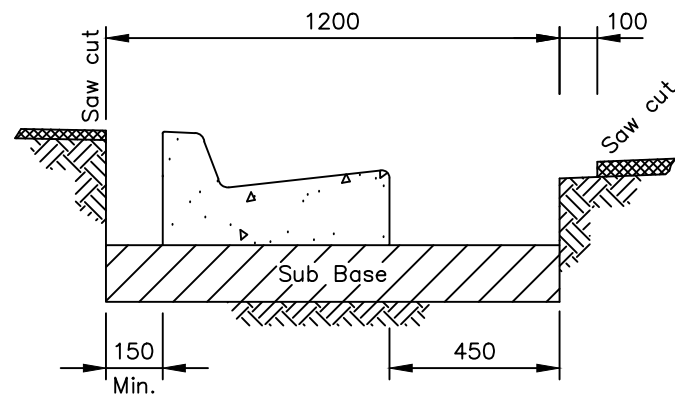


STANDARD DRAWING
APPROVED CONCRETE KERBS AND CHANNELS
PROFILE DIMENSIONS

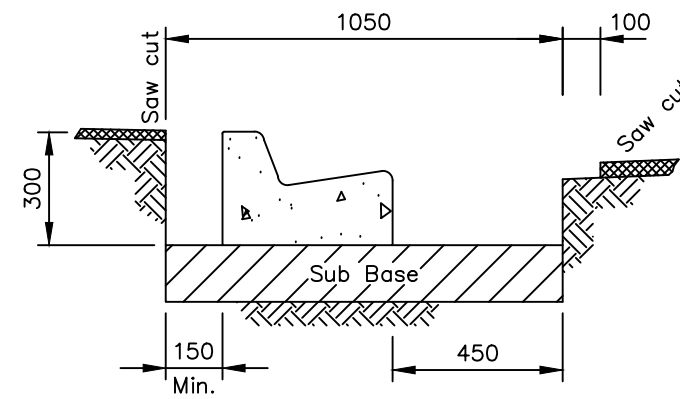
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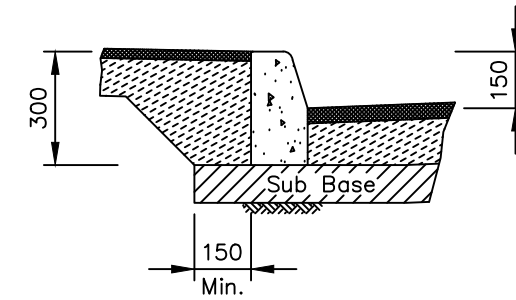
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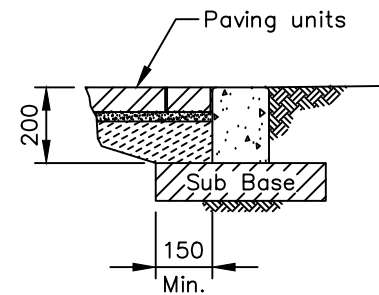
TYPE KC / KCM
(CONSTRUCTION IN EXIST. PAVEMENT)
SCALE 1 : 20



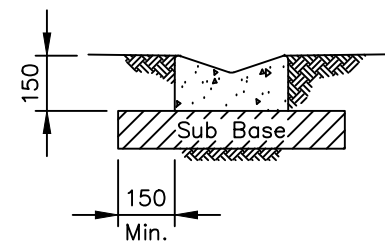
TYPE KCS
(CONSTRUCTION IN EXIST. PAVEMENT)
SCALE 1 : 20



TYPE BK
(CONSTRUCTION IN NEW PAVEMENT)
SCALE 1 : 20



TYPE FK
(e.g. EDGE RESTRAINT FOR PAVING)
SCALE 1 : 20



TYPE DD
(GRASSED AREA)
SCALE 1 : 20

NOTES

1. Sub-Base Depth
 - Sub-grade C.B.R. \geq 4% - Depth = Min. 135mm.
 - Sub-grade C.B.R. < 4% - 'Class B' geotextile, Min. 150
2. Pavement Design

Design of pavements to consider project traffic loading, sub-grade strength and comply with the procedures in either:

 - A.R.R.B. special report No. 41 - 'A Structural Design Guide For Flexible Residential Street Pavements'.
 - AUSTRROADS
'A Guide To Pavement Technology Part 2: Pavement Structural Design'

3. Jointing Requirements (Typical for all)

Provide contraction joints at 3.0m centres.
Provide expansion joints at the following:

 - 21.0m centres (Max.)
 - Structures such as access ramps, vehicular crossings, gully pits and tangent points at intersection kerb returns.

SCALES: AS SHOWN
(All scales are correct at A3)

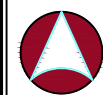
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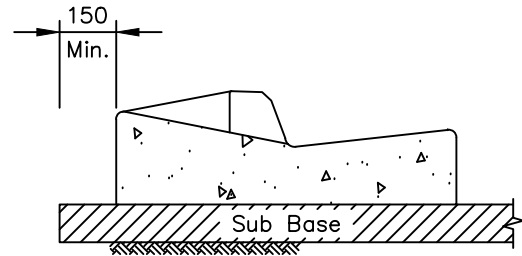


STANDARD DRAWING CONCRETE KERBS AND CHANNELS CONSTRUCTION DETAILS

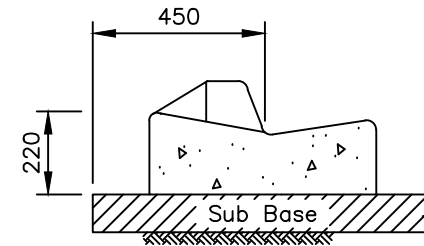
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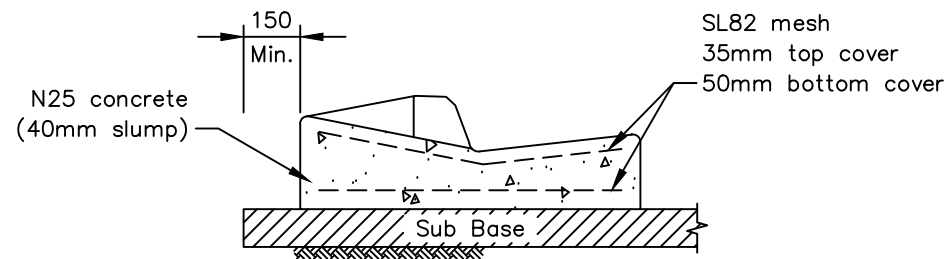
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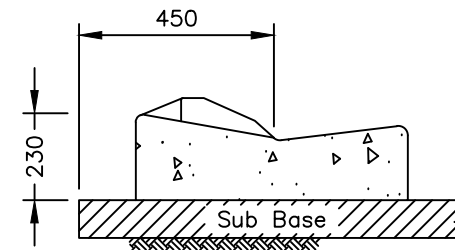
TYPE KC
UNREINFORCED
SCALE 1 : 20



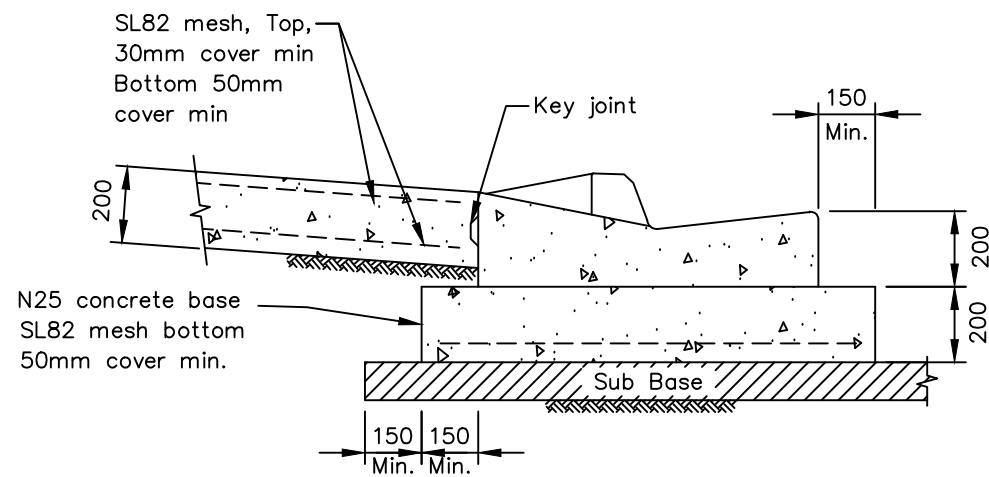
TYPE KCS
UNREINFORCED
SCALE 1 : 20



TYPE KCR & B1 (HEAVY VEHICLES)
IN-SITU POURED REINFORCED
SCALE 1 : 20
(Types KCS and KCM similar)



TYPE KCM
UNREINFORCED
SCALE 1 : 20



TYPE KCRB & B1 (HEAVY VEHICLES)
EXTRUDED ON REINFORCED BASE
SCALE 1 : 20
(Types KCS and KCM similar)

NOTES

1. Sub-Base Depth
 - Sub-grade C.B.R. $\geq 4\%$ - Depth = Min. 135mm.
 - Sub-grade C.B.R. $< 4\%$ - Include 'Class B' geotextile.
2. Refer Sheet TSD-R14 for additional dimensions.
3. All works to be inspected prior to pouring concrete
4. Any concrete oxide to be worked into the concrete surface during finishing.
5. All dimensions in millimetres (mm)

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-R16-v2.dwg

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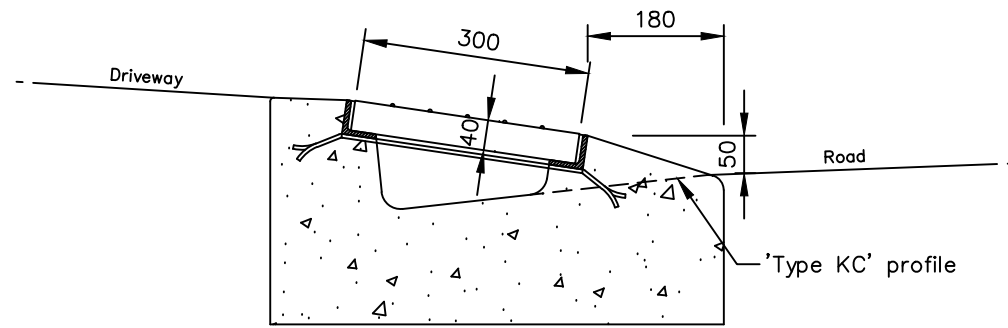
STANDARD DRAWING
CONCRETE KERBS AND CHANNELS
VEHICULAR CROSSINGS

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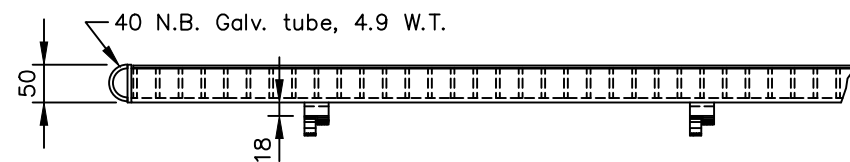
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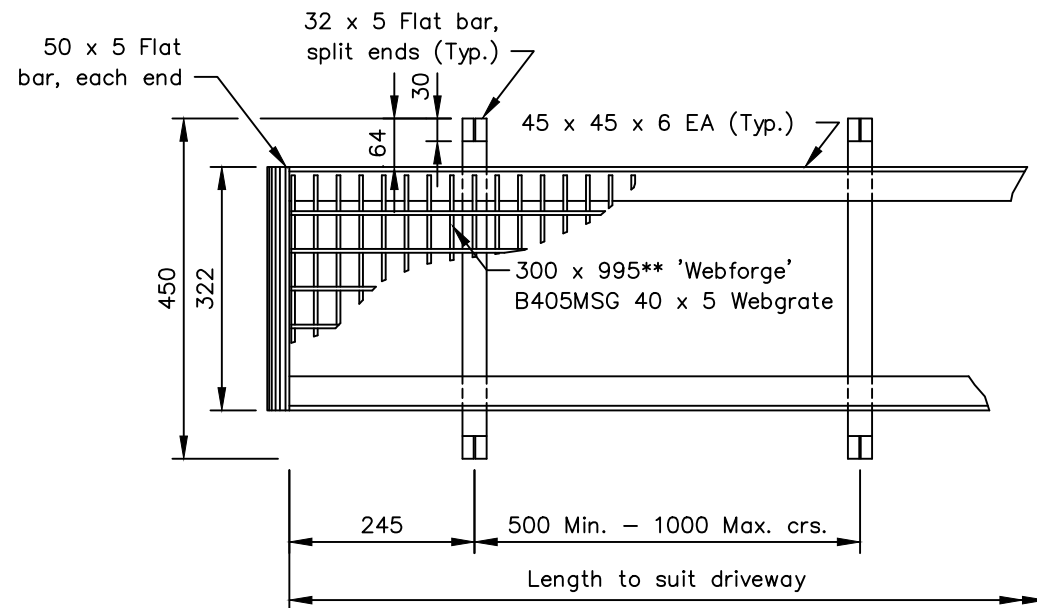
TSD-R16-v2



TYPICAL SECTION
SCALE 1 : 10
(Council Specific Approval only)



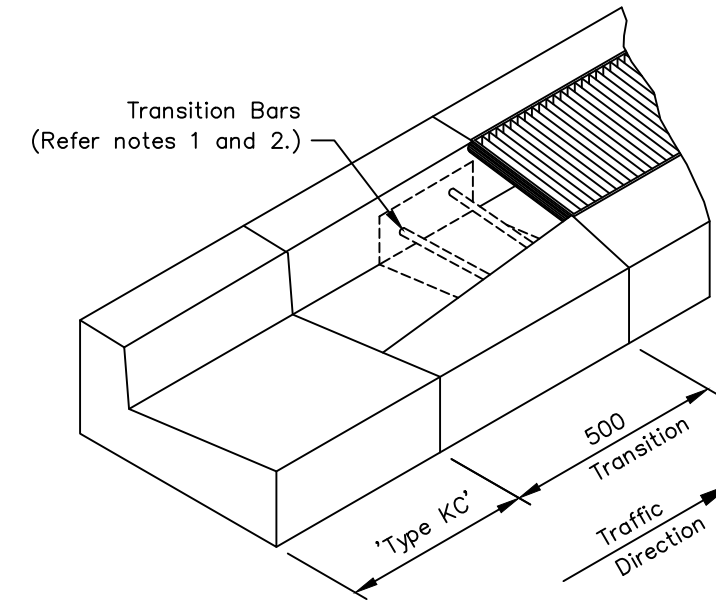
FRONT VIEW



PLAN VIEW

** 485mm for half metre end sections

GRATE AND FRAME DETAIL
SCALE 1 : 10
(Council Specific Approval only)



END TRANSITION DETAIL
N.T.S.

NOTES

TRANSITION BARS

1. Objective
To minimise the risk of personal injury and vehicle damage for all road users (in particular 2 wheeled vehicles) resulting from impact with the exposed end of the wedge grate.
2. Install Transition Bars on traffic 'approach side' only, as specified.
Typically installed where the:
 - through lane is adjacent to kerb
 - bicycle traffic is significant
 - speed environment is higher
3. Transition Bars – Supplied by Principal.
4. Grate and Frame
 - All welds – Nominal 5mm continuous fillet / butt.
 - Clean up weld spatter and remove sharp edges prior to hot dip galvanising

SCALES: AS SHOWN
(All scales are correct at A3)

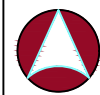
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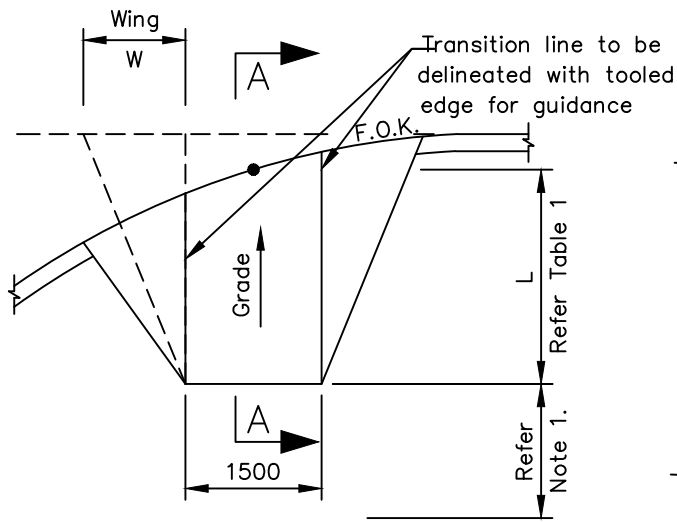


STANDARD DRAWING
CONCRETE KERBS AND CHANNELS
GRATED WEDGE CROSSINGS

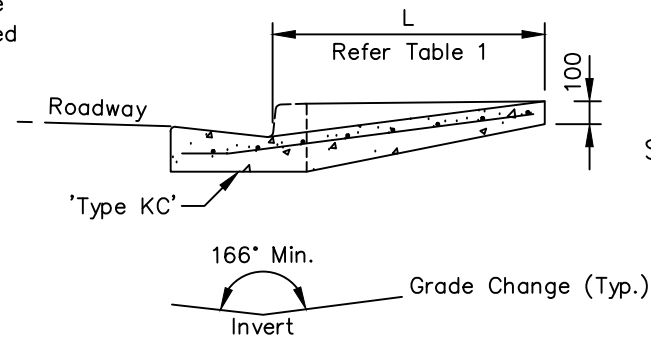
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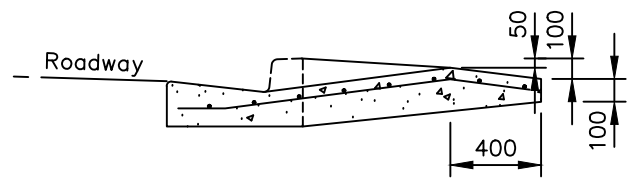
TSD-R17-v2



ACCESS RAMP – TYPE A



STANDARD PROFILE – SP



ALTERNATIVE PROFILE – AP

SECTION A – A

TABLE 1 (Type A)

RAMP LENGTH	L (mm)	
	900 to 1520	1520 to 2000
Maximum Grade	1 in 8 (12.5%)	1 in 14 (7.14%)
Minimum Grade	1 in 8.5 (11.5%)	* Refer note 2.
Wing (W)	600 Min.	Refer FIG. 1
	1500 Max.	Refer FIG. 2

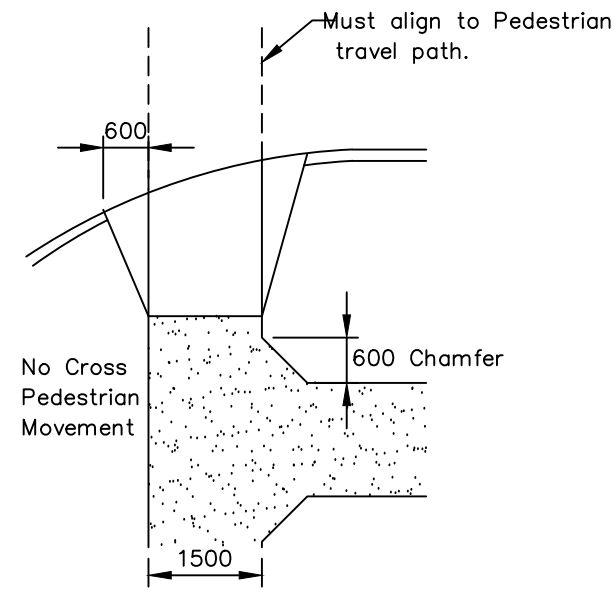
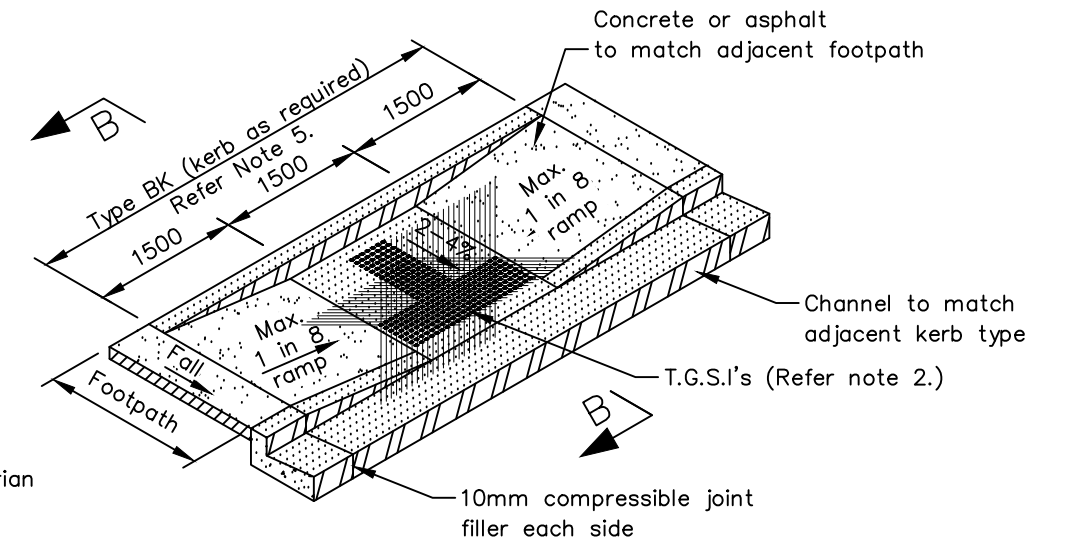
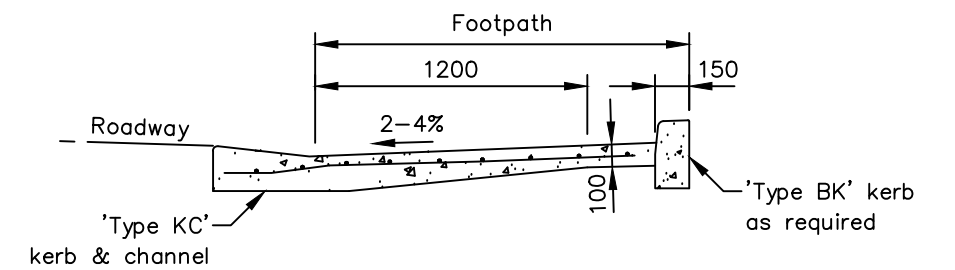


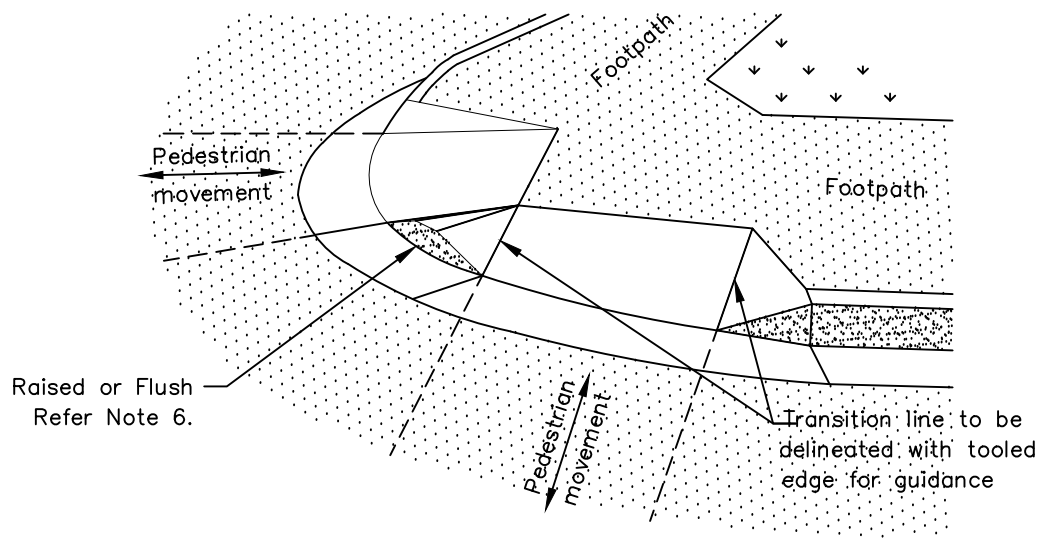
FIG. 1



ACCESS RAMP – TYPE B



SECTION B – B



TYPICAL DETAIL – ADJACENT RAMPS

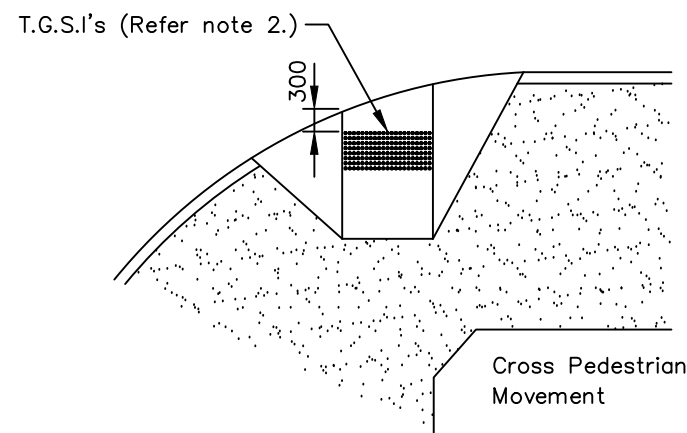


FIG. 2

NOTES

- Use 'Type A' ramp where 1500 clearance can be provided, otherwise use 'Type B'.
- Provide TGS.I's (Individual Tactile Surface Indicators) where ramp slope is less than 12.5% as directed by the Superintendent. (Refer 'AS/NZS 1428.1 – 2009')
- Place SL72 mesh centrally in all ramps including adjacent channel.
- Concrete strength – N25, provide 25mm radius on exposed edges.
- Return 'Type B' kerb at 90° to back of kerb when the footpath comes to an end (one ramp only). Use 0.3m radius to face of kerb in bends.
- Finish – all exposed surfaces
 - Provide tooled joint transition at junction of ramp and wings.
 - Heavy surface dusting of a 1 : 1 mix of cement and sharp quartz sand,
 - Trowelled in and finished with a broomed, non slip finish.
- Design drawings or ID Assets Department will nominate Raised or Flush.

References

 - AS/NZS 1428.1 – 2009
 - Refer to Local Council – Pedestrian Tactile Indicators

SCALES: AS SHOWN
(All scales are correct at A3)

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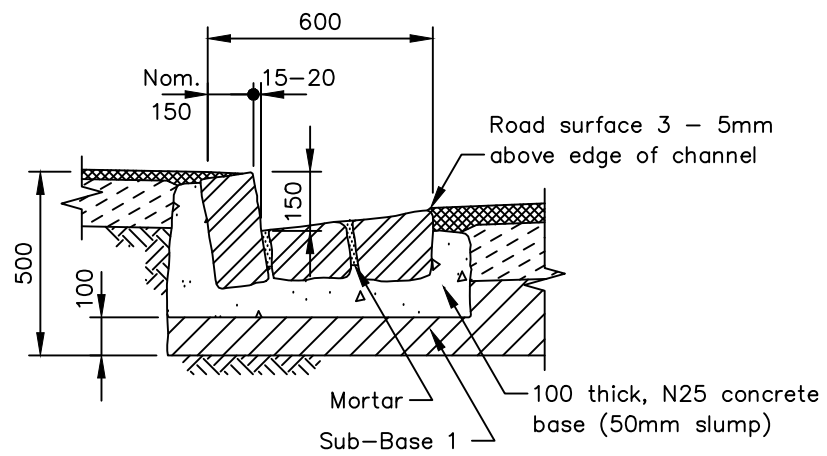


STANDARD DRAWING
CONCRETE KERBS AND CHANNELS
ACCESS RAMPS

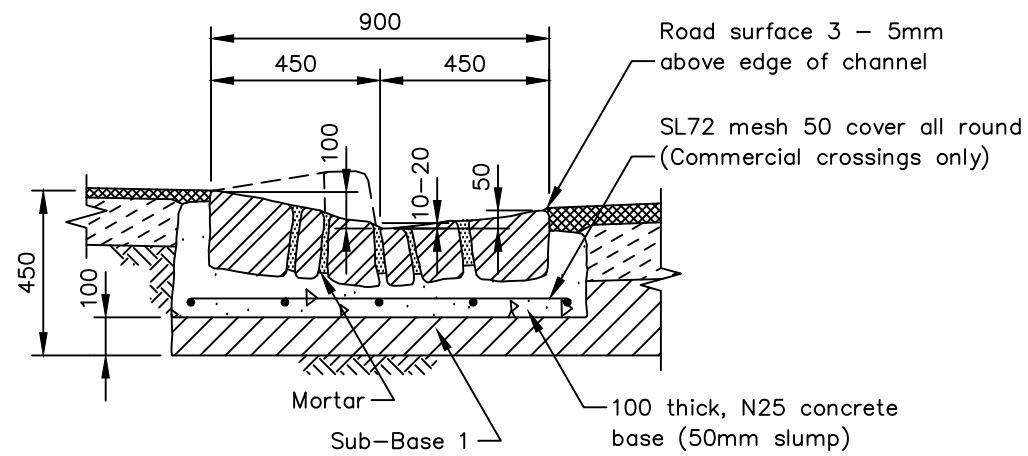
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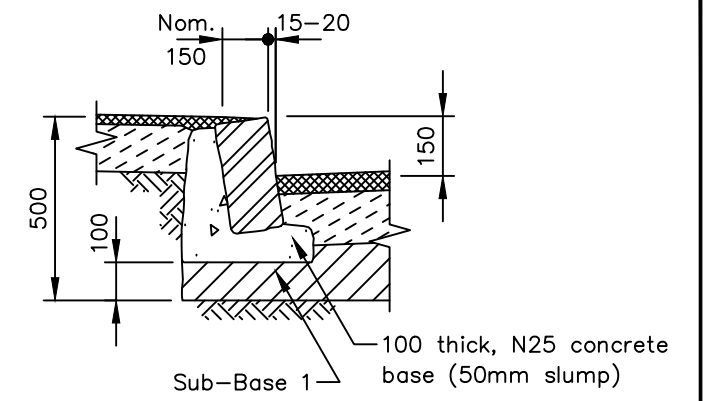
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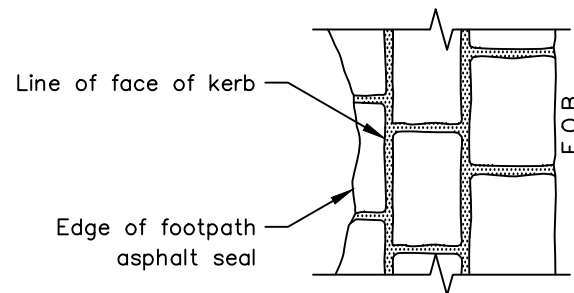
CROSS SECTION
TYPES BS AND BSR
N.T.S.



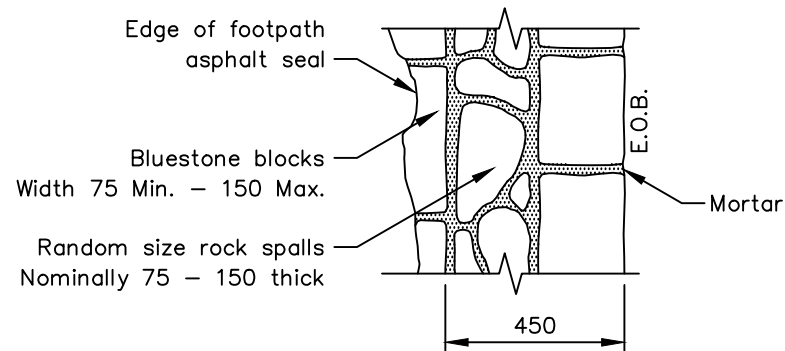
CROSS SECTION
TYPE BSR - CROSSING
N.T.S.



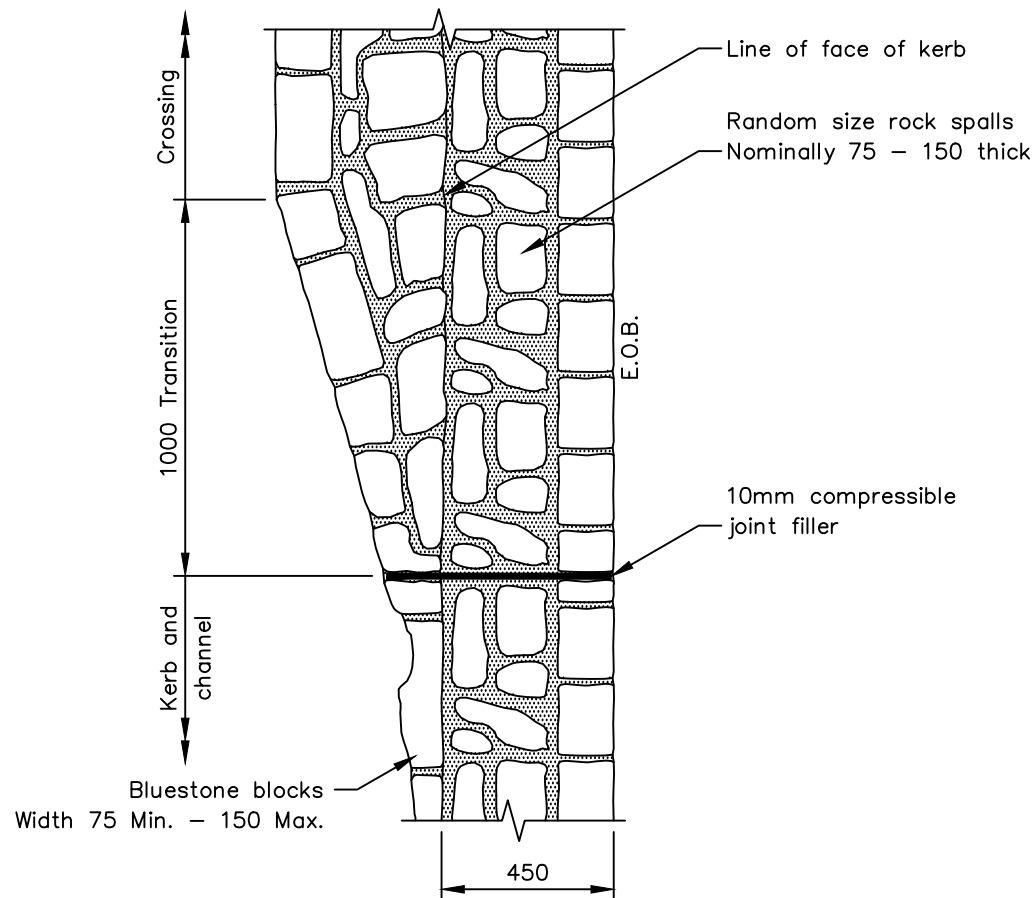
TYPE BSK
BLUESTONE BARRIER KERB
N.T.S.



TYPE BS
KERB AND CHANNEL
TYPICAL PLAN



TYPE BSR
KERB AND CHANNEL
TYPICAL PLAN



TYPE BSR
VEHICULAR CROSSING
TYPICAL PLAN

NOTES

- Mortar:
 - 1.5 parts putty sand
 - 1.0 part quartz sand
 - 1.0 part cement
 - Nominal joint width 20 - 50mm
 - Finish flush with stone faces.
- Re-use suitable existing bluestone.
- Construct concrete access ramps as required.

SCALES: AS SHOWN
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STANDARD DRAWING
BLUESTONE KERBS AND CHANNELS
CONSTRUCTION DETAILS

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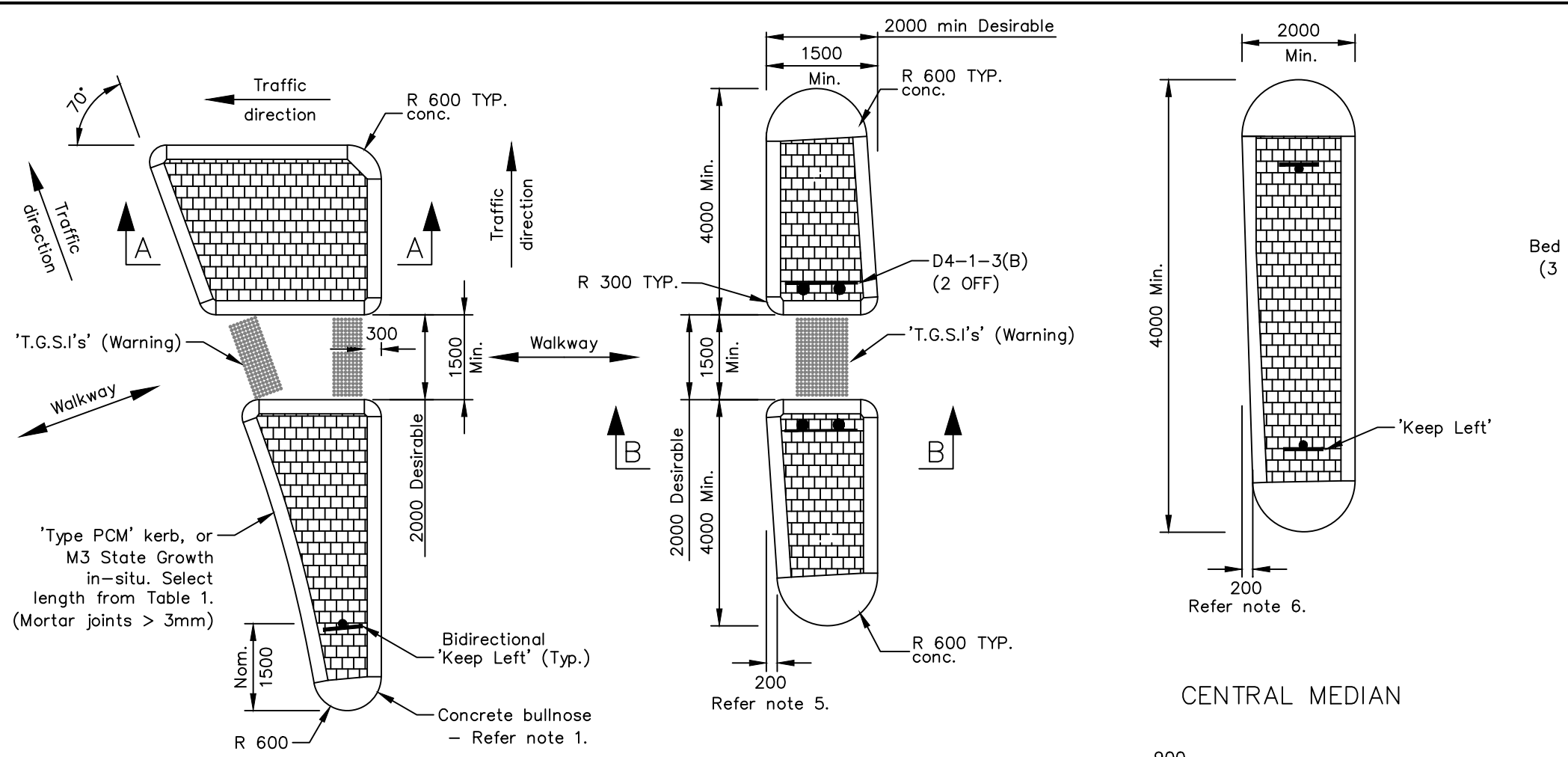
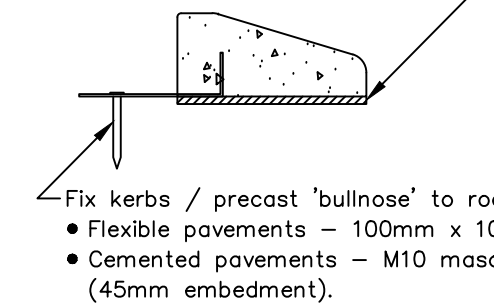


TABLE 1 - 'PCM' Units

RADIUS	BLOCK LENGTH
<8m	300
8m - 14m	750
14m - 25m	1200
>25m	1800

Bed kerb units on hot asphalt or cement grout (3 parts sharp quartz sand to 1 part cement)

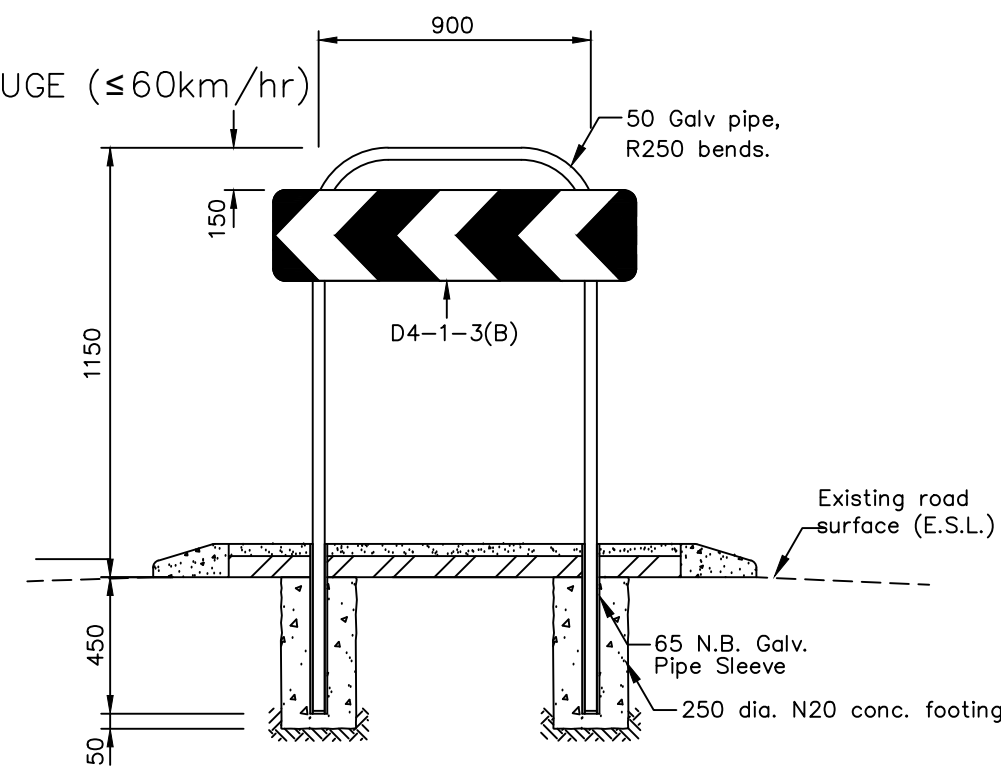
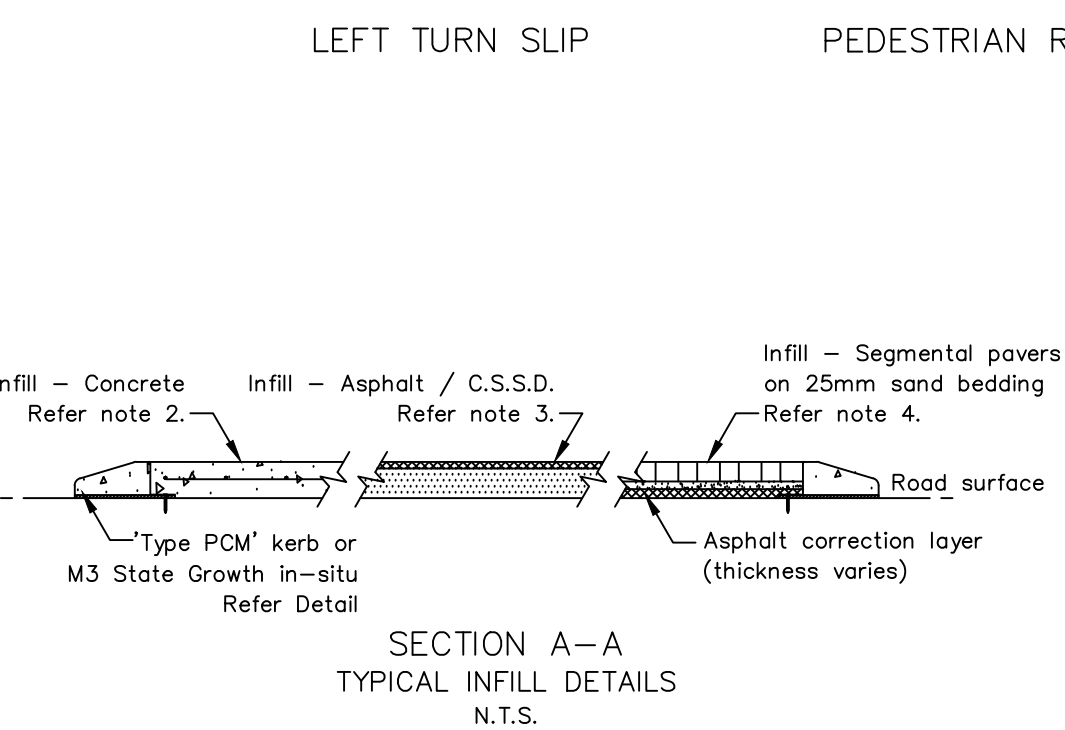


TYPE PCM or M3 State Growth
FIXING DETAILS
N.T.S.

Refer Sheet TSD-R14 for kerb dimensions

NOTES

- Concrete 'Bullnose' (Insitu poured)
 - N32 Conc. Shaped to suit kerb
 - Cast over 150 x 10mm decking spikes or 150 grouted R12 reo. bar (Min 2 off, 80mm embedment)
 - End radius - 300mm unless noted.
- Reinforced Concrete Infill
 - 120mm thick, SL72 mesh central
 - N25 - non trafficable.
 - N32 - trafficable.
 - Sandstone coloured stamped 210mm x 180mm stretcher bond pattern - unless specified on project drawings.
- Asphalt / C.S.S.D. Infill
 - Nom. 85mm cement stabilised stone dust (2.0%).
 - 35mm Asphalt (AC7)
 - Asphalt pavement pattern / colouring - as specified.
- Paved Infill
 - Paver type and colour nominated on project drawings.
 - Provide subsoil drain for paved infill.
- The 200 (1 in 20) taper is only required for a 'stand alone' traffic island. Omit 'Hazard board' and install 'Keep left' signs for non Pedestrian refuge island.
- The example shown is for the first island in a series. Intermediate islands do not require the 200 (1 in 20) taper.
- Refer DSG drawing SD/84.002 for Pedestrian Refuge for detail not shown.
- T.G.S.I.'s (Warning) to be installed as per AS1428 (300 set-back from kerb line).
- Tactile (TGSIs) placement to be in accordance with AS1428.1 2009



SECTION B-B - HAZARD SIGN

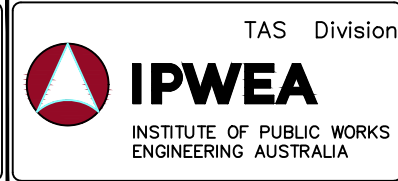
Height and placement maybe dependant on vertical alignment of road.
Approval of specific instances by D.I.E.R. and the Director Infrastructure Services..

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-R20-v2.dwg

REFERENCES

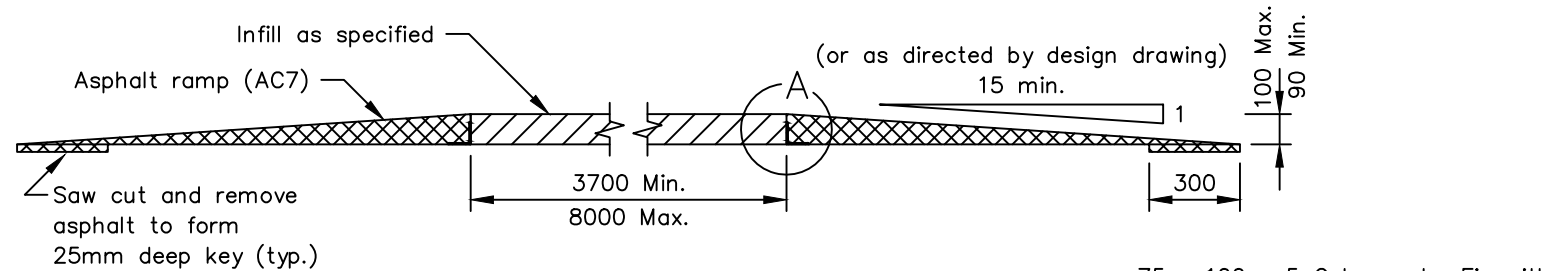
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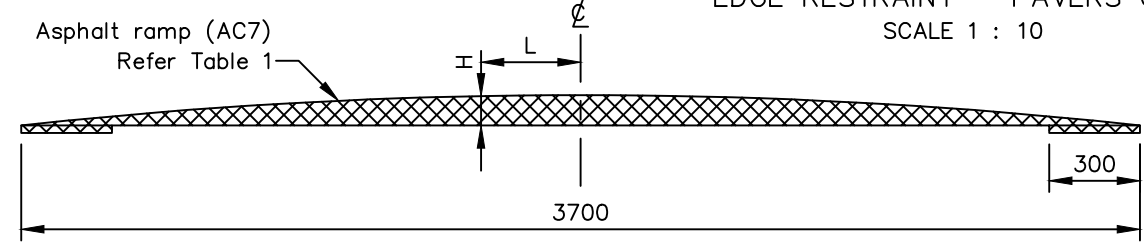
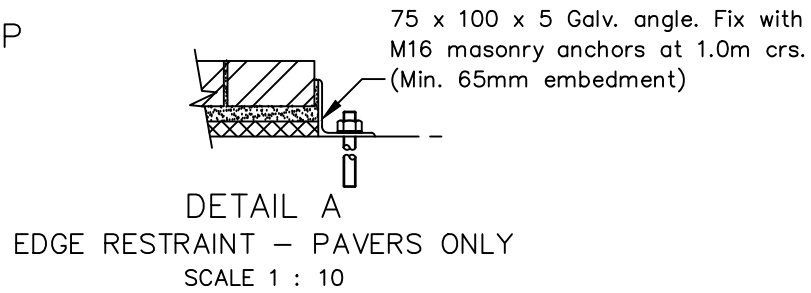
STANDARD DRAWING
TRAFFIC ISLANDS

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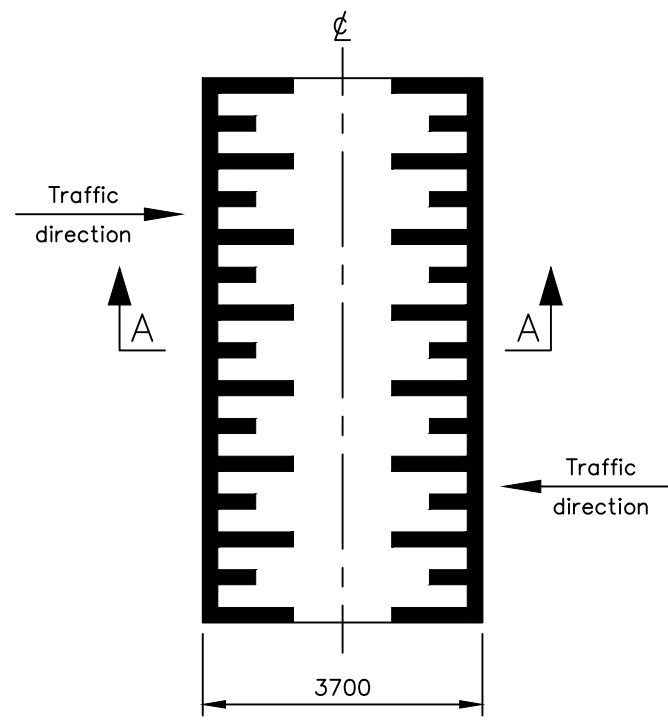
FLAT TOP HUMPS
SECTION A - A
SCALE 1 : 25



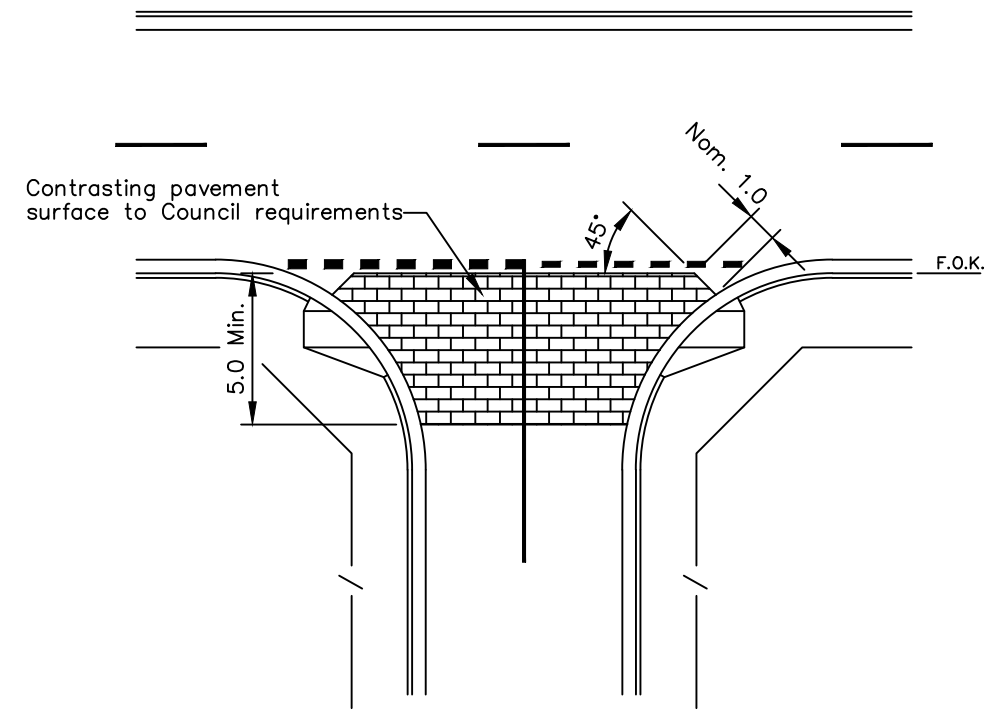
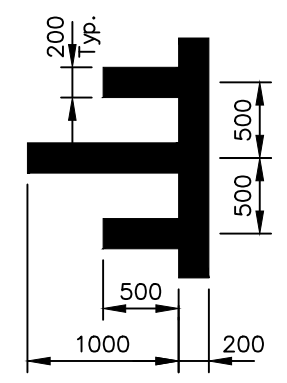
WATTS PROFILE HUMPS
SECTION A - A
SCALE 1 : 25

TABLE 1

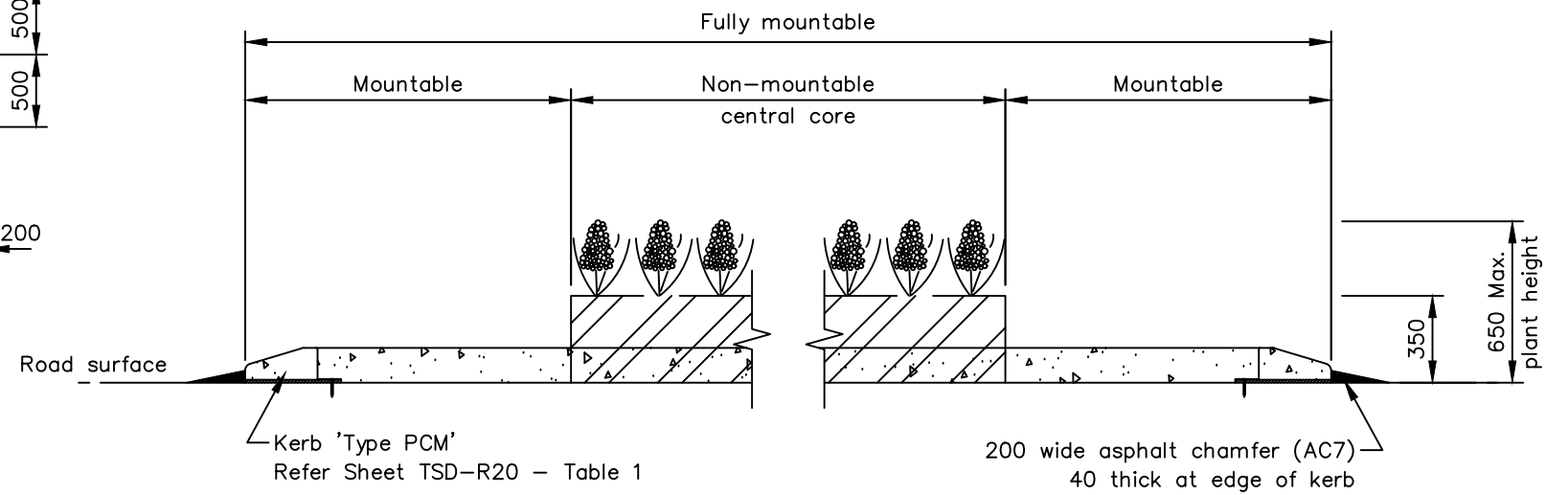
L (m)	H (mm)
0.0	100
0.1	100
0.2	99
0.3	97
0.4	95
0.5	93
0.6	90
0.7	86
0.8	81
0.9	76
1.0	71
1.1	65
1.2	58
1.3	51
1.4	43
1.5	34
1.6	25
1.7	16
1.8	5



WATTS PROFILE HUMPS
PLAN - LINE MARKING
SCALE 1 : 100



TYPICAL THRESHOLD TREATMENT
N.T.S.



TYPICAL SECTION THROUGH ROUNDABOUT
N.T.S.

NOTES

1. Refer 'AS.1742.13-2009' for line marking details.
2. Department of State Growth approval is required for all traffic management installations.

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-R21-v2.dwg

REFERENCES

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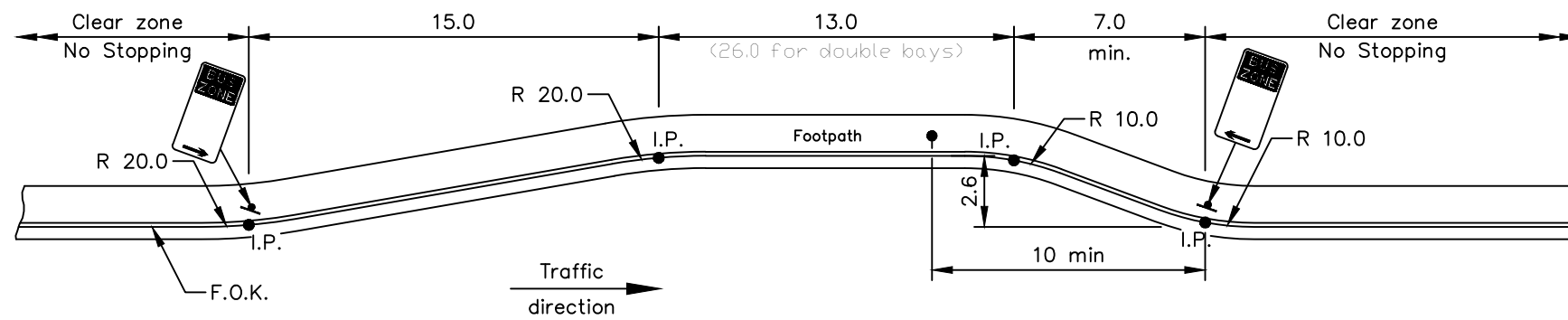
TAS Division
IPWEA
INSTITUTE OF PUBLIC WORKS
ENGINEERING AUSTRALIA

LGAT
Local Government
Association
Tasmania

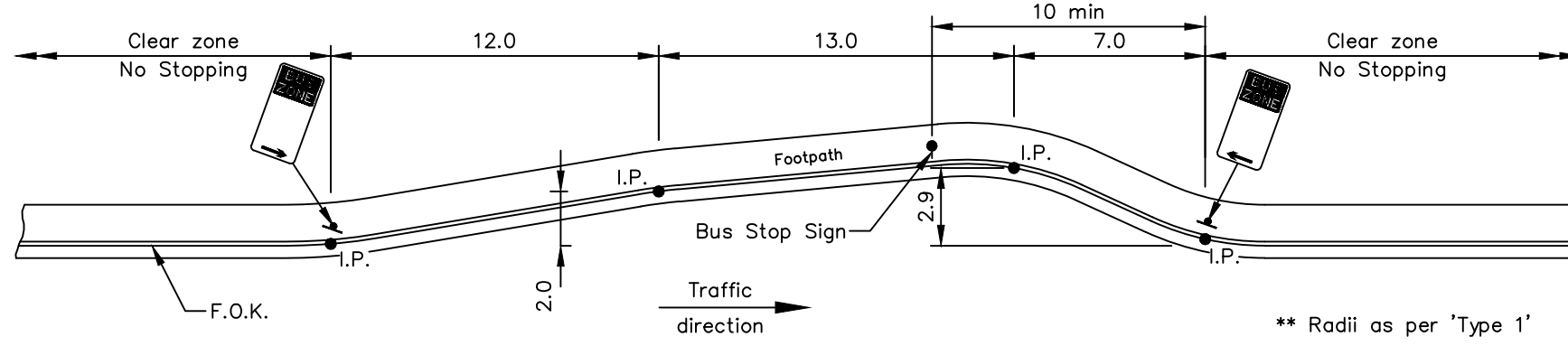
STANDARD DRAWING
ROAD HUMPS, THRESHOLDS
AND ROUNDABOUTS

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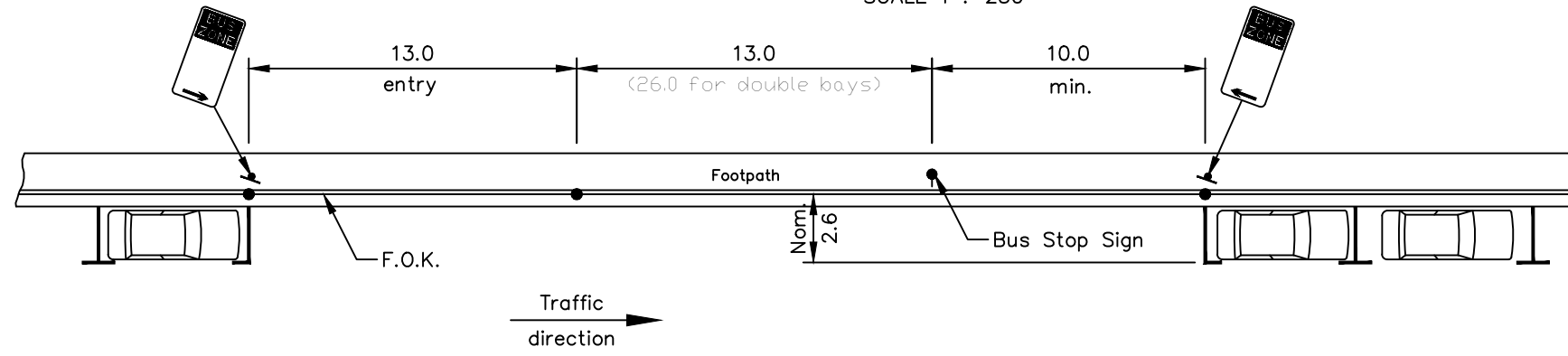


TYPE 1
PARALLEL INDENTED
SCALE 1 : 250

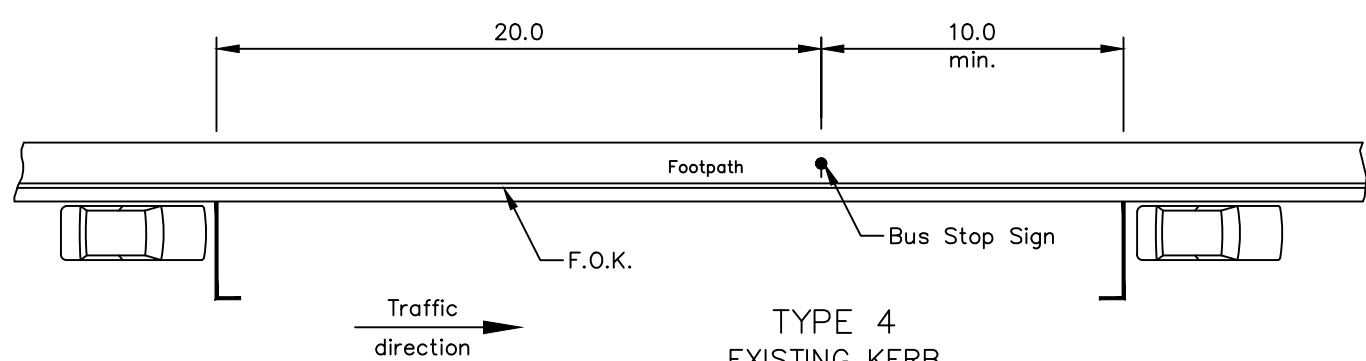


TYPE 2
ANGLE INDENTED
SCALE 1 : 250

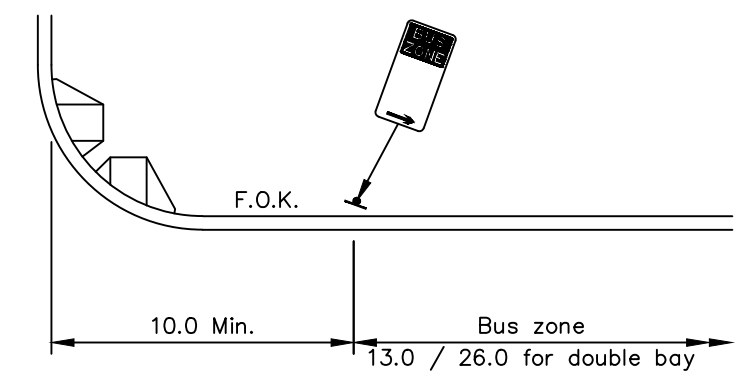
** Radii as per 'Type 1'



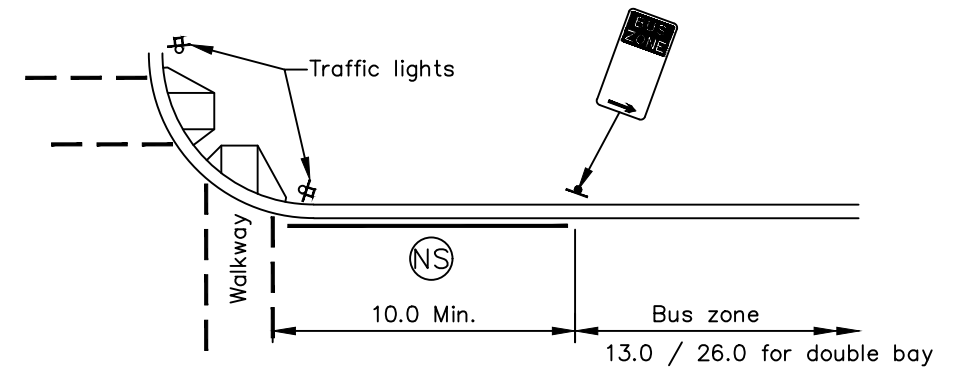
TYPE 3
EXISTING KERB
SCALE 1 : 250



TYPE 4
EXISTING KERB
SCALE 1 : 250



UNSIGNALISED
INTERSECTION
N.T.S.



