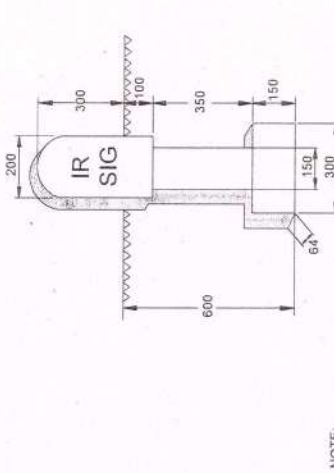
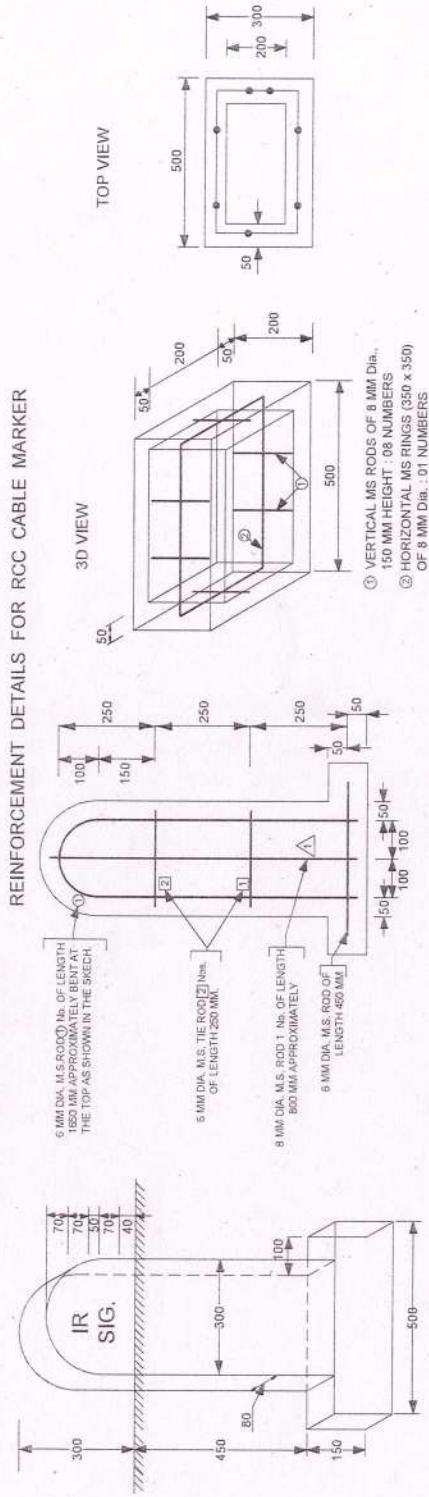
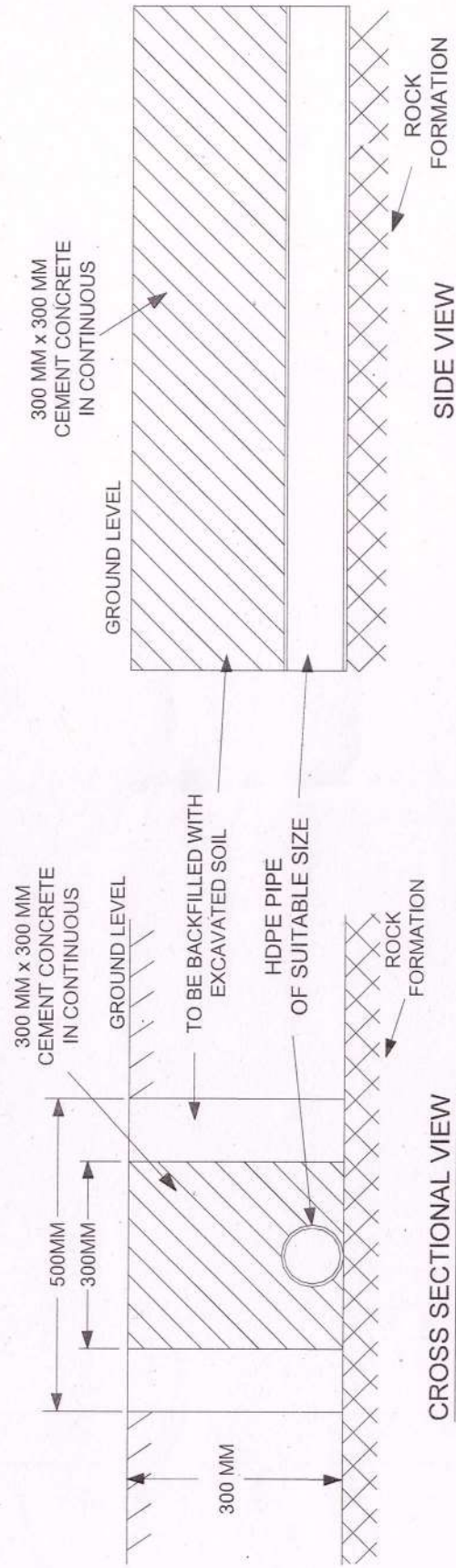


# DRAWING FOR RCC CABLE MARKER



- NOTE:-**
1. ALL DIMENSIONS ARE IN MILLI METER.
  2. PAINTED WHITE LETTERS ON RED BACK GROUND
  3. FOUNDATION CONCRETE OF 300 MM FROM THE BASE OF THE MARKER SHALL BE DONE AT SITE AT ALL PLACES WITH MIX 1:3:5.
  4. COMPONENT CONCRETE SHALL BE OF M25 MIX AND WIRE MESH OF 1.5 MM THICK MESS SHALL BE USED.
  5. THE ENGRAVING OF "RLY" & "SIG" SHALL BE DONE ON BOTH SIDES OF THE MARKER AND ENGRAVED SIDE SHALL BE PLACED PARALLEL TO THE LENGTH OF CABLE ROUTE.

# DRAWING FOR CABLE LAYING WHEN ROCK FACED AT 300 MM DEPTH FROM GROUND LEVEL

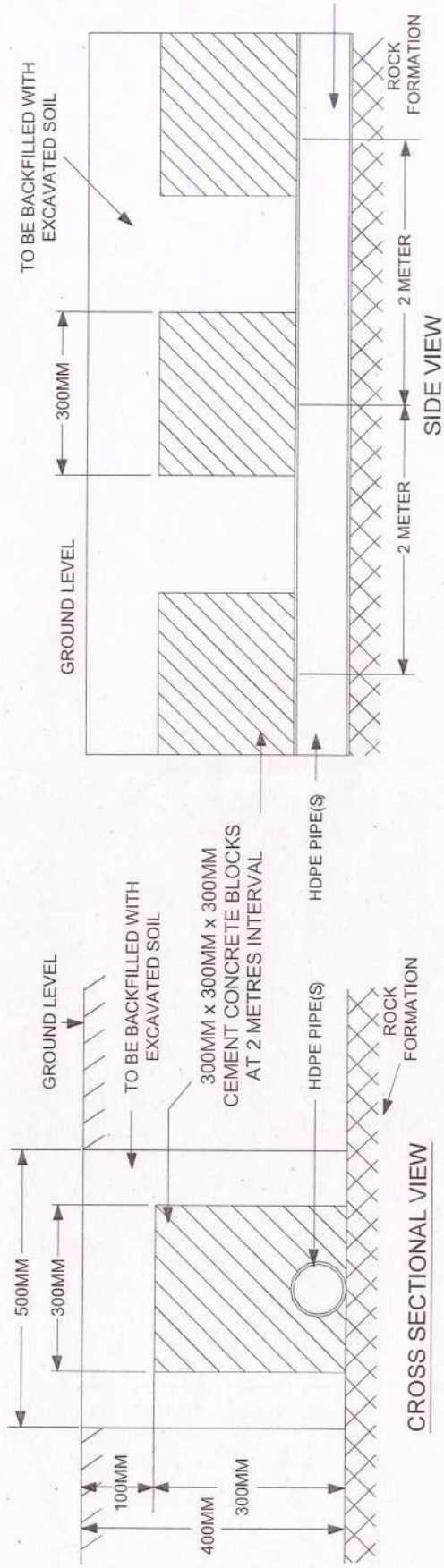


## NOTE :

- 1) ALL DIMENSIONS ARE IN MILLIMETER.
- 2) CEMENT CONCRETING OF 300 MM x 300 MM SHALL BE PROVIDED IN CONTINUOUS.
- 3) CONCRETING WITH MIXTURE OF CEMENT RIVER SAND/ M-SAND. AND JELLY CHIPS OF SIZE 20 MM WITH RATIO 1:3:6.
- 4) HDPE PIPE AS PER IS-4984 TO BE USED.
- 5) REFILLED SOIL SHALL BE RAMMED TO THE EARTH LEVEL.

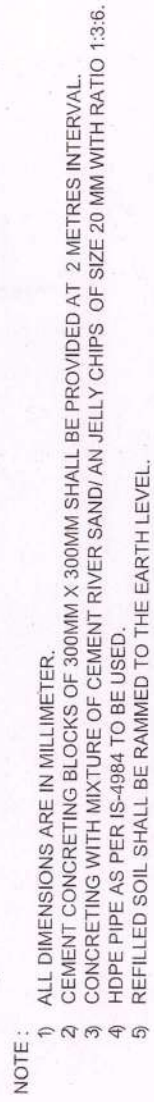


# DRAWING FOR CABLE LAYING WHEN ROCK FACED AT 400 MM DEPTH FROM GROUND LEVEL



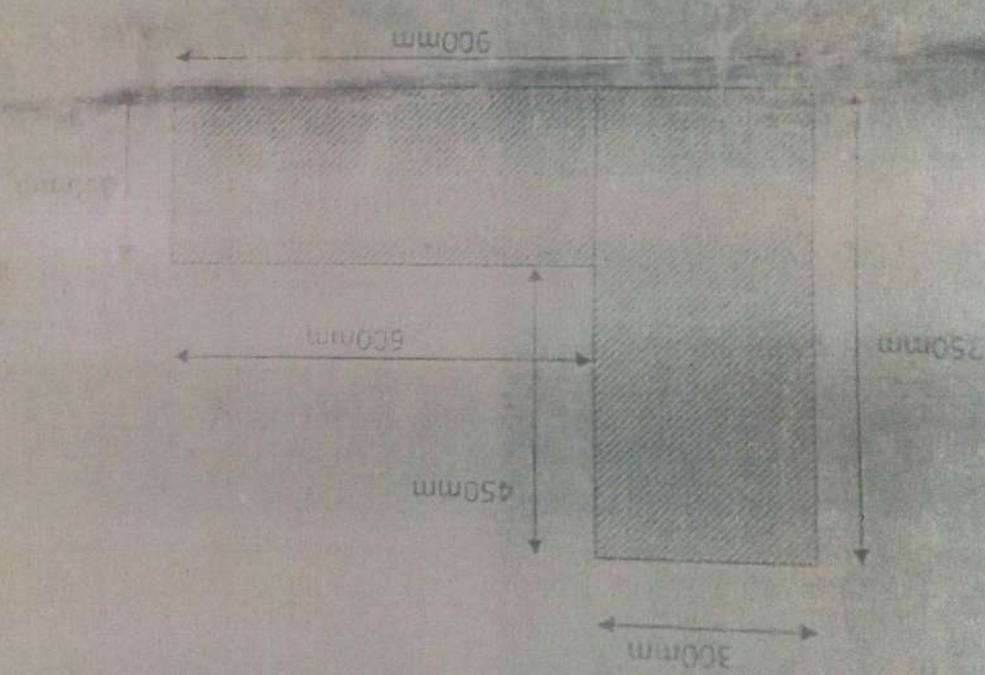
## NOTE :

- 1) ALL DIMENSIONS ARE IN MILLIMETER.
- 2) CEMENT CONCRETING BLOCKS OF 300MM X 300MM X 300MM SHALL BE PROVIDED AT 2 METRES INTERVAL.
- 3) CONCRETING WITH MIXTURE OF CEMENT RIVER SAND/ AN JELLY CHIPS OF SIZE 20 MM WITH RATIO 1:3:6.
- 4) HDPE PIPE AS PER IS-4984 TO BE USED.
- 5) REFILLED SOIL SHALL BE RAMMED TO THE EARTH LEVEL.





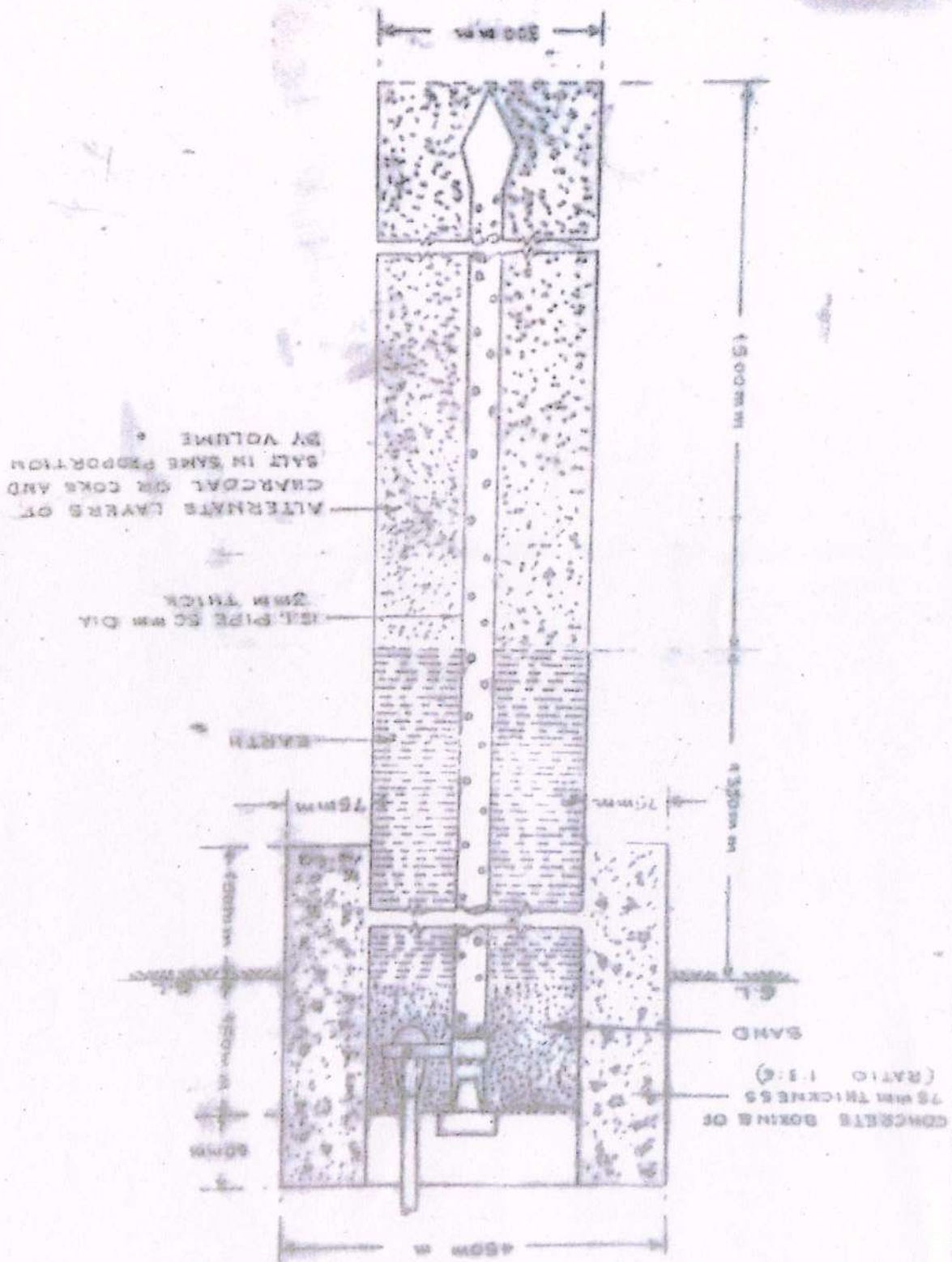
Drawn by	IE/Signal/CON/NGP
Checked by	ASTE/CON/NGP
Approved by	DY CSTE/CON/NGP



