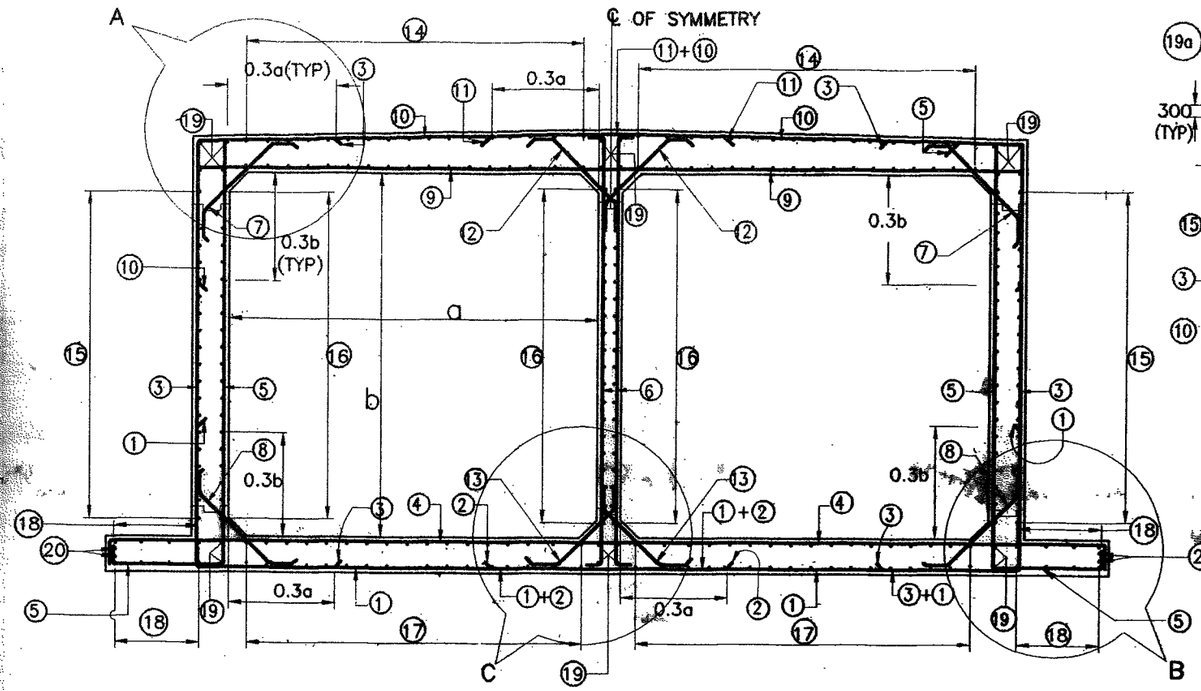
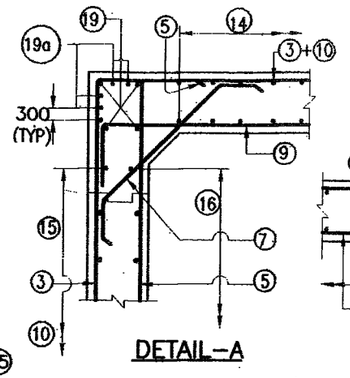
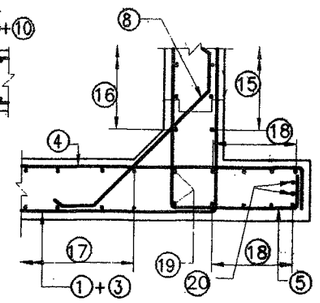
DRG.NO. SD/114 (SHEET 1 OF 4)



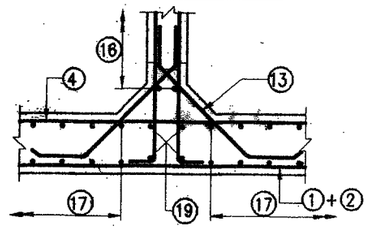
REINFORCEMENT DETAILS OF DOUBLE CELL BOX CULVERT



DETAIL-A



DETAIL-B



DETAIL- C

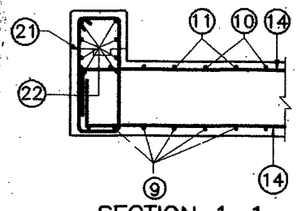
NOTES:

