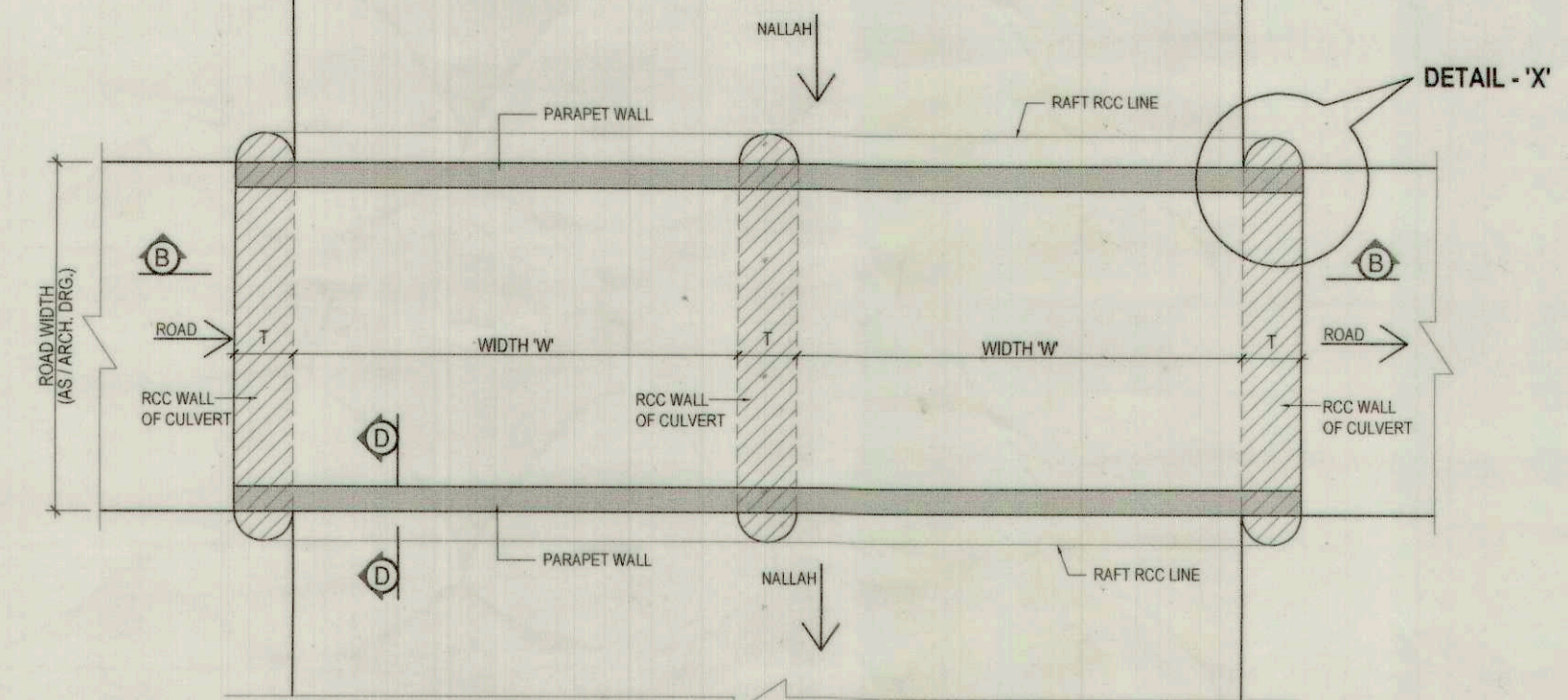
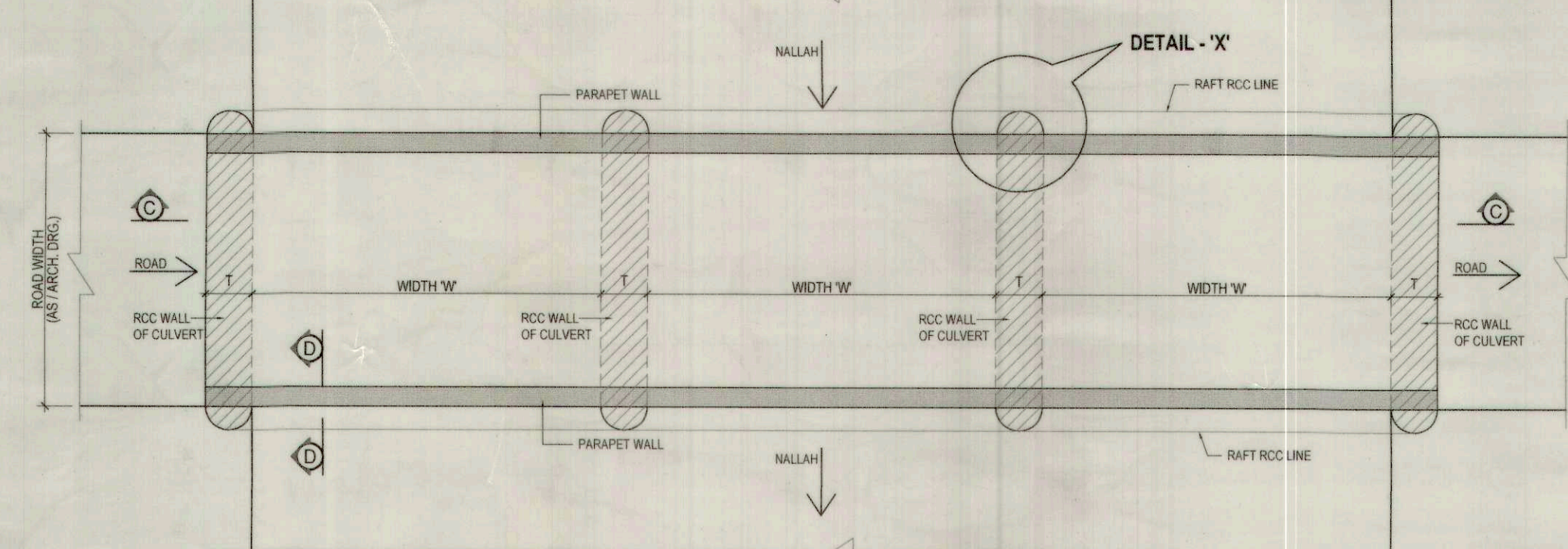


