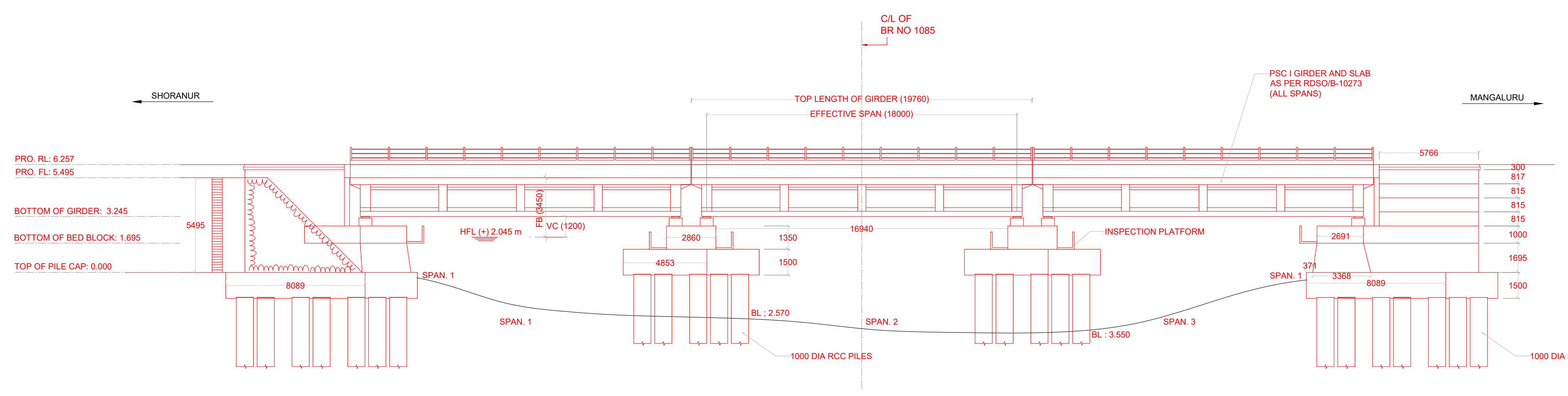
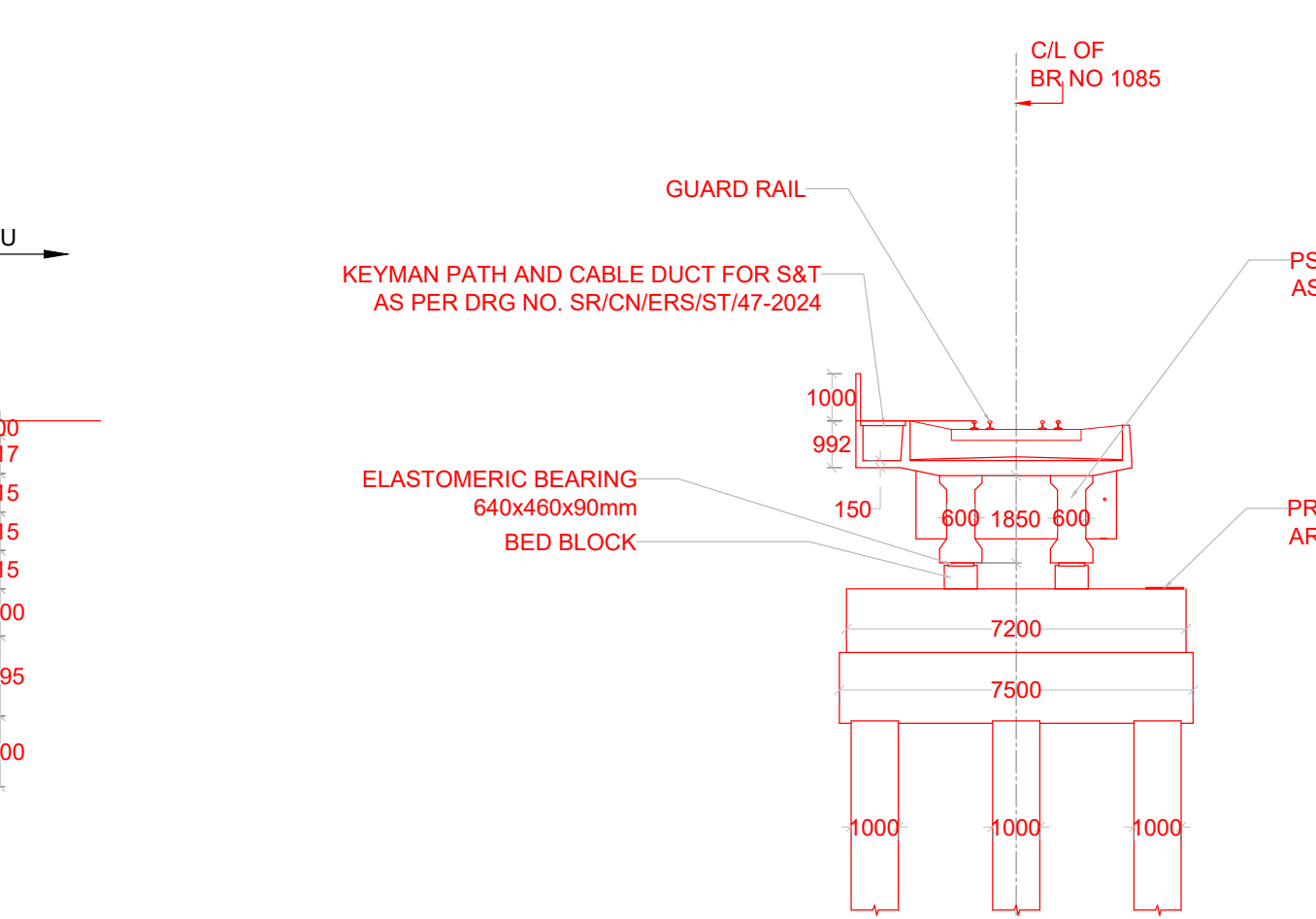
