

TENDER DOCUMENT

FOR

**Lining, Repair and Construction of Balance Works of Left
Main Canal & its Structures under North Koel Reservoir
Project, Jharkhand**

Estimated Cost (Rs. 5.96 Crores)

TENDER NO: WAP/NK/JHK/BALANCE/LMC/2026

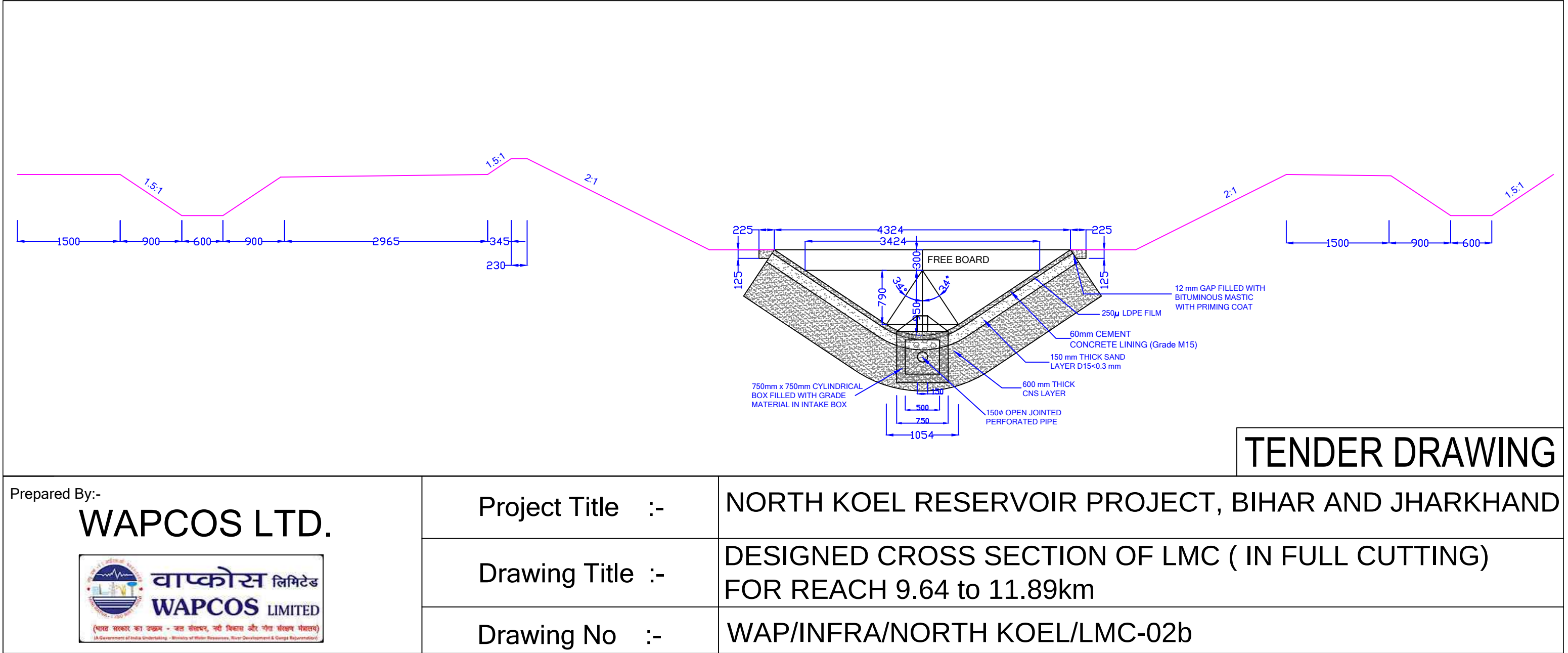
TENDER DRAWINGS

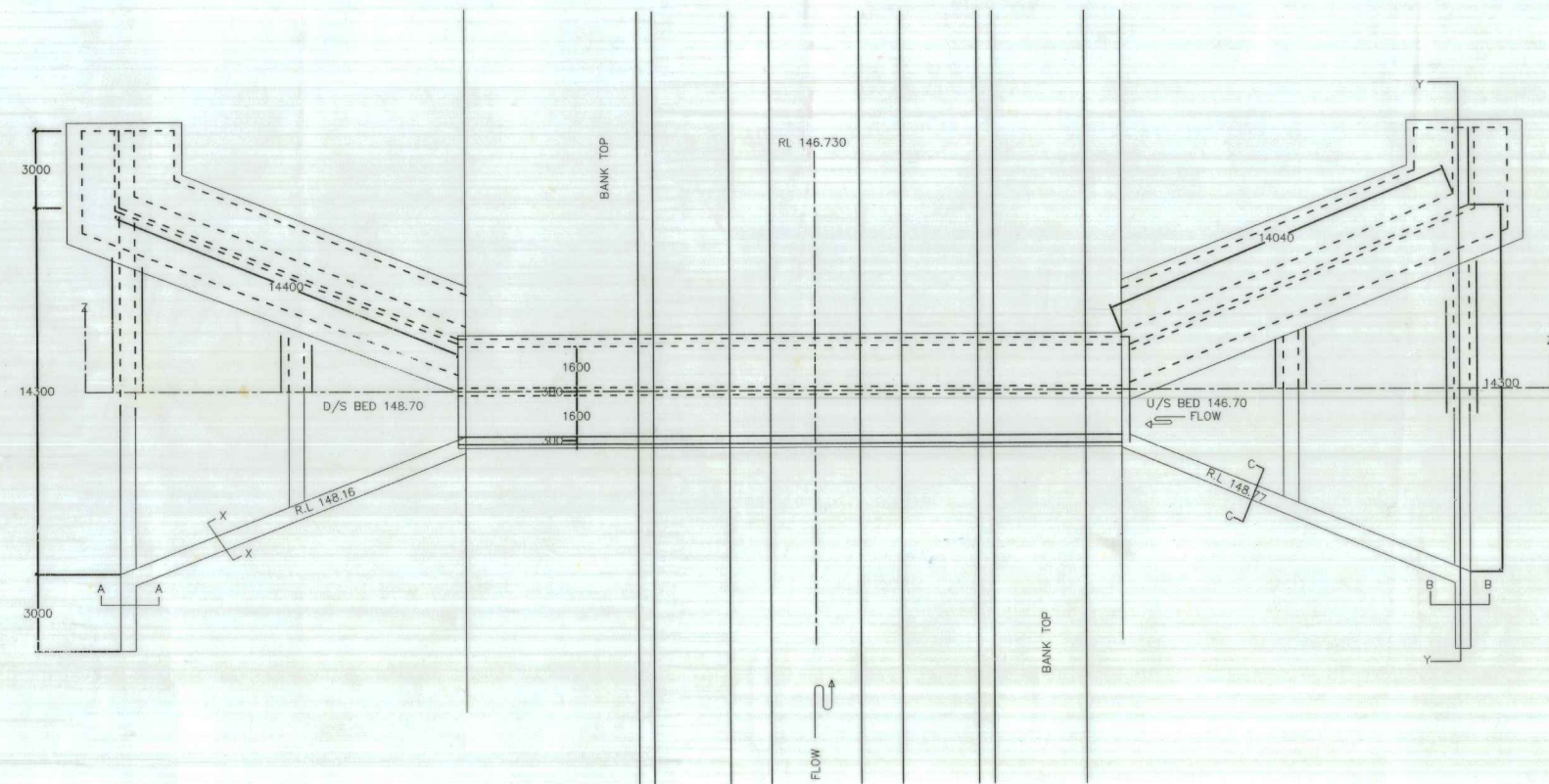
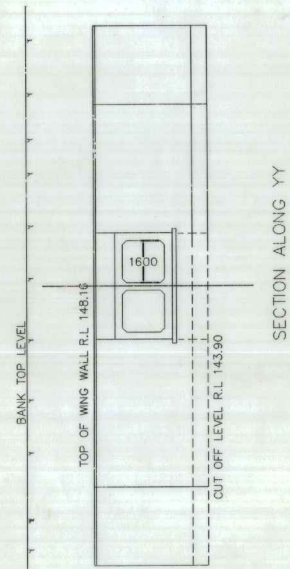
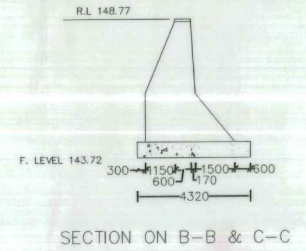
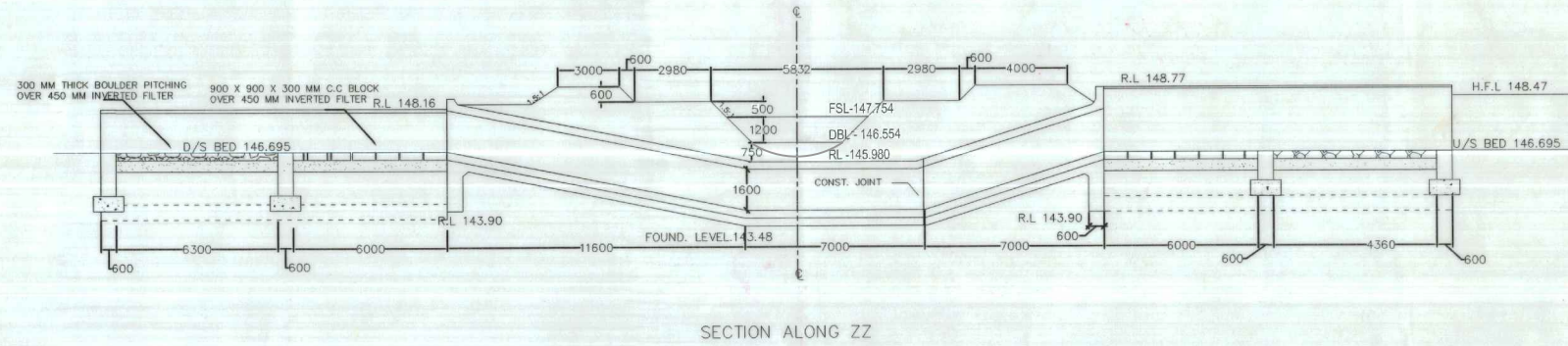
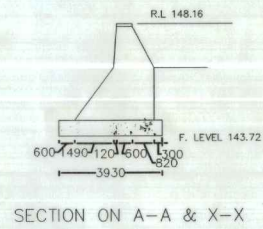
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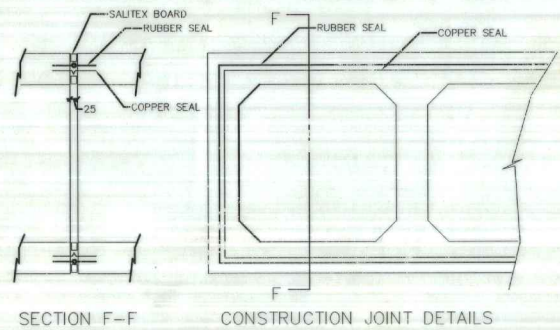
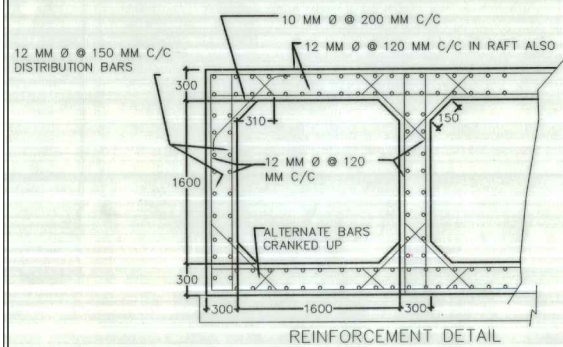
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Tender Drawings of Canal





SCALE 1 : 150
HALF FOUNDATION HALF TOP PLAN



TENDER DRAWING

DESIGN DATA

PARTICULAR	CANAL	DRAIN
DISCHARGE	1.64 CUM	13.0CUM
F.S.D	1.20M	1.175M
S.S.L / H.F.L	147.754 M	147.87 M
BED LEVEL	146.554 M	146.695M
BED WIDTH	CUP SHAPE	-
BEARING CAPACITY OF THE SOIL	15 t/sqm	

NOTE:-

- M20 CONCRETE WITH AGGREGATE 20 MM & DOWN TO BE USED IN R.C.C & HYSD BARS OF GRADE Fe 500 ARE TO BE USED AS REINFORCEMENT.
- ANY DISCREPANCY FOUND DURING CONSTRUCTION MUST BE BROUGHT TO THE NOTICE OF THE COMPETENT OFFICE FOR NECESSARY CHANGES IF ANY.
- DURING EXCAVATION IN CASE OF ENCOUNTER OF ROCK STRATA AT SHALLOW DEPTH FOUNDATION OF WING WALL & RETURN WALL MAY BE KEPT AT 600 MM DEEP IN HARD ROCK & 1500 MM DEEP IN SOFT ROCK.
- WEEP HOLES @1200 MM C/C STAGGERED, SHOULD BE PROVIDED IN THE WING WALL.
- MINIMUM COVER FOR REINFORCEMENT 50 MM TO BE ADOPTED.
- COPPER SEAL AND RUBBER SEAL TO BE PROVIDED AT EXPANSION JOINT IN BARREL AND JOINT TO BE FILLED WITH BITUMINOUS FILLER MATERIAL.
- RUBBER SEAL TO BE PROVIDED AT CONSTRUCTION JOINT IN WING.
- 300 MM MUD MATTING OF M10 CONCRETE BELOW FOOTING WILL BE PROVIDED.
- ANY MISSING DATA MAY SUITABLY BE ASSUMED.

Implementing Agency :-

WAPCOS LTD.



Project Title :- NORTH KOEL RESERVOIR PROJECT, JHARKHAND

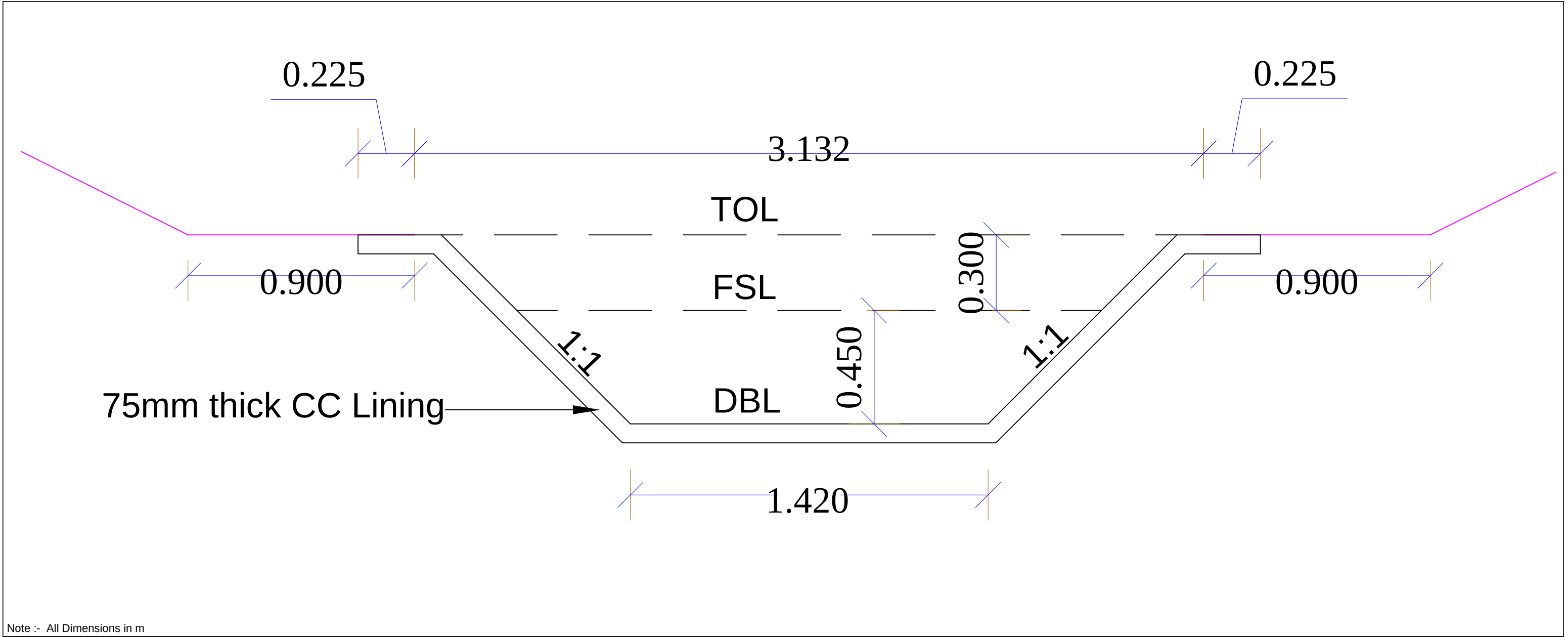
Drawing Title :- DRAWING OF CANAL SYPHON AT RD- 0.30 km OF NORTH KOEL LEFT MAIN CANAL

Drawing No :- WAP/INFRA/NORTH KOEL/LMC-03a

Drawn By:-

Checked By :-

Approved By :-



Note :- All Dimensions in m

Prepared By:-



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Project Title :-

NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND

Drawing Title :-

DESIGN SECTION OF DRAINAGE CHANNEL AT 0.30 KM OF LMC

Drawing No :-

WAP/INFRA/LMC/DESIGN SECTION/01

Tender Drawings of Outlets

NORTH KOEL RESERVOIR PROJECT

Completion of Balance Works of North Koel Reservoir Project

DRAWING REPORT – OUTLETS OFFTAKING FROM LMC, JHARKHAND

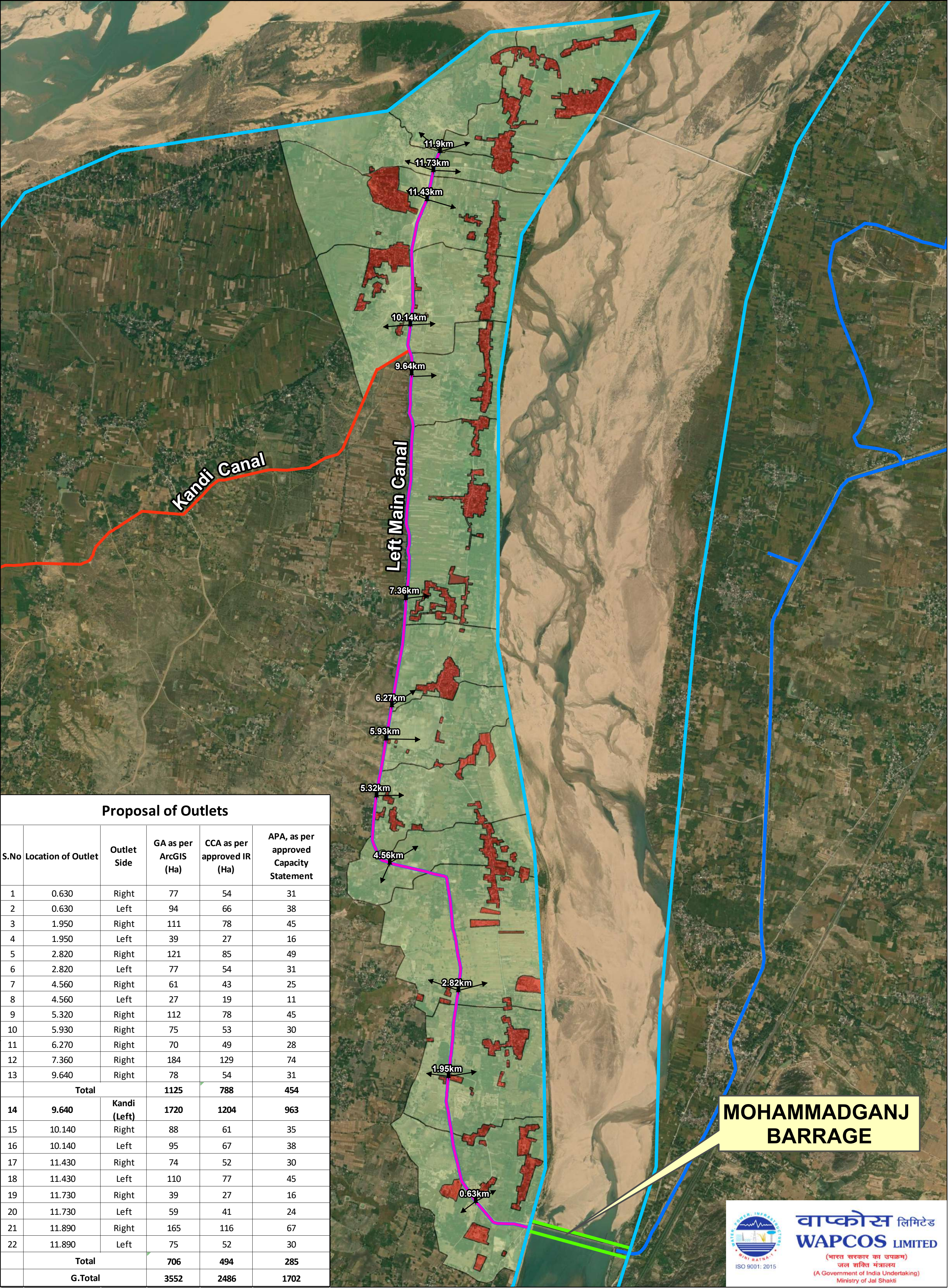


WAPCOS LIMITED

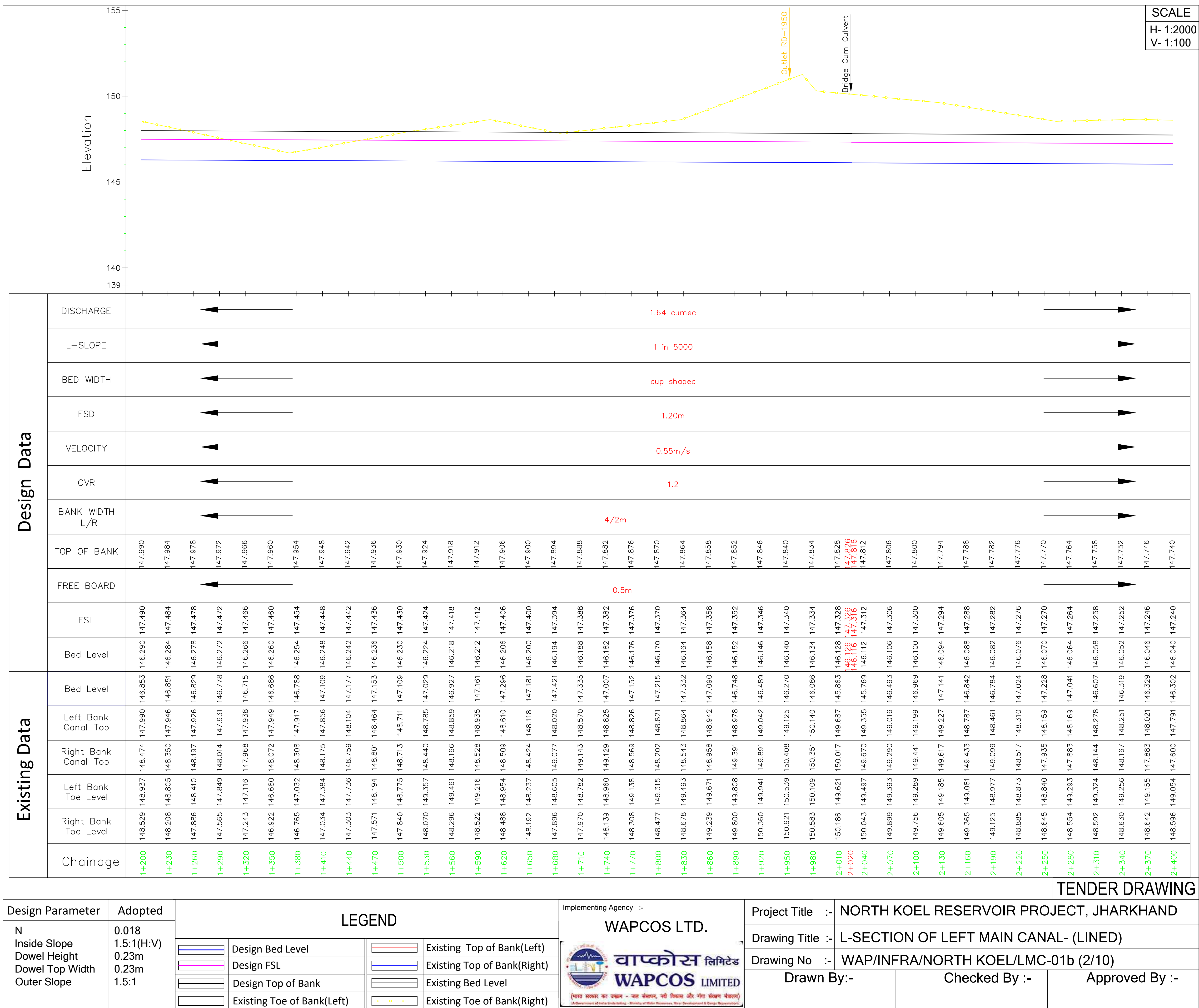
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76- C SECTOR-18 INDUSTRIAL AREA,
GURUGRAM-122015 (HARYANA)

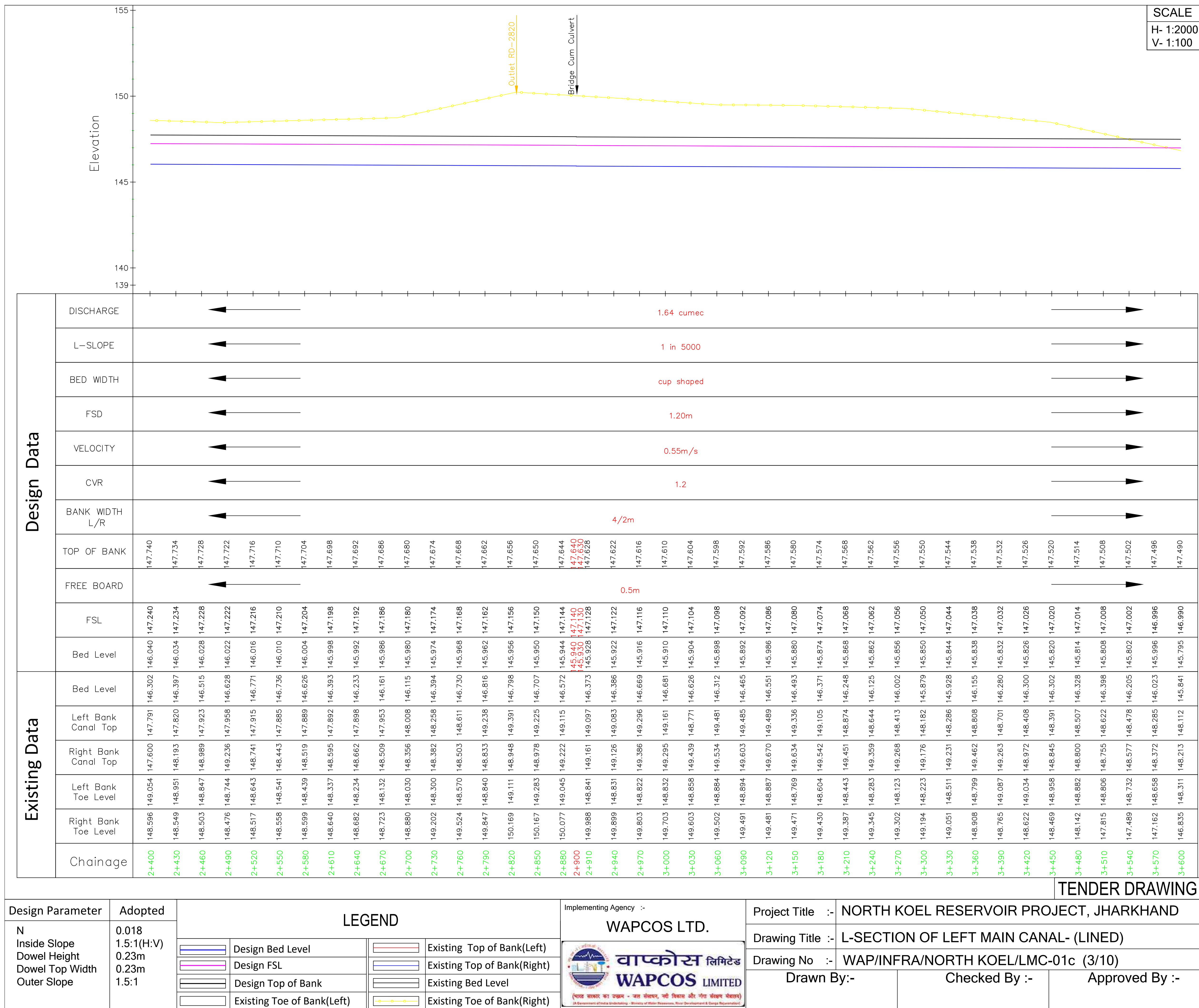


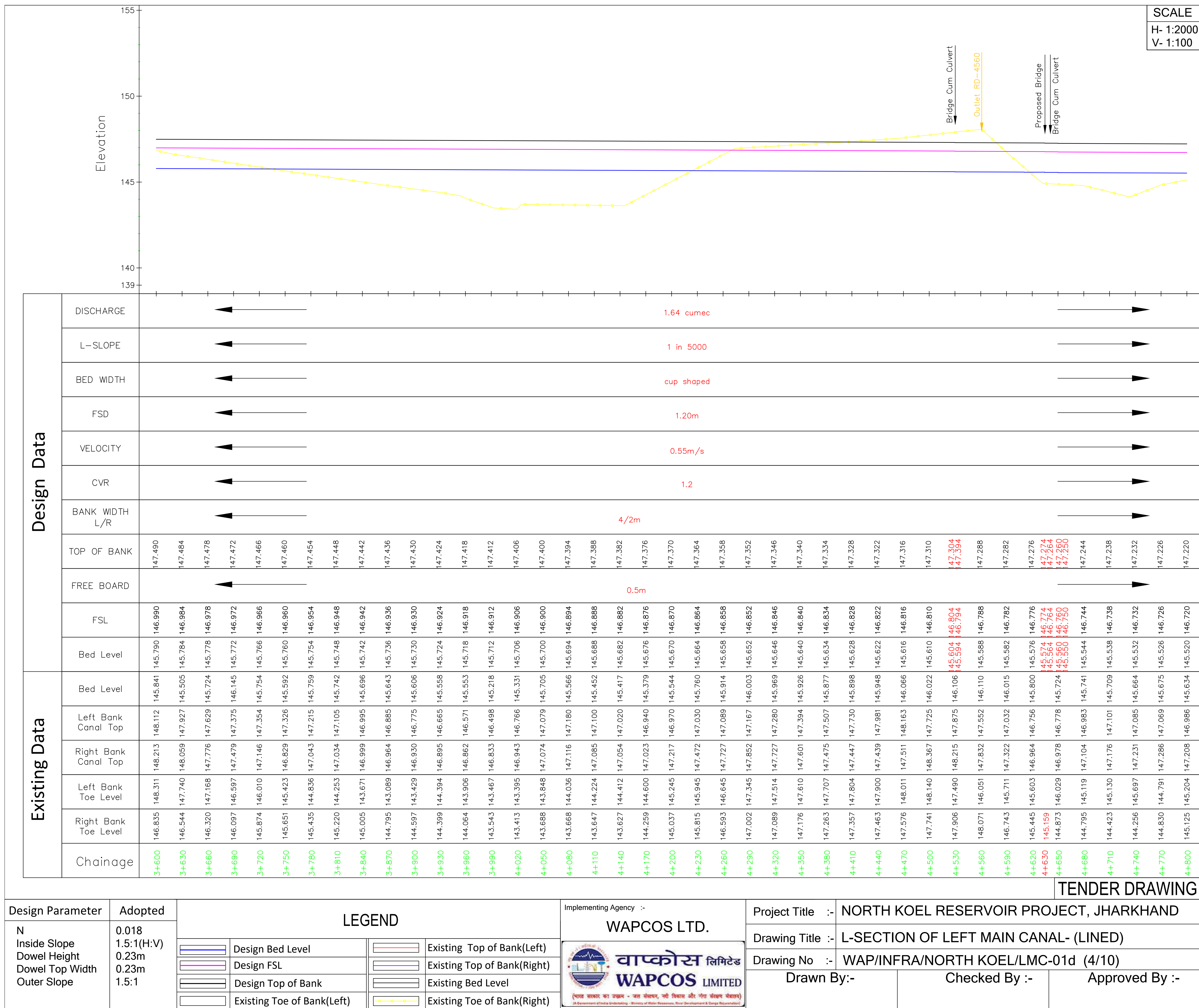
CHAK PLAN SHOWING PROPOSAL OF OUTLET ON LMC

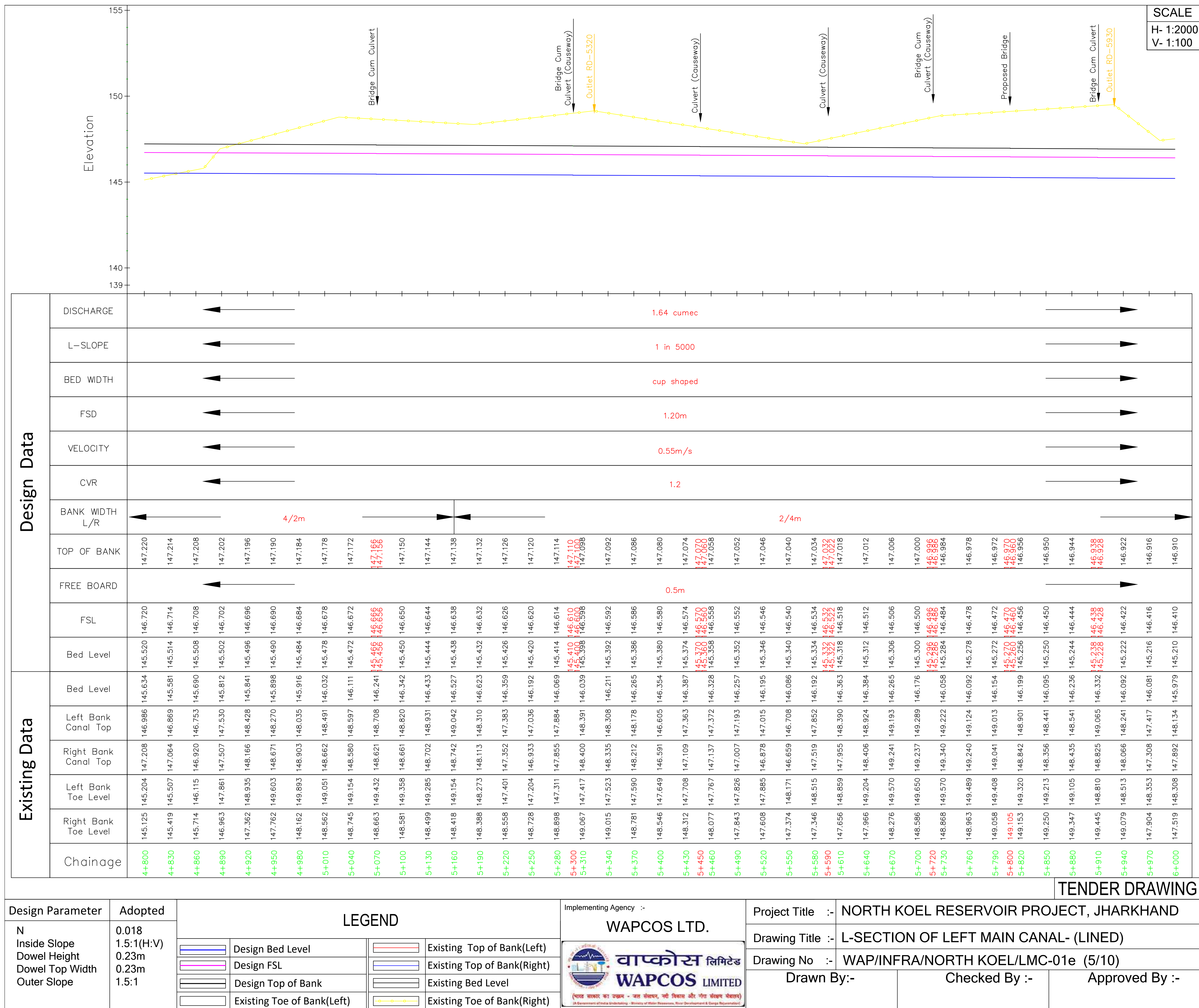


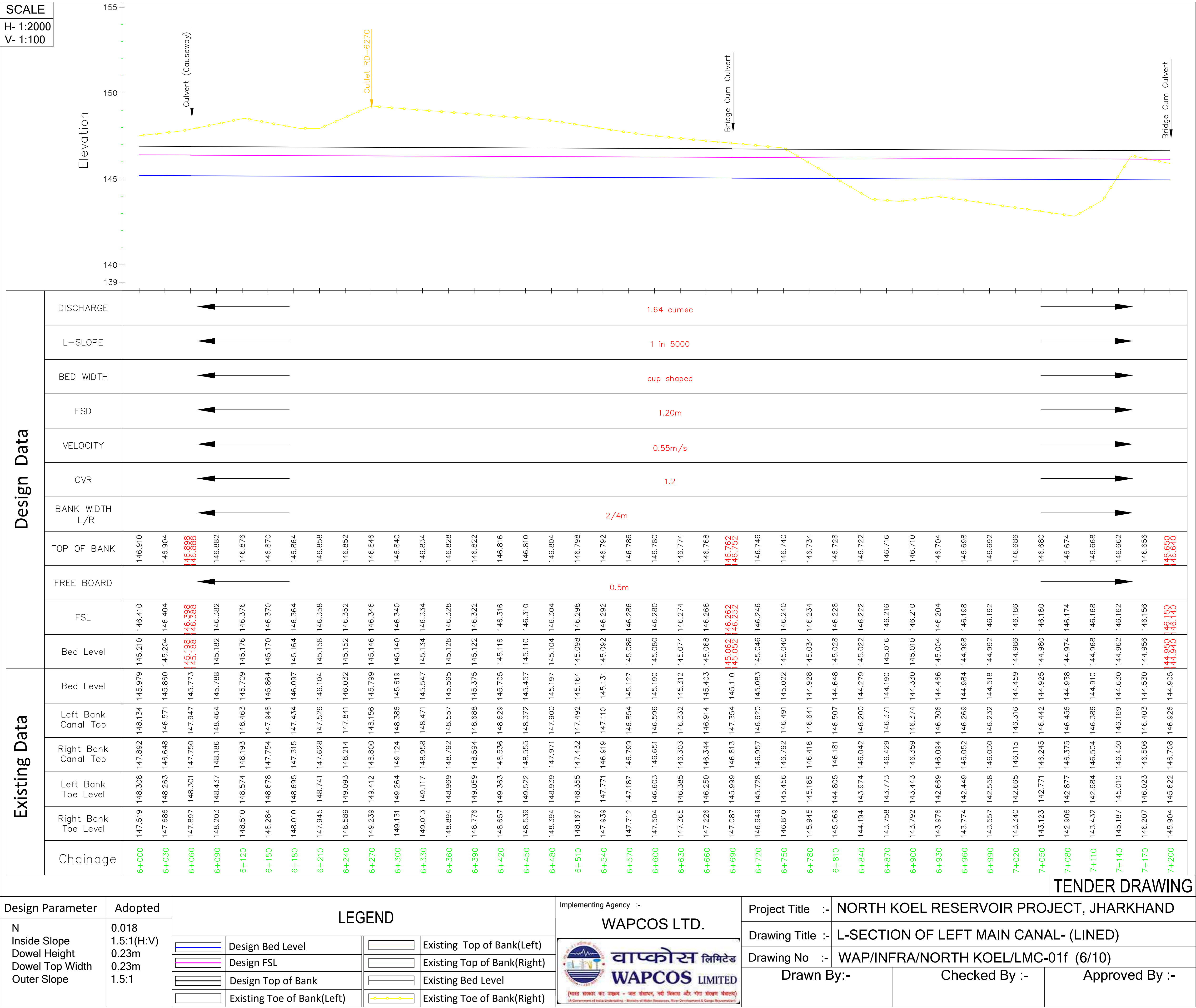
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BARRAGE

