

Technical Publication News

Technical Publications

Industry update – March 2023

The Department of Transport and Main Roads (the department) is committed to continually reviewing and improving our technical publications to ensure we deliver best value for money and embrace the latest technological advancements.

To help you stay informed about any upcoming changes to technical publications we have provided a look ahead of proposed amendments, we have broken these into two timelines: next four months, and into the future.

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NEXT FOUR MONTHS (March 2023 – June 2023)

SPECIFICATIONS

MRTS06 Reinforced Soil Walls

Amendments include:

- Title Change from 'Reinforced Soil Structures' to 'Reinforced Soil Walls'.
- Updated terminology for consistency with other State Road authorities. Test method references will change to reflect current versions of these documents.

MRTS71 Reinforcing Steel

Amendments include:

- Introduction of new method for splicing reinforcing bar (friction-welded connections).
- Reinstatement of substitution clause and subsequent renumbering of hold points.
- Relaxation of dimensional tolerance for reinforcement for use in precast concrete elements that are not prestressed.

MRTS91 Conduits and Pits

Amendments include:

- Clarify the definition of the Administrator in Clause 2.
- Additional requirement regarding the release of Hold Points, Witness Points and Milestones in Clause 5.1.
- Clarify the treatment of asbestos containing materials (ACM) in Clause 6.1.
- Scenarios for management and replacement of pits in ACM-suspected installations, added to Clause 6.1.1 for clarity.
- Option for lockable covers for both rectangular and circular pits in Clause 7.7.6.1.
- Relaxing of restriction on installation of pits if local area being obstructed with other services in Clause 10.2.

MRTS100 High Strength Geosynthetic Reinforcement in Road Embankments

Amendments include:

- A clarification of the process for the selection of geosynthetic reinforcements (for road embankments and slopes).
- The Designers' input table in Annexure 1 expanded to include three distinct, short-term, and long-term, applications for geosynthetic reinforcement for SLS (serviceability limit state) and ULS (ultimate limit state) conditions. Specifically:
 - Basal reinforcement for embankments
 - Piled embankments with basal reinforcement, and
 - Reinforced embankment slopes.
- A requirement for the Contractor and their geosynthetic supplier to provide more complete documentation (including calculations) of the geosynthetic selection process, for acceptance of the product.
- The manufacturer's certification of the geosynthetic product, to be endorsed by a senior representative of the manufacturer's company, will be required to satisfy the requirements of the Annexure, and release of Hold Point 1.

MRTS100 continued...

- The changes are intended to eliminate ambiguities associated with the selection of geosynthetic reinforcements, and this is expected to improve long-term safety for the road users.

MRTS110 Coloured Surface Treatments, MRTS111 High Friction Surface Treatments

Amendments include:

- The term "skid resistance" has been changed to "slip resistance" to be consistent with the terminology used in AS 4663.
- The sampling requirements for slip resistance and texture depth testing have been updated to harmonise with Australian Standard test methods.
- Slider 55 only has been nominated for slip resistance testing (i.e., Slider 96 (which is intended for pedestrian applications) cannot be used).
- Clarified that product installation must be undertaken in accordance with the manufacturer's recommendations.
- Clarified the inspection and suitability assessment requirements for the existing road surfaces prior to application of a CST or HFST.
- Improved guidance on selecting the product registration level to be used on projects is included in the specification annexure.
- Clause 12 has been amended to better reflect the performance standards outlined in Clause 11.

For MRTS110 Coloured Surface Treatments, the following additional changes have been made:

- Colour matching to be assessed by visual assessment (instead of test method AS 1580.601.1).
- Waterborne paint has been removed from the list of unacceptable binder types.

MRTS207 Traffic Survey Foundation Equipment

Amendments include:

- Title Change from 'Traffic Monitoring Foundation Equipment' to 'Traffic Survey Foundation Equipment'.
- Terminology changes from Traffic Monitoring to Traffic Survey and referenced the departments standard drawing titles.

MRTS218 Vehicle Activated Signs

Amendments include:

- Appendices added within MRTS218.
- Inclusion of speed indicator sign requirements.
- General updates for currency.

MRTS220 Third-Party Radio Facilities in Transport and Main Roads Transport Corridors

Amendments include:

- Streamlined the process of small cell installations on the departments infrastructure and fosters readiness amongst the departments district asset owners and maintenance providers in dealing with a new set of infrastructure with structural, electrical, and environmental impacts.

