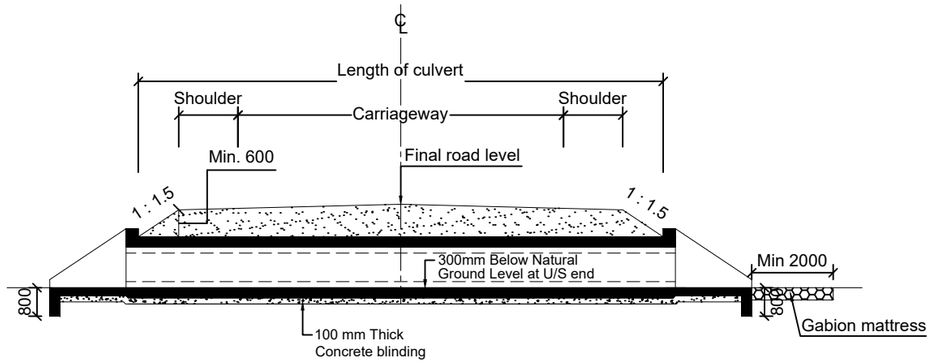
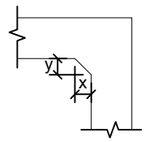


Typical cross section A-A Roadway

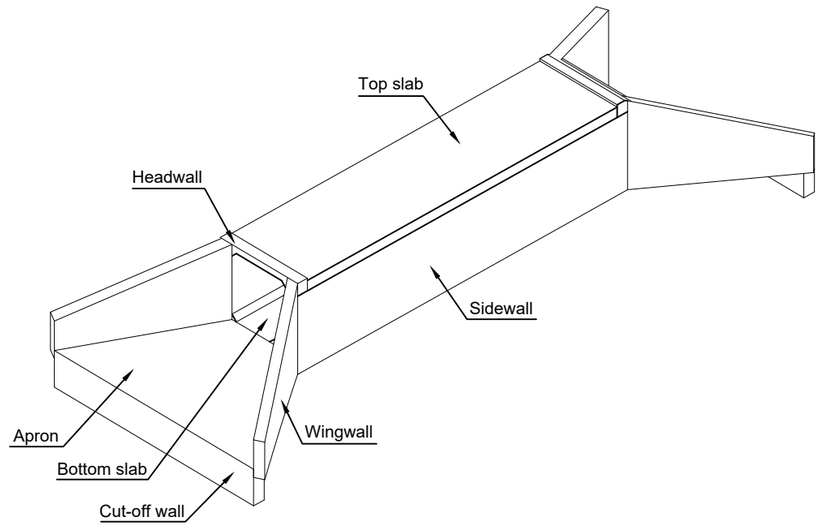
Haunch Detail

Box Span (m)	Haunch Size 'x' (mm)	Haunch Size 'y' (mm)
2.0	150	150
3.0	200	200
4.0	250	250
5.0	300	300

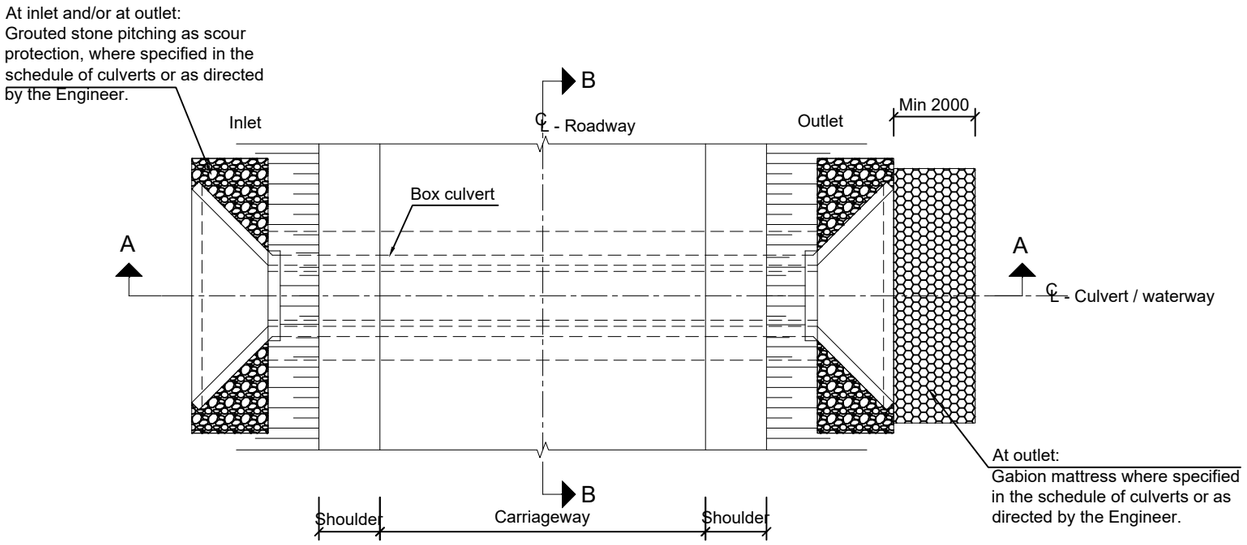
NOTES:
1. Dimensions: All dimensions are in millimeters.
2. Materials: Concrete Grade - C32/40
   Blinding Concrete - C12/15
   Reinforced ribbed Bars - Specified Characteristic value of upper yield strength ≥ 500 N/mm^2
3. Cover to reinforcement 60mm.
4. Backfilling to be done according tp specifications.
5. Soft and loose patches in the bearing area are to be replaced by compacted granular fills with layers not exceeding 300mm.