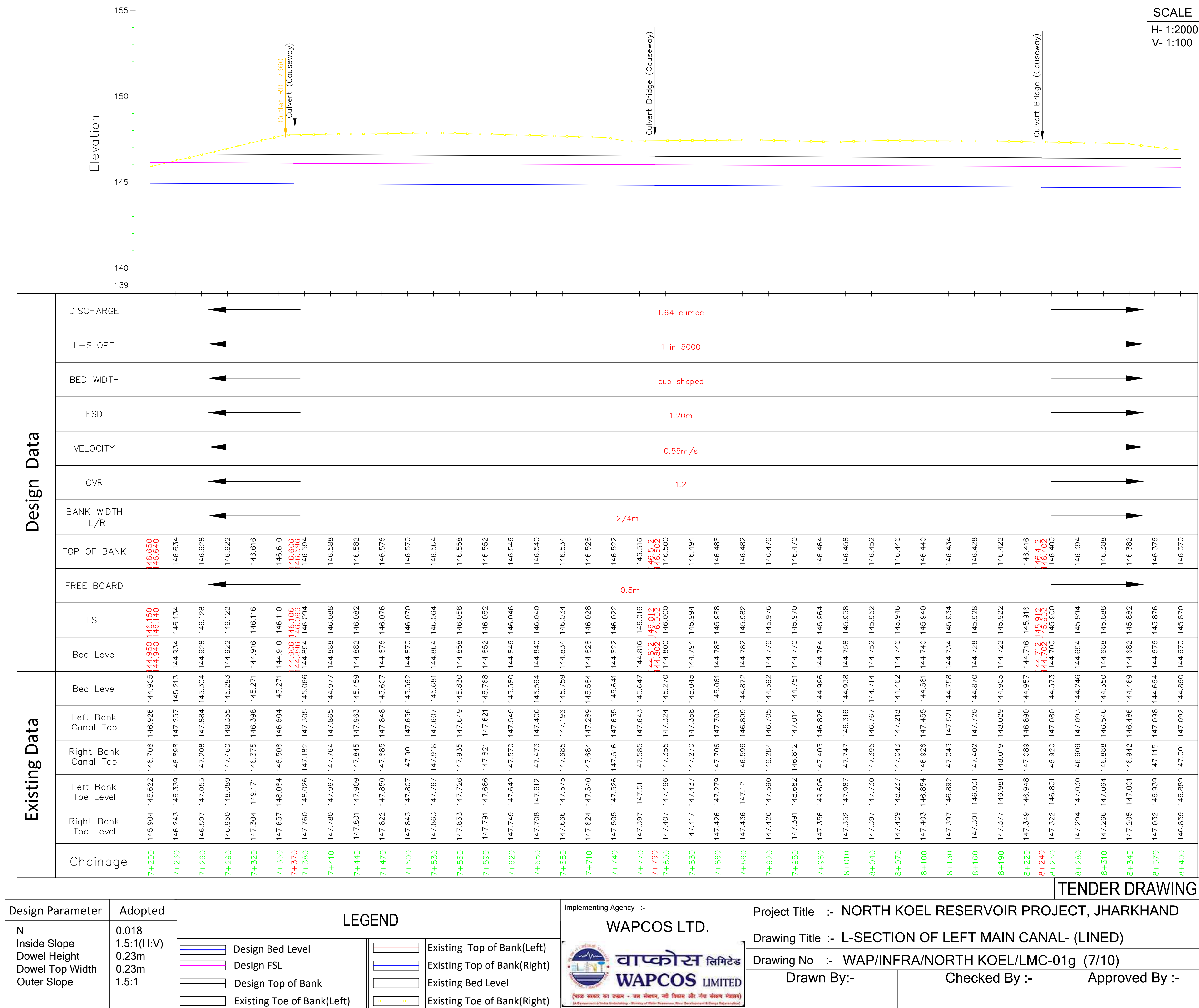


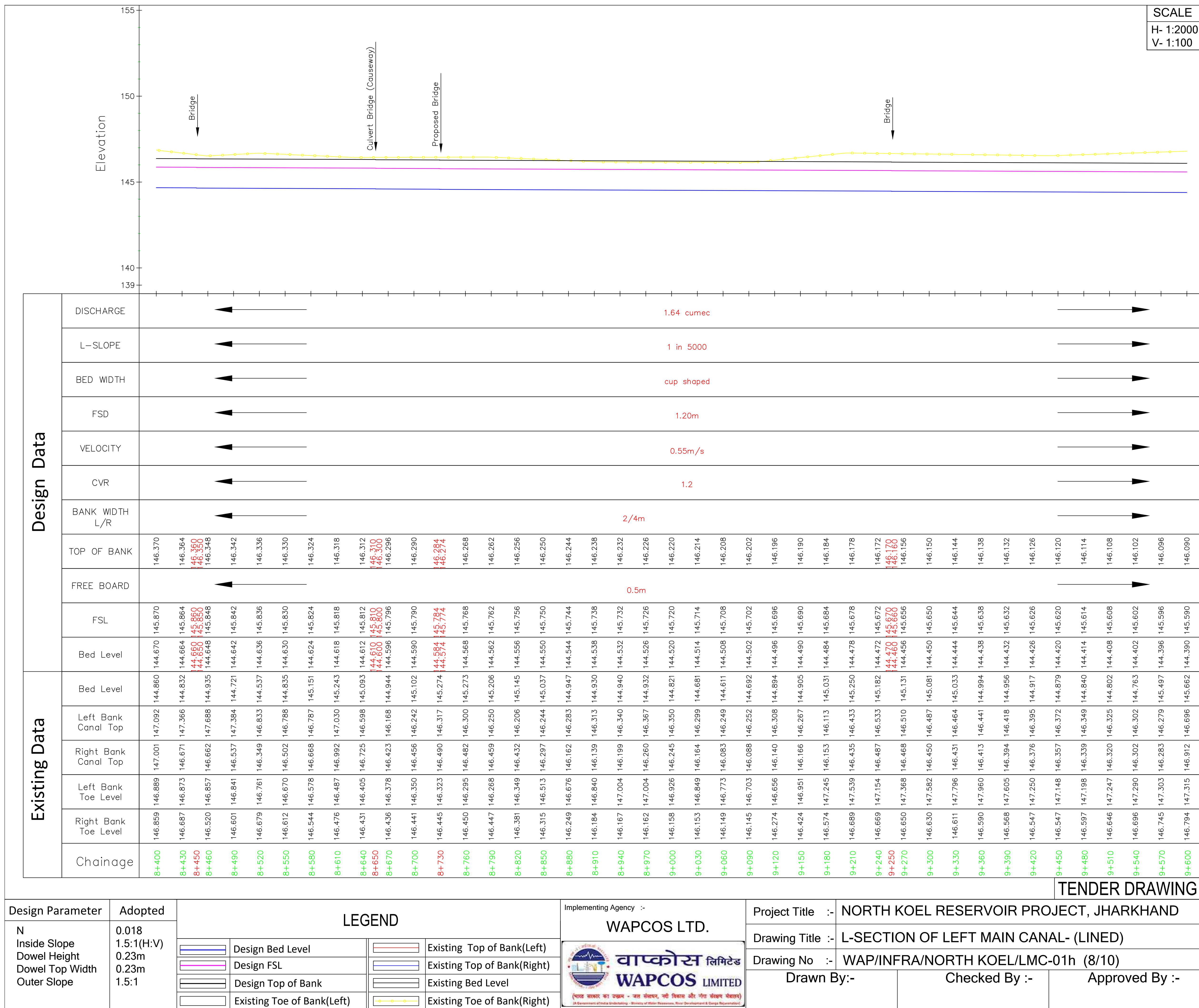


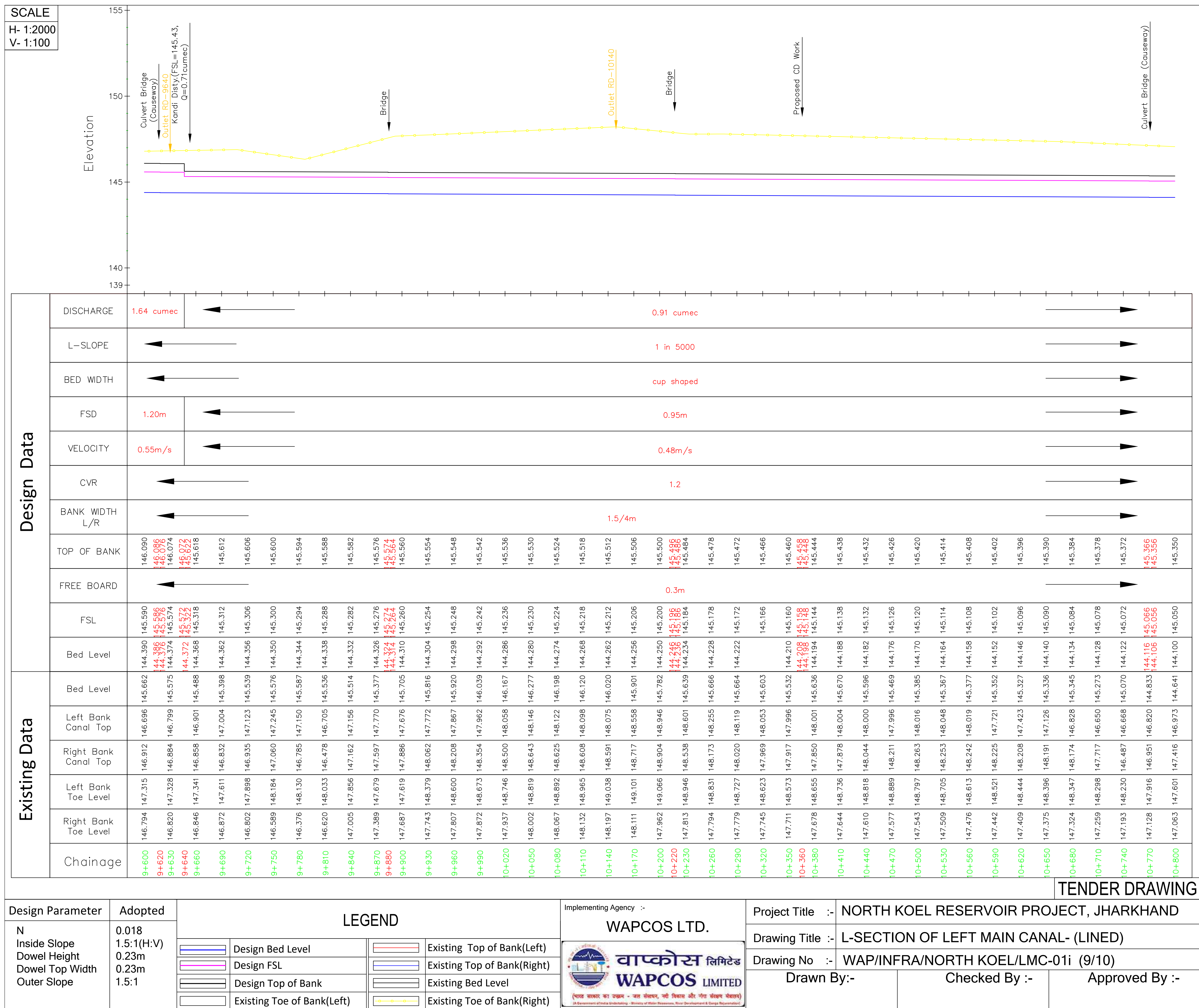


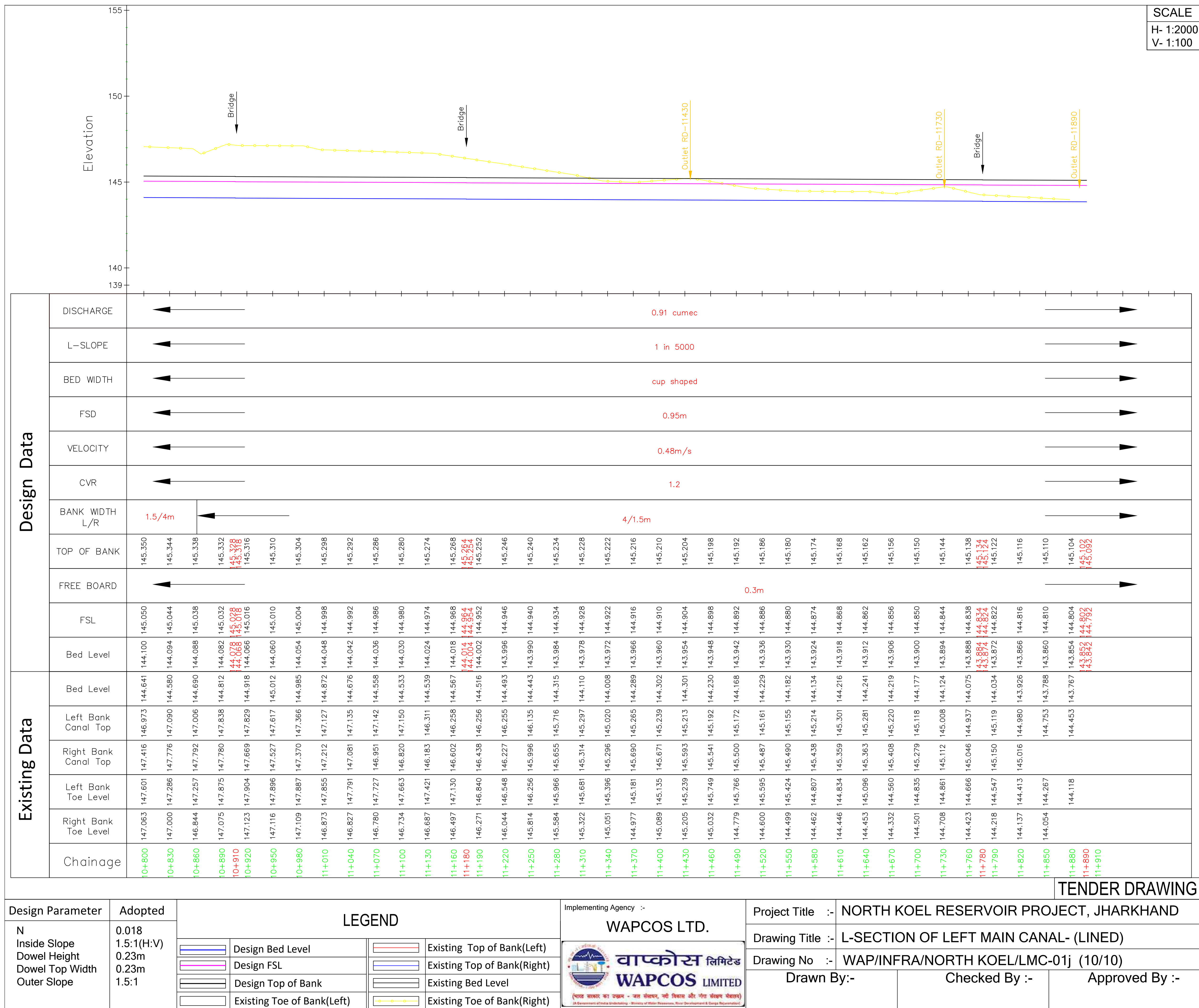


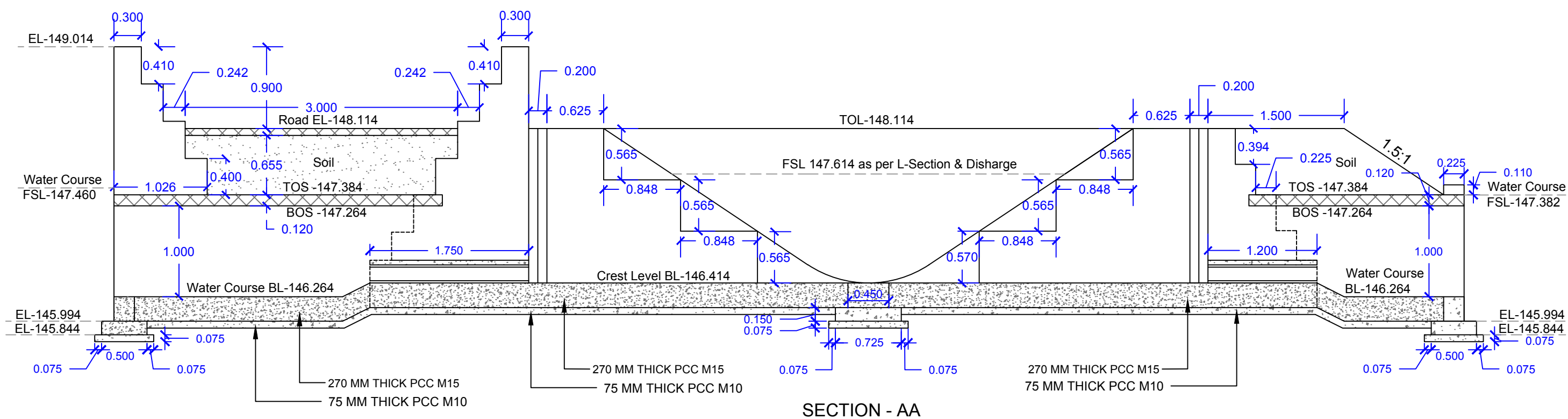
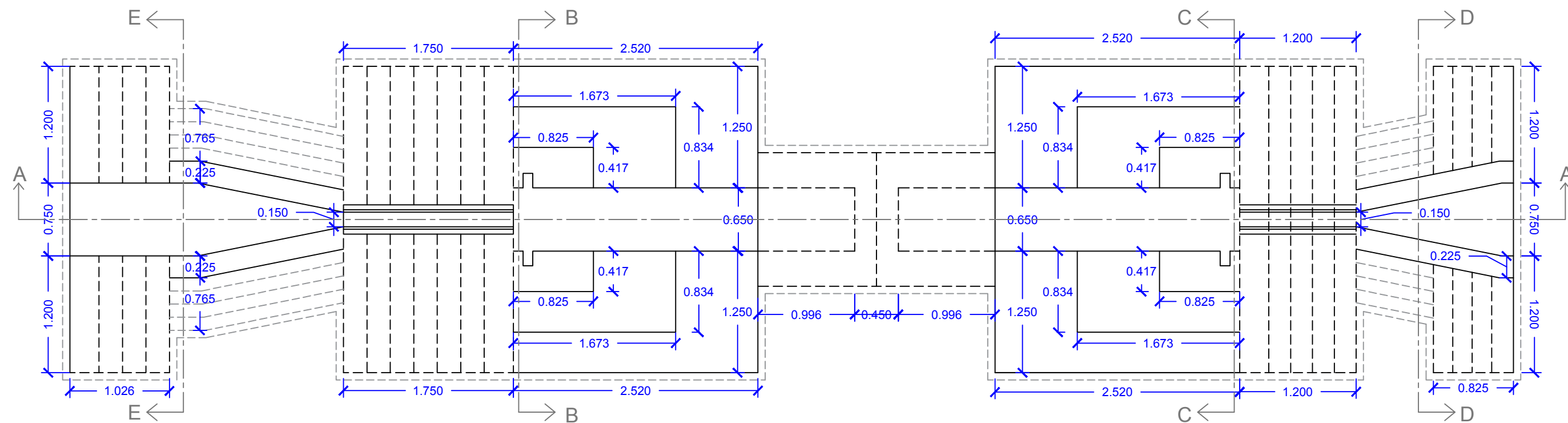












Notes :-

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Ministry of Jal Shakti

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND
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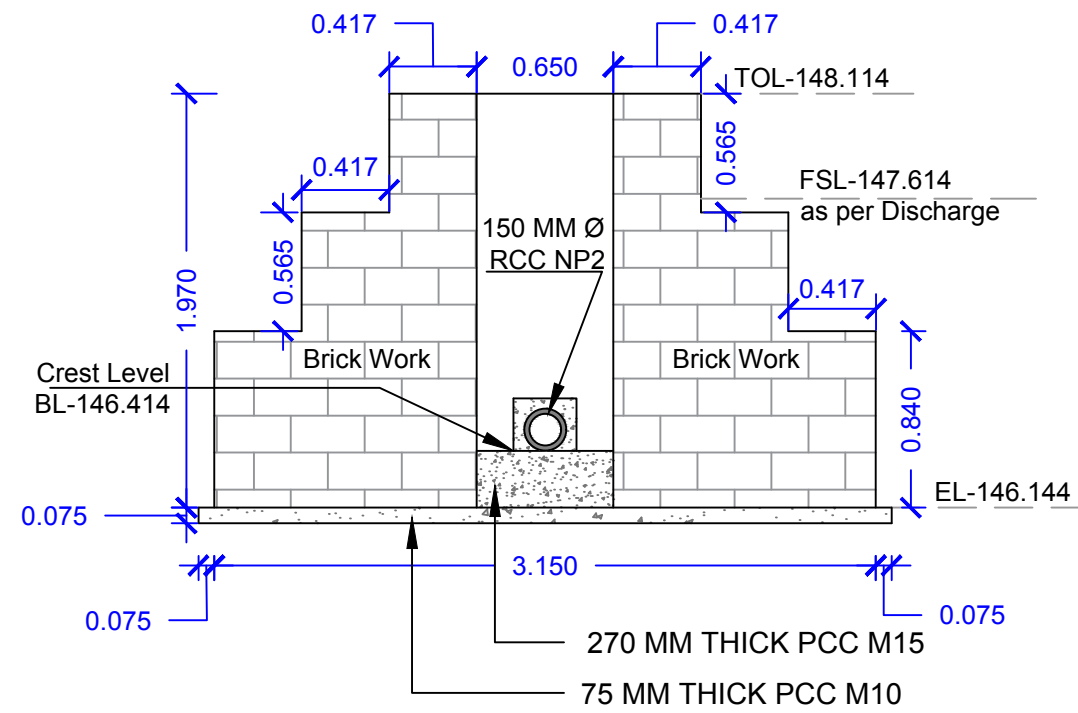
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Drawing No :-	WAP/INFRA/OUTLET/01a
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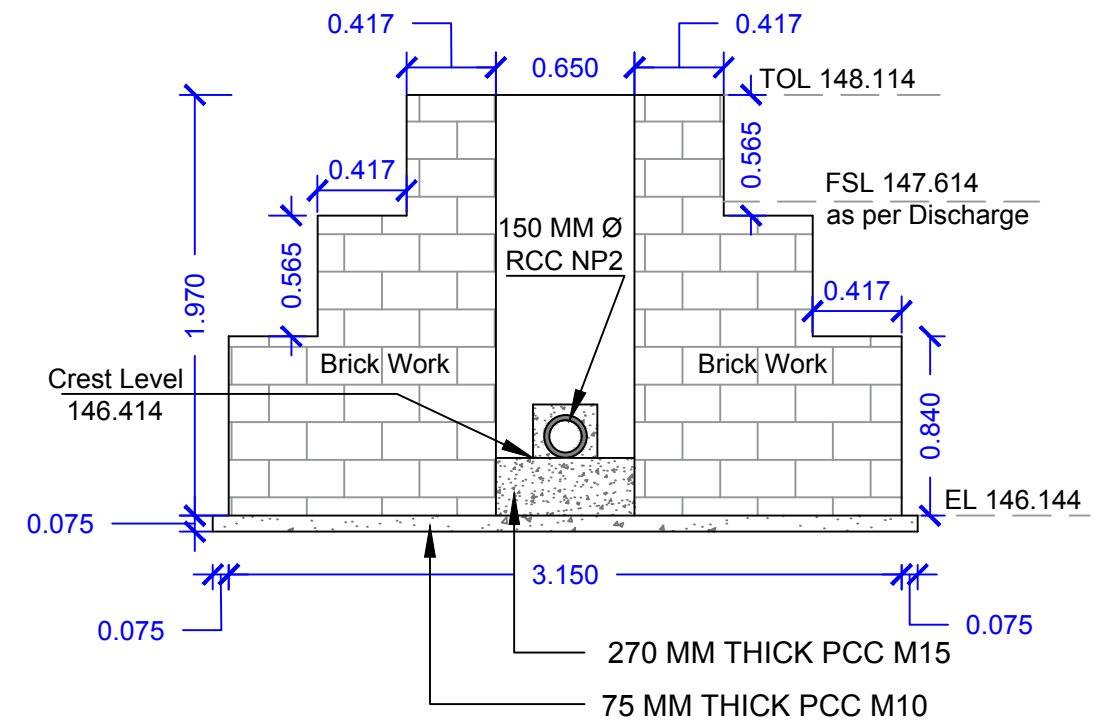
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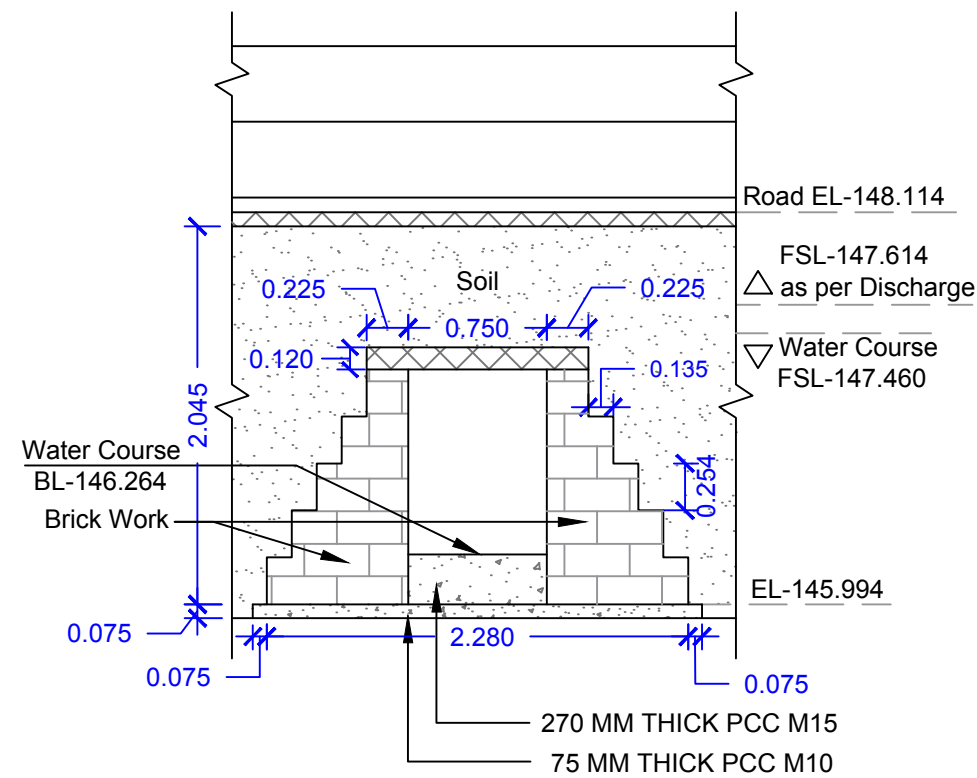
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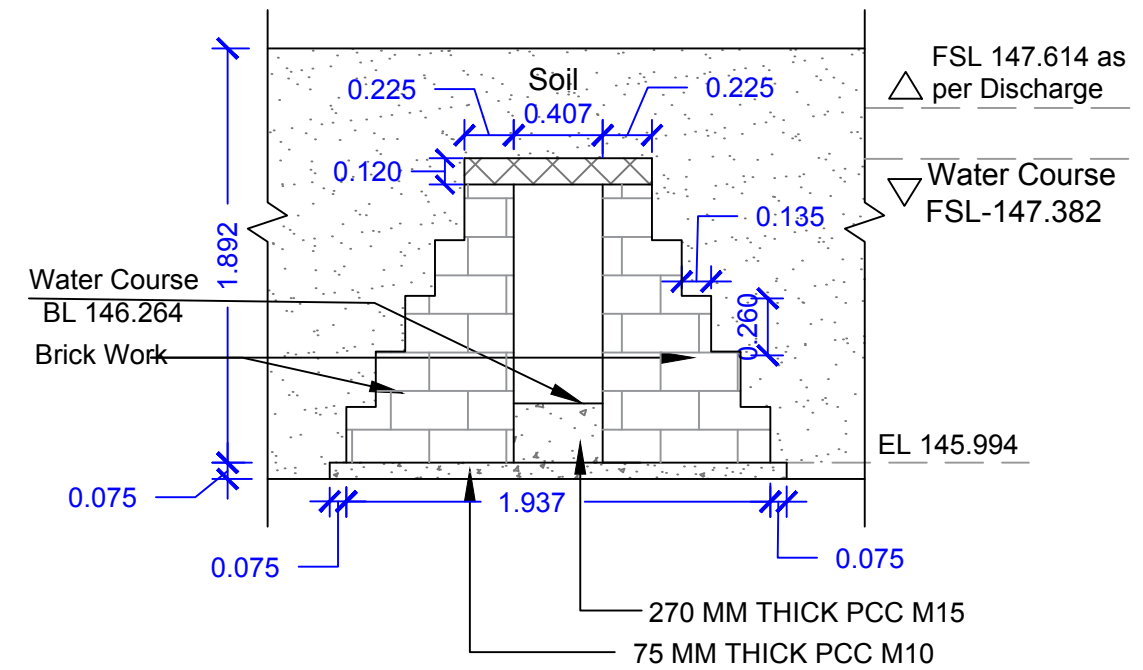
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SECTION - CC



SECTION - EE



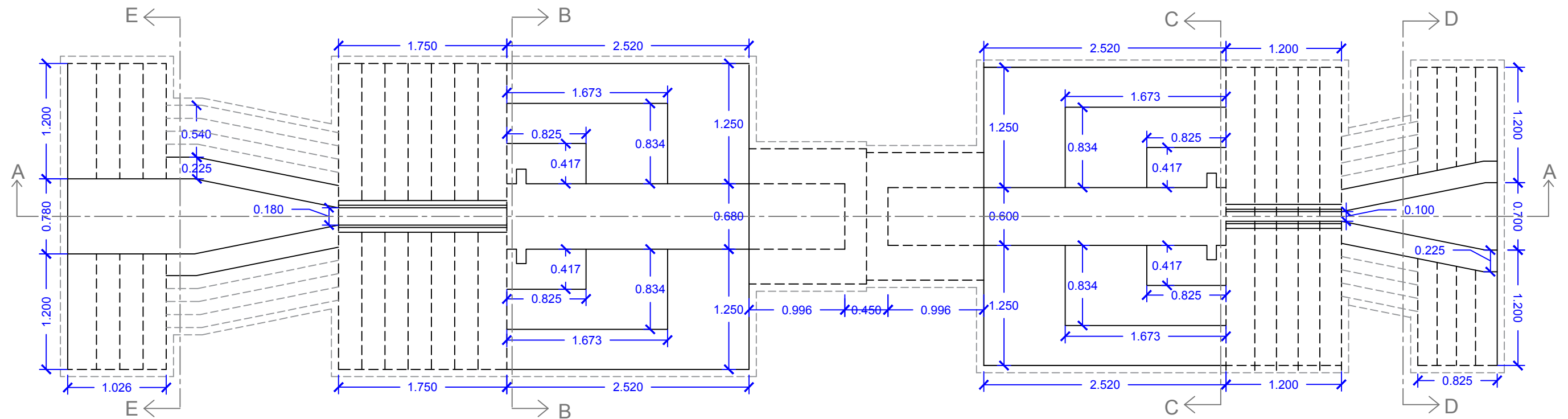
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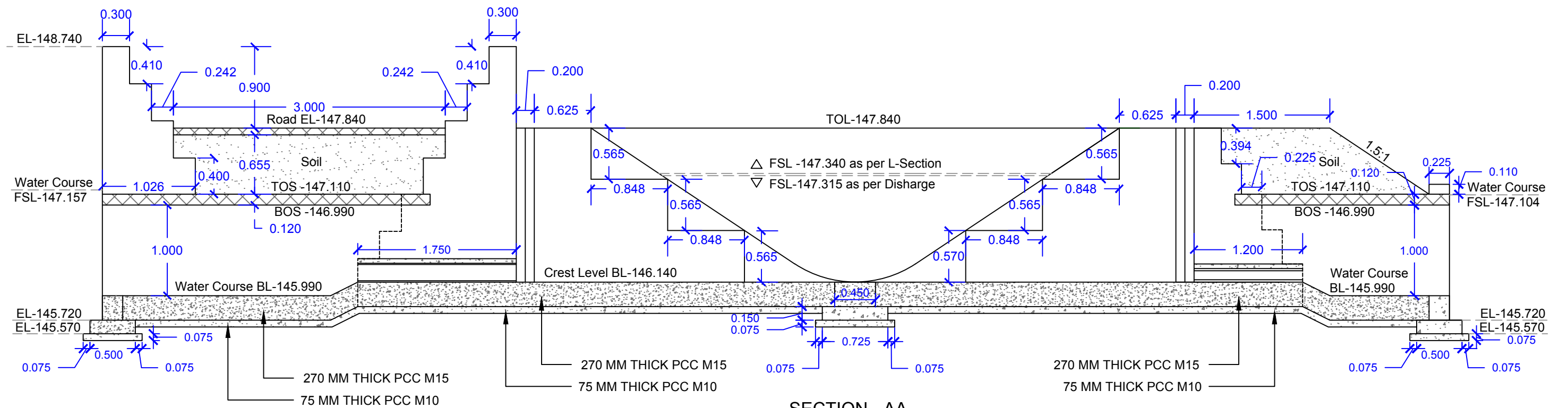


