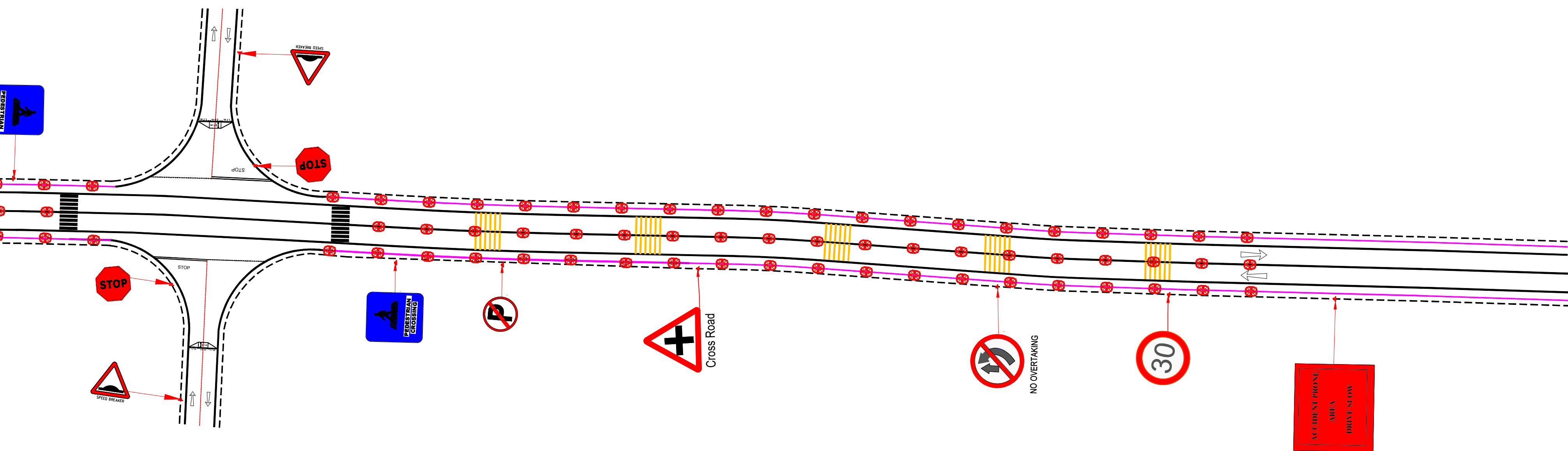
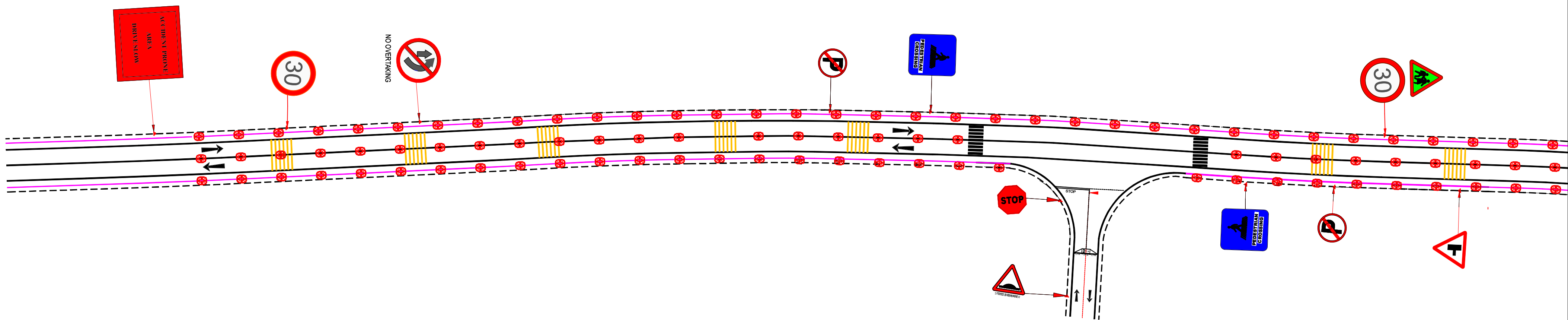
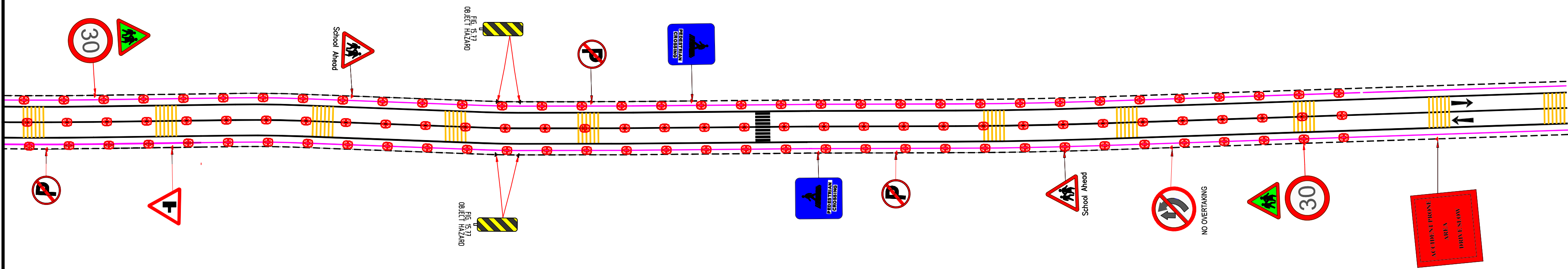
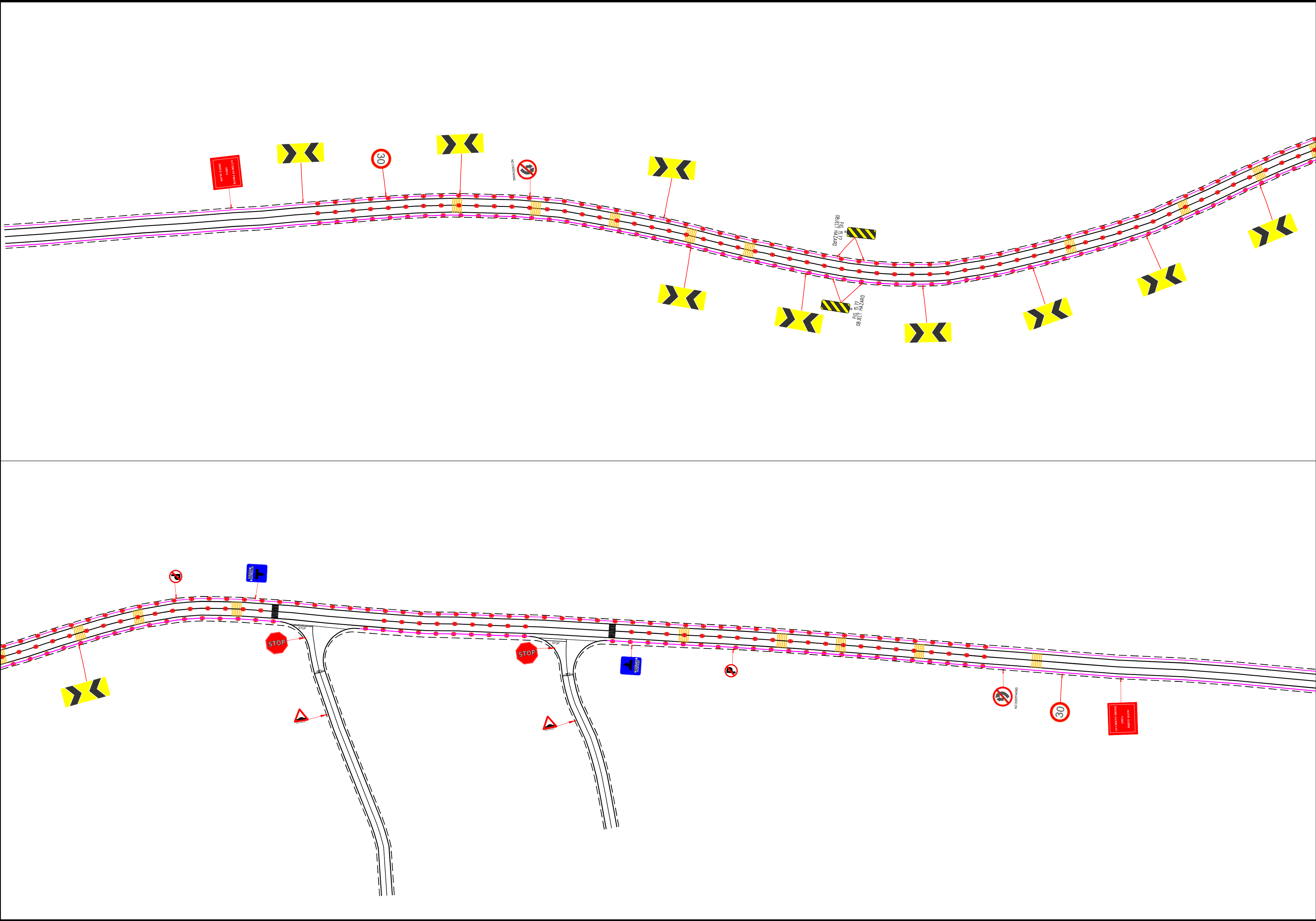


Annexure-1



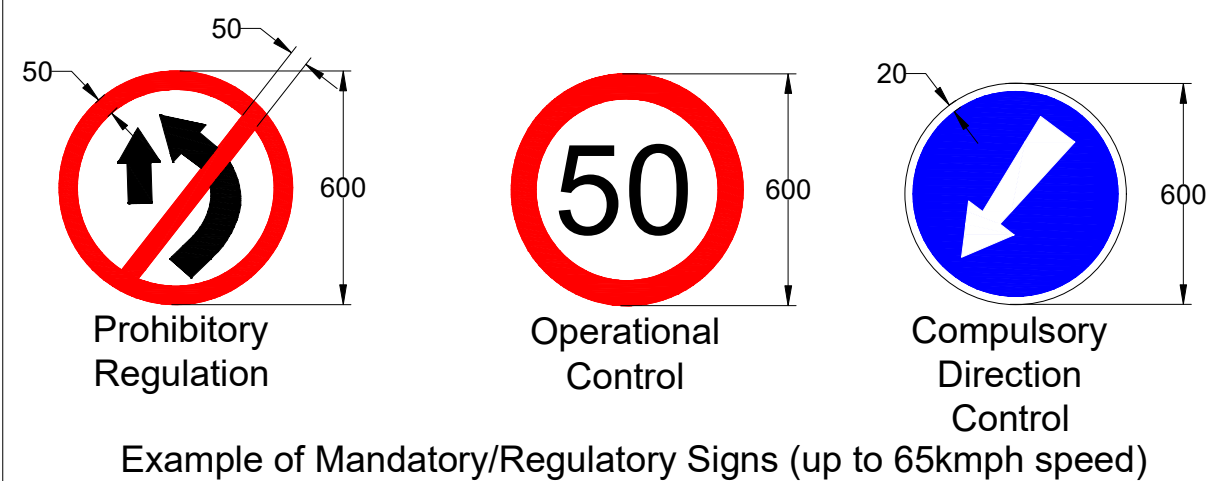




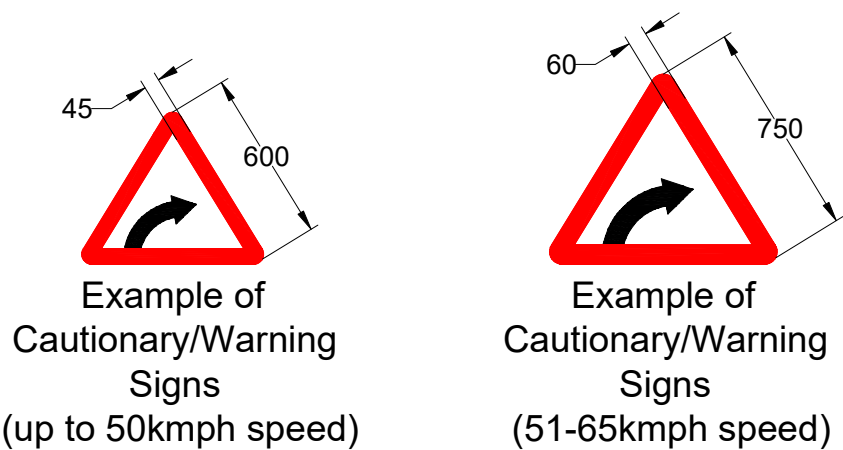
Annexure-2

Annexure-2

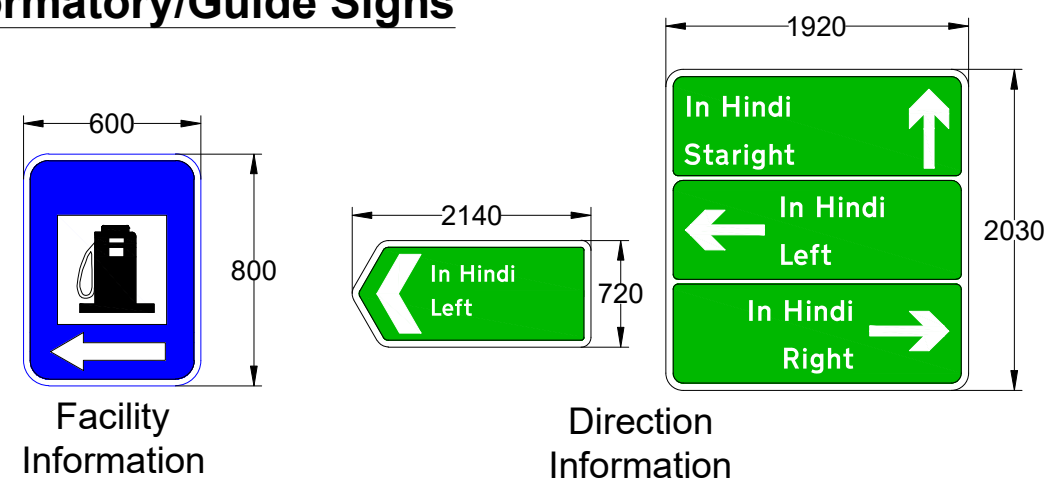
Mandatory/Regulatory Signs



Cautionary/Warning Signs

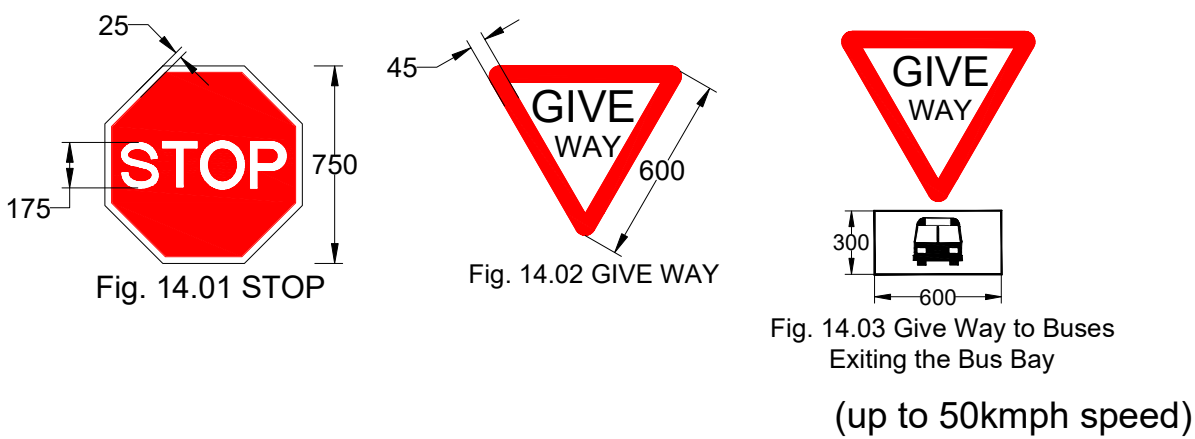


Informatory/Guide Signs



Example of Informatory/Guide Signs (up to 65kmph speed)

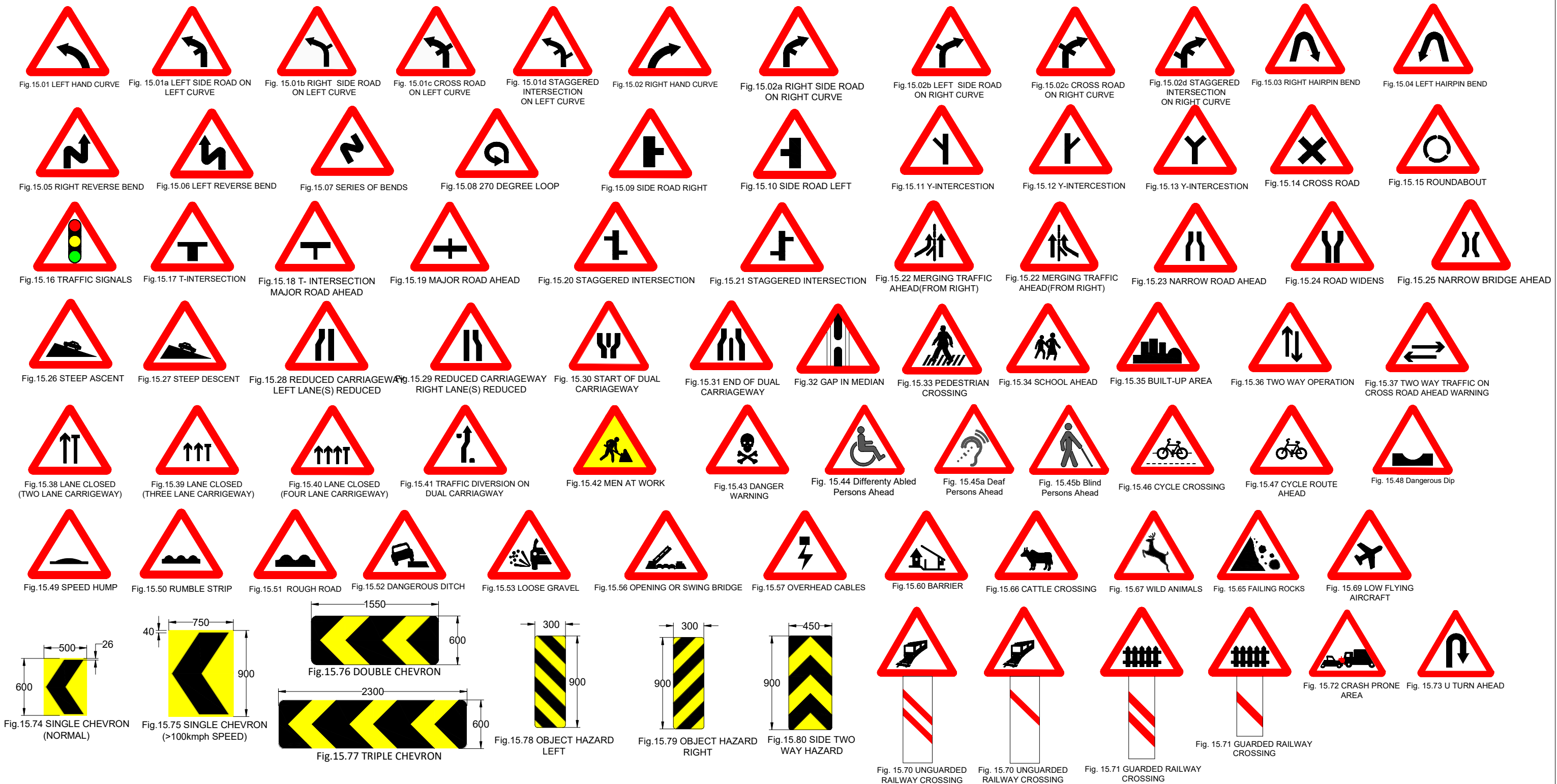
Stop and Give Way Signs



DETAILS OF ROAD SIGNS

NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

Cautionary/Warning Signs



DETAILS OF ROAD SIGNS

NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

Vehicle Control Signs and Speed Limit

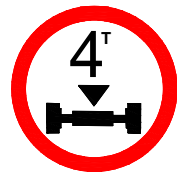


Fig. 14.34 Axle Load Limit



Fig. 14.35 Height Limit

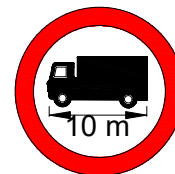


Fig. 14.36 Length Limit



Fig. 14.37 Maximum Speed Limit

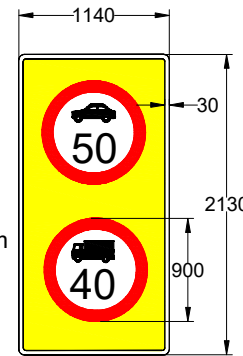


Fig. 14.40 Maximum Speed Limit

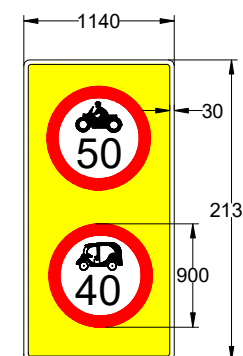


Fig. 14.40b Maximum Speed Limit (Vehicle Type)