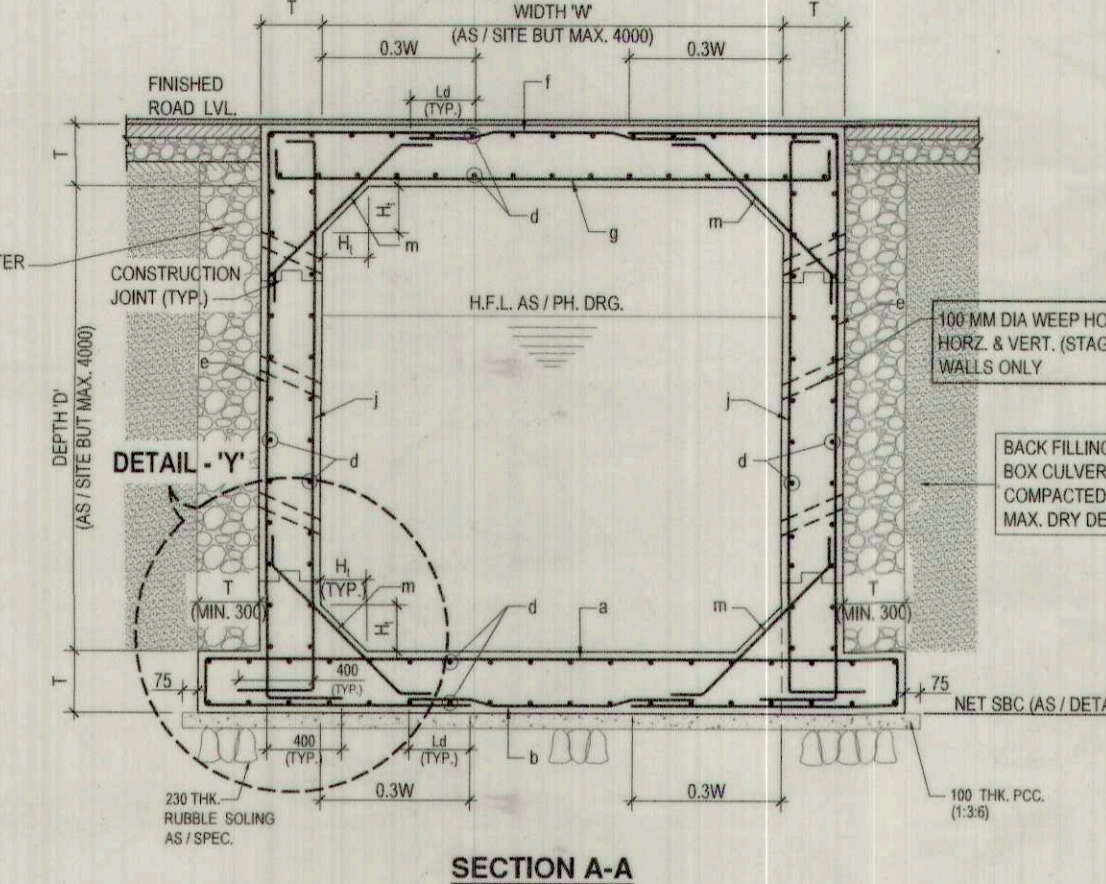
PLAN OF SINGLE CELL RCC BOX CULVERT (TYPE - I)