1. FOR GENERAL NOTES REFER DRG. NO. SD/101.
2. FOR GENERAL ARRANGEMENT REFER DRG. NO. SD/105.
3. FOR BAR BENDING SCHEDULE REFER DRAWING NO. SD/114 (SHEET 2 TO 4 OF 4)
4. FOR LAP ZONES REFER DRG. NO SD/117 (SHEET 1 OF 2)
6. BAR (19a) IS NOT SHOWN IN THE BAR BENDING SCHEDULE. THE NO OF (19a) BARS SHOULD BE DECIDED AT SITE BY ENGINEER-IN-CHARGE DEPENDING ON WALL/TOP SLAB THICKNESS AS PER MENTIONED SPACING IN DETAIL-A.

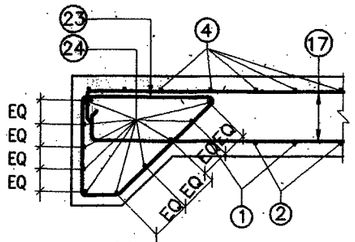
LEGEND :

——— : TOP FACE BARS/ OUTER FACE BARS

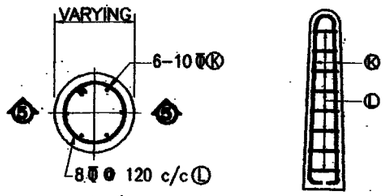
– – – – : BOTTOM FACE BARS/ INNER FACE BARS



