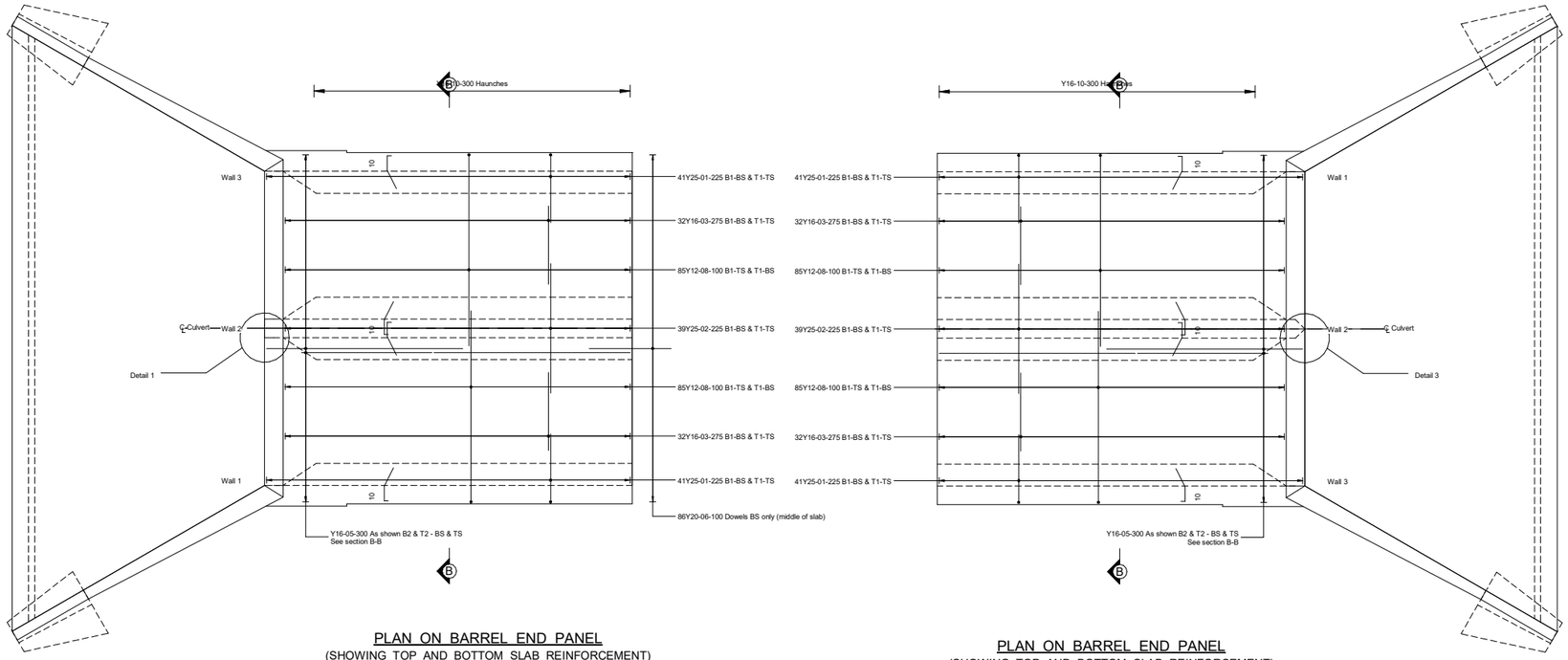
Note:
All dimensions to be checked on site before any work is put in hand.
Refer any discrepancies to the Engineer.

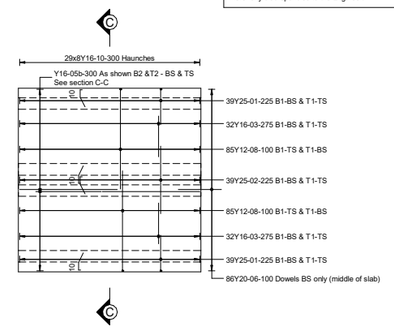


PLAN ON BARREL END PANEL
(SHOWING TOP AND BOTTOM SLAB REINFORCEMENT)

1 : 50

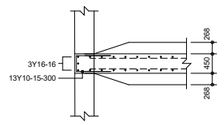
PLAN ON BARREL END PANEL
(SHOWING TOP AND BOTTOM SLAB REINFORCEMENT)

1 : 50



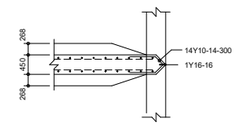
INTERIOR PANEL, TYPICAL PLAN
(SHOWING TOP AND BOTTOM SLAB REINFORCEMENT)

1 : 100



DETAIL 1

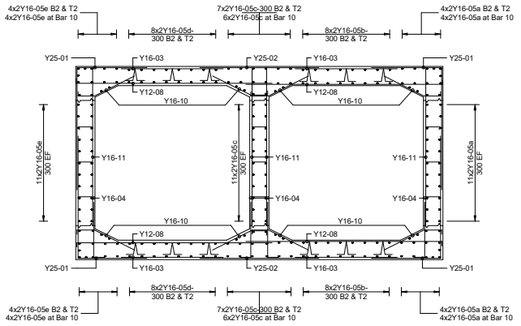
1 : 50



DETAIL 3

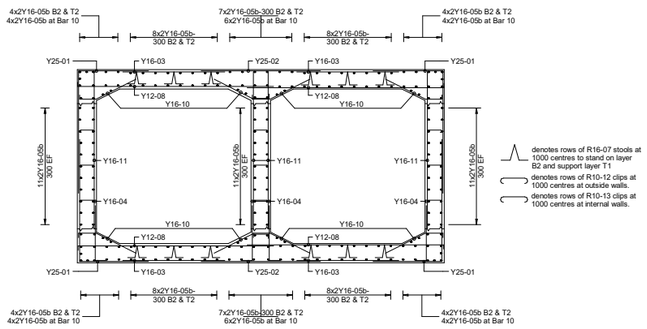
1 : 50

Haunches				
Location	Bar	Wall 1	Wall 2	Wall 3
Upstream End Panel	Y16-10	27x2	27x4	27x2
Downstream End Panel	Y16-10	27x2	27x4	27x2



