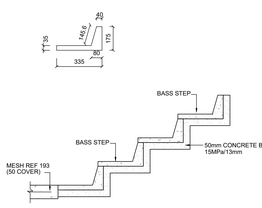
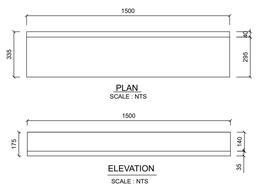
ISSUED FOR TENDER PURPOSES





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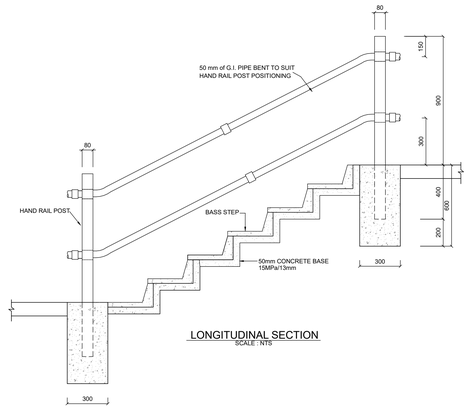
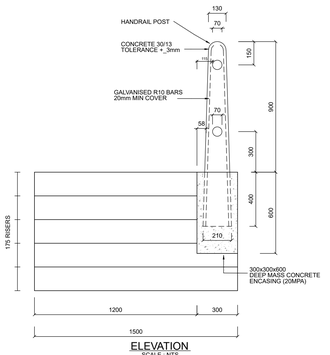
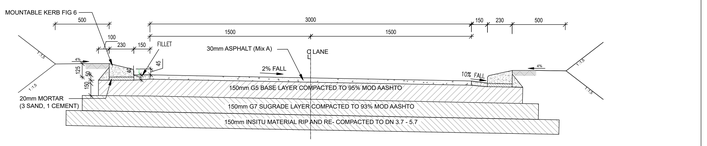
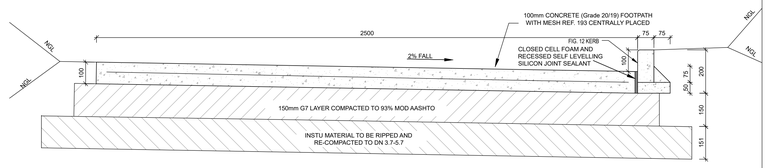




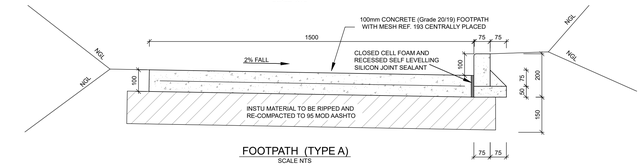
DETAIL A - STAIRCASE AND HAND RAIL DETAIL



