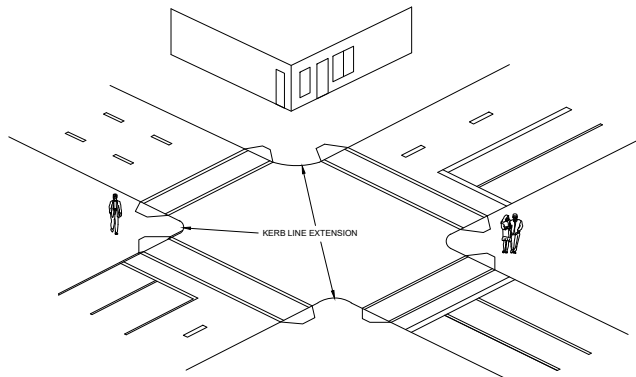
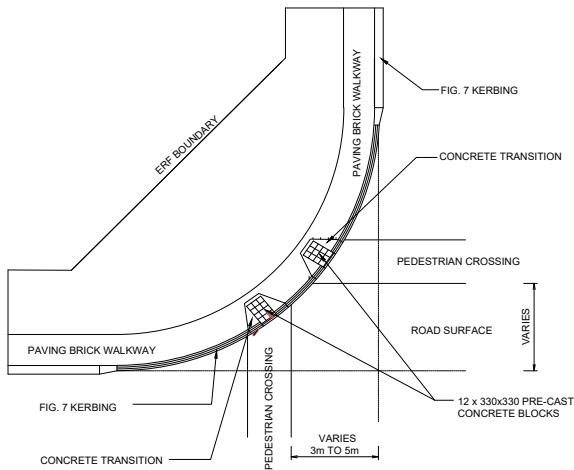


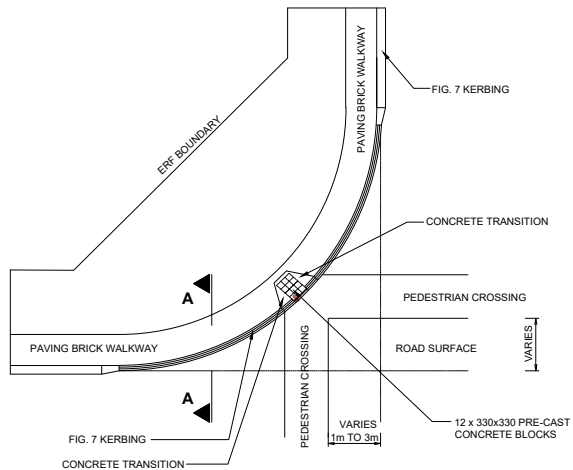
- SPECIFICATION OF PEDESTRIAN RAMPS AT STREET CROSSINGS**
- PEDESTRIAN RAMPS SHALL BE WITH 30 MPa PRECAST CONCRETE BLOCKS, 330mm x 330mm x 100mm WITH SURFACE FINISH AS SPECIFIED, CONSTRUCTED AND THE TRANSITION SECTIONS SHALL BE CAST IN-SITU CLASS 25/19 CONCRETE, 100mm THICK.
  - THE PRECAST CONCRETE BLOCKS SHALL BE PLACED WITH JOINTS NOT SMALLER THAN 5mm OR EXCEEDING 10mm.
  - THE JOINTS SHALL BE FILLED WITH A MORTAR CONSISTING OF ONE PART CEMENT AND THREE PARTS APPROVED SAND, MEASURED PER VOLUME.
  - THE JOINT BETWEEN THE KERB'S CAST-IN-SITU CHANNEL (EXISTING OR NEW) AND THE CONCRETE BLOCKS SHALL BE FILLED WITH A 3:1 RIVER SAND/CEMENT MORTAR. WHERE THIS JOINT EXCEEDS 25mm, IN WIDTH CLASS 25/19 IN-SITU CONCRETE MUST BE USED FOR FILLING.
  - RAMPS SHALL NOT BE REQUIRED AT SLOPING KERBS.
  - RAMPS SHALL BE BUILT AT THE INTERSECTION OF THE EXTENDED KERB LINES. EXCEPTIONS TO ACCOMMODATE ROAD SIDE FURNITURE, SUCH AS TRAFFIC LIGHTS, POWER LINES, ETC. MUST BE APPROVED BY THE ENGINEER.
  - THE SLOPE OF THE RAMP SHALL NOT EXCEED 1:12. OTHERWISE, THE RAMP MUST BE EXTENDED.
  - THE CROSS FALL OF THE KERB'S CAST-IN-SITU CHANNEL AT THE RAMP SHALL NOT EXCEED 1:10 OTHERWISE THE CHANNEL AND THE KERB SHALL BE RECONSTRUCTED OVER A MINIMUM LENGTH OF 3 METERS. CARE MUST BE TAKEN TO PREVENT POSSIBLE DRAINAGE PROBLEMS.
  - THE CROSS FALL OF THE RAMP SHALL NOT EXCEED 1:50.
  - IF NECESSARY, THE PAVING ADJACENT TO THE RAMP AND TRANSITION SECTIONS SHALL BE ADJUSTED TO AVOID SEVERE CHANGES IN GRADE BETWEEN THE PAVING AND THE TRANSITION SECTIONS.
  - ALL IN-SITU CONCRETE SHALL BE CURED FOR AT LEAST 12 HOURS.
  - THE FOUNDATION LAYER SHALL CONSIST OF A 100mm LAYER OF IN-SITU MATERIAL FINISHED TO THE REQUIRED GRADE AND LEVEL. THE FOUNDATION LAYER SHALL BE COMPACTED TO AT LEAST 90% OF THE MODIFIED AASHTO DENSITY.
  - THE BEDDING MATERIAL UNDER THE CONCRETE BLOCKS, SHALL CONSIST OF A 6:1 RIVER SAND/CEMENT MIXTURE.
  - EXISTING PAVING MUST BE CUT IN STRAIGHT LINES, FOLLOWING AN APPROVED METHOD.



