



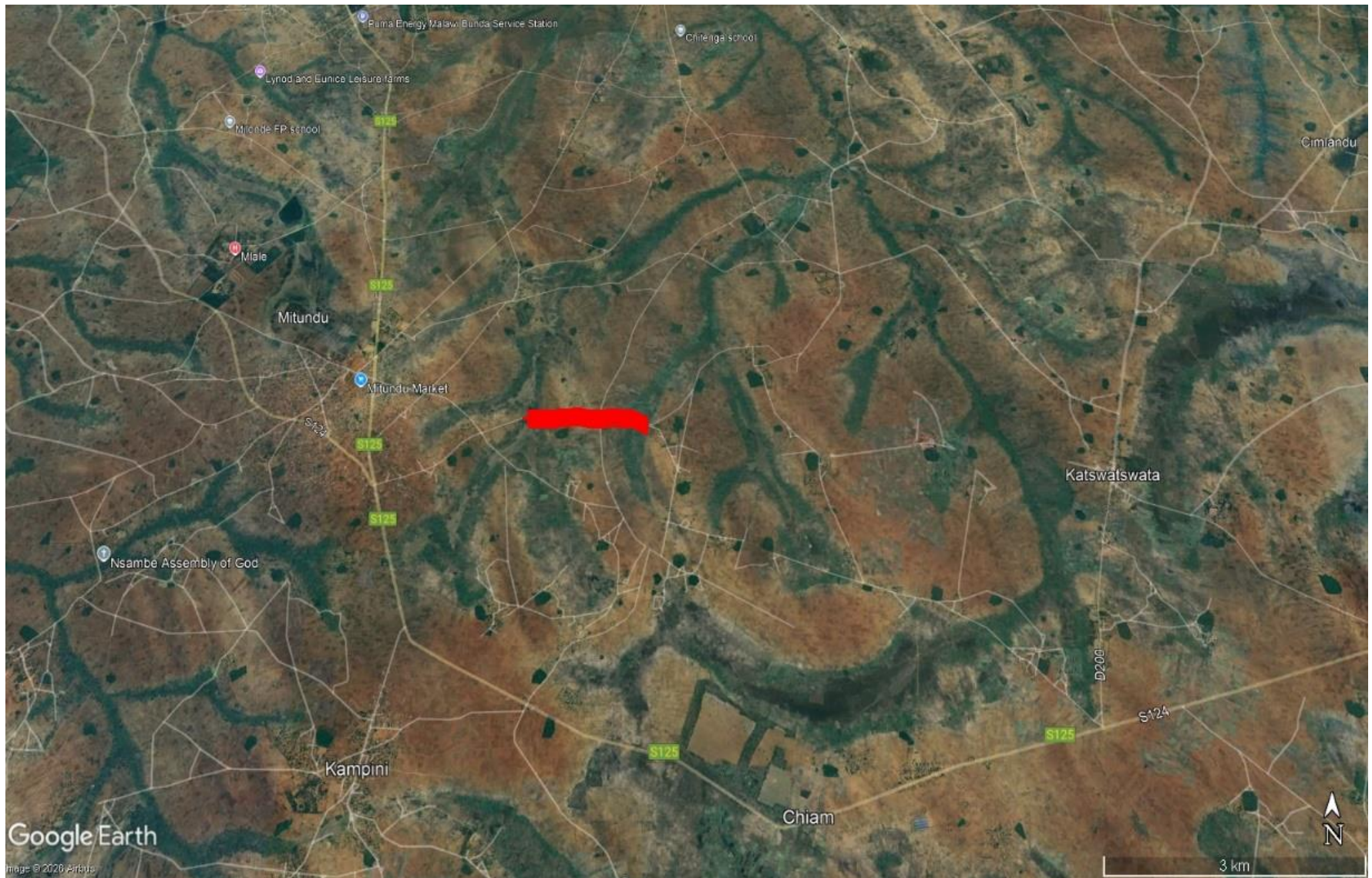
SOUTHERN AFRICA TRADE AND CONNECTIVITY PROJECT
(SATCP)

MINISTRY OF TRANSPORT AND PUBLIC WORKS

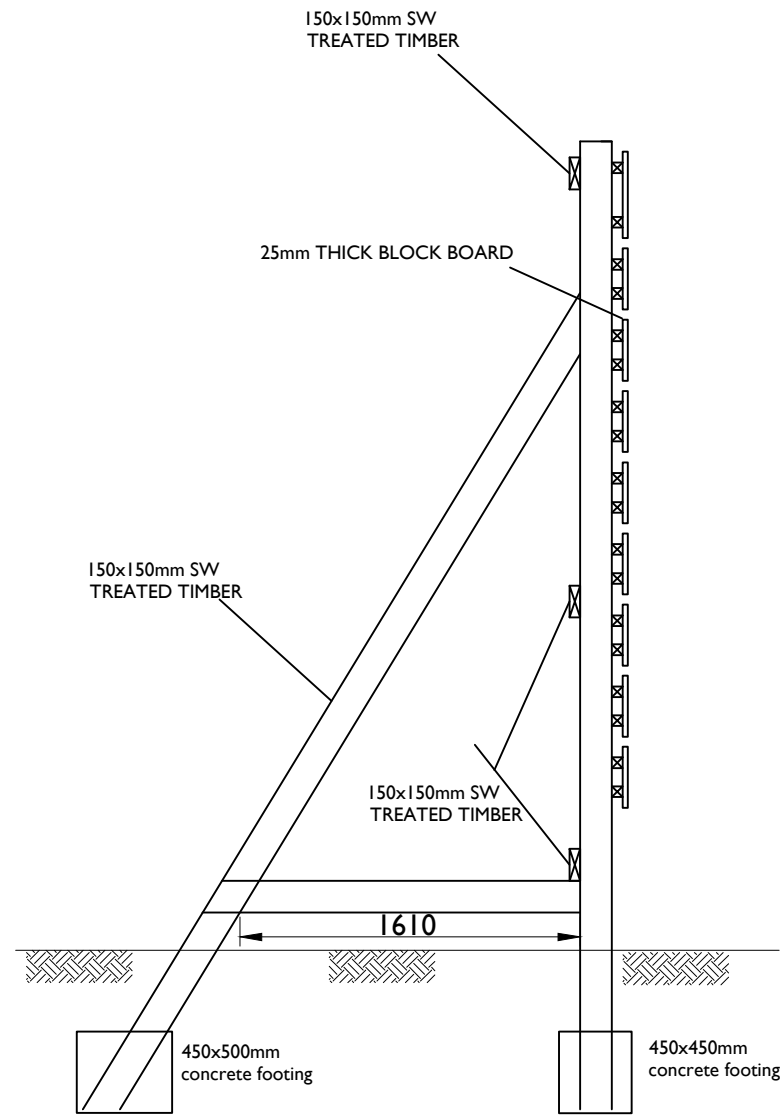
MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT
FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD
(3.9KMs) IN LILONGWE DISTRICT

THE BOOK OF DRAWINGS -TENDER PURPOSE

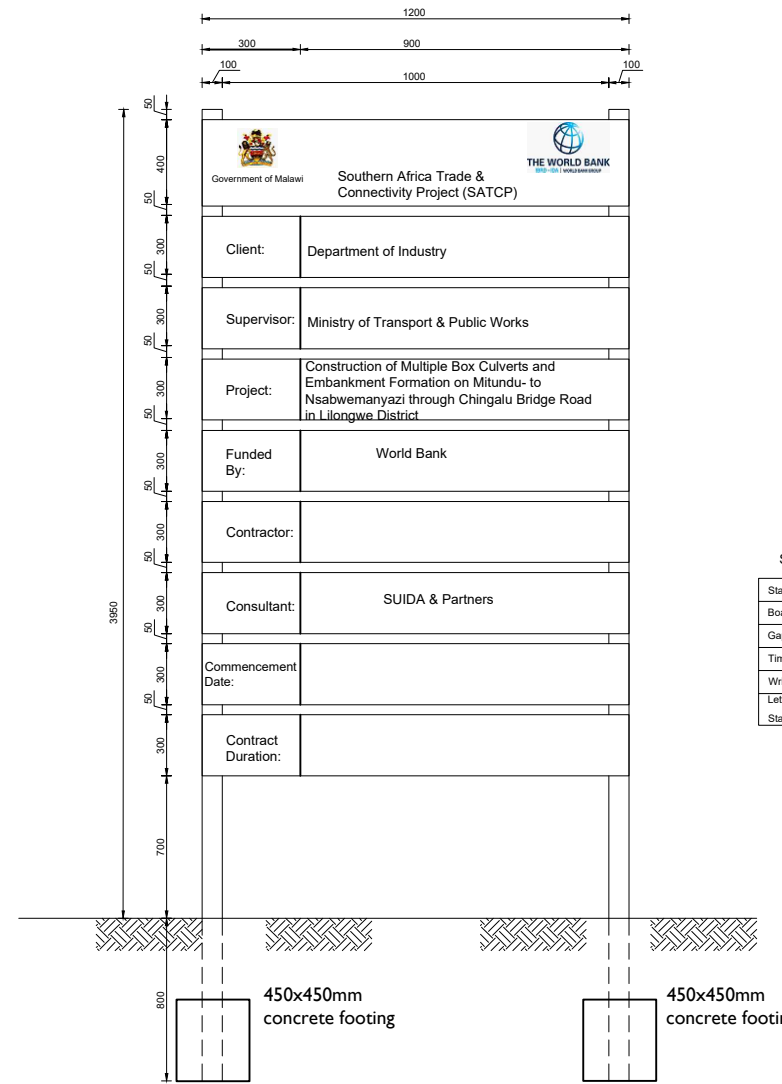
MARCH 2026



LOCATION MAP OF MITUNDU TO NSABWEMANYAZI ROAD IN LILONGWE DISTRICT



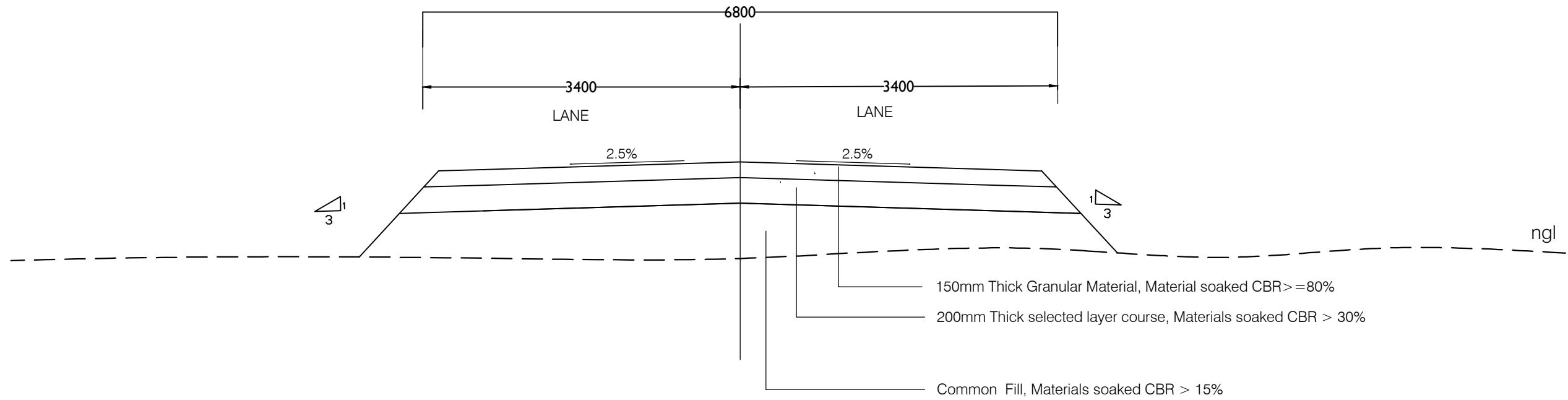
SIDE ELEVATION



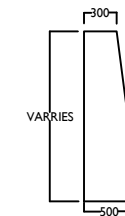
SPECIFICATIONS	
Stands	100mmx50mmx3250mm
Boards	300mmx25mmx1200mm
Gaps between board	= 50mm
Timber to be treated	soft wood
Writings to appear on	one side only
Lettering	
Standard sizes of black colour	on white background.