DETAIL B - ACCESS ROAD DETAIL

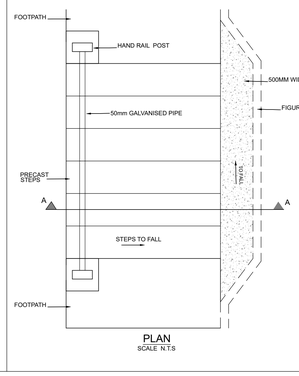


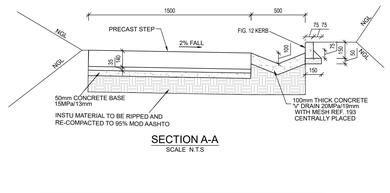
FOOTPATH (TYPE B)
SCALE NTS



FOOTPATH (TYPE A)
SCALE NTS

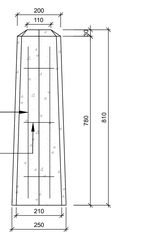
DETAIL C - TYPICAL FOOTPATH DETAIL

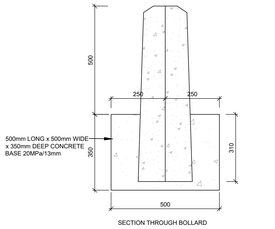




DETAIL D - STEP AND DRAIN DETAIL

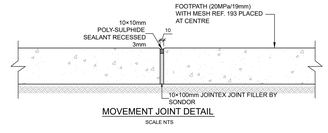
LIST OF DETAILS
- DETAIL A - STAIRCASE AND HANDRAIL DETAIL
- DETAIL B - ACCESS ROAD DETAIL
- DETAIL C - TYPICAL FOOTPATH DETAILS
- DETAIL D - STEP AND DRAIN DETAIL
- DETAIL E - BOLLARD
- DETAIL F - JOINTS
- DETAIL G - GABION PIPE PROTECTION
- DETAIL H - GABION AND DRY STACK RETAINING WALL
- DETAIL I - ROAD TIE-IN DETAIL
- DETAIL J - ROAD TIE-IN DETAIL WITH SIDEWALK
- DETAIL K - RENO MATTRESS AND TRAPEZOIDAL DRAIN





STANDARD BOLLARD
SCALE N.T.S

DETAIL E - BOLLARD



MOVEMENT JOINT DETAIL
SCALE NTS

DETAIL F - JOINT DETAIL

1. GENERAL NOTES

1.1 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LAYOUT DRAWING, LONGITUDINAL SECTION DRAWINGS AND SPECIFICATIONS DOCUMENTED IN THE BILL OF QUANTITIES. ANY DISCREPANCIES MUST BE REFERRED TO THE ENGINEER IMMEDIATELY

1.2 NO SCALING-OFF IS PERMITTED ONLY WRITTEN DIMENSIONS MAY BE DEEMED CORRECT. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.

1.3 ALL WORK TO COMPLY WITH THE LATEST EDITION OF THE SANS 1200 SPECIFICATIONS.

1.4 ALL CUT SLOPES TO BE SHAPED TO 1:1.5 AND FILL SLOPES TO 1:2 UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.

1.5 FILL MATERIAL TO BE COMPACTED IN LAYERS OF MAX. 150mm TO 93% MOD AASHTO. STEPS TO BE FORMED PRIOR TO FILLING . HEIGHT OF STEPS TO BE APPROXIMATELY 300mm LIFTS.

1.6 COMPACTION TESTING TO BE DONE AS FOLLOWS:
(a) 1 TEST PER LAYER FOR EACH 25m LENGTH OF FOOTPATH

1.7 BOLLARDS TO BE CONSTRUCTED ONLY WHEN INSTRUCTED BY THE ENGINEER.

1.8 WHERE THE COVER LEVELS OF THE EXISTING MANHOLES LOCATED IN THE ALIGNMENT OF NEW FOOTPATHS IS HIGHER THAN THE FINISHED DESIGN LEVEL OF THE FOOTPATH, MANHOLE RINGS ARE TO BE CUT SUCH THAT THE NEW MANHOLE COVER LEVEL IS CONSISTENT WITH THE LEVEL AND SLOPE OF THE FOOTPATH. EXISTING MANHOLE LIGHT DUTY COVERS AND FRAME ARE TO BE REPLACED WITH HEAVY DUTY COVER AND FRAME. EXPOSED REINFORCING MUST BE PAINTED WITH SIKA TOP AMATEC 110 EC OR SIMILAR APPROVED

1.7 THESE DESIGNS OR DRAWINGS ARE NOT TO BE SOLD AND ARE SUBJECT TO RECALL. REPRODUCTION OR COPYING RIGHTS ARE RESERVED SOLELY BY BVi CONSULTING ENGINEERS UNDER COPYRIGHT LAW. THESE DRAWINGS HAVE BEEN ISSUED AND RECEIVED ON THE FOLLOWING CONDITIONS:
(a) THAT THEY ARE NOT USED IN ANY WAY AGAINST THE INTERESTS AND BENEFITS OF BVi
(b) THAT THESE DRAWINGS AND ALL COPIES WILL BE RETURNED TO BVi IMMEDIATELY ON DEMAND.
(c) THAT ALL INFORMATION DISCLOSED BY THESE DRAWINGS SHALL BE DEEMED TO BE CONFIDENTIAL.

