

# **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**



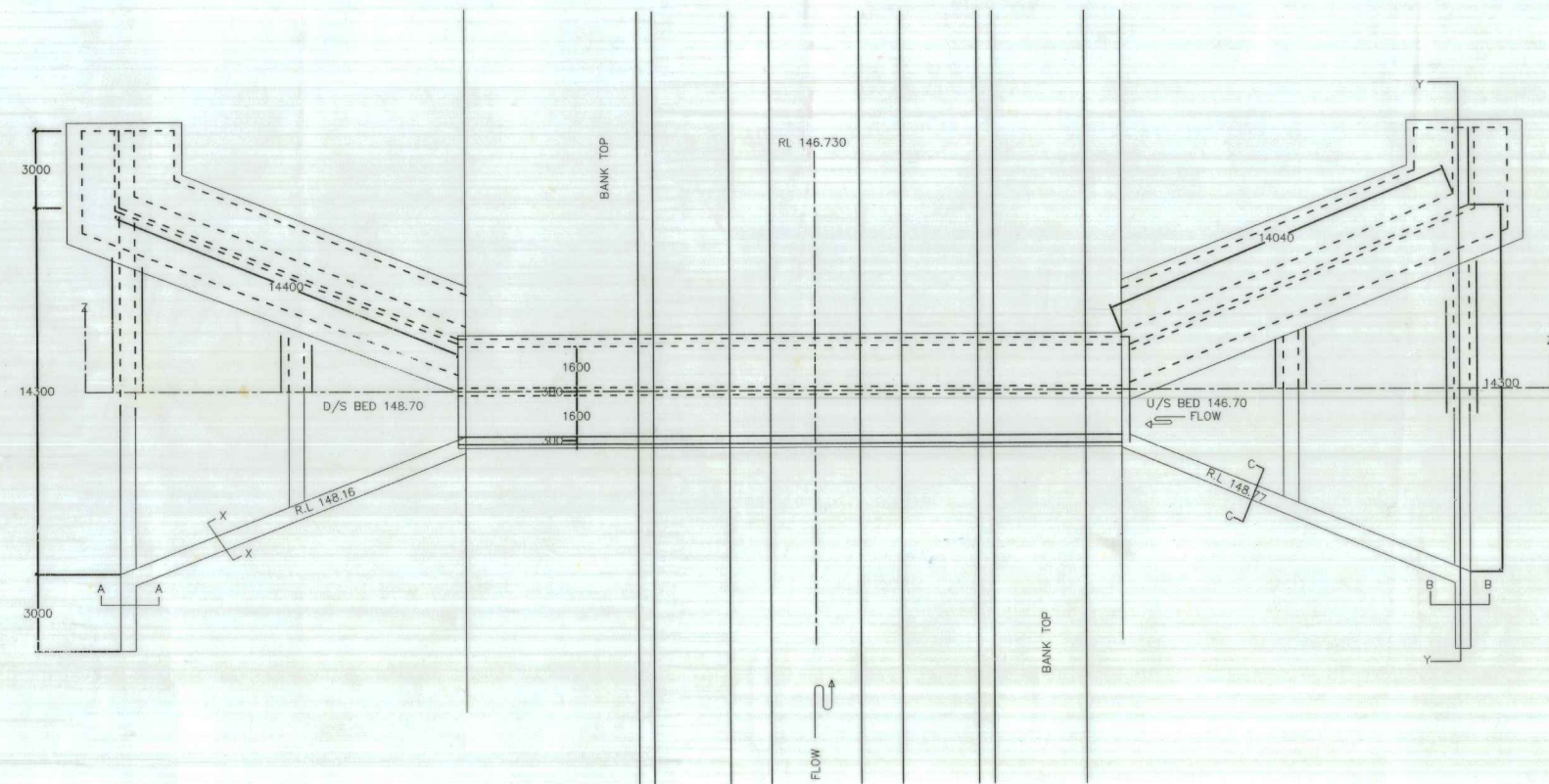
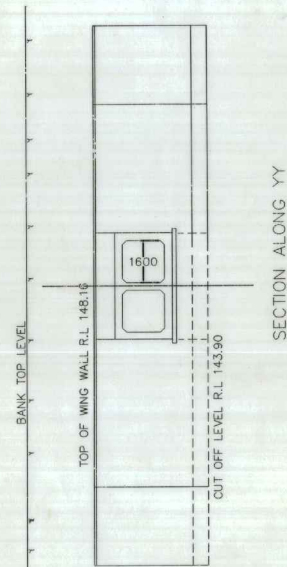
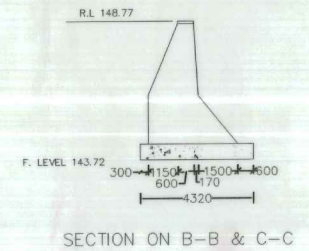
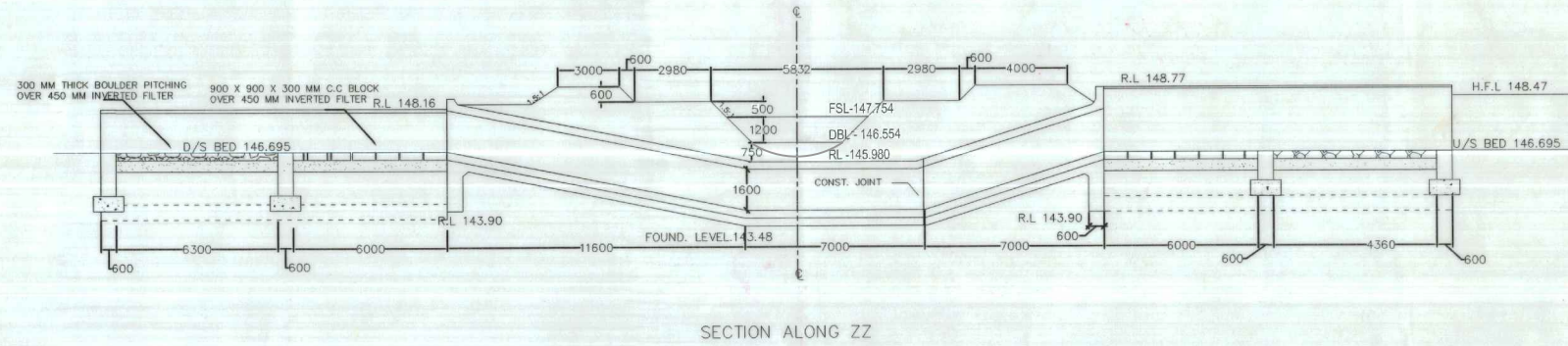
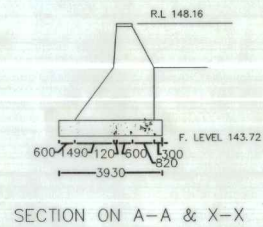
**(भारत सरकार का उपक्रम-जल शक्ति मंत्रालय)**

**(A Government of India Undertaking-Ministry of Jal Shakti)**

# Tender Drawings of Canal







SCALE 1 : 150  
HALF FOUNDATION HALF TOP PLAN

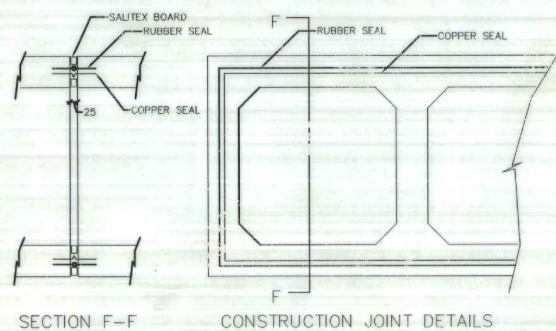
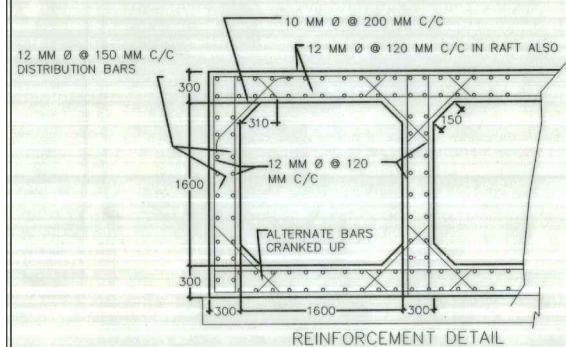
## TENDER DRAWING

### DESIGN DATA

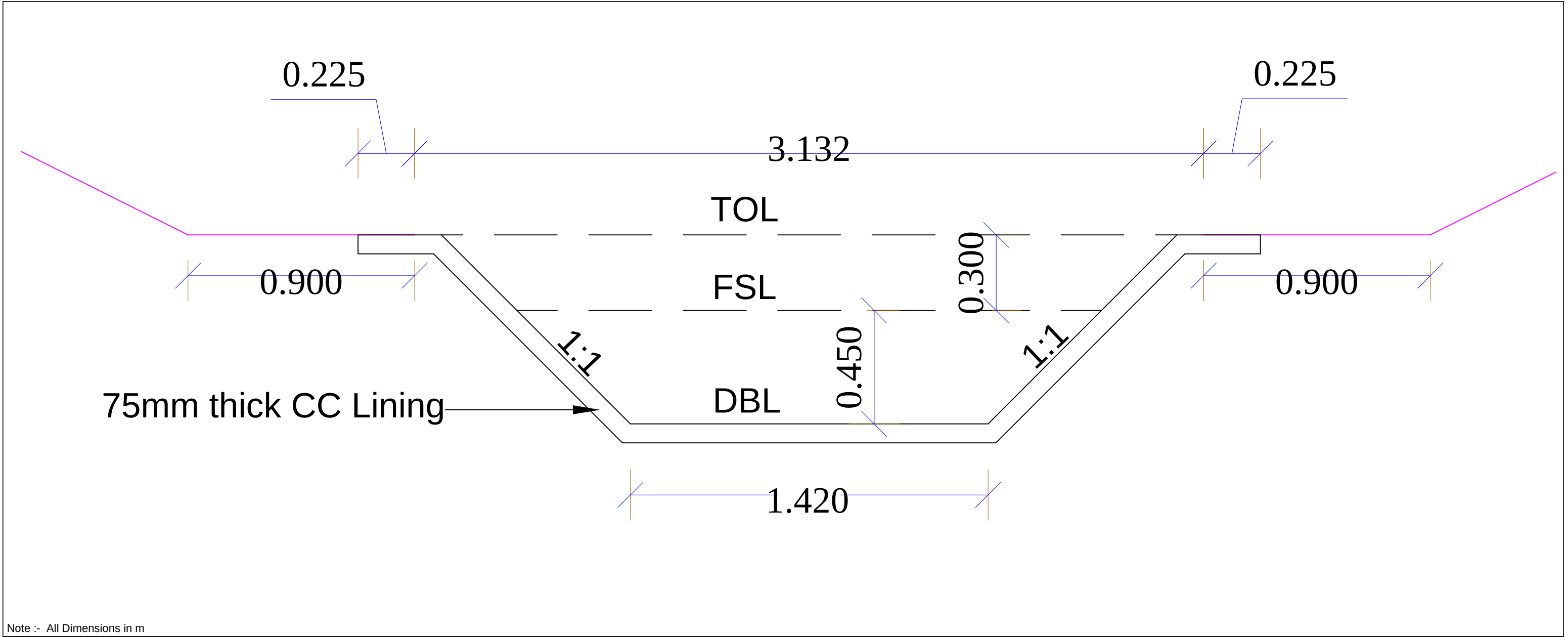
| PARTICULAR                   | CANAL     | DRAIN    |
|------------------------------|-----------|----------|
| DISCHARGE                    | 1.64 CUM  | 13.0CUM  |
| F.S.D                        | 1.20M     | 1.175M   |
| S.S.L / H.F.L                | 147.754 M | 147.87 M |
| BED LEVEL         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

### NOTE:-

1. 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.
2. ANY DISCREPANCY FOUND DURING CONSTRUCTION MUST BE BROUGHT TO THE NOTICE OF THE COMPETENT OFFICE FOR NECESSARY CHANGES IF ANY.
3. 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.
4. WEEP HOLES @1200 MM C/C STAGGERED, SHOULD BE PROVIDED IN THE WING WALL.
5. MINIMUM COVER FOR REINFORCEMENT 50 MM TO BE ADOPTED.
6. COPPER SEAL AND RUBBER SEAL TO BE PROVIDED AT EXPANSION JOINT IN BARREL AND JOINT TO BE FILLED WITH BITUMINOUS FILLER MATERIAL.
7. RUBBER SEAL TO BE PROVIDED AT CONSTRUCTION JOINT IN WING.
8. 300 MM MUD MATTING OF M10 CONCRETE BELOW FOOTING WILL BE PROVIDED.
9. ANY MISSING DATA MAY SUITABLY BE ASSUMED.



|                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Implementing Agency :-<br><b>WAPCOS LTD.</b><br><br><b>वाष्कोस लिमिटेड</b><br><b>WAPCOS LIMITED</b><br><small>(प्राकृतिक संसाधनों का संरक्षण - जल संवर्धन, नदी विकास और गंगा संरक्षण योजना)</small><br><small>(An Extension of Public Undertaking - Ministry of Water Resources, River Development &amp; Ganga Rejuvenation)</small> | Project Title :-<br><b>NORTH KOEL RESERVOIR PROJECT, JHARKHAND</b> |
| Drawing Title :-<br><b>DRAWING OF CANAL SYPHON AT RD- 0.30 km OF NORTH KOEL LEFT MAIN CANAL</b>                                                                                                                                                                                                                                                                                                                           | Drawing No :-<br><b>WAP/INFRA/NORTH KOEL/LMC-03a</b>               |
| Drawn By:-                                                                                                                                                                                                                                                                                                                                                                                                                | Checked By :-                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                           | Approved By :-                                                     |



Note :- All Dimensions in m

|               |                                                                                                                                                                                                                                                        |                  |                                                      |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------|
| Prepared By:- | <br><b>वाष्कोस लिमिटेड</b><br><b>WAPCOS LIMITED</b><br>(भारत सरकार का उपक्रम)<br>जल शक्ति मंत्रालय<br>(A Government of India Undertaking)<br>Ministry of Jal Shakti | 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

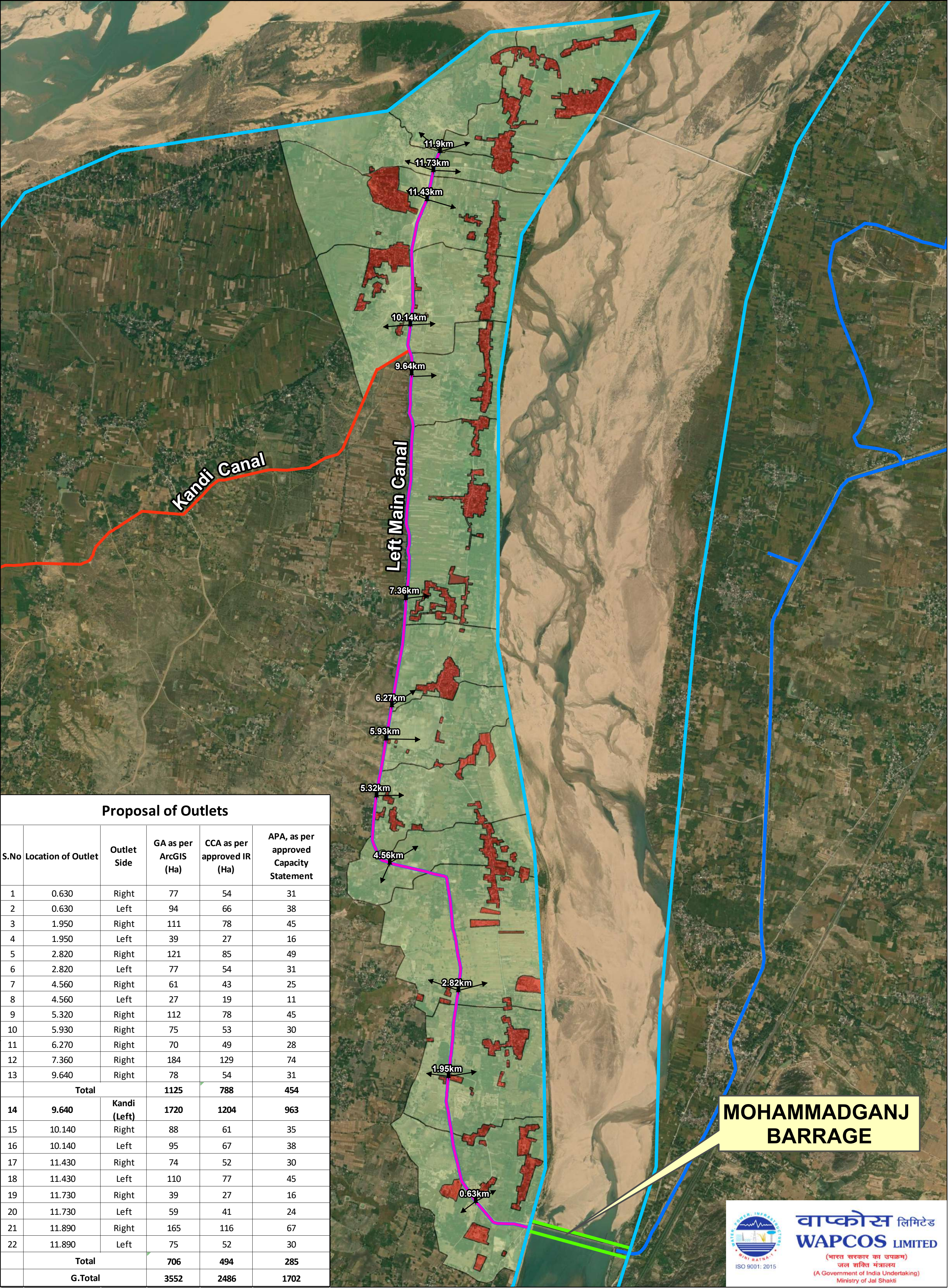


**WAPCOS LIMITED**

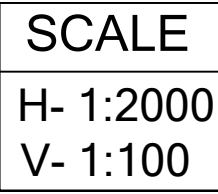
**(GOVT. OF INDIA UNDERTAKING)**  
**76- C SECTOR-18 INDUSTRIAL AREA,**  
**GURUGRAM-122015 (HARYANA)**



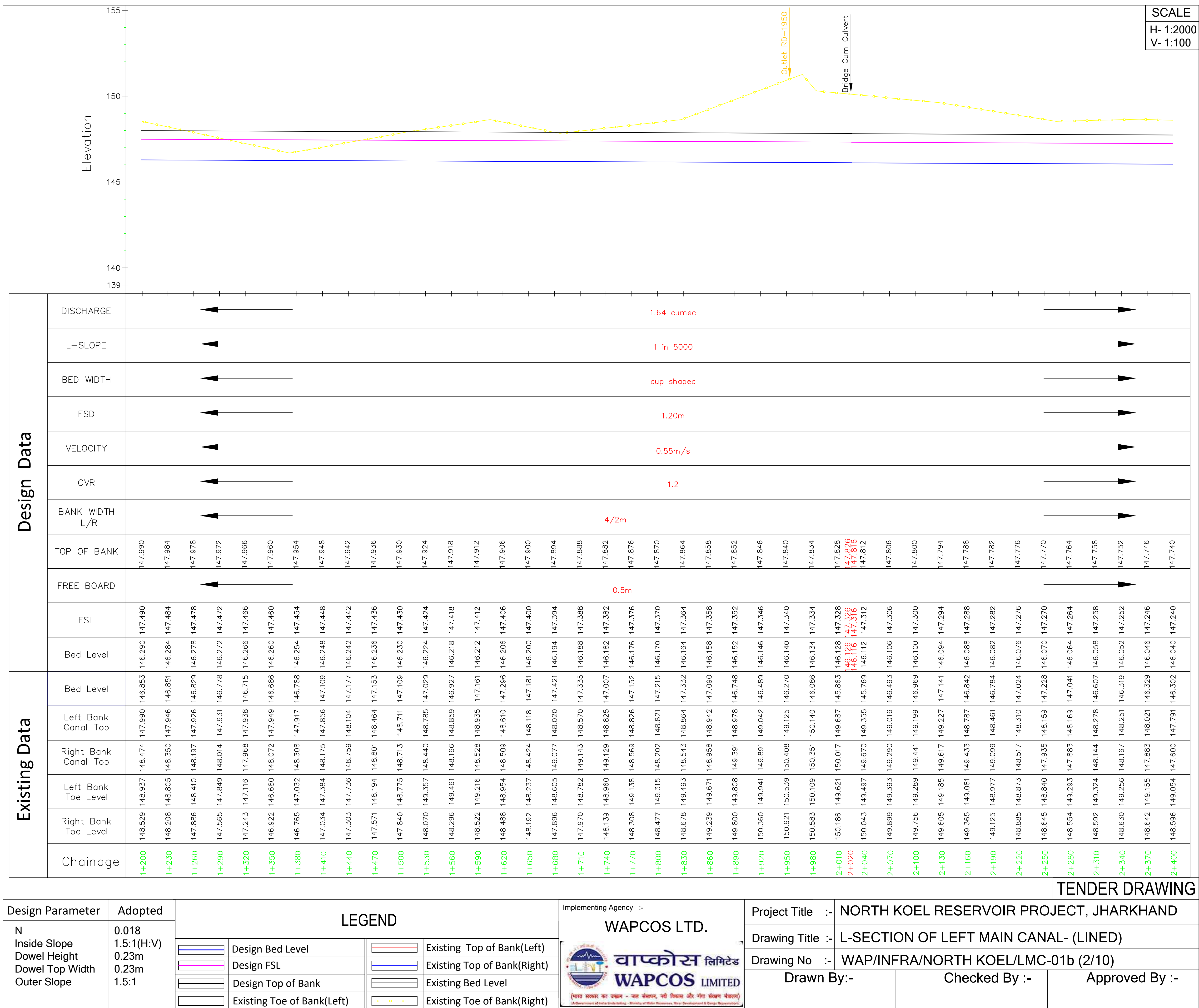
CHAK PLAN SHOWING PROPOSAL OF OUTLET ON LMC