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		DETAILS OF PROJECT SIGN BOARD		<input type="radio"/> DESIGN <input type="radio"/> DRAWING <input type="radio"/> CONSTRUCTION <input type="radio"/> AS-BUILT	
1	REVISION 1	25-02-206			 P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		 Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		DESIGN CHECKED BY F. N. RENg DATE: _____ SIGNATURE: _____ DRAWN Z. B DATE: _____ SIGNATURE: _____ DRAWING CHECKED BY F. N. RENg DATE: _____ SIGNATURE: _____ DRAWING APPROVED BY MINISTRY DATE: _____ SIGNATURE: _____		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1 DRAWING NO: _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/PSB-001 SHEET NO: 1 OF 1	

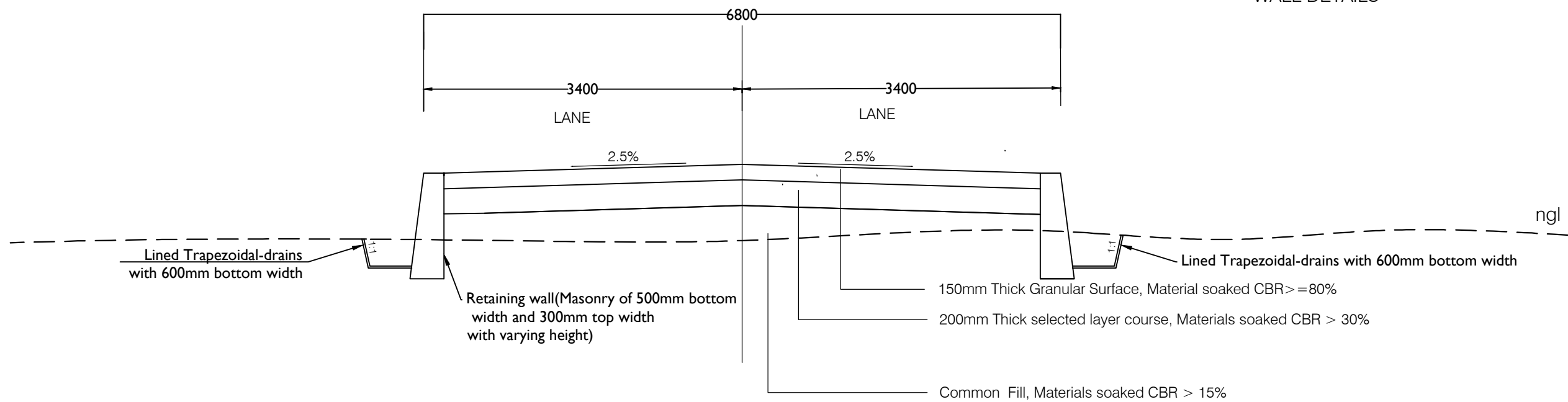
TYPICAL SECTIONS





TYPICAL CROSS SECTION IN FILL



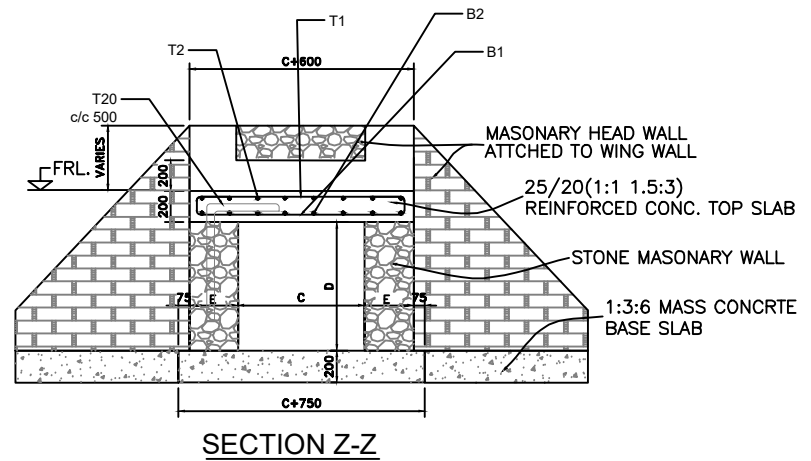
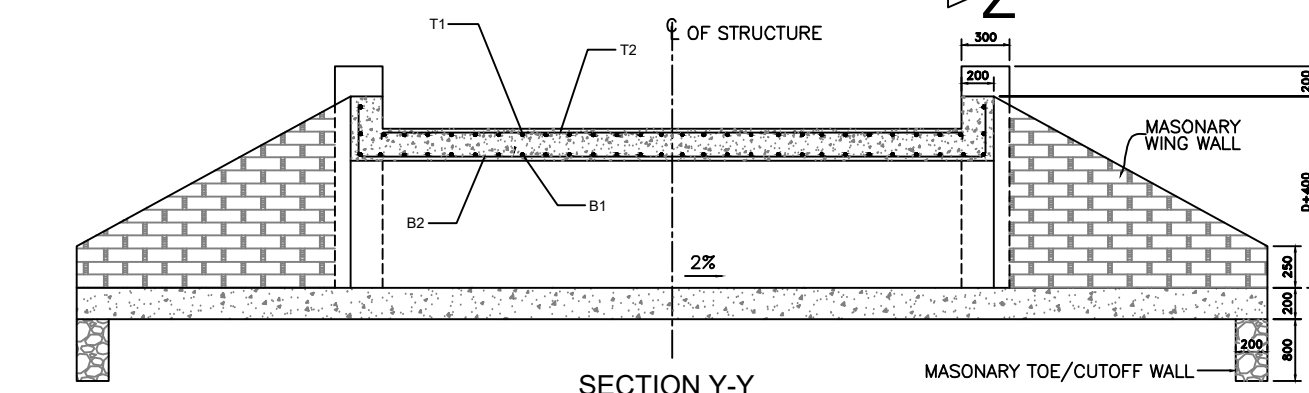
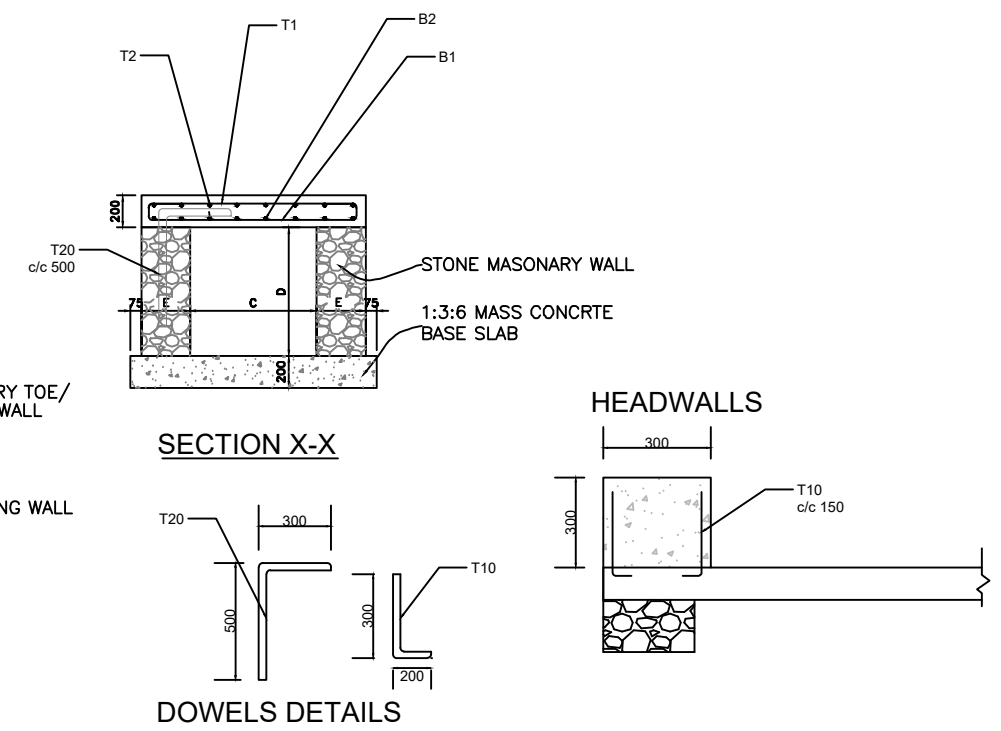
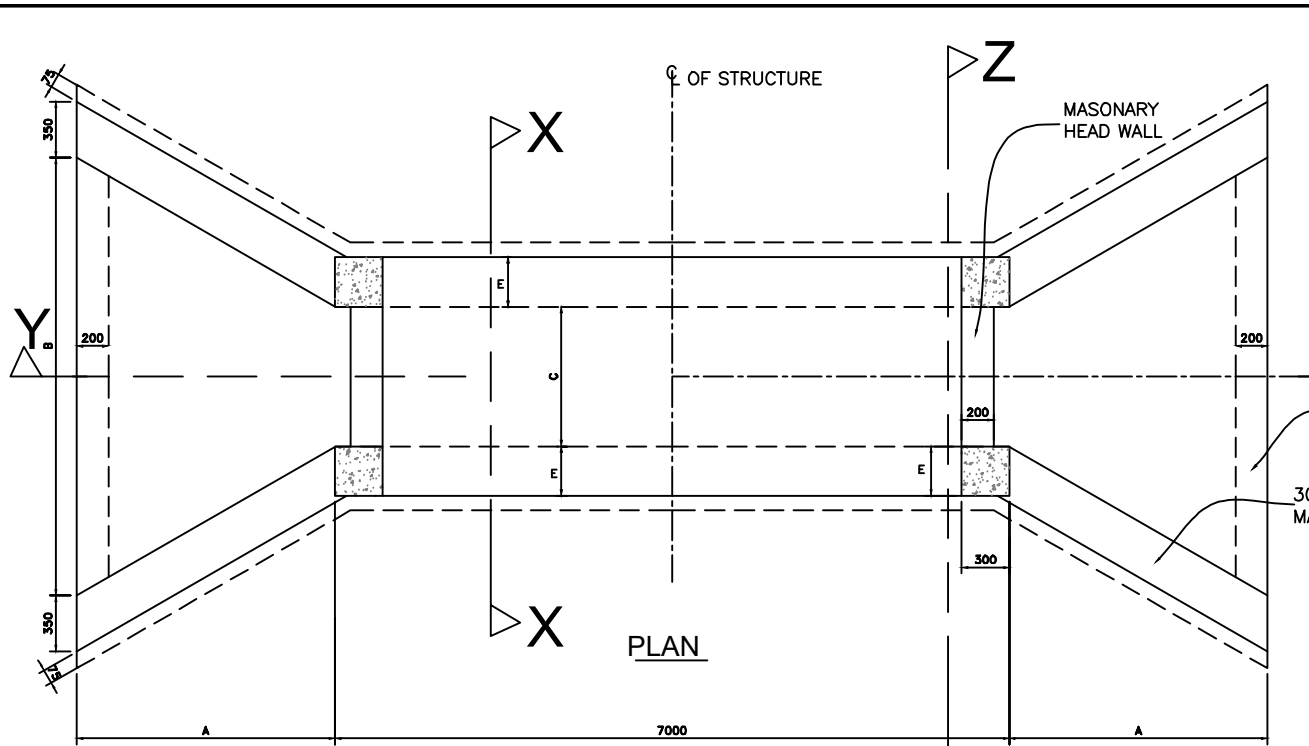
MASONRY RETAINING WALL DETAILS



TYPICAL CROSS SECTION IN FILL WITH RETAINING WALL

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		TYPICAL CROSS SECTION FOR THE ROAD IN EMBANKMENT		<input type="radio"/> CONCEPT DRAWING <input type="radio"/> PRELIMINARY DRAWING <input type="radio"/> PROPOSED FOR CONSTRUCTION DRAWING <input type="radio"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-2026			 P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		 Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		DESIGN CHECKED BY F. N. REng DATE: _____ DRAWN Z. B DATE: _____ DRAWING CHECKED BY F. N. REng DATE: _____ DRAWING APPROVED BY MINISTRY DATE: _____		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1 DRAWING NO: _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/TS-303 SHEET NO: 1 OF 1	

DRAINAGE STRUCTURES



FOR 1M WIDTH SINGLE CELL BOX																
CULVERT TYPE	DIMENSIONS (MM)					NO. OF CELLS	SLAB THK. (MM)	BAR MARK	M1 (MM)	M2 (MM)	NO. OF BARS	BAR MARK	M1 (MM)	M2 (MM)	NO. OF BARS	BAR DESCRIPTION
	A	B	C	D	E											
BC1	2000	5600	1000	1000	300	1	200	B1	120	920	48	B2	120	6920	7	T10-01-150
								T1	120	920	48	T2	120	6920	7	T10-01-150
BC2	2400	6895	1500	1000	300	1	200	B1	120	1420	48	B2	120	6920	11	T12-01-150
								T1	120	1420	48	T2	120	6920	11	T10-01-150
BC3	2400	6895	1500	1500	500	1	200	B1	120	1420	48	B2	120	6920	11	T12-01-150
								T1	120	1420	48	T2	120	6920	11	T10-01-150
BC4	2800	8200	2000	1000	500	1	200	B1	120	1920	48	B2	120	6920	14	T12-01-150
								T1	120	1920	48	T2	120	6920	14	T12-01-150
BC5	2800	8200	2000	2000	600	1	200	B1	120	1920	48	B2	120	6920	14	T12-01-150
								T1	120	1920	48	T2	120	6920	14	T12-01-150

NOTES :-
 . ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE SPECIFIED.
 . ARRANGEMENT FOR COMBINATIONS OF MULTIPLE BOX CULVERTS TO BE DETERMINED BY THE

AMENDMENTS		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-2018


LEGEND	

CONSULTANT'S DETAIL:



SUIDA & PARTNERS
 P.O Box 32345, Chichiri, Blantyre 3
 Malawi
 Tel: + 888 343 523/ 999 343 523
 Email info@suidamw.com

CLIENT'S DETAIL:



Southern Africa Trade Connectivity Project,
 Ministry of Transport and Public Works
 Capital Hill, Off Chilembwe Road
 private Bag 322, Lilongwe

DESIGNED
Z. B
 SIGNATURE: _____ DATE: _____
 DESIGN CHECKED BY
F. N. RENg
 SIGNATURE: _____ DATE: _____
 DRAWN
Z. B
 SIGNATURE: _____ DATE: _____
 DRAWING CHECKED BY
F. N. RENg
 SIGNATURE: _____ DATE: _____
 DRAWING APPROVED BY MINISTRY
 SIGNATURE: _____ DATE: _____

