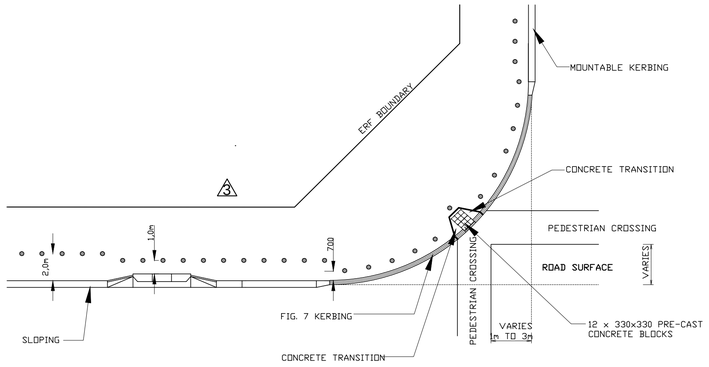
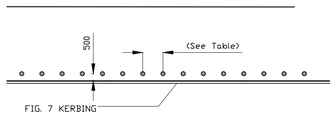
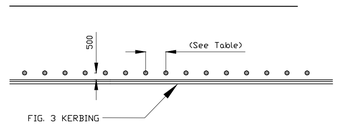


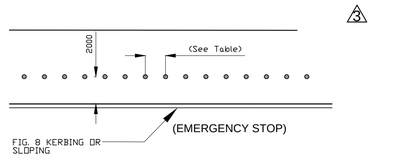
PLACEMENT OF BOLLARDS AT BELLMOUTH



PLACEMENT OF BOLLARDS AT FIG. 7 KERBING



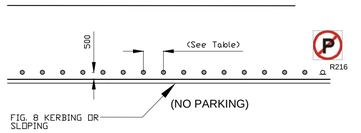
PLACEMENT OF BOLLARDS AT FIG. 3 KERBING



PLACEMENT OF BOLLARDS AT FIG. 8 OR SLOPING EMERGENCY STOP ONLY

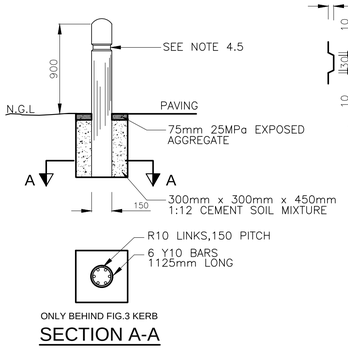
	150mmø	250mmø	325mmø
FIG. 7	1650c/c	1750c/c	1825 (NOT RECOMENDED)
FIG. 3	1650c/c	1750c/c	1825 (NOT RECOMENDED)
FIG. 8	NOT ALLOWED	1750c/c	1825c/c
SLOPING	NOT ALLOWED	1750c/c	1825c/c

