

NOTES AND SPECIFICATIONS

- ROAD MARKING NOTES**
- EXISTING ROAD MARKINGS NOT AFFECTED SHALL BE LEFT AS THEY ARE AND REPAINTED WITHIN THE LIMITS OF CONSTRUCTION.
 - EXISTING ROAD MARKINGS WHICH ARE IN CONFLICT WITH THE NEW ROAD MARKINGS MUST BE REMOVED BEFORE THE NEW MARKINGS ARE PAINTED.
 - ALL REMOVAL OF ROAD MARKINGS WILL BE DONE BY MEANS OF SAND BLASTING OR SIMILAR APPROVED METHOD.
 - ALL ROAD MARKINGS MUST BE CHECKED AND APPROVED AT PRE-MARKING STAGE BY TSHWANE ENGINEERS BEFORE ANY PAINTING TAKES PLACE
 - ALL ROAD MARKINGS TO BE PAINTED TO THE REQUIREMENTS OF SADC-RTSM.
 - THE LENGTH OF THE ARROW ROAD MARKINGS MUST COMPLY WITH THE ROAD TRAFFIC SIGNS MANUAL VOLUME 4 CHAPTER 12.
 - ALL NEW SURFACING MARKINGS DONE IN THE FIRST 4 WEEKS WILL BE REGARDED AS TEMPORARY.
 - ALL TEMPORARY MARKINGS CAN BE DONE IN WATER BASE PAINT.
- ROAD PAINT SPECIFICATIONS**
- ALL LONGITUDINAL ROAD MARKINGS TO BE 1.2mm THERMOPLASTIC.
 - ALL SMALL HAND TYPE MARKINGS NAMELY STOP LINES, YIELD LINES, PEDESTRIAN CROSSING LINES, BLOCK PEDESTRIAN CROSSINGS, SPEED HUMPS, ARROWS AND SYMBOLS TO BE IN THERMOPLASTIC (1.2mm THICK) OR TWO COMPONENT COLD PLASTIC (MMA - METHYL METHACRYLATE) APPLIED AS A SCREED (1MM THICK). PLASCON BRICK AND CONCRETE MARKING PAINT CODES BTP 1 (WHITE) AND BTP 28 (BLACK) SHALL BE USED FOR PAINTING OF KERBS.
 - THE FOLLOWING APPLICATION RULES WILL APPLY:
- | PAINT MARKING APPLICATION RATES: | | | |
|----------------------------------|-----------------------------|---------------------------------|--|
| COLOUR | PAINT APPLICATION RATE (mm) | GLASS BEAD APPLICATION RATE (%) | INITIAL COEFFICIENT OF FRICTION (MINICANDELAS/LUX/m ²) |
| WHITE | 1.2 | 35 | 250 |
| YELLOW | 1.2 | 35 | 135 |
- ALL SERVICE MARKERS LETTERS TO BE PAINTED ON CONCRETE KERBS, WITH BLACK PAINT ON WHITE PAINTED BACKGROUND, ACCORDING TO CoT DETAIL DRAWING 7515-W211

MARKING SPACING
N.T.S.

NOTES: (LONGITUDINAL LINE COMBINATIONS)

- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO THE MARKING INDICATED THIS IS - OR <-
- FOR FULL LONGITUDINAL DIMENSIONS OF COMPONENT MARKINGS SEE RURAL AND URBAN LONGITUDINAL LINE TYPES.
- COMBINATION MARKING 1 TO 4 ARE FOR TWO WAY TRAFFIC AND ARE APPLICABLE TO NATIONAL NON-FREEWAY ROUTES WHICH INTERSECT FREEWAYS.
- COMBINATION MARKING 5 SHALL BE USED TO INDICATE THE DIVISIONS BETWEEN THE THROUGH ROADWAY AND ANY EXCLUSIVE EXIT/TURN LANES. WHEREVER POSSIBLE A CONTINUITY LINE SHOULD LEAD TO, OR TERMINATE IN A CHANNELIZING LINE WHICH MAY BE SHORT. RECOMMENDED MINIMUM LENGTH IS 12m FOR RURAL AND 9m FOR URBAN APPLICATIONS.
- FOR MARKINGS 1 TO 4 ROADSTUDS SHOULD BE LOCATED ON CENTRE LINE OF THE DIVIDING LINE (OR SINGLE NO OVERTAKING LINE MARKING 4)
- WHERE POSSIBLE THE LENGTH OF CHANNELIZING MARKING SHOULD BE ADJUSTED SO THAT THE CONTINUITY LINE ROADSTUDS MATCH OTHER ROADSTUDS ON CROSS-SECTION AND FALL IN THE CENTRE OF A GAP IN THE CONTINUITY LINE.
- DIMENSIONS FOR URBAN APPLICATIONS ARE INDICATED IN BRACKETS.
- ROADSTUDS ON THE SINGLE NO OVERTAKING LINE IN MARKING 4 MAY BE COVERED DURING LINE MARKING OR PLACED AS INDICATED IN DETAIL "A2".

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APPLICATIONS
N.T.S.

TYPICAL APPLICATIONS	a	b	c	d	e	f	g	h	r	r'
URBAN	3000	1941	83	978	1741	528	731	1206	5620	5620
RURAL	4000	2588	111	1301	2321	704	975	1608	3900	10000

ALL APPLICATIONS	H	I	J	K	L	M
	735	260	181	219	75	100 or 150

ARROW AREA / (m ²)	
a	PER ARROW
3000	0.62
4000	0.82

MARKING SPACING
N.T.S.

APPLICATIONS
N.T.S.

NOTES:

- THESE ARROWS SHOULD BE USED IN MULTIPLES OF THREE (AT LEAST) IN ADVANCE OF THE START OF A SECTION OF NO OVERTAKING LINE. NO CROSSING LINE OR PAINTED ISLAND WHEN SUCH BARRIER LINES REPLACE A DIVIDING LINE.
- THE ARROWS MAY BE MARKED ON TOP OF EXISTING DIVIDING LINE MARKINGS (IF THE EXISTING LINE IS A CENTRE LINE TO A 12m OR 7.2m MODULE THE POINT OF THE ARROW SHOULD BE LINED UP WITH THE FORWARD END OF THE LINE).
- WHEN OVERTAKING SECTIONS ARE REGULARLY INTERSPERSED WITH NO OVERTAKING SECTIONS AND ARE SHORT IN LENGTH MARKING WM 2 MAY BE USED AT THE CENTRE OF THE OVERTAKING SECTION.

ROAD STUD LEGEND

W	W	- WHITE/WHITE
R	W	- RED/WHITE
Y	R	- YELLOW/RED

ARROW AREA / (m²)

a	WM 1/WM 5	WM 2/WM 4	WM 3/WM 6	WM 7/WM 8
2500	0.67	0.89	0.66	1.03
4000	1.14	1.43	1.06	1.68
5000	1.45	1.78	1.32	2.12
7500	2.23	2.66	1.98	3.20

MARKING SPACING
N.T.S.

APPLICATIONS
N.T.S.

NOTES:

- THESE ARROWS MAY BE USED IN LANES TO INDICATE THAT DRIVERS SHALL PROCEED ONLY IN THE DIRECTION OR DIRECTIONS SHOWN. THEY SHOULD ONLY BE USED IF THE JUNCTION CONCERNED REQUIRED TURNING MOVEMENT CONTROL BY LANE.
- THE FINAL ARROW NEAREST THE POINT OF TURN OR STRAIGHT ON MOVEMENT SHALL BE YELLOW. ANY ARROWS MARKED IN ADVANCE OF THIS POINT TO WARN DRIVERS OF THE MANDATORY MOVEMENT AHEAD SHALL BE WHITE.
- MANDATORY OR WARNING DIRECTION ARROW SHALL NOT BE USED IN ADVANCE OF A WIDENING OF THE ROADWAY TO A GREATER NUMBER OF LANES. THIS SHALL BE INDICATED IF NECESSARY, BY USING FURCATION ARROWS.