Fig. 14.39 Maximum Speed Limit



Fig. 14.38 Width Limit



Fig. 14.41 Stop for Police Check

No Parking and No Stopping Signs

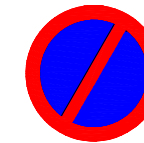


Fig. 14.29 NO STOPPING



Fig. 14.30 NO STOPPING AND NO STANDING



Fig. 14.31 NO PARKING



Fig. 14.32 Parking Not Allowed on Footpath



Fig. 14.33 Parking Not Allowed on Half of Footpath

Prohibitory Signs



Fig. 14.04 Bullock Carts Prohibited



Fig. 14.05 Bullock and Hand Carts Prohibited



Fig. 14.06 Hand Carts Prohibited



Fig. 14.08 Horse Riding Prohibited



Fig. 14.09 Auto-rickshaw Prohibited



Fig. 14.10 Articulated Vehicles Movement Prohibited



Fig. 14.11 Cars Prohibited



Fig. 14.12 Trucks Prohibited



Fig. 14.13 Tractor/ Construction Vehicles Prohibited



Fig. 14.14 Construction Vehical Prohibited



Fig. 14.15 Articulated Vehicles Movement Prohibited



Fig. 14.16 Two Wheelers Prohibited



Fig. 14.17 Cycles Prohibited



Fig. 14.18 Pedestrian Prohibited

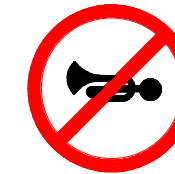


Fig. 14.19 Horn Prohibited

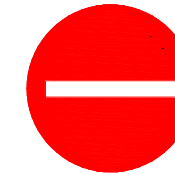


Fig. 14.20 No Entry

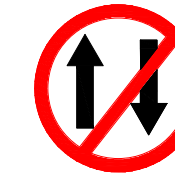


Fig. 14.21 One Way



Fig. 14.22 Right Turn Prohibited



Fig. 14.23 Left Turn Prohibited



Fig. 14.24 Overtaking Prohibited



Fig. 14.25 U-Turn Prohibited

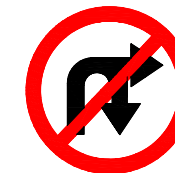


Fig. 14.26 Right Turn & U-Turn Prohibited



Fig. 14.27 Free Left Turn Prohibited at Signal

DETAILS OF ROAD SIGNS

NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

Compulsory Control and Other Signs

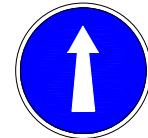


Fig.14.43 COMPULSORY AHEAD

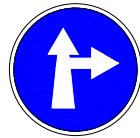


Fig.14.44 COMPULSORY AHEAD OR RIGHT TURN

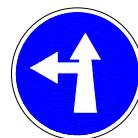


Fig.14.45 COMPULSORY AHEAD OR LEFT TURN

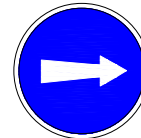


Fig.14.46 COMPULSORY TURN RIGHT

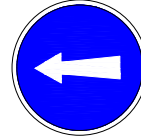


Fig.14.47 COMPULSORY TURN LEFT

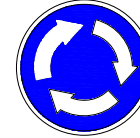


Fig.14.47a PRIORITY TO VEHICLES FROM RIGHT

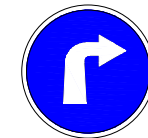


Fig.14.48 COMPULSORY TURN RIGHT

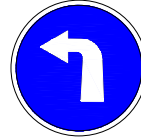


Fig.14.49 COMPULSORY TURN LEFT

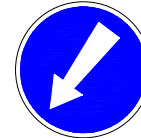


Fig.14.50 COMPULSORY KEEP LEFT

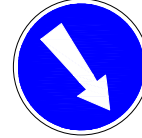


Fig.14.51 COMPULSORY KEEP RIGHT

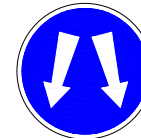


Fig.14.52 PASS EITHER SIDE



Fig.14.53 Minimum Speed Limit



Fig.14.54 Compulsory Cycle Track/Cycles only



Fig.14.55 Compulsory Cyclist and Pedestrian Route



Fig.14.56 Pedestrian Only

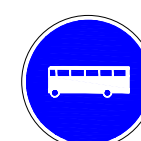


Fig.14.58 Bus Way/ Buses Only

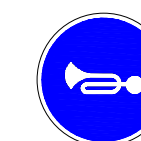


Fig.14.59 Compulsory Sound Horn

Restriction End Signs

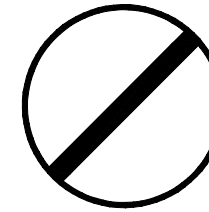


Fig.14.42 RESTRICTION ENDS

Facility Information Signs



Fig.17.01 EATING PLACE



Fig.17.02 LIGHT REFRESHMENT

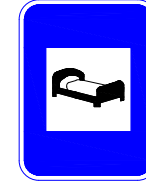


Fig.17.03 RESTING PLACE



FIG.17.04 FIRST AID POST



Fig.17.05 TOILET FACILITIES



Fig.17.06 FILLING STATION



Fig.17.07 HOSPITAL



Fig.17.08 PUBLIC TELEPHONE

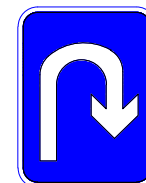


Fig.17.09 U - TURN AHEAD

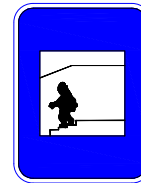


Fig.17.10 PEDESTRIAN SUBWAY

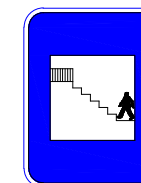


Fig.17.11 FOOT OVER BRIDGE



Fig.17.13 POLICE STATION

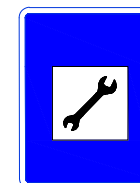


Fig. 17.14 Repair Facility

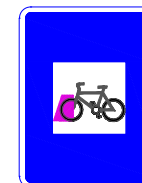


FIG.17.16 PUBLIC BIKE SHEARING STAND

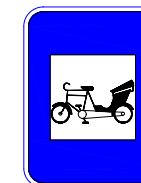


Fig.17.18 CYCLE RICKSHAW STAND



Fig.17.19 TAXI STAND



Fig.17.20 AUTORIKSHAW STAND

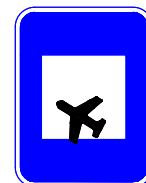


Fig. 17.23 Airport

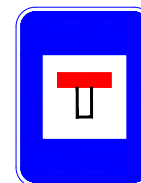


Fig.17.26 NO THROUGH ROAD

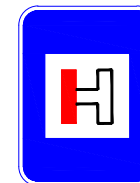


Fig.17.27 NO THROUGH SIDE ROAD



Fig.17.28 TOLL ROAD AHEAD



Fig.17.29 GUIDE SIGN ON TOLL LANE PORTAL

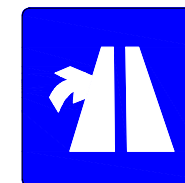


Fig.17.31 ENTRY RAMP FOR EXPRESSWAY



Fig.17.32 EXIT RAMP FOR EXPRESSWAY

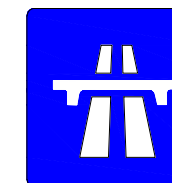


Fig.17.33 EXPRESSWAY SYMBOL



Fig.17.34 EXPRESSWAY SYMBOL

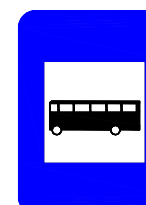


Fig.17.35 BUS STOP

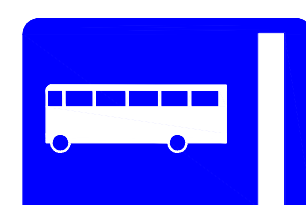


Fig.17.36 BUS LANE



Fig. 17.48 Speed Breaker Informatory Sign



Fig.17.45 Fire Extinguisher



Fig.17.47 PEDESTRIAN CROSSING INFORMATORY SIGN

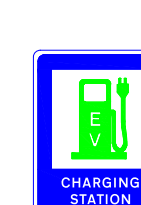
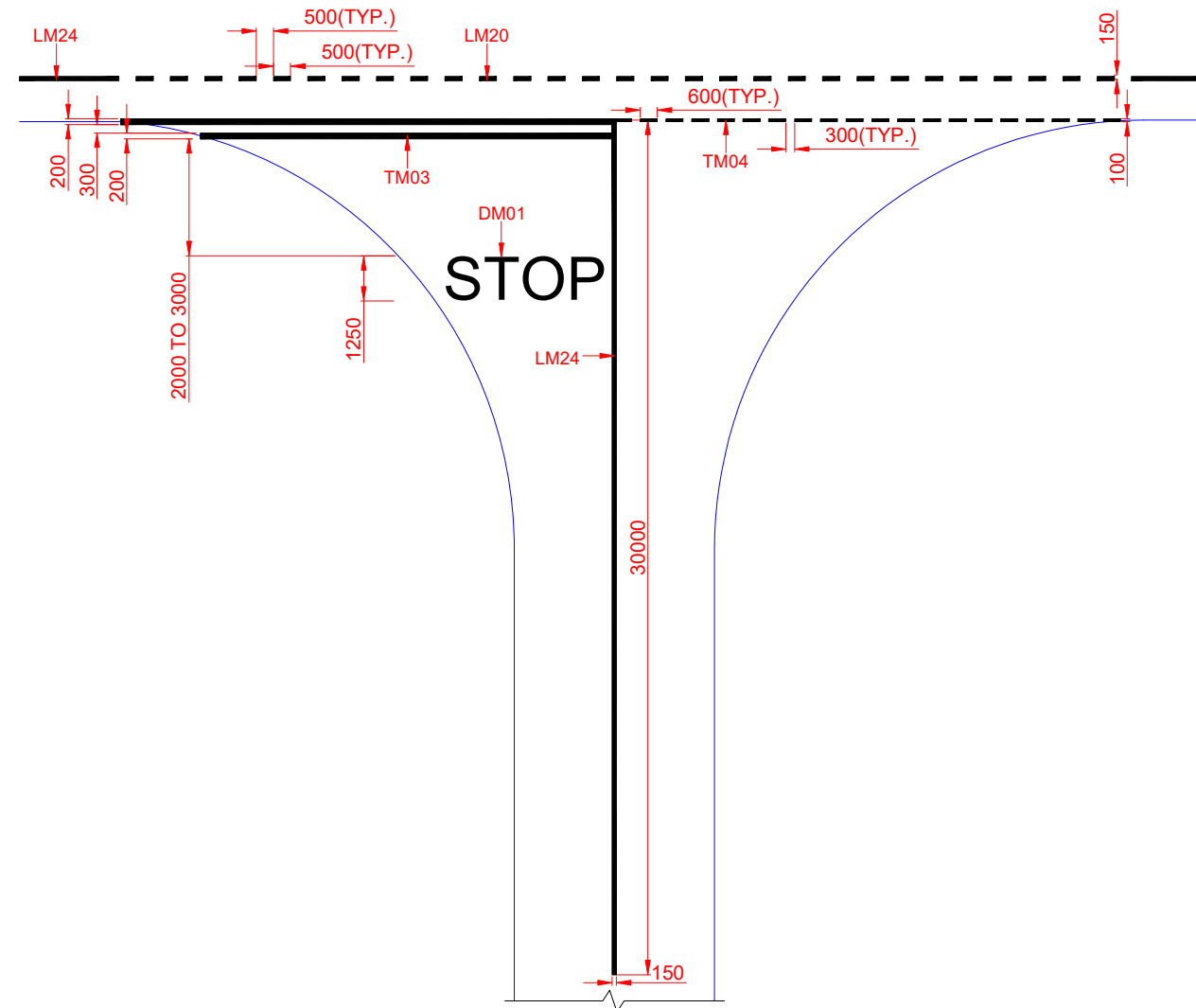


Fig.17.49 ELECTRIC VEHICLE CHARGING STATION INFORMATORY SIGN

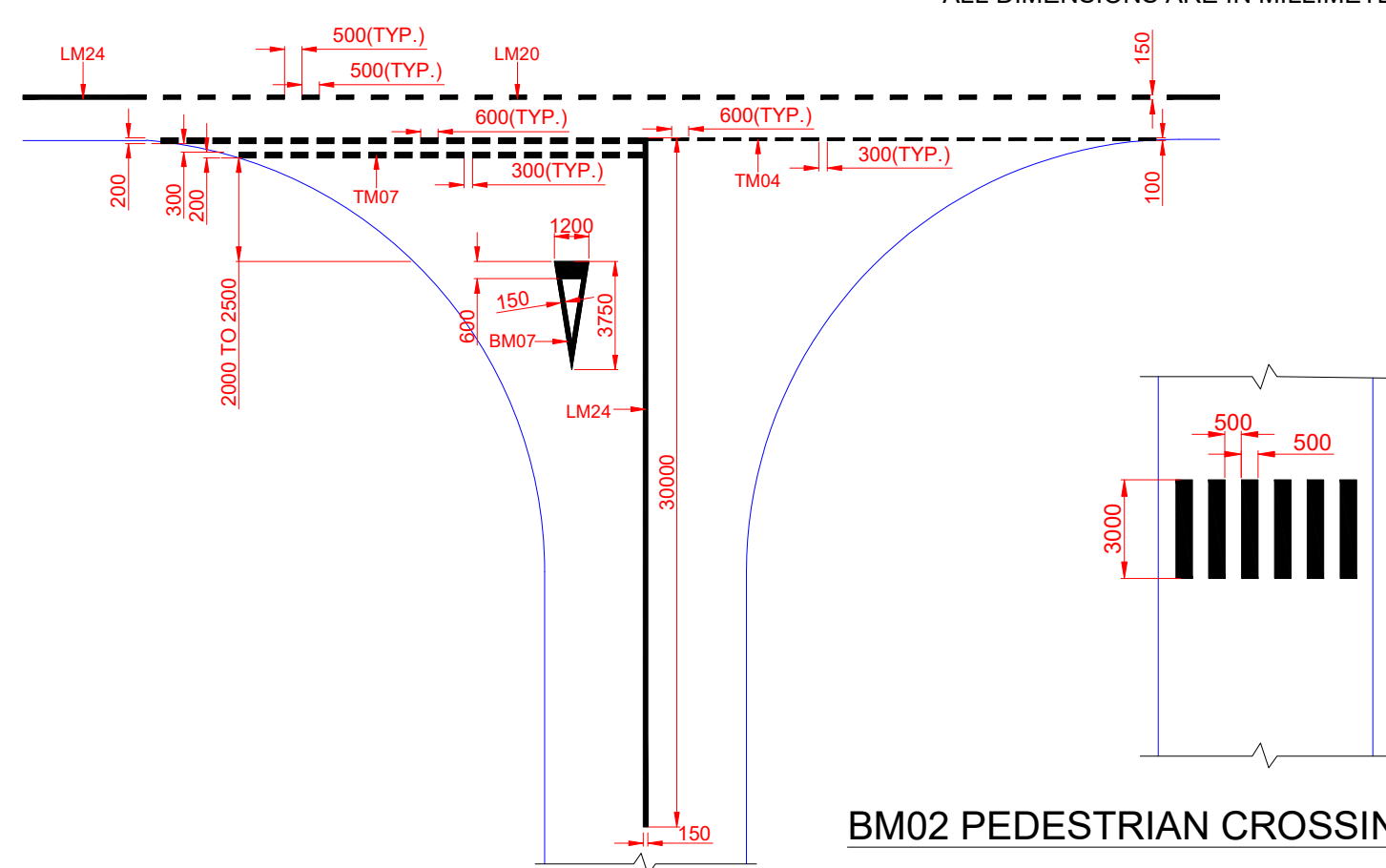
DETAILS OF ROAD SIGNS

NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

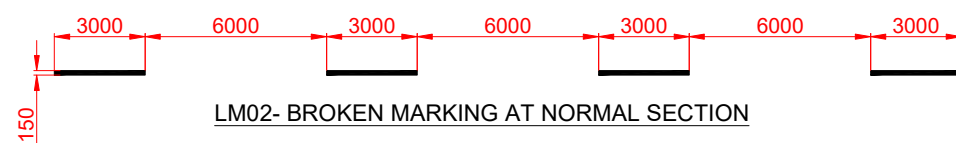


ROAD MARKING AT INTERSECTION (CASE-1 WITH STOP LINE)

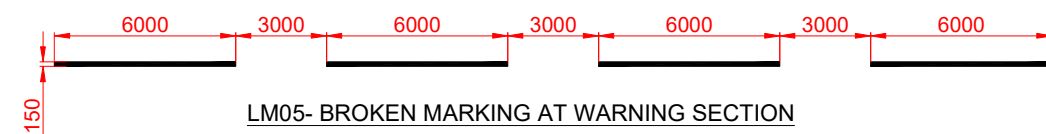


BM02 PEDESTRIAN CROSSING MARKING

ROAD MARKING AT INTERSECTION (CASE-2 WITH GIVE WAY LINE)



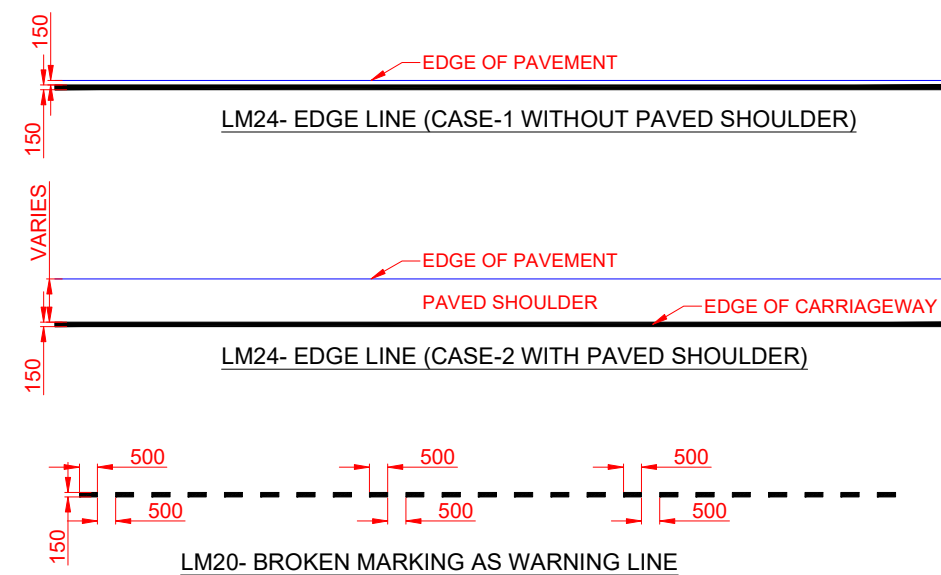
LM02- BROKEN MARKING AT NORMAL SECTION



LM05- BROKEN MARKING AT WARNING SECTION



LM24- CONTINUES MARKING AT NO OVERTAKING SECTION

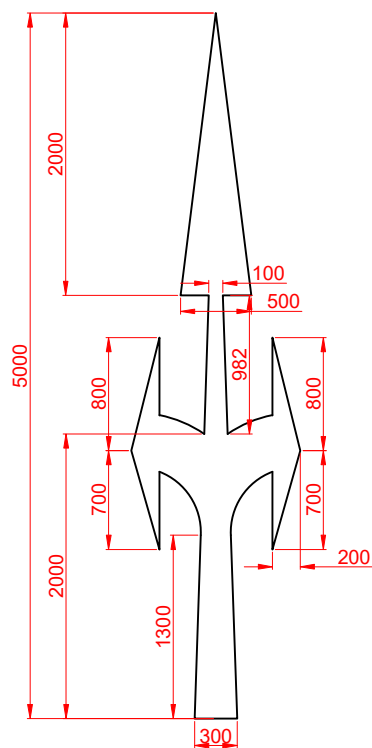


LM24- EDGE LINE (CASE-1 WITHOUT PAVED SHOULDER)

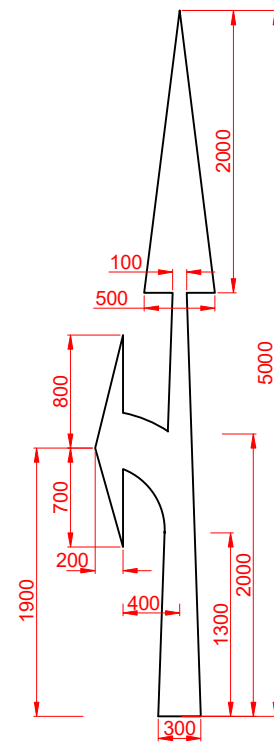
LM24- EDGE LINE (CASE-2 WITH PAVED SHOULDER)

