REINFORCEMENT SCHEDULE _ WINGWALL 1

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION
5036	R10	2	2	4	450	38	100	260	100						1.8	

TYPE & SIZE	MASS (kg)
R8	0.0
R10	1.1
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	1.1

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	0.0
Y16	0.0
Y20	0.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	0.0

REINFORCEMENT SCHEDULE _ WINGWALL 2

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION
5201	Y16	2	7	14	1000	37	620	380							14.0	
5202	Y16	2	1	2	2600	55	250	320	1610	320	250				5.2	
5203	Y16	2	1	2	2450	55	250	320	1470	320	250				4.9	
5204	Y16	2	1	2	2350	55	250	320	1330	320	250				4.7	
5205	Y16	2	1	2	2200	55	250	320	1200	320	250				4.4	
5206	Y16	2	1	2	2050	55	250	320	1060	320	250				4.1	
5207	Y16	2	1	2	1950	55	250	320	930	320	250				3.9	
5208	Y16	2	1	2	1800	55	250	320	790	320	250				3.6	
5209	Y16	2	1	2	1600	20	1600								3.2	
5210	Y16	2	1	2	1450	20	1450								2.9	
5211	Y16	2	1	2	1300	20	1300								2.6	
5212	Y16	2	1	2	1200	20	1200								2.4	
5213	Y16	2	1	2	1050	20	1050								2.1	
5214	Y16	2	1	2	900	20	900								1.8	
5215	Y16	2	1	2	750	20	750								1.5	
5216	Y12	2	14	28	1900	20	1900								53.2	
5217	Y16	2	1	2	2800	101	250	20	2550						5.6	
5218	Y16	2	1	2	2770	101	250	20	2400						5.5	
5219	Y16	2	1	2	2590	101	250	20	2200						5.2	
5220	Y16	2	1	2	2410	101	250	20	2000						4.8	
5221	Y16	2	1	2	2230	101	250	20	1850						4.5	
5222	Y16	2	1	2	2050	101	250	20	1650						4.1	
5223	Y16	2	1	2	1870	101	250	20	1500						3.7	
5224	Y12	2	1	2	2800	20	250	2550							5.6	
5225	Y12	2	1	2	2770	20	250	2400							5.5	
5226	Y12	2	1	2	2590	20	250	2200							5.2	
5227	Y12	2	1	2	2410	20	250	2000							4.8	
5228	Y12	2	1	2	2230	20	250	1850							4.5	
5229	Y12	2	1	2	2050	20	250	1650							4.1	
5230	Y12	2	1	2	1870	20	250	1500							3.7	
5231	Y10	2	13	26	850	114	350	170	350	25					22.1	
5232	Y12	2	6	12	1900	20	1900								22.8	
5233	Y12	2	2	4	1500	20	1500								6.0	
5234	Y12	2	2	4	1000	20	1000								4.0	
5235	Y20	2	6	12	2200	20	2200								26.4	

TYPE & SIZE	MASS (kg)
R8	0.0
R10	0.0
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	0.0

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	13.6
Y12	106.1
Y16	149.7
Y20	65.2
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	334.6

REINFORCEMENT SCHEDULE _ WINGWALL 2

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION
5236	R10	2	2	4	450	38	100	260	100						1.8	

TYPE & SIZE	MASS (kg)
R8	0.0
R10	1.1
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	1.1

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	0.0
Y16	0.0
Y20	0.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	0.0

REINFORCEMENT SCHEDULE _ APRON SLABS & SPLITTER BLOCKS

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION
6000	R12	2	75	150	3140	60	1120	320							471.0	
6001	Y16	2	16	32	8200	20	8200								262.4	
6002	R10	2	16	32	500	38	100	320	100						16.0	
6003	Y16	1	75	75	950	37	150	800							71.3	
6050	R10	20	6	120	760	38	200	380	200						91.2	
6052	R10	20	6	120	940	41	200	538	200	380					112.8	
6053	Y12	20	4	80	920	20	920								73.6	
6100	Y20	1	31	31	1900	20	1900								58.9	
6101	Y16	1	31	31	1200	39	900	150	240						37.2	
6102	Y20	1	2	2	8400	20	8400								16.8	