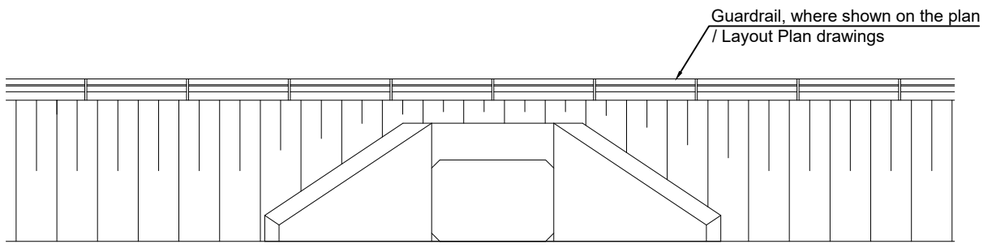
Detail - 1



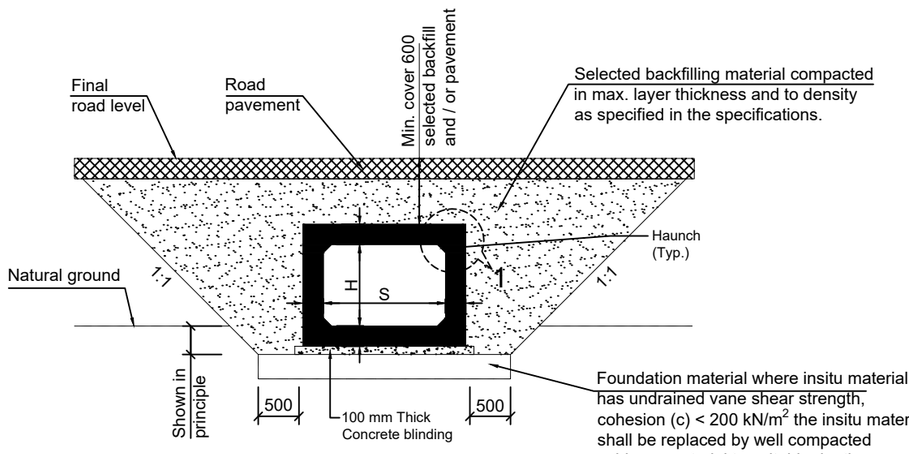
Isometric View



Plan
Orthogonal crossing



Elevation



Section B - B

NO.	AMENDMENTS	DATE

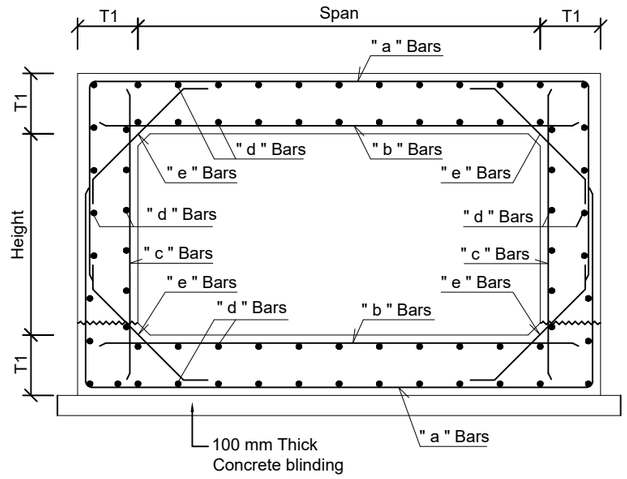
CLIENT:
REPUBLIC OF KENYA
MINISTRY OF ROADS AND TRANSPORT
P.O. BOX 30260-00100
NAIROBI