(For 2x200AH Cells)

Cross-section of battery platform in battery room

EARTH PIT FOR	DON.	DRG. NO.	DATE
RAILWAY SIGNALLING	DEH.	CON/SK/T/G	
CIRCUITS			



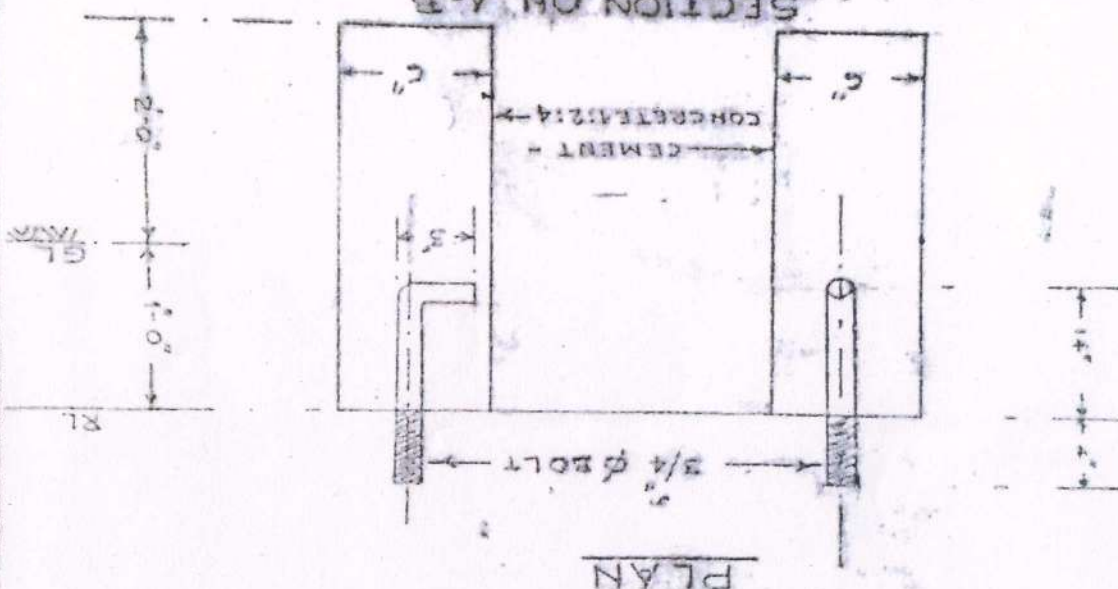


(23)

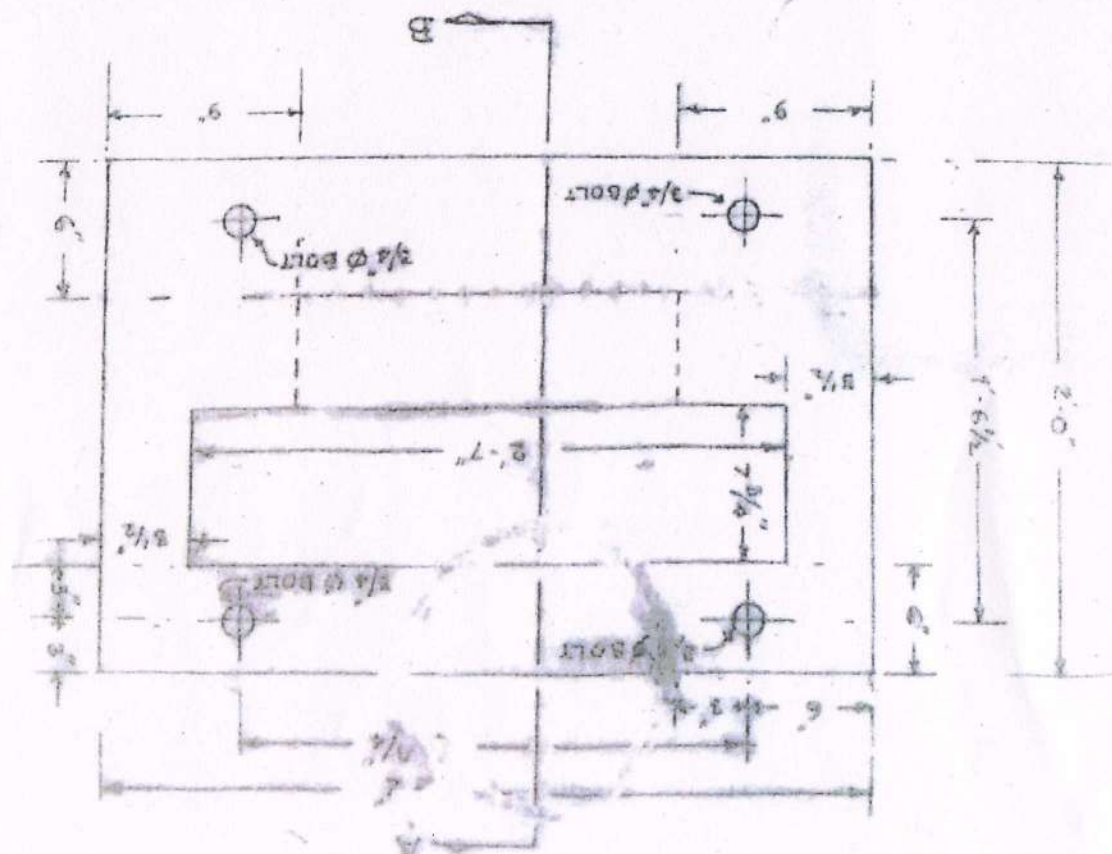
DATE	1	DATE/DESK/1/8	DATE/DESK/1/8
DRG. NO.	CON/15K/1/8	FOR APPARATUS CASE	CONCRETE FOUNDATION
BY	DATE	DATE	DATE

NOTE:-  
 1. EARTH WORK TO BE DONE UP TO PLINTH FROM SL BOYS INSIDE  
 2. OUT SIDE. OUT SIDE THE EARTH TO BE FILLED WITH STONE ALONG THE  
 3. FOUR WALLS.  
 4. AREA OF FOUNDATION DOLL BE 2500MM. 250MM GA-100/M WITH NOTE 6  
 5. THE RATIO OF CEMENT CONCRETE 1:2 CEMENT SAND AND 35MM STONE  
 6. CHIPS SHALL BE 1:2:4 RESPECTIVELY.  
 7. C. PLASTERING ON ALL THE FOUR SIDES OF THE APPARATUS BOX.

SECTION ON A-B



PLAN



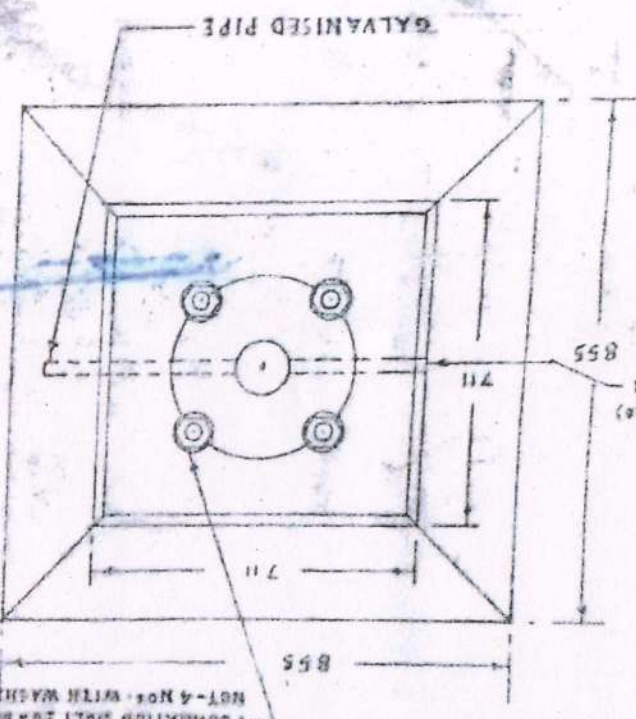


22

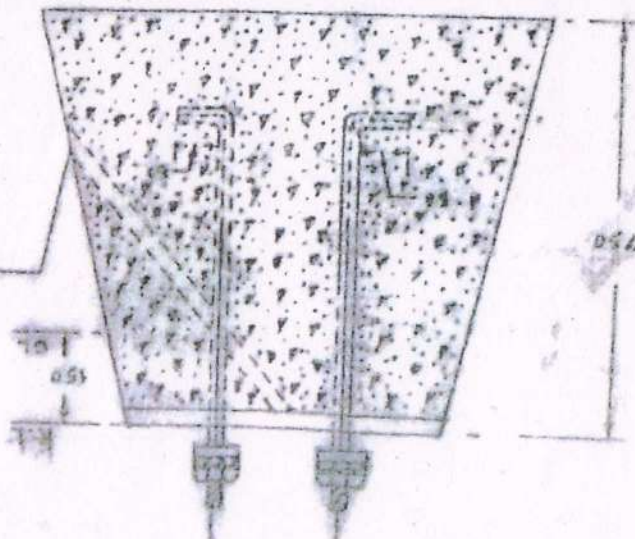
# SHUNT SIGNAL FOUNDATION

CON/SK/1/13

1. CASTING OF BOLTS TO BE DONE IN THE CONCRETE BASE ONLY TAKING THE MEASUREMENTS OF THE SURFACE BASE AND CIRCLE ALSO ALIGNING THE FOUR HOLES OF THE SURFACE BASE WITH THE BOLT LOCATION 1:2.5 & 4 BY PROVIDING TEMPLATE.
2. ENTIRE FOUNDATION SHOULD BE CAST IN ONE STEEL-7CM & WITH BOLT ONLY.
3. DRAIN ON SURFACE OF THE FOUNDATION SHOULD HAVE ENOUGH SLOPE FOR DRAINING OUT ANY WATER.
4. 80 DIAMETER 8.1 PIPE TO BE EMBEDDED DURING CASTING ITSELF (AND NOT LATER ON)
5. OUTSIDE SURFACE SHOULD BE FINISHED WITH 1:4 CEMENT SAND UP TO A LEVEL OF 150 FROM GROUND LEVEL.
6. FOUNDATION WITH MIXTURE OF CEMENT, SAND & STONE CHIPS SIZE: 25 (1:3:6)
7. ALL DIMENSIONS IN MM.
8. FOUNDATION BOLTS OF SIZE 20 WITH 305 WITH ONE WASHER EACH (4 NOS EACH) SHALL BE TO DRUG. 5A-110 A/M WITH ONE NUT & ONE WASHER EACH (4 NOS EACH) SHALL BE CAST.
9. IN CASE OF LOW GROUND LEVEL, DEPTH OF THE CONCRETE FOUNDATION TO BE AS PERMITTED.



FOUNDATION BOLT FOR NOS WITH NOT-4 NOS WITH WASHER



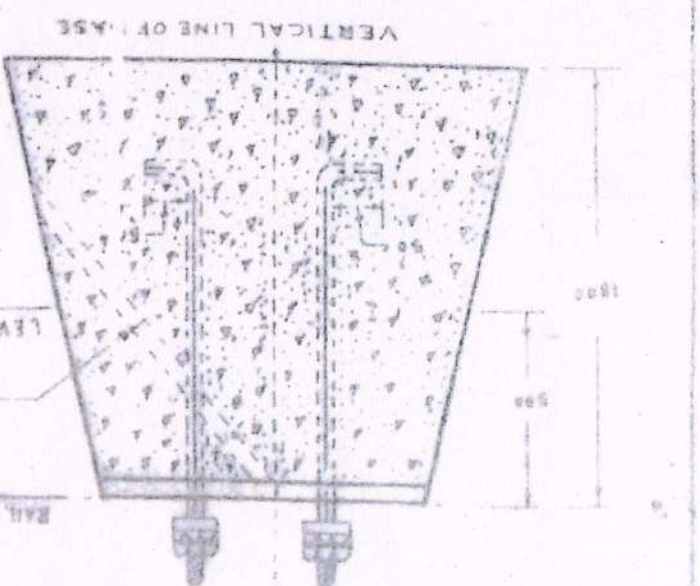
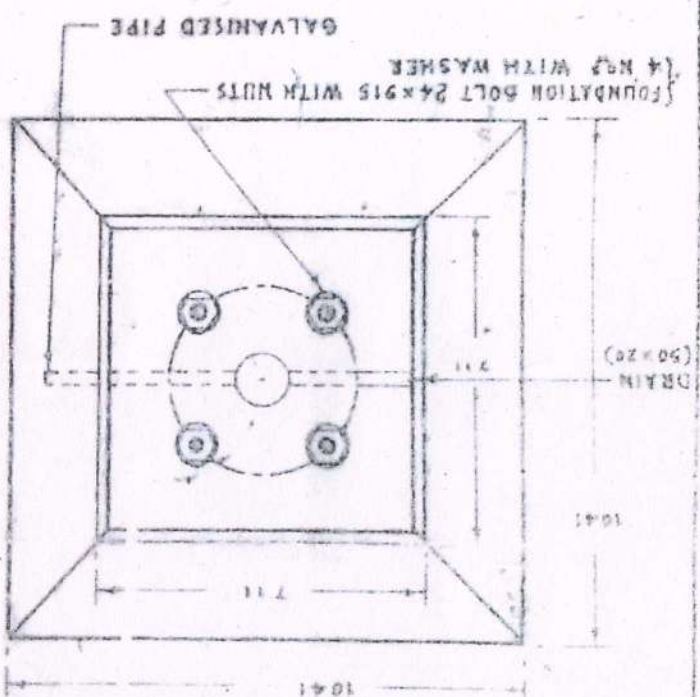


C.S. 13	DR	DR	DR
DR	DR	DR	DR
DR	DR	DR	DR
DR	DR	DR	DR

# SIGNAL FOUNDATION

CON/SK/T/12

1. CASTING OF BOLTS TO BE DONE IN THE CONCRETE BASE DUTY TAKING THE MEASUREMENTS OF THE SURFACE BASE & CIRCLE ALSO ALONG WITH THE BOLT LOCATION 1, 2, 3 & 4 BY PROVIDING TEMPLATE.
2. ENTIRE FOUNDATION SHOULD BE CAST IN ONE STRETCH & WITH BOLT ONLY.
3. DRAIN ON THE SURFACE OF THE FOUNDATION SHOULD HAVE ENOUGH SLOPE FOR DRAINING BUT ANY WATER.
4. 50 DIAMETER GI PIPE TO BE EMBEDDED DURING CASTING ITSELF (AND NOT LATER ON).
5. AFTER CASTING OF BASE & CURING OF THE SAME IS OVER THE FOUR SIDES OF THE BASE TO BE CURED BY ALL LIFT OVER CONCRETE & SIDES DUTY RAMPED WITH EARTH UP TO 500 BELOW THE TOP OF THE BASE.
6. WHERE REQUIRED BITCHING ON THE RELEVANT SIDES OF THE RAMPED SURFACE WITH 225 TO 300 SIZE BOLDERS SHALL BE DONE & FILLING THE CRACKS WITH 1:2:4 CONCRETE WITH FINE 20 STONE CHIPS. BITCHING WILL BE TO THE FULL HEIGHT OF THE RAMPED EARTH.
7. OUTER SURFACE SHOULD BE PLASTERED FROM TOP OF FOUNDATION WITH 1:4 CEMENT SAND OF 14 LEVEL AT 50 BELOW GROUND LEVEL.
8. FOUNDATION WITH PLASTER IN CEMENT SAND & STONE CHIPS. SIZE 20 (1:2:4).
9. ALL DIMENSIONS IN MM.
10. FOUNDATION BOLTS OF SIZE 24 MM. IN DIAMETER NO. 24-12A/M WITH TWO NUTS & TWO WASHER EACH (AND) THE FOUNDATION SHALL BE CAST IN ONE.
11. IN CASE OF LOW GROUND LEVEL, PART OF THE CONCRETE FOUNDATION MAY BE CAST IN TWO PARTS.