SIGNALISED
INTERSECTION
N.T.S.

NOTES

1. Refer Sheet TSD-R24 for bus bay signage requirements.
2. Dimensions of bays are designed to allow a 12.5 metre 'Metro' Accessible bus to stop parallel with the kerb.

SCALES: AS SHOWN
(All scales are correct at A3)

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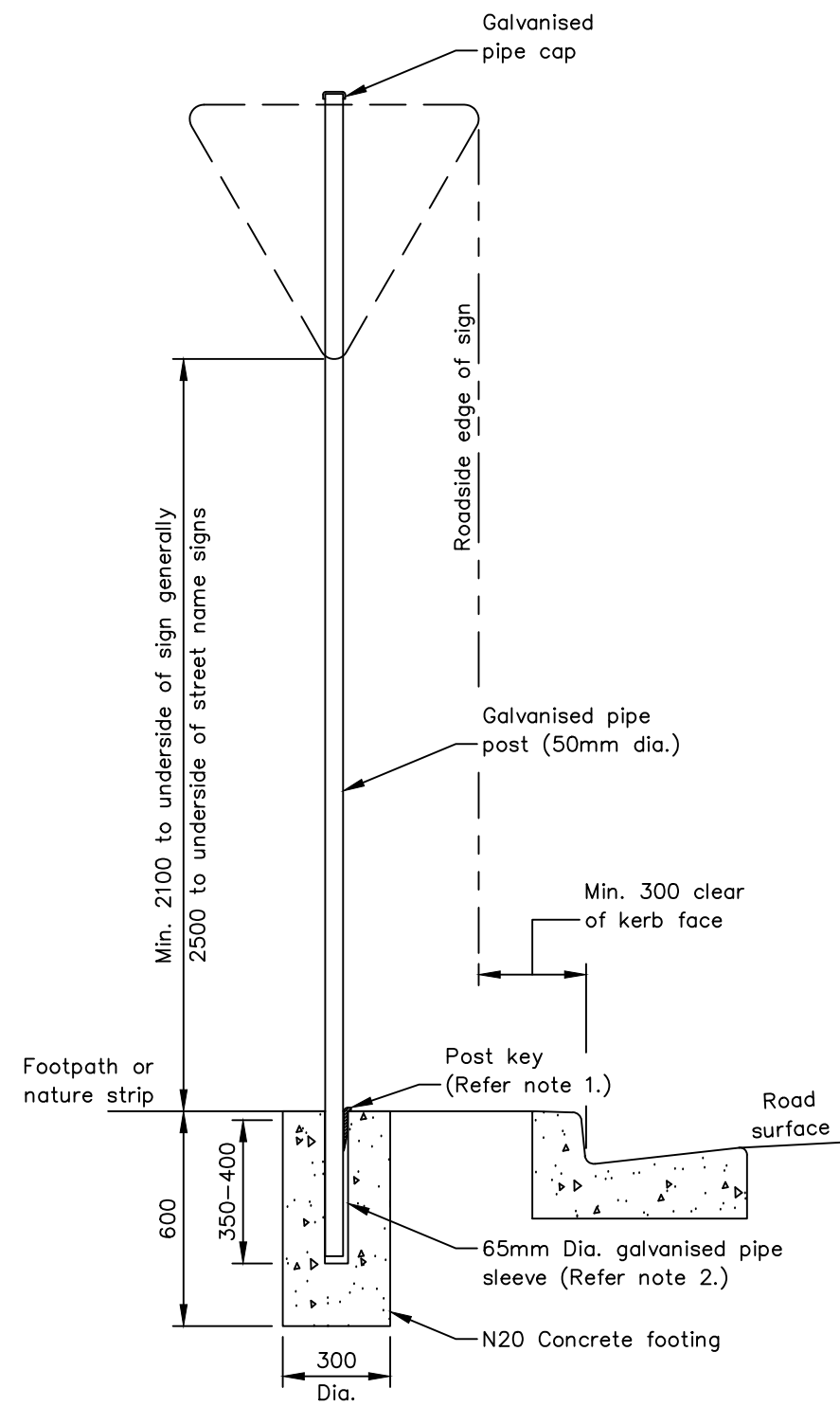
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LGAT Local Government Association Tasmania

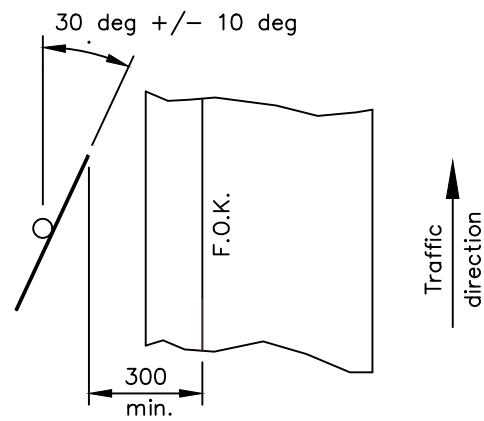
STANDARD DRAWING
GUIDE TO BUS BAYS

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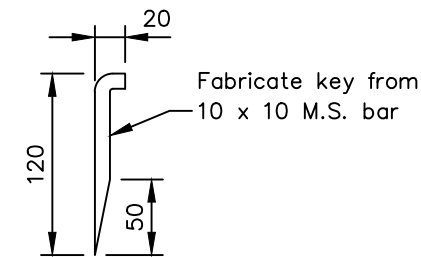
ISSUE DATE: 28-04-2020 DWG No. TSD-R22-v2



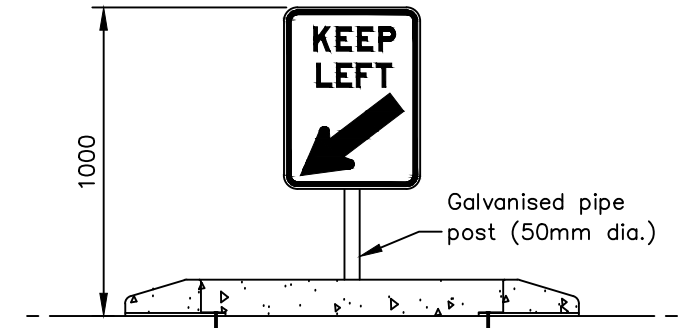
TRAFFIC / PARKING SIGNS
SCALE 1 : 20



PLAN VIEW
KERBSIDE PARKING SIGNS
SCALE 1 : 20



POST KEY
SCALE 1 : 5



TRAFFIC ISLANDS
SCALE 1 : 20

Height and placement maybe dependant on vertical alignment of road.
Approval of specific instances by D.I.E.R. and the General Manager's
delegated officer.

NOTES

1. Place key on the kerbside face of the post clear of pedestrian traffic.
2. Install post sleeves flush with the footpath / nature strip.

SCALES: AS SHOWN
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STANDARD DRAWING

SIGNS

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TSD-R23-v2

CODE

PURPOSE

LINE MARKINGS / SIGNAGE

LINE WIDTH (mm)

RESPONSIBILITY

NS

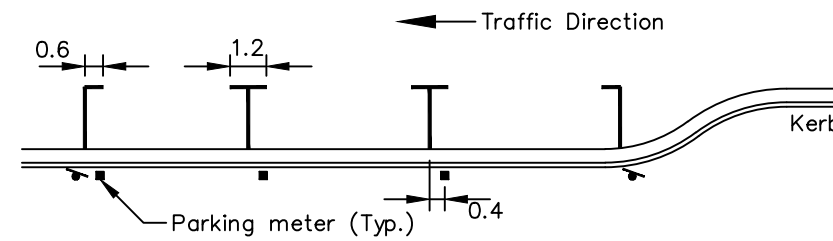
NO STOPPING (All vehicles)
Yellow paint



100

PM

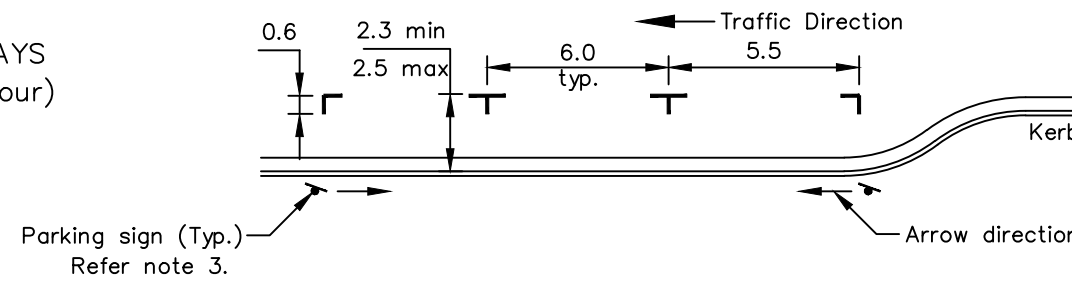
METERED PARKING BAYS
White paint



100

PT

'TIME LIMITED' PARKING BAYS
(Non metered - e.g. 2 Hour)
White paint

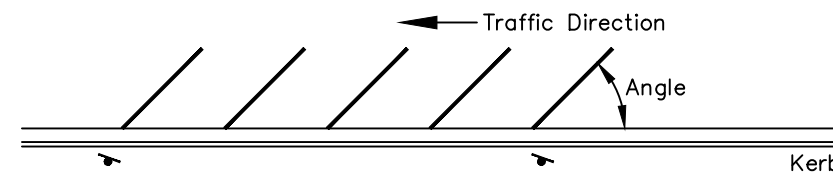


100

Local Council

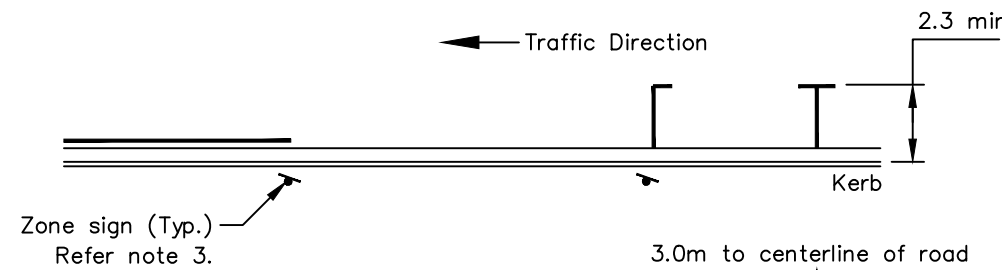
PA

ANGLED PARKING BAYS
White paint

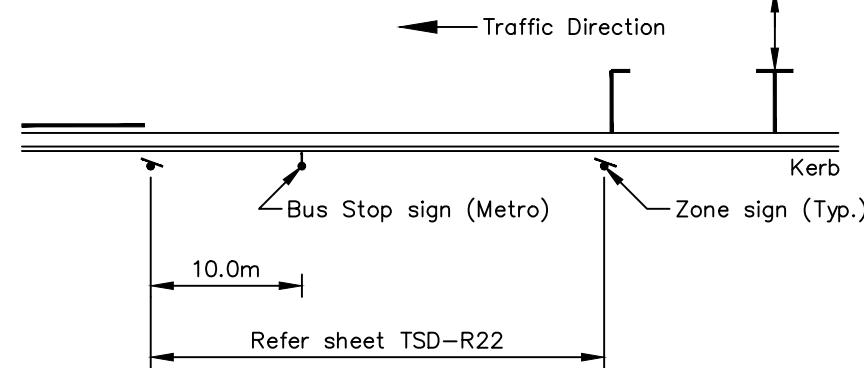


100

SPECIFIC USE ZONES
(e.g. Loading, Taxi, Truck)
Signs only



BUS ZONES
Signs only



Zone signs - Local Council
Bus Stop sign - Metro

NOTES

1. Define bays in 'Time Limited' parking bays ONLY where specified.
2. Provide nominal 100mm gap between line and edge of seal.
3. Provide signs with closed arrows each end of parking area or zone.
4. Refer Sheet TSD-R23 for sign installation details.
5. Refer AS.2890.5-1993 for parallel and angled parking bay setout unless specified on the project drawings.

SCALES: AS SHOWN
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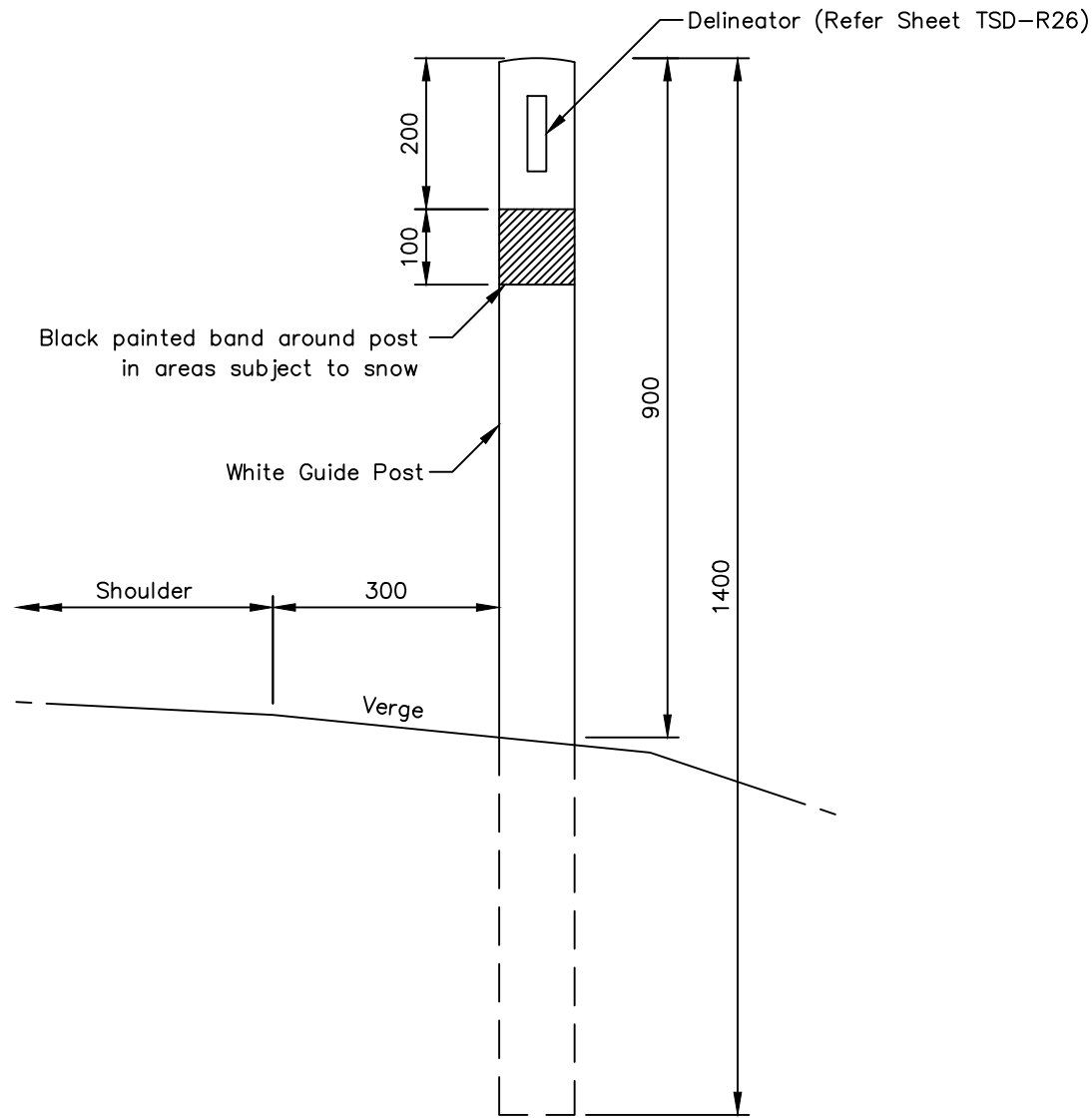


STANDARD DRAWING
LINE MARKING
PARKING CONTROL AND SIGNAGE

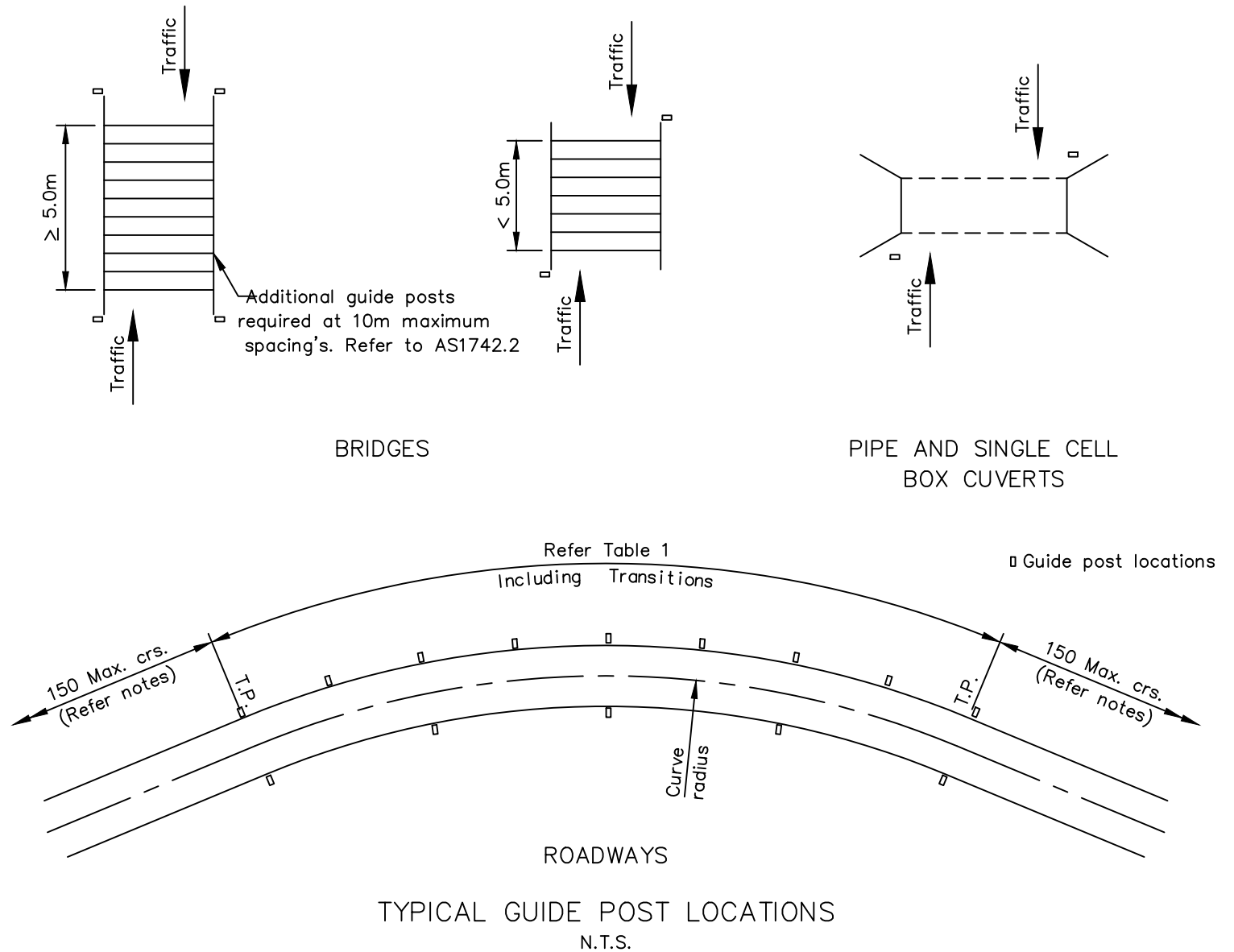
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GUIDE POST
SCALE 1 : 10



TYPICAL GUIDE POST LOCATIONS
N.T.S.

TABLE 1

CURVE RADIUS (m)	SPACING (m)	
	OUTSIDE OF CURVE	INSIDE OF CURVE
< 100	6	12
100 – 199	10	20
200 – 299	15	30
300 – 399	20	40
400 – 599	30	60
600 – 799	40	60
800 – 1199	60	60
1200 – 2000	90	90
> 2000 Incl. straights	150	150

NOTES

- Locations for straight sections
 - Spacing of guide posts shall generally be 150m with the posts in pairs (i.e. One each side of the road). Reduce the spacing to 60m in areas subject to frequent fog.
- Locations (Horizontal Curves)
 - Refer Table 1 for spacing of guide posts on curves.
 - Locate first post at the tangent point (T.P.) – Refer plan.
 - Posts on the inside of a curve shall be located opposite posts on the outside of the curve, wherever practicable, commencing at the tangent point.
- General
 - Refer to 'Part 8 Austroads–Traffic Management. (2008)' for further details as required.
- Guide posts to be erected at culverts endwalls.

SCALES: AS SHOWN
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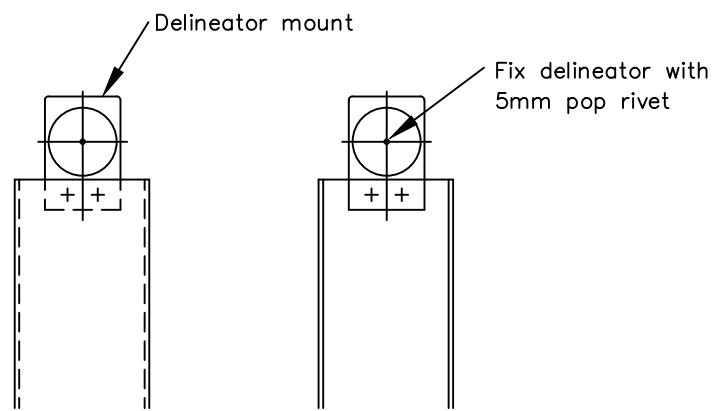


STANDARD DRAWING
GUIDE POSTS

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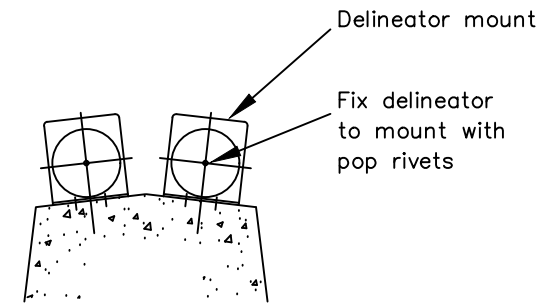
TSD-R25-v2



TYPE 2

SAFETY BARRIER

(Only Type 2 delineators used on Safety Barrier)



NEW JERSEY BARRIER

(Only Type 2 delineators used on New Jersey Barrier)

INSTALLATION

ROAD TYPE	DELINEATOR TYPE	COLOUR	
		LEFT	RIGHT
one way	1	red	white
two way	1	red	white
one way	2	red	yellow
two way	2	red	white

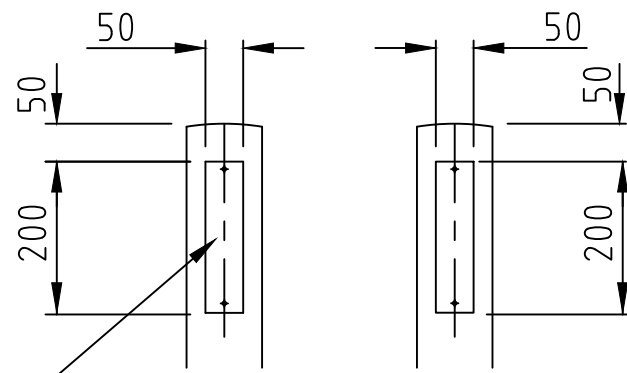
SPACING

SAFETY BARRIER – Delineators required on tangent point post of flare, then in accordance with table:

ROAD CURVATURE	GUARD FENCE TYPE	
	STEEL BEAM	POST & CABLE
Straight or radius > 300m	32m	33m
Radius from 150m – 300m	20m	21m
Radius < 150m	8m	7.5m or 9m

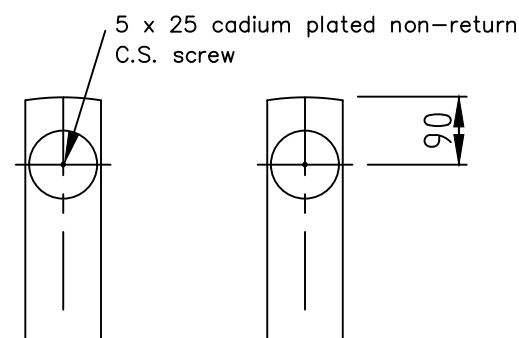
NOTE – Spacings to be halved for Type 1 delineators installed on curved surfaces.

GUIDE POSTS – Delineators required on all guide posts.



26g G.I. delineator backing plate fixed to posts.

TYPE 1



TYPE 2

DELINEATORS

TYPE 1 – Pressure sensitive retroreflective material in accordance with Class 1A, AS1906. 200x50 on reboundable guide posts.

TYPE 2 – Corner cube reflector Type A, AS1906.

GUIDE POSTS

SCALES: AS SHOWN
(All scales are correct at A3)

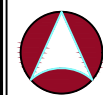
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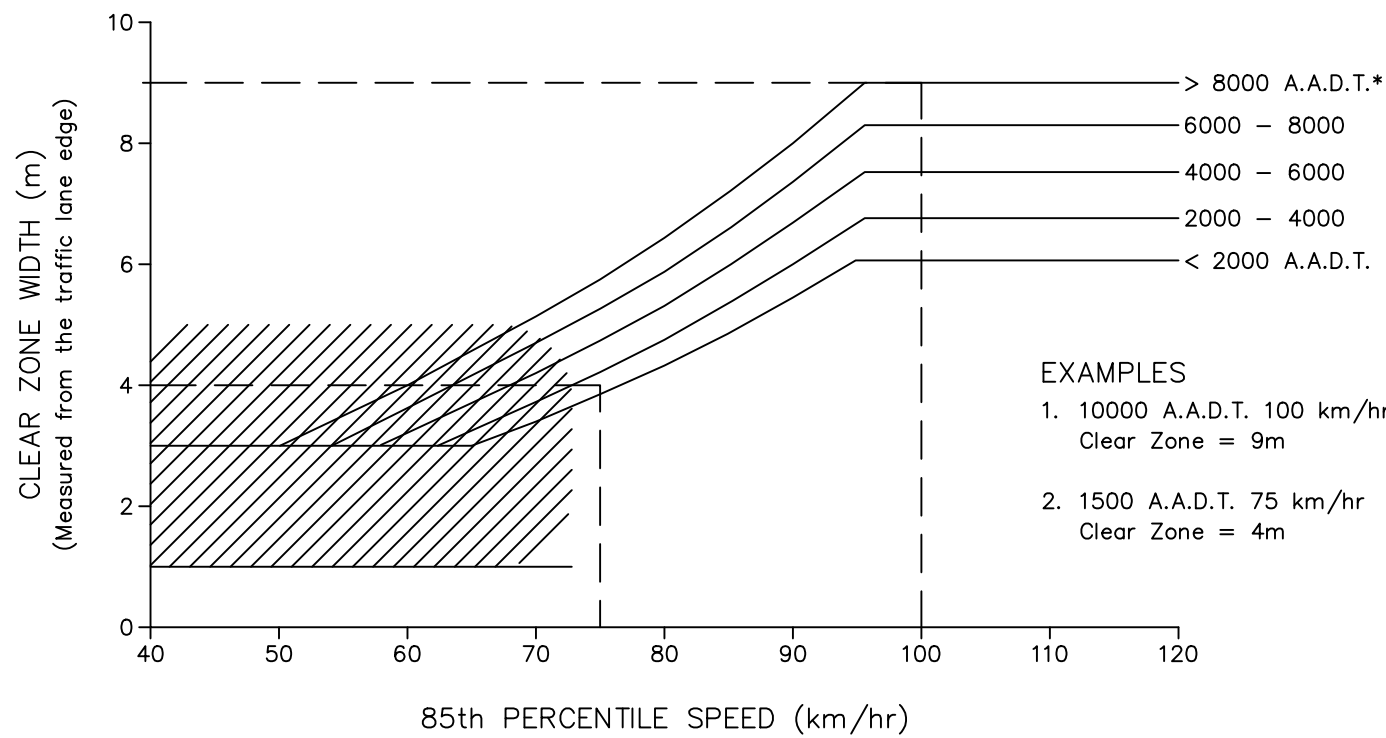
DELINEATORS

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EXAMPLES
 1. 10000 A.A.D.T. 100 km/hr
 Clear Zone = 9m
 2. 1500 A.A.D.T. 75 km/hr
 Clear Zone = 4m

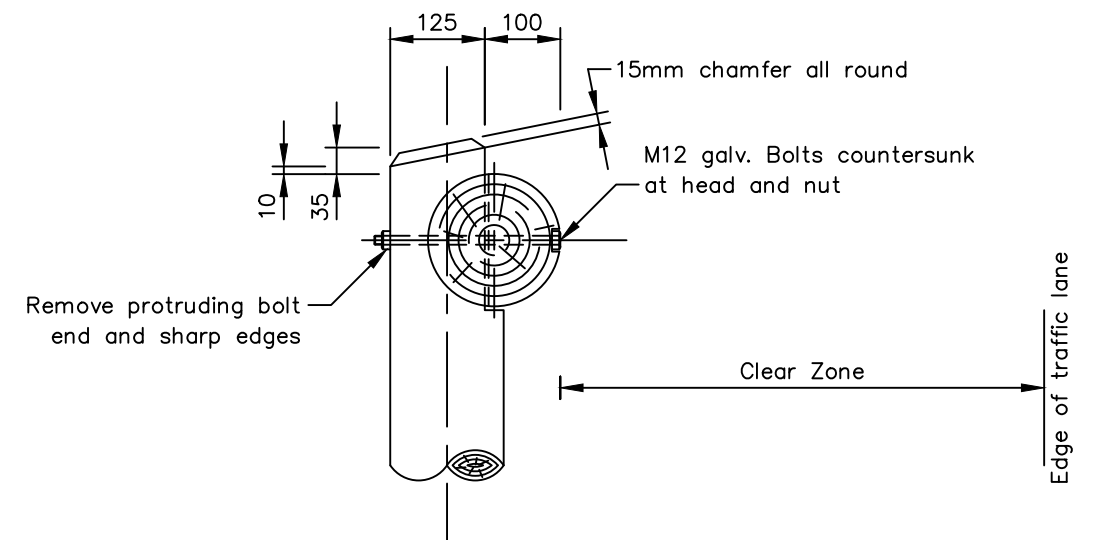
In low speed urban environments, a minimum clear zone 1.0m wide may be accepted to achieve an appropriate balance between traffic safety and other aesthetic considerations.

* A.A.D.T. - Average Annual Daily Traffic (Two way)

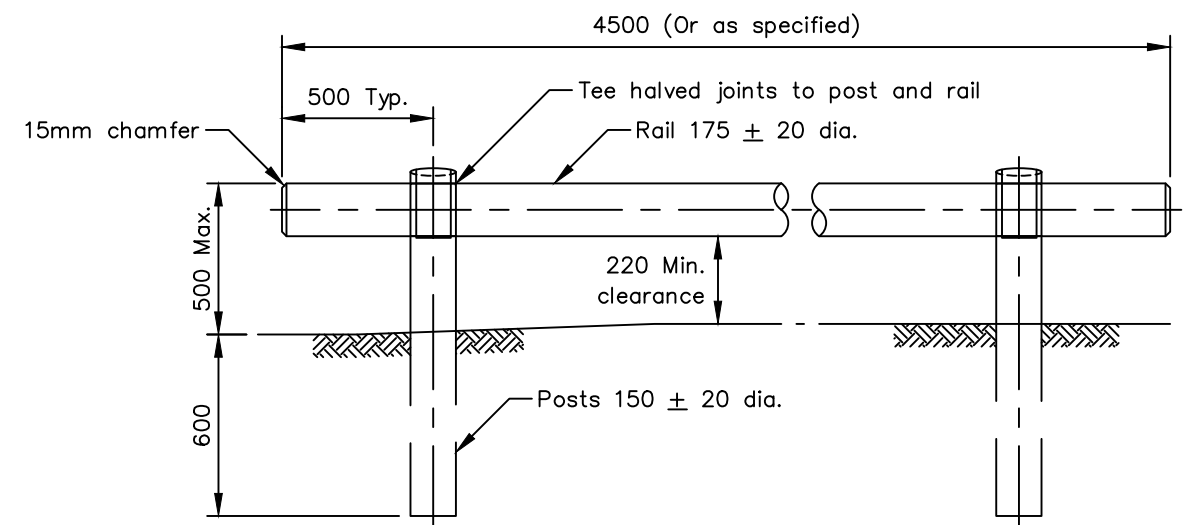
FIGURE 1

NOTES

- The clear zone is measured from the edge of the traffic lane. Shoulders and verge areas are included as part of the clear zone.
- The desirable clear zone widths should be doubled on the outside of curves with a radii of 600m or less, and when measuring clear zones the width of embankment slopes greater than 3 : 1 should not be included.



JOINT DETAIL
N.T.S.



ELEVATION
SCALE 1 : 25

NOTES

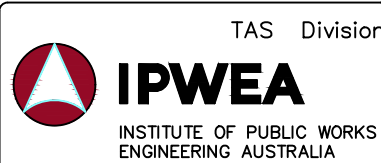
- Treated pine to comply with 'AS.1604-1997' (Timber - Preservative Treated - Sawn and Round)

SCALES: AS SHOWN
(All scales are correct at A3)

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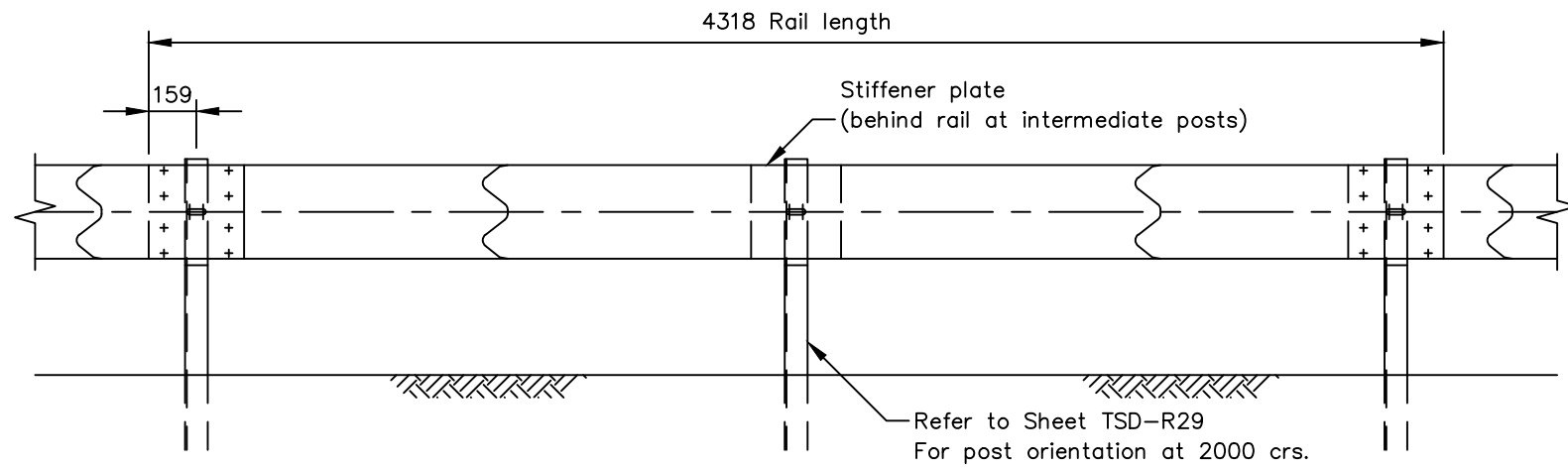


STANDARD DRAWING
CLEAR ZONE
TREATED PINE FENCE

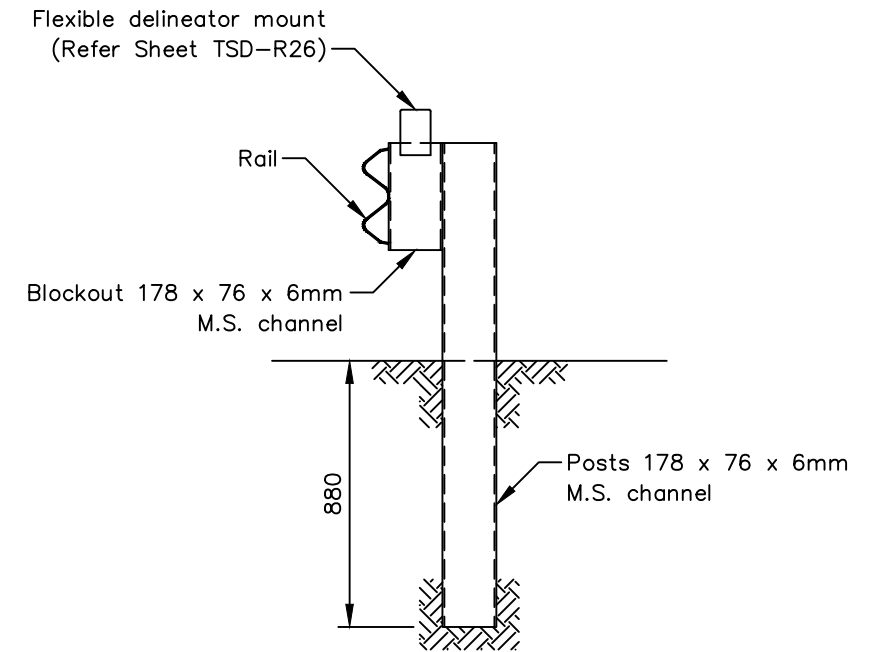
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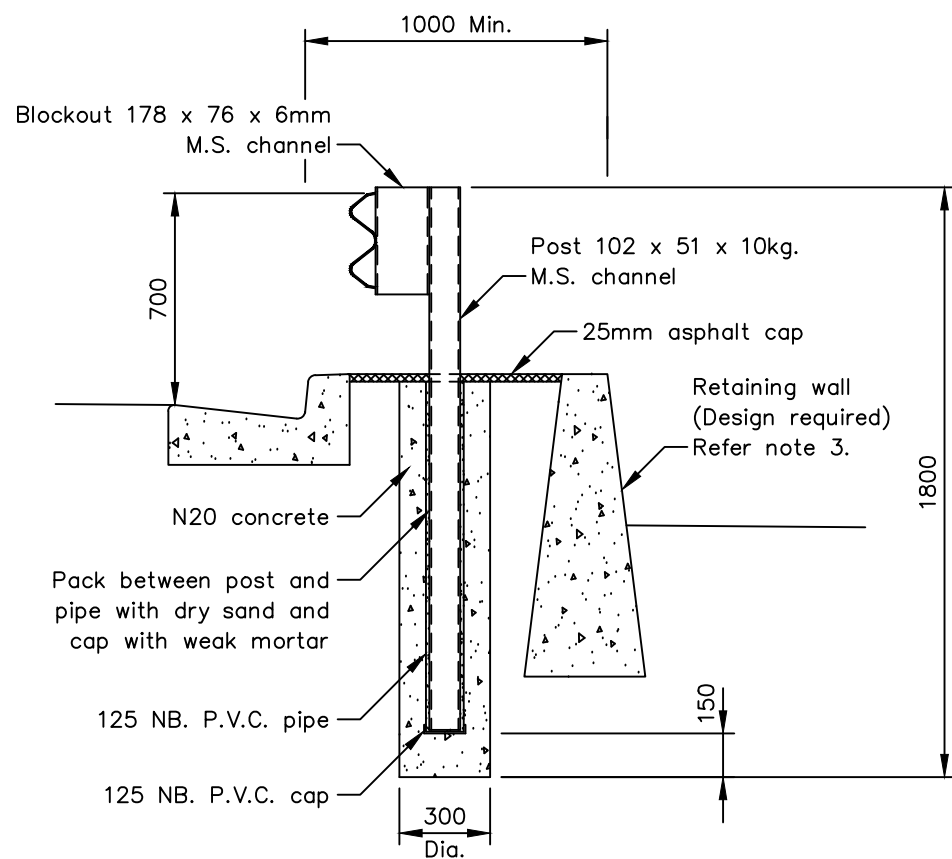
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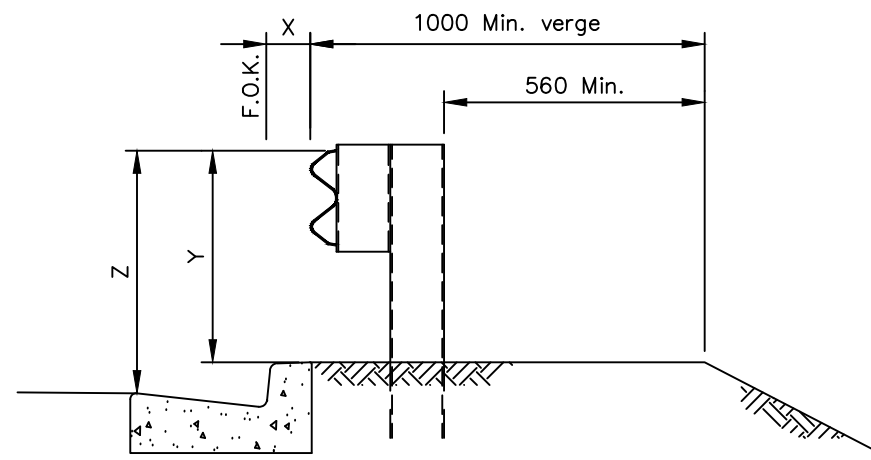
ELEVATION
SCALE 1 : 25



TYPICAL SECTION
SCALE 1 : 25

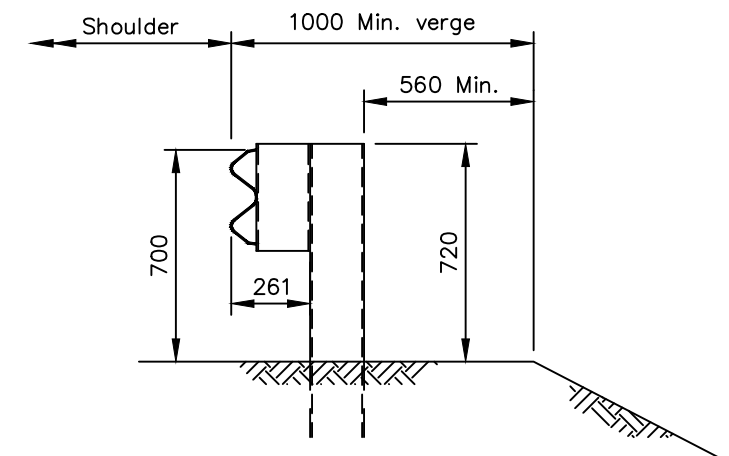


INSTALLATION
(BETWEEN KERB AND RETAINING WALL)
SCALE 1 : 25



	REFERENCE SURFACE		
	T.O.K.	Y	Pavement Edge
Type KC	≤ 150mm	-	700
Type KC	> 3.0m	700	-
Type KCM	2.5m	700	-

INSTALLATION
(ADJACENT TO KERB)
SCALE 1 : 25



INSTALLATION
(ADJACENT TO SHOULDER)
SCALE 1 : 25

NOTES

1. Refer to Austroads AGRD-10 Part 6: Roadside Design, Safety and Barriers
2. Hot dip galvanise all components.
3. The design for the retaining wall shall make provision for the support requirements of the guard rail.

SCALES: AS SHOWN
(All scales are correct at A3)

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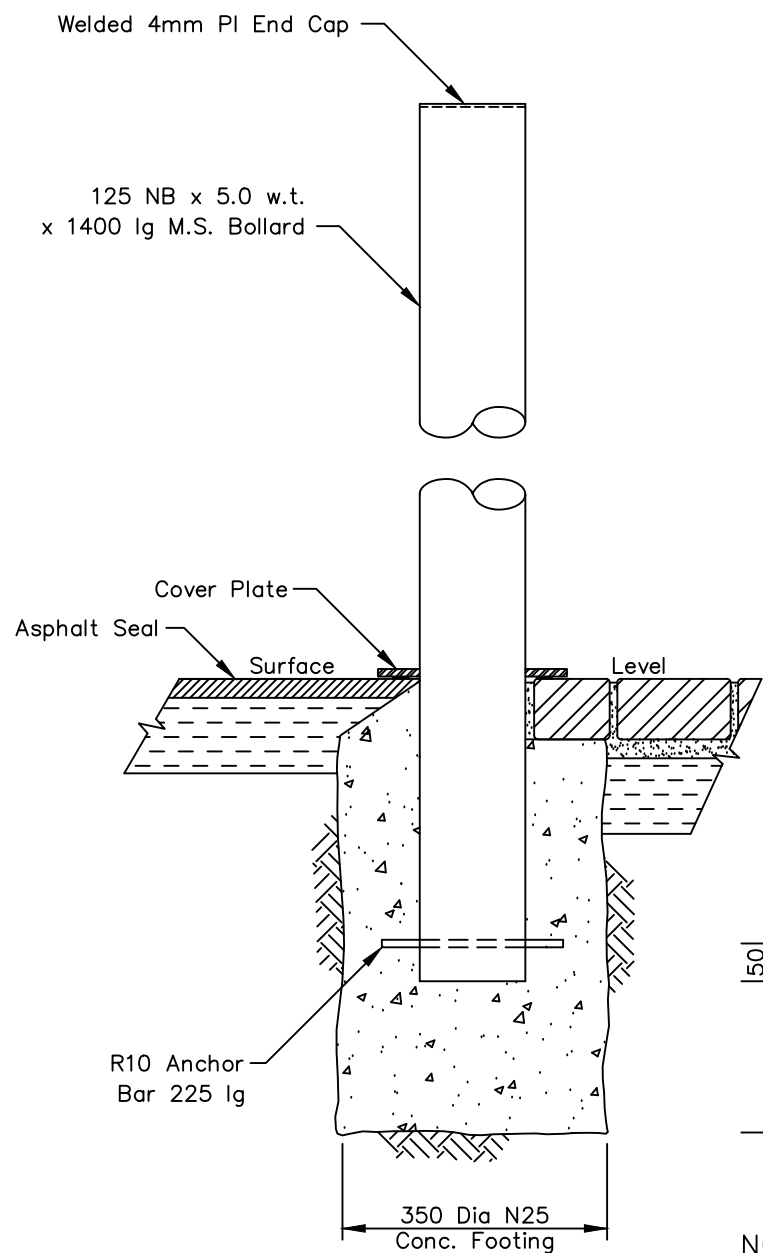
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Association
Tasmania

STANDARD DRAWING
W-BEAM
INSTALLATION DETAILS

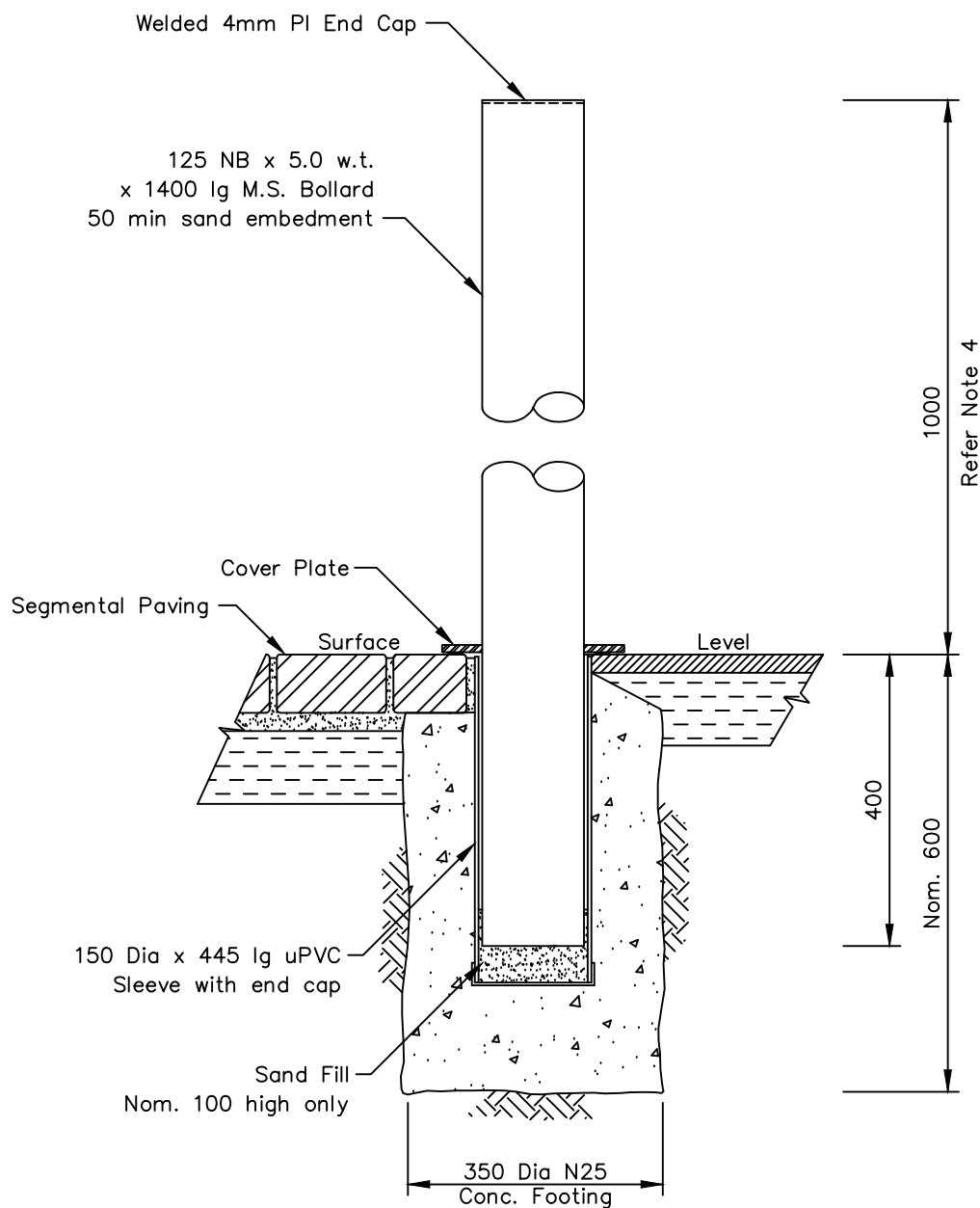
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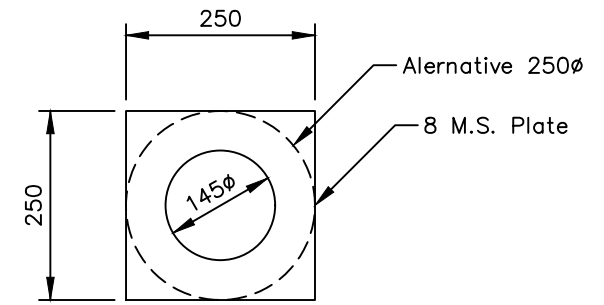
TSD-R28-v2



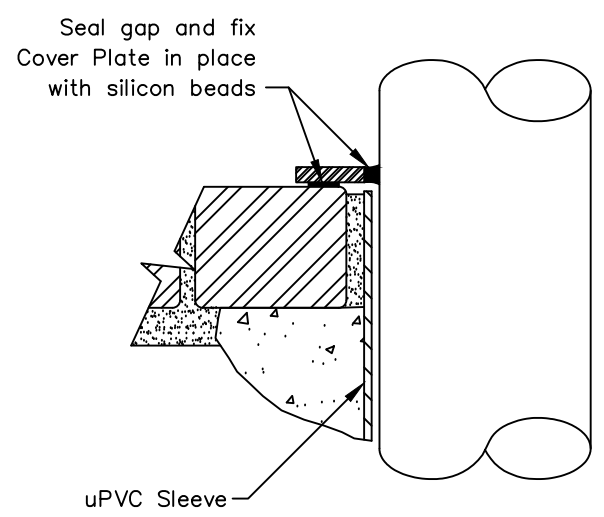
**TYPE F
(FIXED)**
1 : 10



**TYPE R
(REMOVEABLE)**
1 : 10



COVER PLATE
1 : 10



**COVER PLATE FIXING DETAIL
(TYPE R SHOWN)**
1 : 5

NOTES

1. All bollards may be modified to utilise the various footing options. Only use the 'Base Plate' option on concrete paved areas.
2. Welds – 5mm continuous fillet, unless noted otherwise.
3. Bollard finishes
 - Surface preparation (typical)
 - Galvanised – Section (typical)
 - Powder Coating – Complying with AS.4506 / AS.3715.
 - Paint – 1 Coat zinc rich epoxy primer.
 - 1 Coat external epoxy (gloss) top coat.
 - Specify colour to AS.2700.
4. If a bollard is located at the end of a parking space it shall be at least 1300mm high

SCALES: AS SHOWN
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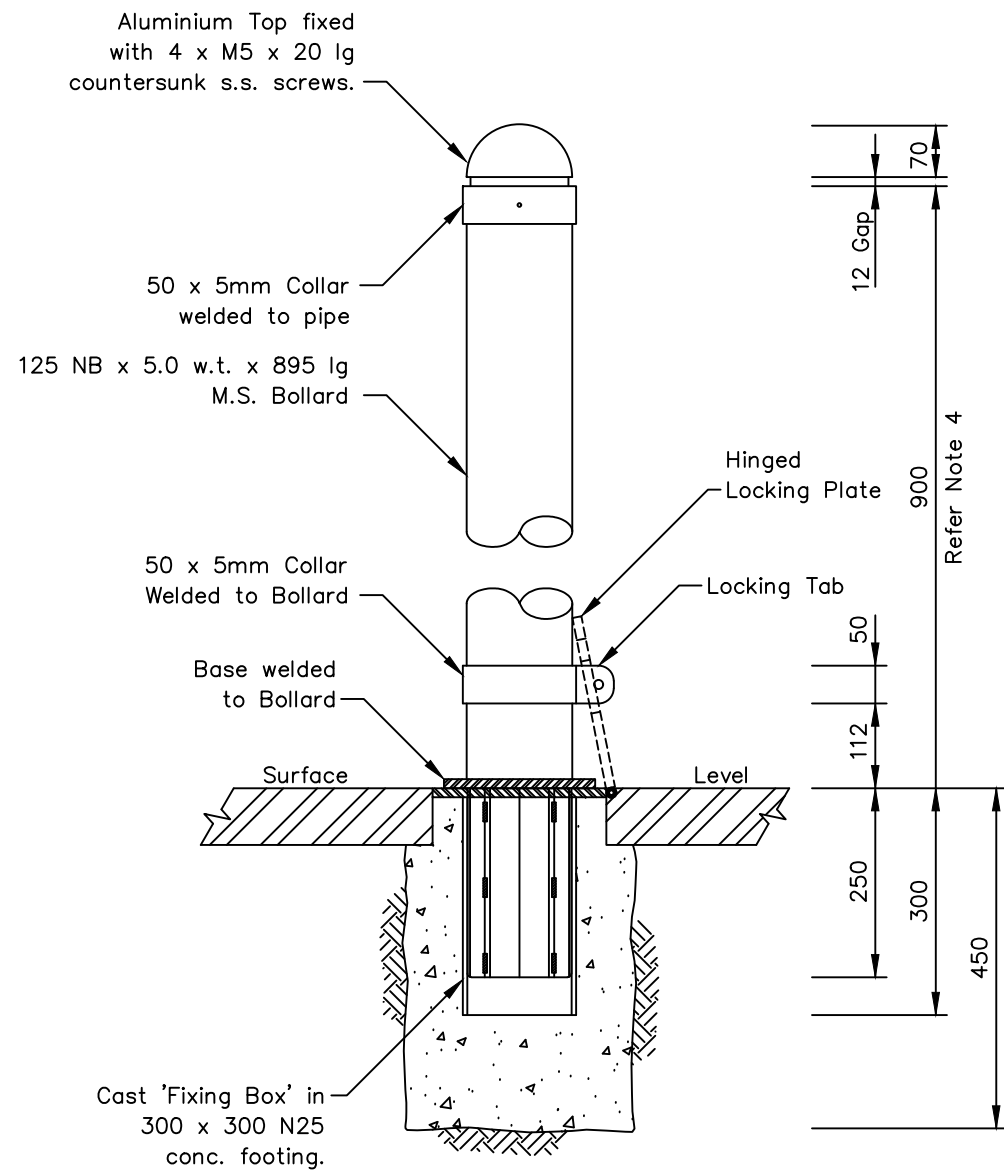
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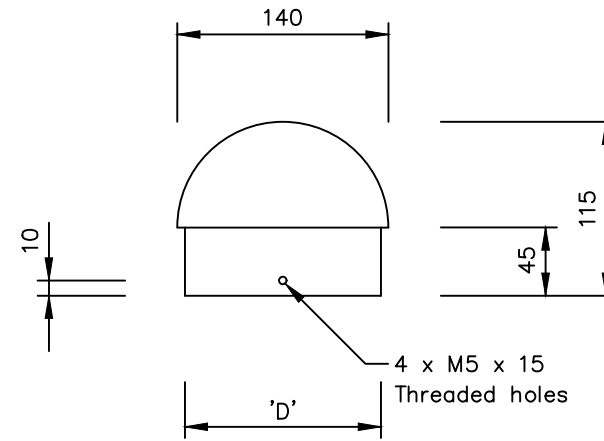
STANDARD DRAWING
BARRIERS / GUARD RAIL
RIGID BOLLARDS

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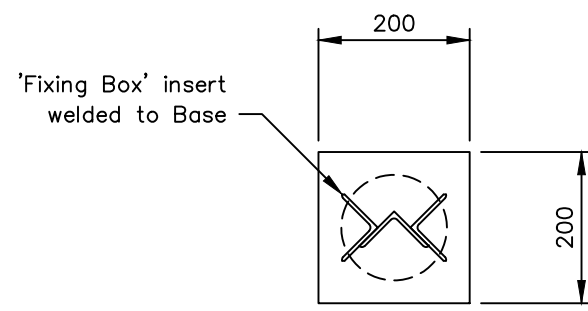
ISSUE DATE: 28-04-2020 DWG No. TSD-R31-v2



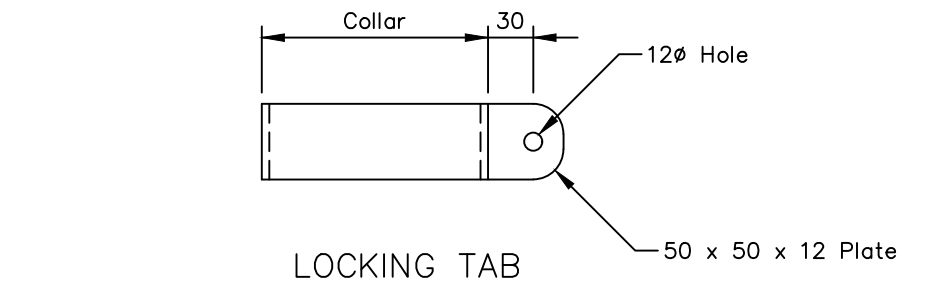
**TYPE L
(LOCKABLE)
(Padlock by Others)**
1 : 10