TYPE & SIZE	MASS (kg)
R8	0.0
R10	135.7
R12	418.2
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	554.0

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	65.4
Y16	586.0
Y20	187.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	838.3

REINFORCEMENT SCHEDULE _

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION

TYPE & SIZE	MASS (kg)
R8	0.0
R10	0.0
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	0.0

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	0.0
Y16	0.0
Y20	0.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	0.0

REINFORCEMENT SCHEDULE _

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION

TYPE & SIZE	MASS (kg)
R8	0.0
R10	0.0
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	0.0

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	0.0
Y16	0.0
Y20	0.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	0.0

REINFORCEMENT SCHEDULE _

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION

TYPE & SIZE	MASS (kg)
R8	0.0
R10	0.0
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	0.0

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	0.0
Y16	0.0
Y20	0.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	0.0

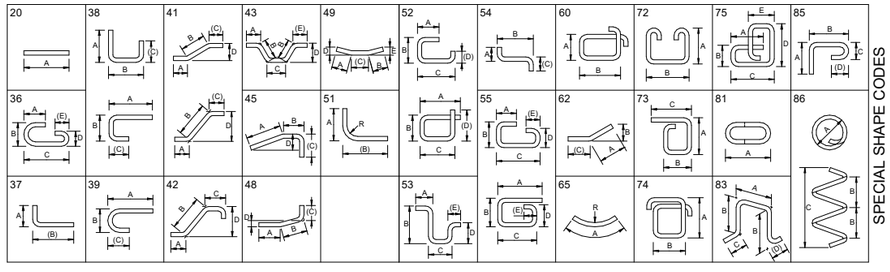
REINFORCEMENT SCHEDULE _

BAR MARK	TYPE & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL NUMBER	CUT LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	R (mm)	TOTAL LENGTH (m)	REVISION

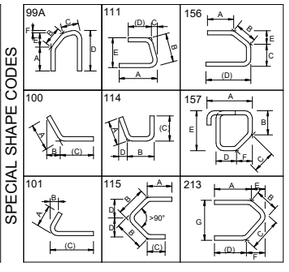
TYPE & SIZE	MASS (kg)
R8	0.0
R10	0.0
R12	0.0
R16	0.0
R20	0.0
R25	0.0
R32	0.0
R40	0.0
TOTAL 'R' MASS	0.0

TYPE & SIZE	MASS (kg)
Y8	0.0
Y10	0.0
Y12	0.0
Y16	0.0
Y20	0.0
Y25	0.0
Y32	0.0
Y40	0.0
TOTAL 'Y' MASS	0.0

STANDARD SHAPE CODES



SPECIAL SHAPE CODES



NOTES

1. **General:**
   1.1 Before ordering and before cutting and bending of reinforcement commences, the Contractor must check all schedules to ensure correctness. Where changes are necessary, they shall be referred to the Engineer.

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

2. **Steel Reinforcement:**
   2.1. Reinforcement shall be bent in accordance with SANS 282:2011 Edition 6.

   2.2. Three types of reinforcement can be specified on reinforcement drawings and bending schedules:
   2.2.1. Steel bars in accordance with SANS 920:2011 Edition 2.3:
   R: Hot-rolled mild steel bars of plain round cross-section having a characteristic strength of 250 MPa.
   Y: Hot-rolled high yield stress steel deformed bars having a characteristic strength of 450 MPa.
   2.2.2. Welded steel fabric in accordance with SANS 1024:2012 Edition 2.2.

   For example:
   R20 Denotes a 20mm diameter plain round hot-rolled mild steel bar.
   Y25 Denotes a 25mm diameter hot-rolled high yield stress deformed bar.
   Ref. 655 Denotes fabric reference 655 (mesh).

3. **Galvanising:**
   Bars denoted with (*) to be hot-dip galvanised as per project specifications and in accordance with SANS 121:2011 Edition 2

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
38 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.1998/015004/30
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

BENDING SCHEDULE - SHEET 2

SCALE :

SHEET 12 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.	G156-07-6000/12	VER
SANRAL DOCUMENT #		

SANRAL TITLE BLOCK #164823/4(DWG/PDF) VERSION V11.1