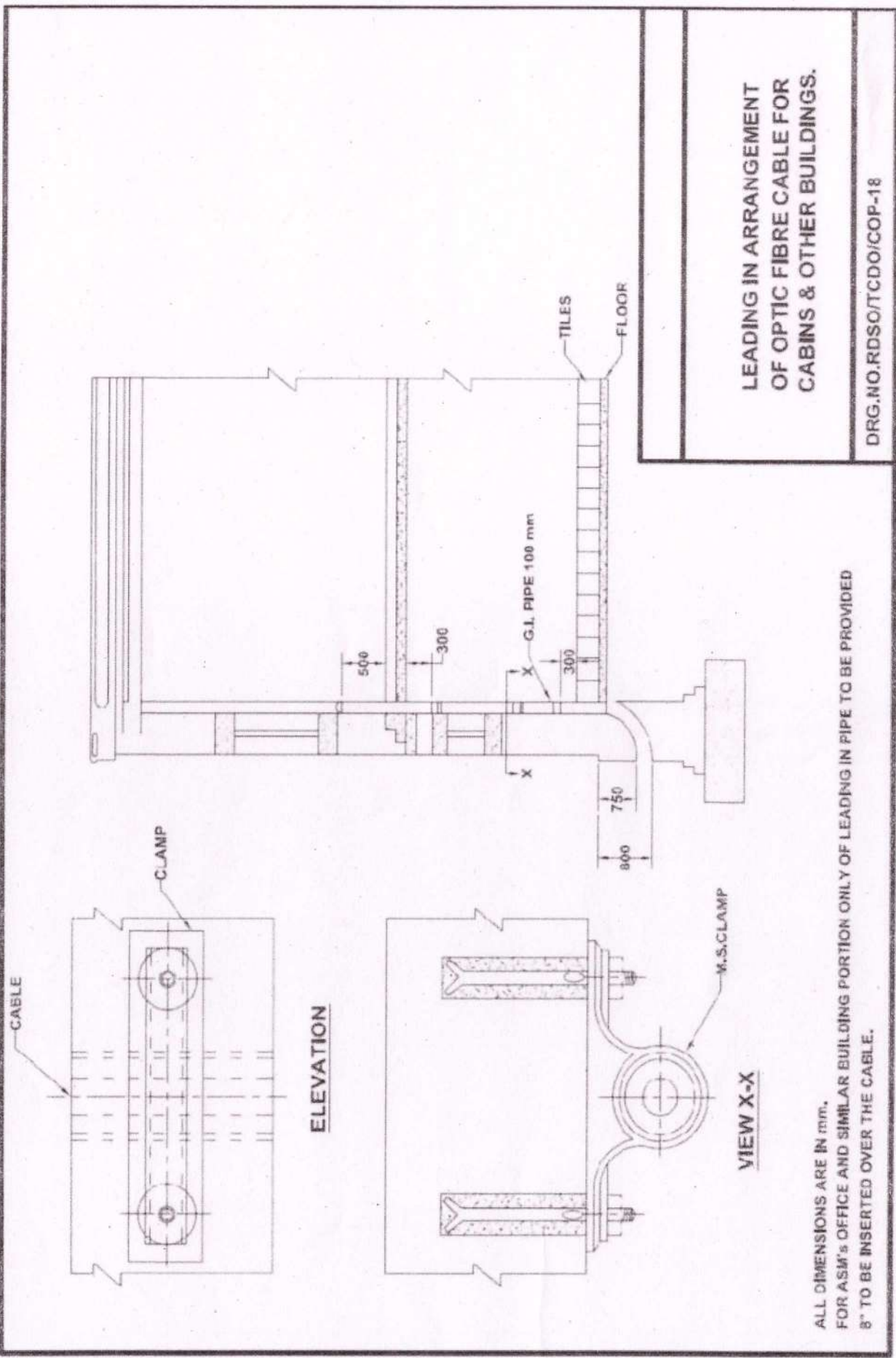


LEVEL OF RAMPED EARTH (GROUND LEVEL)

30 DIA PIPE (3mm)

NOTE

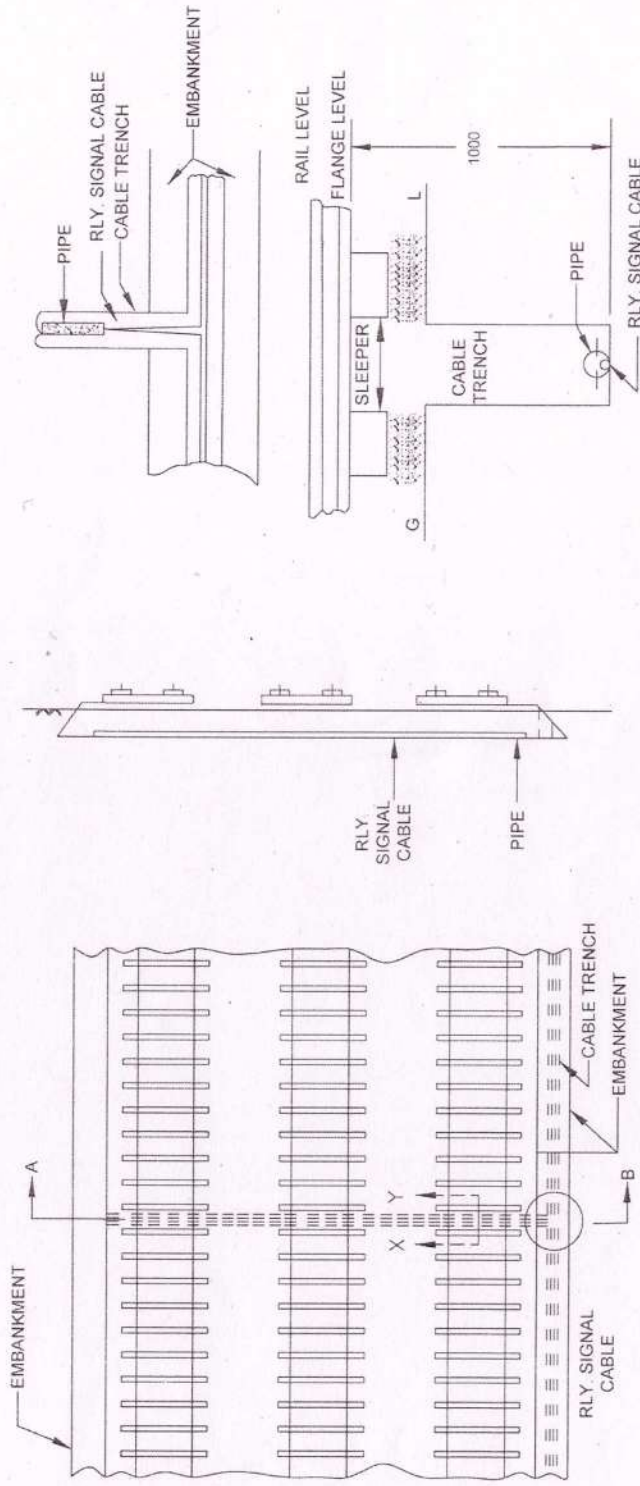
RAIL LEVEL



ALL DIMENSIONS ARE IN mm.  
FOR ASM's OFFICE AND SIMILAR BUILDING PORTION ONLY OF LEADING IN PIPE TO BE PROVIDED  
8" TO BE INSERTED OVER THE CABLE.



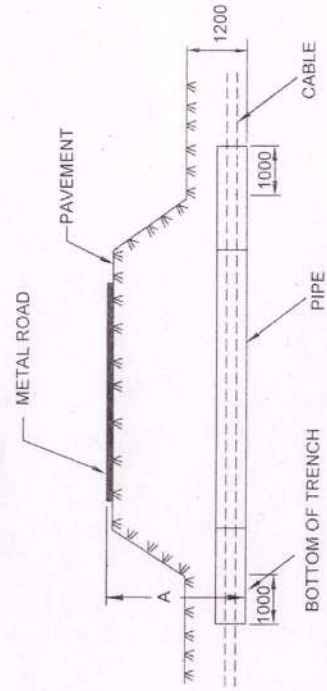
# DRAWING FOR ROAD / TRACK CROSSING



ENLARGED SECTIONAL  
VIEW AT XY

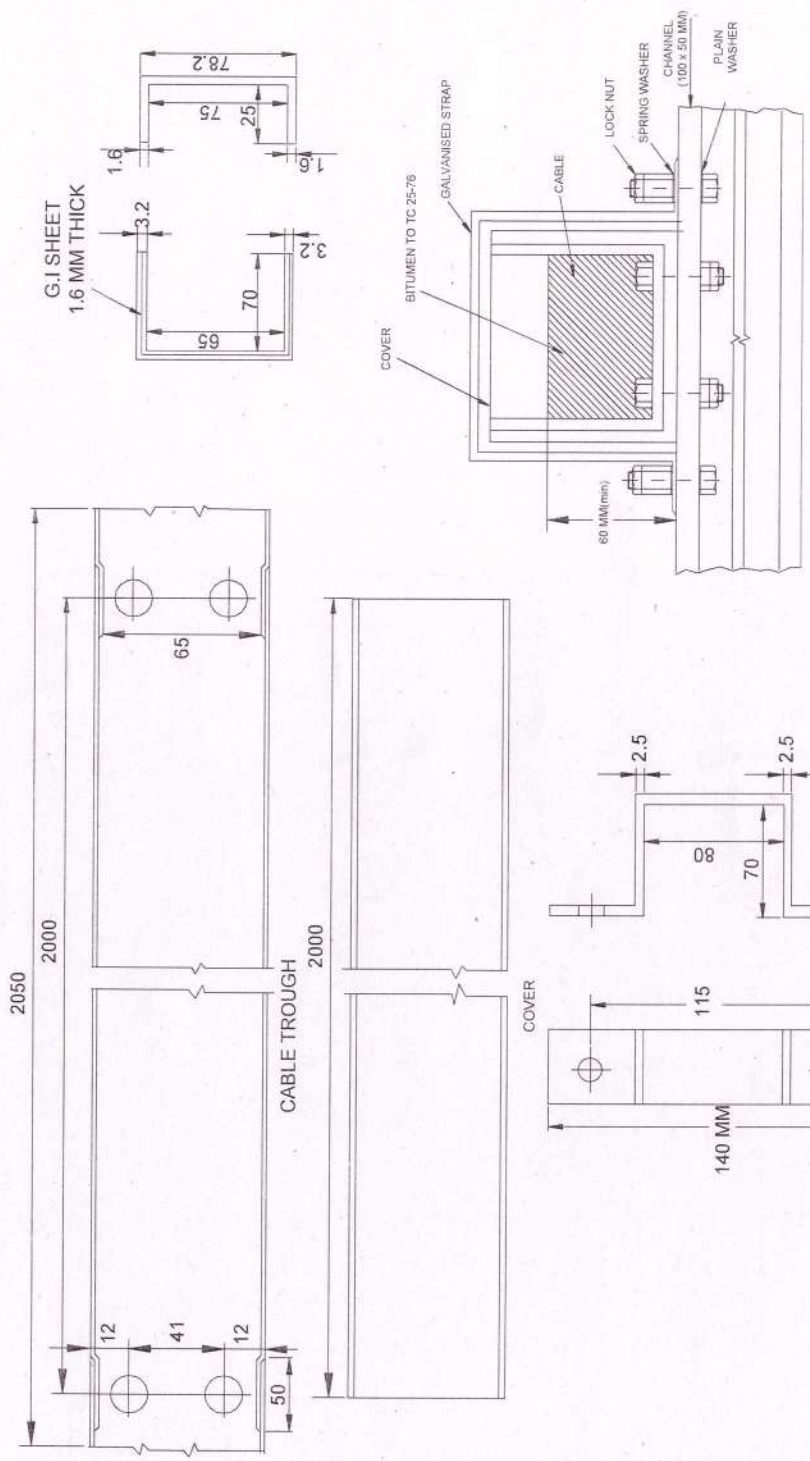
SECTION ON AB

PLAN



NOTE: ALL DIMENSIONS ARE IN MILLIMETER

# DRAWING FOR CABLE TROUGH FOR METALLIC BRIDGE

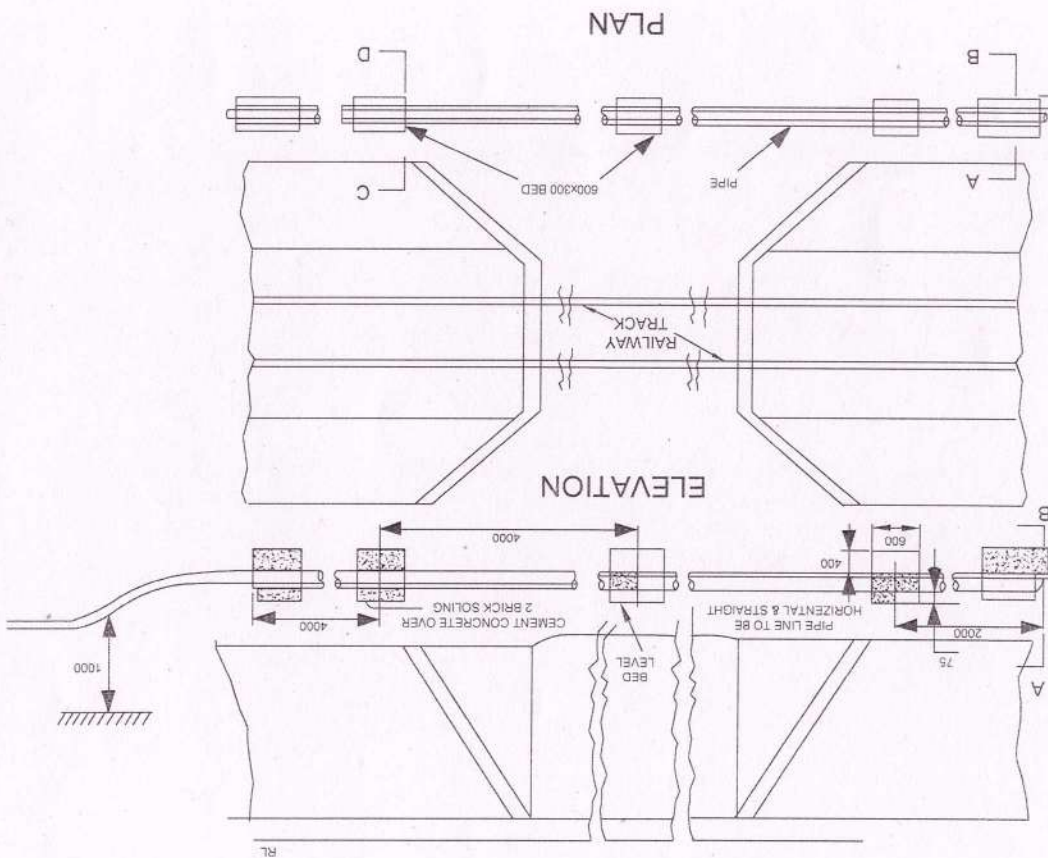


SCHEDULE OF MATERIALS		
SL.No.	DESCRIPTION	NO.REQD.
1.	TROUGH 2.05 METRES LONG.	1
2.	COVER 2.0 METRES LONG	1
3.	STRAP	2
4.	BOLT HEX. HEAD 6 MM Dia. x 32 MM.	4
5.	NUT FOR ABOVE	4
6.	LOCK NUT FOR SL 4	4
7.	DISH WASHER FOR SL 5	4
8.	PLAIN WASHER FOR SL 5	4