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Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	SECTION DRAWING OF PIPE OUTLET AT RD 0.630 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/01b		
Drawn By:-	Checked By :-	Approved By :-	



PLAN



SECTION - AA

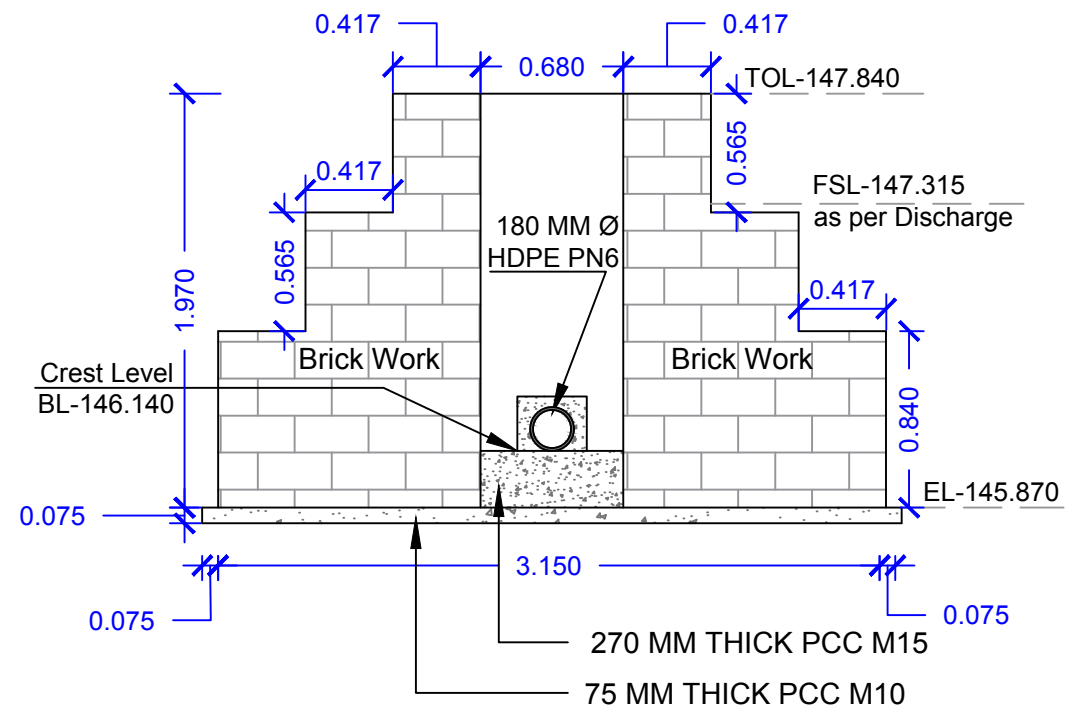
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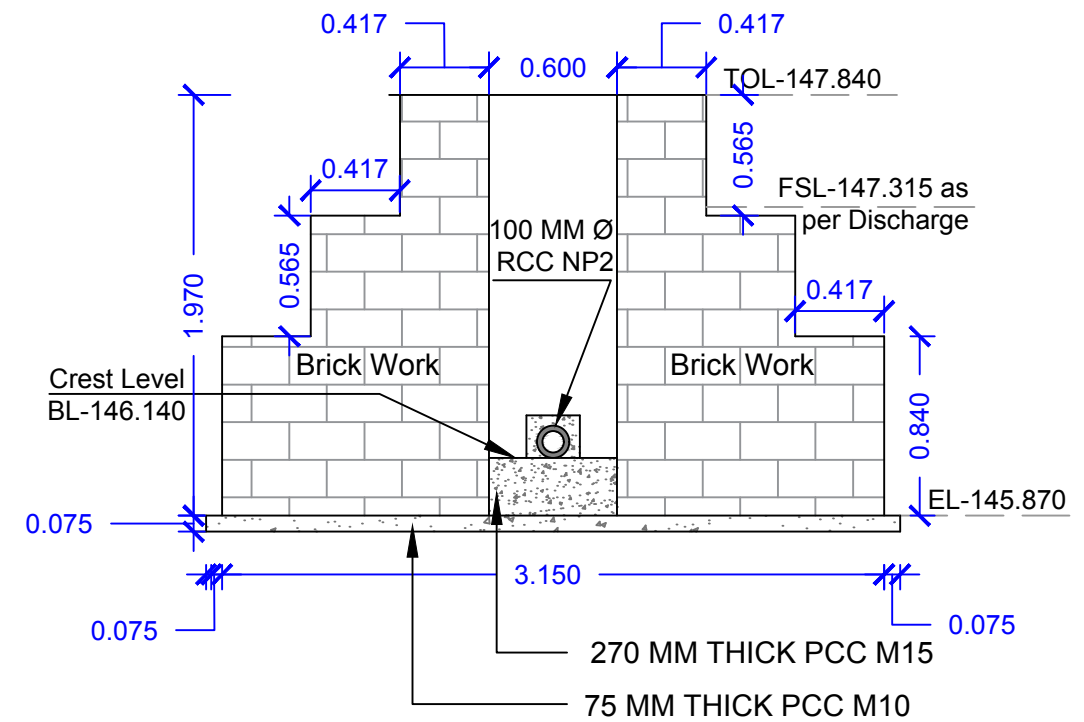


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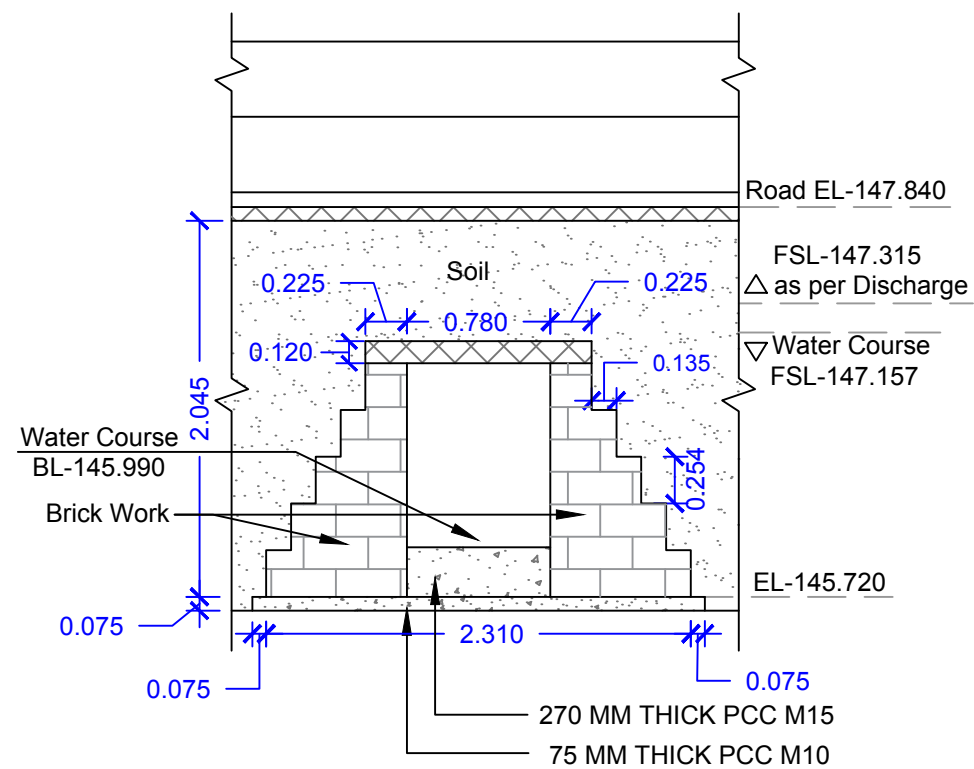
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Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 1.950 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/02a		
Drawn By:-	Checked By :-	Approved By :-	



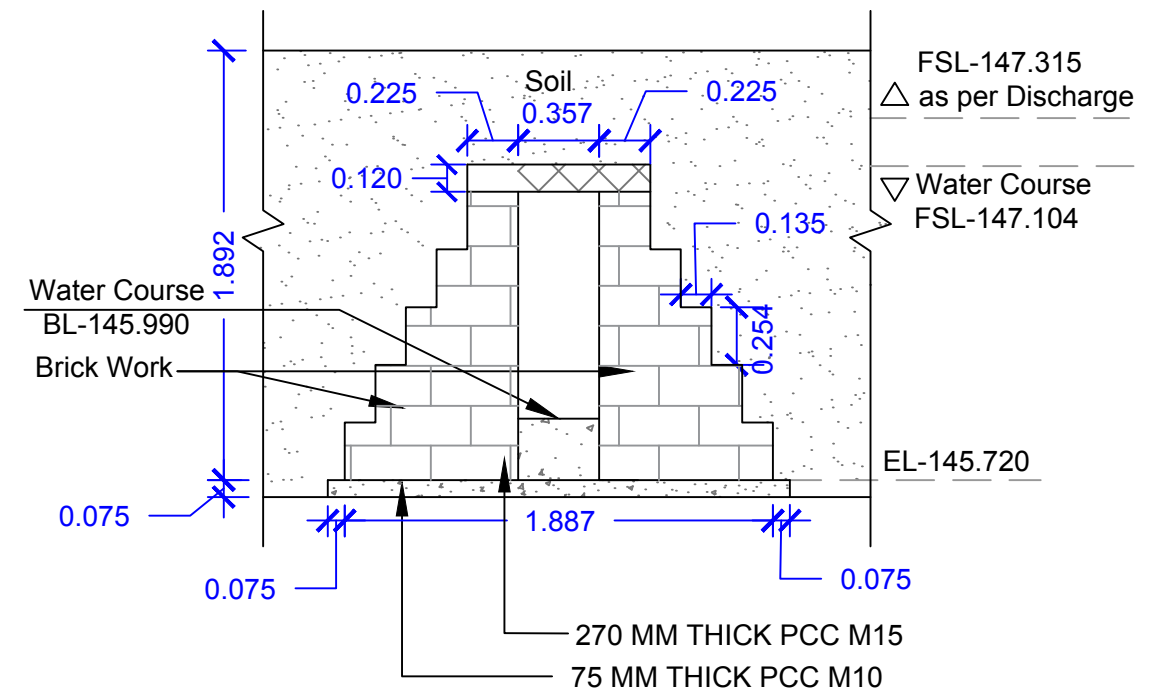
SECTION - BB



SECTION - CC



SECTION - EE



SECTION - DD

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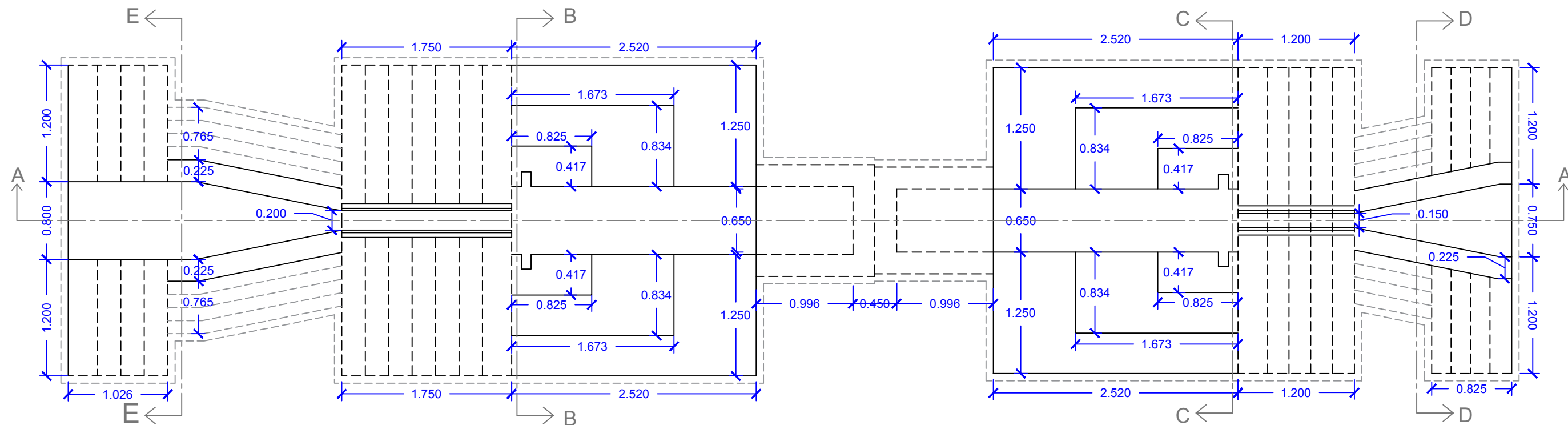
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Drawing No :- WAP/INFRA/OUTLET/02b

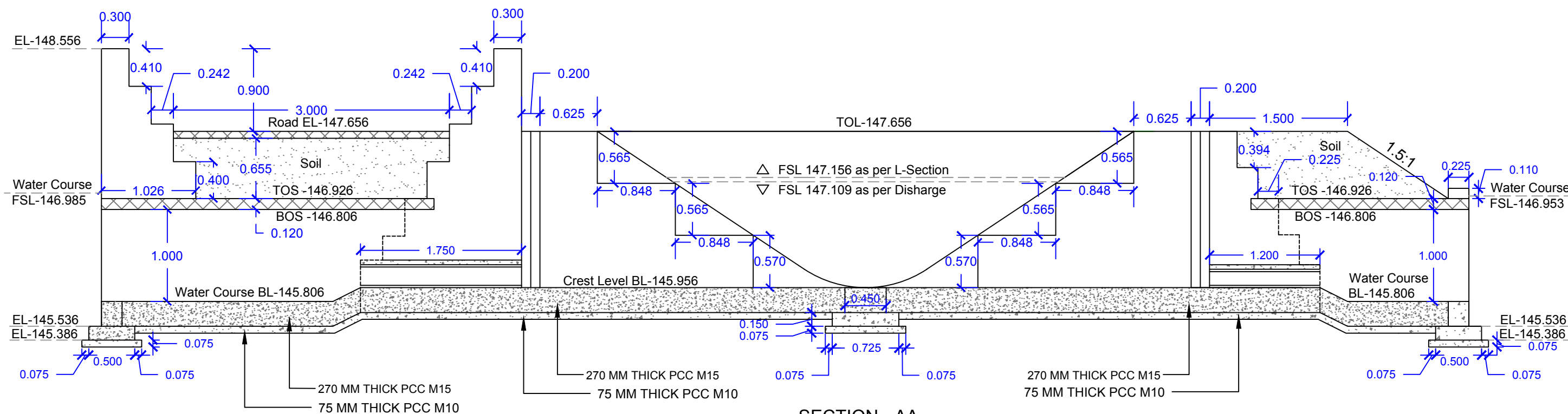
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Checked By :-

Approved By :-



PLAN



SECTION - AA

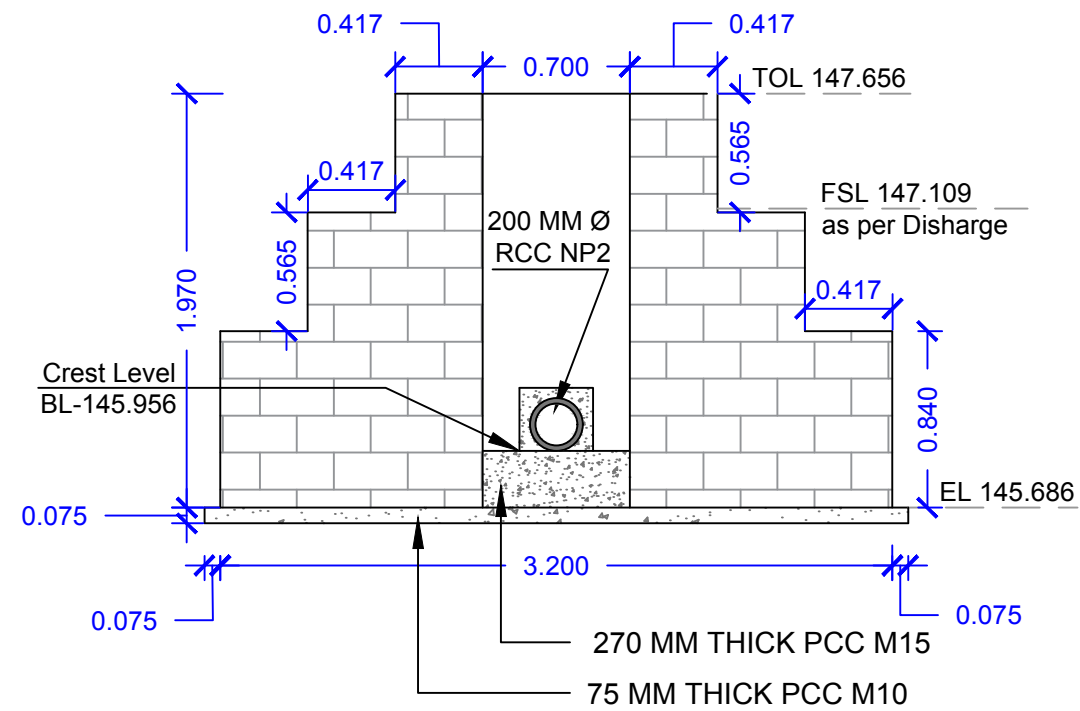
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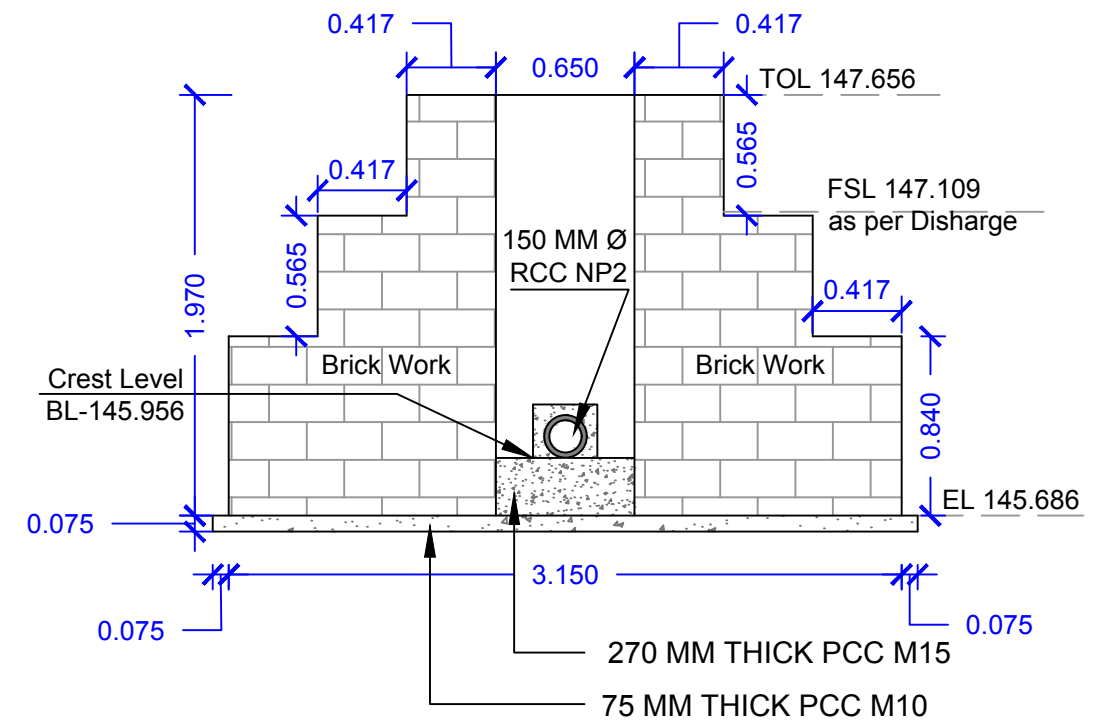


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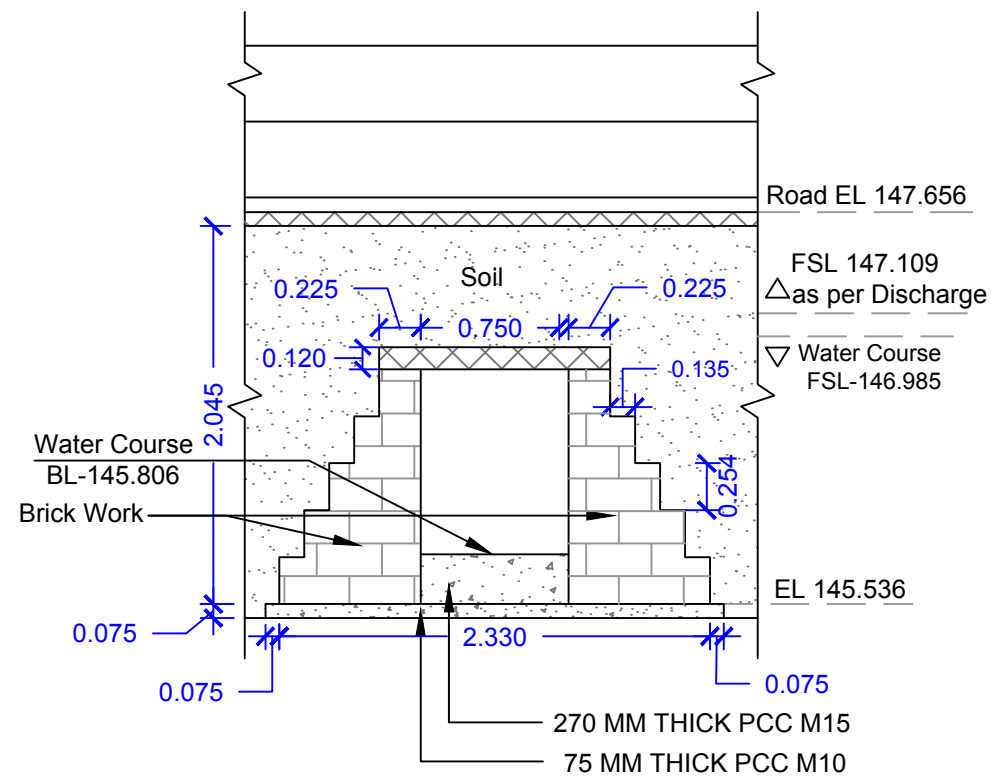
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Drawing Title :-	PLAN & SECTION DRAWING OF OPEN FLUME PIPE OUTLET AT RD 2.820 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/03a		
Drawn By:-	Checked By :-	Approved By :-	



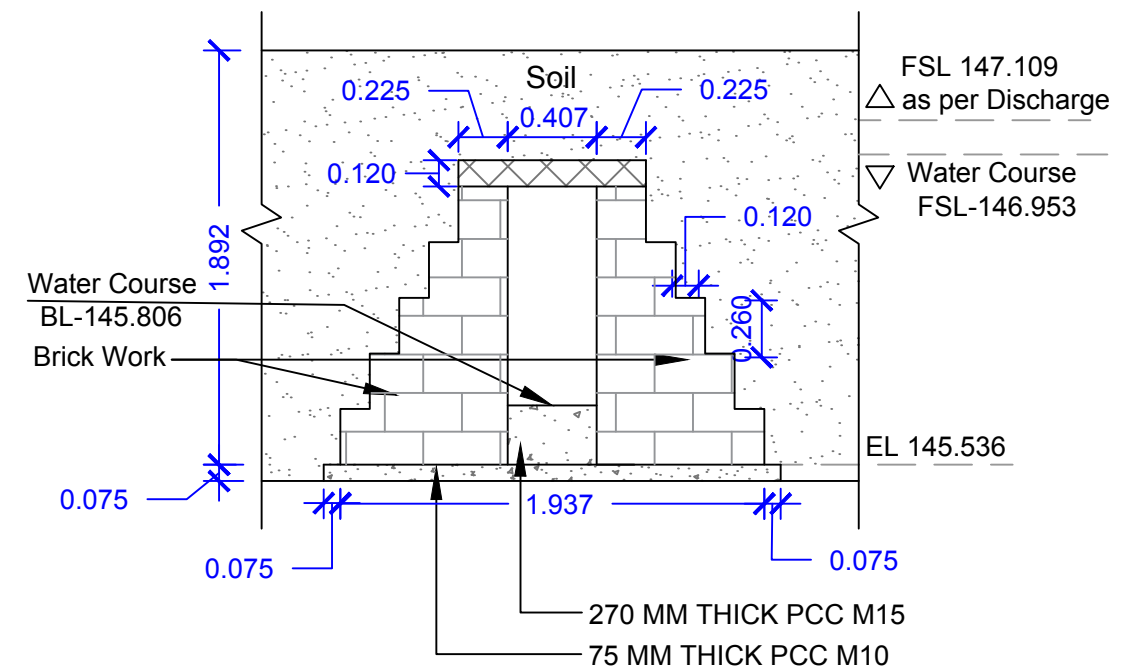
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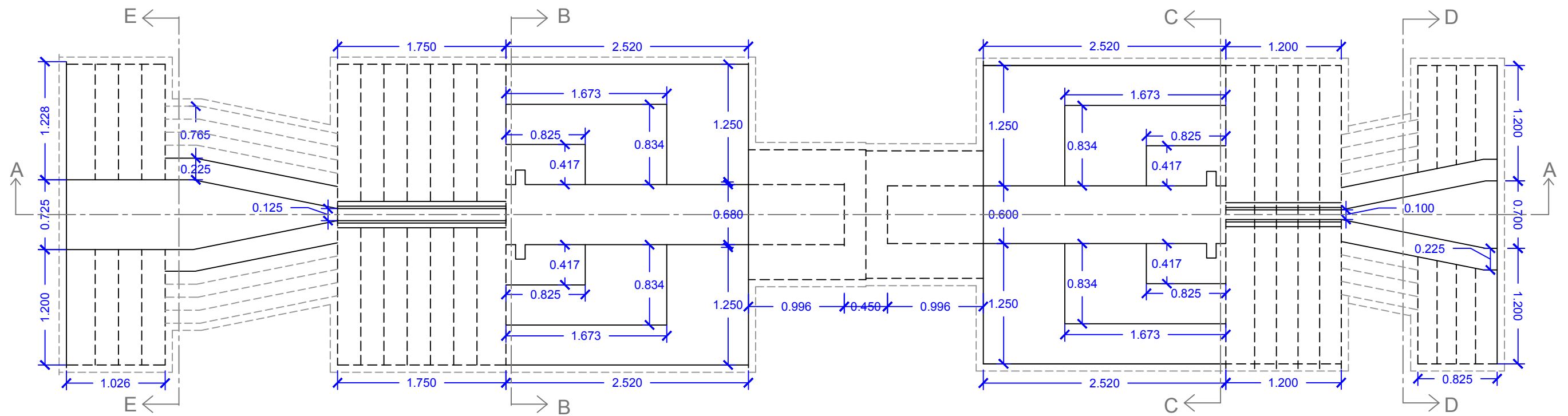
SECTION - DD

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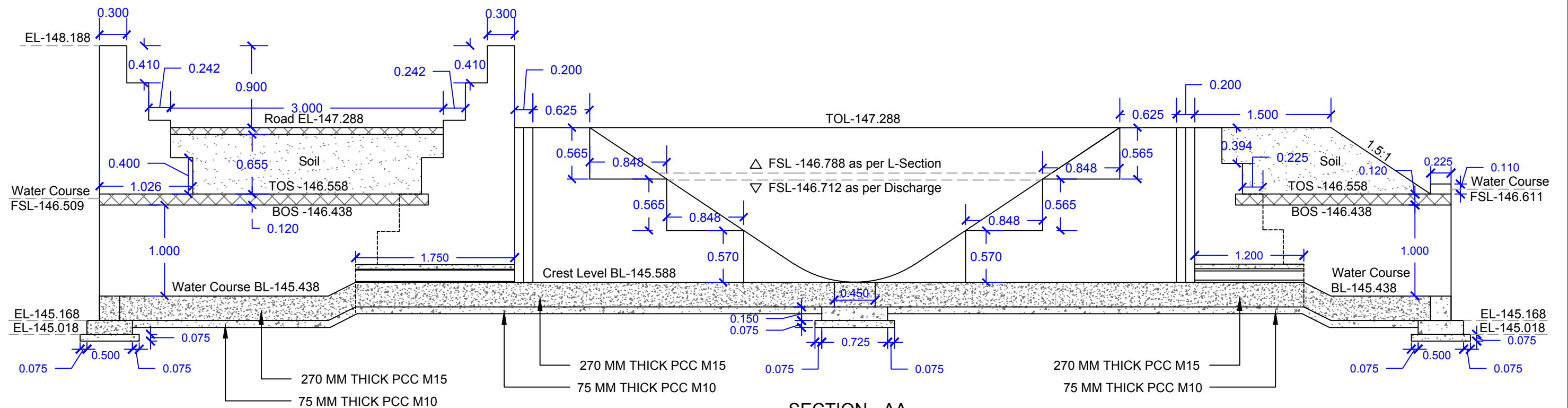


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Drawing Title :-	SECTION DRAWING OF PIPE OUTLET AT RD 2.820 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/03b		
Drawn By:-	Checked By :-	Approved By :-	



PLAN



SECTION - AA

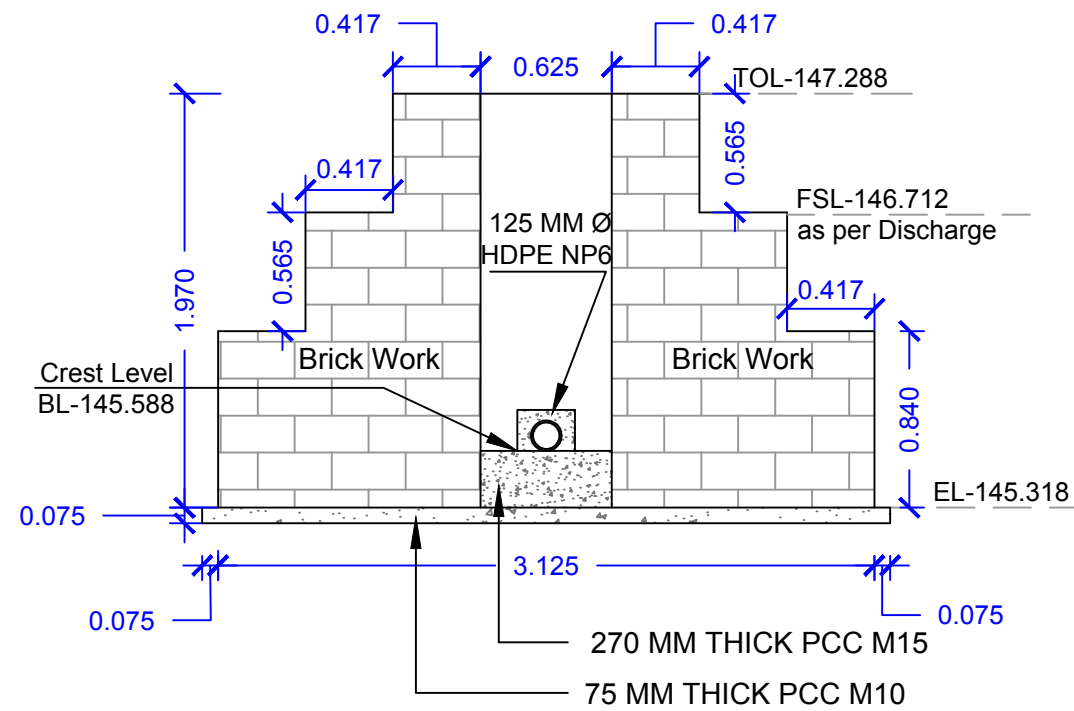
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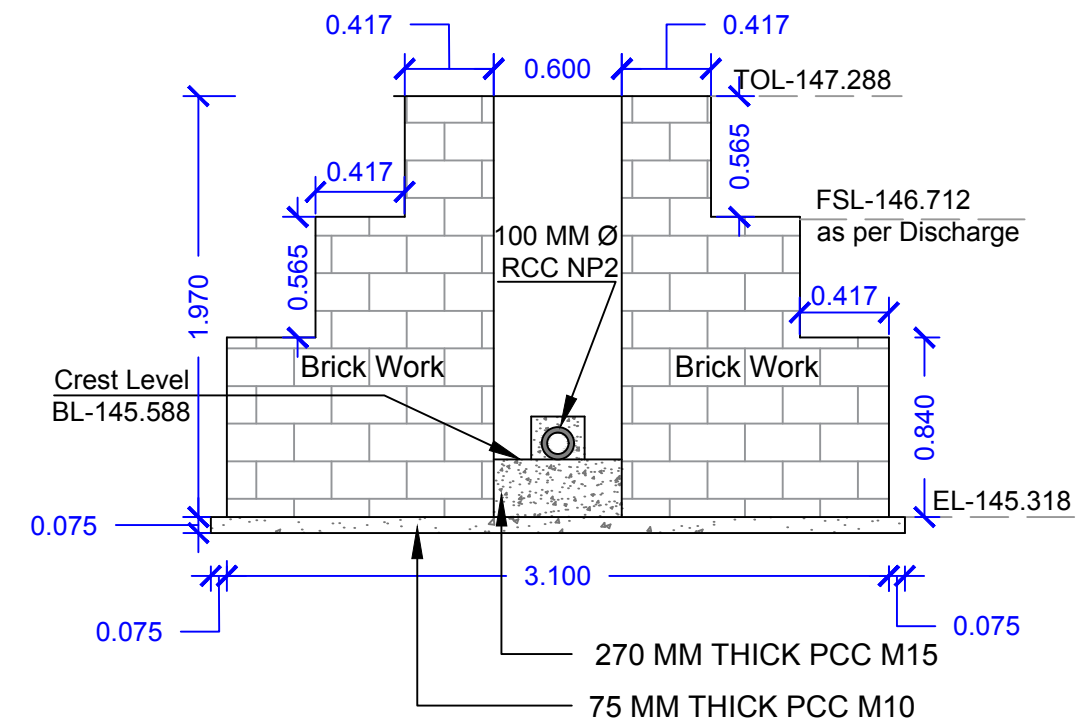


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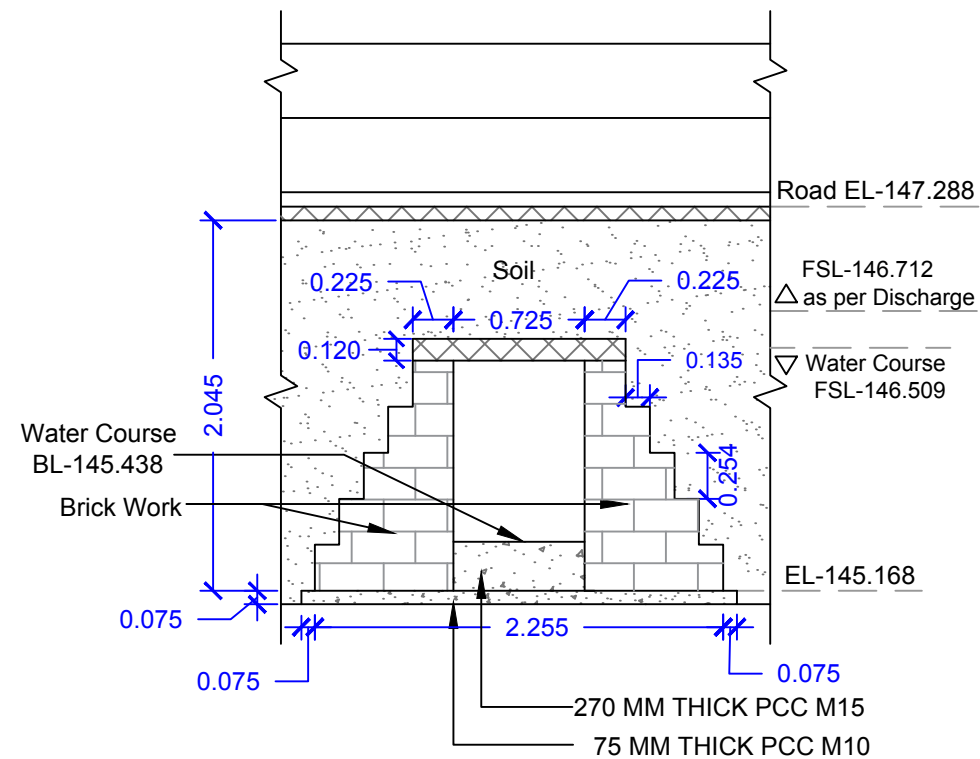
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Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 4.560 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/04a		
Drawn By:-	Checked By :-	Approved By :-	