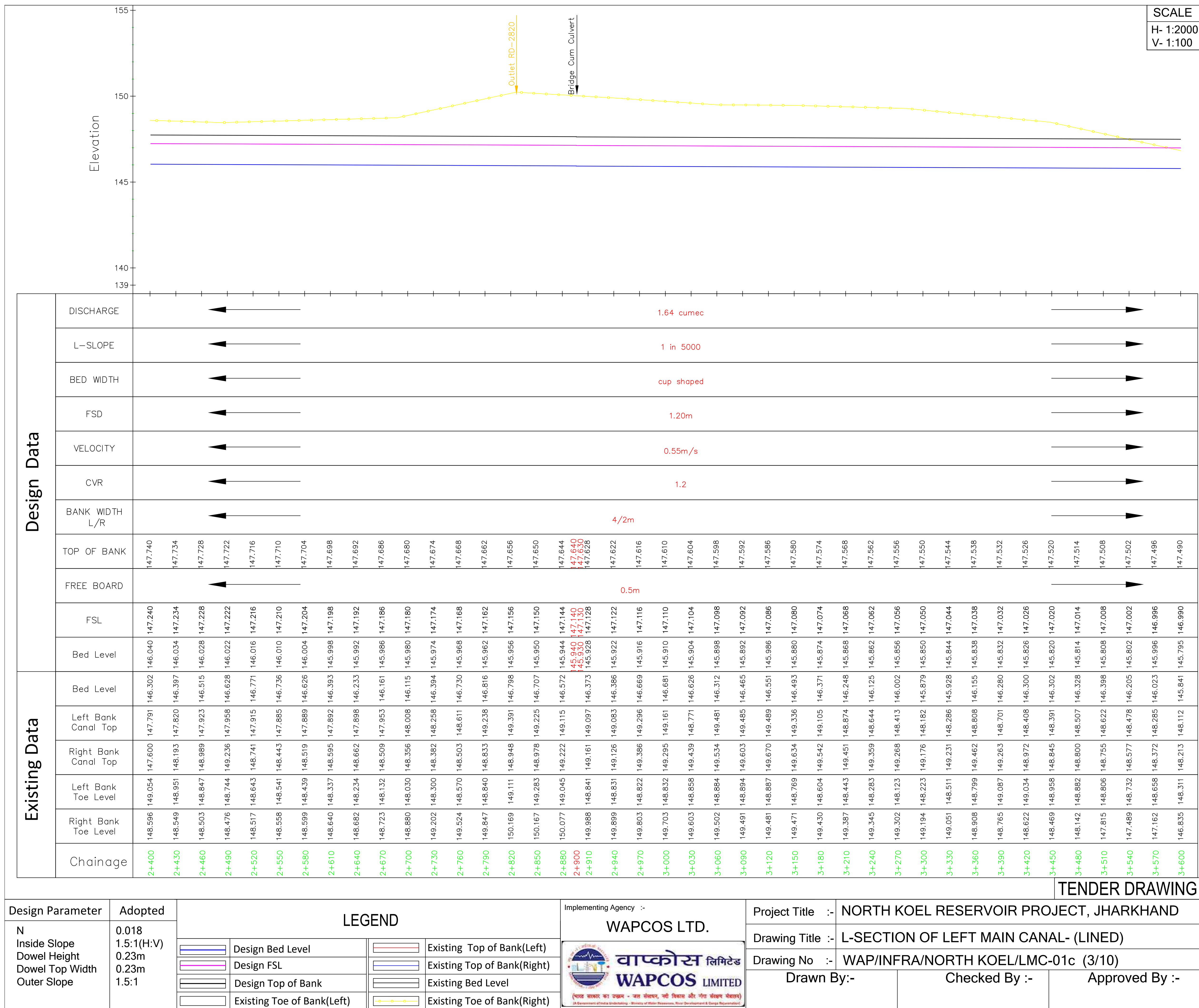


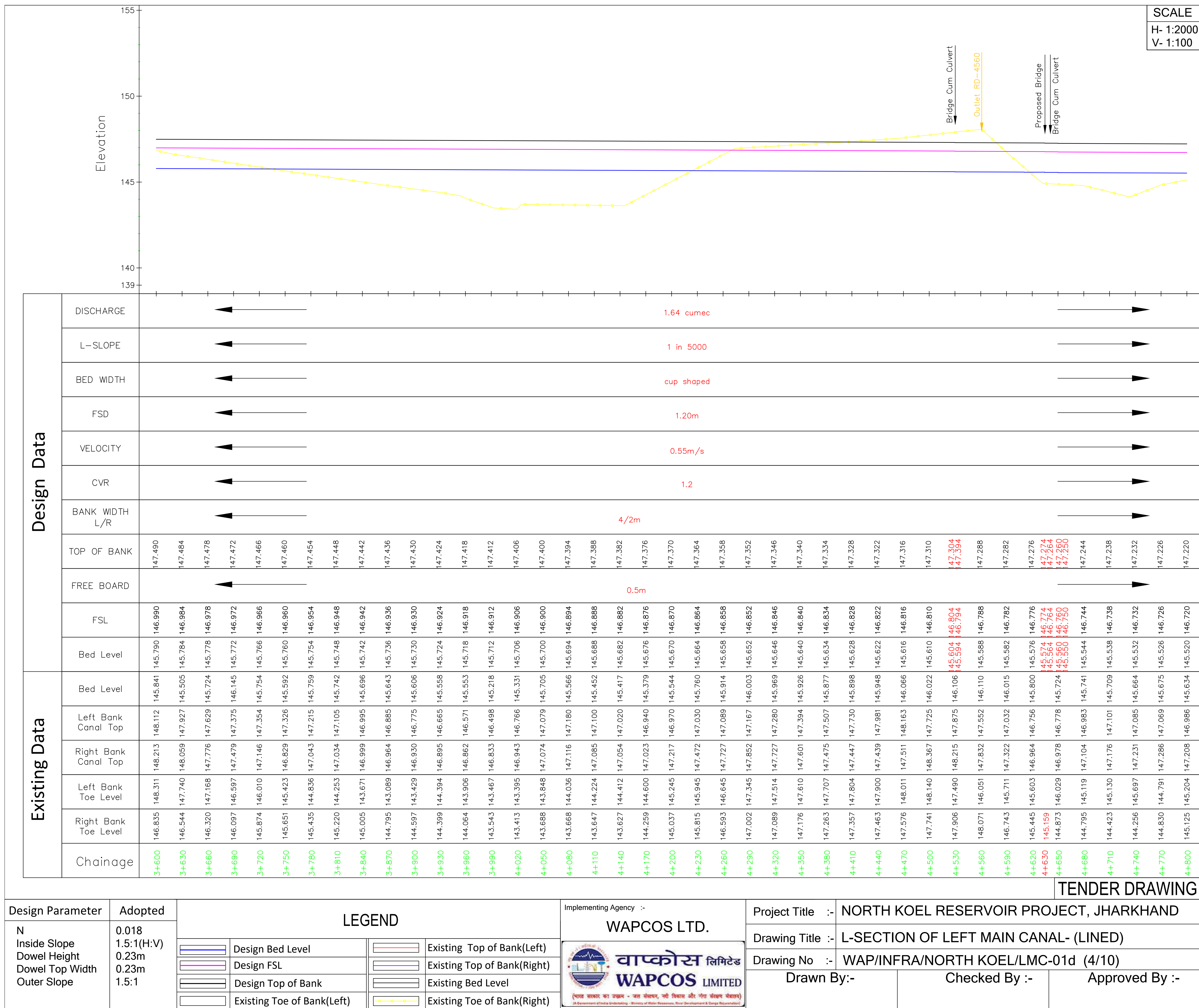
MOHAMMADGANJ  
BARRAGE

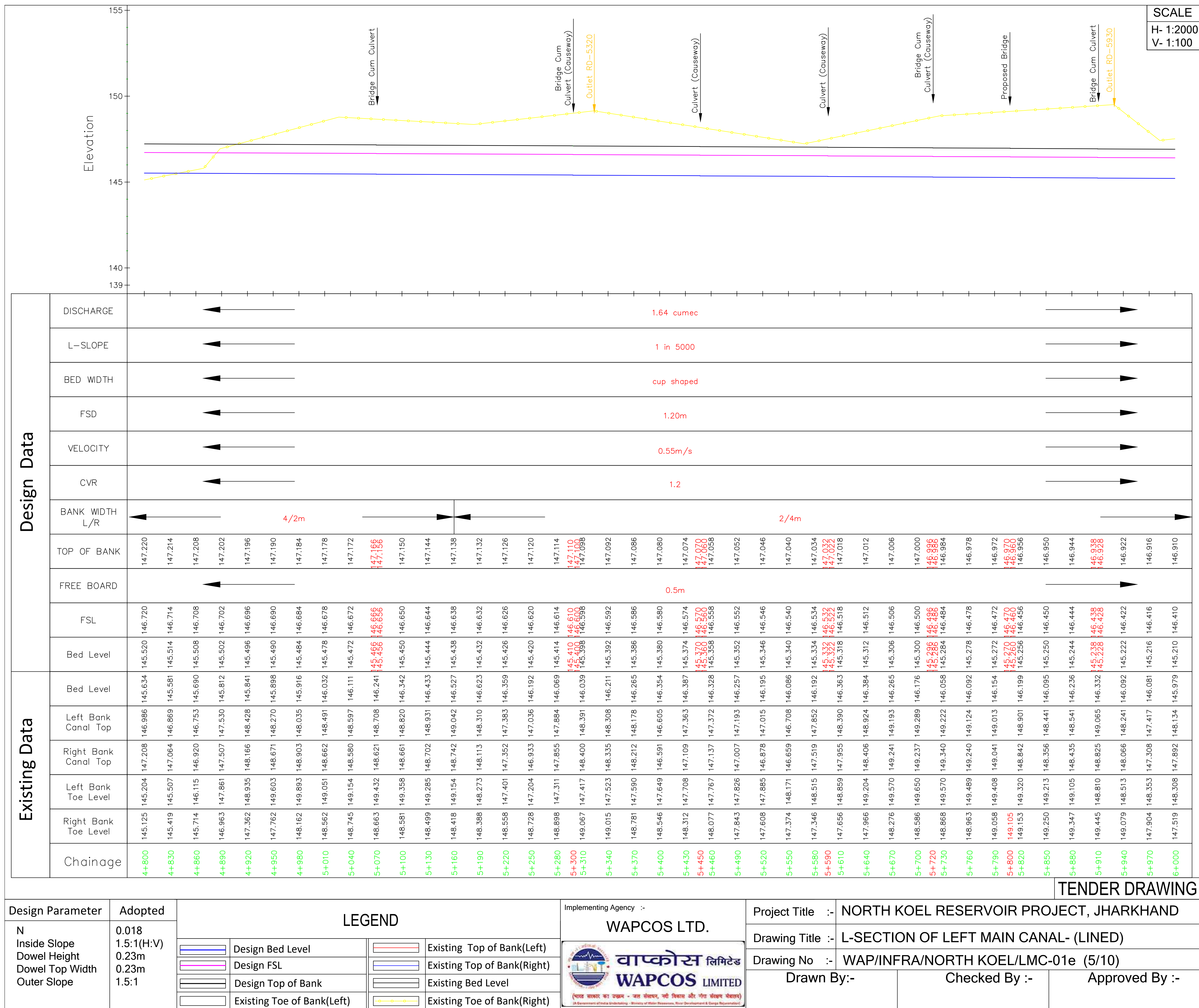


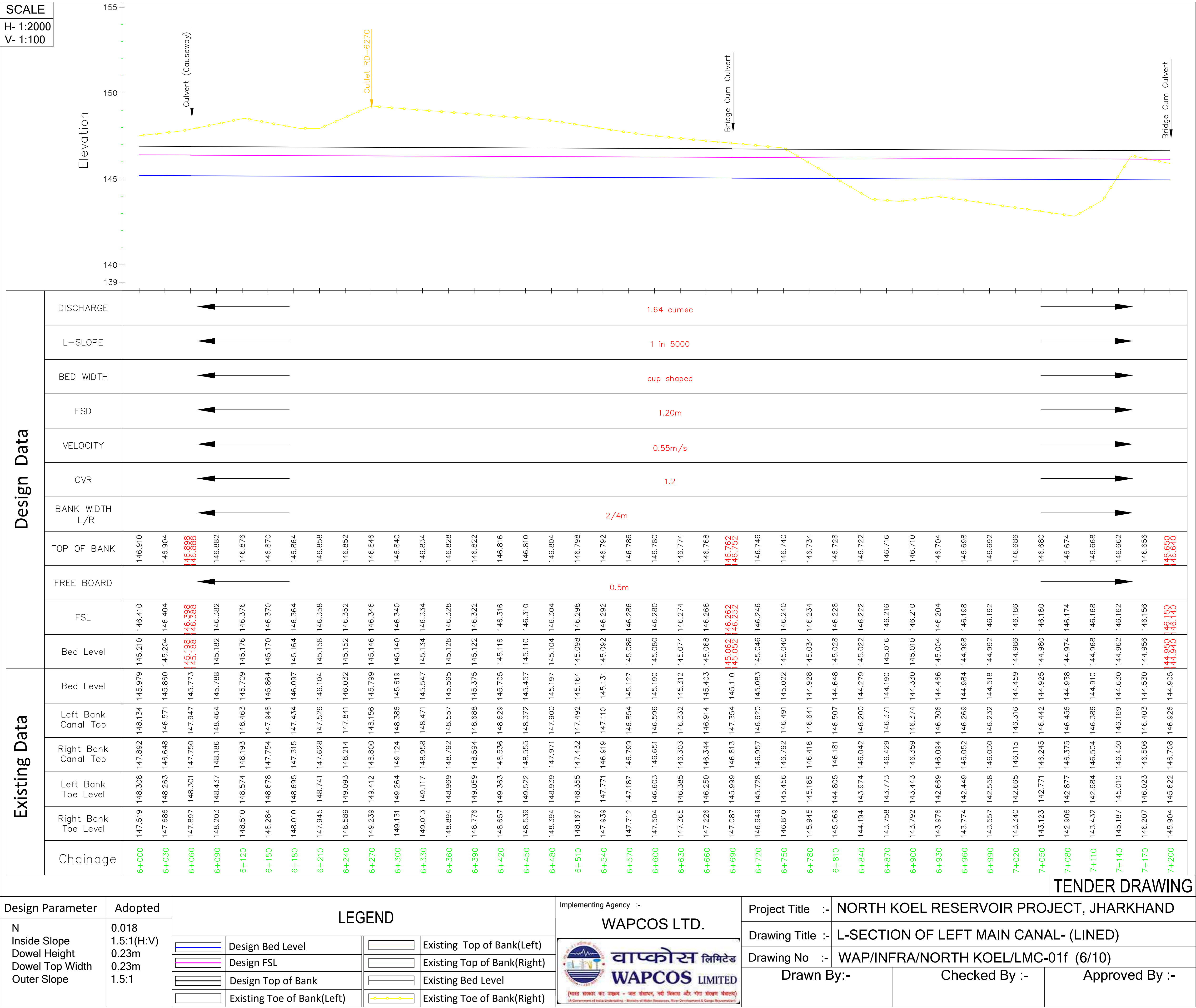
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|------------------|--|------------|-------------------------------------------------------------------------------------|--|----------------------------|--|---------------------------------------------------------------------------------------|--|-----------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------|--|-----------------------------------------|--|----------------|--|--|--|
|                  |  |            |                                                                                     |  |                            |  |                                                                                       |  |                             | TENDER DRAWING |                                                                                                                                                                                                                                                                                                                             |  |                  |  |                                         |  |                |  |  |  |
| Design Parameter |  | Adopted    | LEGEND                                                                              |  |                            |  |                                                                                       |  | Implementing Agency :-      |                |                                                                                                                                                                                                                                                                                                                             |  | Project Title :- |  | NORTH KOEL RESERVOIR PROJECT, JHARKHAND |  |                |  |  |  |
| N                |  | 0.018      |                                                                                     |  |                            |  |                                                                                       |  | Implementing Agency :-      |                |                                                                                                                                                                                                                                                                                                                             |  | Drawing Title :- |  | L-SECTION OF LEFT MAIN CANAL- (LINED)   |  |                |  |  |  |
| Inside Slope     |  | 1.5:1(H:V) |  |  | Design Bed Level           |  |  |  | Existing Top of Bank(Left)  |                |  <div>वाष्कोस लिमिटेड<br/>WAPCOS LIMITED<br/>(भारत सरकार का उद्यम - जल संवर्धन, नदी विकास और गंगा संरक्षण में)<br/>(A Government of India Undertaking - Ministry of Water Resources, River Development &amp; Ganga Rejuvenation)</div> |  | Drawing No :-    |  | WAP/INFRA/NORTH KOEL/LMC-01a (1/10)     |  |                |  |  |  |
| Dowel Height     |  | 0.23m      |  |  | Design FSL                 |  |  |  | Existing Top of Bank(Right) |                |                                                                                                                                                                                                                                                                                                                             |  | Drawn By:-       |  | Checked By :-                           |  | Approved By :- |  |  |  |
| Dowel Top Width  |  | 0.23m      |  |  | Design Top of Bank         |  |  |  | Existing Bed Level          |                |                                                                                                                                                                                                                                                                                                                             |  |                  |  |                                         |  |                |  |  |  |
| Outer Slope      |  | 1.5:1      |  |  | Existing Toe of Bank(Left) |  |  |  | Existing Toe of Bank(Right) |                |                                                                                                                                                                                                                                                                                                                             |  |                  |  |                                         |  |                |  |  |  |

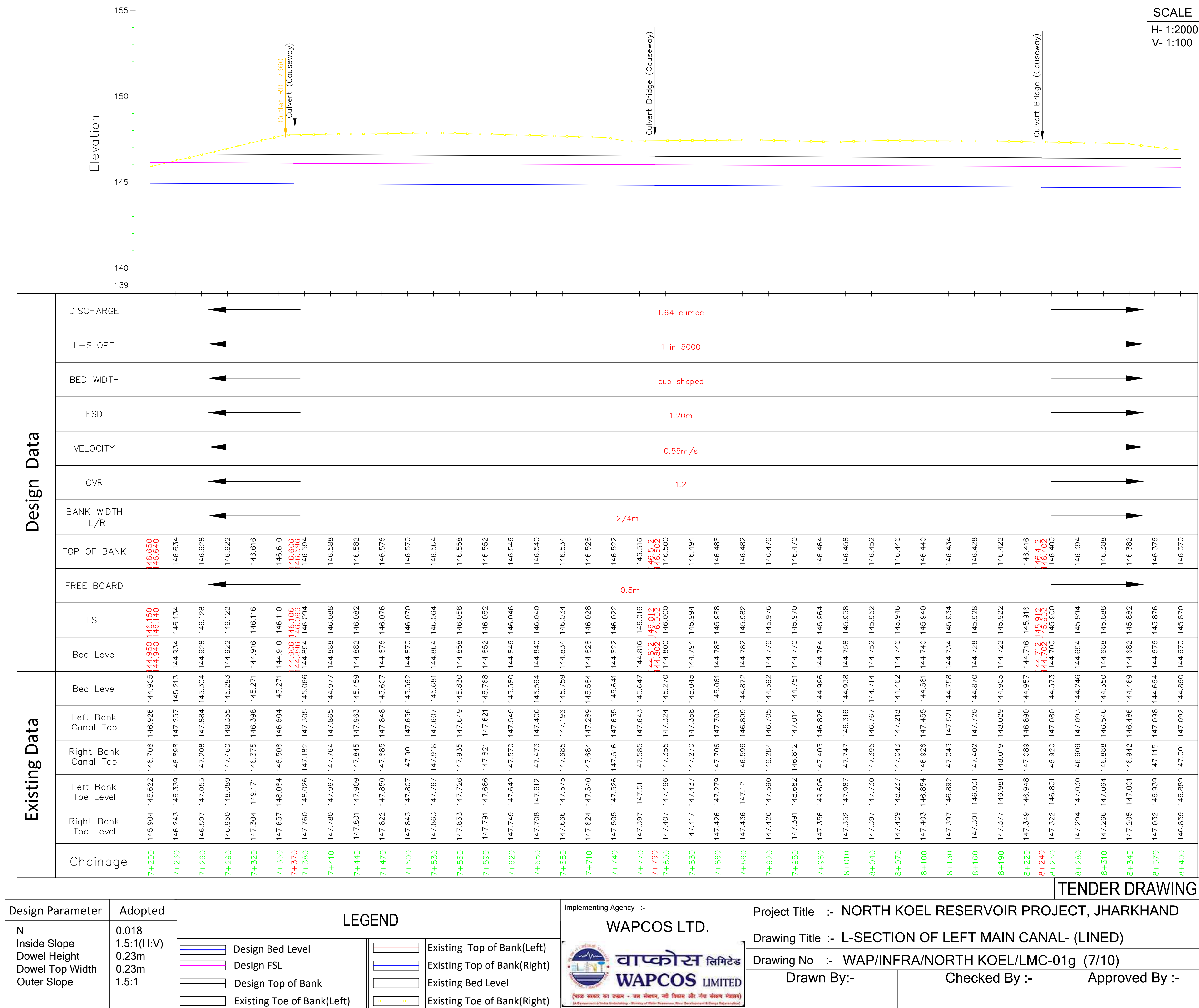


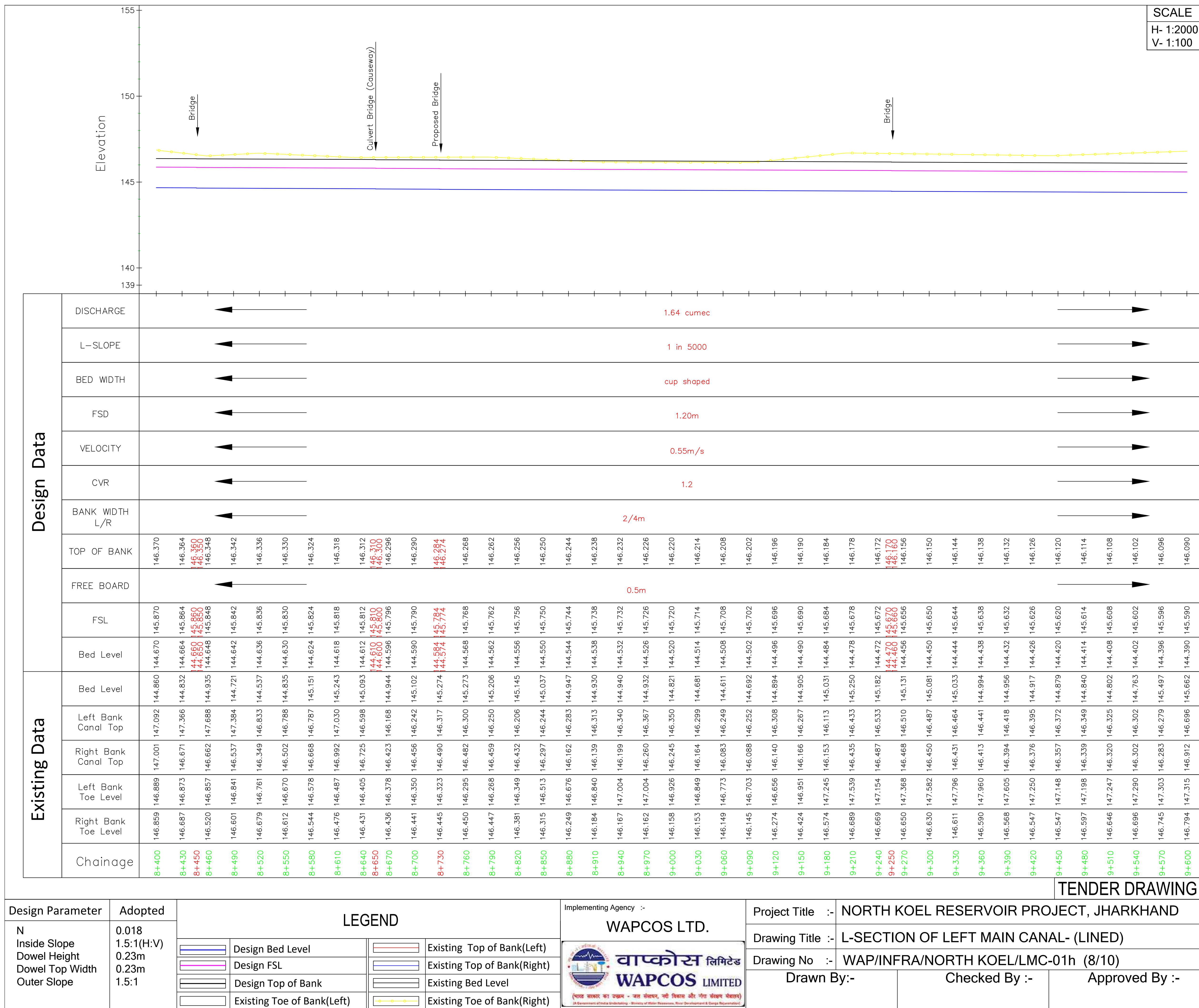


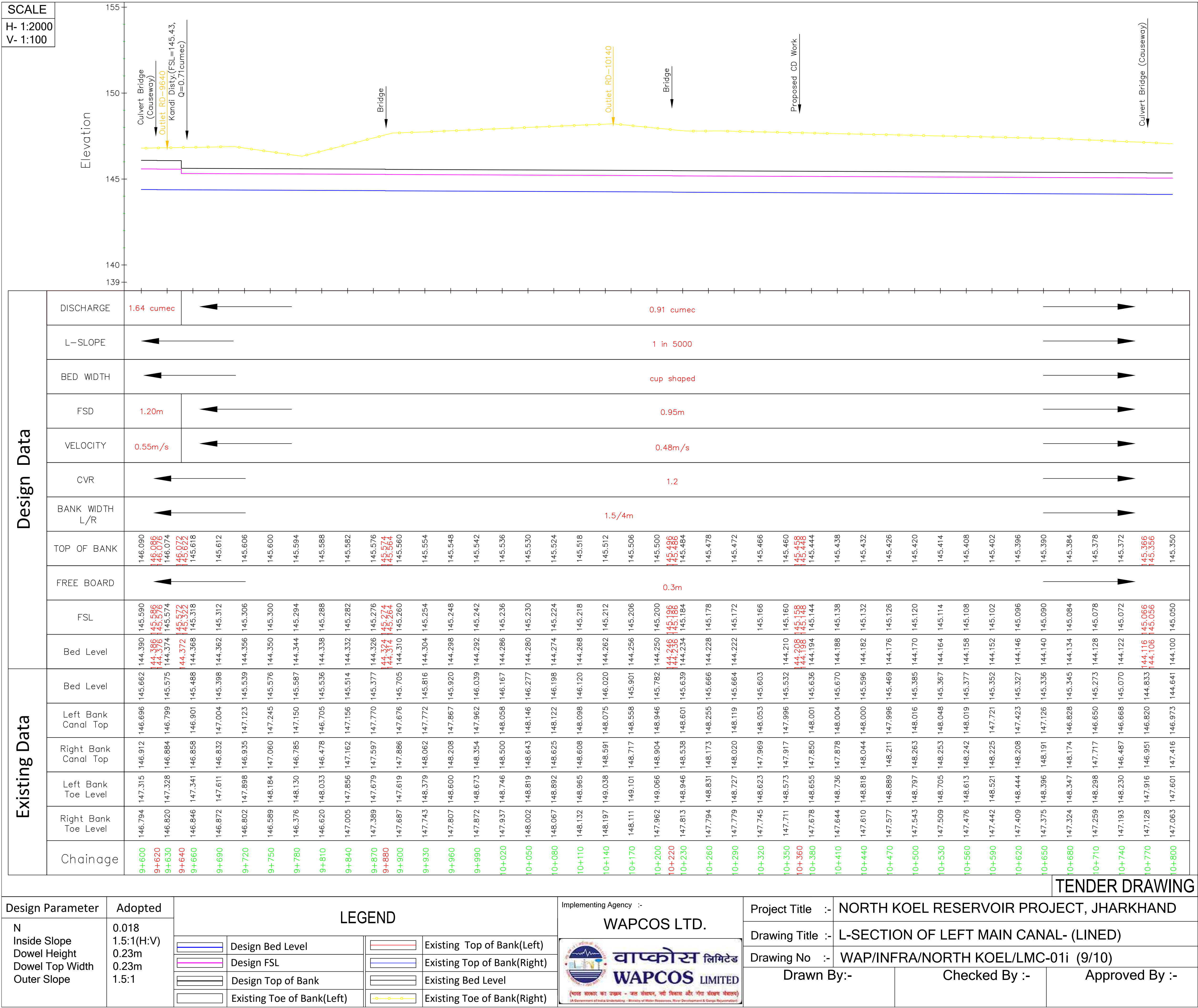


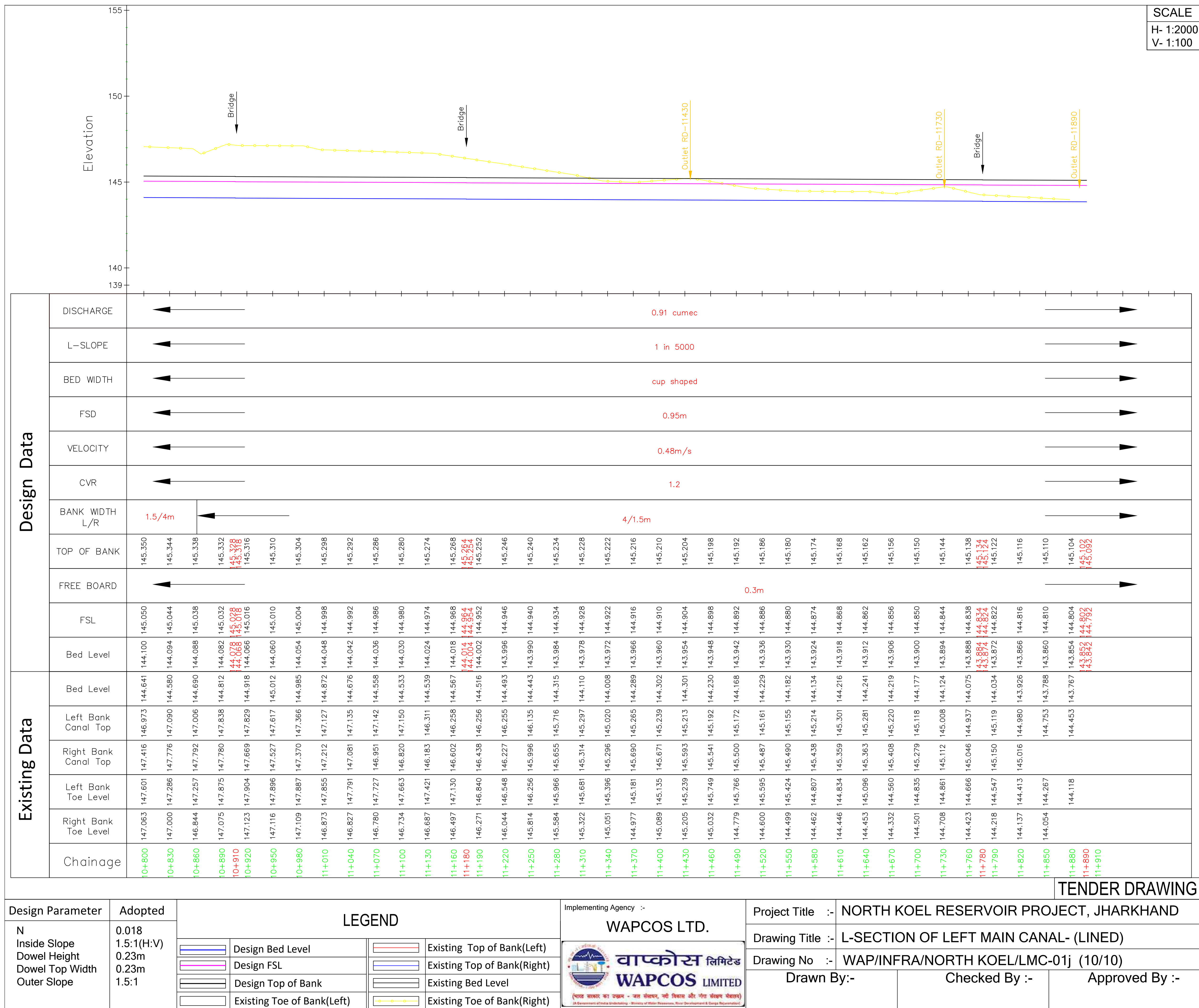


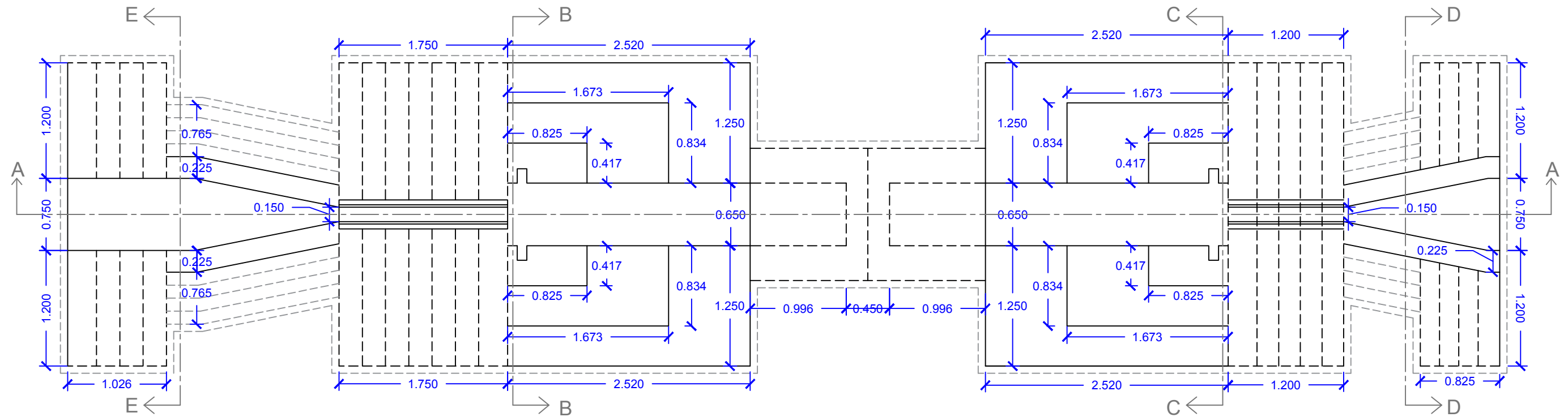




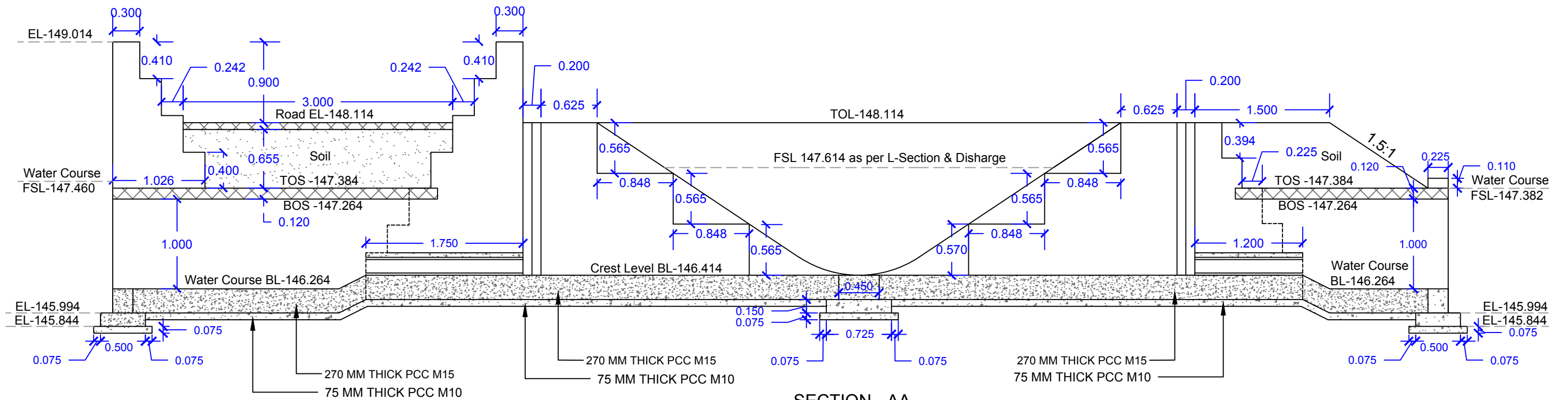








PLAN



SECTION - AA

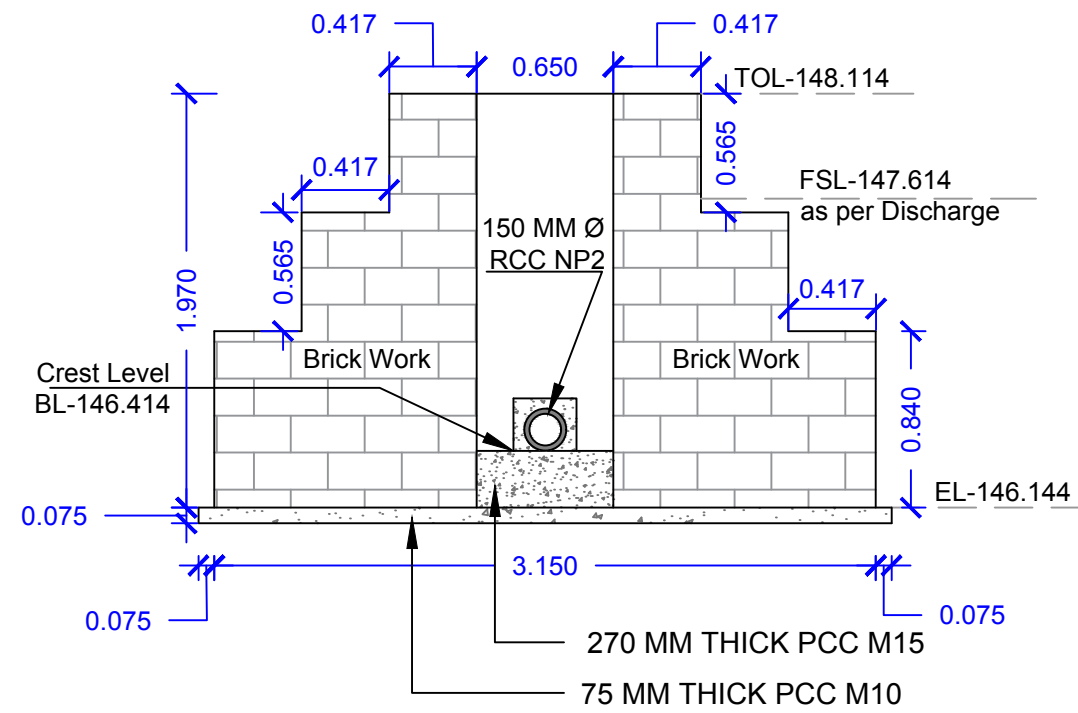
Notes :-

1. ALL DIMENSION AND ELEVATION ARE IN METERS

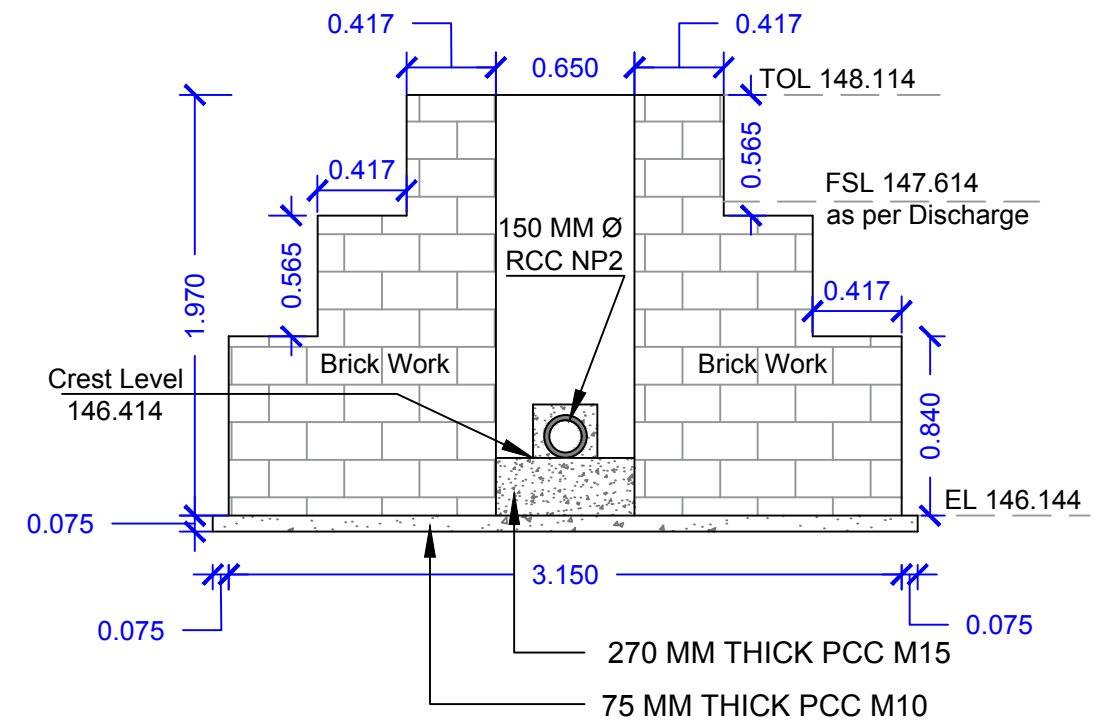


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 Ministry of Jal Shakti

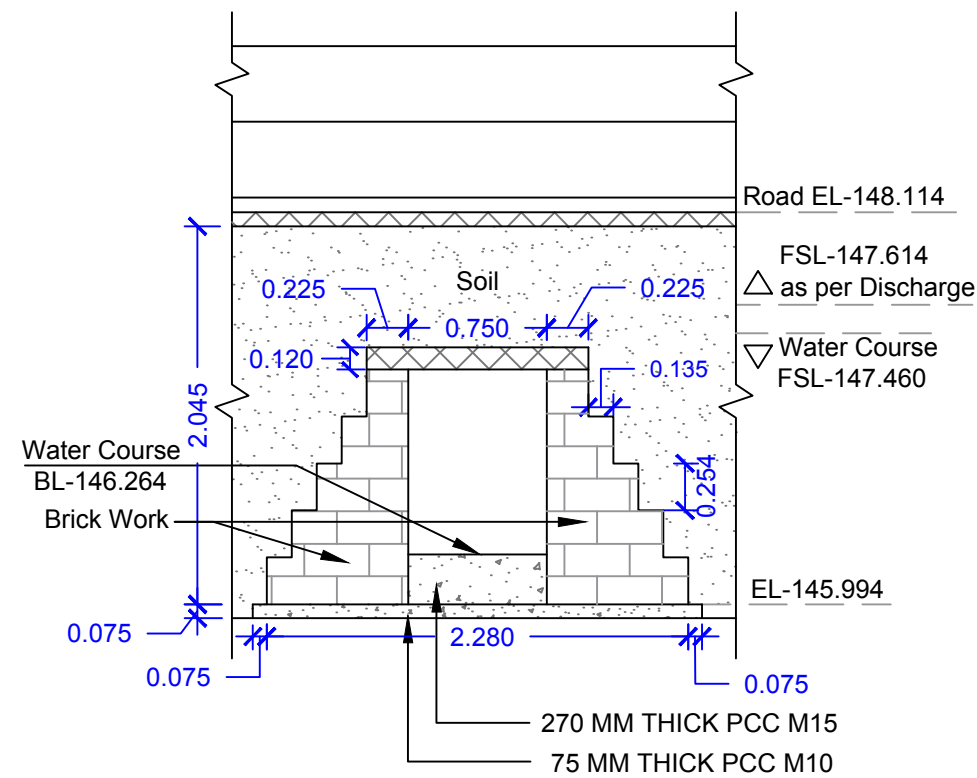
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| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND        |                |  |
| Drawing Title :- | PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 0.630 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/01a      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