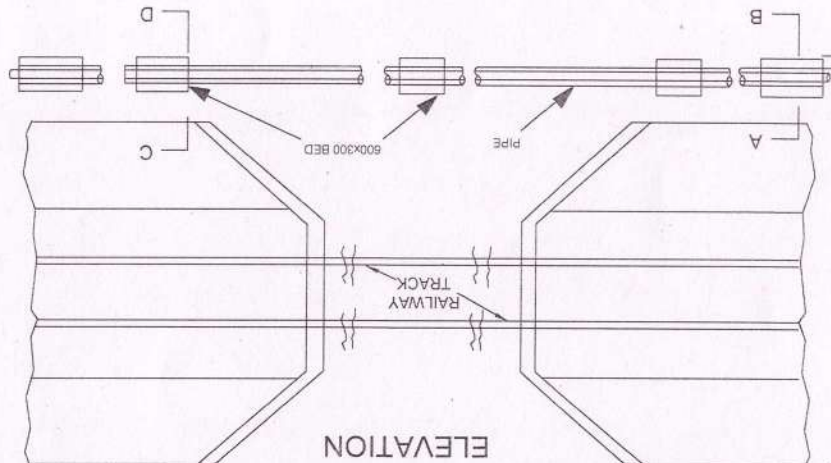
- NOTE:-
- ALL DIMENSIONS ARE IN MILLIMETERS
  - TROUGH TO BE FABRICATED OUT OF GALVANISED STEEL SHEET TO IS:277-1985 WITH FOLLOWING STIPULATIONS THICKNESS : MINIMUM 1.6 MM GRADE OF ZINC COATING : 200
  - NO WELDING SHALL BE DONE ON ANY COMPONENT FOR FABRICATIONS.
  - CABLE TROUGH TO BE FITTED TELESCOPICALLY.
  - AFTER TIGHTENING NUTS FOR FIXING STRAP THE THREAD OF THE BOLT MAY BE BURIED TO PREVENT THEFT.



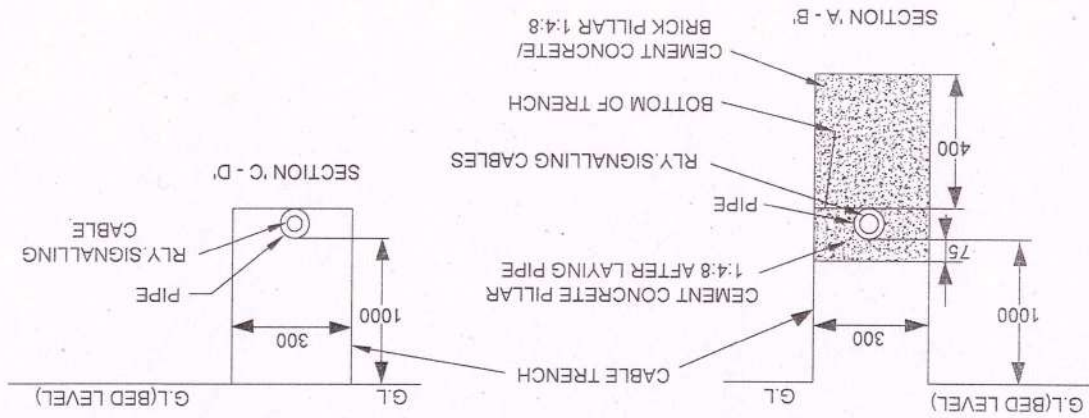
# Drg.No.15-D7 DRAWING FOR CABLE LAYING ON CULVERTS



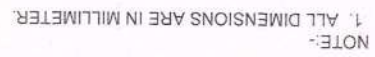
ELEVATION



PLAN



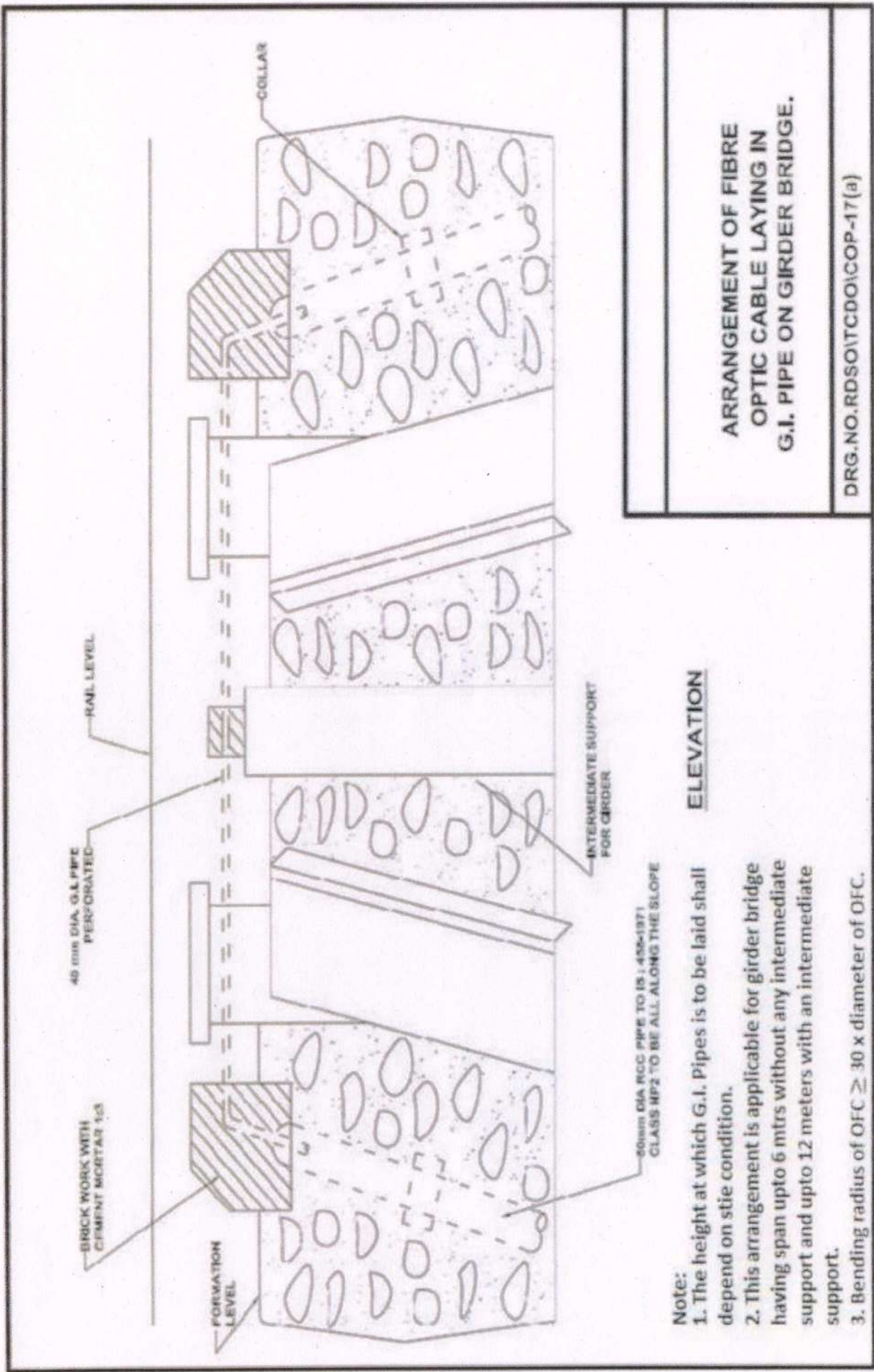
NOTE:-  
1. ALL DIMENSIONS ARE IN MILLIMETER.



Dr. No. 15-D8



(15)

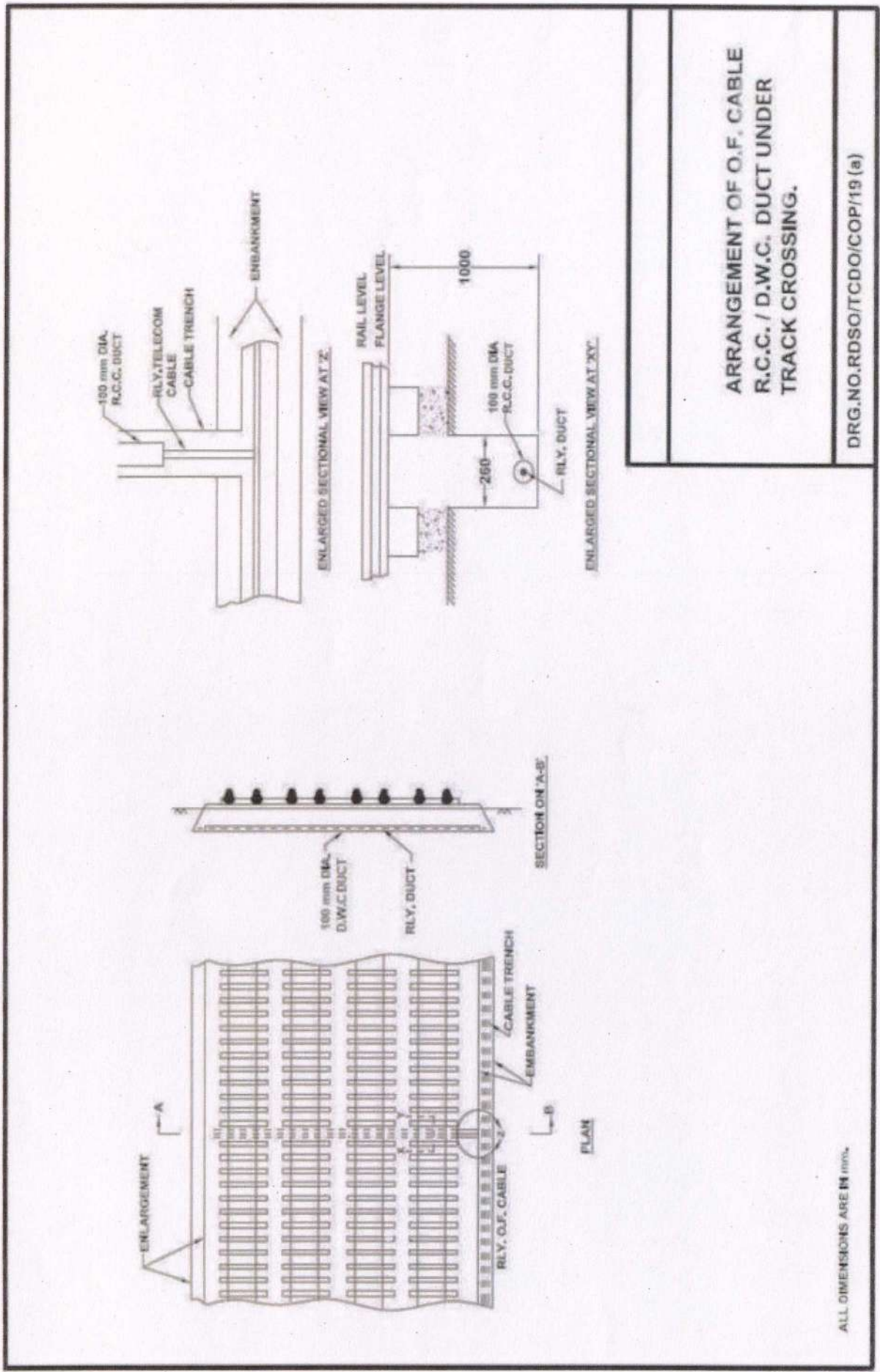


**ELEVATION**

- Note:
1. The height at which G.I. Pipes is to be laid shall depend on site condition.
  2. This arrangement is applicable for girder bridge having span upto 6 mtrs without any intermediate support and upto 12 meters with an intermediate support.
  3. Bending radius of OFC  $\geq 30 \times$  diameter of OFC.

ARRANGEMENT OF FIBRE  
OPTIC CABLE LAYING IN  
G.I. PIPE ON GIRDER BRIDGE.

DRG.NO.RDSO\TCDO\COP-17(a)



ARRANGEMENT OF O.F. CABLE  
R.C.C. / D.W.C. DUCT UNDER  
TRACK CROSSING.