MRTS227 Changeable Message Signs

Amendments include:

- Appendices added within MRTS227.
- General update for currency.

NEW MRTS249 Transportable Changeable Message Signs (TCMS)

NEW Technical Specification includes:

- Guidance to both the TCMS Providers in preparing their designs, and to the departments officers in assessing the applications.
- The requirements set out in this Technical Specification detail minimum standards to achieve electrical structural and operational safety.

NEW MRTS271 Glass Fibre Reinforced Polymer (GFRP) Reinforcement

NEW Technical Specification includes:

- GFRP reinforcement as an alternative to steel reinforcement in aggressive environments.

STANDARD DRAWINGS

SD1043 Reinforcing Steel - Standard Bar Shapes

Amendments include:

- The Weld Tables for bar shapes P and SD are amended with the length of weld compliant with AS 5100.5 Clause 13.2.6 and are transferred to SD1044 for ease of reference.
- The spiral anchoring details are clarified for bar shape Q on Drawing 3.
- The Notes are updated to reflect the above changes.

SD1044 Reinforcing Steel - Lap Lengths

Amendments include:

- New Weld Table added formerly on SD1043, and the lapped splice detail is also amended.
- The Notes are updated to reflect the above changes.

SD1250 R C Box Culverts and Slab Link Box Culverts - Culverts Height > 600

SD1260 R C Box Culverts and Slab Link Box Culverts - Culverts Height = 375 to 600

Amendments include:

- The contraction joint details for aprons are now drawn up separately in Section A of both drawings and improved for slab bases.
- The arrangement of bars in the slab base are amended in all details to clearly demonstrate how to place the bars in 2 layers in the top and in the bottom of the slab.
- The slab bases for culverts sized as "spans up to 2100 mm", is now thicker to allow the edge bars to be installed closer to vertical instead of always on a slant.

SD1314 Traffic Signals/Road Lighting - Cable Jointing Pit Drainage Details

Amendments include:

- Note 2 has been updated to clarify the drainage requirements.

SD1423 Traffic Signals - Traffic Signal Controller Base Installation Details

SD 1679 ITS - Telecommunications Field Cabinet Base Installation Details

Amendments include:

- Changes to address the installation of the departments field cabinets in flood prone areas.
- To reset the requirement on concrete for the slab on SD1423 back to N25/20, to be the same as on SD1679.

SD1633 Traffic Signals/Road Lighting - Cable Jointing Pit Cover Types 3 and 4

SD1634 Traffic Signals/Road Lighting - Cable Jointing Pit Cover Types 7 and 8

Amendments include:

- Change made to include lockable options.

SD1690 ITS - Switchboard Assembly Details - Pole/Top Mounted

Amendments include:

- Standardising on three cabinet variants to suite space and environmental requirements, for example, Tunnels, Post-top, or direct Pole mounting arrangements. A detailed wiring diagram has also been provided.

SD1901 – SD1903 ITS - Traffic Monitoring category

NEW SD1912 ITS - Traffic Survey ANPR Camera Breakout Box Equipment Connection Details

SD1913 ITS - Traffic Survey ANPR Camera Breakout Box Wiring Details

NEW SD1915 ITS - Traffic Survey ANPR Camera Pole Typical Details

Amendments include:

New and revised standard drawings are intended to provide installation standards for Traffic Survey sites with Automatic Number Plate Recognition (ANPR) and Weigh in Motion (WiM) infrastructure assets and to minimise parts carried for maintenance activities.

SD1906 ITS - WIM Piezo Sensor Installation Details

SD1908 – SD1911 ITS - WIM Sensor Configuration category

SD1917 – SD1925 ITS - Axle-Based Vehicle Classifier Sensor Configuration category

SD1922 – SD1925 ITS - Vehicle Classifier Cabinet category

Amendments include:

The revised drawings have standard drawings references corrected.

SD2021 – SD2022 550 Octagonal PSC Piles - Earthquake Classification BEDC-1 Exposure Classification category

Amendments include:

- On Drawing 1, Note 9 for Helix splicing is amended to specify 1.5 flat turns for lapping.
- On Drawings 2 and 3, the wording for how the helix is terminated at the top of the pile is amended to be "1.5 flat turns and anchored with a 300 extension into core".