LM20- BROKEN MARKING AS WARNING LINE

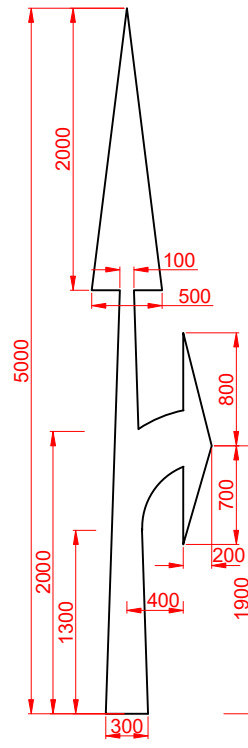
DETAILS OF ROAD MARKING



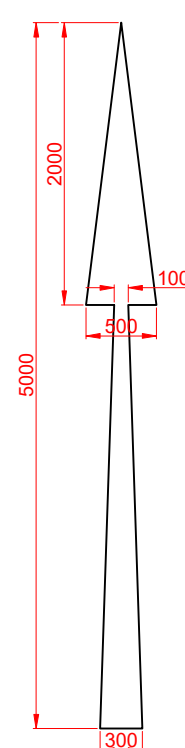
AM07
STRAIGHT RIGHT &
LEFT ARROW



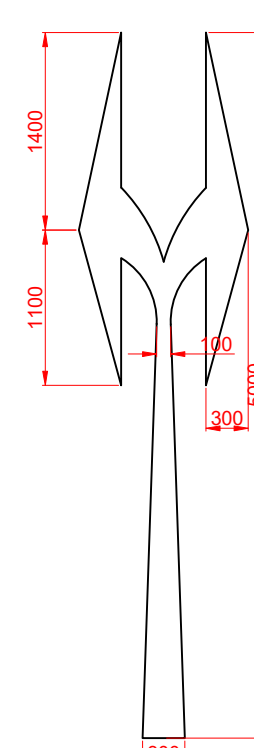
AM11
STRAIGHT &
LEFT ARROW



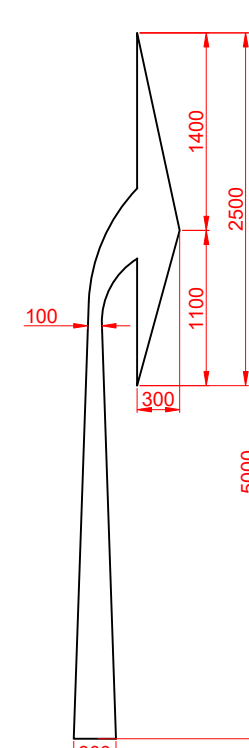
AM12
STRAIGHT &
RIGHT ARROW



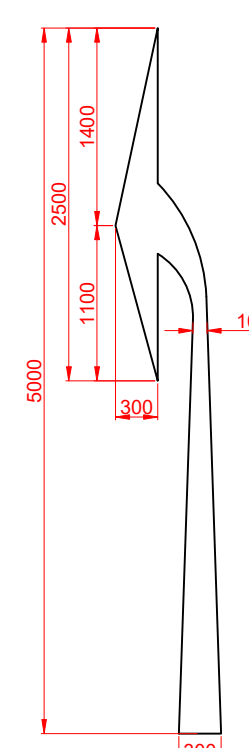
AM08
STRAIGHT ARROW



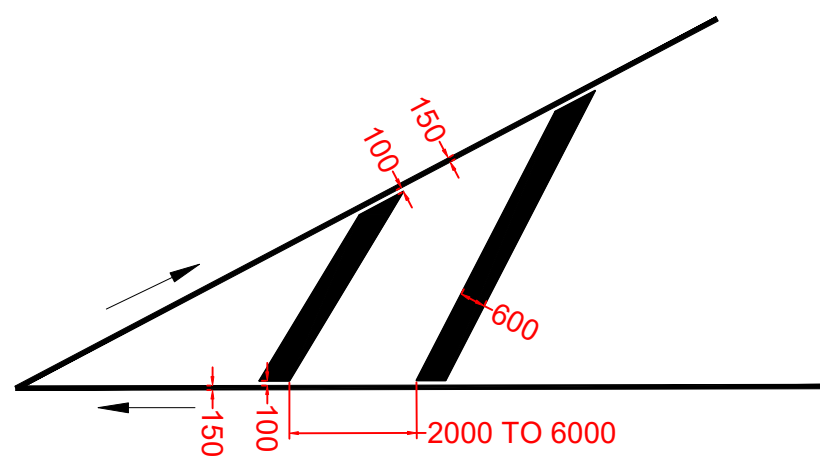
AM06
RIGHT & LEFT
ARROW



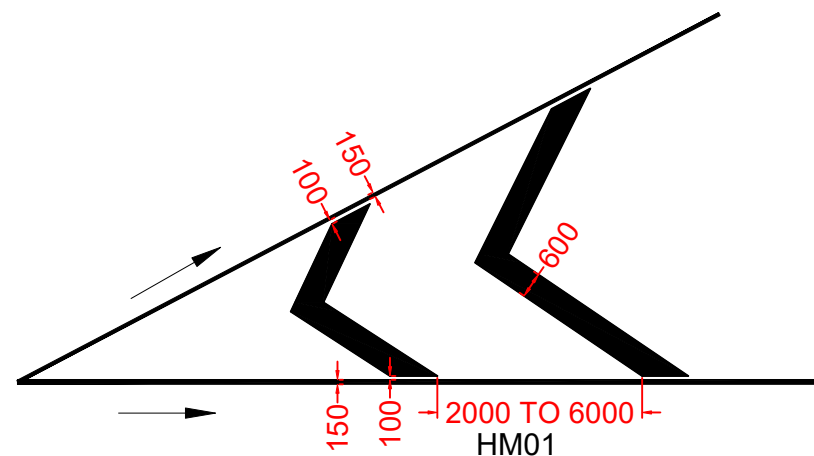
AM03
RIGHT & ARROW



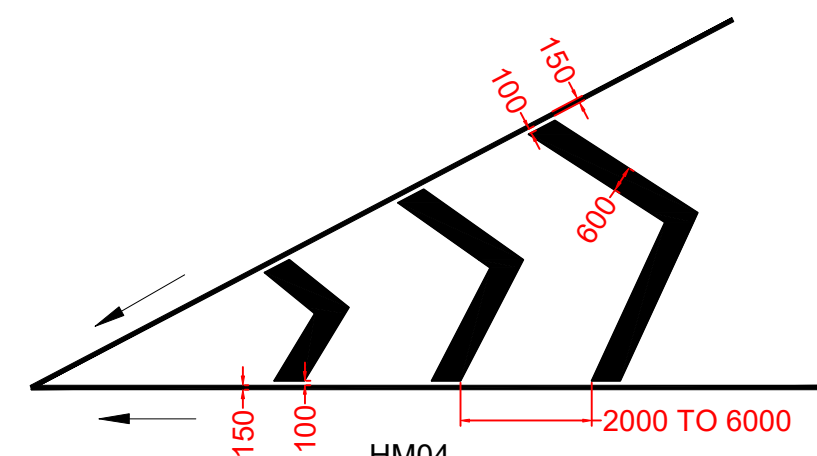
AM02
LEFT ARROW



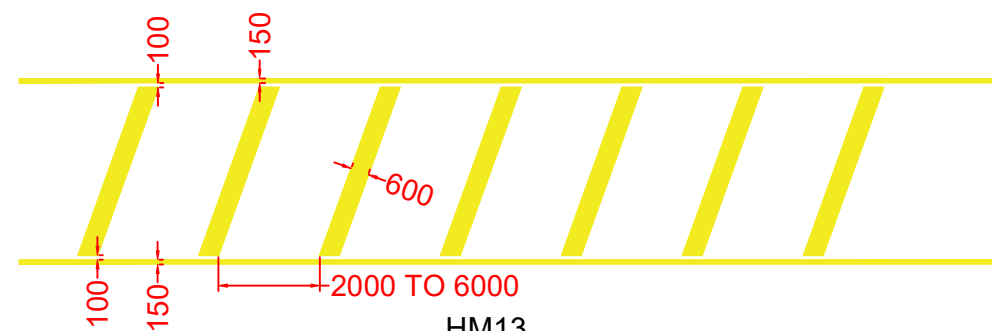
HM07
DIAGONAL



HM01
CHEVRON MARKING



HM04
CHEVRON MARKING



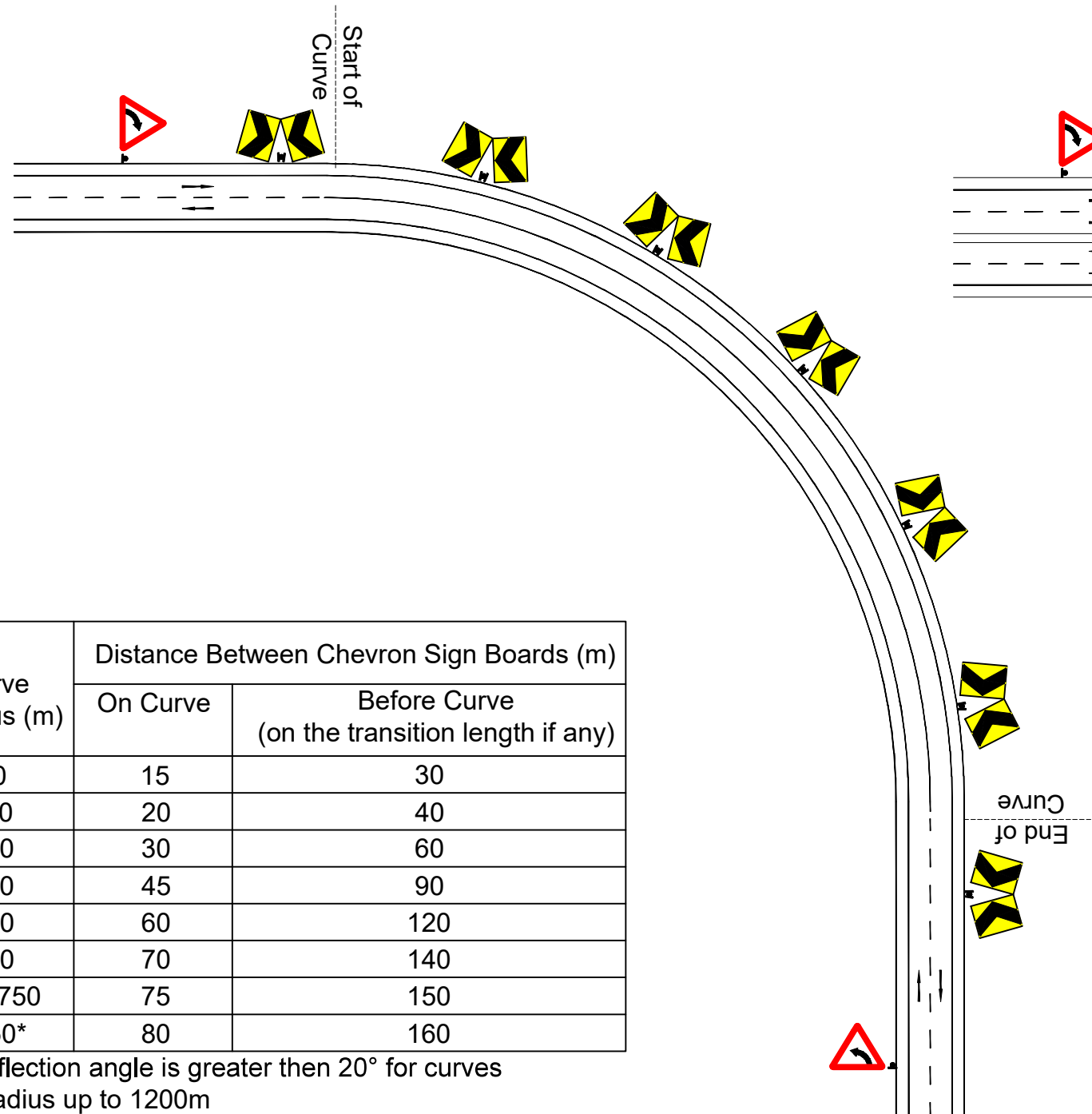
HM13
LADDER HATCHING

DETAILS OF ROAD MARKING

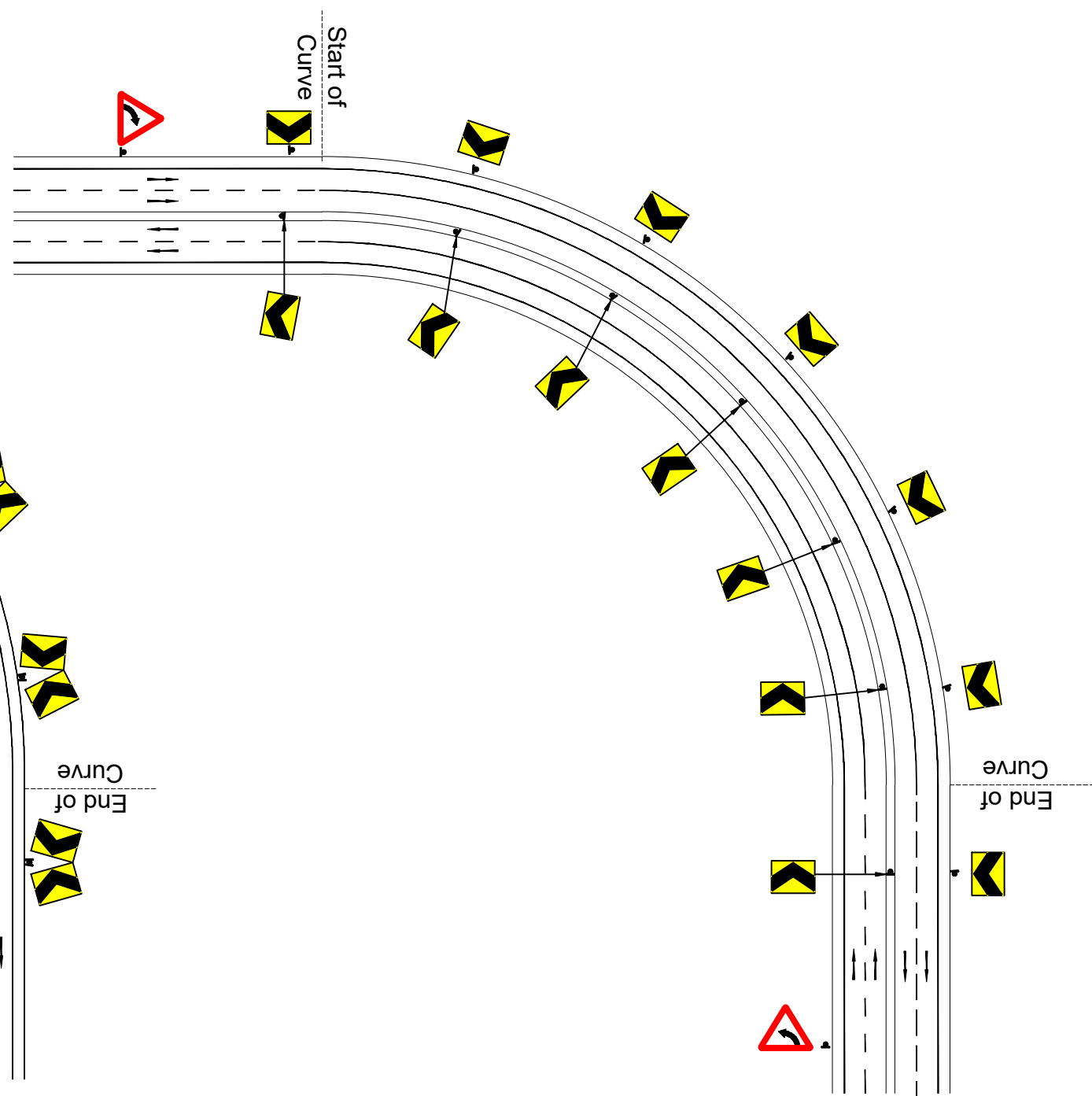
NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

Curve Radius (m)	Distance Between Chevron Sign Boards (m)	
	On Curve	Before Curve (on the transition length if any)
50	15	30
100	20	40
200	30	60
300	45	90
400	60	120
450	70	140
451-750	75	150
>750*	80	160

* If deflection angle is greater than 20° for curves with radius up to 1200m

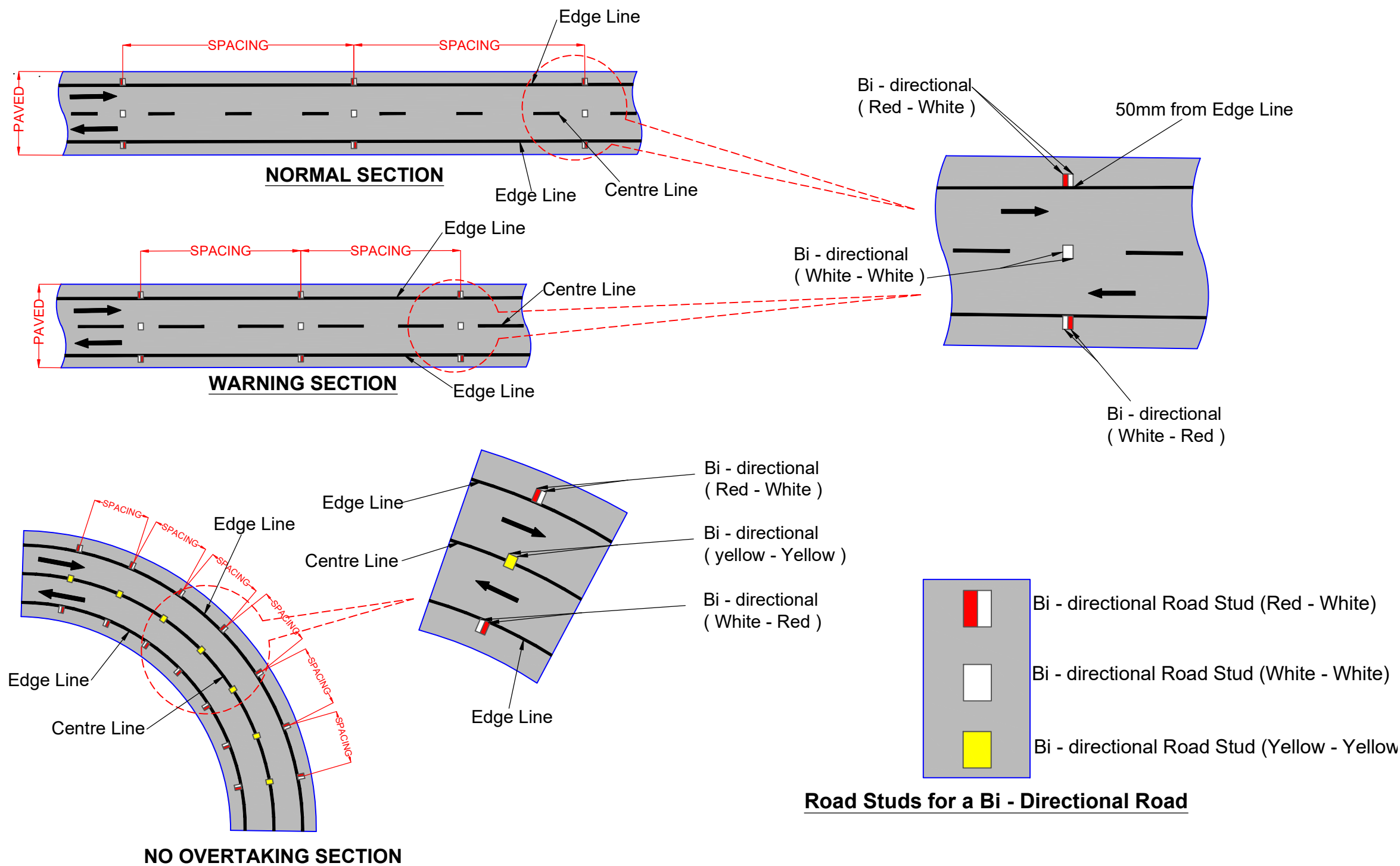


Sign Plan for Curve Delineation of an Undivided Highway using Series of Single Chevron and Other Associated



Sign Plan for Curve Delineation of a Divided Highway using Series of Single Chevron and Other Associated

TYPICAL DETAILS FOR CHEVRON SIGN AT HORIZONTAL CURVE



- Notes: -**
1. All dimensions are in m. other specifies.
 2. The Clause 804 of 'Specification for Road and Bridge Works" by the Ministry of Road Transport & Highway (Morth) and ASTM D 4280 - 04 shall be referred for technical specifications of road studs.
 3. Studs shall be made of plastic material with reflectors should have abrasion resistant protective coating. The studs with anchorage or without anchorage can be bonded to road surface with suitable epoxy/bitumen adhesive as recommended by the manufacturer.
 4. The road studs to be placed on broken longitudinal markings and it shall always be placed at the center of gap and shall never be upon the line segment or by the side of line segment.
 5. However, in the case of the road studs to be placed on carriageway having a paved shoulder, it shall be placed outside the shoulder side edge line and shall be set back by a distance of 50 mm from the edge line.