SECTION 1-1

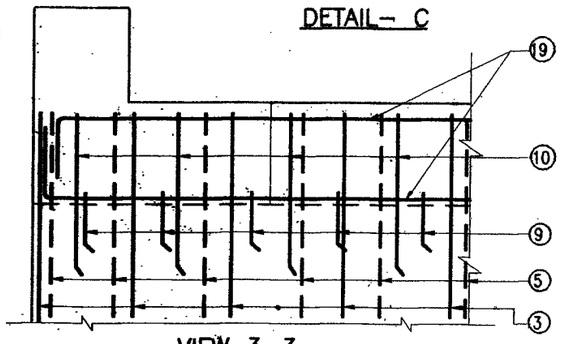


SECTION 2-2



SECTION 4-4

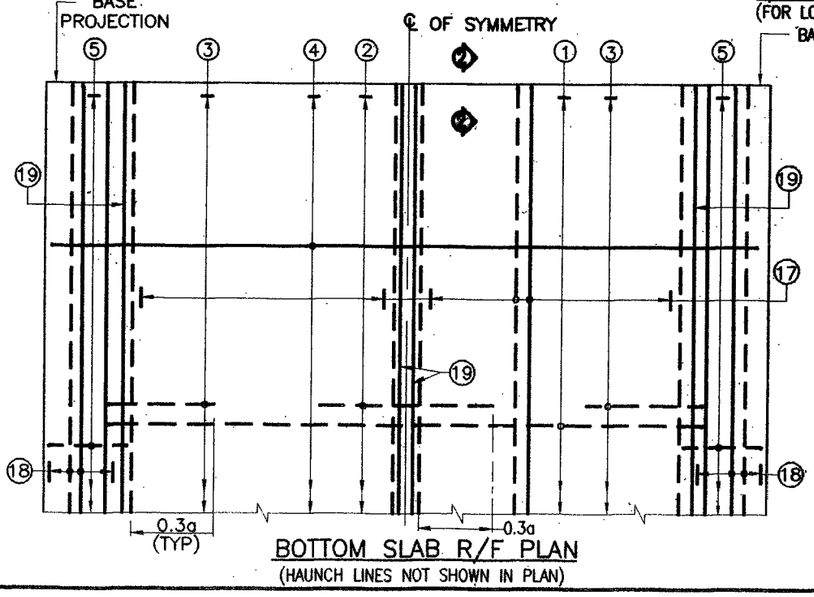
SECTION 5-5



VIEW 3-3

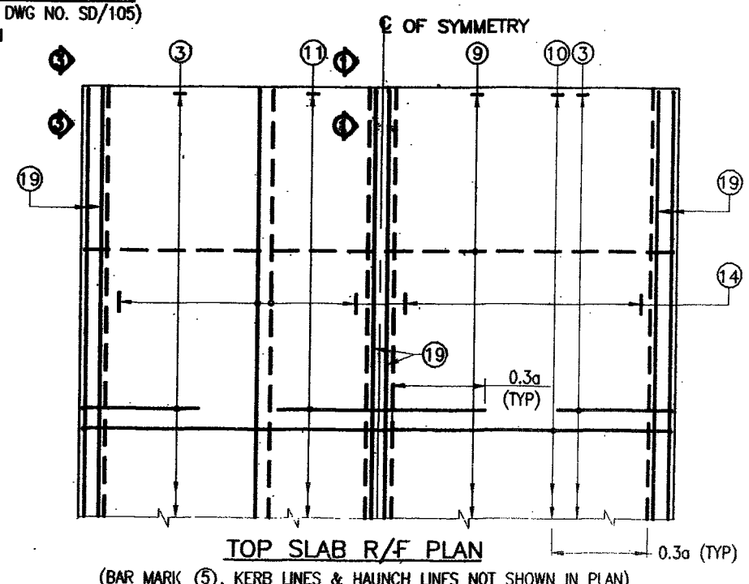
(BAR MARKS (19a) & HAUNCH LINES NOT SHOWN)

R/F DETAILS OF PRECAST GUARD STONE
(FOR LOCATION REFER DWG NO. SD/105)



BOTTOM SLAB R/F PLAN

(HAUNCH LINES NOT SHOWN IN PLAN)



TOP SLAB R/F PLAN

(BAR MARK (5), KERB LINES & HAUNCH LINES NOT SHOWN IN PLAN)

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING), NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DOUBLE CELL BOX CULVERT
(WITH EARTH CUSHION)
TYPICAL REINFORCEMENT DETAILS

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CES (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/114 (SHEET 1 OF 4)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

DRG.NO. SD/114 (SHEET 2 OF 4)