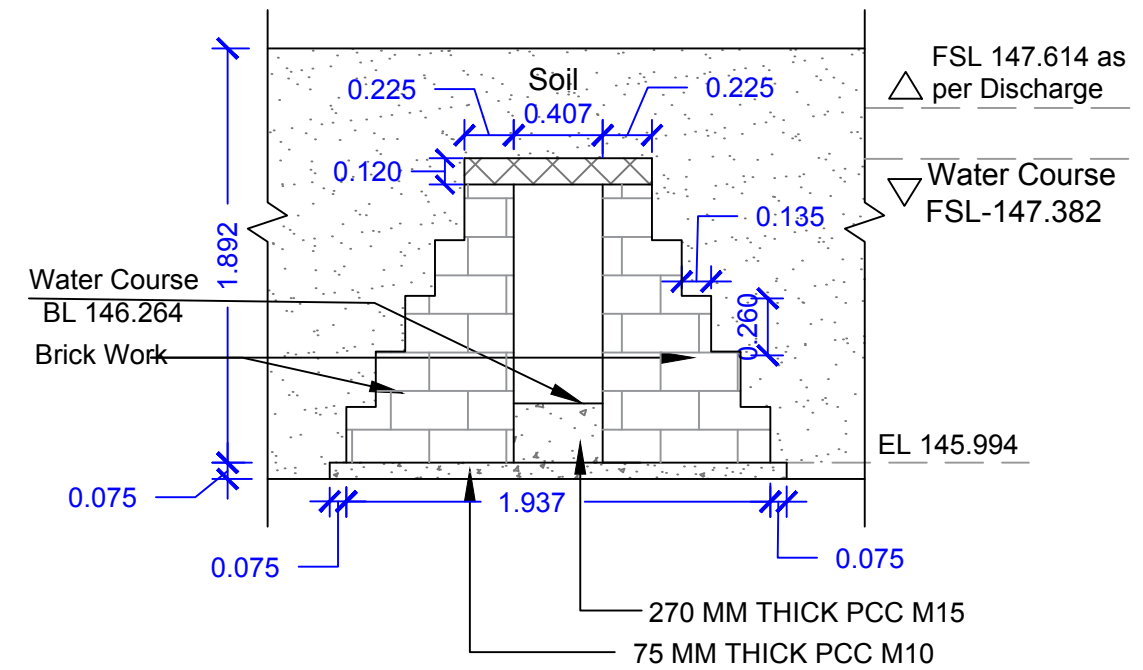
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**SECTION - CC**



**SECTION - EE**



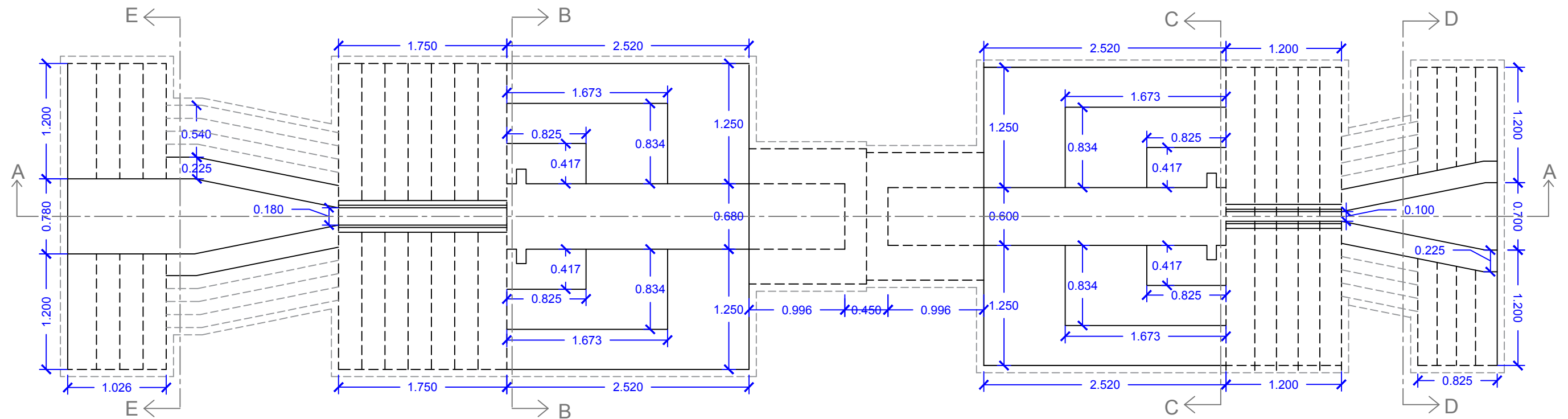
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Notes :-  
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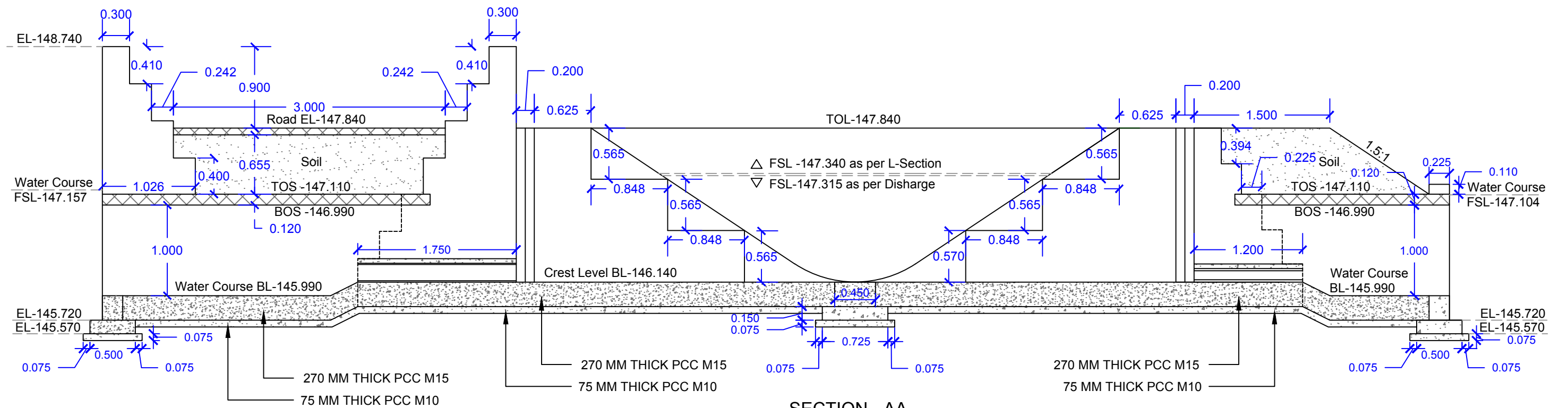


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|                  |                                                   |                |  |
|------------------|---------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |                |  |
| 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

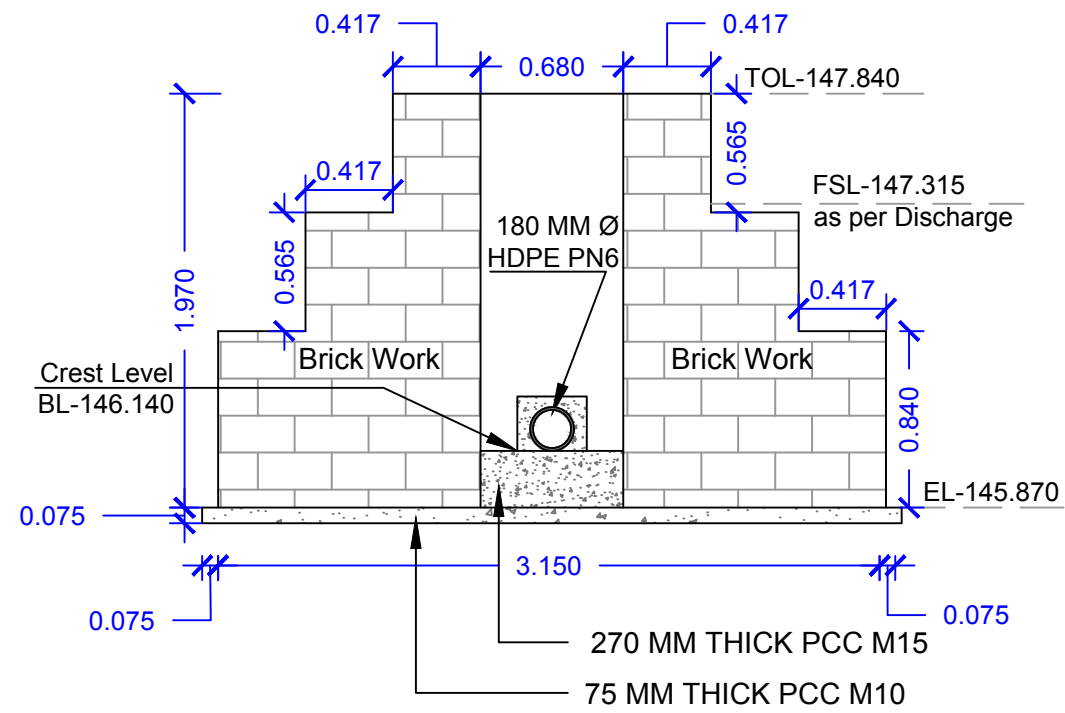
Notes :-

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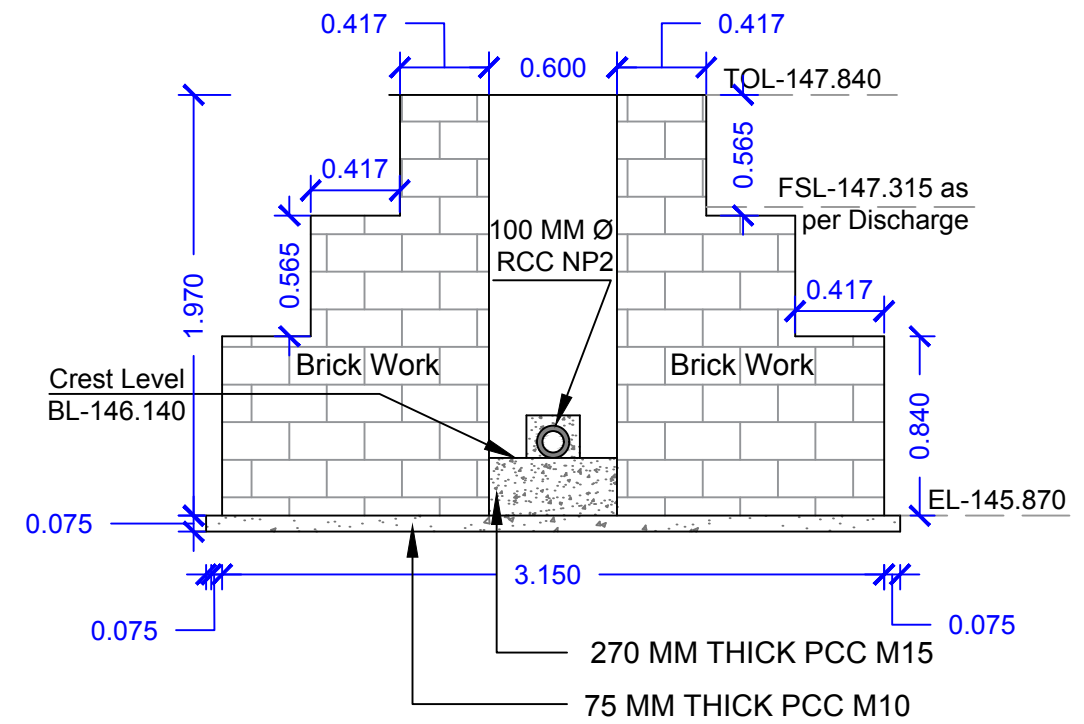


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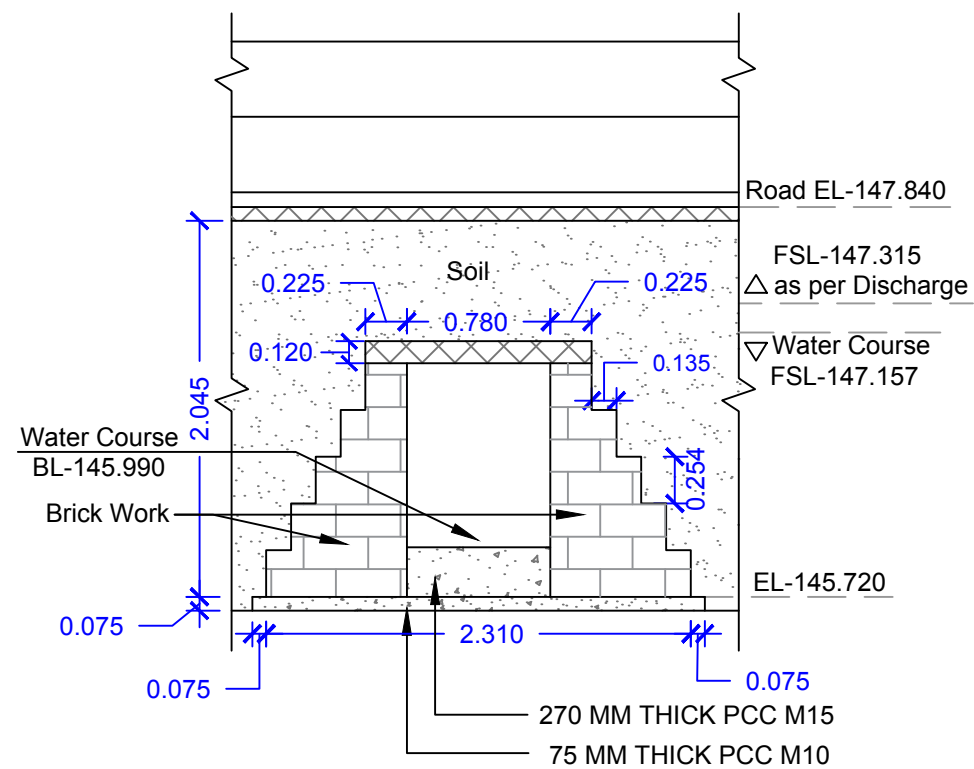
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| Drawing Title :- | PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 1.950 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/02a                                     |                |  |
| Drawn By:-       | Checked By :-             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



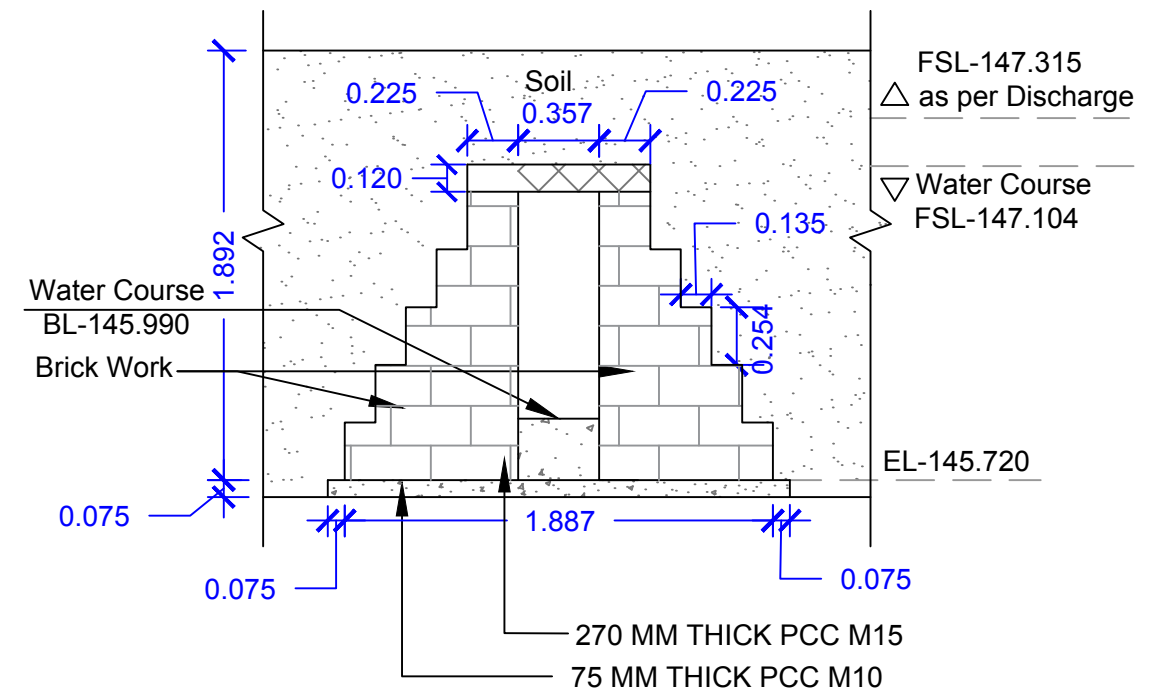
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**SECTION - CC**



**SECTION - EE**



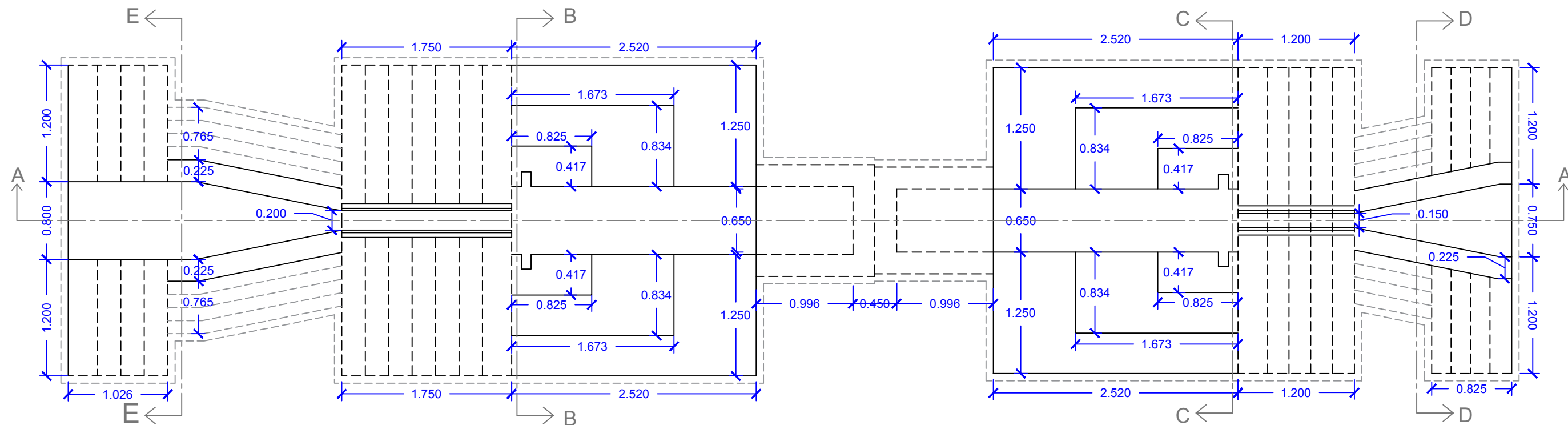
**SECTION - DD**

Notes :-  
1. ALL DIMENSION AND ELEVATION ARE IN METERS

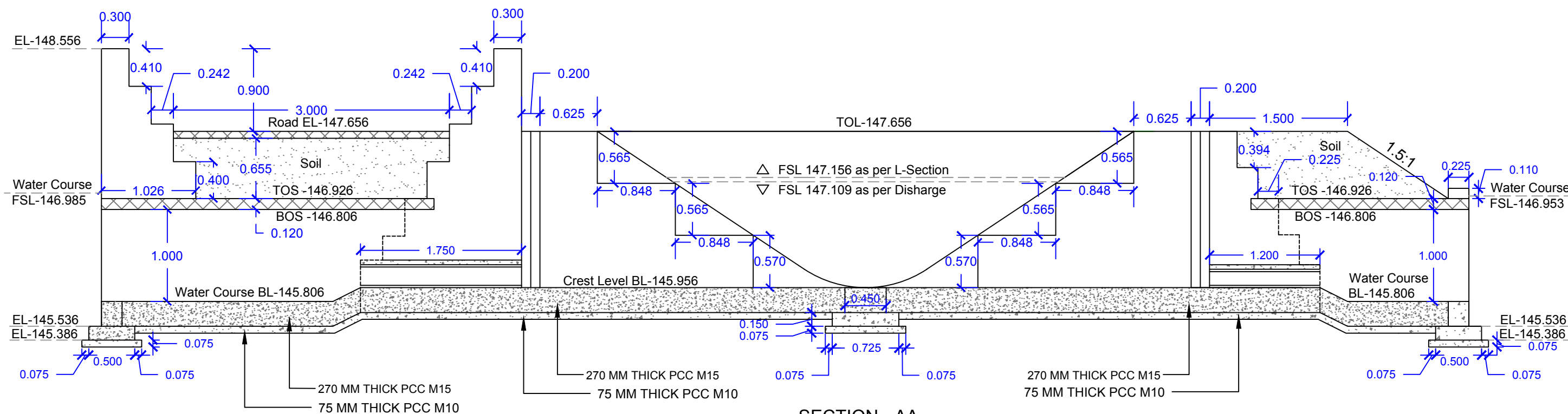


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|------------------|-----------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND   |                |  |
| Drawing Title :- | SECTION DRAWING OF E PIPE OUTLET AT RD 1.950 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/02b                                |                |  |
| Drawn By:-       | Checked By :-                                       | Approved By :- |  |



PLAN



SECTION - AA

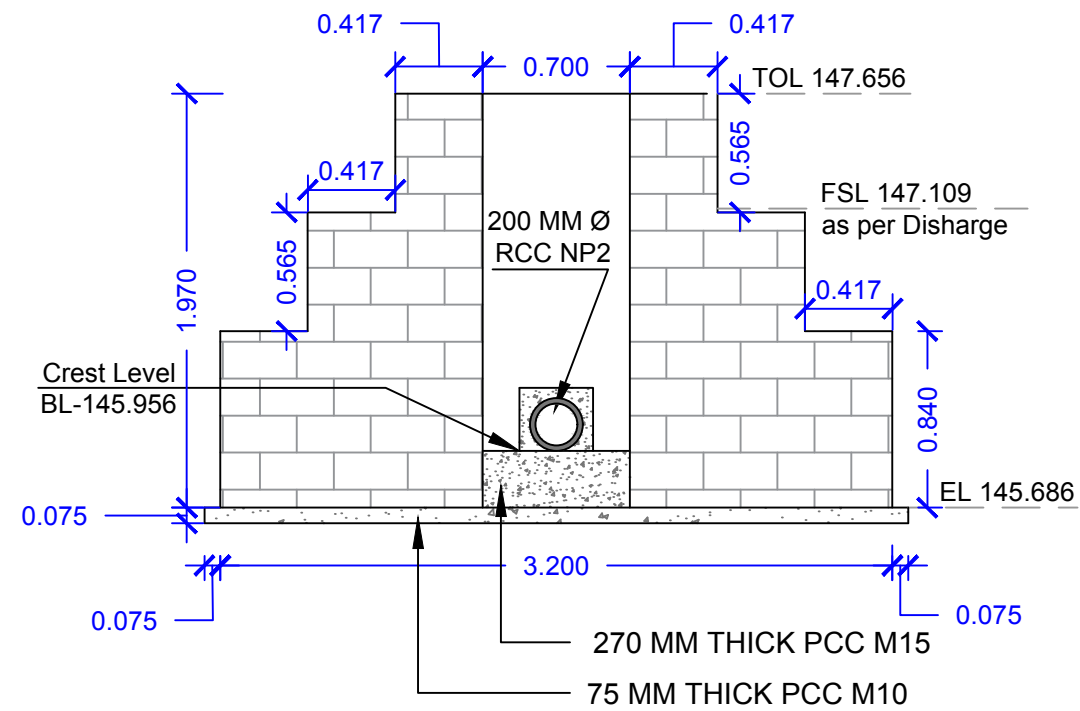
Notes :-

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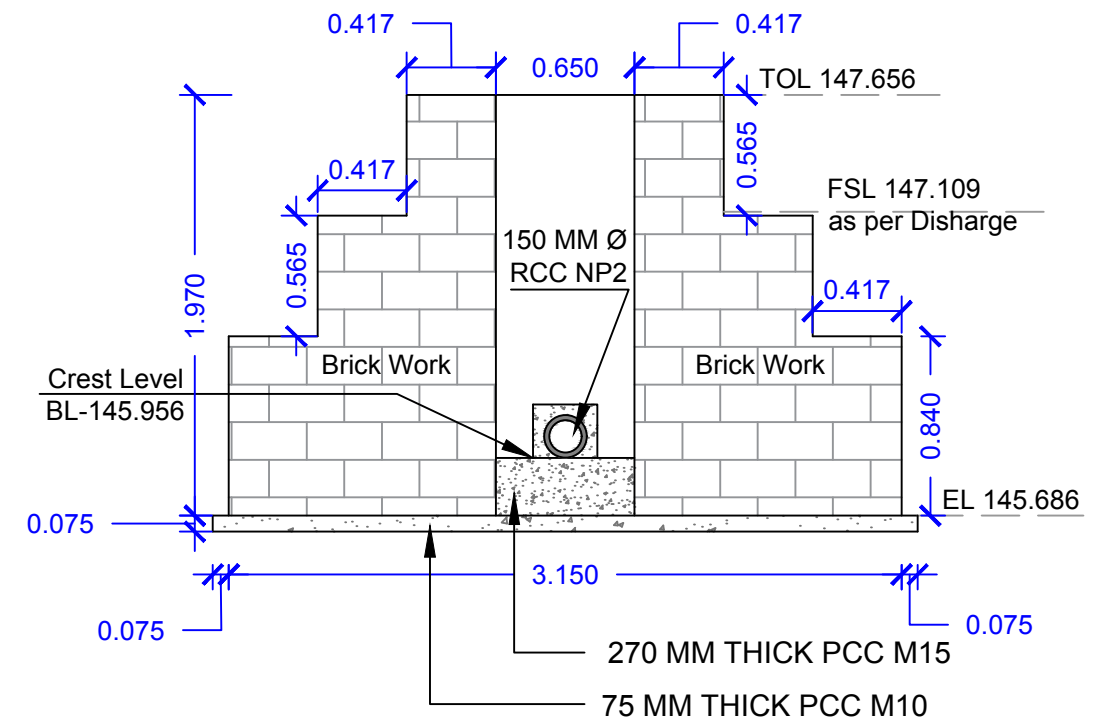


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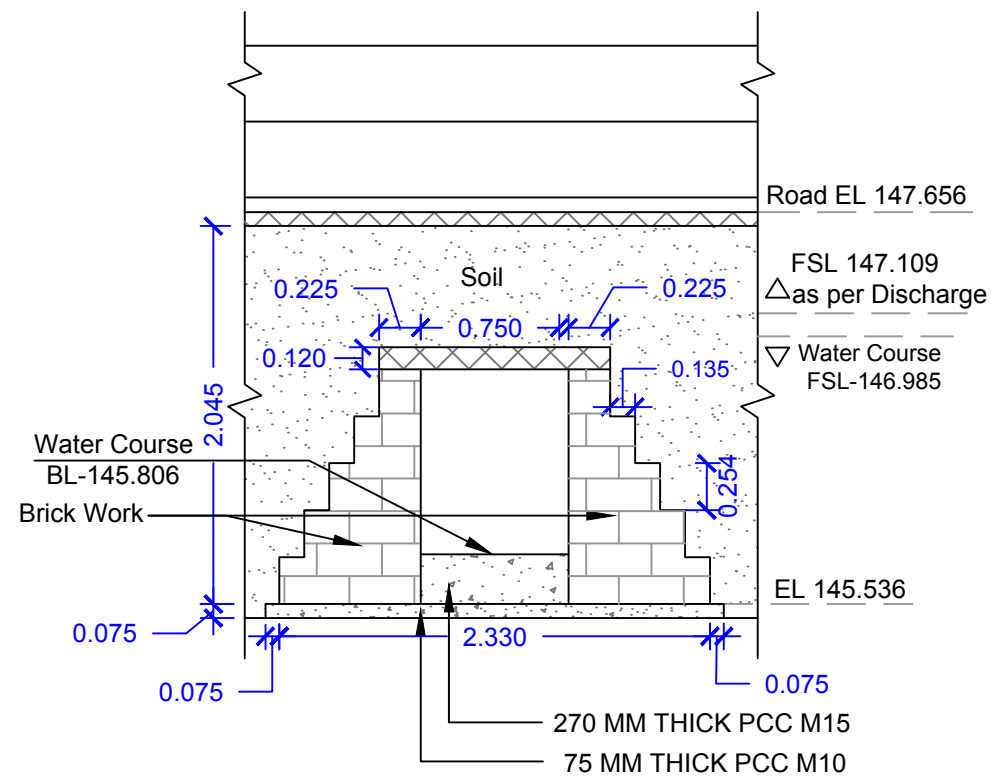
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| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND                   |                |  |
| Drawing Title :- | PLAN & SECTION DRAWING OF OPEN FLUME PIPE OUTLET AT RD 2.820 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/03a                                                |                |  |
| Drawn By:-       | Checked By :-                                                       | Approved By :- |  |



