



**mainroads**  
WESTERN AUSTRALIA

## SPECIFICATION 606

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# TACTILE GROUND SURFACE INDICATORS

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<b>REVISION REGISTER</b>			
<b>Clause Number</b>	<b>Description of Revision</b>	<b>Authorised By</b>	<b>Issue Date</b>
Clause 606.02 Clause 606.11 Annexure 606A	References updated Wet Pendulum Test Classification changed to current standard New suppliers added	TESM	27/09/2022
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-	First Issue of Specification	TMD	12/04/2016

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## SPECIFICATION 606

# TACTILE GROUND SURFACE INDICATORS

## GENERAL

### 606.01 SCOPE

1. The work under this specification consists of the supply and installation of tactile ground surface indicators (TGSIs) for road infrastructure works implemented by Main Roads WA.

### 606.02 REFERENCES

1. Australian or Australian/New Zealand Standards and Main Roads Western Australia Standards are referred to in abbreviated form (e.g. AS 1234 or MRS 67-08-43). For convenience, the full titles are given below:

#### **Australian Standards**

AS 4586 Slip resistance classification of new pedestrian surface materials

#### **Australian / New Zealand Standards**

AS/NZS 1428.4.1 Design for access and mobility - Means to assist the orientation of people with vision impairment – Tactile ground surface indicators

#### **International Organization for Standardization Standards**

ISO 10545-3 Ceramic tiles – Part 3: Determination of water absorption, apparent porosity, apparent relative density and bulk density

ISO 10545-4 Ceramic tiles – Part 4: Determination of modulus of rupture and breaking strength

### 606.03 DEFINITIONS

1. The following definitions shall apply:
  - a. **Back edge** (of warning indicator) - This refers to the edge of the area of warning indicators furthest from the crossing point or hazard.
  - b. **Composite discrete Tactile Ground Surface Indicators (composite discrete TGSIs)** – Tactile ground surface indicators that are individually installed and which provide a differing luminance for the sloping sides and upper surface of the truncated cone
  - c. **Cue** – Any object within the environment which can be felt, heard, seen or smelt by a blind or vision impaired pedestrian

- d. **Depth** – Measured along the direction of travel when encountering the TGSi
- e. **Directional Indicators** – A directional indicator is a textured surface feature consisting of directional grooves built into or applied to walking surfaces to give directional orientation to blind and vision impaired people.
- f. **Direction of Travel** – The path a person travels along which may be a footpath, passageway, walkway, ramp, stairs, landing or similar.
- g. **Discrete Tactile Ground Surface Indicators (discrete TGISs)** – Tactile ground surface indicators that are individually installed, which provide the same luminance for the sloping sides and upper surface of the truncated cone.
- h. **Front edge** (of warning indicator) – This refers to the edge of the area of warning indicators closest to the roadway.
- i. **Height** – Distance measured above the finished floor or ground surface
- j. **Integrated Tactile Ground Surface Indicators (integrated TGSIs)** – Tactile ground surface indicators that are in a defined pattern and which are of the same luminance and material as the base surface.
- k. **Luminance contrast** - The light reflected from one surface or component, compared to the light reflected from another surface of component.
- l. **Luminance factor** - The ratio of luminance of a surface to that of a perfect reflector, identically illuminated
- m. **LRV** – Luminance reflectance value
- n. **Orientation** – Orientation is a person’s awareness of where they are in relation to their environment.
- o. **Tactile Ground Surface Indicators (TGSIs)** – TGSIs are truncated cones or bars installed on the ground or floor surface designed to provide pedestrians who are blind or vision impaired, with warning or directional orientation information.
- p. **Vision impaired** – This is a general term covering all vision difficulties that cannot be adequately corrected by spectacles or contact lenses. Blindness implies severe impairment including a total or near total loss of the ability to perceive form. Therefore, to cover total range of visual impairment, it is referred as “blind and vision impaired” and when mentioned vision impaired, it implies the person has sufficient residual vision for the user to benefit from the bold, high contrast visual cues etc.