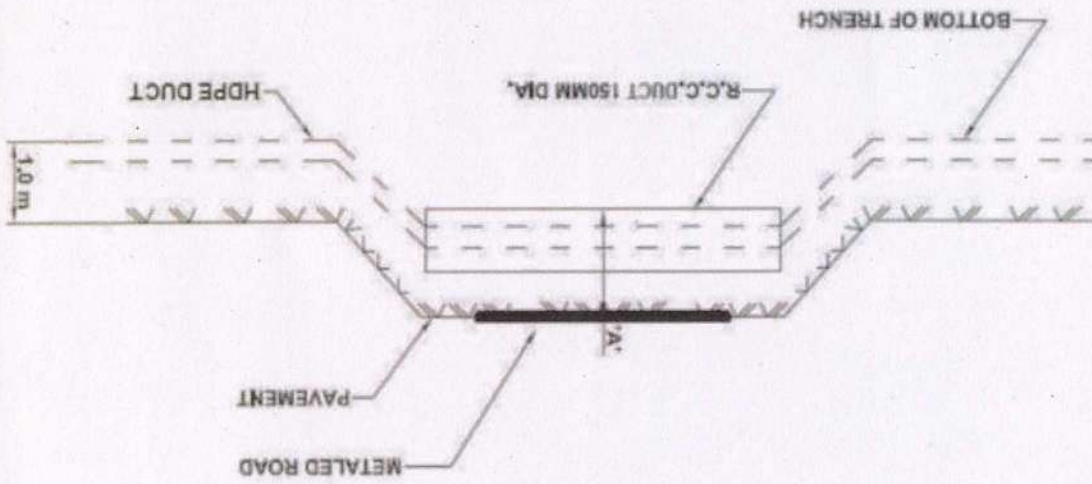
DRG.NO.RDSO/TCDO/COP/19 (a)

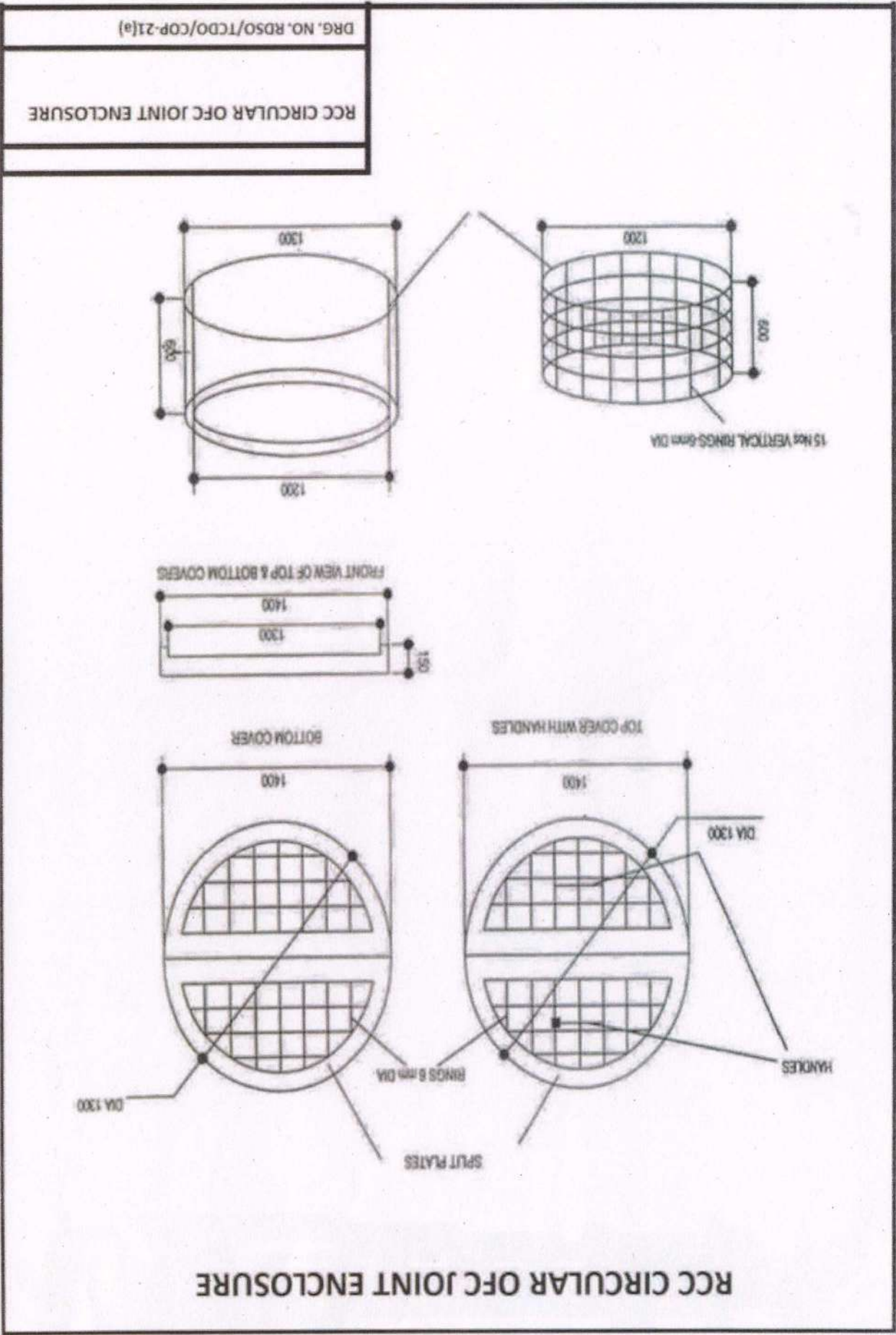


NOTE:  
A' DEPTH WILL BE 1.0 m,  
OR OTHERWISE WILL BE  
DECIDED BY THE ENGINEERS  
AT SITE.

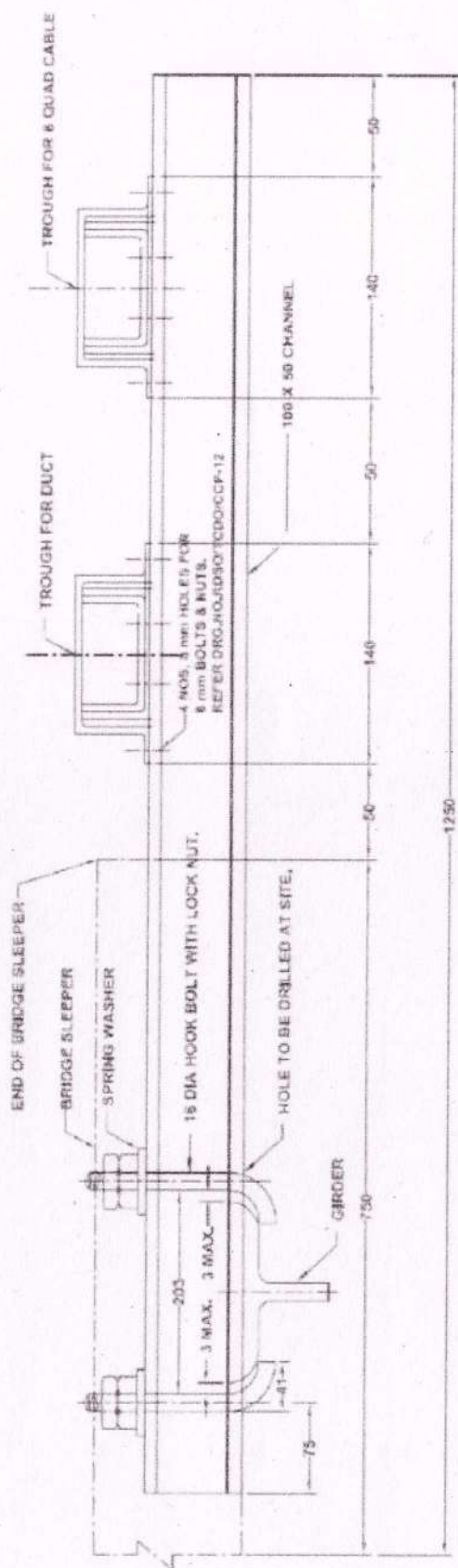
DRG.NO.RDSO/TCDO/COP-20 (a)

ARRANGEMENT OF R.C.C. DUCT  
UNDER METALED ROAD









ARRANGEMENT OF CHANNEL FOR  
CABLE TROUGH ON GIRDER  
BRIDGES & MAJOR CULVERT.

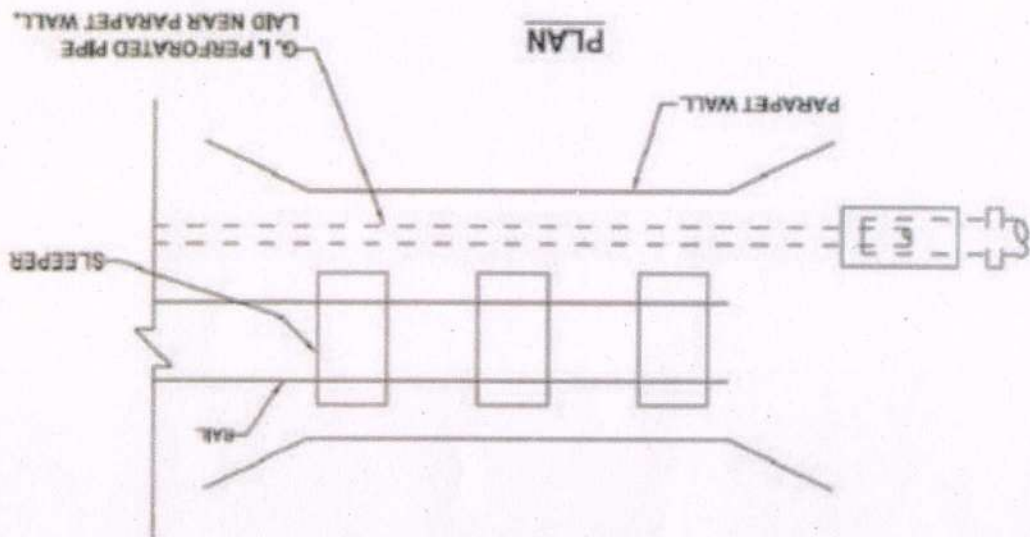
DRG.NO.RDSO/TCDO/COP-13

FIBRE OPTIC CABLE CROSSING  
CULVERT (PIPE/BOX)  
WITH HIGH FLOOD LEVEL.

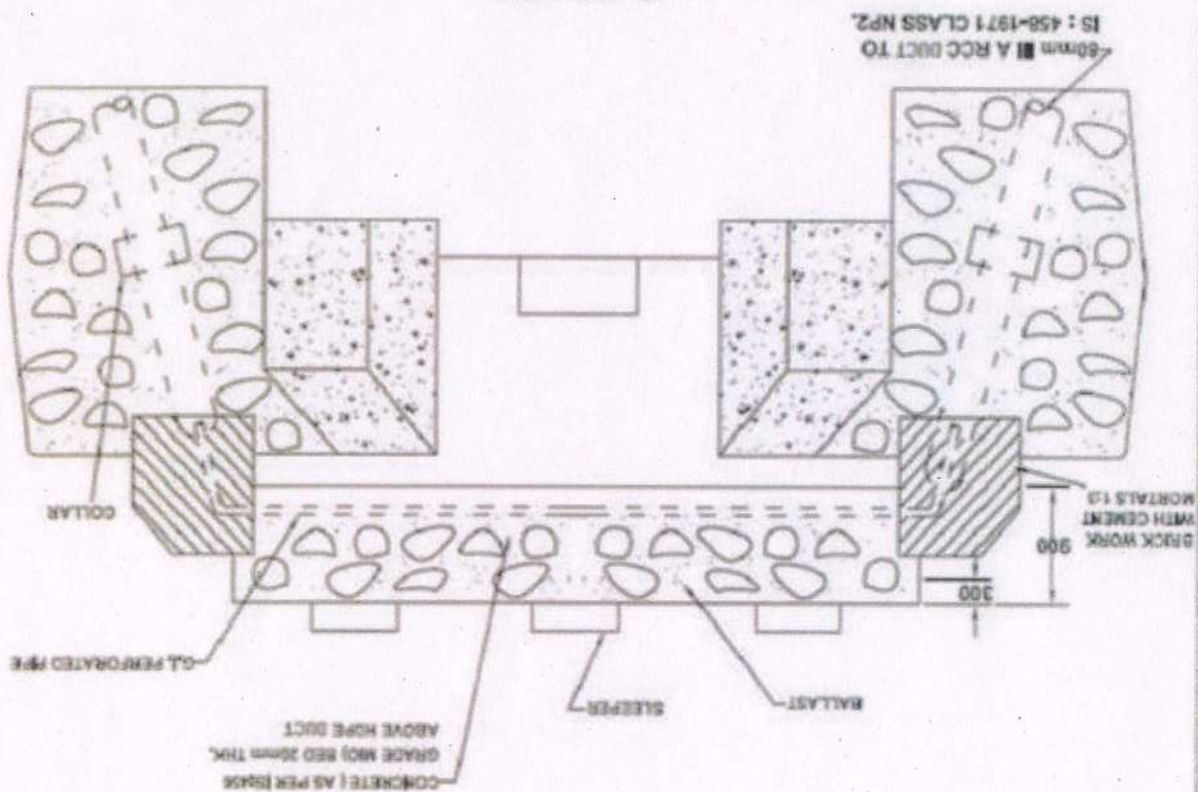
DRG.NO.RDSO/TCDO/COP-16(a)

