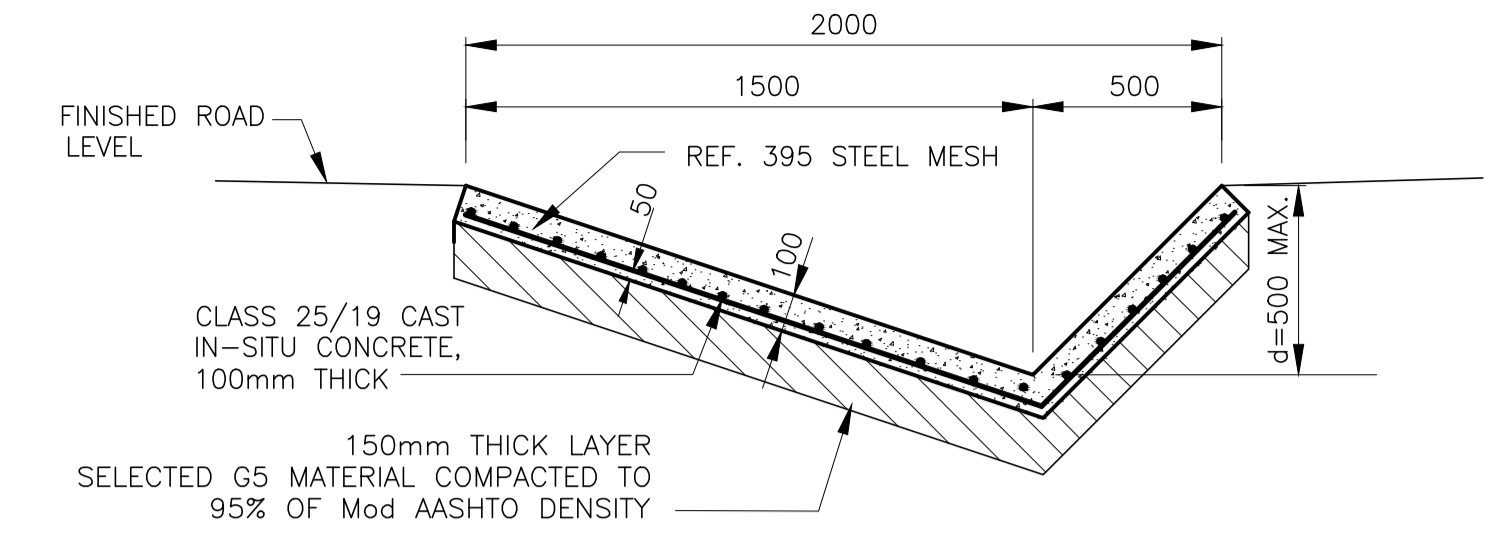
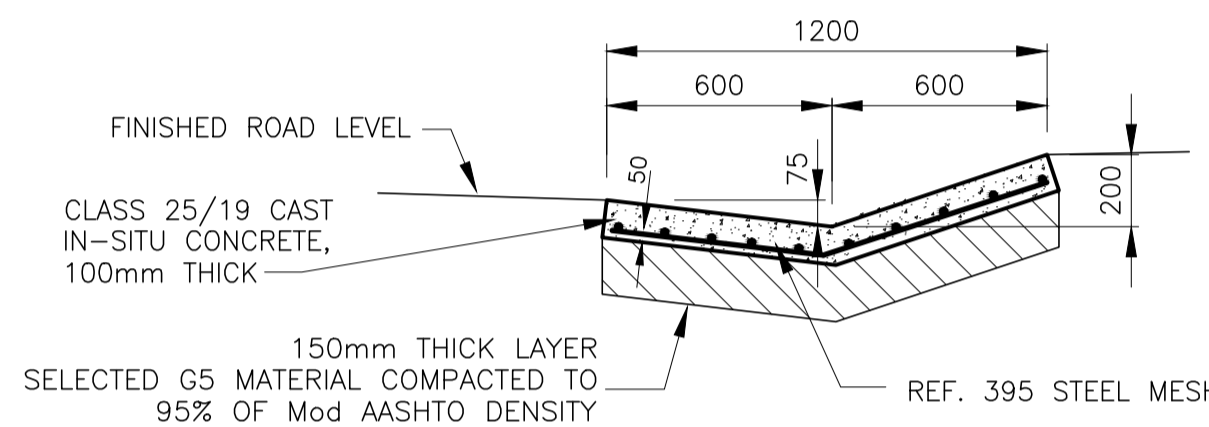