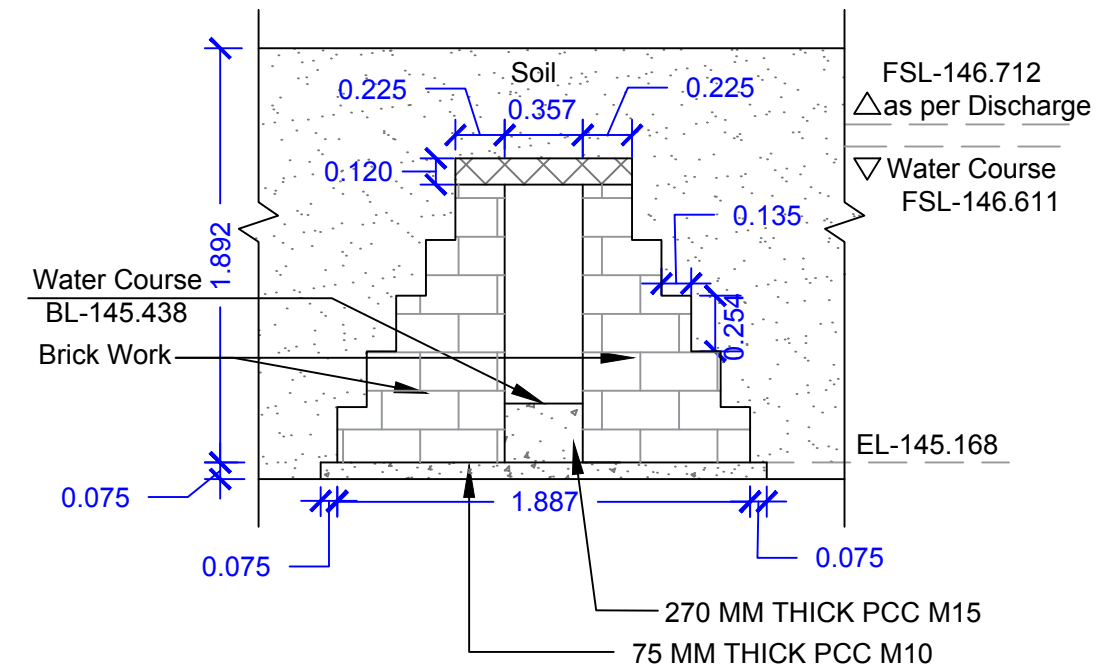
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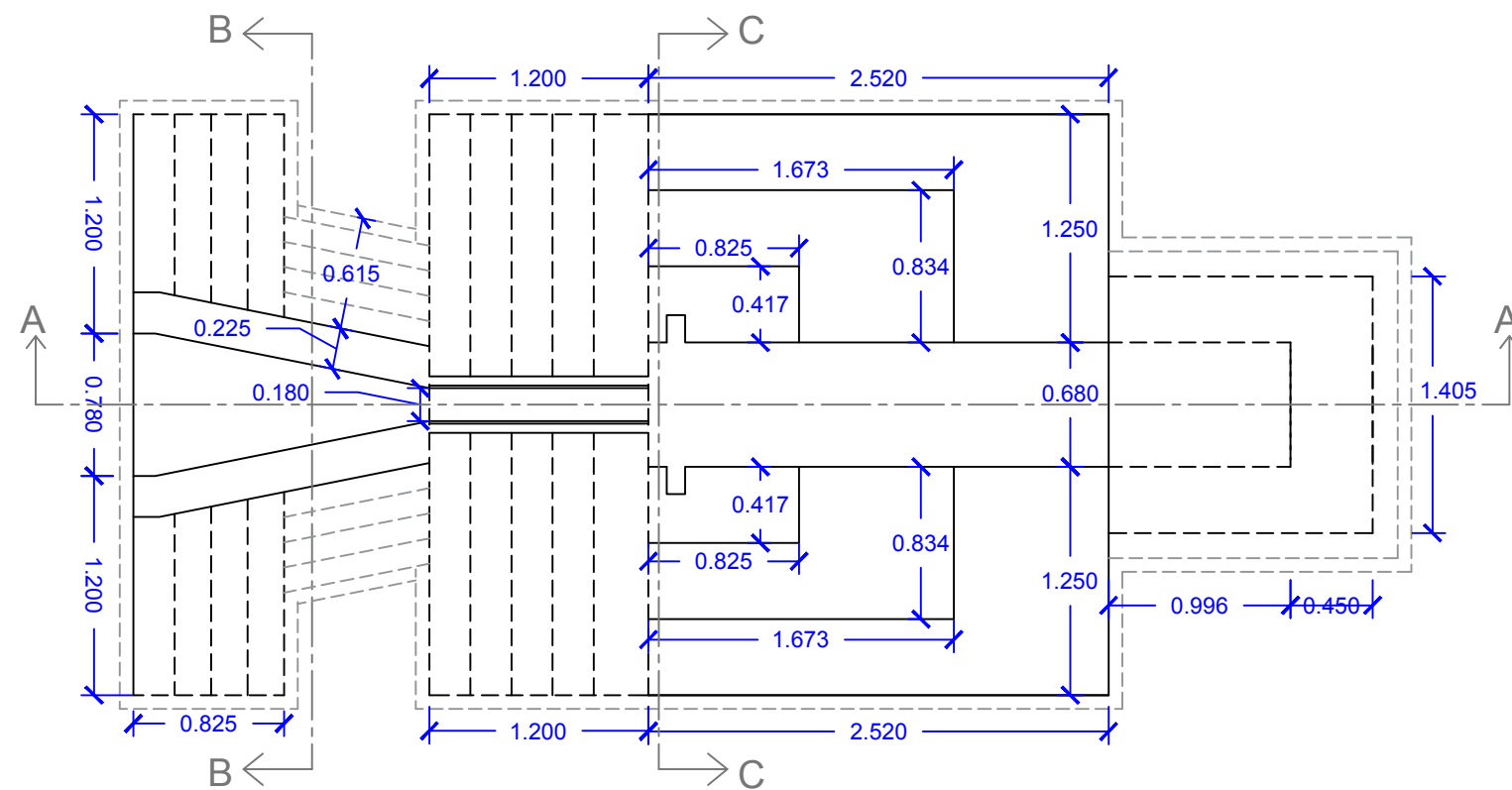
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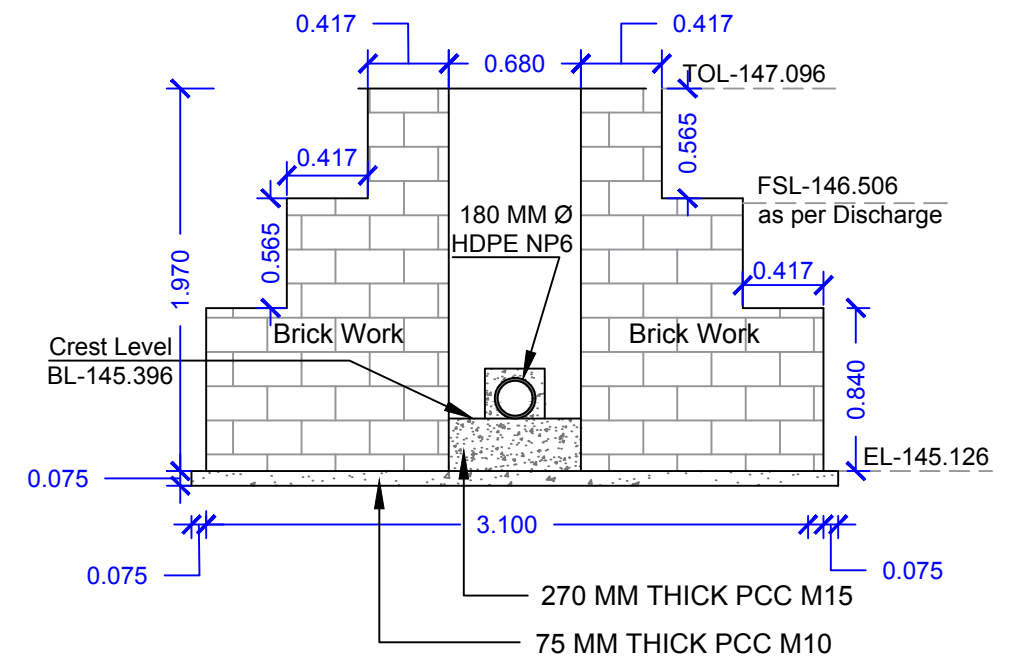


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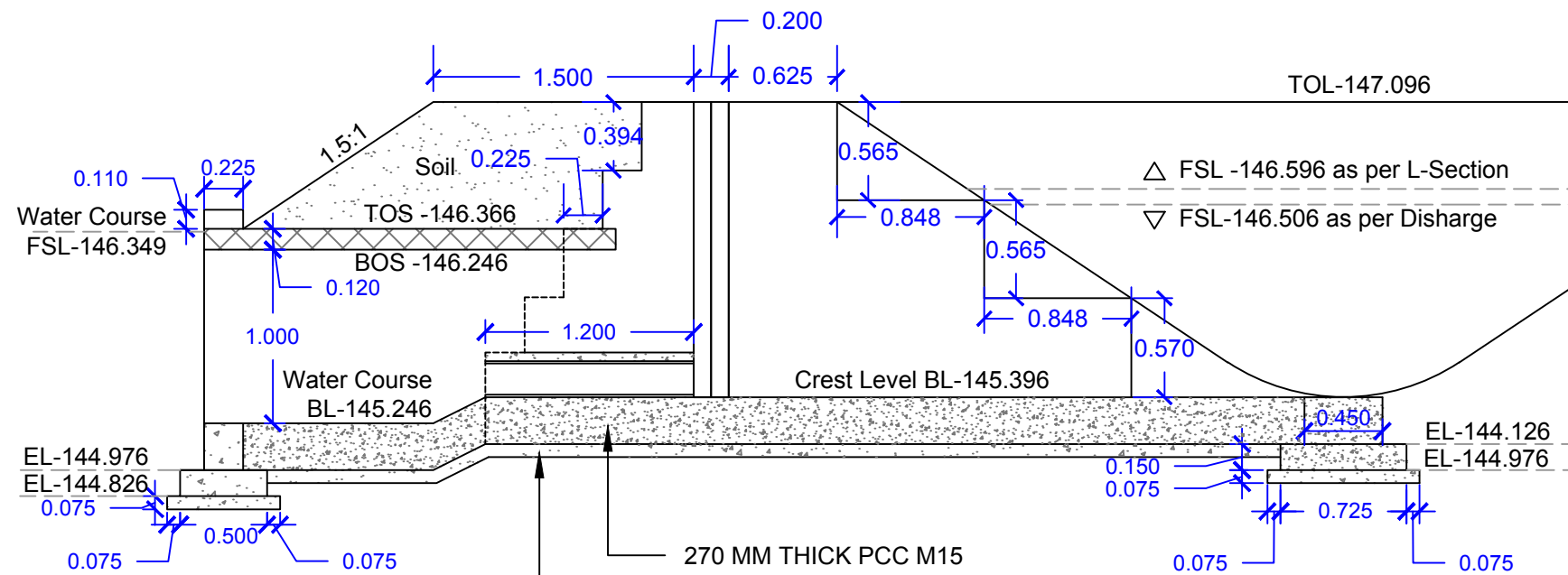
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Drawing Title :-	SECTION DRAWING OF PIPE OUTLET AT RD 4.560 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/04b		
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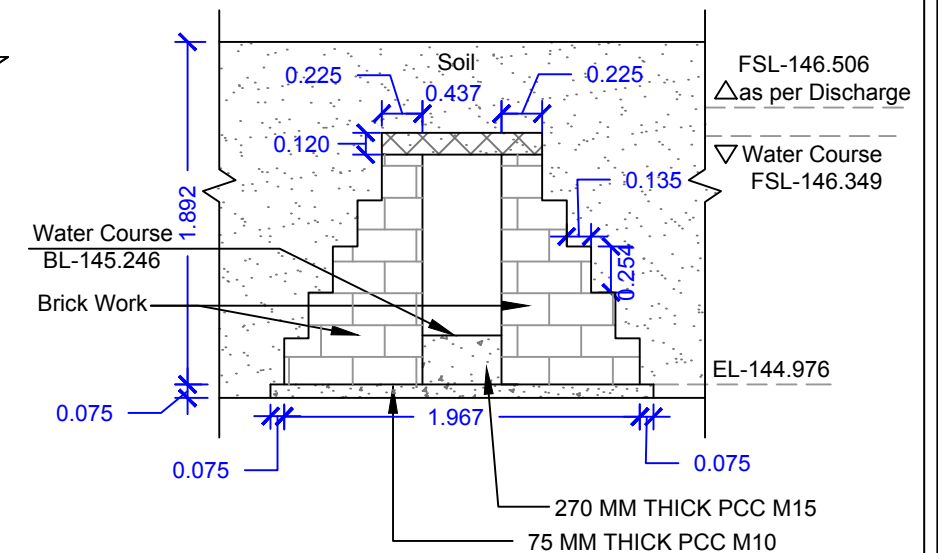
PLAN



SECTION - CC



SECTION - AA



SECTION - BB

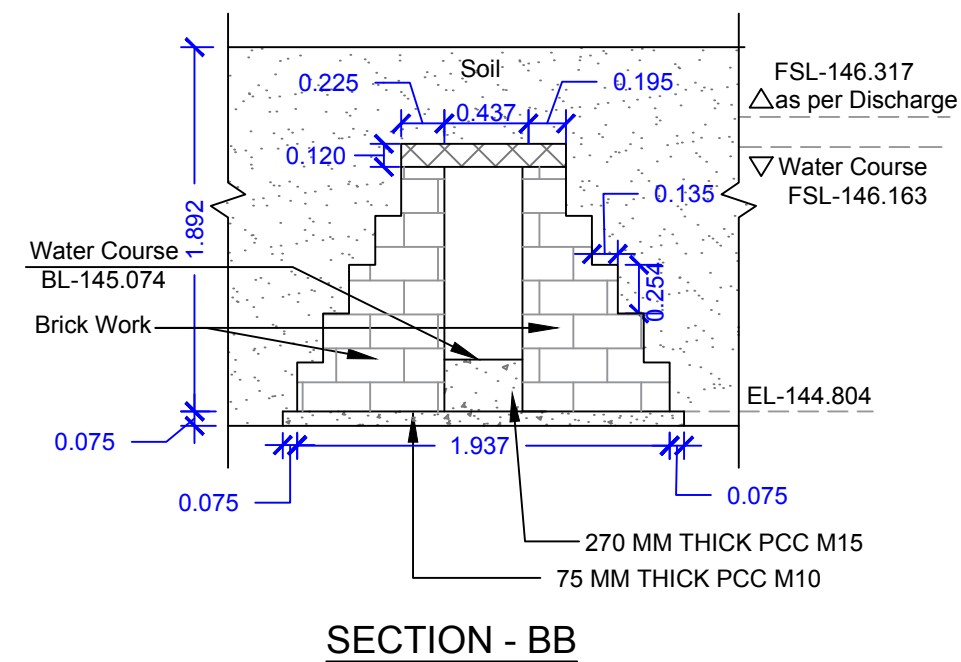
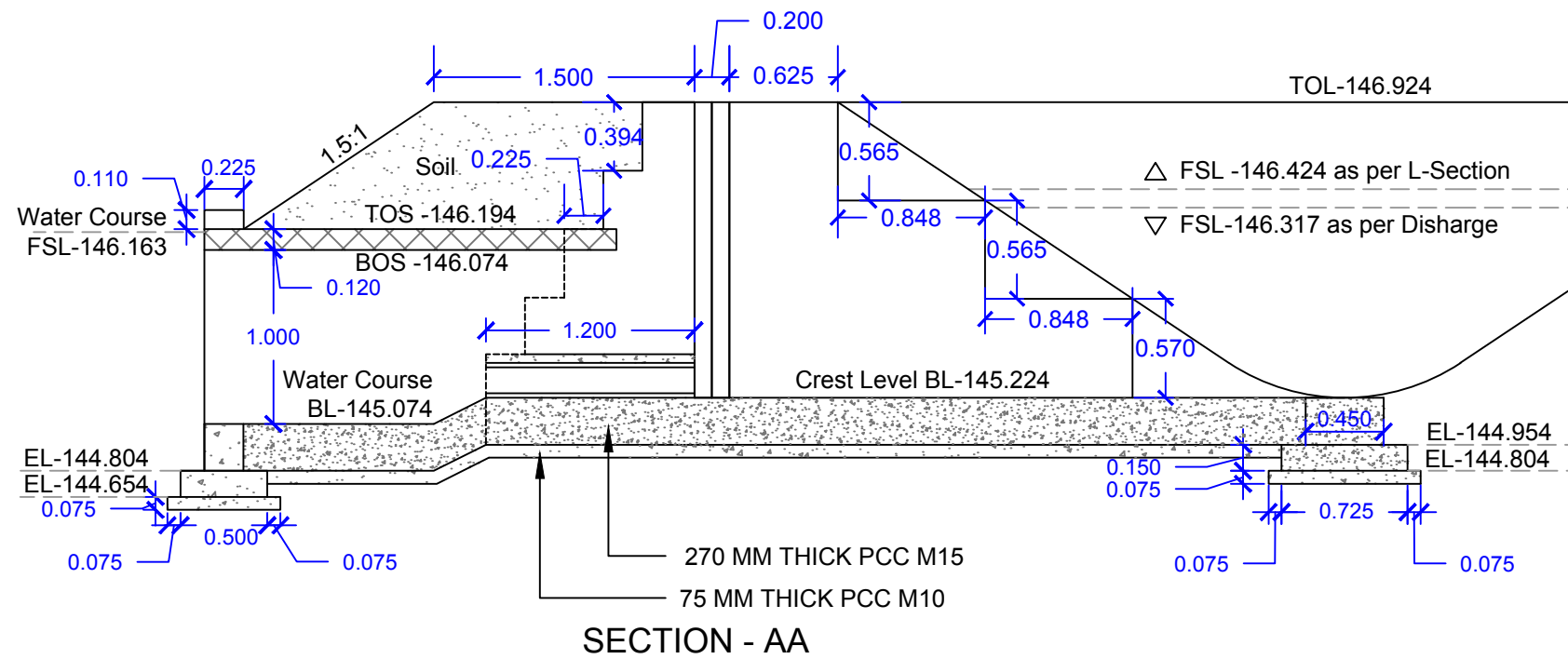
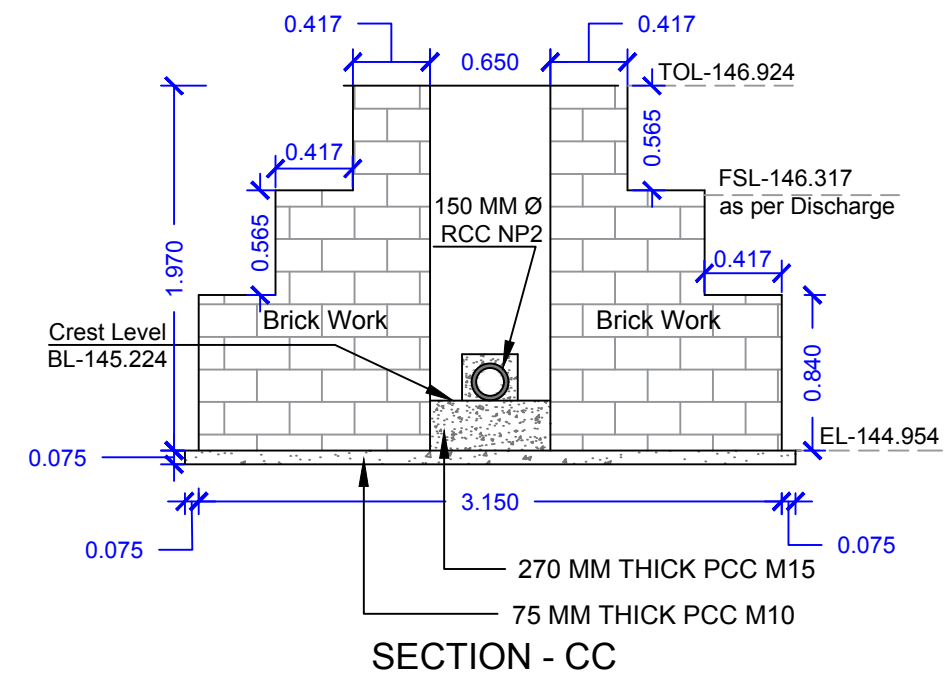
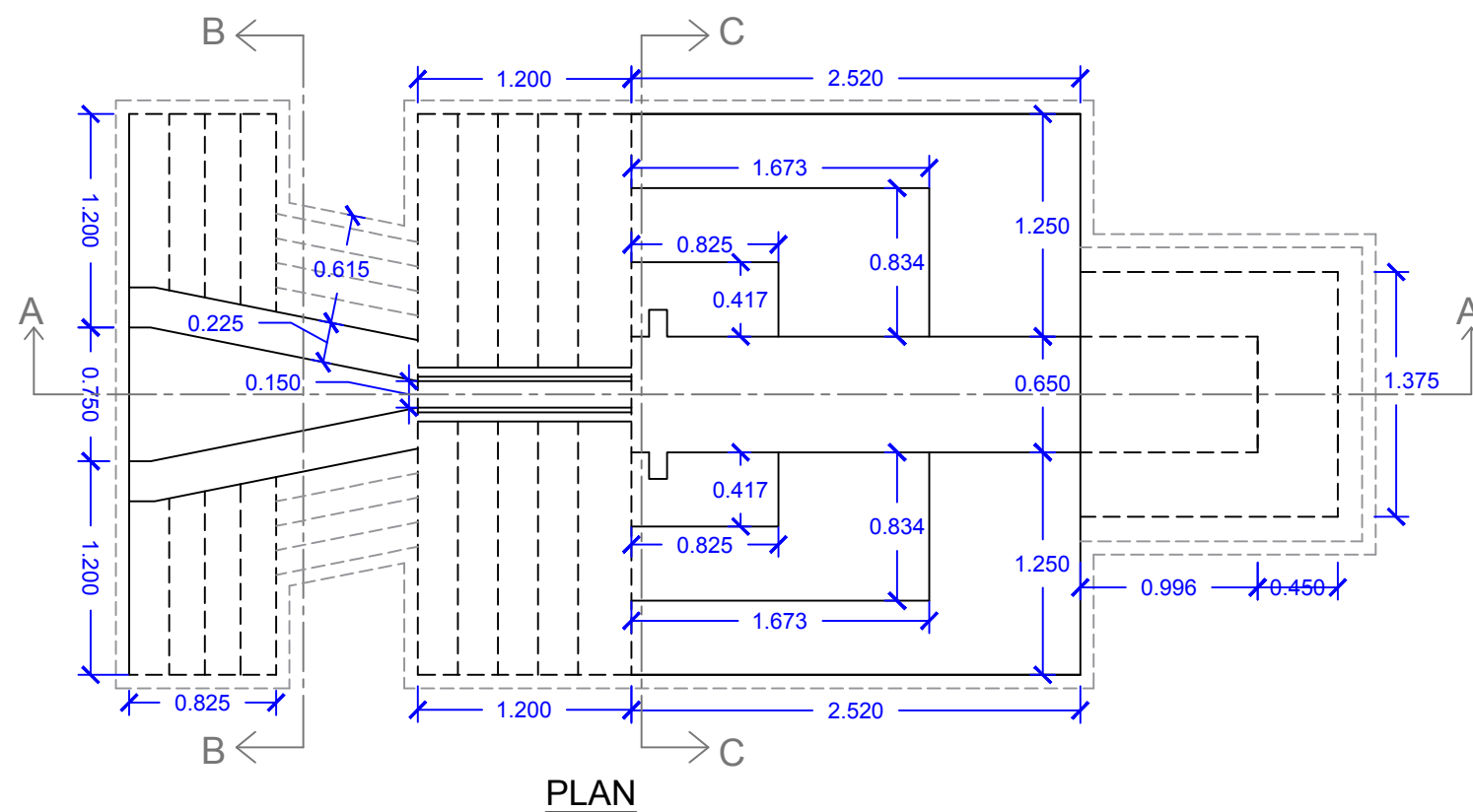
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Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 5.320 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/05		
Drawn By:-	Checked By :-	Approved By :-	

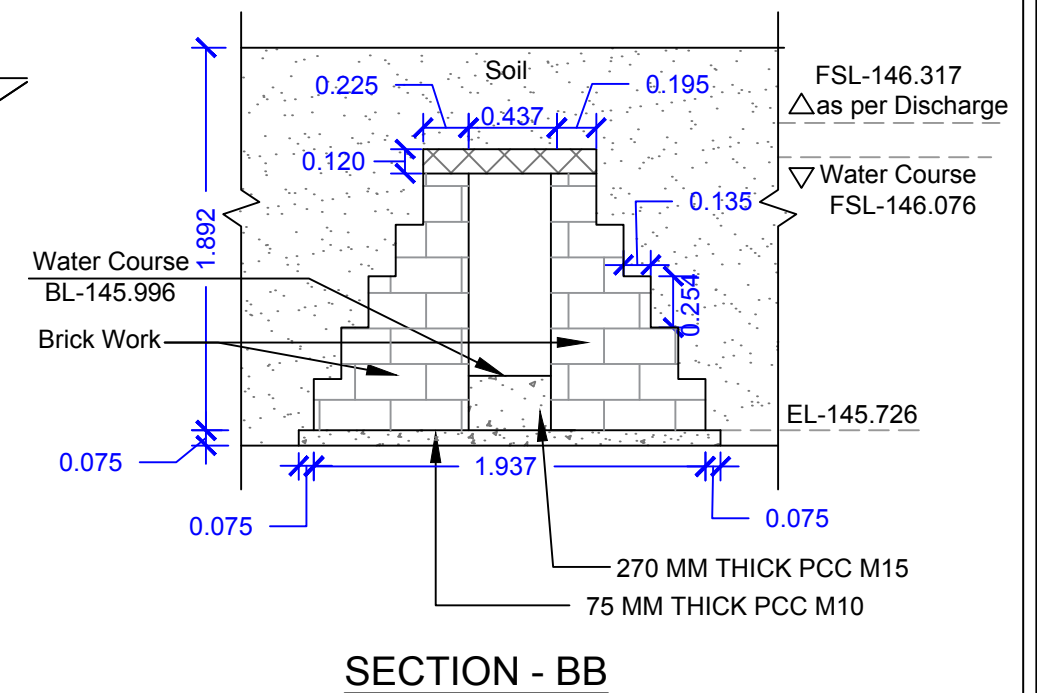
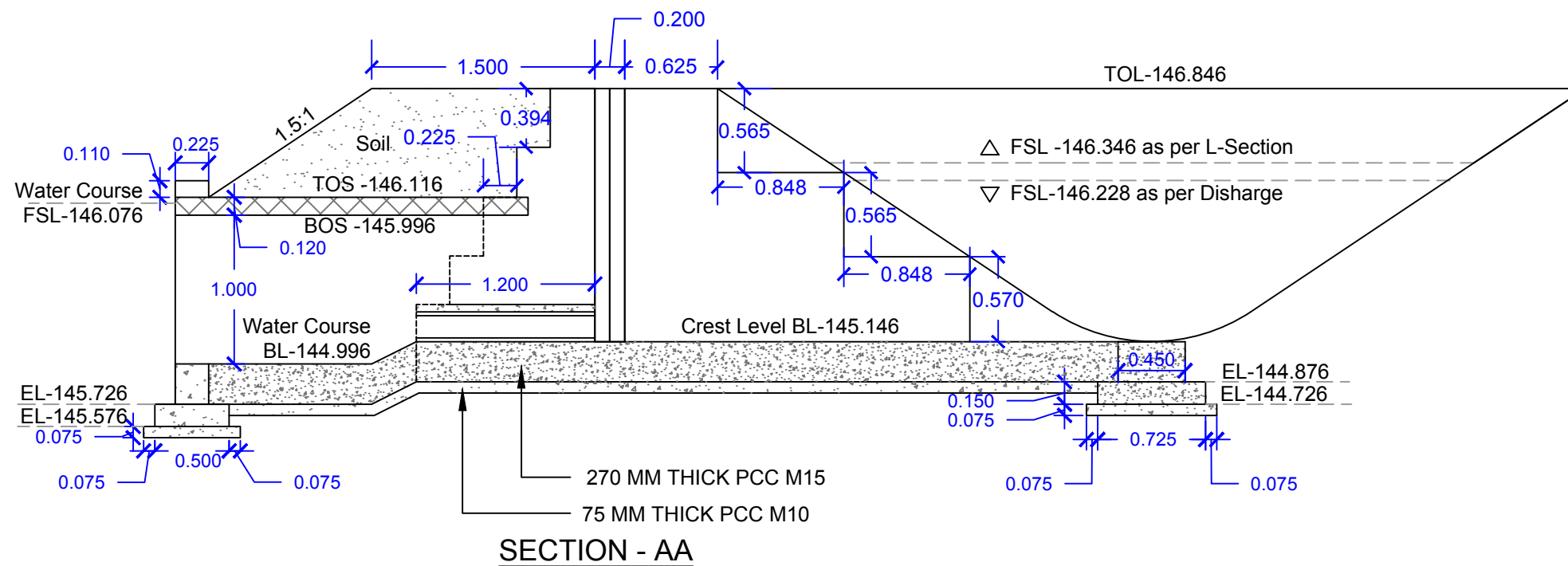
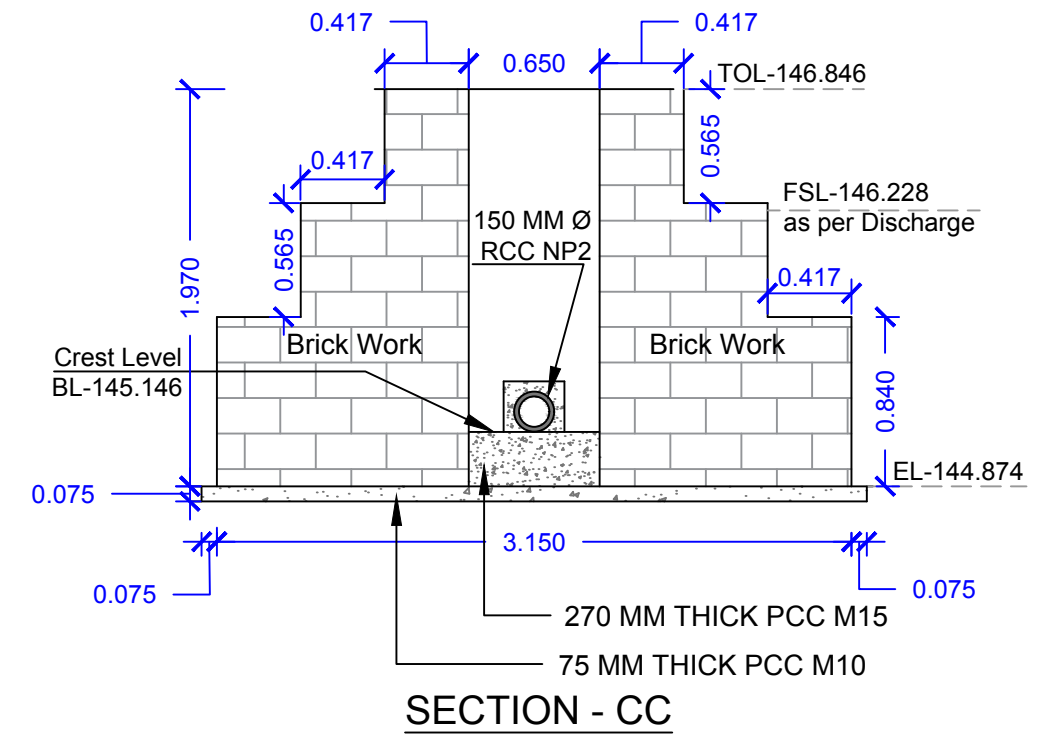
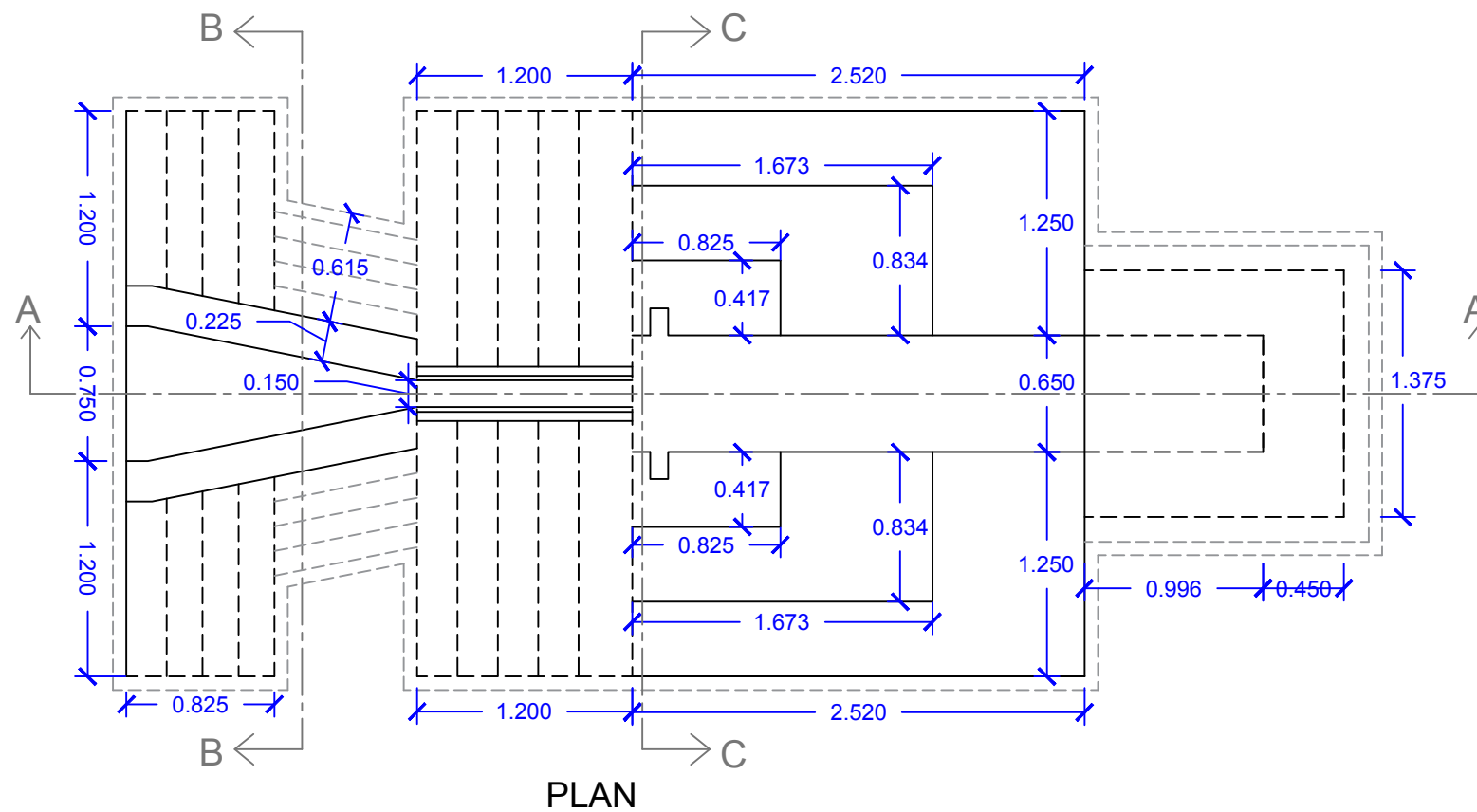


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Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 5.930 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/06		
Drawn By:-	Checked By :-	Approved By :-	

