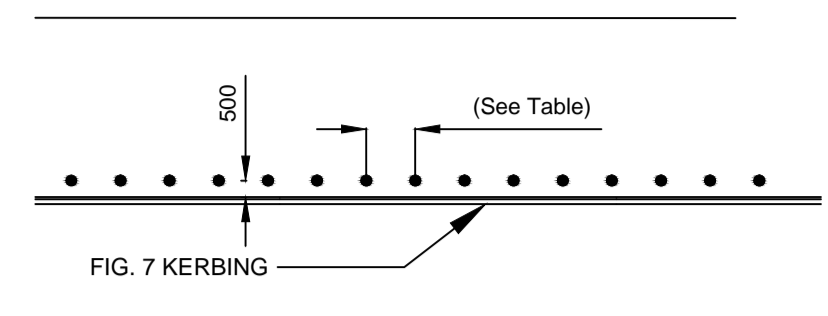
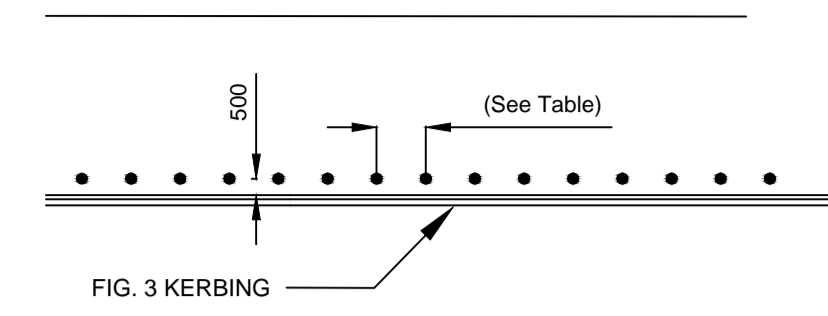