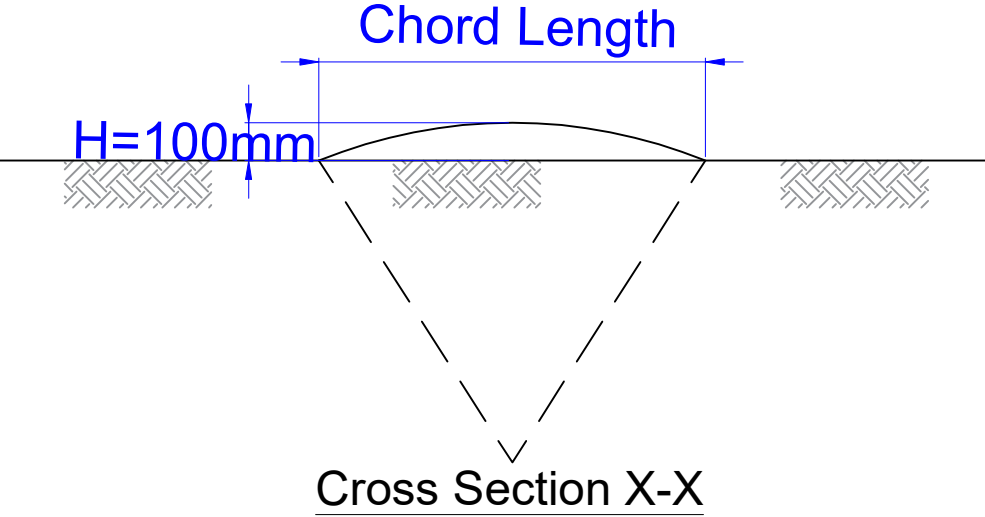
Road Studs for a Bi - Directional Road

SPACING STANDARD OF ROAD STUDS FOR UNDIVIDED ROAD

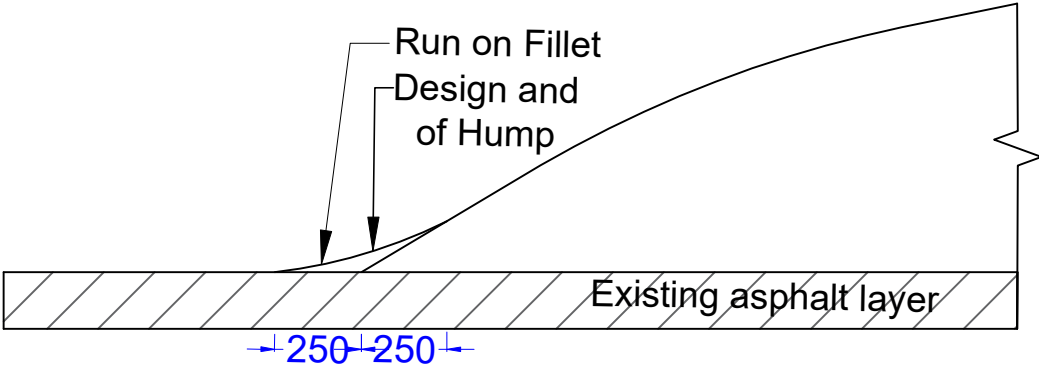
Description	Traffic Movement	Carriageway	Spacing in Normal Section			Spacing in Warning Section			Spacing in No Overtaking Section		
Road Category			Centre Line	Edge Line	Traffic Lane Line	Centre Line	Edge Line	Traffic Lane Line	Centre Line	Edge Line	Traffic Lane Line
Two Lane Road	Two Way	5.5m to 7.0m	White - White Bi - directional at 18m interval (optional)	Red - White Bi - directional at 18m interval (optional)	NA	White - White Bi - directional at 9m interval (Desirable)	Red - White Bi - directional at 9m interval (Desirable)	NA	Yellow - Yellow Bi - directional at 6m interval (Desirable)	Red - White Bi - directional at 6m interval (Desirable)	NA
Two Lane Road with Paved Shoulder	Two Way	10.0m	White - White Bi - directional at 18m interval (optional)	Red - White Bi - directional at 18m interval (optional)	NA	White - White Bi - directional at 9m interval (Desirable)	Red - White Bi - directional at 9m interval (Desirable)	NA	Yellow - Yellow Bi - directional at 6m interval (Desirable)	Red - White Bi - directional at 6m interval (Desirable)	NA

DETAILS OF ROAD STUDS

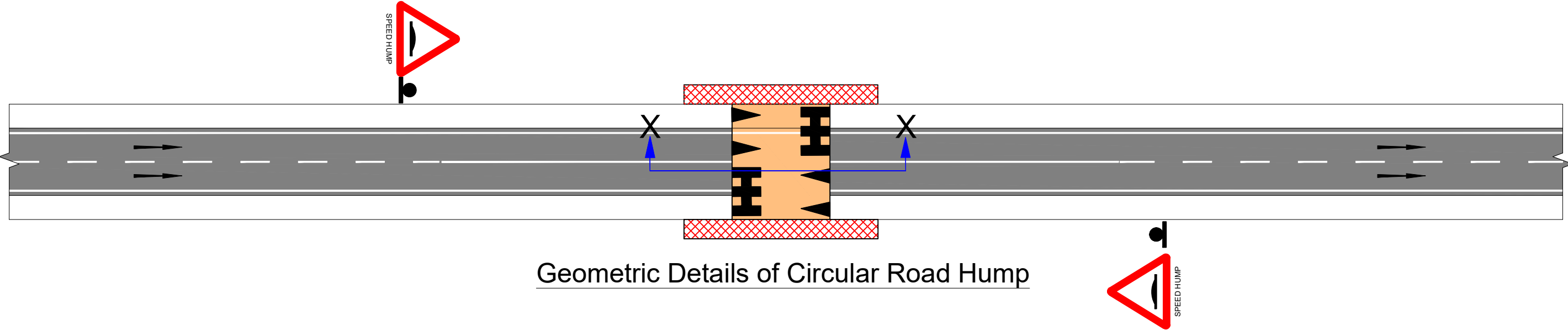
NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.



Recommended Radii and Chord Length, Circular Humps (Assumed Rise = 10 cm)			
Desired Speed	Radius	Chord Length	Bus Speed During Passage
20 km/h	11 m	3.0 m	5 km/h
25 km/h	15 m	3.5 m	10 km/h
30 km/h	20 m	4.0 m	15 km/h
35 km/h	31 m	5.0 m	20 km/h
40 km/h	53 m	6.5 m	25 km/h
45 km/h	80 m	8.0 m	30 km/h
50 km/h	113 m	9.5 m	35 km/h

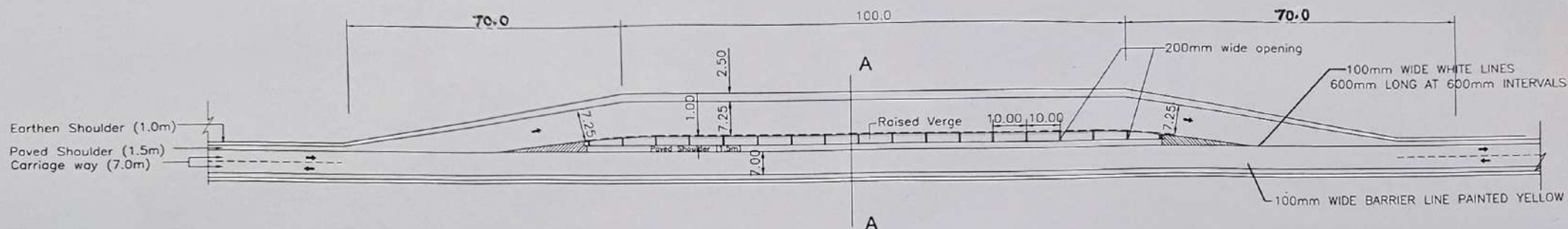


Details of Transition

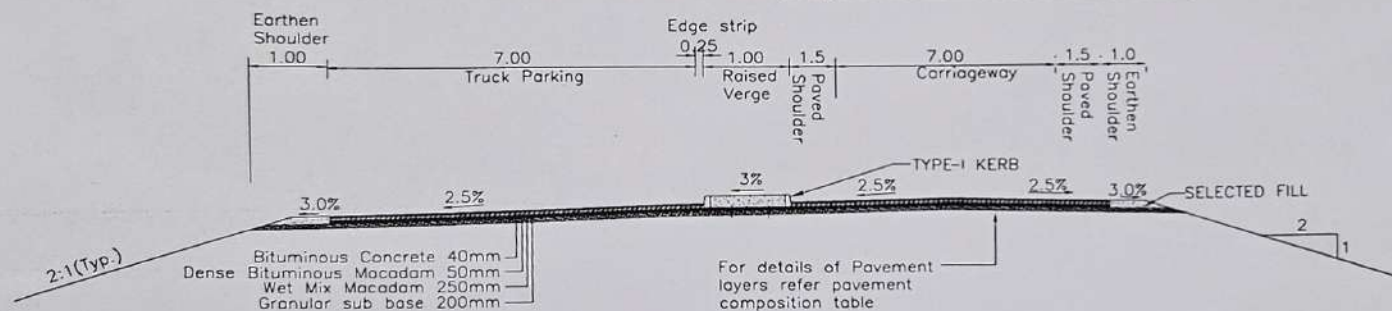


TYPICAL DETAILS FOR CIRCULAR ROAD HUMP

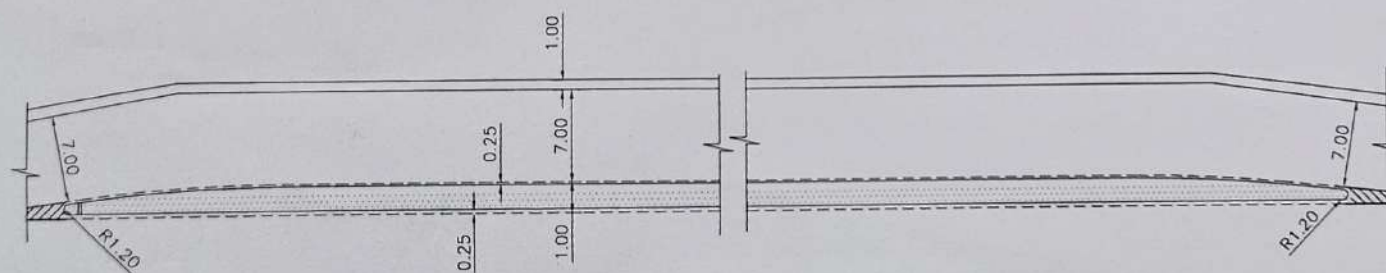
Annexure-3



Layout for Truck Laybye



Section A-A

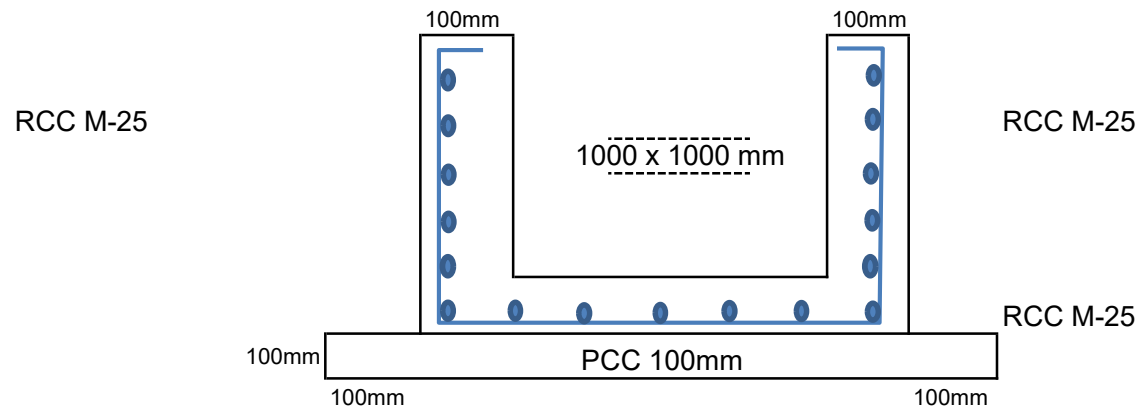


Island Detail

NOTES:

1. ALL THE DIMENSIONS ARE IN METERS UNLESS AND OTHERWISE SPECIFIED.
2. FOR DETAILS OF LINE MARKINGS REFER Dwg. No. - - - - -
3. FOR DETAILS OF KERB REFER Dwg. No. - - - - -
4. FOR DETAILS OF MAIN CARRIAGEWAY CROSS SECTION TYPE REFER PLAN & PROFILE DRAWINGS AT THE LOCATION OF TRUCK LAY BYE
5. TRUCK LAYBYE PAVEMENT IS DESIGNED FOR 10MSA AS PER PLATE 7 (CLAUSE 10.1 OF IRC:37-2012)
6. LOCATIONS AS PER SCHEDULES TO CA OR DECIDED BY THE ENGINEER.

Construction of RCC Drain



Sl. No	Item	No.	Length	Width	Depth	Qty	Unit
1	Earth work in excavation	1	1.00	1.40	1.10	1.54	cum
2	PCC M-15	1	1.00	1.40	0.10	0.14	cum
3	RCC M-25	1	1.00	1.20	0.10	0.12	cum
		2	1.00	0.10	1.00	0.20	cum
4	For Drain Cover	1	1.00	1.20	0.15	0.18	cum
					Total=	0.50	cum
5	HSYD Steel						
	U bar	5	3.35		10mm bar	0.62kg/mtr	10.39
	binder	17	1.00		10mm bar	0.62kg/mtr	10.5
	cover main bar	6	1.25		12mm bar	0.89kg/mtr	6.68
	cover distribution bar	7	1.00		12mm bar	0.89kg/mtr	6.23
					Total=		33.83
6	Weep Holes	1	1.20			0.24	mtr

DRG. NO. SD/102

TABLE SHOWING SALIENT DIMENSIONS

BOX CELL DESIGNATION No./ab/Ed	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	REQUIRED BEARING CAPACITY CATEGORY	DESIGN BASE PRESSURE (T/M ²)	ALLOWABLE DRAINDOWN AT A TIME (mm)
1/22/0	2000	2000	500	350	380	300	C	11.82	0.00
1/23/0	2000	3000	1300	370	420	350	C	11.01	2.98
1/33/0	3000	3000	900	420	420	420	C	10.50	2.15
1/34/0	3000	4000	1700	450	480	480	C	11.37	4.81
1/43/0	4000	3000	400	450	500	500	C	10.53	1.29
1/44/0	4000	4000	1200	480	550	550	C	11.07	3.99
1/45/0	4000	5000	1900	520	620	630	C	12.48	6.14
1/53/0	5000	3000	300	500	570	570	B	9.83	1.73
1/54/0	5000	4000	800	520	600	620	C	10.66	3.40
1/55/0	5000	5000	1500	580	680	700	C	12.40	5.81
1/63/0	6000	3000	300	680	720	720	B	9.88	2.98
1/64/0	6000	4000	300	680	720	750	C	10.93	3.18
1/65/0	6000	5000	1100	680	750	750	C	11.77	5.35
1/66/0	6000	6000	1800	700	800	850	C	13.21	7.50
1/75/0	7000	5000	600	750	850	850	C	11.59	4.86
1/76/0	7000	6000	1200	780	920	950	C	13.00	6.93
1/77/0	7000	7000	1300	780	950	950	C	13.10	7.18
1/85/0	8000	5000	300	800	950	950	C	11.37	4.83
1/86/0	8000	6000	900	820	970	1000	C	12.52	6.58
1/87/0	8000	7000	1300	850	1100	1200	C	14.36	8.82

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER DRG. NO. SD/101.
- FOR REINFORCEMENT DETAILS REFER DRG. NO. SD/108.
- FOR DETAILS OF WING WALL REFER DWG. NO. SD/113.
- SOIL DENSITY ON THE BACKFILL SHOULD CONFORM TO CLAUSE 305.2.1.5 OF MOST SPECIFICATION.
- NET BEARING CAPACITY REQUIRED FOR SOIL IS DIVIDED IN FOUR CATEGORIES AS SHOWN BELOW :

CATEGORY	NET BEARING CAPACITY REQUIRED FOR SOIL
A	5 T/M ²
B	10 T/M ²
C	15 T/M ²
D	20 T/M ²

- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- 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 SEPARATELY.
- '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