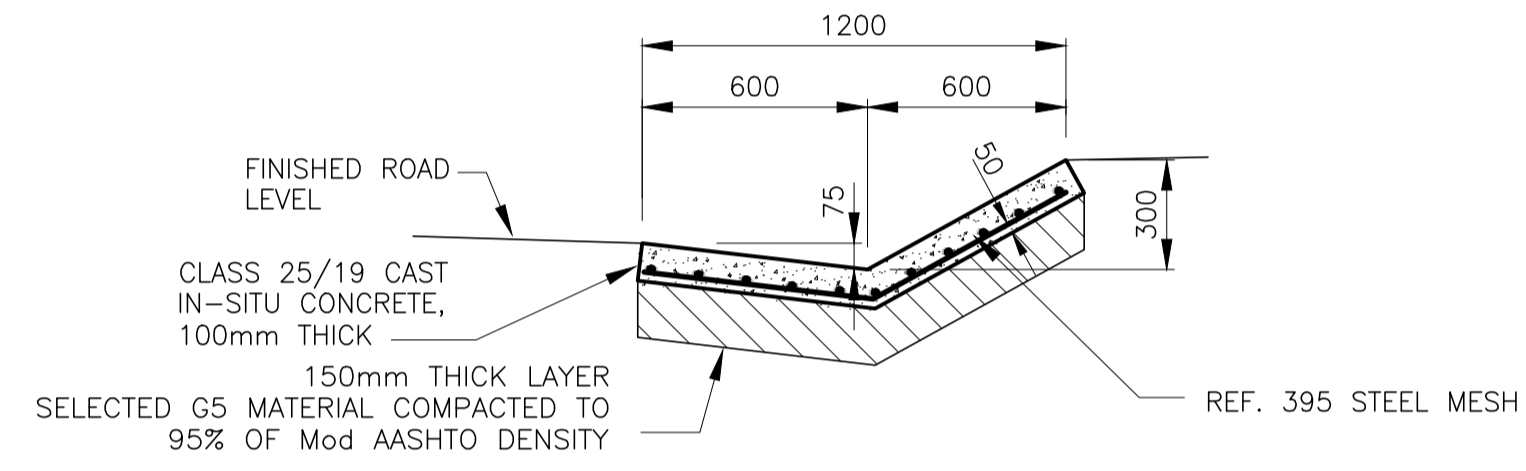
TYPICAL ROAD SECTION



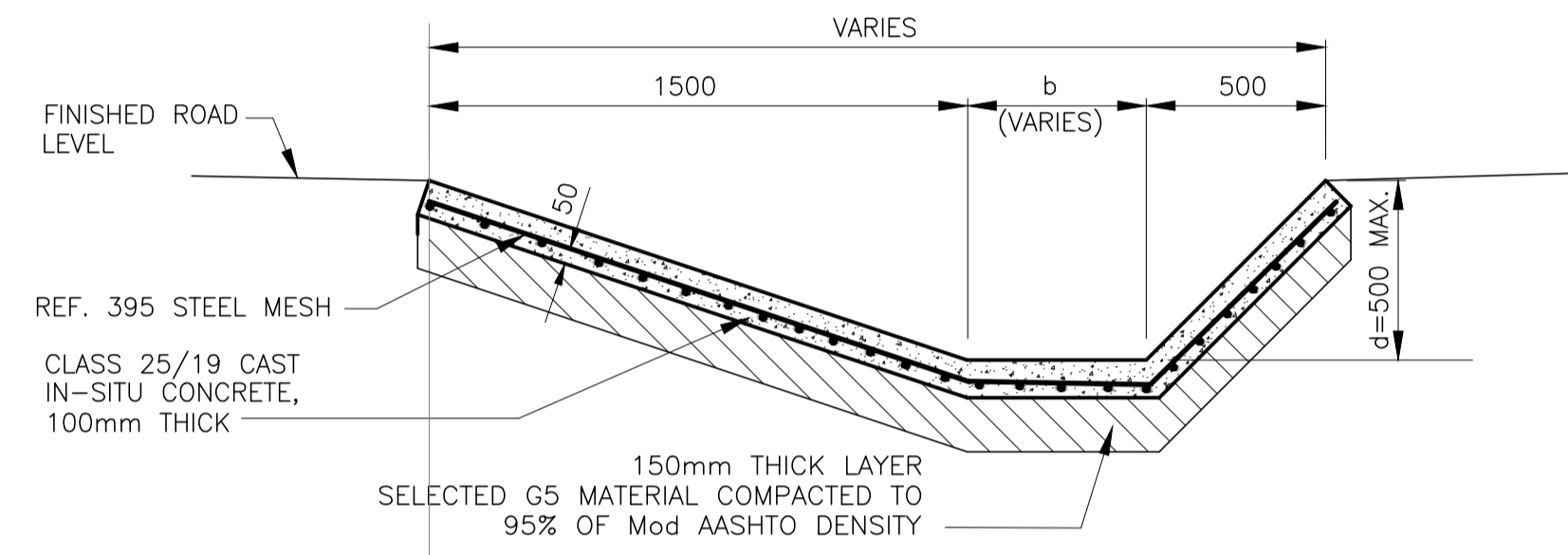
TYPE 4: LARGE SIDE DRAIN WITH NO ERF ACCESS



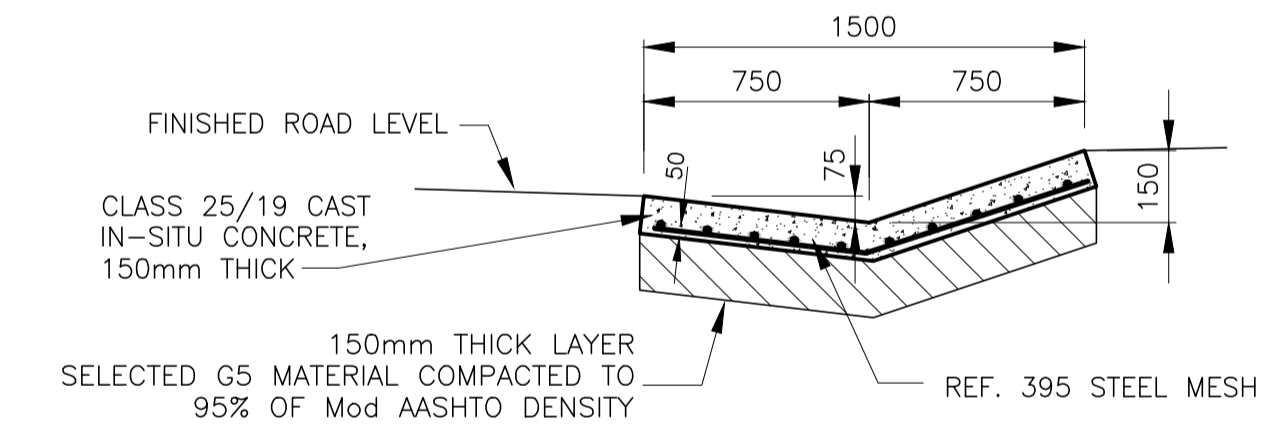
TYPE 1.1: SMALL SIDE DRAIN ALLOWING ERF ACCESS



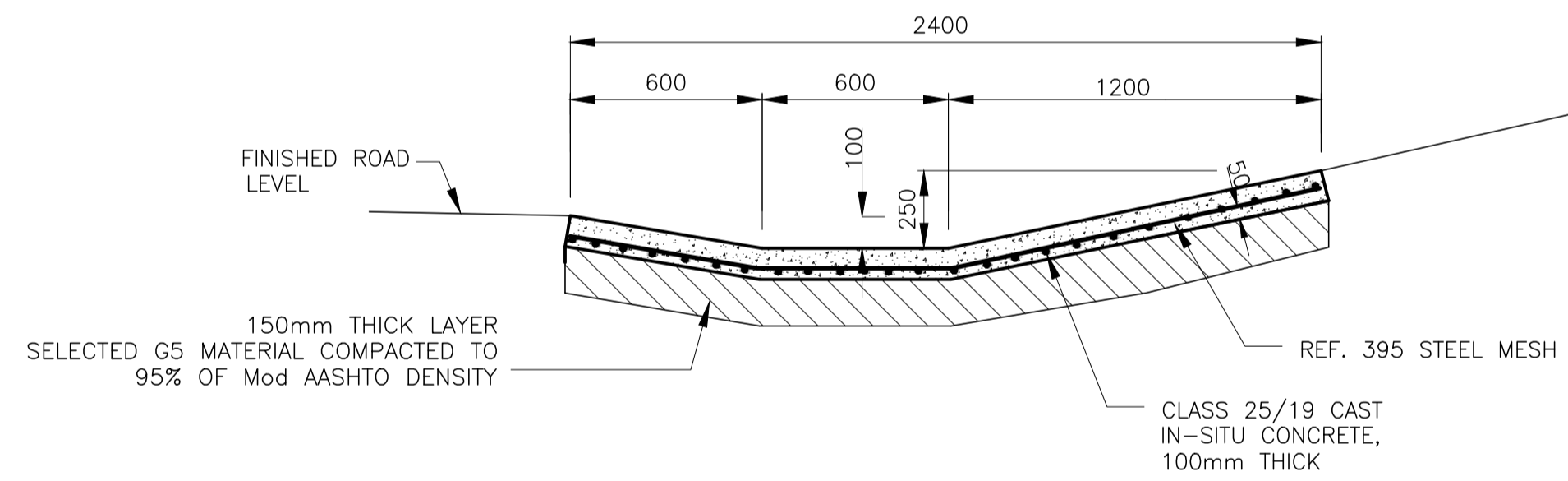
TYPE 2: SMALL SIDE DRAIN WITH NO ERF ACCESS



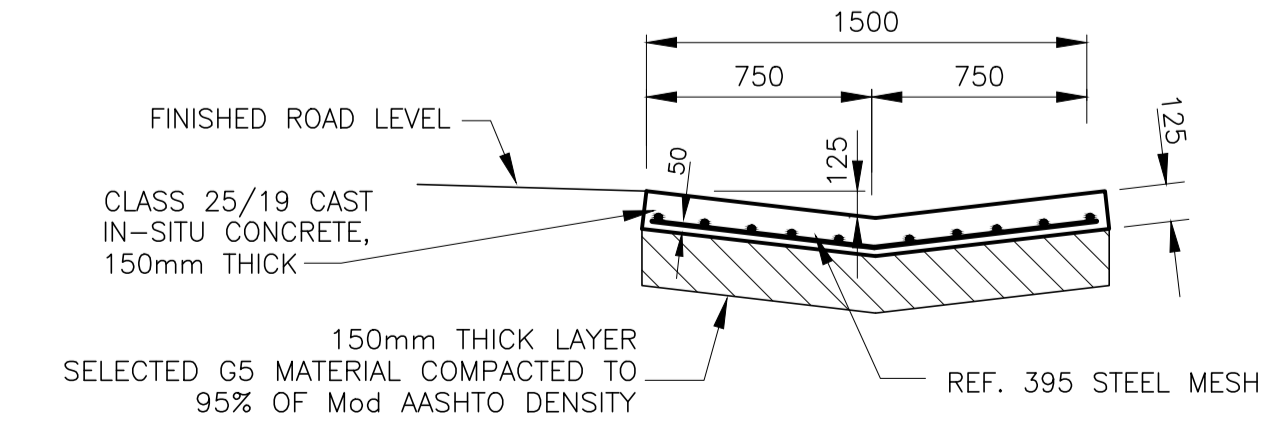
TYPE 5: LARGE SIDE DRAIN WHERE REQUIRED CAPACITY EXCEEDS THAT OF TYPE 4



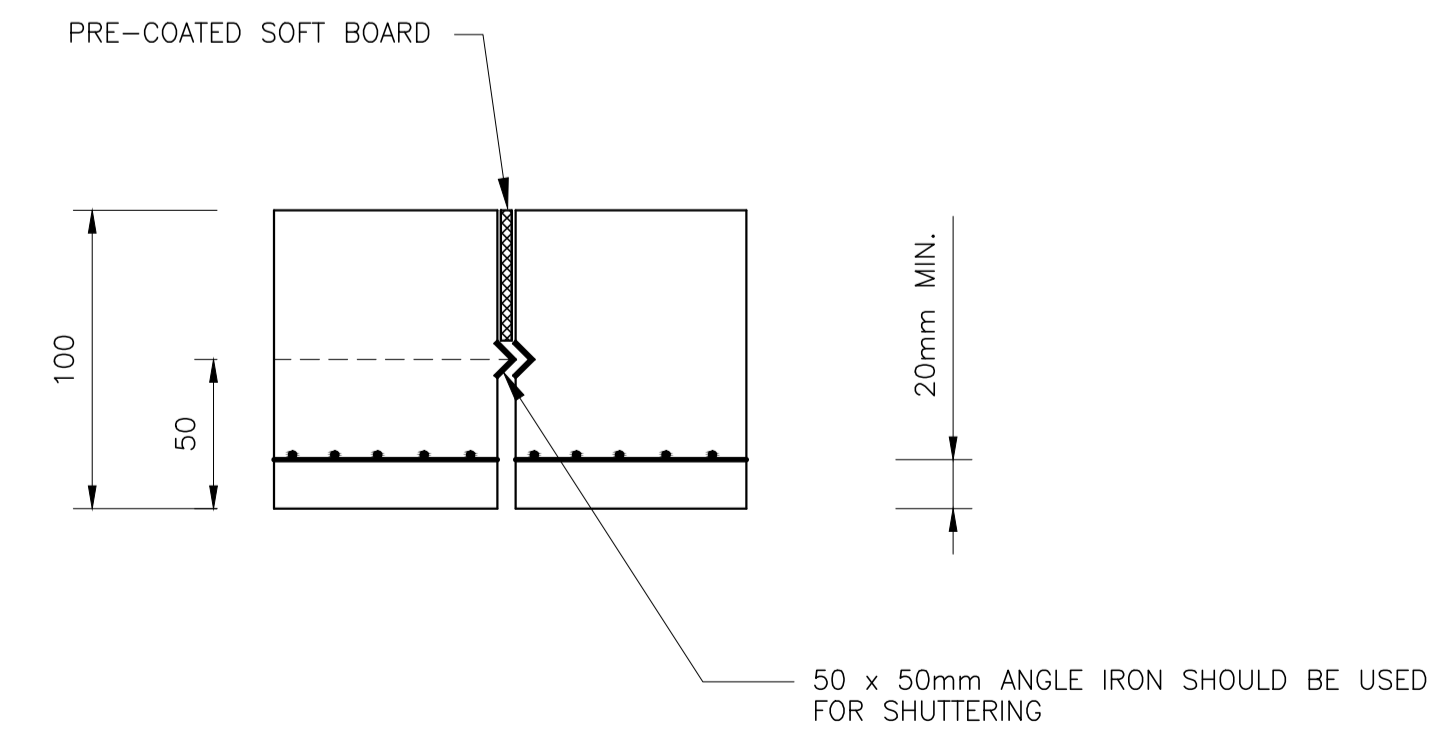
TYPE 1.2: SMALL SIDE DRAIN ALLOWING ERF ACCESS



TYPE 3: LARGE SIDE DRAIN ALLOWING ERF ACCESS



TYPE 1.3: SMALL SIDE DRAIN ALLOWING ERF ACCESS