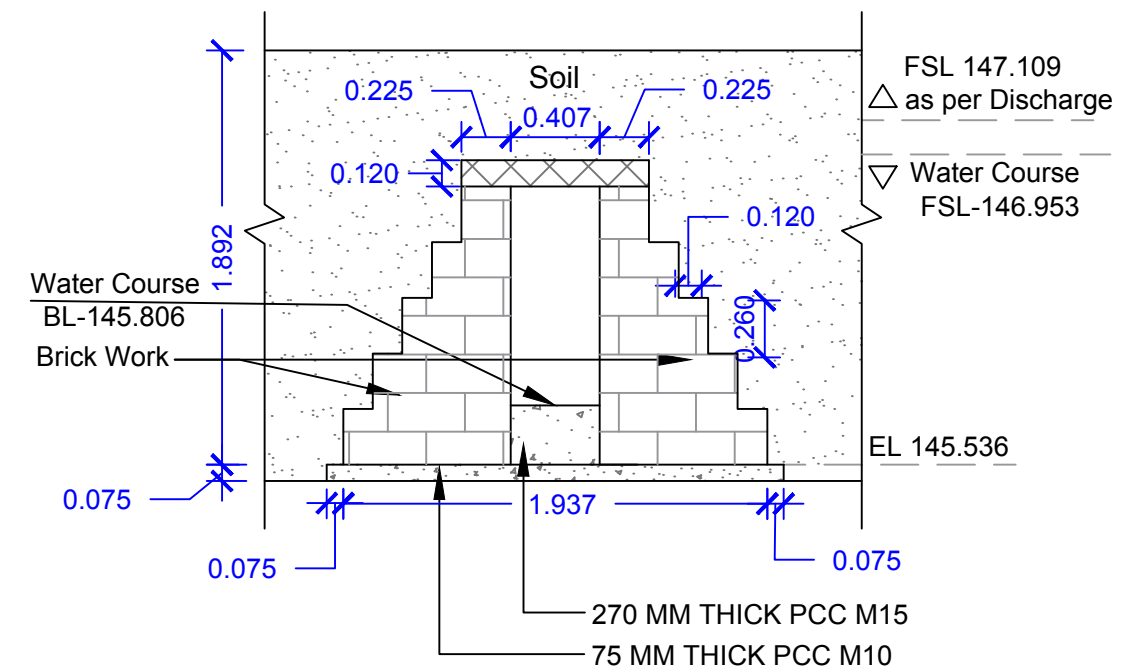
**SECTION - BB**



**SECTION - CC**



**SECTION - EE**



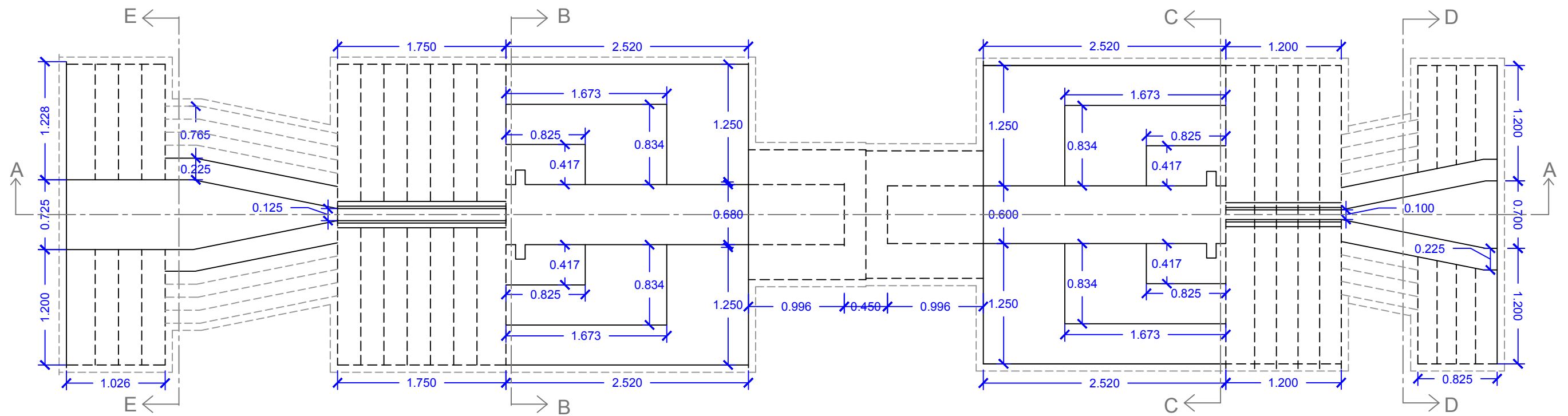
**SECTION - DD**

Notes :-  
1. ALL DIMENSION AND ELEVATION ARE IN METERS

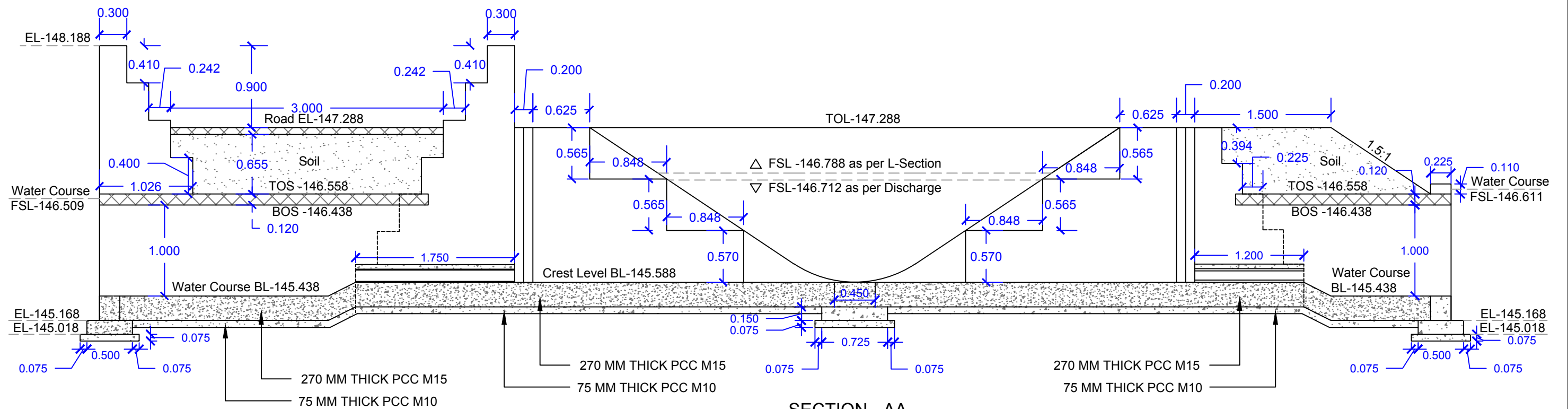


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|------------------|---------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |                |  |
| Drawing Title :- | SECTION DRAWING OF PIPE OUTLET AT RD 2.820 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/03b                              |                |  |
| Drawn By:-       | Checked By :-                                     | Approved By :- |  |



PLAN



SECTION - AA

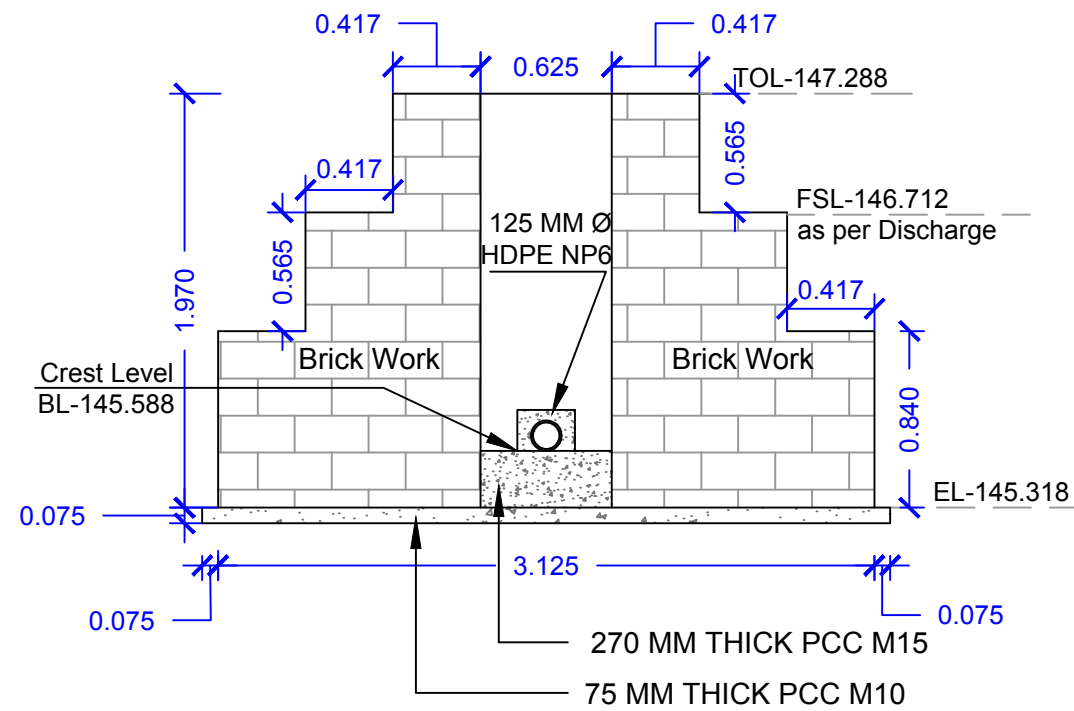
Notes :-

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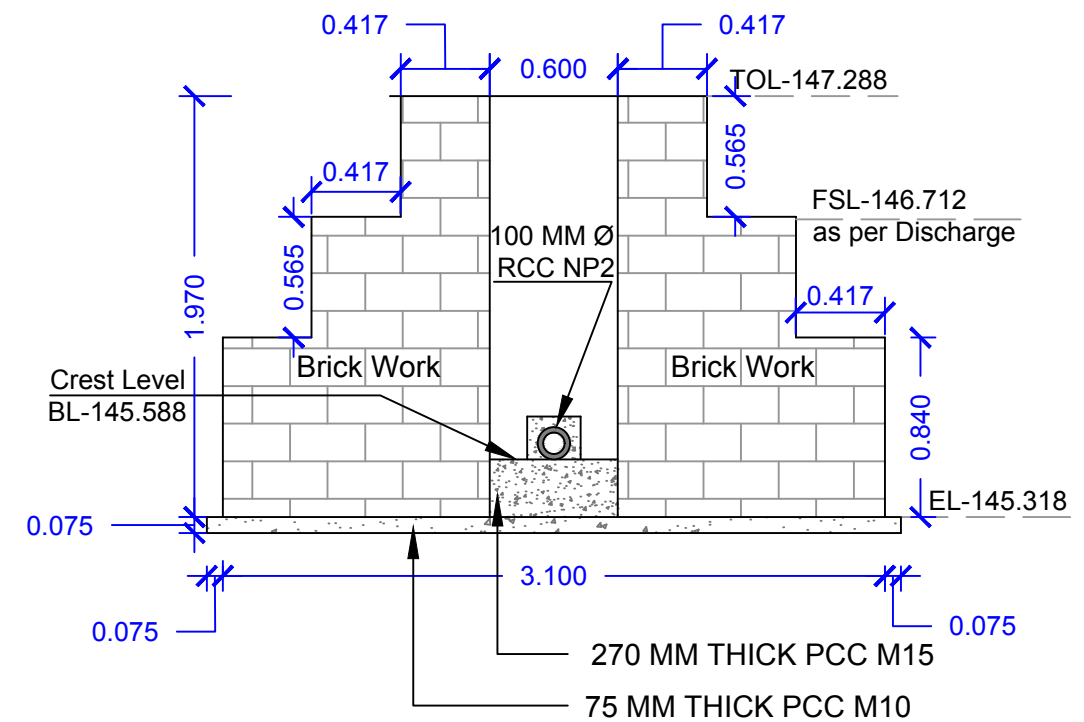


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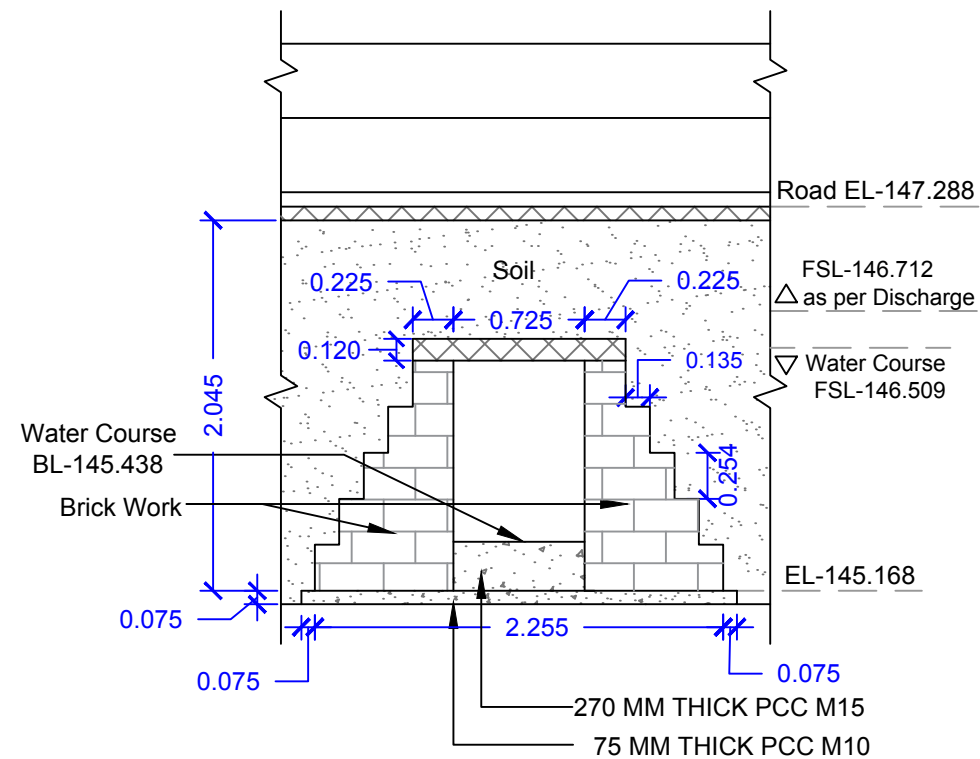
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|------------------|----------------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND        |                |  |
| Drawing Title :- | PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 4.560 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/04a                                     |                |  |
| Drawn By:-       | Checked By :-                                            | Approved By :- |  |



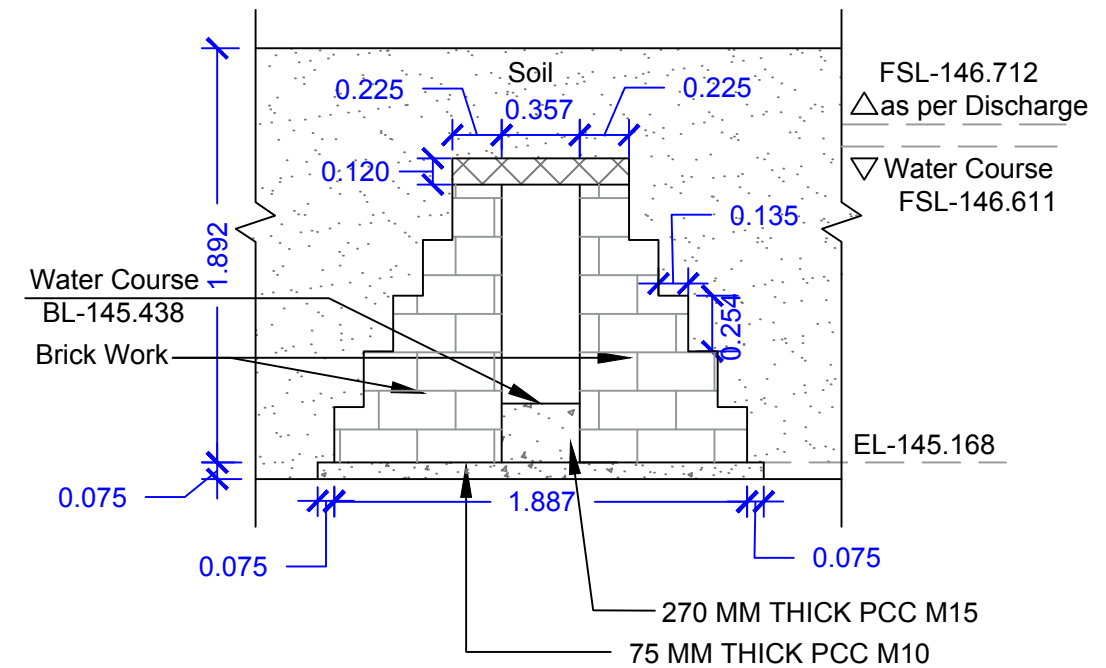
**SECTION - BB**



**SECTION - CC**



**SECTION - EE**



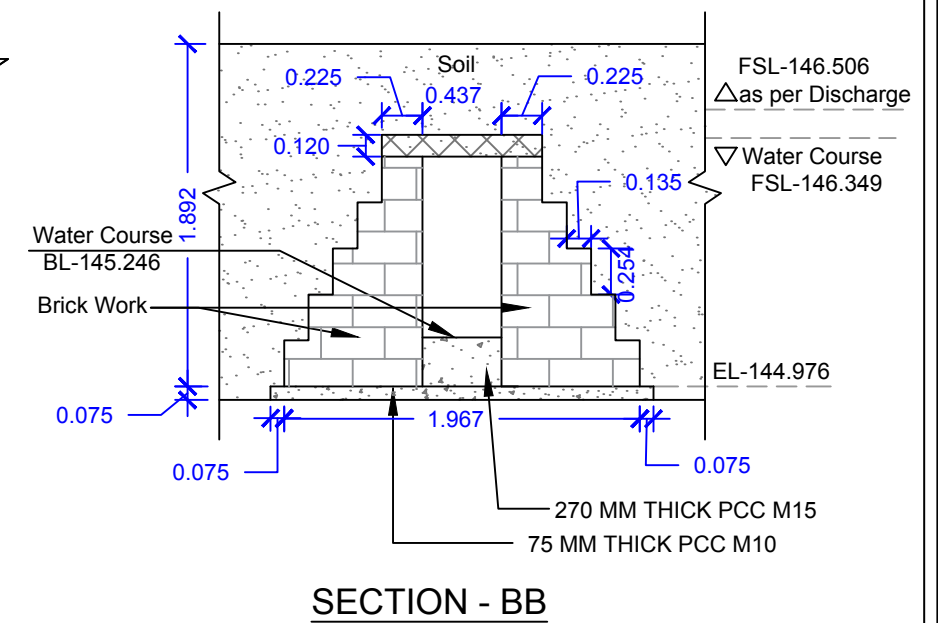
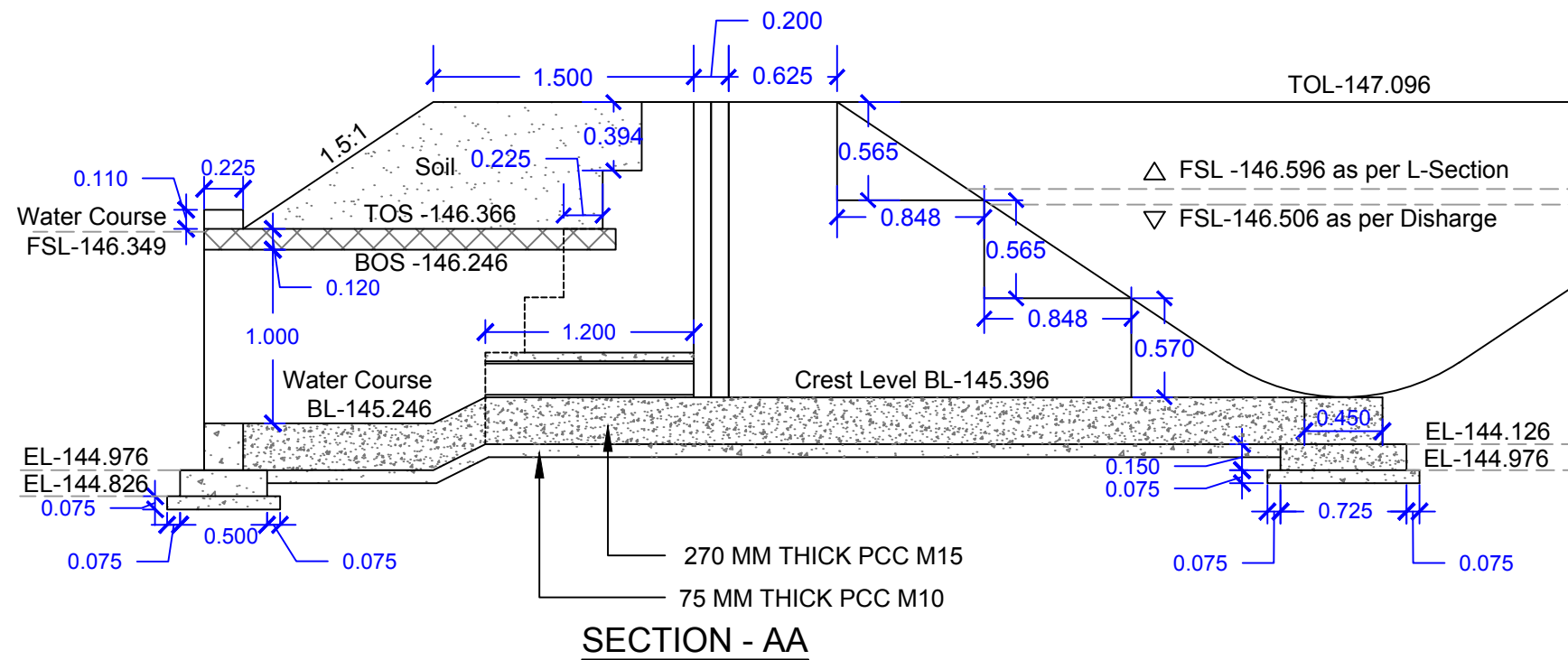
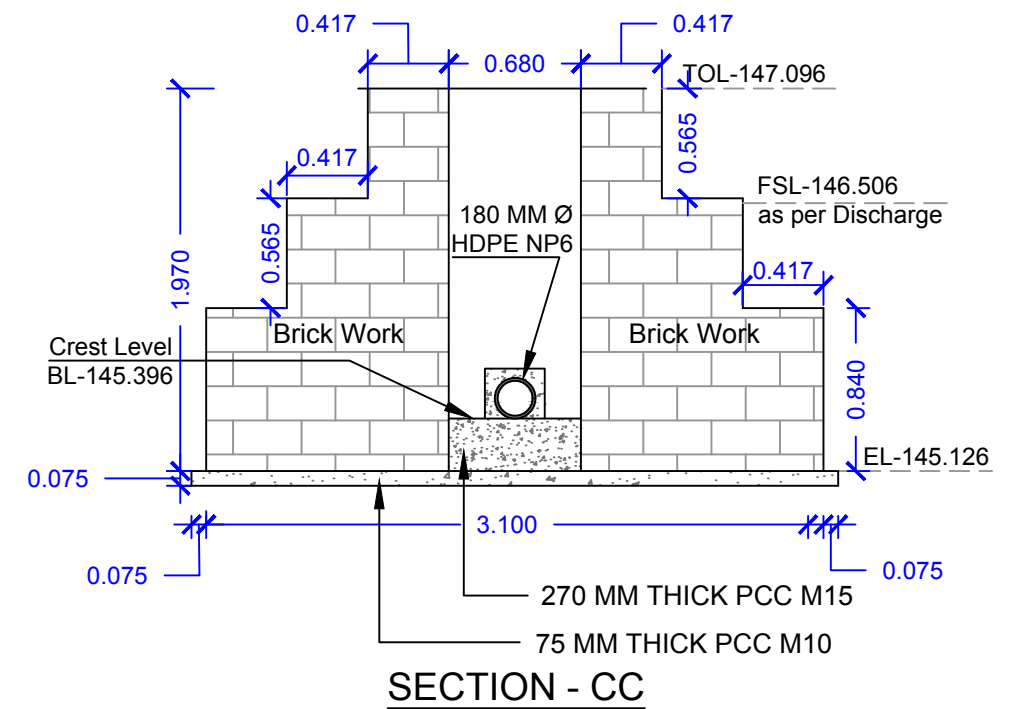
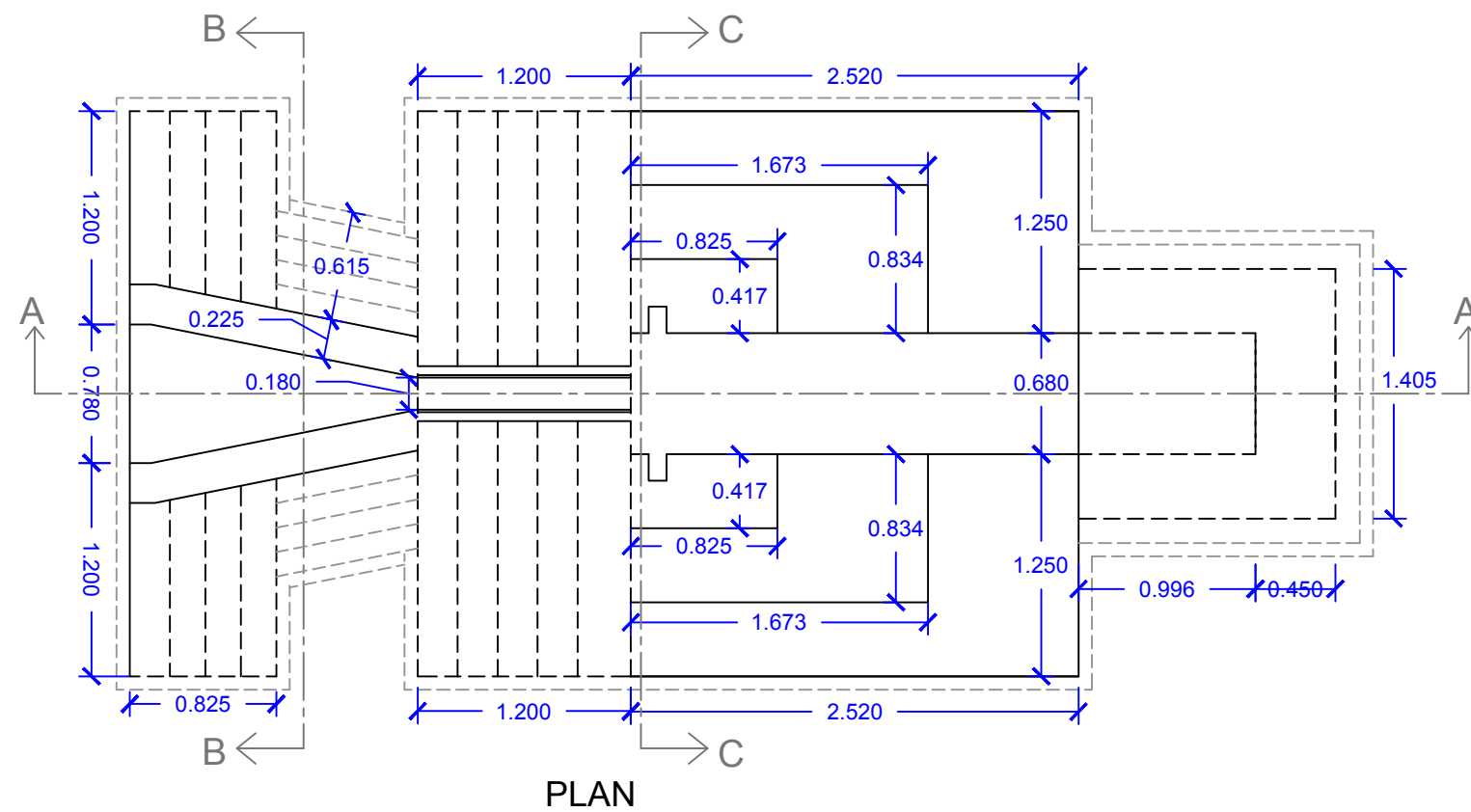
**SECTION - DD**

Notes :-  
1. ALL DIMENSION AND ELEVATION ARE IN METERS



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|                  |                                                   |                |  |
|------------------|---------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND |                |  |
| Drawing Title :- | SECTION DRAWING OF PIPE OUTLET AT RD 4.560 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/04b                              |                |  |
| Drawn By:-       | Checked By :-                                     | Approved By :- |  |