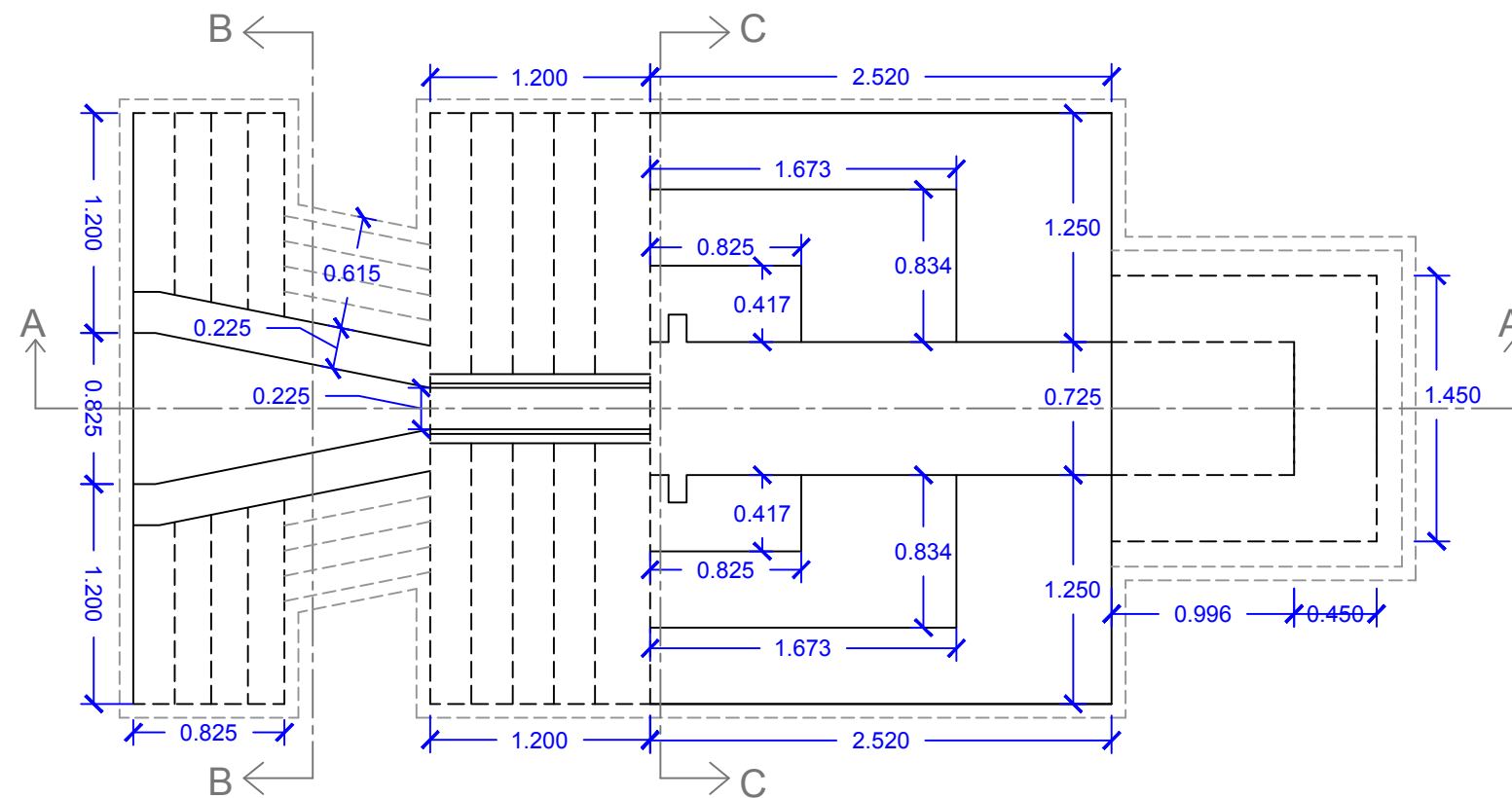


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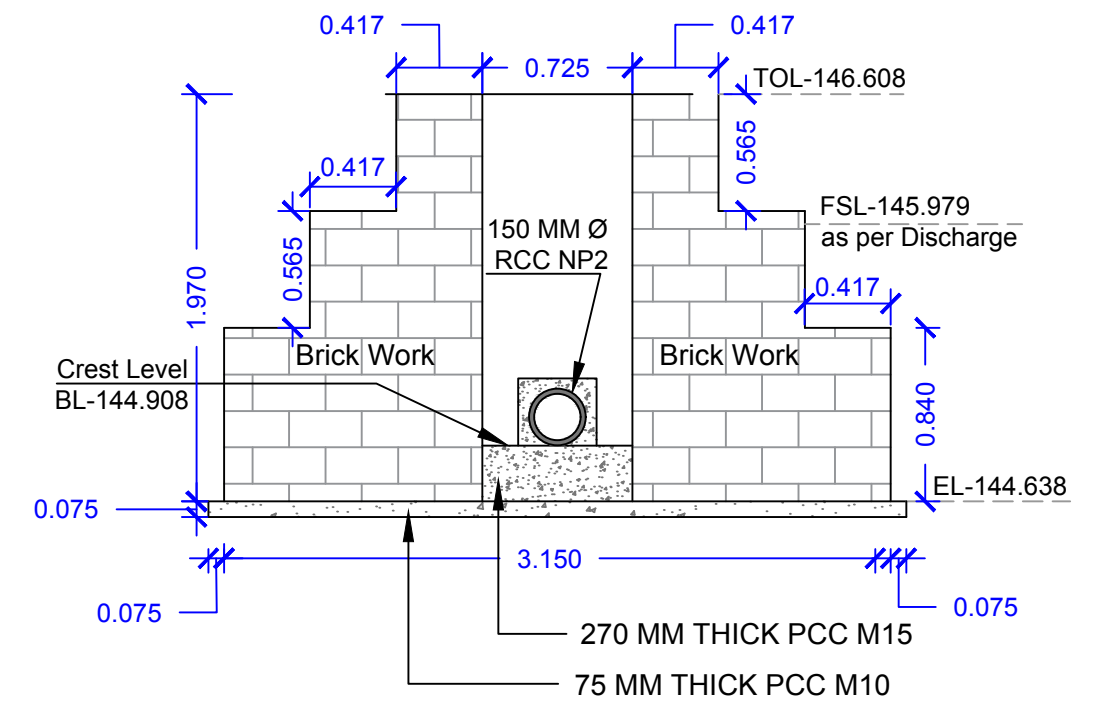


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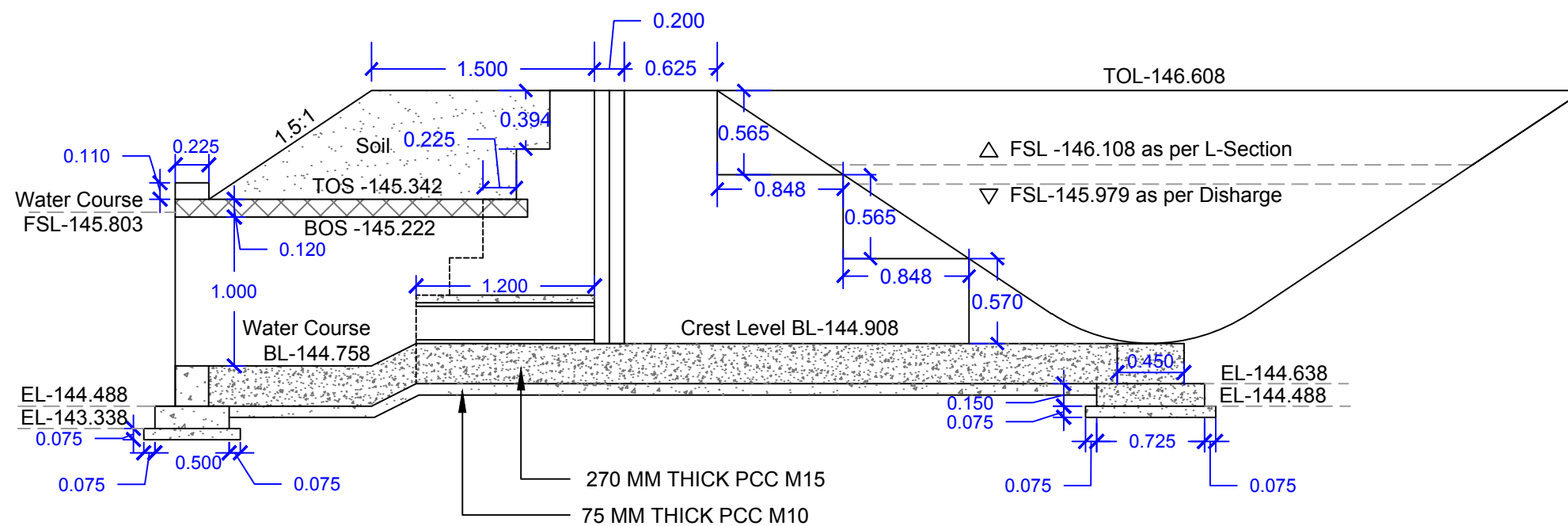
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 6.270 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/07		
Drawn By:-	Checked By :-	Approved By :-	



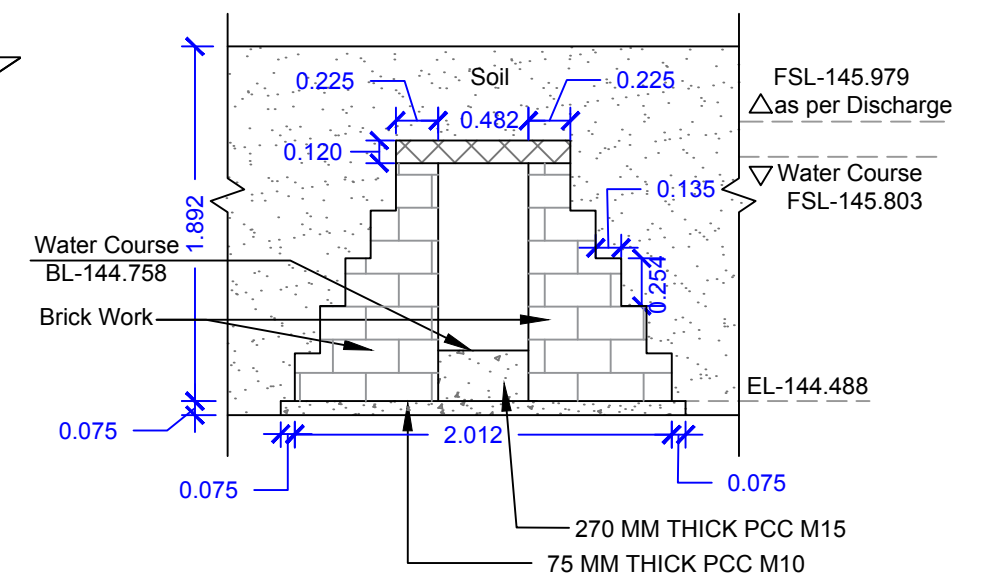
PLAN



SECTION - CC



SECTION - AA



SECTION - BB

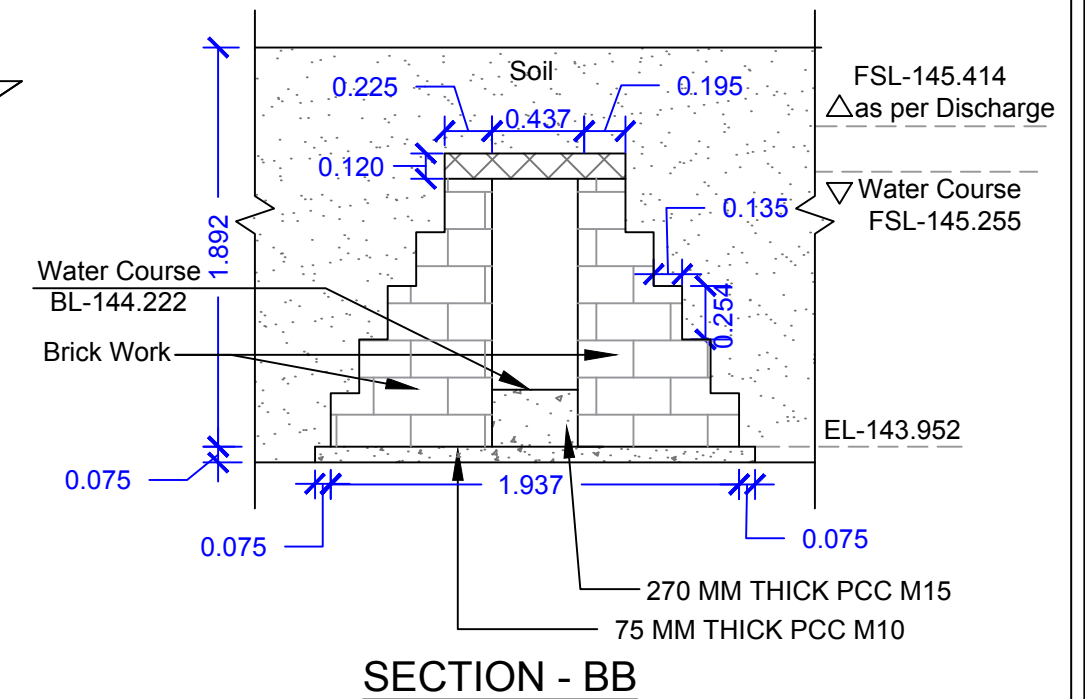
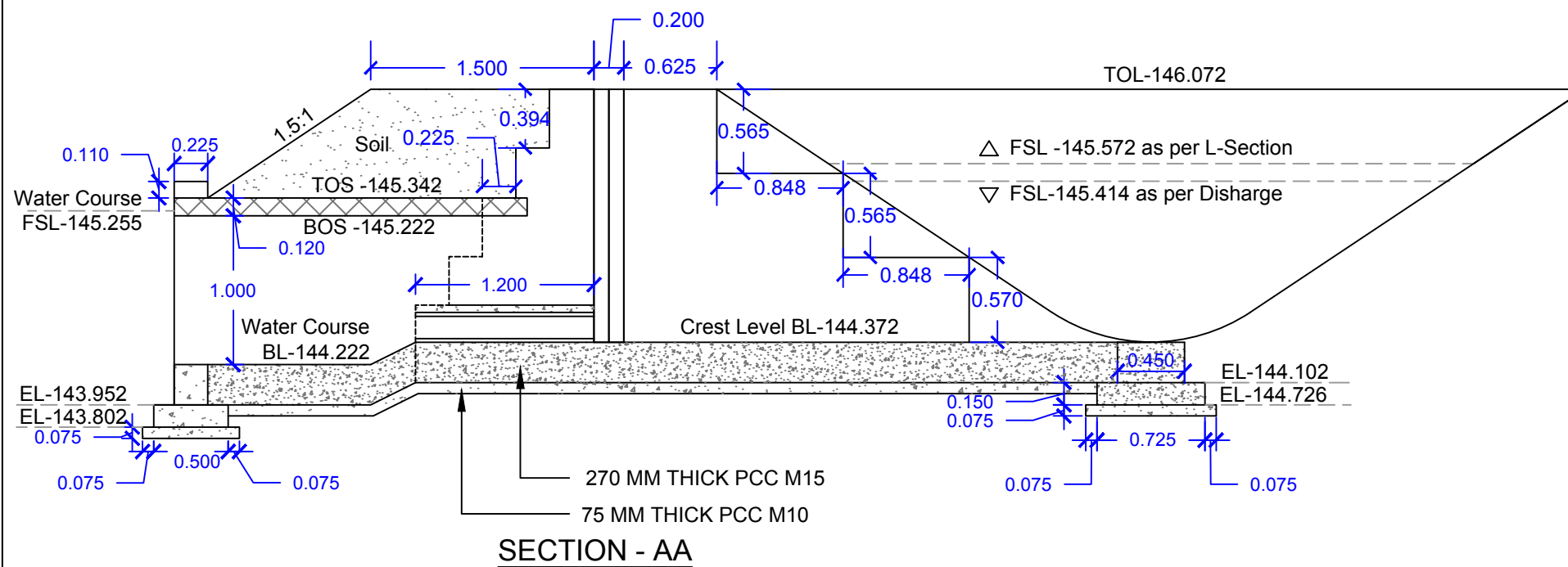
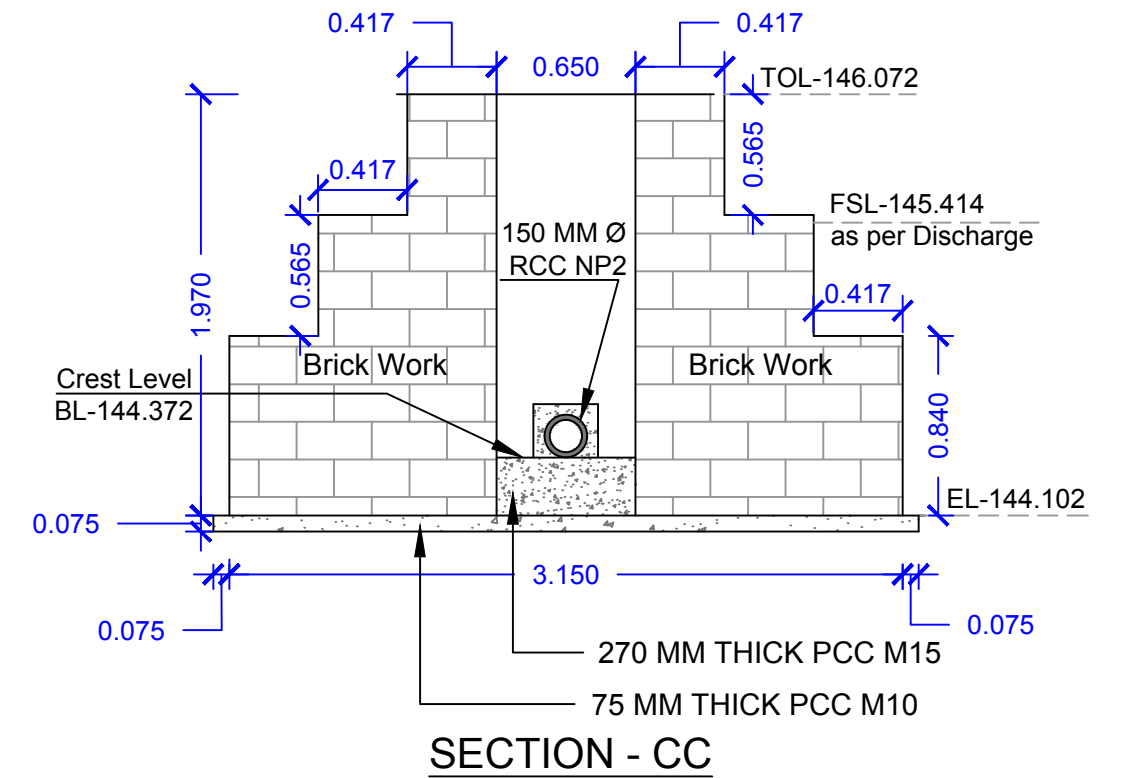
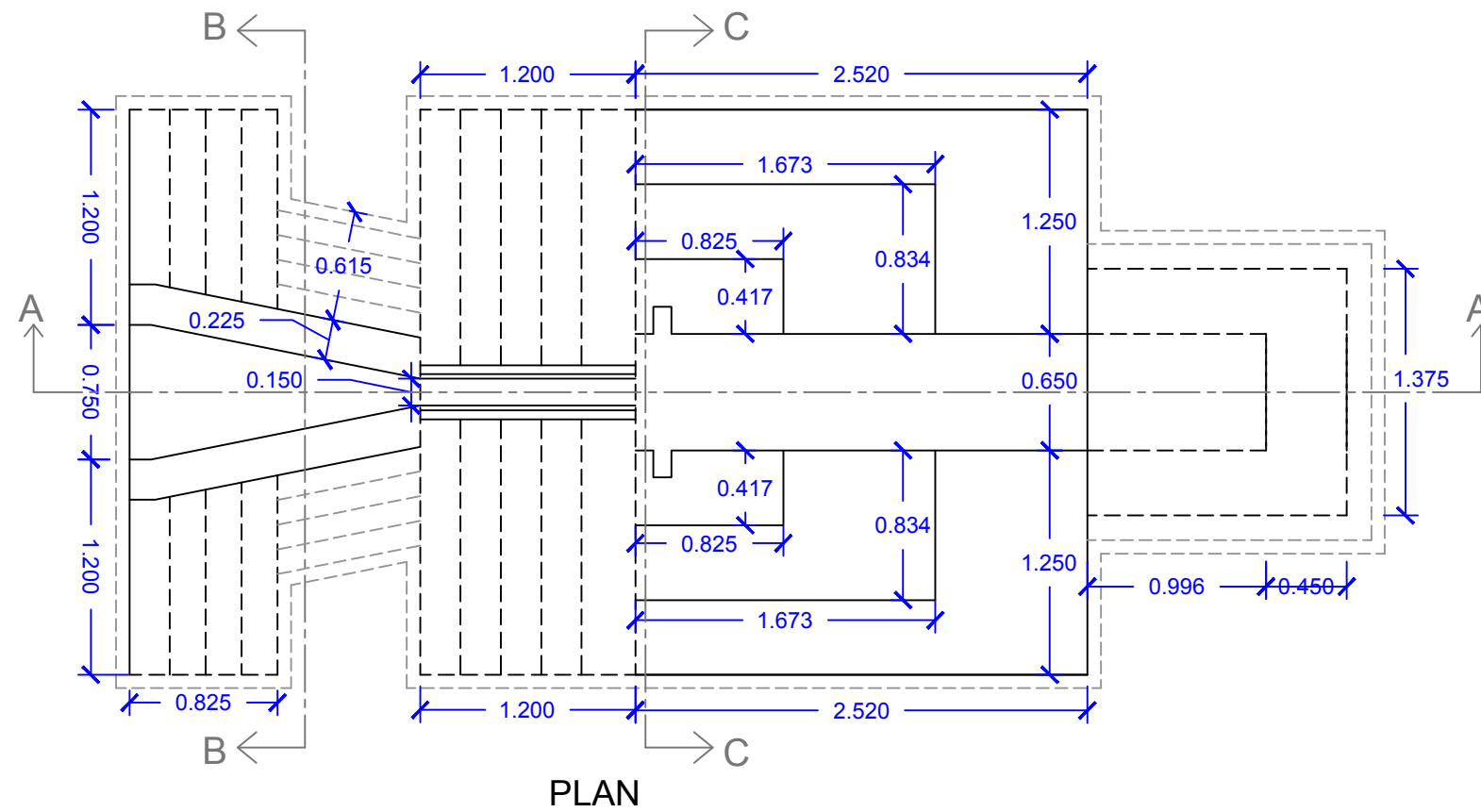
Notes :-

1. ALL DIMENSION AND ELEVATION ARE IN METERS



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WAPCOS LIMITED
 (भारत सरकार का उपकरण)
 राज सचिव नगरपालिका
 Ministry of Jal Shakti

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 7.360 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/08		
Drawn By:-	Checked By :-	Approved By :-	

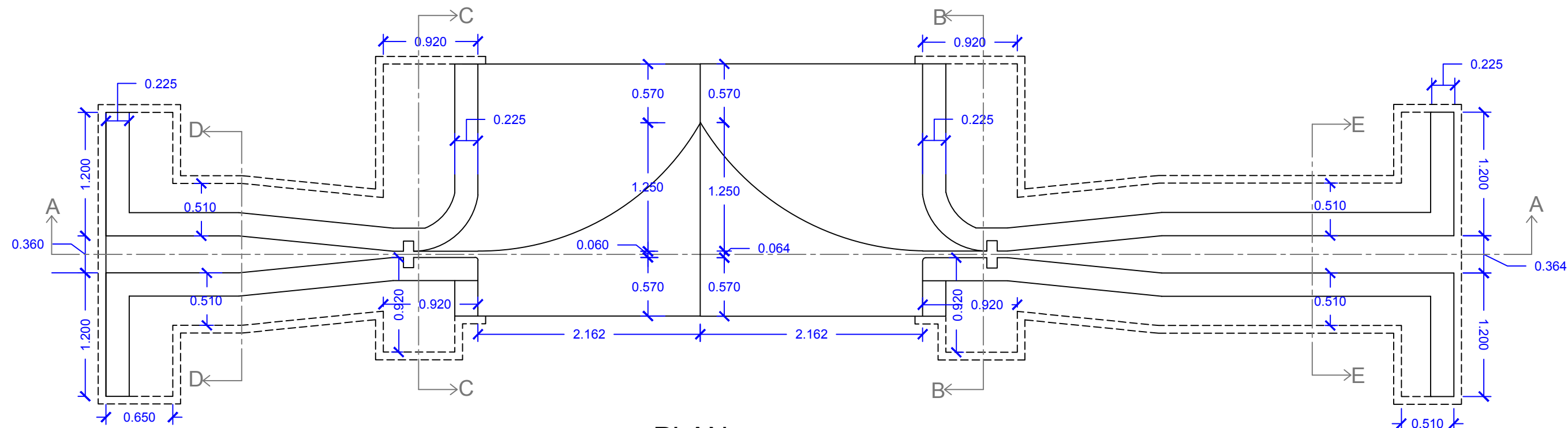


Notes :-
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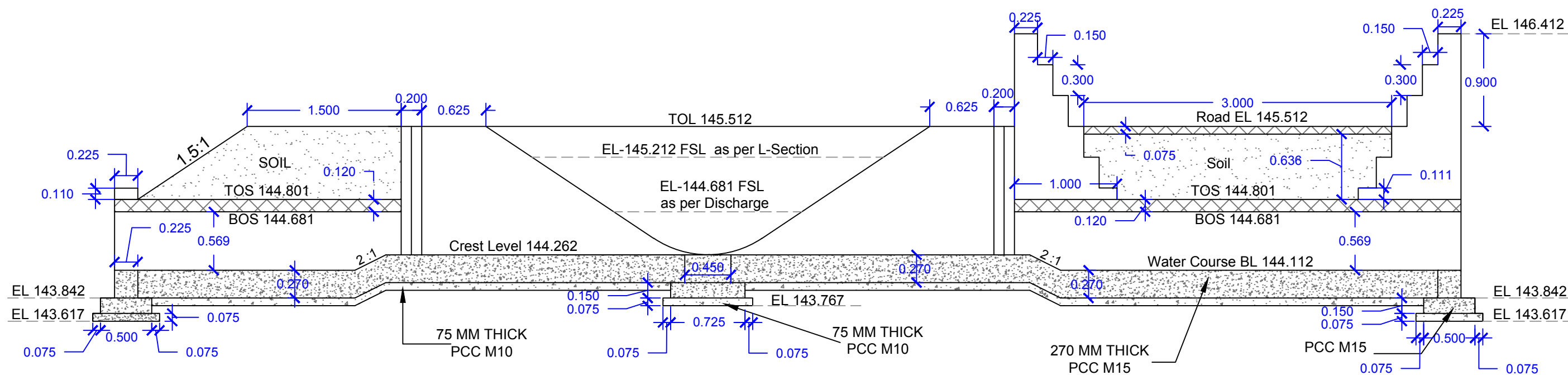


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(A Government of India Undertaking)
Ministry of Jal Shakti

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 9.640 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/09		
Drawn By:-	Checked By :-	Approved By :-	



PLAN



SECTION - AA

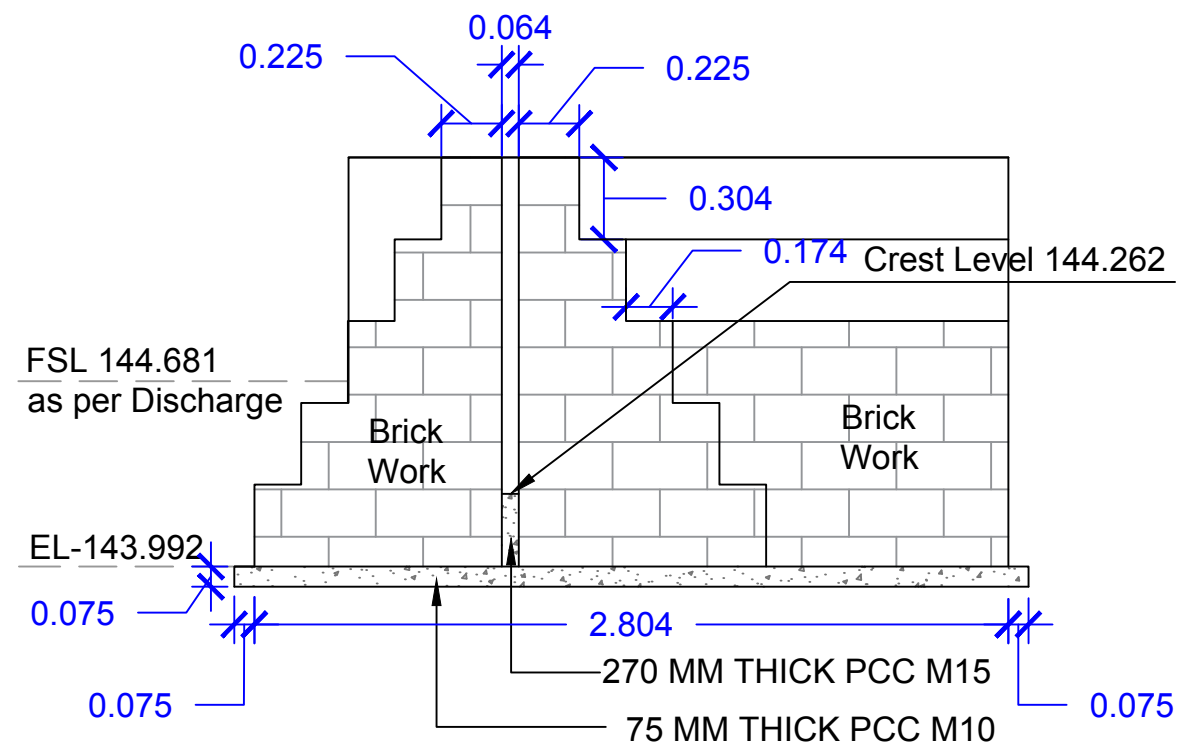
Notes :-

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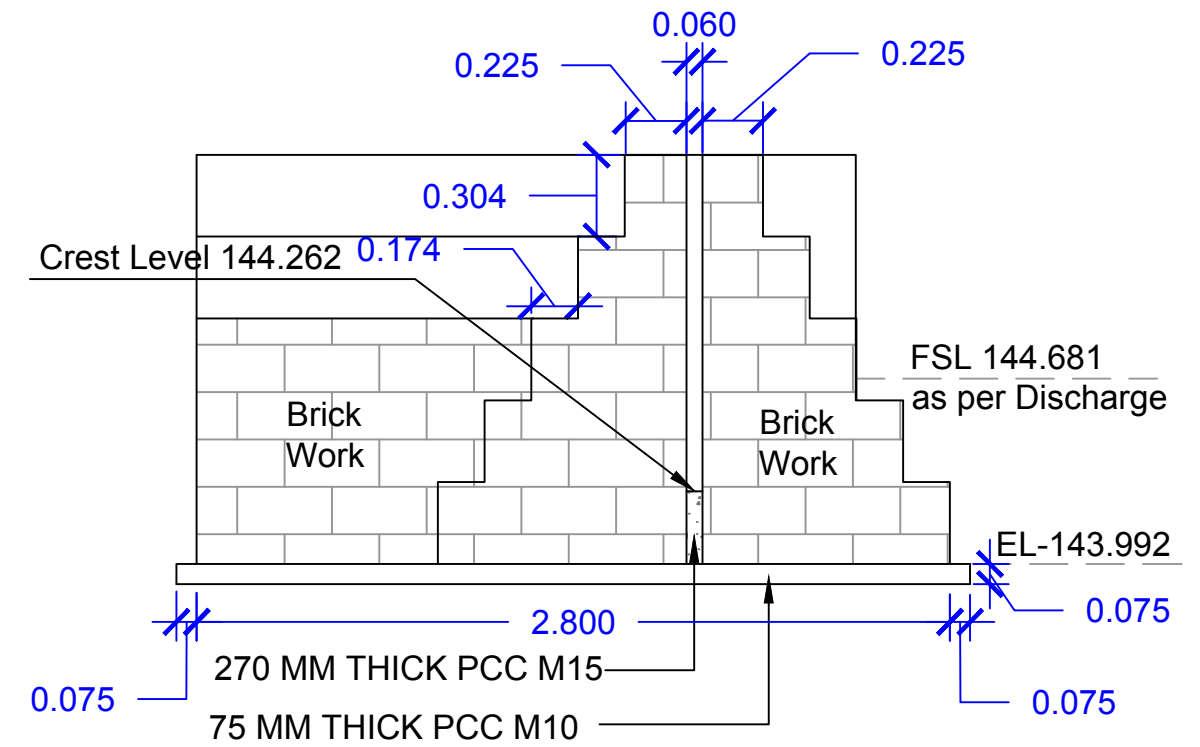


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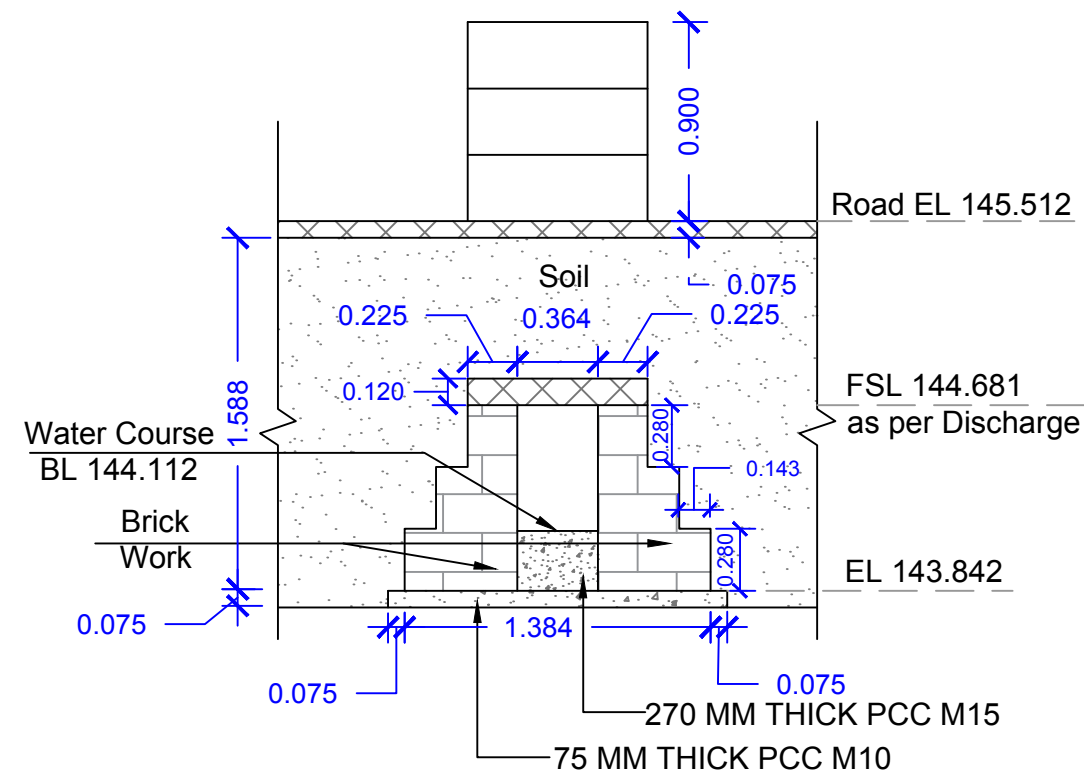
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF OPEN FLUME OUTLET AT RD 10.140 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/10a		
Drawn By:-	Checked By :-	Approved By :-	