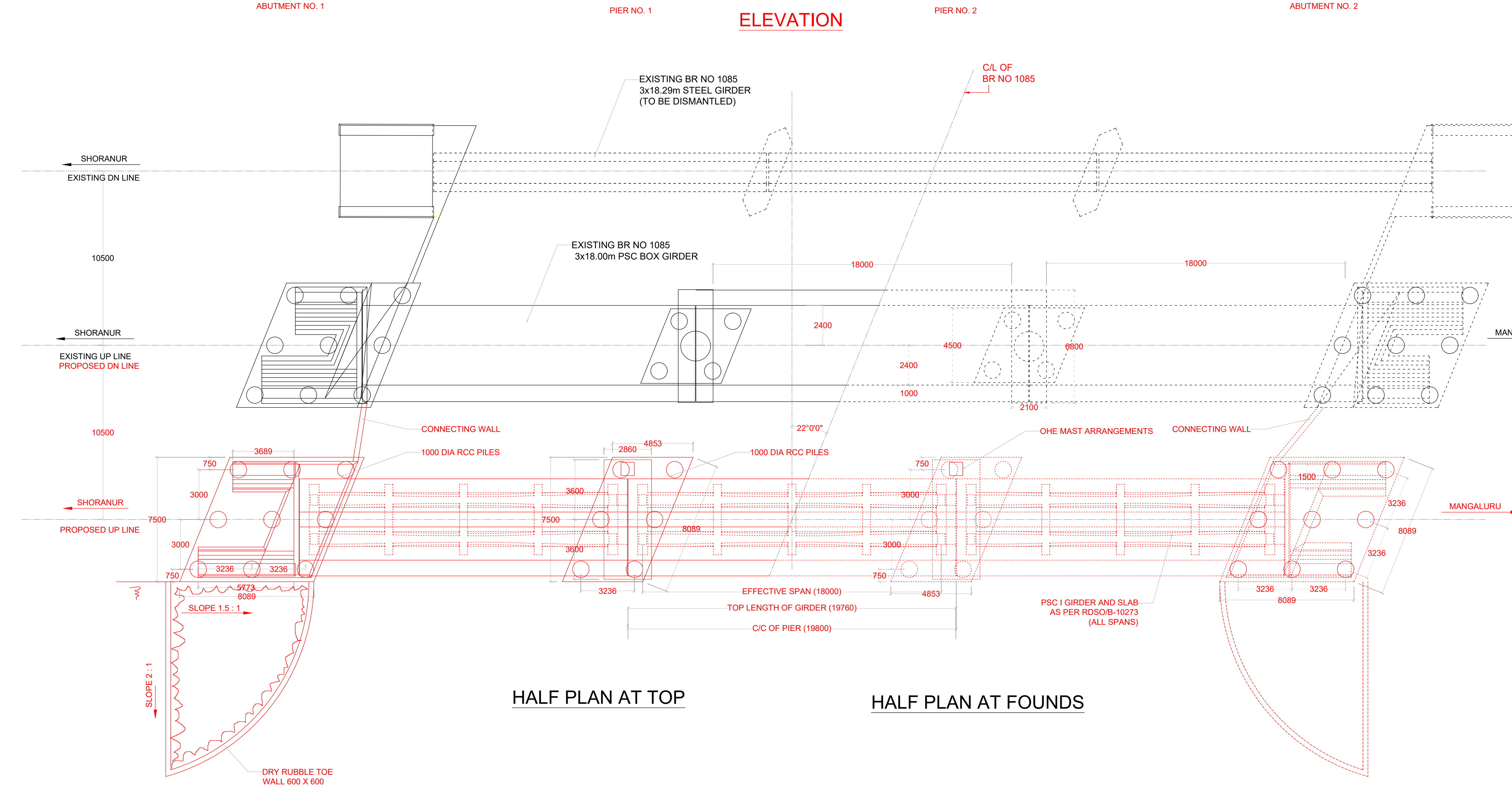