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

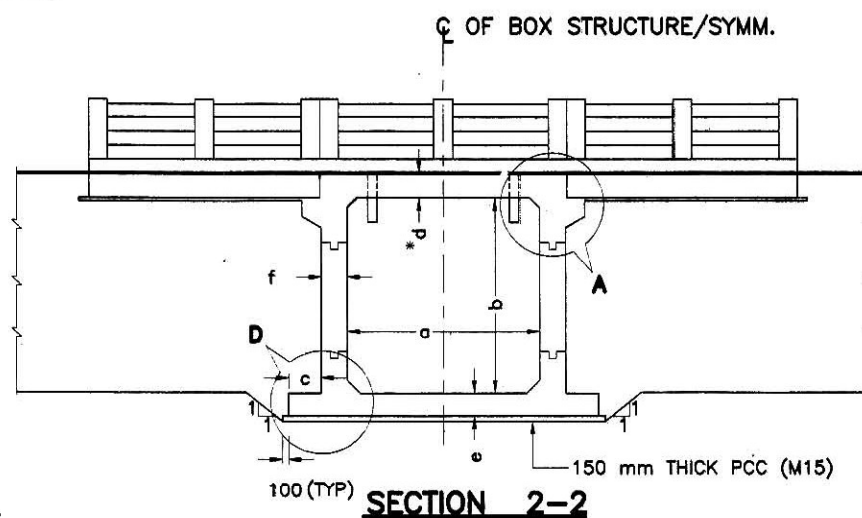
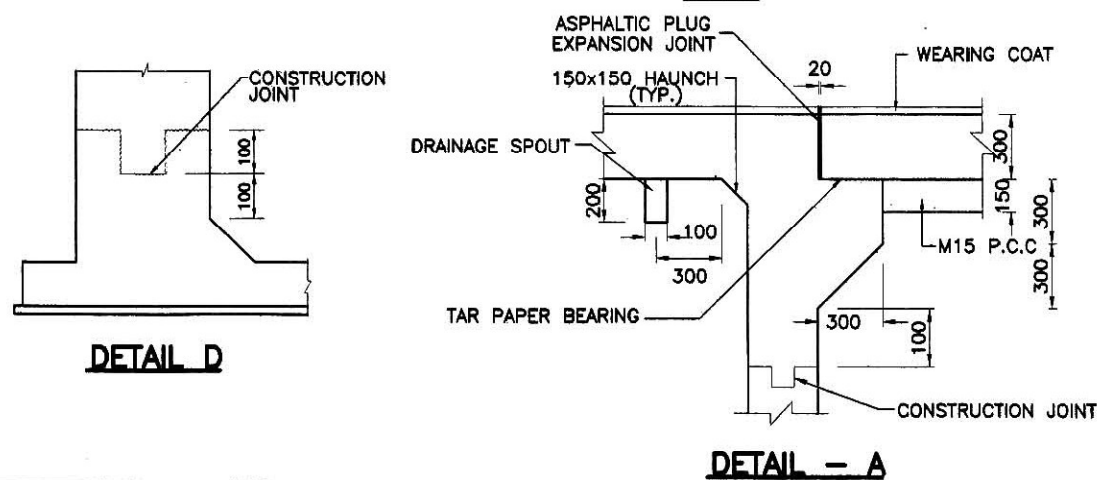
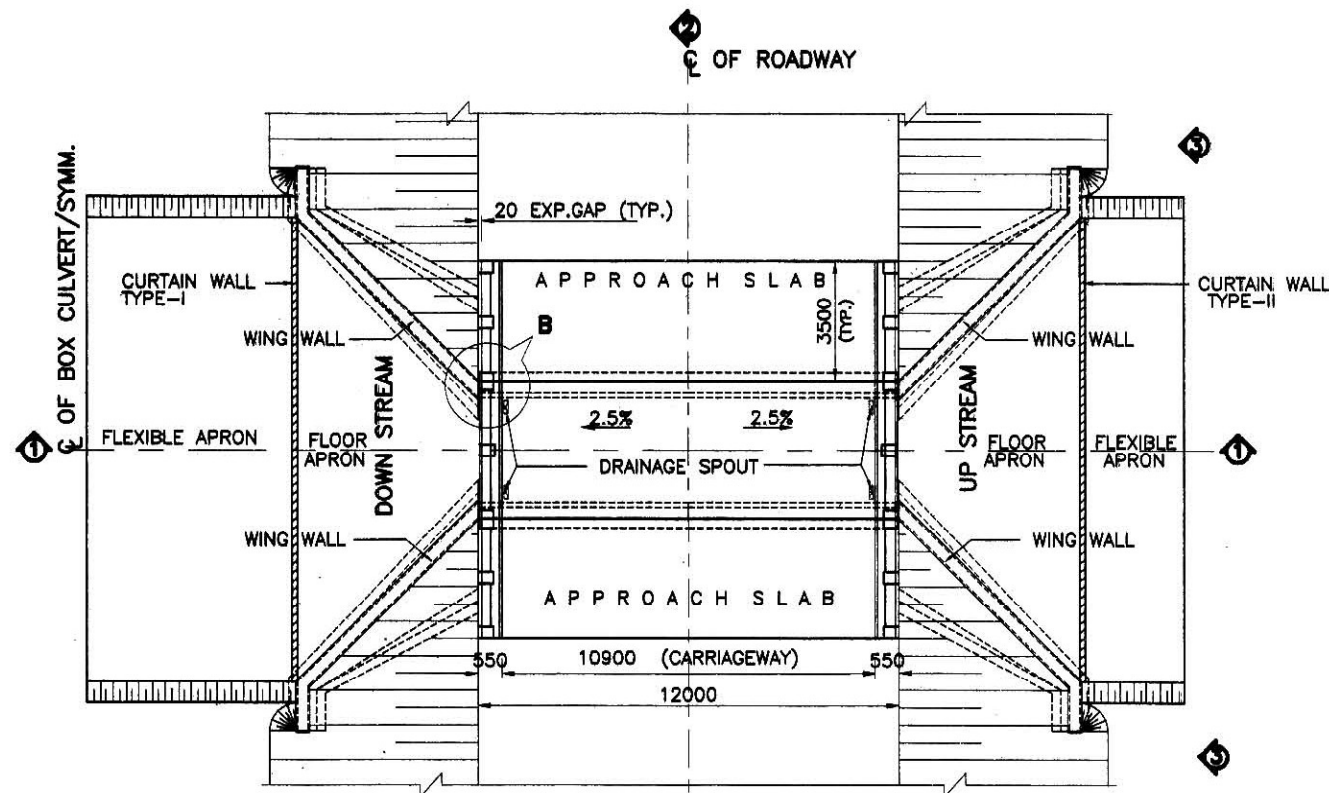
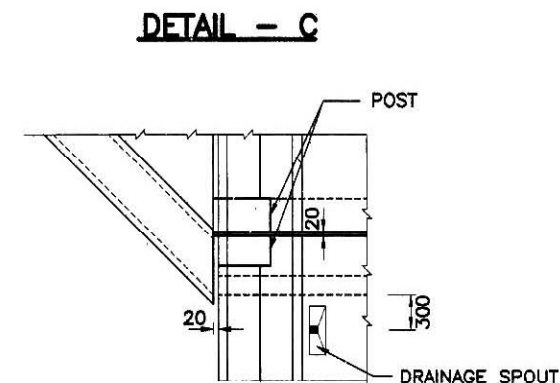
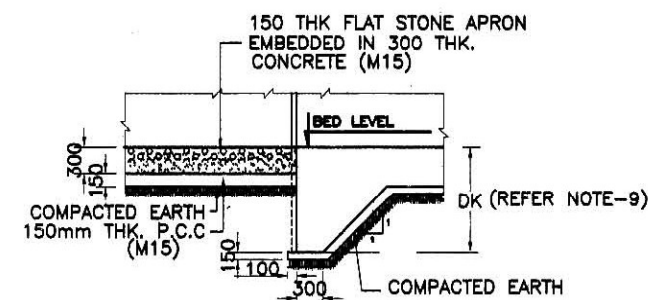
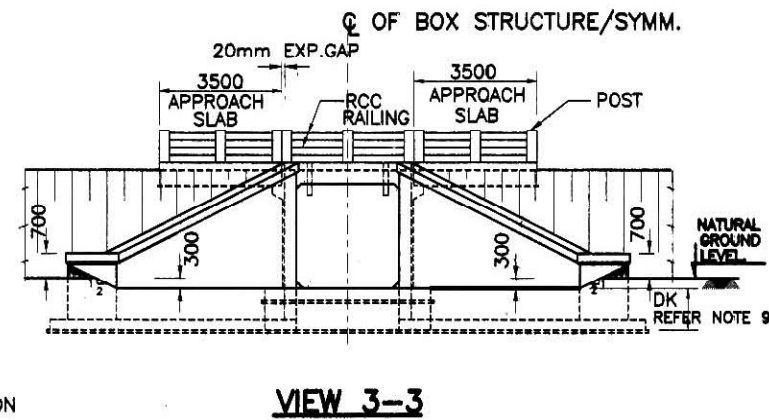
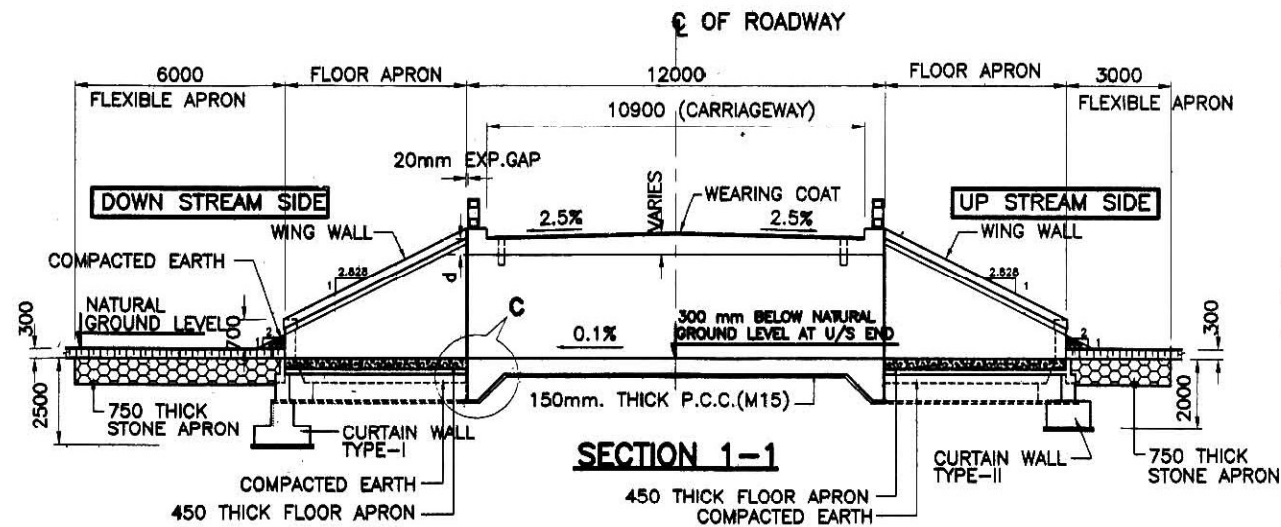
STANDARD DRAWINGS FOR BOX CELL STRUCTURES

SINGLE CELL R.C.C BOX CULVERTS

2m x 2m TO 8m x 7m
(WITHOUT EARTH CUSHION)

GENERAL ARRANGEMENT

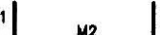
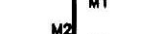
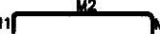
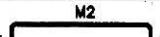
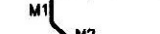
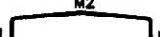
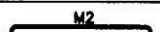
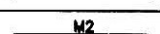
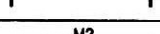
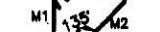
DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1 9 9 9
Ch. (A.R. GHOSH) CES (I) LTD	(M.C. TANDON) TCPL	(G.C. BHATTACHARYA) C.E. (R) S&R MOST	DRG. NO. SD/102



*d DECK SLAB THICKNESS AT INNER EDGE OF KERB AS SHOWN IN SECTION 1-1

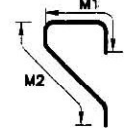
SCHEDULE OF REINFORCEMENT

DRG. NO. SD/108 (SHEET 2 OF 6)

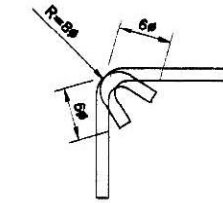
BAR MARK	BOX - CELL DESIGNATION Nc/ab/Ec	SHAPE OF BARS (NOT TO SCALE)	1/22/0							1/23/0							1/33/0							1/34/0																
			BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	LENGTH in mm.	NO. OF BARS	TOTAL LENGTH in meters	WEIGHT in kgs.	BAR DIA. in mm.	SPACING in mm.	M1 in mm.	M2 in mm.	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			10	250	930	2500	4326	49	212.0	130.7	16	225	1270	2600	5085	54	274.6	433.4	10	200	1270	3740	6246	61	381.0	234.9	12	225	1630	3820	7039	54	380.1	337.5						
②			16	250	850	2630	4275	100	427.5	674.8	16	225	900	3690	5435	112	608.7	980.8	16	200	1270	3740	6225	124	771.9	1218.3	16	225	1310	4830	7395	112	828.2	1307.3						
③					BAR IS NOT USED									BAR IS NOT USED									12	200	2100	-	2100	61	128.1	113.7	12	225	2100	-	2100	54	113.4	100.7		
④			16	250	280	3500	4005	49	196.2	309.7	16	250	320	5200	5785	49	283.5	447.4	16	200	320	5540	6125	61	373.6	589.7	16	225	380	7220	7925	54	428.0	675.5						
⑤			16	250	2630	700	3648	98	357.5	564.2	16	175	3690	1550	5558	138	766.9	1210.5	12	150	3740	1220	5298	162	858.3	762.0	16	175	4830	2080	7208	138	994.8	1569.9						
⑥			16	250	260	2500	2965	49	145.3	229.3	16	250	260	2600	3065	49	150.2	237.0	16	200	260	3740	4205	61	256.5	404.9	16	225	260	3820	4285	54	231.4	365.2						
⑦					BAR IS NOT USED									BAR IS NOT USED											BAR IS NOT USED									BAR IS NOT USED						
⑧			10	250	900	2500	4266	49	209.0	128.9	16	225	1220	2600	4985	54	269.2	424.9	10	200	1270	3740	6246	61	381.0	234.9	16	225	1600	3820	6965	54	376.1	593.6						
⑨			10	250	200	890	1243	98	121.8	75.1	10	250	200	989	1342	98	131.5	81.1	10	200	200	1158	1511	122	184.4	113.7	10	225	200	1257	1610	108	173.9	107.2						
⑩			12	250	200	932	1291	98	126.5	112.3	12	250	200	1060	1418	98	139.0	123.4	10	200	200	1158	1524	122	185.9	114.6	10	225	200	1300	1666	108	179.9	110.9						
⑪			10	250	225	11900	12316	16	197.1	121.5	10	250	235	11900	12336	16	197.4	121.7	10	200	260	11900	12386	30	371.6	229.1	10	225	275	11900	12416	26	322.8	199.0						
⑫			10	250	190	11900	12246	16	195.9	120.8	10	150	210	11900	12286	26	319.4	196.9	12	200	210	11900	12279	30	368.4	327.0	12	225	240	11900	12339	26	320.8	284.8						
⑬			10	250	160	11900	12186	16	195.0	120.2	10	250	175	11900	12216	24	293.2	180.8	10	200	210	11900	12286	30	368.6	227.2	12	225	230	11900	12319	36	443.5	393.7						
⑭			10	-	160	11900	12186	12	146.2	90.2	10	-	160	11900	12186	12	146.2	90.2	10	-	160	11900	12186	12	146.2	90.2	10	-	160	11900	12186	12	146.2	90.2						
⑮			10	250	190	11900	12246	12	146.9	90.6	12	250	210	11900	12279	28	343.8	305.2	10	200	210	11900	12286	24	294.9	181.8	12	225	240	11900	12339	36	444.2	394.4						
⑯			12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7						
⑰			12	250	1006	1268	2274	98	222.8	197.8	12	250	1006	1268	2274	98	222.8	197.8	12	200	1006	1268	2274	122	277.4	246.3	12	225	1006	1292	2298	108	248.1	220.3						
⑱			10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1						
⑲			10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1						
⑳			10	150	1100	1556	4207	50	210.3	129.7	10	150	1100	1556	4207	72	302.9	186.8	10	200	1100	1556	4207	58	244.0	150.4	10	150	1100	1556	4207	100	420.7	259.4						
㉑			10	-	160	3500	3786	20	75.7	46.7	10	-	160	5200	5486	20	109.7	67.6	10	-	160	5540	5826	20	116.5	71.8	10	-	160	7220	7506	20	150.1	92.6						
㉒			10	250	160	11900	12186	16	195.0	120.2	10	250	175	11900	12216	24	293.2	180.8	10	250	210	11900	12286	24	294.9	181.8	10	250	230	11900	12326	32	394.4	243.2						
TOTAL STEEL (Kgs)			3458							5642							5688							7541																
TOTAL CONCRETE (cum)			54							77							94							124																

NOTES:

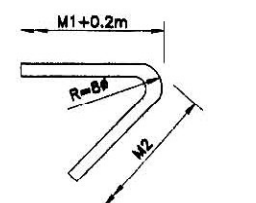
- JOINT OR LAPPING OF BARS SHALL BE SUITABLY STAGGERED AS PER CLAUSE 304.6 OF IRC:21-1987.
- FULL SCALE ELEVATION FOR THE BARS SHALL BE LINED OUT ON A PLAIN PLASTERED FLOOR TO THE DIMENSIONS SHOWN ON THE DRAWING SO AS TO GET CORRECT CLEARANCE BETWEEN DIFFERENT BARS AND THEN THE BARS SHALL BE BENT TO PROPER SHAPE.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING No. SD/108 (SHEET 1 OF 6).
- QUANTITY OF CONCRETE DOES NOT INCLUDE RAILINGS.
- QUANTITY OF STEEL DOES NOT INCLUDE 5% EXTRA FOR WASTAGE AND LAPS.
- BAR No.17 IS DETAILED AS BELOW:



BENDING OF BARS

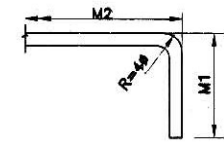


BEND WITH CLOSE HOOKS

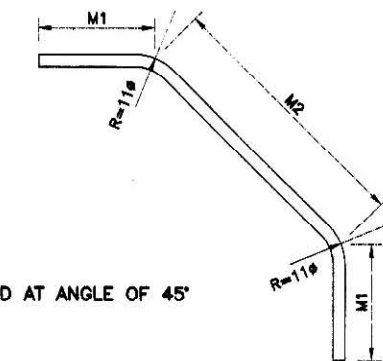


BEND AT ANGLE OF 135°

BEND AT RIGHT ANGLE



BEND AT ANGLE OF 45°



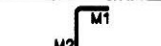
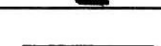
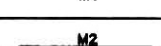
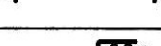
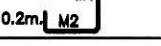
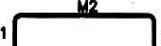
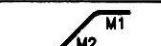
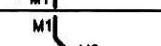
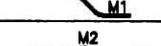
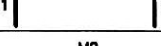
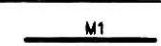
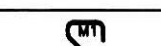
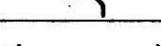
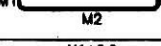
LEGEND : φ SHOWS DIA. OF BAR

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING), NEW DELHI.
STANDARD DRAWINGS FOR BOX CELL STRUCTURES

SINGLE CELL R.C.C BOX CULVERTS
2m x 2m TO 8m x 7m
(WITHOUT EARTH CUSHION)
BAR BENDING SCHEDULE

DESIGNED BY Ch. Ghosh (A.R.GHOSH) CES (I) LTD	CHECKED BY M.C.Tandon (M.C.TANDON) TOPL	APPROVED FOR ISSUE BY C.C.Bhattacharya (C.C.BHATTACHARYA) C.E (R) S&R MOST	1 9 9 9 DRG. NO. SD/108 (SHEET 2 OF 6)
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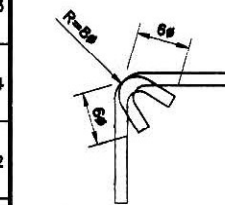
SCHEDULE OF REINFORCEMENT

BAR MARK	BOX - CELL DESIGNATION No/ab/Ec	1/43/0								1/44/0								1/45/0								1/53/0							
		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	10	200	1350	4900	7566	61	461.5	284.5	12	200	1700	5000	8359	61	509.9	452.7	10	200	2070	5160	9266	61	565.2	348.5	12	200	1420	6040	8839	61	539.2	478.7
②	M1  M2	20	200	1650	3850	7081	124	878.1	2165.5	20	200	1700	4930	8261	124	1024.4	2526.3	20	200	1780	6040	9531	124	1181.9	2914.7	20	200	2020	3970	7941	124	984.7	2428.5
③	M1 	12	200	2800	-	2800	61	170.8	151.6	12	200	2800	-	2800	61	170.8	151.6	12	200	2800	-	2800	61	170.8	151.6	16	200	3500	-	3500	61	213.5	337.0
④	M1  M2	16	200	400	5700	6445	61	393.1	620.5	16	200	450	7400	8245	61	502.9	793.8	16	200	520	8980	9945	61	606.6	957.5	16	200	470	8640	7525	61	459.0	724.5
⑤	M1  M2	12	175	3850	800	4988	138	688.4	611.1	12	150	4930	1650	6918	162	1120.7	995.0	12	150	6040	2430	8808	162	1426.9	1266.8	12	175	3970	770	5078	138	700.8	622.2
⑥	M1  M2	16	200	280	4900	5385	61	327.3	516.5	16	200	260	5000	5465	61	333.4	526.2	20	200	320	5160	5731	61	349.6	562.2	16	200	280	6040	6505	61	396.8	626.3
⑦	M1 	8	200	2800	-	2800	60	168.0	66.3	8	200	2800	-	2800	60	168.0	66.3	12	200	2800	-	2800	60	168.0	149.2	12	200	3500	-	3500	60	210.0	186.4
⑧	M1  M2	10	200	1300	4900	7466	61	455.4	280.8	16	200	1630	5000	8205	61	500.5	790.0	12	200	1970	5160	9059	61	552.6	490.6	16	200	1350	6040	6885	61	529.8	836.2
⑨	M1  M2	10	200	200	1314	1667	122	203.4	125.4	10	200	200	1427	1780	122	217.2	133.9	10	200	200	1597	1950	122	237.9	146.6	10	200	200	1484	1836	122	224.1	138.1
⑩	M1  M2	10	200	200	1385	1750	122	213.5	131.7	10	200	200	1526	1892	122	230.8	142.3	12	200	200	1738	2097	122	255.8	227.1	10	200	200	1583	1948	122	237.7	146.6
⑪	M1  M2	10	200	275	11900	12416	40	496.6	306.2	10	200	290	11900	12446	40	497.8	306.9	10	200	310	11900	12486	40	499.4	307.9	10	200	300	11900	12466	50	623.3	384.3
⑫	M1  M2	12	200	250	11900	12359	40	494.4	438.9	12	200	275	11900	12409	40	496.4	440.7	12	175	310	11900	12479	46	574.0	509.6	12	200	285	11900	12429	50	621.4	551.7
⑬	M1  M2	12	200	250	11900	12359	30	370.8	329.2	12	200	275	11900	12409	40	496.4	440.7	12	200	315	11900	12489	50	624.4	554.4	12	200	565.5	285	11900	12429	372.9	331.0
⑭	M1  M2	10	-	160	11900	12186	12	146.2	90.2	10	-	160	11900	12186	12	146.2	90.2	10	-	160	11900	12186	12	146.2	90.2	8	-	128	11900	12129	12	145.5	57.4
⑮	M1  M2	10	200	250	11900	12366	12	148.4	91.5	10	200	275	11900	12416	28	347.6	214.3	10	200	310	11900	12486	44	549.4	338.7	10	200	285	11900	12436	12	149.2	92.0
⑯	M1 	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7
⑰	M1  M2	12	200	1006	1348	2354	122	287.2	255.0	12	200	1006	1419	2425	122	295.8	262.6	12	200	1051	1532	2583	122	315.1	279.7	12	200	1006	1447	2453	122	299.3	265.7
⑱	M1  M2	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1
⑲	M1  M2	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1
⑳	M1  M2	10	150	1100	1556	4207	78	328.1	202.3	10	150	1100	1556	4207	102	429.1	264.6	10	150	1100	1556	4207	122	513.2	316.4	10	150	1100	1556	4207	92	387.0	238.6
㉑	M1  M2	10	-	160	5700	5986	20	119.7	73.8	10	-	160	7400	7686	20	153.7	94.8	10	-	160	8960	9246	20	184.9	114.0	10	-	160	8640	8926	20	138.5	85.4
㉒	M1  M2	10	250	250	11900	12366	24	296.8	183.0	10	230	275	11900	12416	36	447.0	275.6	10	200	315	11900	12496	50	624.8	385.2	10	220	285	11900	12436	28	348.2	214.7
TOTAL STEEL (Kgs)		7120								9164								10807								8941							
TOTAL CONCRETE (cum)		114								149								194								142							

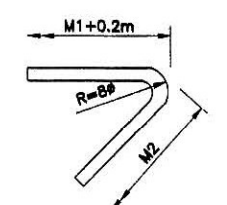
NOTES:

1. FOR ALL NOTES REFER. DRG. NO. SD/108 (SHEET 2 OF 6)

BENDING OF BARS

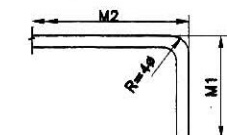


BEND WITH CLOSE HOOKS

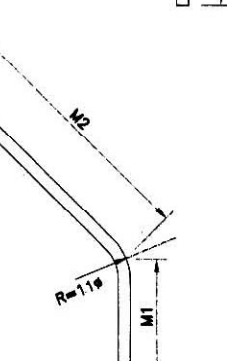


BEND AT ANGLE OF 135°

BEND AT RIGHT ANGLE



BEND AT ANGLE OF 45°

LEGEND: ϕ SHOWS DIA. OF BAR

GOVERNMENT OF INDIA MINISTRY OF SURFACE TRANSPORT (ROADS WING), NEW DELHI.			
STANDARD DRAWINGS FOR BOX CELL STRUCTURES			
SINGLE CELL R.C.C BOX CULVERTS 2m x 2m TO 8m x 7m (WITHOUT EARTH CUSHION) BAR BENDING SCHEDULE			
DESIGNED BY A.R.GHOSH CES (I) LTD	CHECKED BY M.C.TANDON TCPL	APPROVED FOR ISSUE BY C.C.BHATTACHARYA C.E (R) S&R MOST	1999 DRG. NO. SD/108 (SHEET 3 OF 6)