DRAWING TITLE:
STANDARD SINGLE CELL BOX CULVERT DETAILS

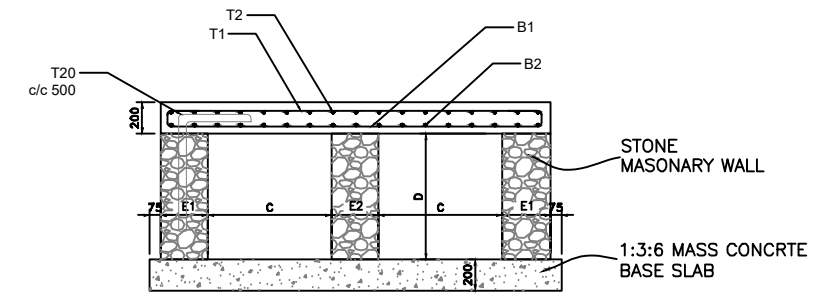
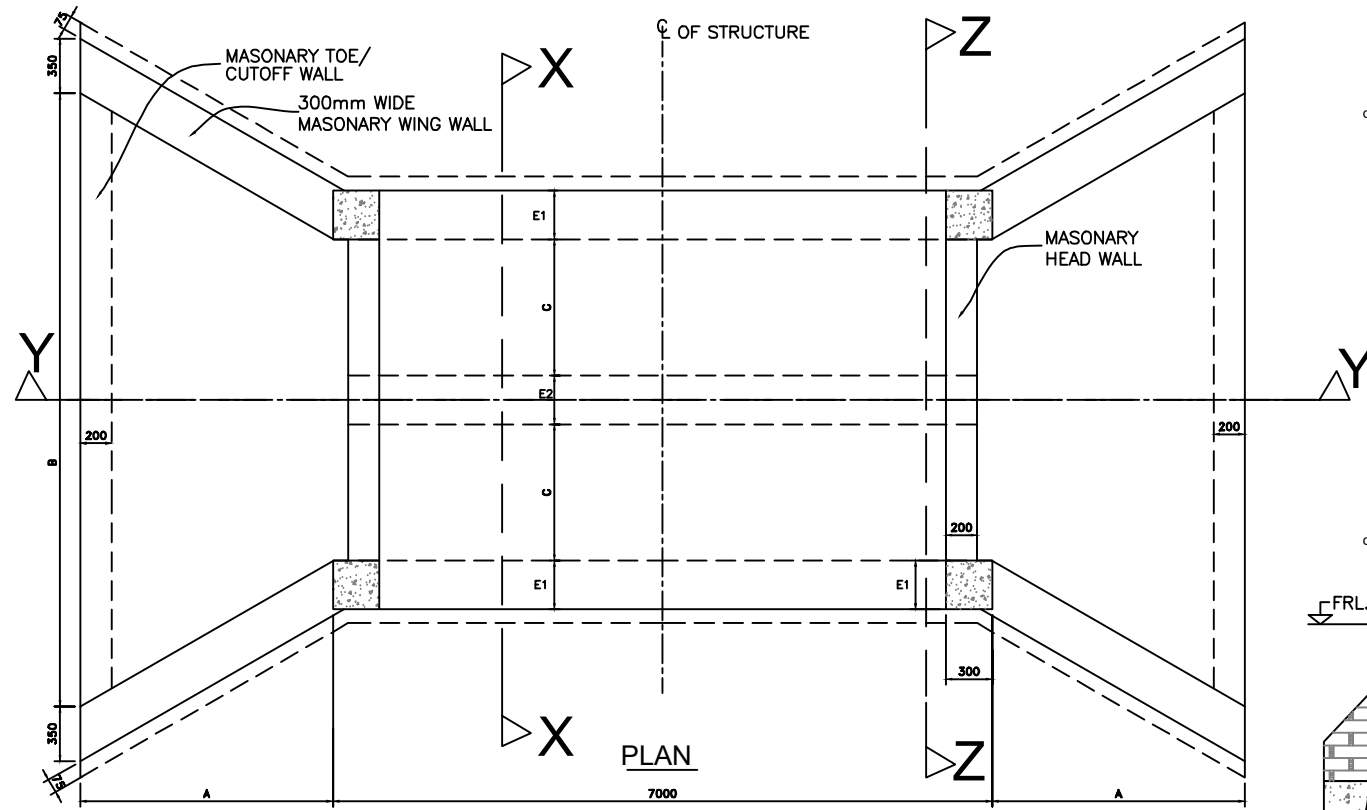
DESCRIPTION OF PROJECT:
 MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT

CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025

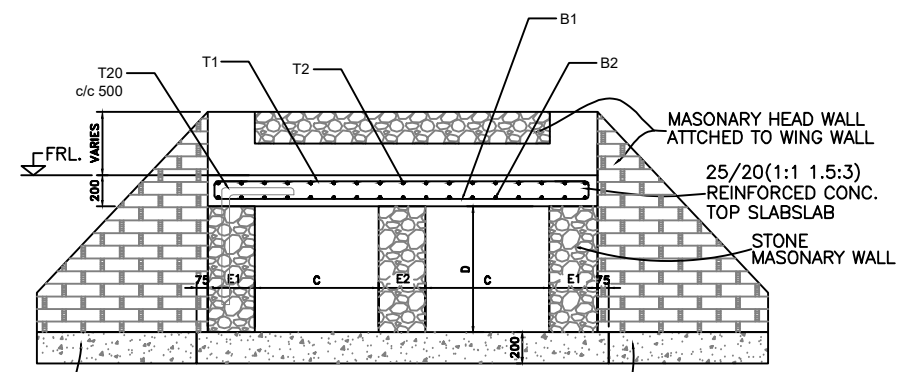
PROJECT STATUS

PLANNING/PROJECT ENGINEER: _____
 INSPECTOR OF WORKS: _____
 REMARKS: _____ ORIGINAL PAPER SIZE: A1

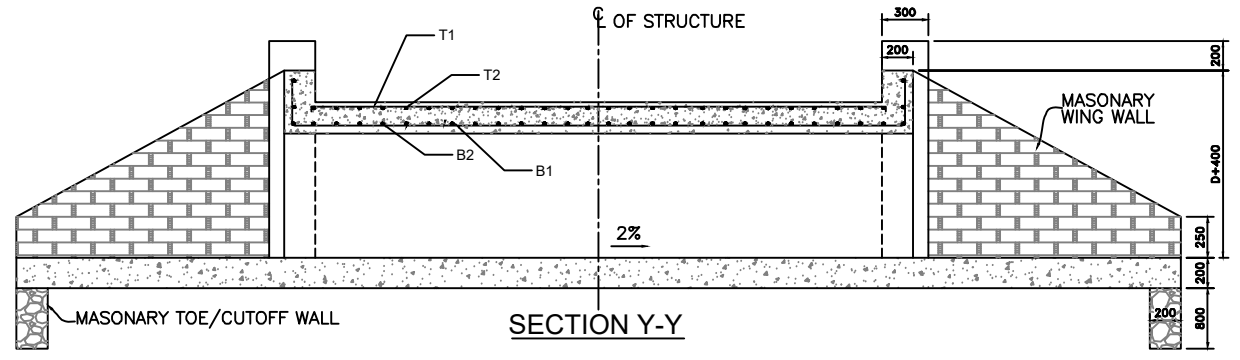
DRAWING NO: _____ SHEET NO: 1 OF 1



SECTION X-X

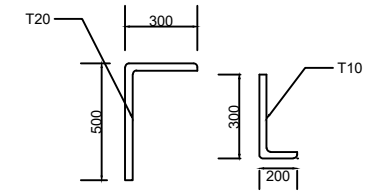
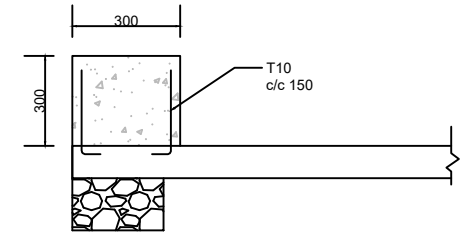


SECTION Z-Z



SECTION Y-Y

HEADWALLS

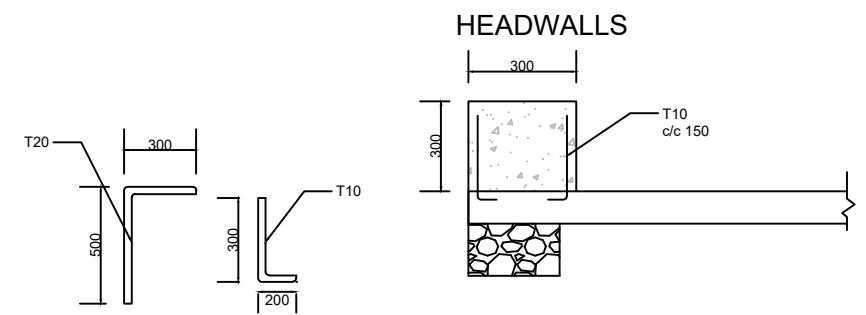
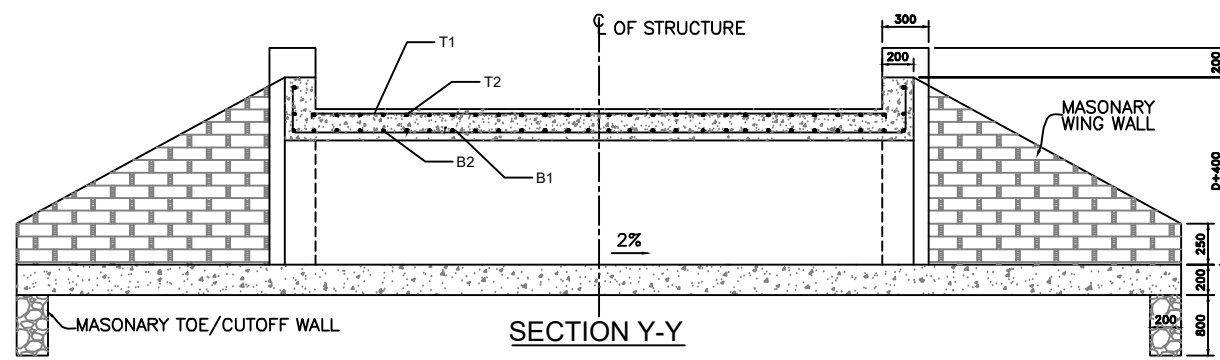
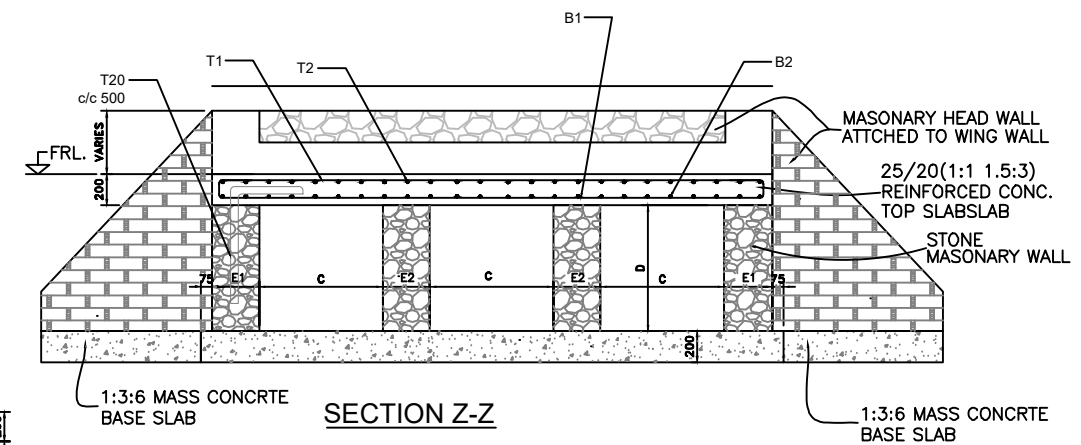
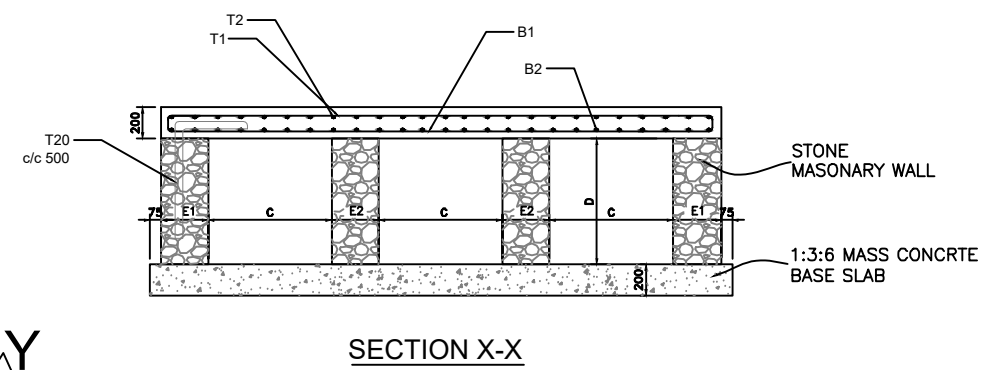
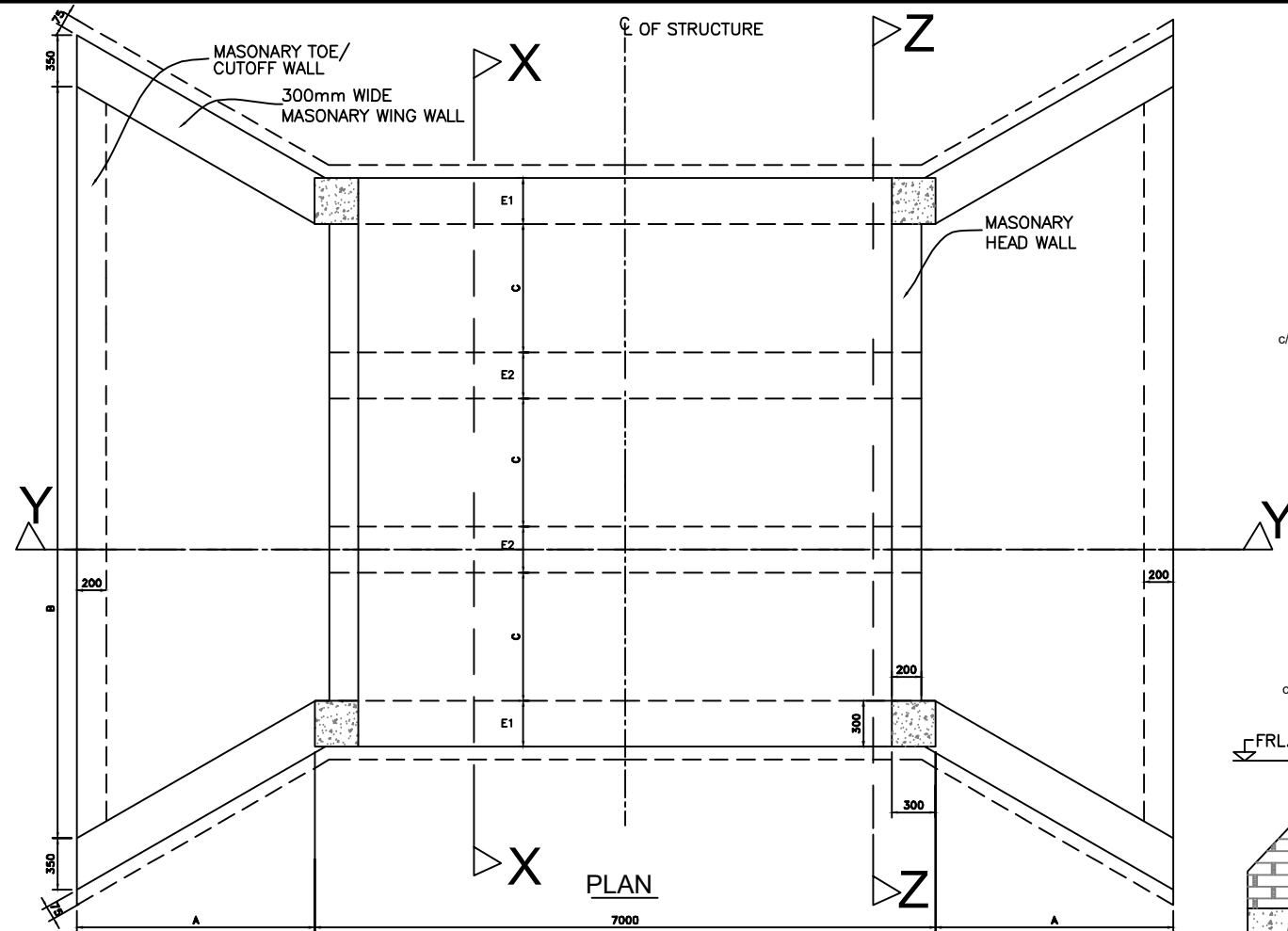