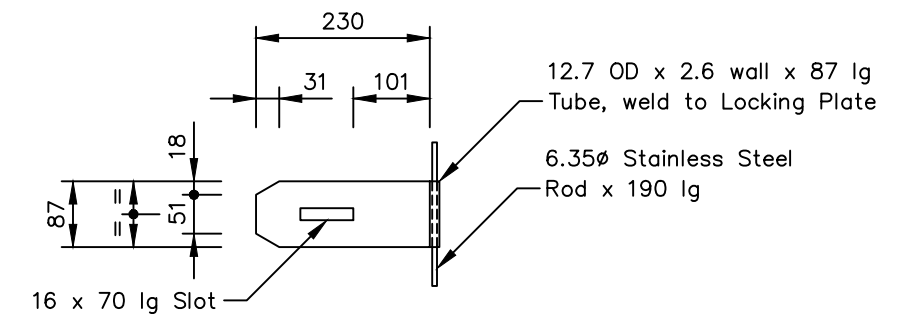
ALUMINIUM TOP (CAST)
(‘D’ to suit press fit in 125 NB Bollard)
1 : 5



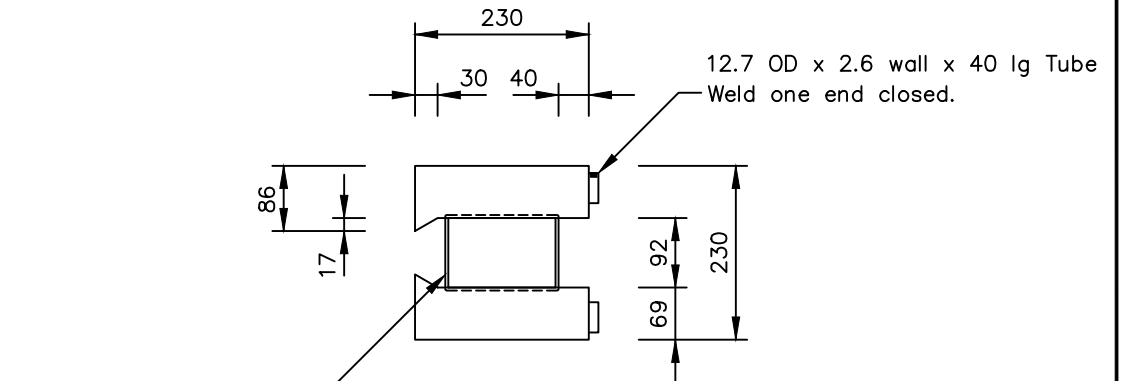
(12mm M.S. Plate)
BOLLARD BASE – TYPE L



LOCKING TAB

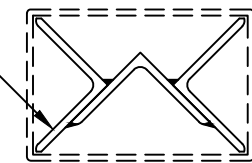


(12mm M.S. Plate)
HINGED LOCKING PLATE – PLAN



(12mm M.S. Plate)
**FIXING BOX – PLAN
(LOCKING PLATE REMOVED)**

3 x 65 x 65 x 5 EA
Provide 2mm clearance
all round to inside of RHS



(All welds 5mm fillet x25 lg at 100 crs)
FIXING BOX INSERT
1 : 5

NOTES

- All bollards may be modified to utilise the various footing options.
- Welds – 5mm continuous fillet, unless noted otherwise.
- Bollard finishes
 - Surface preparation (typical)
 - Galvanised – Section (typical)
 - Powder Coating – Complying with AS.4506 / AS.3715.
 - Paint – 1 Coat zinc rich epoxy primer.
 - 1 Coat external epoxy (gloss) top coat.
 - Specify colour to AS.2700.
- If a bollard is located at the end of a parking space it shall be at least 1300mm high

SCALES: AS SHOWN
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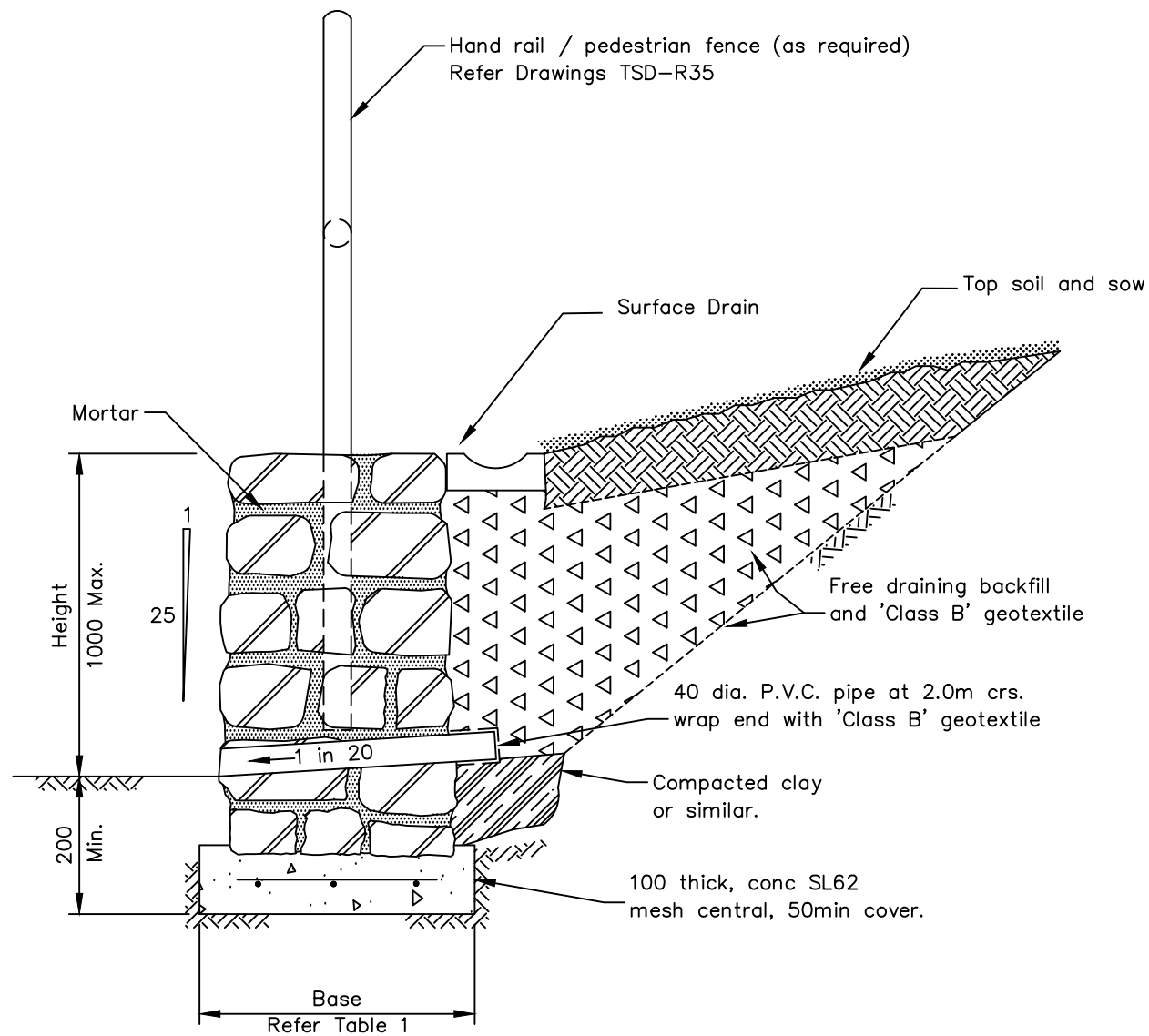


STANDARD DRAWING
BARRIERS / GUARD RAIL
LOCKABLE BOLLARDS

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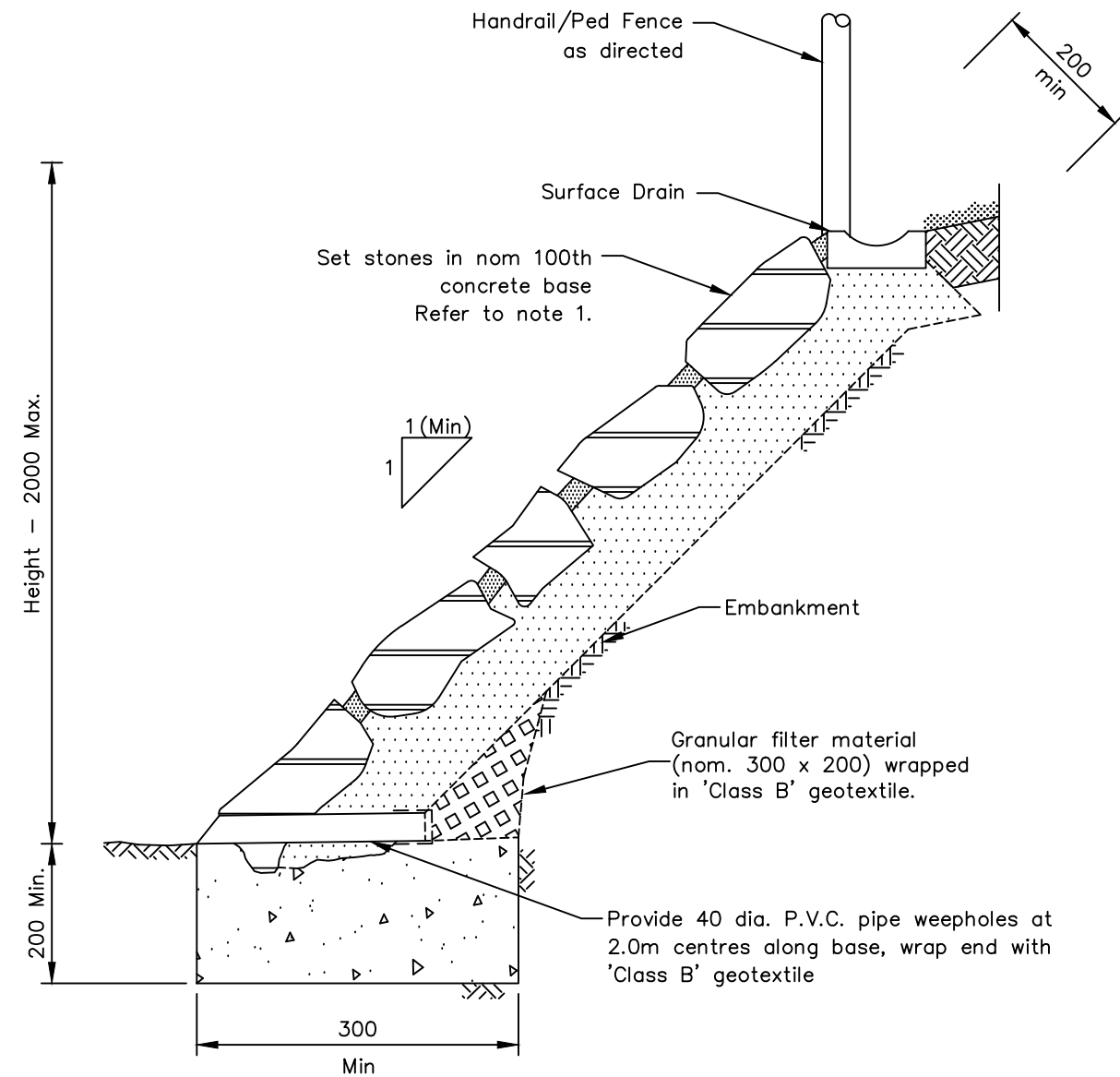
TSD-R32-v2



STONE RETAINING WALL
SCALE 1 : 10
(Grass Embankment Example)

TABLE 1

HEIGHT (mm)	BASE (mm)
0 - 500	350
500 - 1000	500



STONE PITCHING
SCALE 1 : 10

NOTES

1. Stonework – Sound dolerite or basalt, uniform in appearance and composition
Maximum size 200mm x 250mm (face)
Minimum size 100mm x 50mm (face)
2. Concrete – N25
3. Mortar joint mix – 6 sand, 1 cement, 1 lime – Minimum width 10mm, Maximum width 50mm.
Finish mortar joint 3–5mm below face of stones.
4. Remove concrete / mortar staining from stone surface.
5. Place stones randomly to give a uniform appearance.
6. Provide additional drainage for the stone pitched embankment where the water table is high and / or the embankment material is expansive clay, as directed.
7. Provide pipe alternative to drain 'granular filter' or 'free draining' backfill, as directed.

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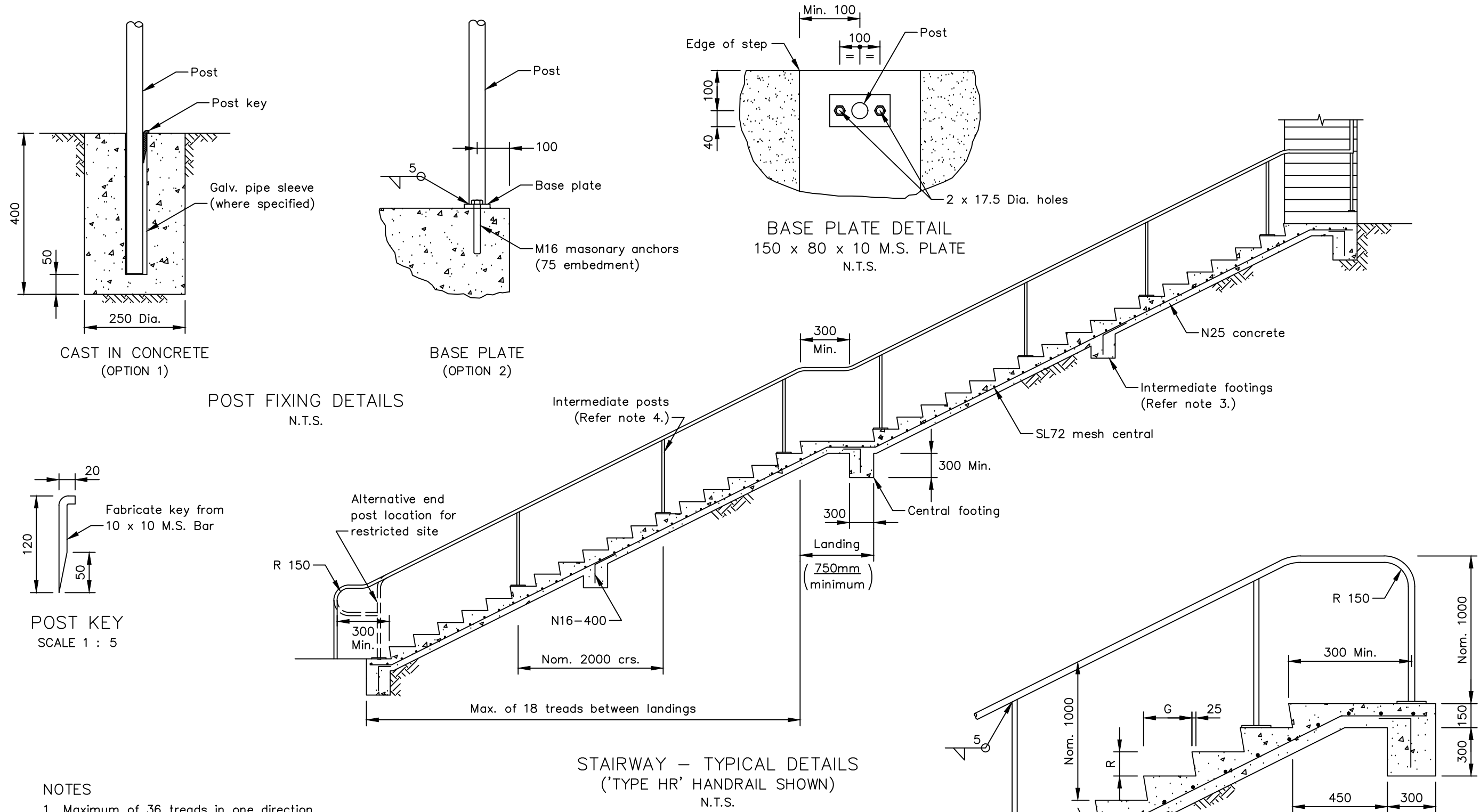


STANDARD DRAWING
STONE WALLS / ROCK PITCHING

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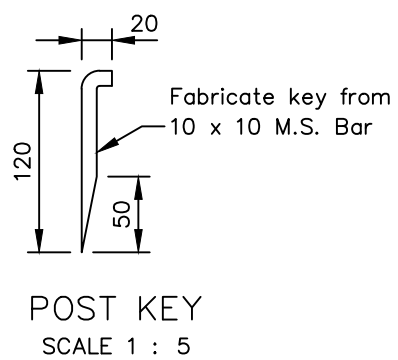
ISSUE DATE: 30-11-2013
DWG No.

TSD-R33-v1



POST FIXING DETAILS
N.T.S.

STAIRWAY - TYPICAL DETAILS
(‘TYPE HR’ HANDRAIL SHOWN)
N.T.S.



- NOTES**
- Maximum of 36 treads in one direction.
 - Minimum stairway width – 1.0m, (900 mm clearway).
 - Delete intermediate footings for less than ten treads between landings.
 - Handrails
 - Handrails required both sides for stairways > 2.0m wide.
 - Pipe bends – R 250 unless noted.
 - Top rail and posts – 40 NB. G.S.T. 2.3 W.T.
 - Intermediate rails – 32 NB. G.S.T. 2.0 W.T.
 - Clean up all welds and remove sharp edges prior to painting with two coats of zinc rich paint.
 - Design to comply with current BCA requirements.

TABLE 1

DIMENSION	MINIMUM	MAXIMUM
G	250*	355
R	115	190
2R+G	550	700

* Desirable min. tread width – 300mm.

SCALES: AS SHOWN
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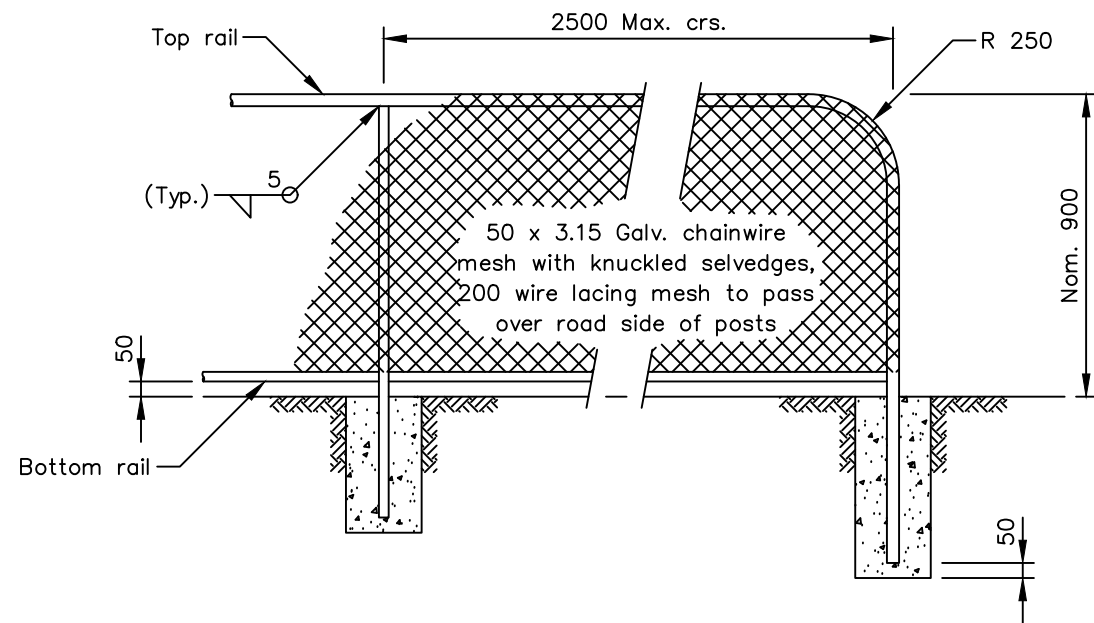
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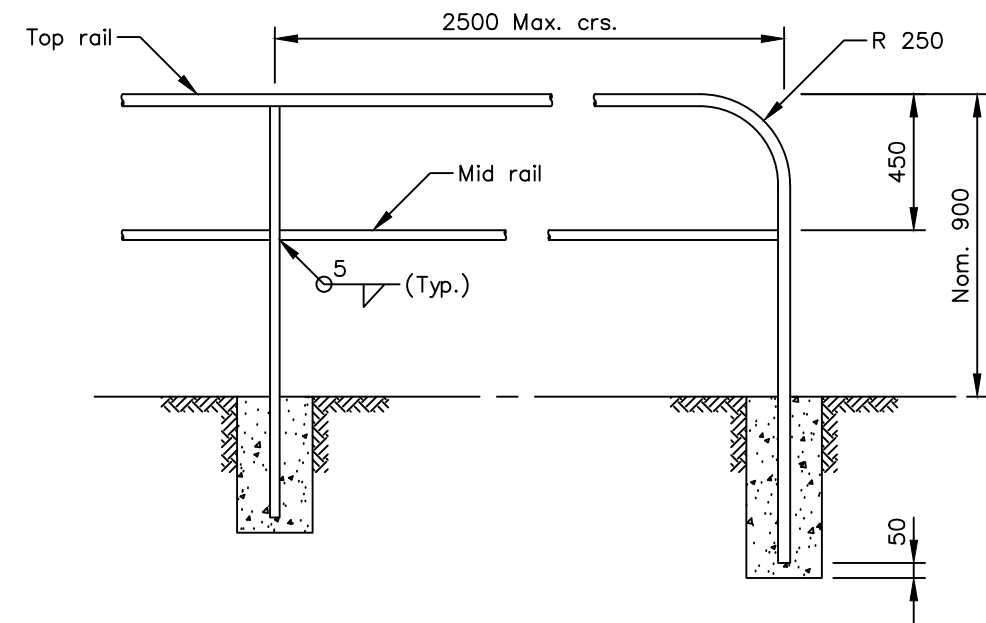
STANDARD DRAWING
STAIRWAY CONSTRUCTION

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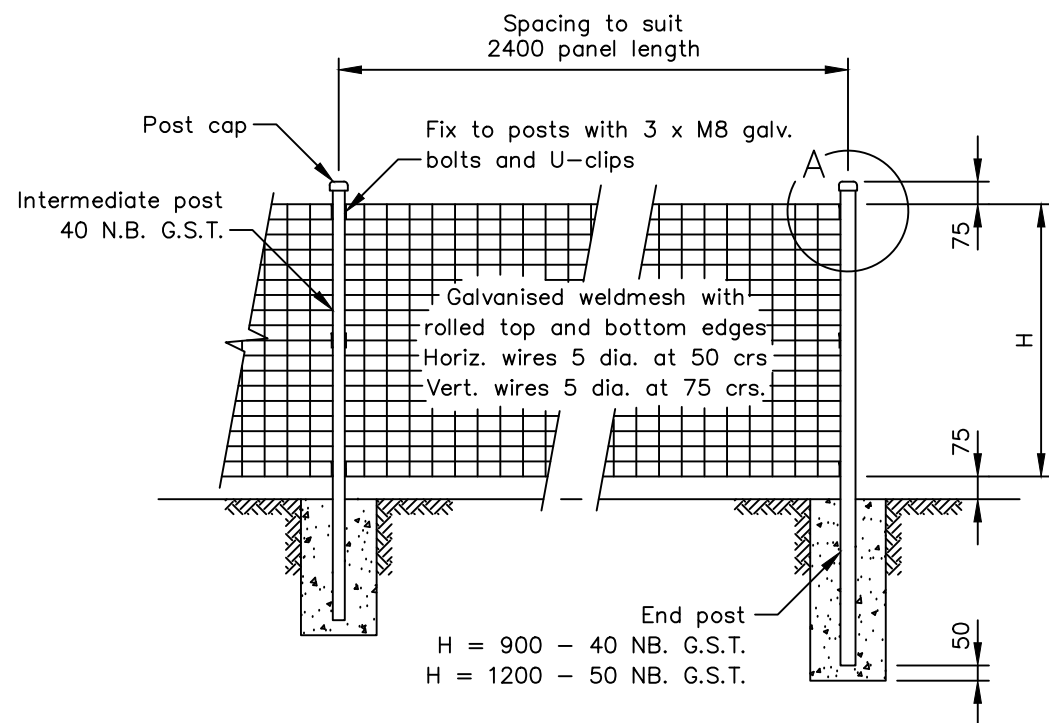
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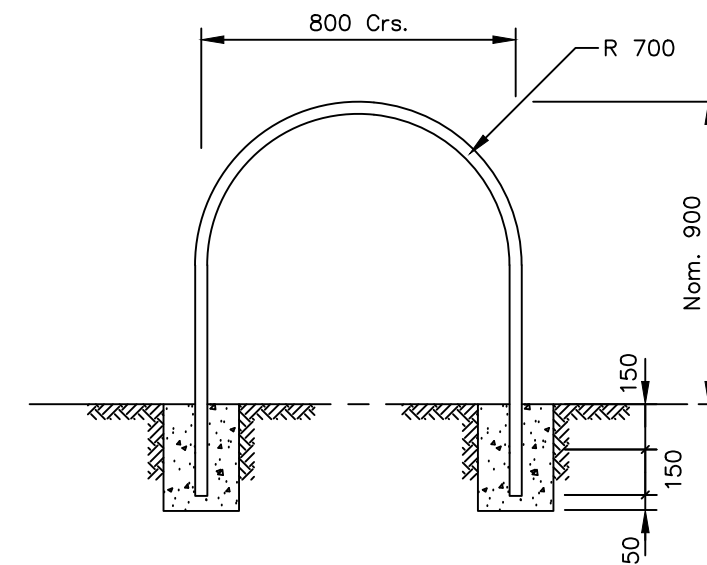
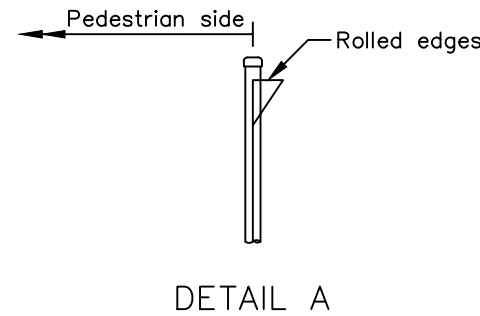
TYPE CM – PEDESTRIAN FENCE



TYPE HRM – HAND RAIL
(TYPE HR – WITHOUT MID RAIL)



TYPE WRT – PEDESTRIAN FENCE
DIMENSION 'H' – SPECIFIED IN PROJECT DRAWINGS (900 / 1200)



CYCLE REST RAIL

NOTES

- Posts
 - Top / bottom rails and posts – 40 NB. G.S.T. 2.3 W.T. unless noted.
 - Mid rails and intermediate posts – 32 NB. G.S.T. 2.0 W.T. unless noted.
 - Clean up all welds and remove sharp edges prior to painting with two coats of zinc rich paint.
 - Do not use galvanised split fittings for hand railing in road reserves.
- Footings
 - All footings – 250mm diameter N20 concrete.
 - End posts – 600mm deep.
 - Intermediate posts – 450mm deep.

SCALES: AS SHOWN
(All scales are correct at A3)

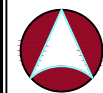
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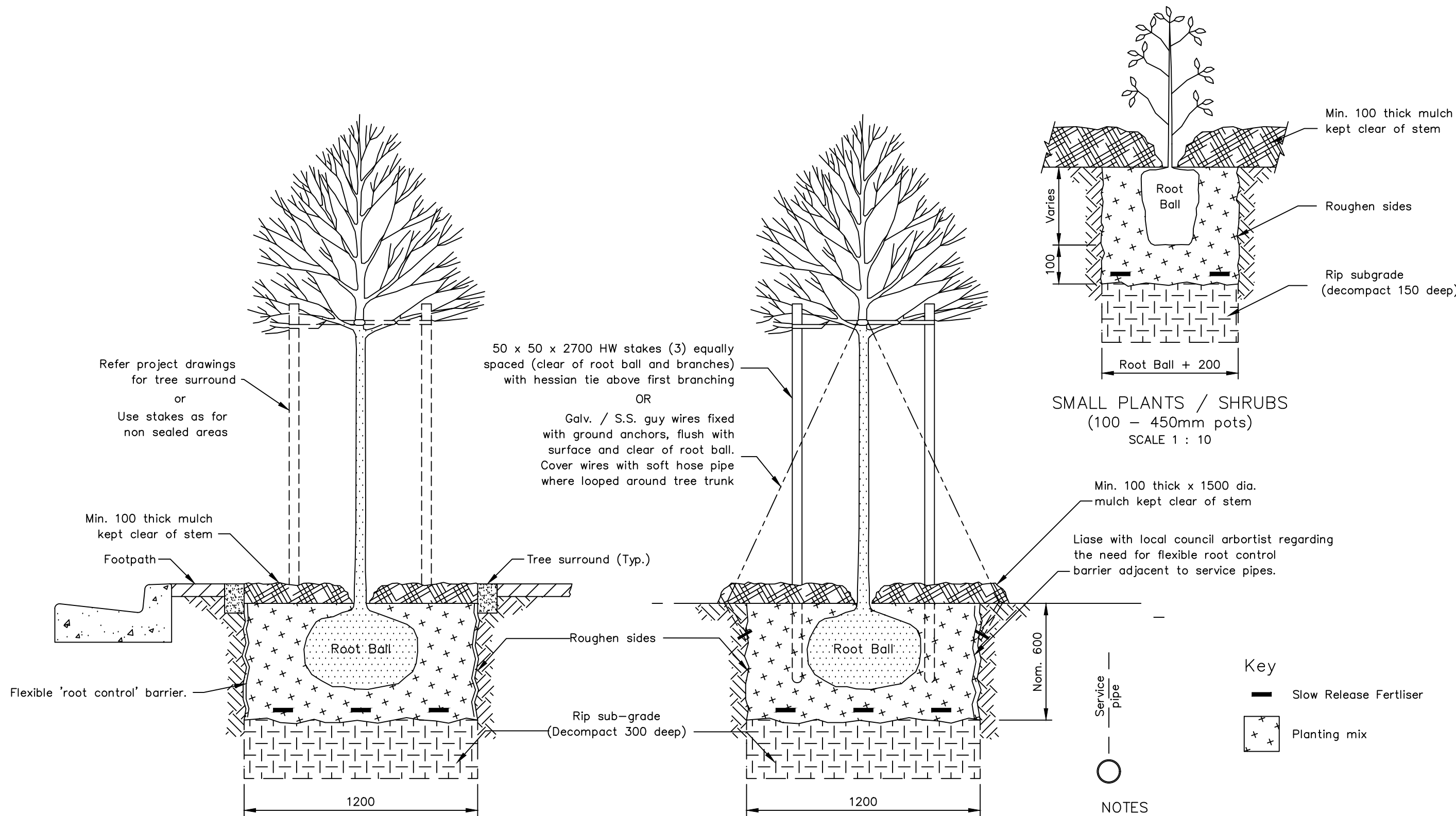


STANDARD DRAWING
PEDESTRIAN FENCES

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ISSUE DATE: 28-04-2020 DWG No.

TSD-R35-v2



Key

- Slow Release Fertiliser
- Planting mix

- NOTES**
1. Liase with superintendent where clay or ground water is encountered during excavation of planting hole.
 2. Tree Supports
 - Trees ≤ 3.0m high – use stakes
 - Trees > 3.0m high – use guy wires
 3. Place plants upright and in centre of hole.


SCALES: AS SHOWN
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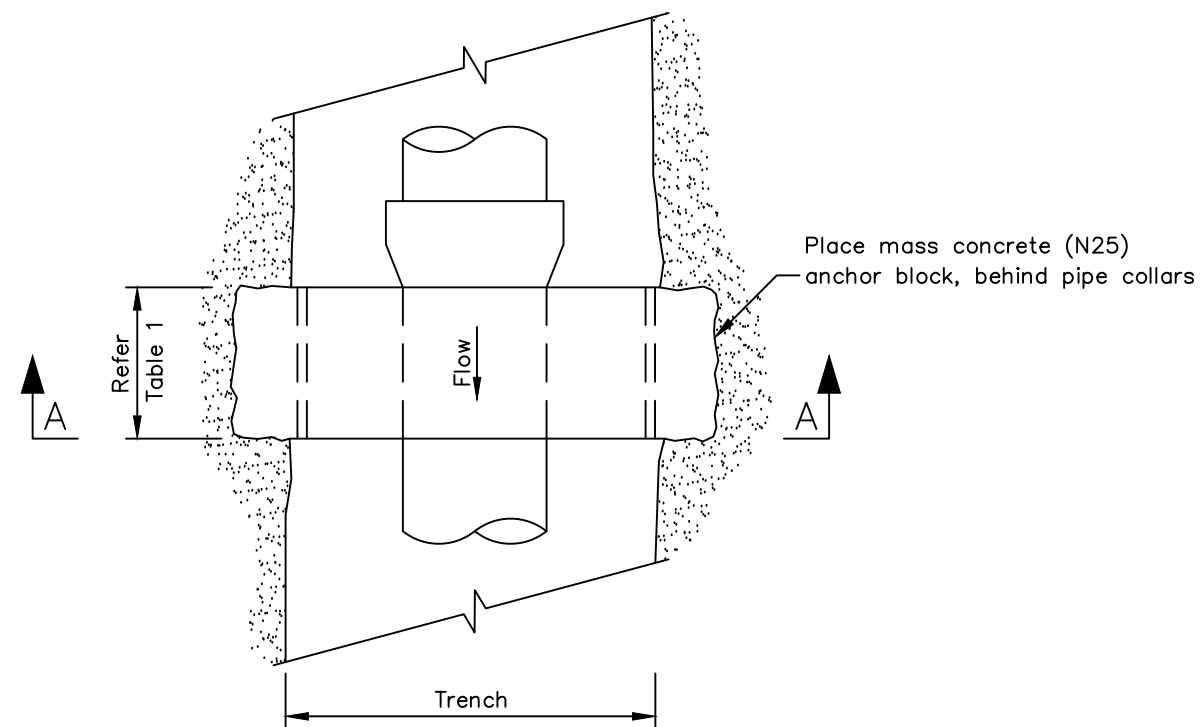


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STANDARD DRAWING
TREE / SHRUB PLANTING

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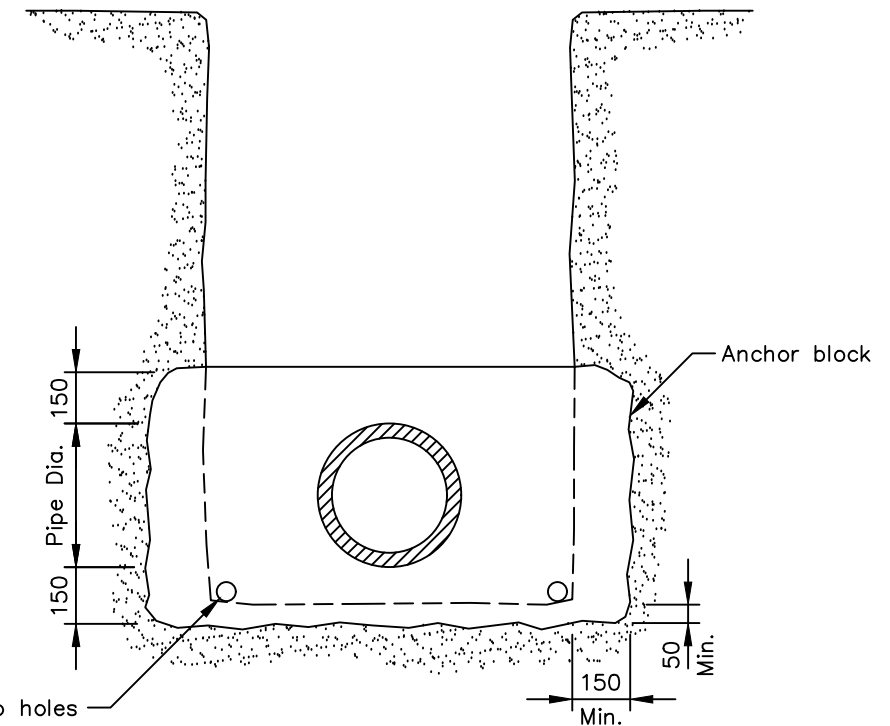
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PLAN
N.T.S.

TABLE 1

PIPE DIAMETER	ANCHOR BLOCK WIDTH
≤ 450	Pipe diameter + 150 mm
> 450	Design required



SECTION A-A
N.T.S.

NOTES

- Construct anchor blocks where pipe grades exceed $\geq 10\%$ at
 - 9.6m centres for Concrete pipes
 - 12.0m centres for P.V.C. pipes
- Landslip areas – site specific design required to ensure land stability risk is not increased.
- Install bulkheads and trench stops in accordance with Table 5.7 of AS/NZS 2566.2:2002 and provide concrete encasement in accordance with Clause 5.8.3 of AS/NZS 2566.2:2002

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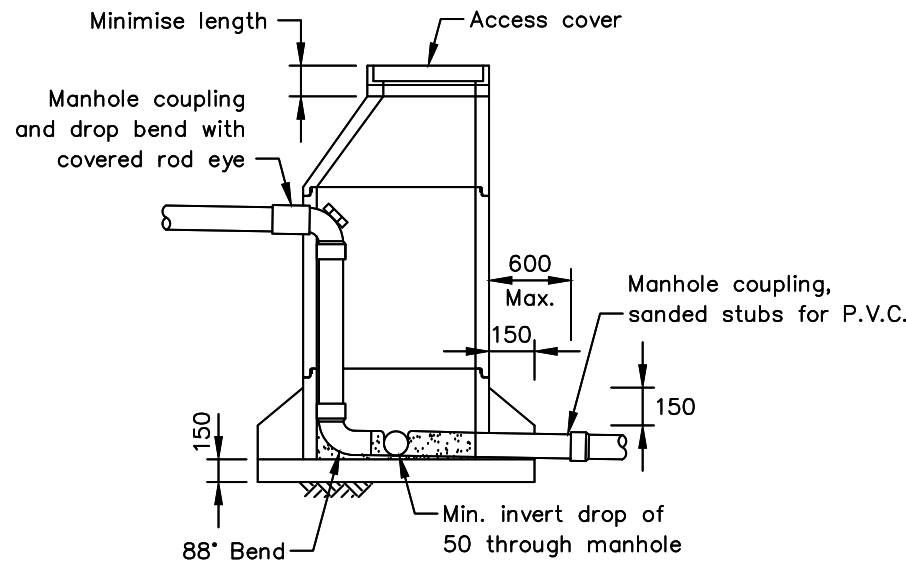


STANDARD DRAWING
PIPE INSTALLATION
ANCHOR BLOCKS

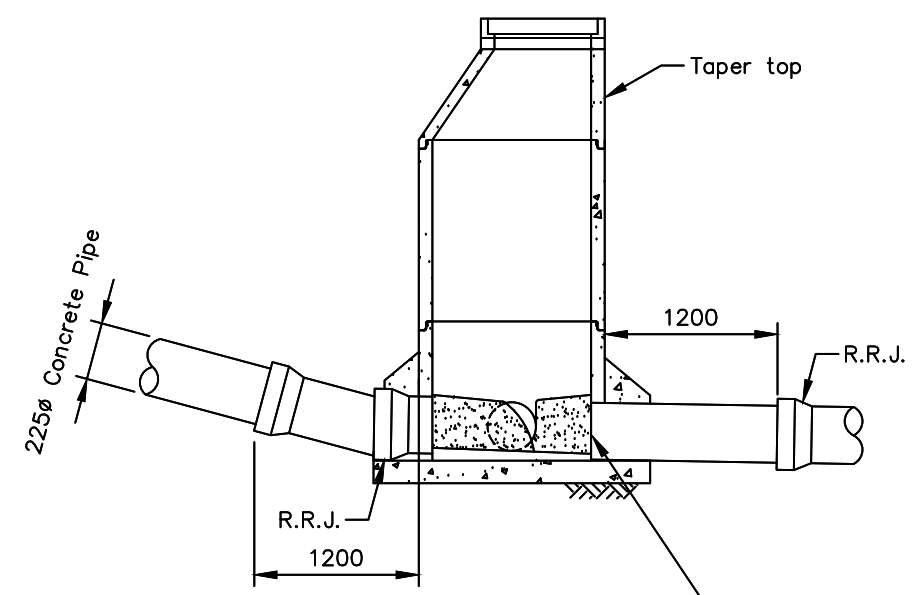
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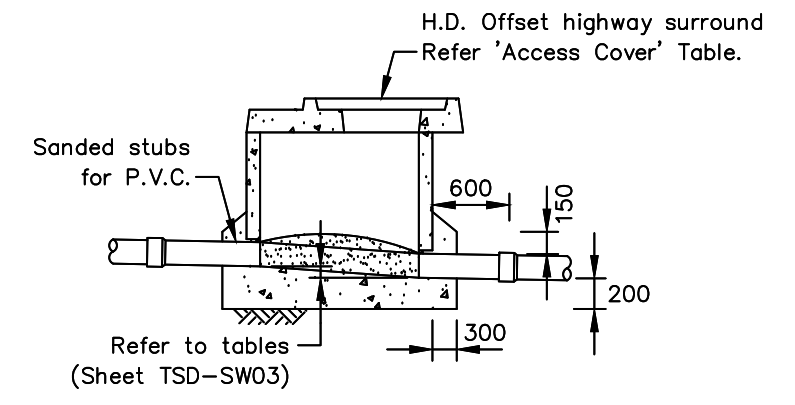
INTERNAL DROP



SECTION A-A

EXTERNAL DROP

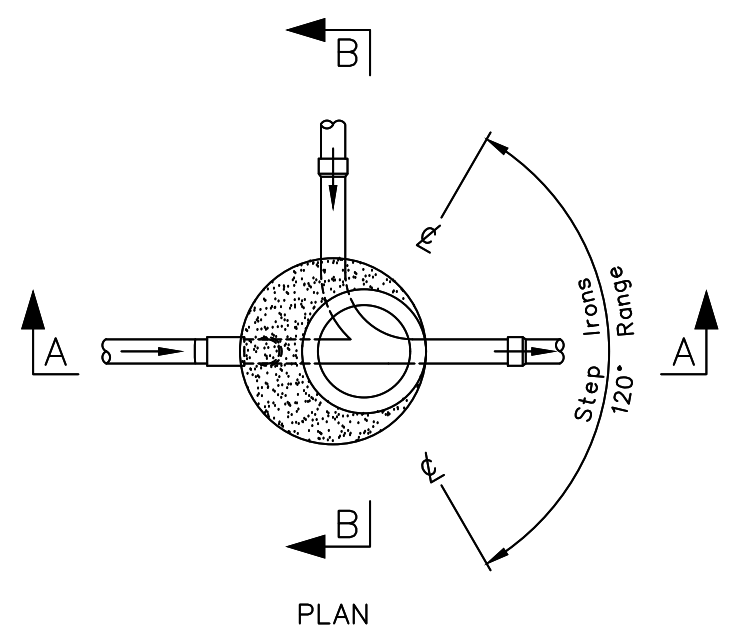
All penetrating pipes to be finished flush with inside face of manholes typ.



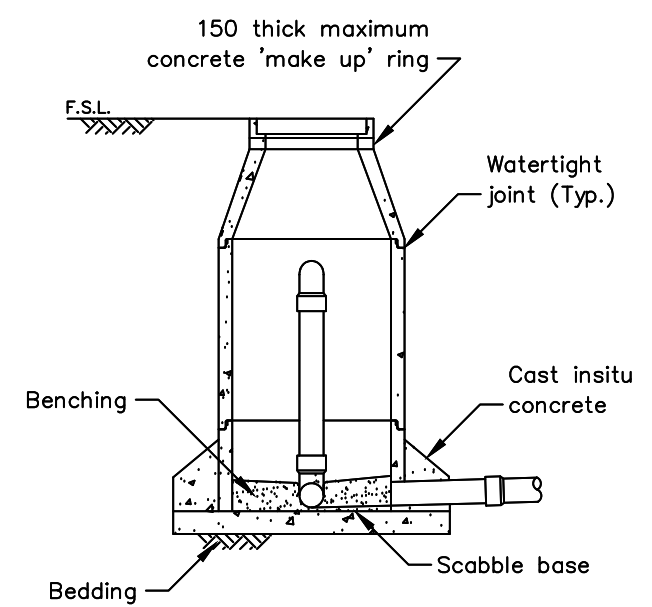
TYPE B - OFFSET SURROUND

MANHOLE SHAFT DIAMETER		
DIA.	DEPTH (m)*	COMMENT
1050	≤ 4.0	Minimum diameter
1200	> 4.0	Less confined
≥ 1200	ALL	To suit multiple pipe configuration

* Depth - F.S.L. to invert



TYPE A - TAPER TOP INTERNAL DROP



SECTION B-B

NOTES

- Insitu concrete - N25
- Drop Connections For Stormwater Manholes
 - Pipe dia. ≤ 150 - Internal, > 150 - External.
 - Internal drops not permitted for inlet grades > 10.0%
 - Drops > 2.0m - support pipes with 50 x 3 galv. M.S. brackets.
- Stormwater Manholes
 - Joints - apply epoxy / non-shrink grout to form water tight joint.
 - Internal surfaces - remove mortar or concrete splashes and fill all air pockets and cavities with grout.
 - Lid surround - fully ram with N20 grout.
- Access Covers
 - Position access cover on the downstream side of MH.
 - Lightly grease lid contact surface.
 - Refer 'AS.3996-1992' for additional requirements.
- Backfill around manholes - as specified for pipeline.

ACCESS COVER - REFER 'AS.3996-1992'			
DRAIN TYPE	MARKING	LOCATION	
		Trafficable	Non Trafficable
Stormwater	SW	Class D (Sealed)	Class B (Unsealed)*

* Use sealed lids in CBD and other shopping precincts

MANHOLES		
DEPTH	TOP TYPE	LOCATION
≤ 1200	H.D. Offset highway	Road pavement
		Other
1200 >	Taper top	Road pavement
	H.D. Offset highway	Other
	Taper top	

SCALES: AS SHOWN
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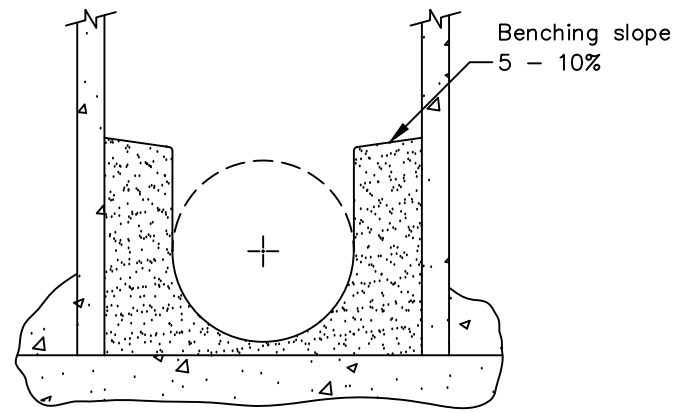
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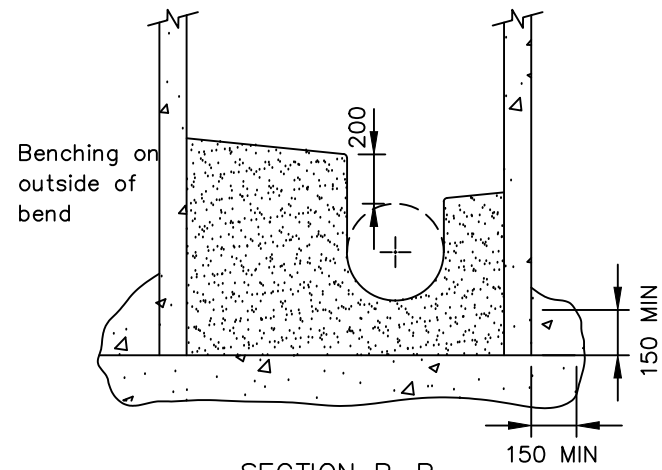
STANDARD DRAWING
MANHOLES - 100 TO 600 DIA. PIPES
GENERAL ARRANGEMENTS

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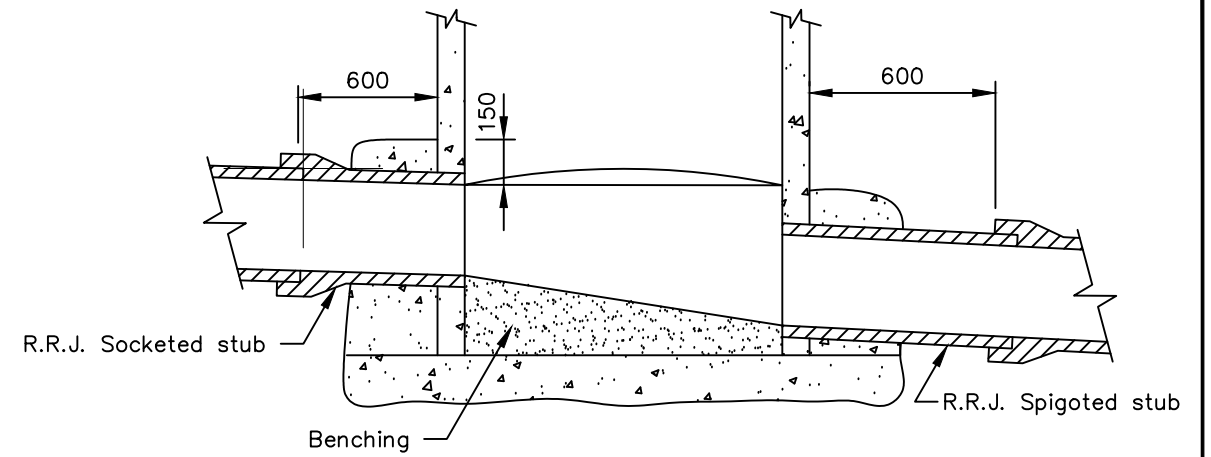
ISSUE DATE: 28-04-2020 DWG No. TSD-SW02-v2



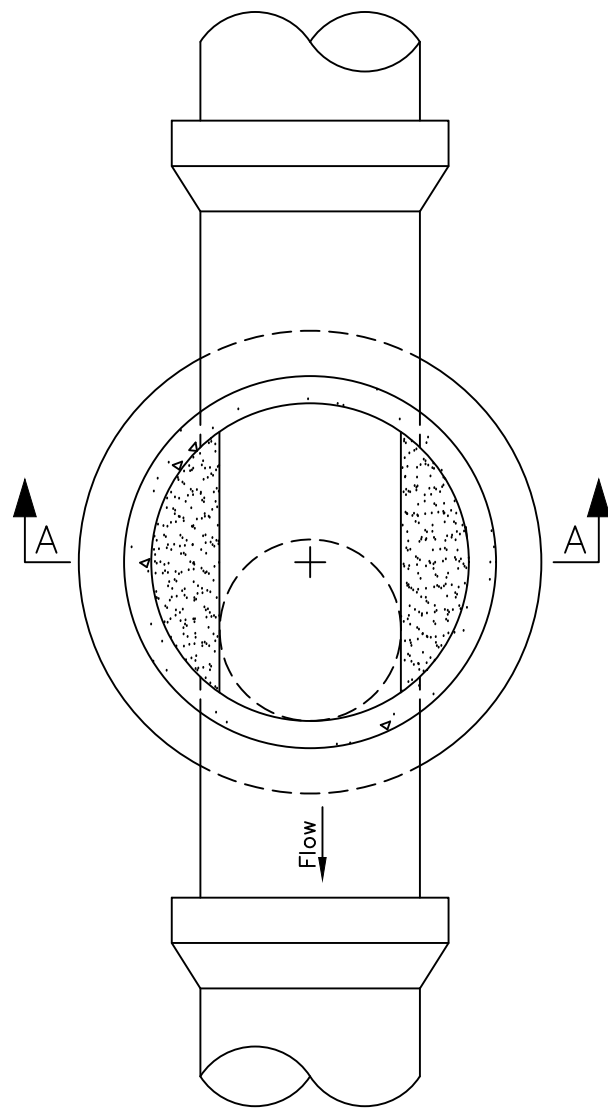
SECTION A-A



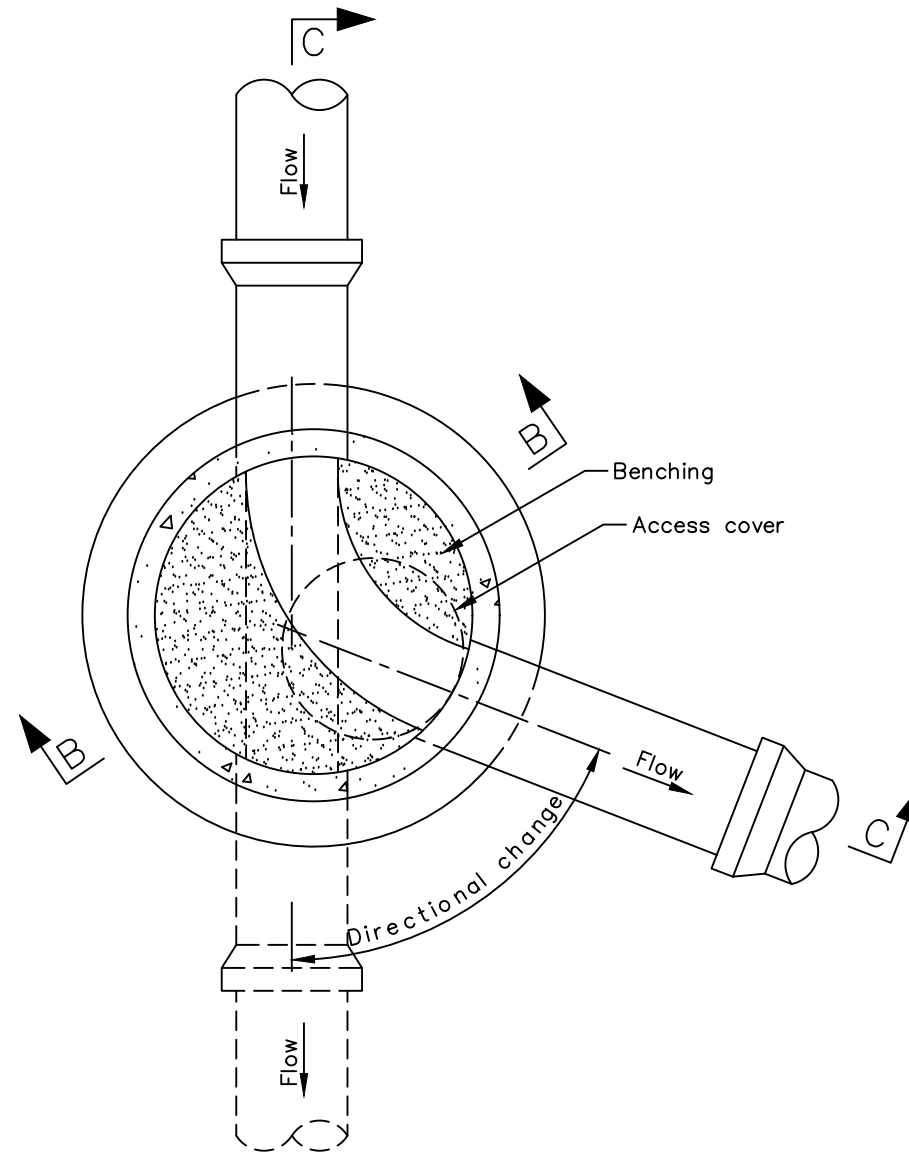
SECTION B-B



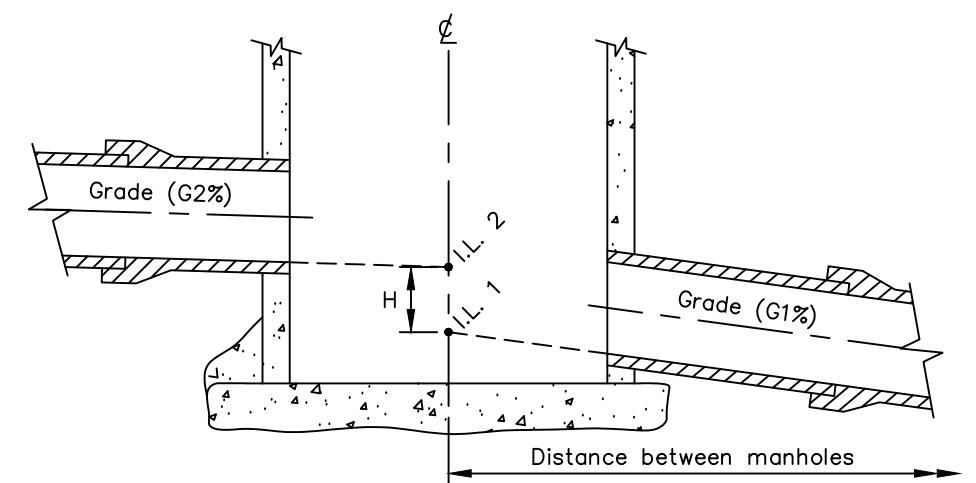
SECTION C-C



PLAN
MANHOLE
(STRAIGHT THROUGH)



PLAN
MANHOLE
(CHANGE IN DIRECTION)



SETOUT REFERENCES

MINIMUM FALL REQUIRED
THROUGH SW MANHOLES

DIRECTIONAL CHANGE	H (mm)
0° - 25°	10
26° - 90°	40
91° - 120°	70

NOTE

- Benching
 - Concrete grade - N25
 - Finish - Steel troweled

SCALES: AS SHOWN
(All scales are correct at A3)

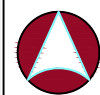
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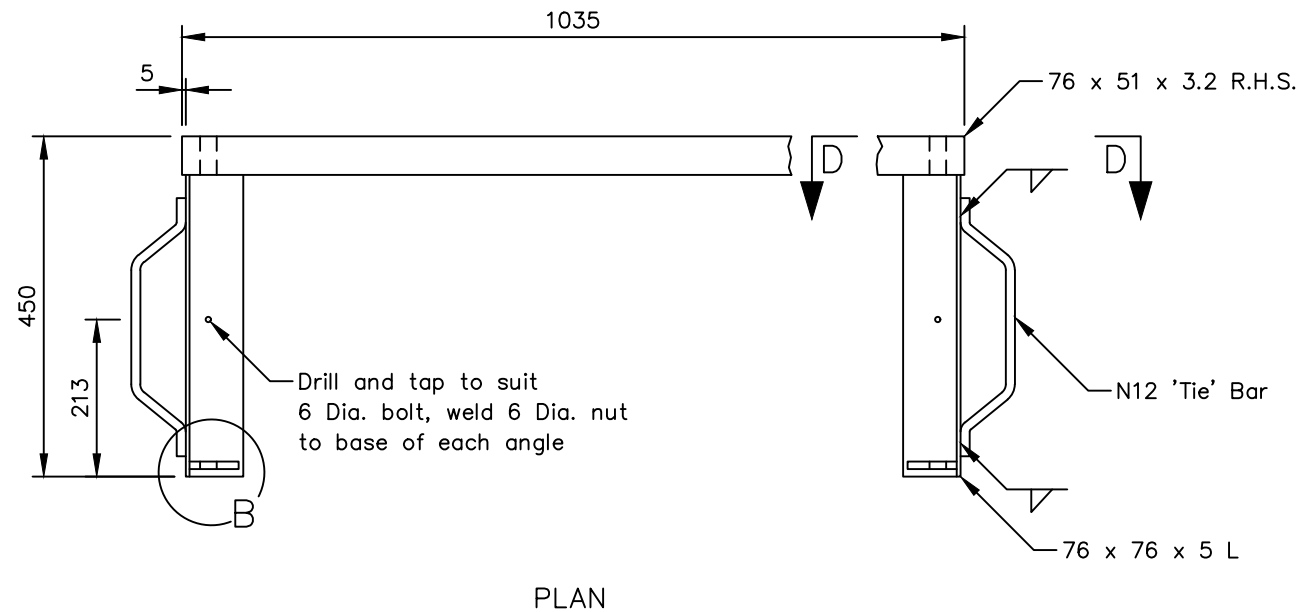
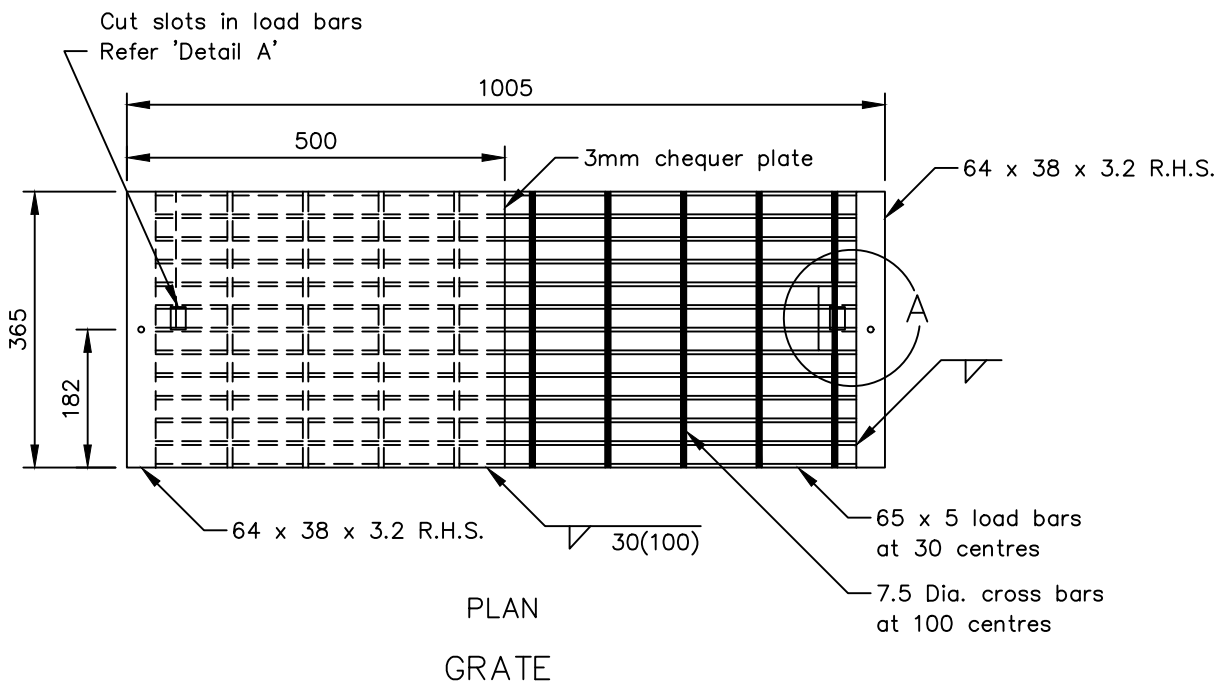
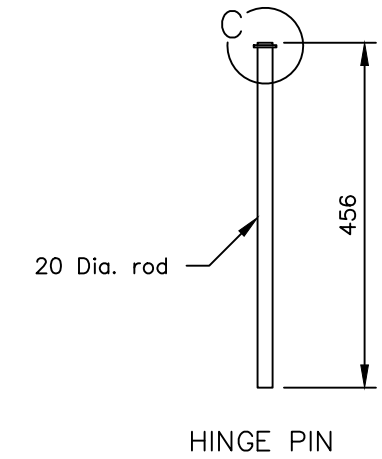
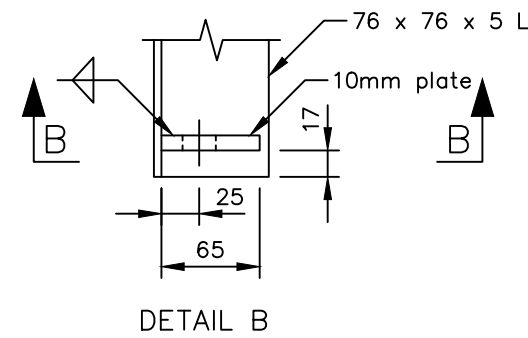
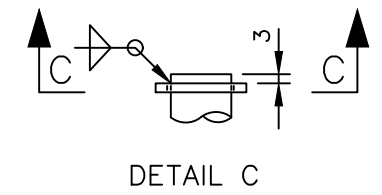
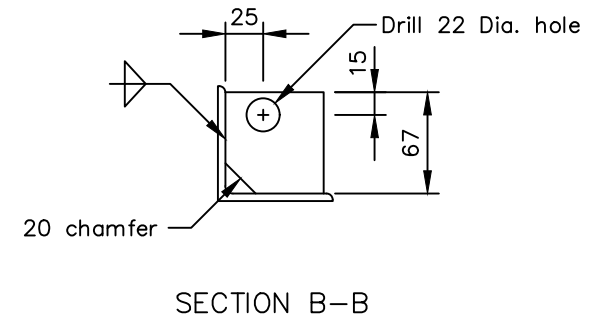
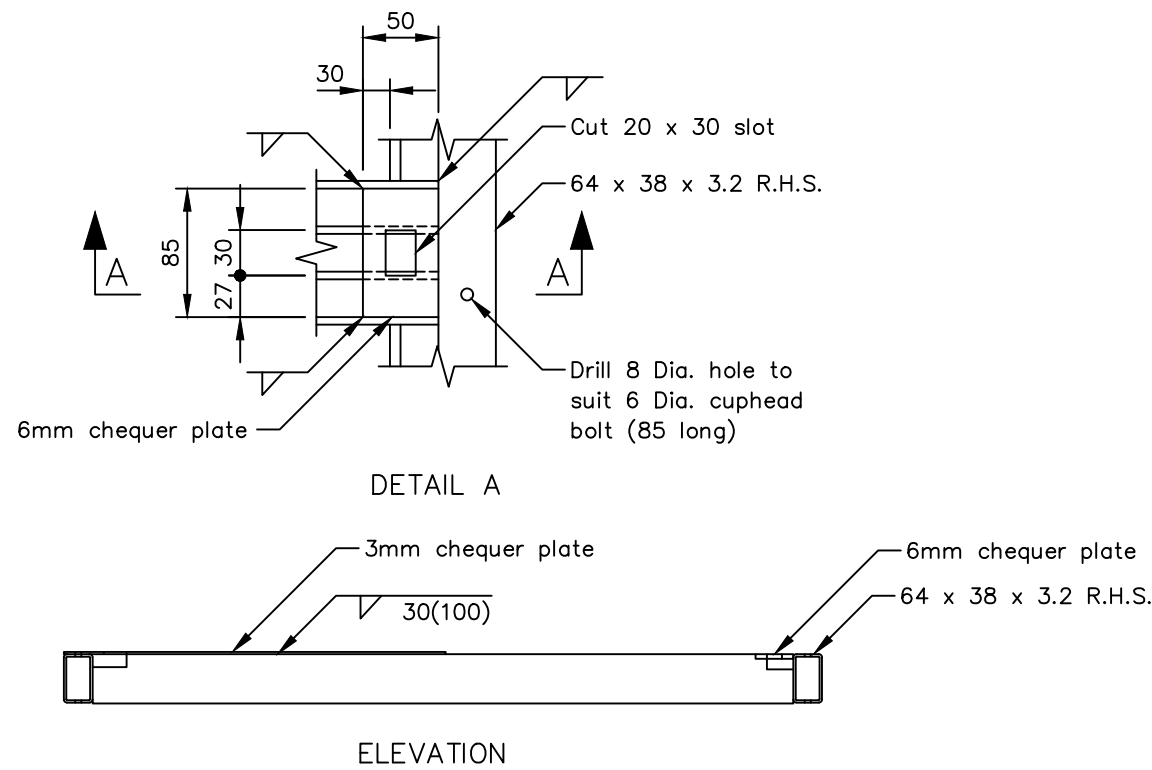
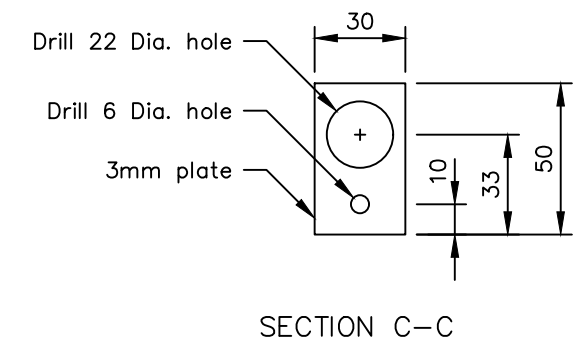
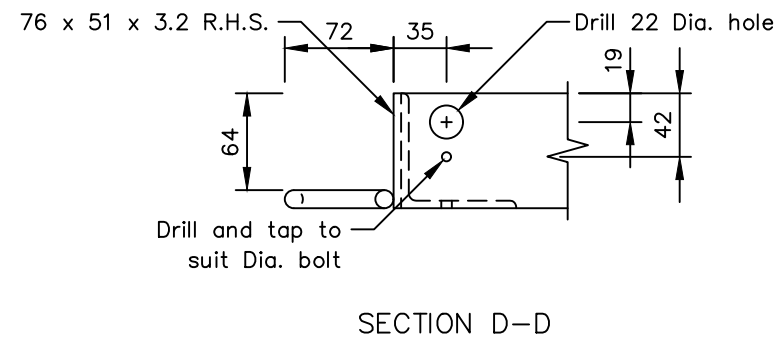
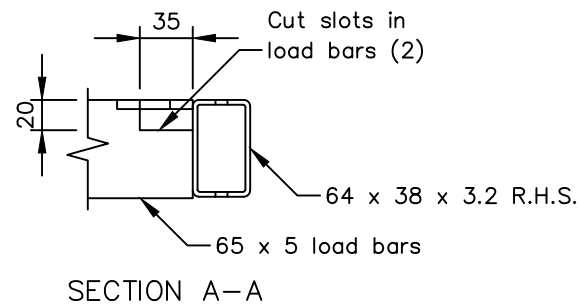


STANDARD DRAWING
MANHOLES 100 - 600 DIA. PIPES
BENCHING DETAILS

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TSD-SW03-v2



PLAN FRAME
(Hinge pin not shown)

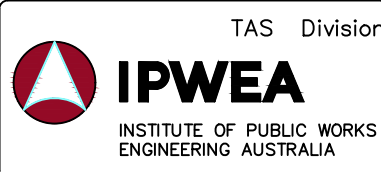
NOTE
1. Hot dip galvanise after fabrication.