APPLICABLE TO ALL CHANNELS AND V-DRAINS SECTION OF JOINTS

NOTES AND SPECIFICATIONS

- STORMWATER SIDE DRAIN**
- 1.1 MINIMUM LONGITUDINAL SLOPE IS 0,67%
- 1.2 MAXIMUM LONGITUDINAL SLOPE SHOULD BE SUCH THAT FLOW VELOCITIES DO NOT EXCEED 3,5 m/s.
- 1.3 MAXIMUM DEPTH FOR TYPE 4 AND 5 SIDE DRAINS IS 500mm, OTHER TYPES AS INDICATED.
- 1.4 UNLINED SIDE DRAINS ARE ONLY PERMITTED WHERE THE FLOW VELOCITY IS LESS THAN 1,5 m/s FOR MINOR STORM (1:2 YEAR RECURRENCE INTERVAL).
- 1.5 IF NOT POSSIBLE TO LIMIT FLOW VELOCITIES IN SIDE DRAINS TO 3,5 m/s, OR AVAILABLE SPACE WITHIN THE ROAD RESERVE RESTRICT THE CONSTRUCTION OF THE REQUIRED SIZE TYPE 5 SIDE DRAIN, PIPES OR CULVERTS MUST BE INSTALLED.
- 1.6 SOFT BOARD FILLED JOINTS (10mm) TO BE PROVIDED AT MAX. 3m CENTRES.
- 1.7 THIS DRAWING ONLY INDICATES THE DETAIL OF SIDE DRAINS AND DOES NOT LIMIT THE USE OF PIPE OR BOX CULVERTS, IF SO REQUIRED BY THE OR DESIGN COST CONSIDERATIONS.
- 1.8 ALSO REFER TO SECTION 504 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.

AMENDMENTS				
NR.	DATE	APPROVED	DESCRIPTION	PAR.

DESIGNED P. A. ODENDAAL Pr.Eng.	DRAWN S. AUDIE
DESIGN CHECKED BY P. A. ODENDAAL Pr.Eng.	INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT D.J. CHALMERS

PROJECT STATUS			