MANUALS

Queensland Manual of Uniform Traffic Control Devices (Queensland MUTCD)

Amendments include:

Part 1

- Updated index of signs to reflect signs currently approved and included with the Queensland MUTCD.

Part 3

- Added requirement for devices to comply with the department's new Technical Specification MRTS249 *Transportable Changeable Message Signs* for release in March 2023.
- Appendix A, Table A.2:
 - Sizes A and C added for TM2-30-Q01 Tractor / Slasher MOWING, sign notes updated, and examples added.
 - Sizes A and B added for TM2-Q05 MERGE IN TURN
 - New sign 'TM3-12-Q01 DO NOT OVERTAKE UNLESS SAFE' added.

Part 5

- Amended legend requirements for overhead signs on road structures over high-speed roads (G3-4-Q01).

Part 7

- Added signs that may be used in Queensland.

Part 15

- Guidance added for the design and display of dual named places on direction signs.

Queensland Guide to Temporary Traffic Management (QGTMM)

Amendments include:

Part 1

- Updated definitions for "may", "shall" and "must" to match those in the Queensland MUTCD.

Part 2

- Identify treatment options when traffic control may be replaced by a Give Way sign arrangement (or a give and take approach without signing), as per AS1742.3 / Queensland MUTCD Part 3.
- Adjust requirements for not requiring active traffic control relating to length of single lane operation under reversible traffic flow to match AS1742.3 / Queensland MUTCD Part 3.
- Adjust the lane width for shuttle flow operation in other traffic assessment elements – lane widths.

QGTMM continued...

Part 3

- Lane width for shuttle flow operation reduced to 3.0 m min. (from 3.5 m min.) and clarified speed to use when determining lane width.
- Clarified the requirements for a safety buffer.
- Added a new section for the use of the Queued traffic ahead multi-message sign assembly for congestion which is not related to traffic control activities.
- Clarified requirements for the maximum spacing of cones and bollards.
- Updated requirements for when active traffic control (by PTCO or traffic controllers) is not required.
- Clarified requirements for positioning of signs for speed enforcement.
- Added Figure 5.5.4(c).
- Amended requirements for the inclusion of a safety buffer where the permanent posted speed limit is less than or equal to 80 km/h and all aspects of work are at least 6 m clear of traffic.
- Clarified guidance on the use of merge and lateral shift tapers in proximity to intersections and ramps.
- Added the option for lateral shift tapers through intersections for contraflow arrangements using intersections for transitions.
- Clarified requirements for the use of flashing lamps (dot point 16) as part of the advance warning for roadwork sites.
- Clarified the scope of temporary traffic management designer responsibility when considering the impact of excavations
- Added reference to *Guideline – Traffic Management at Works on Roads* to address issues of portable traffic control devices (PTCDs) being used at intersections in a way that is not supported by Transport and Main Roads.
- Removed the reference to additional guidance for VRUs and excavations as this does not currently exist in *Guideline – Traffic Management at Works on Roads*.
- Amended requirements for temporary traffic management designer to consider and document the process for installation and removal of traffic control devices in the Traffic Guidance Scheme.

Part 5

- Clarified a single flashing yellow lamp is to be used on plant items within a work area.
- Added options where the use of the ROAD PLANT AHEAD sign may be omitted.

Part 8

- Amended the requirements in relation to temporary road safety barriers for a Competent Persons in Table 51.4 and text.

Guideline – Traffic Management at Works on Roads

- This *Guideline* provides operational guidelines for the provision of temporary traffic management at works on roads. A Clause has been added about the use of automated number plate recognition (ANPR) variable message signs (VMS) at roadworks sites.

Queensland Guide to Traffic Management (QGTMM)

Amendments include:

Part 6

- Aligning the QGTMM Part 6 to the recently published *Queensland Road Safety Technical User Volumes (QRSTUV) – Guide to speed management*. Maximum speed limit on a road for installation of traffic signals has been deleted from QGTMM Part 6 and the user referred to QRSTUV Section 7 for speed limit through signalised intersections.

WITHDRAWN Traffic and Road Use Management (TRUM) manual

TRUM Volume 3 Parts 2, 3 and 4 have been withdrawn. Information previously contained within these documents can be found within the *Queensland Manual of Uniform Traffic Control Devices*, the department's Technical Specifications and *Queensland Guide to Road Safety*.