2. CONCRETE

2.1 CONCRETE WORKS TO COMPLY WITH SANS1200 SECTION G AND SANS 0100 PART 2

2.2 THE FREQUENCY OF CONCRETE WORKS TESTING MUST BE DONE AS FOLLOWS :

(a) AT LEAST ONE SET(3 NO. CUBES) OF SAMPLES FOR EVERY 50m³ OF CONCRETE PLACED
(b) AT LEAST ONE SET OF SAMPLES SHALL BE TAKEN FROM EACH DAY CASTING
(c) TESTING MUST BE BE CARRIED OUT IN ACCORDANCE TO SANS METHOD 861 AND TESTED BY AN APPROVED LABORATORY RESULTS TO BE BE SUBMITTED TO THE ENGINEER
(d) ON THE BASIS IF IMPORTANCE, WHERE DIRECTED BY THE ENGINEER, A SET OF SAMPLES MAY BE REQUESTED.
(e) UNLESS OTHERWISE ADVISED, NO SAMPLE SHALL BE TAKEN OF ANY CONCRETE UNTIL AT LEAST 1m³ OF SUCH CONCRETE HAS BEEN MIXED AND DISCHARGED FOR THE FOOTPATHS

2.3 CURING AND PROTECTION SHALL BE ACCORDING TO SANS 0100 II-1980, 5.8.8

2.4 ALL CONCRETE TO BE PROPERLY CURED BY KEEPING SURFACES CONTINUOUSLY DAMP, AT LEAST 7 DAYS AFTER CASTING.

2.5 CONCRETE POURING WILL ONLY BE DONE UPON THE APPROVAL OF THE SHUTTERING AND FIXING OF THE REINFORCEMENT FOR THE FOOTPATHS/DRAINS

2.6 MIN CONCRETE CUBE STRENGTH AT 28 DAYS:

FOOTPATH	20 MPa
DRAINS	20 MPa
KERB BASE AND HAUNCH	20 MPa
STEP CONCRETE BASE	15 MPa
RETAINING WALL BASE	20 MPa

3.FOOTPATH

3.1 FOOTPATH TO BE CAST IN 2m ALTERNATE PANELS WITH 10mm SOFTBOARD JOINT AT EVERY 10m CENTRES

3.2 THE FOLLOWING TYPE OF FOOTPATHS ARE TO BE CONSTRUCTED DEPENDING ON THE ASSESSMENT OF THE NATURAL GROUND CONDITIONS:

(a) TYPE A- TO BE CONSTRUCTED WHERE THE INSITU MATERIAL CAN BE COMPACTED TO 95% MOD AASHTO.
(b) TYPE B AND C - TO BE CONSTRUCTED WHERE THE MINIMUM COMPACTION OF 95% MOD AASHTO CANNOT BE ACHIEVED FOR THE INSITU MATERIAL

REFER TO LONGSECTION DRAWINGS FOR FOOTPATH TYPE CONSTRUCTION DETAILS.

4.STAIRCASE AND HAND RAILS

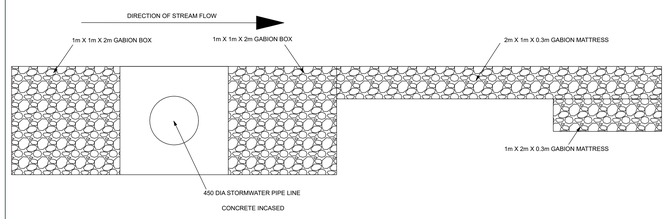
4.1 STAIRCASE DESIGN CAN BE USED FOR A MAXIMUM HEIGHT OF 3m.
4.2 PRECAST BASS STEP OR SIMILAR APPROVED IS TO BE USED.
4.3 20MPa/13mm CONCRETE BASE TO BE CONSTRUCTED BELOW STEPS.
4.4 HAND RAILS ARE TO BE INSTALLED UNDER THE FOLLOWING CONDITIONS :
(a) WHERE STAIRCASES EXCEED 5 No. RISERS
(b) FILL EMBANKMENTS ARE HIGHER THAN 1m
4.5 WHERE STAIRCASES EXCEED 6 No. STEPS AN ADDITIONAL POSTS MUST BE CONSTRUCTED AFTER EVERY 6 NO. STEPS