SCHEDULE OF REINFORCEMENT

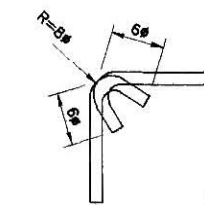
DRG. NO. SD/108 (SHEET 4 OF 6)

BAR MARK	BOX - CELL DESIGNATION No/ab/Ec	SHAPE OF BARS (NOT TO SCALE)	1/54/0							1/55/0							1/63/0							1/64/0										
			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			20	200	1750	6140	9571	61	583.9	1439.9	16	200	2130	6300	10505	61	640.8	1011.4	16	200	1570	7340	10425	61	635.9	1003.7	20	200	1870	7400	11071	61	675.4	1665.5
②			16	200	2070	5020	9105	124	129.0	1782.0	20	200	2150	6160	10391	124	1288.5	3177.7	20	200	2470	4300	9171	124	1137.2	2804.6	20	200	2500	5300	10231	124	1268.7	3128.8
③			16	200	3500	-	3500	61	213.5	337.0	16	200	3500	-	3500	61	213.5	337.0	20	200	4200	-	4200	61	256.2	631.8	20	200	4200	-	4200	61	256.2	631.8
④			16	200	500	7740	8685	61	529.8	836.2	25	200	580	9300	10374	61	632.8	2438.5	12	200	620	7940	9139	61	557.5	494.9	16	200	620	8000	9185	61	560.3	884.3
⑤			12	150	5020	1320	6678	162	1081.9	960.5	16	200	6160	2100	8578	122	1046.5	1651.7	12	150	4300	920	5558	162	900.4	799.4	12	150	5300	950	6588	162	1067.3	947.6
⑥			20	200	320	6140	6711	61	409.4	1009.6	20	200	320	6300	6871	61	419.2	1033.7	16	200	280	7340	7805	61	476.1	751.5	20	200	320	7400	7971	61	486.3	1199.2
⑦			12	200	3500	-	3500	60	210.0	186.4	BAR IS NOT USED							16	200	4200	-	4200	60	252.0	397.7	16	200	4200	-	4200	60	252.0	397.7	
⑧			16	200	1670	6140	9425	61	574.9	907.4	16	200	2030	6300	10305	61	628.6	992.2	16	200	1530	7340	10345	61	631.0	996.0	16	200	1830	7400	11005	61	671.3	1059.6
⑨			10	200	200	1583	1935	122	236.1	145.6	10	200	200	1781	2133	122	260.3	160.5	10	200	200	1950	2303	122	281.0	173.2	10	200	200	1993	2346	122	286.2	176.4
⑩			10	200	200	1696	2061	122	251.5	155.1	10	200	200	1922	2288	122	279.1	172.1	10	200	200	2007	2373	122	289.5	178.5	10	200	200	2049	2415	122	294.6	181.6
⑪			10	150	310	11900	12486	66	824.1	508.1	10	200	340	11900	12546	50	627.3	386.7	10	150	390	11900	12646	78	986.4	608.1	10	150	390	11900	12646	78	986.4	608.1
⑫			10	125	300	11900	12466	78	972.3	599.5	10	125	340	11900	12546	78	978.6	603.3	10	125	360	11900	12586	94	1183.1	729.4	12	125	360	11900	12579	94	1182.4	1049.8
⑬			10	125	310	11900	12486	82	774.1	477.3	10	125	350	11900	12566	78	980.1	604.3	10	125	360	11900	12586	46	578.9	356.9	10	125	375	11900	12616	62	782.2	482.2
⑭			8	-	128	11900	12129	12	145.5	57.4	8	-	128	11900	12129	12	145.5	57.4	10	-	160	11900	12186	12	146.2	90.2	10	-	160	11900	12186	12	146.2	90.2
⑮			10	200	300	11900	12486	20	249.3	153.7	10	150	340	11900	12546	44	552.0	340.3	10	150	360	11900	12586	12	151.0	93.1	10	150	360	11900	12586	12	151.0	93.1
⑯			12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7	12	-	11900	-	11900	10	119.0	105.7
⑰			12	200	1041	1518	2559	122	312.1	277.1	12	200	1121	1631	2752	122	335.7	298.0	12	200	1141	1659	2800	122	341.6	303.3	12	200	1171	1702	2872	122	350.4	311.1
⑱			10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	12186	4	48.7	30.1	10	-	160	11900	4	12186	48.7	30.1
⑲			10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	12186	8	97.5	60.1	10	-	160	11900	8	12186	97.5	60.1
⑳			10	150	1100	1556	4207	106	445.9	274.9	10	150	1100	1556	4207	126	530.1	326.8	10	150	1100	1556	4207	108	454.4	280.1	10	150	1100	1556	4207	110	462.8	285.3
㉑			10	-	160	7740	8026	20	160.5	99.0	10	-	160	9300	9586	20	191.7	118.2	10	-	160	7940	8226	20	164.5	101.4	10	-	160	8000	8286	20	165.7	102.2
㉒			10	210	310	11900	12486	38	474.5	292.5	10	180	350	11900	12566	56	703.7	433.8	10	180	360	11900	12586	32	402.7	248.3	10	170	375	11900	12616	46	580.3	357.8
TOTAL STEEL (Kgs)			10695							14339							11238							13848										
TOTAL CONCRETE (cum)			174							224							201							222										

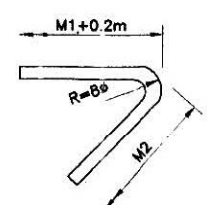
NOTES:

1. FOR ALL NOTES REFER. DRG. NO. SD/108 (SHEET 2 OF 6)

BENDING OF BARS

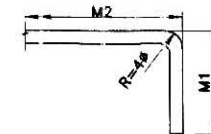


BEND WITH CLOSE HOOKS

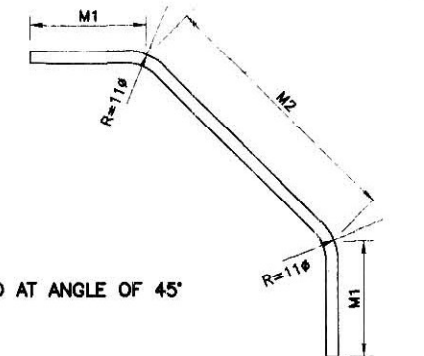


BEND AT ANGLE OF 135°

BEND AT RIGHT ANGLE



BEND AT ANGLE OF 45°

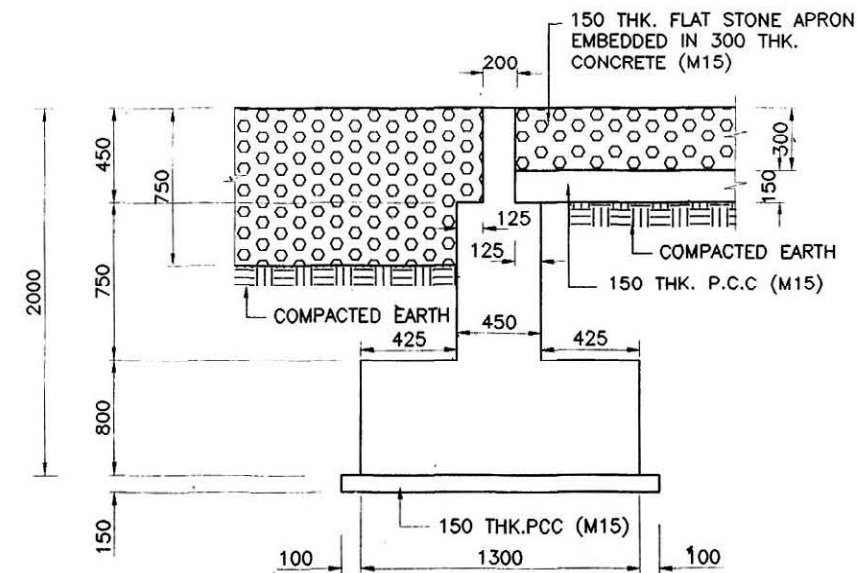
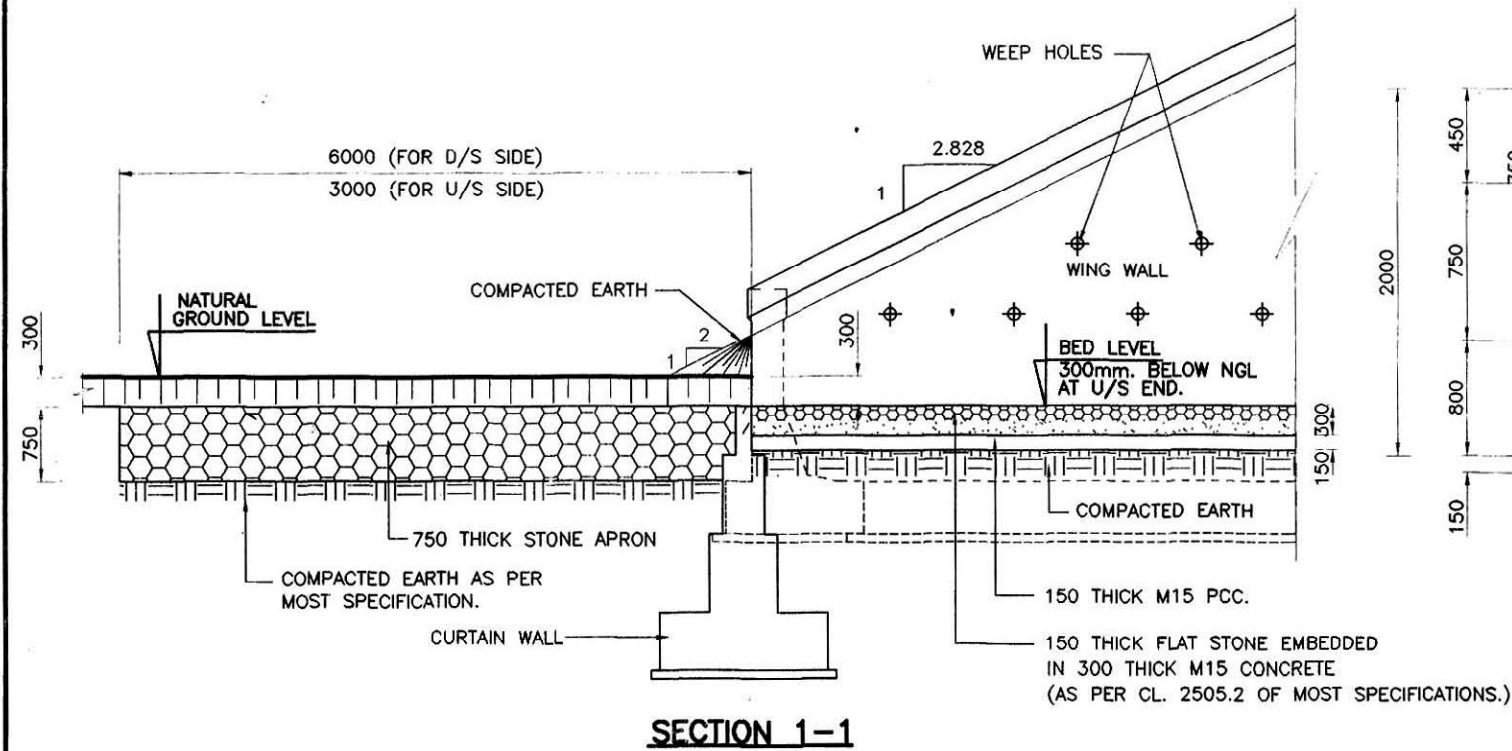


LEGEND : φ SHOWS DIA. OF BAR

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING), NEW DELHI.
STANDARD DRAWINGS FOR BOX CELL STRUCTURES

SINGLE CELL R.C.C BOX CULVERTS
2m x 2m TO 8m x 7m
(WITHOUT EARTH CUSHION)
BAR BENDING SCHEDULE

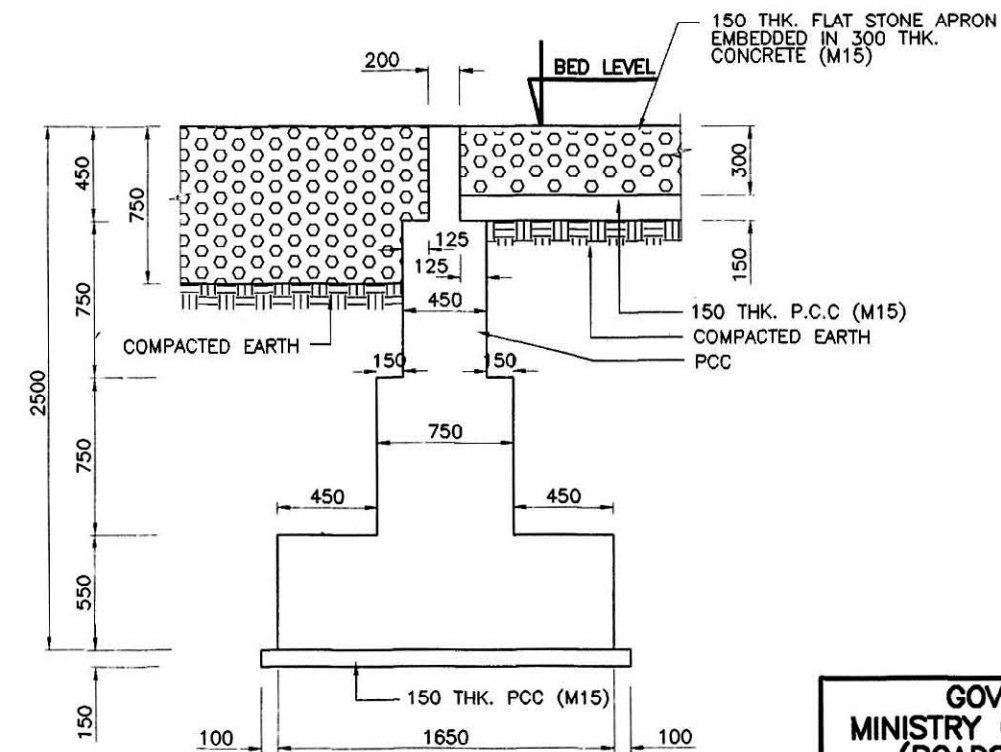
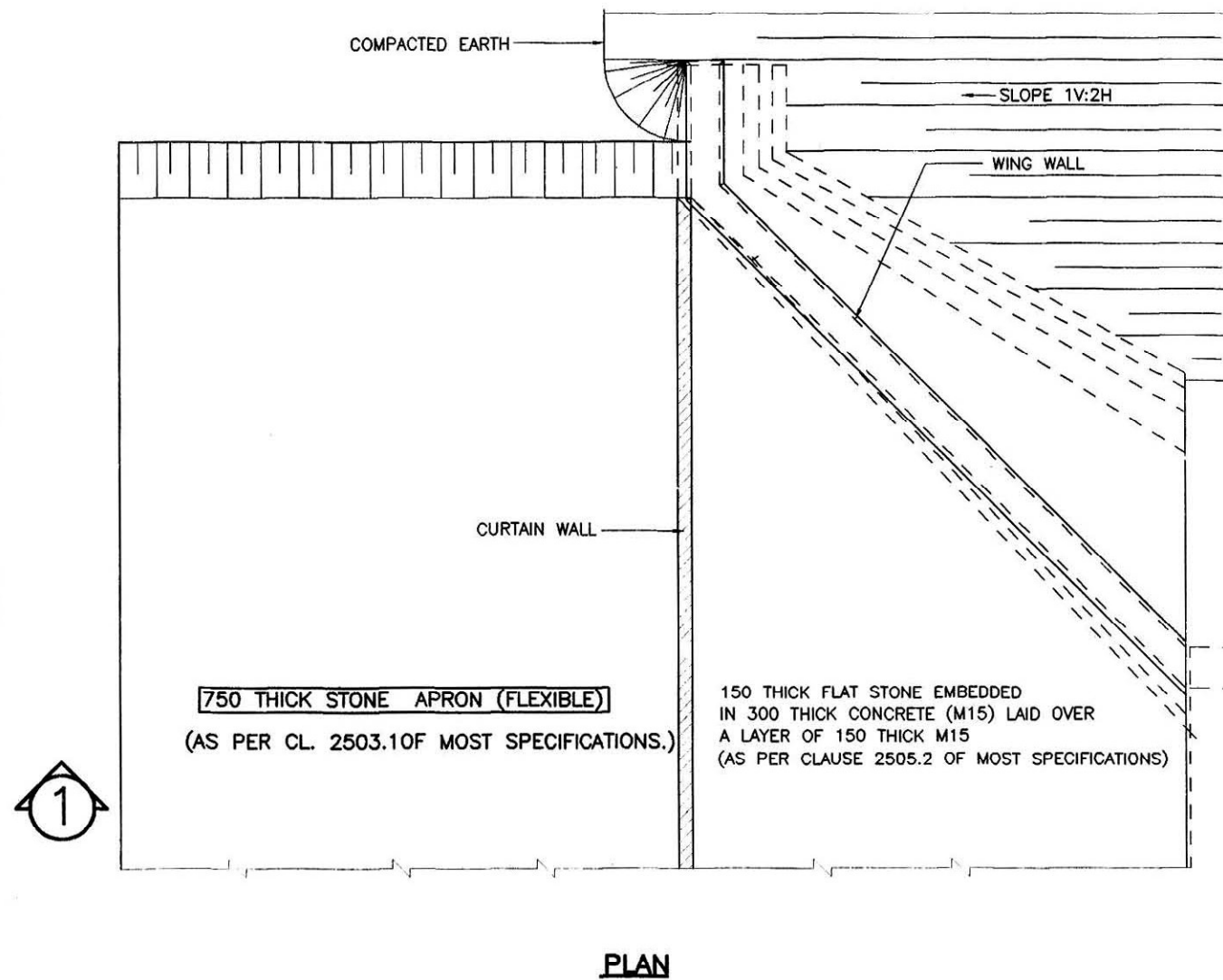
DESIGNED BY A.R. GHOSH CES (I) LTD	CHECKED BY M.C. TANDON TCPL	APPROVED FOR ISSUE BY C.C. BHATTACHARYA C.E (R) S&R MOST	DRG. NO. SD/108 (SHEET 4 OF 6)
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TYPICAL CROSS SECTION OF CURTAIN WALL TYPE-II
(UP STREAM SIDE)

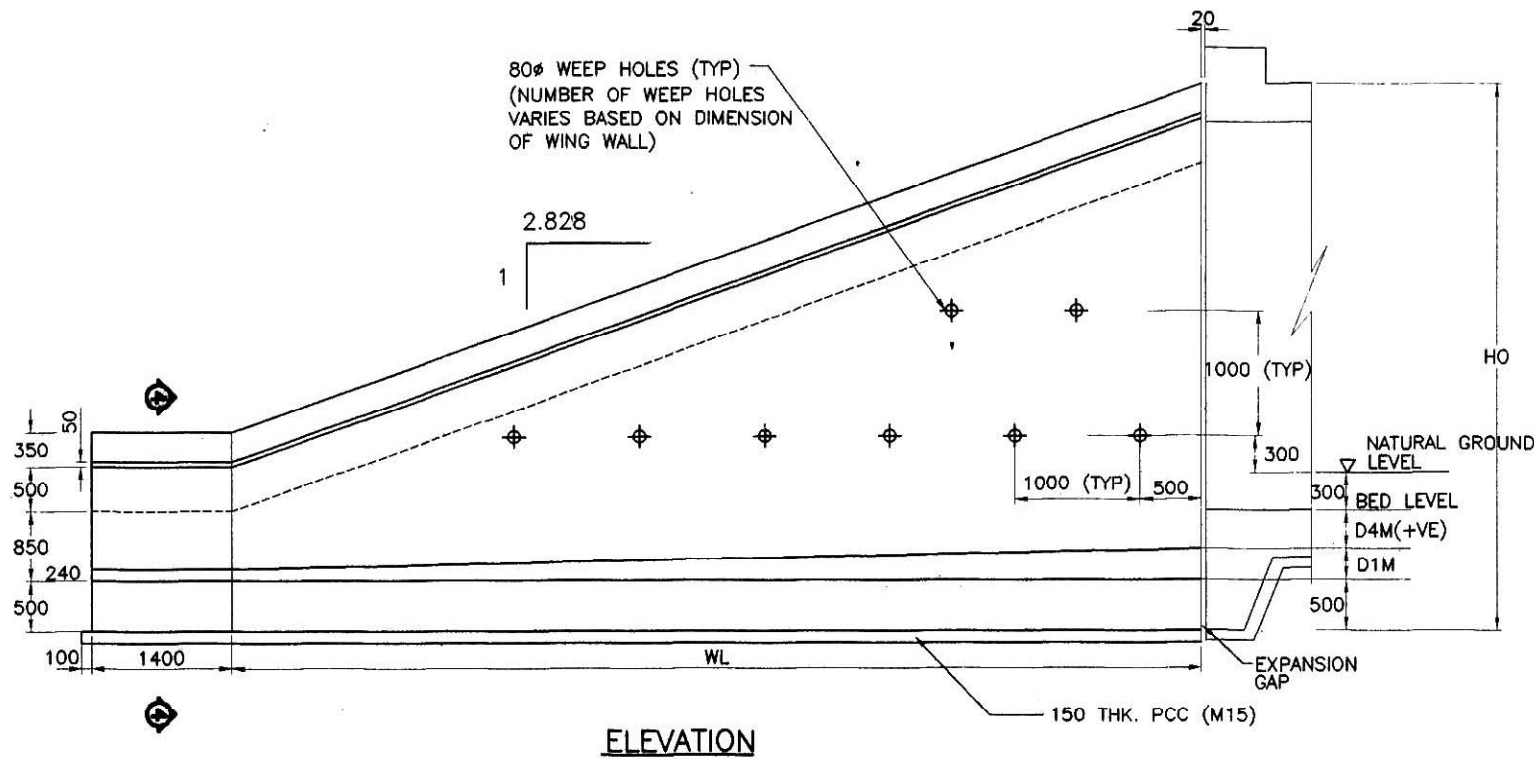
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
2. FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER DRG.NO.SD/101.
3. FOR DETAILS OF WING WALL, REFER DWG.NO.SD/113 (SHEET 1 TO 6 OF 6)
4. COMPACTED EARTH SHOULD CONFIRM TO CLAUSE. 305.2.1.5 OF MOST SPECIFICATIONS