- q. **Warning indicators** – A warning indicator is a textured surface feature consisting of truncated domes built into or applied to walking surfaces to warn blind and vision impaired people of a nearby hazard.
- r. **Width** – The distance measured at right angles to the direction of travel.

## **606.04 – 606.05 NOT USED**

## **PRODUCT AND MATERIALS**

### **606.06 GENERAL**

1. TGSIs are designed to provide pedestrians with visual and sensory information. The two types of TGSIs used by Main Roads WA are warning indicators and directional indicators.
2. Warning indicators alert pedestrians to hazards in the continuous accessible path of travel indicating that they should stop to determine the nature of the hazard before proceeding further.
3. Directional indicators give directional orientation to blind and vision impaired people and designate the continuous accessible path of travel when other tactile or environmental cues are insufficient.
4. The visual contrast between the walking surface and surrounding environment are critical for vision-impaired people who are using their limited residual vision for orientation, distinguishing the limits of the footpath, recognising hazards and gathering information. Therefore, contrast is especially important in the provision of TGSIs to warn users of hazards. TGSIs shall provide a high visual contrast to the adjoining walking surface.
5. TGSIs shall be installed so that there is no likelihood of the edges lifting. For this reason, Main Roads WA does not approve the use of surface stick-on type TGSIs, unless additional mechanical fastenings (e.g. screws) are used.
6. Discrete TGSIs are not to be used on Main Roads WA projects unless there are contract specific requirements.
7. Main Roads WA does not recommend any specific TGSIs for particular applications. The Contractor will need to assess which type or style of TGSIs is most suitable for the particular application taking into account substrate, aesthetics, contrast, availability, consistency with the surrounding area and cost.
8. An approved list of TGSIs manufacturers and available colours that can be used, based on luminous contrast, for typical background materials in road infrastructure works is in Annexure 606A.

## 606.07 WARRANTY OF PRODUCT

1. The Product (TGSIs) including UV resistance and installation shall be backed with a minimum warranty of five years. The warranty must be in writing naming Main Roads Western Australia (Principal) as the product owner
2. During the period of the warranty, the supplier shall, without delay and at no cost to Main Roads Western Australia, correct all defects and omissions covered by the warranty by way of repair, replacement or modification or other means. When the product fails any of the requirements of this Specification during the warranty period the supplier is required to replace the product at no cost to Main Roads Western Australia.
3. Refer to Main Roads Special Conditions of Contract “Warranties from Third Parties”:

**Warranty**

“Warranties from Third Parties”

- a. Upon the termination of the Contract, the Contractor must use all reasonable endeavours to ensure that any warranties in favour of the Contractor relating to the Works are assigned to the Principal.
- b. If a particular warranty cannot be assigned to the Principal, the Contractor holds the benefit of the warranty in trust for the Principal and appoints the Principal as the Contractor’s agent for the purposes of obtaining the benefit of the warranty and enforcing its terms.

4. **Installation of TGSIs shall not proceed until the Principal has acknowledged receipt of the certification referred to in sub-clause 606.07 item 1 in writing. In addition, installation of TGSIs shall not proceed unless the product is included in Annexure 606A – Approved TGSIs, or the Principal has been advised by the Traffic Engineering Standards Manager that the product meets the approval requirements specified in Clause 606.15.**

**HOLD POINT**

## 606.08 MATERIAL

1. TGSIs can be manufactured from any material as long as they comply with relevant standards relating to dimensional and spacing requirements and meet the requirements of the Specification once installed for a minimum of the warranty period. Durable materials suitable for TGSIs include, but are not limited to, corrosion resistant metals such as stainless steel, brass and aluminium, high strength concrete and ceramic and hardwearing rubbers and plastics.

## 606.09 COLOUR

1. The choice of colour is dependent upon the colour of the background substrate surface. The colours may vary to achieve the luminance contrast as specified in Clause 606.13.
2. Indicative contrasting colours for various substrate surfaces is provided in Annexure 606A.