DOWELS DETAILS

NOTES :-
 . ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE SPECIFIED.
 . ARRANGEMENT FOR COMBINATIONS OF MULTIPLE BOX CULVERTS TO BE DETERMINED BY THE SUPERVISION ENGINEER ON SITE

FOR 1M WIDTH SINGLE CELL BOX																	
CULVERT TYPE	DIMENSIONS (MM)						NO. OF CELLS	SLAB THK. (MM)	BAR MARK	M1	M2	NO. OF BARS	BAR MARK	M1	M2	NO. OF BARS	BAR DESCRIPTION
	A	B	C	D	E1	E2				(MM)	(MM)			(MM)	(MM)		
BC6	2400	10200	1500	1500	500	600	2	200	B1	120	4520	48	B2	120	6920	31	T12-01-150
									T1	120	4520	48	T2	120	6920	31	T10-01-150

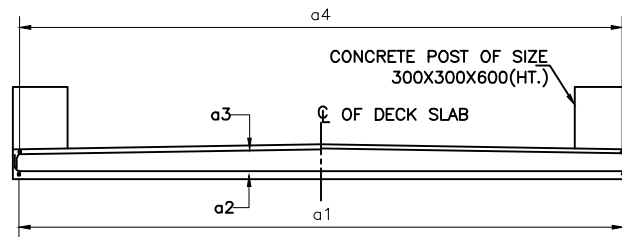
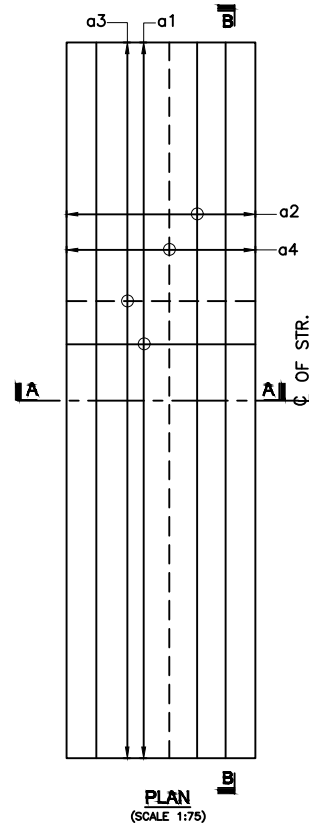
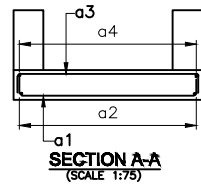
AMENDMENTS NR. DESCRIPTION DATE 1 REVISION 1 25-02-206			LEGEND			CONSULTANT'S DETAIL: SUIDA & PARTNERS P. O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com			CLIENT'S DETAIL: Southern African Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe			DESIGNED: Z. B DESIGN CHECKED BY: F. N. RENG DRAWN: Z. B DRAWING CHECKED BY: F. N. RENG DRAWING APPROVED BY MINISTRY:			DRAWING TITLE: STANDARD DOUBLE CELL BOX CULVERT DETAILS DESCRIPTION OF PROJECT: MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT			PROJECT STATUS PLANNING PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ DATE: _____ ORIGINAL PAPER SIZE: A1		
									CONTRACT NO.: _____ PROJECT NO.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LMI/SBC-002			DRAWING NO.: _____ SHEET NO.: 1 OF 1								



NOTES :-
 . ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE SPECIFIED.
 . ARRANGEMENT FOR COMBINATIONS OF MULTIPLE BOX CULVERTS TO BE DETERMINED BY THE SUPERVISION ENGINEER ON SITE

CULVERT TYPE	DIMENSIONS (MM)						NO. OF CELLS	SLAB THK. (MM)	BAR MARK	M1		M2		NO. OF BARS	BAR MARK	M1		M2		NO. OF BARS	BAR DESCRIPTION
	A	B	C	D	E1	E2				(MM)	(MM)	(MM)	(MM)			(MM)	(MM)	(MM)	(MM)		
BC7	2800	13600	2000	1000	500	600	3	200	B1	120	7920	48	B2	120	6920	54	T12-01-150				
									T1	120	7920	48	T2	120	6920	54	T12-01-150				
BC8	2800	13600	2000	2000	500	800	3	200	B1	120	7920	48	B2	120	6920	54	T12-01-150				
									T1	120	7920	48	T2	120	6920	54	T12-01-150				

AMENDMENTS NR. DESCRIPTION DATE 1 REVISION 1 25-02-2018			LEGEND			CONSULTANT'S DETAIL: SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com			CLIENT'S DETAIL: Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chibemwe Road private Bag 322, Lilongwe			DESIGNED: Z. B DESIGN CHECKED BY: F. N. RENg DRAWN: Z. B DRAWING CHECKED BY: F. N. RENg			DRAWING TITLE: STANDARD THREE CELL BOX CULVERT DETAILS DESCRIPTION OF PROJECT: MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT			PROJECT STATUS PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1 SHEET NO: 1 OF 1		
									CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/SBC-003											



SECTION B-B
(SCALE 1:75)

LEGEND :

TOP BARS SHOWN THUS
 BOTTOM BARS SHOWN THUS

TABLE OF BAR BENDING SCHEDULE FOR SLAB HAVING SPAN 2000mm. :-

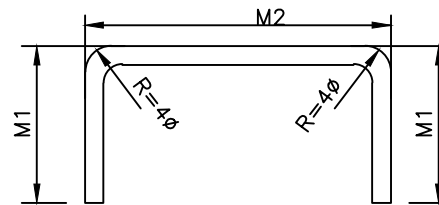
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REIN. SCHEDULE :-

SL. NO.	DESCRIPTION	SHAPE
	FOR SPAN 2000mm.	
a1	16Y @ 150 c/c	
a2	8Y @ 150 c/c	
a3	10Y @ 250 c/c	
a4	10Y @ 250 c/c	

TABLE FOR SLAB :-

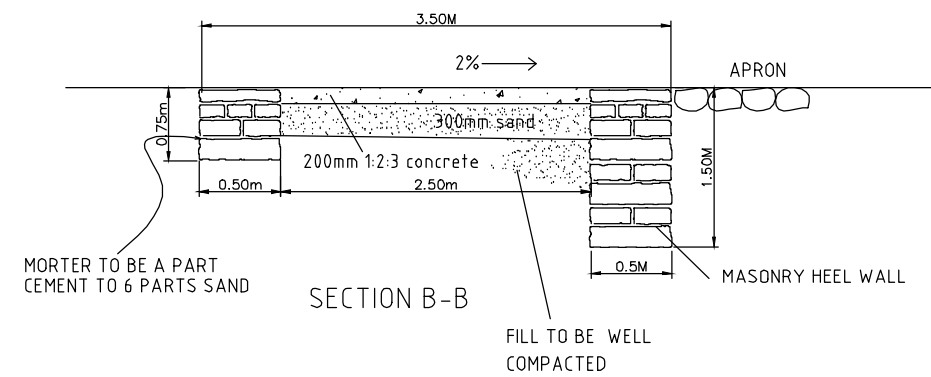
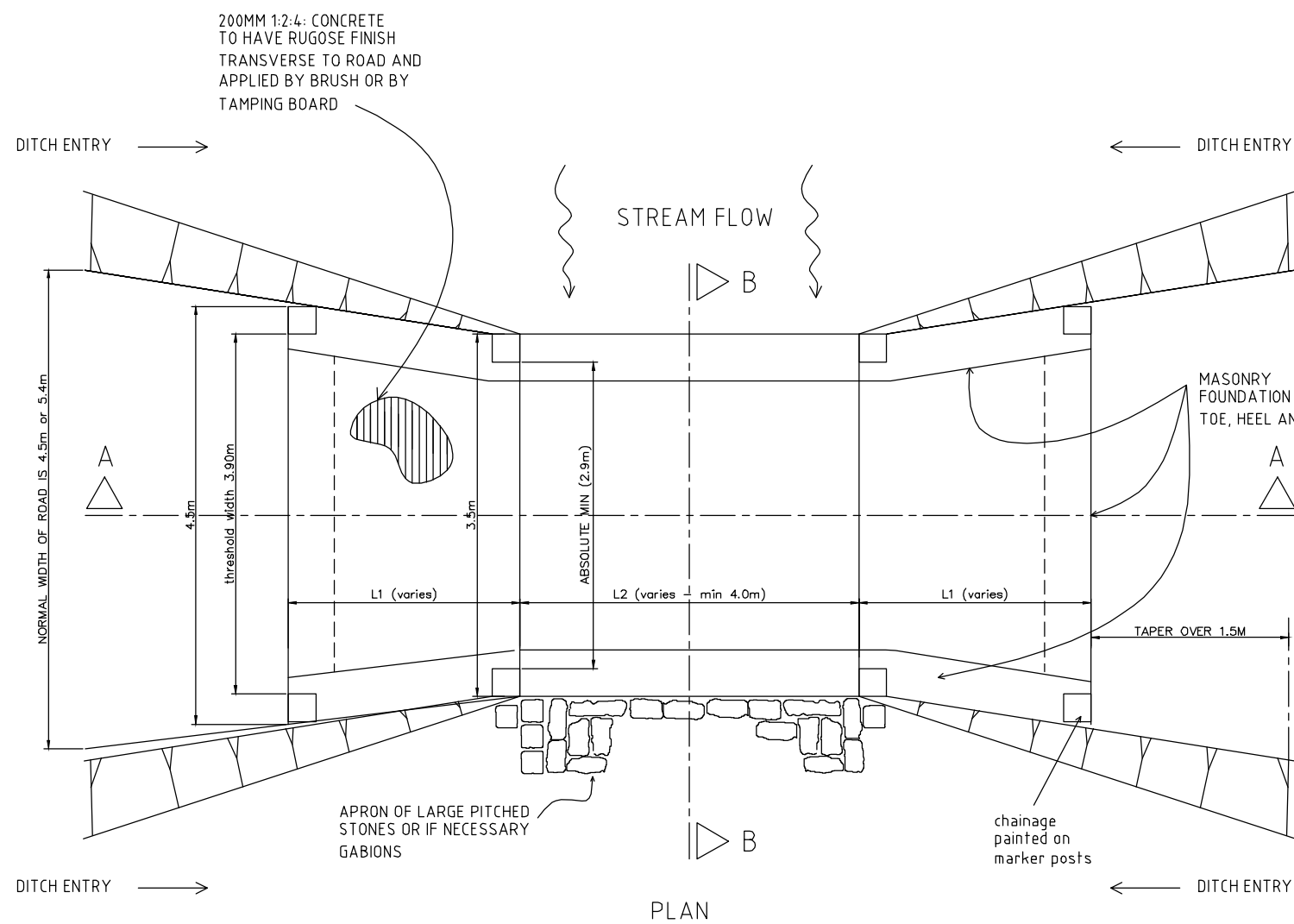
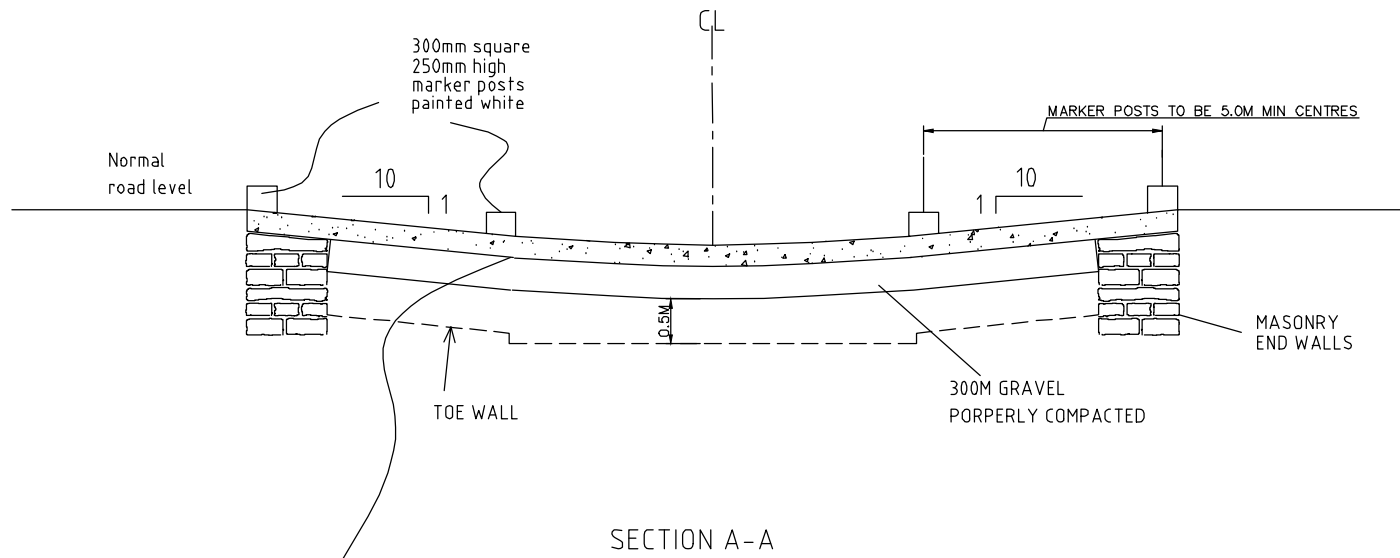
SL. NO.	SPAN (mm)	THICKNESS OF SLAB (mm)
1	2000	250 To 300