SPACING TABLE OF BOLLARDS



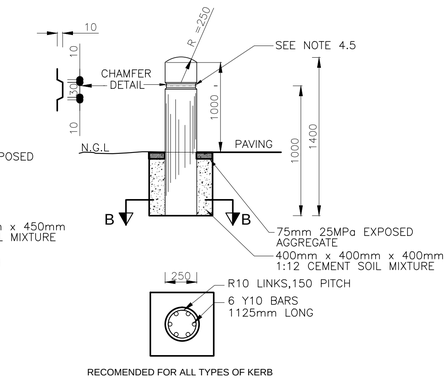
PLACEMENT OF BOLLARDS AT FIG. 8 OR SLOPING NO PARKING

90º PARKING WITH PEDESTRIAN WALKWAY



ONLY BEHIND FIG.3 KERB

SECTION A-A

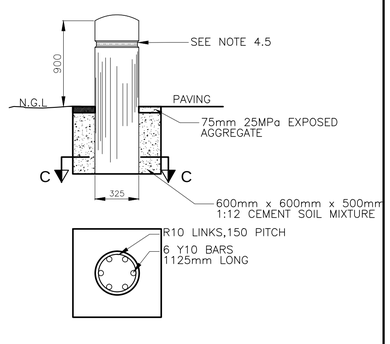


RECOMENDED FOR ALL TYPES OF KERB

SECTION B-B

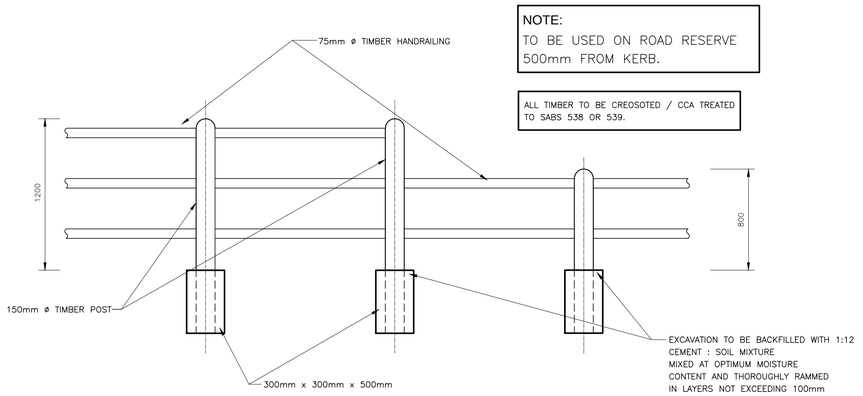
150 CONCRETE BOLLARD (SMOOTH FINISH)

250 CONCRETE BOLLARD (SMOOTH OR EXPOSED AGGREGATE FINISH)

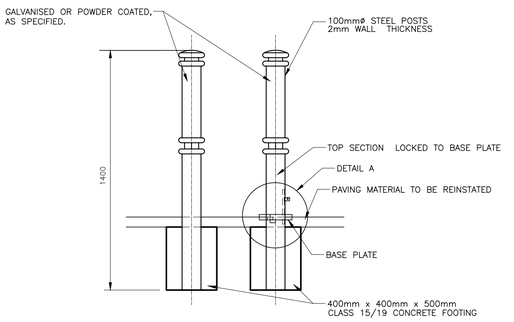


ONLY SLOPING KERB AND AT PEDESTRIAN RAMP

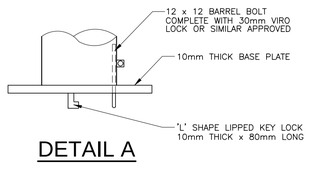
SECTION C-C



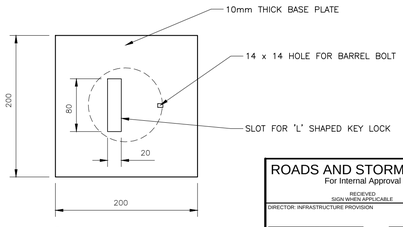
TYPICAL POST AND RAIL TIMBER BALUSTRADE



STEEL BOLLARD



DETAIL A



BASE PLATE DETAIL

TYPICAL STEEL BOLLARD

(CHURCH STREET: PRETORIA CENTRAL)

NOTES AND SPECIFICATIONS

1 GENERAL

1.1 ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS REQUIREMENTS.
1.2 ALL DIMENSIONS ARE IN MILLIMETERS. (UNLESS OTHERWISE SPECIFIED)
1.3 DO NOT SCALE FROM THESE DRAWINGS.
1.4 ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.

2.REINFORCED CONCRETE

2.1 REINFORCED CONCRETE WORK SHALL BE IN STRICT ACCORDANCE WITH SECTIONS 702, 703 AND 704 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.
2.2 CONCRETE COVER SHALL BE AS INDICATED ON THE DRAWINGS OR SPECIFICATIONS.