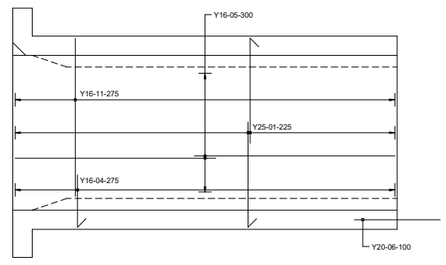
SECTION B-B

1 : 50



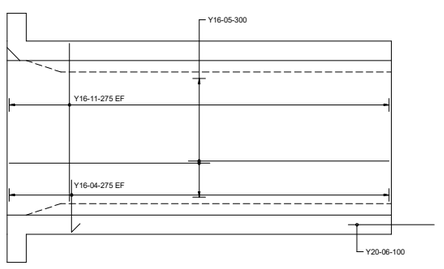
SECTION C-C

1 : 50



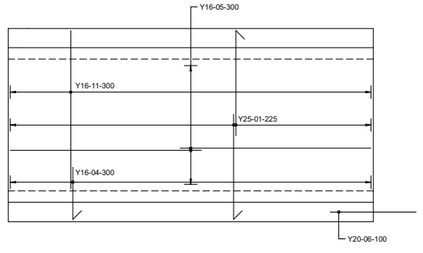
END PANEL, TYPICAL OUTSIDE WALL ELEVATION

1 : 50



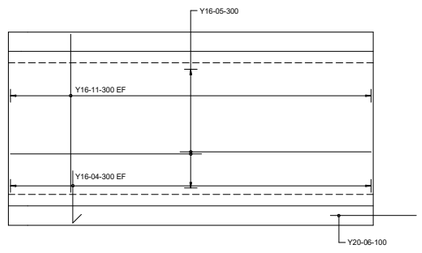
END PANEL, TYPICAL INSIDE WALL ELEVATION

1 : 50



INTERIOR PANEL, TYPICAL OUTSIDE WALL ELEVATION

1 : 50



INTERIOR PANEL, TYPICAL INSIDE WALL ELEVATION

1 : 50

NOTES

1. **Concrete class:**
   C12/15-20 Blinding
   D25/30-XC4(100)-20 Barrels, Earwings, Wingwalls & Apron Slabs
2. **Clear Cover to Steel Reinforcement**
   Concrete cover to reinforcement shall be 40mm.
3. **Steel Reinforcement**
   Reinforcement to conform to SANS-920-2011.
   Reinforcement shall be bent in accordance with SANS-282 Edition 6.

   Characteristic strengths:
   Mild steel (R) bars : 250 MPa
   High yield stress (Y) bars : 450 MPa

   Unless otherwise shown, the minimum reinforcement lap length shall be 45 x dia. of the smaller bar.

   At skewed barrel ends, Bars 01,02,03,08 and 09 may require cutting on-site.
4. **Legend**

   EF - Each face
   NF - Near face
   FF - Far face
   EW - Each way
   BS - Bottom slab
   TS - Top slab

   T1 T3 T2 T4 B2 B4 B1 B3
5. **Chamfers:**
   All exposed sharp concrete edges to be chamfered 20mmx 20mm unless otherwise shown.
6. **Formed concrete surface finishes:**
   Class F1 Concealed surfaces (Rough)
   Class F2 Visible surfaces (Smooth)
7. **Unformed concrete surface finishes:**
   Class U1 Concealed surfaces
   Class U2 Visible surfaces
8. **Guardrail mounting detail:**
   All welding to be full profile 5mm fillet welds.
   The detail to be hot-dip galvanized after fabrication.

No.	DATE	REVISION	CONSULT. ENG.

CONSTRUCTION RECORD (AS-BUILT)
WORKS CONTRACT ENGINEER
Name :
Prof. Reg. No. :
Date :
SANRAL PROJECT MANAGER
Name :
Date :

DESIGNED BY
NAME
Prof. Reg. No.
CHECKED BY
NAME
Prof. Reg. No.
DRAWN BY
NAME

CONSULTANT APPROVAL
Name :
Prof. Reg. No. :
Date :

HEAD OFFICE
48 Tambotie Avenue
Val de Grace
Pretoria
0184

PO Box 415
Pretoria 0001
South Africa

Tel: (012) 844 8000

SANRAL
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD
Reg No. 1998/009584/30
BUILDING SOUTH AFRICA THROUGH BETTER ROADS

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
R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL ARMCO
MAJOR CULVERT C9521 AT KM 6.94
BARREL DETAILS SHEET 2 OF 2

SCALE :
SHEET 03 OF 12

PROJECT NUMBER	N.XXXX	
DRAWING LOCATION DATA	START	END
ROUTE	R531	R531
SECTION	2	2
DRAWING km DISTANCE	6.94	6.94
DRAWING TYPE	STRUCTURES - CULVERTS	
BRIDGE/STRUCTURE No.		
CONSULTANT DRAWING No.	G156-07-6000/03	VER
SANRAL DOCUMENT #		

SANRAL TITLE BLOCK #16482234(DWG/PDF) VERSION V11.1