NOTES :-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. CONCRETE GRADE FOR RCC PRECAST GIRDER SHALL BE CLASS 40/20.
4. GRADE OF STEEL SHALL BE H.Y.S.D. GRADE 460
5. THE CONCRETE COVER FOR REINFORCEMENT SHALL BE 40mm.
6. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER SHEETS OF THIS DRAWING.
7. FOR ALL OTHER NOTES REFER 'GENERAL NOTES' DRAWING.

AMENDMENTS			LEGEND	CONSULTANT'S DETAIL:	CLIENT'S DETAIL:	DESIGNED	DRAWING TITLE:	PROJECT STATUS					
NR.	DESCRIPTION	DATE		SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com	Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe	DESIGNED	REINFORCEMENT DETAIL OF TOPSLAB OF MASONRY WALL BOX CULVERT	<input type="checkbox"/> CONSULTANT DRAWING <input type="checkbox"/> DESIGN DRAWING <input type="checkbox"/> PRELIMINARY DRAWING <input type="checkbox"/> AS-BUILT DRAWING					
1	REVISION 1	25-02-2026				DESIGN CHECKED BY	F. N. RENJ	DESCRIPTION OF PROJECT	MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT				
						DRAWN	Z. B	REMARKS:	ORIGINAL PAPER SIZE: A1				
						DRAWING CHECKED BY	F. N. RENJ	INSPECTOR OF WORKS:	SHEET NO: 1 OF 1				
						DRAWING APPROVED BY	F. N. RENJ	DATE:	NOVEMBER 2025	CONTRACT No.:	PROJECT No.:	SCALE:	1:1000



1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. CONCRETE GRADE FOR RCC PRECAST GIRDER SHALL BE CLASS 40/20.
4. GRADE OF STEEL SHALL BE H.Y.S.D. GRADE 460
5. THE CONCRETE COVER FOR REINFORCEMENT SHALL BE 40mm.
6. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER SHEETS OF THIS DRAWING.
7. FOR ALL OTHER NOTES REFER 'GENERAL NOTES' DRAWING.

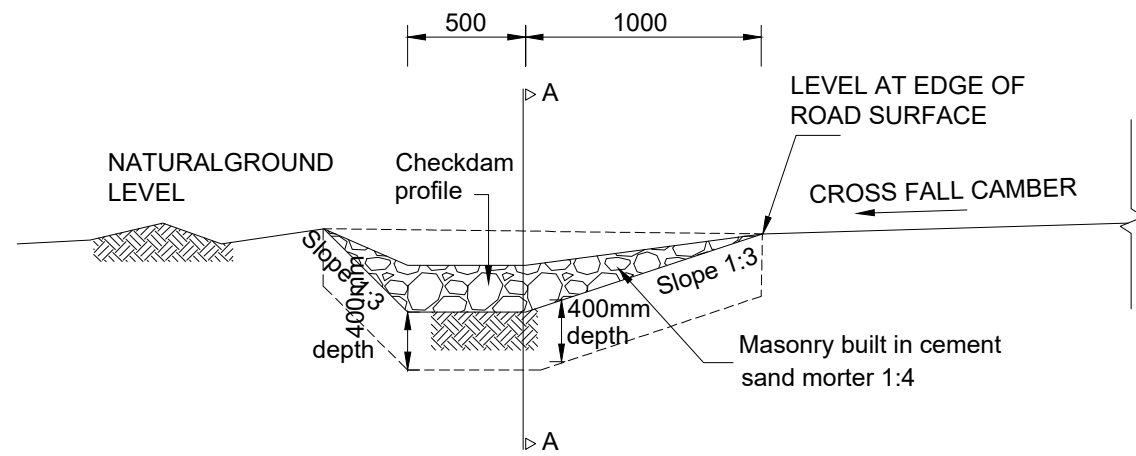
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		TYPICAL DETAILS OF CONCRETE DRIFT		<input type="radio"/> CONSULTING ENGINEER <input type="radio"/> DESIGNER <input type="radio"/> CHECKED <input type="radio"/> APPROVED	
1	REVISION 1	25-02-2018							DESIGN CHECKED BY F. N. RENg DATE: _____		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
									DRAWN Z. B DATE: _____		DRAWING CHECKED BY F. N. RENg DATE: _____		DRAWING NO. _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/STR/CD-001 SHEET NO. 1 OF 1	

STANDARD DRAWINGS

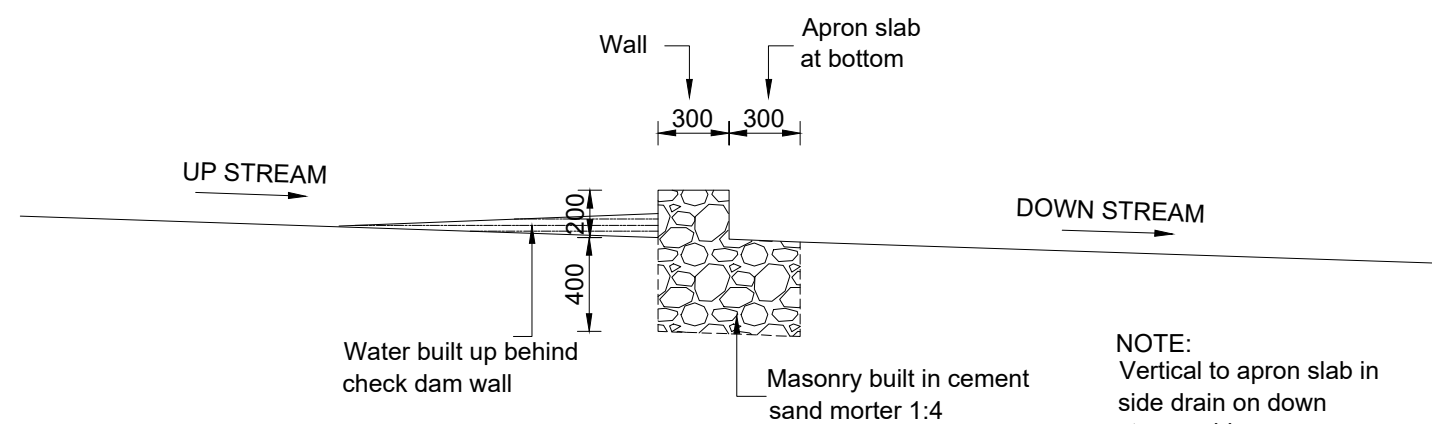
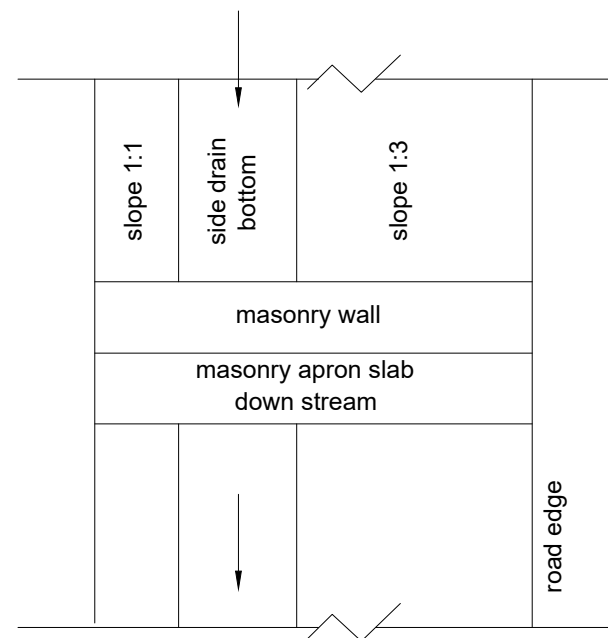
NOTE: Check dam to be used where soil is erodable and as indicated in the table below

TABLE SCOUR CHECK SPACING

GRADIENT OF ROAD (%)	SCOUR CHECK INTERNAL (m)
3	Not Required
4	17
5	13
6	10
7	8
8	7
9	6
10	5
12	4





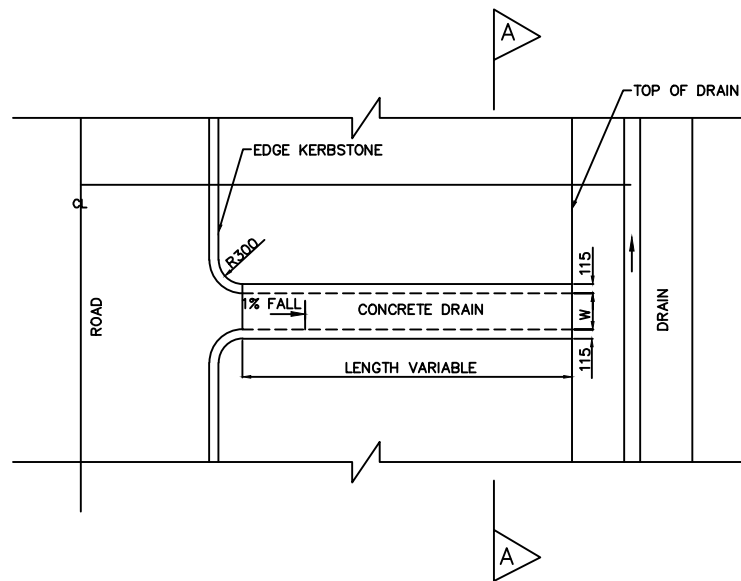
SIDE DRAIN ELEVATION WITH CHECK DAM CONSTRUCTED



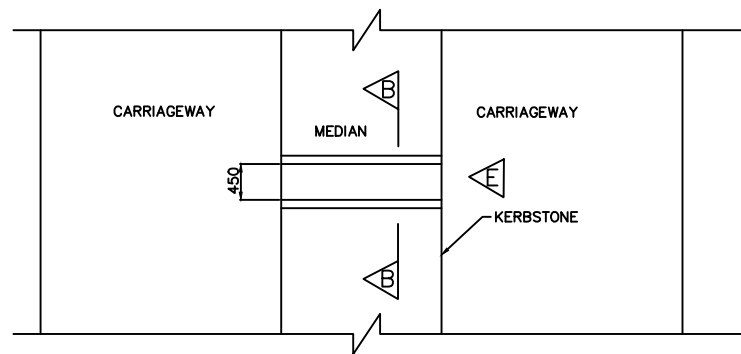
SECTION A-A

NOTE: Vertical to apron slab in side drain on down stream side

AMENDMENTS			PLAN	CONSULTANT'S DETAIL:	CLIENT'S DETAIL:	DESIGNED		DRAWING TITLE:		PROJECT STATUS					
NR.	DESCRIPTION	DATE				DESIGNED BY	DATE	DESIGNED BY	DATE	CONTRACT NO.	PROJECT NO.	SCALE	DATE	DRAWING NO.	SHEET NO.
1	REVISION 1	25-02-2018		 <p>SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com</p>	 <p>Southern African Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe</p>	Z. B		TYPICAL DETAILS OF MASONRY CHECK DAMS		<input type="checkbox"/> CONSULTANT DRAWING <input checked="" type="checkbox"/> DESIGN DRAWING <input type="checkbox"/> PROPOSED FOR CONSTRUCTION DRAWING <input type="checkbox"/> AS-BUILT DRAWING					
						DESIGN CHECKED BY	F. N. RENg			PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1					
						DRAWN	Z. B			DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT					
						DRAWING CHECKED BY	F. N. RENg			DRAWING APPROVED BY MINISTRY CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 DRAWING NO. CON/2025/SP/SATCP-LM/DRN-01 SHEET NO. 1 OF 1					