C/L OF BR NO 1085
SHORANUR
MANGALURU
TOP LENGTH OF GIRDER (19760)
EFFECTIVE SPAN (18000)
PSC I GIRDER AND SLAB AS PER RDSO/B-10273 (ALL SPANS)
PRO. RL: 6.257
PRO. FL: 5.495
BOTTOM OF GIRDER: 3.245
BOTTOM OF BED BLOCK: 1.695
TOP OF PILE CAP: 0.000
5495
5766
HFL (+) 2.045 m
FB (3450)
VC (1200)
2860
4853
1350
1500
16940
8089
INSPECTION PLATFORM
2691
3368
371
300
817
815
815
815
1000
1695
1500
SPAN. 1
SPAN. 2
SPAN. 3
BL ; 2.570
BL : 3.550
1000 DIA RCC PILES
ABUTMENT NO. 1
PIER NO. 1
PIER NO. 2
ABUTMENT NO. 2

ELEVATION

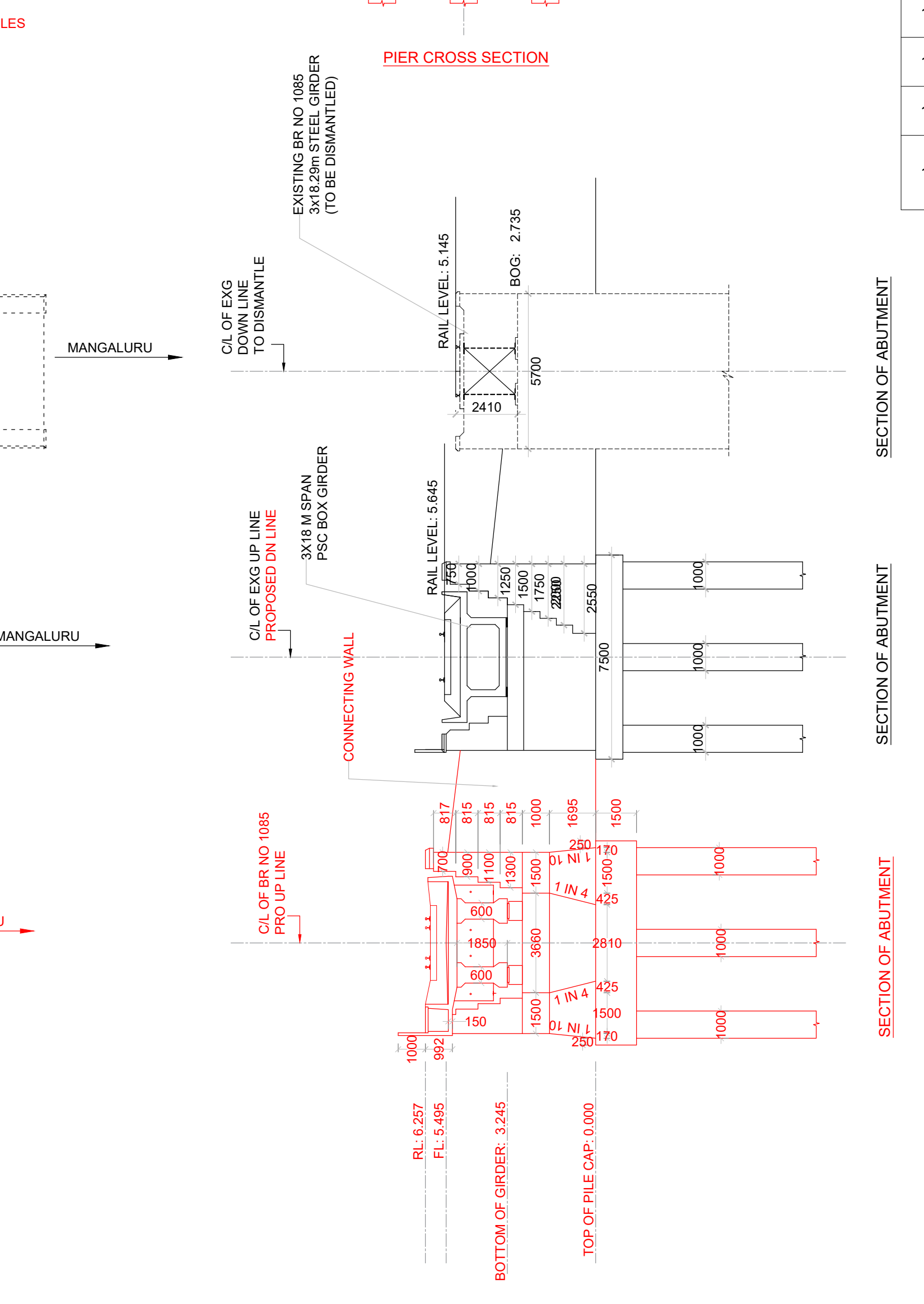

C/L OF BR NO 1085
GUARD RAIL
KEYMAN PATH AND CABLE DUCT FOR S&T AS PER DRG NO. SR/CN/ERS/ST/47-2024
PSC I GIRDER AND SLAB AS PER RDSO/B-10273
ELASTOMERIC BEARING 640x460x90mm
BED BLOCK
PROVISION FOR OHE MAST ARRANGEMENTS
1000
992
150
600
1850
600
7200
7500
1000
1000
1000

PIER CROSS SECTION


EXISTING BR NO 1085 3x18.29m STEEL GIRDER (TO BE DISMANTLED)
C/L OF BR NO 1085
SHORANUR
EXISTING DN LINE
MANGALURU
10500
EXISTING BR NO 1085 3x18.00m PSC BOX GIRDER
18000
18000
2400
4500
6800
2400
1000
2100
SHORANUR
EXISTING UP LINE
PROPOSED DN LINE
MANGALURU
10500
CONNECTING WALL
1000 DIA RCC PILES
22°0'0"
OHE MAST ARRANGEMENTS
CONNECTING WALL
SHORANUR
PROPOSED UP LINE
MANGALURU
3689
750
3000
7500
3000
750
3236
3236
5773
8089
2860
4853
3600
7500
3600
8089
3000
3000
750
1500
3236
8089
3236
3236
3236
8089
SLOPE 1.5 : 1
SLOPE 2 : 1
EFFECTIVE SPAN (18000)
TOP LENGTH OF GIRDER (19760)
C/C OF PIER (19800)
4853