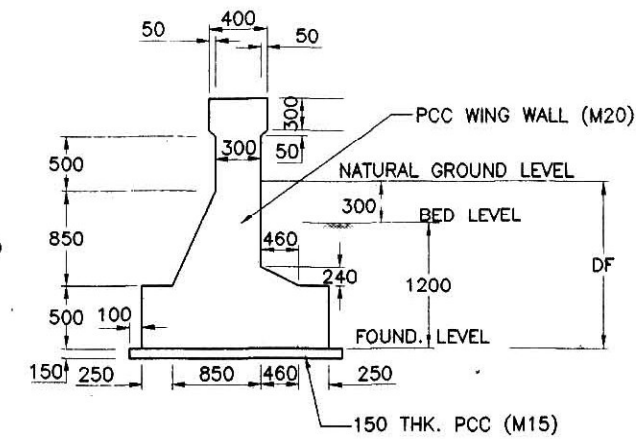


TYPICAL CROSS SECTION OF CURTAIN WALL TYPE-II
(DOWN STREAM SIDE)

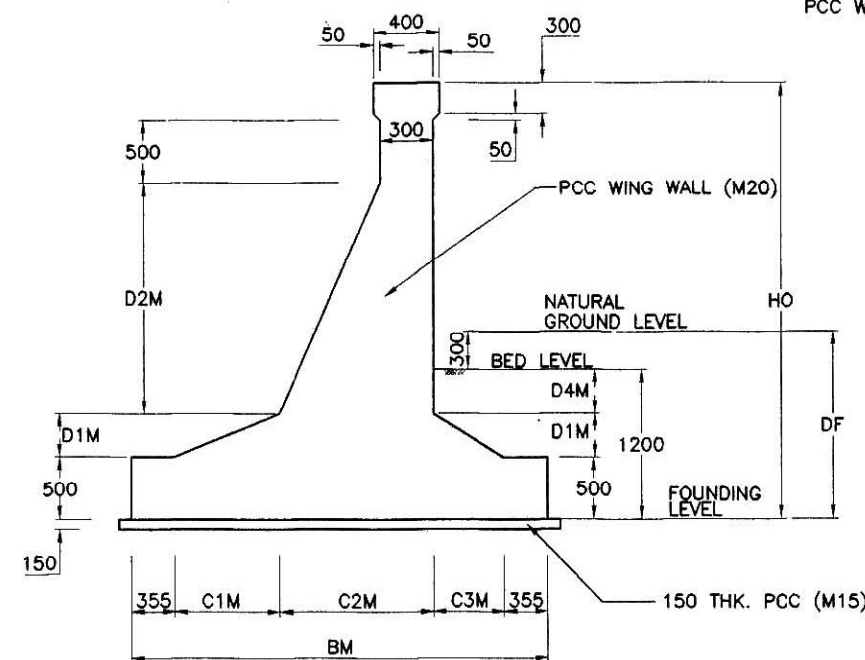
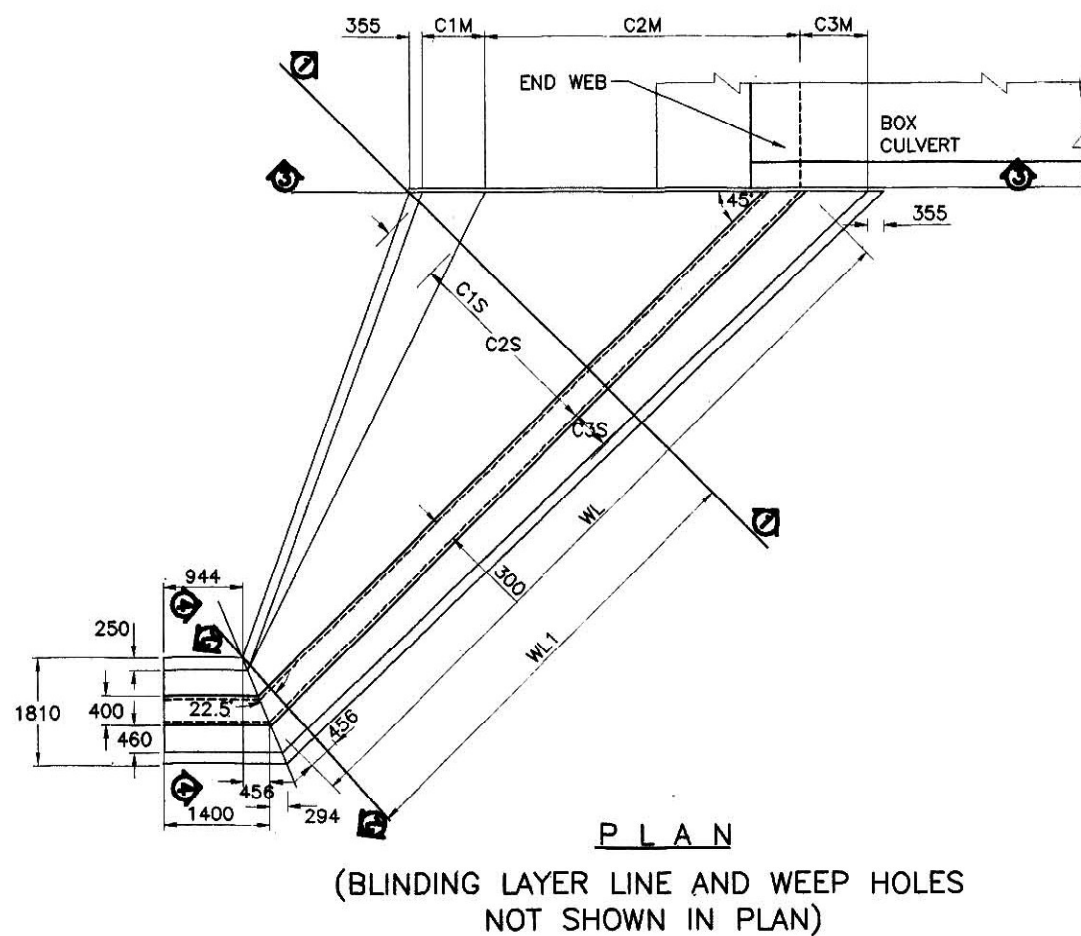
GOVERNMENT OF INDIA MINISTRY OF SURFACE TRANSPORT (ROADS WING), NEW DELHI.			
STANDARD DRAWINGS FOR BOX CELL STRUCTURES			
TYPICAL DETAILS OF FLOOR PROTECTION WORKS GENERAL ARRANGEMENT			
DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
Ch. Ghosh (A.R.GHOSH) CES (I) LTD	M.C. Tandon (M.C.TANDON) TCPL	C.C. Bhattacharya (C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/111 SHEET 1 OF 4



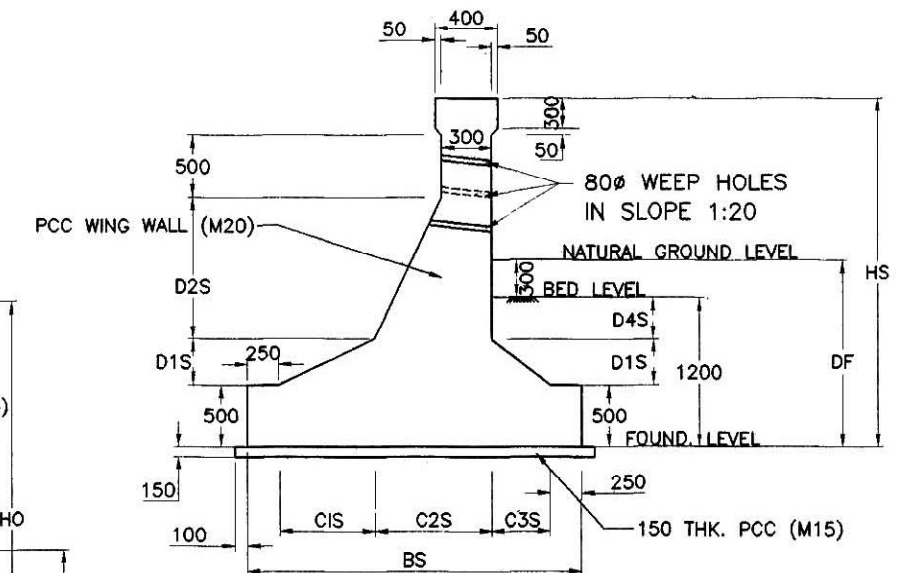
SECTION 4 - 4 (MIN HEIGHT)

**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. DIMENSIONS ARE NOT TO BE SCALED.
2. FOR GENERAL NOTES REFER DRG. NO. SD/101.
3. FOR DIMENSION SCHEDULE REFER DRG. NO. SD/113 (SHEET 3 TO 6 OF 6)
4. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
5. IF THERE IS ANY LEVEL DIFFERENCE IN FOUNDING LEVEL OF WING WALL AND DOWNWARD PROJECTION AT THE ADJACENT EDGE OF BOX STRUCTURE, PROPER GRANULAR PROTECTION IS TO BE PROVIDED IN THIS AREA TO COMPENSATE THE LEVEL DIFFERENCE.
6. MARKED SECTION 2-2 NOT SHOWN IN DRG & IS GIVEN ONLY TO MENTION LENGTH WL1.
7. THE FILTER MEDIA SHALL BE PROVIDED BEHIND THE SURFACE OF WING WALL AS PER IRC:78.



SECTION 3-3



SECTION 1-1

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

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

**DETAILS OF PCC WING WALL
GENERAL ARRANGEMENT
(MAX HEIGHT OF WING WALL
BELOW 6m.)**

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/113 (SHEET 1 OF 6)

TABLE No. - 5 (CONT...)
SALIENT DIMENSIONS OF PCC WING WALL
PCC (M20)

NOTES:

1. FOR ALL NOTES REFER. DRG. NO. SD/113
(SHEET 4 OF 6)

							SECTION 1-1								SECTION 3-3								TOTAL VOLUME OF CONCRETE IN WING WALL (cum.)
SL NO.	BOX DESIGNATION Nc\ab\Ec	NET SAFE BEARING CAPACITY T/Sqm	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH OF W.WALL WL(mm)	LENGTH BETWEEN SEC. 1-1 AND SEC. 2-2(mm)	HT.AT SEC 1-1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)		
1	1/22/0	15	3550	1500	3818	1850	3015	330	933	482	2245	401	1264	299	467	1319	703	3198	524	1676	176	47.10	
2	1/23/0	15	4570	1500	6702	3942	3755	885	1171	477	3033	568	1836	132	1252	1656	691	4309	762	2458	-62	96.76	
3	1/33/0	15	4620	1500	6844	4043	3791	910	1186	475	3071	574	1866	126	1287	1677	687	4361	770	2500	-70	99.80	
4	1/34/0	15	5650	1500	9757	4572	3978	2855	1625	460	5440	542	2086	158	4038	2298	651	7697	837	3483	-137	188.77	
5	1/43/0	15	4650	1500	6929	4104	3812	925	1195	474	3094	578	1884	122	1309	1690	684	4392	774	2526	-74	101.65	
6	1/44/0	15	5680	1500	9841	4561	3974	2936	1640	460	5536	538	2086	162	4152	2319	651	7833	838	3492	-138	191.99	
7	1/45/0	15	7220	2000	12783	6330	5121	3218	2489	503	6890	739	3032	461	4551	3491	912	9865	1146	4724	54	434.89	
8	1/53/0	10	4700	1500	7070	3725	3678	1480	1180	565	3705	579	1749	121	2093	1641	908	5352	835	2515	-135	108.79	
9	1/54/0	15	5720	1500	9955	4546	3989	3044	1680	460	5664	534	2085	166	4305	2348	651	8014	838	3532	-138	196.32	
10	1/55/0	15	7280	2000	12952	6353	5129	3332	2501	502	6835	736	3043	464	4712	3537	911	9870	1149	4781	51	446.95	
11	1/63/0	10	4880	1500	7579	3929	3750	1732	1214	556	4002	574	1827	126	2449	1717	893	5770	841	2689	-141	121.04	
12	1/64/0	15	5880	1500	10407	4487	3948	3476	1740	460	6176	514	2083	186	4916	2461	651	8738	840	3690	-140	214.14	
13	1/65/0	15	7380	2000	13235	6392	5143	3522	2555	499	7076	731	3082	469	4981	3613	909	10213	1152	4878	48	467.50	
14	1/66/0	15	8400	2000	16120	6520	5188	5740	3094	452	9786	652	3186	548	8118	4375	828	14031	1129	5921	71	705.94	
15	1/75/0	15	7450	2000	13433	6419	5153	3655	2593	497	7245	728	3075	473	5189	3687	908	10454	1154	4946	46	482.21	
16	1/76/0	15	8480	2000	16346	6498	5180	5948	3135	446	10029	642	3188	558	8412	4433	814	14369	1120	6010	80	726.57	
17	1/77/0	15	9480	2000	19174	6183	5069	8500	3726	357	13084	503	3216	697	12021	5270	501	18502	890	7240	310	1022.71	
18	1/85/0	15	7500	2000	13574	6439	5160	3750	2620	495	7385	725	3085	475	5304	3705	907	10625	1156	4994	44	492.89	
19	1/86/0	15	8520	2000	16459	6486	5177	6052	3155	444	10151	638	3189	562	8559	4462	808	14539	1116	6054	84	737.01	
20	1/87/0	15	9550	2000	19372	6158	5080	8675	3774	350	13299	492	3218	708	12268	5337	469	18784	865	7335	335	1046.53	
21	2/22/0	10	3600	1500	3659	2044	3084	300	910	544	2254	472	1262	228	424	1287	838	3260	622	1628	78	50.04	
22	2/23/0	15	4600	1500	6787	4002	3776	900	1180	476	3056	572	1854	128	1273	1668	689	4340	767	2483	-67	98.58	
23	2/32/0	10	3650	1500	4101	2155	3123	325	915	551	2291	488	1285	212	460	1294	854	3318	645	1655	55	52.14	
24	2/33/0	10	4670	1500	6985	3691	3666	1438	1151	567	3656	580	1736	120	2034	1628	910	5282	833	2487	-133	106.83	
25	3/22/0	10	3570	1500	3874	1977	3060	285	907	540	2232	462	1248	238	403	1283	829	3225	608	1612	92	48.80	
26	3/33/0	10	4650	1500	6929	3668	3658	1410	1145	568	3623	581	1728	120	1994	1620	912	5235	833	2467	-133	105.53	

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING), NEW DELHI.
STANDARD DRAWINGS FOR BOX CELL STRUCTURES

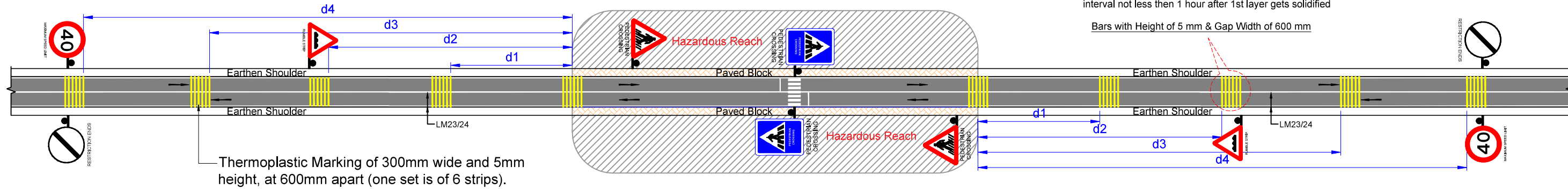
DIMENSION SCHEDULE FOR PCC
WING WALL
(WITHOUT EARTH CUSHION CASES)

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
<i>A.R. GHOSH</i> (A.R. GHOSH) CES (I) LTD	<i>M.C. TANDON</i> (M.C. TANDON) TCPL	<i>C.C. BHATTACHARYA</i> (C.C. BHATTACHARYA) CE (R) S&R MOST	DRG. NO. SD/113 (SHEET 6 OF 6)

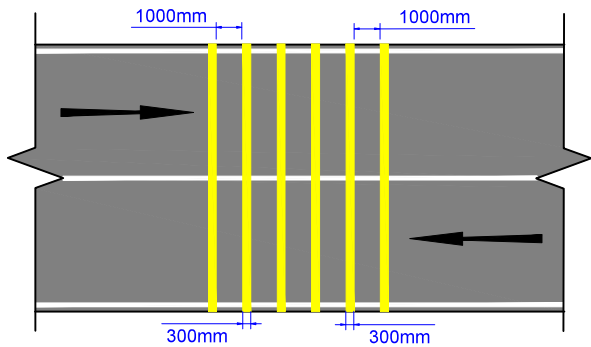
NOTES:-
ALL DIMENSIONS ARE IN MILLIMETER. OTHER SPECIFIED.