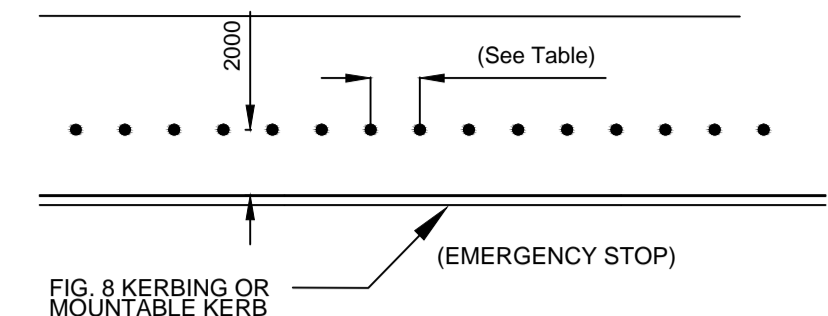
PLACEMENT OF BOLLARDS AT BELLMOUTH



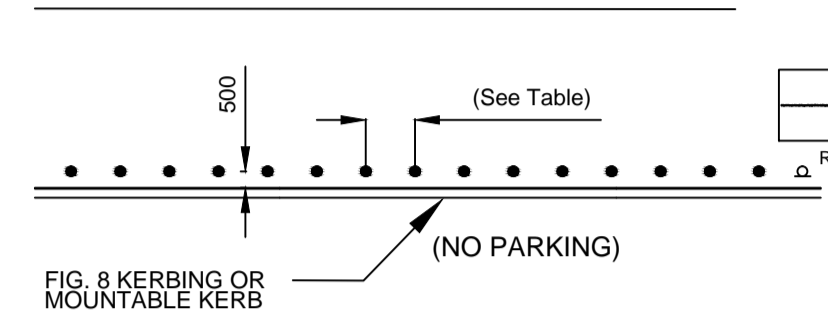
PLACEMENT OF BOLLARDS AT FIG. 7 KERBING



PLACEMENT OF BOLLARDS AT FIG. 3 KERBING



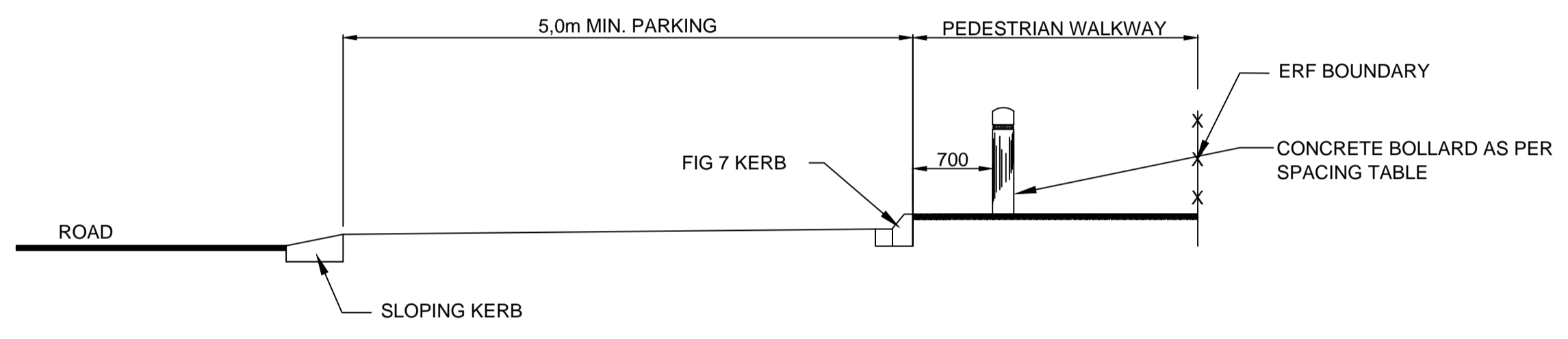