Note:  
Bending radius of OFC  $\geq 30 \times$  diameter  
of OFC

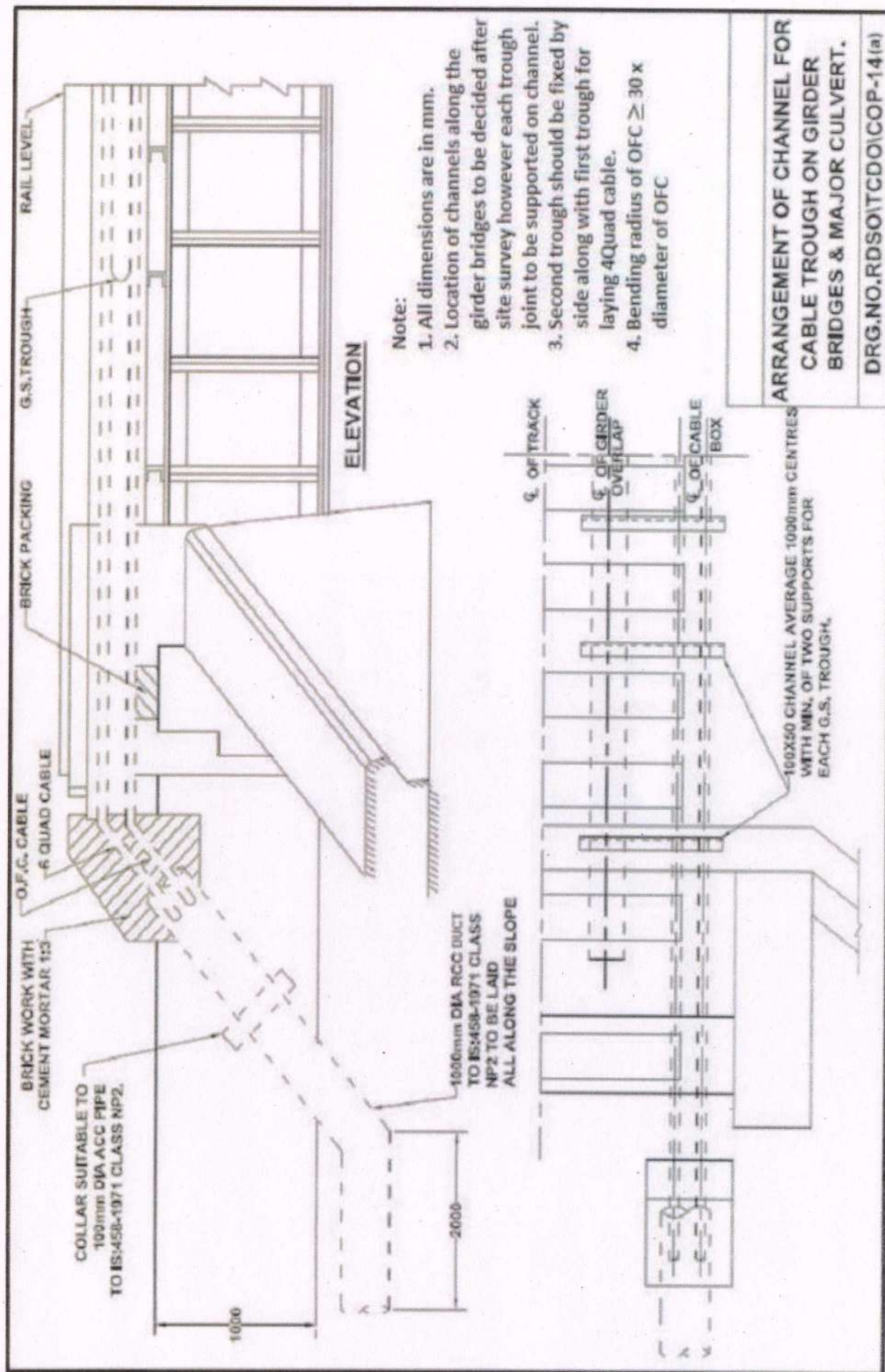
PLAN

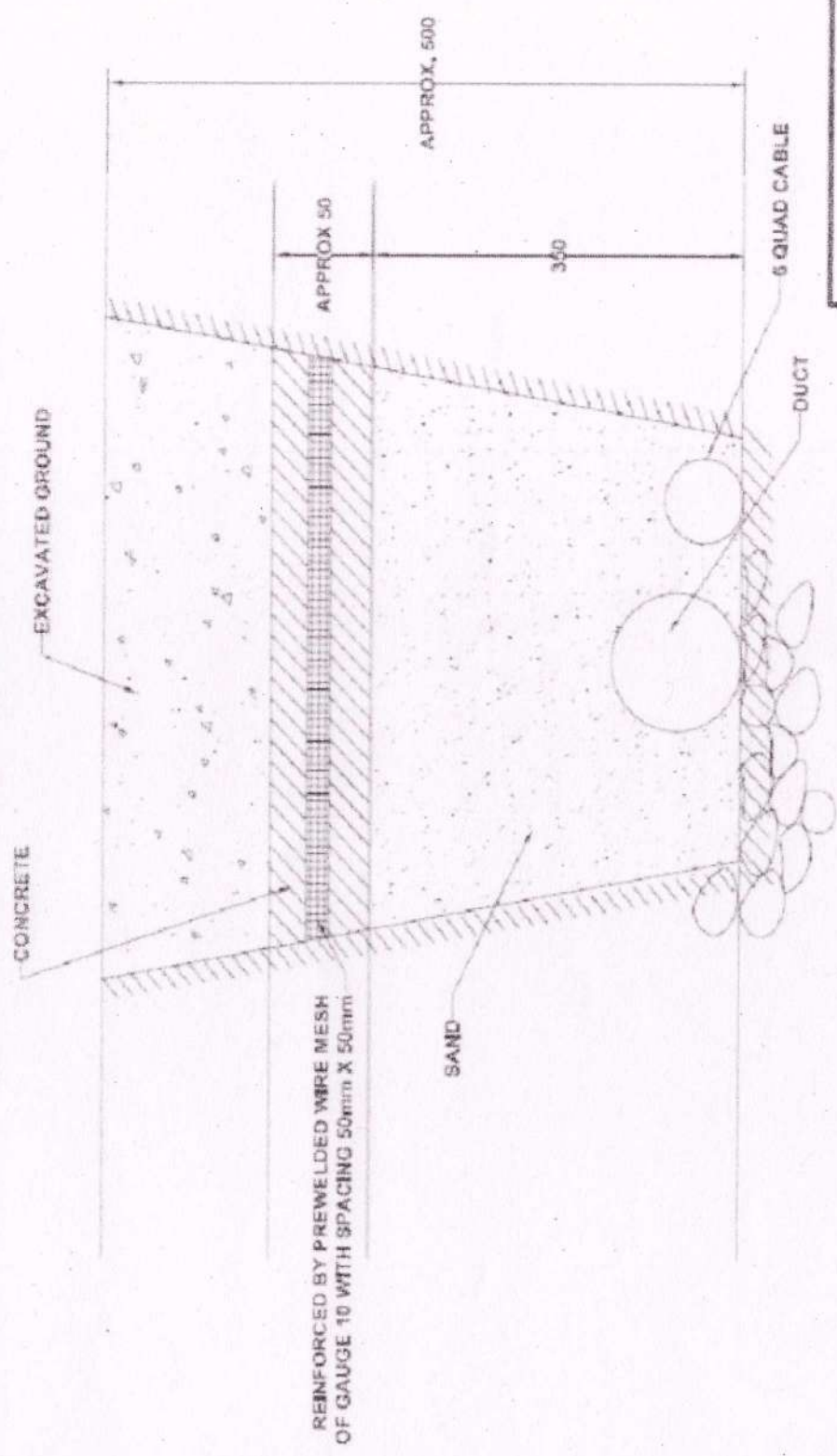


ELEVATION









2. NOT TO SCALE.

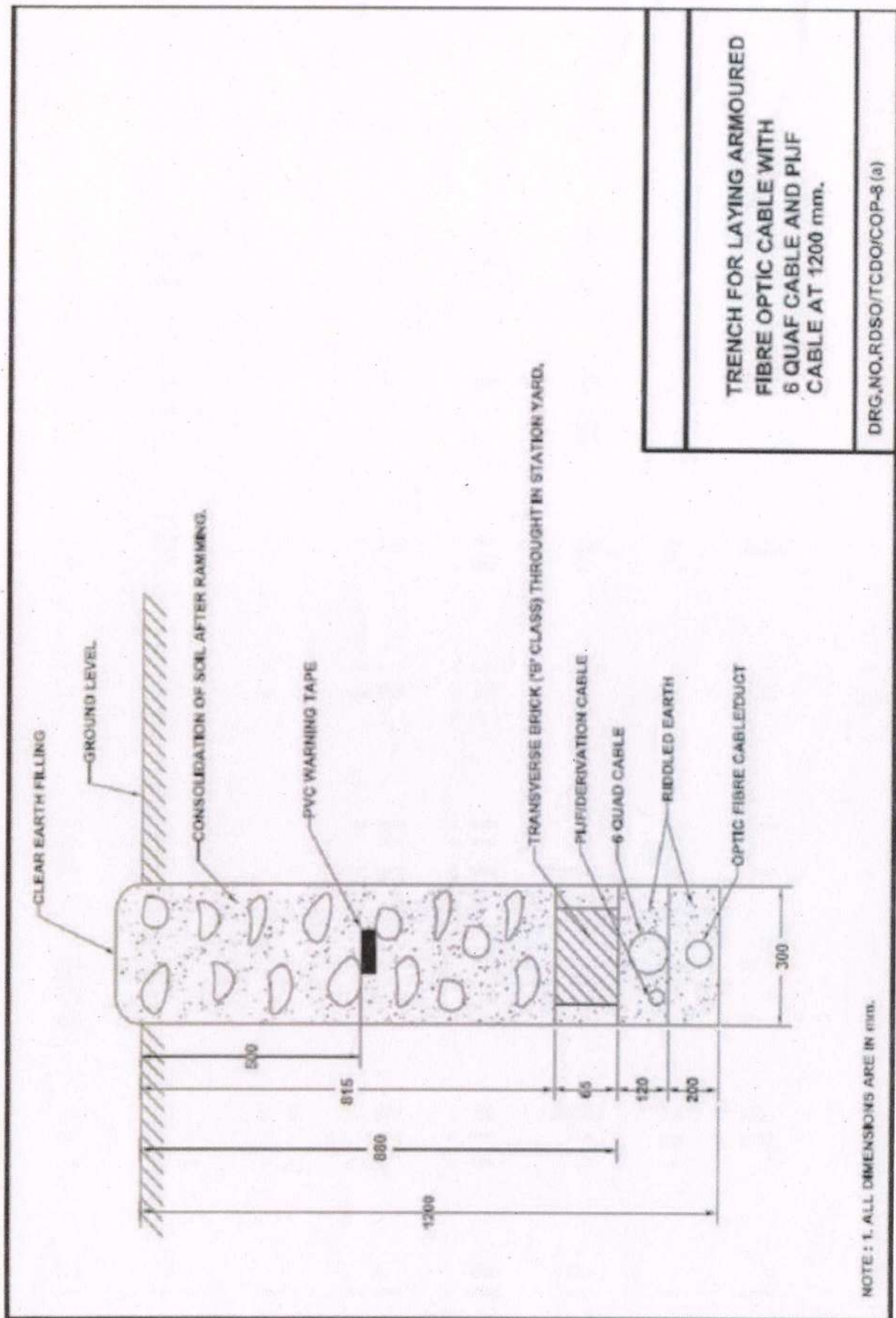
NOTE : 1. ALL DIMENSIONS ARE IN mm.

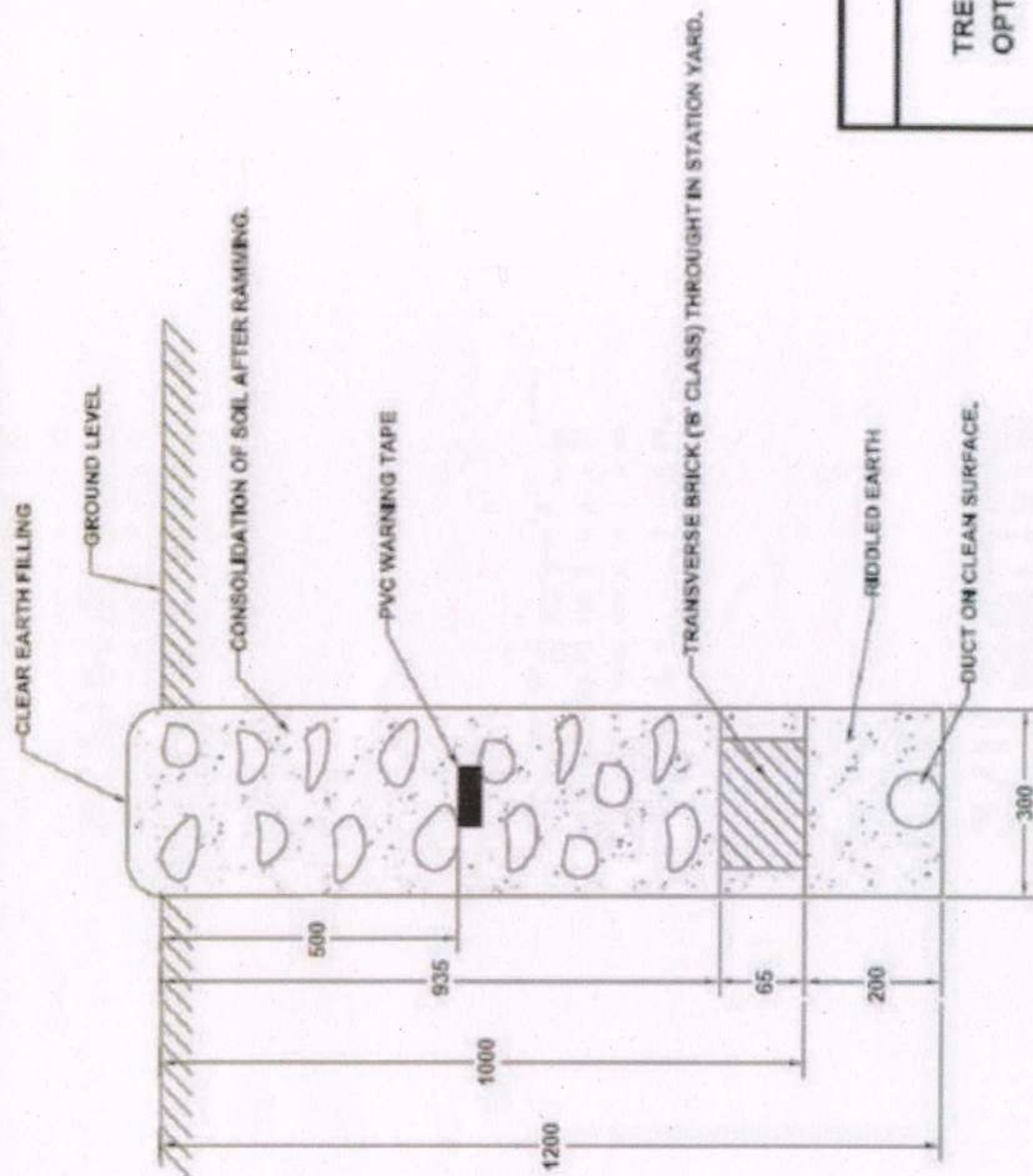
LAYING OF OPTIC FIBRE  
CABLE IN ROCKY AREA

DRG.NO.RDSO/TCDO/ICOP-10



7





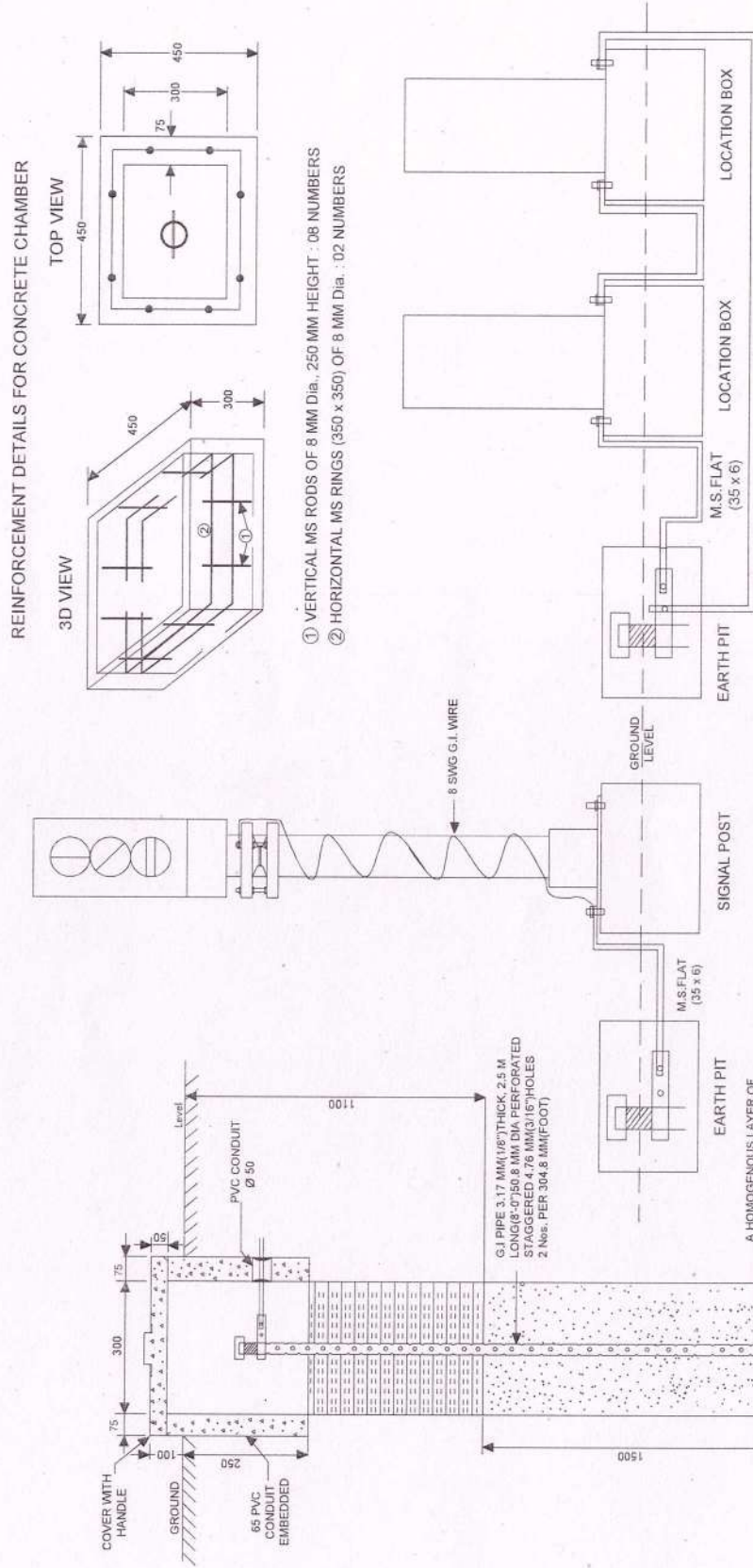
NOTE : 1. ALL DIMENSIONS ARE IN mm.