STANDARD DRAINAGE DRAWINGS

TYPICAL GENERAL ARRANGEMENT DRAWING OF SINGLE CELL RCC BOX STRUCTURES

DRAWING NO.: RDM/4/2/2/01

Date: Jan. 2024 | Scale: N.T.S. | Sheet No.: 1/2



Single cell box culvert

Single cell box culvert

Span, S			m	2.00					2.00					3.00					3.00					3.00				
Height, H			m	1.50					2.00					1.50					2.00					3.00				
Haunch Size			m	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.15x0.15	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20	0.20x0.20
Max fill over top			m	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00
Concrete	T1		m	0.3	0.3	0.3	0.35	0.35	0.3	0.3	0.3	0.35	0.35	0.4	0.4	0.4	0.45	0.45	0.4	0.4	0.4	0.45	0.45	0.4	0.4	0.4	0.45	0.45
Reinforcement	" a " Bars	T Size, @ spacing		T16 @250	T16 @250	T16 @230	T16 @250	T16 @230	T16 @250	T16 @250	T16 @230	T16 @250	T16 @230	T16 @160	T16 @150	T16 @140	T16 @150	T16 @120	T16 @160	T16 @150	T16 @140	T16 @150	T16 @120	T16 @150	T16 @140	T16 @130	T16 @140	T16 @110
	" b " Bars	T Size, @ spacing		T16 @250	T16 @250	T16 @230	T16 @240	T16 @210	T16 @200	T16 @200	T16 @180	T16 @200	T16 @180	T16 @160	T16 @150	T16 @140	T16 @150	T16 @140	T16 @160	T16 @150	T16 @140	T16 @150	T16 @140	T16 @150	T16 @140	T16 @130	T16 @140	T16 @130
	" c " Bars	T Size, @ spacing		T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200
	" d " Bars	T Size, @ spacing		T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200
	" e " Bars	T Size, @ spacing		T12 @250	T12 @250	T12 @230	T12 @250	T12 @230	T12 @250	T12 @250	T12 @230	T12 @250	T12 @230	T12 @160	T12 @150	T12 @140	T12 @150	T12 @120	T12 @160	T12 @150	T12 @140	T12 @150	T12 @140	T12 @150	T12 @140	T12 @130	T12 @140	T12 @110
Quantity	Blinding concrete		m3/m. run	0.280	0.280	0.280	0.290	0.290	0.280	0.280	0.280	0.290	0.290	0.400	0.400	0.400	0.410	0.410	0.400	0.400	0.400	0.410	0.410	0.400	0.400	0.400	0.410	0.410
	Reinforced concrete		m3/m. run	2.460	2.460	2.460	2.940	2.940	2.760	2.760	2.760	3.290	3.290	4.240	4.240	4.240	4.860	4.860	4.640	4.640	4.640	5.310	5.310	5.440	5.440	5.440	6.210	6.210
	Reinforcement		kg/m. run	181	181	185	187	192	207	207	212	212	218	259	264	270	271	286	286	292	299	298	317	347	357	367	364	392

Single cell box culvert

Span, S			m	4.00					4.00					4.00					4.00					5.00				
Height, H			m	1.50					2.00					3.00					4.00					1.50				
Haunch Size			m	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.25x0.25	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30
Max fill over top			m	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00
Concrete	T1		m	0.45	0.45	0.45	0.5	0.5	0.45	0.45	0.45	0.5	0.5	0.45	0.45	0.45	0.5	0.5	0.45	0.45	0.45	0.5	0.5	0.5	0.5	0.5	0.55	0.55
Reinforcement	" a " Bars	T Size, @ spacing		T16 @140	T16 @140	T16 @130	T16 @100	T20 @120	T16 @140	T16 @140	T16 @130	T16 @100	T20 @120	T16 @120	T16 @130	T16 @120	T16 @100	T20 @110	T16 @110	T16 @120	T16 @110	T20 @120	T20 @100	T20 @125	T20 @125	T20 @110	T20 @100	T25 @115
	" b " Bars	T Size, @ spacing		T16 @120	T16 @140	T16 @130	T16 @120	T16 @100	T16 @120	T16 @130	T16 @120	T16 @120	T16 @100	T16 @110	T16 @130	T16 @120	T16 @120	T16 @100	T16 @110	T16 @120	T16 @110	T16 @120	T16 @110	T20 @125	T20 @125	T20 @110	T20 @125	T20 @115
	" c " Bars	T Size, @ spacing		T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @180	T12 @170	T12 @170	T12 @160	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200
	" d " Bars	T Size, @ spacing		T12 @200	T12 @200	T12 @200	T12 @200	T12 @150	T12 @200	T12 @200	T12 @200	T12 @200	T12 @170	T12 @200	T12 @200	T12 @200	T12 @200	T12 @150	T12 @200	T12 @200	T12 @200	T12 @170	T12 @140	T12 @150	T12 @150	T12 @150	T12 @140	T12 @100
	" e " Bars	T Size, @ spacing		T12 @140	T12 @140	T12 @130	T12 @100	T12 @150	T12 @140	T12 @140	T12 @130	T12 @100	T12 @140	T12 @120	T12 @130	T12 @120	T12 @100	T12 @110	T12 @110	T12 @120	T12 @110	T12 @120	T12 @100	T12 @125	T12 @125	T12 @110	T12 @100	T12 @115
Quantity	Blinding concrete		m3/m. run	0.510	0.510	0.510	0.520	0.520	0.510	0.510	0.510	0.520	0.520	0.510	0.510	0.510	0.520	0.520	0.510	0.510	0.510	0.520	0.520	0.620	0.620	0.620	0.630	0.630
	Reinforced concrete		m3/m. run	5.760	5.760	5.760	6.500	6.500	6.210	6.210	6.210	7.000	7.000	7.110	7.110	7.110	8.000	8.000	8.010	8.010	8.010	9.000	9.000	7.500	7.500	7.500	8.360	8.360
	Reinforcement		kg/m. run	323	318	324	354	413	353	350	358	388	448	433	415	428	457	565	511	505	532	628	712	511	511	531	555	663