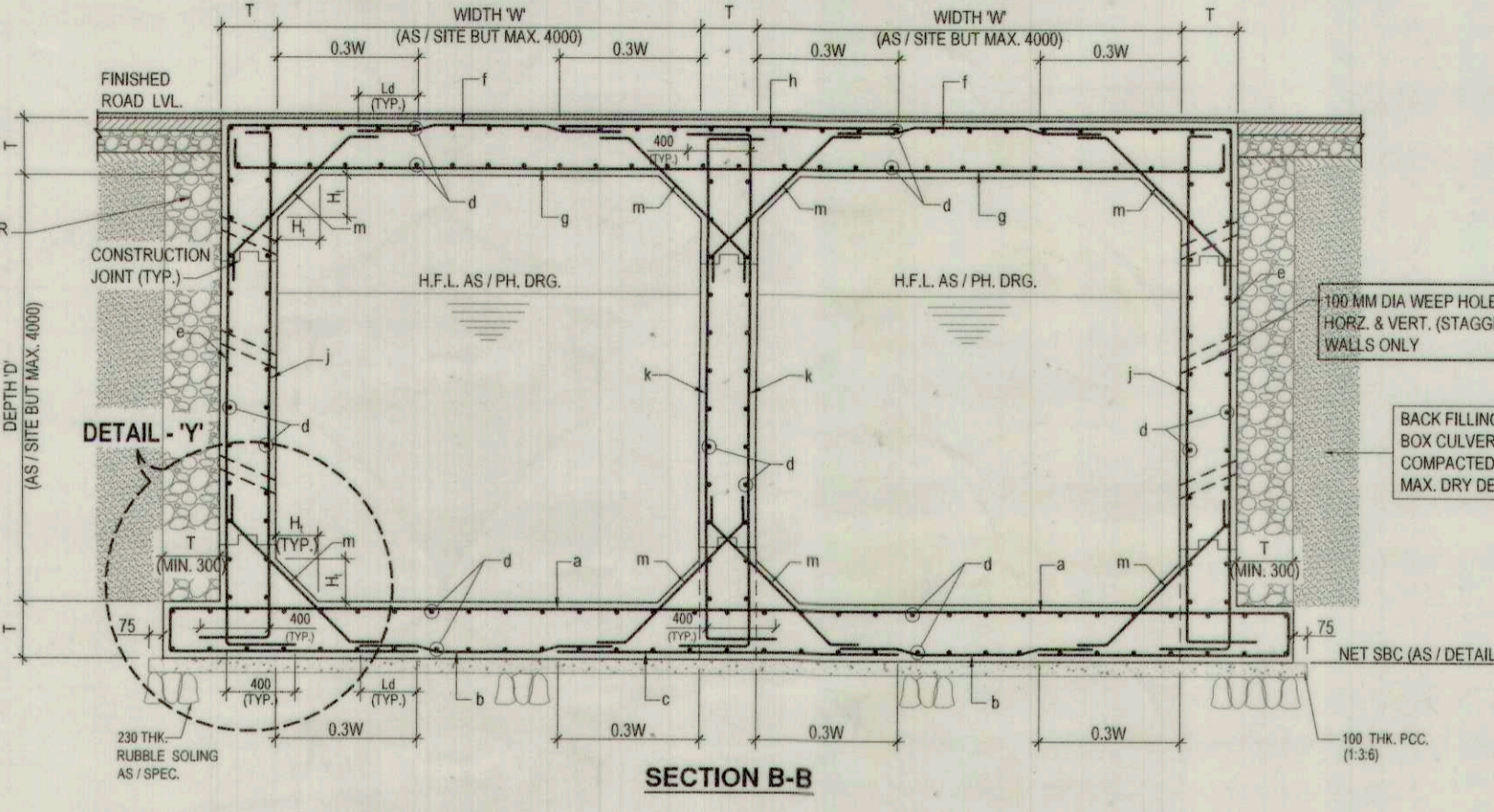
PLAN OF DOUBLE CELL RCC BOX CULVERT (TYPE - II)



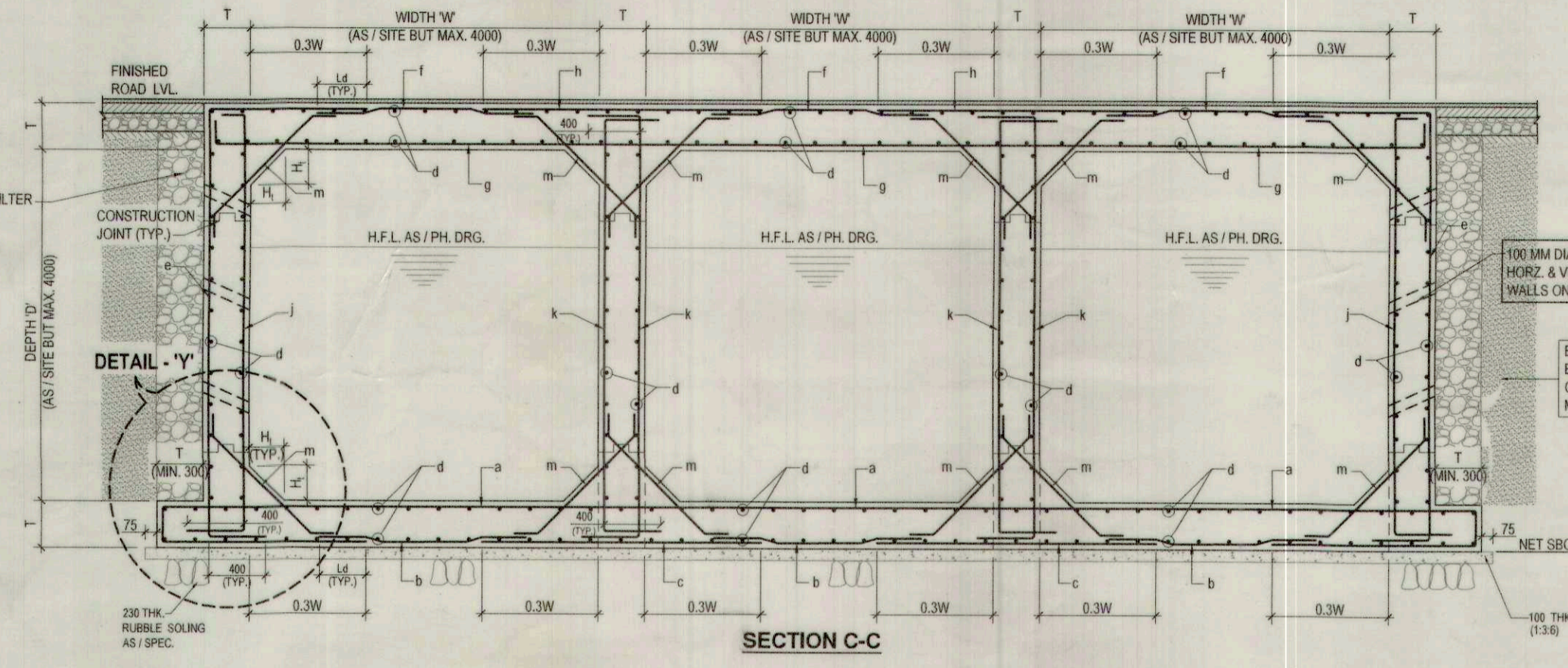
PLAN OF TRIPLE CELL RCC BOX CULVERT (TYPE - III)