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW04-v2.dwg

REFERENCES

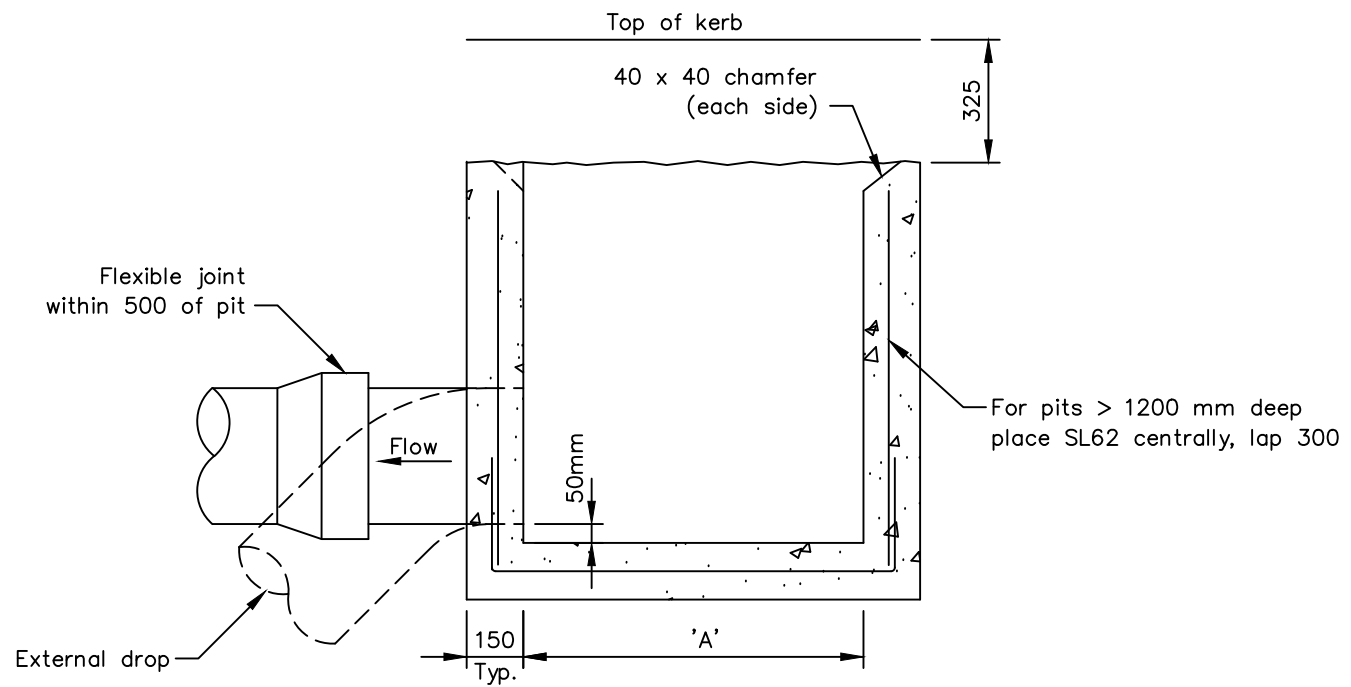
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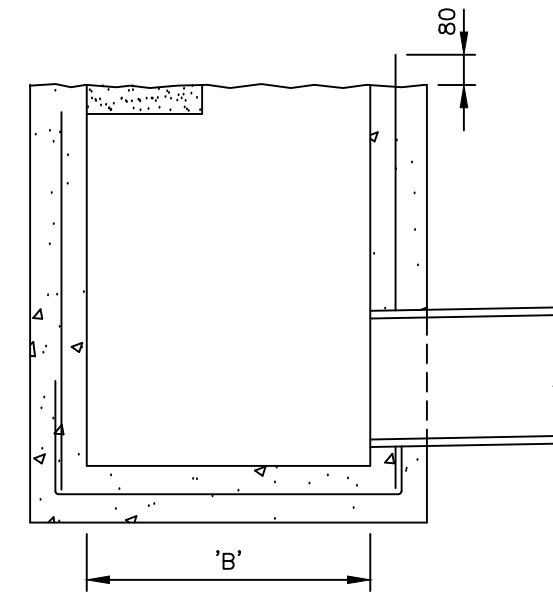
STANDARD DRAWING
SIDE ENTRY PITS
GRATE AND FRAME DETAILS

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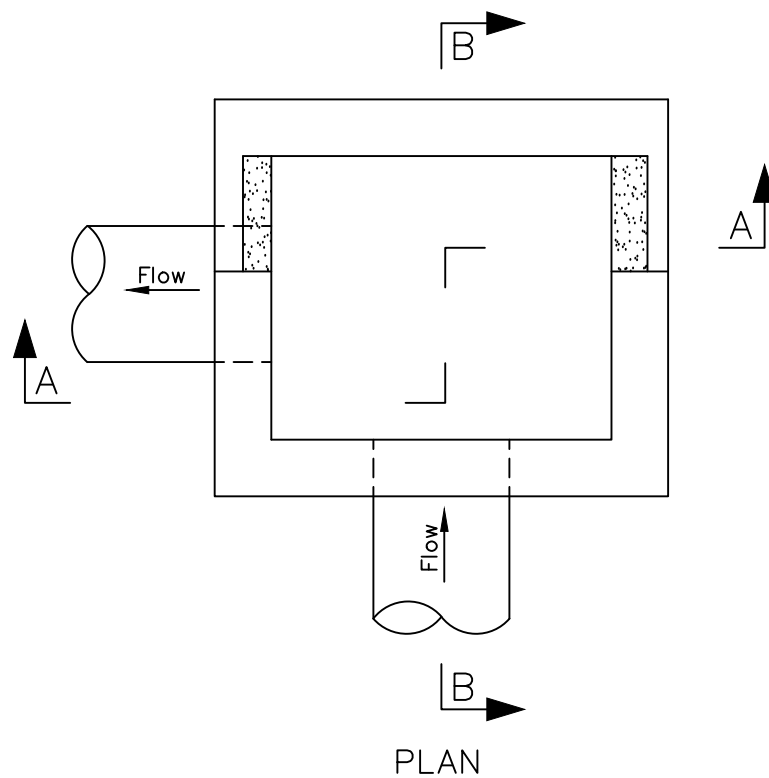
ISSUE DATE: 28-04-2020 DWG No. TSD-SW04-v2



SECTION A-A
(OUTLET PIPE SHOWN IN FULL)



SECTION B-B



PLAN

TABLE 1

Recommended Pit Sizes	
'A'	'B'
450	450
600	600
650	650
750	750
800	500
900	600
900	750
900	900
1200	1200
1225	450
1225	570
1260	450
1350	900
1550	900

Note: Internal dimensions.

NOTES

- Concrete – N25 grade.
- Minimum grade for outlets 1 in 100.
- Refer Sheets:
 - Hydraulic capacity curves in reference area.
 - TSD-SW04 for grate details
 - TSD-SW07, TSD-SW08, TSD-SW09 and TSD-SW10 for lintel details.
- Equivalent pre-cast componentry may be substituted with the approval of the General Manager's delegated officer.

SCALES: AS SHOWN
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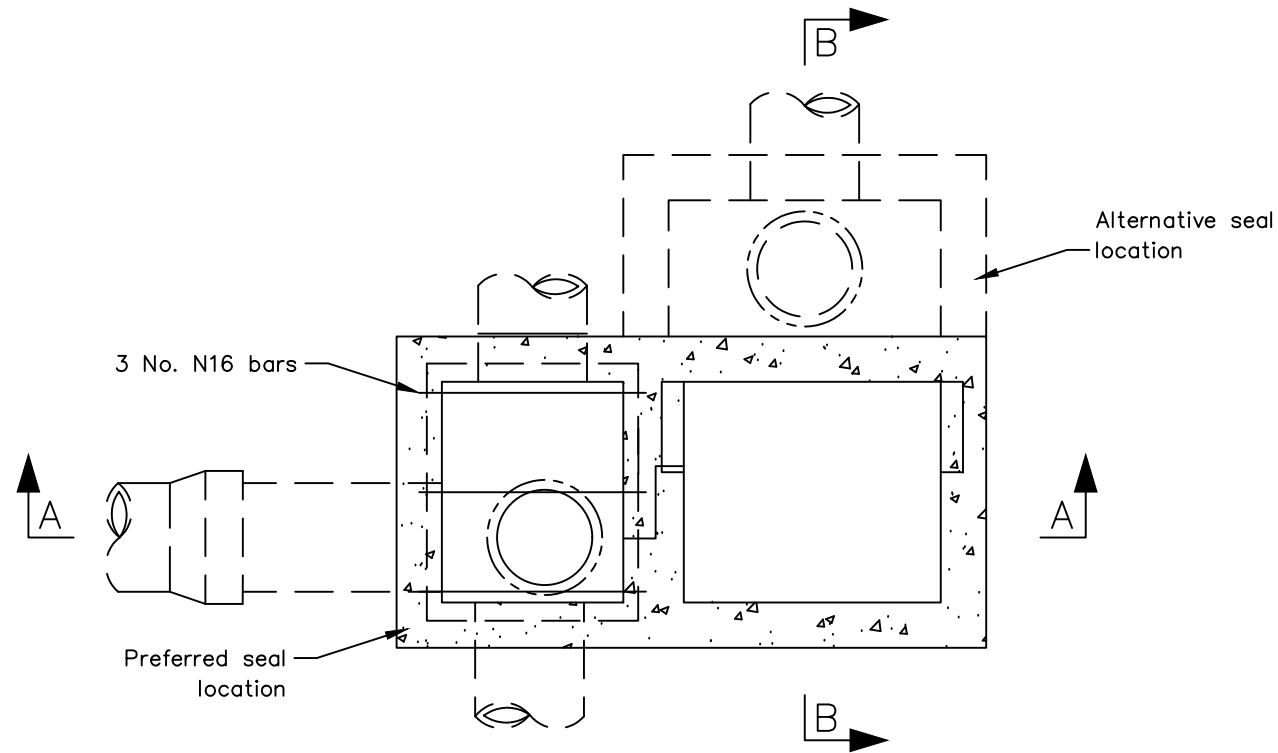


STANDARD DRAWING
SIDE ENTRY PITS - 'SEP'
CONSTRUCTION (CAST IN SITU)

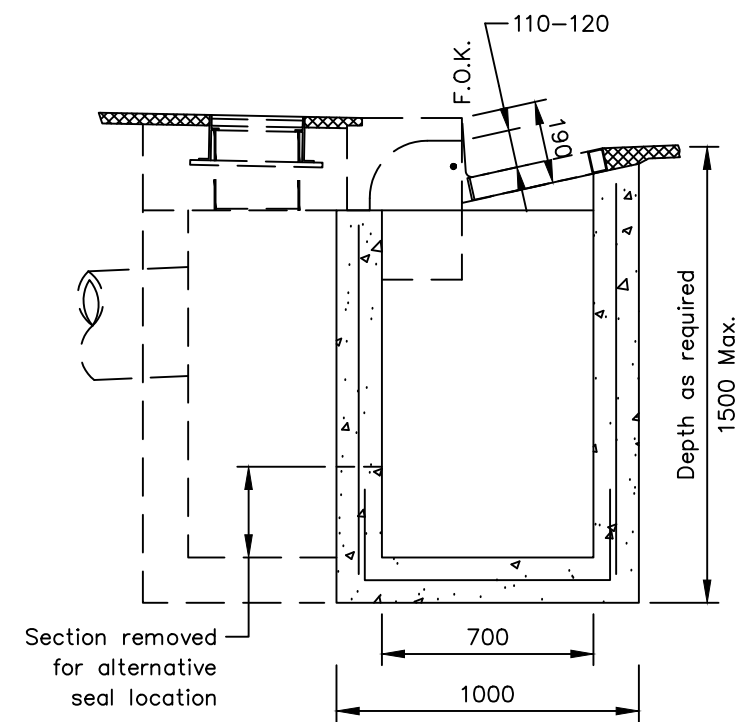
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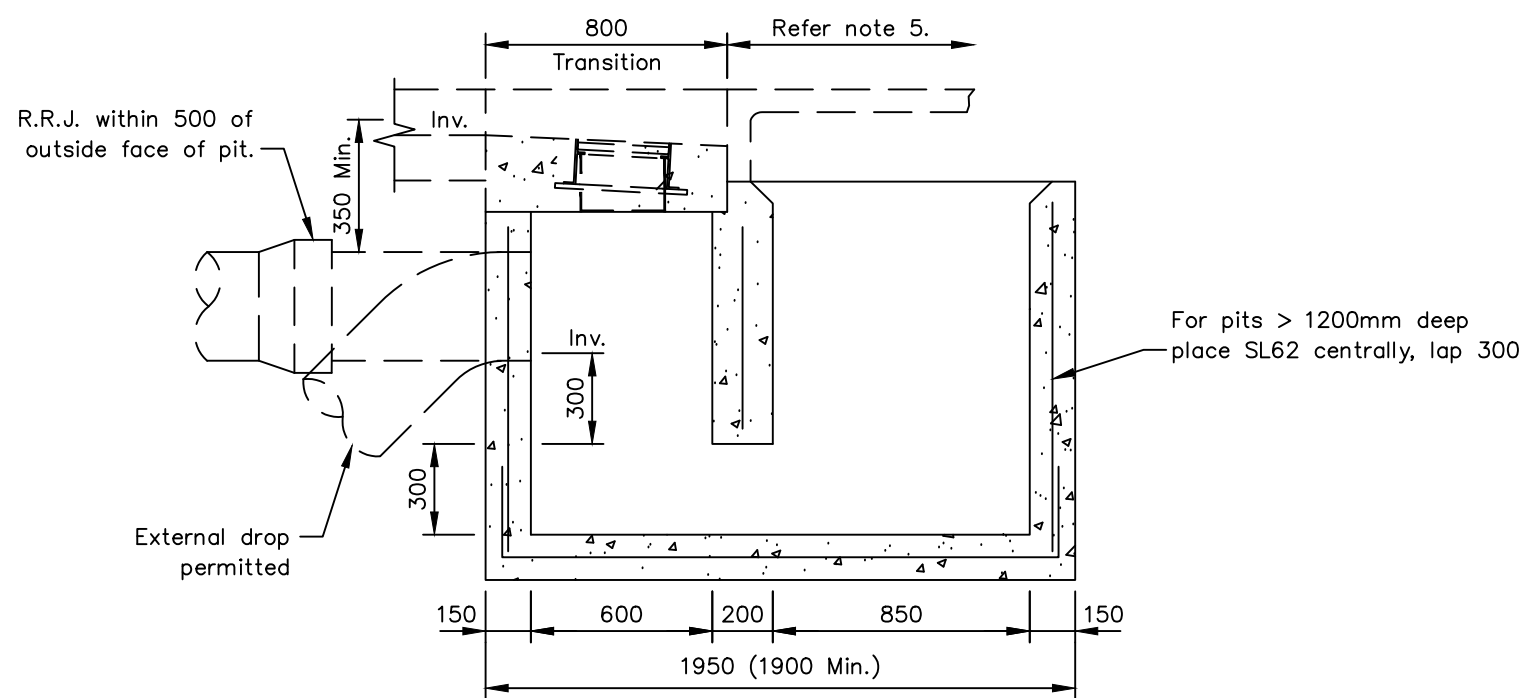
TSD-SW05-v2



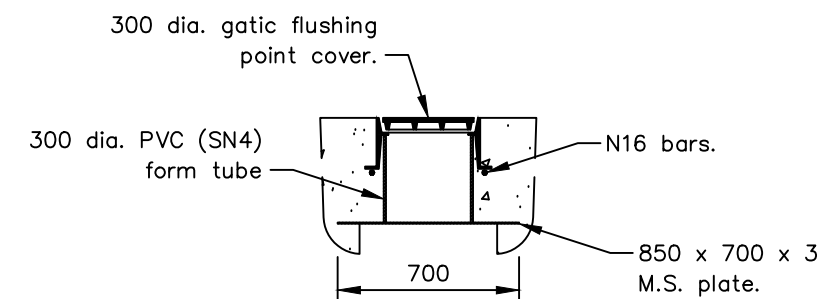
PLAN
(KERB AND LINTEL NOT SHOWN)
SCALE 1 : 25



SECTION B-B
SCALE 1 : 25



SECTION A-A
(BAR NOT SHOWN)
SCALE 1 : 25



TYPICAL SECTION
FLUSHING POINT COVER
AND SURROUND DETAIL
N.T.S.

NOTES

1. Concrete – N25 grade.
2. Minimum grade for outlets 1 in 100.
3. Transition kerb depth from 140 – 190mm.
4. Fit lintels with 20 dia. rod.
5. Refer Sheets:
 - TSD-SW04 for grate details
 - TSD-SW07, TSD-SW08, TSD-SW09 and TSD-SW10 for lintel details
6. Pre-cast manufacturer option available manufacturers specification to meet LGAT standards

SCALES: AS SHOWN
(All scales are correct at A3)

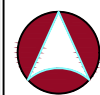
XRef File: TSD-SW06-v2.dwg

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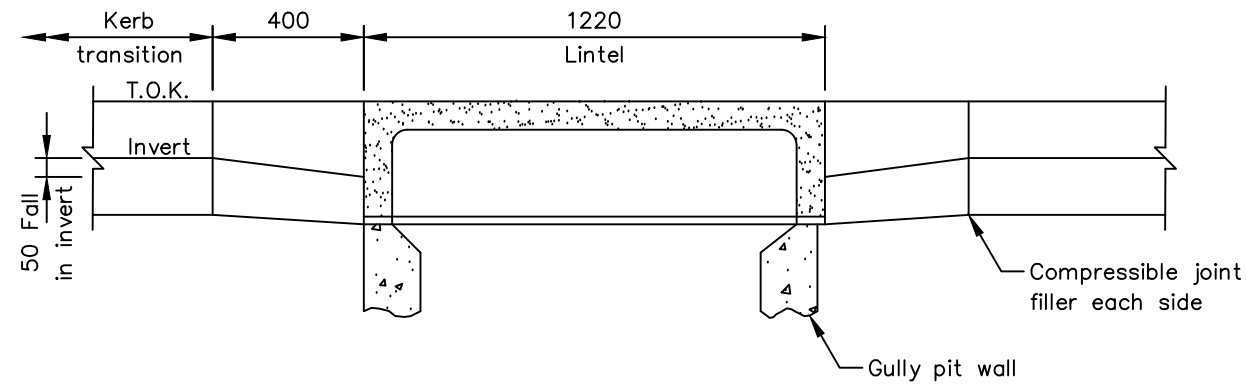


STANDARD DRAWING
SIDE ENTRY PITS - 'SEPS'
CONSTRUCTION (COMBINE AREAS ONLY)

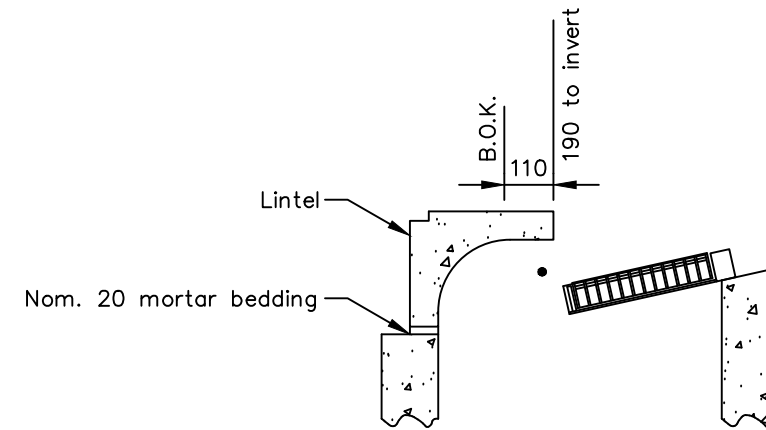
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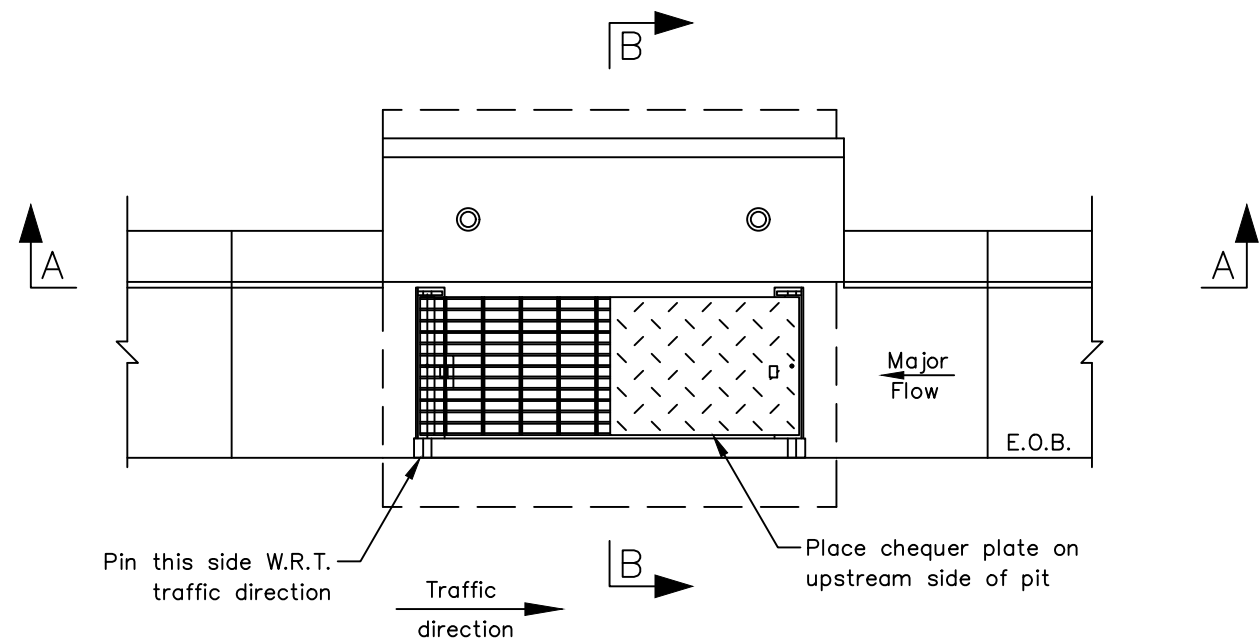
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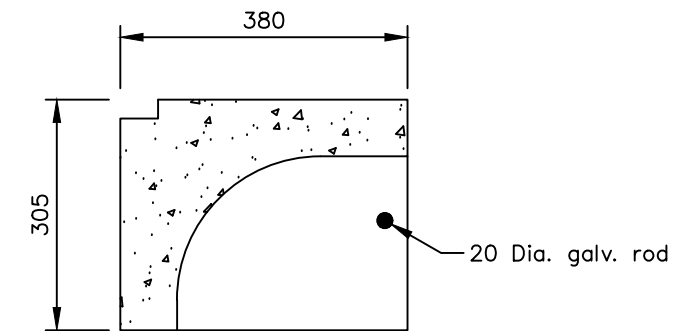
SECTION A-A
(20 Dia. galv. rod not shown)



SECTION B-B



PLAN



PRECAST LINTEL (SECTION)

NOTES

1. Concrete – N25 grade.
2. Refer Sheets:
 - TSD-SW04 for grate details
 - TSD-SW05 for unsealed pit construction
 - TSD-SW06 for sealed pit construction
 - TSD-SW11 for kerb transitions
3. Pre-cast manufacturer option available manufacturers specification to meet LGAT standards

SCALES: AS SHOWN
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XRef File: TSD-SW07-v2.dwg

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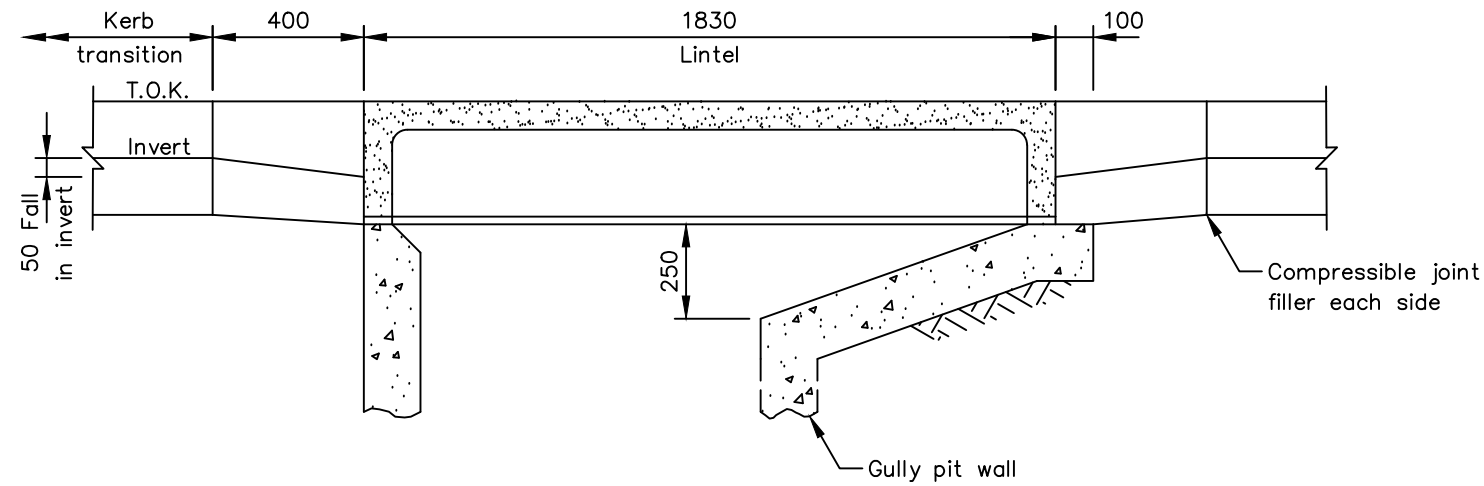
STANDARD DRAWING
SIDE ENTRY PITS
'TYPE 1'

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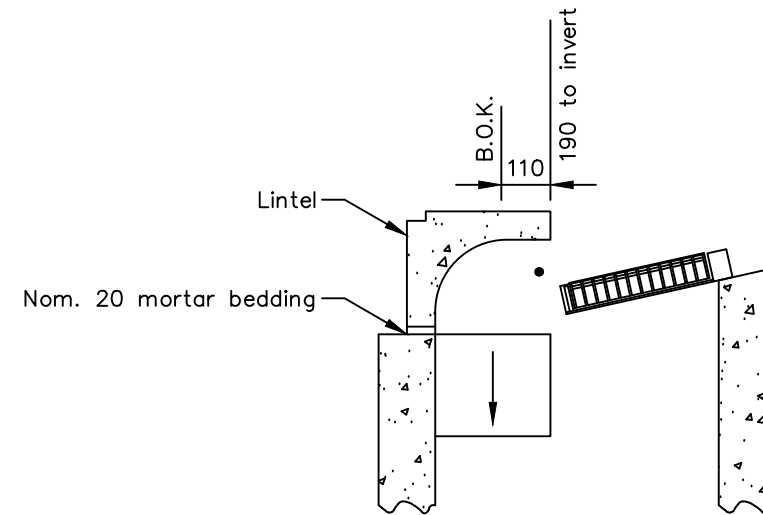
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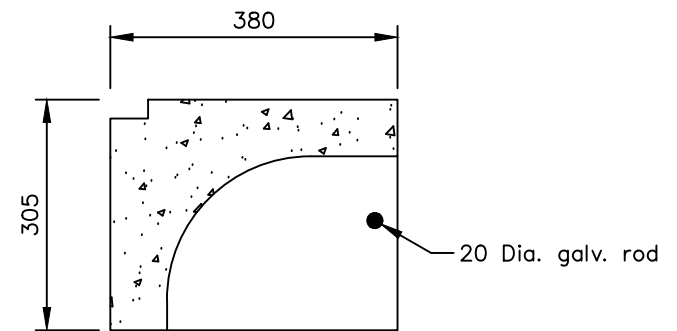
TSD-SW07-v2



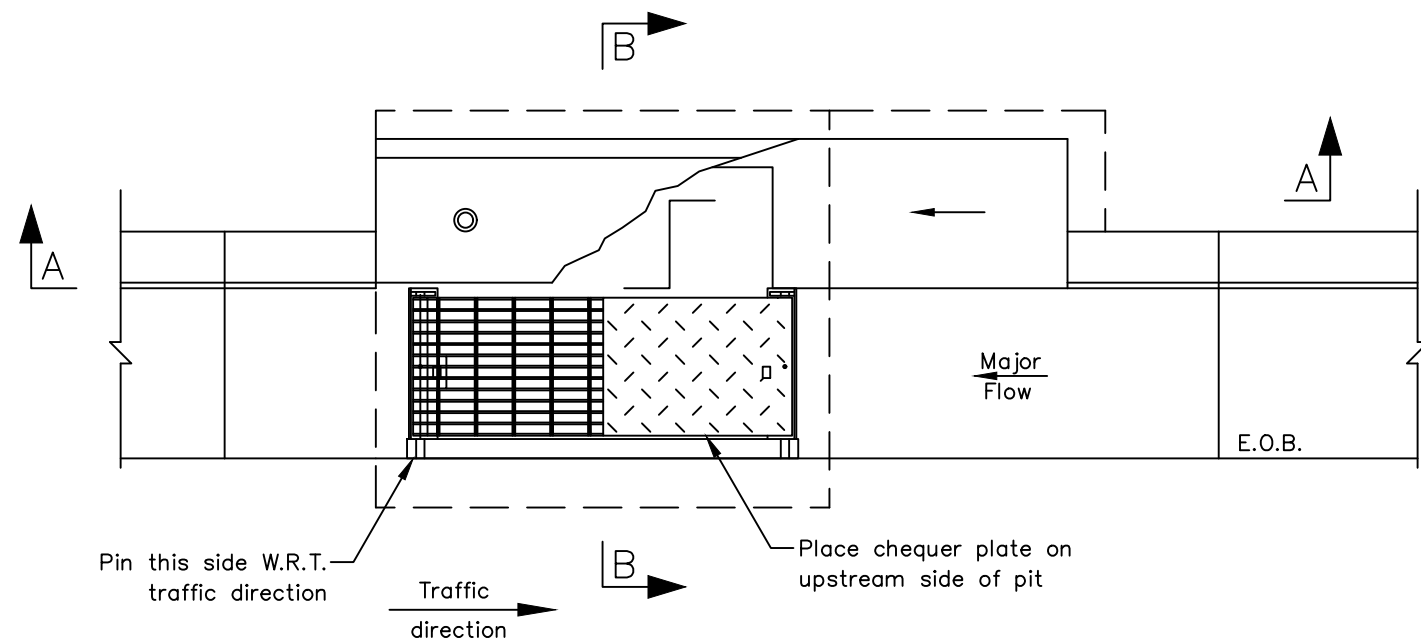
SECTION A-A
(20 Dia. galv. rod not shown)



SECTION B-B



PRECAST LINTEL (SECTION)



PLAN

NOTES

1. Concrete – N25 grade.
2. Refer Sheets:
 - TSD-SW04 for grate details
 - TSD-SW05 for unsealed pit construction
 - TSD-SW06 for sealed pit construction
 - TSD-SW11 for kerb transitions
3. Pre-cast manufacturer option available manufacturers specification to meet LGAT standards

SCALES: AS SHOWN
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XRef File: TSD-SW08-v2.dwg

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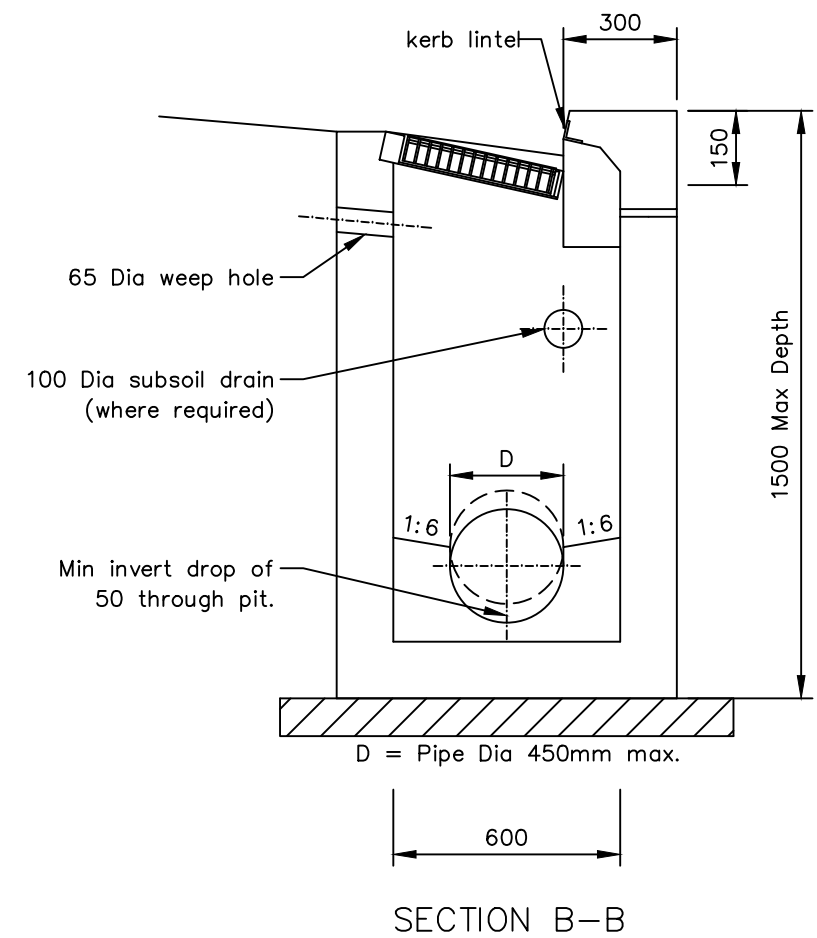
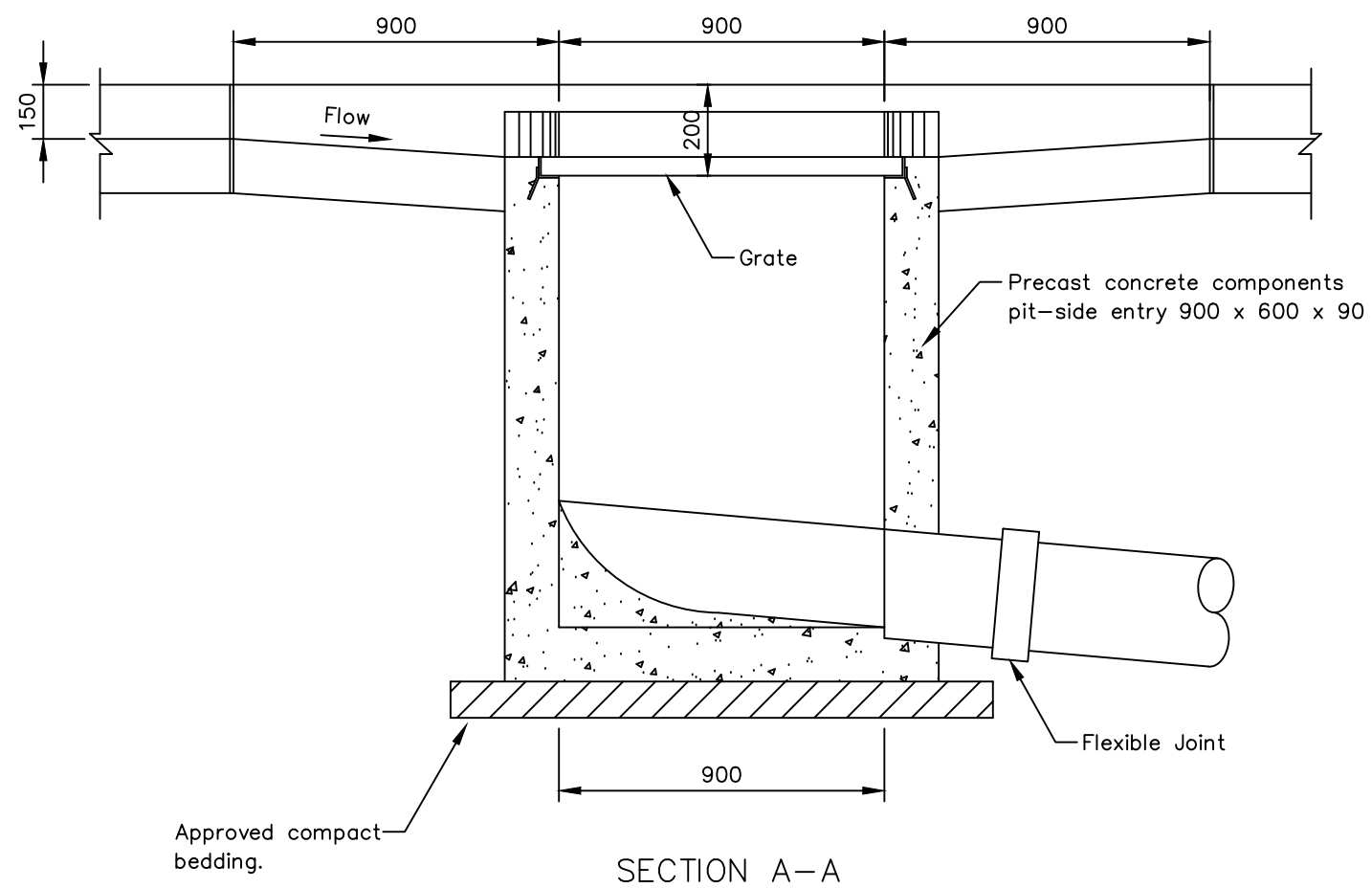
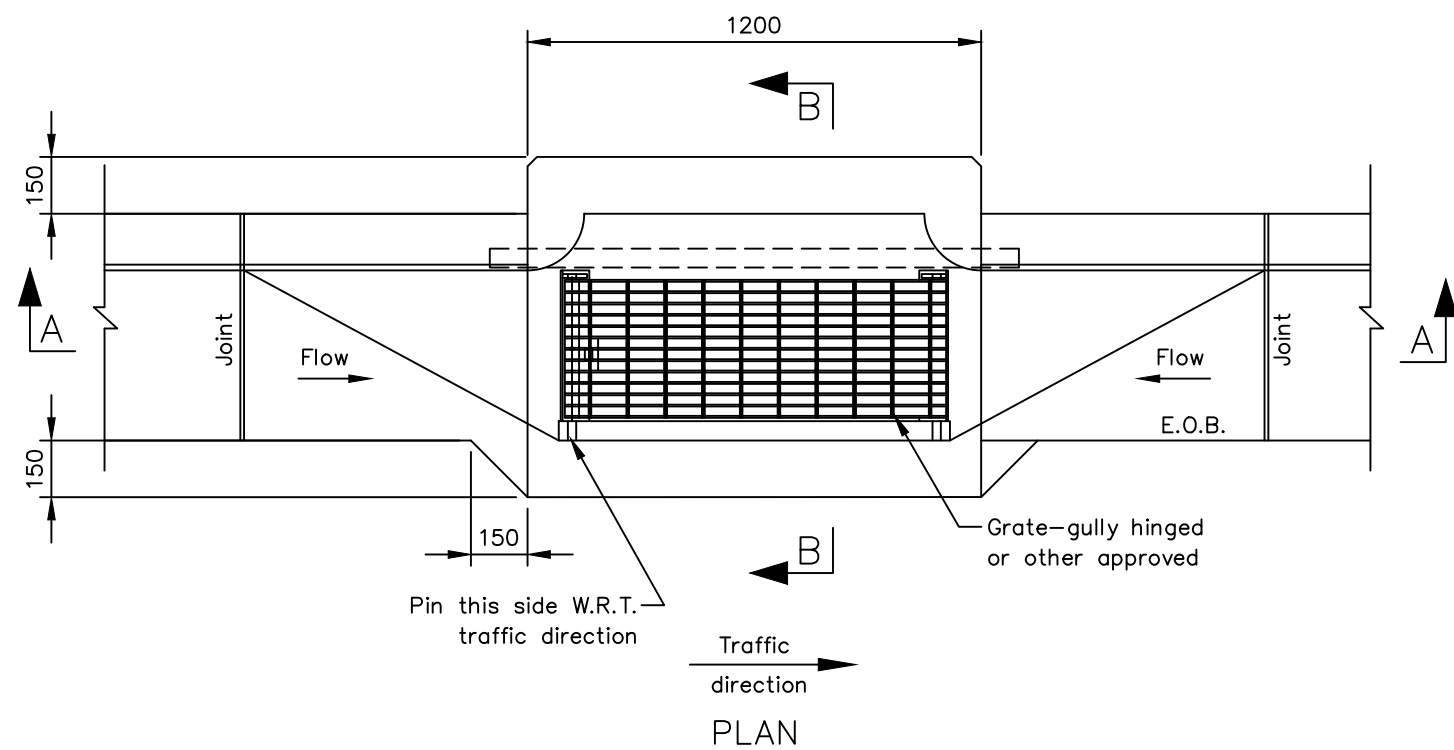
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STANDARD DRAWING
SIDE ENTRY PITS
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NOTES

1. All dimensions in millimetres (mm)
2. Precast components encouraged where available.
3. Angle lintel to be hot dipped galvanised mild steel.
4. Max. depth to be 1500mm – dictated by cover
5. Pits can be used for change of pipe grade or direction where suitable hydraulic conditions exist.
6. Pit to be constructed from N25 concrete.
7. Pre-cast manufacturer option available manufacturers specification to meet LGAT standards

SCALES: AS SHOWN
(All scales are correct at A3)

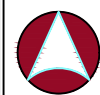
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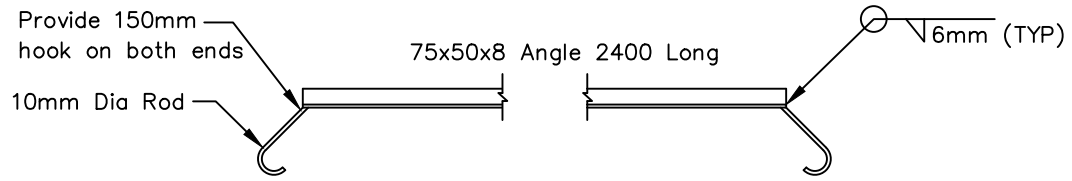
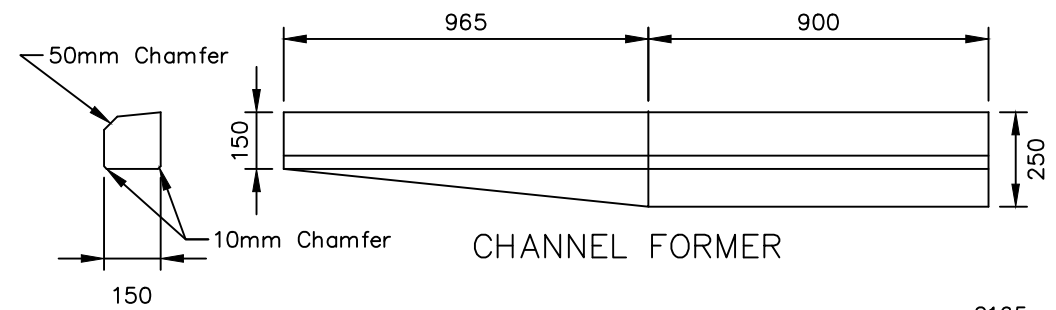


STANDARD DRAWING
SIDE ENTRY PITS
'TYPE 3'

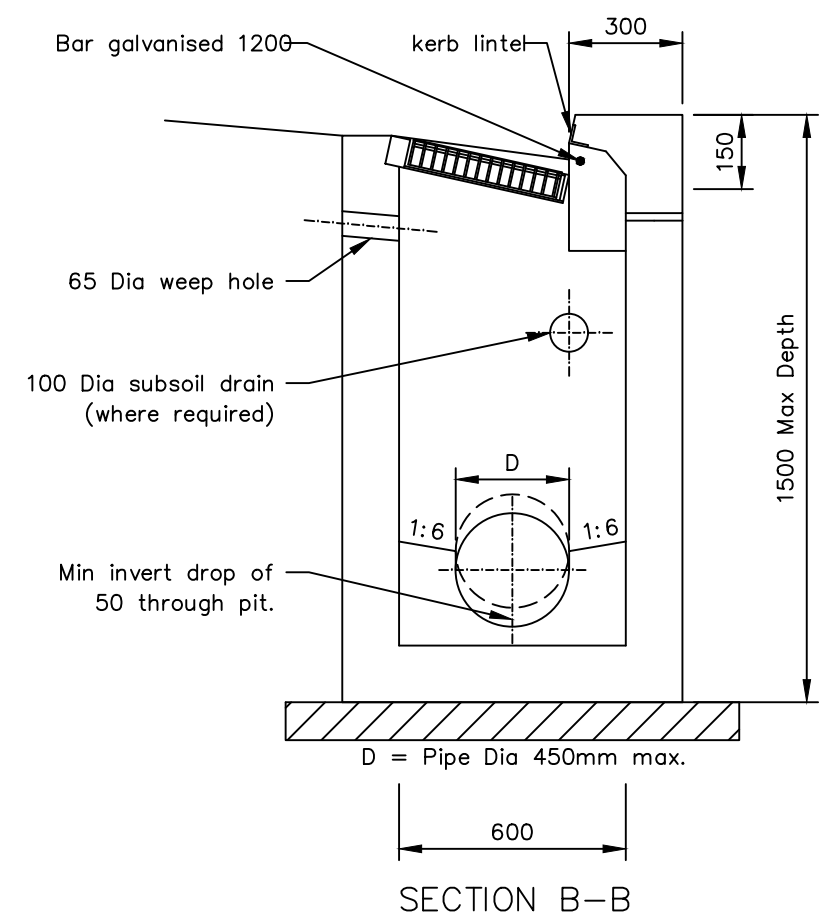
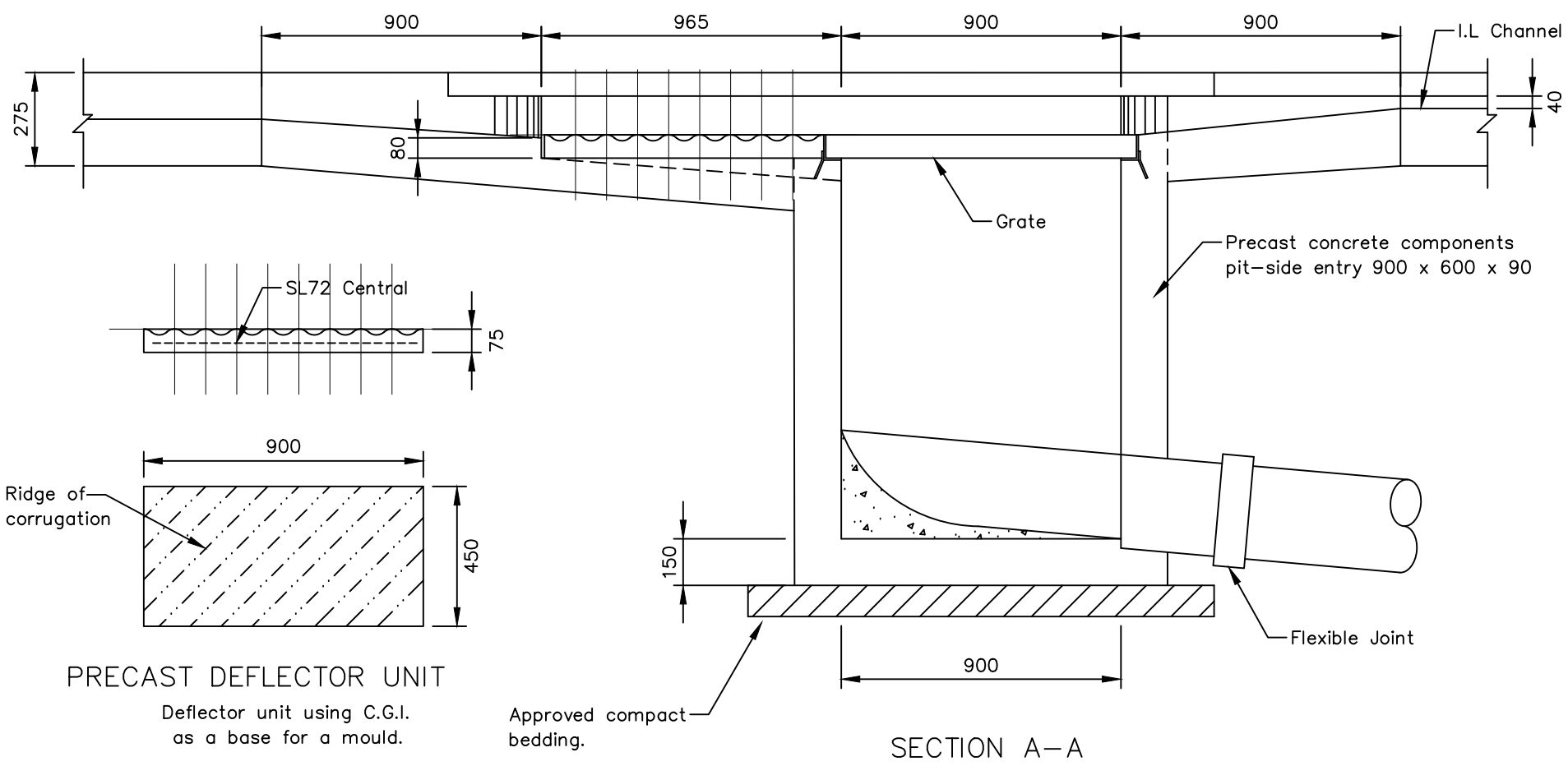
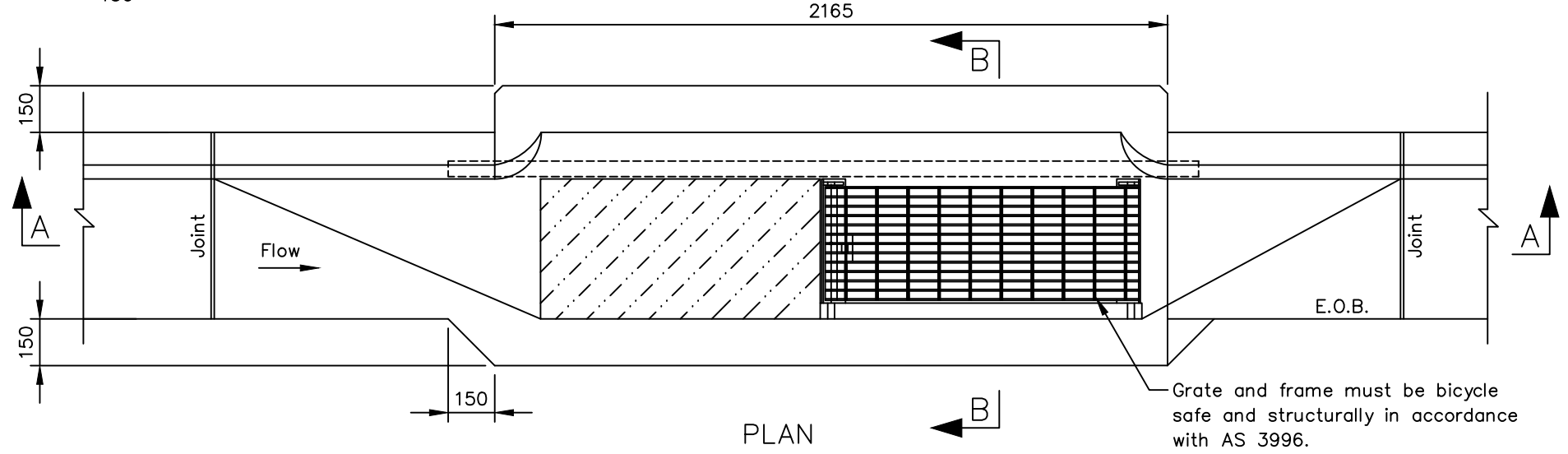
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TSD-SW09-v2



- NOTES**
1. All dimensions in millimetres (mm)
 2. Precast components encouraged where available.
 3. Angle lintel to be hot dipped galvanised mild steel.
 4. Max. depth to be 1500mm – dictated by cover
 5. Pits can be used for change of pipe grade or direction where suitable hydraulic conditions exist.
 6. Pit to be constructed from N25 concrete.
 7. Equivalent pre-cast componentry may be substituted with the approval of the General Manager's delegated officer.