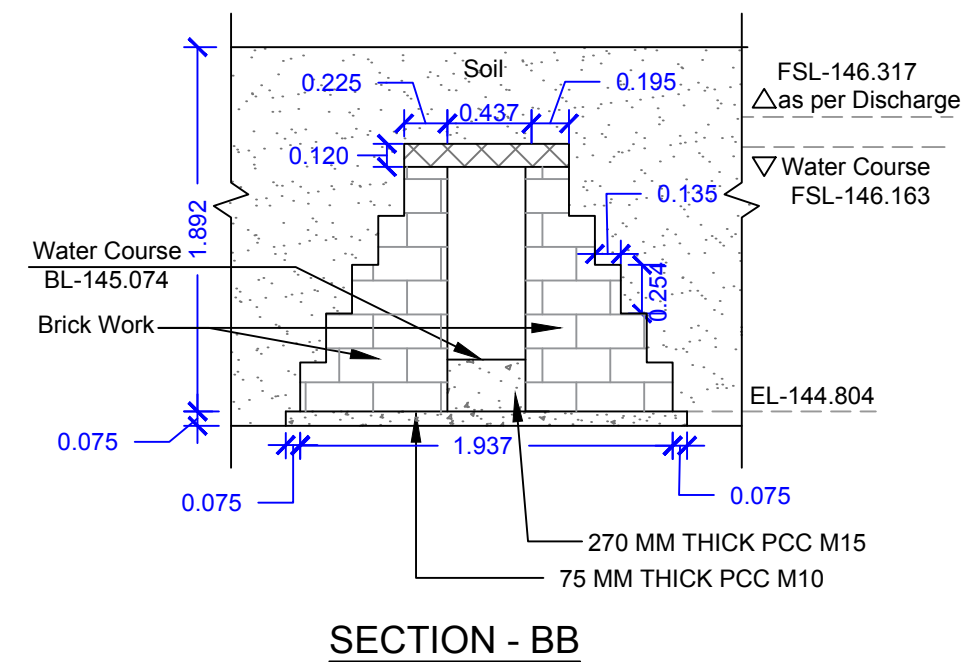
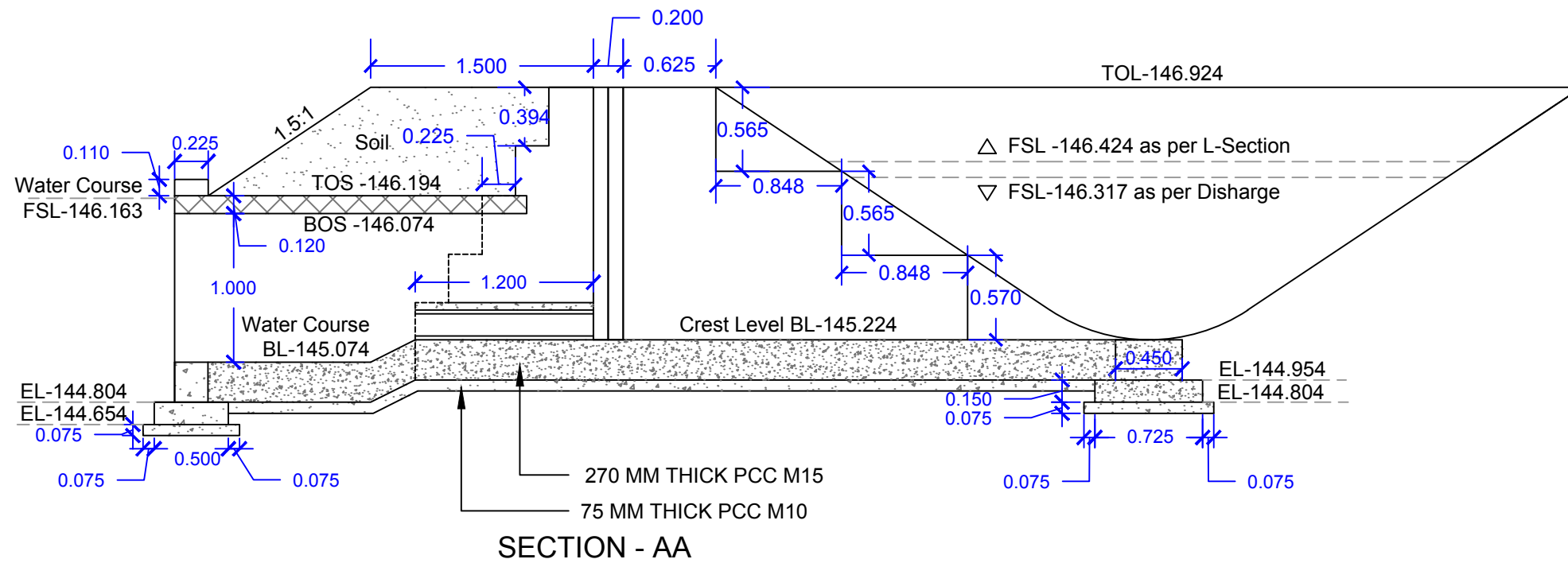
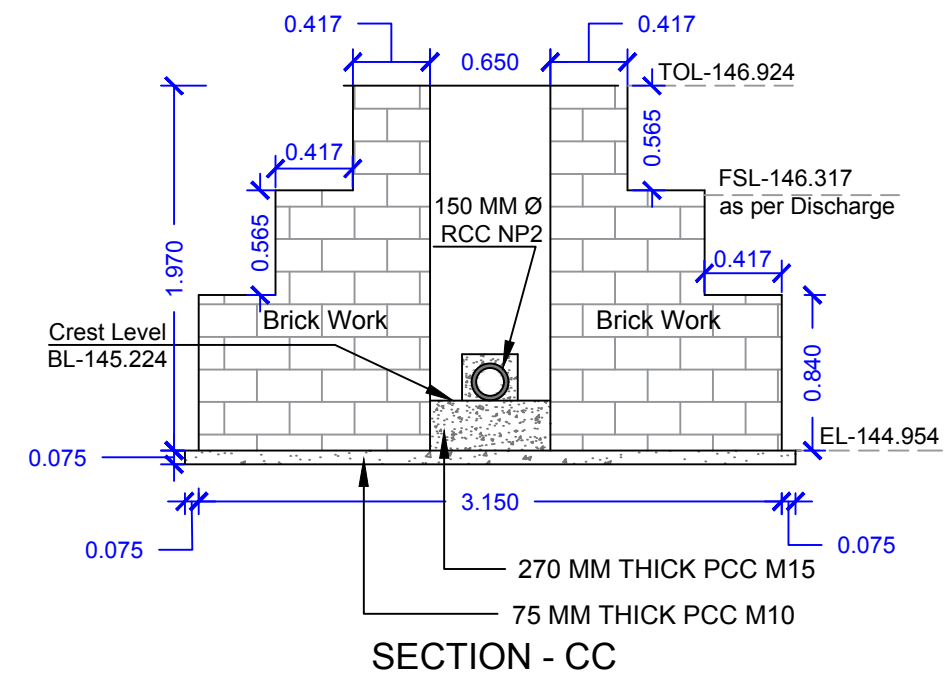
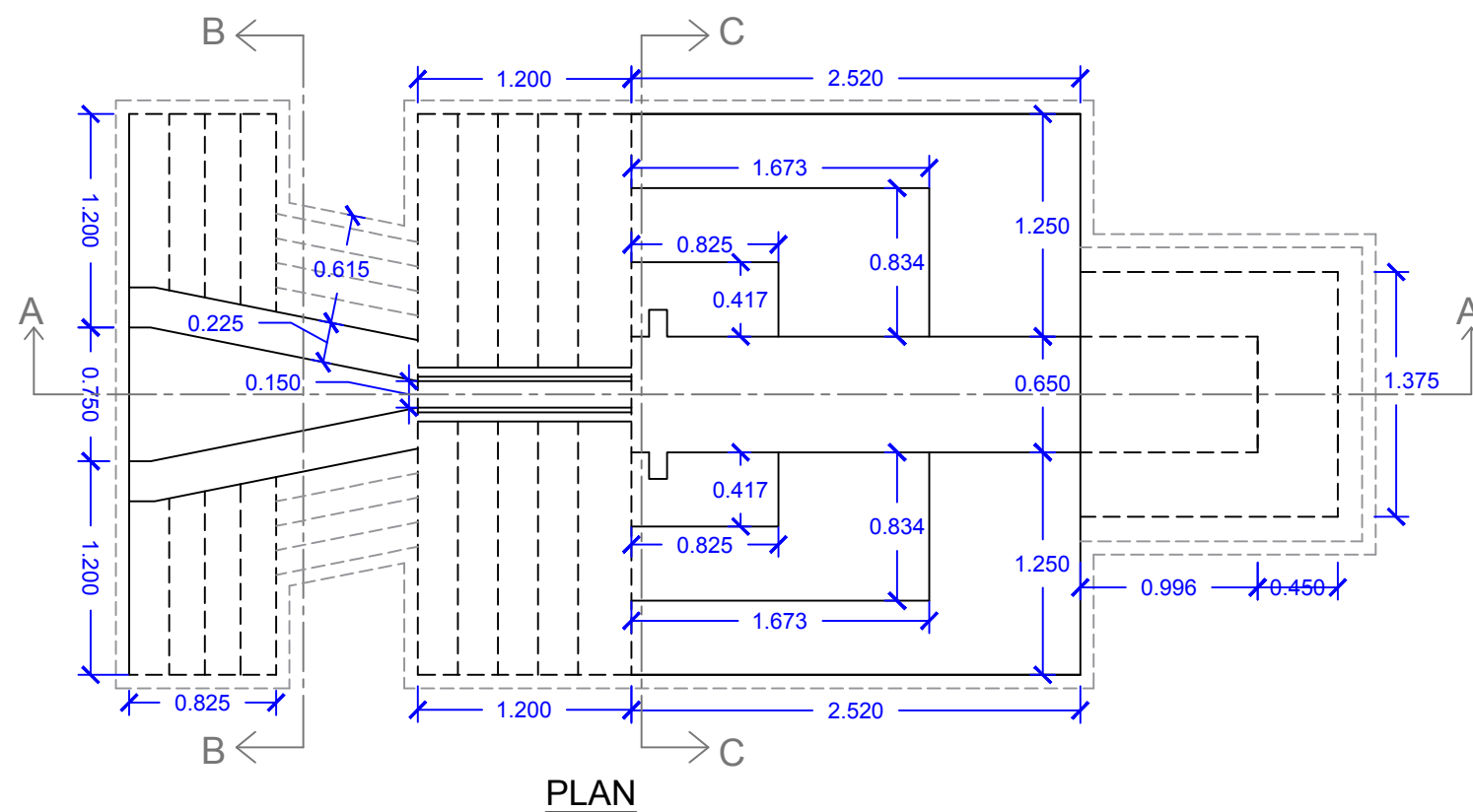


**Notes :-**  
1. ALL DIMENSION AND ELEVATION ARE IN METERS



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|                  |                                                          |                |  |
|------------------|----------------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND        |                |  |
| 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 :- |  |

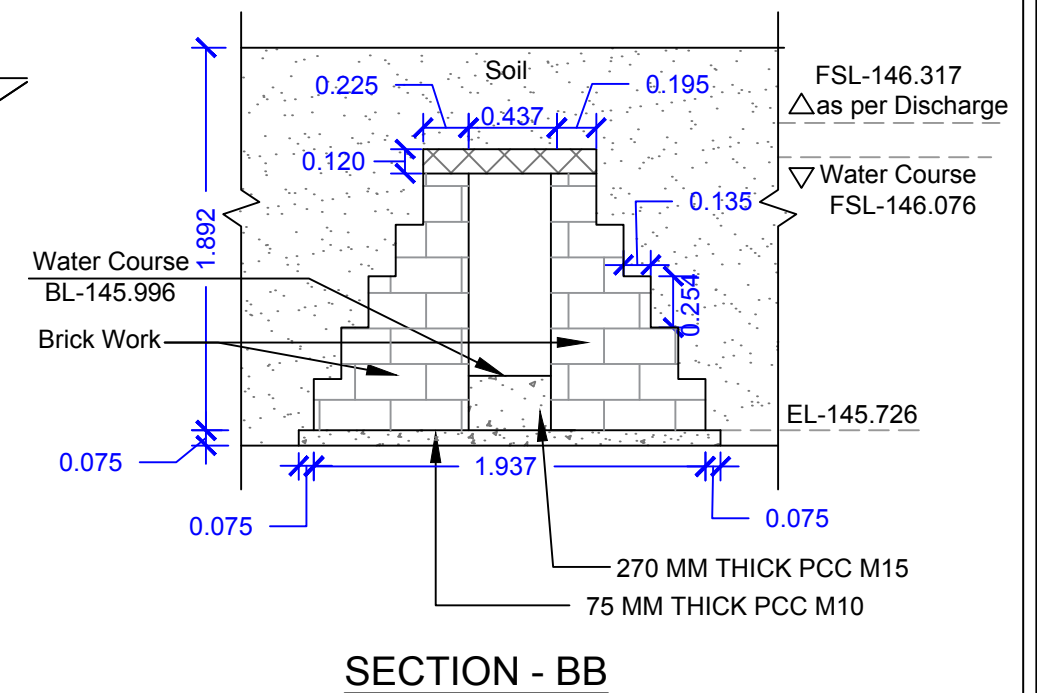
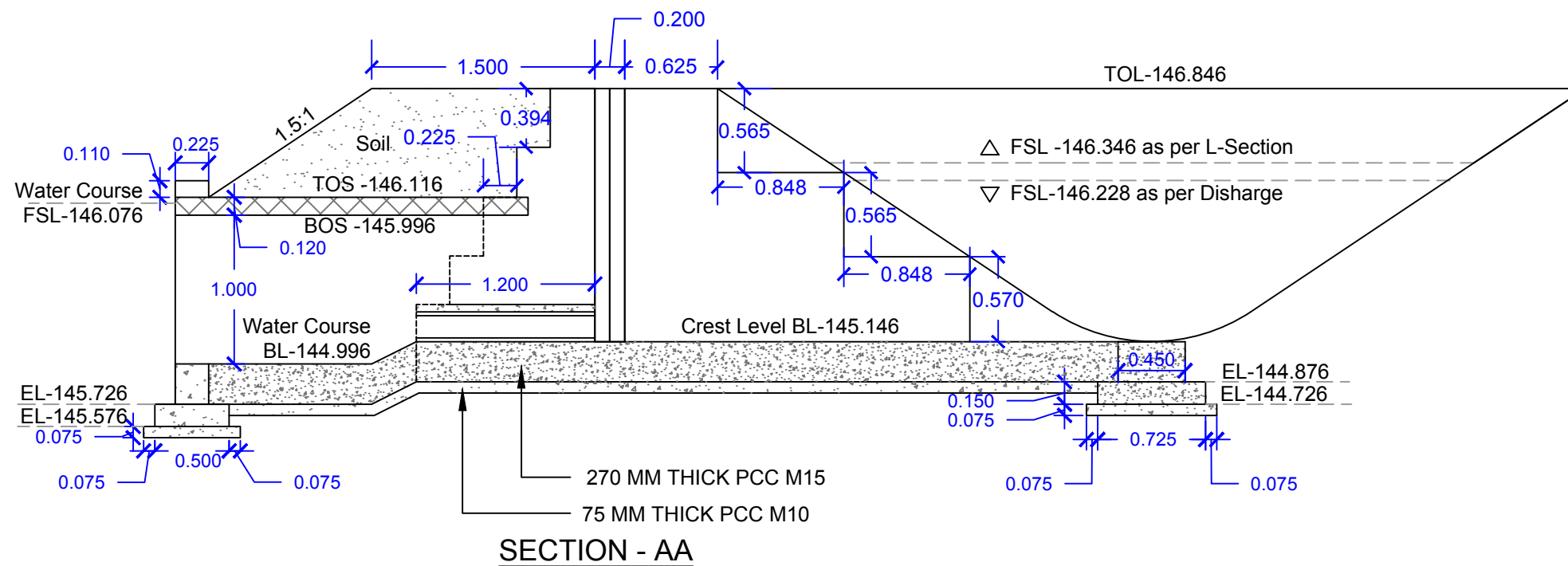
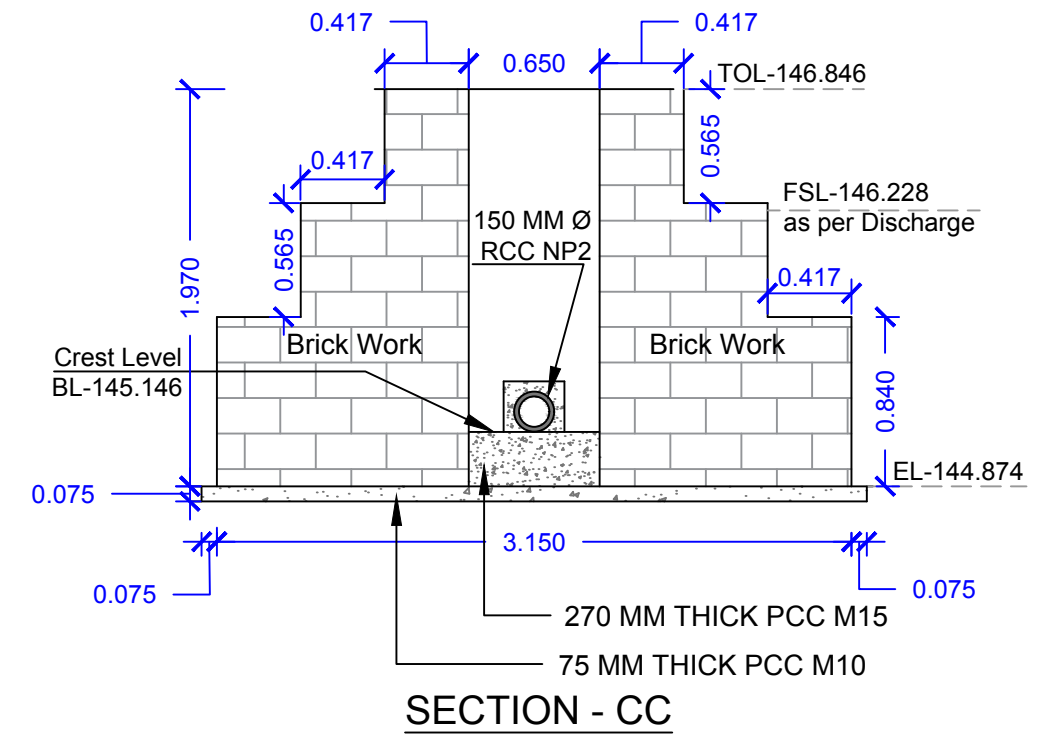
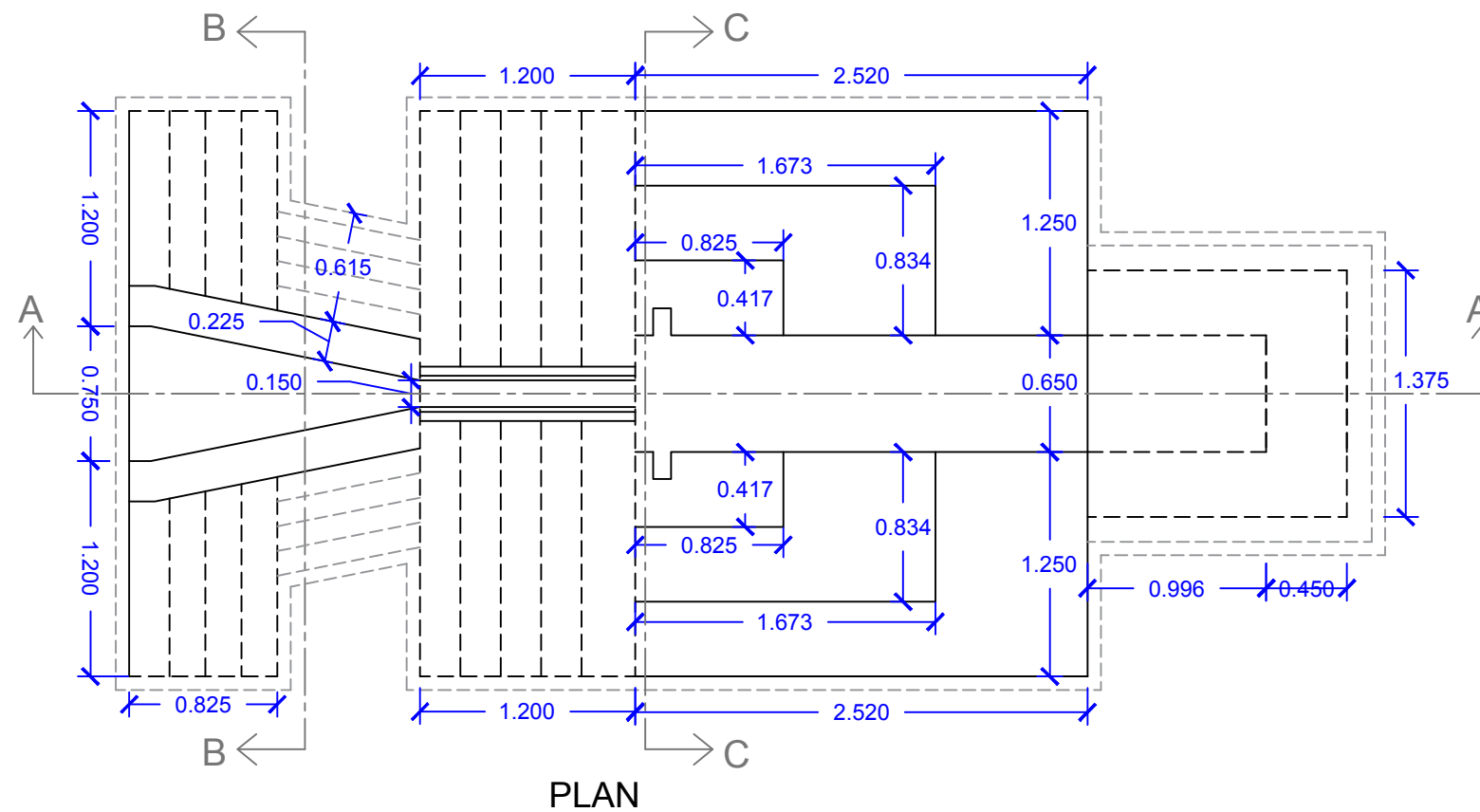


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|                  |                                                          |                |  |
|------------------|----------------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, 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 :- |  |

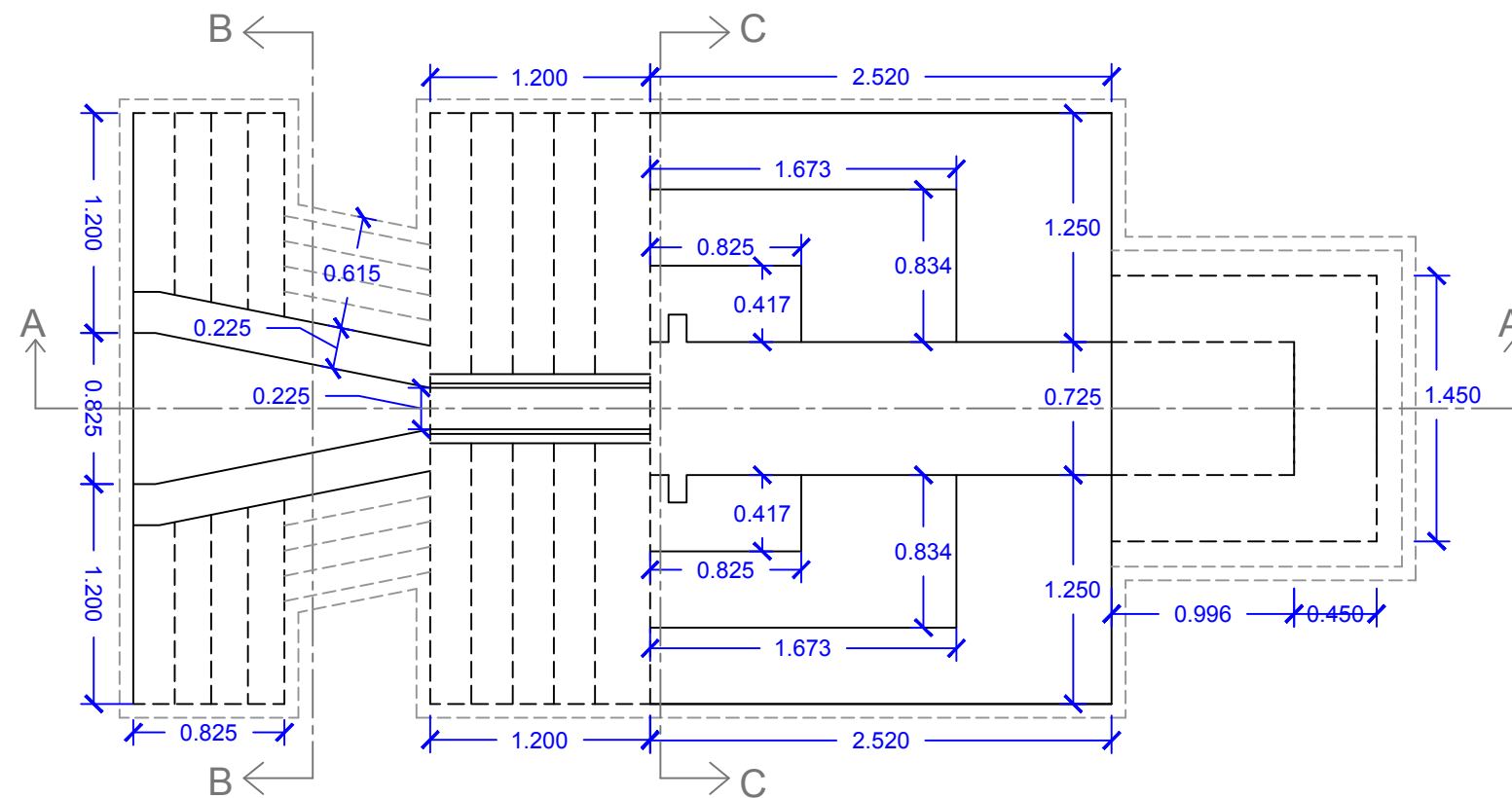


**Notes :-**  
1. ALL DIMENSION AND ELEVATION ARE IN METERS

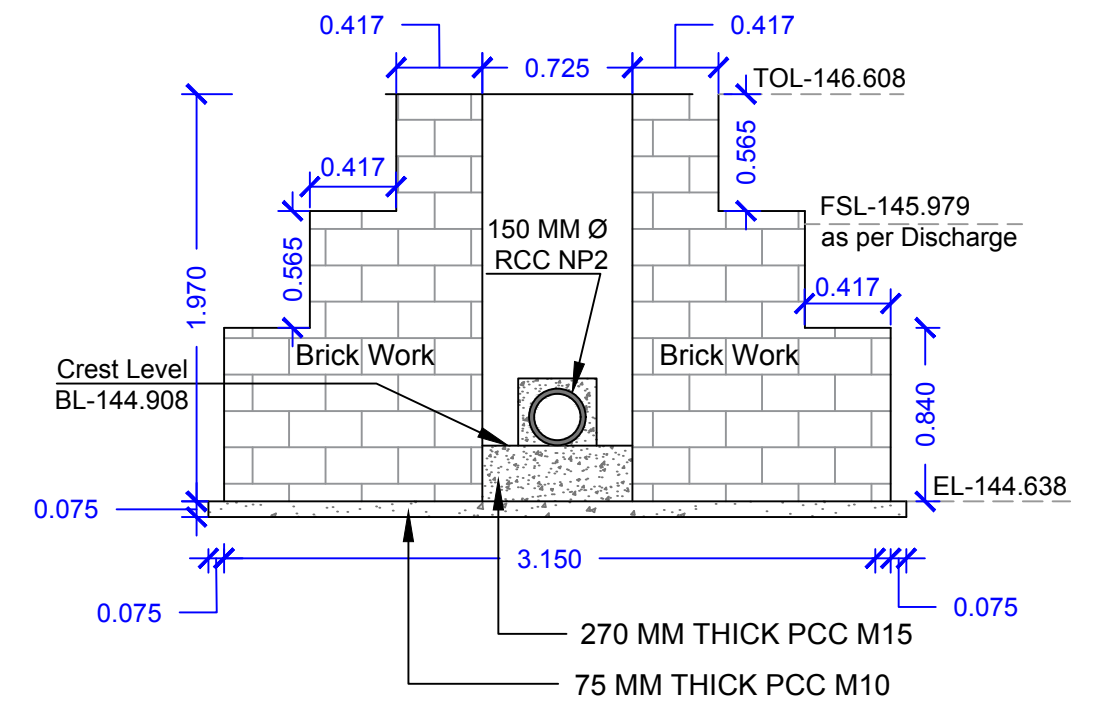


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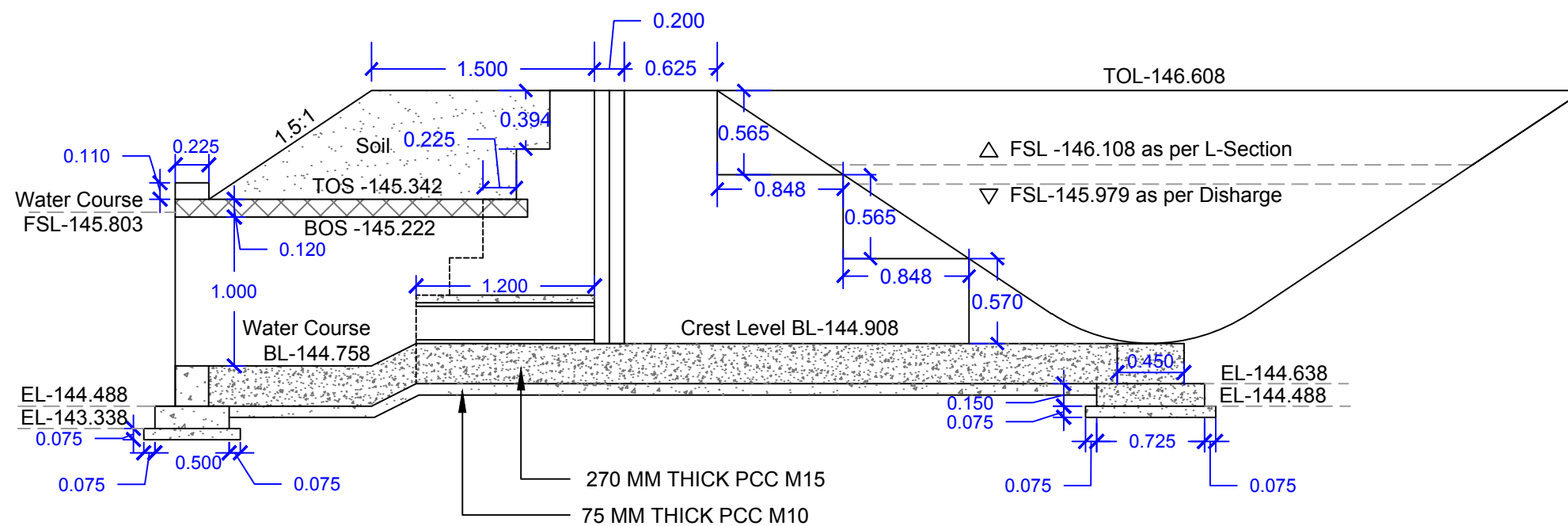
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| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND        |                |  |
| Drawing Title :- | PLAN & SECTION DRAWING OF PIPE OUTLET AT RD 6.270 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/07       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



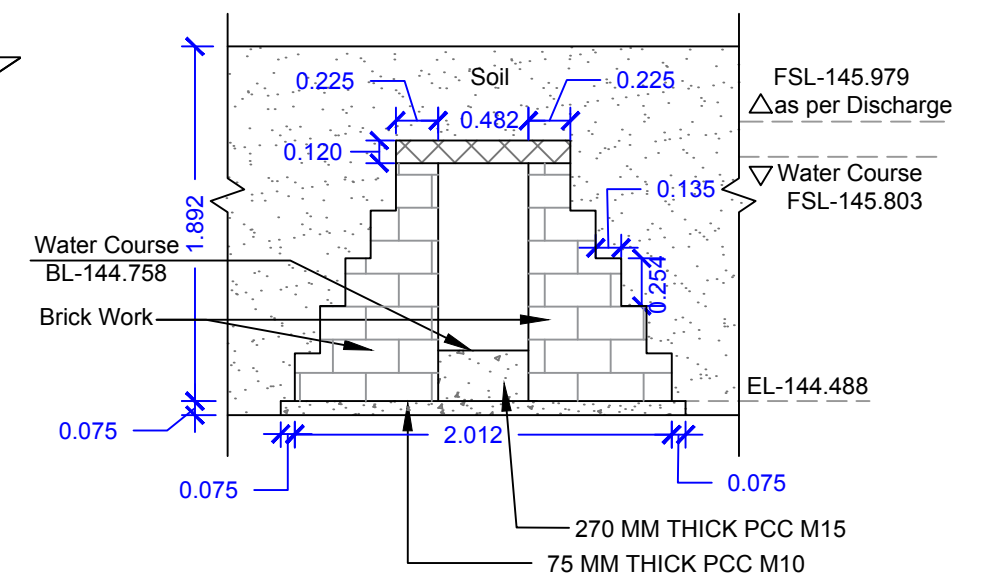
PLAN



SECTION - CC



SECTION - AA



SECTION - BB

Notes :-

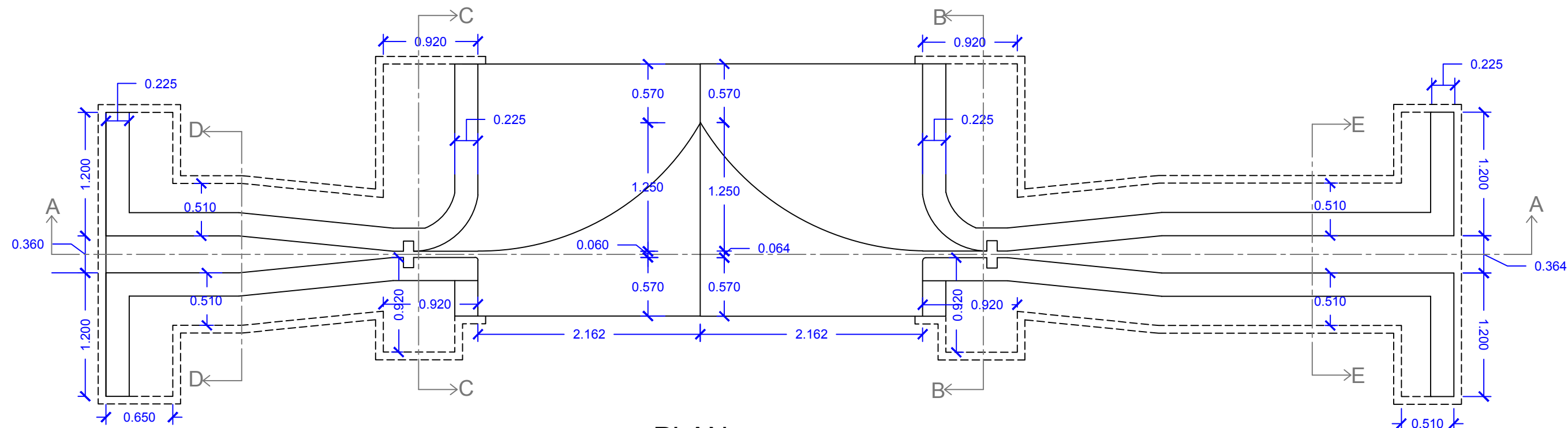
1. ALL DIMENSION AND ELEVATION ARE IN METERS