SECTION A-A



SECTION B-B



SECTION C-C

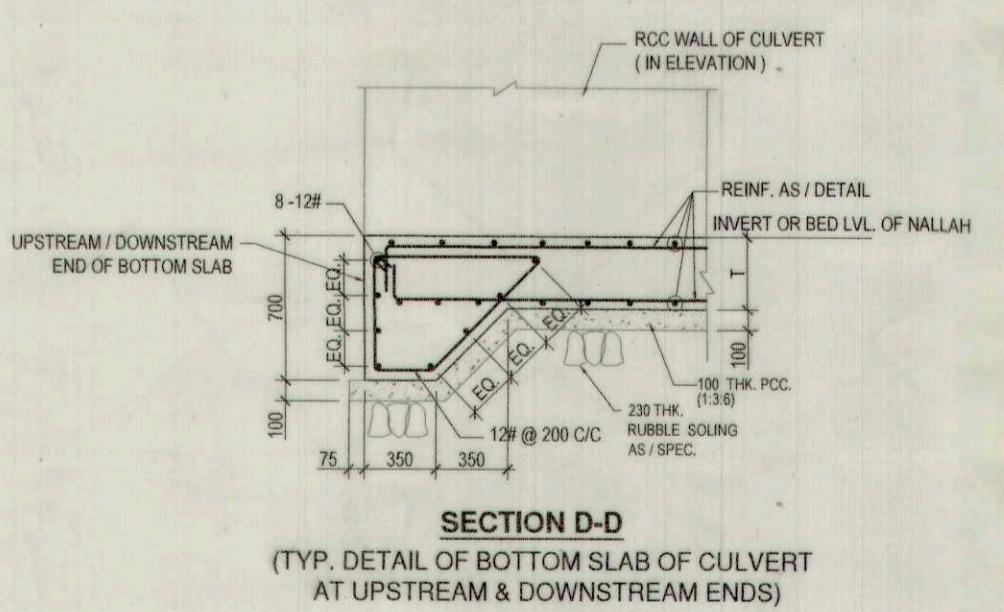
SCHEDULE OF CULVERT

WIDTH 'W'	DEPTH 'D'	THICKNESS 'T'	REINFORCEMENT										DIST. REINF. 'd'	HAUNCH		NET S.B.C. (MIN.)
			BOTTOM SLAB			TOP SLAB				WALL				THICKNESS 'H'	REINF. 'm'	
UPTO 1m	UPTO 1m	225 MM	12# @ 100 c/c	10# @ 200 c/c	12# @ 100 c/c	12# @ 250 c/c	12# @ 100 c/c	16# @ 125 c/c	16# @ 125 c/c	16# @ 200 c/c	16# @ 200 c/c	10# @ 200 c/c	—	—	6 t/m ²	
	1m TO 2m		12# @ 100 c/c	10# @ 200 c/c	12# @ 100 c/c	12# @ 250 c/c	16# @ 125 c/c	16# @ 125 c/c	16# @ 200 c/c	16# @ 200 c/c	16# @ 200 c/c	10# @ 200 c/c	—	—	7.5 t/m ²	
	2m TO 3m		16# @ 150 c/c	10# @ 150 c/c	16# @ 150 c/c	12# @ 250 c/c	12# @ 100 c/c	16# @ 125 c/c	16# @ 125 c/c	16# @ 200 c/c	16# @ 200 c/c	10# @ 200 c/c	—	—	10 t/m ²	
1m TO 2m	UPTO 1m	275 MM	12# @ 100 c/c	10# @ 200 c/c	12# @ 100 c/c	12# @ 200 c/c	16# @ 150 c/c	16# @ 100 c/c	16# @ 100 c/c	16# @ 150 c/c	16# @ 150 c/c	10# @ 200 c/c	—	—	6 t/m ²	
	1m TO 2m		12# @ 100 c/c	10# @ 200 c/c	12# @ 100 c/c	12# @ 200 c/c	16# @ 150 c/c	16# @ 100 c/c	16# @ 100 c/c	16# @ 150 c/c	16# @ 150 c/c	10# @ 200 c/c	—	—	7.5 t/m ²	
	2m TO 3m		16# @ 150 c/c	10# @ 150 c/c	16# @ 150 c/c	12# @ 200 c/c	16# @ 150 c/c	16# @ 100 c/c	16# @ 100 c/c	16# @ 150 c/c	16# @ 150 c/c	10# @ 200 c/c	—	—	10 t/m ²	
2m TO 3m	UPTO 1m	325 MM	12# @ 100 c/c	10# @ 200 c/c	12# @ 100 c/c	12# @ 250 c/c	16# @ 125 c/c	20# @ 125 c/c	20# @ 125 c/c	16# @ 100 c/c	16# @ 100 c/c	10# @ 200 c/c	—	—	6 t/m ²	
	1m TO 2m		12# @ 100 c/c	10# @ 200 c/c	12# @ 100 c/c	12# @ 250 c/c	16# @ 125 c/c	20# @ 125 c/c	20# @ 125 c/c	16# @ 100 c/c	16# @ 100 c/c	10# @ 200 c/c	—	—	7.5 t/m ²	
	2m TO 3m		16# @ 100 c/c	12# @ 200 c/c	16# @ 100 c/c	12# @ 250 c/c	16# @ 125 c/c	20# @ 125 c/c	20# @ 125 c/c	16# @ 100 c/c	16# @ 100 c/c	12# @ 200 c/c	—	—	10 t/m ²	