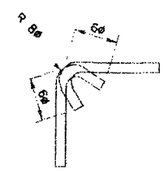
SCHEDULE OF REINFORCEMENT

BAR MARK	BOX – CELL DESIGNATION Nc/ab/Ec / SHAPE OF BARS (NOT TO SCALE)	2/22/3								2/22/4								2/22/5								2/23/3							
		BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.
①	M1 M2 M1	12	240	850	4650	6309	101	637.2	565.7	12	240	900	4650	6309	117	749.8	665.7	12	250	900	4690	6449	124	799.7	709.9	12	200	1200	4850	7209	121	872.3	774.4
②	M1	12	240	–	1450	1450	100	145.0	128.7	12	240	–	1450	1450	116	168.2	149.3	16	260	–	1450	1450	123	178.4	281.5	BAR IS NOT USED							
③	M1 M2 M1	10	240	800	2470	4036	204	823.3	507.6	10	240	800	2550	4116	236	971.3	598.8	10	260	820	2570	4176	250	1043.9	643.6	10	200	900	3550	5316	244	1297.0	799.7
④	M1 M2 M1	10	125	200	4650	5016	192	963.0	593.7	12	160	250	4650	5109	175	894.0	793.7	12	150	250	4690	5149	214	1101.8	978.2	12	180	250	4850	5309	134	711.4	631.6
⑤	0.2 M2 M1 0.2	10	200	2470	450	2869	242	694.3	428.0	10	250	2550	450	2949	226	666.5	410.9	10	200	2570	470	2989	322	962.4	593.4	10	200	3550	750	4249	242	1028.2	633.9
⑥	M2 M1 M1	10	250	160	2470	2756	194	534.6	329.6	10	250	160	2550	2836	226	640.9	395.1	10	250	160	2570	2856	258	736.8	454.2	10	250	160	3550	3836	194	744.1	458.8
⑦	M2 M1 M1	10	240	200	706	1059	202	213.9	131.9	10	240	200	749	1101	234	257.7	156.9	10	260	200	805	1158	248	287.2	177.0	10	200	200	890	1243	242	300.7	185.4
⑧	M1 M2 M1	10	240	200	749	1101	202	222.5	137.2	10	240	200	819	1172	234	274.3	169.1	10	260	200	848	1200	248	297.7	183.5	10	200	200	961	1313	242	317.9	196.0
⑨	M1 M2 M1	12	220	200	4638	4997	110	549.6	488.0	12	180	200	4638	4997	156	779.5	692.1	12	180	200	4678	5037	178	896.5	796.0	10	200	160	4840	5126	121	620.2	382.4
⑩	M1 M2 M1	10	240	820	4650	6290	101	635.3	391.7	12	240	850	4650	6350	117	743.0	659.6	12	260	870	4690	6430	124	797.3	707.9	12	200	1150	4850	7150	121	865.2	768.1
⑪	M1	16	240	–	1450	1450	100	145.0	228.9	16	240	–	1450	1450	116	168.2	265.5	16	260	–	1450	1450	123	178.4	281.5	12	200	–	1450	1450	120	174.0	154.5
⑫	M2 M1 M1	10	240	200	706	1059	202	213.9	131.9	10	240	200	749	1101	234	257.7	158.9	10	260	200	777	1130	248	280.1	172.7	10	200	200	749	1101	242	266.5	164.3
⑬	M1 M2 M1	10	240	200	749	1101	202	222.5	137.2	10	240	200	819	1172	234	274.3	169.1	10	260	200	819	1172	248	290.7	179.2	10	200	200	819	1172	242	283.6	174.9
⑭	M2 M1 M1	10	250	160	23848	24134	16	386.1	238.1	10	250	160	27848	28134	16	450.1	277.5	10	250	160	31848	32134	16	514.1	317.0	10	250	160	23848	24134	16	386.1	238.1
⑮	M2 M1 M1	10	250	160	23848	24134	16	386.1	238.1	10	250	160	27848	28134	16	450.1	277.5	10	250	160	31848	32134	16	514.1	317.0	10	250	175	23848	24164	24	579.9	357.5
⑯	M2 M1 M1	10	250	160	23848	24134	32	772.3	476.1	10	250	160	27848	28134	32	900.3	555.1	10	250	160	31848	32134	32	1028.3	634.3	10	250	160	23848	24134	48	1158.4	714.2
⑰	M2 M1 M1	10	250	160	23848	24134	32	772.3	476.1	10	250	175	27848	28164	32	901.2	555.6	10	250	175	31848	32164	32	1029.2	634.5	10	250	175	23848	24164	32	772.3	476.1
⑱	M2 M1 M1	10	250	160	23848	24134	12	289.6	178.6	10	250	175	27848	28164	12	338.0	208.4	10	250	175	31848	32164	12	386.0	238.0	10	250	175	23848	24164	12	289.6	178.6
⑲	M2 M1 M1	10	–	160	23848	24134	20	482.7	297.6	10	–	160	27848	28134	20	56..7	346.9	10	–	160	31848	32134	20	642.7	396.0	10	–	160	23848	24134	20	482.7	297.6
⑳	M2 M1 M1	BAR IS NOT USED								10	–	160	27848	28134	2	56.5	34.7	10	–	160	31848	32134	2	64.3	39.6	10	–	160	23848	24134	2	48.3	29.8
㉑	M1 M2	10	150	150	470	1271	64	81.4	50.2	10	150	150	500	1331	64	85.2	52.5	10	150	150	520	1371	66	90.5	55.8	10	150	150	500	1331	68	90.5	55.8
㉒	M1 M2 M1	10	–	160	4650	4936	16	79.0	48.7	10	–	160	4650	4936	16	79.0	48.7	10	–	160	4690	4976	16	79.6	49.1	10	–	160	4850	5136	16	82.2	50.7
㉓	M1+0.2m 135° M1 M2 0.2	10	150	1100	1556	4207	64	269.2	166.0	10	150	1100	1556	4207	64	269.2	166.0	10	150	1100	1556	4207	66	277.7	171.2	10	150	1100	1556	4207	68	286.2	176.5
㉔	M1 M2 M1	12	–	200	4650	5009	20	100.2	88.9	12	–	200	4650	5009	20	100.2	88.9	12	–	200	4690	5049	20	101.0	89.6	12	–	200	4850	5209	20	104.2	92.5
TOTAL STEEL (Kgs)		6451.3								7898.6								9100.8								7991.9							
TOTAL CONCRETE (cum)		117.86								147.06								170.62								166.85							

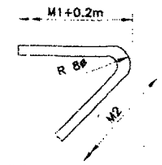
NOTES:

1. JOINT OR LAPPING OF BARS SHALL BE SUITABLY STAGGERED AS PER CLAUSE 304.6 OF IRC:21–1987
2. FULL SCALE ELEVATION FOR THE BARS SHALL BE LINED OUT ON A PLAIN PLASTERED FLOOR TO THE DIMENSIONS SHOWN ON THE DRAWING SO AS TO GET CORRECT CLEARENCE BETWEEN DIFFERENT BARS AND THEN THE BARS SHALL BE BENT TO PROPER SHAPE.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING No. SD/109 (SHEET 1 OF 16).
4. QUANTITY OF CONCRETE DOES NOT INCLUDE GUARD STONES.
5. QUANTITY OF STEEL DOES NOT INCULDE 5% EXTRA FOR WASTAGE AND LAPS.