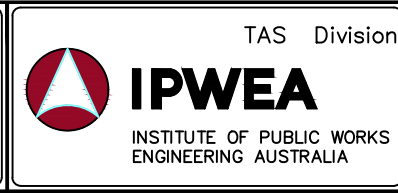


SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW10-v2.dwg

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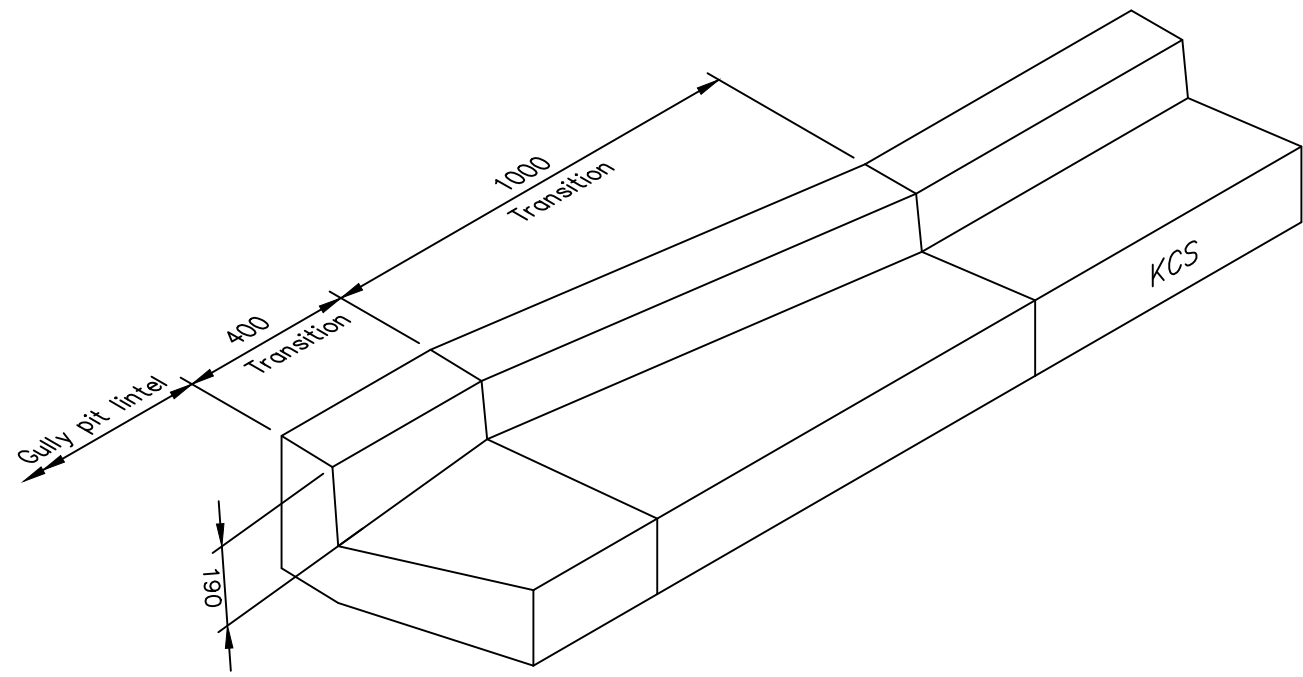
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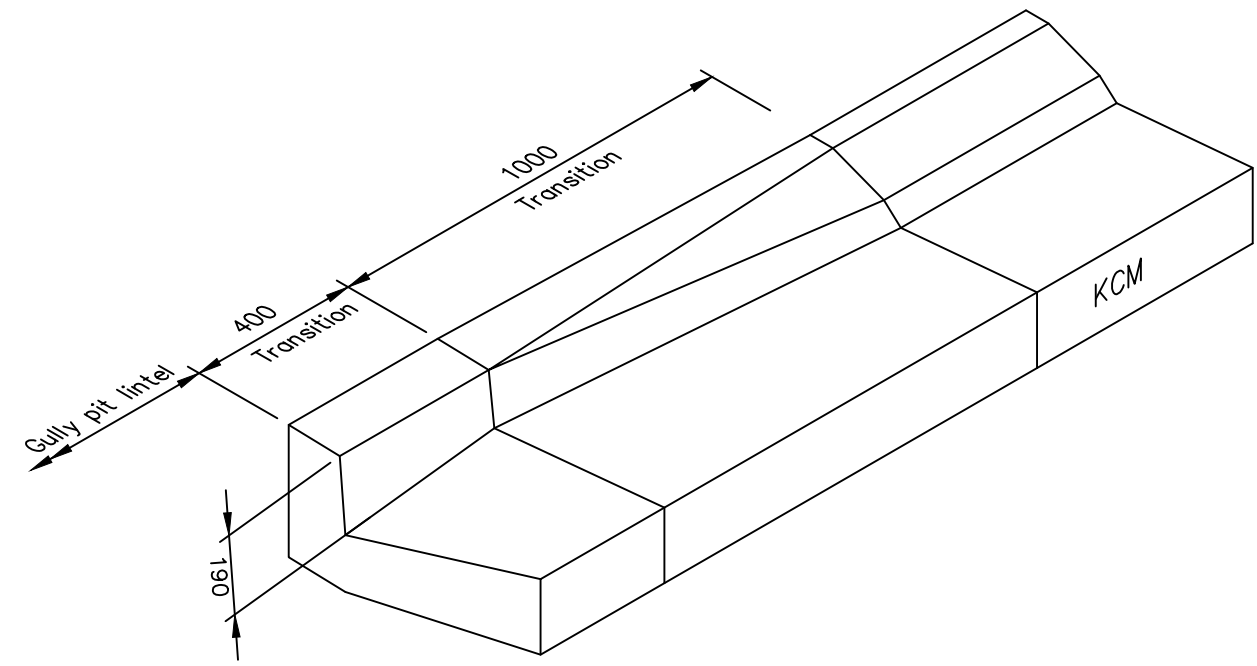
STANDARD DRAWING
SIDE ENTRY PITS
'TYPE 4'

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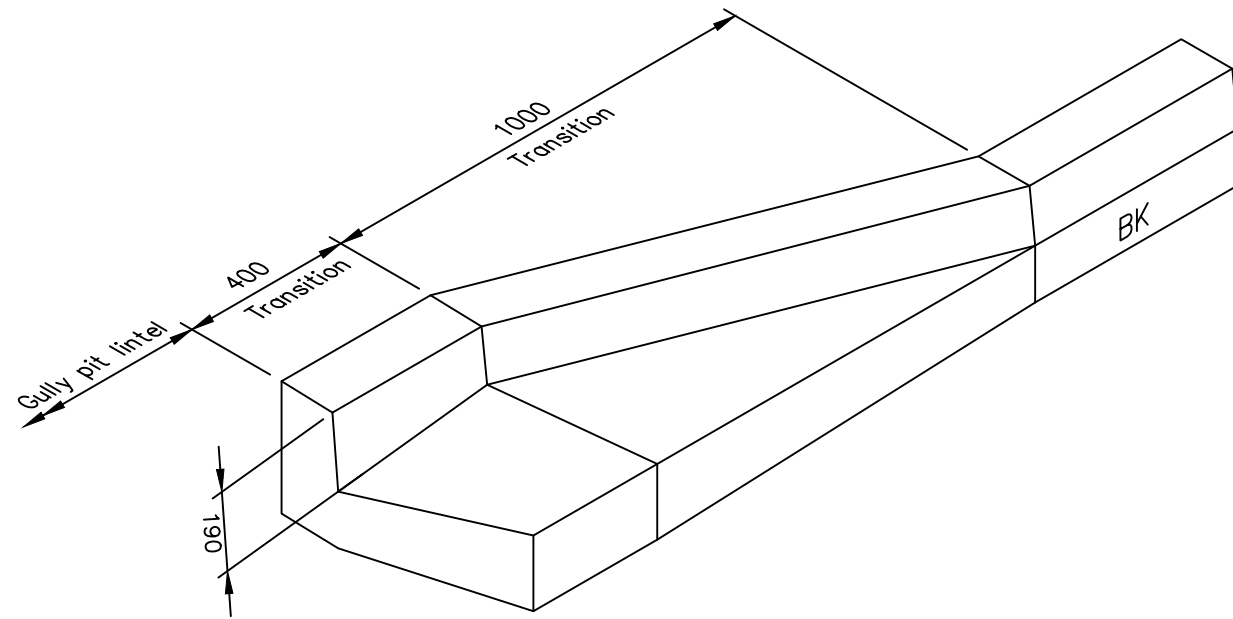
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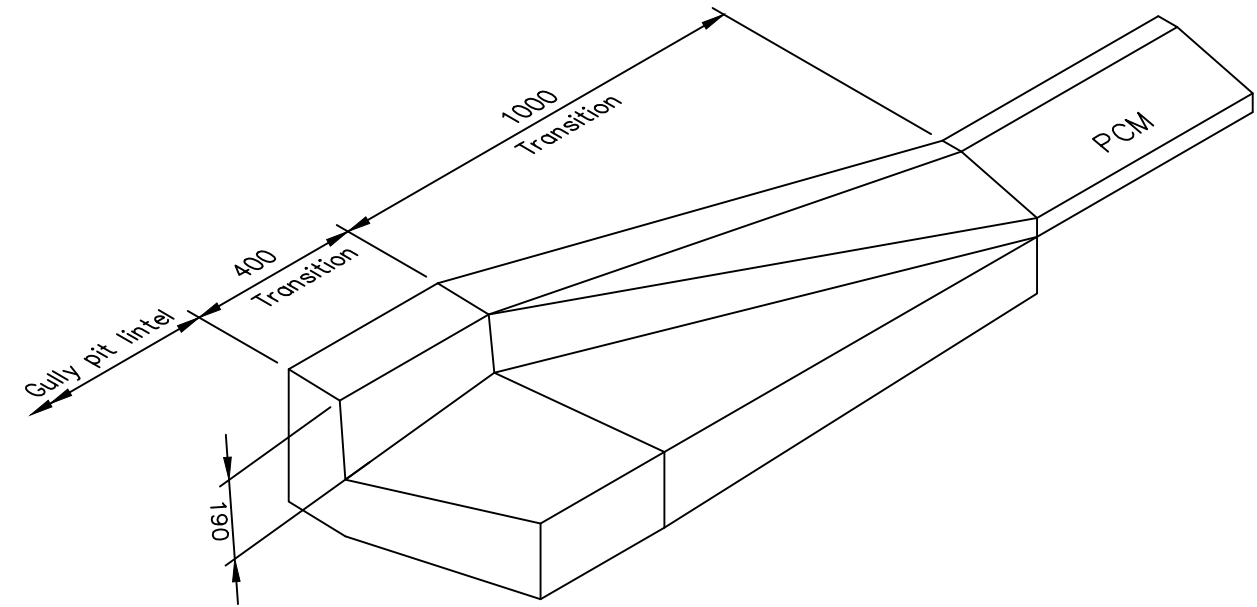
TYPE KCS



TYPE KCM



TYPE BK



TYPE PCM

NOTES

1. Line inverts up through plan transition.
2. Refer Sheets:
 - TSD-SW07, TSD-SW08, TSD-SW09
 - TSD-SW10 for lintel details

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW11-v2.dwg

REFERENCES
TSD-SW11-v2

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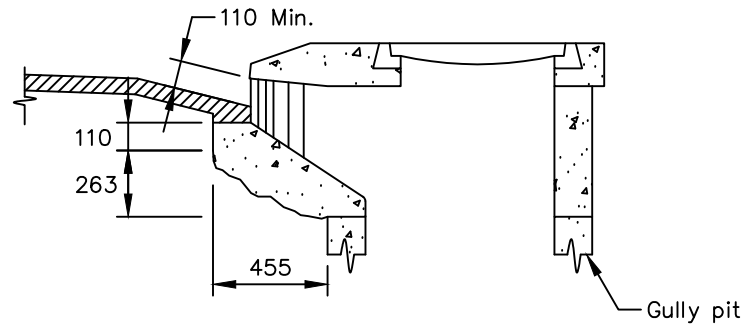
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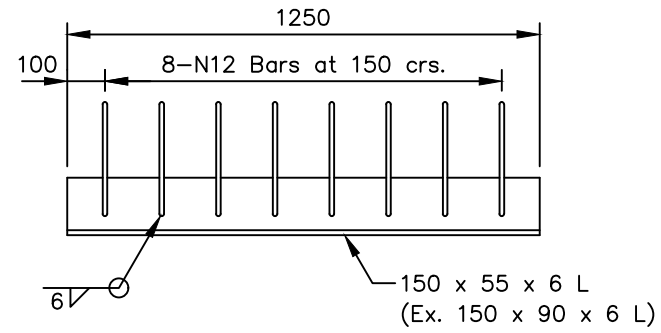
STANDARD DRAWING
SIDE ENTRY PITS
KERB TRANSITIONS

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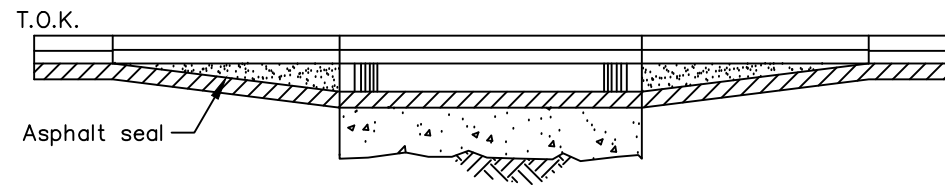
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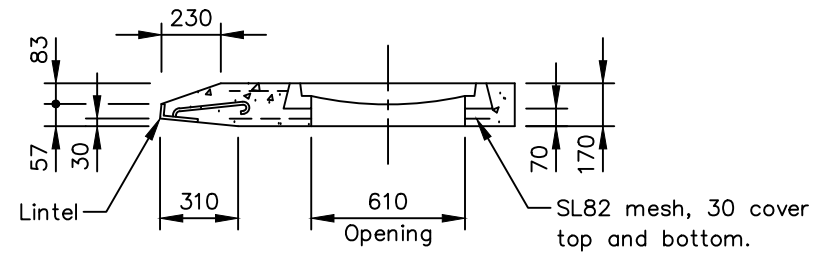
SECTION B-B



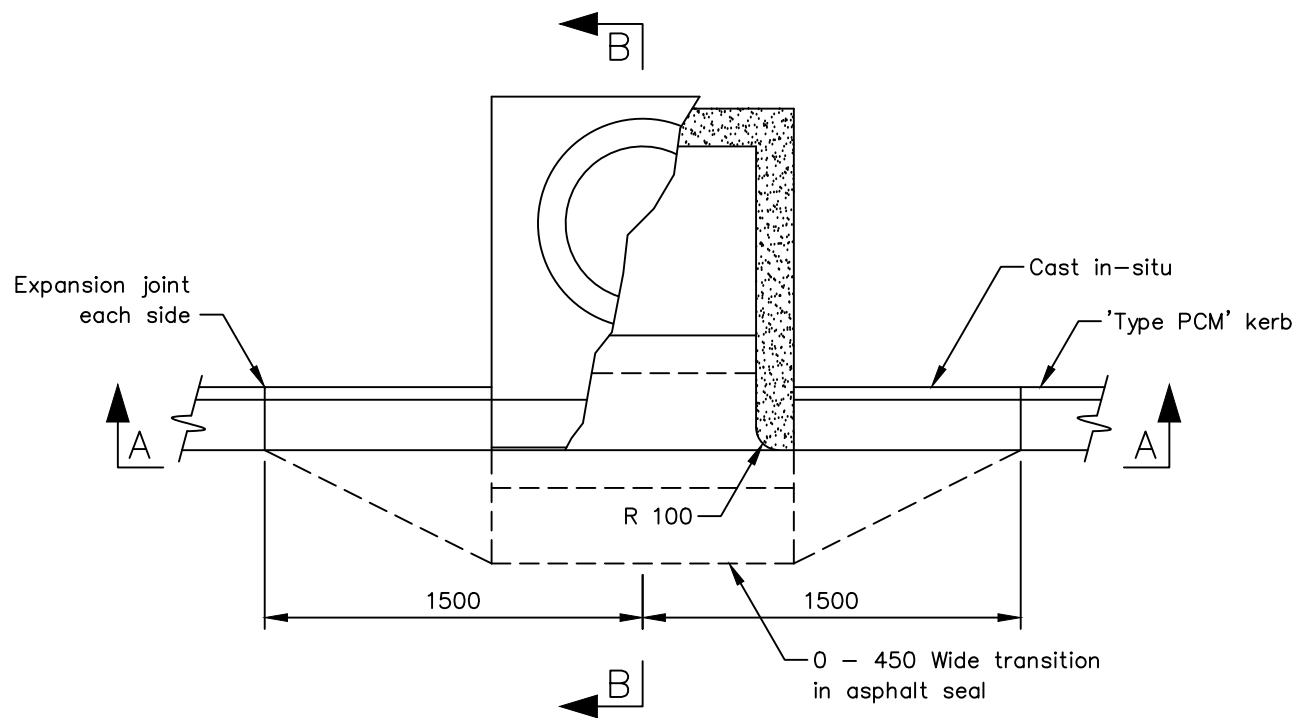
LINTEL (GALV. M.S. ANGLE)



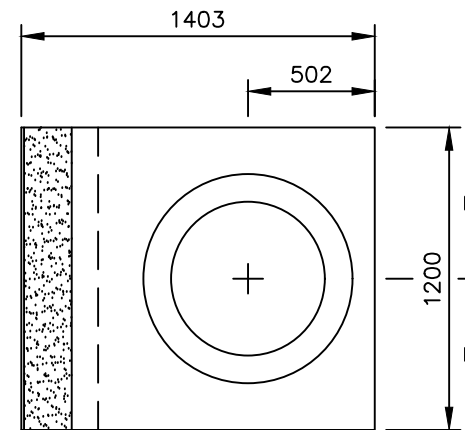
SECTION A-A



Standard 600 mm heavy duty 'Gatic' (or approved equivalent) lid and surround integrally cast into pit top.



PLAN (CUT AWAY VIEW)



PRE-CAST PIT TOP

NOTES

1. Lap (300) all reinforcing with min. 50mm cover. (U.N.O.)
2. Provide 20mm chamfer for all exposed edges.
3. Concrete strength N25, min. 150mm thick.
4. 'PCM' - Precast mountable kerb.
5. Refer Sheets:
 - TSD-S04 for grate details
 - TSD-S05 for unsealed pit construction
6. Equivalent pre-cast componentry may be substituted with the approval of the General Manager's delegated officer.

SCALES: AS SHOWN
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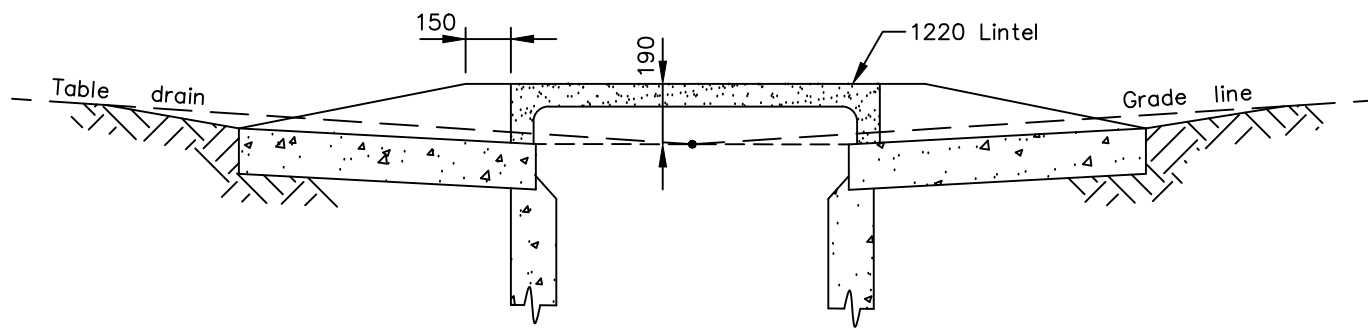


STANDARD DRAWING
SIDE ENTRY PITS
'TYPE 5'

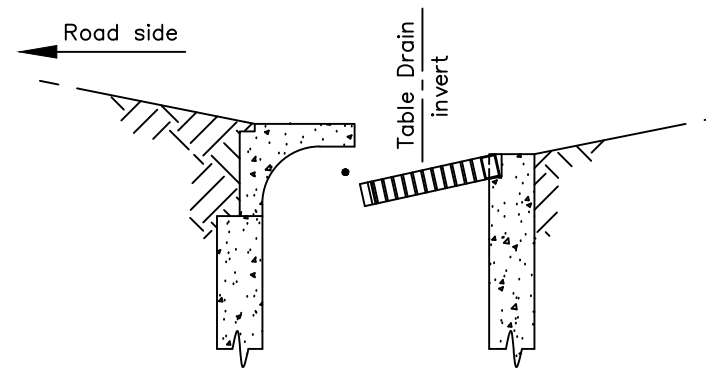
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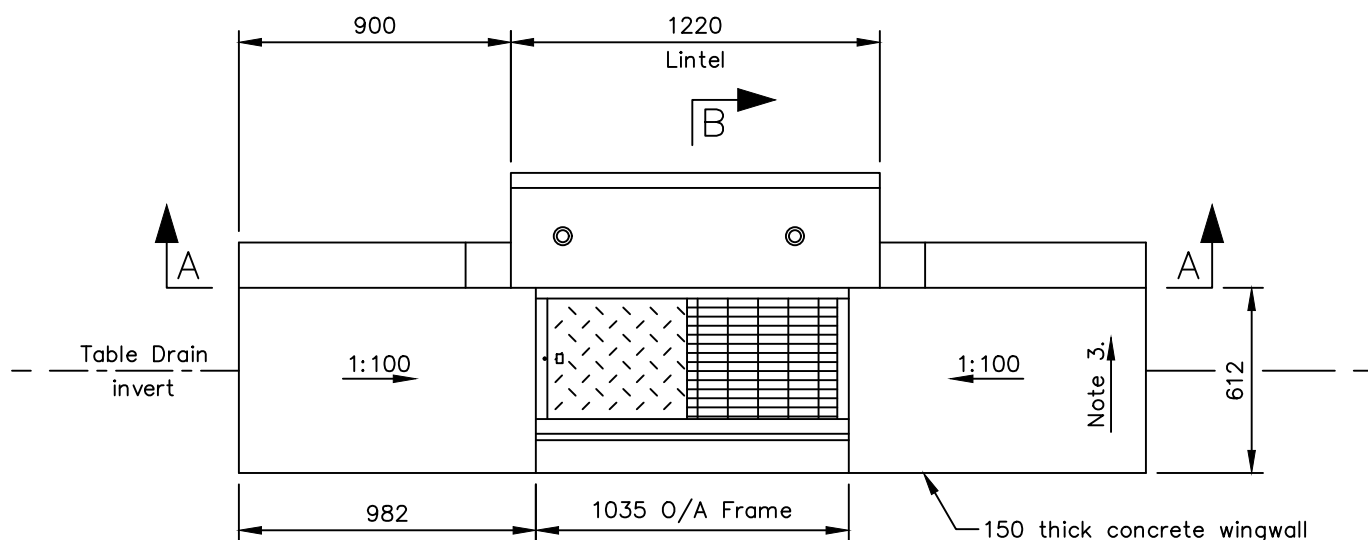
TSD-SW12-v2



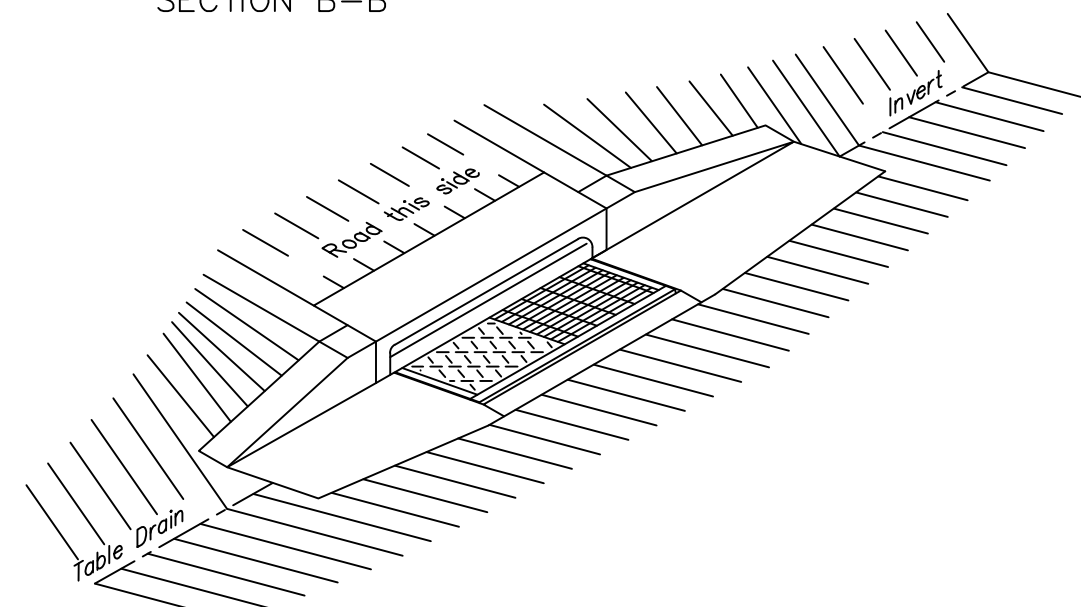
SECTION A-A
(Bar removed for clarity)



SECTION B-B



PLAN



PICTORIAL VIEW

NOTES

1. Position chequer plate on side of maximum flow.
2. Provide 20 radius on all exposed edges of in-situ poured concrete.
3. Vary wingwall channel crossfall to suit table drain.
4. Concrete - N25 grade, 150 thick.
5. Fit lintels with 20 dia. galv. rod.
6. Refer Sheets:
 - TSD-SW04 for grate details
 - TSD-SW05 for unsealed pit construction

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW13-v2.dwg

REFERENCES

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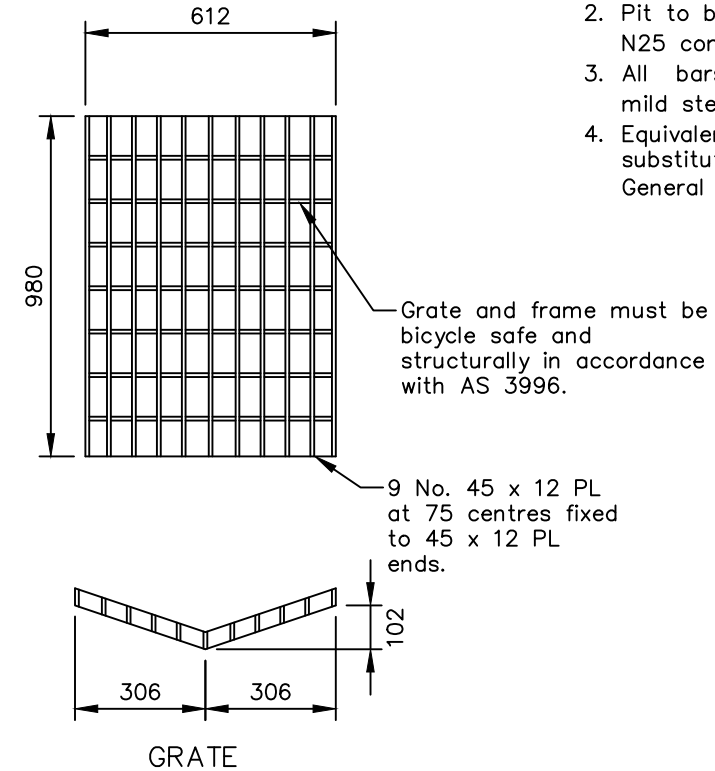
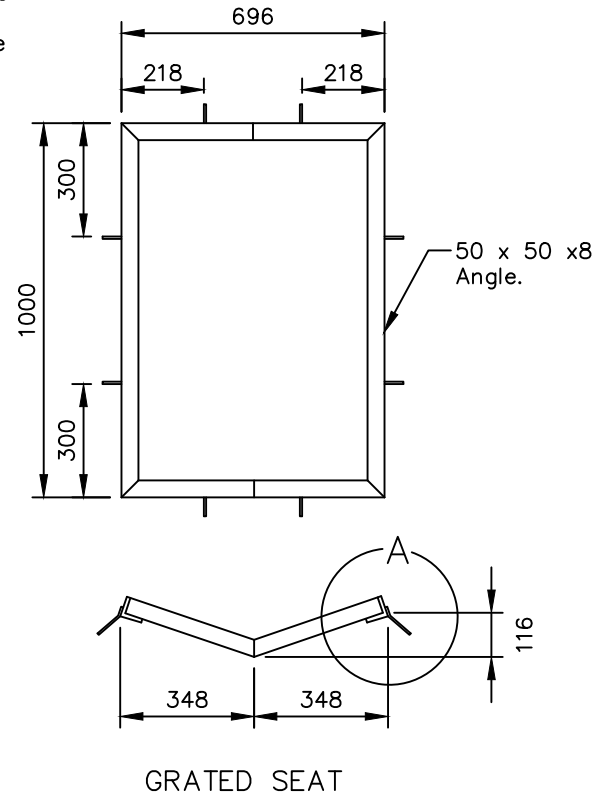
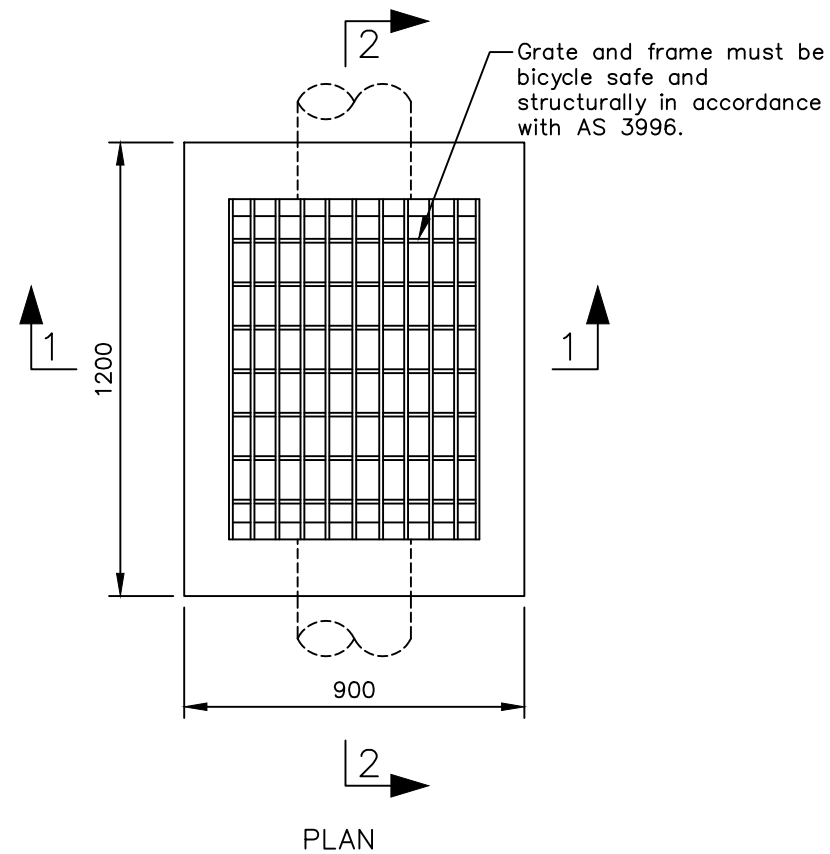


STANDARD DRAWING
SIDE ENTRY PITS
TABLE DRAIN PIT CONSTRUCTION

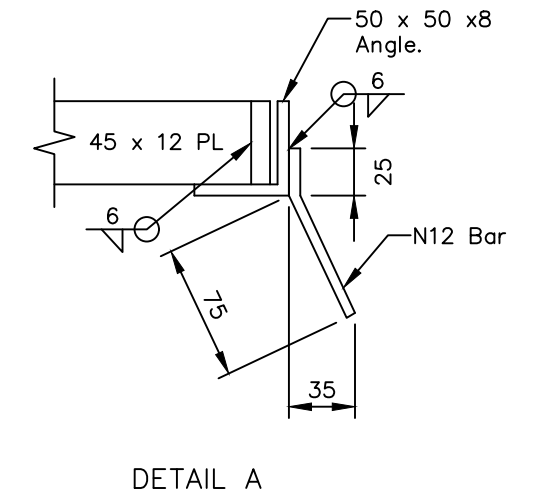
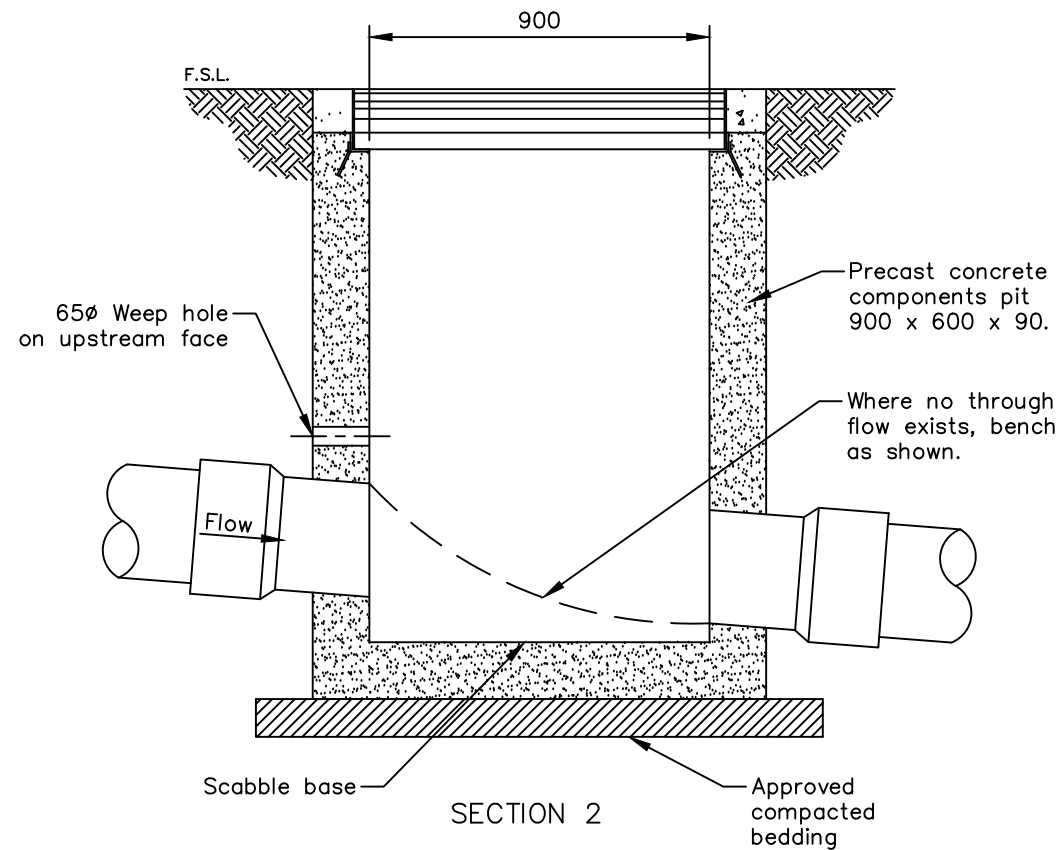
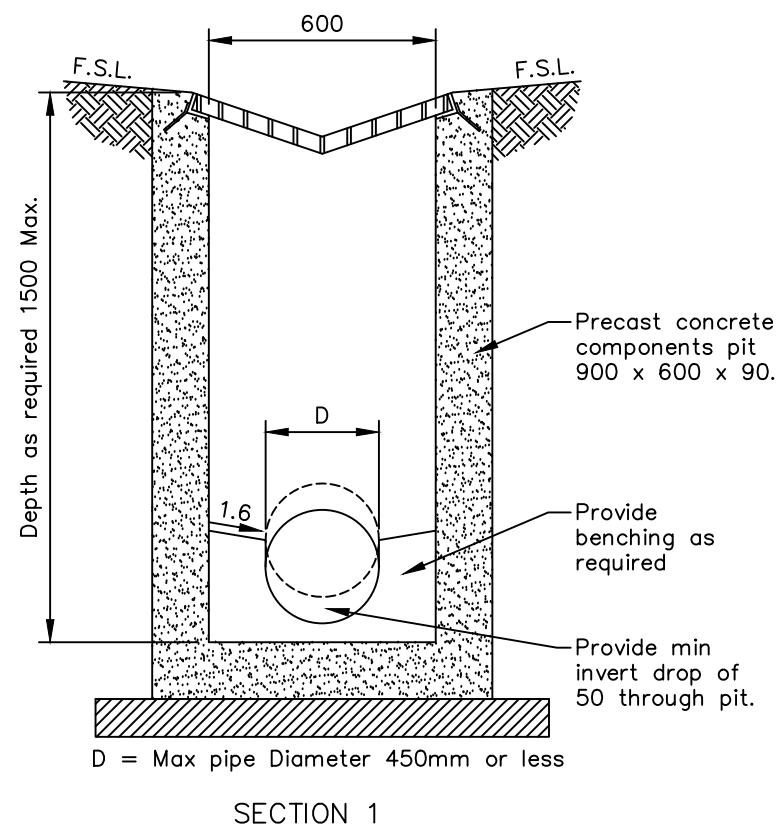
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ISSUE DATE: 28-04-2020

DWG No. TSD-SW13-v2



- NOTES**
1. All dimension in millimetres (mm)
 2. Pit to be constructed from grade N25 concrete.
 3. All bars and angles to be grade 250 mild steel.
 4. Equivalent pre-cast componentry may be substituted with the approval of the General Manager's delegated officer.



SCALES: AS SHOWN
(All scales are correct at A3)

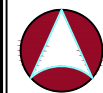
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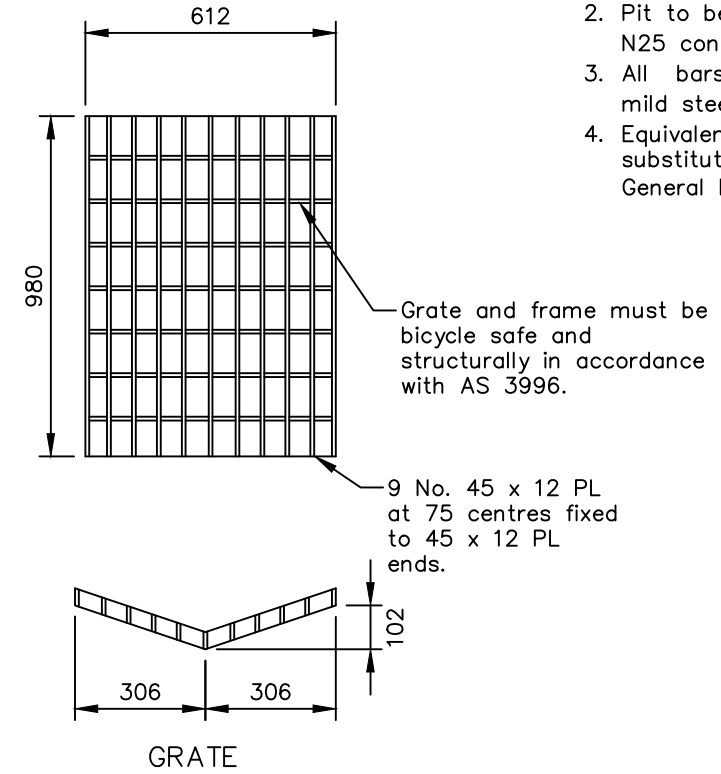
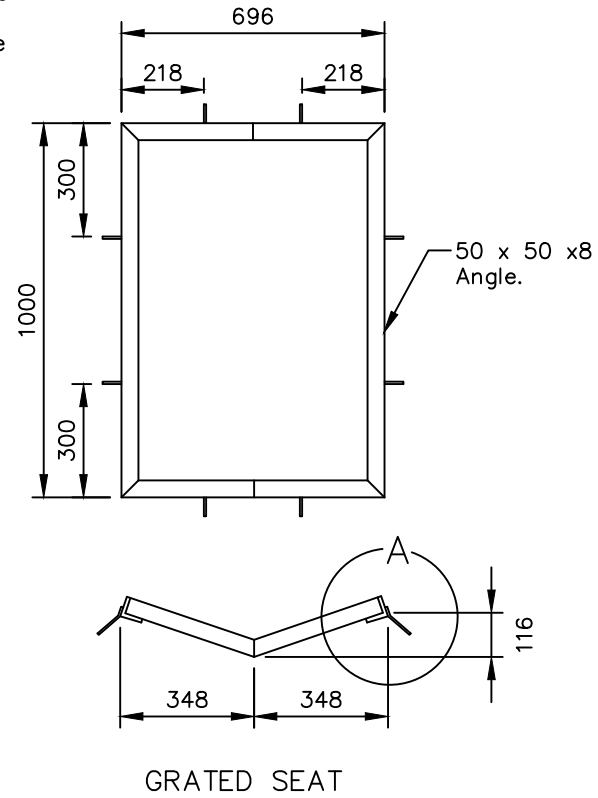
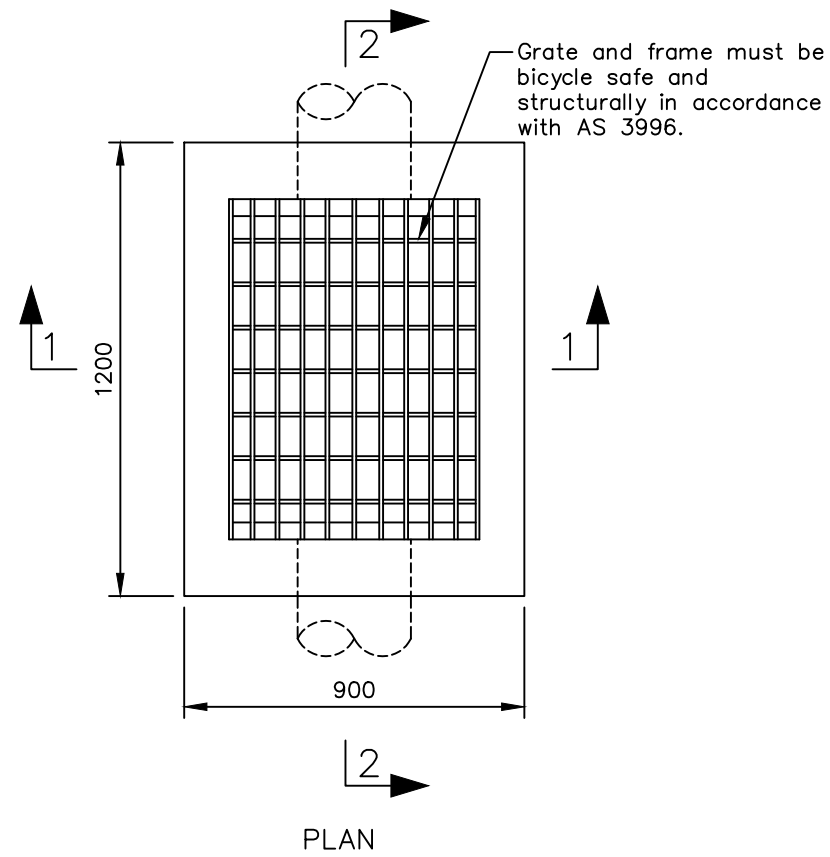
STANDARD DRAWING
STORMWATER - 'GVP'

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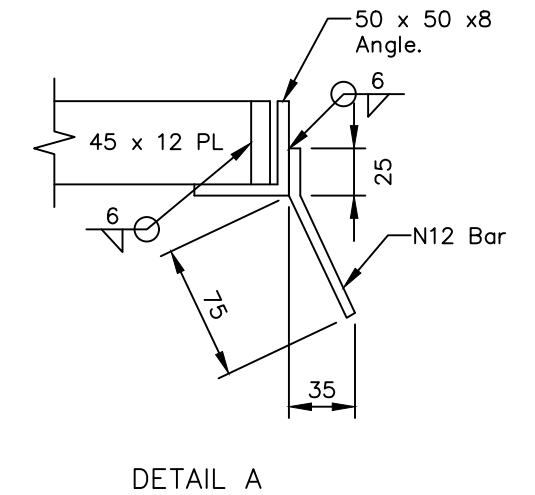
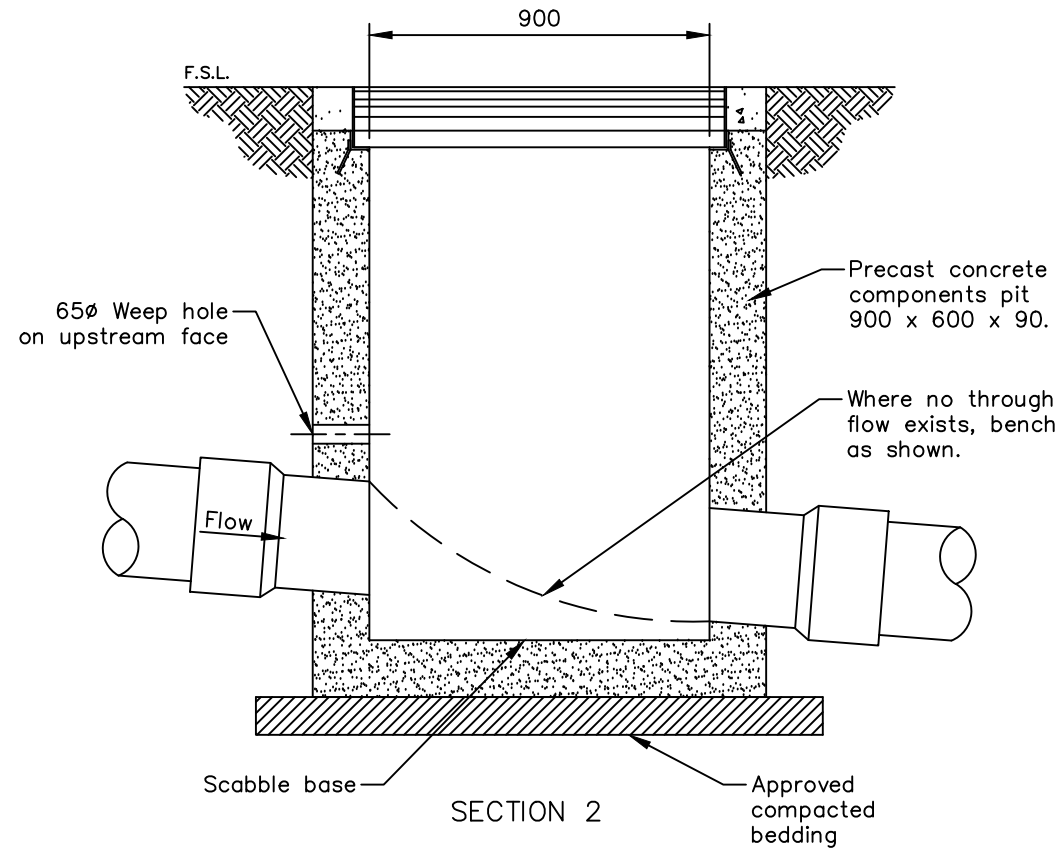
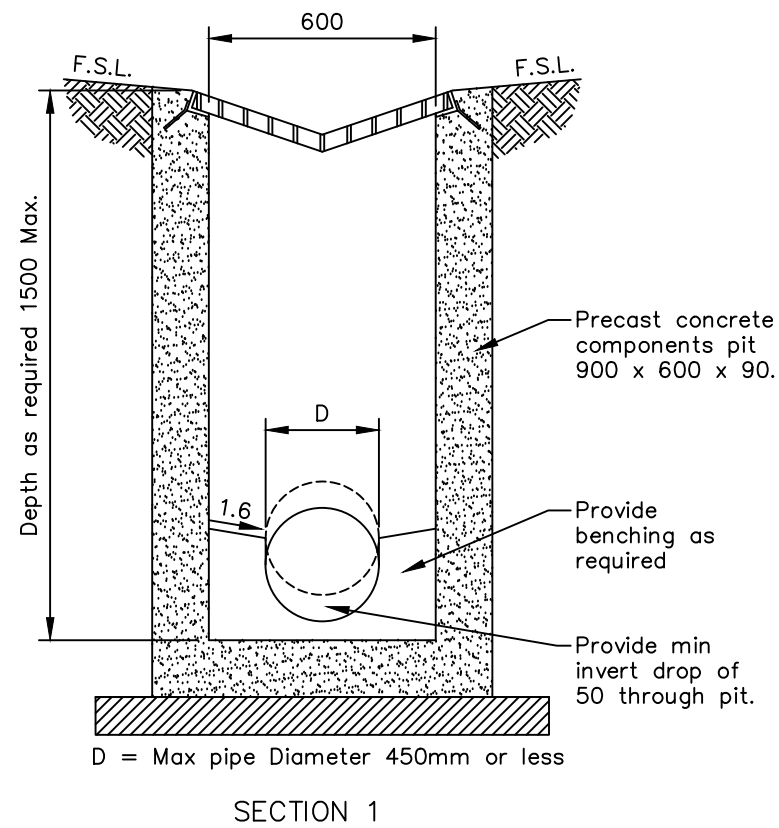
ISSUE DATE: 28-04-2020

DWG No.

TSD-SW14-v2



- NOTES**
1. All dimension in millimetres (mm)
 2. Pit to be constructed from grade N25 concrete.
 3. All bars and angles to be grade 250 mild steel.
 4. Equivalent pre-cast componentry may be substituted with the approval of the General Manager's delegated officer.



SCALES: AS SHOWN
(All scales are correct at A3)

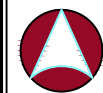
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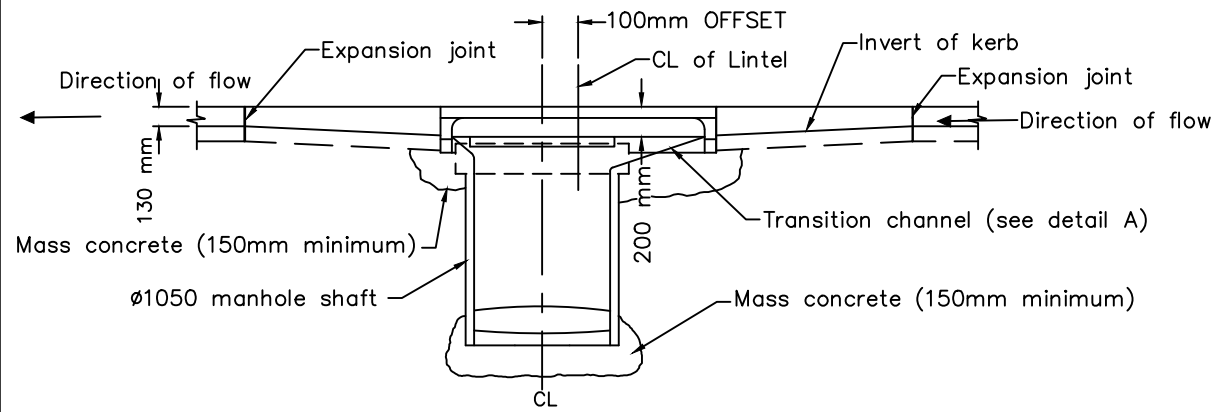


STANDARD DRAWING
STORMWATER - 'GP'

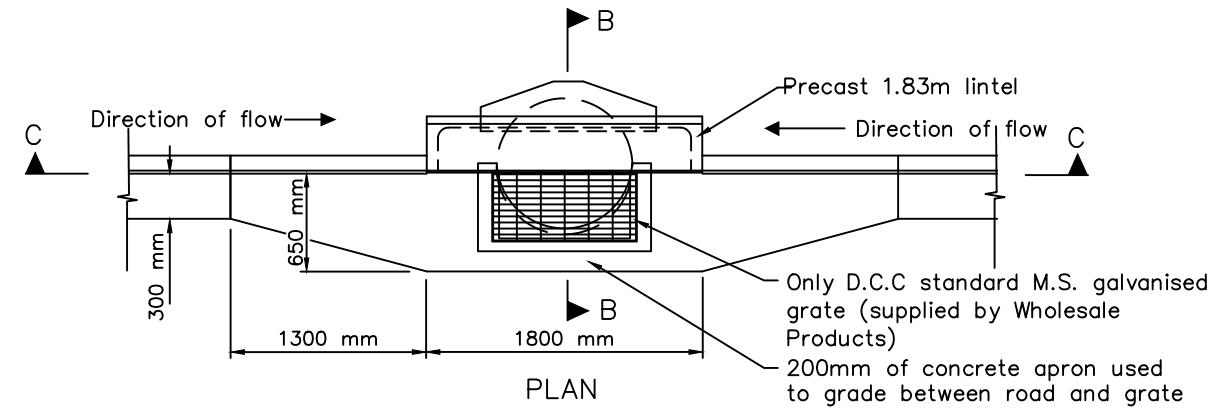
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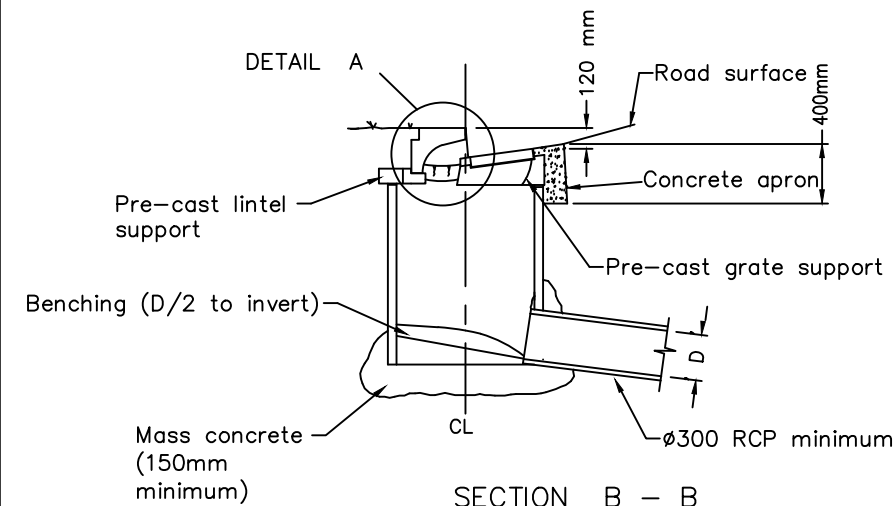
TSD-SW15-v2



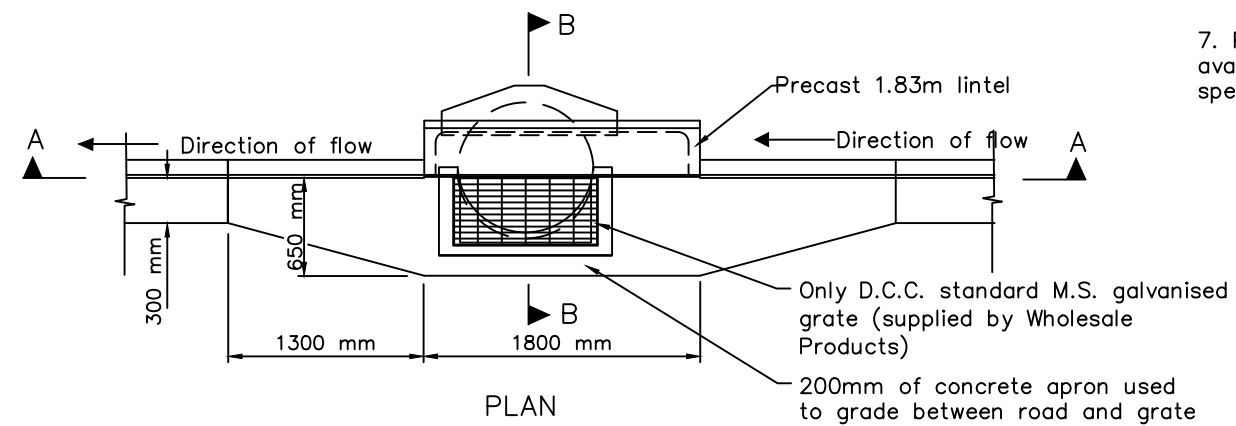
SECTION A-A



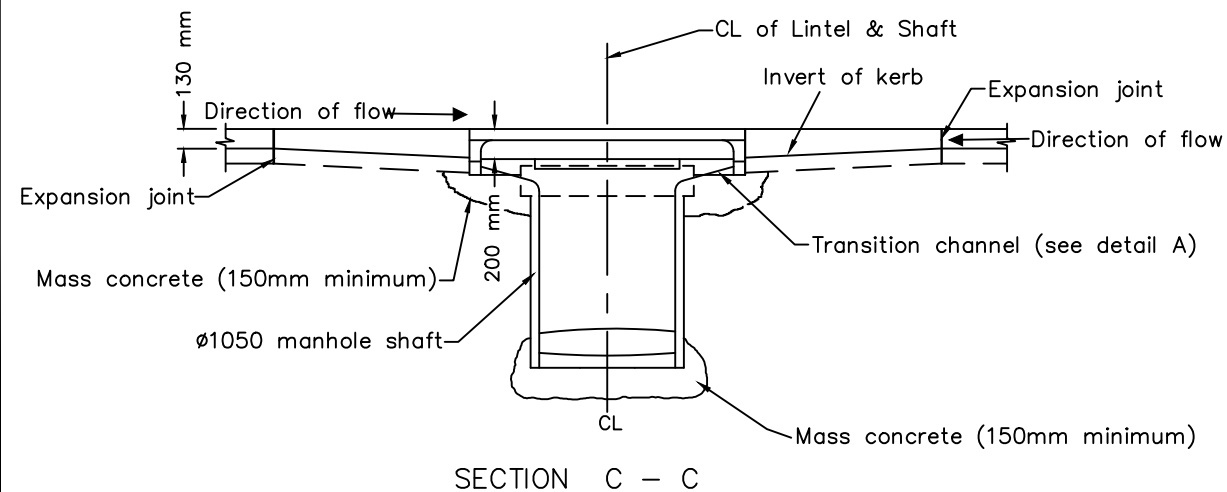
SAG PIT DETAILS



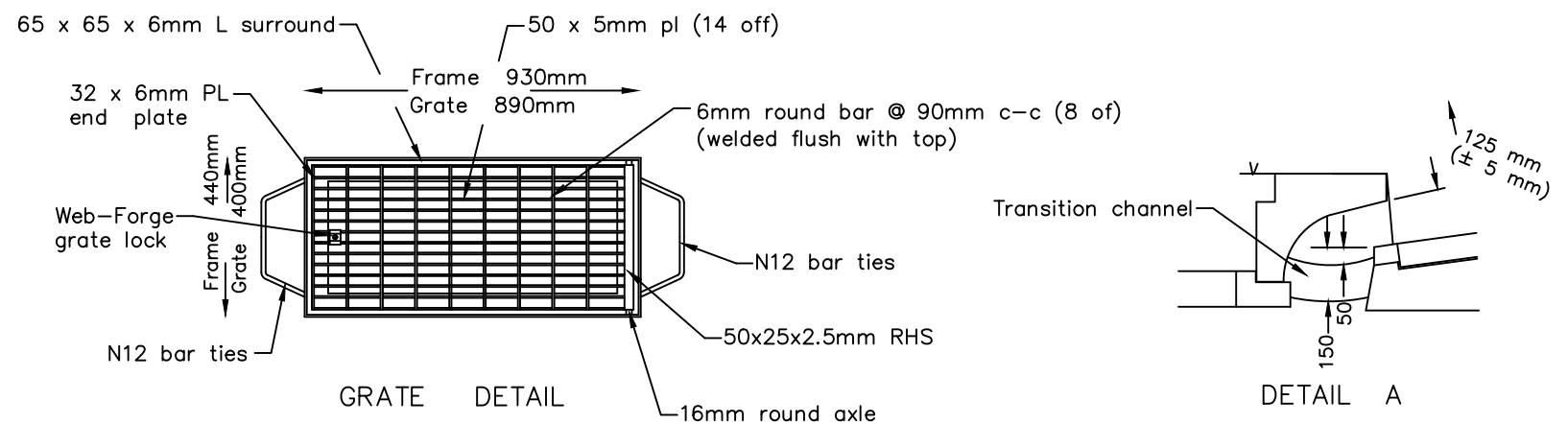
SECTION B - B



ON GRADE PIT DETAILS



SECTION C - C



DETAIL A

- NOTES**
1. All concrete to have a minimum strength of N25.
 2. Clean cement stabilised sand to be compacted under kerb transitions.
 3. Mass concrete, 150mm minimum, to be placed under lintel.
 4. Standard manhole shaft to be ϕ 1050 RCP
 5. All grate and frame components to be hot dipped galvanised.
 6. Refer TSD-SW04-v1.
 7. Pre-cast manufacturer option available manufacturers specification.

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW16-v2.dwg

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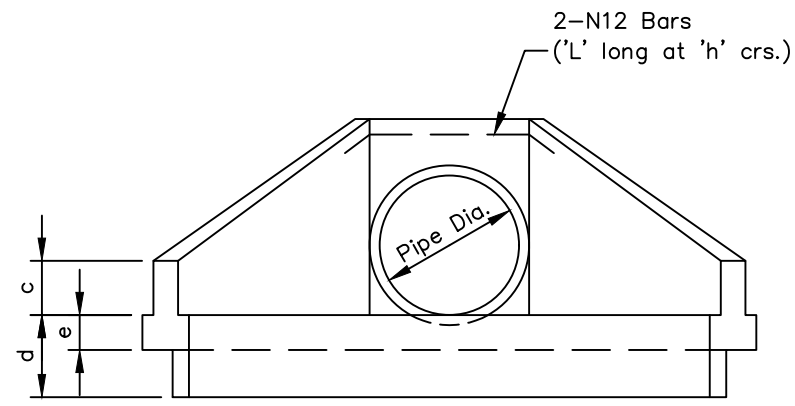


STANDARD DRAWING
SIDE ENTRY PITS
'TYPE 6'

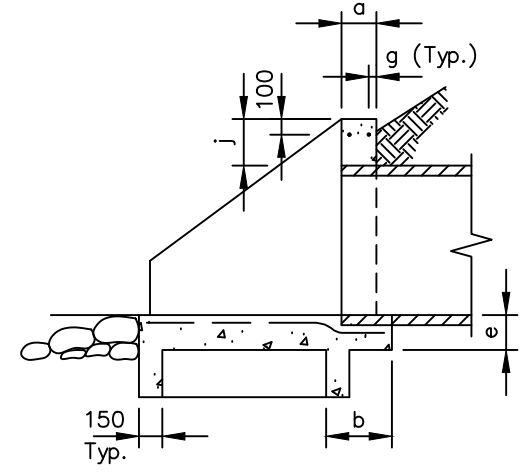
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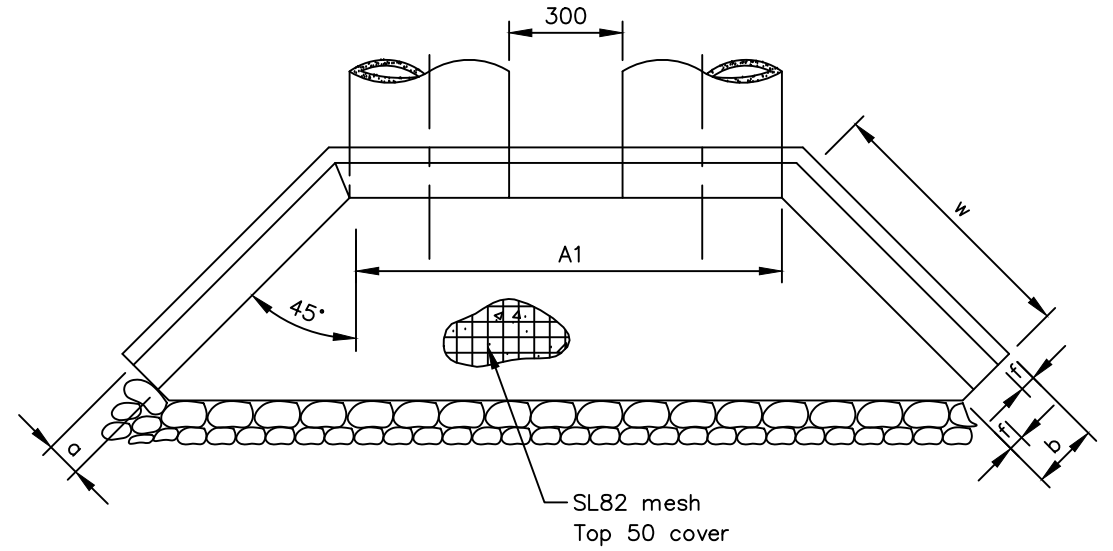
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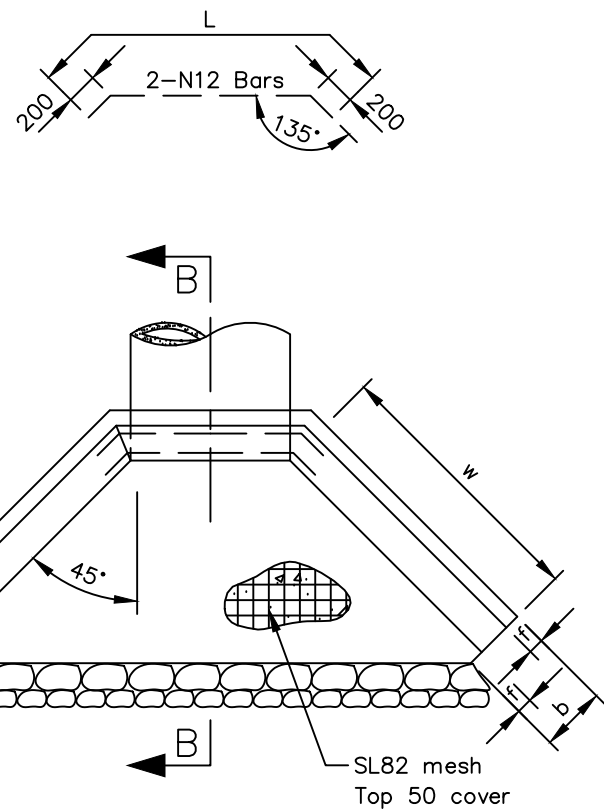
ELEVATION



SECTION B-B



PLAN DOUBLE ENDWALL



SECTION A-A

DIMENSION TABLE

PIPE DIAMETER	300	375	450	525	600	675	750	825	900
HEADWALL DIMENSIONS (mm)									
A1	1425	1600	1750	1950	-	-	-	-	-
a	150	150	150	150	175	175	200	200	225
b	300	300	300	300	375	375	400	400	425
c	300	300	300	300	350	350	350	350	350
d	375	375	375	375	530	530	530	530	530
e	150	150	150	150	175	175	200	200	225
f	75	75	75	75	100	100	100	100	100
g	40	40	40	40	50	50	50	50	50
h	70	70	70	70	75	75	100	100	125
j	200	200	200	200	300	300	300	300	300
w	700	700	850	1000	1100	1300	1450	1600	1750
Vol. of concrete (m ³)	0.329	0.375	0.485	0.621	0.981	1.220	1.483	1.702	2.027
Reinforcing (all bars N12)									
L - (Rear)	845	921	1017	1099	1204	1287	1388	1470	1575
L - (Front)	803	880	975	1057	1140	1223	1305	1387	1471
Reo. Length (mm)	1648	1801	1992	2156	2344	2510	2693	2857	3046
Reo. Mass (kg) *	1420	1509	1687	1776	1954	2131	2220	2398	2486

* Does not include SL82 mesh to slab

NOTES

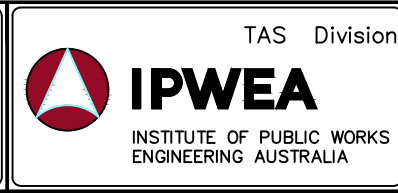
1. Quantities are for one headwall only.
2. Provide 12mm chamfer for all exposed surfaces.
3. Concrete grade - N25.
4. Pre-cast manufacturer option available manufacturers specification.
5. All dimensions in millimetres (mm)
6. Provide rock pitching as directed by General Manager's delegated officer.