PSC I GIRDER AND SLAB AS PER RDSO/B-10273 (ALL SPANS)
DRY RUBBLE TOE WALL 600 X 600

HALF PLAN AT TOP

HALF PLAN AT FOUNDS


EXISTING BR NO 1085 3x18.29m STEEL GIRDER (TO BE DISMANTLED)
C/L OF EXG DOWN LINE TO DISMANTLE
RAIL LEVEL: 5.145
BOG: 2.735
2410
5700
C/L OF EXG UP LINE
PROPOSED DN LINE
3X18 M SPAN PSC BOX GIRDER
RAIL LEVEL: 5.645
CONNECTING WALL
1000
1250
1500
1750
2550
7500
1000
C/L OF BR NO 1085 PRO UP LINE
817
815
815
815
1000
1695
1500
700
900
1100
1300
600
1850
600
150
3660
1500
1500
1 IN 4
425
2810
1500
250
170
1000
992
RL: 6.257
FL: 5.495
BOTTOM OF GIRDER: 3.245
TOP OF PILE CAP: 0.000
SECTION OF ABUTMENT
SECTION OF ABUTMENT
SECTION OF ABUTMENT

TECHNICAL DETAILS OF EXISTING BRIDGE

1	BRIDGE ON UP/DN	BR NO 1085 (DN) (TO BE DISMANTLED)	BR NO 1085 (UP) (PRO DN)
2	LOCATION	11°45'58"N 75°28'50"E	11°45'58"N 75°28'50"E
3	SPAN (EFFECTIVE SPAN)	3x18.29m STEEL GIRDER	3x18.00m PSC BOX GIRDER
4	TYPE OF SUPER STRUCTURE	STEEL GIRDER	PSC BOX
5	TYPE OF SUB - STRUCTURE	CC BED BLOCK & COURSED RUBBLE ABUTMENT/PIER	CC BED BLOCK & ABUTMENT AND RCC PIER
6	TYPE OF FOUNDATION	WELL	PILE
7	DISTANCE FROM NEW BRIDGE	21.000 M	10.500 M
8	RAIL LEVEL	5.145 M	5.645 M
9	FORMATION LEVEL	4.520 M	4.970 M
10	FOUNDATION LEVEL	VARIES	VARIES
11	HIGH FLOOD LEVEL	2.045M	2.045 M
12	LOW WATER LEVEL	- 0.955 M	- 0.955 M
13	BED LEVEL	VARIES	VARIES
14	VERTICAL CLEARANCE	0.690 M	1.158 M
15	LINEAR WATERWAY	54.87 M	54.00 M
16	ANY MAJOR ACCIDENTS HAPPENED TO THIS BRIDGE IN PAST	NO	NO