## **606.10 DIMENSION, SHAPE AND SPACING**

1. The design and arrangement of warning TGSIs shall comply with Figure 2.1 of AS/NZS 1428.4.1.
2. Warning indicators shall be installed as per Clause 2.3.3 of AS/NZS 1428.4.1.
3. Directional indicators shall be installed as per Clause 3.2.3 of AS/NZS 1428.4.1.
4. The design and arrangement of directional TGSIs shall comply with Figure 3.1 of AS/NZS 1428.4.1.

## **606.11 SLIP RESISTANCE**

1. TGSIs shall be tested for slip resistance in accordance with AS 4586 and satisfy the minimum requirement;  
  - a. Wet Pendulum Test Classification: Class P4 or better
  - b. Oil Wet Ramp Test Classification: Class R10 or better
2. The manufacturer shall submit the results with confirmation that the product resistance classification remains current and that the product and process have not changed.

***Slip Resistance Testing***

## **606.12 CERAMIC TACTILE GROUND SURFACE INDICATORS**

1. Ceramic TGSIs shall comply with the following,  
  - a. Minimum breaking strength of 1100N, tested in accordance with ISO 10545-4
  - b. Water absorption ( E )  $\leq$  3%, measured in accordance with ISO 10545-3.

***Ceramic TGSi Testing***

## **606.13 LUMINANCE CONTRAST**

1. The luminance contrast of TGSIs is the difference in the amount of light reflected from the TGSIs compared to the amount of light reflected from the background or adjacent path of travel.
2. Luminance contrast shall be measured in accordance with AS/NZS 1428.4.1 Appendix E, section E3 and shall meet the following requirements:  
  - a. Where the TGSi is an integrated unit, it shall have a minimum luminance contrast of 30% compared to the amount of light reflected from the surface of the adjacent path of travel.
  - b. Where the TGSIs are discrete units having the same luminance for the sloping sides and upper surface of the truncated cones, the units shall have a minimum luminance contrast of 45% compared to the amount of light reflected from the surface of the adjacent path of travel.

***Luminance Contrast Testing***

***Luminance Contrast***



- c. Where the TGSIs are composite discrete units having differing luminance for the sloping side and upper surface of the truncated cones, the unit shall have a minimum luminance contrast of 60% compared to the amount of light reflected from the surface of the adjacent path of travel.

#### **606.14 UV STABILITY**

1. TGSIs material and colours that are likely to degrade in sunlight (e.g. plastic and rubber) shall be UV stabilised.

#### **606.15 TEST REPORTS AND OTHER DOCUMENTATION**

1. The manufacturer shall provide certificates and test results for laboratory testing carried out by a NATA approved testing authority for;  
*Test Reports*
  - a. TGSIs design (size and spacing) compliant with AS1428.4.1
  - b. Luminance Contrast AS/NZS 1428.4.1, Appendix E  
(Calculated luminance contrast values shall be submitted together with the laboratory test values of mean luminance reflectance values for the products and common background materials. Luminance Reflectance Values (LRV) for some typical common background materials used in road works is given in Annexure 606B)
  - c. Slip Resistance / Abrasion Resistance
    - i. Wet Pendulum Test (AS 4586, Appendix A)
    - ii. Oil Wet Ramp Test Method (AS 4586, Appendix D)
  - d. For ceramic TGSIs products - water absorption (ISO 10545-3)
  - e. For ceramic TGSIs products - breaking strength (ISO 10545-4)
  - f. UV stability – evidence of the use of UV stabilization compounds or accelerated weathering tests, if applicable.
2. In the case of stick-on type TGSIs, the manufacturer shall demonstrate that there is no likelihood of the edges lifting, through the additional use of mechanical means (e.g. screws into ready-formed holes).
3. The manufacturer shall provide the installation and product manuals for all TGSIs.