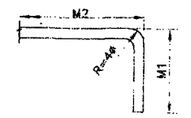
BENDING OF BARS



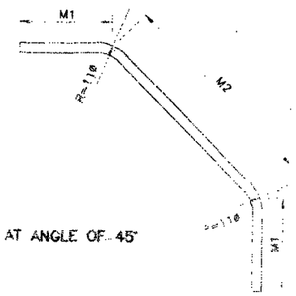
BEND WITH CLOSE HOOKS



BEND AT ANGLE OF 135°



BEND AT RIGHT ANGLE



BEND AT ANGLE OF 45°

LEGEND :- ø SHOWS DIA. OF BAR

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING), NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DOUBLE CELL BOX CULVERT
2m x 2m TO 5m x 5m
(WITH EARTH CUSHION)

BAR BENDING SCHEDULE

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	DRG. NO.
			SD/114

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

SCHEDULE OF REINFORCEMENT

BAR MARK	SHAPE OF BARS (NOT TO SCALE) / BOX – CELL DESIGNATION Nc/ab/Eo	2/23/4								2/23/5								2/32/3								2/32/4							
		BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.
①	M1 M2 M1	16	280	1200	4850	[illegible]	[illegible]	[illegible]	[illegible]	16	260	1200	4910	[illegible]	[illegible]	893.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
②	M1	BAR IS NOT USED								10	260	–	1450	[illegible]	[illegible]	175.4	[illegible]	[illegible]	[illegible]	–	[illegible]	2050	2050	96	196.8	310.4	[illegible]	[illegible]	–	[illegible]	2050	96	196.8	310.4
③	M1 M2 M1	12	280	900	3570	5329	204	1087.1	965.1	12	260	930	3600	5419	250	1354.7	1202	12	250	1150	2720	4979	196	975.8	865.1	10	200	1150	2720	5086	256	1444.7	890.5
④	M1 M2 M1	12	160	250	4850	5300	175	929.0	824.8	12	150	250	4910	[illegible]	214	1148.9	1020.2	12	120	[illegible]	6750	7349	180	1469.8	1304.4	10	160	350	6750	7435	151	1159.6	1030.7
⑤	0.2 M1 0.2 M2	10	200	3570	750	4289	282	1203.6	742.2	10	200	3600	680	[illegible]	322	1361.7	839.5	10	200	2720	500	3169	242	768.9	472.8	10	200	2820	500	3269	282	921.8	568.3
⑥	M1 M2 M1	10	250	160	3570	3850	226	871.4	537.1	10	250	160	3600	[illegible]	258	1002.5	618.1	10	250	160	2720	3006	194	583.1	359.5	10	250	160	[illegible]	[illegible]	226	[illegible]	402.7
⑦	M1 M2 M1	10	280	200	918	1371	202	276.7	158.1	10	260	200	[illegible]	[illegible]	248	336.3	207.3	10	250	200	995	1313	194	254.8	157.1	10	200	200	1041	1384	282	390.3	240.7
⑧	M1 M2 M1	10	280	200	981	1313	202	265.3	163.6	10	260	200	1003	[illegible]	248	336.3	207.3	10	250	200	989	1142	194	260.3	160.5	[illegible]	200	200	1080	1412	282	398.3	245.6
⑨	M1 M2 M1	10	150	150	4840	5136	187	958.5	591.0	10	150	160	4909	[illegible]	214	1139.7	684.2	12	150	150	6738	7097	160	1135.5	1008.1	12	150	200	6738	7097	215	1532.9	1361.9
⑩	M1 M2 M1	12	280	1170	4850	7190	101	726.2	644.7	12	260	1200	4910	[illegible]	124	936.4	831.8	12	250	950	6750	8450	97	819.1	744.0	12	200	1000	6750	6750	151	1233.8	1095.7
⑪	M1	16	280	–	1450	1450	100	145.0	228.9	16	260	–	1450	[illegible]	122	178.4	281.5	16	250	–	2050	2050	96	196.8	310.4	16	200	–	2050	2050	140	287.0	453.0