HYDRAULIC PARTICULARS

SL	DESCRIPTION	EXISTING UP LINE (PRO.DN)	EXISTING DN LINE TO BE DISMANTILED	PROPOSED UP LINE
1	SPAN	3x18.00 m	3x18.29m	3x18.00 (EFF)
2	RAIL LEVEL	5.645	5.145	6.257
3	FORMATION LEVEL	4.970	4.520	5.495
4	BOTTOM OF SLAB/GIRDER	3.203	2.735	3.245
5	HFL	2.045	2.045	2.045
6	BED LEVEL	VARYING	VARYING	VARYING
7	FREE BOARD	2.925	2.475	3.450
8	VERTICAL CLEARANCE	1.158	0.690	1.200

DEPTH OF CONSTRUCTION OF 2I GIRDER

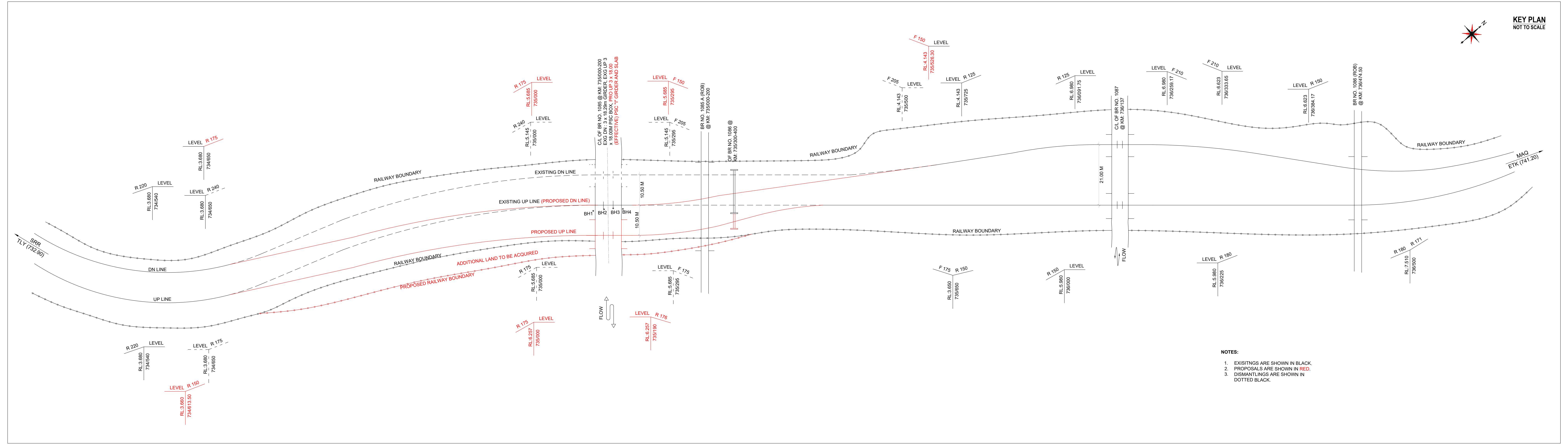
SL	PARTICULARS	DEPTH DETAILS
1	RAIL 60KG	172 mm
2	RUBBER PAD	10 mm
3	PSC SLEEPER	230 mm
4	BALLAST CUSHION	350 mm
5	WEARING COAT	80 mm
6	DECK SLAB	320 mm
7	GIRDER	1850 mm
	TOTAL	**3012 mm**

TECHNICAL DETAILS OF PROPOSED BRIDGE

1	BRIDGE ON UP/DN	BR NO. 1085 (UP)
2	LOCATION	11°45'58"N 75°28'50"E
3	SPAN (EFFECTIVE SPAN)	3x18.00 (EFF) PSC I GIRDER AND SLAB
4	TYPE OF SUPER STRUCTURE	PSC I GIRDER AND SLAB
5	TYPE OF SUB - STRUCTURE	RCC
6	TYPE OF FOUNDATION	RCC PILE
7	RAIL LEVEL	6.257 M
8	FORMATION LEVEL	5.495 M
9	FOUNDATION LEVEL	VARIES
10	HIGH FLOOD LEVEL	2.045 M
11	LOW WATER LEVEL	- 0.995 m
12	BED LEVEL	VARIES
13	VERTICAL CLEARANCE	1.200 M
14	LINEAR WATERWAY	50.82 M
15	FREE BOARD	3.450 M
16	SEISMIC ZONE	ZONE - III
17	WIND ZONE	ZONE - B
18	SUB-ZONE FOR W.WAY CALCULATION	5 - (B)
19	EXPOSURE CONDITION	MODERATE
20	CLEAR COVER	VARIES
21	PROVISION OF GUARD RAIL	YES
22	TRACK ON STRAIGHT/ CURVE	STRAIGHT
23	ANY RAT/RAW WITHIN 50KM ON UPSTREAM	NIL
24	CROSS SLOPE	1 IN 2000
25	NAME OF RIVER	KUYYALI RIVER
26	TYPE OF BEARING	ELASTOMERIC BEARING
27	STANDARD OF LOADING	25 T - LOADING 2008