PLACEMENT OF BOLLARDS AT FIG. 8 OR MOUNTABLE KERB EMERGENCY STOP ONLY



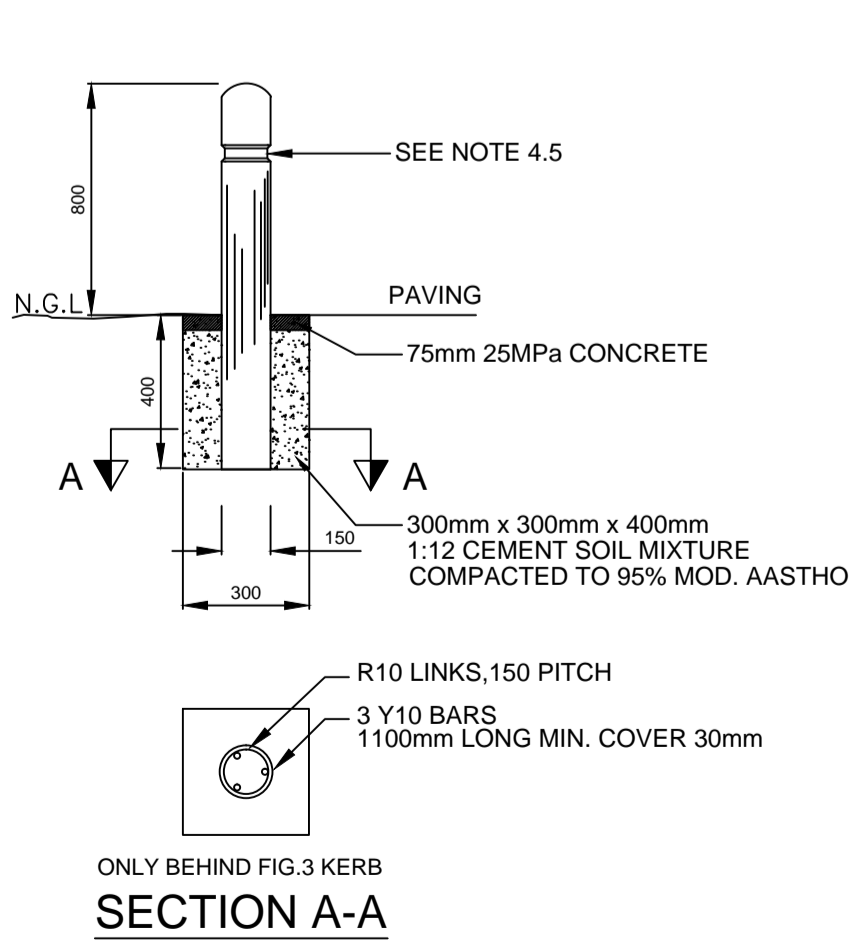
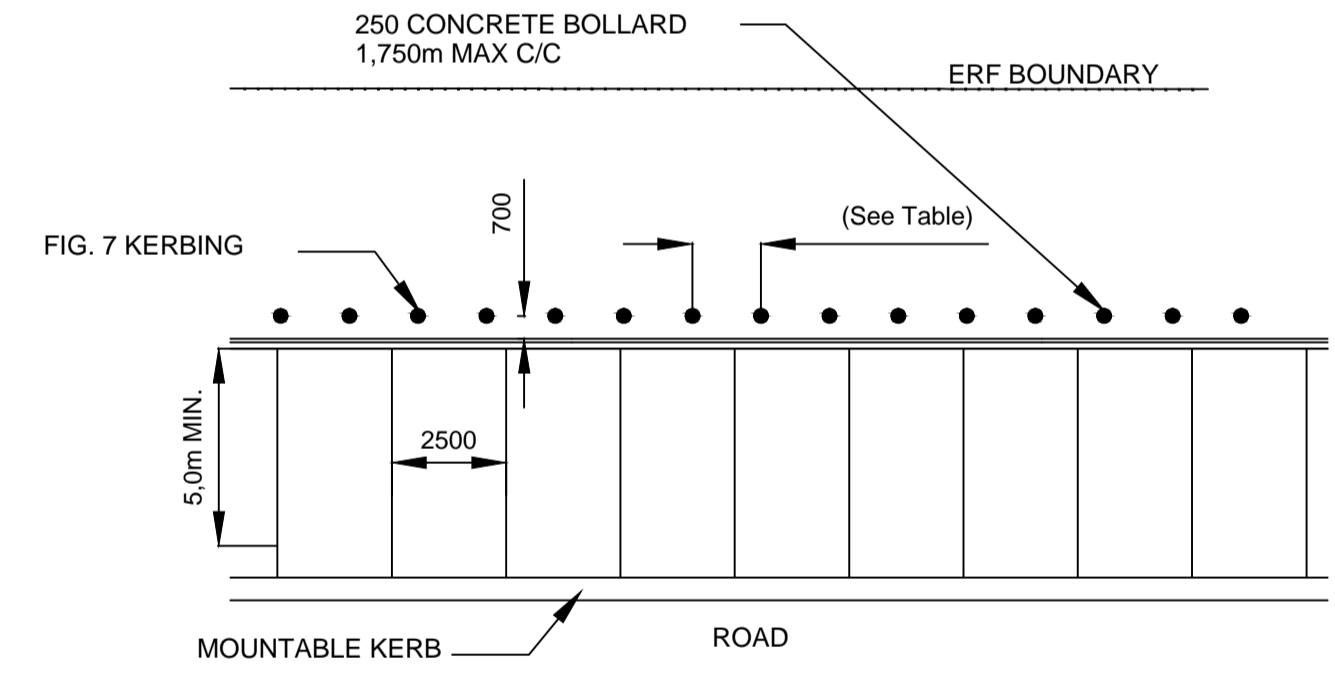
PLACEMENT OF BOLLARDS AT FIG. 8 OR MOUNTABLE KERB NO PARKING