#### **606.16 - 606.19 NOT USED**

### **INSTALLATION**

#### **606.20 GENERAL**

1. In Western Australia, on Main Roads WA projects, Main Roads WA standard drawings supersede those shown in AS 1428.4.1 for the following typical treatments:
  - a. Drawing No.200931-0089, Ramps Type A and Type B

- b. Drawing No.200931-0090, Modified Cut Through Corner Treatment
- c. Drawing No.200931-0091, Median Gaps

### **606.21 METHOD OF INSTALLATION**

1. In the absence of any other documents approved by Main Roads Western Australia, all components of a TGSi as well as the installation methodology shall conform to the manufacturer's requirements.
2. The methods of installation shall include
  - a. In-built into substrate (Integrated TGSi tile)
  - b. Adhesive Fixing (Integrated TGSi tile)

### **606.22 IN-BUILT INTO SUBSTRATE**

1. MRWA's preferred method of installation for integrated TGSi tiles is in-built into the substrate. For new surfacing the TGSIs shall be in-built at the time of substrate construction in order to avoid the likelihood of the TGSIs coming off due to weak adhesion/bonding between the substrate and tiles.
2. Specific attention should be given to ensuring that the TGSIs are installed flush with the surrounding surface so as not create a trip hazard.

### **606.23 ADHESIVE FIXING**

1. To ensure satisfactory bonding of TGSIs to the surface, it is a Main Roads WA requirement that this method of fixing be supplemented by mechanical means (e.g. use of screws into the substrate).
2. TGSIs shall be installed with high strength adhesive recommended by the manufacturer, on a smooth, flat and dry surface to ensure the adhesive has maximum surface area contact.
3. For integrated TGSIs, the edge of the base surface shall not be more than 3mm above the surrounding surface and have all exposed external edges chamfered.

### **606.24 MECHANICAL FIXING**

1. In mechanical fixing, TGSIs with a stem or spigot that protrudes into the substrate are used instead of TGSIs with a flat base. This method is ideal to retro-fit discrete TGSIs after the substrate has been laid or on an existing substrate. The mechanical fixing mechanism may be supplemented through the use of an adhesive.
2. For mechanical fixing, drilling templates shall be used as a guide and correct diameter holes drilled into the substrate to the minimum depth specified by the manufacturer.
3. Metal TGSi's must be thoroughly cleaned with a suitable cleaning agent (e.g. acetone) prior to installation. Any additional adhesive material used shall be recommended by the manufacturer.

**606.25 – 606-80 NOT USED**

## **AS BUILT AND HANDOVER REQUIREMENTS**

### **606.81 AS BUILT INFORMATION**

1. The installation and product manuals for all tactile ground surface indicators shall be provided.

**606.82 – 606.90 NOT USED**

## **CONTRACT SPECIFIC REQUIREMENTS**

**606.91 – 606-99 NOT USED**

## ANNEXURE 606A

### APPROVED TACTILE GROUND SURFACE INDICATORS

#### INDICATIVE CONTRASTING COLOURS

Indicative contrasting colours are set out below; refer to individual suppliers for specific details.

Background Material	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm or 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Blue Medium Grey Charcoal Black Terracotta	Grey Mustard Yellow Warning Yellow Ivory White	Grey Mustard Yellow Warning Yellow Ivory White	Blue Medium Grey Charcoal Black Terracotta	Grey Blue Mustard Yellow Warning Yellow Terracotta Ivory White

#### APPROVED SUPPLIERS

##### 1. Safety Tactile Pave Pty Ltd

Location:

WANGARA WA 6065  
Mobile: 0498 996 311

Material: Durable High Strength UV Resistant Polymer Concrete Tile

Type: Integrated

Size: 300mm x 300mm x 8mm; 400mm x 400mm x 2mm – fastened to concrete surface  
300mm x 300mm x 40mm; 400mm x 400mm x 8mm – imbedded into fresh concrete  
300mm x 300mm x 40mm; 400mm x 400mm x 40mm – 40mm depth tactile  
300mm x 300mm x 60mm; 400mm x 400mm x 60mm – 60mm depth concrete`

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Charcoal Terracotta	Safety Yellow Terracotta White	Safety Yellow Terracotta White	Safety Yellow Terracotta White Charcoal	Safety Yellow Terracotta White Charcoal Sandstone	Safety Yellow Terracotta White Charcoal Sandstone