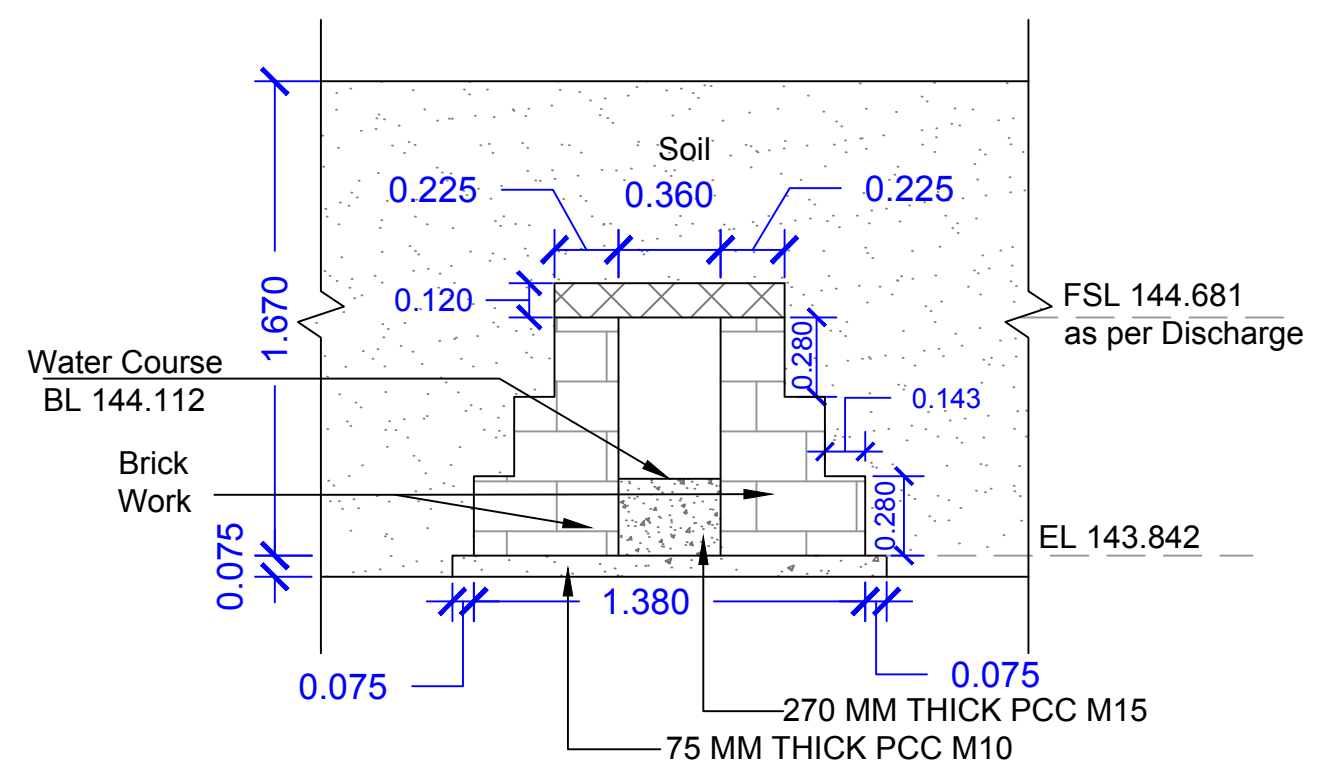
SECTION - BB



SECTION - CC



SECTION - EE

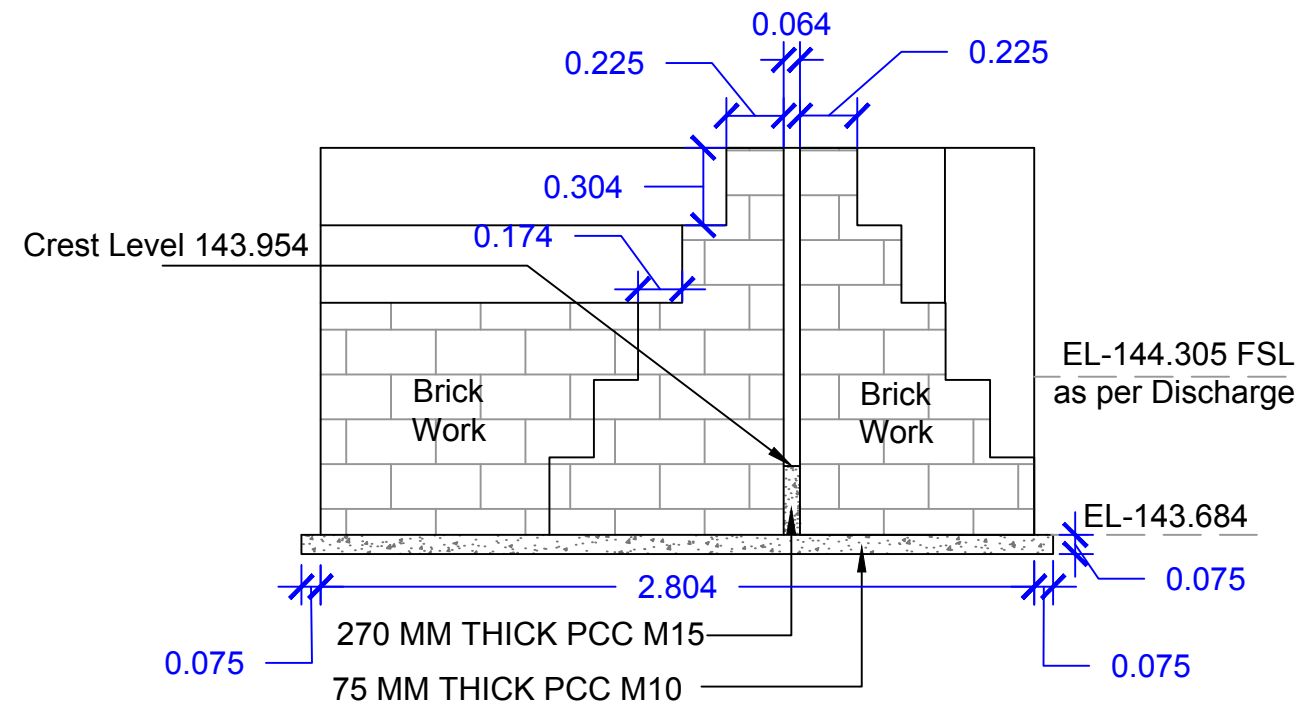


SECTION - DD

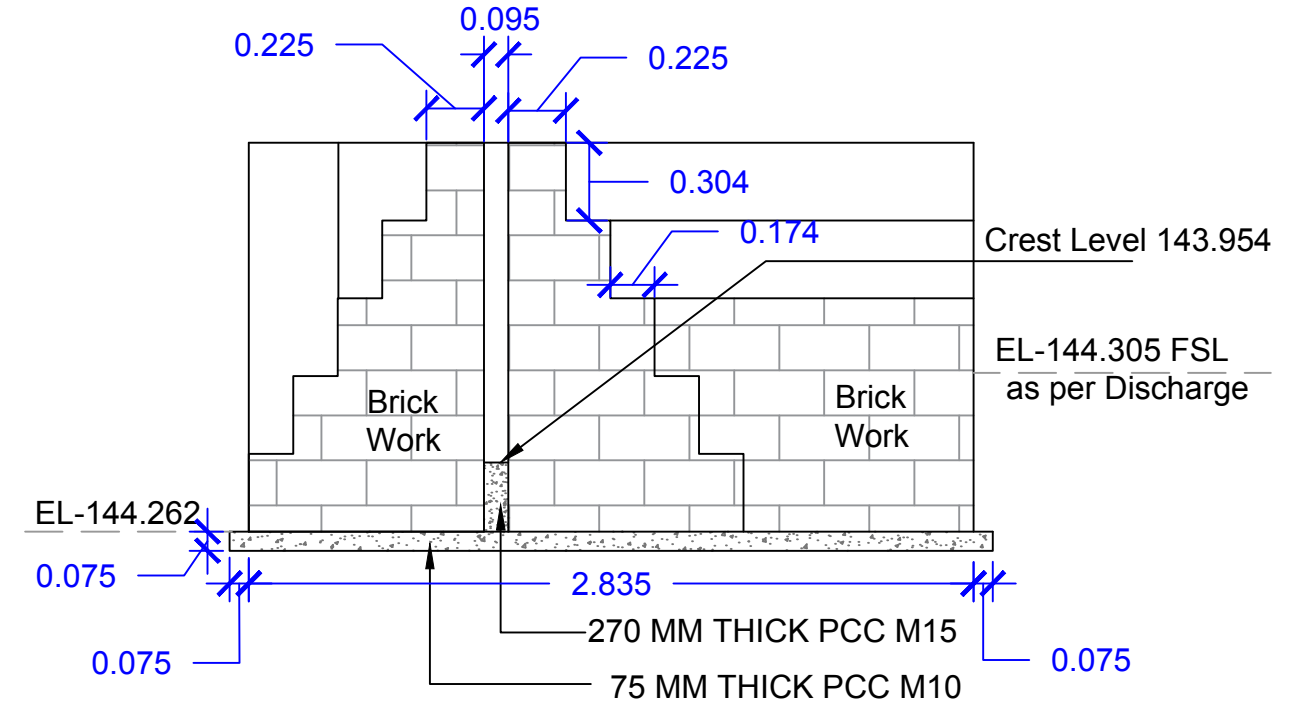
Notes :-
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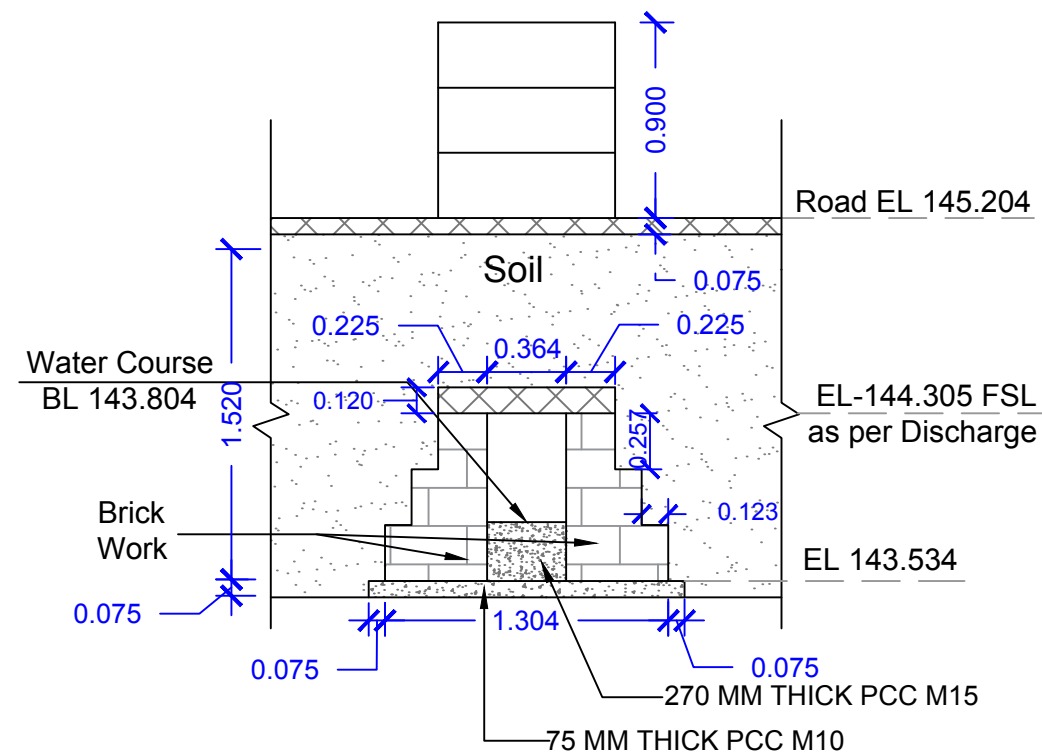
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	SECTION DRAWING OF OPEN FLUME OUTLET AT RD 10.140 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/10b		
Drawn By:-	Checked By :-	Approved By :-	



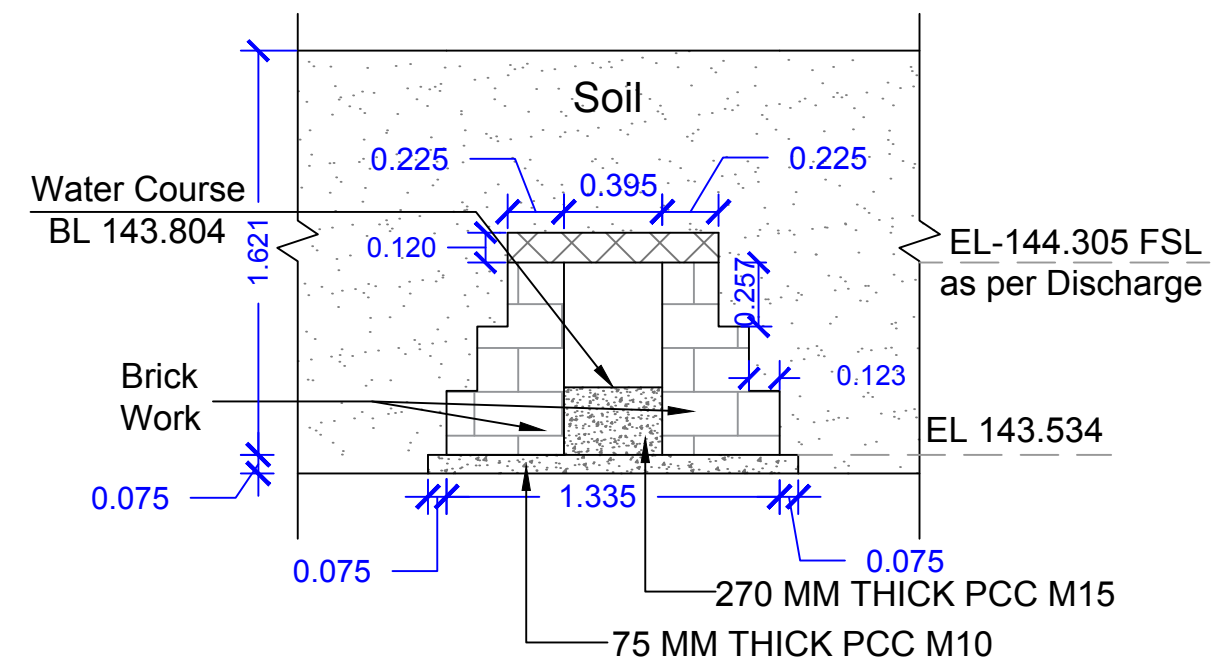
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SECTION - CC



SECTION - EE



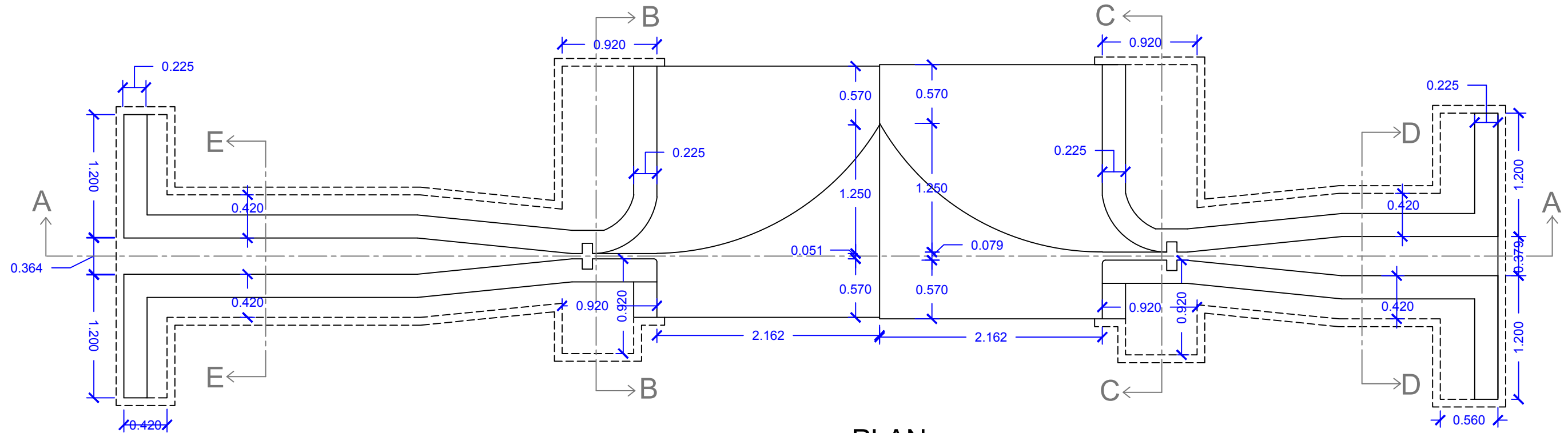
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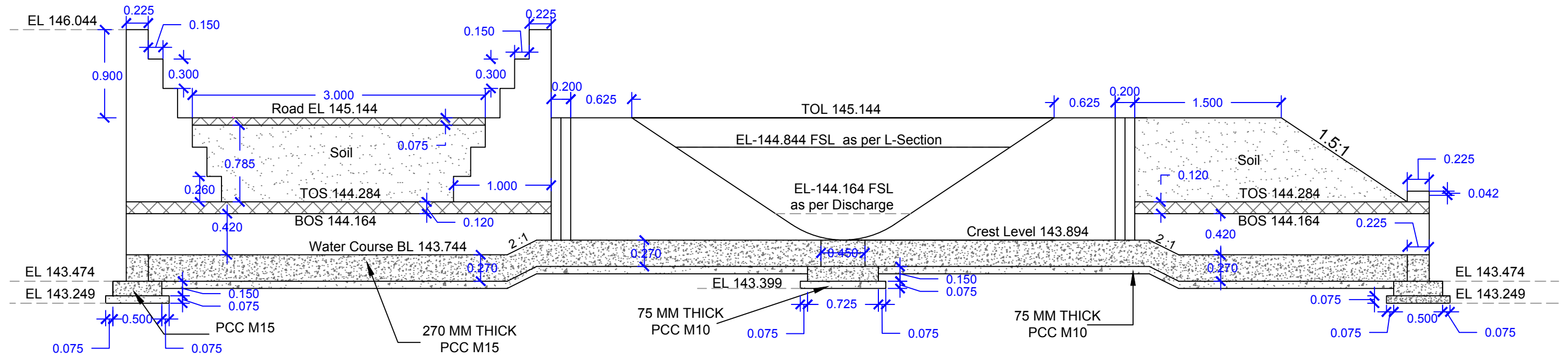


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Ministry of Jal Shakti

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.430 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/11b		
Drawn By:-	Checked By :-	Approved By :-	



PLAN



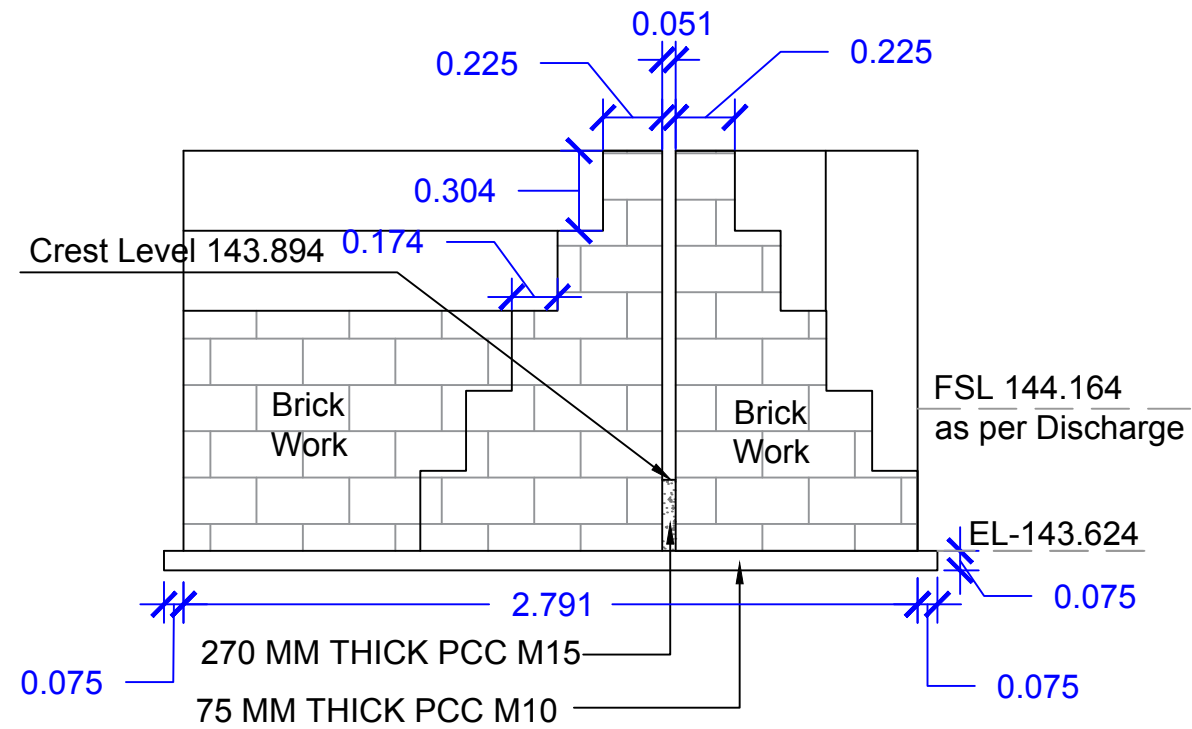
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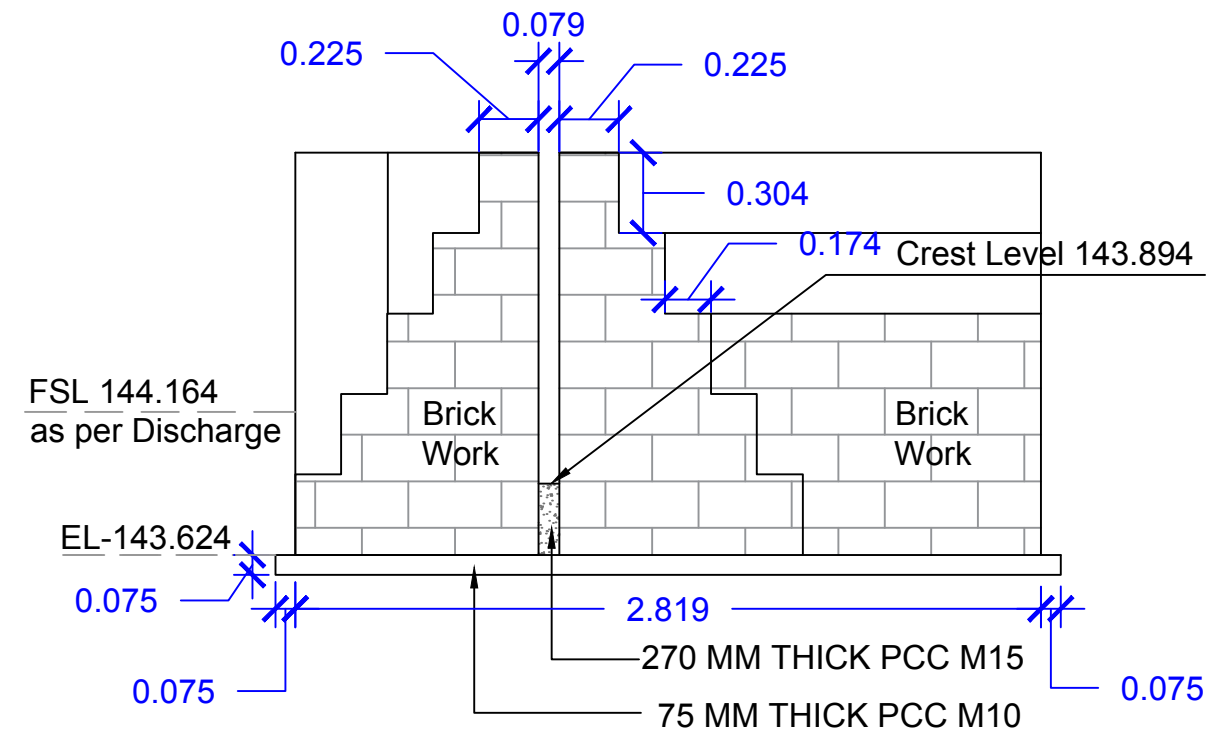


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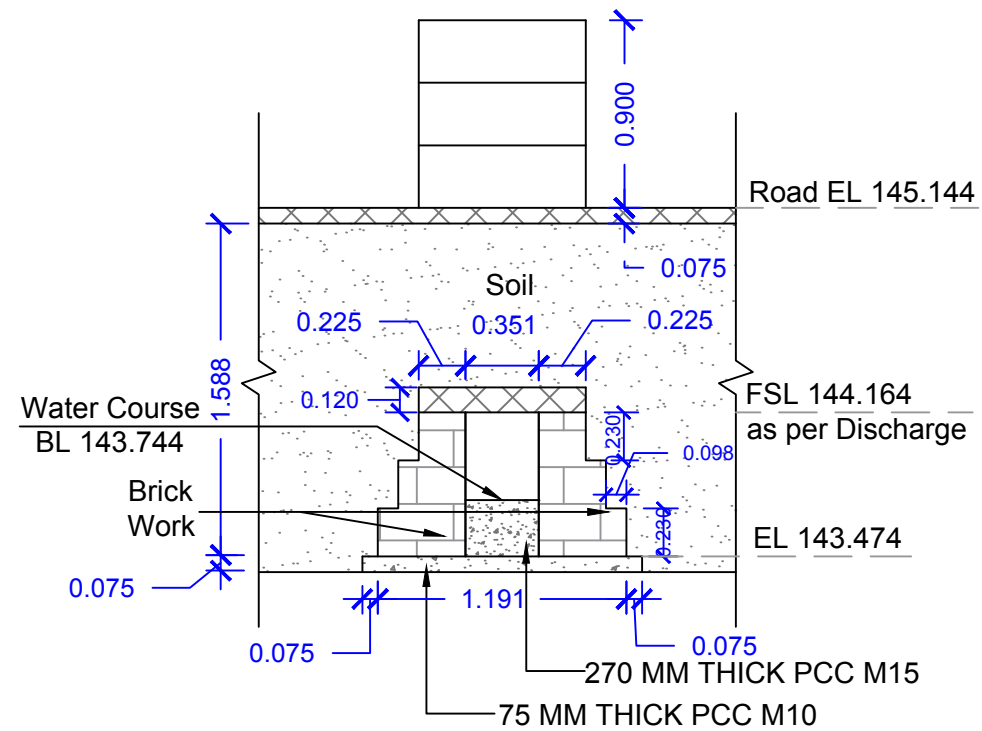
Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.730 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/12a		
Drawn By:-	Checked By :-	Approved By :-	



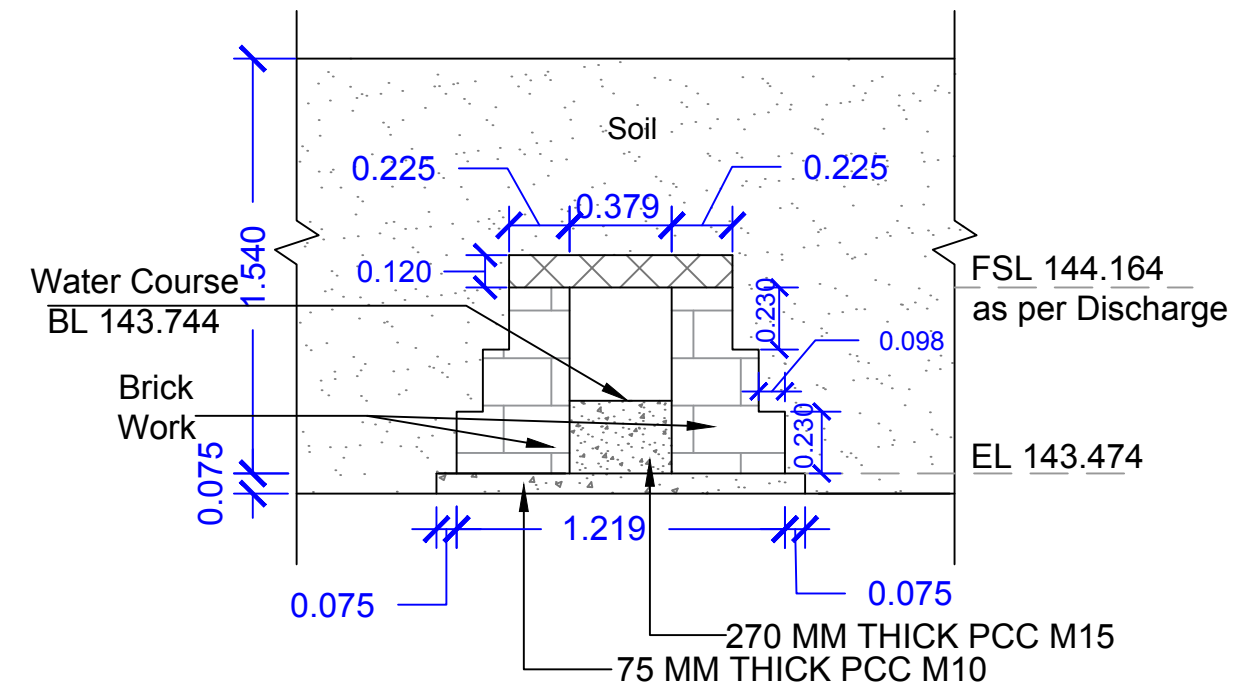
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SECTION - CC



SECTION - EE

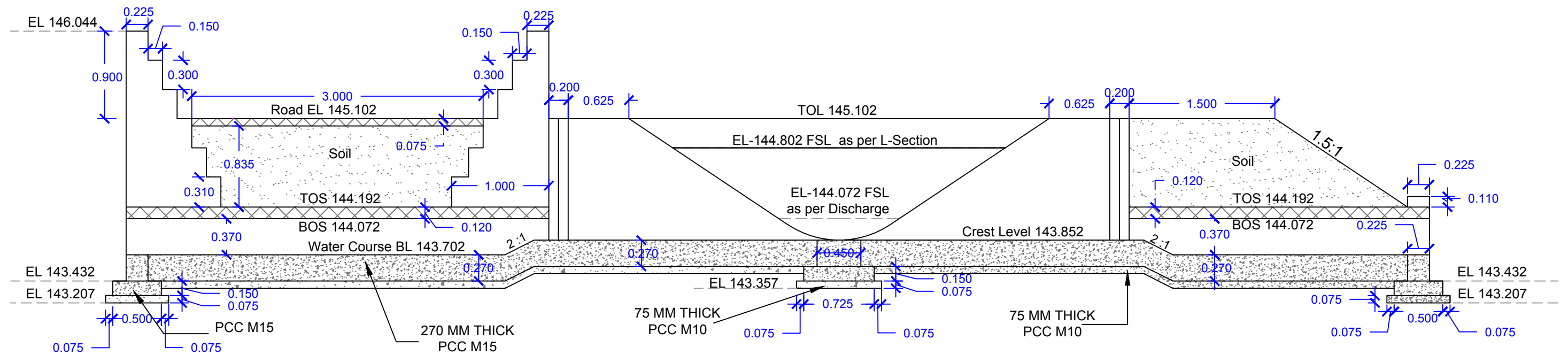
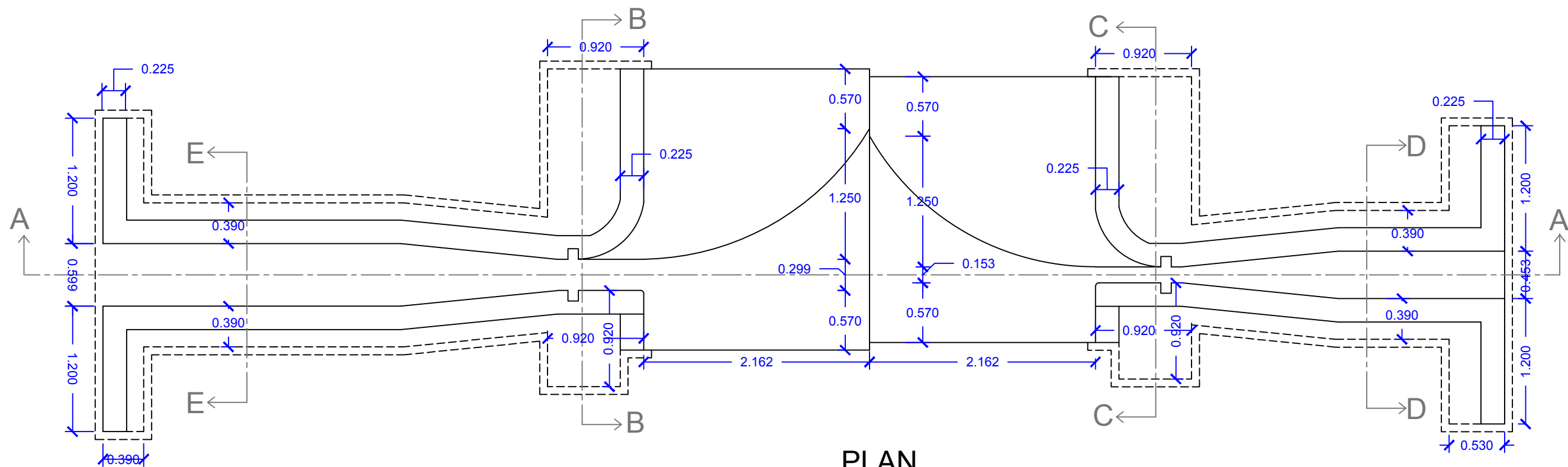


SECTION - DD

Notes :-
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Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.730 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/12b		
Drawn By:-	Checked By :-	Approved By :-	



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जल शक्ति मंत्रालय
(A Government of India Undertaking)
(Ministry of Jal Shakti)

Project Title :-	NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND		
Drawing Title :-	PLAN & SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.890 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/13a		
Drawn By:-	Checked By :-	Approved By :-	