TRENCH FOR LAYING ARMoured  
OPTIC FIBRE CABLE.

DRG.NO.RD/SO/TCDO/COP-6(a)



# EARTHING ARRANGEMENT FOR SIGNALS, LOCATION BOXES



- NOTE:
1. ALL DIMENSIONS ARE IN MM.
  2. ALL MULTIPLE UNITS, CALLING-ON, SHUNT, ROUTE & SCREENS SHALL BE LOOPED TOGETHER.
  3. CODE OF PRACTICE FOR EARTHING AS PER IS: 3043
  4. CONCRETE OF M25 GRADE 1:2:4 WITH MAXIMUM SIZE OF STONE CHIPS OF 10 MM.

# NOTES:

- THIS DRAWING OF RCC DUCT IS SUITABLE FOR TRACK CROSSING CONFORMING TO 251 LOADING 2008 FOR SINGLE AS WELL AS MULTIPLE TRACKS.
- THIS DRAWING IS ALSO SUITABLE FOR STRAIGHT ALIGNMENT ADJACENT TO TRACK.
- THIS DRAWING IS SUITABLE FOR MODERATE ENVIRONMENT EXPOSURE CONDITION IN ACCORDANCE WITH CLAUSE 8.2.1 OF IS 456: 2000.
- UNIT WEIGHT OF MATERIAL HAS BEEN TAKEN AS BELOW:
  - EARTH -  $24.8 \text{ kN/m}^3$  (IN SATURATED CONDITION)
  - BALLAST -  $19 \text{ kN/m}^3$
  - RCC -  $25 \text{ kN/m}^3$
- DESIGN IS BASED ON FOLLOWING CODES:
  - BRIDGE RULES
  - IS 456: 2000
- CONCRETE GRADE FOR DUCT HAS BEEN CONSIDERED AS M25 AS PER CLAUSE 6.1.2 OF IS 456:2000.
- AFTER EARTH SURFACE HAS BEEN PROPERLY COMPACTED AND LEVELLED, 75MM LEAN CONCRETE OF GRADE M10 SHALL BE PROVIDED BELOW RCC DUCT AS PER CLAUSE 8.1.3 OF IS 456: 2000.
- CLEAR COVER FOR REINFORCING BARS HAS BEEN CONSIDERED AS 30mm AS PER CLAUSE 26.4 OF IS 456:2000.
- ALL REINFORCEMENT BARS SHALL BE OF HIGH STRENGTH DEFORMED (HSD)/TMT BARS OF F415 OR HIGHER GRADE CONFORMING TO IS 1786: 2008.
- RCC SURFACES COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @  $1.464 \text{ Kg/SQM}$ .
- ALL HOOKS COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH ANY ANTI-CORROSIVE PAINT.
- ALL JOINTS BETWEEN TWO UNITS OF RCC DUCT AS WELL AS BETWEEN RCC DUCT & ITS COVER SHALL BE PROPERLY SEALED BY PRESSURE GROUTING WITH EPOXY MORTAR TO PREVENT INGRESS OF WATER. FOR PREPARING MIX PROPORTION OF RESIN TO HARDENER SHOULD NEARLY BE 1:1 (SUBJECT TO MANUFACTURER'S RECOMMENDATIONS).
- NO LIFTING/WEED HOLES SHOULD BE PROVIDED IN THE RCC DUCT.
- PARTIAL SAND FILLING OF DUCT, AFTER CABLE LAYING MAY BE CONSIDERED TO DETER FIRE & RODENTS.
- SIZE OF CHARGE AGGREGATE HAS BEEN TAKEN AS 20mm AS PER CLAUSE 5.3.5 OF IS 456: 2000.
- AS FAR AS POSSIBLE, LAYING OF RCC DUCT SHALL BE AVOIDED IN LOW LYING AREAS, ROCKY TERRAINS AND POINTS & CROSSINGS.
- THIS DRAWING HAS BEEN CHECKED FOR 300mm TO 500mm EARTH CUSHION. ACCORDINGLY, THE SAME IS TO BE ENSURED THE SOIL BELOW STRUCTURE SHALL BE ABLE TO RESIST THE MINIMUM FOUNDATION PRESSURE OF  $110 \text{ kN/m}^2$ .
- FOUR LIFTING HOOKS ON DUCT AND FOUR LIFTING HOOKS ON DUCT COVER SHALL BE PROVIDED AS SHOWN IN THE DRAWING.
- LENGTH OF SINGLE UNIT OF RCC DUCT IS TAKEN AS 2 METER.
- MINIMUM WALL THICKNESS HAS BEEN CONSIDERED AS PER CLAUSE 21.2 OF IS 456:2000 FROM FIRE RESISTANCE POINT OF VIEW.
- CABLE SHOULD BE TAKEN WHILE HANDLING THE PREFABRICATED/PRECAST RCC CABLE DUCT DURING TRANSPORTATION TO SITE AS PER CLAUSE 15.1 OF IS 783: 2010.
- AT SUITABLE INTERVALS, NOT MORE THAN 500m ALONG THE DUCT AND AT EACH LOCATION OF TRACK CROSSING, A CHAMFER OF SIZE  $1200\text{mm} \times 1200\text{mm} \times 150\text{mm}$  DEPTH (PREFERABLY) SHALL BE PROVIDED WITH LID & LOCKING ARRANGEMENT AND ENSURING SAFETY OF CABLES FROM FIRE.
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- WEIGHT IN BAR BENDING SCHEDULE ARE TENTATIVE FOR GUIDANCE ONLY. PAYMENT MAY BE MADE AFTER DETAIL COMPUTATION AS PER CONTRACT/CODAL CONDITION.

THIS DRAWING IS THE PROPERTY OF  
RESEARCH DESIGNS AND STANDARDS ORGANISATION  
(MINISTRY OF RAILWAYS)  
(JALPAIGURI-226011-INDIA)  
AND SHALL NOT BE USED, COPIED OR REPRODUCED IN  
PART OR WHOLE WITHOUT PRIOR CONSENT IN WRITING.

R.D.S.O.

STANDARD DRAWING OF  
PRECAST RCC DUCT OF  
SIZE 300mm X 100mm  
FOR LAYING S&T CABLE  
(251 LOADING-2008)

PROVISIONAL DATE - 29.05.2023

SDO/S&T/ RCC DUCT/1018/1

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APPROVED BY

DESIGNED BY

CHECKED BY

DATE

SCALE

DESCRIPTION

ALT

DATE

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DESIGNED BY

CHECKED BY</



# NOTES

- THIS DRAWING OF RCC DUCT IS SUITABLE FOR TRACK CROSSING CONFORMING TO 25T LOADING 2008 FOR SINGLE AS WELL AS MULTIPLE TRACKS.
- THIS DRAWING IS ALSO SUITABLE FOR STRAIGHT ALIGNMENT ADJACENT TO TRACK.
- THIS DRAWING IS SUITABLE FOR MODERATE ENVIRONMENT EXPOSURE CONDITION IN ACCORDANCE WITH CLAUSE 8.2.1.1 OF IS 456:2000.
- UNIT WEIGHT OF MATERIAL HAS BEEN TAKEN AS BELOW:
  - EARTH - 24.8 kN/m<sup>3</sup> (IN SATURATED CONDITION)
  - BALLAST - 19 kN/m<sup>3</sup>
  - RCC - 25 kN/m<sup>3</sup>
- DESIGN IS BASED ON FOLLOWING CODES:
  - BRIDGE RULES
  - IS 456:2000
- CONCRETE GRADE FOR DUCT HAS BEEN CONSIDERED AS M25 AS PER CLAUSE 6.1.2 OF IS 456:2000.
- AFTER EARTH SURFACE HAS BEEN PROPERLY COMPACTED AND LEVELLED, 75MM LEAN CONCRETE OF GRADE M10 SHALL BE PROVIDED BELOW RCC DUCT AS PER CLAUSE 6.1.3 OF IS 456:2000.
- CLEAR COVER FOR REINFORCING BARS HAS BEEN CONSIDERED AS 30mm AS PER CLAUSE 26.4 OF IS 456:2000.
- ALL REINFORCEMENT BARS SHALL BE OF HIGH STRENGTH DEFORMED (HSD)/TMT BARS OF Fe415 OR HIGHER GRADE CONFORMING TO IS 1786:2008.
- RCC SURFACES COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 Kg/SQM.
- ALL JOINTS COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH ANTI-CORROSIVE PAINT.
- ALL JOINTS BETWEEN TWO UNITS OF RCC DUCT AS WELL AS BETWEEN RCC DUCT & ITS COVER SHALL BE PROPERLY SEALED BY PRESSURE GROUTING WITH EPOXY MORTAR TO PREVENT INGRESS OF WATER FOR PREPARING W/P. PROPORTION OF RESIN TO HARDENER SHOULD NEARLY BE 1:1 (SUBJECT TO MANUFACTURER'S RECOMMENDATIONS).
- NO LIFTING/WEEP HOLES SHOULD BE PROVIDED IN THE RCC DUCT.
- PARTIAL SAND FILLING OF DUCT AFTER CABLE LAYING MAY BE CONSIDERED TO DETECT FIRE & RODENTS.
- SIZE OF CONCRETE AGGREGATE HAS BEEN TAKEN AS 20mm AS PER CLAUSE 5.3.5 OF IS 456:2000.
- AS FAR AS POSSIBLE, LAYING OF RCC DUCT SHALL BE AVOIDED IN LOW LYING AREAS, ROCKY TERRAINS AND POINTS & CROSSINGS.
- THIS DRAWING HAS BEEN CHECKED FOR 300mm TO 500mm EARTH CUSHION. ACCORDINGLY, THE SAME IS TO BE ENSURED. THE SOIL BELOW STRUCTURE SHALL BE ABLE TO RESIST THE MINIMUM FOUNDATION PRESSURE OF 120 kN/m<sup>2</sup>.
- FOUR LIFTING HOOKS ON DUCT AND FOUR LIFTING HOOKS ON DUCT COVER SHALL BE PROVIDED AS SHOWN IN THE DRAWING.
- LENGTH OF SINGLE UNIT OF RCC DUCT IS TAKEN AS 2 METER.
- MINIMUM WALL THICKNESS HAS BEEN CONSIDERED AS PER CLAUSE 21.2 OF IS 456:2000 FROM FIRE RESISTANCE POINT OF VIEW.
- CABLE SHOULD BE TAKEN WHILE HANDLING THE PREFABRICATED/PRECAST RCC CABLE DUCT DURING TRANSPORTATION TO SITE AS PER CLAUSE 15.1 OF IS 786:2010.
- AT SUITABLE INTERVALS, NOT MORE THAN 300M ALONG THE DUCT AND AT EACH LOCATION OF TRACK CROSSING, A CHAMBER OF SIZE 1200mm X 1200mm X 1500mm DEPTH (PREFERABLY) SHALL BE PROVIDED WITH LID & LOCKING ARRANGEMENT AND ENSURING SAFETY OF CABLES FROM FIRE.
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- WEIGHT IN BAR BENDING SCHEDULE ARE TENTATIVE FOR GUIDANCE ONLY. PAYMENT MAY BE MADE AFTER DETAIL COMPUTATION AS PER CONTRACT/COAL CONDITION.

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R.D.S.O.

STANDARD DRAWING OF  
PRECAST RCC DUCT OF  
SIZE 300mm X 300mm  
FOR LAYING S&T CABLE  
(25t LOADING-2008)

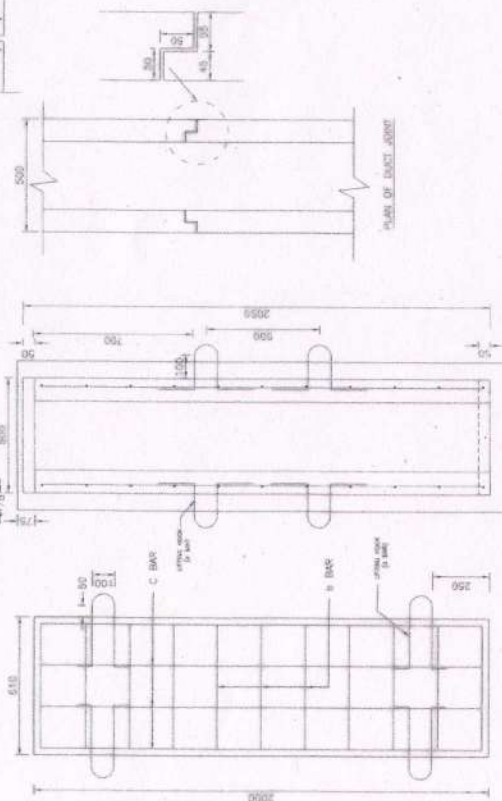
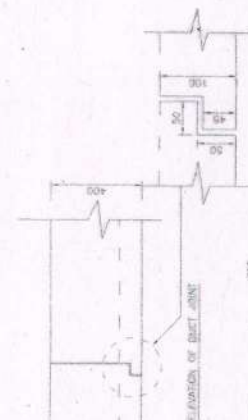
PROVISIONAL DATE-29.05.2023  
SDO/S&T/RCC DUCT/1018/2

APPROVED BY: [Signature]  
AUTHOR: [Signature]

SCALE: 1:10  
DESCRIPTION: [Blank]  
DATE: [Blank]

SPECIFICATION: [Blank]  
REVISIONS: [Blank]

NOTE: [Blank]



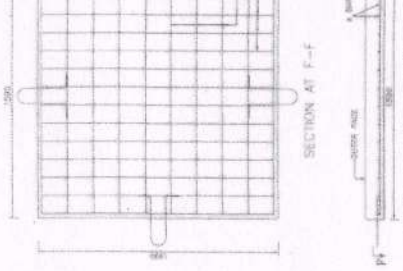
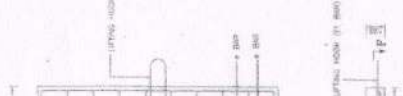
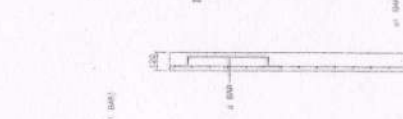
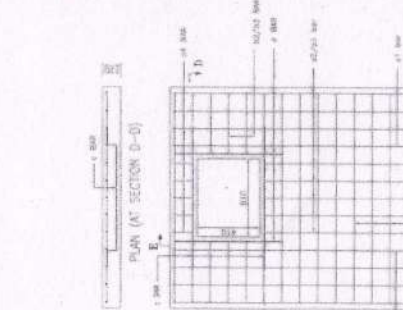
SECTION AT A-A

SECTION AT B-B

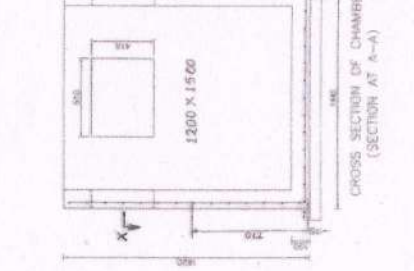
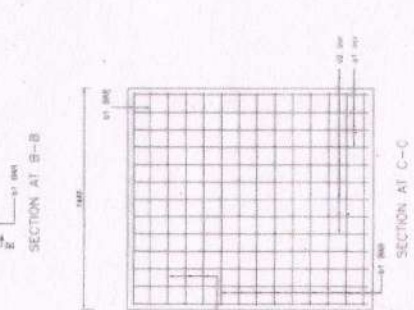
SHAPE OF BAR	BAR SYMBOL	DIA OF BAR	NO. OF BAR	NO. OF LENGTH	WEIGHT/M LENGTH	TOTAL WEIGHT
10	10	10	11	0.3600	4.3100	
12	12	12	11	0.3650	2.8200	
16	16	16	11	0.3950	8.4300	
20	20	20	4	0.3950	1.5800	
25	25	25	4	0.3650	1.4600	
TOTAL						19.20

U - TYPE STRUCTURE	350	kg
DUCT COVER	350	kg
TOTAL WEIGHT OF CONCRETE	855	kg
WEIGHT OF BAR OF CONCRETE	19.20	kg

Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100



Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Bar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100



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R.D.S.O.