Single cell box culvert

Span, S			m	5.00					5.00					5.00					5.00				
Height, H			m	2.00					3.00					4.00					5.00				
Haunch Size			m	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30	0.30x0.30
Max fill over top			m	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00	0.6-1.0	2.00	3.00	4.00	5.00
Concrete	T1		m	0.5	0.5	0.5	0.55	0.55	0.5	0.5	0.5	0.55	0.55	0.5	0.5	0.5	0.55	0.55	0.6	0.6	0.6	0.65	0.65
Reinforcement	" a " Bars	T Size, @ spacing		T20 @125	T20 @125	T20 @110	T20 @100	T25 @115	T20 @110	T20 @110	T20 @100	T25 @130	T25 @100	T20 @100	T25 @160	T25 @150	T25 @150	T25 @140	T20 @100	T25 @160	T25 @150	T25 @150	T25 @140	T25 @100
	" b " Bars	T Size, @ spacing		T20 @125	T20 @125	T20 @110	T20 @125	T20 @115	T20 @110	T20 @110	T20 @100	T20 @130	T20 @100	T20 @100	T25 @160	T25 @150	T25 @160	T25 @150	T20 @100	T25 @160	T25 @150	T25 @160	T25 @150
	" c " Bars	T Size, @ spacing		T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @150	T12 @140	T12 @130	T12 @140	T12 @130
	" d " Bars	T Size, @ spacing		T12 @170	T12 @170	T12 @150	T12 @140	T12 @100	T12 @150	T12 @150	T12 @140	T12 @110	T16 @160	T12 @140	T12 @140	T12 @130	T12 @120	T12 @160	T12 @140	T12 @140	T12 @130	T12 @120	T16 @160
	" e " Bars	T Size, @ spacing		T12 @125	T12 @125	T12 @110	T12 @100	T12 @115	T12 @110	T12 @110	T12 @100	T12 @130	T12 @100	T12 @100	T12 @160	T12 @150	T12 @140	T12 @100	T12 @100	T12 @160	T12 @150	T12 @140	T12 @100
Quantity	Blinding concrete		m3/m. run	0.620	0.620	0.620	0.630	0.630	0.620	0.620	0.620	0.630	0.630	0.620	0.620	0.620	0.630	0.630	0.640	0.640	0.640	0.650	0.650
	Reinforced concrete		m3/m. run	8.000	8.000	8.000	8.910	8.910	9.000	9.000	9.000	10.010	10.010	10.000	10.000	10.000	11.110	11.110	13.440	13.440	13.440	14.690	14.690
	Reinforcement		kg/m. run	540	540	576	602	726	688	688	701	797	973	800	884	916	960	1188	990	1128	1199	1218	1540

Minimum lap length (mm)

Bar size	Lap length
12	450
16	600
20	850
25	1300

NO.	AMENDMENTS	DATE

CLIENT:

REPUBLIC OF KENYA
MINISTRY OF ROADS AND TRANSPORT
P.O. BOX 30260-00100
NAIROBI

STANDARD DRAINAGE DRAWINGS

STANDARD DIMENSION & REINFORCEMENT DRAWING OF SINGLE CELL RCC BOX STRUCTURES

DRAWING NO.: RDM/4/2/2/01

Date: Jan. 2024 | Scale: N.T.S. | Sheet No.: 2/2