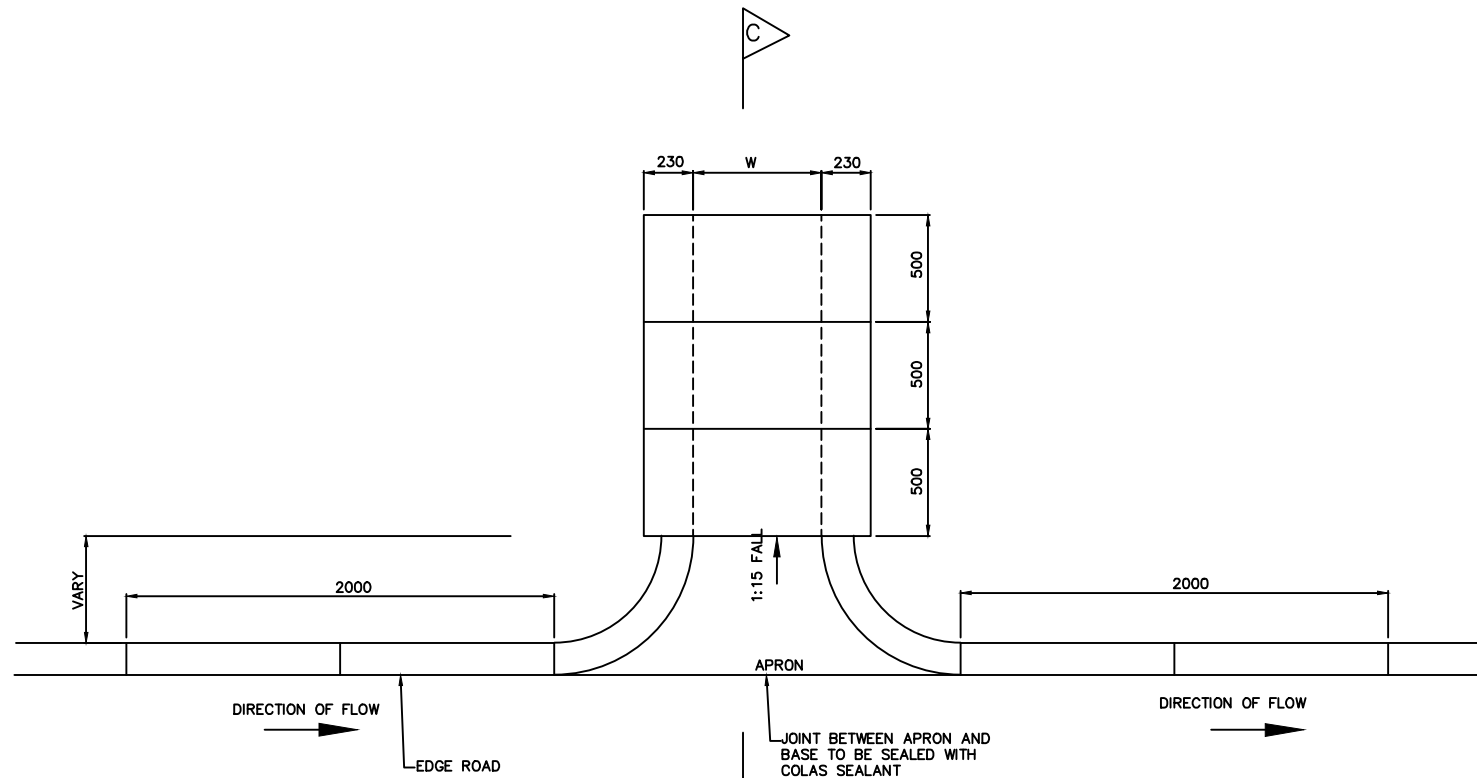


TYPICAL CONCRETE OUTLETS AND CHUTE PLANE



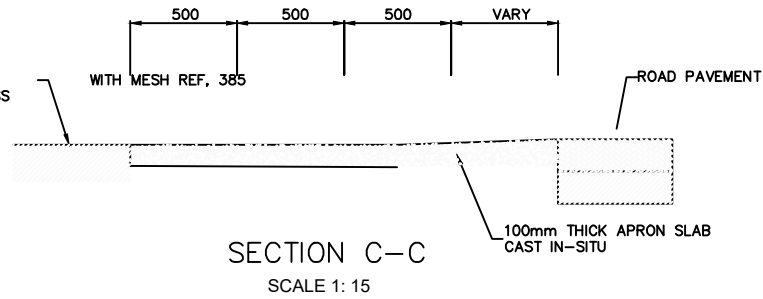
DUAL CARRIAGE ROAD PLAN

SCALE 1: 40



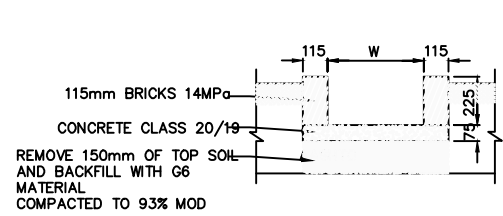
TYPICAL PLAN AT OUTLETS
SCALE 1: 15

COVER TO OUTLET AT
WALKWAY CONCRETE CLASS
20/19

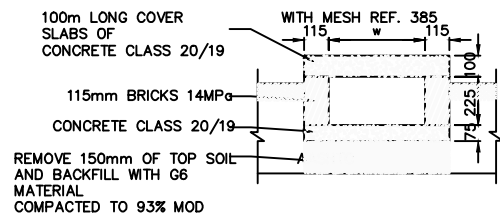


SECTION C-C
SCALE 1: 15

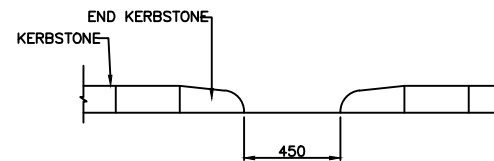
CHUTE	COVER	W
TYPE 1	OPEN	W=450
TYPE 2	COVERED	W=450
TYPE 3	COVERED	W=600



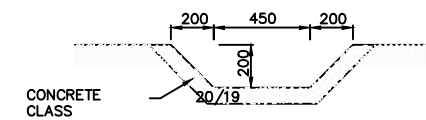
SECTION A-A OPEN CHUTES



SECTION A-A COVERED CHUTE
IN WALKWAYS
SCALE 1: 15



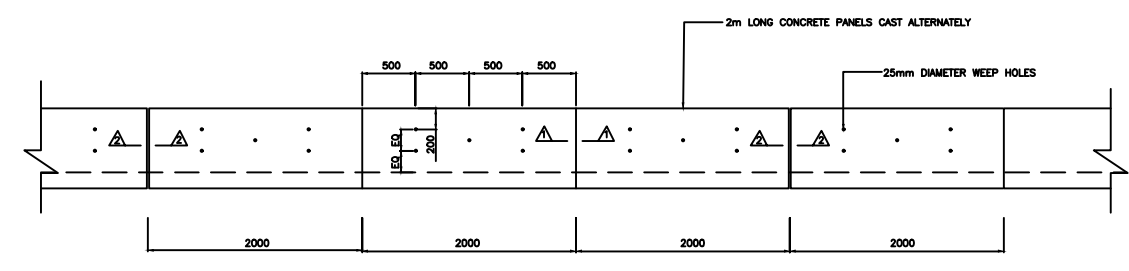
ELEVATION E
SCALE 1: 15



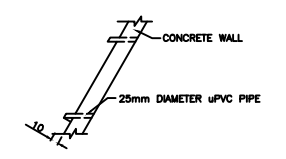
SECTION B-B

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: STORMWATER DRAINAGE DETAILS INLETS,OUTLETS AND CHUTES		<input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> CONSTRUCTION <input type="radio"/> AS-BUILT	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. RENg		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWN Z B NDOLO		CONTRACT No.:		PROJECT No.:	
									DRAWING CHECKED BY F. N. RENg		SCALE: 1:1000		DATE: NOVEMBER 2025	
									DRAWING APPROVED BY MINISTRY		CONTRACT No.:		PROJECT No.:	
									SIGNATURE		DATE:		DRAWING NO. CON/2025/SP/SATCP-LM/DRN-03	
									SIGNATURE		DATE:		SHEET NO. 1 OF 1	

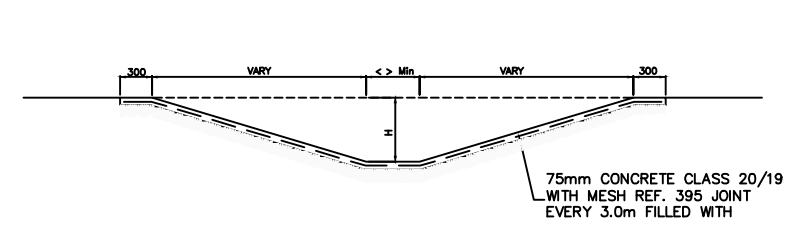
DEPTH H(m)	DEPTH H(m)
H<0.8	1:4
0.8<H<0.9	1:3
0.9<H<1.5	1:2
H>1.5	1:1.5



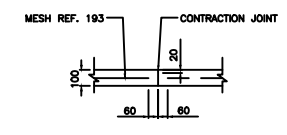
VEE OR TRAPEZOIDAL LINED DRAIN SIDE WALL ELEVATION
SCALE 1: 300



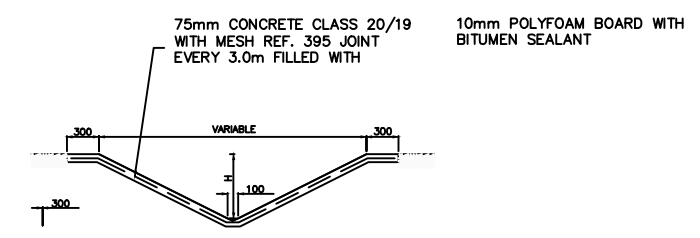
SECTION THROUGH SIDE PANEL



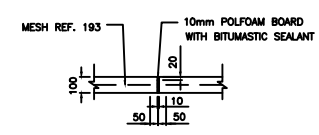
TYPICAL SECTION OF LINED TRAPEZOIDAL DRAIN
SIDE SLOVES VARY 'H' Min 300mm
SCALE 1: 300



SECTION 2-2
EXPANSION JOINT SECTION THROUGH SIDE PANEL



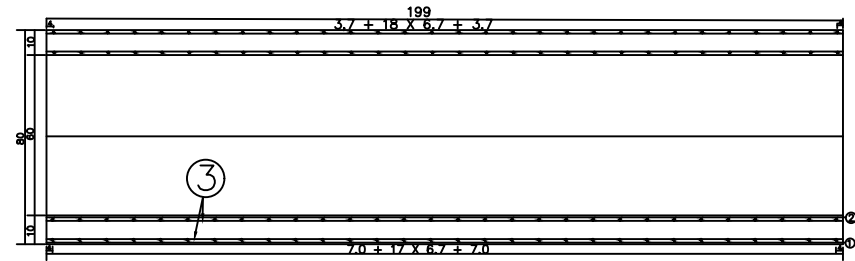
TYPICAL SECTION OF LINED VEE DRAIN
SIDE SLOVES VARY 'H' Min 300mm
SCALE 1: 300



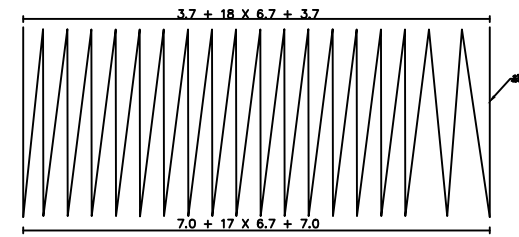
SECTION 2-2
EXPANSION JOINT

REFERENCE CODE	WIRE/BAR DIAMETER	MESH APERTURE	SHEET WEIGHT
REF 100	4.00 mm	200 x 200mm	14.4 kgs
REF 156	3.55 mm	100 x 100mm	22.5 kgs
REF 193	5.6 mm	200 x 200mm	27.8 kgs
REF 245	6.3 mm	200 x 200mm	35.3 kgs
REF 311	7.1 mm	200 x 200mm	44.8 kgs
REF 395	8.00 mm	200 x 200mm	56.9 kgs
REF 500	9.00 mm	200 x 200mm	72.0 kgs
REF 617	10.00 mm	200 x 200mm	88.9 kgs
REF 888	12.00 mm	200 x 200mm	127.9 kgs

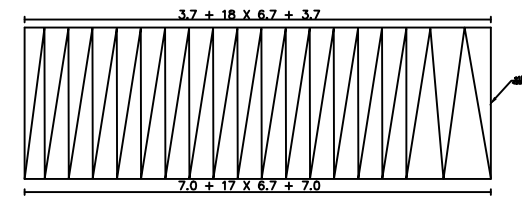
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: TRAPEZOIDAL AND VEE DRAINS DETAILS AT ROAD CROSSING		<input type="radio"/> DESIGN <input type="radio"/> CHECKED <input type="radio"/> APPROVED FOR CONSTRUCTION <input type="radio"/> AS BUILT	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. RENg		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWING CHECKED BY F. N. RENg		CONTRACT No.:		DRAWING NO.:	
									DRAWING APPROVED BY MINISTRY		PROJECT No.:		SHEET NO.:	
									SIGNATURE		SCALE: 1:1000		NOVEMBER 2025	
											CON/2025/SP/SATCP-LM/DRN-06		1 OF 1	