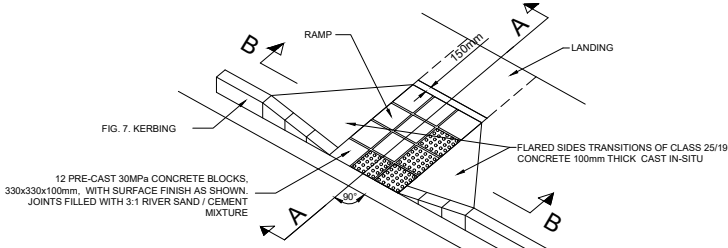
**PEDESTRIAN RAMP AT STREET CROSSINGS**



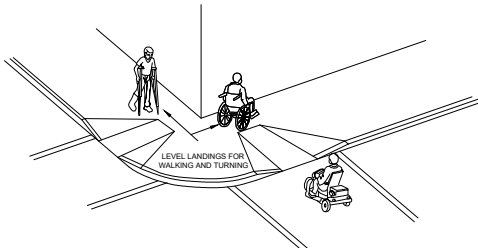
**TYPE A PEDESTRIAN CROSSING**



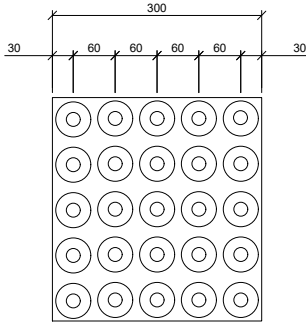
**TYPE B PEDESTRIAN CROSSING**



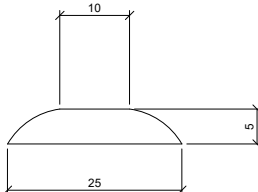
**KERB RAMP - ISOMETRIC VIEW**



**THE NEED FOR A LANDING AT A KERB RAMP**



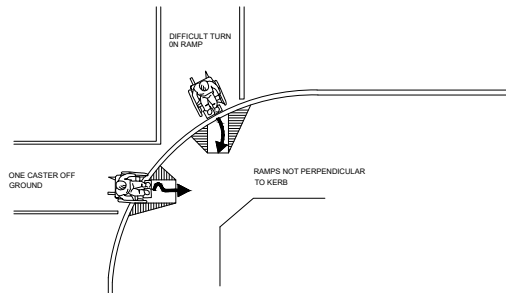
**DOMES SPACING**



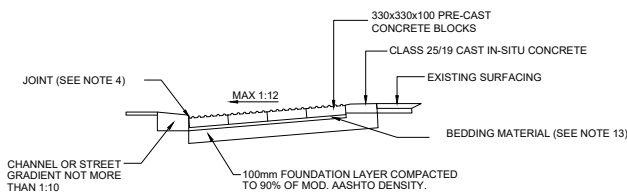
**DOMES SECTION PEDESTRIAN RAMP DETECTABLE WARNING**



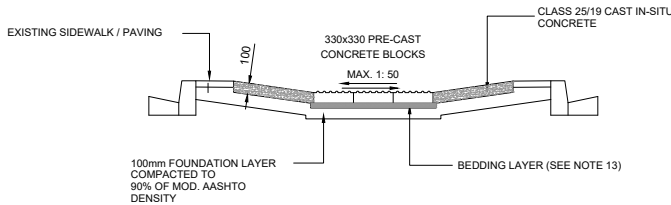
**KERB RAMPS**



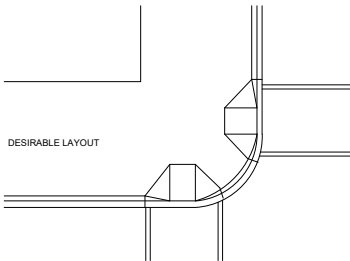
**PROBLEMS WITH KERB RAMPS THAT ARE NOT PERPENDICULAR TO THE KERB**



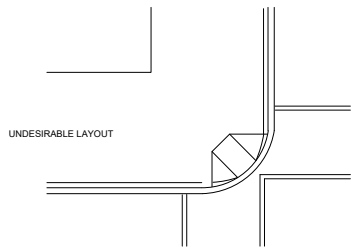
**SECTION A-A**



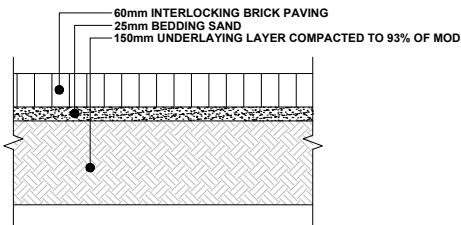
**SECTION B-B**



**DOUBLE PEDESTRIAN KERB RAMP AT JUNCTION CORNER (DESIRABLE DESIGN)**



**SINGLE PEDESTRIAN KERB RAMP AT JUNCTION CORNER (UNDESIRABLE DESIGN)**



**SECTION A-A SCALE 1:5**

FOR TENDER PURPOSES ONLY			
CONSTRUCTION RECORD (AS-BUILT)			
WORKS CONTRACT ENGINEER			
Name : M.P. BOONSTRA			
Prof. Reg. No. : 970909			
Date : 20180205			