3m TO 4m	UPTO 1m	350 MM	16# @ 150 c/c	10# @ 150 c/c	16# @ 150 c/c	12# @ 200 c/c	16# @ 100 c/c	20# @ 100 c/c	20# @ 100 c/c	16# @ 100 c/c	16# @ 100 c/c	10# @ 200 c/c	—	—	6 t/m ²	
	1m TO 2m		16# @ 150 c/c	10# @ 150 c/c	16# @ 150 c/c	12# @ 200 c/c	16# @ 100 c/c	20# @ 100 c/c	20# @ 100 c/c	16# @ 100 c/c	16# @ 100 c/c	10# @ 200 c/c	—	—	7.5 t/m ²	
	2m TO 3m		16# @ 100 c/c	12# @ 200 c/c	16# @ 100 c/c	12# @ 200 c/c	16# @ 100 c/c	20# @ 100 c/c	20# @ 100 c/c	16# @ 100 c/c	16# @ 100 c/c	12# @ 200 c/c	—	—	10 t/m ²	
	3m TO 4m		16# @ 100 c/c	12# @ 200 c/c	16# @ 100 c/c	12# @ 200 c/c	16# @ 100 c/c	20# @ 100 c/c	20# @ 100 c/c	16# @ 100 c/c	16# @ 100 c/c	12# @ 200 c/c	—	—	12.5 t/m ²	

- NOTE**
- ROAD SHALL CROSS THE NALLAH AT RIGHT ANGLE ONLY.
 - NO FILLING IS ALLOWED ON TOP SLAB OF CULVERT EXCEPT WEARING COAT.
 - TOP SLAB OF CULVERT SHALL BE HORIZONTAL & NO SLOPE SHALL BE PROVIDED ALONG THE DIRECTION OF ROAD.

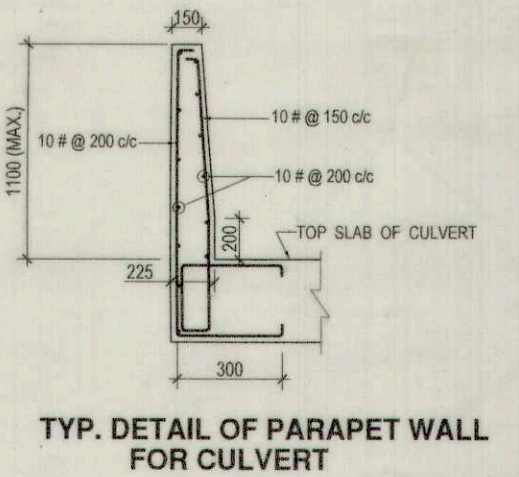
- NOTE**
- FOR LOCATION, LAYOUT, INVERT LVL. & OTHER DETAILS OF CULVERT, REFER ARCH. & PH. DRGS.
 - IN CASE, THERE IS REGT. OF WING WALL TO REGULATE FLOW FROM NALLAH TO CULVERT, THEN ACCORDINGLY ARCH. & PH. DRGS. SHALL BE SUBMITTED TO SDS FOR PROVIDING ADDITIONAL DETAILS.
 - REQUIREMENT, THICKNESS, MATERIAL & OTHER DETAILS OF WEARING COAT SHALL BE TAKEN AS PER SPECIFICATIONS.
 - TOP SURFACE OF BOTTOM SLAB IS ASSUMED AS BED LEVEL OF NALLAH / DRAIN.
 - BACK FILLING BEHIND RCC WALLS OF BOX CULVERT SHALL BE PROPERLY COMPACTED (MIN. 90% OF LABORATORY MAX. DRY DENSITY).
 - IF REQUIRED NET SBC IS NOT FOUND AT DEPTH OF CULVERT, SDS HAS TO BE INFORMED FOR REVISED STRL. DRAWINGS.