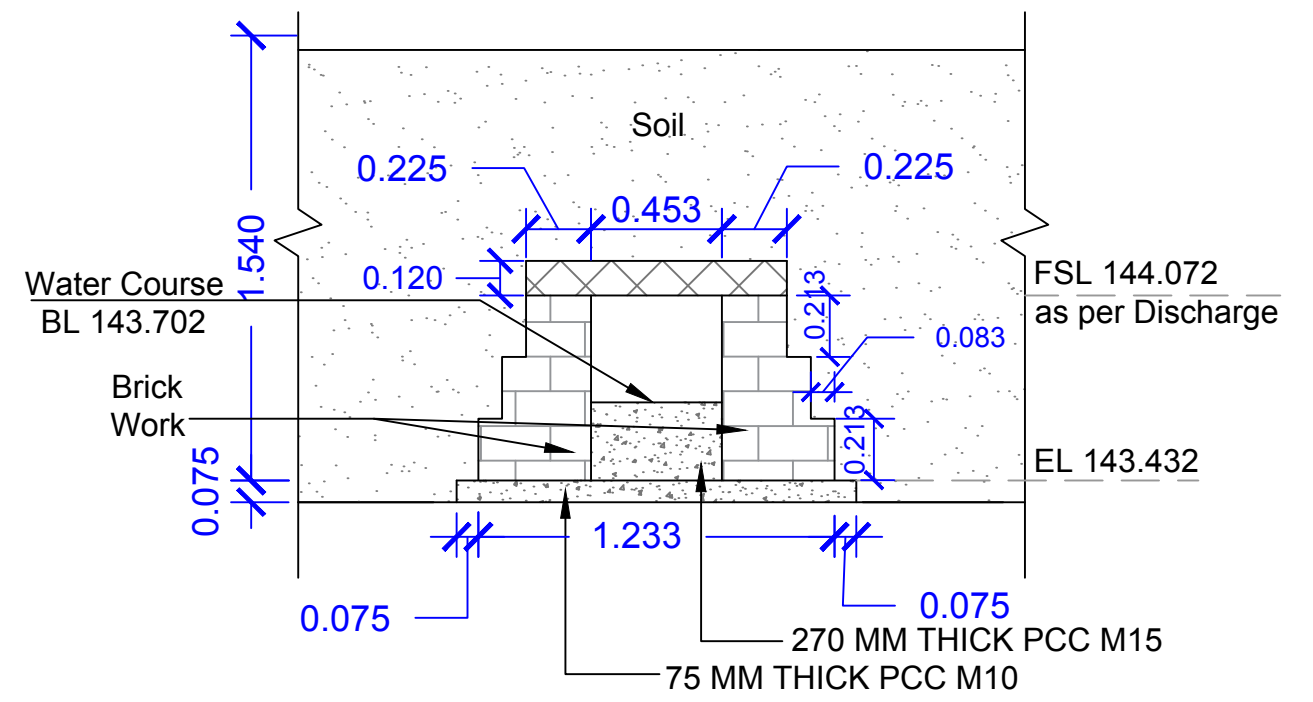
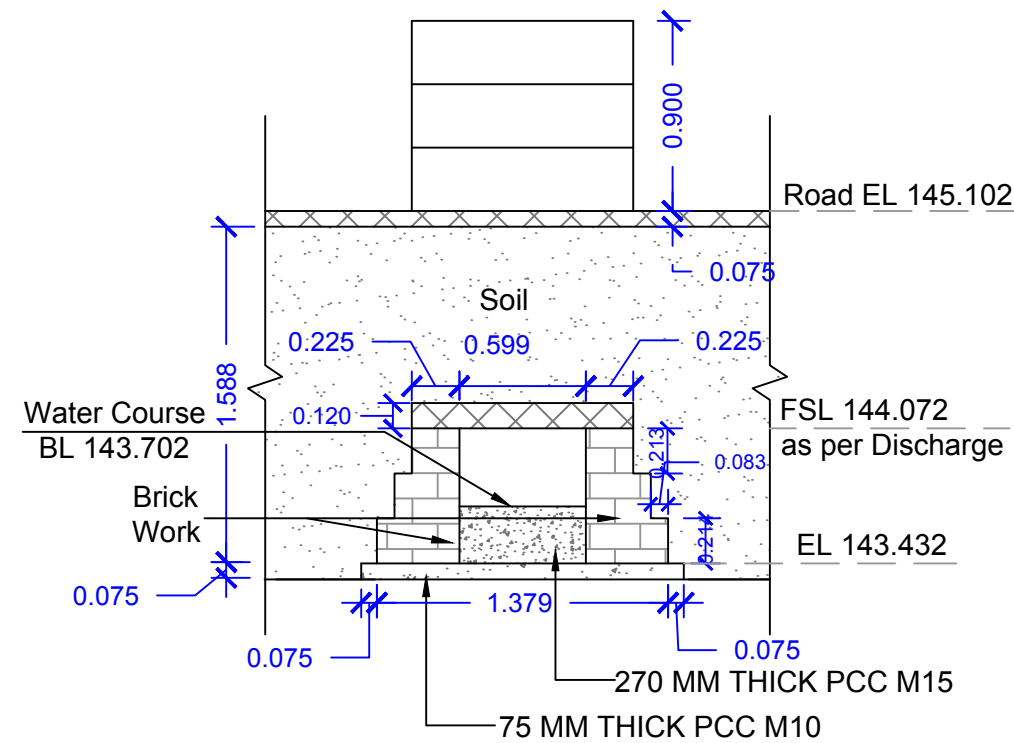
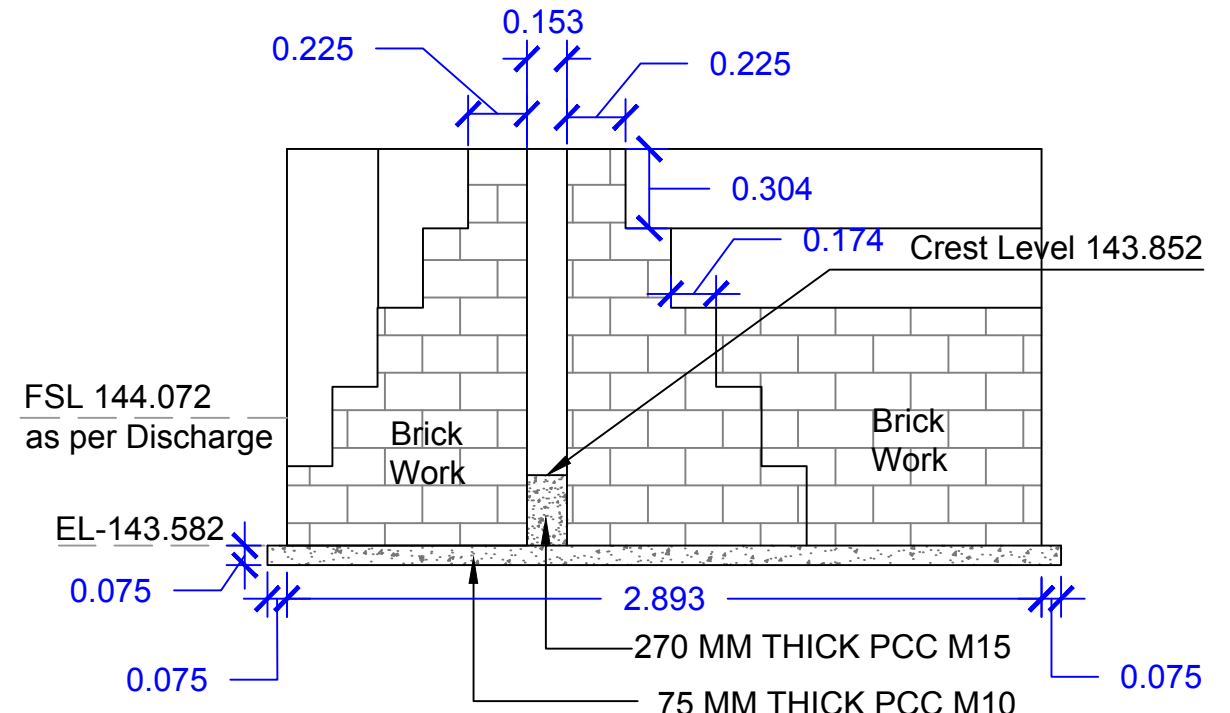
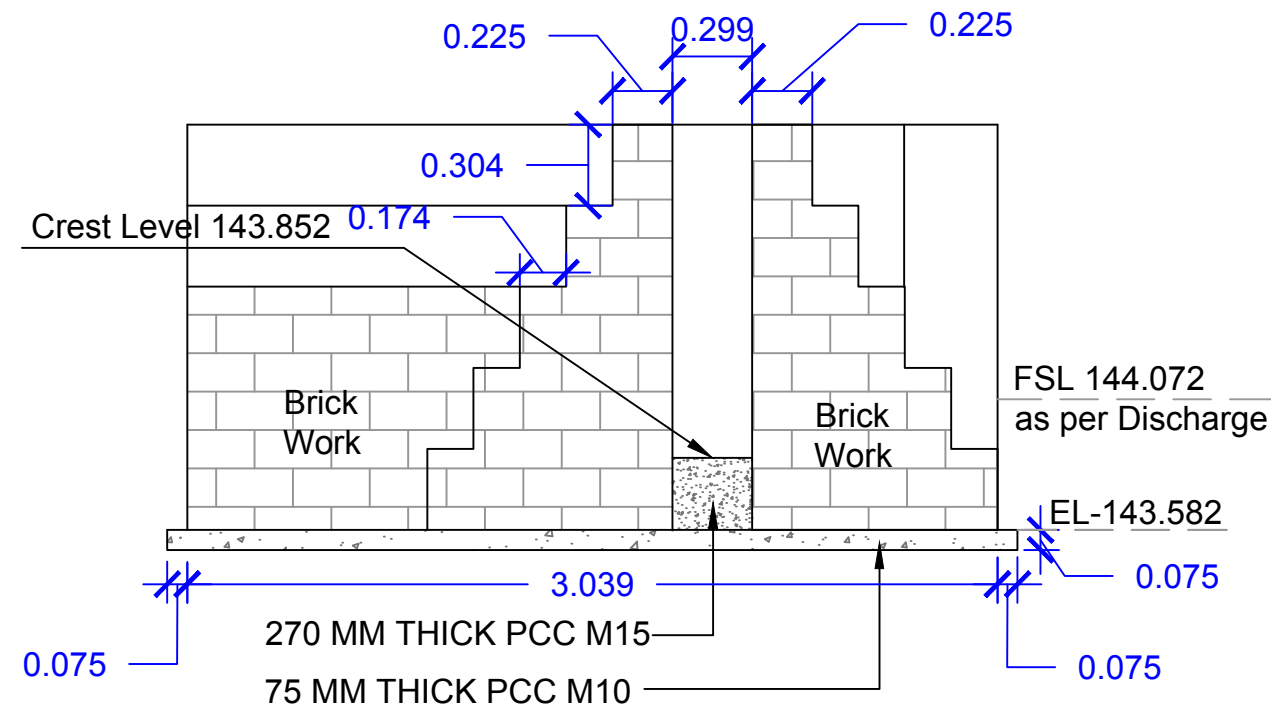
Drawing Title :-	PLAN & SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.890 OF LMC
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Drawing No :-	WAP/INFRA/OUTLET/13a
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Drawn By:-

Checked By :-

Approved By :-



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Drawing Title :-	SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.890 OF LMC		
Drawing No :-	WAP/INFRA/OUTLET/13b		
Drawn By:-	Checked By :-	Approved By :-	

NORTH KOEL RESERVOIR PROJECT

Completion of Balance Works of North Koel Reservoir Project

ESTIMATE REPORT – OUTLETS OFFTAKING FROM LMC, JHARKHAND



WAPCOS LIMITED

(GOVT. OF INDIA UNDERTAKING)
76- C SECTOR-18 INDUSTRIAL AREA,
GURUGRAM-122015 (HARYANA)



WATER RESOURCE DEPARTMENT GOVERNMENT OF JHARKHAND
NORTH KOEL RESERVOIR PROJECT FOR LMC OUTLETS

Lead Chart

S. NO.	Name of Material	Source	Lead in Km.	Multiplying factor	Lead on			Hauling Charges on			Loading and Unloading	Rate (Rs)	Add @ 14.95 % Overhead + Contractor's Profit	Rate (Rs)	Unit
					Surfaced Road	Unsurfaced Road	Kutchha Road	Surfaced Road	Unsurfaced Road	Kutchha Road					
1	Sand	Koel River	5	1.60	3.00	0.00	1.00	8.00	9.60	19.40	133.00	202.44	30.26	232.70	Cum
2	Chips	Chattarpur	70	1.60	68.00	0.00	2.00	8.00	9.60	19.40	133.00	1065.48	159.29	1224.77	Cum
3	Stone Metal	Chattarpur	70	1.74	68.00	0.00	2.00	8.00	9.60	19.40	133.00	1147.07	171.49	1318.56	Cum
4	Boulder	Chattarpur	35	1.67	33.00	0.00	2.00	8.00	9.60	19.40	213.00	718.68	107.44	826.12	Cum
6	Cement	Daltonganj	70	1.00	70.00	0.00	0.00	8.00	9.60	19.40	279.00	839.00	125.43	964.43	MT
7	Steel	Daltonganj	70	1.00	70.00	0.00	0.00	8.00	9.60	19.40	279.00	839.00	125.43	964.43	MT
9	Hume Pipe	Ranchi	250	0.80	250.00	0.00	0.00	8.00	9.60	19.40	279.00	1879.00	280.91	2159.91	RM
4	Bricks	Japla	30	4.00	28.00	0.00	2.00	8.00	9.60	19.40	276.00	1327.20	198.42	1525.62	Per 1000 nos

General Abstract of Cost for Outlets offtaking from LMC, Jharkhand				
North Koel Reservoir Project, Jharkhand & Bihar				
S.No	Chainage (Km)	Outlet Side	Type of Outlet	Amount (in Rs.)
1	0.630	Right	Pipe	162366.71
2	0.630	Left	Pipe	102955.86
3	1.950	Right	Pipe	156154.75
4	1.950	Left	Pipe	90330.77
5	2.820	Right	Pipe	159060.69
6	2.820	Left	Pipe	101252.78
7	4.560	Right	Pipe	159981.43
8	4.560	Left	Pipe	99608.85
9	5.320	Right	Pipe	105681.13
10	5.930	Right	Pipe	102006.11
11	6.270	Right	Pipe	103639.68
12	7.360	Right	Pipe	101699.46
13	9.640	Right	Pipe	103100.95
14	10.140	Right	Open Flume	69210.46
15	10.140	Left	Open Flume	102959.76
16	11.430	Right	Open Flume	97974.03
17	11.430	Left	Open Flume	67342.88
18	11.730	Right	Open Flume	106578.40
19	11.730	Left	Open Flume	65820.62
20	11.890	Right	Open Flume	115675.54
21	11.890	Left	Open Flume	66186.87
Sub total (in Rs.)				2239587.72
GST @ 18% on Sub total				403125.79
Labour Cess @ 1% on Sub total				22395.88
G.Total (in Rs.)				2665109.39
G.Total (in Rs. Lakhs.)				26.65

Cost Estimate					
Outlet OR1 at RD 0.63 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	102.41	m ³	110.83	11350.10
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	38.23	m ³	106.98	4089.80
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	2.20	m ³	3279.00	7213.80
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	2.24	m ³	4068.00	9102.19
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	22.61	m ³	4068.35	91985.39
6	Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per direction of E/I 6.02 RCD, Jharkhand, 2021	0.71	m ³	4461.00	3161.73

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.22	m ³	3600.00	776.17
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1235.58
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	5.20	m ²	414.88	2156.96
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	3.61	m ²	541.32	1954.17
11	Labour for laying, fitting and fixing 200mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.75	m	281.91	493.34
12	150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.75	m	212.00	371.00
13	Coarse Sand (5 Km lead)	24.23	m ³	232.70	5637.33
14	Stone chips+Metal (70 Km lead)	4.71	m ³	1224.77	5767.06
15	Cement (70 Km lead)	6.52	MT	964.43	6289.66
16	Bricks (30 Km lead)	9180	2000 Nos	1525.62	7002.60
17	NP2 RCC Pipes (250 Km)	1.75	RM	2159.91	3779.84
S.total (in Rs.) (A)					162366.71

Quantity for Outlet OR1 at 0.63 Km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.94	9.98	1	49.32
Barrel Portion			5.98	2.78	1	16.65
Protection Wall (Distribution Side)			4.94	7.38	1	36.44
						102.41
PCC at Subgrade (M10)						
Canal Portion		0.075		10.54	1	0.790
Wall behind lining		0.075		6.28	1	0.471
Barrel Portion		0.075		10.26	1	0.770
Protection Wall (Distribution Side)		0.075		2.24	1	0.168
						2.20
PCC (M15)						
Canal Portion		0.27		2.29	1	0.62
Beneath Pipe		0.27		1.14	1	0.31
For Covering Pipe	1.75			0.04	1	0.08
Barrel Portion		0.27		1.44	1	0.39
Toe Wall	6.24			0.14	1	0.85
						2.24
Brick Work						
Wall behind lining	3.29			2.98	1	9.79
Barrel Wall (E-E)	2.76			0.63	2	3.47
Crash Barrier	3.15			1.08	1	3.39
After Hume Pipe		0.567		5.26	2	5.96
						22.61
Hume Pipe	1.750			0.014	1	0.024
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.80	1	0.22
CC Road	3.15	0.075	3.00		1	0.71
						0.92
BACK FILLING						
Empty Area						
Inside Barrel			0.49	3.01	1	1.46
Above Canal Portion			0.65	2.02	1	1.31
Above Barrel Portion			5.98	2.17	1	12.99
Above Protection Wall (Distribution Side)			4.94	4.14	1	20.45

						38.23
SHUTTERING						
PCC (M10) Canal Portion	23.73	0.075		1.78	1	
Toe Wall Foundation (Upper Portion)	11.02	0.150		1.65	1	
Toe Wall Foundation (Lower Portion)	11.77	0.150		1.77	1	
				5.20		

Centring						
Barrel Slab				3.61		

Cost Estimate					
Outlet OL1 at RD 0.63 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	67.70	m ³	110.83	7503.19
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	17.93	m ³	106.98	1918.20
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.94	m ³	3279.00	6361.26
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.81	m ³	4068.00	7369.98
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.82	m ³	4068.35	56224.60
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.11	m ³	3600.00	407.25
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.01	MT	57308.00	648.29
8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	4.88	m ²	414.88	2024.47

9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	2.37	m ²	541.32	1282.93
10	Labour for laying, fitting and fixing 200mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
11	150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	212.00	254.40
12	Coarse Sand (5 Km lead)	15.06	m ³	232.70	3504.27
13	Stone chips+Metal (70 Km lead)	3.38	m ³	1224.77	4142.29
14	Cement (70 Km lead)	4.26	MT	964.43	4104.42
15	Bricks (30 Km lead)	5611	2000 Nos	1525.62	4280.13
16	NP2 RCC Pipes (250 Km)	1.20	nos	2159.91	2591.89
S.total (in Rs.) (A)					102955.86

Quantity for Outlet OL2 at 0.63 Km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.94	4.20	1	20.75
Barrel Portion			3.99	4.08	1	16.28
Protection Wall (Distribution Side)			4.94	6.21	1	30.68
						67.70
PCC at Subgrade (M10)						
Canal Portion		0.075		12.41	1	0.930
Wall behind lining		0.075		6.28	1	0.471
Barrel Portion		0.075		5.00	1	0.375
Protection Wall (Distribution Side)		0.075		2.24	1	0.168
						1.94
PCC (M15)						
Canal Portion		0.27		2.29	1	0.62
Beneath Pipe		0.27		0.78	1	0.21
For Covering Pipe	1.20			0.04	1	0.05
Barrel Portion		0.27		1.29	1	0.35
Toe Wall	4.29			0.14	1	0.58
						1.81
Brick Work						
Wall behind lining	3.29			1.41	1	4.64
Barrel Wall (D-D)	2.56			0.63	2	3.22
After Hume Pipe		0.567		5.26	2	5.96
						13.82
Hume Pipe	1.200			0.014	1	0.016
In Superstructure						
RCC M-20 Barrel Slab		0.12		0.94	1	0.11
						0.11
BACK FILLING						
Empty Area						
Inside Barrel			0.47	1.79	1	0.84
Above Canal Portion			0.65	0.69	1	0.45
Above Barrel Portion			3.99	2.01	1	8.02
Above Protection Wall (Distribution Side)			4.94	4.61	1	22.78
						17.93
SHUTTERING						

PCC (M10) Canal Portion	27.27	0.075		2.05	1	
Toe Wall Foundation (Upper Portion)	9.07	0.150		1.36	1	
Toe Wall Foundation (Lower Portion)	9.82	0.150		1.47	1	
				4.88		

Centring						
Barrel Slab				2.37		

Cost Estimate					
Outlet OR3 at RD 1.95 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	88.49	m ³	110.83	9807.35
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	29.22	m ³	106.98	3126.02
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	2.47	m ³	3279.00	8099.13
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.85	m ³	4068.00	7511.71
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	21.39	m ³	4068.35	87022.01
6	Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per direction of E/I 6.02 RCD, Jharkhand, 2021	0.72	m ³	4461.00	3191.85

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.16	m ³	3600.00	565.92
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	900.88
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	4.44	m ²	414.88	1843.31
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.31	m ²	541.32	709.13
11	Providing and supplying in standard lengths 180 mm dia HDPE pipe confirming to IS 4985-4984/14151/12786/13488 (S.No 112 item no M1028)	1.75	m	731.43	1280.00
12	Labour charge for laying and fixing and jointing of 180 mm HDPE pipe of all pressure but welding including providing all labour, tools, tackles and jointing material including carriage of material from site godown to work site all complete job, leak proof, including testing as per specification and direction of E/I (8.83)	1.75	m	2752.30	4816.53
13	Coarse Sand (5 Km lead)	22.98	m ³	232.70	5347.58
14	Stone chips+Metal (70 Km lead)	4.58	m ³	1224.77	5604.36
15	Cement (70 Km lead)	6.14	MT	964.43	5924.88
16	Bricks (30 Km lead)	8684	2000 Nos	1525.62	6624.24
17	NP2 RCC Pipes (250 Km)	1.75	nos	2159.91	3779.84
S.total (in Rs.) (A)					156154.75

Quantity for Outlet OR3 at 1.95 Km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.97	8.71	1	43.29
Barrel Portion			6.01	1.93	1	11.61
Protection Wall (Distribution Side)			4.97	6.76	1	33.60
						88.49
PCC at Subgrade (M10)						
Canal Portion		0.075		14.05	1	1.054
Wall behind lining		0.075		6.33	1	0.475
Barrel Portion		0.075		10.33	1	0.775
Protection Wall (Distribution Side)		0.075		2.26	1	0.169
						2.47
PCC (M15)						
Canal Portion		0.27		2.39	1	0.65
Beneath Pipe		0.27		1.19	1	0.32
For Covering Pipe	1.75			0.05	1	0.09
Barrel Portion		0.27		1.52	1	0.41
Toe Wall	2.80			0.14	1	0.38
						1.85
Brick Work						
Wall behind lining	3.32			2.98	1	9.88
Barrel Wall (E-E)	2.76			0.63	2	3.47
Crash Barrier	3.18			1.06	1	3.37
After Hume Pipe		0.477		4.90	2	4.67
						21.39
HDPE Pipe (180 mm dia)	1.750			0.016	1	0.028
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.31	1	0.16
CC Road	3.18	0.075	3.00		1	0.72
						0.87
BACK FILLING						
Empty Area						
Inside Barrel			0.51	3.00	1	1.52
Above Canal Portion			0.68	2.02	1	1.37
Above Barrel Portion			6.01	2.17	1	13.05
Above Protection Wall (Distribution Side)			4.97	3.37	1	16.75

						29.22
SHUTTERING						
PCC (M10) Canal Portion	27.29	0.075		2.05	1	
Toe Wall Foundation (Upper Portion)	7.61	0.150		1.14	1	
Toe Wall Foundation (Lower Portion)	8.36	0.150		1.25	1	
				4.44		

Centring						
Barrel Slab				1.31		

Cost Estimate					
Outlet OL4 at RD 1.95 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	65.38	m ³	110.83	7246.07
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	23.93	m ³	106.98	2559.78
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.80	m ³	3279.00	5902.20
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.63	m ³	4068.00	6644.61
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	11.74	m ³	4068.35	47762.43
7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.08	m ³	3600.00	302.40
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.01	MT	57308.00	481.39
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	4.65	m ²	414.88	1929.81

10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.70	m ²	541.32	378.92
11	Labour for laying, fitting and fixing 200mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
12	100mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	200.00	240.00
13	Coarse Sand (5 Km lead)	12.90	m ³	232.70	3000.81
14	Stone chips+Metal (70 Km lead)	3.08	m ³	1224.77	3772.02
15	Cement (70 Km lead)	3.68	MT	964.43	3544.58
16	Bricks (30 Km lead)	4766	2000 Nos	1525.62	3635.55
17	NP2 RCC Pipes (250 Km)	1.20	nos	2159.91	2591.89
S.total (in Rs.) (A)					90330.77

Quantity for Outlet OL4 at 1.95 Km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.89	3.36	1	16.43
Barrel Portion			3.94	3.45	1	13.59
Protection Wall (Distribution Side)			4.89	7.23	1	35.35
						65.38
PCC at Subgrade (M10)						
Canal Portion		0.075		12.55	1	0.941
Wall behind lining		0.075		4.32	1	0.324
Barrel Portion		0.075		4.89	1	0.367
Protection Wall (Distribution Side)		0.075		2.20	1	0.165
						1.80
PCC (M15)						
Canal Portion		0.27		2.11	1	0.57
Beneath Pipe		0.27		0.72	1	0.19
For Covering Pipe	1.20			0.03	1	0.04
Barrel Portion		0.27		1.18	1	0.32
Toe Wall	3.78			0.14	1	0.51
						1.63
Brick Work						
Wall behind lining	3.24			1.19	1	3.86
Barrel Wall (E-E)	2.56			0.63	2	3.22
After Hume Pipe		0.477		4.90	2	4.67
						11.74
Hume Pipe	1.200			0.01	1	0.012
In Superstructure						
RCC M-20 Barrel Slab		0.12		0.70	1	0.08
						0.08
BACK FILLING						
Empty Area						
Inside Barrel			0.43	1.80	1	0.78
Above Canal Portion			0.60	2.02	1	1.21
Above Barrel Portion			3.94	0.00	1	0.00
Above Protection Wall (Distribution Side)			4.89	4.95	1	24.21
						23.93
SHUTTERING						

PCC (M10) Canal Portion	26.49	0.075		1.99	1	
Toe Wall Foundation (Upper Portion)	8.51	0.150		1.28	1	
Toe Wall Foundation (Lower Portion)	9.26	0.150		1.39	1	
				4.65		

Centring						
Barrel Slab				0.70		

Cost Estimate					
Outlet OR5 at RD 2.82 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	88.84	m ³	110.83	9846.14
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	41.30	m ³	106.98	4418.15
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	2.38	m ³	3279.00	7804.02
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	2.10	m ³	4068.00	8540.32
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	22.35	m ³	4068.35	90927.62
6	Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per direction of E/I 6.02 RCD, Jharkhand, 2021	0.71	m ³	4461.00	3161.73

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.22	m ³	3600.00	776.17
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1235.58
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I- 7.3.19	4.79	m ²	414.88	1987.19
10	Providing centering including strutting. Propping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.80	m ²	541.32	972.59
11	Labour for laying, fitting and fixing 200mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all complete as per specification and direction of E / I. 7.6.1.2	1.75	m	281.91	493.34
12	200mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.75	m	323.68	566.44
13	Coarse Sand (5 Km lead)	24.00	m ³	232.70	5584.11
14	Stone chips+Metal (70 Km lead)	4.75	m ³	1224.77	5821.69
15	Cement (70 Km lead)	6.45	MT	964.43	6224.02
16	Bricks (30 Km lead)	9074	2000 Nos	1525.62	6921.74
17	NP2 RCC Pipes (250 Km)	1.75	RM	2159.91	3779.84
S.total (in Rs.) (A)					159060.69

Quantity for Outlet OR5 at 2.82 Km of LMC						
Outlet OR5 at RD 2.82 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.99	8.71	1	43.46
Barrel Portion			6.03	1.93	1	11.65
Protection Wall (Distribution Side)			4.99	6.76	1	33.73
						88.84
PCC at Subgrade (M10)						
Canal Portion		0.075		12.77	1	0.957
Wall behind lining		0.075		6.37	1	0.478
Barrel Portion		0.075		10.38	1	0.778
Protection Wall (Distribution Side)		0.075		2.27	1	0.170
						2.38
PCC (M15)						
Canal Portion		0.27		2.46	1	0.66
Beneath Pipe		0.27		1.23	1	0.33
For Covering Pipe	1.75			0.06	1	0.10
Barrel Portion		0.27		1.57	1	0.42
Toe Wall	4.29			0.14	1	0.58
						2.10
Brick Work						
Wall behind lining	3.34			2.98	1	9.94
Barrel Wall (E-E)	2.76			0.63	2	3.47
Crash Barrier	3.20			1.06	1	3.39
After Hume Pipe		0.567		4.90	2	5.55
						22.35
Hume Pipe	1.750			0.018	1	0.031
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.80	1	0.22
CC Road	3.15	0.075	3.00		1	0.71
						0.92
BACK FILLING						
Empty Area						
Inside Barrel			0.52	3.00	1	1.56
Above Canal Portion			0.70	2.02	1	1.41
Above Protection Wall (Distribution Side)			4.99	3.37	1	16.82
						41.30

SHUTTERING						
PCC (M10) Canal Portion	25.88	0.075		1.94	1	
Toe Wall Foundation (Upper Portion)	9.12	0.150		1.37	1	
Toe Wall Foundation (Lower Portion)	9.87	0.150		1.48	1	
				4.79		

Centring						
Barrel Slab				1.80		

Cost Estimate					
Outlet OL6 at RD 2.82 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	69.21	m ³	110.83	7670.54
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	18.35	m ³	106.98	1963.02
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.83	m ³	3279.00	6000.57
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.75	m ³	4068.00	7121.57
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.80	m ³	4068.35	56143.23
7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.11	m ³	3600.00	380.12
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.01	MT	57308.00	605.10

9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	4.70	m ²	414.88	1948.23
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.88	m ²	541.32	476.31
11	Labour for laying, fitting and fixing 150 mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
12	150 mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	212.00	254.40
13	Coarse Sand (5 Km lead)	14.96	m ³	232.70	3481.54
14	Stone chips+Metal (70 Km lead)	3.22	m ³	1224.77	3949.62
15	Cement (70 Km lead)	4.20	MT	964.43	4054.31
16	Bricks (30 Km lead)	5603	2000 Nos	1525.62	4274.02
17	NP2 RCC Pipes (250 Km)	1.20	RM	2159.91	2591.89
S.total (in Rs.) (A)					101252.78

Quantity for Outlet OL6 at 2.82 Km of LMC						
Outlet OR5 at RD 2.82 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			3.39	3.36	1	11.39
Barrel Portion			3.45	3.45	1	11.90
Protection Wall (Distribution Side)			6.36	7.22	1	45.92
						69.21
PCC at Subgrade (M10)						
Canal Portion		0.075		12.84	1	0.963
Wall behind lining		0.075		4.39	1	0.329
Barrel Portion		0.075		5.00	1	0.375
Protection Wall (Distribution Side)		0.075		2.24	1	0.168
						1.83
PCC (M15)						
Canal Portion		0.27		2.29	1	0.62
Beneath Pipe		0.27		0.78	1	0.21
For Covering Pipe	1.20			0.04	1	0.05
Barrel Portion		0.27		1.29	1	0.35
Toe Wall	3.84			0.14	1	0.52
						1.75
Brick Work						
Wall behind lining	3.29			1.53	1	5.03
Barrel Wall (D-D)	2.56			0.63	2	3.22
After Hume Pipe		0.567		4.90	2	5.55
						13.80
Hume Pipe	1.200			0.014	1	0.016
In Superstructure						
RCC M-20 Barrel Slab		0.12		0.88	1	0.11
						0.11
BACK FILLING						
Empty Area						
Inside Barrel			0.47	1.80	1	0.85
Above Canal Portion			0.65	0.87	1	0.57
Above Protection Wall (Distribution Side)			6.36	5.03	1	31.96
						18.35
SHUTTERING						
PCC (M10) Canal Portion	26.62	0.075		2.00	1	

Toe Wall Foundation (Upper Portion)	8.62	0.150		1.29	1	
Toe Wall Foundation (Lower Portion)	9.37	0.150		1.41	1	
				4.70		

Centring						
Barrel Slab				0.88		

Cost Estimate					
Outlet OR7 at RD 4.56 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	84.88	m ³	110.83	9407.25
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	40.97	m ³	106.98	4383.40
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	2.32	m ³	3279.00	7607.28
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.91	m ³	4068.00	7779.59
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	22.06	m ³	4068.35	89747.80
6	Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per direction of E/I 6.02 RCD, Jharkhand, 2021	0.70	m ³	4461.00	3111.55

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.20	m ³	3600.00	733.06
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1166.95
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	4.75	m ²	414.88	1970.20
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.70	m ²	541.32	918.57
11	Providing and supplying in standard lengths 125 mm dia HDPE pipe confirming to IS 4985-4984/14151/12786/13488 (S.No 112 item no M1028)	1.75	m	353.46	618.56
12	Labour charge for laying and fixing and jointing of 180 mm HDPE pipe of all pressure but welding including providing all labour, tools, tackles and jointing material including carriage of material from site gowdown to work site all complete job, leak proof, including testing as per specification and direction of E/I (8.83)	1.75	m	2752.30	4816.53
13	Coarse Sand (5 Km lead)	23.60	m ³	232.70	5491.88
14	Stone chips+Metal (70 Km lead)	4.52	m ³	1224.77	5535.89
15	Cement (70 Km lead)	6.31	MT	964.43	6081.37
16	Bricks (30 Km lead)	8956	2000 Nos	1525.62	6831.73
17	NP2 RCC Pipes (250 Km)	1.75	nos	2159.91	3779.84
S.total (in Rs.) (A)					159981.43

Quantity for Outlet OR7 at 4.56 Km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.92	8.75	1	43.01
Barrel Portion			5.96	1.93	1	11.50
Protection Wall (Distribution Side)			4.92	6.18	1	30.37
						84.88
PCC at Subgrade (M10)						
Canal Portion		0.075		12.21	1	0.916
Wall behind lining		0.075		6.23	1	0.467
Barrel Portion		0.075		10.20	1	0.765
Protection Wall (Distribution Side)		0.075		2.22	1	0.166
						2.32
PCC (M15)						
Canal Portion		0.27		2.20	1	0.59
Beneath Pipe		0.27		1.09	1	0.30
For Covering Pipe	1.75			0.04	1	0.07
Barrel Portion		0.27		1.38	1	0.37
Toe Wall	4.31			0.14	1	0.58
						1.91
Brick Work						
Wall behind lining	3.27			2.96	1	9.66
Barrel Wall (E-E)	2.76			0.63	2	3.47
Crash Barrier	3.13			1.08	1	3.38
After Hume Pipe		0.567		4.90	2	5.55
						22.06
HDPE Pipe	1.750			0.012	1	0.021
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.70	1	0.20
CC Road	3.10	0.075	3.00		1	0.70
						0.90
BACK FILLING						
Empty Area						
Inside Barrel			0.47	3.00	1	1.41
Above Canal Portion			0.63	2.08	1	1.30
Above Protection Wall (Distribution Side)			4.92	2.85	1	14.01
						40.97

SHUTTERING						
PCC (M10) Canal Portion	25.57	0.075		1.92	1	
Toe Wall Foundation (Upper Portion)	9.06	0.150		1.36	1	
Toe Wall Foundation (Lower Portion)	9.81	0.150		1.47	1	
				4.75		

Centring						
Barrel Slab				1.70		

Cost Estimate					
Outlet OL8 at RD 4.56 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	60.79	m ³	110.83	6737.36
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	22.62	m ³	106.98	2419.62
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.92	m ³	3279.00	6295.68
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.63	m ³	4068.00	6615.91
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.66	m ³	4068.35	55573.66
7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.09	m ³	3600.00	326.89
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.01	MT	57308.00	520.38

9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	4.73	m ²	414.88	1963.54
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.76	m ²	541.32	409.62
11	Labour for laying, fitting and fixing 100 mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
12	100 mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	200.00	240.00
13	Coarse Sand (5 Km lead)	14.81	m ³	232.70	3445.84
14	Stone chips+Metal (70 Km lead)	3.19	m ³	1224.77	3904.03
15	Cement (70 Km lead)	4.14	MT	964.43	3995.60
16	Bricks (30 Km lead)	5546	2000 Nos	1525.62	4230.54
17	NP2 RCC Pipes (250 Km)	1.20	nos	2159.91	2591.89
S.total (in Rs.) (A)					99608.85

Quantity for Outlet OL8 at 4.56 Km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.89	3.39	1	16.58
Barrel Portion			3.80	3.45	1	13.11
Protection Wall (Distribution Side)			4.89	6.36	1	31.10
						60.79
PCC at Subgrade (M10)						
Canal Portion		0.075		12.60	1	0.945
Wall behind lining		0.075		6.19	1	0.464
Barrel Portion		0.075		4.58	1	0.344
Protection Wall (Distribution Side)		0.075		2.20	1	0.165
						1.92
PCC (M15)						
Canal Portion		0.27		2.11	1	0.57
Beneath Pipe		0.27		0.72	1	0.19
For Covering Pipe	1.20			0.03	1	0.04
Barrel Portion		0.27		1.18	1	0.32
Toe Wall	3.73			0.14	1	0.51
						1.63
Brick Work						
Wall behind lining	3.24			1.51	1	4.89
Barrel Wall (D-D)	2.56			0.63	2	3.22
After Hume Pipe		0.567		4.90	2	5.55
						13.66
HDPE Pipe	1.200			0.01	1	0.012
In Superstructure						
RCC M-20 Barrel Slab		0.12		0.76	1	0.09
						0.09
BACK FILLING						
Empty Area						
Inside Barrel			0.43	1.80	1	0.78
Above Canal Portion			0.60	0.89	1	0.53
Above Protection Wall (Distribution Side)			4.89	4.00	1	19.56
						22.62
SHUTTERING						
PCC (M10) Canal Portion	27.78	0.075		2.08	1	

Toe Wall Foundation (Upper Portion)	8.46	0.150		1.27	1	
Toe Wall Foundation (Lower Portion)	9.21	0.150		1.38	1	
				4.73		

Centring						
Barrel Slab				0.76		

Cost Estimate					
Outlet OR9 at RD 5.32 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	71.07	m ³	110.83	7876.69
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	36.46	m ³	106.98	3900.95
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.52	m ³	3279.00	4984.08
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.97	m ³	4068.00	8022.26
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.23	m ³	4068.35	53824.27
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.25	m ³	3600.00	885.60
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1409.78

8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	5.15	m ²	414.88	2134.56
9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.82	m ²	541.32	443.88
10	Providing and supplying in standard lengths 180 mm dia HDPE pipe confirming to IS 4985-4984/14151/12786/13488 (S.No 112 item no M1028)	1.20	m	731.43	877.72
11	Labour charge for laying and fixing and jointing of 180 mm HDPE pipe of all pressure but welding including providing all labour, tools, tackles and jointing material including carriage of material from site gowdown to work site all complete job, leak proof, including testing as per specification and direction of E/I (8.83)	1.20	m	2752.30	3302.76
12	Coarse Sand (5 Km lead)	14.42	m ³	232.70	3356.05
13	Stone chips+Metal (70 Km lead)	3.25	m ³	1224.77	3984.59
14	Cement (70 Km lead)	4.14	MT	964.43	3989.01
15	Bricks (30 Km lead)	5371	2000 Nos	1525.62	4097.05
16	NP2 RCC Pipes (250 Km)	1.20	RM	2159.91	2591.89
S.total (in Rs.) (A)					105681.13