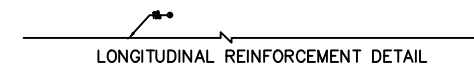
PROFILE



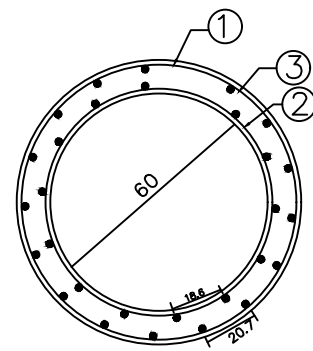
OUTER RING RIBS PROFILE



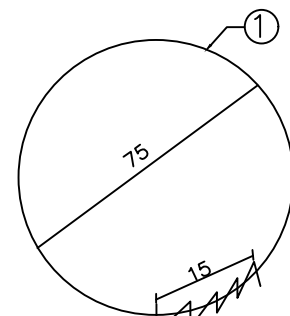
INNER RING RIBS PROFILE



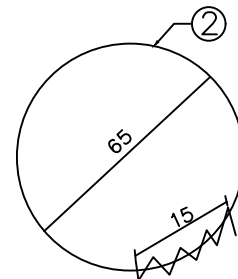
LONGITUDINAL REINFORCEMENT DETAIL



CROSS-SECTION



OUTER RING RIBS DETAILS



INNER RING RIBS DETAILS

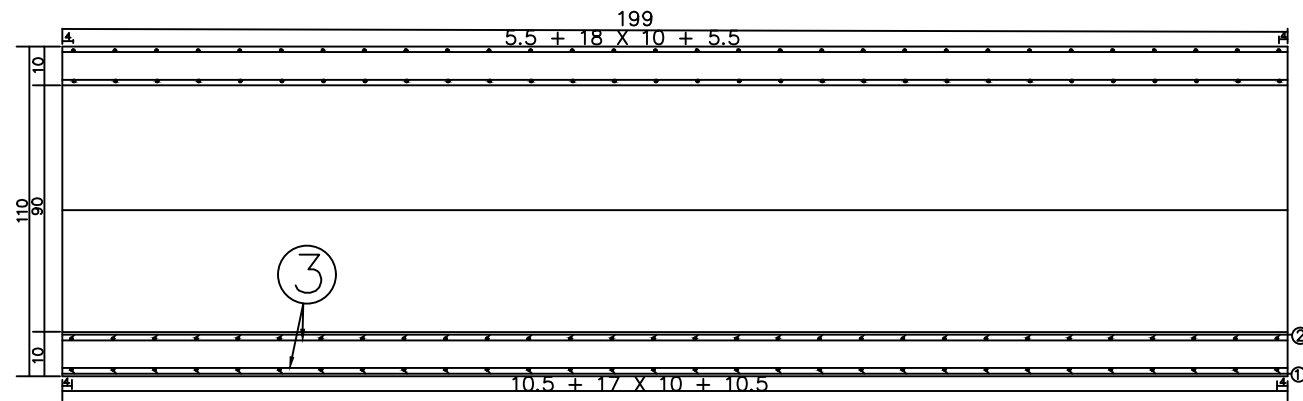
ENGINEERING QUANTITIES LIST

NUMBER	DIAMETER	EACH LENGTH	THE NUMBER	TOTAL	WEIGHT PER METER	WEIGHT	SERIAL NUMBER
Unit	mm	cm	Radical	m	kg/m	kg	
1	10	1000	1	1000	0.008	8.00	001
2	12	1000	1	1000	0.011	11.00	002
3	16	1000	1	1000	0.020	20.00	003

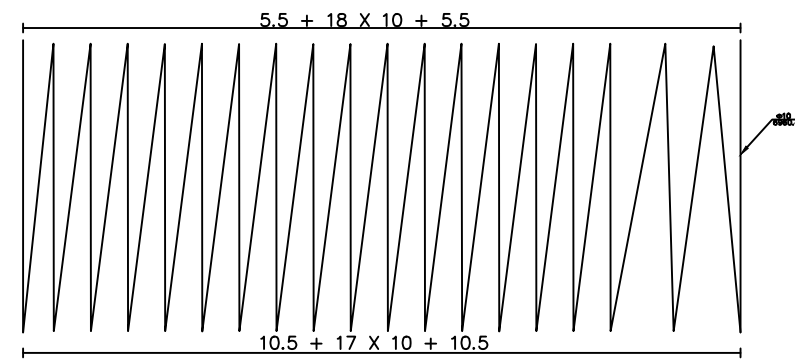
SUMMATION C20 concrete: 0.4m³ HPB235: 67.7KG

NOTES:
1. Figures in addition to the steel bar diameter in millimeters in size and indicated, the rest are in centimeters

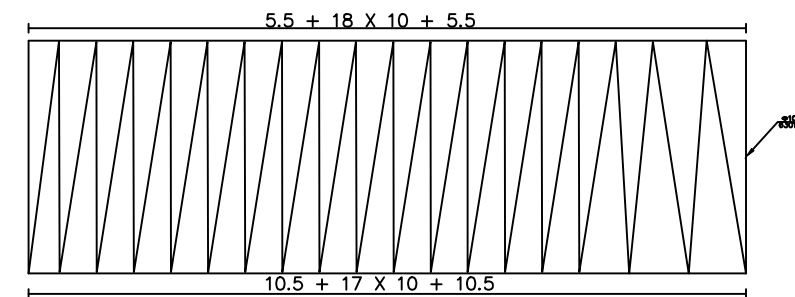
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: 900MM DIAMETER CONCRETE DETAILS		<input type="checkbox"/> DESIGN DRAWING <input type="checkbox"/> REVIEW DRAWING <input type="checkbox"/> APPROVAL FOR CONSTRUCTION DRAWING <input type="checkbox"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-2026							DESIGN CHECKED BY F. N. RENJ DATE: _____ SIGNATURE: _____		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
									DRAWN Z. B DATE: _____ SIGNATURE: _____		CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/DRN-09 SHEET NO: 1 OF 1	



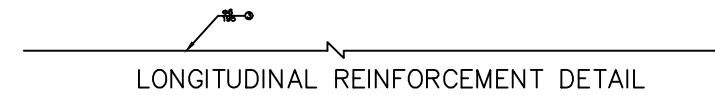
PROFILE



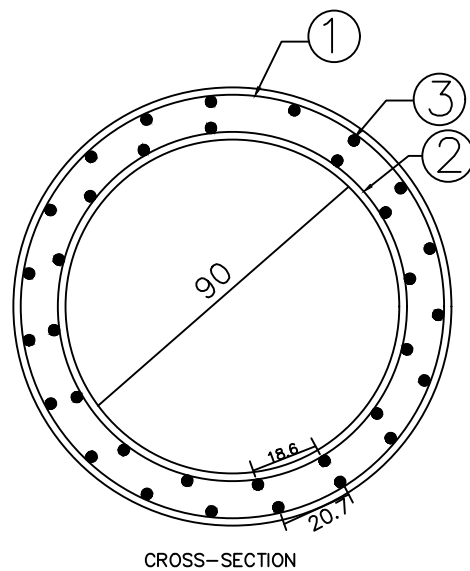
OUTER RING RIBS PROFILE



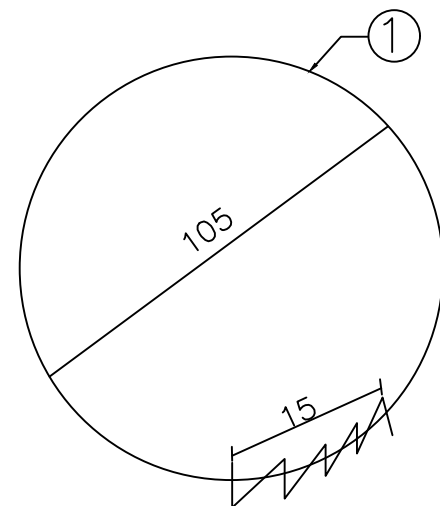
INNER RING RIBS PROFILE



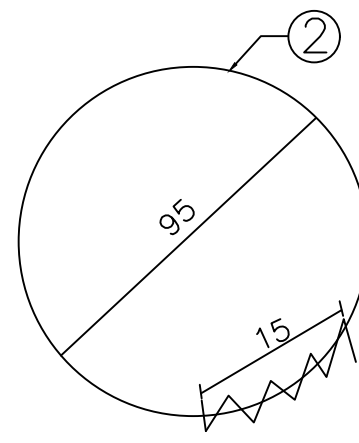
LONGITUDINAL REINFORCEMENT DETAIL



CROSS-SECTION



OUTER RING RIBS DETAILS



INNER RING RIBS DETAILS

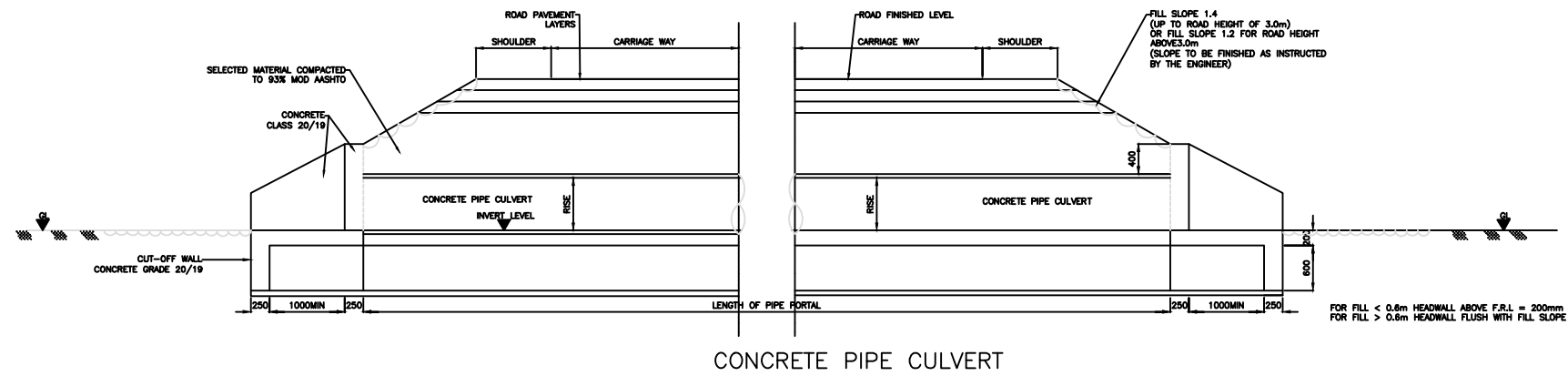
ENGINEERING QUANTITIES LIST

NUMBER	DIAMETER	EACH LENGTH	THE NUMBER	TOTAL	WEIGHT PER METER	WEIGHT	SERIAL NUMBER
Unit	mm	cm	Radical	m	kg/m	kg	
1	ø10	6003.30	1	60.0	0.62	42.98	HPB 235
2	ø10	6300.80	1	63.0	0.62	38.88	HPB 235
3	ø6	195	32	62.4	0.22	13.85	HPB 235
SUMMATION C20 concrete: 0.6m ³ HPB235: 95.7KG							

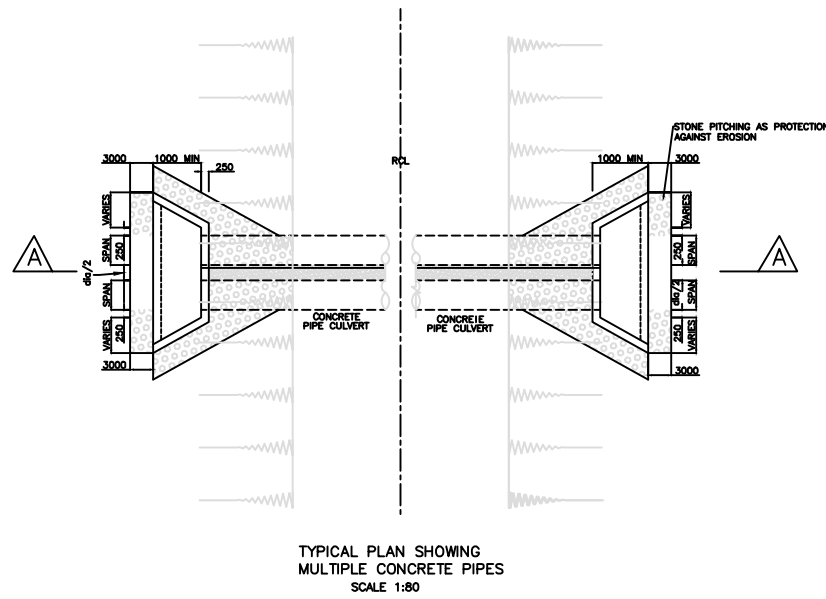
NOTES:

