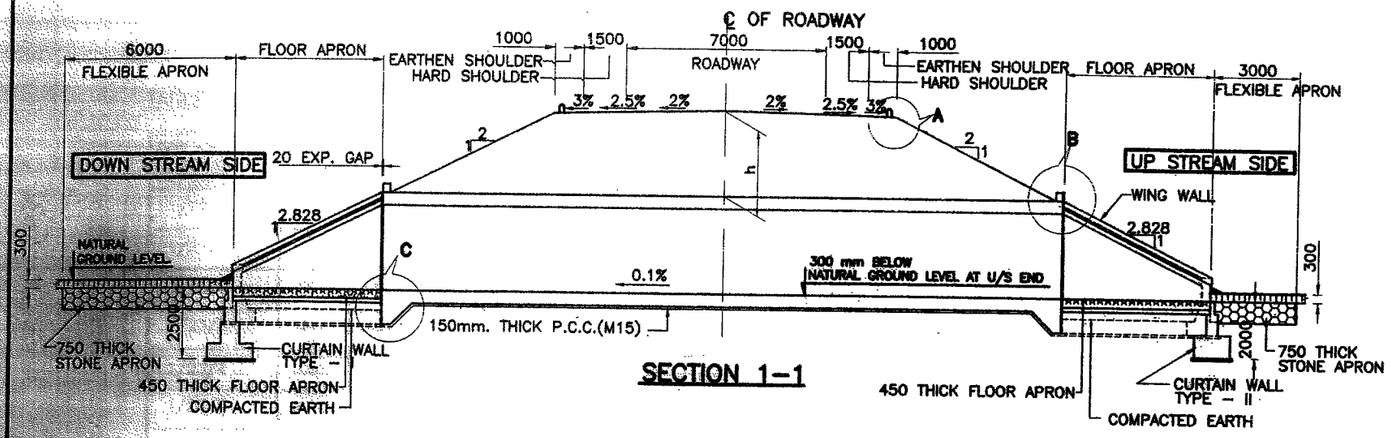
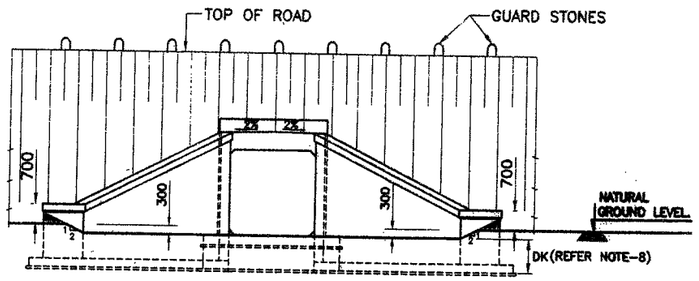
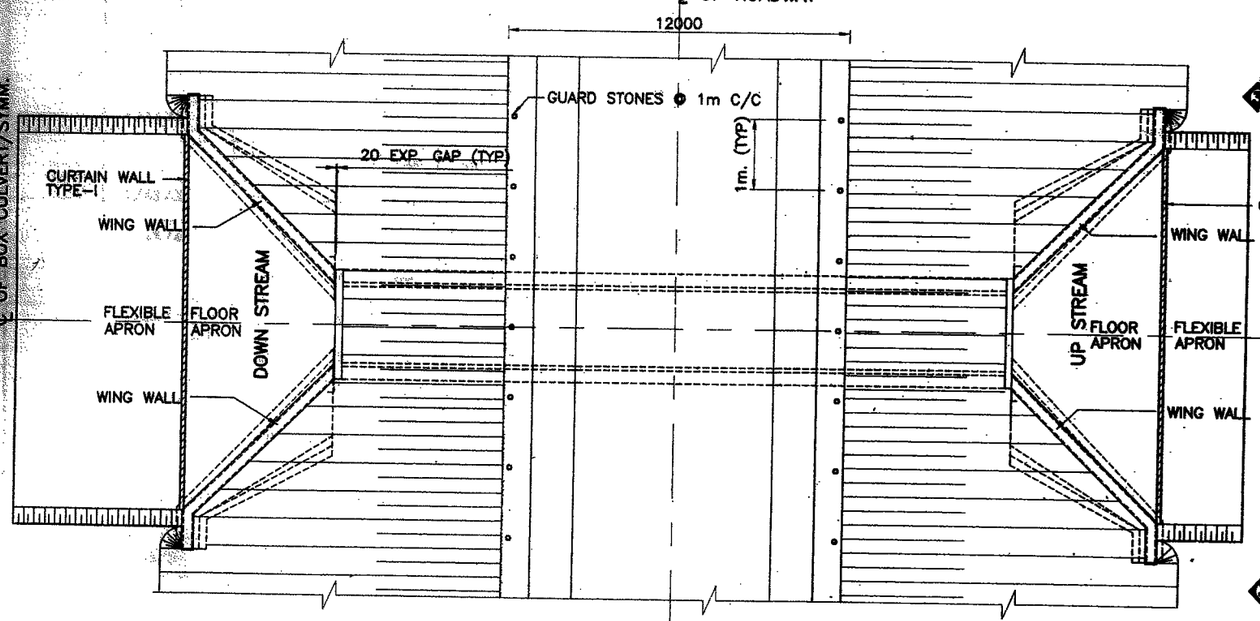
DRG.NO. SD/103 (SHEET 1 OF 2)