## 2. ESP Australia Pty. Ltd

Location: 21 Ceylon Street  
NUNAWADING VIC 3131  
Tel: 1300 665 761

Material: Fibre Reinforced Polymer Tiles

Type: Integrated

Size: 300mm x 300mm; 300mm (w) x 600mm; 300mm x 1200mm

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Blue Black	Yellow White	Yellow White	Black	Blue Yellow White	Blue Yellow White

## 3. Tac-Pav Australia

Location: PO Box 428  
INGLEWOOD WA 6932  
Mobile: 0405 538 161

Material: Fibre Reinforced Polymer Cement Tiles

Type: Integrated

Size: 300mm x 300mm; 300mm(w) x 600mm

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Charcoal Terracotta	Yellow White	Yellow White	Charcoal Terracotta	Yellow Terracotta White	Yellow Terracotta White

**4. Guardian Tactile Systems Pty. Ltd.**

Location: Unit 11/88 Erindale Road  
 BALCATTWA WA 6021  
 Tel: 08 9240 1888  
 Mobile: 0414 922 273

Material: Bayer Desmopan Polyurethane Tiles

Type: Integrated

Size: 300mm x 300mm; 400mm x 400mm

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Terracotta Medium Grey Black	White Warning Yellow	Warning Yellow Medium Grey Black White	Terracotta Warning Yellow Black	White Warning Yellow	White Warning Yellow

**5. Tactile Indicators Pty. Ltd.**

Location: 131 Oakover Road  
 Herne Hill WA 6056  
 Mobile: 0418 958 851

Material: Concrete Tactile Pavers & Fibre Reinforced Polymer Cement Tiles

Type: Integrated

Size: 300 mm x 300 mm & 400mm x 400mm

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Charcoal (Black) Terracotta	Yellow Ivory	Yellow Ivory	Charcoal (Black)	Yellow Ivory	yellow Ivory

**6. Tactile Indicators (Perth) Pty. Ltd.**

Location: 4/11 Alloa Road  
 Maddington WA 6109

Mobile: 0418 958 851

Material: Fibre Reinforced Polymer Cement Tiles (Stikcrete)

Type: Integrated

Size: 300 mm x 300 mm & 400mm x 400mm

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Charcoal (Black) Terracotta	Yellow Ivory	Yellow Ivory	Charcoal (Black)	Yellow Ivory	yellow Ivory

## 7. Eigen Tactile

Location: PO Box 552  
 BURWOOD VIC 3125  
 Tel: (03) 9018 7954

Material: Fibre Reinforced Resin (Polymer) Tiles (Fibre-Tac Tactile)  
 Panda Tac Tactile – Granite  
 Phyllo Tactile – Ceramic

Type: Integrated

Size: 300mm x 300mm x 2mm & 600mm x 300mm x 2 mm (Fibre-Tac)  
 300 mm x 300 mm x 40 mm (Panda Tac)  
 300 mm x 300 mm x 10 mm (Phyllo Tac)

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	Black Charcoal Grey	White Yellow Grey Ivory	White Yellow Grey Ivory	Black Charcoal Grey	White Yellow Charcoal Grey Ivory	White Yellow Charcoal Grey Ivory

## 8. United Civil Construction (UCC)

Location: 21 Burwood Highway  
 BURWOOD VIC 3125

Mobile: 0417 922 273

Material: Flexi Pave – Concrete Polymer

Type: Integrated

Size: 300mm x 600mm x 2mm



<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	n/a	n/a	n/a	Black Terracotta	White Yellow Terracotta	White Yellow Terracotta

**9. CME Composite Materials Engineering Pty.Ltd.**

Location: 37 Hosie Street  
 BAYSWATER VIC 3153  
 Tel: 03-8720 7600

Material: CME Tactile – Polymer and Glass filled Polyester Resin

Type: Integrated

Size: 300mm x 600mm x 8mm

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt	New 14mm Dense Grade Asphalt
<b>Contrast Colours</b>	n/a	White Yellow	White Yellow	n/a	White Yellow	White Yellow