MODUS OPERANDI

1. BEFORE COMMENCEMENT OF THE WORK, I-GIRDERS SHALL BE CAST AND PROPERLY CURED TO ACHIEVE THE REQUIRED STRENGTH.
2. CARRY OUT PILING WORK FOR THE NEW BRIDGE AT A DISTANCE OF 10.50 M FROM CENTER LINE OF THE EXISTING UP LINE BRIDGE, ENSURING THAT THE EXISTING BRIDGE STRUCTURES ARE NOT AFFECTED.
3. CAST PILES, PILE CAPS, ABUTMENT WALLS, TRESTLE COLUMNS, TRESTLE BEAMS, AND BED BLOCKS, AND ALLOW THEM TO CURE IN ACCORDANCE WITH CLAUSE 8.4 OF THE IRS CONCRETE AND BRIDGE CODE, 1997.
4. ERECT PSC I-GIRDERS IN POSITION, CAST THE DECK SLAB AND BALLAST RETAINERS TO COMPLETE THE SUPERSTRUCTURE, AND COMPLETE THE BRIDGE IN ALL RESPECTS.
5. LINK THE TRACK ON THE BRIDGE AND ITS APPROACHES.
6. DURING CUT AND CONNECTION, DISCONNECT THE EXISTING TRACK ON THE DOWN LINE AND CONNECT IT TO THE NEWLY CONSTRUCTED DN LINE.
7. PERMIT TRAFFIC AT RESTRICTED SPEED.


KEY PLAN
NOT TO SCALE
N
SRR
TLY (732.90)
DN LINE
UP LINE
RAILWAY BOUNDARY
EXISTING DN LINE
EXISTING UP LINE (PROPOSED DN LINE)
PROPOSED UP LINE
ADDITIONAL LAND TO BE ACQUIRED
PROPOSED RAILWAY BOUNDARY
BH1
BH2
BH3
BH4
10.50 M
10.50 M
21.00 M
FLOW
C/L OF BR NO. 1085 @ KM: 735/000-200 EXG DN: 3 x 18.29m GIRDER, EXG UP 3 x 18.00M PSC BOX, PRO UP 3 x 18.00 (EFFECTIVE) PSC "I" GIRDER AND SLAB
BR NO. 1085 A (ROB) @ KM: 735/000-200
OF BR NO. 1086 @ KM: 735/300-400
C/L OF BR NO. 1087 @ KM: 736/137
BR NO. 1086 (ROB) @ KM: 736/474.50
MAQ
ETK (741.20)
R 220 LEVEL RL:3.680 734/540
LEVEL R 175 RL:3.680 734/650
LEVEL R 240 RL:3.680 734/650
R 220 LEVEL RL:3.680 734/540
LEVEL R 175 RL:3.680 734/650
LEVEL R 150 RL:3.660 734/613.50
R 175 LEVEL RL:5.685 735/000
R 240 LEVEL RL:5.145 735/000
LEVEL F 150 RL:5.685 735/295
LEVEL F 205 RL:5.145 735/295
R 175 LEVEL RL:5.685 735/000
LEVEL F 175 RL:5.685 735/295
R 175 LEVEL RL:6.257 735/000
LEVEL R 176 RL:6.257 735/190
F 150 LEVEL RL:4.143 735/526.30
F 205 LEVEL RL:4.143 735/500
LEVEL R 125 RL:4.143 735/725
R 125 LEVEL RL:6.980 736/091.75
LEVEL F 210 RL:6.980 736/259.17
F 210 LEVEL RL:6.623 736/333.65
LEVEL R 150 RL:6.623 736/384.17
F 175 R 150 RL:3.650 735/650
R 150 LEVEL RL:5.980 736/000
LEVEL R 180 RL:5.980 736/225
R 180 R 171 RL:7.510 736/500

NOTES:

1. EXISITNGS ARE SHOWN IN BLACK.
2. PROPOSALS ARE SHOWN IN RED.
3. DISMANTLINGS ARE SHOWN IN DOTTED BLACK.

BORE LOG DETAILS (BH-1)