KERB	ONLY EXISTING	250mmØ
FIG. 7	150mmØ	1750c/c
FIG. 3	1650c/c	1750c/c
FIG. 8	NOT ALLOWED	1750c/c
MOUNTABLE KERB	NOT ALLOWED	1750c/c

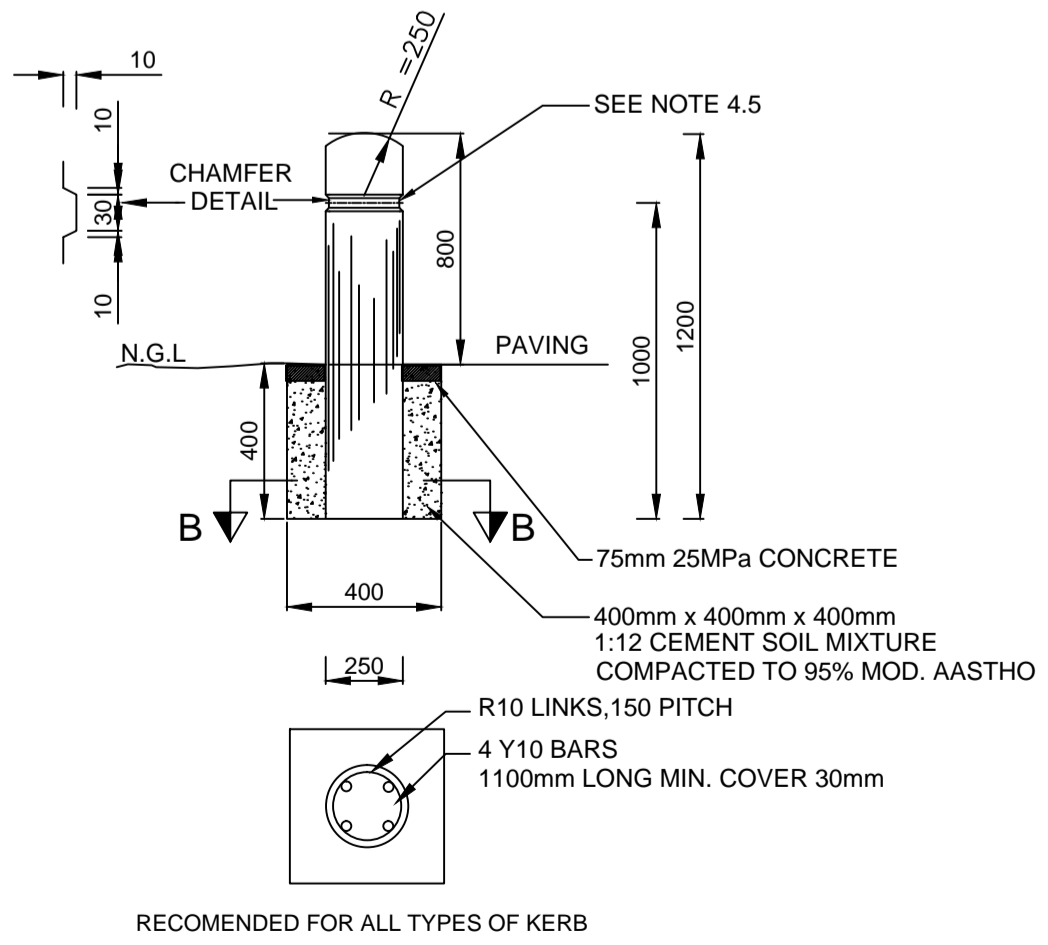
SPACING TABLE OF BOLLARDS