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW17-v2.dwg

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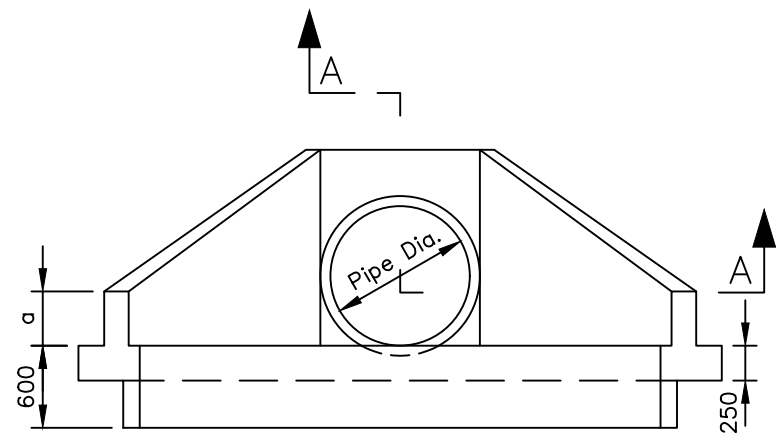
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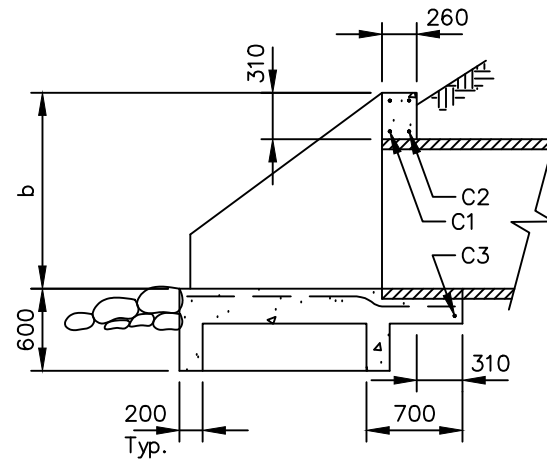
STANDARD DRAWING
OUTLET HEADWALLS
300 TO 900 DIA. PIPES

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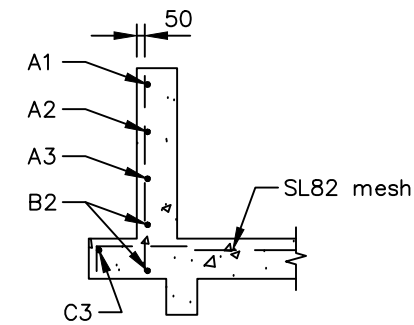
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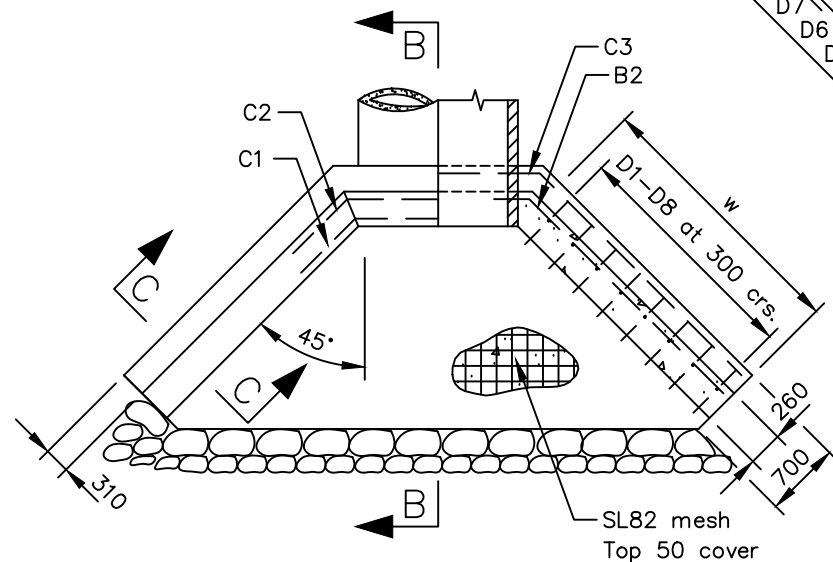
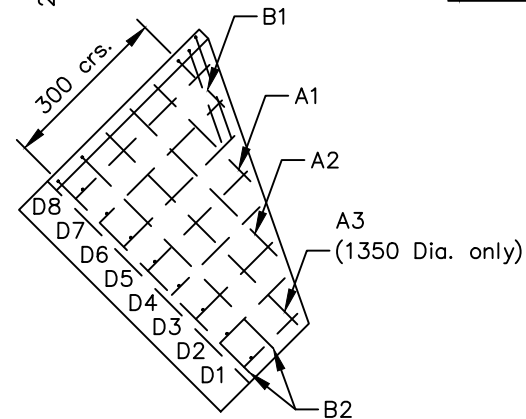
ELEVATION



SECTION B-B



SECTION C-C



SECTION A-A

DIMENSION TABLE

PIPE DIAMETER	1050	1200	1350
HEADWALL DIMENSIONS (mm)			
a	450	450	530
b	1380	1550	1700
w	1930	2300	2500

BAR SHAPE (ALL BARS N12)	MARK	1050 DIA. PIPE					1200 DIA. PIPE					1350 DIA. PIPE				
		L1 mm	L2 mm	L1+L2 mm	No. Req'd	Total Length	L1 mm	L2 mm	LG mm	No. Req'd	Total Length	L1 mm	L2 mm	LG mm	No. Req'd	Total Length
	A1	1404	-	1404	2	2.81	1587	-	1587	2	3.17	1486	-	1486	2	2.97
	A2	1967	-	1967	2	3.93	2340	-	2340	2	4.68	2127	-	2127	2	4.25
	A3	-	-	-	-	-	-	-	-	-	-	2537	-	2537	2	5.07
	B1	781	250	1031	2	2.06	765	250	1015	2	2.03	845	300	1145	2	2.29
	B2	1967	250	2217	4	8.87	2340	250	2590	4	10.36	2537	300	2837	4	11.35
	C1	1259	750	2759	2	5.52	1412	750	2912	2	5.82	1565	750	3065	2	6.13
	C2	1392	750	2892	2	5.78	1545	750	3045	2	6.09	1698	750	3198	2	6.40
	C3	1649	2095	5839	1	5.84	1802	2465	6732	1	6.73	1955	2665	7285	1	7.29
	D1	629	-	1329	2	2.66	641	-	1341	2	2.68	790	-	1490	2	2.98
	D2	-	-	-	-	-	751	-	1451	2	2.90	930	-	1630	2	3.26
	D3	774	-	1474	2	2.95	860	-	1560	2	3.12	1071	-	1771	2	3.54
	D4	918	-	1618	2	3.24	970	-	1670	2	3.34	1211	-	1911	2	3.82
	D5	1062	-	1762	2	3.52	1080	-	1780	2	3.56	1351	-	2051	2	4.10
	D6	1207	-	1907	2	3.81	1189	-	1889	2	3.78	1492	-	2192	2	4.38
	D7	1352	-	2052	2	4.10	1299	-	1999	2	4.00	1632	-	2332	2	4.66
	D8	1496	-	2196	2	4.39	1408	-	2108	2	4.22	1773	-	2473	2	4.95

Reo. Mass = 52.81 kg *	Reo. Mass = 59.03 kg *	Reo. Mass = 68.77 kg *
Volume of concrete (2.794 m3)	Volume of concrete (3.499 m3)	Volume of concrete (3.987 m3)

* Does not include SL82 mesh in apron.

NOTES

- Quantities are for one headwall only.
- Chamfer (10 x 10) all exposed surfaces.
- Concrete grade - N25.
- Cover to all reinforcing 50mm unless noted.
- Pre-cast manufacturer option available manufacturers specification
- All dimensions in millimetres (mm)
- Provide rock pitching as directed by General Manager's delegated officer.

SCALES: AS SHOWN
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REFERENCES

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1050 TO 1350 DIA. PIPES

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ISSUE DATE: 28-04-2020 DWG No.

TSD-SW18-v2

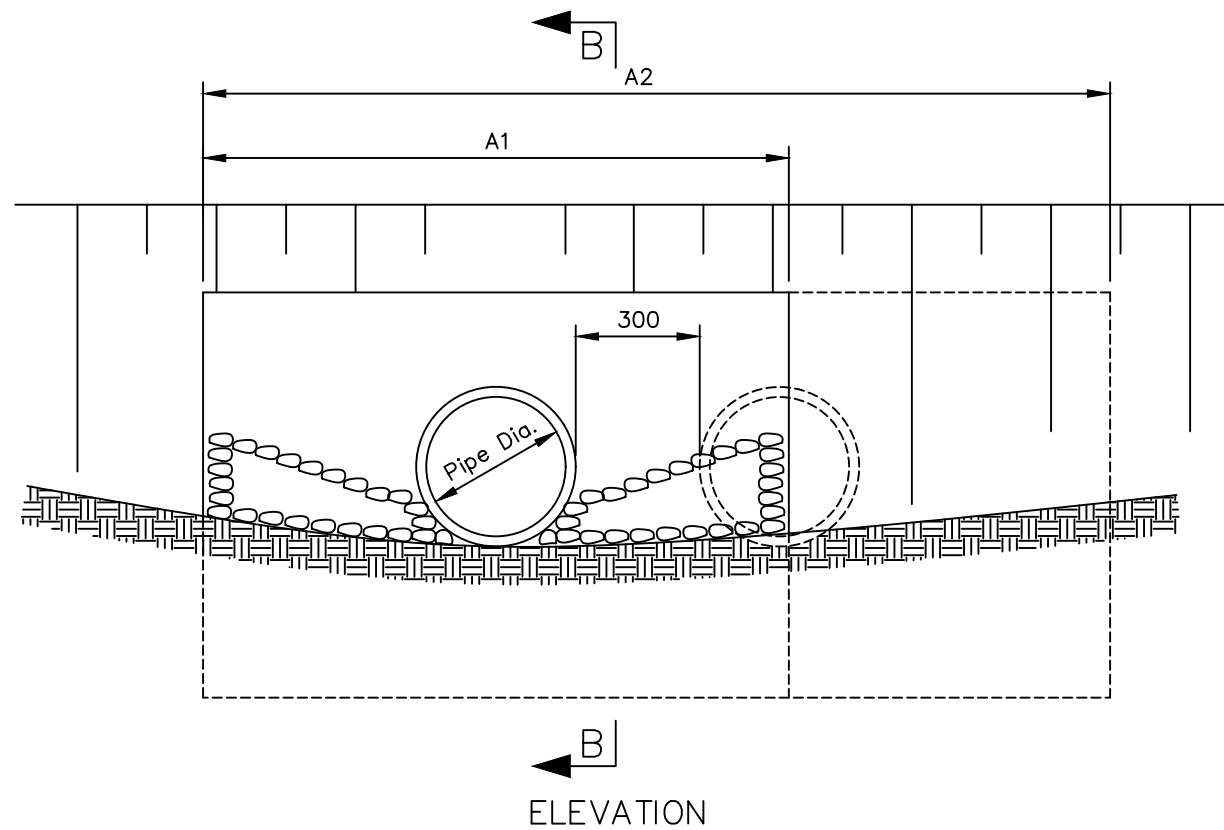
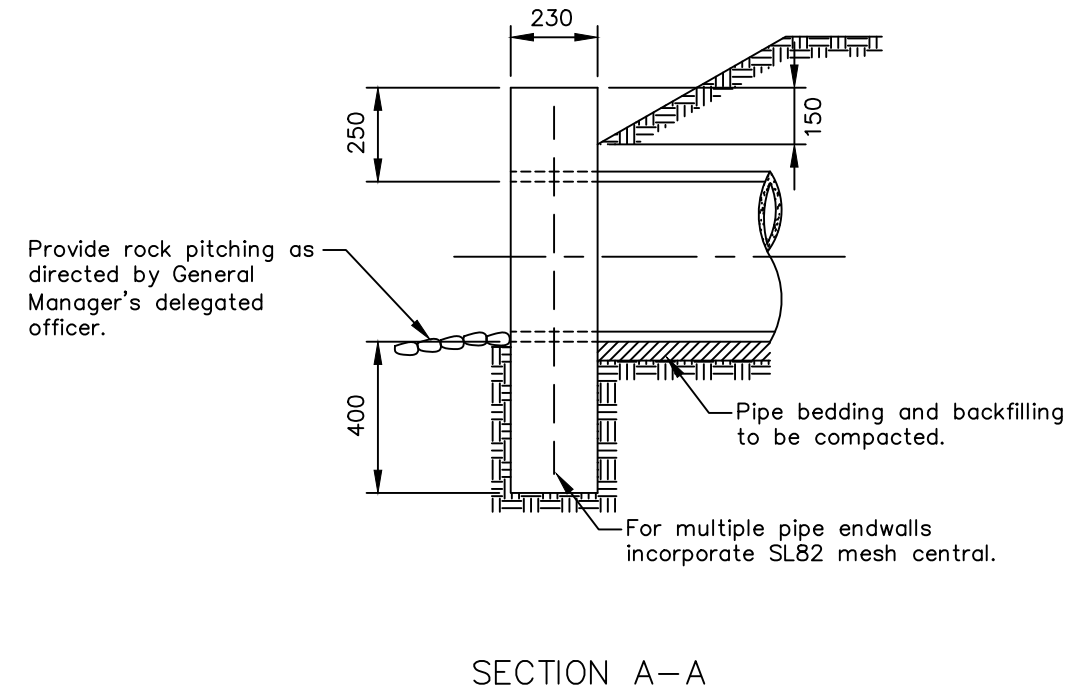
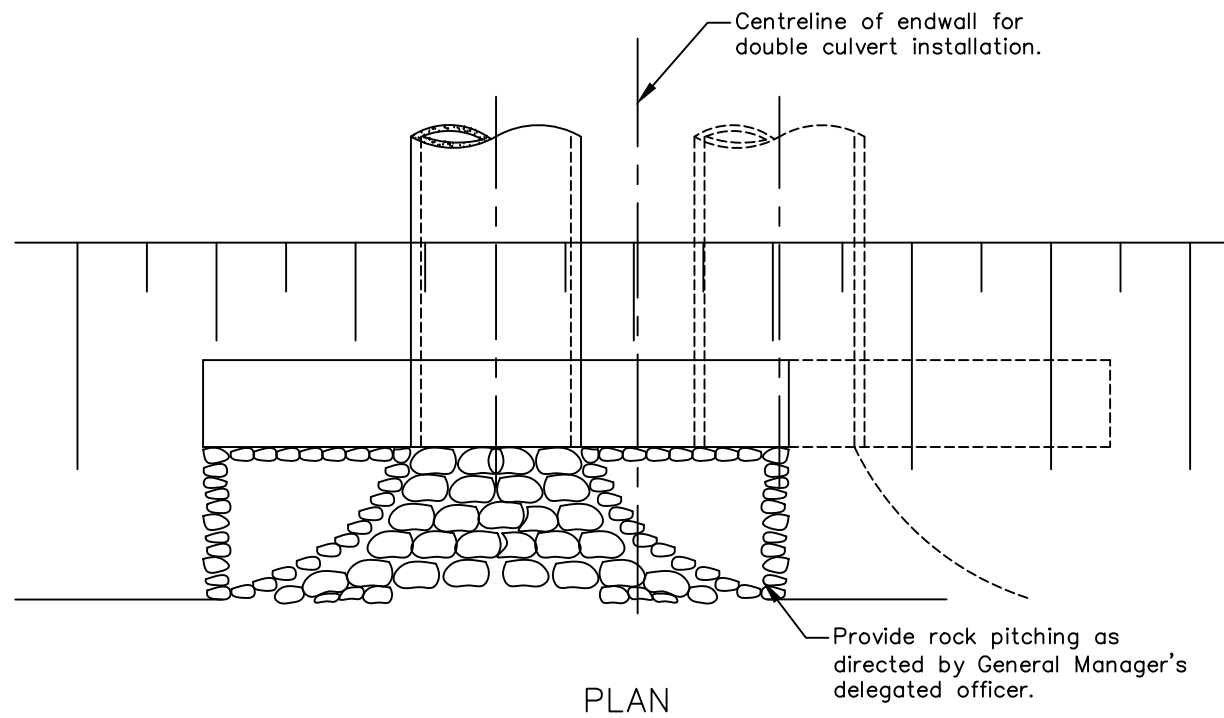


TABLE 1

NOMINAL PIPE DIAMETER	HEADWALL DIMENSIONS (mm)	
	A1	A2
300	1150	1850
375	1350	2100
450	1550	2400
525	1750	2650

NOTES

1. Quantities are for one headwall only.
2. Chamfer (10 x 10) all exposed surfaces.
3. Concrete grade – N25.
4. Cover to all reinforcing 50mm unless noted.
5. Equivalent pre-cast componentry may be substituted with the approval of the General Manager's delegated officer.
6. Lap reinforcement 300 min.
7. All dimensions in millimetres (mm)
8. Provide rock pitching as directed by General Manager's delegated officer.

SCALES: AS SHOWN
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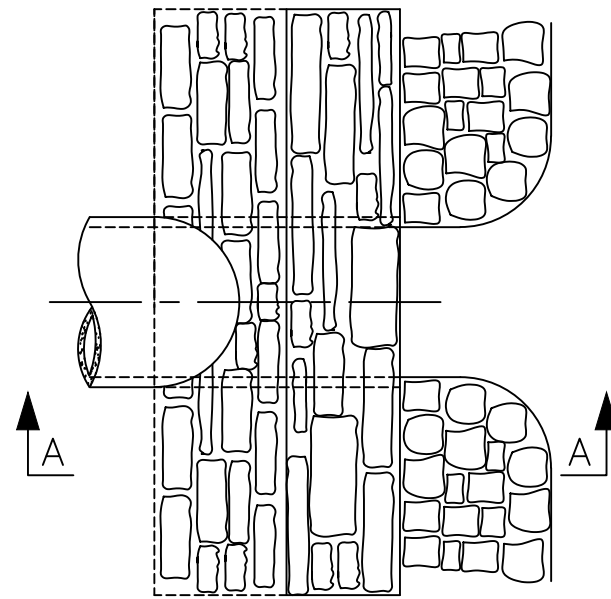
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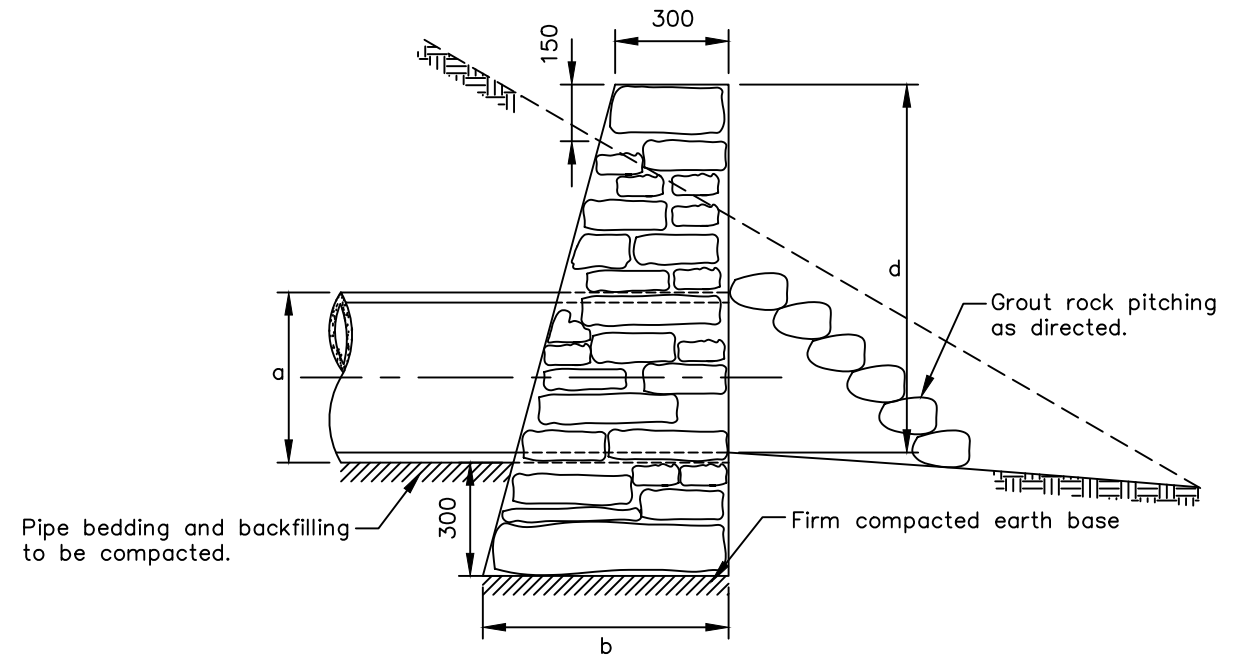
STANDARD DRAWING
CONCRETE ENDWALL PLAIN
(300 - 450 DIA)

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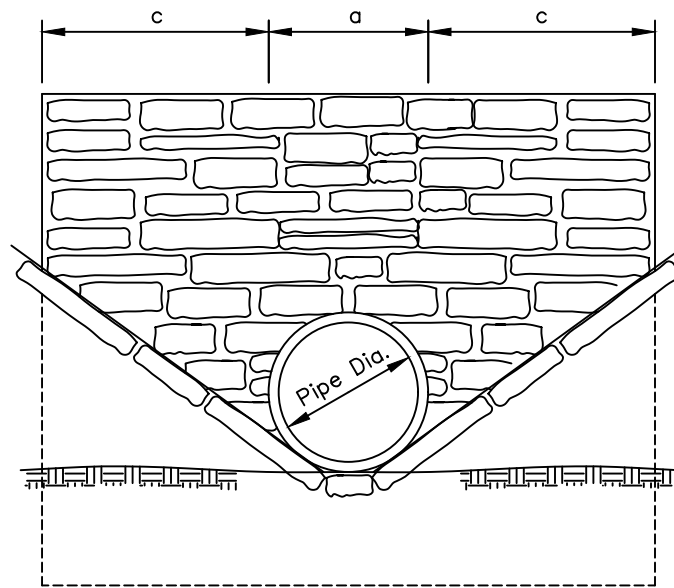
ISSUE DATE: 28-04-2020 DWG No. TSD-SW19-v2



PLAN



SECTION A-A



FRONT ELEVATION

TABLE 1

NOMINAL PIPE DIAMETER	HEADWALL DIMENSIONS (mm)			
	a	b	c	d
300	365	550	600	800
375	450	600	675	900
450	538	650	750	1000

NOTES

1. All dimensions in millimetres (mm)
2. Stone headwall to be used only where the specific approval of the General Manager's delegated officer.
3. All stones to be set in mortar consisting of 1 part cement to 3 parts clean sand.
4. All stones to be clean, hard and durable and shall have weight of between 10 & 70kg.
5. All stones shall have a length of at least 1.5 times the width and shall be bedded to the course below on their broadest base.

SCALES: AS SHOWN
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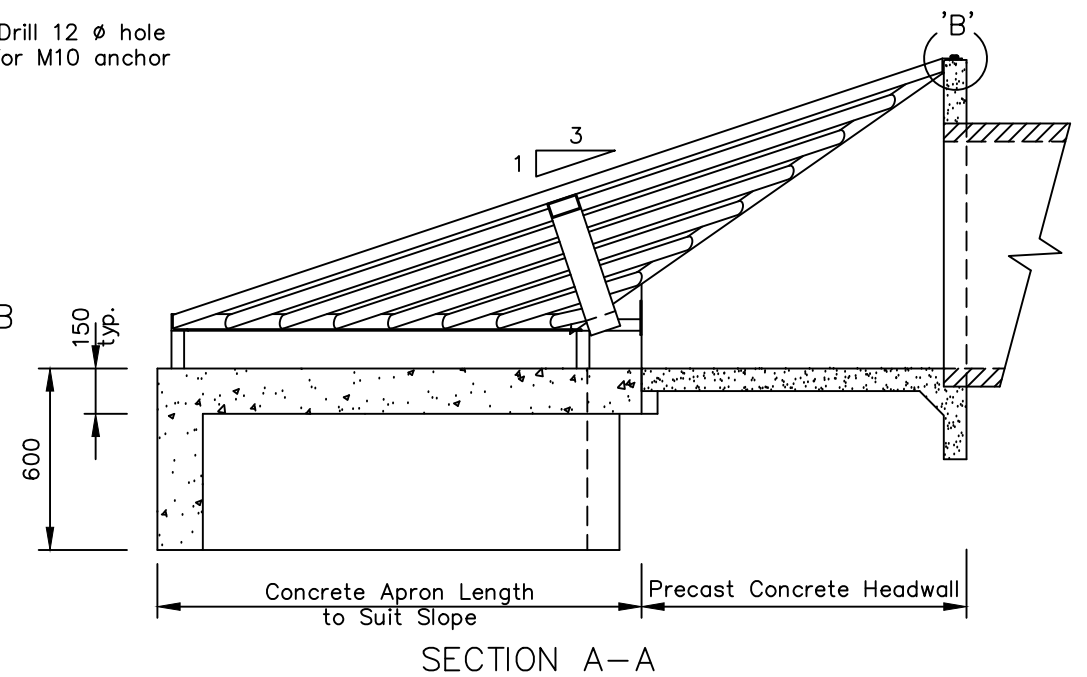
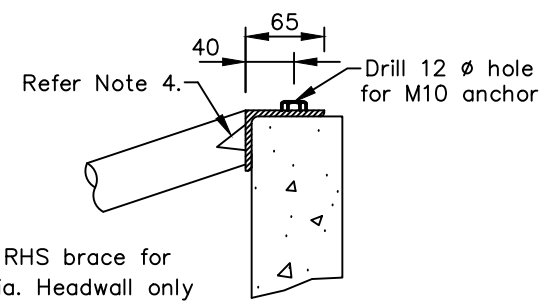
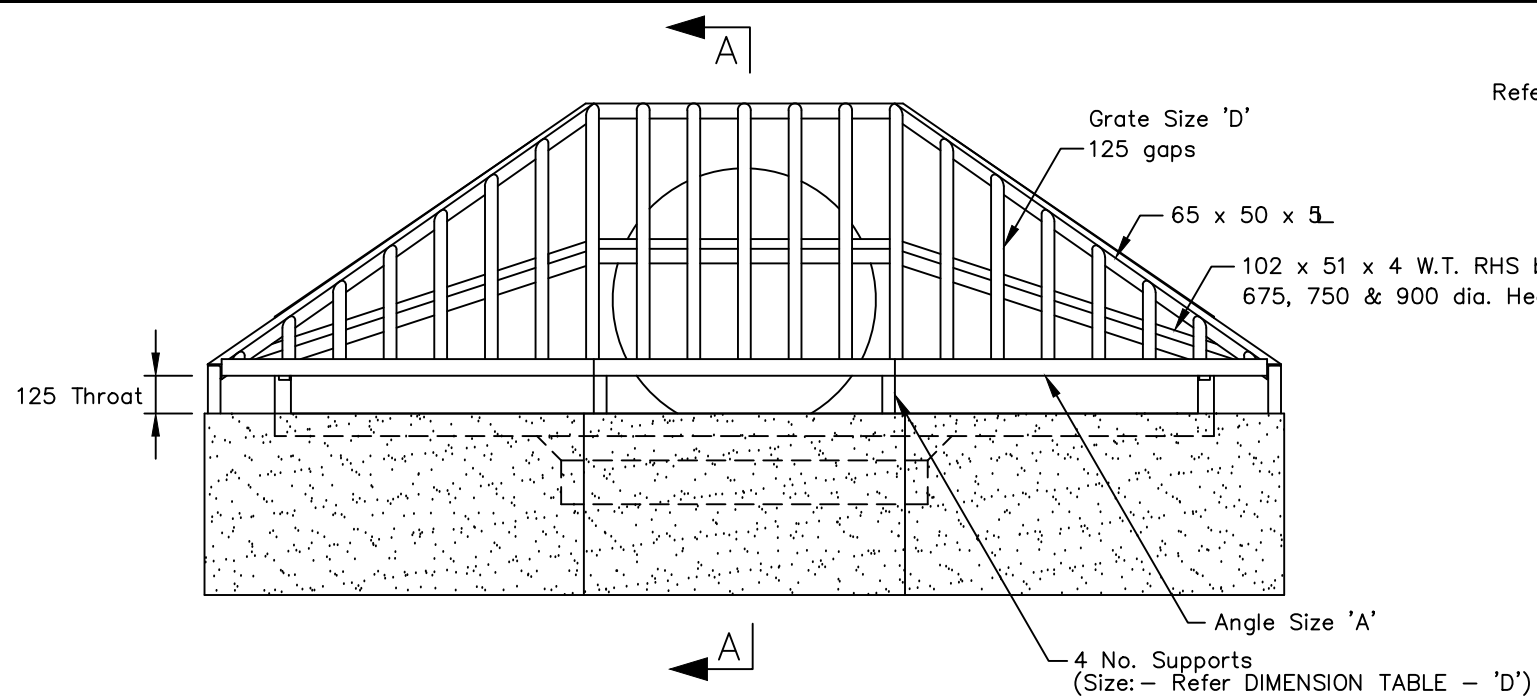
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STANDARD DRAWING
OUTLET HEADWALLS
GROUTED STONE (300 - 450 DIA)

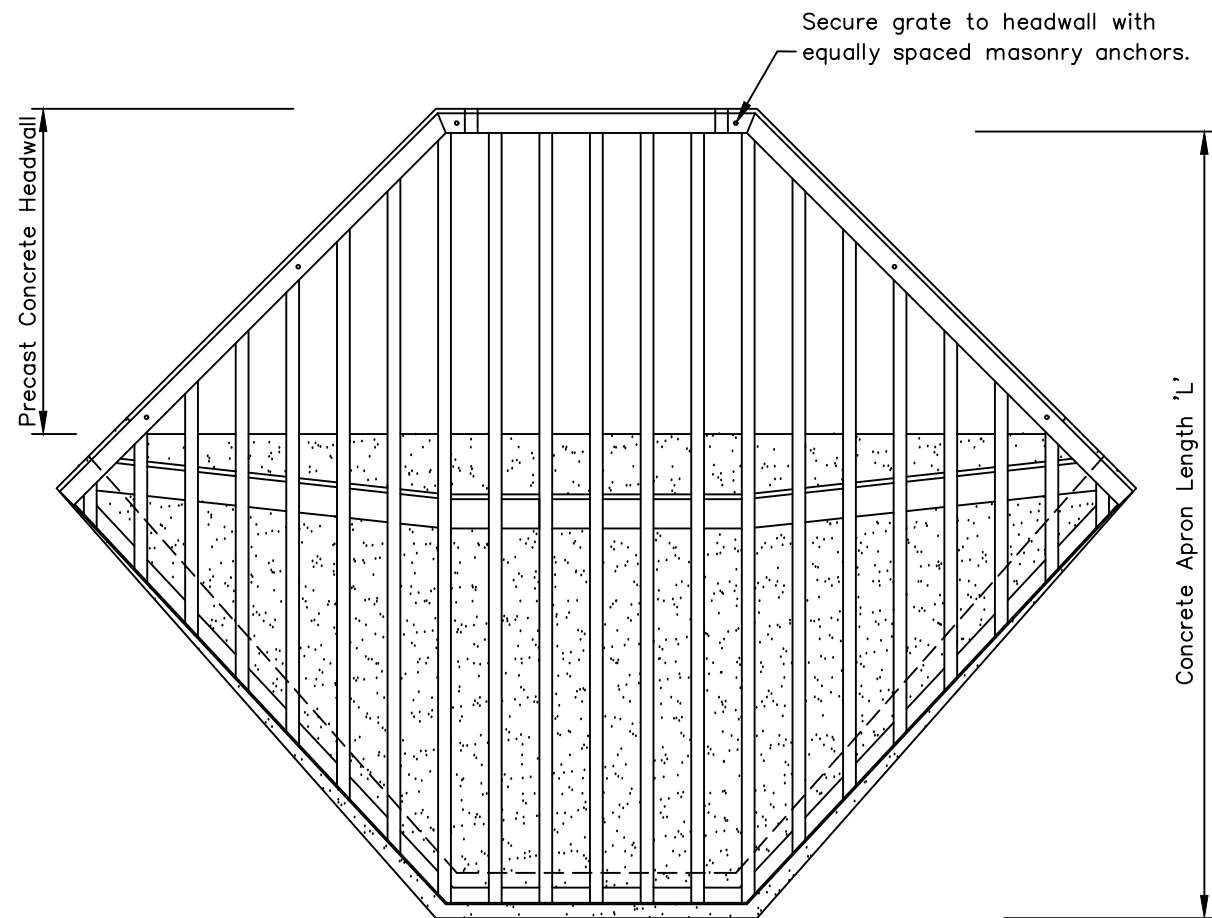
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ISSUE DATE: 28-04-2020 DWG No. TSD-SW20-v2



INLET GRATE
FRONT ELEVATION

SECTION A-A



INLET GRATE
PLAN
(Headwall to suit 750 dia. pipe shown)

DIMENSION TABLE

HEADWALL SIZE	DIAMETER			
	300, 375, 450	525, 600	675, 750	900
'L' (mm)	1600	2030	2600	3425
'D' (mm)	26.9 O.D. x 3.2 W.T.	33.7 O.D. x 4 W.T.	42.4 O.D. x 4 W.T.	48.3 O.D. x 4 W.T.
'A' (mm)	40 x 40 x 5	45 x 45 x 5	55 x 55 x 5	65 x 65 x 5

O.D. = Outside Diameter
W.T. = Wall Thickness

FIXING DETAILS

Headwall Size	Galv. Masonry Anchors	No. required
300, 375, 450	M10 - 50mm embedment	4
525, 600	M10 - 50mm embedment	4
675, 750	M10 - 50mm embedment	6
900	M10 - 50mm embedment	8

NOTES

1. This drawing is for new installations.
Inlet grating gradient - 1 in 3.
2. All welds - 5mm fillet all round.
3. Clean up all welds and remove sharp edges prior to hot dip galvanising to 'AS.1650'.
4. Preparation for galvanising - Cut two V's measuring 20 wide x 25 long, out of opposite sides and each end of CHS and RHS sections to facilitate internal galvanising.
5. Headwall for single pipe entry shown. For multiple pipes refer to local council. General Manager's delegated officer. for design requirements.
6. Not all hidden detail shown, for clarity.
7. Concrete - N25.
8. Refer Standard drawing TSD-SW17 headwall dimensions.

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW21-v2.dwg

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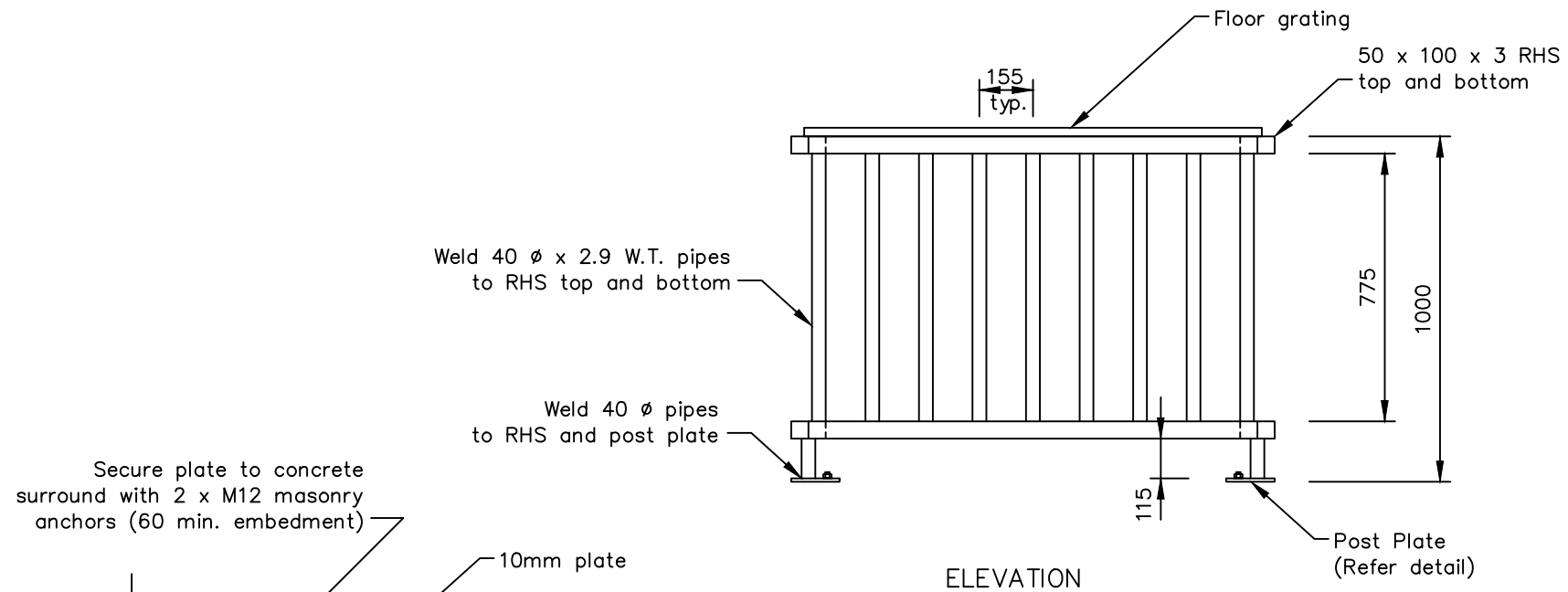


STANDARD DRAWING
INLET HEADWALLS
GRATED INLET - 300 TO 900 DIA. PIPES

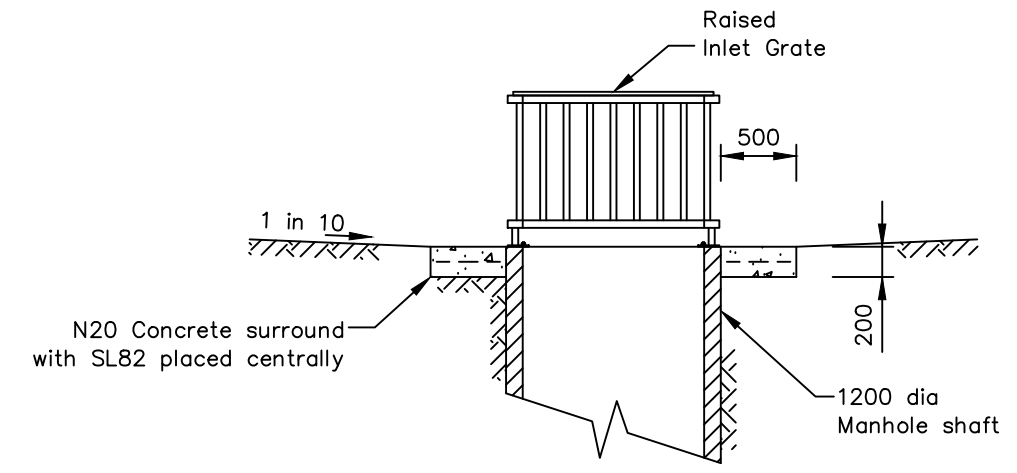
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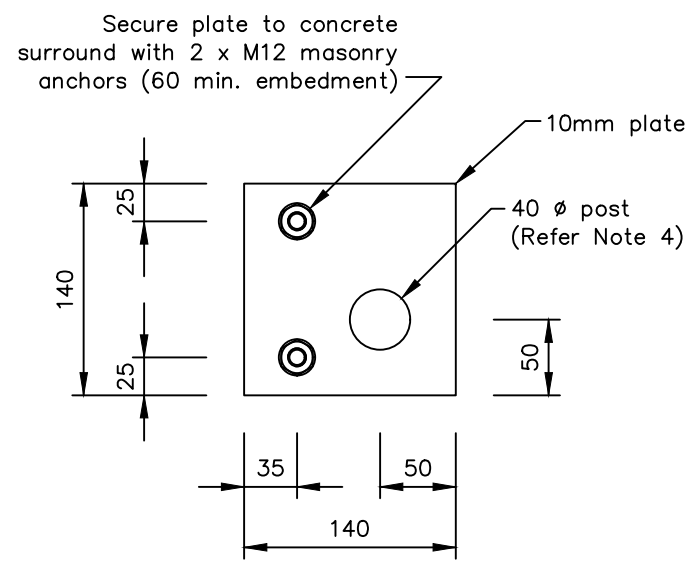
TSD-SW21-v2



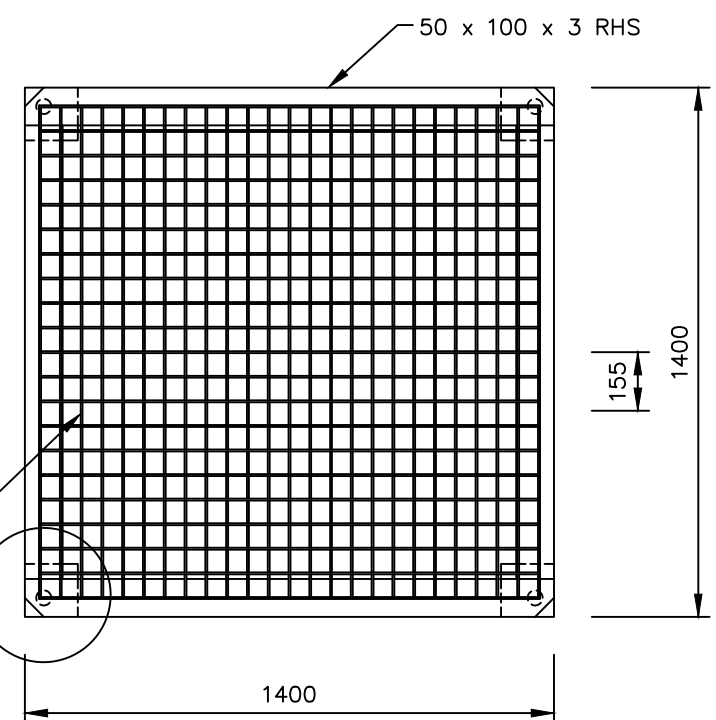
ELEVATION



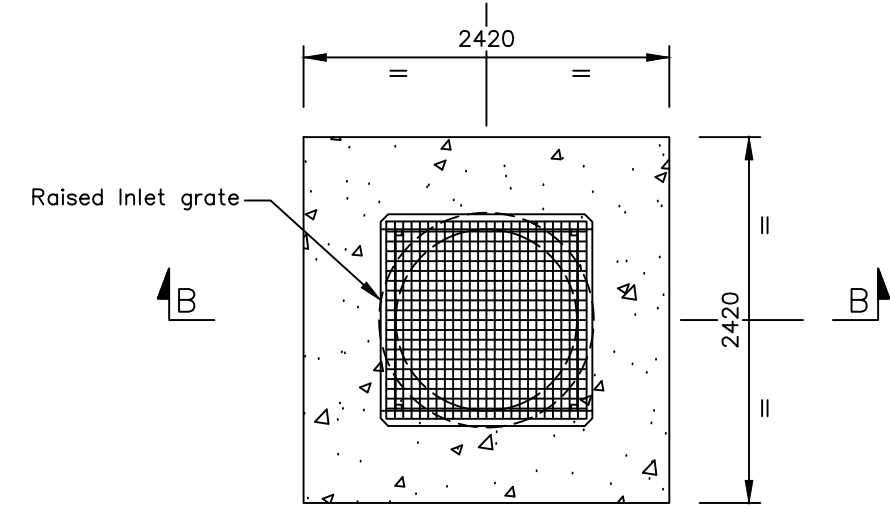
SECTION BB



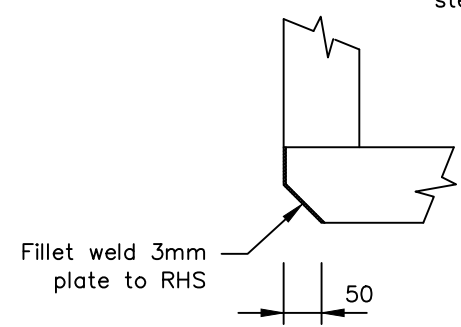
POST PLATE DETAIL PLAN



INLET GRATE PLAN



RAISED GRATED INLET PLAN



DETAIL A

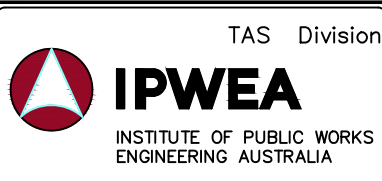
NOTES

1. Clean up all welds and remove sharp edges.
2. Hot dip galvanise grate after fabrication.
3. All welds 3.0 mm continuous fillet.
4. Preparation for galvanising – Cut two V's measuring 20 wide x 25 long, out of opposite sides and each end of CHS and RHS sections to facilitate internal galvanising and cut hole in Post Plate for CHS post.

SCALES: AS SHOWN
(All scales are correct at A3)

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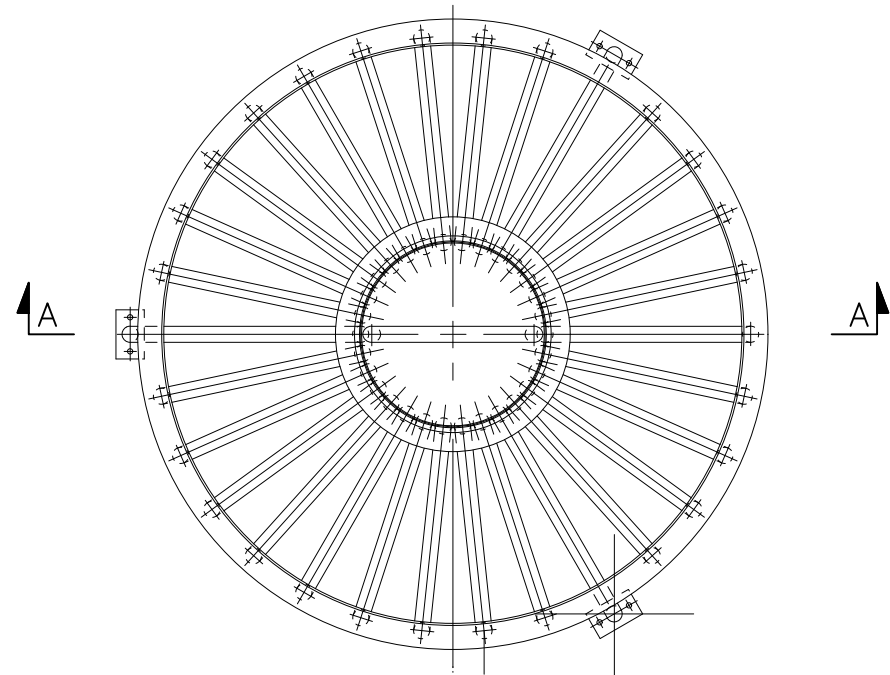


STANDARD DRAWING
INLET HEADWALLS (SQUARE)
RAISED GRATED INLET

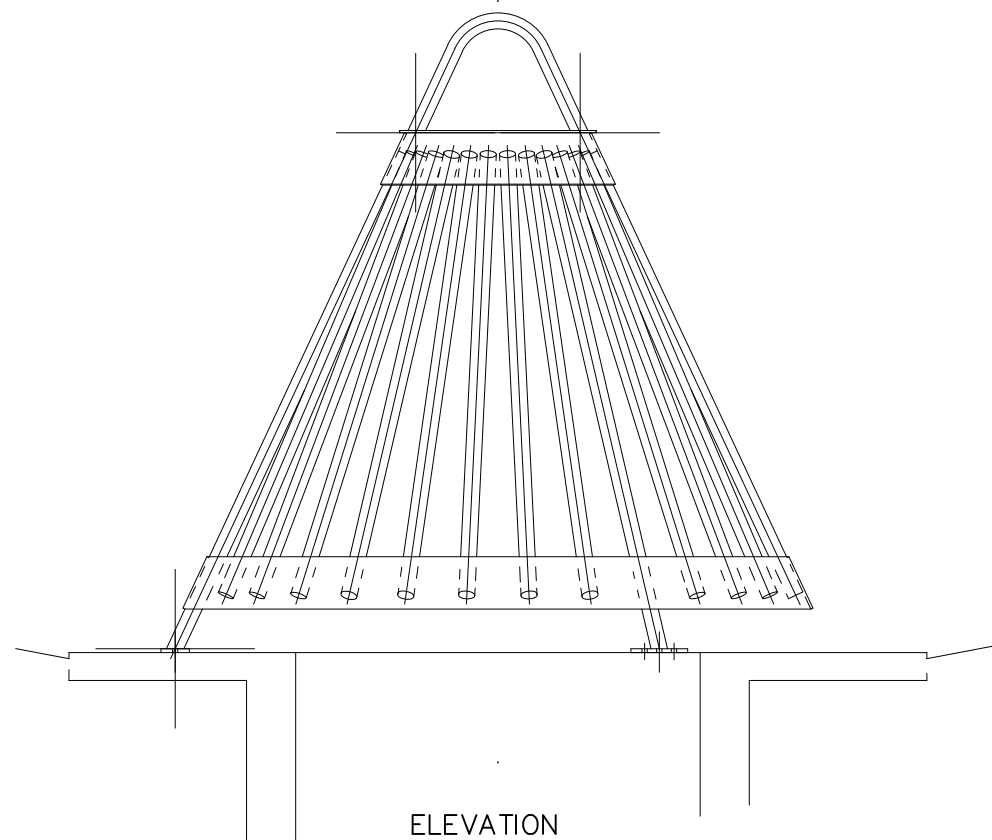
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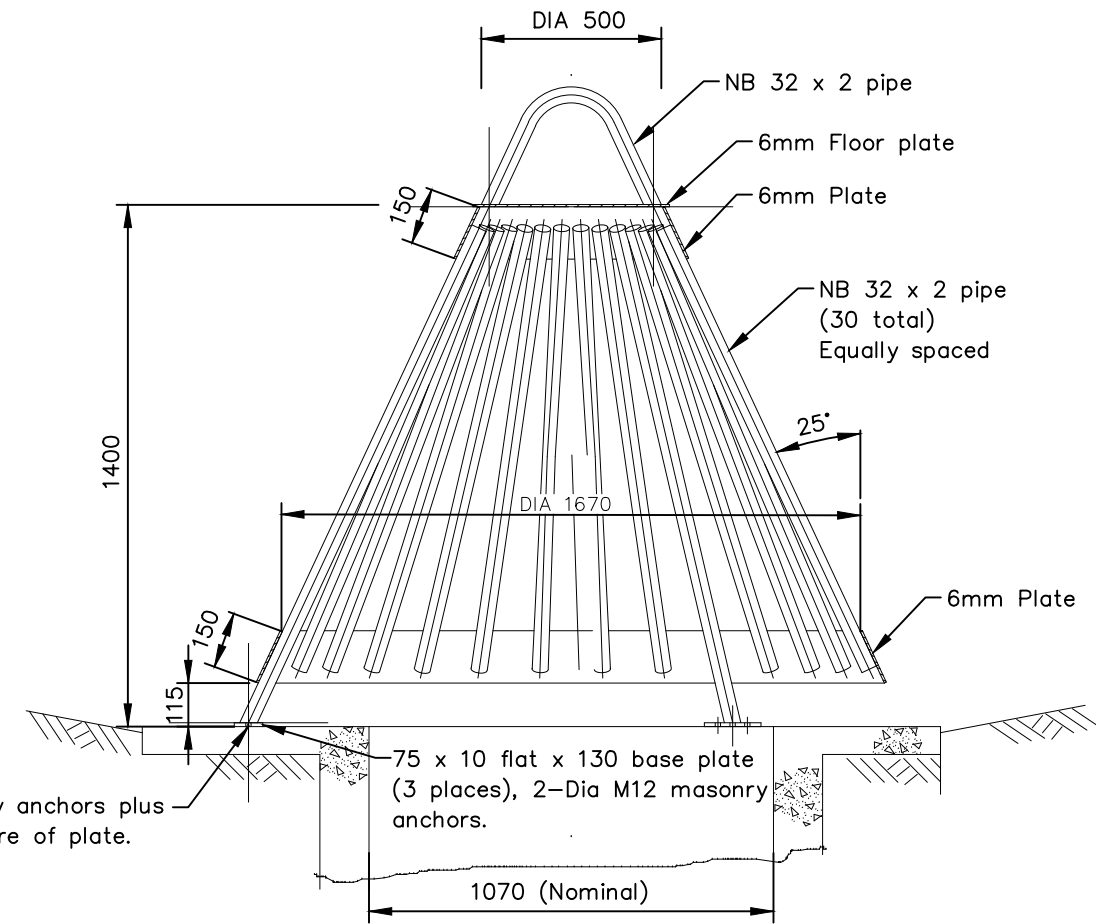
DOMED INLET GRATE
PLAN



ELEVATION

NOTES

1. Clean up all welds and remove sharp edges.
2. Hot dip galvanise grate after fabrication.
3. All welds 3.0 mm continuous fillet.
4. Preparation for galvanising – Cut two V's measuring 20 wide x 25 long, out of opposite sides and each end of CHS and RHS sections to facilitate internal galvanising and cut hole in Post Plate for CHS post.



2-Dia 14 holes for masonry anchors plus
1-Dia 14 drain hole in centre of plate.

SECTION AA

SCALES: AS SHOWN
(All scales are correct at A3)

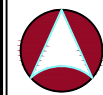
XRef File: TSD-SW23-v2.dwg

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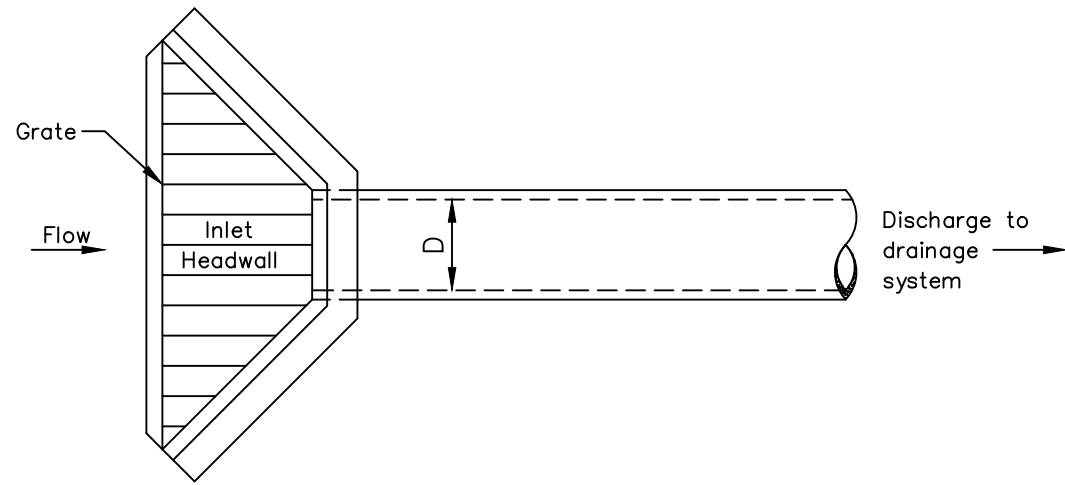
STANDARD DRAWING
INLET HEADWALLS (DOMED)
RAISED GRATED INLET

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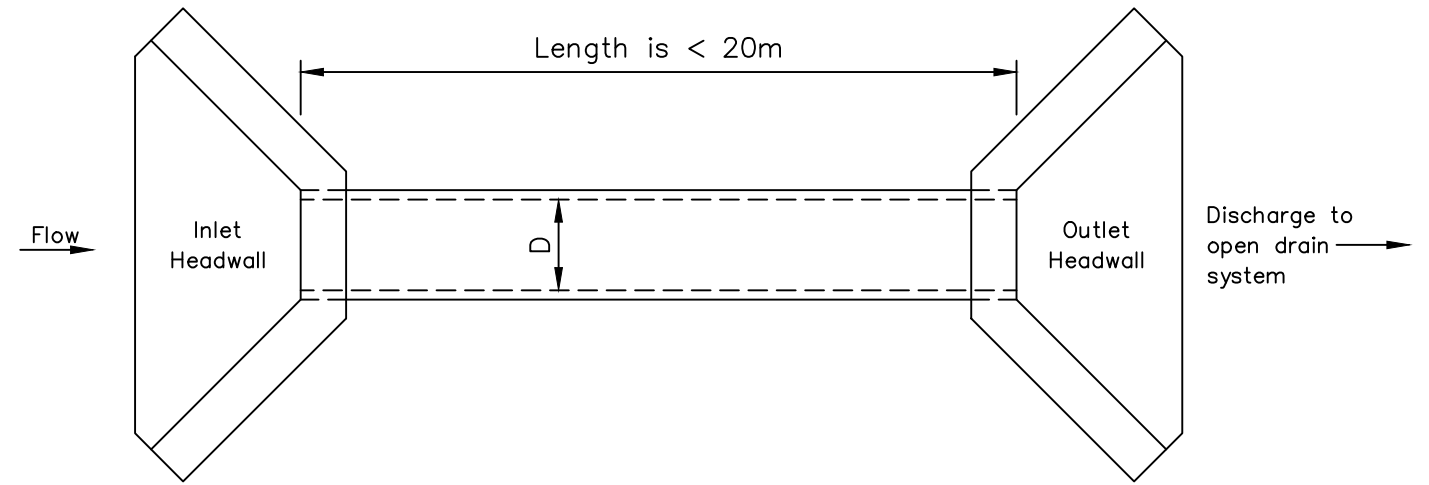
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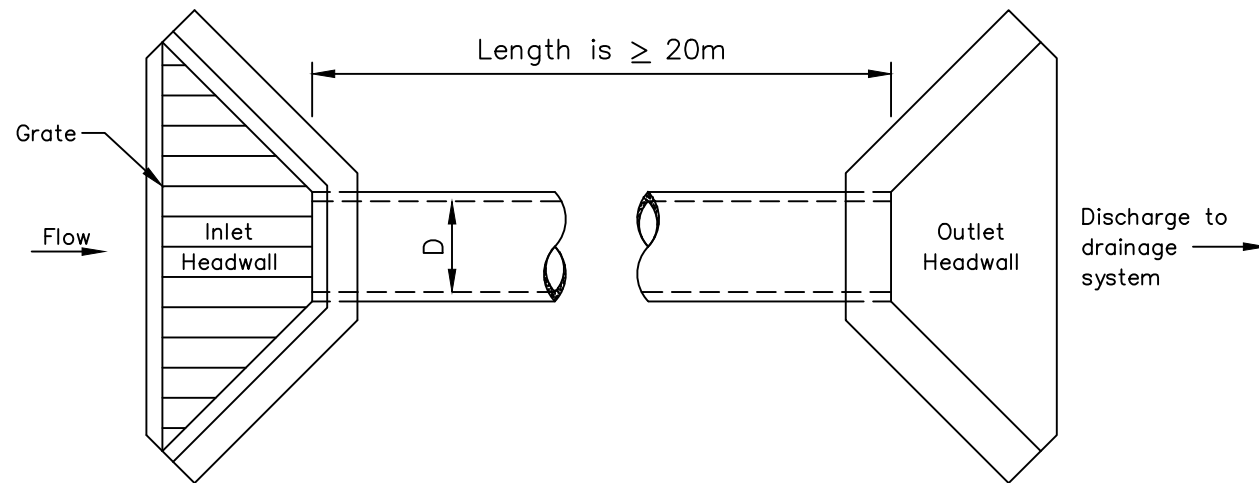
TSD-SW23-v2



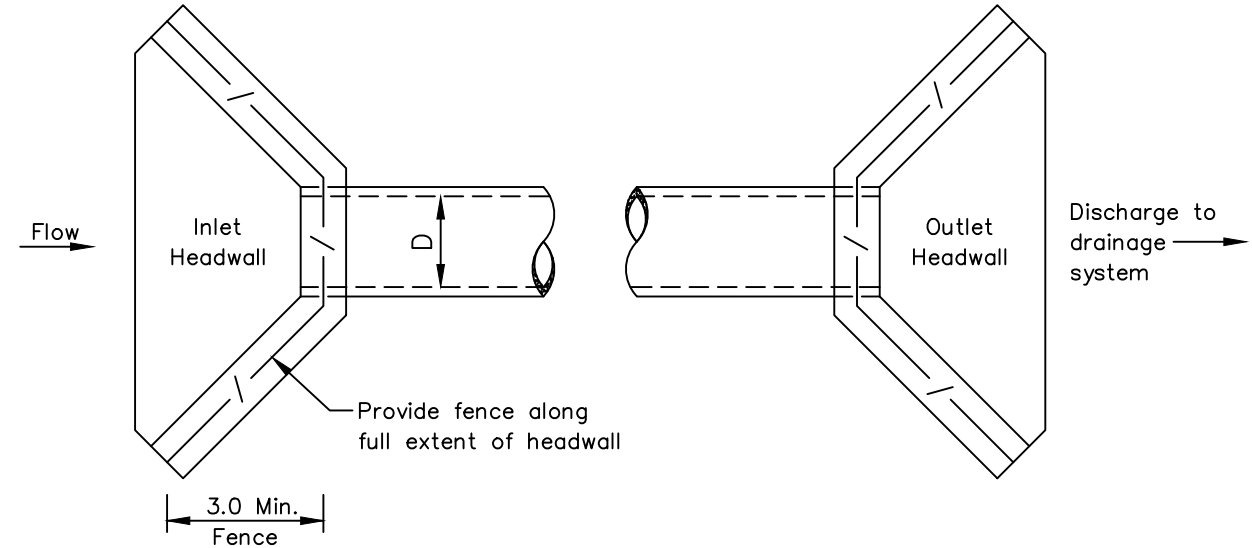
Where 'D' is $\geq 300 \phi$ – Grate all Inlet Headwalls



Where 'D' is $\geq 300 \phi$ and $< 900 \phi$ – No Inlet Headwall Grate



Where 'D' is $\geq 300 \phi$ and $< 1200 \phi$ – Grate all Inlet Headwalls



Where 'D' is $\geq 1200 \phi$ – Fence all Headwalls
(Fence – 1200mm high Type 'CM')



Fix sign to outlet headwalls where 'D' is $> 900 \phi$ and pipe length is $\geq 20m$.

