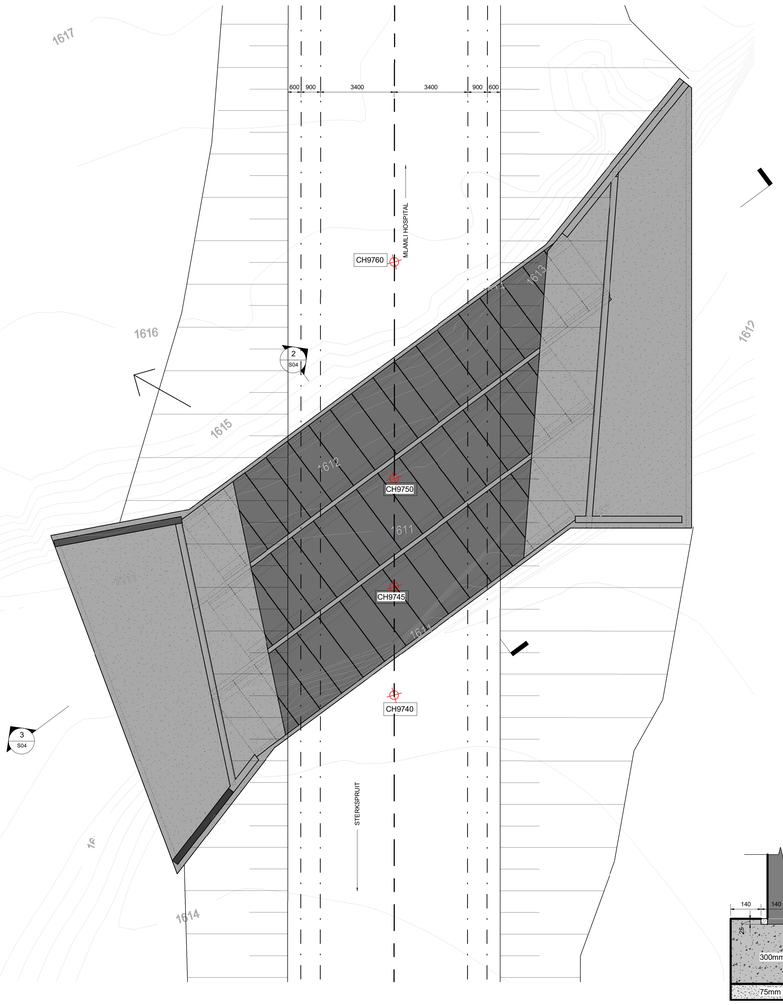
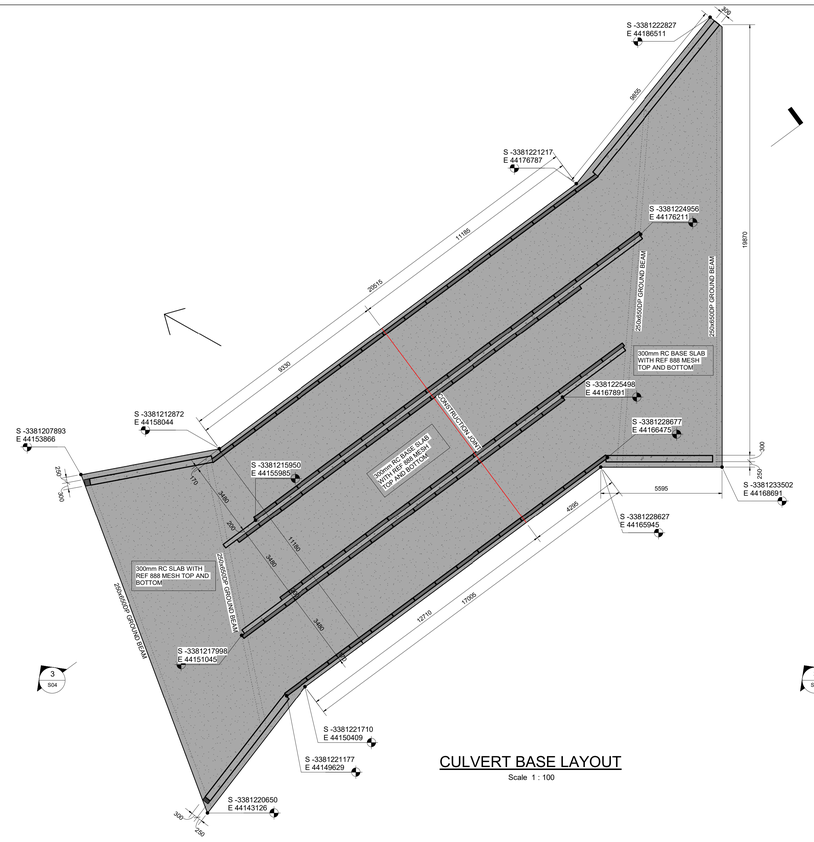