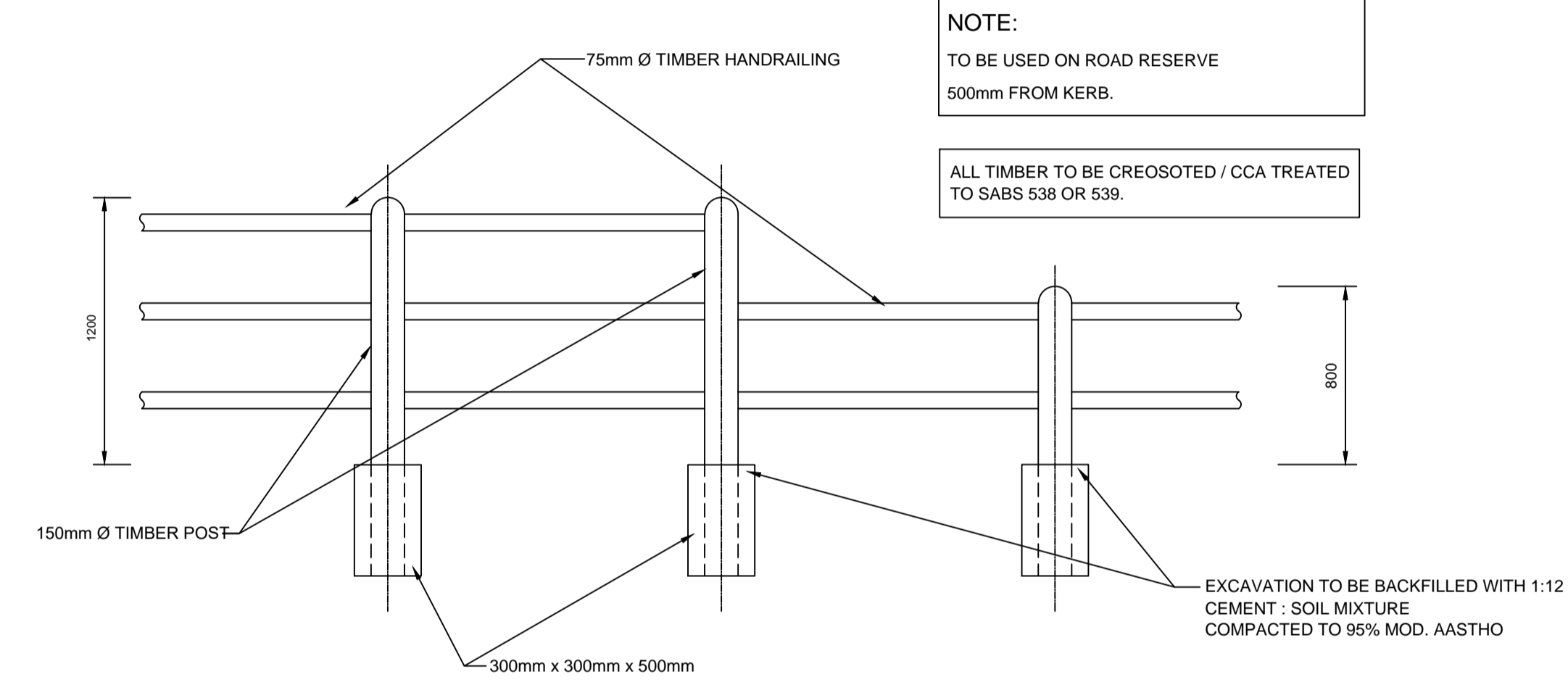
90° PARKING WITH PEDESTRIAN WALKWAY



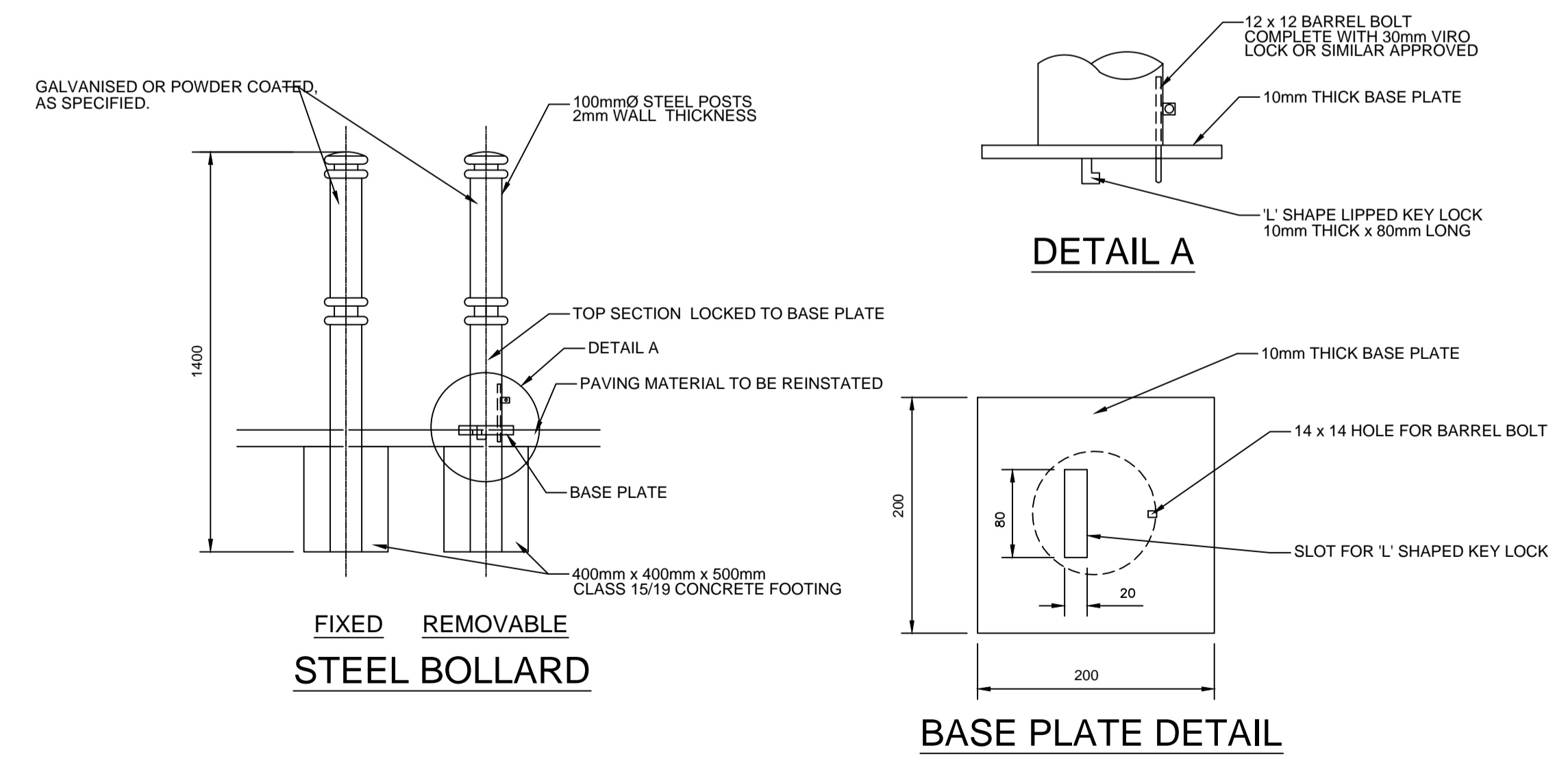
150mm Ø CONCRETE BOLLARD (SMOOTH OR EXPOSED AGGREGATE FINISH)