ROAD STUD LEGEND

W	W	- WHITE/WHITE
R	W	- RED/WHITE
Y	R	- YELLOW/RED

ARROW AREA / (m²)

a	RM 8.1/RM 5.1	RM 8.2/RM 7.2	RM 8.3/RM 7.3	RM 8.4/RM 7.4	RM 8.5/RM 7.5	RM 8.6/RM 7.6
2500	0.67	0.89	0.66	1.03	0.66	1.03
4000	1.14	1.43	1.06	1.68	1.06	1.68
5000	1.45	1.78	1.32	2.12	1.32	2.12
7500	2.23	2.66	1.98	3.20	1.98	3.20

AMENDMENTS

NR.	DATE	APPROVED	DESCRIPTION	PAR.

DESIGNED BY: J. CRONJE P. Tech Eng
DRAWN BY: S. AUDIE
DESIGN CHECKED BY: S. NINDOO P. Tech Eng
INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT: D.J. CHALMERS

CITY OF TSHWANE
ROADS AND TRANSPORT DEPARTMENT

GROUP HEAD: Mr Letloane P. (Phako)
P.O. BOX 1409
PRETORIA 0001

DIVISIONAL HEAD: Mr Marven K Thagale
P.O. BOX 1409
PRETORIA 0001

DRAWING APPROVED BY: Mr Letloane P. (Phako)

LOCATION OF PROJECT:

TYPICAL STANDARD DETAILS

ROAD MARKINGS
ARROW DETAILS

MARKING SPACING
N.T.S.

APPLICATIONS
N.T.S.

NOTES:

- IT IS RECOMMENDED THAT THREE SETS OF ARROWS BE USED ON HIGH SPEED ROADS, SPACED AT FOUR MODULE INTERVALS BEFORE THE END OF THE LANE LINE. SINGLE ARROWS SETS MAY BE USED ON LOWER SPEED ROADS.
- THE BENT ARROWS MAY BE USED IN ADDITION TO THE THREE-ARROW SETS ALONG THE LENGTH OF THE LANE REDUCTION TAPER.

ROAD STUD LEGEND

W	W	- WHITE/WHITE
R	W	- RED/WHITE
Y	R	- YELLOW/RED

ARROW AREA / (m²)

a	WM 1 / WM 3	WM 2
4000	2.08	2.06
5000	2.61	2.58
7500	3.92	3.88
12000	6.56	6.20

MARKING SPACING
N.T.S.

APPLICATIONS
N.T.S.

NOTES:

- THESE ARROWS MAY BE USED TO INDICATE THAT THE NUMBER OF LANES IS INCREASING AHEAD. ONLY ONE SET OF ARROWS SHOULD BE USED UNLESS A LEFT AND RIGHT TURN LANE ARE ADDED TO A MULTI-LANE ROADWAY AT THE SAME POINT WHERE TWO SETS MAY BE USED.
- DIRECTION ARROWS AHEAD SHALL NOT BE USED TO INDICATE THE ADDITION OF LANES AHEAD.
- AS A GENERAL RULE BIFURCATION ARROWS SHOULD BE LOCATED TWO TO THREE MARKING MODULES BEFORE THE START OF THE LANE GENERATING TAPER OR CURVE.

ROAD STUD LEGEND

W	W	- WHITE/WHITE
R	W	- RED/WHITE
Y	R	- YELLOW/RED

ARROW AREA / (m²)

a	GM 3.1/GM 3.3	GM 3.2	GM 3.4
2500	1.30	1.27	1.93
4000	2.07	2.04	3.09
5000	2.59	2.55	3.87
7500	3.89	3.82	5.80