Stormwater Outlet Headwall

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW24-v2.dwg

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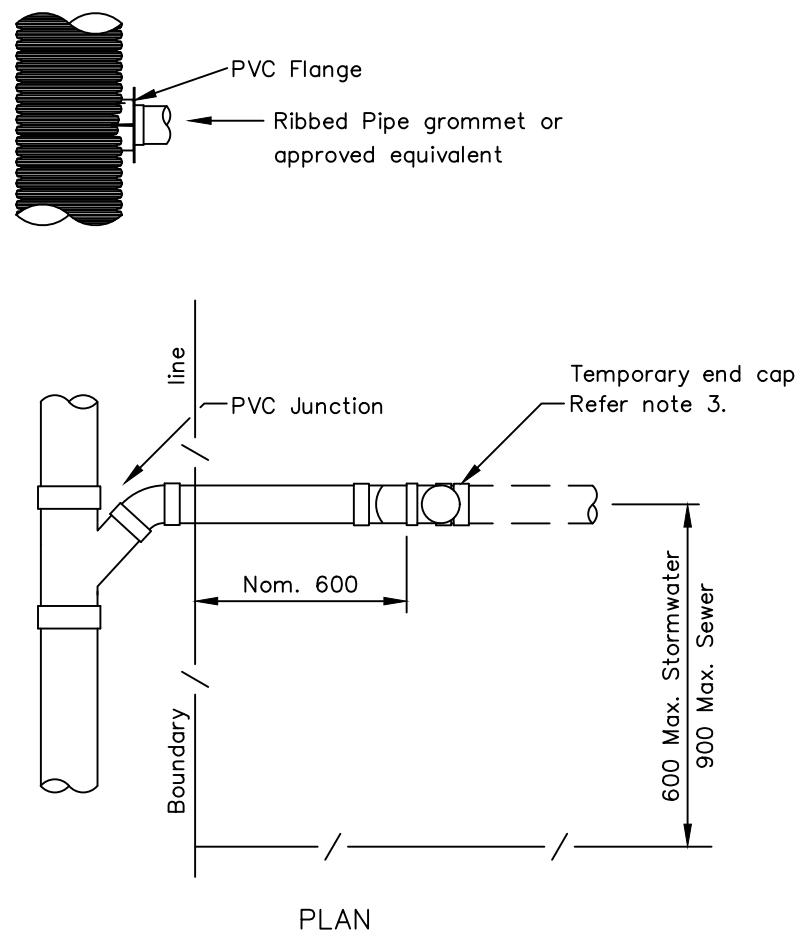
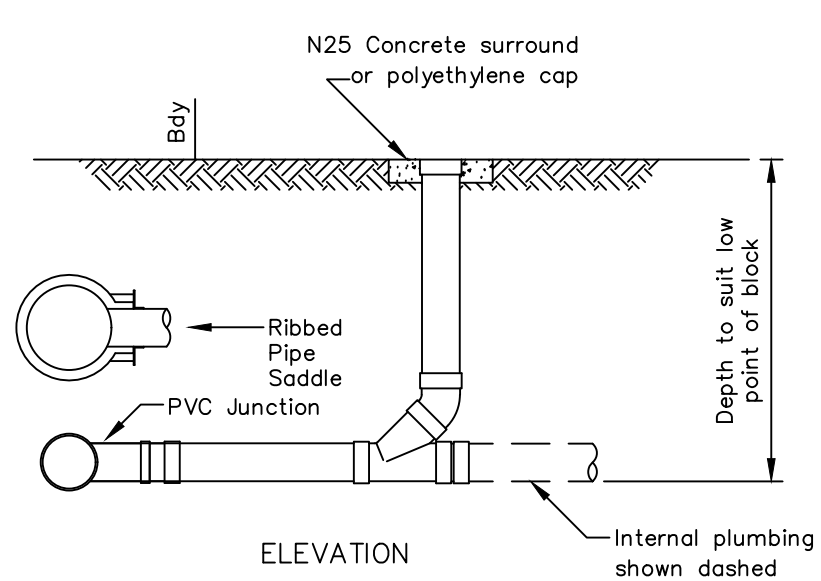
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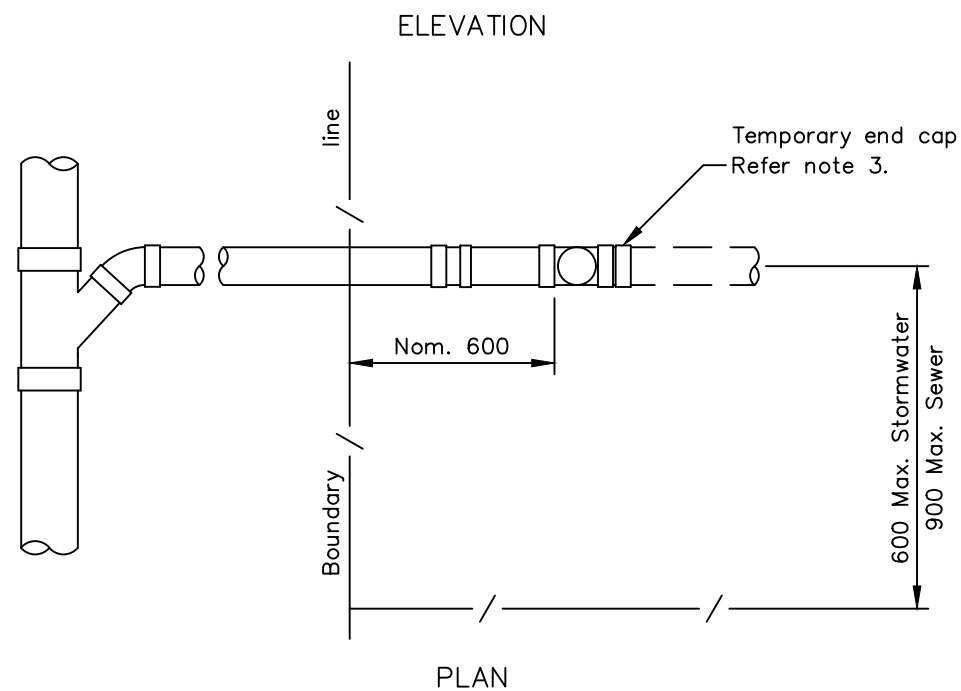
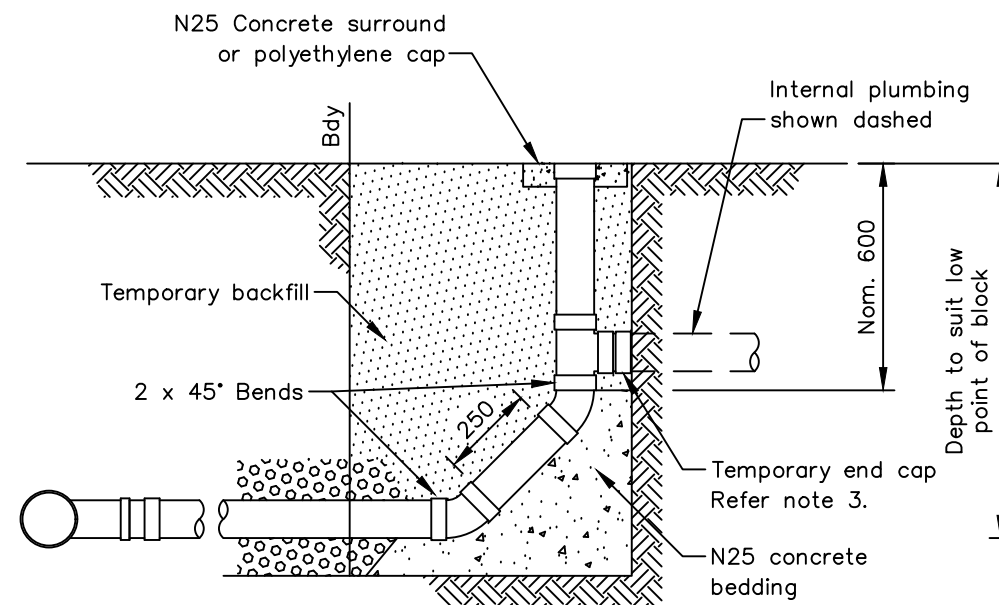
STANDARD DRAWING
HEADWALLS
INLET GRATE AND FENCE REQUIREMENTS

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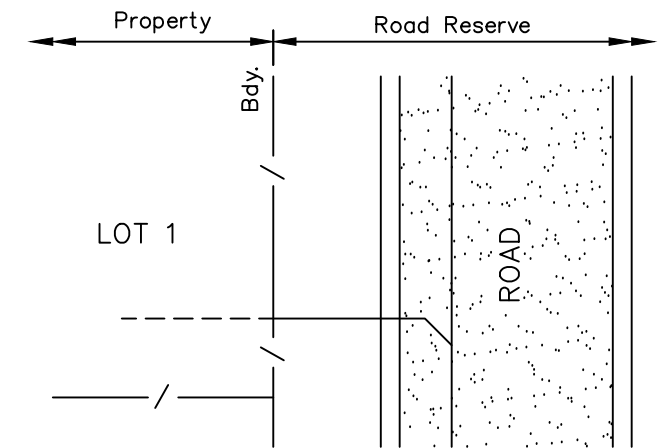
TYPICAL OBLIQUE BRANCH CONNECTION
(MAIN LOCATED OUTSIDE BOUNDARY)



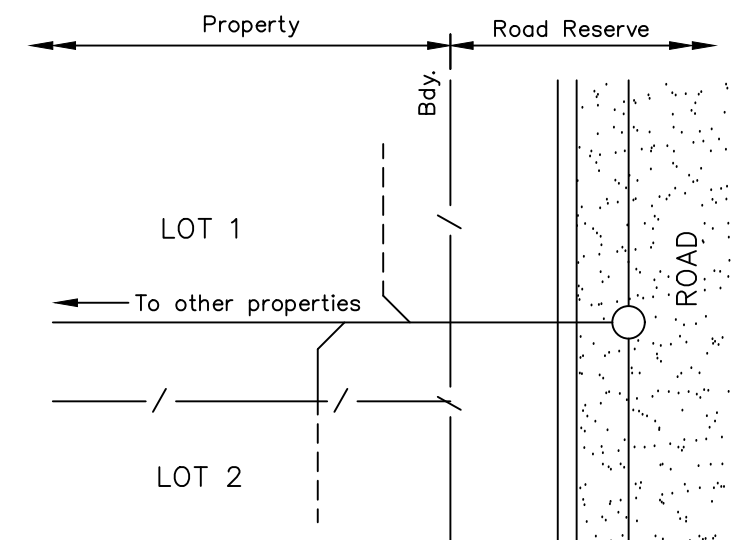
TYPICAL JUMP CONNECTION

NOTES

1. Pipe bedding and backfill in accordance with Standard Drawing TSD-G01
2. Jump up to be used on all stormwater connections deeper than 2.0m.
3. Survey completed main by CCTV and submit report by DVD. (All new sub-division installation)
4. Push caps to be used on all stormwater connections



MAIN IN ROAD RESERVE



MAIN IN PRIVATE PROPERTY

MAINTENANCE RESPONSIBILITY

- Local Council
- Property Owner

SCALES: AS SHOWN
(All scales are correct at A3)

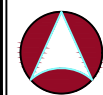
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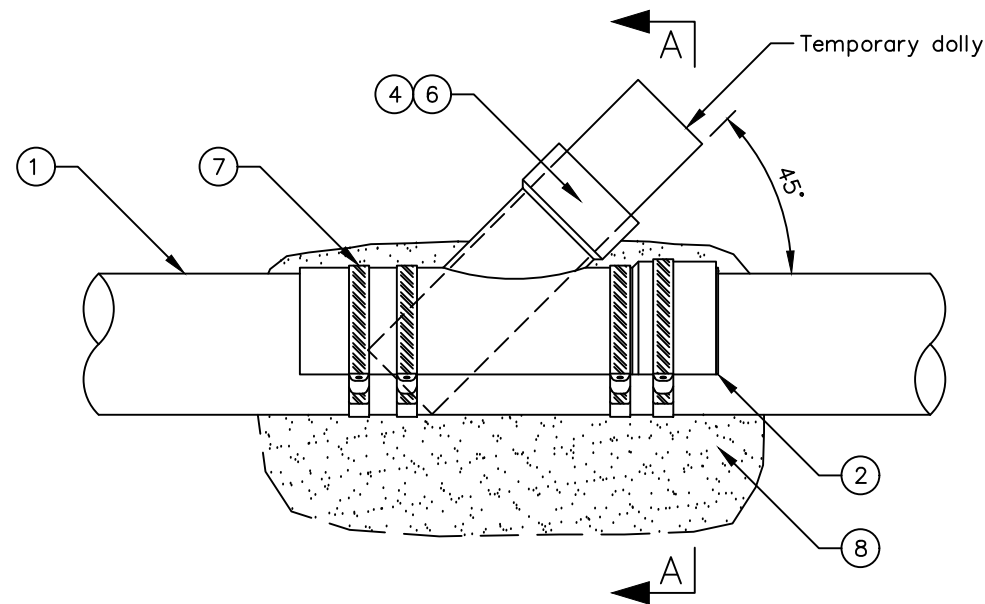


STANDARD DRAWING
STORMWATER PROPERTY CONNECTIONS TO MAINS

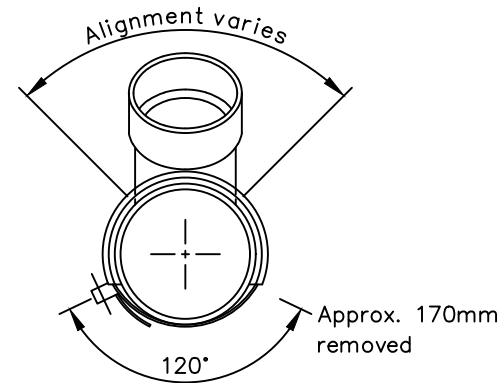
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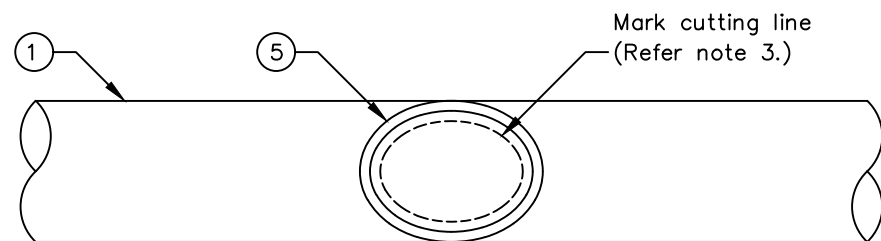
DWG No. TSD-SW25-v2



ELEVATION



SECTION A-A
(C.S.S.D. AND DOLLY NOT SHOWN)



PLAN

NOTES

CASE 1 – P.V.C. SADDLE TO 160 O.D. POLY MAIN.

- ① 160 O.D. Poly main.
- ② Glue 75mm long piece of 150 dia. P.V.C. pipe into female socket. Cut down 45° 150 x 100 P.V.C. reducing junction.
- ③ Use inside of reducer as a template to mark poly main. Cut and remove sharp edges.
- ④ Check 102mm O.D. M.S. exhaust tubing dolly can be inserted approximately 280mm through 45° junction into main. Clean both mating surfaces.
- ⑤ Apply minimum 2 x 4mm continuous bead of Selleys 'Wet Seal' (Silicon) or similar 10mm from edge and 10mm apart.
- ⑥ Insert dolly into main, slide junction down onto silicon beads.
- ⑦ Clamp with 2 x 13mm stainless steel worm drive hose clamps both ends. Fully wrap clamps both ends with denso tape. Remove dolly.
- ⑧ Support/encase connections with cement stabilised stone dust (3% cement) minimum 500mm long 300mm wide x 300 deep.

CASE 2 – P.V.C. SADDLE TO P.V.C. MAIN.

- ① Existing 150 dia. P.V.C. main.
- ② Glue 75mm long piece of 150 dia. P.V.C. pipe into female socket. Cut down 45° 150 x 100 P.V.C. reducing junction.
- ③ Use inside of reducer as a template to mark P.V.C. main. Cut and remove sharp edges.
- ④ Check 102mm O.D. M.S. exhaust tubing dolly can be inserted approximately 280mm through 45° junction into main. Clean both mating surfaces.
- ⑤ Apply solvent cement to mating surfaces.
- ⑥ Insert dolly into main, slide junction down onto solvent cement.
- ⑦ Clamp with 2 x 13mm stainless steel worm drive hose clamps both ends. Fully wrap clamps both ends with denso tape. Remove dolly.
- ⑧ Support/encase connections with cement stabilised stone dust (3% cement) minimum 500mm long 300mm wide x 300 deep.

SCALES: AS SHOWN
(All scales are correct at A3)

XRef File: TSD-SW26-v2.dwg

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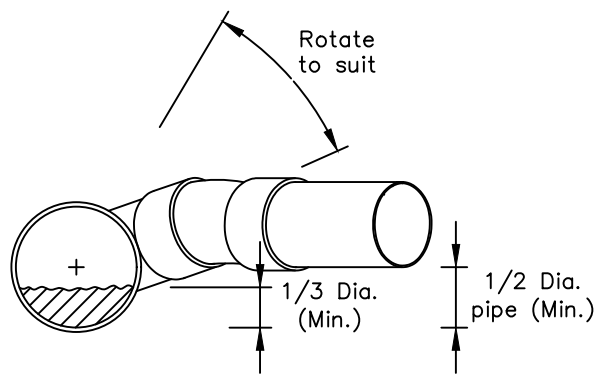
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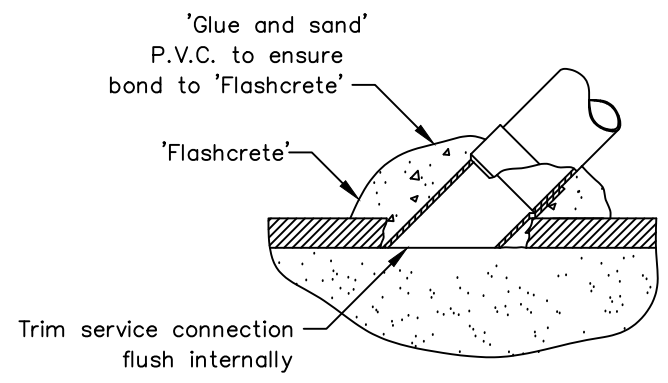
TSD-SW26-v2

STANDARD DRAWING

SADDLE CONNECTION TO STORMWATER DRAIN

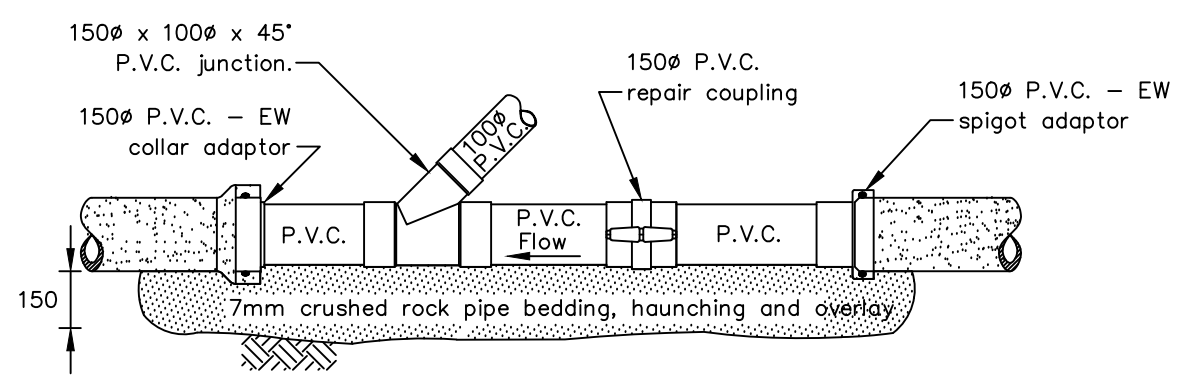
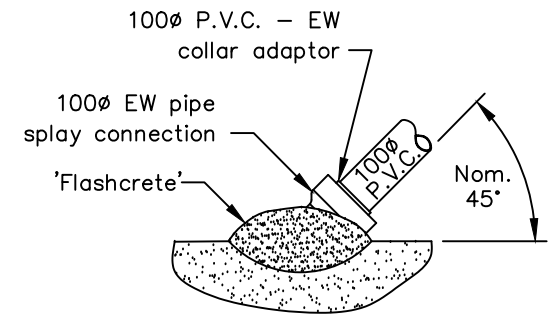


TYPICAL JUNCTION BRANCH ENTRY ALIGNMENT

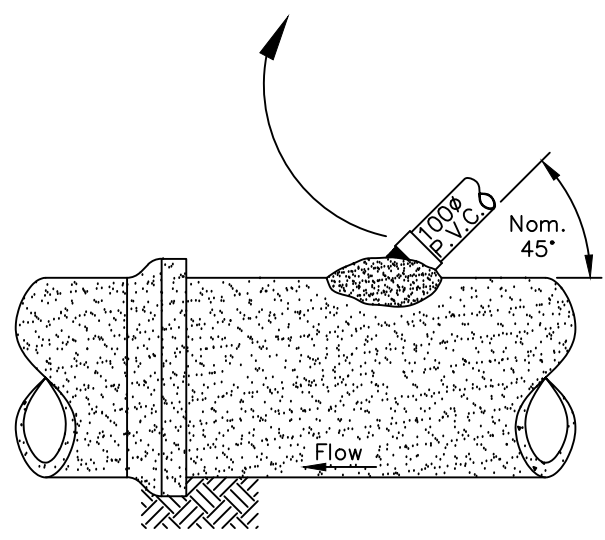


ENLARGED CUT-AWAY VIEW

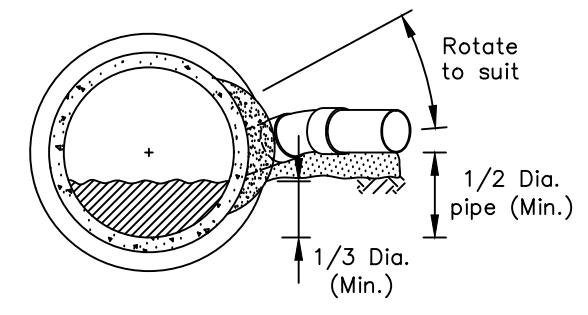
- NOTES
1. New service connections may be installed by Council or by Contractor supervised by Council.
 2. 'Flashcrete' – quick setting cementitious mortar or similar.
 3. Refer Sheet TSD-G01 for additional trench backfill detail.



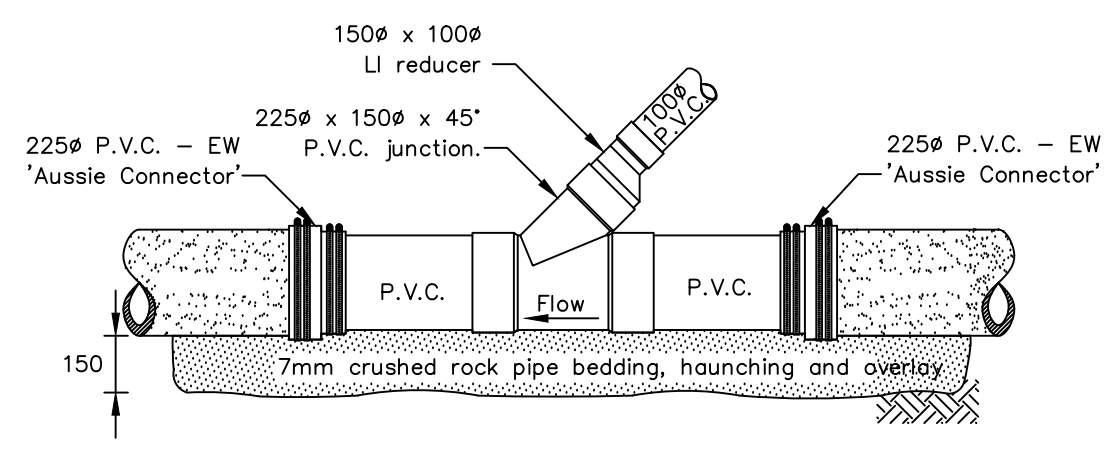
ELEVATION
150 DIA. EW CONC.



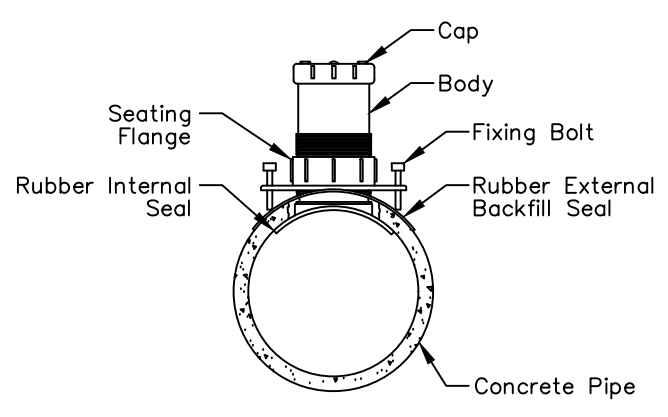
ELEVATION
≥ 300 DIA. EW / CONC



TYPICAL JUNCTION BRANCH ENTRY ALIGNMENT



ELEVATION
225 & 300 DIA. EW CONC.



FLOW CONNECTION JUNCTION BRANCH

SCALES: AS SHOWN
(All scales are correct at A3)

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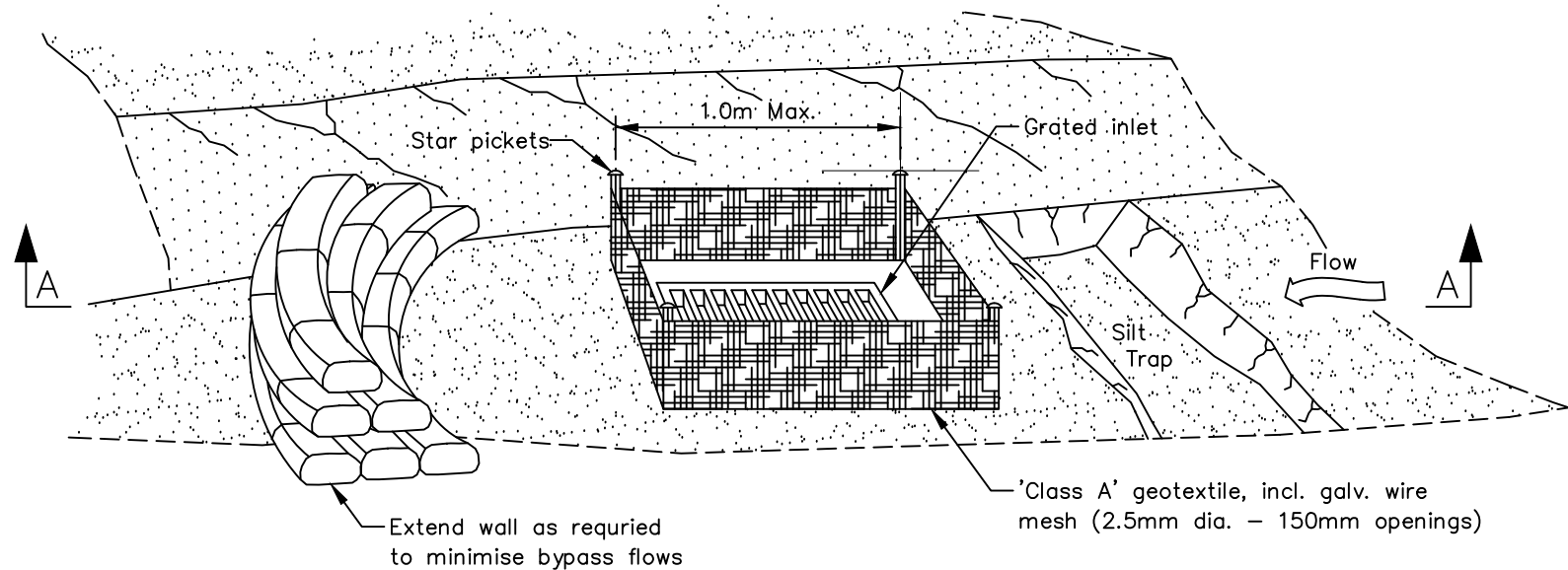
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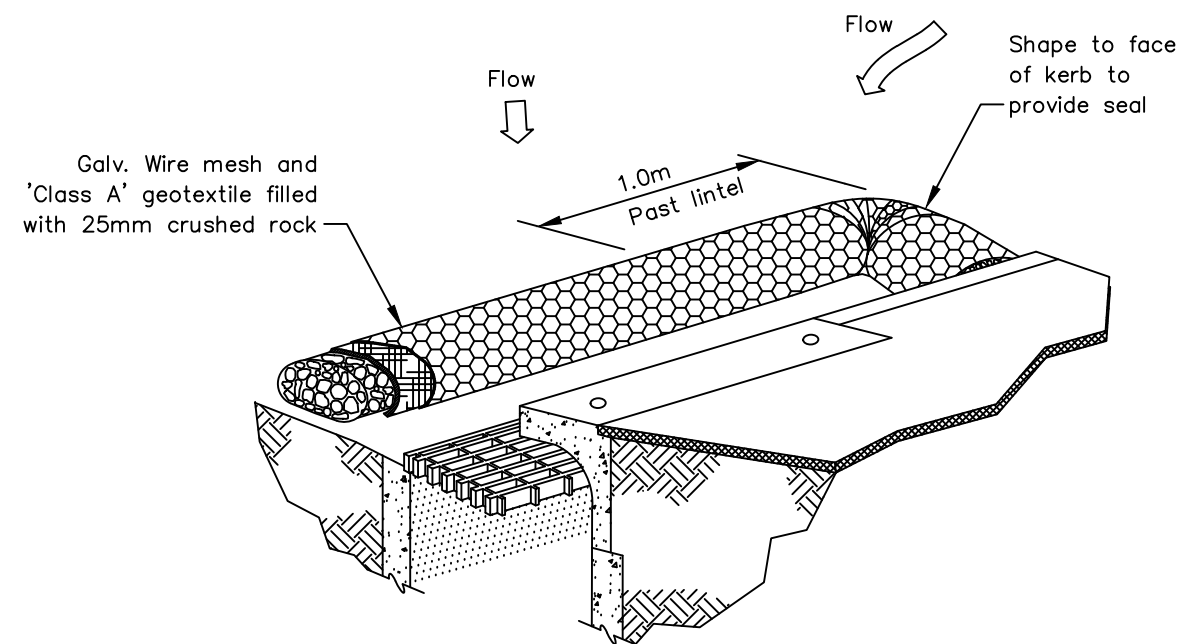
STANDARD DRAWING
REPAIRS/NEW CONNECTION
TO STORMWATER DRAIN

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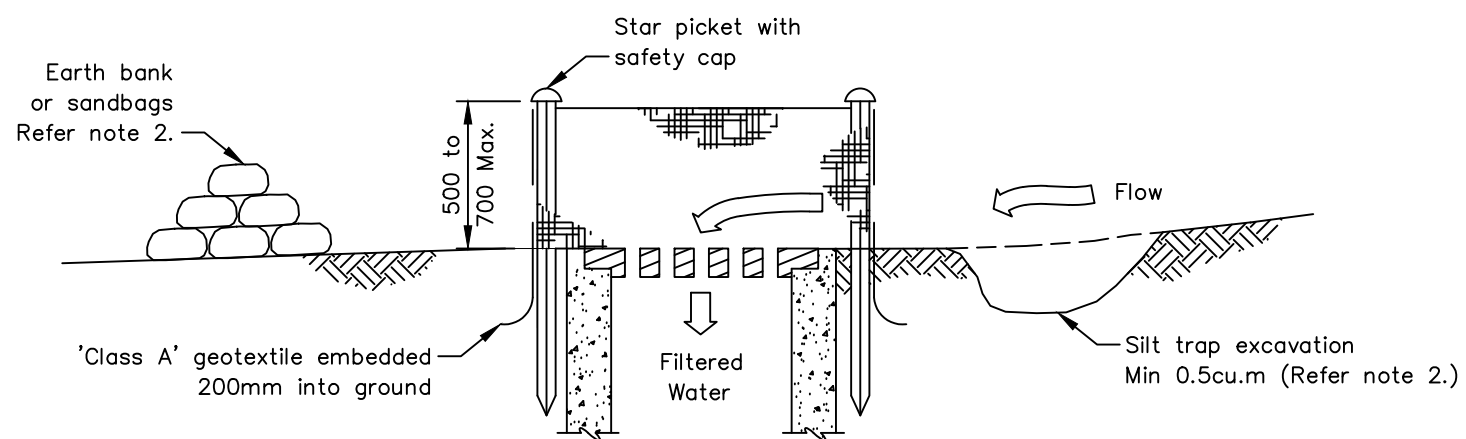
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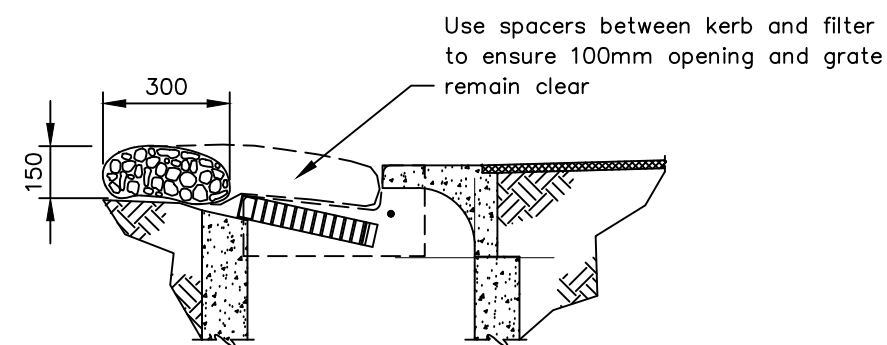
PICTORIAL VIEW



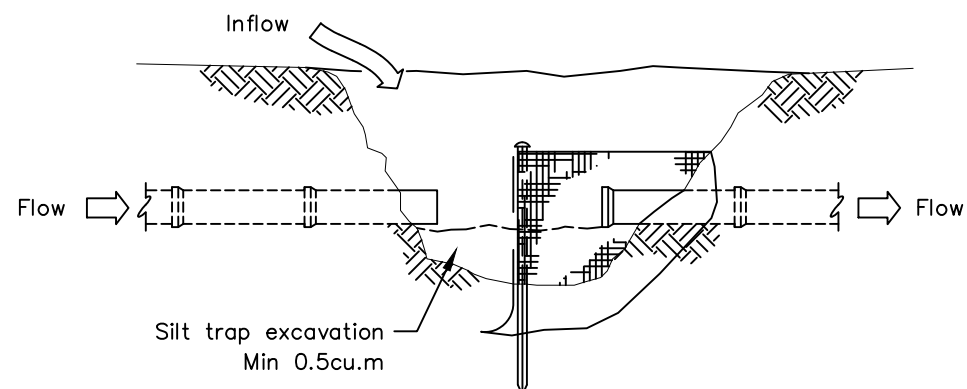
PICTORIAL VIEW



SECTION A-A
TYPE SC1
SILT FENCE AT GRATED PIT



SECTIONAL VIEW
TYPE SC3
SILT FILTER AT GULLY PIT



TYPE SC2
SILT FENCE FOR PIPELINE CONSTRUCTION

NOTES

SILT FENCE - 'TYPES SC1 AND SC2'

1. Construct as detailed and install 'Class A' geotextile or use proprietary silt fence.
2. Omit sandbag wall and silt trap when pit is in a low point.

GULLY PIT FILTER - 'TYPE SC3'

3. Galv. wire mesh 2mm dia. x 12mm opening.

GENERAL

4. Clear sediment after each storm.
5. 'Type SC2' can also be used for maintenance or connection of services to existing pipelines.

SCALES: AS SHOWN
(All scales are correct at A3)

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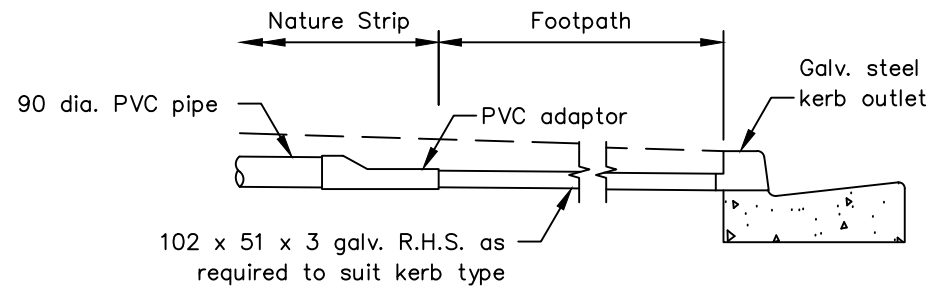


STANDARD DRAWING
GUIDELINES FOR SEDIMENT CONTROL

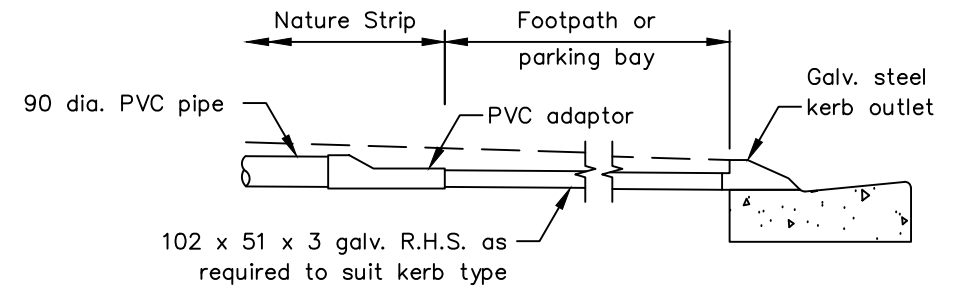
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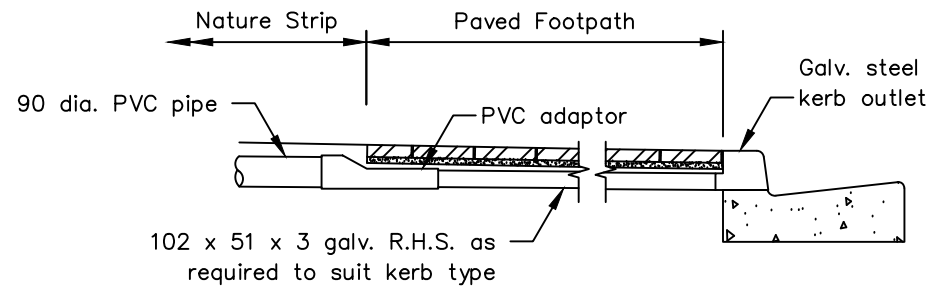
TSD-SW28-v2



ASPHALT FOOTPATH / NATURE STRIP
(TYPES BK, KC AND KCS)
SCALE 1 : 25



TYPE KCM
SCALE 1 : 25



PAVED FOOTPATH
(TYPES KC AND KCS)
SCALE 1 : 25

* Refer to TSD-R11 for paving details.

STORMWATER KERB OUTLETS

SCALES: AS SHOWN
(All scales are correct at A3)

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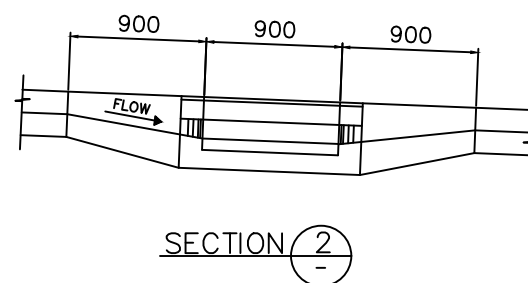
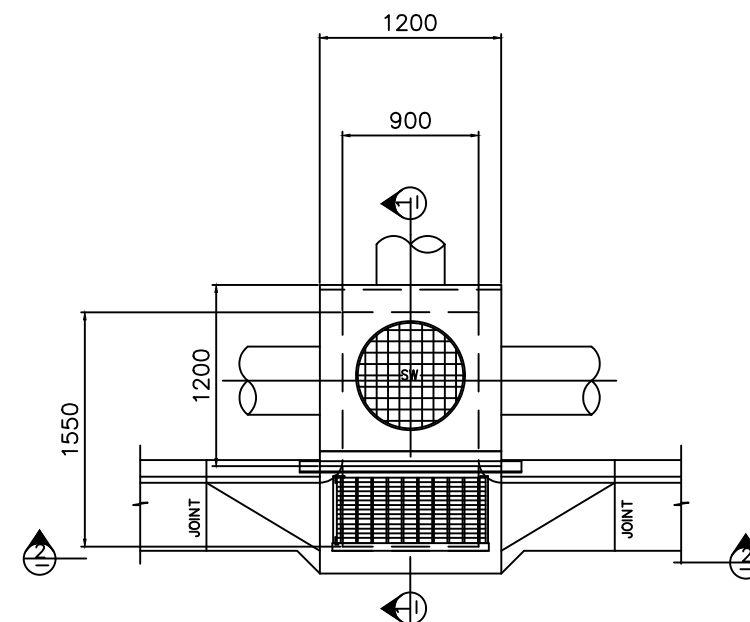
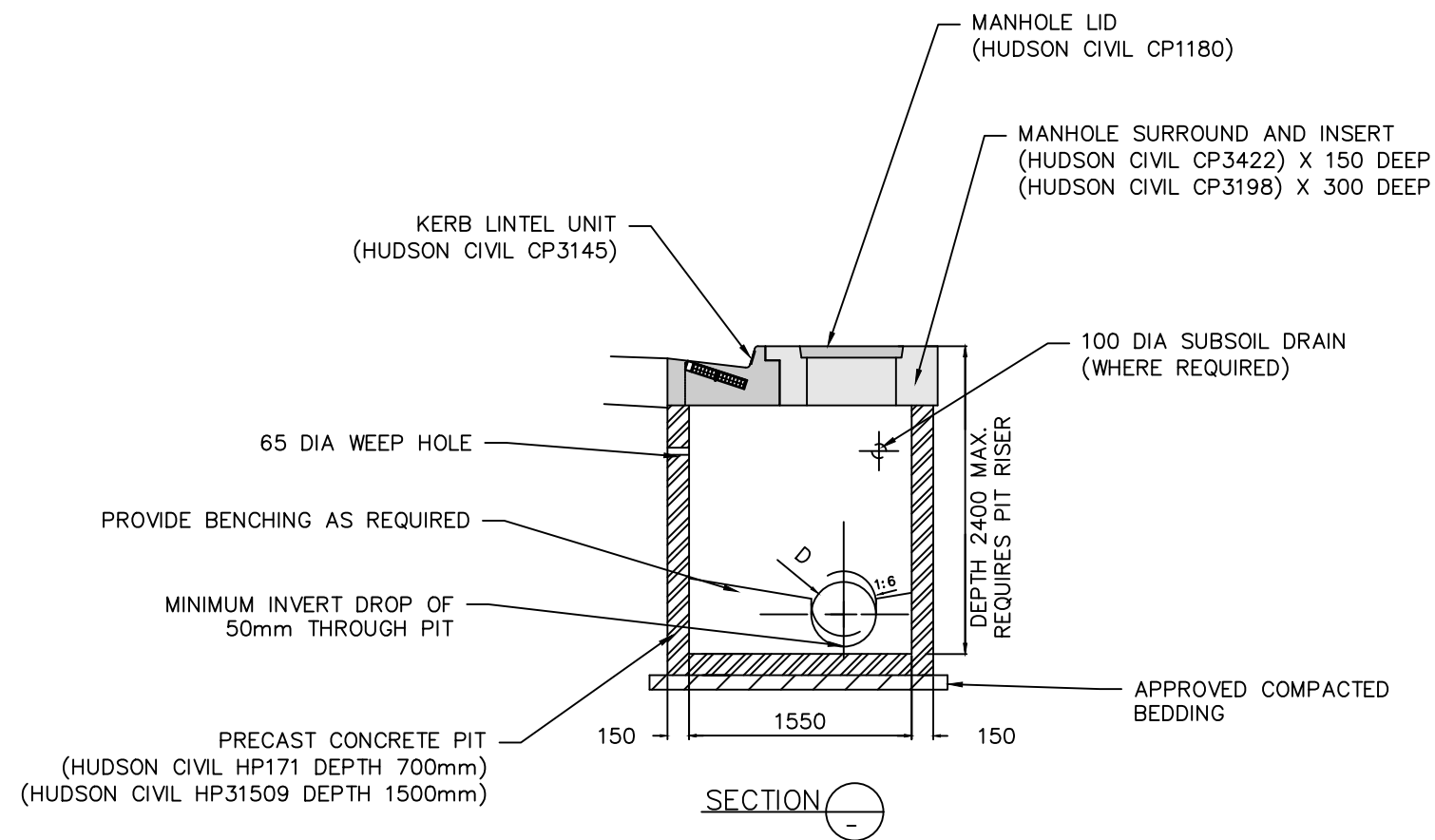
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KERB CONNECTION

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ISSUE DATE: 28-04-2020

DWG No. TSD-SW29-v2



NOTES

1. ALL DIMENSIONS IN MILLIMETRES (mm)
2. PIT TO BE CONSTRUCTED FROM GRADE N20 CONCRETE
3. ALL MANHOLE COVERS TO HAVE THE LETTERS "SW" CAST IN TO INDICATE STORMWATER.

SCALES: AS SHOWN
(All scales are correct at A3)

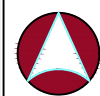
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REFERENCES

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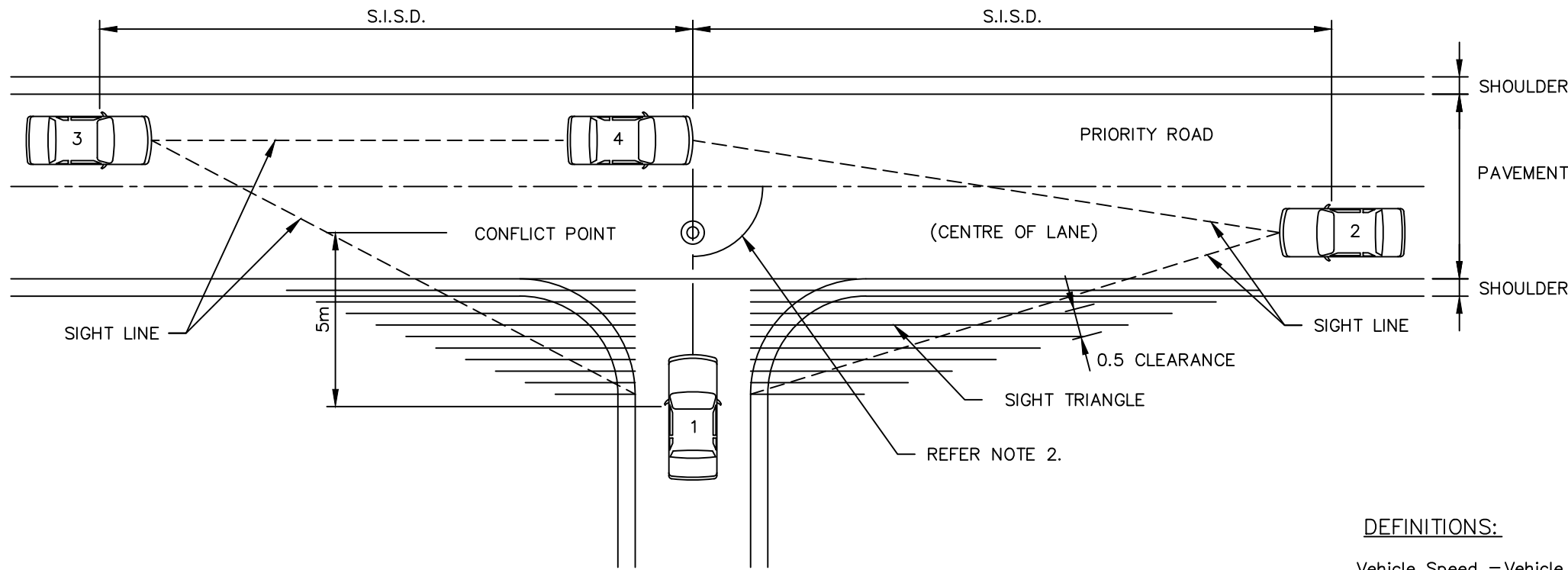
LARGE SIDE ENTRY PIT

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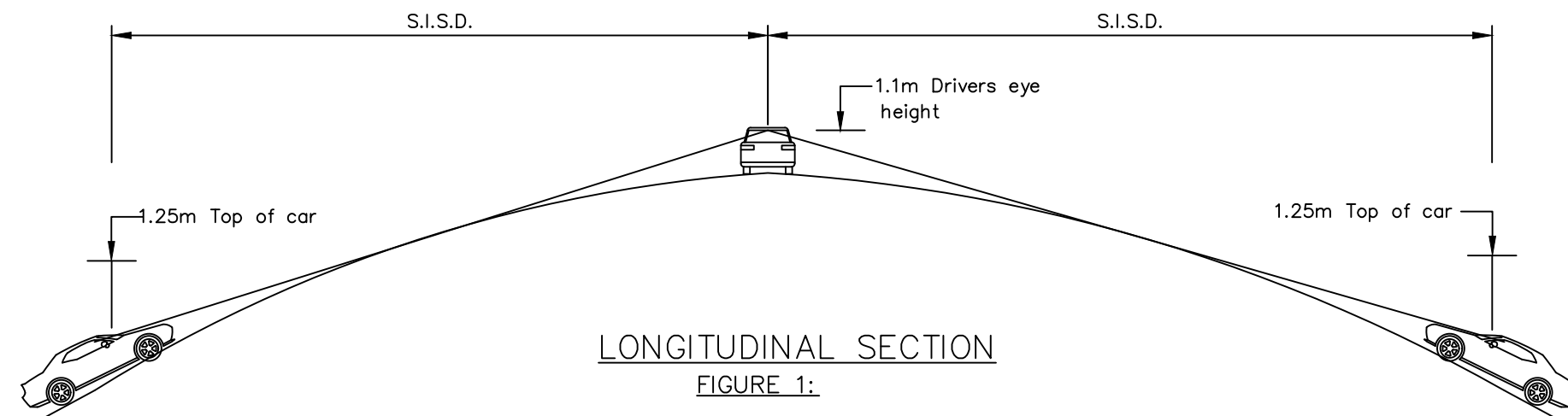
ISSUE DATE:
28-04-2020

DWG No.
TSD-SW30-v2

SIGHT DISTANCES
(2 LANE ROAD ONLY)



PLAN



LONGITUDINAL SECTION

FIGURE 1:

VEHICLE SPEED (km/h)	SAFE INTERSECTION SIGHT DISTANCE METRES, FOR SPEED LIMITS OF:	
	60 km/h or less	Greater than 60 km/h
50	80	90
60	105	115
70	130	140
80	165	175
90		210
100		250
110		290

NOTES:

1. - For maximum driveway access slopes refer TSD-R04
2. - The angle of intersection should be between 70° and 90° to the major road.
3. - Shall be the posted speed limit for assessment of access driveways.
4. - Refer to AGRD04A - Part 4A Unsignalised and Signalised Intersection.

DEFINITIONS:

Vehicle Speed = Vehicle speed is the actual or recorded speed of traffic passing along the road and is the speed at or below which 85% of passing vehicles travel.

S.I.S.D = Safe Intersection Sight Distance.

- Provides sufficient distance for a driver of a vehicle on the major road to observe a vehicle on a driveway approach moving into a collision situation (e.g. in the worst case, stalling across the traffic lanes) and to decelerate to a stop before reaching the collision point.
- Is viewed between two points to provide inter-visibility between drivers and vehicles on the major road and minor road approaches. It is measured from a driver eye height of 1.1m above the road to points 1.25m above the road which represents drivers seeing the upper part of cars as illustrated on Figure 1.
- Assumes that the driver on the minor road is situated at a distance of 5m (minimum of 3m) from the lip of the channel or edge line projection of the major road. S.I.S.D allows for a 3s observation time for a driver on the priority legs of the intersection to detect the problem ahead, (e.g. car from driveway stalling on through lane) plus the SSD.
- Provides sufficient distance for a vehicle to cross the non-terminating movement on two-lane two way roads, or undertake two-stage crossing of dual carriageways, including those with vehicle speeds of 80 km/h or more.
- Should also be provided for drivers stored in the centre of the road when undertaking a crossing or right-turning movement.
- Enables approaching drivers to see an articulated vehicle, which has properly commenced a manoeuvre from a leg without priority, but its length creates an obstruction.
- Is measured along the carriageway from the approaching vehicle to the conflict point, the line of sight having to be clear to a point 5m (3m minimum) back from the holding line or stop line on the side road.

SCALES: AS SHOWN
(All scales are correct at A3)

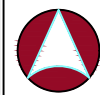
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STANDARD DRAWING
GUIDE TO INTERSECTION AND DOMESTIC ACCESS
SIGHT DISTANCE REQUIREMENTS

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TSD-RF01-v2

LINE TYPE	CODE	CODE Audio Tactile	PAVEMENT MARKING DETAILS	WIDTH (mm)	TYPICAL APPLICATION
Barrier (One direction)	(B1)	(B1a)		100	Centre lines on higher category two way undivided rural roads.
Barrier (Both direction)	(B2)	(B2a)		100	Centre lines on higher category two way and multi-lane undivided rural roads.
Barrier (Both direction)	(B3)	(B3a)		100	Centre lines on lower category two way undivided rural and urban roads. Dividing line at junctions.
Barrier (Both direction)	(B4)	(B4a)		200	Centre lines on multi-lane undivided urban roads. Approach marking to urban traffic islands.
Separation (Rural)	(S)	(Sa)		100	Centre lines in two way undivided rural roads.
Separation (Urban)	(S1)			100	Centre lines in two way undivided urban roads.
Separation (Median lane)	(S2)			100	Definition of median turning lanes.
Separation (Social purpose)	(S3)	(S3a)		100	Centre lines where enhanced delineation is required and continuous line is not appropriate.
Separation (Bicycle paths)	(S4)			80	Centre lines on dedicated off-road bicycle paths.
Lane (Rural)	(L)			100	Lane lines on multi-lane rural roads.
Lane (Urban)	(L1)			100	Lane lines on multi-lane urban roads.
Lane (Turnout lane)	(L2)			100	Lane lines at slow vehicle turnouts.
Lane (Special purpose)	(L3)			100	Lane lines on multi-lane roundabouts or where enhanced delineation is required and a continuous line is not appropriate.
Lane (Continuous)	(LC)			100	Lane lines where prohibiting lane change maneuvers is required.
Continuity	(C)			200	Entry points to right and left turn facilities. Entry and exit ramp merge/diverge areas.
Continuous Continuity	(CC)	(CCa)		200	Right and left turn facilities. Entry and exit ramp gore areas. Channelising at traffic islands.
Edge (Urban)	(E)			100	Edge lines on urban roads. On-road bicycle lanes.
Edge Continuity (Urban)	(EC)			100	Edge lines continuity on urban roads. Continuity of on-road bicycle lanes past side road junctions.
Edge (Rural)	(E2)	(E2a)		150	Edge lines on rural roads.
Edge Continuity (Rural)	(EC2)			150	Edge lines continuity on rural roads.

LINE TYPE	CODE	MARKING DETAILS	WIDTH (mm)	TYPICAL APPLICATION
Stop	(SL)		300	Intersections/Junctions controlled by Stop signs or traffic signals, Children's crossings.
Holding	(HL)		300	Intersections/Junctions/roundabouts controlled by give ways signs.
Junction (Continuity)	(JC)		150	Where additional definition across the right hand side of an urban junction is required. (Refer Drawing SD-84.001)
Turn (Traffic signals)	(T)		100	Definition of turn maneuvers at traffic signals.
Pedestrian Walkway	(W)		100	Definition of pedestrian walkways at traffic signals and children's crossings.
No Stopping (Refer Note 1)	(NS)	(Yellow)	100	Restriction of stopping parking where use of parking control signs is not appropriate.


AUDIO-TACTILE PAVEMENT MARKING DETAILS	
TYPE-A (Typically on asphalt surfaces)	TYPE-B (Typically on asphalt surfaces)
<ul style="list-style-type: none"> 8mm thick thermoplastic strips placed on road surface followed by standard waterborne paint to match specified line type and width. Application over existing painted marking is permitted provided final application of standard waterborne paint is applied following strip placement. 	<ul style="list-style-type: none"> 2mm thick thermoplastic line with 6mm thermoplastic strips integrated on top of base line. 50mm drainage gaps shall be provided in accordance with DIER Specification R64.

NOTES

- All pavement marking shall be white except 'No Stopping' markings which are yellow.
- Setout dimensions for all markings shall be measured to the centre of the line type.
- All dimensions are in metres unless noted otherwise.
- Refer DIER Specifications R64 and T10 for performance and application guidelines.

RESPONSIBILITY

Department of Infrastructure,
Energy and Resources
Transport Division



SCALES: AS SHOWN
(All scales are correct at A3)

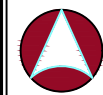
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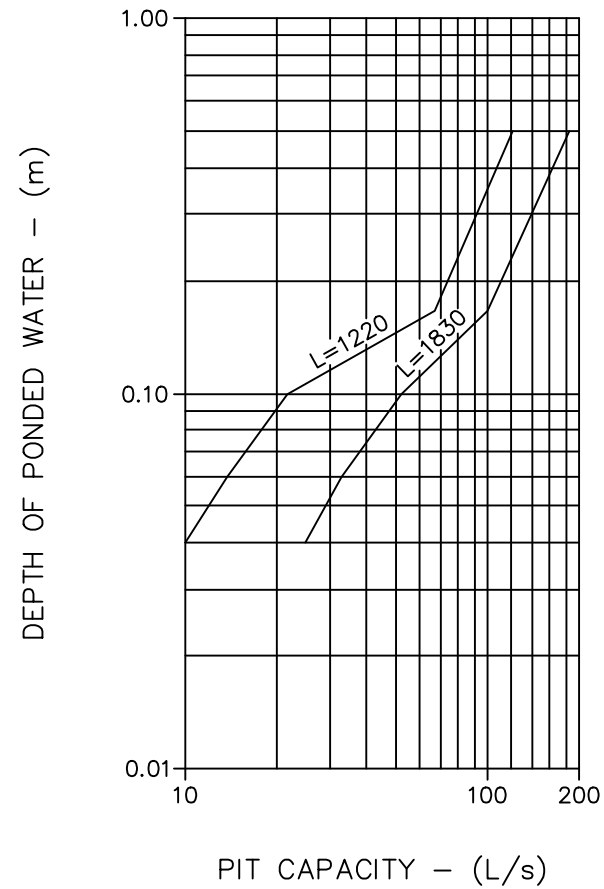


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LINE MARKING TRAFFIC CONTROL

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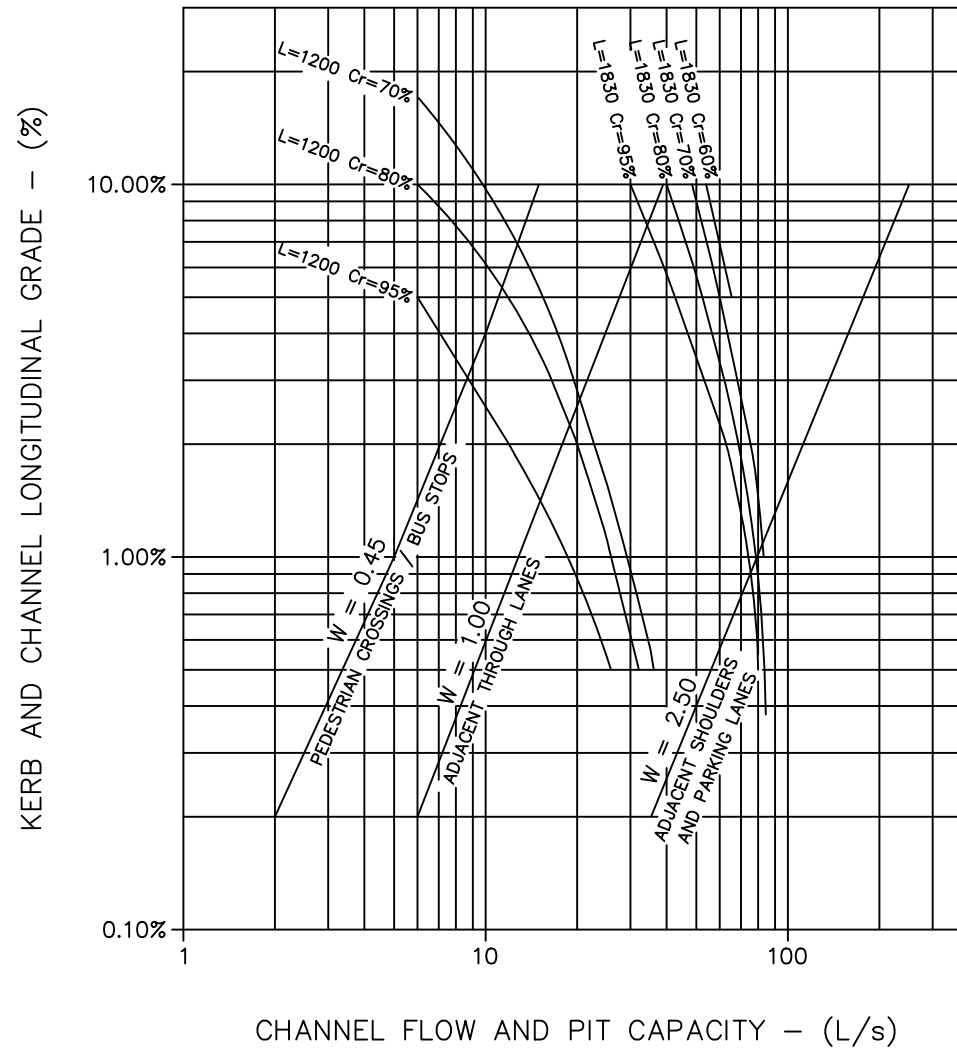
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TSD-RF02-v2



HYDRAULIC CAPACITY IN SAG
(1220mm AND 1830mm LINTELS)

Curves based on theoretical calculations.
Use of 1220mm lintels not favoured in sag conditions.



HYDRAULIC CAPACITY ON GRADE
(1220mm AND 1830mm LINTELS AT 3% CROSSFALL)

On grade inlet capture rates based on model studies.
(Refer TSD design file No. JF.95.077)

NOTES

- Maximum flow widths:
 - 0.45m adjacent to pedestrian crossing points and bus stops.
 - 1.00m adjacent to traffic through lanes and in acceleration, deceleration and left turn lanes.
 - 2.50m adjacent to road shoulders and parking lanes.
- Inlet capture rates (Cr) ignores interception by grate (assumed to be blocked by leaves). Assumes 50mm depression, 600mm long transition, 125mm deep throat and trough below the lintel.
- For crossfalls greater than 3% use 3% curves. For 2% crossfalls, reduce capacity by:
 - 25% for 1220 lintel
 - 50% for 1830 lintel
- Refer to 'The University Of New South Wales Water Research Laboratory – Physical Modelling Of Stormwater Side Entry Pits (628.2420994 COX)' for sealed side entry pits.