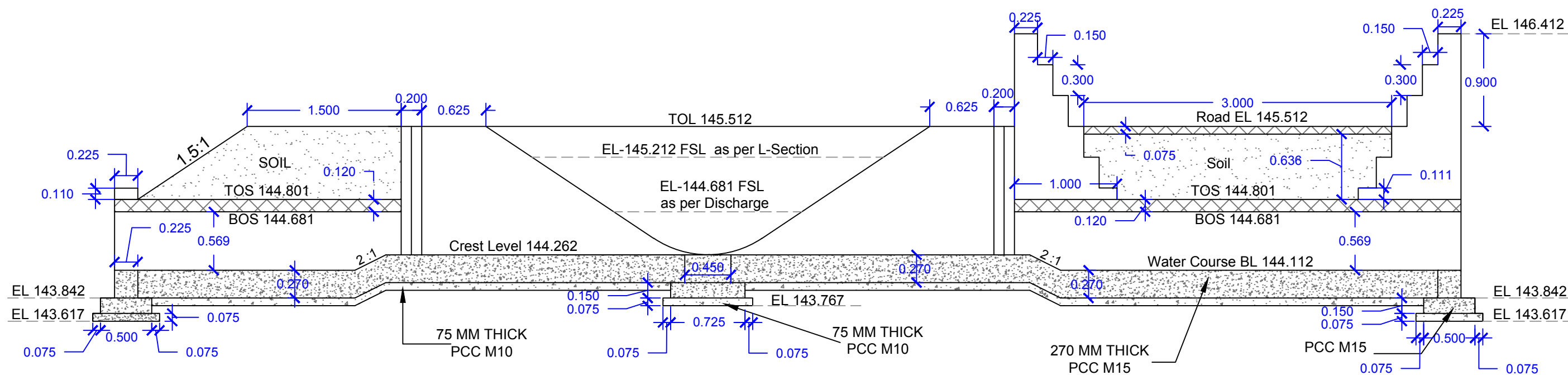
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|                  |                                                          |                |  |
|------------------|----------------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, 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 :- |  |





PLAN



SECTION - AA

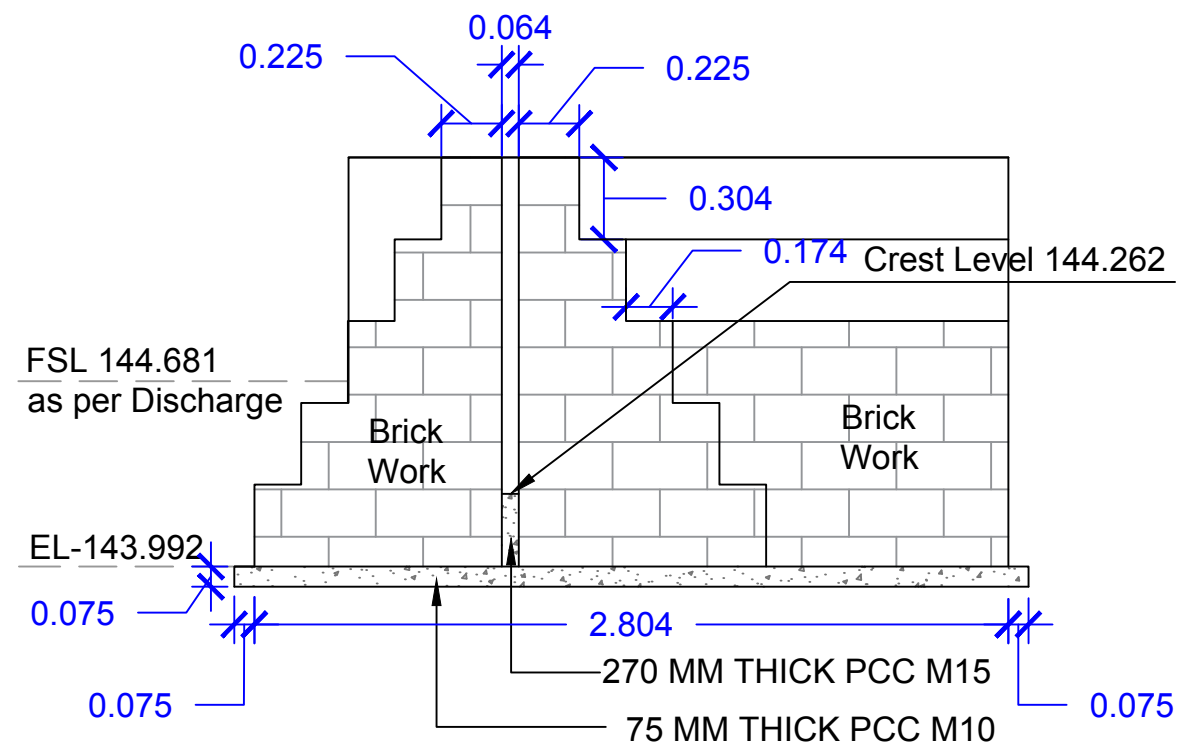
Notes :-

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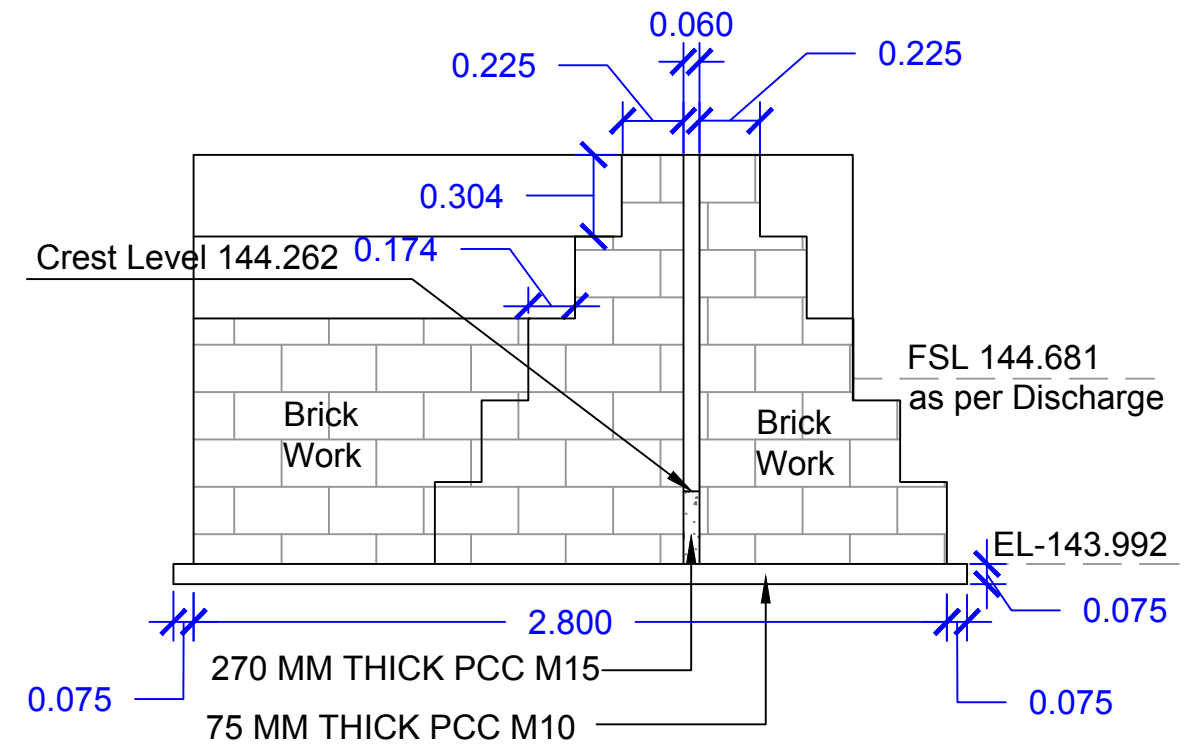


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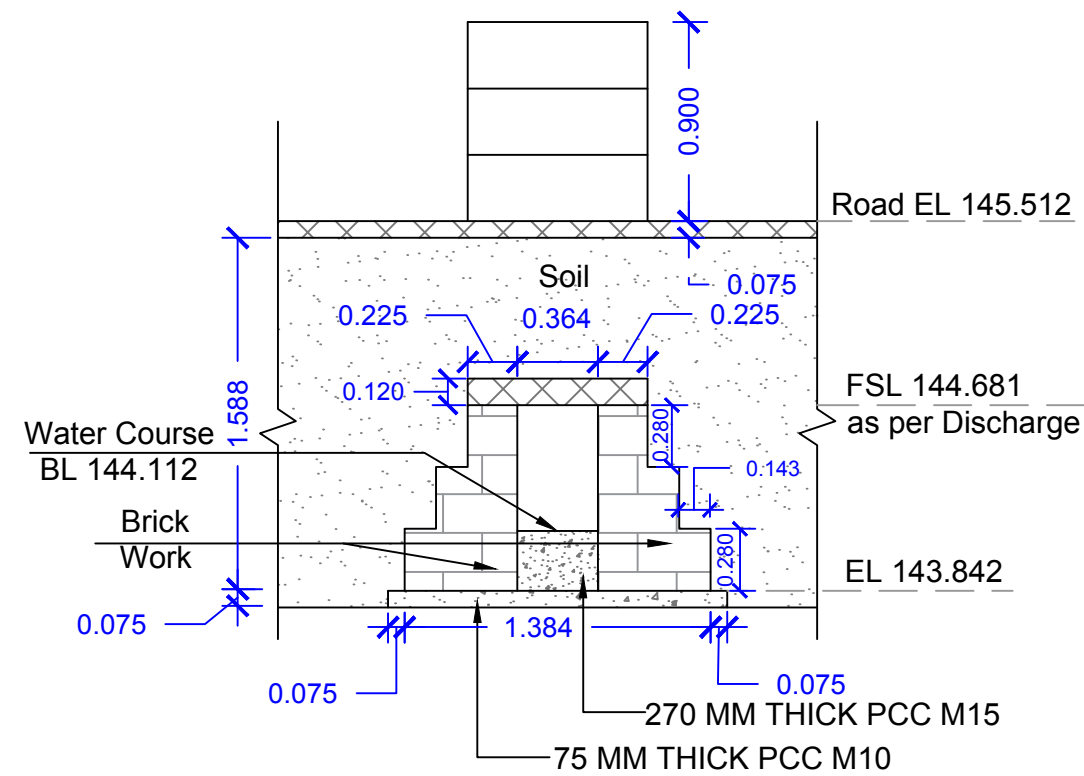
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| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND               |                |  |
| Drawing Title :- | PLAN & SECTION DRAWING OF OPEN FLUME OUTLET AT RD 10.140 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/10a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



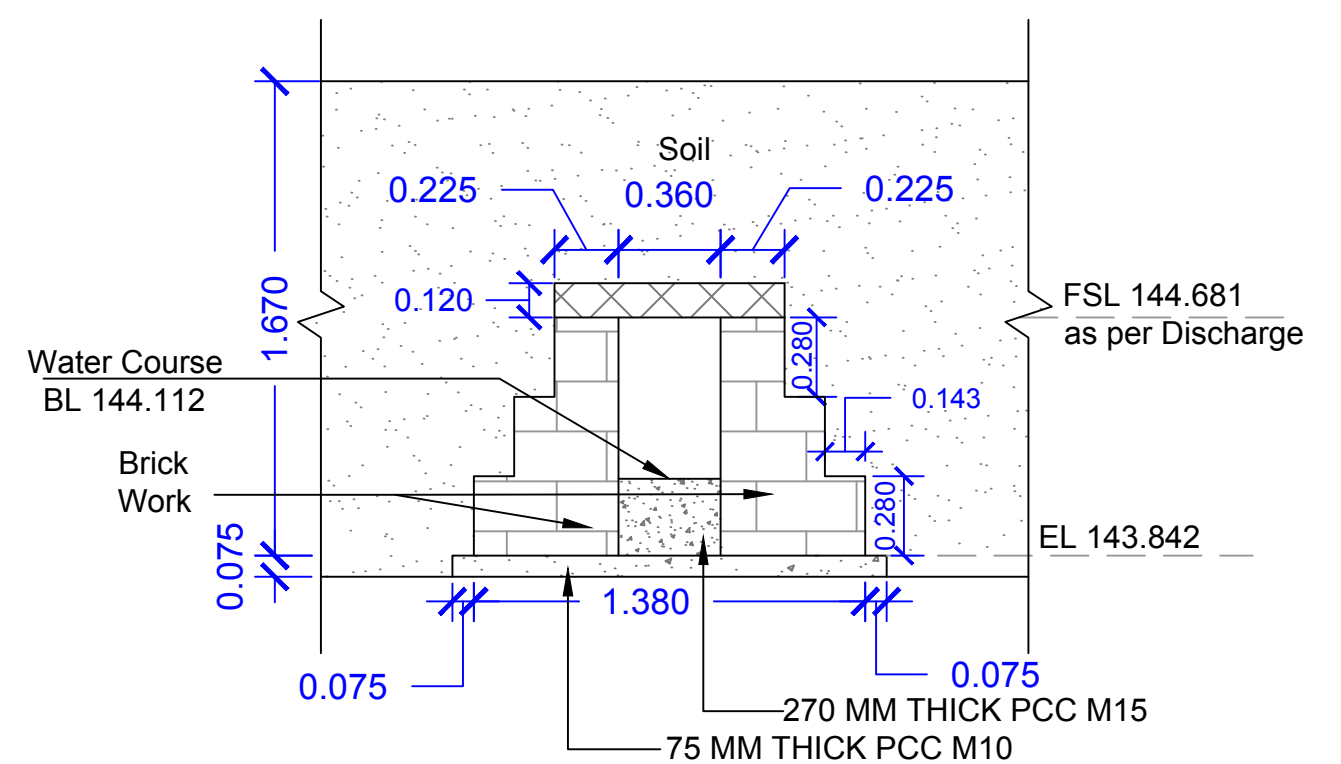
SECTION - BB



SECTION - CC



SECTION - EE

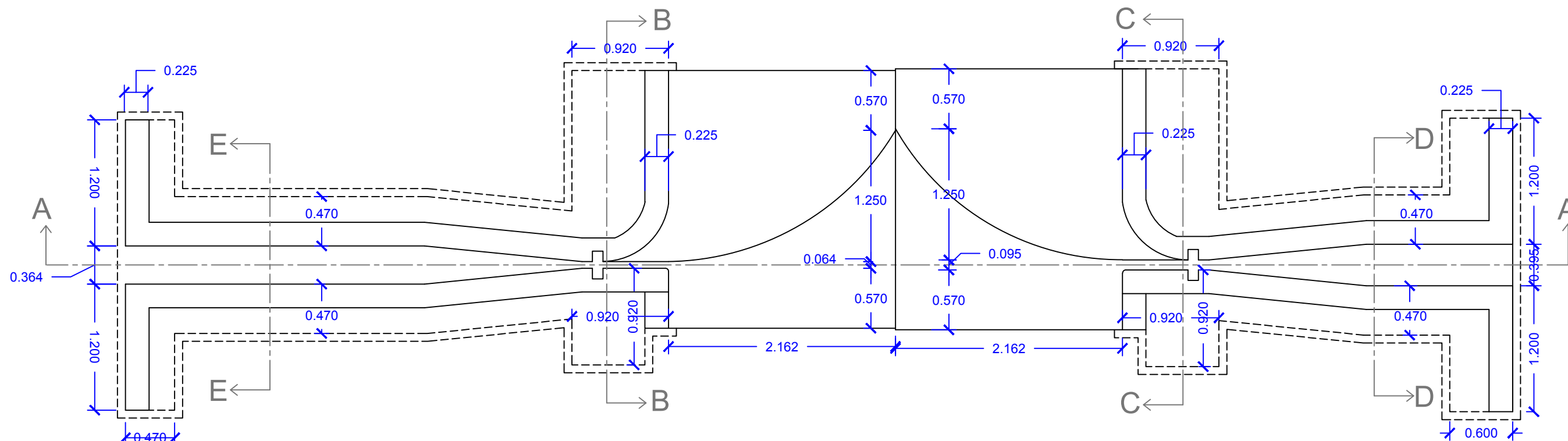


SECTION - DD

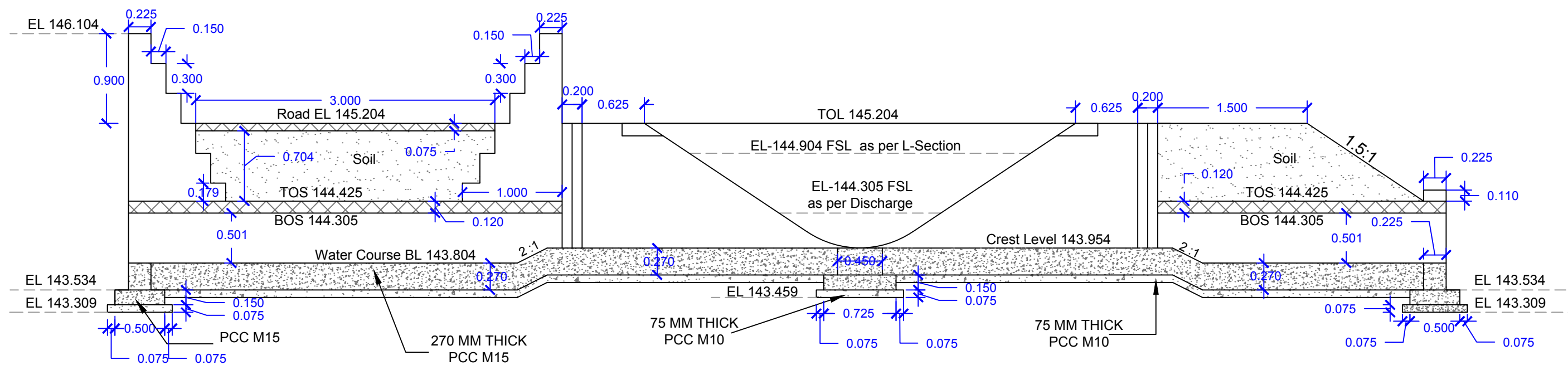
Notes :-  
1. ALL DIMENSION AND ELEVATION ARE IN METERS



|                  |                                                          |                |  |
|------------------|----------------------------------------------------------|----------------|--|
| 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 :- |  |



**PLAN**



**SECTION - AA**

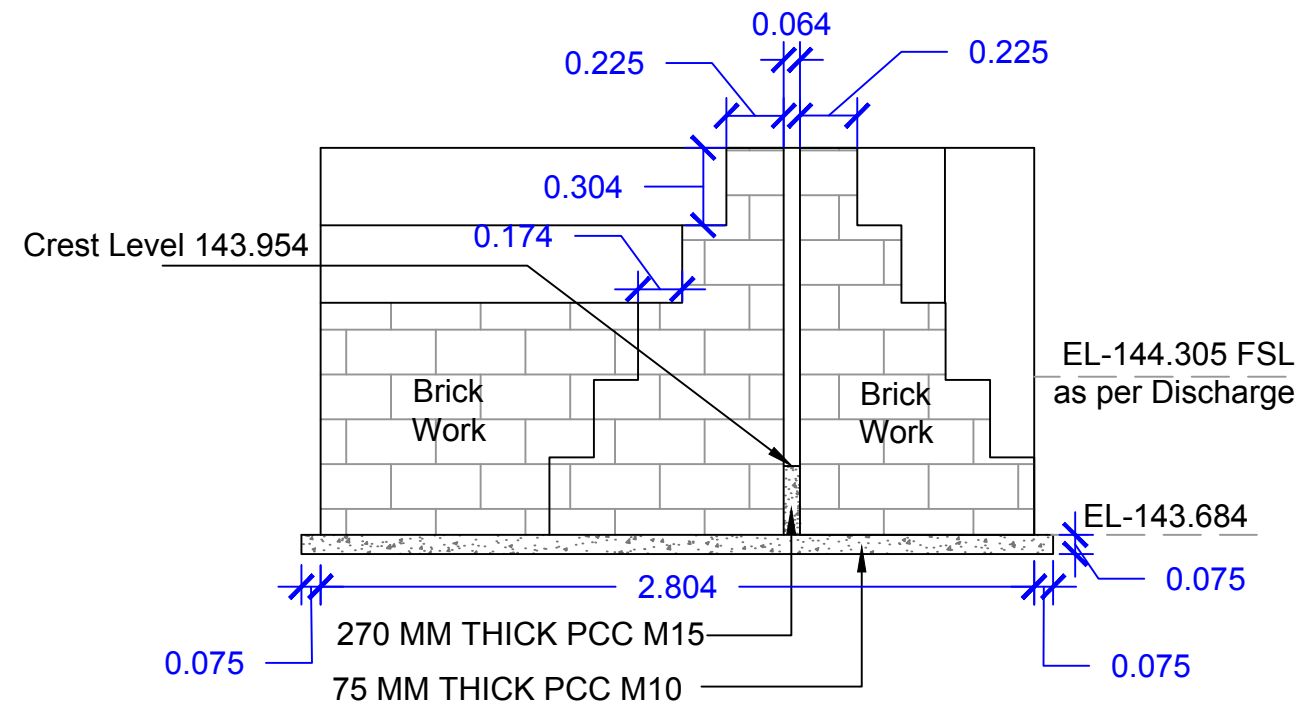
**Notes :-**

1. ALL DIMENSION AND ELEVATION ARE IN METERS

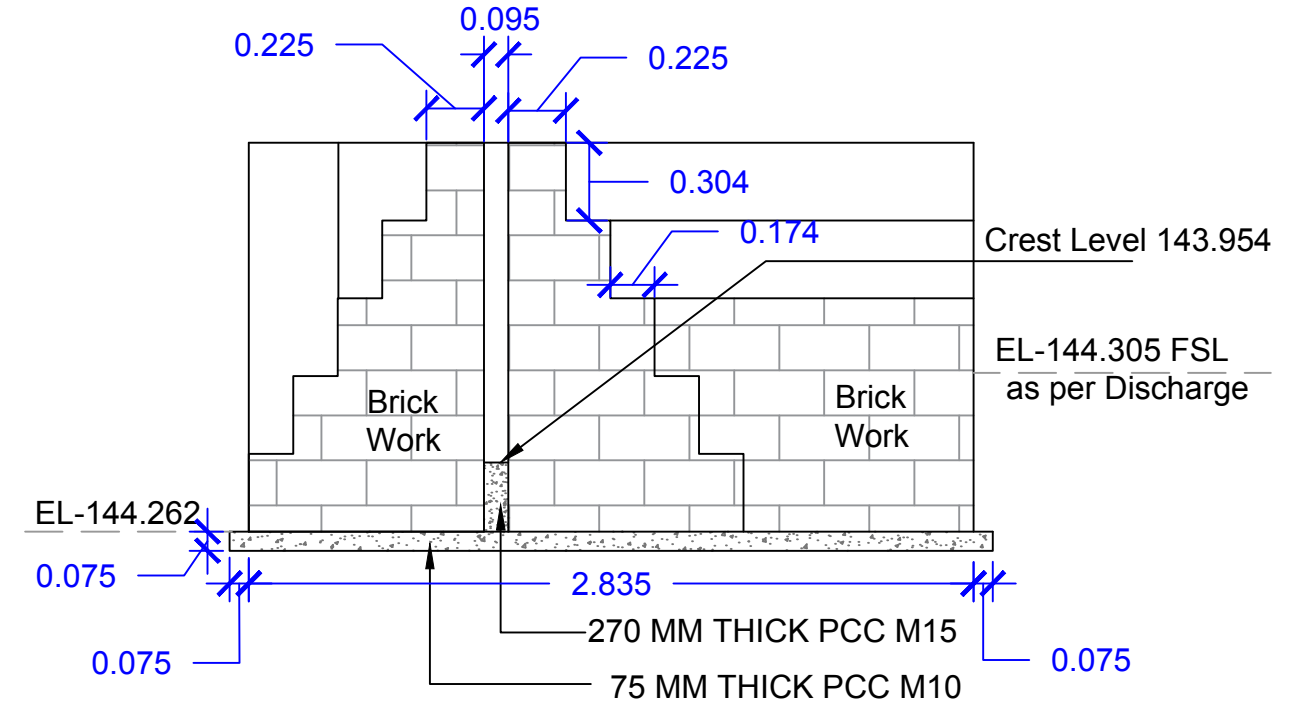


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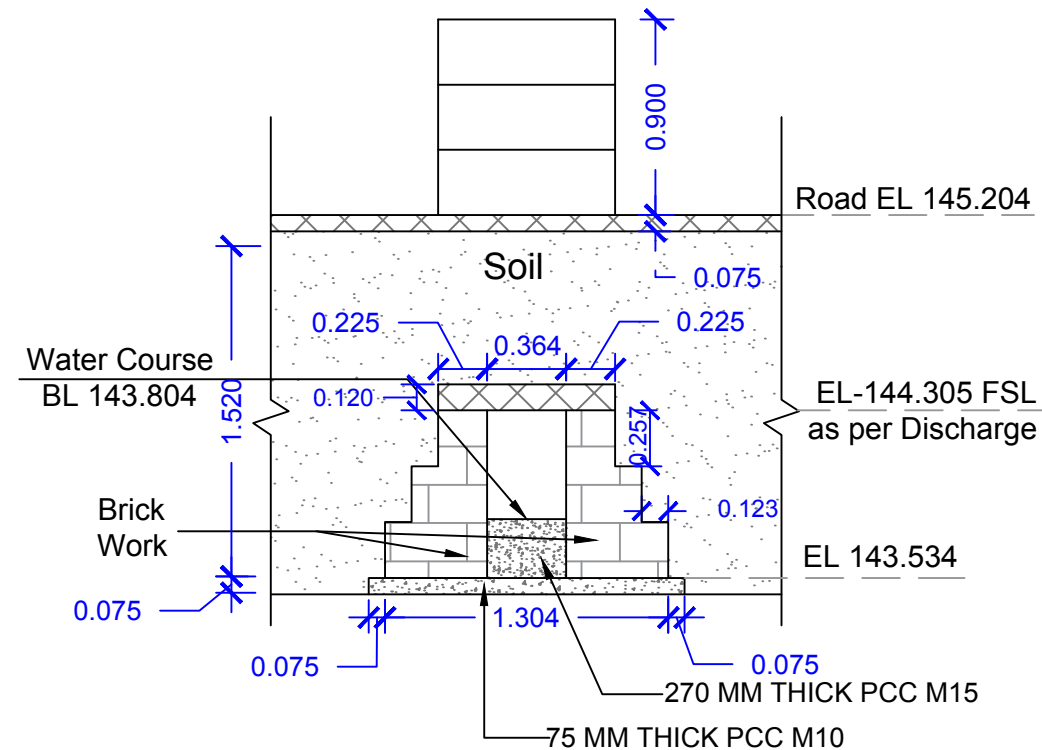
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| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND               |                |  |
| Drawing Title :- | PLAN & SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.430 OF LMC |                |  |
| Drawing No :-    | WAP/INFRA/OUTLET/11a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



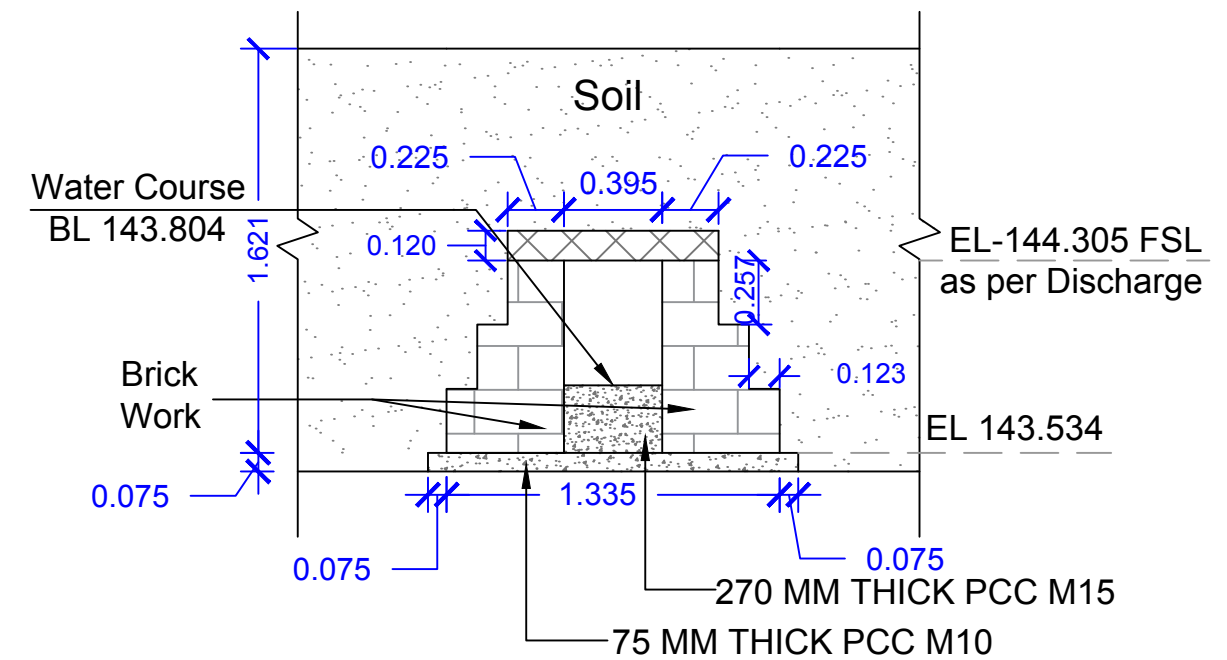
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**SECTION - CC**