<input type="radio"/> CONCEPT DRAWING	<input type="radio"/> TENDER DRAWING	<input type="radio"/> APPROVED FOR CONSTRUCTION DRAWING	<input type="radio"/> AS BUILT DRAWING

PROJECT ENGINEER (CONSULTANT)	INITIALS AND SURNAME	SIGNATURE AND Pr. No.	DATE
INSPECTOR OF WORKS (CITY OF TSHWANE)	INITIALS AND SURNAME	SIGNATURE AND Pr. No.	DATE

CONSULTANT DETAIL

CITY OF TSHWANE
ROADS AND TRANSPORT DEPARTMENT

Mr. P. Lallofane STRATEGIC EXECUTIVE DIRECTOR

Ms. L. V. Kgagkwe-Piki EXECUTIVE DIRECTOR

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P.O. BOX 1409 PRETORIA 0001

DRAWING APPROVED BY EXECUTIVE DIRECTOR
Ms. L. V. Kgagkwe-Piki

TYPICAL STANDARD DETAILS

DESCRIPTION OF PROJECT
ROAD AND SURFACE DRAINAGE DETAILS FOR LOW-COST DEVELOPMENT ROAD CROSS-SECTION AND SIDE DRAIN

RECEIVED	SCALE	ORIG. PAPER SIZE:
DIRECTOR: INFRASTRUCTURE PROVISION	AS SHOWN	A1
DIRECTOR: INFRASTRUCTURE CONSTRUCTION (PROJECT) MANAGEMENT	DATE	DATE
DIRECTOR: INFRASTRUCTURE ASSET MANAGEMENT	DATE	DATE
DIRECTOR: TRANSPORT INFRASTRUCTURE PLANNING	DATE	DATE
DIRECTOR: INTELLIGENT TRANSPORT SYSTEM AND TRAFFIC ENGINEERING	DATE	DATE
DIRECTOR: INFRASTRUCTURE MAINTENANCE MANAGEMENT (IMM)	DATE	DATE

CONTRACT No.:	PROJECT No.:
DATE: MAY 2013	SCALE: AS SHOWN
DRAWING NO. STD017	SHEET NO. 2 OF 4