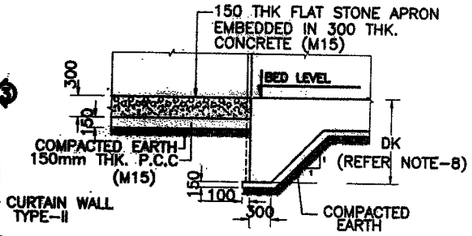
SECTION 1–1



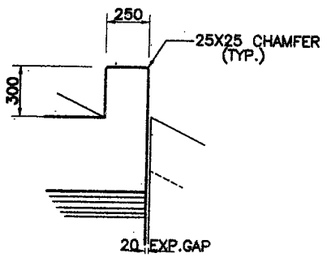
VIEW 3–3



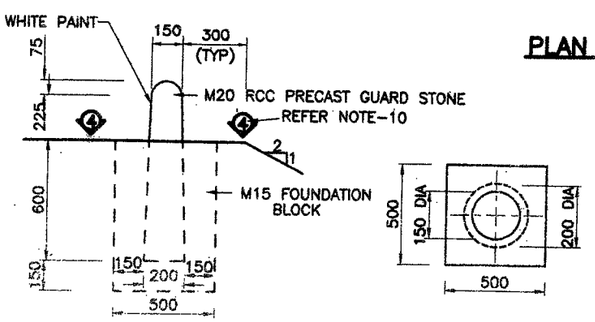
PLAN AT ROAD LEVEL



DETAIL – C



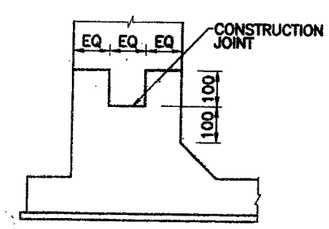
DETAIL – B



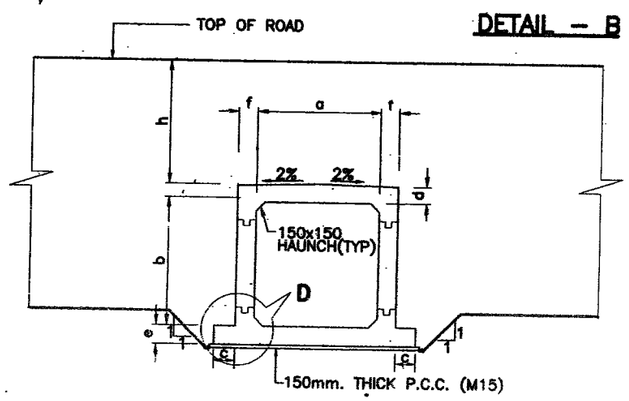
DETAIL – A

PLAN

DETAIL OF PRECAST GUARD STONE @ 1m c/c



DETAIL D



SECTION 2–2

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
2. FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER DRG. NO. SD/101.
3. FOR REINFORCEMENT DETAILS REFER DRG. NO. SD/109.
4. FOR DETAILS OF WING WALL REFER DWG. NO. SD/113.
5. SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFIRM TO CLAUSE 305.2.1.5 OF MOST SPECIFICATION.
6. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
7. DESIGNS ARE GIVEN FOR THE BOX CELL CULVERTS ONLY. THESE HAVE NO BEARING WITH DESIGN OF EMBANKMENT WHICH WILL BE TAKEN UP BY ENGINEER–IN–CHARGE SEPERATELY
8. 'DK' IS DEPTH OF KEY AT BASE SLAB.

FOR BASE SLAB THICKNESS	VALUE OF 'DK'
UPTO 900mm	1200mm.
GREATER THAN 900mm	e+300mm

e = BASE SLAB THICKNESS

9. FOR SECTION 2–2 DETAILS REFER DRAWING NO SD/103 (SHEET 1 OF 2)
10. FOR SECTION 4–4 DETAILS REFER DRAWING NO SD/109 (SHEET 1 OF 16)

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

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

SINGLE CELL R.C.C BOX CULVERT
2m x 2m TO 8m x7m
(WITH EARTH CUSHION)

GENERAL ARRANGEMENT

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CEE (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/103 (SHEET 1 OF 2)

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