Quantity for Outlet OR9 at 5.32 Km of LMC						
Outlet OR9 at RD 5.32 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.97	8.00	1	39.76
Protection Wall (Distribution Side)			4.97	6.30	1	31.31
						71.07
PCC at Subgrade (M10)						
Canal Portion		0.075		10.70	1	0.802
Wall behind lining		0.075		4.42	1	0.332
Barrel Portion		0.075		2.85	1	0.214
Protection Wall (Distribution Side)		0.075		2.26	1	0.169
						1.52
PCC (M15)						
Canal Portion		0.27		2.39	1	0.65
Beneath Pipe		0.27		0.82	1	0.22
For Covering Pipe	1.20			0.05	1	0.06
Barrel Portion		0.27		0.70	1	0.19
Toe Wall	6.30			0.14	1	0.86
						1.97
Brick Work						
Wall behind lining	3.32			1.54	1	5.11
Barrel Wall (B-B)	1.71			0.63	2	2.16
After Hume Pipe		0.567		5.26	2	5.96
						13.23
Hume Pipe	1.200			0.016	1	0.019
In Superstructure						
RCC M-20 Barrel Slab		0.12		2.05	1	0.25
						0.25
BACK FILLING						
Empty Area						
Inside Barrel			0.38	1.80	1	0.68
Above Canal Portion			0.68	3.01	1	2.05
Above Protection Wall (Distribution Side)			4.97	3.00	1	14.91
						36.46
SHUTTERING						
PCC (M10) Canal Portion	22.65	0.075		1.70	1	
Toe Wall Foundation (Upper Portion)	11.11	0.150		1.67	1	

Toe Wall Foundation (Lower Portion)	11.86	0.150		1.78	1	
				5.15		

Centring						
Barrel Slab				0.82		

Cost Estimate					
Outlet OR10 at RD 5.3 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	74.50	m ³	110.83	8256.84
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	40.29	m ³	106.98	4309.81
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.50	m ³	3279.00	4918.50
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.90	m ³	4068.00	7749.52
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.18	m ³	4068.35	53620.85
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.23	m ³	3600.00	842.40
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1341.01

8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	5.11	m ²	414.88	2121.49
9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.77	m ²	541.32	416.82
10	Labour for laying, fitting and fixing 150mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
11	150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	212.00	254.40
12	Coarse Sand (5 Km lead)	14.33	m ³	232.70	3334.97
13	Stone chips+Metal (70 Km lead)	3.17	m ³	1224.77	3880.25
14	Cement (70 Km lead)	4.09	MT	964.43	3947.28
15	Bricks (30 Km lead)	5351	2000 Nos	1525.62	4081.80
16	NP2 RCC Pipes (250 Km)	1.20	RM	2159.91	2591.89
S.total (in Rs.) (A)					102006.11

Quantity for Outlet OR10 at 5.93 Km of LMC						
Outlet OR9 at RD 5.32 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.94	8.00	1	39.52
Protection Wall (Distribution Side)			4.94	7.08	1	34.98
						74.50
PCC at Subgrade (M10)						
Canal Portion		0.075		10.54	1	0.790
Wall behind lining		0.075		4.39	1	0.329
Barrel Portion		0.075		2.81	1	0.211
Protection Wall (Distribution Side)		0.075		2.24	1	0.168
						1.50
PCC (M15)						
Canal Portion		0.27		2.29	1	0.62
Beneath Pipe		0.27		0.78	1	0.21
For Covering Pipe	1.20			0.04	1	0.05
Barrel Portion		0.27		0.66	1	0.18
Toe Wall	6.24			0.14	1	0.85
						1.90
Brick Work						
Wall behind lining	3.29			1.54	1	5.07
Barrel Wall (B-B)	1.71			0.63	2	2.16
After Hume Pipe		0.567		5.26	2	5.96
						13.18
Hume Pipe	1.200			0.014	1	0.016
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.95	1	0.23
						0.23
BACK FILLING						
Empty Area						
Inside Barrel			0.35	1.80	1	0.62
Above Canal Portion			0.65	3.01	1	1.96
Above Protection Wall (Distribution Side)			4.94	3.00	1	14.82
						40.29
SHUTTERING						
PCC (M10) Canal Portion	22.59	0.075		1.69	1	
Toe Wall Foundation (Upper Portion)	11.02	0.150		1.65	1	

Toe Wall Foundation (Lower Portion)	11.77	0.150		1.77	1	
				5.11		

Centring						
Barrel Slab				0.77		

Cost Estimate					
Outlet OR11 at RD 6.27 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	82.00	m ³	110.83	9088.06
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	47.79	m ³	106.98	5112.16
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.50	m ³	3279.00	4918.50
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.90	m ³	4068.00	7749.52
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.18	m ³	4068.35	53620.85
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.23	m ³	3600.00	842.40
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1341.01

8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	5.11	m ²	414.88	2121.49
9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.77	m ²	541.32	416.82
10	Labour for laying, fitting and fixing 150mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
11	150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	212.00	254.40
12	Coarse Sand (5 Km lead)	14.33	m ³	232.70	3334.97
13	Stone chips+Metal (70 Km lead)	3.17	m ³	1224.77	3880.25
14	Cement (70 Km lead)	4.09	MT	964.43	3947.28
15	Bricks (30 Km lead)	5351	2000 Nos	1525.62	4081.80
16	NP2 RCC Pipes (250 Km)	1.20	RM	2159.91	2591.89
S.total (in Rs.) (A)					103639.68

Quantity for Outlet OR11 at 6.27 Km of LMC						
Outlet OR9 at RD 5.32 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.94	8.00	1	39.52
Barrel Portion			3.93	2.89	1	11.36
Protection Wall (Distribution Side)			4.94	6.30	1	31.12
						82.00
PCC at Subgrade (M10)						
Canal Portion		0.075		10.54	1	0.790
Wall behind lining		0.075		4.39	1	0.329
Barrel Portion		0.075		2.81	1	0.211
Protection Wall (Distribution Side)		0.075		2.24	1	0.168
						1.50
PCC (M15)						
Canal Portion		0.27		2.29	1	0.62
Beneath Pipe		0.27		0.78	1	0.21
For Covering Pipe	1.20			0.04	1	0.05
Barrel Portion		0.27		0.66	1	0.18
Toe Wall	6.24			0.14	1	0.85
						1.90
Brick Work						
Wall behind lining	3.29			1.54	1	5.07
Barrel Wall (B-B)	1.71			0.63	2	2.15
After Hume Pipe		0.567		5.26	2	5.96
						13.18
Hume Pipe	1.200			0.014	1	0.016
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.95	1	0.23
						0.23
BACK FILLING						
Empty Area						
Inside Barrel			0.35	1.80	1	0.62
Above Canal Portion			0.65	3.01	1	1.96
Above Protection Wall (Distribution Side)			4.94	3.00	1	14.82
						47.79
SHUTTERING						
PCC (M10) Canal Portion	22.59	0.075		1.69	1	

Toe Wall Foundation (Upper Portion)	11.02	0.150		1.65	1	
Toe Wall Foundation (Lower Portion)	11.77	0.150		1.77	1	
				5.11		

Centring						
Barrel Slab				0.77		

Cost Estimate					
Outlet OR11 at RD 7.36 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	63.74	m ³	110.83	7064.30
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	28.90	m ³	106.98	3091.39
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.55	m ³	3279.00	5082.45
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	2.07	m ³	4068.00	8434.89
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royalti and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.30	m ³	4068.35	54109.06
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.26	m ³	3600.00	928.80
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.03	MT	57308.00	1478.55

8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	5.19	m ²	414.88	2154.16
9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.89	m ²	541.32	481.77
10	Labour for laying, fitting and fixing 150mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
11	150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	212.00	254.40
12	Coarse Sand (5 Km lead)	14.55	m ³	232.70	3386.05
13	Stone chips+Metal (70 Km lead)	3.38	m ³	1224.77	4135.75
14	Cement (70 Km lead)	4.20	MT	964.43	4048.53
15	Bricks (30 Km lead)	5400	2000 Nos	1525.62	4119.17
16	NP2 RCC Pipes (250 Km)	1.20	RM	2159.91	2591.89
S.total (in Rs.) (A)					101699.46

Quantity for Outlet OR11 at 7.36 Km of LMC						
Outlet OR9 at RD 5.32 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			5.02	7.56	1	37.91
Protection Wall (Distribution Side)			5.02	5.15	1	25.83
						63.74
PCC at Subgrade (M10)						
Canal Portion		0.075		10.93	1	0.820
Wall behind lining		0.075		4.48	1	0.336
Barrel Portion		0.075		2.91	1	0.218
Protection Wall (Distribution Side)		0.075		2.28	1	0.171
						1.55
PCC (M15)						
Canal Portion		0.27		2.55	1	0.69
Beneath Pipe		0.27		0.87	1	0.23
For Covering Pipe	1.20			0.06	1	0.07
Barrel Portion		0.27		0.77	1	0.21
Toe Wall	6.39			0.14	1	0.87
						2.07
Brick Work						
Wall behind lining	3.37			1.54	1	5.18
Barrel Wall (B-B)	1.71			0.63	2	2.16
After Hume Pipe		0.567		5.26	2	5.96
						13.30
Hume Pipe	1.200			0.02	1	0.024
In Superstructure						
RCC M-20 Barrel Slab		0.12		2.15	1	0.26
						0.26
BACK FILLING						
Empty Area						
Inside Barrel			0.42	1.80	1	0.76
Above Canal Portion			0.73	2.56	1	1.86
Above Protection Wall (Distribution Side)			5.02	3.00	1	15.05
						28.90
SHUTTERING						
PCC (M10) Canal Portion	22.74	0.075		1.71	1	
Toe Wall Foundation (Upper Portion)	11.25	0.150		1.69	1	

Toe Wall Foundation (Lower Portion)	12.00	0.150		1.80	1	
				5.19		

Centring						
Barrel Slab				0.89		

Cost Estimate					
Outlet OR13 at RD 9.64 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	55.82	m ³	110.83	6186.53
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	31.54	m ³	106.98	3373.68
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.50	m ³	3279.00	4918.50
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.90	m ³	4068.00	7749.52
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	14.03	m ³	4068.35	57078.95
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.23	m ³	3600.00	842.40
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1341.01

8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	5.11	m ²	414.88	2121.49
9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.77	m ²	541.32	416.82
10	Labour for laying, fitting and fixing 150mm NP2 pipe with collors in line level and grade as well providing approved jointing materials and joints properly filled to make them water proof all completeas per specification and direction of E / I. 7.6.1.2	1.20	m	281.91	338.29
11	150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 (S.No.10.2)	1.20	m	212.00	254.40
12	Coarse Sand (5 Km lead)	15.15	m ³	232.70	3526.43
13	Stone chips+Metal (70 Km lead)	3.17	m ³	1224.77	3880.25
14	Cement (70 Km lead)	4.29	MT	964.43	4135.82
15	Bricks (30 Km lead)	5696	2000 Nos	1525.62	4344.97
16	NP2 RCC Pipes (250 Km)	1.20	RM	2159.91	2591.89
S.total (in Rs.) (A)					103100.95

Quantity for Outlet OR13 at 9.64 Km of LMC						
Outlet OR9 at RD 5.32 Km	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.94	7.22	1	35.67
Protection Wall (Distribution Side)			4.94	4.08	1	20.16
						55.82
PCC at Subgrade (M10)						
Canal Portion		0.075		10.54	1	0.790
Wall behind lining		0.075		4.39	1	0.329
Barrel Portion		0.075		2.81	1	0.211
Protection Wall (Distribution Side)		0.075		2.24	1	0.168
						1.50
PCC (M15)						
Canal Portion		0.27		2.29	1	0.62
Beneath Pipe		0.27		0.78	1	0.21
For Covering Pipe	1.20			0.04	1	0.05
Barrel Portion		0.27		0.66	1	0.18
Toe Wall	6.24			0.14	1	0.85
						1.90
Brick Work						
Wall behind lining	3.29			1.80	1	5.92
Barrel Wall (E-E)	1.71			0.63	2	2.15
After Hume Pipe		0.567		5.26	2	5.96
						14.03
Hume Pipe	1.200			0.014	1	0.016
In Superstructure						
RCC M-20 Barrel Slab		0.12		1.95	1	0.23
						0.23
BACK FILLING						
Empty Area						
Inside Barrel			0.35	3.01	1	1.04
Above Canal Portion			0.65	2.35	1	1.53
Above Protection Wall (Distribution Side)			4.94	0.82	1	4.05
						31.54
SHUTTERING						
PCC (M10) Canal Portion	22.59	0.075		1.69	1	
Toe Wall Foundation (Upper Portion)	11.02	0.150		1.65	1	

Toe Wall Foundation (Lower Portion)	11.77	0.150		1.77	1	
				5.11		

Centring						
Barrel Slab				0.77		

Cost Estimate					
Outlet OR14 at RD 10.140 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	52.25	m ³	110.83	5790.87
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	19.16	m ³	106.98	2049.64
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.81	m ³	3279.00	2655.99
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.57	m ³	4068.00	6398.95
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	8.82	m ³	4068.35	35882.85
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.24	m ³	3600.00	879.78
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.02	MT	57308.00	1400.51
8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	7.76	m ²	414.88	3221.07

9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.80	m ²	541.32	433.06
10	Coarse Sand (5 Km lead)	9.67	m ³	232.70	2249.18
11	Stone chips+Metal (70 Km lead)	2.27	m ³	1224.77	2784.85
12	Cement (70 Km lead)	2.83	MT	964.43	2732.11
13	Bricks (30 Km lead)	3581	2000 Nos	1525.62	2731.62
Total (in Rs.)					69210.46

Quantity for OR14 at RD 10.14 Km						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.45	3.90	1	17.36
Barrel Portion			3.03	1.59	1	4.82
Protection Wall (Distribution Side)			4.41	6.82	1	30.08
						52.25
PCC at Subgrade (M10)						
Canal Portion		0.075		2.19	1	0.164
Lining Support Wall		0.075		3.08	1	0.231
Barrel Portion		0.075		3.67	1	0.275
Protection Wall (Distribution Side)		0.075		1.89	1	0.142
						0.81
PCC (M15)						
Canal Portion		0.27		1.39	1	0.37
Canal Sides		0.06		4.85	1	0.29
Barrel Portion		0.27		0.74	1	0.20
Toe Wall	5.21			0.14	1	0.71
						1.57
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	2.55			0.31	2	1.58
Protection Wall	2.76			0.39	1	1.09
Deduction of wall from Barrel Mouth	0.36			0.21	1	-0.08
						8.82
In Superstructure						
RCC M-20 Barrel Slab		0.12		2.04	1	0.24
						0.24
BACK FILLING						
Empty Area						
Inside Barrel	2.99	1.00	0.81		1	2.42
Above Canal Portion			0.70	1.54	1	1.08
Above Barrel Portion			3.03	0.40	1	1.21
Above Protection Wall (Distribution Side)			4.41	3.84	1	16.93
						19.16
SHUTTERING						
Barrel Slab Side	6.92	0.120		0.83	1	
PCC (M10) Canal Portion	11.64	0.075		0.87	1	
PCC (M10) Barrel Portion	7.12	0.075		0.53	1	

PCC (M10) Protection Wall (Distribution Side)	5.13	0.075		0.39	1	
PCC (M15) Canal Portion	7.29	0.270		1.97	1	
PCC (M15) Protection Wall (Distribution Side)	6.84	0.270		1.85	1	
Toe Wall Foundation (Disty Side)	6.52	0.150		0.98	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				7.76		

Centring						
Barrel Slab				0.80		

Cost Estimate					
Outlet OL15 at 10.140 Km of LMC					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	73.15	m ³	110.83	8107.21
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	33.45	m ³	106.98	3578.30
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.99	m ³	3279.00	3246.21
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.69	m ³	4068.00	6859.50
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royalyi and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.63	m ³	4068.35	55451.61
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.62	m ³	3600.00	2238.84

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.40	m ³	3600.00	1425.60
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.04	MT	57308.00	2269.40
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	8.47	m ²	414.88	3512.47
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.34	m ²	541.32	722.66
11	Coarse Sand (5 Km lead)	14.79	m ³	232.70	3442.50
12	Stone chips+Metal (70 Km lead)	3.23	m ³	1224.77	3950.57
13	Cement (70 Km lead)	4.08	MT	964.43	3933.49
14	Bricks (30 Km lead)	5534	2000 Nos	1525.62	4221.39
S.total (in Rs.) (A)					102959.76

Quantity of Outlet OL15 at 10.14 km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.45	4.04	1	17.98
Barrel Portion			3.03	6.21	1	18.84
Protection Wall (Distribution Side)			4.41	8.23	1	36.33
						73.15
PCC at Subgrade (M10)						
Canal Portion		0.075		2.20	1	0.165
Lining Support Wall		0.075		3.08	1	0.231
Barrel Portion		0.075		6.07	1	0.455
Protection Wall (Distribution Side)		0.075		1.89	1	0.142
						0.99
PCC (M15)						
Canal Portion		0.27		1.39	1	0.38
Canal Sides		0.06		4.08	1	0.24
Barrel Portion		0.27		1.32	1	0.36
Toe Wall	5.22			0.14	1	0.71
						1.69
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	4.10			0.30	2	2.46
Crash Barrier	2.76			0.89	2	4.95
						13.63
In Superstructure						
RCC M-20 Barrel Slab		0.12		3.30	1	0.40
CC Road	2.76	0.075	3.00		1	0.62
						1.02
BACK FILLING						
Empty Area						
Inside Barrel	4.55	1.00	0.81		1	3.70
Above Canal Portion			0.70	1.37	1	0.96
Above Barrel Portion			3.03	2.17	1	6.58
Above Protection Wall (Distribution Side)			4.41	5.61	1	24.76
						33.45
SHUTTERING						
Barrel Slab	10.02	0.120		1.20	1	
PCC (M10) Canal Portion	12.89	0.075		0.97	1	

PCC (M10) Barrel Portion	7.13	0.075		0.53	1	
PCC (M10) Protection Wall (Distribution Side)	8.25	0.075		0.62	1	
PCC (M15) Canal Portion	7.29	0.270		1.97	1	
PCC (M15) Protection Wall (Distribution Side)	6.84	0.270		1.85	1	
Toe Wall Foundation (Disty Side)	6.53	0.150		0.98	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				8.47		

Centring						
Barrel Slab				1.34		

Cost Estimate					
Outlet OL17 at RD 11.43 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	44.04	m ³	110.83	4880.95
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	18.86	m ³	106.98	2017.93
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.81	m ³	3279.00	2655.99
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.63	m ³	4068.00	6621.63
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	8.53	m ³	4068.35	34703.03
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.26	m ³	3600.00	921.99
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.03	MT	57308.00	1467.71
8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	7.87	m ²	414.88	3264.44

9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.80	m ²	541.32	433.06
10	Coarse Sand (5 Km lead)	9.41	m ³	232.70	2190.35
11	Stone chips+Metal (70 Km lead)	2.33	m ³	1224.77	2854.04
12	Cement (70 Km lead)	2.79	MT	964.43	2690.14
13	Bricks (30 Km lead)	3463	2000 Nos	1525.62	2641.61
Total (in Rs.)					67342.88

Quantity for OL17 at RD 11.43 Km						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.49	3.75	1	16.82
Barrel Portion			2.99	1.45	1	4.33
Protection Wall (Distribution Side)			4.45	5.15	1	22.89
						44.04
PCC at Subgrade (M10)						
Canal Portion		0.075		2.26	1	0.169
Lining Support Wall		0.075		3.12	1	0.234
Barrel Portion		0.075		3.56	1	0.267
Protection Wall (Distribution Side)		0.075		1.91	1	0.144
						0.81
PCC (M15)						
Canal Portion		0.27		1.44	1	0.39
Canal Sides		0.06		4.85	1	0.29
Barrel Portion		0.27		0.86	1	0.23
Toe Wall	5.28			0.14	1	0.72
						1.63
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	2.59			0.27	2	1.40
Protection Wall	2.80			0.35	1	0.98
Deduction of wall from Barrel Mouth	0.40			0.18	1	-0.07
						8.53
In Superstructure						
RCC M-20 Barrel Slab		0.12		2.13	1	0.26
						0.26
BACK FILLING						
Empty Area						
Inside Barrel	2.99	1.00	0.85		1	2.53
Above Canal Portion			0.70	1.37	1	0.96
Above Barrel Portion			2.99	0.08	1	0.24
Above Protection Wall (Distribution Side)			4.45	2.30	1	10.22
						18.86
SHUTTERING						
Barrel Slab Side	7.20	0.120		0.86	1	
PCC (M10) Canal Portion	11.71	0.075		0.88	1	
PCC (M10) Barrel Portion	7.19	0.075		0.54	1	

PCC (M10) Protection Wall (Distribution Side)	5.13	0.075		0.39	1	
PCC (M15) Canal Portion	7.36	0.270		1.99	1	
PCC (M15) Protection Wall (Distribution Side)	6.96	0.270		1.88	1	
Toe Wall Foundation (Disty Side)	6.59	0.150		0.99	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				7.87		

Centring						
Barrel Slab				0.80		

Cost Estimate					
Outlet OR 16 at 11.43 Km of LMC					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	46.67	m ³	110.83	5172.44
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	13.72	m ³	106.98	1467.64
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.97	m ³	3279.00	3180.63
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.69	m ³	4068.00	6859.50
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	13.66	m ³	4068.35	55573.66
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.62	m ³	3600.00	2238.84

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.40	m ³	3600.00	1425.60
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.04	MT	57308.00	2269.40
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	8.49	m ²	414.88	3521.44
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.34	m ²	541.32	722.66
11	Coarse Sand (5 Km lead)	14.81	m ³	232.70	3447.16
12	Stone chips+Metal (70 Km lead)	3.21	m ³	1224.77	3928.53
13	Cement (70 Km lead)	4.08	MT	964.43	3936.00
14	Bricks (30 Km lead)	5546	2000 Nos	1525.62	4230.54
S.total (in Rs.) (A)					97974.03

Quantity of Outlet OR16 at 11.43 km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.45	3.75	1	16.70
Barrel Portion			2.95	4.08	1	12.04
Protection Wall (Distribution Side)			4.41	4.06	1	17.92
						46.67
PCC at Subgrade (M10)						
Canal Portion		0.075		2.20	1	0.165
Lining Support Wall		0.075		3.08	1	0.231
Barrel Portion		0.075		5.75	1	0.431
Protection Wall (Distribution Side)		0.075		1.89	1	0.142
						0.97
PCC (M15)						
Canal Portion		0.27		1.39	1	0.38
Canal Sides		0.06		4.08	1	0.24
Barrel Portion		0.27		1.32	1	0.36
Toe Wall	5.22			0.14	1	0.71
						1.69
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	4.14			0.30	2	2.49
Crash Barrier	2.76			0.89	2	4.95
						13.66
In Superstructure						
RCC M-20 Barrel Slab		0.12		3.30	1	0.40
CC Road	2.76	0.075	3.00		1	0.62
						1.02
BACK FILLING						
Empty Area						
Inside Barrel	4.55	1.00	0.81		1	3.70
Above Canal Portion			0.70	1.16	1	0.81
Above Barrel Portion			2.95	0.00	1	0.00
Above Protection Wall (Distribution Side)			4.41	5.61	1	24.76
						13.72
SHUTTERING						
Barrel Slab	10.02	0.120		1.20	1	
PCC (M10) Canal Portion	12.89	0.075		0.97	1	

PCC (M10) Barrel Portion	7.13	0.075		0.53	1	
PCC (M10) Protection Wall (Distribution Side)	8.25	0.075		0.62	1	
PCC (M15) Canal Portion	7.29	0.270		1.97	1	
PCC (M15) Protection Wall (Distribution Side)	6.92	0.270		1.87	1	
Toe Wall Foundation (Disty Side)	6.53	0.150		0.98	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				8.49		

Centring						
Barrel Slab				1.34		

Cost Estimate					
Outlet OL19 at RD 11.73 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	36.75	m ³	110.83	4073.00
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	18.32	m ³	106.98	1959.40
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.81	m ³	3279.00	2655.99
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.63	m ³	4068.00	6612.66
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	8.34	m ³	4068.35	33930.04
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.27	m ³	3600.00	982.56
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.03	MT	57308.00	1564.12
8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	7.93	m ²	414.88	3290.12

9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	0.92	m ²	541.32	498.01
10	Coarse Sand (5 Km lead)	9.23	m ³	232.70	2148.98
11	Stone chips+Metal (70 Km lead)	2.34	m ³	1224.77	2869.26
12	Cement (70 Km lead)	2.75	MT	964.43	2653.60
13	Bricks (30 Km lead)	3386	2000 Nos	1525.62	2582.87
Total (in Rs.)					65820.62

Quantity for OL19 at RD 11.73 Km						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.47	3.75	1	16.76
Barrel Portion			2.87	1.55	1	4.45
Protection Wall (Distribution Side)			4.43	3.51	1	15.55
						36.75
PCC at Subgrade (M10)						
Canal Portion		0.075		2.22	1	0.167
Lining Support Wall		0.075		3.10	1	0.232
Barrel Portion		0.075		3.59	1	0.269
Protection Wall (Distribution Side)		0.075		1.90	1	0.143
						0.81
PCC (M15)						
Canal Portion		0.27		1.41	1	0.38
Canal Sides		0.06		4.85	1	0.29
Barrel Portion		0.27		0.89	1	0.24
Toe Wall	5.25			0.14	1	0.71
						1.63
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	2.86			0.23	2	1.31
Protection Wall	2.78			0.31	1	0.85
Deduction of wall from Barrel Mouth	0.38			0.14	1	-0.05
						8.34
In Superstructure						
RCC M-20 Barrel Slab		0.12		2.27	1	0.27
						0.27
BACK FILLING						
Empty Area						
Inside Barrel	3.22	1.00	0.83		1	2.67
Above Canal Portion			0.70	1.37	1	0.96
Above Protection Wall (Distribution Side)			4.43	0.85	1	3.76
						18.32
SHUTTERING						
Barrel Slab Side	7.40	0.120		0.89	1	
PCC (M10) Canal Portion	11.68	0.075		0.88	1	
PCC (M10) Barrel Portion	7.16	0.075		0.54	1	
PCC (M10) Protection Wall (Distribution Side)	5.58	0.075		0.42	1	

PCC (M15) Canal Portion	7.33	0.270		1.98	1	
PCC (M15) Protection Wall (Distribution Side)	7.04	0.270		1.90	1	
Toe Wall Foundation (Disty Side)	6.56	0.150		0.98	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				7.93		

Centring						
Barrel Slab				0.92		

Cost Estimate					
Outlet OR18 at 11.73 Km of LMC					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	44.50	m ³	110.83	4931.94
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	11.63	m ³	106.98	1243.66
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.93	m ³	3279.00	3049.47
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.65	m ³	4068.00	6711.59
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royalyi and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	15.62	m ³	4068.35	63547.63
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.62	m ³	3600.00	2238.84

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.40	m ³	3600.00	1425.60
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.04	MT	57308.00	2269.40
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	8.49	m ²	414.88	3521.82
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.34	m ²	541.32	722.66
11	Coarse Sand (5 Km lead)	16.68	m ³	232.70	3880.92
12	Stone chips+Metal (70 Km lead)	3.14	m ³	1224.77	3846.58
13	Cement (70 Km lead)	4.51	MT	964.43	4350.55
14	Bricks (30 Km lead)	6342	2000 Nos	1525.62	4837.74
S.total (in Rs.) (A)					106578.40

Quantity of Outlet OR18 at 11.73 km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.41	3.75	1	16.54
Barrel Portion			2.85	4.05	1	11.56
Protection Wall (Distribution Side)			4.41	3.71	1	16.40
						44.50
PCC at Subgrade (M10)						
Canal Portion		0.075		2.10	1	0.158
Lining Support Wall		0.075		3.04	1	0.228
Barrel Portion		0.075		5.36	1	0.402
Protection Wall (Distribution Side)		0.075		1.89	1	0.142
						0.93
PCC (M15)						
Canal Portion		0.27		1.32	1	0.36
Canal Sides		0.06		3.98	1	0.24
Barrel Portion		0.27		1.31	1	0.35
Toe Wall	5.18			0.14	1	0.70
						1.65
Brick Work						
Lining Support Wall	3.55			0.87	2	6.17
Barrel Wall	4.19			0.44	2	3.69
Crash Barrier	2.76			1.04	2	5.75
						15.62
In Superstructure						
RCC M-20 Barrel Slab		0.12		3.30	1	0.40
CC Road	2.76	0.075	3.00		1	0.62
						1.02
BACK FILLING						
Empty Area						
Inside Barrel	4.55	1.00	0.81		1	3.70
Above Canal Portion			0.70	1.16	1	0.81
Above Protection Wall (Distribution Side)			4.41	5.61	1	24.76
						11.63
SHUTTERING						
Barrel Slab	10.02	0.120		1.20	1	
PCC (M10) Canal Portion	12.81	0.075		0.96	1	
PCC (M10) Barrel Portion	7.13	0.075		0.53	1	

PCC (M10) Protection Wall (Distribution Side)	8.25	0.075		0.62	1	
PCC (M15) Canal Portion	7.23	0.270		1.95	1	
PCC (M15) Protection Wall (Distribution Side)	7.02	0.270		1.90	1	
Toe Wall Foundation (Disty Side)	6.53	0.150		0.98	1	
Toe Wall Foundation (Disty Side)	2.29	0.150		0.34	1	
				8.49		

Centring						
Barrel Slab				1.34		

Cost Estimate					
Outlet OR20 at 11.89 Km of LMC					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	43.80	m ³	110.83	4854.35
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	28.67	m ³	106.98	3066.64
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	1.06	m ³	3279.00	3475.74
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	2.15	m ³	4068.00	8756.78
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royalyi and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	16.08	m ³	4068.35	65419.07
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.67	m ³	3600.00	2429.19

7	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.52	m ³	3600.00	1867.10
8	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.05	MT	57308.00	2972.22
9	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	8.86	m ²	414.88	3676.83
10	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.34	m ²	541.32	722.66
11	Coarse Sand (5 Km lead)	17.47	m ³	232.70	4064.81
12	Stone chips+Metal (70 Km lead)	3.84	m ³	1224.77	4699.75
13	Cement (70 Km lead)	4.86	MT	964.43	4690.77
14	Bricks (30 Km lead)	6528	2000 Nos	1525.62	4979.62
S.total (in Rs.) (A)					115675.54

Quantity of Outlet OR20 at 11.89 km of LMC						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.69	3.75	1	17.58
Barrel Portion			3.03	4.05	1	12.27
Protection Wall (Distribution Side)			4.65	3.00	1	13.95
						43.80
PCC at Subgrade (M10)						
Canal Portion		0.075		2.65	1	0.199
Lining Support Wall		0.075		3.33	1	0.250
Barrel Portion		0.075		6.05	1	0.454
Protection Wall (Distribution Side)		0.075		2.05	1	0.154
						1.06
PCC (M15)						
Canal Portion		0.27		1.74	1	0.47
Canal Sides		0.06		4.08	1	0.24
Barrel Portion		0.27		2.47	1	0.67
Toe Wall	5.69			0.14	1	0.77
						2.15
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	4.22			0.39	2	3.33
Crash Barrier	3.00			1.09	2	6.53
						16.08
In Superstructure						
RCC M-20 Barrel Slab		0.12		4.32	1	0.52
CC Road	3.00	0.075	3.00		1	0.67
						1.19
BACK FILLING						
Empty Area						
Inside Barrel	4.55	1.00	1.05		1	4.77
Above Canal Portion			0.70	1.16	1	0.81
Above Protection Wall (Distribution Side)			4.65	1.11	1	5.15
						28.67
SHUTTERING						
Barrel Slab	10.02	0.120		1.20	1	
PCC (M10) Canal Portion	13.36	0.075		1.00	1	
PCC (M10) Barrel Portion	7.60	0.075		0.57	1	

PCC (M10) Protection Wall (Distribution Side)	8.25	0.075		0.62	1	
PCC (M15) Canal Portion	7.76	0.270		2.09	1	
PCC (M15) Protection Wall (Distribution Side)	7.32	0.270		1.98	1	
Toe Wall Foundation (Disty Side)	7.00	0.150		1.05	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				8.86		

Centring						
Barrel Slab				1.34		

Cost Estimate					
Outlet OL21 at RD 11.89 Km					
S.No.	Description	Quantity	Unit	WRD, GoJ SOR, 2021	Amount (INR)
1	Earthwork in Excavation of canals having discharge between 8.5 cumecs (300 cusecs) and 0.14 cumecs (5 cusecs) in ordinary soil (vide classification of soil item -A) including clod breaking, having earth in 225 mm layer & rough dressing of soil with initial lead of 10 m and lift of 1.5 m.all complete as per approved design, specification and direction of E/I. (WRD Part B 7.1.8)	36.40	m ³	110.83	4034.21
2	Earthwork in filling foundation trenches and back filling of structures in layer not exceeding 150 mm thick well watered rammed and fully compacted and finely dressed with suitable earth obtained from excavation of foundation trenches and placed in a suitable profile within a lead of 30m and lift of 1.5 m complete job, as per specification and direction of E/I (WRD Part B Corrigendum 7.1.31)	18.06	m ³	106.98	1931.84
3	Providing & laying P.C.C. or R.C.C. M-100 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (Part A Corrigendum 7.1.12.4)	0.84	m ³	3279.00	2754.36
4	Providing & laying P.C.C. or R.C.C. M-150 with nominal mix of various components of canal or embankment structures with approved quality of 20 mm graded coarse aggregate, complete job as per specification & direction of E/I. (WRD Part A Corrigendum 7.3.1.1)	1.75	m ³	4068.00	7138.91
5	Brick work in designation 75A Brick with cement motar (1: 6) in foundation with approved quality coarse sand of requisite F.M. washed and screened with raking out joints to 12 mm depth, curring, scaffolding and its removal wherever required including royaliy and all taxes etc. complete job as per specification and direction of E / I. 7.4.4	8.13	m ³	4068.35	33075.69
6	Providing and laying R.C.C M-200 with nominal mix of (1:1.5:3) in foundation of various components of canal or embankment structures with approved quality of graded coarse aggregate of required grade (as per design) and approved quality sand of requisite F.M washed and screened including necessary tools and plants, vibrating, curing., royalty and all taxes etc. excluding cost of form work as well reinforcement, its cutting, bending, binding and placing complete job as per specifications and direction of E/I. 7.3.5	0.31	m ³	3600.00	1108.20
7	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications as per direction of E/I. (WRD Part A Corrigendum -8.3 -13.6)	0.03	MT	57308.00	1764.13
8	Providing shuttering including strutting propping etc. and its removal after use in foundation as per specification and direction of E/I-7.3.19	8.10	m ²	414.88	3359.73

9	Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. 7.3.20	1.18	m ²	541.32	638.76
10	Coarse Sand (5 Km lead)	9.11	m ³	232.70	2120.87
11	Stone chips+Metal (70 Km lead)	2.51	m ³	1224.77	3073.34
12	Cement (70 Km lead)	2.77	MT	964.43	2668.79
13	Bricks (30 Km lead)	3301	2000 Nos	1525.62	2518.04
Total (in Rs.)					66186.87

Quantity for OL21 at RD 11.89 Km						
Description	Length (m)	Height/ Thickness (m)	Width (m)	Area	Nos	Volume
EXCAVATION						
Canal Portion			4.54	3.75	1	17.04
Barrel Portion			2.88	1.67	1	4.81
Protection Wall (Distribution Side)			4.50	3.23	1	14.54
						36.40
PCC at Subgrade (M10)						
Canal Portion		0.075		2.37	1	0.178
Lining Support Wall		0.075		3.18	1	0.238
Barrel Portion		0.075		3.73	1	0.280
Protection Wall (Distribution Side)		0.075		1.95	1	0.146
						0.84
PCC (M15)						
Canal Portion		0.27		1.52	1	0.41
Canal Sides		0.06		4.85	1	0.29
Barrel Portion		0.27		1.19	1	0.32
Toe Wall	5.40			0.14	1	0.73
						1.75
Brick Work						
Lining Support Wall	3.58			0.87	2	6.23
Barrel Wall	2.96			0.20	2	1.19
Protection Wall	2.85			0.27	1	0.78
Deduction of wall from Barrel Mouth	0.45			0.12	1	-0.05
						8.13
In Superstructure						
RCC M-20 Barrel Slab		0.12		2.57	1	0.31
						0.31
BACK FILLING						
Empty Area						
Inside Barrel	3.29	1.00	0.90		1	2.97
Above Canal Portion			0.70	1.37	1	0.96
Above Protection Wall (Distribution Side)			4.50	0.75	1	3.38
						18.06
SHUTTERING						
Barrel Slab Side	7.70	0.120		0.92	1	
PCC (M10) Canal Portion	11.83	0.075		0.89	1	
PCC (M10) Barrel Portion	7.31	0.075		0.55	1	
PCC (M10) Protection Wall (Distribution Side)	5.73	0.075		0.43	1	

PCC (M15) Canal Portion	7.48	0.270		2.02	1	
PCC (M15) Protection Wall (Distribution Side)	7.17	0.270		1.94	1	
Toe Wall Foundation (Disty Side)	6.71	0.150		1.01	1	
Toe Wall Foundation (Disty Side)	2.32	0.150		0.35	1	
				8.10		

Centring						
Barrel Slab				1.18		