1. Figures in addition to the steel bar diameter in millimeters in size and indicated, the rest are in centimeters

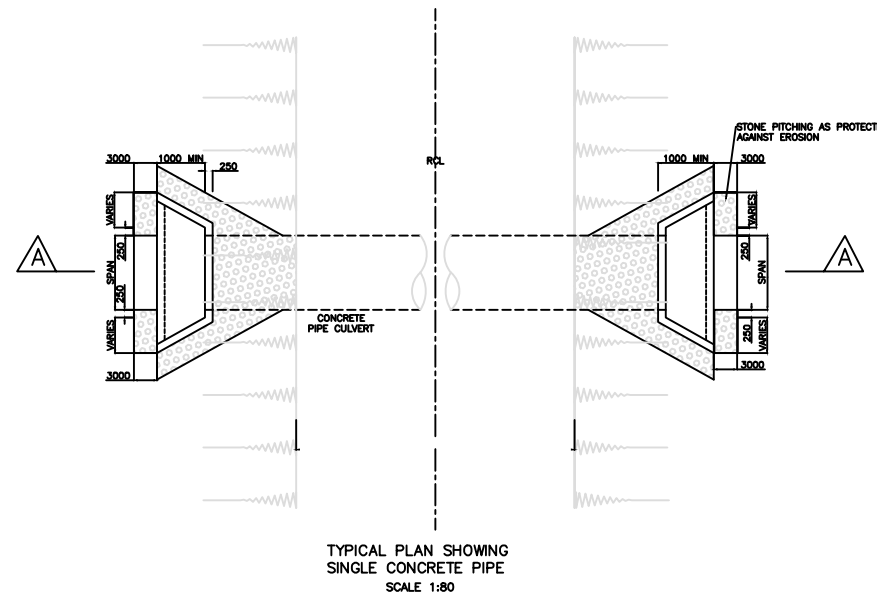
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: 900MM DIAMETER CONCRETE DETAILS		<input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> CONSTRUCTION <input type="radio"/> AS-BUILT	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. REng		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWN Z. B		DRAWING APPROVED BY MINISTRY		CONTRACT No.: PROJECT No.: SCALE: 1:1000 DATE: NOVEMBER 2025 DRAWING NO: CON/2025/SP/SATCP-LM/DRN-10 SHEET NO: 1 OF 1	



TYPICAL SECTION A-A
SCALE 1:30

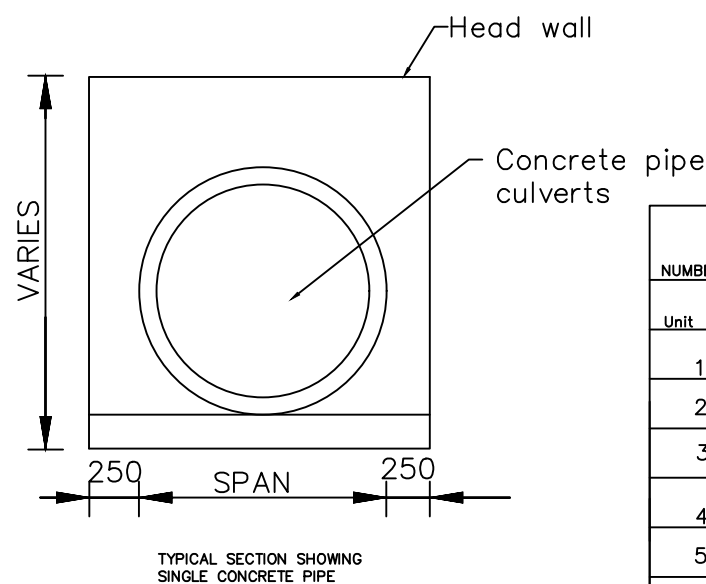
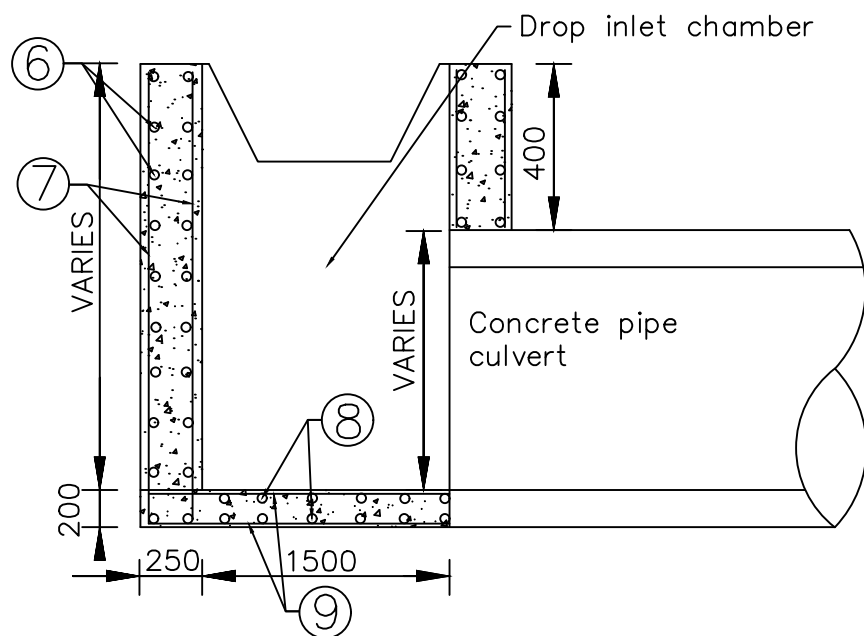
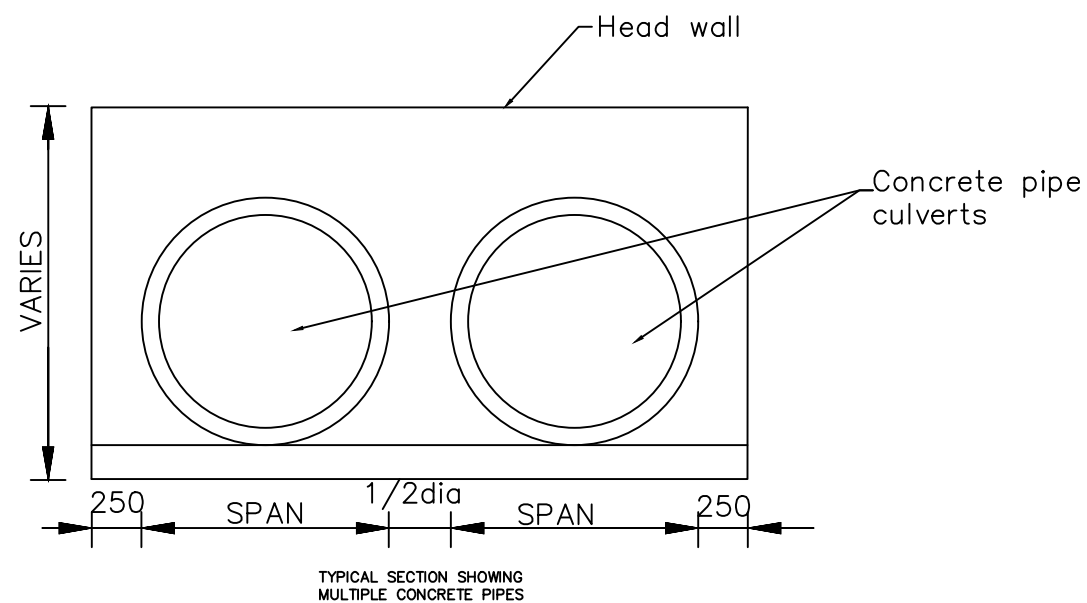
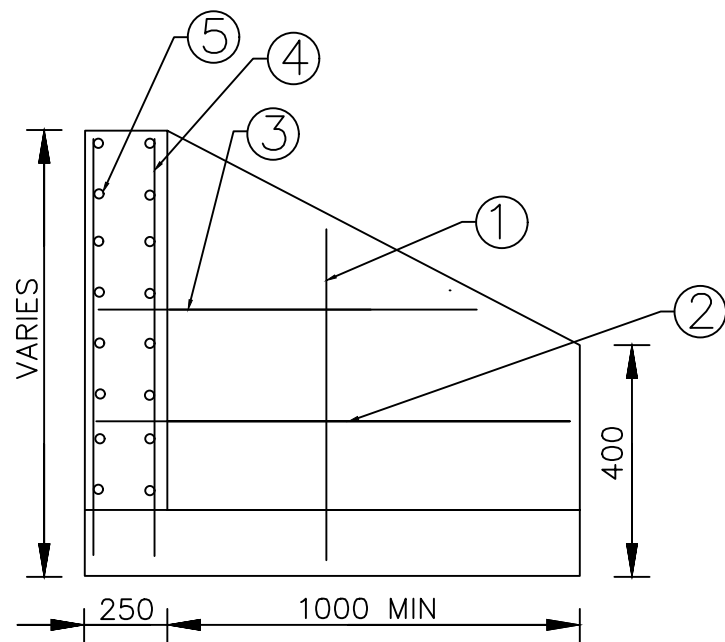


TYPICAL PLAN SHOWING
MULTIPLE CONCRETE PIPES
SCALE 1:80



TYPICAL PLAN SHOWING
SINGLE CONCRETE PIPE
SCALE 1:80

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africal Trade Connectivity Project,		Z. B		STANDARD DRAWINGS: GENERAL ARRANGEMENT OF REINFORCED CONCRETE RING		<input type="radio"/> CONSULTING <input type="radio"/> DESIGN <input type="radio"/> PRELIMINARY <input type="radio"/> AS-BUILT	
1	REVISION 1	25-02-206			 P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		 Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		DESIGN CHECKED BY F. N. RENg DATE: _____ DRAWN Z. B DATE: _____ DRAWING CHECKED BY F. N. RENg DATE: _____ DRAWING APPROVED BY MINISTRY DATE: _____		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
									CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/DRN-11 SHEET NO: 1 OF 1			



REINFORCEMENT DETAILS
(TO BE CUT AND BENT ON SITE)

NUMBER	DIAMETER	SPACING	WEIGHT PER METER	SERIAL NUMBER
Unit	mm	mm	kg/m	
1	φ12	150	0.89	HPB 235
2	φ10	150	0.62	HPB 235
3	φ10	150	0.62	HPB 235
4	φ12	150	0.89	HPB 235
5	φ10	150	0.62	HPB 235
6	φ10	225	0.62	HPB 235
7	φ10	225	0.62	HPB 235
8	φ10	225	0.62	HPB 235
9	φ10	225	0.62	HPB 235

Concrete class: C20/19

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		STANDARD DRAWINGS: REINFORCED CONCRETE RING AND DROP INLET CHAMBER DETAILS		<input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> APPROVAL FOR CONSTRUCTION <input type="radio"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-206			 P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		 Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		DESIGN CHECKED BY F. N. RENg DATE: _____ DRAWING APPROVED BY F. N. RENg DATE: _____		DESCRIPTION OF PROJECT MW-MTPW-544340-CWRFB/ CONSTRUCTION OF MULTIPLE BOX CULVERTS AND EMBANKMENT FORMATION ON MITUNDU TO NSABWEMANYAZI THROUGH CHANGALU BRIDGE (UD) ROAD(3.9KMS) IN LILONGWE DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
					 PROJECT NO.: _____ CONTRACT NO.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO.: _____ SHEET NO.: 1 OF 1		CON/2025/SP/SATCP-LM/DRN-12		1 OF 1			

ROAD INVENTORY

DISTRICT - LILONGWE

DATA COLLECTED ON: 08/OCT/2025

UPDATED ON:

MITUNDU TO NSABWEMANYAZI ROAD THROUGH CHANGALU BRIDGE (UD)

Chainage		DESCRIPTION
FROM	TO	
0+000		MITUNDU
2+200	2+500	gravelling
2+260		Existing Box culvert - 2.1m x 4m (2 cells)- Provide 4No. Wing walls
2+310		Existing concrete pipe culvert (600mm Dia - 2lines)
2+320		Existing Box culvert - 2.5m x 1.7m (1 cells)- Demolish Wing walls and reconstruct
2+340		Existing concrete pipe culvert (600mm Dia - 2lines)
2+350		Existing concrete pipe culvert (600mm Dia - 2lines)
2+360		Existing Box culvert - 1.9m x 1.7m (2 cells)-construct aprons, Demolish Wing walls and reconstruct,
3+650	3+940	Embankment formation
3+650	3+770	Provide Retaining walls - LHS & RHS
3+770		Existing concrete pipe culvert (600mm Dia 2 lines)
3+775		Provide a Box culvert - 1.5m x 1.5m 2 cells
3+805		Provide a Box culvert - 1.5m x 1.5m 2 cells
3+815		Existing concrete pipe culvert (600mm Dia - 2lines)
3+860		Provide a Box Culvert - 1.5m x 1.5m - 1 cell
3+770	3+880	Provide Retaining walls - LHS & RHS
3+880	3+940	Provide lined drains - RHS
3+930		Existing concrete pipe culvert (600mm Dia - 2lines) - requires Cleaning and excavation of outlet drain
3+960		MSABWEMANYAZI

LIST OF STRUCTURES		
DISTRICT - LILONGWE		
DATA COLLECTED ON: 08/OCT/2025		
UPDATED ON:		
	MITUNDU TO NSABWEMANYAZI ROAD THROUGH CHANGALU BRIDGE (UD)	
Chainage	DESCRIPTION	ACTION
0+000	MITUNDU	
2+260	Existing Box culvert - 2.1m x 4m (2 cells)	Provide 4No. Wing walls
2+310	Existing concrete pipe culvert (600mm Dia - 2lines)	Demolish and construct a Box culvert - 2m x 2m 1 cell
2+320	Existing Box culvert - 2.5m x 1.7m (1 cells)	Provide 4No. Demolish Wing walls and reconstruct
2+340	Existing concrete pipe culvert (600mm Dia - 2lines)	Demolish and construct a Box culvert - 2m x 2m 1 cell
2+350	Existing concrete pipe culvert (600mm Dia - 2lines)	Demolish fill section
2+350	Existing Box culvert - 1.9m x 1.7m (2 cells)	Provide 4No. Demolish Wing walls and reconstruct, construct aprons
3+770	Existing concrete pipe culvert (600mm Dia - 2lines)	Demolish and construct a Box culvert - 1.5m x 1.5m 2 cell
3+815	Existing concrete pipe culvert (600mm Dia - 2lines)	Demolish and construct a Box culvert - 1.5m x 1.5m 2 cell
3+860	Provide a Box Culvert - 1.5m x 1.5m - 1 cells	
3+930	Provide a concrete pipe culvert - 600mm Dia 1 line	
3+930	Existing concrete pipe culvert (600mm Dia - 2lines)	requires Cleanning and excavation of outlet drain
3+960	NSABWEMANYAZI	