DWG-1

Approach Speed(kmph)	Bar Marking (Number of TM08)	Distance (d1,d2,d3 & d4) from Hazard
Upto 50 kmph	1 set	d1=50,
51 to 65kmph	2 set	d1=50,d2=80
66 to 80 kmph	3 set	d1=50,d2=80,d3=120
81 to 100 kmph	4 set	d1=50,d2=80,d3=120,d3=180



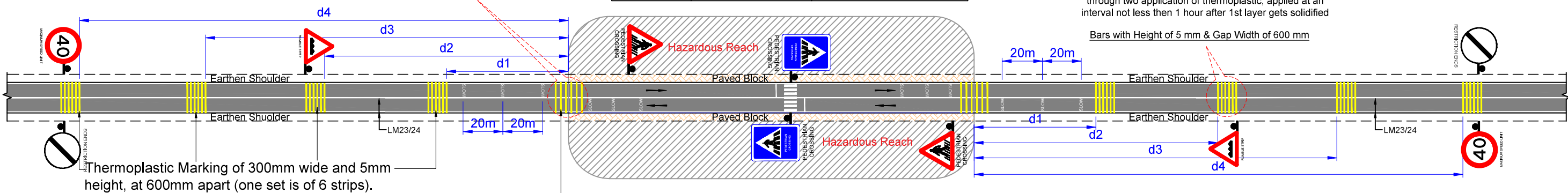
Transverse Bar marking as an Alerting Measure



Thermoplastic Marking of 300 mm wide and 15 mm height, at 1000 mm apart (one set is of 6 strips). 15 mm height is achieved through six application of thermoplastic, applied at an interval not less than 1 hour after the previous layer gets solidified. Alternatively, made of mastic Asphalt or any equivalent material which would provide 15 mm high

Bars with Height of 15 mm & Gap Width of 1000 mm

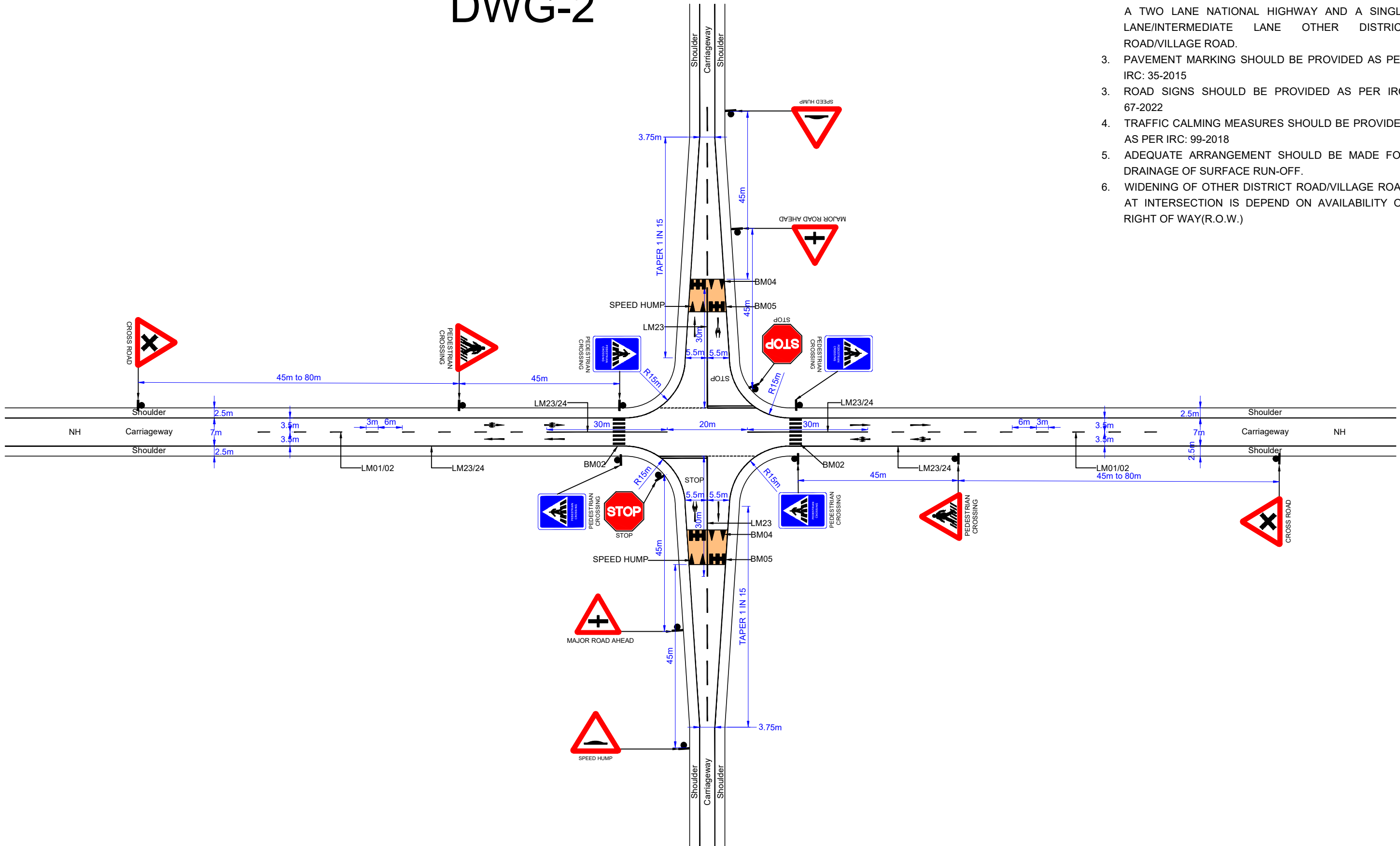
Approach Speed(kmph)	Bar Marking (Number of TM08)	Distance (d1,d2,d3 & d4) from Hazard
Upto 50 kmph	1 set	d1=50,
51 to 65kmph	2 set	d1=50,d2=80
66 to 80 kmph	3 set	d1=50,d2=80,d3=120
81 to 100 kmph	4 set	d1=50,d2=80,d3=120,d3=180



Transverse Bar marking with stricter Compliance

TYPICAL DETAILS OF TRANSVERSE BAR MARKING

DWG-2



NOTES:-

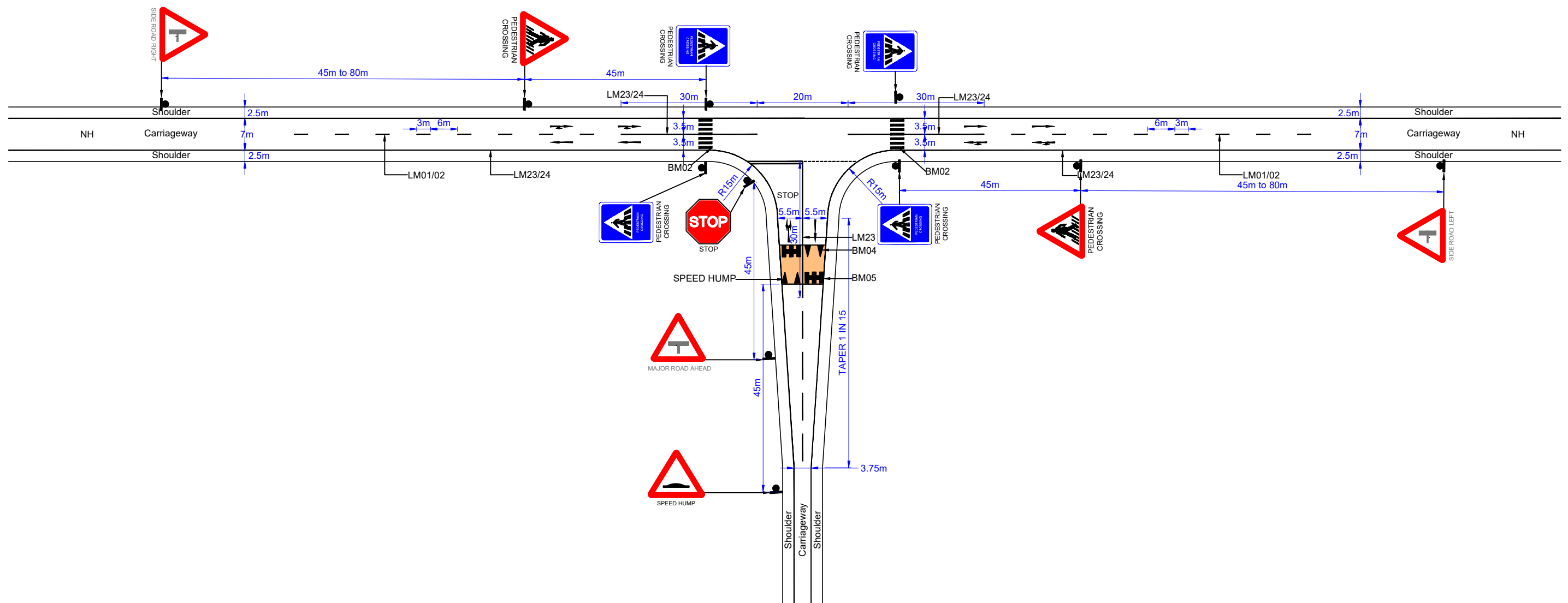
1. ALL DIMENSIONS ARE IN METER. OTHER SPECIFIED.
2. THE DESIGN IS SUITABLE FOR AN INTERSECTION OF A TWO LANE NATIONAL HIGHWAY AND A SINGLE LANE/INTERMEDIATE LANE OTHER DISTRICT ROAD/VILLAGE ROAD.
3. PAVEMENT MARKING SHOULD BE PROVIDED AS PER IRC: 35-2015
3. ROAD SIGNS SHOULD BE PROVIDED AS PER IRC: 67-2022
4. TRAFFIC CALMING MEASURES SHOULD BE PROVIDED AS PER IRC: 99-2018
5. ADEQUATE ARRANGEMENT SHOULD BE MADE FOR DRAINAGE OF SURFACE RUN-OFF.
6. WIDENING OF OTHER DISTRICT ROAD/VILLAGE ROAD AT INTERSECTION IS DEPEND ON AVAILABILITY OF RIGHT OF WAY(R.O.W.)

TYPICAL DETAILS OF CROSS ROAD INTERSECTION

DWG-3

NOTES:-

1. ALL DIMENSIONS ARE IN METER. OTHER SPECIFIED.
2. THE DESIGN IS SUITABLE FOR AN INTERSECTION OF A TWO LANE NATIONAL HIGHWAY AND A SINGLE LANE/INTERMEDIATE LANE OTHER DISTRICT ROAD/VILLAGE ROAD.
3. PAVEMENT MARKING SHOULD BE PROVIDED AS PER IRC: 35-2015
3. ROAD SIGNS SHOULD BE PROVIDED AS PER IRC: 67-2022
4. TRAFFIC CALMING MEASURES SHOULD BE PROVIDED AS PER IRC: 99-2018
5. ADEQUATE ARRANGEMENT SHOULD BE MADE FOR DRAINAGE OF SURFACE RUN-OFF.
6. WIDENING OF OTHER DISTRICT ROAD/VILLAGE ROAD AT INTERSECTION IS DEPEND ON AVAILABILITY OF RIGHT OF WAY(R.O.W.)

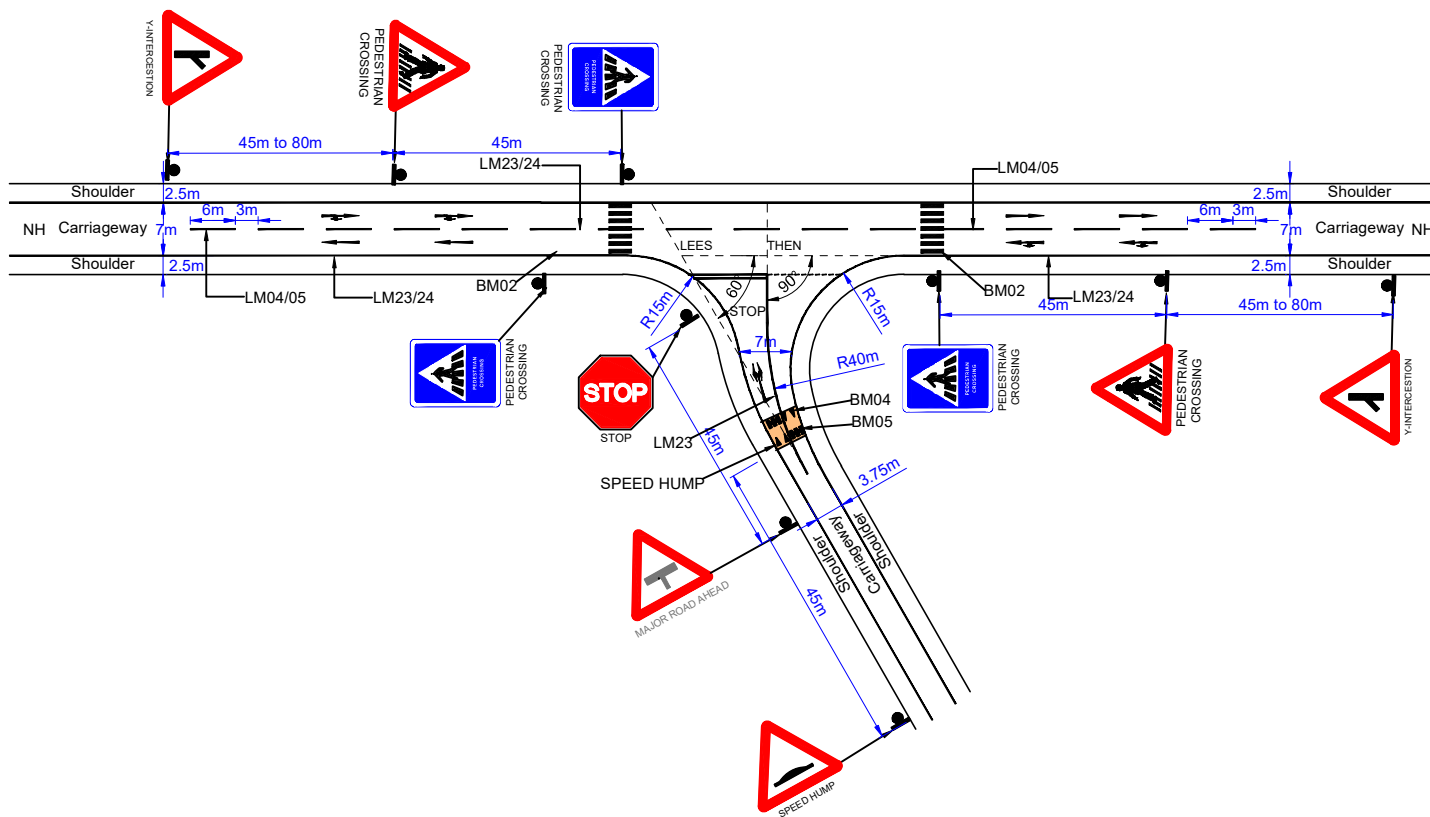
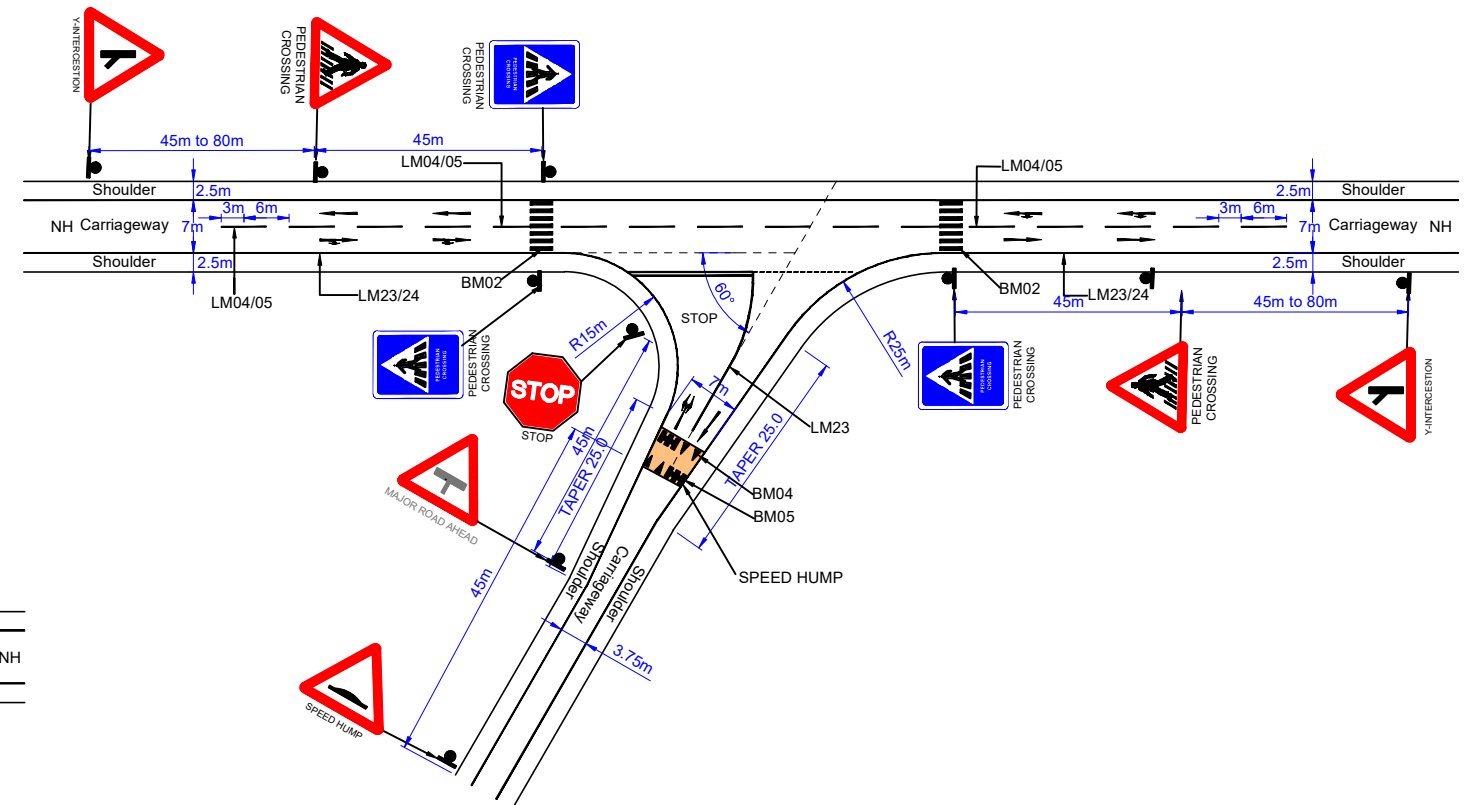
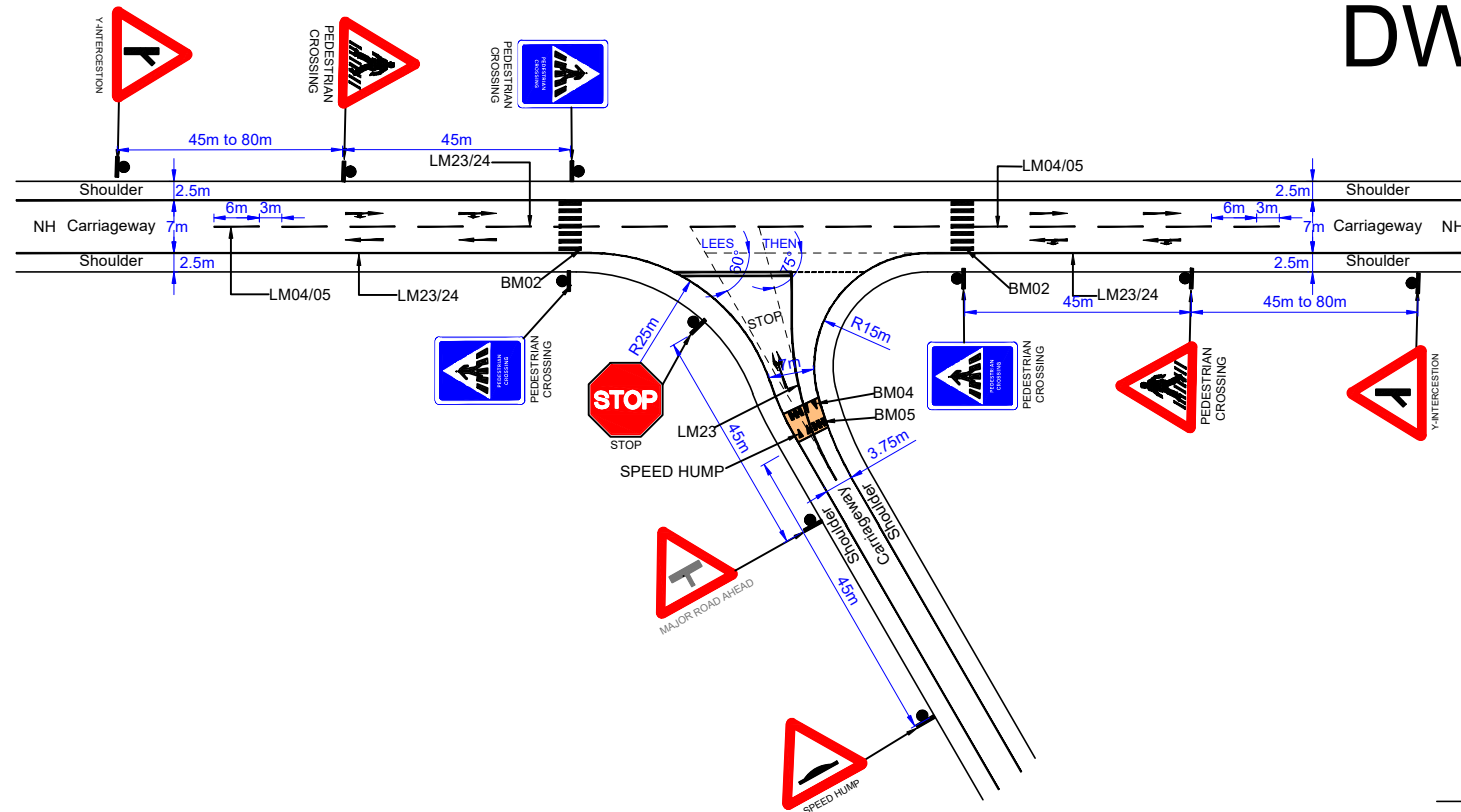


TYPICAL DETAILS OF T- INTERSECTION

DWG-4

NOTES:-

1. ALL DIMENSIONS ARE IN METER. OTHER SPECIFIED.
2. THE DESIGN IS SUITABLE FOR AN INTERSECTION OF A TWO LANE NATIONAL HIGHWAY AND A SINGLE LANE/INTERMEDIATE LANE OTHER DISTRICT ROAD/VILLAGE ROAD.
3. PAVEMENT MARKING SHOULD BE PROVIDED AS PER IRC: 35-2015
3. ROAD SIGNS SHOULD BE PROVIDED AS PER IRC: 67-2022
4. TRAFFIC CALMING MEASURES SHOULD BE PROVIDED AS PER IRC: 99-2018
5. ADEQUATE ARRANGEMENT SHOULD BE MADE FOR DRAINAGE OF SURFACE RUN-OFF.
6. WIDENING OF OTHER DISTRICT ROAD/VILLAGE ROAD AT INTERSECTION IS DEPEND ON AVAILABILITY OF RIGHT OF WAY(R.O.W.)



TYPICAL DETAILS OF Y- INTERSECTION