⑫	M2 M1 M1	10	280	200	777	1130	202	228.2	140.7	10	260	200	819	[illegible]	[illegible]	290.7	179.2	10	250	200	890	1243	194	241.1	148.5	10	200	200	961	1313	282	370.4	228.4
⑬	M1 M2 M1	10	280	200	819	1172	202	236.7	146.0	10	260	200	819	[illegible]	[illegible]	290.7	179.2	10	250	200	918	1271	194	246.6	152.0	10	200	200	989	1342	282	378.4	233.3
⑭	M2 M1 M1	10	250	160	27848	28134	16	450.1	277.5	10	260	175	31848	[illegible]	[illegible]	514.6	317.3	10	250	200	23848	24214	24	581.1	358.3	10	250	225	27848	28264	24	678.3	418.2
⑮	M2 M1 M1	10	250	175	27848	28164	24	[illegible]	416.7	10	250	190	31848	[illegible]	[illegible]	[illegible]	478.4	10	250	160	23848	24134	16	386.1	238.1	10	220	160	27848	28134	18	506.4	312.2
⑯	M2 M1 M1	10	250	160	27848	28134	48	[illegible]	832.6	10	250	[illegible]	31848	[illegible]	[illegible]	[illegible]	951.1	10	250	160	23848	24134	32	772.3	476.1	10	250	160	27848	28134	32	900.3	555.1
⑰	M2 M1 M1	10	250	175	27848	28164	32	901.2	555.6	10	250	[illegible]	31848	[illegible]	[illegible]	[illegible]	[illegible]	10	220	210	23848	24134	56	1357.1	836.7	10	220	235	27848	28264	30	1583.9	976.5
⑱	M2 M1 M1	10	250	175	27848	28164	12	[illegible]	[illegible]	10	250	175	31848	[illegible]	[illegible]	[illegible]	[illegible]	10	220	210	23848	24234	16	390.6	174.3	10	250	235	27848	28284	12	339.4	209.3
⑲	M2 M1 M1	10	–	180	27848	28134	20	[illegible]	[illegible]	10	–	180	31848	[illegible]	[illegible]	[illegible]	[illegible]	10	–	180	23848	24134	24	442.7	247.9	10	–	180	[illegible]	[illegible]	20	392.7	246.7
⑳	M2 M1 M1	10	–	180	27848	28134	2	[illegible]	34.7	10	–	180	31848	[illegible]	[illegible]	[illegible]	[illegible]	10	–	180	23848	24134	4	49.1	29.5	10	–	180	[illegible]	28134	2	[illegible]	[illegible]
㉑	M1 M2	10	150	150	520	1371	63	[illegible]	[illegible]	10	150	150	550	[illegible]	[illegible]	[illegible]	[illegible]	10	150	150	600	[illegible]	34	140.9	86.9	10	150	150	[illegible]	1631	92	150.1	92.5
㉒	M1 M2 M1	10	–	180	4850	5136	16	[illegible]	[illegible]	10	–	180	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	–	180	[illegible]	[illegible]	24	112.8	69.4	10	–	180	[illegible]	[illegible]	16	112.8	69.4
㉓	M1+0.2m 135° M1 M2 0.2	10	150	1100	1556	4207	68	286.1	176.4	10	150	1100	1556	[illegible]	[illegible]	[illegible]	[illegible]	10	150	1100	1556	4207	92	387.0	238.6	10	150	1100	1556	4207	92	387.0	238.6
㉔	M1 M2 M1	12	–	200	4850	5209	20	104.2	92.5	12	–	200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12	–	200	6750	7109	20	142.2	126.2	12	–	200	6750	7109	20	142.2	[illegible]
TOTAL STEEL (Kgs)		9338.9								11189								9677.8								12507.2							
TOTAL CONCRETE (cum)		196.14								232.5								138.03								248.85							