5.RETAINING AND GABION WALL

5.1 NEW DRY STACK RETAINING WALL POSITIONS AND HEIGHT WILL BE FINALISED ON SITE.
5.2 THE BOTTOM ROW OF BLOCKS IS TO BE SET IN WET CONCRETE.
5.3 ALL BACKFILL TO BE COMPACTED TO 93% MOD AASHTO DENSITY. UNLESS OTHERWISE AGREED WITH THE ENGINEER. THE CONTRACTOR TO SUPPLY THE ENGINEER WITH RESULTS OF COMPACTION TESTS.
5.4 STORMWATER BEHIND THE TOP OF THE WALL TO BE MANAGED IN SUCH A MANNER AS TO PREVENT SCOURING OF THE FILL MATERIAL AND PREVENT THE WALL FROM OVERTURNING
5.5 BACKFILL TO BE BENCHED IN SUITABLE GROUND.
5.6 FOUNDATION:
(a) ENGINEER TO APPROVE FOUNDING CONDITIONS PRIOR TO CASTING OF CONCRETE
(b) ALL FOUNDATIONS TO BE CONSTRUCTED ON SOUND INSITU MATERIAL. NO FOUNDATION WILL BE ALLOWED ON ANY FILL MATERIAL
(c) TOP OF FOUNDATION LEVEL TO BE MIN 340MM BELOW FINISHED GROUND LEVEL.
5.7 GABION WALLS TO BE CONSTRUCTED AS PER ENGINEERS INSTRUCTIONS.

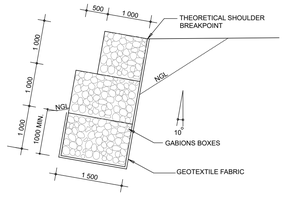
6.STANDARD BOLLARD

6.1 CONCRETE GRADE TO BE 30MPa/13mm
6.2 FINISH - SMOOTH WITH BOTTOM FACE BRUSHED
6.3 FOUNDATION CONCRETE IS TO BE GRADE 20MPa/13mm AND IS HAVE A STEEL TOWE FINISH.