## ANNEXURE 606B

### LUMINANCE REFLECTANCE VALUE (LRV) FOR COMMON BACKGROUND MATERIAL

<b>Background Material</b>	White line marking	Sealed Surface (old)	Red Laterite Asphalt	New Concrete	New 10mm Dense Grade Asphalt (Black)	New 14mm Dense Grade Asphalt (Black)
<b>LRV for Dry Surface (%)</b>	44.04	12.46	9.98	48.00	6.40	5.40
<b>LRV for Wet Surface (%)</b>	43.25	7.60	5.08	28.90	2.80	-

Note: LRV values are indicative and in case the colour of background material varies significantly the manufacturer shall perform a field test to determine the luminance contrast.

## GUIDANCE NOTES

### FOR REFERENCE ONLY – DELETE GUIDANCE NOTES FROM FINAL DOCUMENT

1. All edits to downloaded Specifications shall be made using *Track Changes*, to clearly show added/deleted text.
2. If **all** information relating to a clause is deleted, the clause number should be retained and the words “**NOT USED**” should be inserted.
3. The proposed documents with tracked changes shall be submitted to the Project Manager for review, prior to printing the final batch of documents. When this final printing is carried out, the tracked changes option is to be turned off.
4. Before printing accept all changes in the document, turn off *Track Changes* and refresh the Table of Contents.
5. The Custodian of this specification is Traffic Engineering Standards Manager.

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Although not recommended for Main Roads projects, should a project require the use of discrete tactile surface indicators the following Contract Specific Clause may be used:

## CONTRACT SPECIFIC REQUIREMENTS

The following clauses are to be placed under the CONTRACT SPECIFIC REQUIREMENTS, as required. After inserting the clause, change the clause number and heading to style “H2 SP” so it appears in the Table of Contents.

XXX.XX SUB HEADING (H2 SP)

1. Insert text (Main Table SP)

***Keyword SP***

2. Insert text (Main Table SP)

XXX.XX SUB HEADING (H2 SP)

1. Insert text (Main Table SP)

2. Insert text (Main Table SP)

## AMENDMENT CHECKLIST

Specification No. **606** Title: **Tactile Ground Surface Indicators** Revision No: \_\_\_\_\_

Project Manager: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Checked by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Contract No: \_\_\_\_\_ Contract Description: \_\_\_\_\_

ITEM	DESCRIPTION	SIGN OFF
<i>Note: All changes/amendments must be shown in Tracked Changes mode until approved.</i>		
1.	Project Manager has reviewed Specification and identified Additions and Amendments.	
2.	<b>CONTRACT SPECIFIC REQUIREMENTS</b> addressed? Contract specific materials, products, clauses added? (Refer Specification Guidance Notes for guidance).	
3.	Any unlisted materials/products proposed and approved by the Project Manager? If “Yes” provide details at 16.	
4.	Standard clauses amended? <b>MUST SEEK</b> approval from Manager Commercial.	
5.	Clause deletes shows as “ <b>NOT USED</b> ”.	
6.	Appropriate <b>INSPECTION AND TESTING</b> parameters included in Spec 201 (Text Methods, Minimum Testing Frequencies verified).	
7.	<b>ANNEXURES</b> completed (refer Specification Guidance Notes).	
8.	<b>HANDOVER</b> and <b>AS BUILT</b> requirements addressed.	
9.	Main Roads QS has approved changes to <b>SMM</b> .	
10.	Project Manager certifies completed Specification reflects intent of the design.	
11.	Completed Specification – independent verification arranged by Project Manager.	
12.	Project Manager’s review completed.	
13.	<b>SPECIFICATION GUIDANCE NOTES</b> deleted.	
14.	<b>TABLE OF CONTENTS</b> updated.	
15.	<b>FOOTER</b> updated with Document No., Contract No. and Contract Name.	
16.	Supporting information prepared and submitted to Project Manager.	
Further action necessary:		

Signed: \_\_\_\_\_ (Project Manager) Date: \_\_\_\_\_