TABLE SHOWING SALIENT DIMENSIONS OF SINGLE CELL BOX CULVERT

BOX CELL DESIGNATION Nc/ab/Ec	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	h (mm)	REQUIRED BEARING CAPACITY CATEGORY	DESIGN BASE PRESSURE (T/M²)
1/22/3	2000	2000	600	250	300	250	3000	B	8.80
1/22/4	2000	2000	500	280	350	280	4000	C	10.17
1/22/5	2000	2000	500	300	350	300	5000	C	11.31
1/23/3	2000	3000	1100	280	300	350	3000	C	10.59
1/23/4	2000	3000	1000	320	370	400	4000	C	12.09
1/23/5	2000	3000	1100	320	350	380	5000	C	13.14
1/33/3	3000	3000	800	370	450	400	3000	C	10.35
1/33/4	3000	3000	750	380	470	420	4000	C	11.57
1/33/5	3000	3000	750	420	500	420	5000	C	12.86
1/34/3	3000	4000	1400	370	470	480	3000	C	12.17
1/34/4	3000	4000	1400	400	550	500	4000	C	13.68
1/34/5	3000	4000	1300	450	550	520	5000	C	14.85
1/43/3	4000	3000	500	470	550	420	3000	C	10.12
1/43/4	4000	3000	400	500	600	450	4000	C	11.42
1/43/5	4000	3000	300	570	670	500	5000	C	12.88
1/44/3	4000	4000	1000	470	600	550	3000	C	11.87
1/44/4	4000	4000	1000	500	600	550	4000	C	13.07
1/44/5	4000	4000	1000	500	650	550	5000	C	14.31
1/45/3	4000	5000	1600	450	600	630	3000	C	13.85
1/45/4	4000	5000	1600	500	650	650	4000	D	15.01
1/45/5	4000	5000	1500	550	700	700	5000	D	16.38
1/53/3	5000	3000	300	550	650	500	3000	C	10.11
1/53/4	5000	3000	300	620	700	520	4000	C	11.54
1/53/5	5000	3000	300	670	770	550	5000	C	12.98
1/54/3	5000	4000	800	550	700	530	3000	C	11.56
1/54/4	5000	4000	700	600	750	570	4000	C	12.90
1/54/5	5000	4000	600	650	800	600	5000	C	14.23
1/55/3	5000	5000	1400	550	750	650	3000	C	13.40
1/55/4	5000	5000	1200	600	780	700	4000	C	14.66
1/55/5	5000	5000	1200	650	820	730	5000	D	16.04