STANDARD DRAWING OF PRECAST  
R.C.C. CHAMBER FOR CONNECTING  
R.C.C. DUCT OF SIZE 300mm X 300mm  
FOR LAYING S&T CABLE

PROVISIONAL DATE - 23.05.2023  
SDO/S&T/RCC CHAMBER/1019/2

1. THIS DRAWING IS SUITABLE FOR CONNECTION OF RCC DUCT FOR LAYING S&T CABLE ONLY.

2. THIS DRAWING IS SUITABLE FOR ADJUNCT TO TRACK ONLY.

3. THIS DRAWING IS SUITABLE FOR MODERATE ENVIRONMENT EXPOSURE CONDITION IN ACCORDANCE WITH CLAUSE 8.2.1 OF IS 456:2000.

4. UNIT WEIGHT OF MATERIAL HAS BEEN TAKEN AS BELOW:

1) EARTH - 24.5 kN/m<sup>3</sup> (SATURATED CONDITION)

2) RCC - 25 kN/m<sup>3</sup>

5. DESIGN IS BASED ON FOLLOWING CODES:

1) BRIDGE RULES

2) IS 456:2000

3) CONCRETE GRADE FOR CHAMBER HAS BEEN CONSIDERED AS M25 AS PER CLAUSE 6.1.2 OF IS 456:2000.

7. AFTER EARTH SURFACE HAS BEEN PROPERLY COMPACTED AND LEVELLED, 75MM LEAN CONCRETE OF GRADE M10 SHALL BE PROVIDED BELOW RCC CHAMBER AS PER CLAUSE 6.1.3 OF IS 456:2000.

8. CLAY COVER FOR REINFORCING BARS HAS BEEN CONSIDERED AS 30mm AS PER CLAUSE 26.4 OF IS 456:2000.

9. ALL REINFORCEMENT BARS SHALL BE OF HIGH STRENGTH DEFORMED (HSD)/TMT BARS OF Fe415 OR HIGHER GRADE CONFORMING TO IS 1786:2008.

10. RCC SURFACES COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 kg/m<sup>2</sup>.

11. ALL JOINTS COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH AN ANTI-CORROSIVE PAINT.

12. ALL JOINTS BETWEEN RCC CHAMBER & RCC DUCT AS WELL AS BETWEEN RCC CHAMBER & ITS COVER SHALL BE PROPERLY SEALED BY PRESSURE GROUTING WITH EPOXY MORTAR TO PREVENT INFILTRATION OF WATER. FOR PREPARING MIX, PROPORTION OF RESIN TO HARDENER SHOULD NEARLY BE 1:1 (SUBJECT TO MANUFACTURER'S RECOMMENDATIONS).

13. NO LIFTING/WEED HOLES SHOULD BE PROVIDED IN THE RCC CHAMBER.

14. AS FAR AS POSSIBLE, RCC CHAMBER SHALL BE AVOIDED IN LOW LYING AREAS, ROCKY TERRAINS AND PONTS & CROSSINGS.

15. THIS DRAWING HAS BEEN CHECKED FOR 100mm TO 300mm EARTH CUSHION ACCORDINGLY. THE SAME IS TO BE ENSURED THE SOIL BELOW STRUCTURE SHALL BE ABLE TO RESIST THE MINIMUM FOUNDATION PRESSURE OF 60 kN/m<sup>2</sup>.

16. FOUR LIFTING HOOKS ON CHAMBER AND FOUR LIFTING HOOKS ON CHAMBER COVER SHALL BE PROVIDED AS SHOWN IN THE DRAWING.

17. MINIMUM WALL THICKNESS HAS BEEN CONSIDERED AS PER CLAUSE 21.2 OF IS 456:2000 FROM FIRE RESISTANCE POINT OF VIEW.

18. SIZE OF COARSE AGGREGATE HAS BEEN TAKEN AS 20mm AS PER CLAUSE 5.3.5 OF IS 456:2000.

19. QUALITY & BAR BENDING SCHEDULE HAS BEEN PREPARED FOR CHAMBER CONSIDERING THE SPACINGS OF 510mm x 410mm IN THREE VERTICAL WALLS. HOWEVER NUMBER OF BARS CAN VARY AS PER REQUIREMENT IN THAT CASE. QUANTITY & BAR BENDING SCHEDULE SHALL BE MODIFIED ACCORDINGLY.

20. CASE MAY BE TAKEN WHILE HANDLING THE PREFABRICATED/PRECAST RCC CHAMBER DURING TRANSPORTATION TO SITE AS PER CLAUSE 15.1 OF IS 1863:2010.

21. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.

22. WEIGHT IN BAR BENDING SCHEDULE ARE TENTATIVE FOR GUIDANCE ONLY. PAYMENT MAY BE MADE AFTER DETAIL COMPUTATION AS PER CONTRACT/ORDAL CONDITION.

SCALE: 1:100

REVISIONS:

NO. OF SHEETS: 04/04

DATE: 23.05.2023

DESIGNED BY: SDO/S&T/RCC CHAMBER/1019/2

CHECKED BY: SDO/S&T/RCC CHAMBER/1019/2

APPROVED BY: SDO/S&T/RCC CHAMBER/1019/2

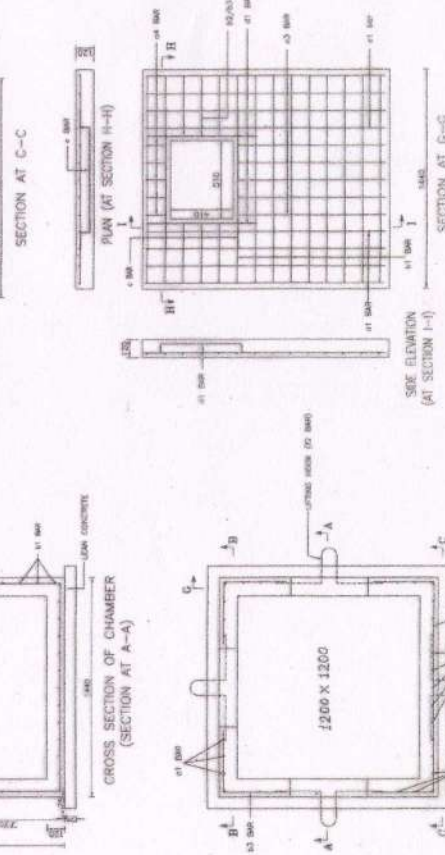
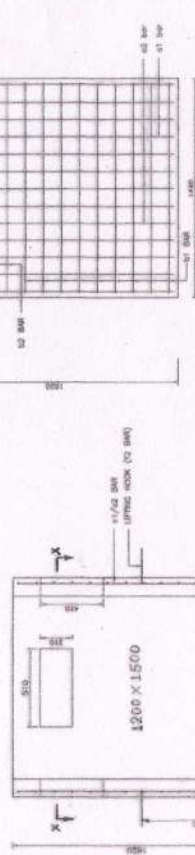
NOTE: (AT SECTION X-X)



1. THIS DRAWING IS SUITABLE FOR CONNECTION OF RCC DUCT FOR LAYING S&T CABLE ONLY.

1. THIS DRAWING IS SUITABLE FOR CONNECTION OF RCC DUCT FOR LAYING S&T CABLE ONLY.
2. THIS DRAWING IS SUITABLE FOR ADJACENT TO TRACK ONLY.
3. THIS DRAWING IS SUITABLE FOR MODERATE ENVIRONMENT EXPOSURE CONDITION IN ACCORDANCE WITH CLAUSE 8.2.2.1 OF IS 456: 2000.
4. UNIT WEIGHT OF MATERIAL HAS BEEN TAKEN AS BELOW:
  - i) EARTH - 74.8 kN/m<sup>3</sup>(IN SATURATED CONDITION)
  - ii) RCC - 25 kN/m<sup>3</sup>
  - iii) BRIDGE RULES
5. DESIGN IS BASED ON FOLLOWING CODES:
  - i) IS 456: 2000
  - ii) IS 456: 2000
  - iii) CONCRETE GRADE FOR CHAMBER HAS BEEN CONSIDERED AS M25 AS PER CLAUSE 6.1.2 OF IS 456:2000.
  - iv) AFTER EARTH SURFACE HAS BEEN PROPERLY COMPACTED AND LEVELLED, 75MM LEAN CONCRETE OF GRADE M10 SHALL BE PROVIDED BELOW RCC CHAMBER AS PER CLAUSE 6.1.3 OF IS 456: 2000.
  - v) CLEAR COVER FOR REINFORCING BARS HAS BEEN CONSIDERED AS 30mm AS PER CLAUSE 26.4.4 OF IS 456:2000.
9. ALL REINFORCEMENT BARS SHALL BE OF HIGH STRENGTH DEFORMED (HSD)/TMT BARS OF Fe415 OR HIGHER GRADE CONFORMING TO IS 1786: 2008.
10. RCC SURFACES COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH BITUMEN OR COAL-TAR OF APPROVED QUALITY @ 1.464 kg/SM<sup>2</sup>
11. ALL HOODS COMING IN CONTACT WITH SOIL SHALL BE PAINTED WITH ANY ANTI-CORROSIVE PAINT.
12. ALL JOINTS BETWEEN RCC CHAMBER & RCC DUCT AS WELL AS BETWEEN RCC CHAMBER & JT COVER SHALL BE PROPERLY SEALED BY PRESSURE GROUTING WITH EPOXY MORTAR TO PREVENT INGRESS OF WATER. FOR PREPARING MIX, PROPORTION OF RESIN TO HARDENER SHOULD NEARLY BE 1:1 (SUBJECT TO MANUFACTURER'S RECOMMENDATIONS).
13. NO LIFTING/WEED HOLES SHOULD BE PROVIDED IN THE RCC CHAMBER.
14. AS FAR AS POSSIBLE, RCC CHAMBER SHALL BE AVOIDED IN LOW LYING AREAS, ROCKY TERRAINS AND PONTS & CROSSINGS.
15. THIS DRAWING HAS BEEN CHECKED FOR 100mm TO 300mm EARTH CUSHION. ACCORDINGLY, THE SAME IS TO BE ENSURED THE SOIL BELOW STRUCTURE SHALL BE ABLE TO RESIST THE MINIMUM FOUNDATION PRESSURE OF 80 kN/m<sup>2</sup>
16. FOUR LIFTING HOOKS ON CHAMBER AND FOUR LIFTING HOOKS ON CHAMBER COVER SHALL BE PROVIDED AS SHOWN IN THE DRAWING.
17. MINIMUM WALL THICKNESS HAS BEEN CONSIDERED AS PER CLAUSE 21.2 OF IS 456: 2000 FROM FIRE RESISTANCE POINT OF VIEW.
18. SIZE OF COARSE AGGREGATE HAS BEEN TAKEN AS 20mm AS PER CLAUSE 5.3.3 OF IS 456: 2000.
19. QUANTITY & BAR BENDING SCHEDULE HAS BEEN PREPARED FOR CHAMBER CONSIDERING THE OPENINGS OF 300mm x 400mm IN TWO VERTICAL WALLS AND 500mm x 200mm IN ONE VERTICAL WALL. QUANTITY OF OPENINGS CAN VARY AS REQUIREMENT. IN THAT CASE, QUANTITY & BAR BENDING SCHEDULE SHALL BE MODIFIED ACCORDINGLY.
20. CARE MAY BE TAKEN WHILE HANDLING THE PRE-FABRICATED/PRECAST RCC CHAMBER DURING TRANSPORTATION TO SITE AS PER CLAUSE 15.1 OF IS 783: 2010.
21. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
22. WEIGHT IN BAR BENDING SCHEDULE ARE TENTATIVE FOR GUIDANCE ONLY. PAYMENT MAY BE MADE AFTER DETAIL COMPUTATION AS PER CONTRACT/ADDL. CONDITION.

QUANTITY SCHEDULE FOR UNIT OF MOD DUCT	
CHAMBER	2992
CHAMBER DUCT	778
OPENING IN WALL (3 SIZES)	128
TOTAL WEIGHT OF CONCRETE	3916
WEIGHT OF DUCT	254.78
IN TONS	12



SECTIONAL PLAN OF CHAMBER (AT SECTION X-X)		NOTE	SPECIFICATION	SCALE	ALT	DESCRIPTION	DATE
		1. CHAMBER IS DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS & REQUIREMENTS OF THE PROJECT.	2. CHAMBER IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS & REQUIREMENTS OF THE PROJECT.	3. CHAMBER IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS & REQUIREMENTS OF THE PROJECT.	4. CHAMBER IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS & REQUIREMENTS OF THE PROJECT.	5. CHAMBER IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS & REQUIREMENTS OF THE PROJECT.	6. CHAMBER IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS & REQUIREMENTS OF THE PROJECT.

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R.D.S.O.

STANDARD DRAWING OF PRECAST  
R.C.C. CHAMBER FOR CONNECTING  
R.C.C. DUCT OF SIZES  
300mm X 300mm & 300mm X 100mm  
FOR LAYING S&T CABLE

PROVISIONAL      DATE -29.05.2023  
SDO/84T / RCC CHAMBER/1019/1