- NOTE**
- TYPE OF CULVERT (i.e. TYPE I OR II OR III) TO BE DECIDED BY SITE EIC AS PER SITE REQUIREMENT.
 - RCC BOX CULVERT HAS BEEN DESIGNED FOR CLASS 'AA' (WHEELED) & CLASS 'A' LOADING.

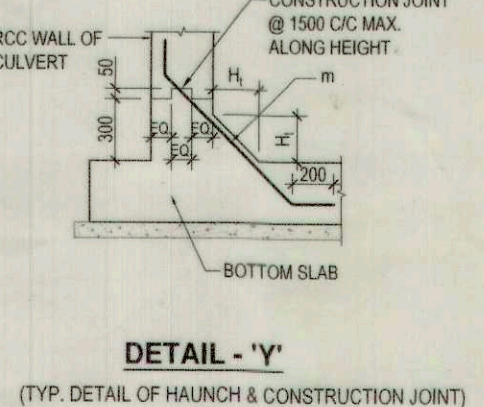


SECTION D-D (TYP. DETAIL OF BOTTOM SLAB OF CULVERT AT UPSTREAM & DOWNSTREAM ENDS)

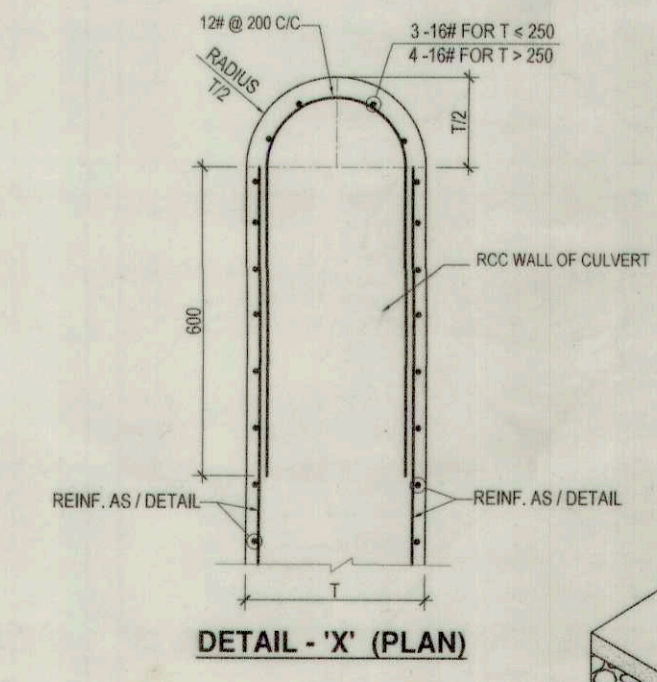
IN CASE OF ANY DOUBT OR CONFUSION, SDS IS TO BE CONSULTED PRIOR TO TAKING ANY ACTION.



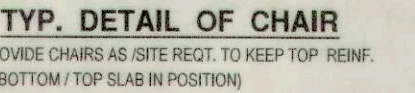
TYP. DETAIL OF PARAPET WALL FOR CULVERT



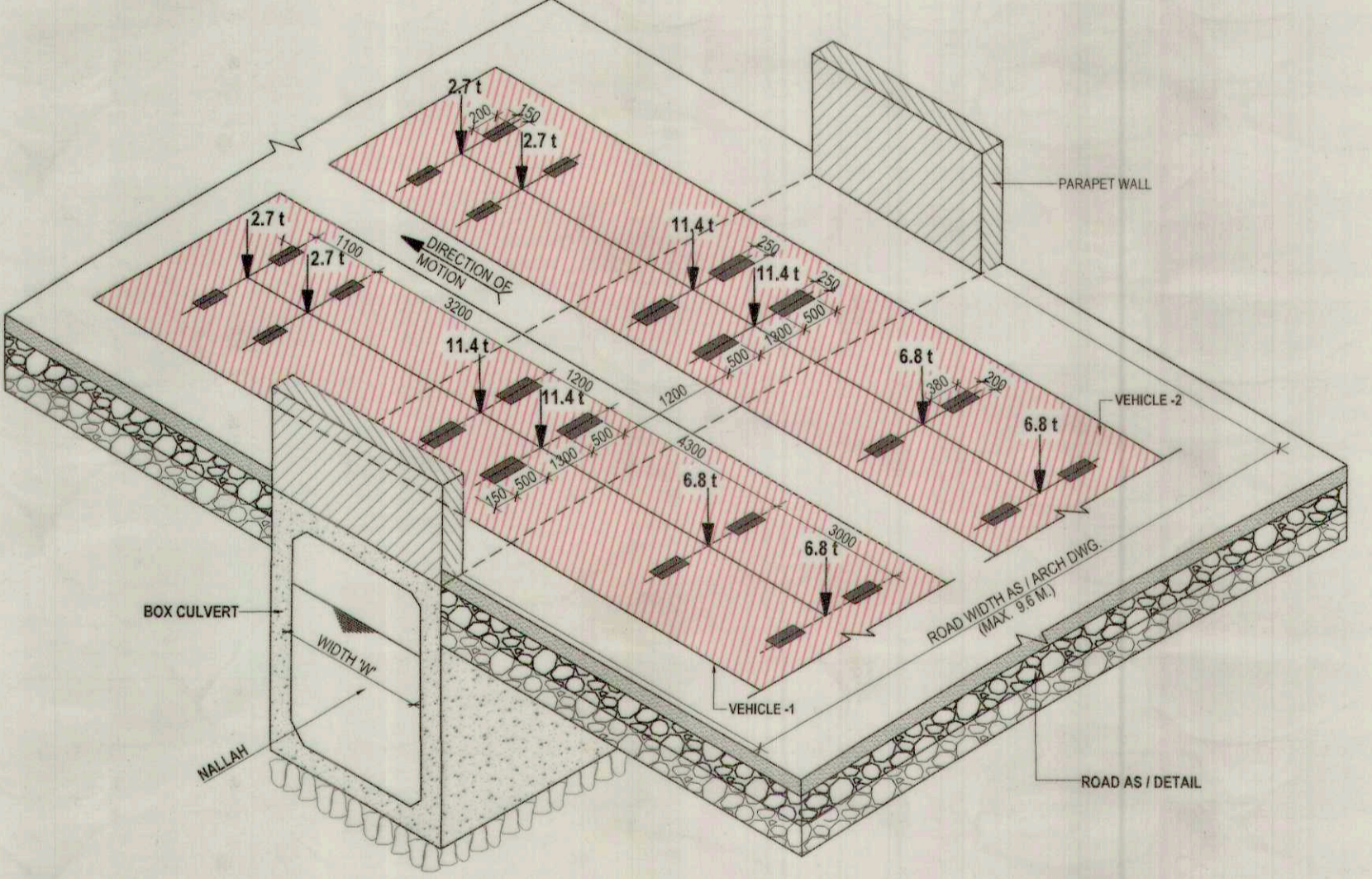
DETAIL - 'Y' (TYP. DETAIL OF HAUNCH & CONSTRUCTION JOINT)