BOX CELL DESIGNATION Nc/ab/Ec	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	h (mm)	REQUIRED BEARING CAPACITY CATEGORY	DESIGN BASE PRESSURE (T/M²)
1/63/3	6000	3000	300	650	750	580	3000	C	10.39
1/63/4	6000	3000	300	750	850	630	4000	C	12.06
1/63/5	6000	3000	300	820	900	670	5000	C	13.51
1/64/3	6000	4000	400	700	800	580	3000	C	11.47
1/64/4	6000	4000	300	750	850	630	4000	C	12.80
1/64/5	6000	4000	300	800	950	700	5000	C	14.40
1/65/3	6000	5000	1000	650	850	680	3000	C	13.05
1/65/4	6000	5000	900	650	900	720	4000	C	14.39
1/65/5	6000	5000	850	770	1000	750	5000	D	15.93
1/66/3	6000	6000	1500	650	900	850	3000	C	14.87
1/66/4	6000	6000	1400	700	1000	880	4000	D	16.29
1/66/5	6000	6000	1250	750	1050	950	5000	D	17.58
1/75/3	7000	5000	700	750	1000	700	3000	C	12.97
1/75/4	7000	5000	500	850	1050	770	4000	C	14.35
1/75/5	7000	5000	400	920	1150	800	5000	D	15.82
1/76/3	7000	6000	1300	750	1100	800	3000	C	14.86
1/76/4	7000	6000	1100	820	1100	880	4000	D	16.06
1/76/5	7000	6000	1100	870	1150	900	5000	D	17.46
1/77/3	7000	7000	1700	750	1100	1000	3000	D	16.56
1/77/4	7000	7000	1600	820	1150	1050	4000	D	17.95
1/77/5	7000	7000	1500	900	1200	1100	5000	D	19.37
1/85/3	8000	5000	300	870	1100	750	3000	C	12.83
1/85/4	8000	5000	00	950	1200	850	4000	C	14.18
1/85/5	8000	5000	00	1100	1300	900	5000	D	16.00
1/86/3	8000	6000	800	850	1200	900	3000	C	14.55
1/86/4	8000	6000	700	950	1250	950	4000	D	15.99
1/86/5	8000	6000	600	1050	1300	1000	5000	D	17.44
1/87/3	8000	7000	1300	850	1200	1050	3000	D	16.19
1/87/4	8000	7000	1200	950	1350	1100	4000	D	17.90
1/87/5	8000	7000	1100	1050	1400	1150	5000	D	19.35

NOTES:

1. FOR GENERAL ARRANGEMENT,REFER DRAWING. NO. SD/103 (sheet 1 of 2).
2. FOR GENERAL NOTES, REFER DRG.NO. SD/101
3. SAFE BEARING CAPACITY REQUIRED FOR SOIL IS DIVIDED IN FOUR CATEGORIES AS SHOWN BELOW :

CATEAGORY	::	SAFE BEARING CAPACITY REQUIRED FOR SOIL
A	::	5 T/M²
B	::	10 T/M²
C	::	15 T/M²
D	::	20 T/M²

4. ALL CASES WITH EARTH CUSHION HEIGHTS OF 3m TO 5m ARE SAFE FOR DRAW DOWN CONDITION.
5. FOR EARTH CUSHION BETWEEN 3m AND 4m, BOX WITH 4m EARTH CUSHION IS TO BE USED AND FOR EARTH CUSHION BETWEEN 4m TO 5m, BOX WITH 5m EARTH CUSHION IS TO BE USED. NO RECOMMENDATION IS GIVEN FOR BOX CULVERT WITH EARTH CUSHION HEIGHT IN BETWEEN 0m TO 3m.
6. IN CASE ALLOWABLE SOIL BEARING CAPACITY IS LESS THAN ACTUAL BEARING PRESSURE, THE SOIL SHOULD BE STABILISED TO ACHIEVE SAME.
7. FOR DIMENSIONAL PARAMETERS REFER SECTION 2-2 OF DRAWING NO. SD/103 (SHEET 1 OF 2)

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GENERAL ARRANGEMENT

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/103 (SHEET 2 OF 2)

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