CONTRACTS

Infrastructure Contracts

Contract documents updated on a tri-annual basis to accommodate new and/or updated legislation, government policies and enhancements due to project learnings and/or industry feedback.

Specific amendments include:

- Transport Infrastructure Contract (TIC) and Minor Infrastructure Contract (MIC) – Key changes are removing references to Australian Building and Construction Commission (ABCC), Building Code compliance requirement.

TECHNICAL NOTES

TN192 Pavement Investigation Analysis

Amendments include:

Updates include the latest best practice techniques and guidance for pavement investigation.

NEW TN205 Use of extended design domain for the lateral placement of road safety barriers

New Technical Note includes:

Clarification regarding the departments definition of the Normal Design Domains (NDD) and Extended Design Domains (EDD) for the lateral placement of the road safety barrier with respect to the hinge point.

OTHER

Traffic Control Signs / Tourist and Service Signs guideline

Traffic Control (TC) and MUTCD-Q series signs will be released in March 2023 as part of the standard quarterly update of this signs database. Many signs no longer required or included in guidance elsewhere have been deleted.

The *Tourist and Service Signs* guideline will be updated and released simultaneously, in concert with changes to TC signs and to incorporate reference to dual named place signing in Queensland MUTCD Part 15.

FUTURE UPDATES AND NEW RELEASES

NEW SPECIFICATIONS

- Erosion and Sediment Control Provisional Sum Method
- Recreational Boating Infrastructure Lighting
- Concrete Pavement Base (Ancillary Works)

NEW GUIDELINES, MANUALS AND TECHNICAL NOTES

Guidelines

- *Guidelines for Geotechnical Investigations* will provide guidance on the minimum requirements for execution of geotechnical investigations for and on behalf of the department.
- A new guideline on wildlife signing will replace Traffic and Road Use Management (TRUM) manual Volume 3 Part 8 with updated guidance and references to source documents
- *Toll Signing Guideline* will replace TRUM manual Volume 3 Part 10 will be converted into this new guideline.

Manuals

- *Guidelines for Geotechnical Investigation Manual* provides guidance on minimum requirements for execution of geotechnical investigations for and on behalf of the department.
- *Heavy Vehicle Mass Limits Manual Class 1 Over Size Over Mass (OSOM)* vehicles present the highest structural risk on the network. Currently, most of these vehicles can access all state-controlled roads with minimal restrictions, creating risk of damage and deterioration of structures.

Engineering Policies

- EP175 *Assessment Methodology for the Supply of Project Waste for Reuse* introduced to supplement the updated contractual arrangements in MRTS51 and MRTS04 for deposition of surplus material.

FUTURE UPDATES

Technical Specifications

- MRTS04 improved management and control of dispersive and slaking soils in earthworks.
- MRTS07A, 07B, 07C, 09, 57, 104 and 115 annual revision of pavement rehabilitation specifications to provide improved clarity based on recent project learnings, feedback, research, and developments, along with minor formatting amendments.
- MRTS27 to update technical references and testing requirements.
- MRTS62 to address issues encountered during bridge construction projects and feedback from stakeholders.
- MRTS51 to clarify arrangements for deposition of surplus materials such as clean earth for reuse opportunities on private land outside of project boundaries.
- MRTS92 review and update in conjunction with the revision of the suite of associated standard drawings.

Technical Specifications continued...

- MRTS97 review and update for currency to align with revised Wind Loading AS 1170.2 and other standards.
- MRTS200 update to state all professional engineering services shall be undertake in accordance with the Queensland Professional Engineers Act.
- MRTS201 review and update for currency.
- MRTS253 review and update for currency.
- MRTS256 revision to address use of metallic labels and identification of brittle cables.

Standard Drawings

- SD881 updates to layer configuration
- Pole and Footing suite of drawings updates to SD1380, SD1381, SD1382, SD1392, SD1393, SD1395, SD1396, SD1403, SD1429, SD1683 and 1684.
- SD1045, SD1116, SD1178, SD1305, SD1359, SD1468, SD1736 review and update for currency.
- SD1423 and SD1679 update for currency and alignment to other technical documents.
- SD1615 update regarding gate arrangement and maintenance
- SD1643, SD1644, SD1647, SD1650, SD1651, SD1653, SD1654 review regarding proposed updated to MRTS16 *Landscape and Revegetation Works*.