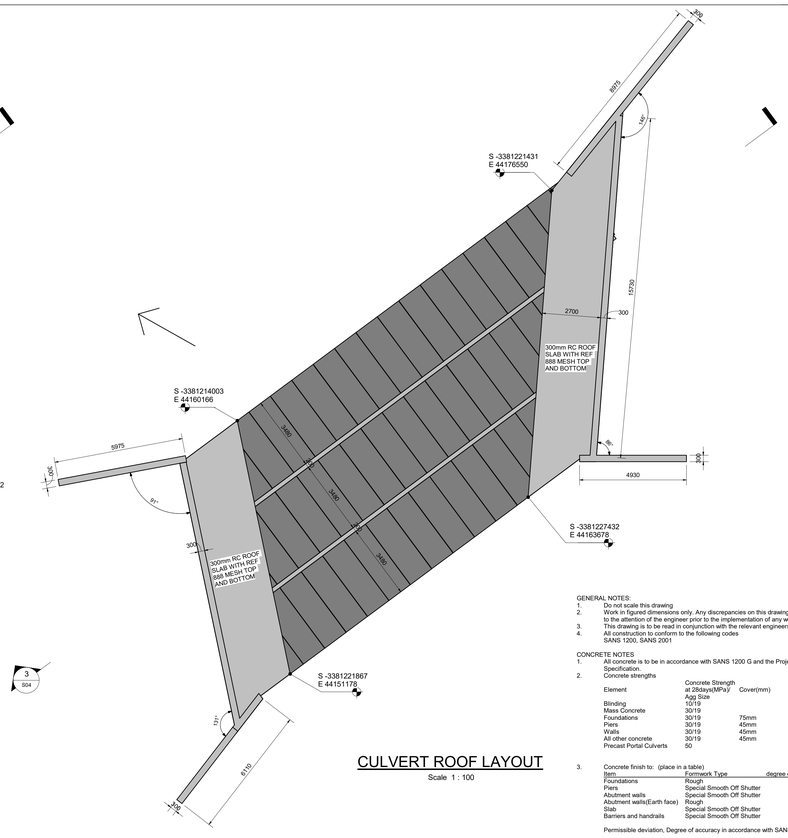