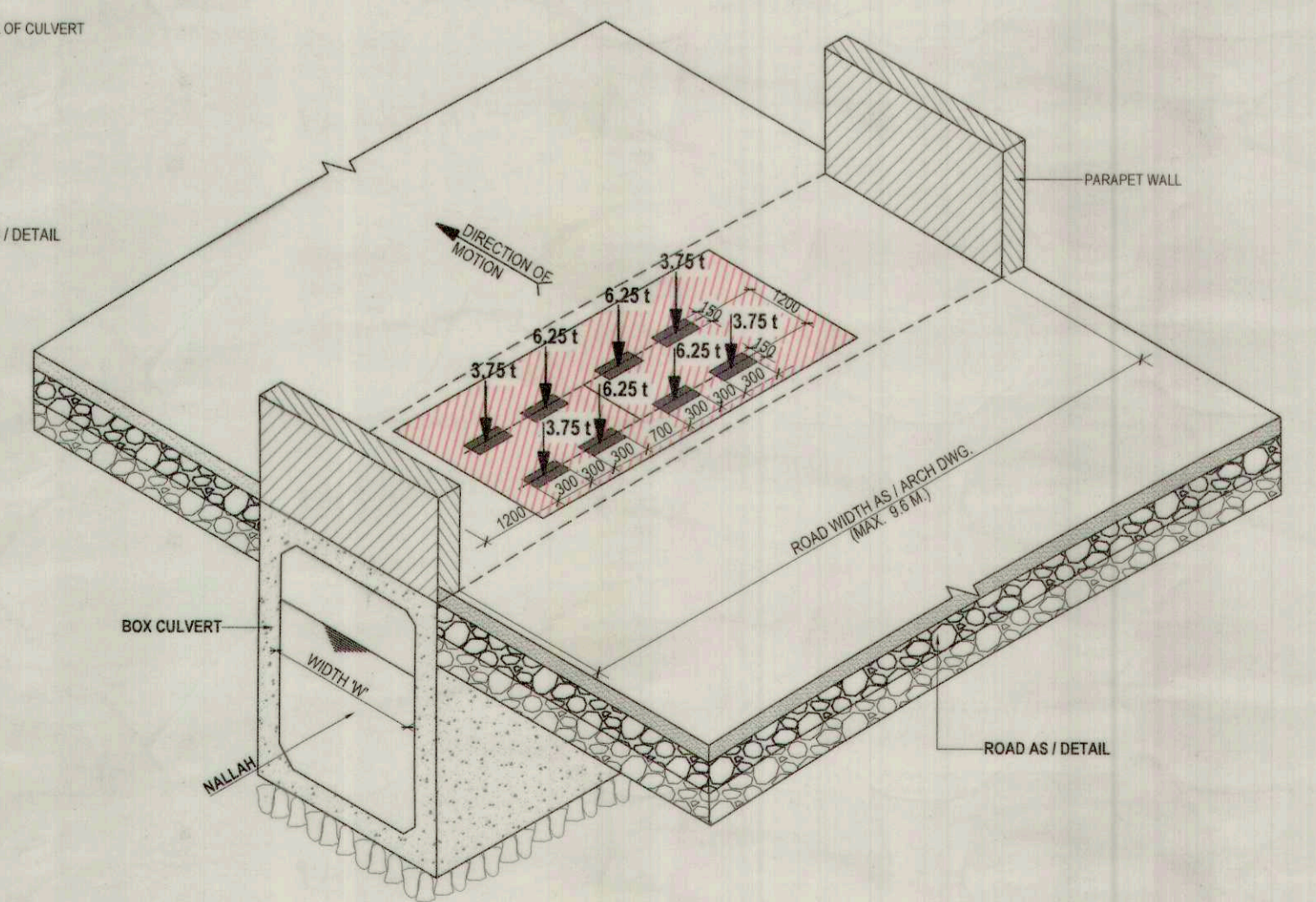
DETAIL - 'X' (PLAN)