Technical Notes

- TN147 *Recommended Interim Treatment for Crash-Damaged Public Domain Steel Beam Guardrail Infrastructure*.
- TN189 *Generic Road Safety Camera Poles*.

Policies / Guidelines

- *Mobile Laser Scanning Guideline*.
- *Mobile Laser Scanning Guideline checklist*.
- *Hydrologic and Hydraulic Modelling Guideline* update to harmonised with Austroads Guide to Road Design Parts 5A and 5B.
- *Project Scoping Guideline* to provide advice on scoping road construction and rehabilitation projects.
- *Technical Guidelines for the Treatment of Overhead Structures – Objects Thrown or Dropped* reinstate and update of content to incorporate a revised risk assessment methodology at existing overpasses. Rationalisation of data requirements and simplification of data collection processes, ensuring guidance aligns with Safe System principles and the department's Road Safety Policy. Will include updating and reinstatement of Engineering Policy EP177 to manage risk of objects thrown from overpasses onto road users below. The policy will clarify the department's requirements when planning, designing, operating, and maintaining overpass structures and approach roads to manage this safety risk.

Manuals

Design Criteria for Bridges and Other Structures

Updates to ensure durability, structural integrity, safety, constructability, least whole of life cost, and to ensure its currency.

Drafting and Design Presentation Standards Volume 2, Parts 1 and 2

Review and update of content

Fauna Sensitive Road Design

Review, update, and rationalisation of content from Volume 1 and Volume 2. Anticipated for release in 2023.

Geotechnical Logging Guideline / Geotechnical Investigation – Minimum Requirements

Update of technical guidance in line with Australian Standards and industry practice to ensure best practice for geotechnical investigation works.

Heavy Vehicle Mass Limits Manual

Class 1 Over Size Over Mass (OSOM) vehicles present the highest structural risk on the network. Currently, most of these vehicles can access all state-controlled roads with minimal restrictions, creating risk of damage and deterioration of structures.

Materials Testing Manual, Edition 5, Amendment 9

This release will amend existing test methods to incorporate stakeholder feedback and align with changes to Technical Specification MRTS04 *General Earthworks*.

Nuclear Gauge Testing Manual

New edition to refresh the Manual, adopt Australian Standard method for sampling / testing, align content with the *Materials Testing Manual* and amend material based on stakeholder feedback

Queensland Manual of Uniform Traffic Control Devices (Queensland MUTCD)

To be harmonised to AS 1742.2. Final Queensland MUTCD Part to be harmonised.

Road Drainage Manual (RDM)

Harmonisation to *Austroads Guide to Road Drainage*.

Structures Inspection Manual

Review for currency and provides opportunity to align inspection practice with modern asset management for structures.

Traffic and Road Use Management (TRUM) manual Volume 4, Part 5

Changes will provide industry with clarity around loop configurations and inform contractors on the safe installation practices for pneumatic tubes in liaison with Transport and Main Roads project managers.

Transport Noise Management Code of Practice Volume 1: Road Traffic Noise

Update of content to improve clarity and incorporate legislative changes.

Transport Noise Management Code of Practice Volume 2: Construction Noise and Vibration

Re-gazetted under s318E of the *Environmental Protection Act 1994* prior to its expiration on 28 July 2023.

Contracts

Infrastructure Contracts Amendments to Transport Infrastructure Contract (TIC) and Minor Infrastructure Contract (MIC).

FUTURE WITHDRAWALS

Technical Note 38 Longitudinal Grades for Footpaths, Walkways and Bikeways

Guidance to be harmonised in *Road Planning and Design Manual*, and *Queensland Guide to Traffic Management*.

APPROVED PRODUCTS AND REGISTER SUPPLIERS

The department's Approved Products and Registered Suppliers for infrastructure works are frequently updated.

To see the status and how to register, view via [Approved Products and Registered Suppliers](#).

DEFINITIONS

SPECIFICATIONS and STANDARD DRAWINGS: Rules and procedures by which a product, process or activity can be specified or defined.

CONTRACTS: The binding legal agreements between two parties.

TECHNICAL NOTES: Provide clarity or additional options not previously detailed in a specification, manual or guideline, or address emerging issues.

MANUALS: Technical information gathered into a single publication; discipline based.

POLICY: Provides a desired position and a guide for action.

GUIDELINES: Provide options on actions that will achieve optimal outcomes in line with Technical Standards.