CULVERT BASE LAYOUT

Scale 1 : 100



CULVERT ROOF LAYOUT

Scale 1 : 100

GENERAL NOTES:

1. Do not scale this drawing
2. Work in figured dimensions only. Any discrepancies on this drawing to be brought to the attention of the engineer prior to the implementation of any work.
3. This drawing is to be read in conjunction with the relevant engineers drawings.
4. All construction to conform to the following codes
   SANS 1200, SANS 2001

CONCRETE NOTES:

1. All concrete is to be in accordance with SANS 1200 G and the Project Specification.
2. Concrete strengths

Element	Concrete Strength at 28days(MPa)/ Agg Size	Cover(mm)	Max Water/ Cement Ratio
Blinding	10/19		0.53
Mass Concrete	30/19		0.53
Foundations	30/19	75mm	0.53
Piers	30/19	45mm	0.53
Walls	30/19	45mm	0.53
All other concrete	30/19	45mm	0.53
Precast Portal Culverts	50		

3. Concrete finish to: (place in a table)

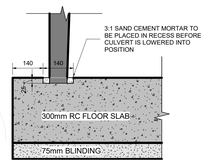
Item	Formwork Type	degree of accuracy
Foundations	Rough	II
Piers	Special Smooth Off Shutter	II
Abutment walls	Special Smooth Off Shutter	II
Abutment walls(Earth face)	Rough	II
Slab	Special Smooth Off Shutter	II
Barriers and handrails	Special Smooth Off Shutter	I

   Permissible deviation, Degree of accuracy in accordance with SANS 1200 G

5. All concrete edges to chamfered 25x25mm
4. LEGEND (to be adjusted to suite drawing, culvert drawings may require additional information on legend)
   U/S Beam – Upstand beam
   D/S Beam – Downstand Beam
   UNO – Unless noted otherwise
   Beam sizes shown as Width x Depth
   000 Top of concrete (TOC)
6. Testing of concrete
   Test cubes should be taken every 50m³ or for each pour (whichever is the least) or as required by the engineer.
7. Reinforcement
   a. All high tensile steel (Y Bars) to be Type C Class 2 Grade 1 with a minimum guaranteed yield stress of 450MPa as per SANS 920-2011
   b. All mild steel (R Bars) to have a minimum yield stress of 250MPa in accordance with SANS 920-2011

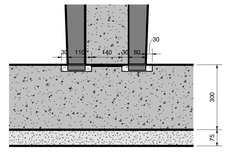
BRIDGE/CULVERT NOTES:

1. Description of structure
1.1 This culvert consists of 1 barrels of 2400x2400 Class 75S Precast rectangular portal culverts in accordance with SANS 986. The base slabs, wing walls and head walls are cast in-situ concrete.
1.2 All existing culvert or bridge structures to be demolished.
2. Design criteria
   a. Design Codes Used:
   TMH7 Parts 1&2
   TMH7 Part 3
   SANS 0100
   Code of procedure for the planning and design of highway and road structures in South Africa
3. Loadings used in accordance with TMH7 Part 2
   a. NA Loading
   b. NB Loading - Type NB36
   c. NC Loading - Type NC-30x5x40
   d. Reinforced concrete unit weight – 25.5kN/m³
   e. Premix unit weight - 21kN/m³
   f. Earth fill behind abutments - 20kN/m³