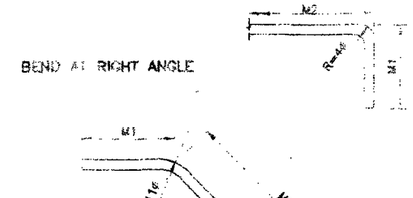
BENDING OF BARS



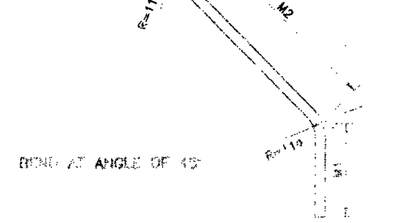
BEND WITH CLOSE HOOKS



BEND AT ANGLE OF 135°



BEND AT RIGHT ANGLE



BEND AT ANGLE OF 45°

LEGEND : SHOWS DIA. OF BAR

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING) , NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DOUBLE CELL BOX CULVERT
2m x 2m TO 3m x 3m
(WITH EARTH CUSHION)

BAR BENDING SCHEDULE

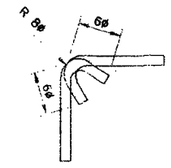
DRG.NO. SD/114 (SHEET 4 OF 4)

SCHEDULE OF REINFORCEMENT

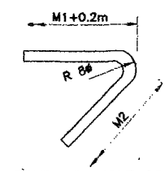
BAR MARK	SHAPE OF BARS (NOT TO SCALE) / BOX – CELL DESIGNATION Nc/ab/Ec	2/32/5								2/33/3								2/33/4								2/33/5							
		BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.
①	M1 M2 M1	16	240	1050	6750	8795	134	1178.5	1860.1	12	200	1270	6850	9349	121	1131.2	1004.3	16	220	1300	6910	9455	128	1210.2	1910.2	16	200	1330	6950	9555	161	1538.4	2428.1
②	M1	16	240	–	2050	2050	133	272.7	430.3	12	200	–	2050	2050	120	246.0	218.4	12	220	–	2050	2050	127	260.4	231.1	12	200	–	2050	2050	160	328.0	291.2
③	M1 M2 M1	12	240	1150	2900	5159	270	1392.9	1236.6	12	200	1200	3720	6079	244	1483.2	1316.8	12	220	1230	3780	6199	258	1599.3	1419.9	10	200	1250	3860	6326	324	2049.5	1263.6
④	M1 M1 M2	16	170	400	6750	7495	189	1416.6	2235.8	16	200	320	6850	7435	121	899.6	1419.9	16	180	350	6910	7555	156	1178.6	1860.2	16	170	380	6950	7655	189	1446.8	2283.6
⑤	0.2 M2 M1 0.2	10	200	2900	500	3349	322	1078.3	664.8	10	200	3720	550	4219	242	1021.0	629.5	10	200	3780	580	4309	282	1215.1	749.2	10	200	3860	600	4409	322	1419.7	875.3
⑥	M2 M1 M1	10	250	160	2900	3186	258	821.9	506.7	10	250	160	3720	4006	194	777.1	479.1	10	250	160	3780	4066	226	918.8	566.5	10	250	160	3860	4146	258	1069.6	659.4
⑦	M2 M1 M1	10	240	200	1102	1455	268	389.9	240.4	10	200	200	1031	1384	242	335.0	206.5	10	220	200	1116	1469	256	376.1	231.9	10	200	200	1215	1568	322	504.9	311.3
⑧	M1 M2 M1	10	240	200	1102	1455	268	389.9	240.4	10	200	200	1060	1412	242	341.8	210.7	10	220	200	1145	1497	256	383.3	236.3	10	200	200	1215	1568	322	504.9	311.3
⑨	M2 M1 M1	12	120	200	6738	7097	267	1894.8	1682.3	12	170	200	6838	7197	142	1021.9	907.3	12	140	200	6898	7257	200	1451.4	1288.5	12	130	200	6938	7297	248	1795.0	1593.6
⑩	M2 M1 M1	16	240	1050	6750	8850	134	1185.9	1871.8	12	200	1250	6850	9350	121	1131.4	1004.4	16	220	1280	6910	9470	128	1212.2	1913.2	12	200	1330	6950	9610	161	1547.2	1373.6
⑪	M1	16	240	–	2050	2050	133	272.7	430.3	16	200	–	2050	2050	120	246.0	388.3	12	220	–	2050	2050	127	260.4	231.1	20	200	–	2050	2050	160	328.0	808.9
⑫	M2 M1 M1	10	240	200	1031	1384	268	371.0	228.7	10	200	200	890	1243	242	300.7	185.4	10	220	200	932	1285	256	329.9	202.8	10	200	200	1003	1356	322	436.6	269.2