TYP. DETAIL OF CHAIR



CLASS 'A' TRAIN OF VEHICLES



CLASS 'AA' TRAIN OF VEHICLES

LEGEND

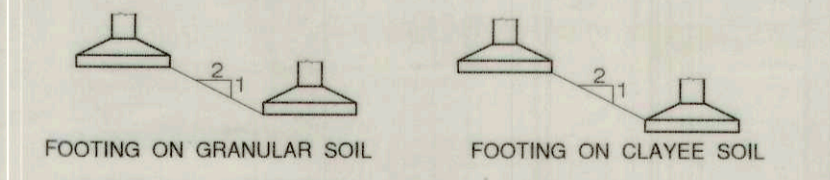
H.F.L. - HIGH FLOOD LEVEL

NOTES -

- ALL DIMENSIONS & LEVELS ARE IN MILLIMETERS (MM) UNLESS NOTED OTHERWISE. NO DIMENSION SHALL BE SCALED OFF. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
- THE WORK SHALL BE STRICTLY IN ACCORDANCE WITH IS: 456 - 2000 UNLESS NOTED OTHERWISE.
- ALL RCC WORK SHALL BE OF MINIMUM (M30) GRADE UNLESS NOTED OTHERWISE.
- REINFORCEMENT USED SHALL BE OF GRADE (Fe 550 / Fe 550D) TMT BARS CONFORMING TO IS: 1786 - 2008, INDICATED THUS #.
- ALL LEVELS AND DIMENSIONS INDICATED IN THIS DRG. ARE FROM THE CONCRETE SURFACE WITHOUT ANY FINISHES UNLESS NOTED OTHERWISE.
- THIS DRG. SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL, PH. E & M AND STRUCTURAL DRAWINGS.
- IN THE EVENT OF ANY DISCREPANCY BETWEEN STRUCTURAL DRGS. AND BASIC ARCHITECTURAL, PH. E & M DRGS. OR BETWEEN DIFFERENT STRUCTURAL DRGS., UNDERSIGNED SHALL BE IMMEDIATELY INFORMED PRIOR TO TAKING FURTHER ACTION.
- LAP LENGTH 'Ld' WITHOUT HOOKS SHALL BE AS GIVEN BELOW WHERE 'D' IS DIAMETER OF THE SMALLER LAPPING BAR.

CONCRETE GRADE	M30	M25	M20	M15
LAP LENGTH 'Ld'	50 D	54 D	63 D	75 D

- FOR LOCATION OF CONCEALED CONDUITS, PIPES AND OTHER CIVIL, PH. ELECTRICAL AND AIRCONDITIONING WORKS, INSERTS, CUTOUTS, HOLES, OPENINGS, ETC., REFER SEPARATE DRGS. BUT THESE SHALL BE LOCATED / FIXED PRIOR TO CONCRETING.
- SPACING OF BARS SHALL BE STAGGERED AND NOT MORE THAN 50% OF BARS TO BE SPLICED AT ANY SECTION.
- BACKFILL MATERIAL SHALL BE NON-COHESIVE / WELL GRAVEL.
- ADJACENT FOOTINGS AT DIFFERENT LEVELS SHALL BE PROVIDED SUCH THAT THE SLOPE OF LINE AS SHOWN IN THE SKETCHES BELOW, IS NOT STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL.



NOMINAL COVER

MEMBER	NOMINAL COVER
BOTTOM SLAB	50 MM
TOP SLAB	35 MM (BOTTOM COVER) 45 MM (TOP COVER)
RCC WALLS	45 MM

REV. NO.	DESCRIPTION	INITIAL	DATE
R3	GRADE OF STEEL CHANGED FROM Fe 500 TO Fe 550 / Fe 550D AND CORRESPONDING DETAILS CHANGED.	M. ASHAWA P. K. PANDIA	05.01.2024
R2	DRG. REVISED IN GENERAL.	MAYANK S.K. SAINI	11.12.2020
R1	DRG. REVISED IN GENERAL (SECTION - D & DETAIL - X)	MAYANK P. K. PANDIA	31.12.18

REVISIONS

05/01/2024

DIRECTORATE OF CONSTRUCTION SERVICES AND ESTATE MANAGEMENT
STRUCTURAL DESIGN SECTION
VIRRAM SARABHAI BHAVAN, ANUSHTHANAGAR, MUMBAI - 400004

DRN. BY	KAMELESH	TITLE -
DRG. CHDR.	MAYANK	STANDARD DRG. OF RCC BOX CULVERT
DESIGN BY	MAYANK	
DESIGN CHDR.	S. K. SAINI	DRG. NO. -
APPROVED	P. K. PANDIA	REV.
SCALE	1:100, 1:25	DRG. NO. -
DATE	12-06-2016	DCSEM / SDS / STD. DRG. / BOX CULVERT - 01 / 8179