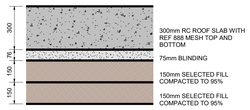
SECTION 2 - Callout 1 - Dependent 1

Scale 1 : 10



Section 3 - Callout 2 Copy 1

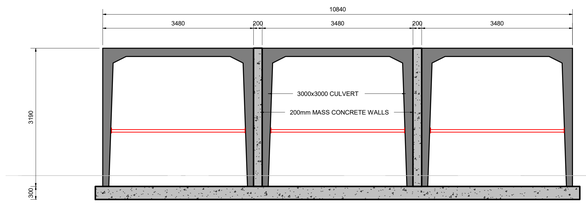
Scale 1 : 10



TYPICAL LAYERWORKS

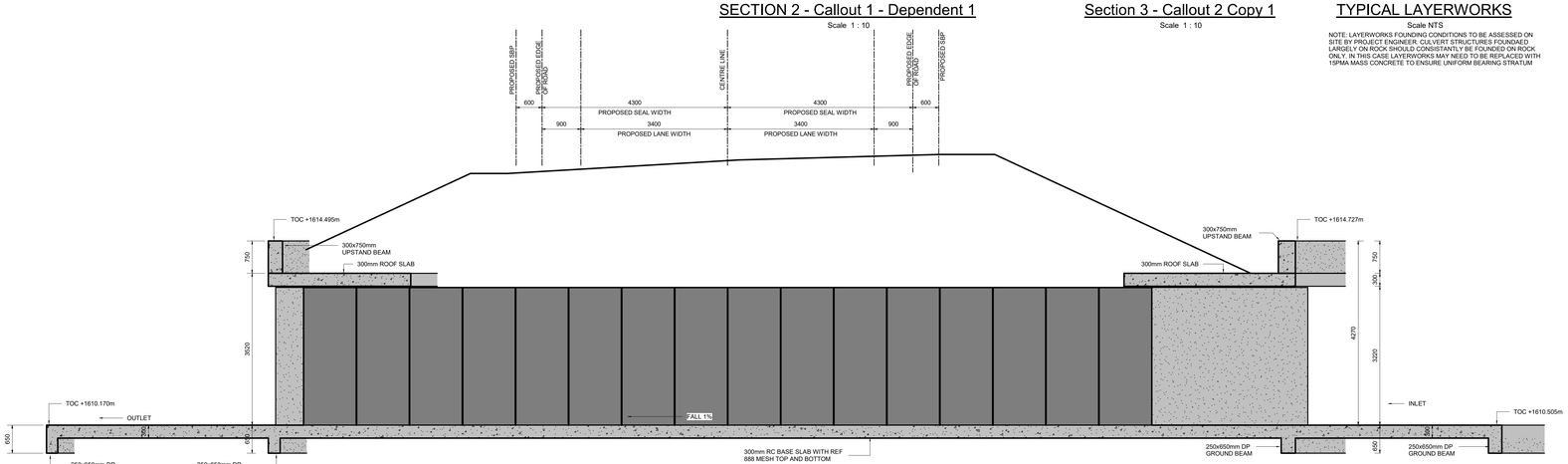
Scale NTS

NOTE: LAYERWORKS FOUNDING CONDITIONS TO BE ASSESSED ON SITE BY PROJECT ENGINEER. CULVERT STRUCTURES FOUNDAED LARGELY ON ROCK SHOULD CONSISTANTLY BE FOUNDED ON ROCK ONLY. IN THIS CASE LAYERWORKS MAY NEED TO BE REPLACED WITH 15PMA MASS CONCRETE TO ENSURE UNIFORM BEARING STRATUM



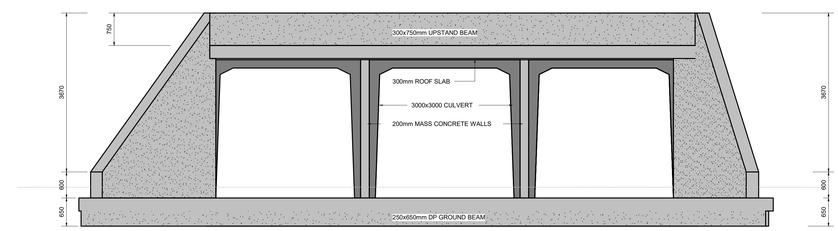
CULVERT CROSS SECTION

Scale 1 : 50



CULVERT LONG SECTION

Scale 1 : 50



INLET AND OUTLET

Scale 1 : 50

FOR TENDER PURPOSES ONLY

Drawing Nr	Reference Drawing	Date	Chkd	Apprv

Rev	Description	Date	Chkd	Apprv

Client

Province of the EASTERN CAPE TRANSPORT

Project

THE COMPLETION OF UPGRADING TO A SURFACE STANDARD DR08606(+/- 12Km) STERKSPRUIT TO MLAMLI

Consultant

MASILAKHE CONSULTING
DEVELOPMENT MANAGERS

Approved:

Name S.K.Anthony Date:

Drawing Title

CULVERT STRUCTURE @ CH9750

Proj. Engineer	S ANTHONY
Designed	A SCOTT
Drawn	B BIESKE
Checked	A SCOTT
Proj. Manager	VS RUNE

Scale: As indicated

Sheet No.

Project No.

Drawing No.: S04

Revision: T