BORE HOLE NO: A1		GROUND LEVEL: (+) 0.000	
GRAPHIC LOG	VISUAL SOIL DESCRIPTION	DEPTH FROM GL(m)	'N' VALUE
▤	STIFF CLAY WITH MOORUM	4.00	17
▤	STIFF CLAY	9.00	21
▨	CLAY WITH FINE SAND	14.50	21
▨	HARD ROCK	16.60	>100

BORE LOG DETAILS (BH-2)

BORE HOLE NO: P1		GROUND LEVEL: (+) 0.000	
GRAPHIC LOG	VISUAL SOIL DESCRIPTION	DEPTH FROM GL(m)	'N' VALUE
▤	WATER	2.57	
▤	CLAY WITH MOORUM	7.00	22
▤	FINE SAND	11.50	41
▨	CLAY WITH SAND	13.40	52
▨	HARD ROCK	15.50	>100

BORE LOG DETAILS (BH-3)

BORE HOLE NO: P2		GROUND LEVEL: (+) 0.000	
GRAPHIC LOG	VISUAL SOIL DESCRIPTION	DEPTH FROM GL(m)	'N' VALUE
▤	WATER	3.55	
▤	FINE SAND WITH GRAVELS	7.50	22
▤	STIFF CLAY WITH GRAVLES	10.50	32
▨	CLAY WITH SAND	14.09	44
▨	HARD ROCK	16.22	>100

BORE LOG DETAILS (BH-4)

BORE HOLE NO: A2		GROUND LEVEL: (+) 0.000	
GRAPHIC LOG	VISUAL SOIL DESCRIPTION	DEPTH FROM GL(m)	'N' VALUE
▢	CLAY WITH MOORUM MATERIALS	4.50	5
▤	SOFT CLAY	6.00	13
▨	CLAY WITH MOORUM	7.50	18
▤	SILTY CLAY	9.00	31
▨	FINE SAND	12.00	80
▨	HARD ROCK	14.00	>100

NOTES:-

1. ALL MEASUREMENTS ARE IN MILLI METRES AND LEVELS IN METERS, UNLESS OTHER WISE SPECIFIED.
2. PROPOSALS ARE SHOWN IN RED.
3. DISMANTLING ARE SHOWN IN BLACK DOTTED.
4. ENGINEER IN-CHARGE TO VERIFY RAIL LEVEL, FORMATION LEVEL, HFL AND FOUNDATION LEVEL.
5. RCC BORED PILES & PILE CAP AS PER DESIGN.
6. THE DEPTH OF PILES TO BE DECIDED AS PER DESIGN AND ENGINEER IN-CHARGE.
7. PILES SHOULD BE TERMINATED ONLY ON HARD ROCK. THE MINIMUM SOCKET LENGTH OF PILE INSIDE HARD ROCK IS 1000 mm.
8. BACK FILL IS TO BE PROVIDED AS PER PARA No. 7.5.1& 7.5.2 OF SUB-STRUCTURE CODE 1985.
9. WEEP HOLES TO BE PROVIDED AS PER PARA No. 7.6.1 OF SUB-STRUCTURE CODE 1985.
10. FOR DETAILS OF 18000 M SPAN PSC "I" GIRDER, SEE DRG No. RDSO/B-10273
11. MIX FOR ALL PCC WORK SHOULD BE IN M20.
12. TRANSITION SYSTEM FOR BRIDGE APPROACHES AS PER RDSO DRG NO. GE/SK/GL/912A/Rev.0/2024
13. RCC INSPECTION PLATFORM TO BE AS PER DRG No. RDSO/CBS-0016. TO BE PROVIDED ALL ROUND THE PIER AND ABUTMENT.
14. SUITABLE CUT & CONNECTION TO BE PROVIDED AT BOTH ENDS AFTER REBUILDING OF BRIDGE DEPENDING UPON THE SITE CONDITION.
15. LAND ACQUISITION TO BE DONE FOR ACCOMMODATING THE APPROACH TRACK.
16. GUARD RAILS ARE TO BE PROVIDED AS PER RDSO DRG No. T/4088 AND T/4089 TO T/4097.
17. FOR DETAILS OF UP LINE BRIDGE SEE DRG: No. CN/312- 97/1(COMP)
18. LWL (-) 0.955 AS PER COMPLETION PLAN OF UP LINE BRIDGE TO DRG No. CN/312- 97/1(COMP).
19. NECESSARY 8 NUMBERS 50 DIA HOLES FOR 32 MM DIA BOLTS TO BE PROVIDE OVER ALL PIERS FOR FIXING THE OHE MAST, AS PER BS-121 STANDARD FOR FIXING THE OHE MAST. OHE PROVISION ARRANGEMENTS TO BE DESIGNED.
20. DUCT PROVISION SHALL BE MADE AS PER RAILWAY BOARD LETTER NO. 2022/GS/IR/CABLE LAYING POLICY, DT:29/03/2023 FOR TAKING S&T CABLES.