250mm Ø CONCRETE BOLLARD (SMOOTH OR EXPOSED AGGREGATE FINISH) EXPOSED AGGREGATE TO BE USED ON ALL NEW WORKS



TYPICAL POST AND RAIL TIMBER BALUSTRADE



TYPICAL STEEL BOLLARD (Only to be used at)

(HELEN JOSEPH STREET: PRETORIA CENTRAL)

NOTES AND SPECIFICATIONS

- GENERAL
 - ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS REQUIREMENTS.
 - ALL DIMENSIONS ARE IN MILLIMETERS. (UNLESS OTHERWISE SPECIFIED)
 - DO NOT SCALE FROM THESE DRAWINGS.
 - ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
- REINFORCED CONCRETE
 - 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.
 - CONCRETE COVER SHALL BE AS INDICATED ON THE DRAWINGS OR SPECIFICATIONS.
- STRUCTURAL STEELWORK
 - STRUCTURAL STEELWORK SHALL BE IN STRICT ACCORDANCE WITH SECTION 805 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.
 - STRUCTURAL STEEL SHALL BE GRADE 300W UNLESS OTHERWISE INDICATED OR SPECIFIED.
 - COLD FORMED SECTIONS SHALL BE MADE FROM COMMERCIAL QUALITY STEEL UNLESS OTHERWISE SPECIFIED.
 - HOLDING DOWN BOLTS SHALL BE OF THE GRADE SPECIFIED ON THE DRAWINGS.
 - 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.
 - 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).
- CONCRETE BOLLARDS
 - CONCRETE TYPE CLASS 30/19.
 - CONCRETE FINISH AS SPECIFIED ON DRAWINGS.
 - STEEL REINFORCEMENT TO BE MIN. 3Y10 BARS FOR 150mm AND 4Y10 BARS FOR 250mm WITH R10 LINKS AT 150mm PITCH.
 - 30mm CONCRETE COVER TO REINFORCEMENT.
 - UNLESS OTHERWISE SPECIFIED, 20mm WIDE CLASS III, YELLOW REFLECTIVE TAPE MUST BE FIXED IN THE RECESS TO ENHANCE VISIBILITY MIN 50mm OVERLAP.
 - CONCRETE BACKFILL AROUND BOLLARD SPACE TO BE DETERMINED BY PAVING PROFILE MIN. 400mm X 400mm FOR 250mm Ø BOLLARDS
 - ALL BACKFILLED CONCRETE FINISHES MUST BE WORKED OFF TO CLASS U2 SURFACE FINISH. ALL CONCRETE EDGES TO BE WORKED OFF WITH A NOSING TOOL.

AMENDMENTS				
NR.	DATE	APPROVED	DESCRIPTION	PAR.
1.	01/10/2020		UPDATE OF CONCRETE BOLLARDS	

DESIGNED J. CRONJIE Pr. Tech. Eng.	DRAWN S. AUDIE
CHECKED BY S. NAIDOO Pr. Tech. Eng.	INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT D.J. CHALMERS

CITY OF TSHWANE
ROADS AND TRANSPORT DEPARTMENT

GROUP HEAD
Mr Letloane P. (Pheko)

DIVISIONAL HEAD
Mr Marven K. Thagale

P.O. BOX 1409
PRETORIA

P.O. BOX 1409
PRETORIA

DESIGNED BY Mr Letloane P. (Pheko)	DRAWING RECOMMENDED BY DIVISIONAL HEAD TRANSPORTATION PLANNING Mr K. Thagale (Marven)
CHECKED BY Mr K. Thagale (Marven)	DIVISIONAL HEAD Mr Swaneepoel (Marven)

TYPICAL STANDARD DETAILS

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

CONTRACT NO.:	PROJECT NO.:
DATE: 31 JANUARY 2022	SCALE: NOT TO SCALE
DRAWING NO. STD011	SHEET NO. 1 OF 3