**SECTION - EE**



**SECTION - DD**

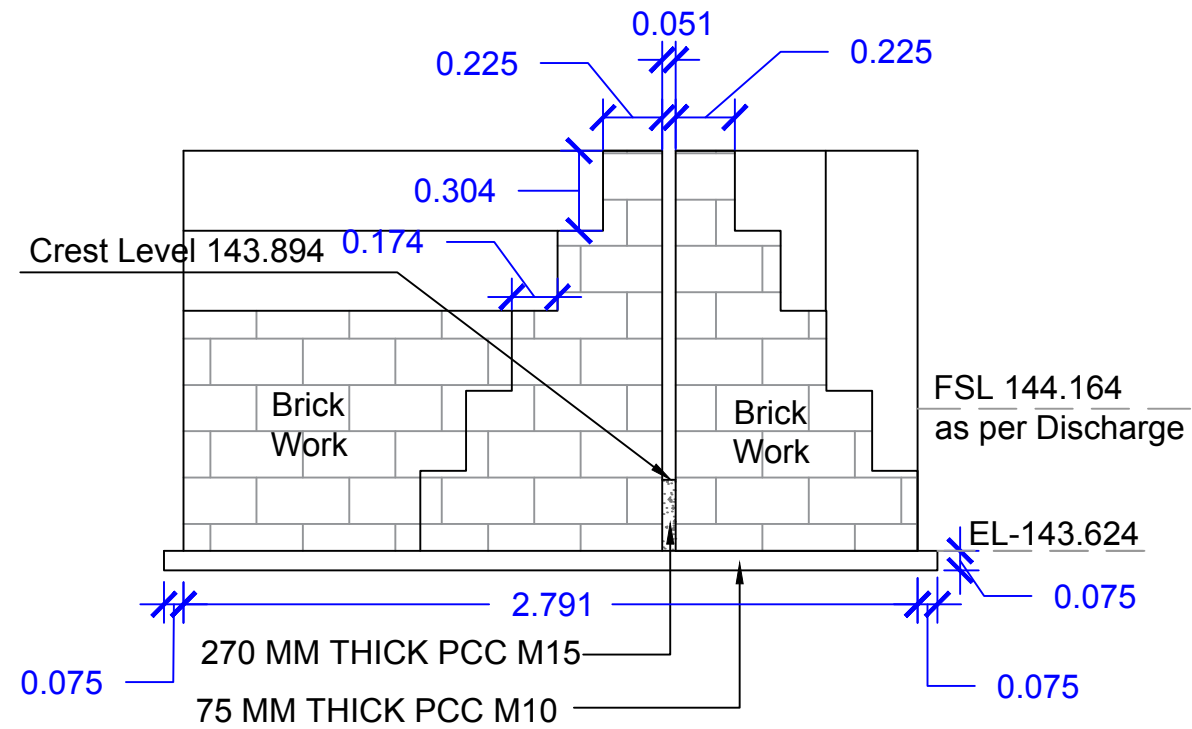
Notes :-  
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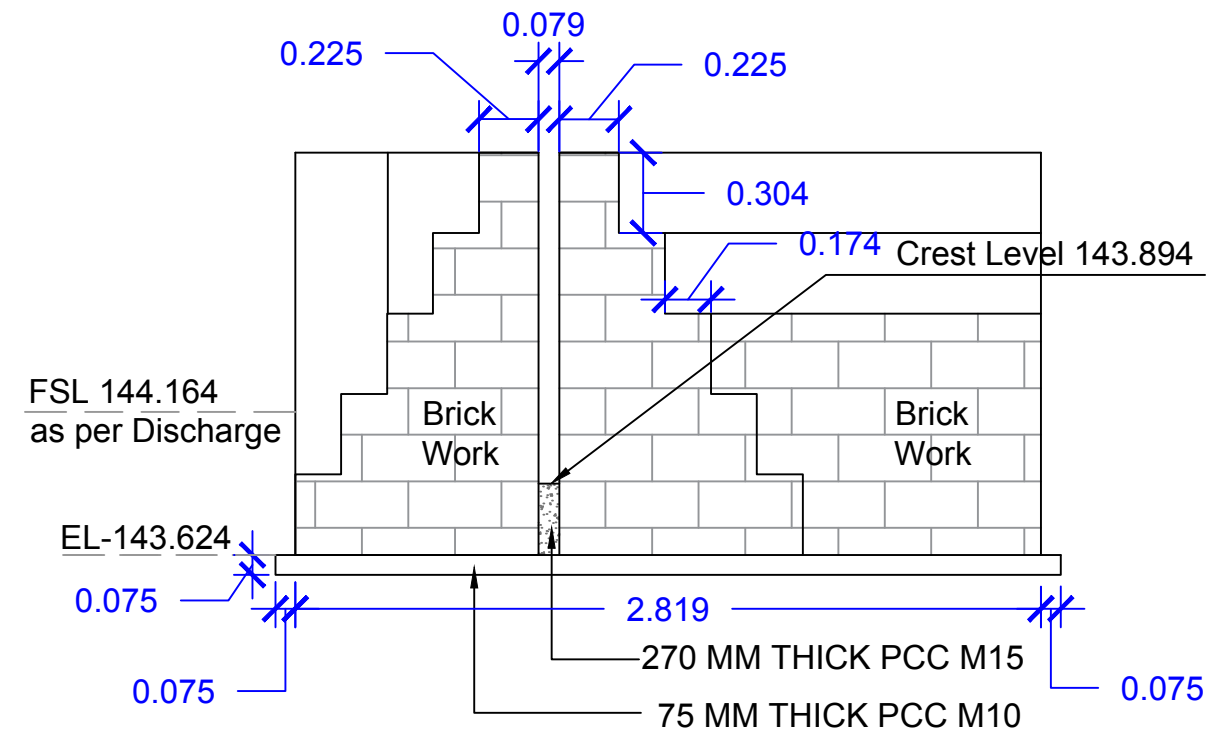
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|------------------|----------------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND        |                |  |
| Drawing Title :- | SECTION DRAWING OF OPEN FLUME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

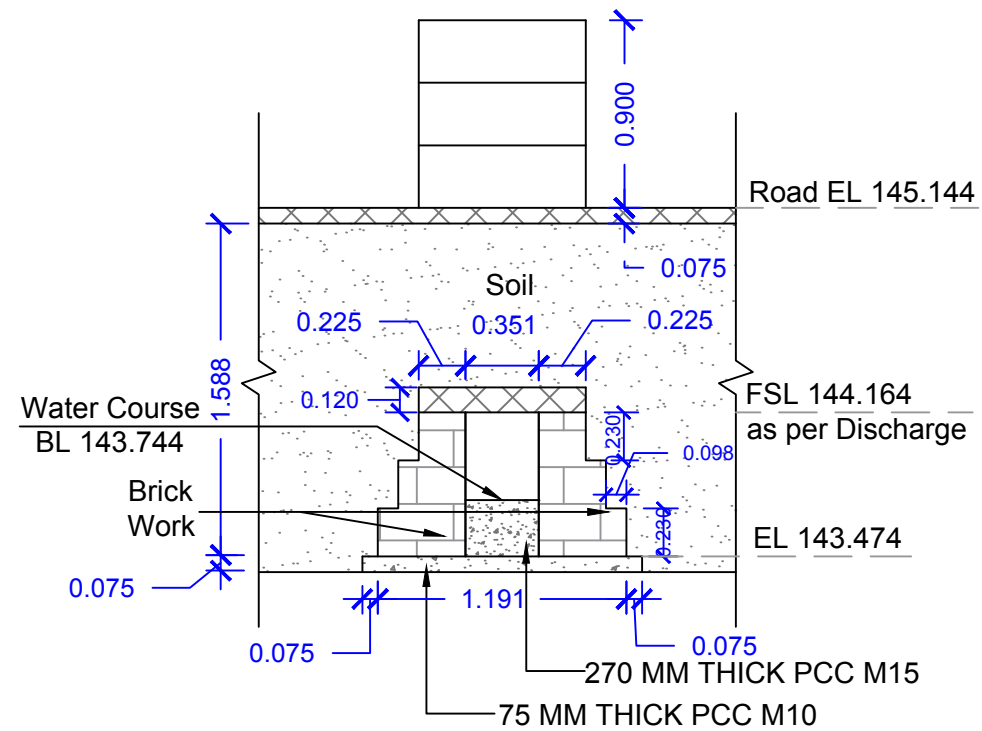




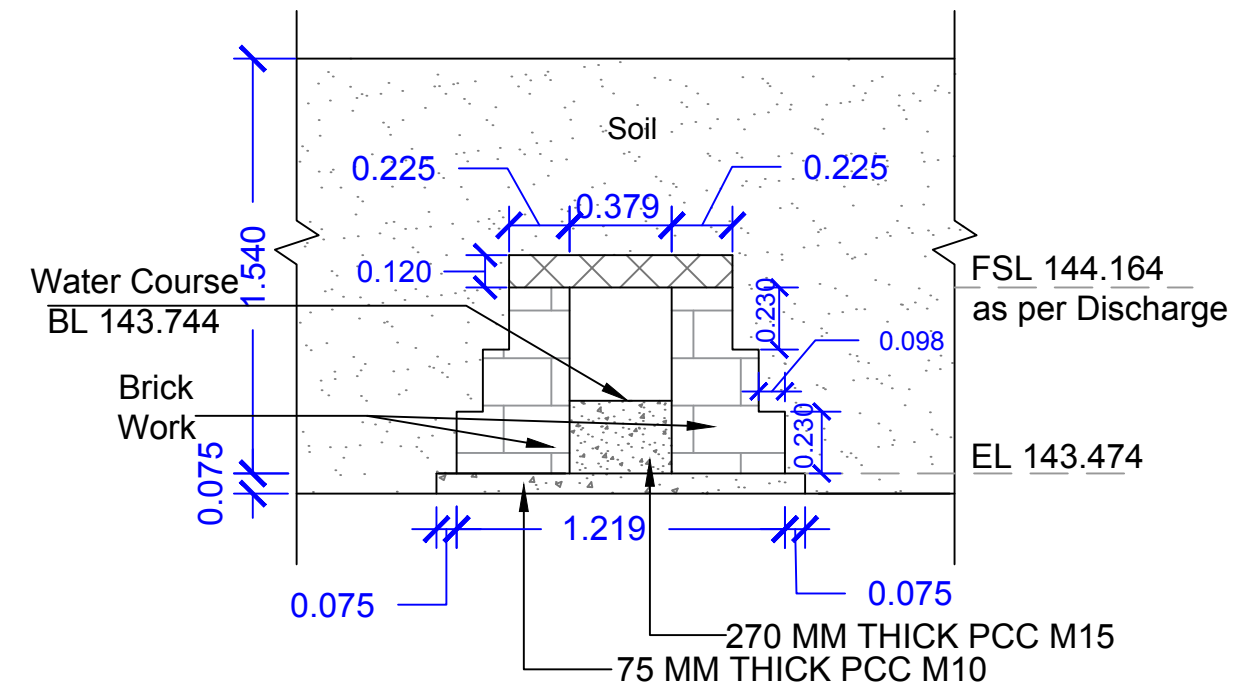
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**SECTION - CC**



**SECTION - EE**

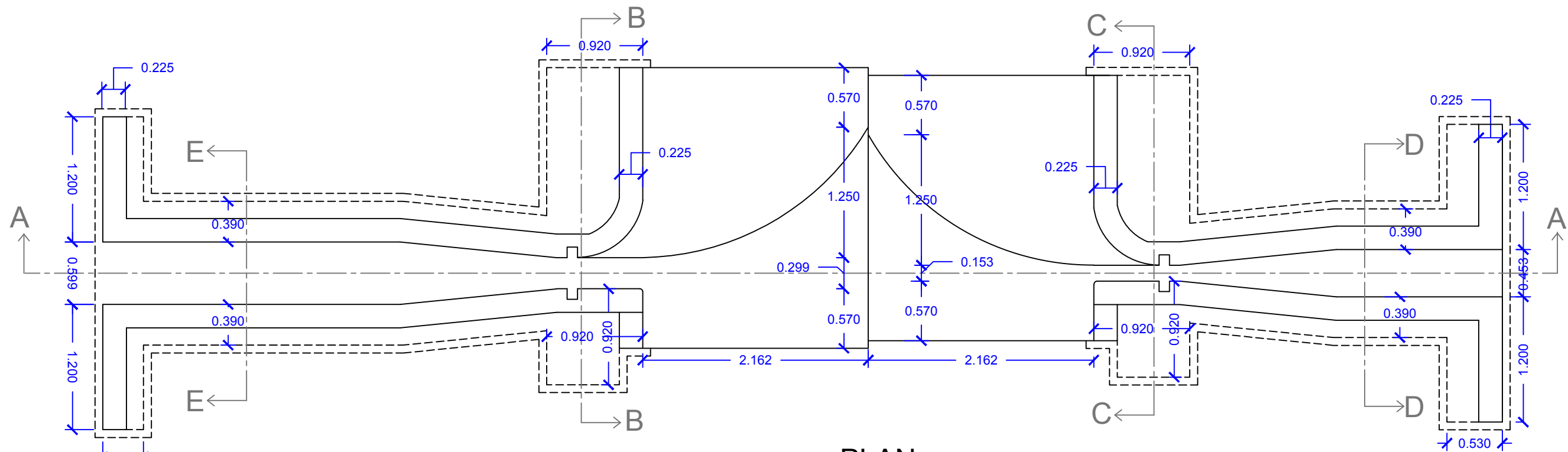


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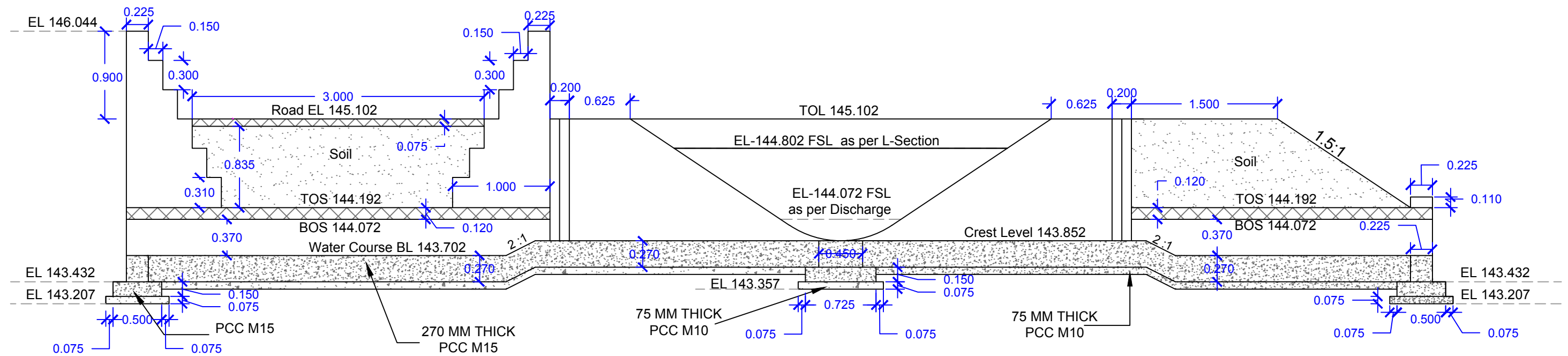
Notes :-  
1. ALL DIMENSION AND ELEVATION ARE IN METERS



|                  |                                                          |                |  |
|------------------|----------------------------------------------------------|----------------|--|
| 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 :- |  |



PLAN



SECTION - AA

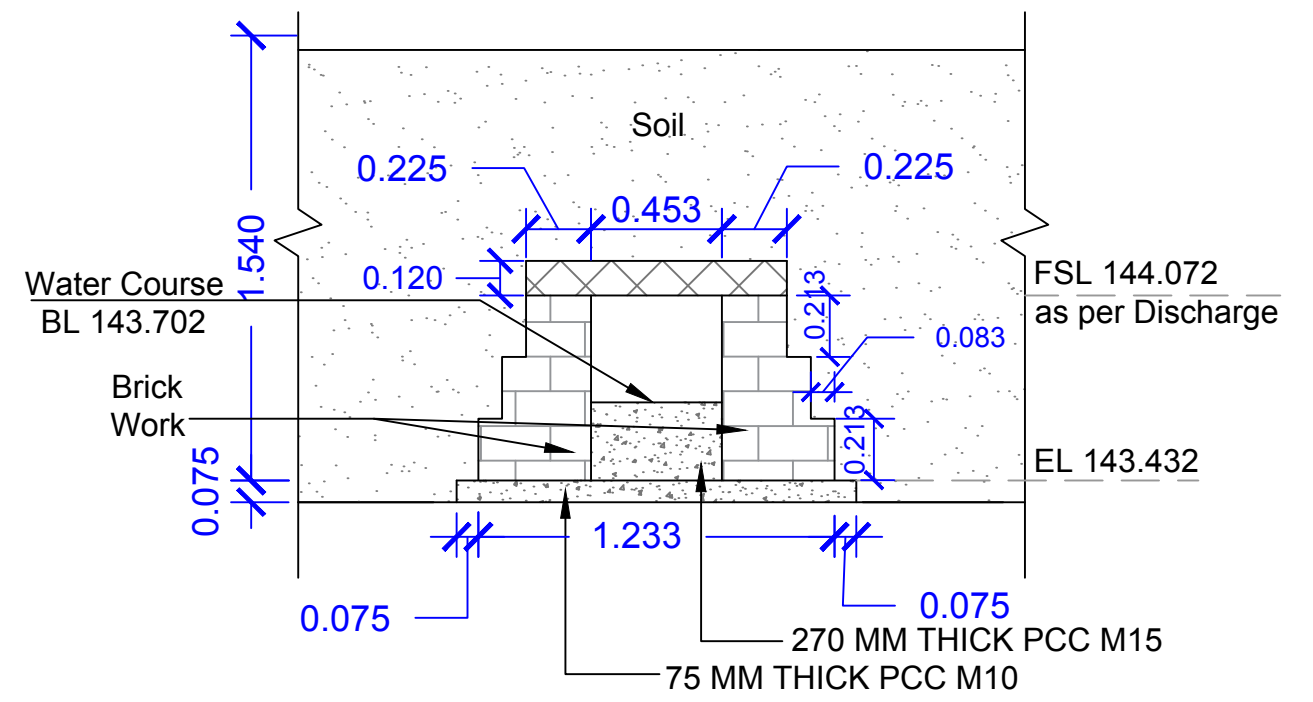
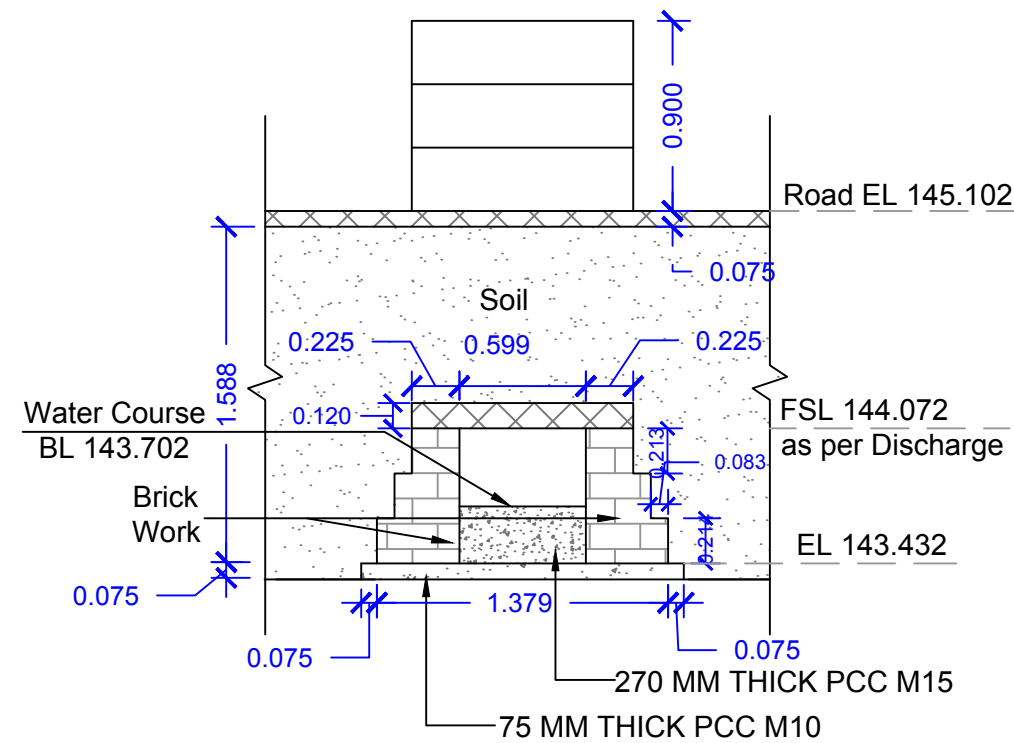
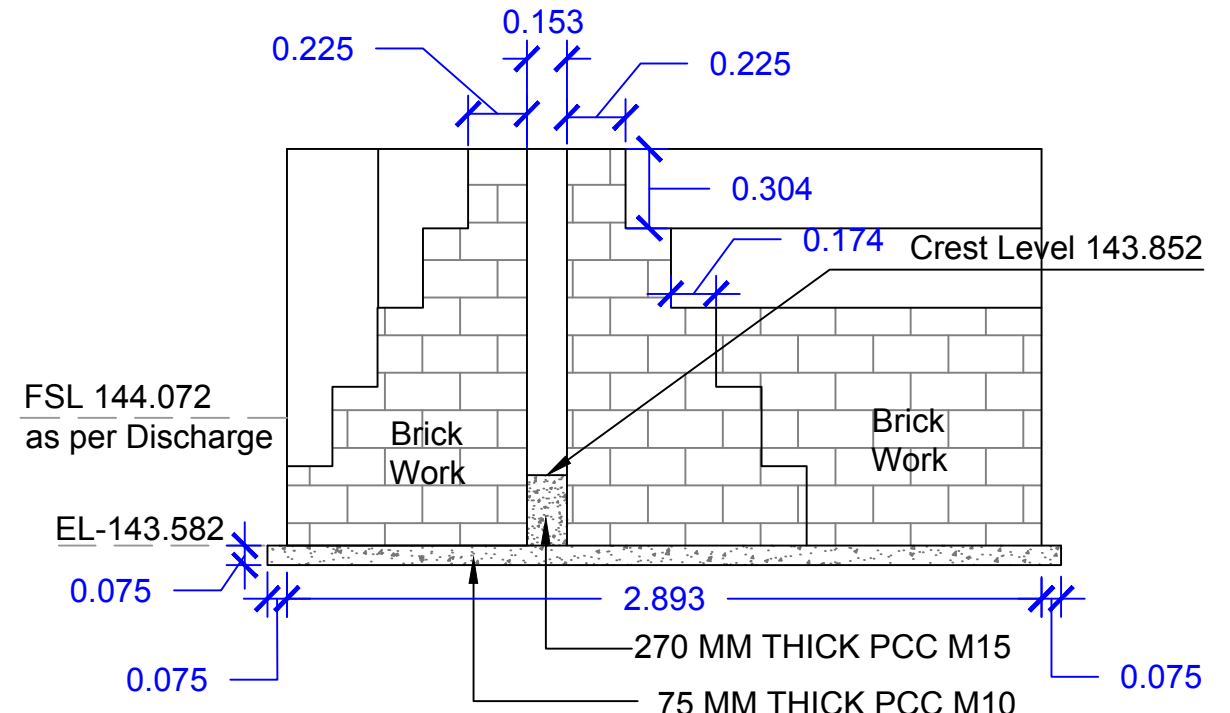
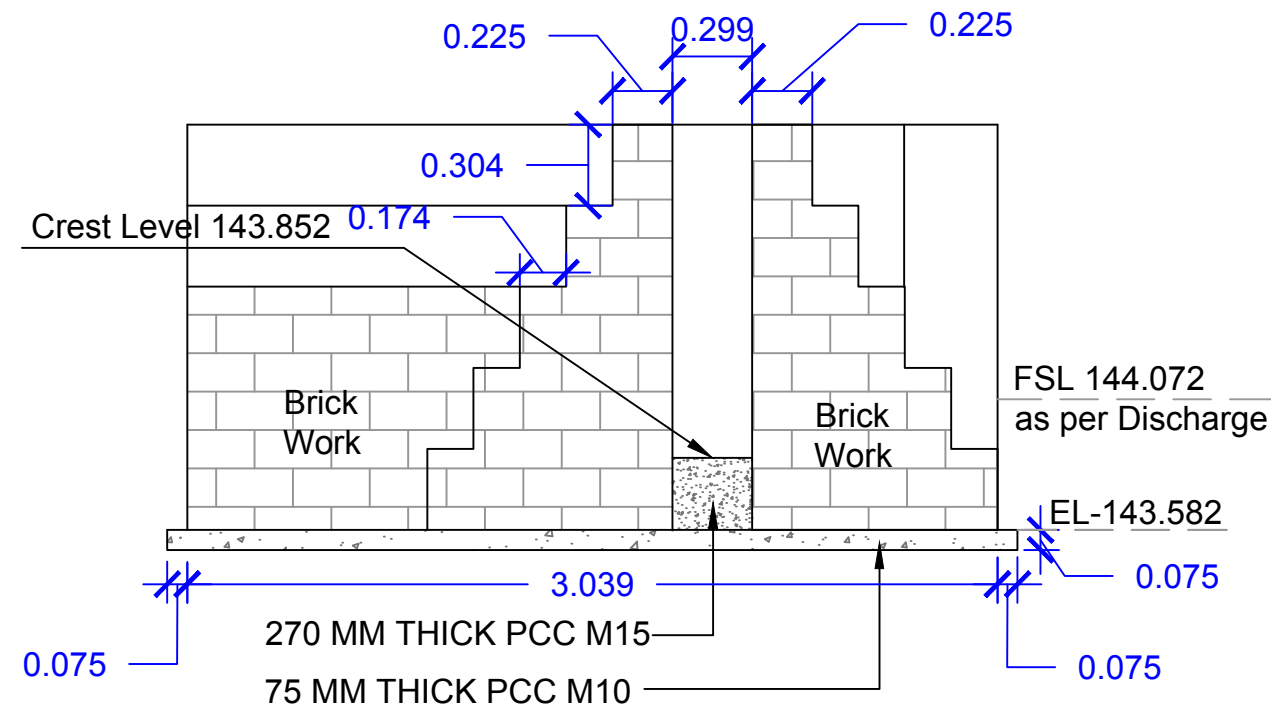
Notes :-

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 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 :- |  |



Notes :-  
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|------------------|----------------------------------------------------------|----------------|--|
| Project Title :- | NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND        |                |  |
| Drawing Title :- | SECTION DRAWING OF OPEN FLUME OUTLET AT RD 11.890 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<br>LMC, Jharkhand |                  |             |                |                    |
|-----------------------------------------------------------------------|------------------|-------------|----------------|--------------------|
| North Koel Reservoir Project, Jharkhand & Bihar                       |                  |             |                |                    |
| S.No                                                                  | Chainage<br>(Km) | Outlet Side | Type of Outlet | Amount<br>(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<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                                                                                                                                                                                                                                                       | 102.41   | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                                                                                                                                                                                                                                        | 38.23    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.20     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.24     | m <sup>3</sup> | 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. <b>7.4.4</b>                                                                                                                                                                                                                                                                                                                                                                                                             | 22.61    | m <sup>3</sup> | 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 <b>6.02 RCD, Jharkhand, 2021</b> | 0.71     | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.22  | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                                                                                                                                                                                                                                                                                                           | 5.20  | m <sup>2</sup> | 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. <b>7.3.20</b>                                                                                                                                                                                                                                                                                                                                                                                              | 3.61  | m <sup>2</sup> | 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. <b>7.6.1.2</b>                                                                                                                                                                                                                                                                              | 1.75  | m              | 281.91   | 493.34           |
| 12                          | 150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.75  | m              | 212.00   | 371.00           |
| 13                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 24.23 | m <sup>3</sup> | 232.70   | 5637.33          |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4.71  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                |          | <b>162366.71</b> |

| Quantity for Outlet OR1 at 0.63 Km of LMC |               |                             |              |       |     |               |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|---------------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume        |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |               |
| 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         |
|                                           |               |                             |              |       |     | <b>102.41</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |               |
| 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         |
|                                           |               |                             |              |       |     | <b>2.20</b>   |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |               |
| 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          |
|                                           |               |                             |              |       |     | <b>2.24</b>   |
| <b>Brick Work</b>                         |               |                             |              |       |     |               |
| 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          |
|                                           |               |                             |              |       |     | <b>22.61</b>  |
|                                           |               |                             |              |       |     |               |
| <b>Hume Pipe</b>                          | 1.750         |                             |              | 0.014 | 1   | <b>0.024</b>  |
|                                           |               |                             |              |       |     |               |
| <b>In Superstructure</b>                  |               |                             |              |       |     |               |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 1.80  | 1   | 0.22          |
| CC Road                                   | 3.15          | 0.075                       | 3.00         |       | 1   | 0.71          |
|                                           |               |                             |              |       |     | <b>0.92</b>   |
|                                           |               |                             |              |       |     |               |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |               |
| <b>Empty Area</b>                         |               |                             |              |       |     |               |
| 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         |

|                                     |       |       |  |             |   |              |
|-------------------------------------|-------|-------|--|-------------|---|--------------|
|                                     |       |       |  |             |   | <b>38.23</b> |
| <b>SHUTTERING</b>                   |       |       |  |             |   |              |
| 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 |              |
|                                     |       |       |  | <b>5.20</b> |   |              |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>3.61</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL1 at RD 0.63 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 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 <sup>3</sup> | 232.70  | 3504.27          |
| 13                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                               | 3.38  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                              |       |                |         | <b>102955.86</b> |

| Quantity for Outlet OL2 at 0.63 Km of LMC |               |                             |              |       |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>67.70</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>1.94</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>1.81</b>  |
| <b>Brick Work</b>                         |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>13.82</b> |
|                                           |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                          | 1.200         |                             |              | 0.014 | 1   | <b>0.016</b> |
|                                           |               |                             |              |       |     |              |
| <b>In Superstructure</b>                  |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 0.94  | 1   | 0.11         |
|                                           |               |                             |              |       |     | <b>0.11</b>  |
|                                           |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |              |
| <b>Empty Area</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>17.93</b> |
| <b>SHUTTERING</b>                         |               |                             |              |       |     |              |

|                                     |       |       |  |             |   |  |
|-------------------------------------|-------|-------|--|-------------|---|--|
| 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 |  |
|                                     |       |       |  | <b>4.88</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>2.37</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                |                       |              |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR3 at RD 1.95 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 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 <sup>3</sup> | 232.70   | 5347.58          |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.58  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                |          | <b>156154.75</b> |

| Quantity for Outlet OR3 at 1.95 Km of LMC |            |                       |           |       |     |              |
|-------------------------------------------|------------|-----------------------|-----------|-------|-----|--------------|
| Description                               | Length (m) | Height/ Thickness (m) | Width (m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |            |                       |           |       |     |              |
| 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        |
|                                           |            |                       |           |       |     | <b>88.49</b> |
| <b>PCC at Subgrade (M10)</b>              |            |                       |           |       |     |              |
| 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        |
|                                           |            |                       |           |       |     | <b>2.47</b>  |
| <b>PCC (M15)</b>                          |            |                       |           |       |     |              |
| 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         |
|                                           |            |                       |           |       |     | <b>1.85</b>  |
| <b>Brick Work</b>                         |            |                       |           |       |     |              |
| 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         |
|                                           |            |                       |           |       |     | <b>21.39</b> |
|                                           |            |                       |           |       |     |              |
| <b>HDPE Pipe (180 mm dia)</b>             | 1.750      |                       |           | 0.016 | 1   | <b>0.028</b> |
|                                           |            |                       |           |       |     |              |
| <b>In Superstructure</b>                  |            |                       |           |       |     |              |
| RCC M-20 Barrel Slab                      |            | 0.12                  |           | 1.31  | 1   | 0.16         |
| CC Road                                   | 3.18       | 0.075                 | 3.00      |       | 1   | 0.72         |
|                                           |            |                       |           |       |     | <b>0.87</b>  |
|                                           |            |                       |           |       |     |              |
| <b>BACK FILLING</b>                       |            |                       |           |       |     |              |
| <b>Empty Area</b>                         |            |                       |           |       |     |              |
| 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        |

|                                     |       |       |  |             |   |              |
|-------------------------------------|-------|-------|--|-------------|---|--------------|
|                                     |       |       |  |             |   | <b>29.22</b> |
| <b>SHUTTERING</b>                   |       |       |  |             |   |              |
| 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 |              |
|                                     |       |       |  | <b>4.44</b> |   |              |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>1.31</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL4 at RD 1.95 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 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 <sup>3</sup> | 232.70  | 3000.81         |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                               | 3.08  | m <sup>3</sup> | 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         |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                              |       |                |         | <b>90330.77</b> |

| Quantity for Outlet OL4 at 1.95 Km of LMC |               |                             |              |       |     |        |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(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 |  |
|                                     |       |       |  | <b>4.65</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.70</b> |  |  |

| 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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                                                                                                                                                                                                                                                       | 88.84    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                                                                                                                                                                                                                                        | 41.30    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.38     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.10     | m <sup>3</sup> | 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. <b>7.4.4</b>                                                                                                                                                                                                                                                                                                                                                                                                             | 22.35    | m <sup>3</sup> | 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 <b>6.02 RCD, Jharkhand, 2021</b> | 0.71     | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.22  | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                                                                                                                                                                                                                                                                                                           | 4.79  | m <sup>2</sup> | 414.88   | 1987.19          |
| 10                          | Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of E/I. <b>7.3.20</b>                                                                                                                                                                                                                                                                                                                                                                                              | 1.80  | m <sup>2</sup> | 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 completeas per specification and direction of E / I. <b>7.6.1.2</b>                                                                                                                                                                                                                                                                              | 1.75  | m              | 281.91   | 493.34           |
| 12                          | 200mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.75  | m              | 323.68   | 566.44           |
| 13                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 24.00 | m <sup>3</sup> | 232.70   | 5584.11          |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4.75  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                |          | <b>159060.69</b> |