BRIDGE STRENGTH CERTIFICATE

CERTIFIED THAT THE BRIDGE IS DESIGNED FOR 25T LOADING OF 2008 (UPTO AND INCLUDING C.S.NO.47 OF 22-06-2017)

Digitally signed by ROBIN RAJAN Date: 2026.01.20 15:49:37 +05'30'	Digitally signed by Vijay Pandey Date: 2026.02.17 14:49:04 +05'30'
DYCE/I/CN/ERS	CE/CN/N/ERS

NO SCOUR CERTIFICATE

IT IS CERTIFIED THAT THE PILES WILL BE RESTING ON HARD ROCK WITH 1M SOCKETING AND AS SUCH NO DANGER OF SCOURING

Digitally signed by ROBIN RAJAN Date: 2026.01.20 15:49:57 +05'30'	Digitally signed by Vijay Pandey Date: 2026.02.17 14:49:04 +05'30'
DYCE/I/CN/ERS	CE/CN/N/ERS

WATERWAY CERTIFICATE

CERTIFIED THAT THE BRIDGE IS DESIGNED WITH ADEQUATE WATERWAY FOR THE DESIGN DISCHARGE

Digitally signed by M PONNIRULANDI Date: 2026.01.27 11:28:33 +05'30'	Digitally signed by ROBIN RAJAN Date: 2026.01.20 15:50:14 +05'30'
XEN/CN/CLT	DYCE/I/CN/ERS

SSE-I-CNCLT	Digitally Signed By SHAMJITH on 20/01/2026 01:39 pm
SSE-VI-CNCLT	Digitally Signed By SURALI on 20/01/2026 01:41 pm
AXEN-CN-CLT	Digitally Signed By PONNIRULANDI on 27/01/2026 11:30 am
DYCECN-ERS-I	Digitally Signed By ROBIN on 20/01/2026 03:51 pm
DYCSTE-CNERS	Digitally Signed By SUNI on 29/01/2026 11:08 am
DYCEE-CNERS	Digitally Signed By SANDEEP on 24/01/2026 12:11 pm
SSEI-CNHQERS	Digitally Signed By Praveen on 11/02/2026 04:17 pm
DYCECN-PLGERS	Digitally Signed By A R on 11/02/2026 04:57 pm
CECN-N-ERS	Digitally Signed By Vijay on 17/02/2026 02:49 pm
SRDENWEST-PGT	Digitally signed by Abhishek Verma Date: 2026.05.06 15:50:13 +05'30'
SRDENCO-ORD-PGT	Mohmmad Islam Digitally signed by Mohmmad Islam Date: 2026.05.06 16:15:18 +05'30'
SRDOM-PGT	BALAMURALI M Digitally signed by BALAMURALI M Date: 2026.04.13 19:52:55 +05'30'
SRDSTE-PGT	Nidhin S Roy Digitally signed by Nidhin S Roy Date: 2026.03.30 15:03:05 +05'30'
SRDEETRD-PGT	Prashant Joshi Digitally signed by Prashant Joshi Date: 2026.03.27 12:47:05 +05'30'
SRDEEG-PGT	Shailendra Kumar Digitally signed by Shailendra Kumar Date: 2026.03.24 19:42:52 +05'30'
DRM-PGT	Madhukar Roat Digitally signed by Madhukar Roat Date: 2026.05.12 11:16:01 +05'30'

SOUTHERN RAILWAY

OFFICE OF CHIEF ADMINISTRATIVE OFFICER,
CONSTRUCTION, ERNAKULAM

SANCTION DETAILS	VIDE LETTER NO. No.W.563/I/2024/UW/PH:32/ Pt-2/E-516369 dt.03.03.2025

BR NO. 1085 DN AT KM 735/000-200
EXISTING 3x18.29 M STEEL GIRDER BETWEEN
THALASSERY AND ETAKKOT STATIONS
PROPOSED REBUILDING AS 3 x 18.00 M EFFECTIVE SPAN
PSC I GIRDER AND SLAB
AS PER RDSO DRG NO. B-10273
{ DESIGNED FOR 25 T LOADING 2008 }

GENERAL ARRANGEMENT DRAWING

SCALE - 1:100	DRG NO.: SR/CN/ERS/15-2026

Signature Not Verified
Digitally signed by
Soumya S
Date: 2026.06.29
18:18:26 IST
Reason: IREPS-CRIS
Location: New Delhi