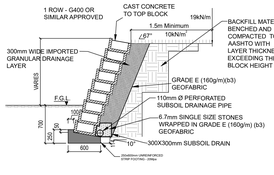


GABION PIPE PROTECTION DETAIL
SCALE 1: 20

DETAIL G - GABION PIPE PROTECTION

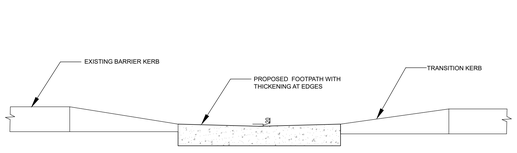


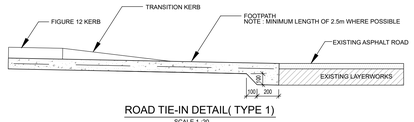
3m GABION RETAINING WALL (SLOPED 10°)
FILL CONDITION
SCALE N.T.S

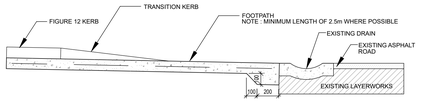


CUT AND FILL CONDITION
DRYSTACK WALL
SCALE N.T.S

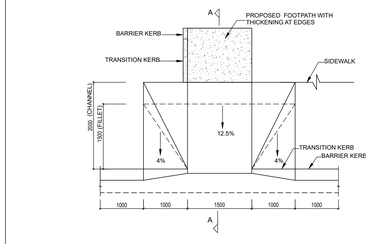
DETAIL H - GABION AND DRY STACK RETAINING WALL

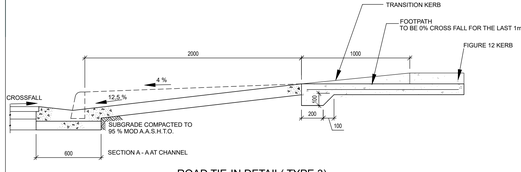


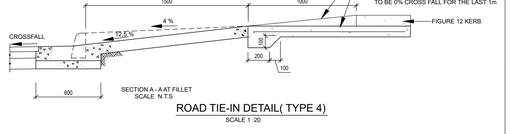




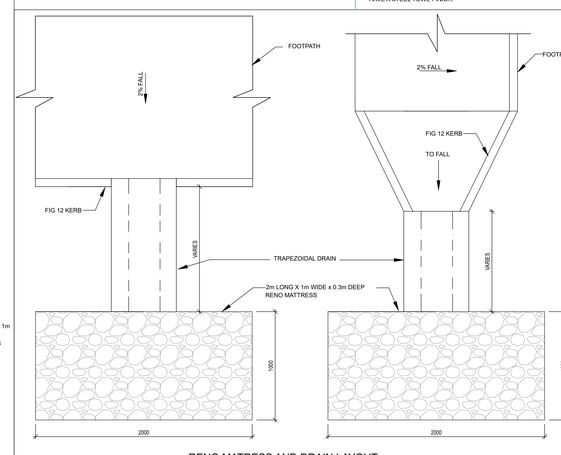
DETAIL I - ROAD TIE-IN DETAIL (NO SIDEWALK)



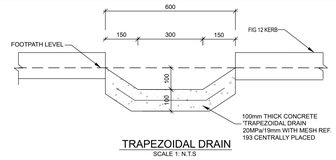




DETAIL J - ROAD TIE-IN DETAIL WITH SIDEWALK



RENO MATTRESS AND DRAIN LAYOUT
SCALE 1 : N.T.S



TRAPEZOIDAL DRAIN
SCALE 1: N.T.S

DETAIL K - RENO MATTRESS AND TRAPEZOIDAL DRAIN

ETHEKWINI MUNICIPALITY

ENGINEERING UNIT
DEVELOPMENT ENGINEERING

PLAN DESCRIPTION	DWG. NO.	SHEET NO.
CONTINUED FROM		
CONTINUED ON		
CROSS SECTIONS		
TYPICAL CROSS SECTION		
SURVEY LAYOUT		

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

DESIGN CONSULTANT

BVi Consulting Engineers KwaZulu-Natal PTY (Ltd)
Registration No. 1999/000000/07

ENGINEERING
PROCUREMENT
MANAGEMENT

Visit or contact us online at www.bvigroup.co.za

PROVINCE KZN — OFFICE Durban — +27 31 266 8382 — E-MAIL dbn@bvikn.co.za

Approved		Reg. No.	Date

Revision	Date	Description
A	04/12/2023	ISSUED FOR TENDER PURPOSES

NOTE:No construction work to commence until land and servitude acquisitions have been completed

Acquisitions completed

DATE Engineer

UNDERGROUND SERVICES CHECKED

SERVICE	DATE	SIGNATURE
S.W.DRAINS		
SEWERS		
WATER MAINS		
G.P.O.CABLES		
ELECTRIC CABLES		
S.A.R. CABLES		
E.S.C. CABLES		
OIL PIPE LINE		

NOTE:
Only underground services affected by new construction work are shown.Care must be taken during excavations for road foundations,trenches etc., to avoid damage to underground services such as sewers, drains, cables, water mains and connections. Wherever possible these must be located before work proceeds.

Contract No.

Project Title

PROVISION OF INCREMENTAL SERVICES TO SETTLEMENT EMLAZA Qx4

Drawing Title

GENERAL STANDARD DETAILS

Scales	Reference
AS SHOWN	

Checked	Date	Signature
KP		
Designed PT		
Drawn by BS		

Senior Manager: Development Engineering (South)

Deputy Head: Development Engineering

Head : Engineering

Drawing No 49286

Sheet 1 of 3 Sheets

M:\DELTA\ PROJECTS\DWT\29-00 - ETHEKWINI RF\SVYS\ TENDER DRAWINGS\EMLAZA QX4-GA\EMBD8-003.DWG