SANRAL PROJECT MANAGER			
Name : J.A. van den BERG			
Date : 20180205			
DRAWN BY P. FOURIE			
DESIGNED BY M.P. BOONSTRA			
CHECKED BY J.A. van den BERG			
CONSULTANT APPROVAL			
Name : M.P. BOONSTRA			
Prof. Reg. No. : 970909			
Date : 20180205			
HEAD OFFICE			
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Pretoria 0184			
PO Box 415			
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NORTHERN REGION			
38 Ida Street			
Menlo Park			
Pretoria 0081			
Private Bag X17			
Lynnwood Ridge			
0040			
Tel: (012) 426 6200			
ACCEPTANCE			
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING			
for the SA NATIONAL ROADS AGENCY SOC LTD.			
Date :			
PROJECT DESCRIPTION			
THE RESURFACING OF NATIONAL ROUTE N001, SECTION 29 BETWEEN MUSINA SOUTH AND MUSINA NORTH			
DRAWING DESCRIPTION			
PEDESTRIAN RAMPS AT INTERSECTIONS			
PROJECT NUMBER			
NRA N.001-290-2004/1			
DRAWING LOCATION DATA			
ROUTE			
N1			
SECTION			
29			
DRAWING km DISTANCE			
88,650			
DRAWING TYPE			
ROADS - ANCILLARY WORKS			
BRIDGE/STRUCTURE No.			
CONSULTANT DRAWING No.			
KBK/2312/04/001			
SANRAL DOCUMENT #			
-			
VER			
V1			
SCALE: AS SHOWN			
SHEET 1 OF 1			