L = Lintel
Cr = Capture rate
W = Flow width adjacent to kerb

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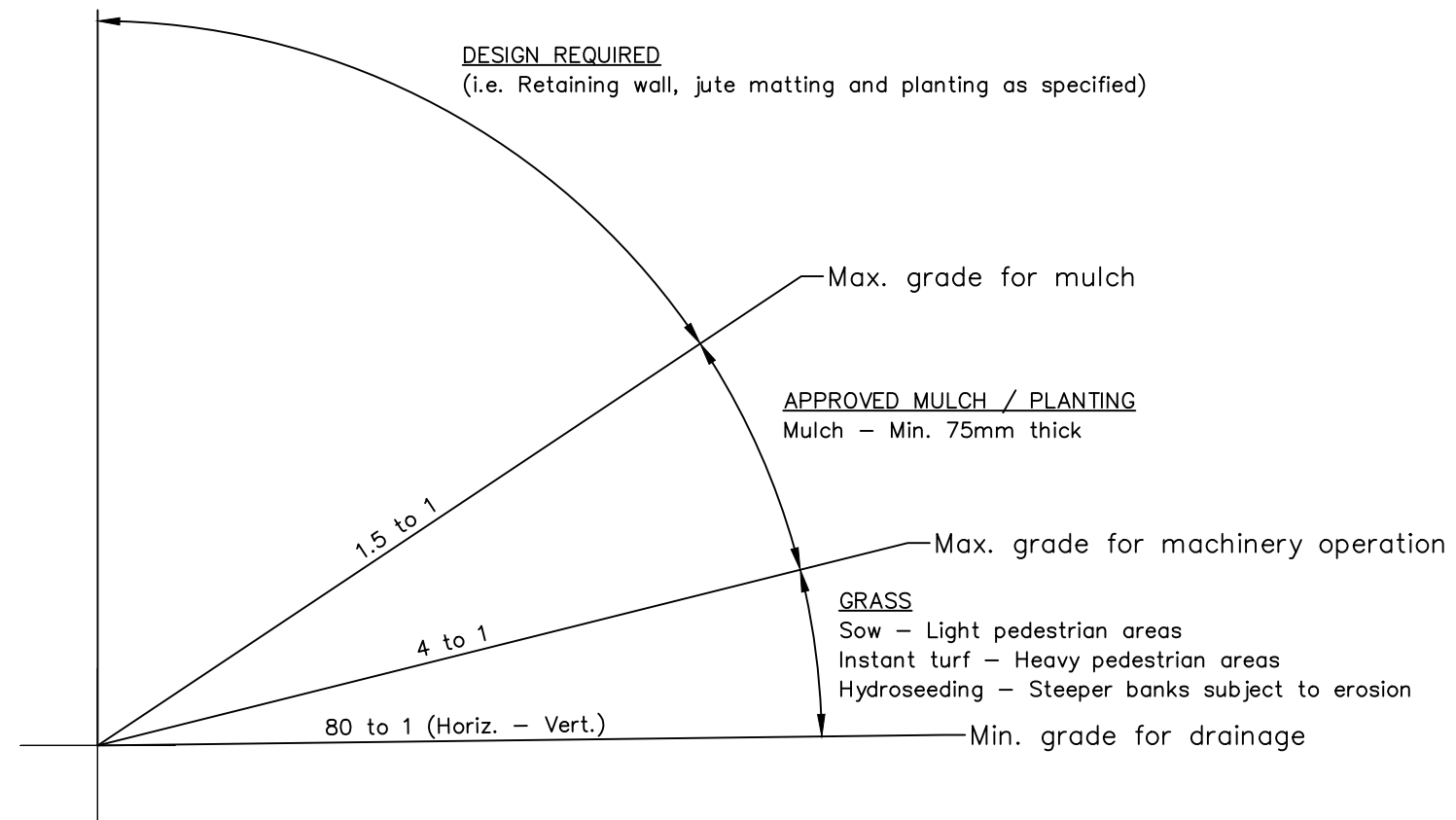


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TSD-RF03-v2

STANDARD DRAWING
SIDE ENTRY PITS HYDRAULIC CAPACITY CURVES



NOTES

Soil Type

- Sandy loam (free of weeds and stones).
- Topsoil - Min. 100mm thick

Preparation Before Sowing

- Light roll prior to sowing and lightly raked after sowing.

Seed Mix

- 70% - blend of two varieties
- 30% - blend of two varieties
- Application rate - 1.0 kg per 30 square metres.

Initial Fertilizing

- A complete fertilizer (8 : 4 : 10 - N : P : K) ratio or similar (e.g. 'Lawn Starter') should be used.
- N : P : K - Nitrogen : Phosphorous : Potassium
- Application rate - 1.0 kg per 33 square metres.

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STANDARD DRAWING
NATURE STRIP DETAILS

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DWG No. TSD-RF04-v2

<u>BREAK O'DAY COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	<u>DEVONPORT CITY COUNCIL</u> <ul style="list-style-type: none"> TSD-R02: Table 2 is to be replaced by 'refer to Devonport City Council, Road Network Strategy, Tables 2 & 4'. TSD-R06: Table 1 is to be replaced by 'refer to Devonport City Council, Road Network Strategy, Tables 1 & 3'. 	<u>KINGBOROUGH COUNCIL</u> <ul style="list-style-type: none"> TSD-G01: Minimum asphalt thickness to be 40mm DG10 or DG14. All trenching under sealed roads to have full depth FCR. TSD-G02: Footpaths to be 1350 to BOK, 1500mm when clear of kerb. For services not in the roadway, cover requirements to be as per service providers requirements. TSD-G03: Minimum offset from public infrastructure to property boundary or easements is 1000mm from the side of the pipe. All clearances are subject to the approval of the Executive Manager Engineering Services. TSD-R01: Face of barrier to be located at the outer edge of the shoulder (also applies to guide posts). Shoulder grades are to be no greater than 10%. TSD-R02: Minimum 1000mm shoulder irrespective of edge line. Shoulder grades to be no greater than 10%. TSD-R03: Seal to property boundary or to a maximum of 6.0m from edge of shoulder. Minimum culvert size DN375. TSD-R04: Minimum culvert size to be DN375. Pipe material and resulting cover requirements to the approval of the Executive Manager Engineering Services. TSD-R05: Minimum culvert size to be DN375. TSD-R06: Width and footpath requirements to be in accordance with the Kingborough Planning Scheme. Footpath to be 1350mm from BOK. Minimum 40mm asphalt wearing course. TSD-R09: Segmental pavers are not approved. Standard grey broom finish for concrete. Minimum driveway width 3000mm. SL82 mesh central. Footpath 1350 to BOK. TSD-R10: Trafficable swale crossings to be to the satisfaction of the Executive Manager Engineering Services. Minimum width 3000mm. SL82 central. TSD-R11: All footpaths to be dowelled to back of kerb. Note 2 W to be 1350mm to BOK. TSD-R12: Location of sub soil drains to be to the satisfaction of the Executive Manager Engineering Services. Pavement design to be undertaken by a suitably qualified and experienced practitioner. TSD-R14: Wedge profiles are not permitted. TSD-R18: Trafficable swale crossings to be to the satisfaction of the Executive Manager Engineering Services. Minimum width 3000mm. SL82 central. TSD-R19: Not applicable to KMC. TSD-R36: Use of engineered soils should be considered/noted when in proximity to kerb or road pavement where compaction or settlement of the 'planting mix' could result in disturbance to levelling strips or pavement. TSD-SW07: Grate type not approved by KMC. TSD-SW08: Grate type not approved by KMC. TSD-SW09: Max depth approved to 1650mm. TSD-SW10: Max depth approved to 1650mm. TSD-SW13: Not approved by KMC.
<u>BRIGHTON COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	<u>DORSET COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	
<u>BURNIE CITY COUNCIL</u> <ul style="list-style-type: none"> TSD-R01: Rural Road unsealed TSD-R02: Rural Road sealed TSD-R06: Urban Roads Typical Section and Pavement Widths TSD-R07: Urban Roads – Cul-de-sac Turning Heads. Road Reservation Width (R) to be approved by the General Managers Delegated Officer. TSD-R08: Typical Cul-de-sac details Urban and Rural. Road Width (W) face of Kerb to Face of Kerb to be approved by the General Managers Delegated Officer. 	<u>FLINDERS COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	
<u>CENTRAL COAST COUNCIL</u> <ul style="list-style-type: none"> TSD-R14: Variation to Standard Kerb Profiles TSD-R15: Variation to Stormwater Kerb Outlets. 	<u>GEORGE TOWN COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	
<u>CENTRAL HIGHLANDS COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	<u>GLAMORGAN SPRING BAY COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	
<u>CIRCULAR HEAD COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	<u>GLENORCHY CITY COUNCIL</u> <ul style="list-style-type: none"> TSD-R15: Concrete Kerbs and Channels construction details: Use current Glenorchy City Council practice. TSD-R18: Access Ramps: Using current AS1428-2009 	
<u>CLARENCE CITY COUNCIL</u> <ul style="list-style-type: none"> TSD-R07: Urban Roads: Cul-de-sac turning heads to effect that Clarence City Council will only accept circular or offset circular turning heads. 	<u>HOBART CITY COUNCIL</u> <ul style="list-style-type: none"> TSD-SW01: Anchor blocks required where pipe grades >20% TSD-RF01: NB Lesser sight distances than detailed may be appropriate for access driveways, but shall be accessed by a suitably qualified practitioner having regard to the requirements of AS2980.1 (Parking facilities Pt1: Off Street Car Parking). TSD-R24: Regulatory parking signage and line marking can only be installed if approved by the Transport Commission (DIER), or a Council Officer with the appropriate delegation under Section 10 of the Transport Act 1981. 	
<u>DERWENT VALLEY COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	<u>HUON VALLEY COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	
<u>DERWENT VALLEY COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	<u>KENTISH COUNCIL</u> <ul style="list-style-type: none"> No Departures or Exclusions 	

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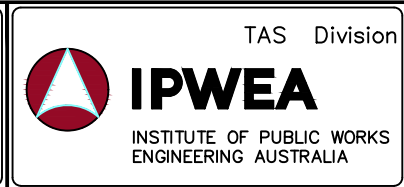
<u>KING ISLAND COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 	<u>TASMAN COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 	
<u>LATROBE COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 	<u>WARATAH–WYNYARD COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 	
<u>LAUNCESTON CITY COUNCIL</u> <ul style="list-style-type: none"> Roads: Council wishes to retain the discretion to vary the road standards described in TSD–R01, TSD–R02 & TSD–R06 to allow the pavement width and surface type to be specified by the Planning Permit conditions. 	<u>WEST COAST COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 	
<u>MEANDER VALLEY COUNCIL</u> <ul style="list-style-type: none"> TSD–R02: Table 2 needs to align with MVC’s road hierarchy TSD–R06: Tables 1 and 2 need to align with MVC’s road hierarchy TSD–R18: access ramp Type B: ‘footpath’ dimension needs an additional 150mm, i.e. the BK kerb should not be included in the overall width of the footpath. TSD–R34: Exclude option 2: MVC will allow posts to be welded directly to cast in situ plates. Detail of plates to be determined by municipal engineer. 	<u>WEST TAMAR COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 	
<u>NORTHERN MIDLANDS COUNCIL</u> <ul style="list-style-type: none"> TSD–R11: Minimum footpath width 1800mm. TSD–R14: The kerb profiles shown on drawing TSD–R14 will not be used in Northern Midlands Council. Contact Council for details of kerb profiles. TSD–R15: All kerb and channel in new or existing pavement to be constructed on a sub–base with minimum depth of 150mm in accordance with note 1. 		
<u>SORELL COUNCIL</u> <ul style="list-style-type: none"> TSD–R17: Concrete Kerbs And Channels Grated Wedge Crossings TSD–R19: Bluestone Kerbs And Channels Construction Details TSD–SW13: Side Entry Pits Table Drain Pit Construction TSD–SW22: Inlet Headwalls (Square) Raised Grated Inlet TSD–SW23: Inlet Headwalls (Domed) Raised Grated Inlet 		
<u>SOUTHERN MIDLANDS COUNCIL</u> <ul style="list-style-type: none"> No departures or exclusions 		

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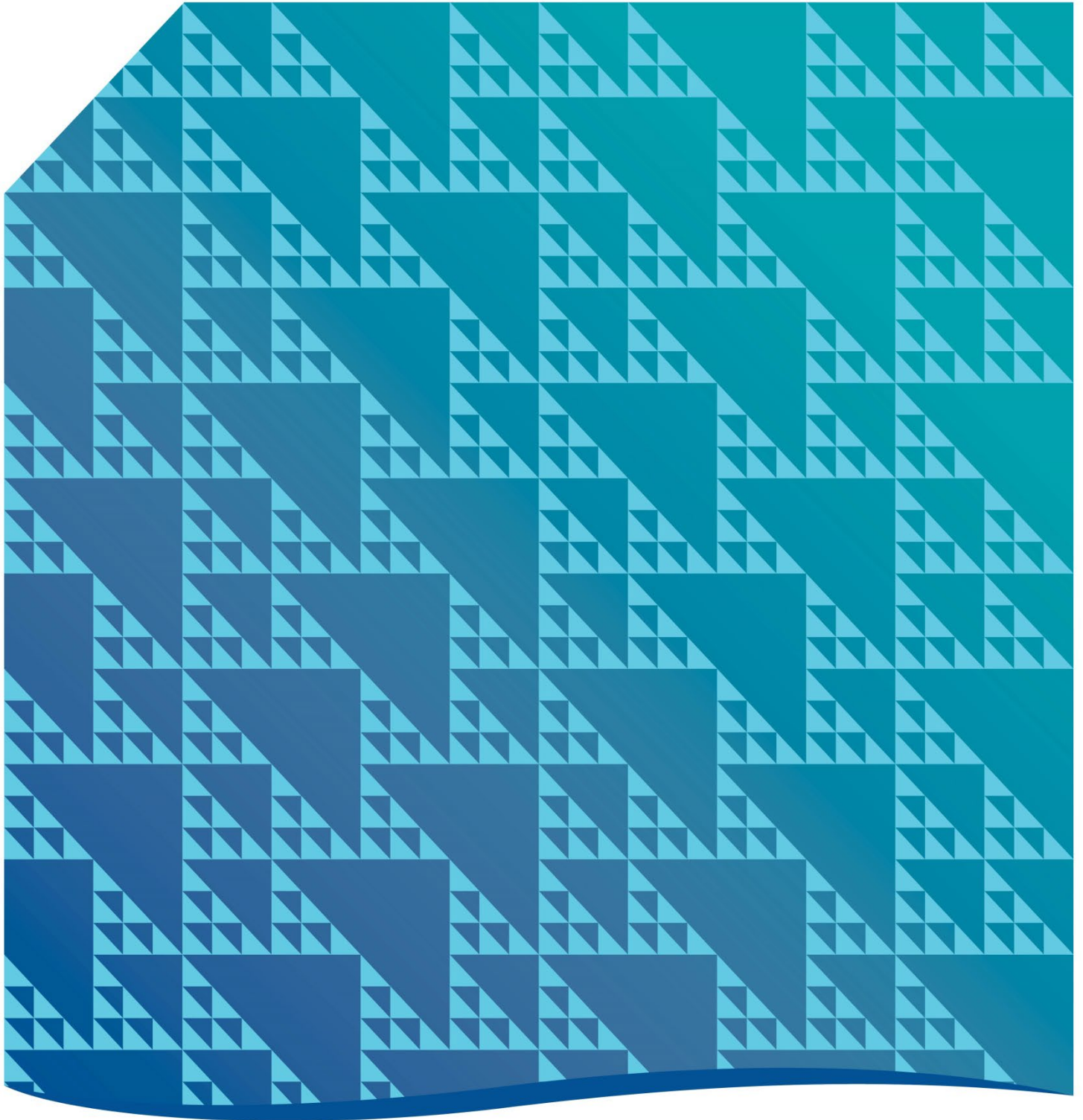
ATTACHMENT C – DIER R40.A5 SPECIFICATION: UNSEALED ROAD AND UNSEALED SHOULDERS 97/2014

R40 Pavement Base and Subbase

Date: July 2014

Edition 1 / Revision 1

Roadworks Specification



REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 1 / Rev 1	All Document R40.4 R40.6.3 R40.6.3 R40.A.1 R40.A.1- R40.A.3	'Department of State Growth' replaces 'DIER' Formatting updated to current Specification Template Reference to ENR40 added Inclusion of CBR testing for Base A material Clause (c) relating to Unsound and Marginal Rock Content added Clause 2. Requiring Base A material to have a minimum CBR of 100% Limits specified for the unsound and marginal rock component (applies to basic igneous rock only)	BW (MRA)	07.07.14
Ed 1 / Rev 0	R40.A.4(f) R40.A.5(c)3)	edited from '40m', to read '40mm' edited from '10m', to read '10mm'	BW (MAM)	14.06.13

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R40.2 DEFINITIONS	4
R40.3 OBJECTIVES AND QUALITY STANDARDS	5
R40.4 REFERENCES AND STANDARDS	5
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R40.1 SCOPE

This Specification sets out the minimum requirements for:

- properties of materials used as base and subbase
- properties of materials used as unsealed road and unsealed shoulders wearing surface
- sampling and testing
- quality control and documentation
- compaction
- tolerances on dimensions and levels and surface evenness

to be achieved in the construction of unbound granular pavements.

It includes a payment adjustment scheme which is based on the measured roughness of the completed pavement.

The material and construction standards for the five material categories (Base Class A and B, Subbase 1 and 2 and Unsealed Road and Unsealed Shoulders Wearing Surface) are included in the Appendices.

R40.2 DEFINITIONS

For the purposes of this Specification, the following definitions apply:

Course: Separately defined and specified layer(s) in a pavement.

Base: Uppermost granular course of the pavement. Two quality classes of base are defined (Class A and Class B).

Subbase 1: Course placed immediately below the Base.

Subbase 2: Course placed below Subbase 1.

Coarse Aggregate: That portion of the material retained on a 4.75mm A.S. Sieve.

Fine Aggregate: That portion of the material passing a 4.75mm A.S.Sieve.

Nominal Size: Whole number, expressed in mm, above the sieve size through which nearly all of the particles pass.

Lot: A single homogeneous production unit produced by the same work process and brought to completion at the same time. The lot shall appear to be of consistent quality without obvious changes in attribute values, whether or not these attribute values form part of the quality criteria.

Target Grading: A particle size distribution, expressed as percentage of material passing each relevant sieve size, which represents the expected median value of the material after placement and compaction within the pavement.

Deviation Limits of Grading: When added to and subtracted from the percentage passing each sieve size of the target grading, these define the extreme range of acceptable properties of the material.

OMC: Optimum Moisture Content, Modified Compaction

MDD: Maximum Dry Density, Modified Compaction

DDR: Dry Density Ratio, Modified Compaction

CBR: Californian Bearing Ratio

Lane IRI_{qc}: It is average IRI (International Roughness Index) of two wheel paths in a single lane, with units of m/km.

Assigned Value: It is the value of a property, calculated from consecutive and the most recent measurements of that property. It is used to determine compliance of the product with the specified criteria for the particular property. It applies to a homogeneous product without obvious changes in attribute values, whether or not these attribute values are directly related to the particular property.

R40.3 OBJECTIVES AND QUALITY STANDARDS

The objective is to ensure a smooth and durable pavement structure which:

- contains only materials of the specified strength and durability
- has uniform properties, shape and dimensions
- will not lose shape under traffic loading

Quality requirements are defined in terms of:

- properties of the constituents of products such as durability and shape of aggregates
- strength (CBR) of the product at specified moisture and density
- particle size distribution and properties of the fines, after placing and compaction
- characteristic DDR of compacted layers
- dimensional tolerances of courses
- roughness of the finished pavement.

R40.4 REFERENCES AND STANDARDS

Pavement construction shall be compatible with the provisions of all Department of State Growth Standard Specifications for Design, Construction and Maintenance, Austroads Guides And Test Methods and Australian Standards in particular:

Department of State Growth Standard Specifications

- G1 – General Provisions
- G2 – Contract Management Plan
- G3 - Traffic Management
- G6 – Production of Aggregate and Rock Products
- G8 – Construction Survey
- G9 – Product Quality
- G10 – Construction Environmental Management Plan
- T4 - Planning and Design Survey.

Austroads Guide to Pavement Technology

- Part 4 – Pavement Materials
- Part 4A – Granular Base and Subbase Materials
- Part 4E – Recycled Materials
- Part 4G Geotextiles and Geogrids
- Part 4H Test Methods
- Part 6 – Unsealed pavements
- Part 8 Pavement Construction
- Part 9 – Pavement Work practices.

Austroads Guide to Asset Management

- Part 5B – Roughness.

There are a number of Austroads reports referenced in these guides that are also to be used particularly:

- AP-C87/08 Glossary of Austroads Terms.

Australian Standards

- AS 1141 Methods of Sampling and Testing Aggregates
- AS 1289 Methods of Testing Soils for Engineering Purposes
- AS 2758 Aggregates and Rock for Engineering Purposes.

ENR40 Pavement Base and Subbase - Explanatory Notes provide background information, and should be read in conjunction with this Specification.

R40.5 NOMINATION OF MATERIALS

The Contractor is required to provide evidence that the materials nominated for use in the pavement are capable of meeting the specified criteria.

For each nominated material, the Contractor shall, at least five (5) working days prior to intended use of the material, supply to the Superintendent the following:

- a completed *Nomination of Materials Form R40.1* which includes:
 - the source and geological origin of all component materials and the percentage by dry mass of each component, this is particularly relevant to blended products
 - the target grading, where this applies
 - test data, which demonstrate that the material satisfies the relevant requirements of this specification
 - estimates of the effect of compaction on particle size distribution (*R40.6.3(b)*) where the Contractor intends to use, as evidence of product control, particle size distributions measured prior to placement and compaction
- for Base and Subbase 1 materials, evidence that the material source is managed in accordance with *Department of State Growth Standard Specification G6*.
- a representative sample (100kg) in clearly labelled bags, individually no heavier than 25kg, if required by the Superintendent. For blended products, the Contractor shall provide 10kg samples of each component material in clearly labelled bags in addition to the representative sample, if required by the Superintendent.

The above requirements shall also apply to any changes of materials and their components during the course of the contract.

Note:

The Contractor should be aware that payment adjustments apply to the achieved evenness of surface. The Contractor's choice of materials, spreading and compaction plant and control over the variability of materials and processes will largely determine the achieved evenness of surface. The likely stability of materials under traffic is an important consideration.

Test reports and other information shall comply with the following:

- The date on the test reports, required to accompany the completed Nomination of Materials form, shall be within six (6) months of the date of submission of the form
- The assigned values are derived from tests undertaken within the previous 24 months
- The CBR test report is accompanied by particle size distribution, properties of fines, maximum dry density and optimum moisture content for the sample tested for CBR.

R40.6 PRODUCT QUALITY**R40.6.1 General**

The quality of all material after placement and compaction shall meet all the requirements of this specification, including particle durability and shape, CBR, particle size distribution and properties of fines.

Non compliance of a lot with respect to particle size distribution and/or properties of fines will be treated as defective work (*Clause G2.4.6*).

Retests of lots will not include any earlier test result.

The Contractor shall test materials and document results as defined *R40.6.3*

R40.6.2 Material Quality

(a) General

Materials shall be uniform in composition and moisture content, well mixed and not segregated.

Material shall be free from the seeds of noxious weeds, plant pathogens and other organic matter, lumps or balls of clay. In the event that the source contains sulphides, mica, secondary minerals or other constituents with potentially adverse effects on the performance of the product, the Contractor shall submit a plan to the Superintendent in accordance with Clause G6.6.

All components, coarse and fine, shall be comprised of hard durable particles with no tendency to fret or breakdown when alternately wetted and dried.

The properties of materials crushed to produce the fines of blended products shall satisfy the durability requirements for coarse aggregate.

(b) Material Quality Requirements

The requirements for particle size are defined in terms of the acceptable deviation of the measured percentage passing each nominated sieve size from the specified or target grading.

Different deviation limits apply to:

- the mean of the three samples within each lot
- for each sample within the lot

In each case the measured value must fall within the range defined by the specified or target value, plus and minus the particular deviation limits. In addition to the above, limits are placed on the relative proportion of particles within consecutive sieve sizes. These are termed grading ratios.

The requirements for properties of fines are defined in terms of maximum acceptable values of:

- Liquid Limit (LL)
- Plastic Index (PI)

Plastic Index multiplied by percentage passing 0.425 mm sieve for each sample within a lot and the lot mean.

R40.6.3 Quality Control

(a) Sampling Procedures

Where material is supplied from a compliant source using production control testing for both particle size distribution and properties of fines, test results supplied from this source will be acceptable as evidence of product compliance provided that:

- the Contractor's control procedures, including dealing with a non-complying product, are detailed in the Contract Management Plan
- the production quality testing undertaken at a frequency of not less than 1 test per 600 tonnes
- there is traceability between the location of the material in the pavement and the production quality testing, sufficient to ensure that the location of non-complying materials can be established
- account is made of any changes to material properties that may arise from placement and compaction, as defined in R40.6.3 (b)
- after accounting for the effects of compaction the moving average of the latest three consecutive tests shall comply with the specified mean value and all tests shall comply with the "each sample" limits
- the supplier provides all production test results for the particular material during the period of supply of the particular lot in question.

Note:

Where for instance the supplier may have produced, say 3000 tonnes of a particular material while supplying only say 2000 tonnes to the contract in question, the Superintendent will require access to all the results for the 3000 tonnes.

In the event that the supplier is not undertaking production control testing for compliance with particle size distribution and properties of fines, testing shall be carried out on a lot basis. The maximum size of lots, for insitu testing, shall not exceed 5000m². The frequency of sampling and testing shall be 3 tests per lot.

(b) CBR Tests on Compacted Base Class A and B, Subbase, I Subbase 2 and Unsealed Wearing Surface

Soaked CBR tests at the specified dry density ratio and moisture content (Appendices A1 – A5 as required) shall be undertaken at a rate of not less one (1) test per 3000 tonnes of supply.

Each test result shall comply with the minimum soaked CBR in Appendices A1 – A5 as required.

In the event that the supplier is undertaking routine CBR tests in accordance with the above and maintaining quality control charts, compliance shall be based on the assigned value. The assigned values calculated from five (5) consecutive measurements and using the following formula ($\bar{x}-s$).

The Superintendent may accept an assigned value determined using some data older than 24 months provided that there is at least two (2) measurements not older than 24 months. The Superintendent may also judge compliance based on less than five (5) measurements provided that three (3) of these measurements are not more than 24 months old and that the measurements are the only measurements that have been made for the particular product. In this latter case, the assigned value shall be the minimum value in the data set.

In both the above situations the Superintendent may require an increased frequency of testing until there are five (5) test results within the 24 month time frame.

In the event that the assigned value is not less than:

- 120% of the specified minimum CBR, the testing frequency may be reduced to not less than one (1) test per 6,000 tonnes of supply.
- 150% of the specified minimum CBR, the testing frequency may be reduced to one (1) test per 10,000 tonnes of supply.

In the event that the assigned value falls outside the limits for a lower frequency of testing, the higher test frequency shall apply until the limit for the lower frequency of test is satisfied.

(c) Unsound and Marginal Rock Content

This clause relates to basic igneous rock only. The rock shall be classed as either sound, marginal or unsound, in accordance with *Standard Specification G6 Production of Aggregates and Rock Products Clause G6.8.2(b)*. The fraction of marginal and unsound rock retained on a 4.75mm AS sieve shall not exceed the limits in Appendix A1 – A5.

(d) Accounting for Effects of Compaction

The specification applies to the properties of the material in place and after compaction. If the Contractor intends to submit results of tests made prior to placing and compaction as evidence of product compliance; the Contractor must demonstrate either that:

- the particle size distribution has not been significantly affected by compaction
- or that after correcting for changes that arise from compaction, the particle size distribution complies with the specified limits.

Demonstration will involve a field trial undertaken in accordance with Appendix B1. The trial will be undertaken either during or prior to the placement of the first lot of each course and repeated:

- at intervals not exceeding 5000m³ of in place material
- whenever there is a significant change in the compaction processes or plant

The Contractor shall give the Superintendent at least 24 hours notice of the trial. The Contractor may be required to provide duplicate samples to the Superintendent.

Field trials may not be required where the Contractor can demonstrate to the satisfaction of the Superintendent, by previous tests and reports, that there is no significant change in particle size distribution resulting from placement and compaction or that the change is well established.

The above procedure does not remove the Contractor's obligations concerning the properties of the in-place material.

Where the particle size distribution is changed by compaction, the Contractor is required to deal with this matter in the Contract Management Plan.

The plan should define:

- the correction to be applied to each sieve size
- the methods by which the Contractor will account for the corrections in the setting of target values and compliance limits and in the control charts.
- the procedures to be adopted by the Contractor in the oversight of material quality and test results.

(e) Change of Target Grading

A Contractor in seeking a change to the target grading of Base Class B, Subbase 1, Subbase 2 or Unsealed Wearing Surface must demonstrate that the material and proposed limits fully comply with all the requirements of this specification. The Superintendent may require the Contractor to comply with *R40.5 Nomination of Materials*.

(f) Quality Control Documentation

The Contract Management Plan shall define the methods by which quality control and compliance with this specification is demonstrated and displayed.

The Contractor shall maintain quality control charts for CBR, particle size distribution, properties of fines and the product of PI and percent passing the 0.425mm sieve in addition to control charts required in Department of State Growth *Standard Specification G6*. The charts shall be readily available during construction for inspection by the Superintendent at all times.

The minimum requirements for the charts are:

- identify the property to be controlled
- all individual test results are included and identified by a sample or test number
- the test plots are made in chronological order (eg. date of supply, time of sampling or date of test)
- include at least one set of control limits (average or single sample) for each particular property
- at least four sieve sizes are included in the particle grading control charts. The charts shall include the 0.075 and 0.425 mm sieve sizes
- a chart for PI and PI x % passing 0.425mm sieve.

Test results shall be entered on the charts within five working days of receipt of the test results.

For the purpose of the control charts, test results, included in the charts, remain current for two years.

R40.7 CONSTRUCTION**R40.7.1 General**

Each layer shall be finished to a uniform surface, free of segregated areas that does not deform or weaken under traffic or exposure to the weather.

Note:

The Contractor must select materials, plan construction and manage plant and traffic consistent with this requirement.

The top surface of base course shall be tight and shall not ravel under traffic. The top surface of other courses and layers shall not be loose or ravelled and shall be suitable to provide a good frictional bond with the succeeding layer.

No course shall be covered with a succeeding layer until it has met all the requirements of this Specification.

When placing a frost resistant base course a maximum length of 800m of base being left unsealed at any one time shall apply.

Note:

Previous experience with a Frost Resistant Base has indicated that compaction is best achieved with the use of a combination of vibrating and multi tyre rollers and that it needs to be sealed as soon as possible after compaction and preparation of the surface to limit traffic damage. The pavement will noticeably deteriorate if left unsealed over a weekend.

R40.7.2 Handling and Spreading

The material shall be handled in a manner that avoids segregation and produces a uniform finished product.

R40.7.3 Pavement Layer Thickness

The maximum permitted thickness of compacted layers within each course is included in Appendices A1 – A5 as required.

R40.7.4 Compaction

Compaction shall be assessed according to *Department of State Growth Standard Specification G4*.

Pavement materials shall be compacted to the relevant minimum characteristic DDR given in Appendices A1 – A5 as required.

R40.7.5 Moisture Content Prior to Sealing

Prior to sealing, the Contractor shall inspect the base and ensure that it is of uniform moisture content and free of local damp and wet spots and demonstrate that the Moisture Content of the base course is not more than 70% of the corrected OMC.

The Contract Management Plan shall define:

- inspection plan for the completed base
- method of selecting lots and test sites
- number of samples in each lot (minimum shall be 3)
- the manner by which the Contractor will deal with an uneven distribution of moisture.

Where the number of test sites for moisture content is 4 or less the assessment shall be based on the maximum moisture content measured in those samples. Where the number of test sites is greater than 4, the assessment shall be based on the average plus one standard deviation of the test results for that lot.

The sampling depth shall be 75mm or greater. The moisture contents determined by the use of an appropriately calibrated nuclear density meter will be acceptable.

In addition to the above moisture content requirements, the surface of the base may have to meet ball penetration test criteria (embedment) as defined in *Department of State Growth Standard Specification R51*.

R40.8 COMPLETED SURFACE

R40.8.1 General

The surface of each pavement course shall conform to the levels, grades and shapes shown on the Drawings or in the computer printout.

No point on the finished surface of a course shall deviate from the designated levels by more than the tolerances defined in Appendices A1 – A5.

The join to existing work after placement of the surfacing shall be smooth without any abrupt change in levels. The location of the join shall not be detectable when driven over in a passenger vehicle.

R40.8.2 Evenness Of Finished Surface - Roughness Survey

Where the works include construction of a base course across a full lane width, a roughness survey shall be undertaken after the completion of all bituminous surfacing works but prior to Practical Completion.

Payment adjustments may be made based on these measurements.

All areas of roadway, carriageways and ramps shall be tested, except in those areas of the contract which are less than 200m continuous length. These need not be tested.

Individual carriageways, ramps, side roads and different surfacing types shall be treated as individual lots.

The required procedures for the assessment and analysis of the roughness data and calculation of the assigned roughness are included in *Appendix B2*.

R40.8.3 Payment Adjustment

Unless specified otherwise in the Works Specification, the adjustments to the payment given in *Table R40.1 - Payment Adjustment for Level of Service* will apply to new work.

New work for the purpose of this clause involves the construction of a full lane width base course layer including any modification or stabilisation of an existing pavement structure.

The adjustment is based on the assigned roughness determined for each carriageway.

The adjustment, which applies to the tendered price for the supply, placement and compaction of the base and sprayed surfacing course placed on the base. The adjustment may be positive or negative. The payment adjustment applies only to that portion of the base that is surfaced.

In the event that the starting and finishing points of the survey do not include the joints between the new work and adjacent sections, or that the Contractor deletes the readings covering these joints from the calculation of the characteristic roughness, the Contractor shall: inform the Superintendent of the reasons for excluding the joints eliminate unevenness of the joints to the satisfaction of the Superintendent.

Table R40.1 – Payment Adjustment for Level of Service

Assigned Roughness Lane IRIqc m/km	Percentage Adjustment to Payment (%)
0 – 2.0	Additional 1.0% for each 0.10 or part thereof that R c < 2.0

2.01 – 2.3	No adjustment
2.31 – 3.0	Reduction of 1.0% for each 0.10 or part thereof that R c > 2.3
Greater than 3.01	Unacceptable Level of Service

R40.8.4 Unacceptable Level of Service

Where the completed surface is of an unacceptable level of service the Contractor shall provide to the Superintendent a proposal to return the works to an acceptable level.

The Contractor shall not proceed with the proposed remedial works without the prior approval of the Superintendent.

The Principal shall not be liable for any costs incurred by the Contractor in returning the works to an acceptable level of service.

R40.9 MEASUREMENT AND PAYMENT

The Contractor shall demonstrate compliance with this specification as a condition of payment.

When field measurement of pavement is undertaken (Ref. *Clause G1.18*), payment shall be for the quantities of material for each course computed on the basis of the measured plan area of the top finished surface of each course within the design perimeters constructed to the specified thickness within the tolerances. The unit of measurement shall be square metres.

The top surface shall not include embankment and table drain batter slopes.

In areas of kerb or kerb and gutter, the plan area of the top finished surface of base shall be measured from the face of the kerb, or lip of kerb and gutter. The Contractor shall make allowance, within the rate for base quoted in the Schedule of Rates, for base placed under and 150mm minimum beyond the back of kerb or kerb and gutter.

Base course supplied, spread and compacted on site shall be paid for at the tendered rate per square metre adjusted in accordance with *Table R40.8.3*. Where the base course is measured in the Schedule as cubic metres, the value of the base subject to the payment adjustment shall be the surfaced area multiplied by the rate per cubic metre multiplied by the average depth of the base course.

R40.10 COMPLETED WORKS REPORT

In addition to any requirements stated elsewhere, the completed works report shall contain:

- location plans that identify
 - materials used
 - the precise position of a change in material type within any course
 - lot boundaries for material properties and compaction control
- nomination of material forms for each material used
- control charts for particle size distribution, properties of fines and Corrected MDD and OMC for each material used.
- CBR test results, or alternatively CBR control charts for Base Class B, Subbase 1 & 2
- moisture contents prior to sealing as a percentage of corrected OMC for each sealing lot
- record of the mean Lane IRI_{qc} for each measurement interval for each lane.

R40.11 HOLD POINTS

The hold points (Refer *Clause G2.5.4*) identified in this Specification are in *Table R40.2 Hold Points*.

Table R40.2 – Hold Points

Reference	Description	Nominated Work not to Proceed	Evidence of Compliance
R40.5	nomination of pavement material	Supply of pavement material	Nomination of materials form with supporting test data
R40.7.1	top of each pavement course	Placement of the next layer	Test data
R40.6.1	non compliance with respect to material quality	Further placement of material	Corrective action with supporting test data
R40.6.3 (d)	change of target grading	Placement of material	Test data
R40.8.3	exclusion of joint from roughness survey	Payment	Corrective action
R40.8.4	unacceptable level of service	Payment	Corrective action

R40.12 CONTRACT MANAGEMENT PLAN

The following clauses are relevant to the Contract Management Plan:

- *R40.6.3(a)*, dealing with non-complying product
- *R40.6.3(b)*, dealing with changes to particle size distribution as a result of placement and compaction
- *R40.6.3(d)*, defining methods by which quality control and compliance with the specification is demonstrated and displayed
- *R40.7.5*, defining inspection and test procedures of the base prior to sealing
- *Appendix A5 (c)(2)*, equipment and procedures that will be used to undertake the compaction of shoulder material.

APPENDIX R40.A – MATERIALS & CONSTRUCTION STANDARDS**APPENDIX R40.A.1 – BASE CLASS A****(a) Nature of Materials**

The material shall be either a crushed rock or crushed natural gravel or a combination of both. At least 75% by mass of the coarse aggregate shall have two (2) or more broken faces. The moisture content prior to placement shall be within 1.0% of OMC.

The project specification may nominate either a nominal 19mm or 27mm material.

(b) Nomination of Materials (Ref R40.5)1) Whole Sample – Particle Size Distribution

The target particle size distribution is defined below:

AS Sieve Size mm	% Passing	
	Nominal 19mm	Nominal 27mm
26.5		100
19.0	100	86
9.5	73	63
4.75	54	46
2.36	39	34
0.425	18	16
0.075	8	7

2) Soaked CBR

Soaked CBR (AS 1289.6.1.1), compacted to 98% DDR and within 1% of OMC, then soaked for 4 days prior to test. Material passing the 53mm sieve but retained on the 19mm sieve may be replaced by an equal portion by mass of the material passing the 19mm sieve but retained on the 4.75mm sieve. The amount of replaced material, on a dry mass basis, shall not exceed 25% of the portion passing the 19mm sieve. The report shall indicate the percentage replaced.

CBR (minimum) = 100

3) Coarse Aggregatei) Wet/Dry Strength Variation (AS 1141-22)

Assigned Wet Strength (minimum) = 100kN

Assigned Wet/Dry Strength Variation (maximum) = 35%

ii) AS 1141.15 Flakiness Index

Assigned Flakiness Index (maximum) = 35

The Superintendent may accept the results of a single test report for Flakiness Index, provided that the report is not more than 6 months old and the test result does not exceed 30.

4) Fine Aggregate

Liquid Limit (LL) (AS 1289.3.1.1)

Plastic Index (PI) (AS 1289.3.3.1)

Liquid Limit (maximum) = 25

Plastic Index (maximum) = 4

5) Unsound and Marginal Rock Content

This clause relates to basic igneous rock only. The rock shall be classed as either sound, marginal or unsound, in accordance with *Standard Specification G6 Production of Aggregates and Rock Products Clause G6.8.2(b)*. The fraction of marginal and unsound rock retained on a 4.75mm AS sieve shall not exceed:

- Unsound rock: maximum 5%
- Unsound and marginal rock: combined maximum 10%

(c) Acceptance Limits for in Place Product1) Particle Size Distribution

The particle size distribution, for the mean and each sample, of the in-place compacted material shall fall within the following limits.

AS Sieve Size mm	% Passing			
	Nominal 19mm		Nominal 27mm	
	Lot Mean Limits	Each Sample Limits	Lot Mean Limits	Each Sample Limits
26.5			95-100	93-100
19.0	95-100	93-100	79-93	76-96
9.5	66-80	63-83	56-70	53-73
4.75	47-61	44-64	39-53	36-56
2.36	33-45	31-47	28-40	28-42
0.425	14-21	12-23	12-19	10-21
0.075	5-10	4-11	4-9	3-10

The particle size distribution curve for the in-place material shall not deviate from a lower limit to a higher limit but shall roughly parallel the target grading. The percent passing the 0.075mm sieve, divided by the percent passing the 0.425mm sieve shall fall within the range 0.35 to 0.60.

2) Properties of Fines

The properties of the lot mean and each sample shall not exceed:

Property	Lot Mean	Each Sample
Liquid Limit	25	27
Plastic Index	4	6

(d) Pavement Layer Thickness

Thickness of Compacted Layer (maximum) = 175mm

(e) Compaction (Ref R40.7.4)

Characteristic DDR (minimum) = 98.0%

(f) Completed Surface (Ref R40.8.1)1) Maximum deviation from designated surface level of the base course

5mm (below) and 10mm (above)

2) Maximum gap under a 1.2m straight edge located anywhere on the completed surface

Maximum gap = 6mm

3) Roughness (IRI)

refer R40.8.3

APPENDIX R40.A.2 – BASE CLASS B**(a) Nature of Materials**

The material may be a crushed rock, natural gravel or a mixture of both.

(b) Nomination of Materials (Ref R40.5)

The Contractor is required to nominate a target grading and to provide evidence that the nominated material satisfies the requirements specified in (1) to (4) below

1) Whole Sample – Particle Size Distribution AS 1289-3.6.1

The nominated particle size distribution must satisfy two requirements:

- % passing limits for target grading
- grading ratio limits

The limits for each are defined below.

The particle size distribution curve of the nominated grading shall not deviate from a lower limit to a higher limit of the target range but shall roughly parallel the limits of the target grading range defined in the table below. The grading ratio limit is the quotient of the percentage passing the two identified sieves. The divisor is the percentage passing the larger sieve.

Targets and Limits (% of Total Mass)						
Sieve Size mm	Specified Values			Nominate d Grading	Acceptance Limits	
	Target	Limits of Deviation			Lot Mean	Each Sample
		Lot Mean	Each Sample			
100						
75	100					
37.5	90-100	8	12			
19	68-100	8	12			
9.5	50-100	8	12			
4.75	38-90	8	12			
2.36	28-60	7	10			
0.425	14-30	5	8			
0.075	7-20	3	5			

2) Grading Ratio Limits

Sieve Sizes mm	Limits % Passing
0.075 / 0.425	0.3 – 0.8
0.425 / 2.36	0.3 – 0.8
2.36 / 4.75	0.5 – 0.9
4.75 / 9.5	0.5 – 0.9

3 Soaked CBR

Soaked CBR (AS 1289.6.1.1), compacted to 98% DDR and within 1% of OMC, then soaked for 4 days prior to test. Material passing the 53mm sieve but retained on the 19mm sieve may be replaced by an equal portion by mass of the material passing the 19mm sieve but retained on the 4.75mm sieve. The amount of replaced material, on a dry mass basis, shall not exceed 25% of the portion passing the 19mm sieve. The report shall indicate the percentage replaced.
CBR (minimum) = 80

4) Coarse Aggregate

Wet/Dry Strength Variation AS 1141-22

Assigned Wet Strength (minimum) = 80kN

Assigned Wet/Dry Strength Variation (maximum) = 40%

5) Fine Aggregate

Liquid Limit (LL) (AS 1289-3.1.1)
 Plastic Index (PI) (AS 1289-3.3.1)
 Liquid Limit (maximum) = 25
 Plastic Index (maximum) = 6
 PI x % passing 0.425 mm
 sieve (maximum) = 180

6) Unsound and Marginal Rock Content

This clause relates to basic igneous rock only. The rock shall be classed as either sound, marginal or unsound, in accordance with *Standard Specification G6 Production of Aggregates and Rock Products Clause G6.8.2(b)*. The fraction of marginal and unsound rock retained on a 4.75mm AS sieve shall not exceed:

- Unsound rock: maximum 7%
- Unsound and marginal rock: combined maximum 10%

(c) Acceptance Limits for in Place Product

1) Particle Size Distribution

The particle size distribution limits for the mean and each sample of the in-place compacted material shall fall within limits defined by:

- the target grading,
- plus or minus deviation limits separately specified for the mean value and each sample within a lot

The specified deviation limits are included in section R40-A2 b(i) of this Appendix.

2) The Properties of Fines

The properties of the lot mean and each sample shall not exceed:

Property	Lot Mean	Each Sample
Liquid Limit	25	30
Plastic Index	6	8
PI x % Passing		
0.425 mm sieve	180	210

(d) Pavement Layer Thickness (Ref R40.7.3)

Compacted Layer Thickness (maximum) = 175mm

(e) Compaction (Ref R40.7.4)

Characteristic DDR (minimum) = 98%

(f) Completed Surface (Ref R40.8.1)

1) Maximum Deviation from designated surface level of course

5mm (below) and 10mm (above)

2) Maximum gap under a 1.2 m straight edge located anywhere on the completed surface

Maximum gap = 6 mm

3) Roughness IRI

Refer R40.8.3

APPENDIX R40.A.3 – SUBBASE 1**(a) Nature of Materials**

The material may be a crushed rock, natural gravel or a mixture of both.

(b) Nomination of Materials (Ref R40.5)

The Contractor is required to nominate a target grading and to provide evidence that the nominated material satisfies the requirements specified in (i) to (iv) below.

1) Whole Sample – Particle Size Distribution AS 1289-3.6.1

The nominated particle size distribution must satisfy two requirements:

- % passing limits for target grading
- grading ratio limits

The limits for each are defined below.

The grading ratio limit is the quotient of the percentage passing the two identified sieves. The divisor is the percentage passing the larger sieve.

Targets and Limits (% of Total Mass)						
Sieve Size mm	Specified Values			Nominated Grading	Acceptance Limits	
	Target	Limits of Deviation			Lot Mean	Each Sample
		Lot Mean	Each Sample			
100	100	0	0			
75	95-100	9	15			
37.5	70-100	9	15			
19	52-100	9	15			
9.5	40-100	9	15			
4.75	30-100	9	15			
2.36	22-75	7	12			
0.425	12-40	6	10			
0.075	6-26	4	6			

2) Grading Ratio Limits

Sieve Sizes mm	Limits % Passing
0.075 / 0.425	0.3 – 0.8
0.425 / 2.36	0.3 – 0.8
2.36 / 4.75	0.5 – 0.9
4.75 / 9.5	0.5 – 0.9

3) Minus 19mm Fraction

Soaked CBR (AS 1289.6.1.1), compacted to 95% DDR and within 1% of OMC, then soaked for 4 days prior to test. Material passing the 53mm sieve but retained on the 19mm sieve may be replaced by an equal portion by mass of the material passing the 19mm sieve but retained on the 4.75mm sieve. The amount of replaced material, on a dry mass basis, shall not exceed 25% of the portion passing the 19mm sieve. The report shall indicate the percentage replaced.

CBR (minimum) = 30

4) Coarse Aggregate

Wet/Dry Strength Variation AS 1141-22

Assigned Wet Strength (minimum) = 50kN

Assigned Wet/Dry Strength Variation (maximum) = 45%

5) Fine Aggregate

Liquid Limit (LL) (AS 1289-3.1.1)
 Plastic Index (PI) (AS 1289-3.3.1)
 Liquid Limit (maximum) = 35
 Plastic Index (maximum) = 12
 PI x % passing 0.425
 mm sieve (maximum) = 300

6) Unsound and Marginal Rock Content

This clause relates to basic igneous rock only. The rock shall be classed as either sound, marginal or unsound, in accordance with *Standard Specification G6 Production of Aggregates and Rock Products Clause G6.8.2(b)*. The fraction of marginal and unsound rock retained on a 4.75mm AS sieve shall not exceed:

- Unsound rock: maximum 10%
- Unsound and marginal rock: combined maximum 20%

(c) Acceptance Limits For In Place Products

1) Particle Size Distribution

The particle size distribution limits for the mean and each sample of the in place compacted material shall fall within limits defined by:

- the target grading,
- plus or minus deviation limits separately specified for the mean value and each sample within a lot

The specified deviation limits are included in section R40-A3 b(i) of this Appendix.

2) The Properties of Fines

The properties of the lot mean and each sample shall not exceed:

Property	Lot Mean	Each Sample
Liquid Limit	35	40
Plastic Index	12	16
PI x % Passing		
0.425 mm sieve	300	350

(d) Pavement Layer Thickness (Ref R40.7.3)

Compacted Layer Thickness (maximum) = 200mm

(e) Compaction (Ref R40.7.4)

Characteristic DDR (minimum) = 96%

(f) Completed Surface (Ref R40.8.1)

1) Maximum Deviation from designated surface level of course

30mm (below) and 15mm (above)

APPENDIX R40.A.4 – SUBBASE 2**(a) Nature of Materials**

The material may be a crushed rock, natural gravel or a mixture of both.

(b) Nomination of Materials (Ref R40.5)

The Contractor is required to nominate a target grading and to provide evidence that the nominated material satisfies the requirements in (1) to (3) below.

1) Whole Sample – Particle Size Distribution AS 1289-3.6.1

The nominated particle size distribution must satisfy the limits defined in the table below.

Targets and Limits (% of Total Mass)						
Sieve Size mm	Specified Values			Nominated Grading	Acceptance Limits	
	Target	Limits of Deviation			Lot Mean	Each Sample
		Lot Mean	Each Sample			
100	100	0	5			
75	85-100	10	15			
37.5	70-100	10	18			
19						
9.5	35-100	10	18			
4.75						
2.36	18-80	10	18			
0.425	4-45	7	12			
0.075	0-25	7	12			

2) Minus 19mm Fraction

Soaked CBR (AS 1289.6.1.1), compacted to 95% DDR and within 1% of OMC, then soaked for 4 days prior to test. Material passing the 53mm sieve but retained on the 19mm sieve may be replaced by an equal portion by mass of the material passing the 19mm sieve but retained on the 4.75mm sieve. The amount of replaced material, on a dry mass basis, shall not exceed 25% of the portion passing the 19mm sieve. The report shall indicate the percentage replaced.
CBR (minimum) = 15

3) Fine Aggregate

Liquid Limit (LL) (AS1289-3.1.1)

Plastic Index (PI) (AS1289-3.3.1)

Liquid Limit (maximum) = 40

Plastic Index (maximum) = 20

PI x % passing 0.425mm

sieve (maximum = 450)

(c) Acceptance Limits For In Place Product1) Particle Size Distribution

The particle size distribution limits for the mean and each sample of the in-place compacted material shall fall within limits defined by:

- the target grading,
- plus or minus deviation limits separately specified for the mean value and each sample within a lot

The specified deviation limits are included in section R40-A4 b(i) of this Appendix.

2) The Properties of Fines

The properties of the lot mean and each sample shall not exceed:

Property	Lot Mean	Each Sample
Liquid Limit	40	45
Plastic Index	20	25
PI x % Passing		
0.425 mm sieve	450	600

(d) Pavement Layer Thickness (Ref R40.7.3)

Compacted Layer Thickness (maximum) = 250mm

(e) Compaction (Ref R40.7.4)

Characteristic DDR (minimum) = 95%

(f) Completed Surface (Ref R40.8.1)

1) Maximum Deviation from designated surface level of course

40mm (below) and 20mm (above)

APPENDIX R40.A.5 – UNSEALED ROAD AND UNSEALED SHOULDERS WEARING SURFACE

(a) Nature of Materials

The material shall be produced from natural gravel, crushed rock or a mixture of both. The material shall be free from organic matter (clay lumps, excess mica and other deleterious materials). The desired material will have a marked resistance to ravelling in dry weather and to deformation in wet weather and will be of uniform quality.

(b) Nomination of Materials (Ref R40.5)

The Contractor is required to nominate a target grading (for the material in place and after compaction) and to provide evidence that the nominated material satisfies the requirements in this appendix.

1) Whole Sample Particle Size Distribution

The nominated particle size must satisfy two requirements

- % age passing limits
- Grading ratio limits

(i) *Particle Size Distribution and Nominated Grading*

The particle size distribution of the nominated material must be such, that after adding and subtracting the Limits of Deviation, the percentage passing falls within the target grading limits in the *Table R40.A.5.1* below.

Table R40.A.5.1 - Percent Passing Limits

Sieve Size (mm)	Target Grading Limits % Passing	Limits of Deviation %
26.5	100	0
19		12
9.5		12
4.75		12
2.36	40 to 70	10
0.425		8
0.075	6 to 25	5

The Contractor shall define and provide to the Superintendent, the percent passing of the nominated material for all the sieve sizes included in *Table R40.A.5.1*.

(ii) *Grading Ratio Limits*

The nominated grading shall also satisfy *Table R40.A.5.2* below:

Table R40.A.5.2 - Grading Ratio Limits

Sieve Size (mm)	Grading Ratio Limits/% passing
0.075/0.425	0.3 to 0.8
0.075/2.36	0.2 to 0.6
2.36/4.75	0.5 to 0.9
4.75/9.5	0.5 to 0.9

2) Coarse Aggregate

Crushed Aggregates when tested in accordance with AS 1141-22 shall have:

- Assigned Wet Strength. Minimum of 50kN
- Assigned Wet Dry Strength Variation, Maximum of 45%

Natural Gravels and Sedimentary rocks when tested in accordance with AS 1141.28 shall have a Ball Mill Value not greater than 50%.

Where the product is a mixture of crushed stone and natural gravels, both of the above provisions shall be met.

3) Fine Fraction

The Plastic Index (PI) (AS 1289C3) shall not be less than 4 or greater than 15.
The PI x Nominated % Passing the 0.425mm sieve size shall not exceed 300.

4) Soaked CBR (AS 1289.F1.1(2))

The Soaked CBR of the material at the nominated grading, compacted to 95% DDR and within 1% of OMC and soaked for four days, shall not be less than 50%.

(c) Acceptance Limits For In Place Product

1) Particle Size Distribution and Property of Fines

The particle size distribution of material in place and after compaction shall be within the limits defined by the nominated particle grading plus and minus the Limits of Deviation defined in *Table R40.A.5.1* and as well comply with the Target Grading limits of that same table and the Grading Ratio Limits of *Table R40.A.5.2*.

All material after compaction shall meet the requirement of Fine Fraction.

2) Compaction

The thickness of compacted layers shall not exceed 150mm or be less than 2.5 times the nominal size of the material.

For wearing surface placement on unsealed pavements and shoulder filling in existing pavements, the course shall be finished to a uniform tight surface that does not deform, ravel or weaken under traffic.

The Contractor shall define in the Contract Management Plan, the equipment and procedures that will be used to undertake the compaction of shoulder material.

3) Tolerance

10mm below or 15mm above the design surface level. Material abutting a sealed pavement shall match the level of the seal and shall not impede surface drainage.

APPENDIX R40.A.6 – FROST RESISTANT BASE**NOMINATION OF MATERIAL**

For each separate material, the Contractor shall, at least 5 working days prior to intended use of the material, supply to the Superintendent the following:

- Details of the source and geological description of the material
- A representative sample (150kg) in clearly labelled bags, individually no heavier than 25kg
- Test results including historical data demonstrating that the material satisfies the relevant requirements of this specification and Specification G6
- The target grading
- For blended products, the Contractor shall identify the source and geological origin of all component materials and the percentage by dry mass of each component in the blend and provide 10kg samples of each component material in clearly labelled bags

The above shall also apply to any changes of materials and their components during the course of the contract.

MATERIAL QUALITY

The following requirements apply to all materials, unless specifically exempted by other Clauses of this specification.

Material shall be free from organic matter, lumps or balls of clay, excessive amounts of mica or secondary minerals or other adverse constituents. It shall be uniform, well-mixed and not segregated.

All components, coarse and fine, shall comprise of hard durable particles with no tendency to fret or breakdown when alternately wetted and dried.

While the strength and durability requirements have been expressed in terms of wet strength and wet/dry strength variation respectively, the contractor may nominate another criteria, provided that the combination of strength and durability criteria are consistent with AS 2758.2.

Specification Clause of AS 2758.2 is as follows:

Base Class A

The Material shall be produced by crushing either quarried rock or naturally occurring gravel or a mixture of both.

The Coarse aggregate shall comprise clean, hard, durable, pieces of stone. At least 75% by mass of the coarse aggregate shall have 2 or more broken faces.

Grading Limits

The grading Limits for Frost Resistant Base material shall be given in *Table R40.A.6.1 – Target Grading Limits*.

Table R40.A.6.1 – Target Grading Limits

A.S.	Percent Resistant Base	
Sieve Size (mm)	Frost Resistant Base (27 mm)	
	Target Grading Limits % Passing	Target Grading Limits % Passing
100		
75		
37.5		
26.5	95-100	93-100
19	78-92	75-95
9.5	54-68	51-71
4.75	37-51	34-54
2.36	25-37	23-39
0.425	8-15	6-17
0.075	2-9	1-10

The Frost Resistant Base shall also comply with the relevant material quality requirements.

The road is to be sealed in a number of sections with a maximum length of 800m of frost resistant Base being unsealed at any one time.

Note:

Previous experience with a Frost Resistant Base has indicated that compaction is best achieved with the use of a combination of vibrating and multi tyre rollers and that it needs to be sealed as soon as possible after compaction and preparation of the surface to limit traffic damage. The pavement will noticeably deteriorate if left unsealed over a weekend.

APPENDIX R40.B.1 - FIELD TRIAL TO DETERMINE CORRECTION TO PARTICLE SIZE DISTRIBUTION**(a) Scope**

The following describes procedures to be used by the Contractor in the event that the Contractor intends to submit results of tests made prior to placing and compaction as evidence of product compliance.

(b) Procedure

Demonstration will involve:

- A field trial which would normally be part of the works, using identical equipment, processes, layer thicknesses and moisture control as that intended to be used in the placement of the particular material.
- Particle size distributions of three samples taken prior to compaction. The samples shall be taken at the same point in the process, normally used by the supplier in sampling.
- Particle size distributions of three samples taken after the material has been placed and compacted to the specified values.
- Insitu density and moisture content tests in at least five locations within the trial
- Laboratory compaction test on a representative sample

(c) Report

The Contractor will provide a report which defines:

- The particular material tested
- Plant, layer thicknesses and number of passes used
- Measured moisture contents, insitu densities, dry density ratios (DDR) and characteristic
- DDR achieved in the trial
- Particle size distribution of samples, prior to and after compaction
- Intended corrections to the particle size distribution obtained prior to placement and compaction

APPENDIX R40.B.2 - MEASUREMENT AND CALCULATION OF ASSIGNED ROUGHNESS

(a) Measuring Device

The measuring device used for the measurement of roughness shall be:

- Capable of measuring the longitudinal profile along one or both wheel paths of a lane at least every 250mm with a precision of elevation of 0.5mm over a wave band of 1 to 20metres
- Calibrated according to the relevant test method

(b) Method of Measurement

- Measurements are made over 100m intervals. End lengths of less than 100m will not be included in the calculations but joints between lots shall be included.
- Measurement will be made in each traffic lane
- Three runs will be made in each lane
- Each run in a lane will commence at the same starting point

The starting point of the survey shall be within 10m of the start of the works. The start and finish chainages shall be recorded.

The Lane IRI qc is calculated for each measurement entered for each of the three lanes

A mean value of Lane IRIqc (Rm) is determined for each measurement interval of the three runs on each lane.

(c) Calculation of Assigned Roughness

A characteristic roughness Rc, expressed in Lane IRIqc, will be calculated for each lane from the following formula:

$$R_c = R_m + 1.0s_{n-1}$$

Where the standard deviation:

$$s_{n-1} = (\text{Sum } 1 \text{ to } n (R_n - R)^2)^{1/2} / n-1$$

n = number of measurement intervals within the lane

The assigned roughness shall be the highest characteristic lane roughness within the particular carriageway. The Contractor may subdivide the readings of the lane with the highest characteristic roughness within a carriageway into subsections, provided that all subsections but one are longer than 0.5km and that no subsection is less than 0.3km.

FORM R40.1 - NOMINATION OF MATERIAL FORM**Electronic forms are available from**<http://www.transport.tas.gov.au/road/contractor/specifications>

Contractor:			
Contract No:			
Course:		Date:	

Material Source			
Name of Source:			
Supplier's Business Name:			
Address:			
Suburb:		State:	P/Code:

Geological Descriptions		
a) Primary Material:		%
b) Additives:		%

Test Properties (Most recent test data)			
1) CBR			
Tested By:			
Report Date:		Report No:	
Specified CBR:		Measured CBR:	
			Attach Report

2) Durability			
Tested By:			
Report Date:		Report No:	
Specified Wet Strength:	kN	Assigned Wet Strength:	kN
Specified WDSV:	%	Assigned WDSV:	%
			Attach Report

3) Modified Compaction			
Tested By:			
Report Date:		Report No:	
Test Max Grain Size:	mm	Oversize:	%
Measured MDD:	t/m ³	Measured OMC:	%
Corrected MDD:	t/m ³	Corrected OMC:	%
Particle Density:	t/m ³	Attach Report	

4) Properties of Fines			
Tested By:			
Report Date:		Report No:	
LL	PL	PI	Attach Report

5) Particle Size			
Tested By:			
Report Date:		Report No:	
Prior to / after completion			

Sieve Size (mm)	100	75	37.5	26.5	19	9.5	4.75	2.36	0.425	0.075
% Passing										
Target Grading % Passing										
Before/After Compaction										
Lot Mean Upper Limit % Passing										
Lot Mean Lower Limit % Passing										
Single Sample Upper Limit % Passing										
Single Sample Lower Limit % Passing										

Expected % Change in PSD Resulting from Compaction										
Sieve Size (mm)	100	75	37.5	26.5	19	9.5	4.75	2.36	0.425	0.075
Expected % Change to % Passing										

Tested By:			
Report Date:		Report No:	
Attach Report			

CONTROL CHARTS TO BE PROVIDED FOR SAME MATERIAL AS REQUIRED UNDER DEPARTMENT OF STATE GROWTH SPECIFICATIONS

1) Corrected Maximum Dry Density – Department of State Growth Standard Specification G4, Clause G4.8 (ii)

Supplied / Not Supplied

2) Wet Strength + Wet Dry Strength Variation – Department of State Growth Standard Specification G6, Clause G6.9(a)

Supplied / Not Supplied

3) Particle Size Distribution – Department of State Growth Standard Specification R40, Clause R40.8.2(e)

Supplied / Not Supplied

4) Plastic Index – Department of State Growth Standard Specification R40, clause 6.3(d)

Supplied / Not Supplied

SAMPLES

1) Primary Material

Identification: Number of Bags:

2) Additives

- (a) Identification Number of Bags:
- (b) Identification Number of Bags:
- (c) Identification Number of Bags:

Signed:

Recorded:



Department of State Growth

GPO Box 536

Hobart TAS 7001 Australia

Transport Infrastructure Services

Phone: 1300 135 513

Email: info@stategrowth.tas.gov.au

Web: www.stategrowth.tas.gov.au

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