⑬	M1 M2 M1	10	240	200	1031	1384	268	371.0	228.7	10	200	200	918	1271	242	307.6	189.6	10	220	200	961	1313	256	336.2	207.3	10	200	200	1003	1356	322	436.6	269.2
⑭	M2 M1 M1	10	250	250	31848	32314	24	775.5	478.1	10	250	200	23848	24214	24	581.1	358.3	10	250	215	27848	28244	24	677.8	417.9	10	250	240	31848	32294	24	775.0	477.8
⑮	M2 M1 M1	10	220	160	31848	32134	18	578.4	356.6	10	250	175	23848	24164	24	579.9	357.5	10	250	190	27848	28194	24	676.6	417.2	10	220	200	31848	32214	28	902.0	556.1
⑯	M2 M1 M1	10	250	160	31848	32134	32	1028.3	634.0	10	250	160	23848	24134	48	1158.4	714.2	10	250	160	27848	28134	48	1350.6	832.6	10	250	160	31848	32134	48	1542.4	951.0
⑰	M2 M1 M1	10	200	250	31848	32314	60	1938.8	1195.4	10	240	210	23848	24234	52	1260.2	776.9	10	220	225	27648	28264	56	1582.8	975.8	10	200	240	31848	32294	60	1937.6	1194.6
⑱	M2 M1 M1	10	250	250	31848	32314	12	387.8	239.1	10	250	210	23848	24234	12	290.8	179.3	10	250	225	27848	28264	12	339.2	209.1	10	250	240	31848	32294	12	387.5	238.9
⑲	M2 M1 M1	10	–	160	31848	32134	20	642.7	396.2	10	–	160	23848	24134	20	482.7	297.6	10	–	160	27848	28134	20	562.1	346.9	10	–	160	31848	32134	30	642.7	396.2
⑳	M2 M1 M1	10	–	160	31848	32134	2	64.3	39.6	10	–	160	23848	24134	2	48.3	29.8	10	–	160	27848	28134	2	56.3	34.7	10	–	160	31848	32134	2	64.3	39.6
㉑	M1 M2	10	150	150	700	1731	92	159.3	98.2	10	150	150	600	1531	94	143.9	88.7	10	150	150	630	1591	94	149.6	92.2	10	150	150	680	1691	96	162.4	100.1
㉒	M1 M1 M2	10	–	160	6750	7036	16	112.6	69.4	10	–	160	6850	7136	16	114.2	70.4	10	–	160	6910	7196	16	115.1	71.0	10	–	160	6950	7236	16	115.8	71.4
㉓	M1+0.2m M1 135° M2 0.2	10	150	1100	1556	4207	92	387.0	238.6	10	150	1100	1556	4207	94	395.5	243.8	10	150	1100	1556	4207	94	395.5	243.8	10	150	1100	1556	4207	96	403.9	249.0
㉔	M1 M1 M2	12	–	200	6750	7109	20	142.2	126.2	12	–	200	6850	7209	20	144.2	128.0	12	–	200	6910	7269	20	145.4	129.1	12	–	200	6950	7330	20	146.2	129.8
TOTAL STEEL (Kgs)		15728.5								11404.9								14818.6								17142							
TOTAL CONCRETE (cum)		300.92								227.87								282.77								345.2							

NOTES:

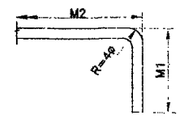
1. FOR ALL NOTES REFER DRG. NO. SD/114 (SHEET 2 OF 4).



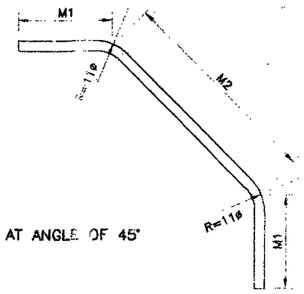
BEND WITH CLOSE HOOKS



BEND AT ANGLE OF 135°



BEND AT RIGHT ANGLE



BEND AT ANGLE OF 45°

LEGEND : ø SHOWS DIA. OF BAR

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING), NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DOUBLE CELL BOX CULVERT
2m x 2m TO 3m x 3m
(WITH EARTH CUSHION)

BAR BENDING SCHEDULE

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1998
(A.R.GHOSH) CES (I) LTD	(M.C. [illegible]OON)	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/114 (SHEET 4 OF 4)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com