3. STRUCTURAL STEELWORK

3.1 STRUCTURAL STEELWORK SHALL BE IN STRICT ACCORDANCE WITH SECTION 809 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.
3.2 STRUCTURAL STEEL SHALL BE GRADE 300W UNLESS OTHERWISE INDICATED OR SPECIFIED.
3.3 COLD FORMED SECTIONS SHALL BE MADE FROM COMMERCIAL QUALITY STEEL UNLESS OTHERWISE SPECIFIED.
3.4 HOLDING DOWN BOLTS SHALL BE OF THE GRADE SPECIFIED ON THE DRAWINGS.
3.5 PAINTING OF STRUCTURAL STEELWORK SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SECTION 806 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.
3.6 ALL STRUCTURAL STEEL, INCLUDING TUBES, SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF SABS 763 FOR TYPE A1 OR B1 ARTICLES AS APPLICABLE (OR LATEST).

4. CONCRETE BOLLARDS

4.1 CONCRETE TYPE CLASS 30/19.
4.2. CONCRETE FINISH AS SPECIFIED ON DRAWINGS.
4.3. STEEL REINFORCEMENT TO BE 6Y10 BARS WITH R10 LINKS AT 150mm PITCH.
4.4. 20mm CONCRETE COVER TO REINFORCEMENT.
4.5. UNLESS OTHERWISE SPECIFIED, REFLECTIVE TAPE MUST BE FIXED IN THE RECESS TO ENHANCE VISIBILITY.
4.6. EXPOSED CONCRETE BACKFILL AROUND BOLLARD SPACE TO BE DETERMINED BY PAVING PROFILE.

AMENDMENTS

NR.	DATE	APPROVED	DESCRIPTION	PAR.

DESIGNED: C.B. RAMEKANE — SIGNATURE / DATE
DRAWN: S. AUDIE
DESIGN CHECKED BY: S. NAIDOO — SIGNATURE / DATE
INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT: D.J. CHALMERS — SIGNATURE / DATE

PROJECT STATUS

○ CONCEPT DRAWING ○ TENDER DRAWING ○ APPROVED FOR CONSTRUCTION DRAWING ○ 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. I. Letlonkane — STRATEGIC EXECUTIVE DIRECTOR — P.O. BOX 1409 PRETORIA 0001
Ms. L. V. Kegakilwe-Piki — EXECUTIVE DIRECTOR — P.O. BOX 1409 PRETORIA 0001

DRAWING APPROVED BY EXECUTIVE DIRECTOR
Ms. L. V. Kegakilwe-Piki
SIGNATURE: DATE:

LOCATION OF PROJECT:

TYPICAL STANDARD DETAILS

DESCRIPTION OF PROJECT

HANDRAILS/BALUSTRADE, AND BOLLARDS
STEEL HANDRAIL/BALUSTRADE, POST AND RAIL TIMBER BALUSTRADE, CONCRETE BOLLARDS AND STEEL BOLLARDS

ROADS AND STORMWATER
For Internal Approval
RECEIVED
SIGN WHEN APPLICABLE
DIRECTOR: INFRASTRUCTURE PROVISION — SIGNATURE / DATE
DIRECTOR: INFRASTRUCTURE CONSTRUCTION (PROJECT) MANAGEMENT — SIGNATURE / DATE
DIRECTOR: INFRASTRUCTUREASSET MANAGEMENT — SIGNATURE / DATE
DIRECTOR: TRANSPORT INFRASTRUCTURE PLANNING — SIGNATURE / DATE
DIRECTOR: INTELLIGENT TRANSPORT SYSTEN AND TRAFFIC ENGINEERING ENGINEERING — SIGNATURE / DATE
DIRECTOR: INFRASTRUCTURE MAINTENANCE MANAGEMENT (MM) — SIGNATURE / DATE

0 10 20 40 60 80m
SCALE 1:1000

CONTRACT No. :
PROJECT No. :
DATE : MAY 2013
SCALE : AS SHOWN
ORIGINAL PAPER SIZE: A1
DRAWING NO: STD011
SHEET NO: 1 OF 1
REVISION 0