| Quantity for Outlet OR5 at 2.82 Km of LMC |               |                             |              |       |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR5 at RD 2.82 Km                  | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>88.84</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>2.38</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>2.10</b>  |
| <b>Brick Work</b>                         |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>22.35</b> |
|                                           |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                          | 1.750         |                             |              | 0.018 | 1   | <b>0.031</b> |
|                                           |               |                             |              |       |     |              |
| <b>In Superstructure</b>                  |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 1.80  | 1   | 0.22         |
| CC Road                                   | 3.15          | 0.075                       | 3.00         |       | 1   | 0.71         |
|                                           |               |                             |              |       |     | <b>0.92</b>  |
|                                           |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |              |
| <b>Empty Area</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>41.30</b> |

| <b>SHUTTERING</b>                   |       |       |  |             |   |  |
|-------------------------------------|-------|-------|--|-------------|---|--|
| 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 |  |
|                                     |       |       |  | <b>4.79</b> |   |  |

| <b>Centring</b> |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| Barrel Slab     |  |  |  | <b>1.80</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL6 at RD 2.82 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Quantity | Unit           | WRD, GoJ<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                               | 69.21    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                | 18.35    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                            | 1.83     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                         | 1.75     | m <sup>3</sup> | 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 <b>E / I. 7.4.4</b>                                                                                                                                                                                     | 13.80    | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.11     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                               | 4.70  | m <sup>2</sup> | 414.88  | 1948.23          |
| 10                          | Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of <b>E/I. 7.3.20</b>                                                                                                                  | 0.88  | m <sup>2</sup> | 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 <b>E / I. 7.6.1.2</b> | 1.20  | m              | 281.91  | 338.29           |
| 12                          | 150 mm NP2 RCC Hume pipe with collar as per I.S 458-1971 ( <b>S.No.10.2</b> )                                                                                                                                                                                        | 1.20  | m              | 212.00  | 254.40           |
| 13                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                              | 14.96 | m <sup>3</sup> | 232.70  | 3481.54          |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                       | 3.22  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                      |       |                |         | <b>101252.78</b> |

| Quantity for Outlet OL6 at 2.82 Km of LMC |               |                             |              |       |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR5 at RD 2.82 Km                  | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>69.21</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>1.83</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>1.75</b>  |
| <b>Brick Work</b>                         |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>13.80</b> |
|                                           |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                          | 1.200         |                             |              | 0.014 | 1   | <b>0.016</b> |
|                                           |               |                             |              |       |     |              |
| <b>In Superstructure</b>                  |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 0.88  | 1   | 0.11         |
|                                           |               |                             |              |       |     | <b>0.11</b>  |
|                                           |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |              |
| <b>Empty Area</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>18.35</b> |
| <b>SHUTTERING</b>                         |               |                             |              |       |     |              |
| 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 |  |
|                                     |      |       |  | <b>4.70</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.88</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                |                       |              |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR7 at RD 4.56 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 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 <sup>3</sup> | 232.70   | 5491.88          |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.52  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                |          | <b>159981.43</b> |

| Quantity for Outlet OR7 at 4.56 Km of LMC |               |                             |              |       |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>84.88</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>2.32</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>1.91</b>  |
| <b>Brick Work</b>                         |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>22.06</b> |
|                                           |               |                             |              |       |     |              |
| <b>HDPE Pipe</b>                          | 1.750         |                             |              | 0.012 | 1   | <b>0.021</b> |
|                                           |               |                             |              |       |     |              |
| <b>In Superstructure</b>                  |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 1.70  | 1   | 0.20         |
| CC Road                                   | 3.10          | 0.075                       | 3.00         |       | 1   | 0.70         |
|                                           |               |                             |              |       |     | <b>0.90</b>  |
|                                           |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |              |
| <b>Empty Area</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>40.97</b> |

| <b>SHUTTERING</b>                   |       |       |  |             |   |  |
|-------------------------------------|-------|-------|--|-------------|---|--|
| 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 |  |
|                                     |       |       |  | <b>4.75</b> |   |  |

| <b>Centring</b> |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| Barrel Slab     |  |  |  | <b>1.70</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL8 at RD 4.56 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 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. <b>7.6.1.2</b> | 1.20  | m              | 281.91  | 338.29          |
| 12                          | 100 mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                          | 1.20  | m              | 200.00  | 240.00          |
| 13                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                              | 14.81 | m <sup>3</sup> | 232.70  | 3445.84         |
| 14                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                       | 3.19  | m <sup>3</sup> | 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         |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                      |       |                |         | <b>99608.85</b> |

| Quantity for Outlet OL8 at 4.56 Km of LMC |               |                             |              |       |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>60.79</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>1.92</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>1.63</b>  |
| <b>Brick Work</b>                         |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>13.66</b> |
|                                           |               |                             |              |       |     |              |
| <b>HDPE Pipe</b>                          | 1.200         |                             |              | 0.01  | 1   | <b>0.012</b> |
|                                           |               |                             |              |       |     |              |
| <b>In Superstructure</b>                  |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 0.76  | 1   | 0.09         |
|                                           |               |                             |              |       |     | <b>0.09</b>  |
|                                           |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |              |
| <b>Empty Area</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>22.62</b> |
| <b>SHUTTERING</b>                         |               |                             |              |       |     |              |
| 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 |  |
|                                     |      |       |  | <b>4.73</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.76</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR9 at RD 5.32 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Quantity | Unit           | WRD, GoJ<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                               | 71.07    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                | 36.46    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                            | 1.52     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                         | 1.97     | m <sup>3</sup> | 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 <b>E / I. 7.4.4</b>                                                                                                                                                                                     | 13.23    | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.25     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                                                                                               | 5.15  | m <sup>2</sup> | 414.88  | 2134.56          |
| 9                           | Providing centering including strutting. Proping etc. and removing after use in deck slab as per specifications and direction of <b>E/I. 7.3.20</b>                                                                                                                                                                                  | 0.82  | m <sup>2</sup> | 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 <sup>3</sup> | 232.70  | 3356.05          |
| 13                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                       | 3.25  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                      |       |                |         | <b>105681.13</b> |

| Quantity for Outlet OR9 at 5.32 Km of LMC |               |                             |              |       |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR9 at RD 5.32 Km                  | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |       |     |              |
| Canal Portion                             |               |                             | 4.97         | 8.00  | 1   | 39.76        |
| Protection Wall (Distribution Side)       |               |                             | 4.97         | 6.30  | 1   | 31.31        |
|                                           |               |                             |              |       |     | <b>71.07</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>1.52</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>1.97</b>  |
| <b>Brick Work</b>                         |               |                             |              |       |     |              |
| 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         |
|                                           |               |                             |              |       |     | <b>13.23</b> |
|                                           |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                          | 1.200         |                             |              | 0.016 | 1   | <b>0.019</b> |
|                                           |               |                             |              |       |     |              |
| <b>In Superstructure</b>                  |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 2.05  | 1   | 0.25         |
|                                           |               |                             |              |       |     | <b>0.25</b>  |
|                                           |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |       |     |              |
| <b>Empty Area</b>                         |               |                             |              |       |     |              |
| 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        |
|                                           |               |                             |              |       |     | <b>36.46</b> |
| <b>SHUTTERING</b>                         |               |                             |              |       |     |              |
| 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 |  |
|                                     |       |       |  | <b>5.15</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.82</b> |  |  |

| Cost Estimate            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR10 at RD 5.3 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
| S.No.                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Quantity | Unit           | WRD, GoJ<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                               | 74.50    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                | 40.29    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                            | 1.50     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                         | 1.90     | m <sup>3</sup> | 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 <b>E / I. 7.4.4</b>                                                                                                                                                                                     | 13.18    | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.23     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                              | 5.11  | m <sup>2</sup> | 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. <b>7.3.20</b>                                                                                                                 | 0.77  | m <sup>2</sup> | 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. <b>7.6.1.2</b> | 1.20  | m              | 281.91  | 338.29           |
| 11                          | 150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                          | 1.20  | m              | 212.00  | 254.40           |
| 12                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                             | 14.33 | m <sup>3</sup> | 232.70  | 3334.97          |
| 13                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                      | 3.17  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                     |       |                |         | <b>102006.11</b> |

| Quantity for Outlet OR10 at 5.93 Km of LMC |               |                             |              |       |     |              |
|--------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR9 at RD 5.32 Km                   | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                          |               |                             |              |       |     |              |
| Canal Portion                              |               |                             | 4.94         | 8.00  | 1   | 39.52        |
| Protection Wall (Distribution Side)        |               |                             | 4.94         | 7.08  | 1   | 34.98        |
|                                            |               |                             |              |       |     | <b>74.50</b> |
| <b>PCC at Subgrade (M10)</b>               |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>1.50</b>  |
| <b>PCC (M15)</b>                           |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>1.90</b>  |
| <b>Brick Work</b>                          |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>13.18</b> |
|                                            |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                           | 1.200         |                             |              | 0.014 | 1   | <b>0.016</b> |
|                                            |               |                             |              |       |     |              |
| <b>In Superstructure</b>                   |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                       |               | 0.12                        |              | 1.95  | 1   | 0.23         |
|                                            |               |                             |              |       |     | <b>0.23</b>  |
|                                            |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                        |               |                             |              |       |     |              |
| <b>Empty Area</b>                          |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>40.29</b> |
| <b>SHUTTERING</b>                          |               |                             |              |       |     |              |
| 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 |  |
|                                     |       |       |  | <b>5.11</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.77</b> |  |  |

| Cost Estimate             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR11 at RD 6.27 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
| S.No.                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Quantity | Unit           | WRD, GoJ<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                               | 82.00    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                | 47.79    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                            | 1.50     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                         | 1.90     | m <sup>3</sup> | 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 <b>E / I. 7.4.4</b>                                                                                                                                                                                     | 13.18    | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.23     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                              | 5.11  | m <sup>2</sup> | 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. <b>7.3.20</b>                                                                                                                 | 0.77  | m <sup>2</sup> | 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. <b>7.6.1.2</b> | 1.20  | m              | 281.91  | 338.29           |
| 11                          | 150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                          | 1.20  | m              | 212.00  | 254.40           |
| 12                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                             | 14.33 | m <sup>3</sup> | 232.70  | 3334.97          |
| 13                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                      | 3.17  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                     |       |                |         | <b>103639.68</b> |

| Quantity for Outlet OR11 at 6.27 Km of LMC |               |                             |              |       |     |              |
|--------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR9 at RD 5.32 Km                   | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                          |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>82.00</b> |
| <b>PCC at Subgrade (M10)</b>               |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>1.50</b>  |
| <b>PCC (M15)</b>                           |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>1.90</b>  |
| <b>Brick Work</b>                          |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>13.18</b> |
|                                            |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                           | 1.200         |                             |              | 0.014 | 1   | <b>0.016</b> |
|                                            |               |                             |              |       |     |              |
| <b>In Superstructure</b>                   |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                       |               | 0.12                        |              | 1.95  | 1   | 0.23         |
|                                            |               |                             |              |       |     | <b>0.23</b>  |
|                                            |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                        |               |                             |              |       |     |              |
| <b>Empty Area</b>                          |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>47.79</b> |
| <b>SHUTTERING</b>                          |               |                             |              |       |     |              |
| 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 |  |
|                                     |       |       |  | <b>5.11</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.77</b> |  |  |

| Cost Estimate             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR11 at RD 7.36 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
| S.No.                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Quantity | Unit           | WRD, GoJ<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                               | 63.74    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                | 28.90    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                            | 1.55     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                         | 2.07     | m <sup>3</sup> | 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 <b>E / I. 7.4.4</b>                                                                                                                                                                                     | 13.30    | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.26     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                              | 5.19  | m <sup>2</sup> | 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. <b>7.3.20</b>                                                                                                                 | 0.89  | m <sup>2</sup> | 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. <b>7.6.1.2</b> | 1.20  | m              | 281.91  | 338.29           |
| 11                          | 150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                          | 1.20  | m              | 212.00  | 254.40           |
| 12                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                             | 14.55 | m <sup>3</sup> | 232.70  | 3386.05          |
| 13                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                      | 3.38  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                     |       |                |         | <b>101699.46</b> |

| Quantity for Outlet OR11 at 7.36 Km of LMC |               |                             |              |       |     |              |
|--------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR9 at RD 5.32 Km                   | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                          |               |                             |              |       |     |              |
| Canal Portion                              |               |                             | 5.02         | 7.56  | 1   | 37.91        |
| Protection Wall (Distribution Side)        |               |                             | 5.02         | 5.15  | 1   | 25.83        |
|                                            |               |                             |              |       |     | <b>63.74</b> |
| <b>PCC at Subgrade (M10)</b>               |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>1.55</b>  |
| <b>PCC (M15)</b>                           |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>2.07</b>  |
| <b>Brick Work</b>                          |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>13.30</b> |
|                                            |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                           | 1.200         |                             |              | 0.02  | 1   | <b>0.024</b> |
|                                            |               |                             |              |       |     |              |
| <b>In Superstructure</b>                   |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                       |               | 0.12                        |              | 2.15  | 1   | 0.26         |
|                                            |               |                             |              |       |     | <b>0.26</b>  |
|                                            |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                        |               |                             |              |       |     |              |
| <b>Empty Area</b>                          |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>28.90</b> |
| <b>SHUTTERING</b>                          |               |                             |              |       |     |              |
| 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 |  |
|                                     |       |       |  | <b>5.19</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.89</b> |  |  |

| Cost Estimate             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR13 at RD 9.64 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                |                       |              |
| S.No.                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Quantity | Unit           | WRD, GoJ<br>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. <b>(WRD Part B 7.1.8)</b>                                                                                                                                               | 55.82    | m <sup>3</sup> | 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 <b>(WRD Part B Corrigendum 7.1.31)</b>                                                                                                                                | 31.54    | m <sup>3</sup> | 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. <b>(Part A Corrigendum 7.1.12.4)</b>                                                                                                                                                                                                                                                                            | 1.50     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum 7.3.1.1)</b>                                                                                                                                                                                                                                                                         | 1.90     | m <sup>3</sup> | 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 <b>E / I. 7.4.4</b>                                                                                                                                                                                     | 14.03    | m <sup>3</sup> | 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. <b>7.3.5</b> | 0.23     | m <sup>3</sup> | 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. <b>(WRD Part A Corrigendum -8.3 -13.6)</b>                                                                                                                                                                                                                                                                                                                                                  | 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 <b>E/I-7.3.19</b>                                                                                                              | 5.11  | m <sup>2</sup> | 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. <b>7.3.20</b>                                                                                                                 | 0.77  | m <sup>2</sup> | 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. <b>7.6.1.2</b> | 1.20  | m              | 281.91  | 338.29           |
| 11                          | 150mm NP2 RCC Hume pipe with collar as per I.S 458-1971 <b>(S.No.10.2)</b>                                                                                                                                                                                          | 1.20  | m              | 212.00  | 254.40           |
| 12                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                             | 15.15 | m <sup>3</sup> | 232.70  | 3526.43          |
| 13                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                      | 3.17  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                     |       |                |         | <b>103100.95</b> |

| Quantity for Outlet OR13 at 9.64 Km of LMC |               |                             |              |       |     |              |
|--------------------------------------------|---------------|-----------------------------|--------------|-------|-----|--------------|
| Outlet OR9 at RD 5.32 Km                   | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area  | Nos | Volume       |
| <b>EXCAVATION</b>                          |               |                             |              |       |     |              |
| Canal Portion                              |               |                             | 4.94         | 7.22  | 1   | 35.67        |
| Protection Wall (Distribution Side)        |               |                             | 4.94         | 4.08  | 1   | 20.16        |
|                                            |               |                             |              |       |     | <b>55.82</b> |
| <b>PCC at Subgrade (M10)</b>               |               |                             |              |       |     |              |
| 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        |
|                                            |               |                             |              |       |     | <b>1.50</b>  |
| <b>PCC (M15)</b>                           |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>1.90</b>  |
| <b>Brick Work</b>                          |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>14.03</b> |
|                                            |               |                             |              |       |     |              |
| <b>Hume Pipe</b>                           | 1.200         |                             |              | 0.014 | 1   | <b>0.016</b> |
|                                            |               |                             |              |       |     |              |
| <b>In Superstructure</b>                   |               |                             |              |       |     |              |
| RCC M-20 Barrel Slab                       |               | 0.12                        |              | 1.95  | 1   | 0.23         |
|                                            |               |                             |              |       |     | <b>0.23</b>  |
|                                            |               |                             |              |       |     |              |
| <b>BACK FILLING</b>                        |               |                             |              |       |     |              |
| <b>Empty Area</b>                          |               |                             |              |       |     |              |
| 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         |
|                                            |               |                             |              |       |     | <b>31.54</b> |
| <b>SHUTTERING</b>                          |               |                             |              |       |     |              |
| 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 |  |
|                                     |       |       |  | <b>5.11</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.77</b> |  |  |

| Cost Estimate               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR14 at RD 10.140 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32  | 433.06          |
| 10                    | Coarse Sand (5 Km lead)                                                                                                                      | 9.67 | m <sup>3</sup> | 232.70  | 2249.18         |
| 11                    | Stone chips+Metal (70 Km lead)                                                                                                               | 2.27 | m <sup>3</sup> | 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         |
| <b>Total (in Rs.)</b> |                                                                                                                                              |      |                |         | <b>69210.46</b> |

| Quantity for OR14 at RD 10.14 Km          |               |                             |              |      |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|------|-----|--------------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>52.25</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>0.81</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |      |     |              |
| 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         |
|                                           |               |                             |              |      |     | <b>1.57</b>  |
| <b>Brick Work</b>                         |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>8.82</b>  |
| <b>In Superstructure</b>                  |               |                             |              |      |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 2.04 | 1   | 0.24         |
|                                           |               |                             |              |      |     | <b>0.24</b>  |
|                                           |               |                             |              |      |     |              |
| <b>BACK FILLING</b>                       |               |                             |              |      |     |              |
| <b>Empty Area</b>                         |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>19.16</b> |
| <b>SHUTTERING</b>                         |               |                             |              |      |     |              |
| 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<br>(Distribution Side) | 5.13 | 0.075 |  | 0.39        | 1 |  |
| PCC (M15) Canal Portion                          | 7.29 | 0.270 |  | 1.97        | 1 |  |
| PCC (M15) Protection Wall<br>(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 |  |
|                                                  |      |       |  | <b>7.76</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.80</b> |  |  |

| Cost Estimate                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL15 at 10.140 Km of LMC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32   | 722.66           |
| 11                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 14.79 | m <sup>3</sup> | 232.70   | 3442.50          |
| 12                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.23  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                |          | <b>102959.76</b> |

| Quantity of Outlet OL15 at 10.14 km of LMC |            |                       |           |      |     |              |
|--------------------------------------------|------------|-----------------------|-----------|------|-----|--------------|
| Description                                | Length (m) | Height/ Thickness (m) | Width (m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>73.15</b> |
| <b>PCC at Subgrade (M10)</b>               |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>0.99</b>  |
| <b>PCC (M15)</b>                           |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>1.69</b>  |
| <b>Brick Work</b>                          |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>13.63</b> |
| <b>In Superstructure</b>                   |            |                       |           |      |     |              |
| RCC M-20 Barrel Slab                       |            | 0.12                  |           | 3.30 | 1   | 0.40         |
| CC Road                                    | 2.76       | 0.075                 | 3.00      |      | 1   | 0.62         |
|                                            |            |                       |           |      |     | <b>1.02</b>  |
| <b>BACK FILLING</b>                        |            |                       |           |      |     |              |
| <b>Empty Area</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>33.45</b> |
| <b>SHUTTERING</b>                          |            |                       |           |      |     |              |
| 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<br>(Distribution Side) | 8.25 | 0.075 |  | 0.62        | 1 |  |
| PCC (M15) Canal Portion                          | 7.29 | 0.270 |  | 1.97        | 1 |  |
| PCC (M15) Protection Wall<br>(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 |  |
|                                                  |      |       |  | <b>8.47</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>1.34</b> |  |  |

| Cost Estimate              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL17 at RD 11.43 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32  | 433.06          |
| 10                    | Coarse Sand (5 Km lead)                                                                                                                      | 9.41 | m <sup>3</sup> | 232.70  | 2190.35         |
| 11                    | Stone chips+Metal (70 Km lead)                                                                                                               | 2.33 | m <sup>3</sup> | 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         |
| <b>Total (in Rs.)</b> |                                                                                                                                              |      |                |         | <b>67342.88</b> |

| Quantity for OL17 at RD 11.43 Km          |               |                             |              |      |     |              |
|-------------------------------------------|---------------|-----------------------------|--------------|------|-----|--------------|
| Description                               | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                         |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>44.04</b> |
| <b>PCC at Subgrade (M10)</b>              |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>0.81</b>  |
| <b>PCC (M15)</b>                          |               |                             |              |      |     |              |
| 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         |
|                                           |               |                             |              |      |     | <b>1.63</b>  |
| <b>Brick Work</b>                         |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>8.53</b>  |
| <b>In Superstructure</b>                  |               |                             |              |      |     |              |
| RCC M-20 Barrel Slab                      |               | 0.12                        |              | 2.13 | 1   | 0.26         |
|                                           |               |                             |              |      |     | <b>0.26</b>  |
| <b>BACK FILLING</b>                       |               |                             |              |      |     |              |
| <b>Empty Area</b>                         |               |                             |              |      |     |              |
| 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        |
|                                           |               |                             |              |      |     | <b>18.86</b> |
| <b>SHUTTERING</b>                         |               |                             |              |      |     |              |
| 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<br>(Distribution Side) | 5.13 | 0.075 |  | 0.39        | 1 |  |
| PCC (M15) Canal Portion                          | 7.36 | 0.270 |  | 1.99        | 1 |  |
| PCC (M15) Protection Wall<br>(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 |  |
|                                                  |      |       |  | <b>7.87</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.80</b> |  |  |

| Cost Estimate                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR 16 at 11.43 Km of LMC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32   | 722.66          |
| 11                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 14.81 | m <sup>3</sup> | 232.70   | 3447.16         |
| 12                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.21  | m <sup>3</sup> | 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         |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                |          | <b>97974.03</b> |

| Quantity of Outlet OR16 at 11.43 km of LMC |            |                       |           |      |     |              |
|--------------------------------------------|------------|-----------------------|-----------|------|-----|--------------|
| Description                                | Length (m) | Height/ Thickness (m) | Width (m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>46.67</b> |
| <b>PCC at Subgrade (M10)</b>               |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>0.97</b>  |
| <b>PCC (M15)</b>                           |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>1.69</b>  |
| <b>Brick Work</b>                          |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>13.66</b> |
| <b>In Superstructure</b>                   |            |                       |           |      |     |              |
| RCC M-20 Barrel Slab                       |            | 0.12                  |           | 3.30 | 1   | 0.40         |
| CC Road                                    | 2.76       | 0.075                 | 3.00      |      | 1   | 0.62         |
|                                            |            |                       |           |      |     | <b>1.02</b>  |
|                                            |            |                       |           |      |     |              |
| <b>BACK FILLING</b>                        |            |                       |           |      |     |              |
| <b>Empty Area</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>13.72</b> |
| <b>SHUTTERING</b>                          |            |                       |           |      |     |              |
| 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<br>(Distribution Side) | 8.25 | 0.075 |  | 0.62        | 1 |  |
| PCC (M15) Canal Portion                          | 7.29 | 0.270 |  | 1.97        | 1 |  |
| PCC (M15) Protection Wall<br>(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 |  |
|                                                  |      |       |  | <b>8.49</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>1.34</b> |  |  |

| Cost Estimate              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL19 at RD 11.73 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32  | 498.01          |
| 10                    | Coarse Sand (5 Km lead)                                                                                                                      | 9.23 | m <sup>3</sup> | 232.70  | 2148.98         |
| 11                    | Stone chips+Metal (70 Km lead)                                                                                                               | 2.34 | m <sup>3</sup> | 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         |
| <b>Total (in Rs.)</b> |                                                                                                                                              |      |                |         | <b>65820.62</b> |

| Quantity for OL19 at RD 11.73 Km              |               |                             |              |      |     |              |
|-----------------------------------------------|---------------|-----------------------------|--------------|------|-----|--------------|
| Description                                   | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                             |               |                             |              |      |     |              |
| 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        |
|                                               |               |                             |              |      |     | <b>36.75</b> |
| <b>PCC at Subgrade (M10)</b>                  |               |                             |              |      |     |              |
| 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        |
|                                               |               |                             |              |      |     | <b>0.81</b>  |
| <b>PCC (M15)</b>                              |               |                             |              |      |     |              |
| 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         |
|                                               |               |                             |              |      |     | <b>1.63</b>  |
| <b>Brick Work</b>                             |               |                             |              |      |     |              |
| 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        |
|                                               |               |                             |              |      |     | <b>8.34</b>  |
| <b>In Superstructure</b>                      |               |                             |              |      |     |              |
| RCC M-20 Barrel Slab                          |               | 0.12                        |              | 2.27 | 1   | 0.27         |
|                                               |               |                             |              |      |     | <b>0.27</b>  |
| <b>BACK FILLING</b>                           |               |                             |              |      |     |              |
| <b>Empty Area</b>                             |               |                             |              |      |     |              |
| 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         |
|                                               |               |                             |              |      |     | <b>18.32</b> |
| <b>SHUTTERING</b>                             |               |                             |              |      |     |              |
| 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<br>(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 |  |
|                                                  |      |       |  | <b>7.93</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>0.92</b> |  |  |

| Cost Estimate                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR18 at 11.73 Km of LMC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32   | 722.66           |
| 11                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 16.68 | m <sup>3</sup> | 232.70   | 3880.92          |
| 12                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.14  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                |          | <b>106578.40</b> |

| Quantity of Outlet OR18 at 11.73 km of LMC |            |                       |           |      |     |              |
|--------------------------------------------|------------|-----------------------|-----------|------|-----|--------------|
| Description                                | Length (m) | Height/ Thickness (m) | Width (m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>44.50</b> |
| <b>PCC at Subgrade (M10)</b>               |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>0.93</b>  |
| <b>PCC (M15)</b>                           |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>1.65</b>  |
| <b>Brick Work</b>                          |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>15.62</b> |
| <b>In Superstructure</b>                   |            |                       |           |      |     |              |
| RCC M-20 Barrel Slab                       |            | 0.12                  |           | 3.30 | 1   | 0.40         |
| CC Road                                    | 2.76       | 0.075                 | 3.00      |      | 1   | 0.62         |
|                                            |            |                       |           |      |     | <b>1.02</b>  |
|                                            |            |                       |           |      |     |              |
| <b>BACK FILLING</b>                        |            |                       |           |      |     |              |
| <b>Empty Area</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>11.63</b> |
| <b>SHUTTERING</b>                          |            |                       |           |      |     |              |
| 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<br>(Distribution Side) | 8.25 | 0.075 |  | 0.62        | 1 |  |
| PCC (M15) Canal Portion                          | 7.23 | 0.270 |  | 1.95        | 1 |  |
| PCC (M15) Protection Wall<br>(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 |  |
|                                                  |      |       |  | <b>8.49</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>1.34</b> |  |  |

| Cost Estimate                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OR20 at 11.89 Km of LMC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32   | 722.66           |
| 11                          | Coarse Sand (5 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 17.47 | m <sup>3</sup> | 232.70   | 4064.81          |
| 12                          | Stone chips+Metal (70 Km lead)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.84  | m <sup>3</sup> | 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          |
| <b>S.total (in Rs.) (A)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                |          | <b>115675.54</b> |

| Quantity of Outlet OR20 at 11.89 km of LMC |            |                       |           |      |     |              |
|--------------------------------------------|------------|-----------------------|-----------|------|-----|--------------|
| Description                                | Length (m) | Height/ Thickness (m) | Width (m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                          |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>43.80</b> |
| <b>PCC at Subgrade (M10)</b>               |            |                       |           |      |     |              |
| 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        |
|                                            |            |                       |           |      |     | <b>1.06</b>  |
| <b>PCC (M15)</b>                           |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>2.15</b>  |
| <b>Brick Work</b>                          |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>16.08</b> |
| <b>In Superstructure</b>                   |            |                       |           |      |     |              |
| RCC M-20 Barrel Slab                       |            | 0.12                  |           | 4.32 | 1   | 0.52         |
| CC Road                                    | 3.00       | 0.075                 | 3.00      |      | 1   | 0.67         |
|                                            |            |                       |           |      |     | <b>1.19</b>  |
|                                            |            |                       |           |      |     |              |
| <b>BACK FILLING</b>                        |            |                       |           |      |     |              |
| <b>Empty Area</b>                          |            |                       |           |      |     |              |
| 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         |
|                                            |            |                       |           |      |     | <b>28.67</b> |
| <b>SHUTTERING</b>                          |            |                       |           |      |     |              |
| 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<br>(Distribution Side) | 8.25 | 0.075 |  | 0.62        | 1 |  |
| PCC (M15) Canal Portion                          | 7.76 | 0.270 |  | 2.09        | 1 |  |
| PCC (M15) Protection Wall<br>(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 |  |
|                                                  |      |       |  | <b>8.86</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>1.34</b> |  |  |

| Cost Estimate              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|-----------------------|--------------|
| Outlet OL21 at RD 11.89 Km |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                |                       |              |
| S.No.                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quantity | Unit           | WRD, GoJ<br>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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>3</sup> | 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 <sup>2</sup> | 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 <sup>2</sup> | 541.32  | 638.76          |
| 10                    | Coarse Sand (5 Km lead)                                                                                                                      | 9.11 | m <sup>3</sup> | 232.70  | 2120.87         |
| 11                    | Stone chips+Metal (70 Km lead)                                                                                                               | 2.51 | m <sup>3</sup> | 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         |
| <b>Total (in Rs.)</b> |                                                                                                                                              |      |                |         | <b>66186.87</b> |

| Quantity for OL21 at RD 11.89 Km              |               |                             |              |      |     |              |
|-----------------------------------------------|---------------|-----------------------------|--------------|------|-----|--------------|
| Description                                   | Length<br>(m) | Height/<br>Thickness<br>(m) | Width<br>(m) | Area | Nos | Volume       |
| <b>EXCAVATION</b>                             |               |                             |              |      |     |              |
| 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        |
|                                               |               |                             |              |      |     | <b>36.40</b> |
| <b>PCC at Subgrade (M10)</b>                  |               |                             |              |      |     |              |
| 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        |
|                                               |               |                             |              |      |     | <b>0.84</b>  |
| <b>PCC (M15)</b>                              |               |                             |              |      |     |              |
| 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         |
|                                               |               |                             |              |      |     | <b>1.75</b>  |
| <b>Brick Work</b>                             |               |                             |              |      |     |              |
| 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        |
|                                               |               |                             |              |      |     | <b>8.13</b>  |
| <b>In Superstructure</b>                      |               |                             |              |      |     |              |
| RCC M-20 Barrel Slab                          |               | 0.12                        |              | 2.57 | 1   | 0.31         |
|                                               |               |                             |              |      |     | <b>0.31</b>  |
| <b>BACK FILLING</b>                           |               |                             |              |      |     |              |
| <b>Empty Area</b>                             |               |                             |              |      |     |              |
| 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         |
|                                               |               |                             |              |      |     | <b>18.06</b> |
| <b>SHUTTERING</b>                             |               |                             |              |      |     |              |
| 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<br>(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 |  |
|                                                  |      |       |  | <b>8.10</b> |   |  |

|                 |  |  |  |             |  |  |
|-----------------|--|--|--|-------------|--|--|
| <b>Centring</b> |  |  |  |             |  |  |
| Barrel Slab     |  |  |  | <b>1.18</b> |  |  |