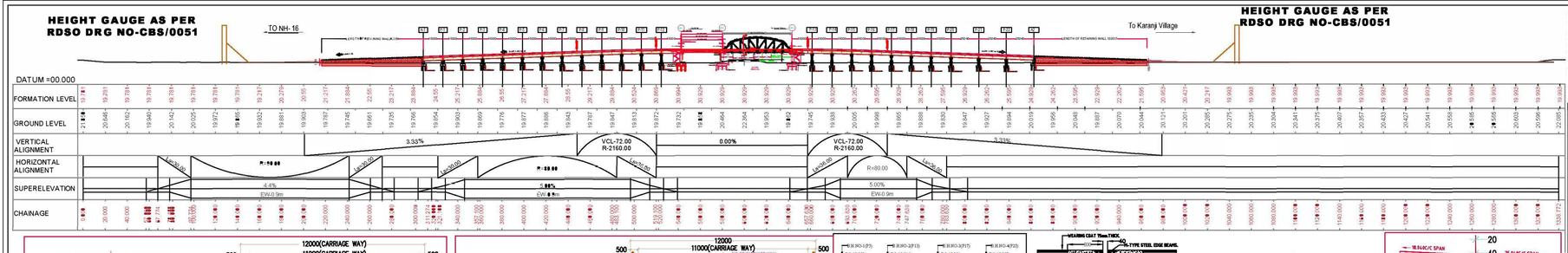
HEIGHT GAUGE AS PER RDSO DRG NO-CBS/0051



HEIGHT GAUGE AS PER RDSO DRG NO-CBS/0051

SHEET NO.	DESCRIPTION
RDSO/C-11776/1	GENERAL BLOCK LAYOUT
RDSO/C-11776/2	PLAN OF C.G.HEIGHT ARRANGEMENT
RDSO/C-11776/3	DETAILS OF SLOPE, SLOPE PROTECTION, CAVES
RDSO/C-11776/4	DETAILS OF PILOT, DUCKFOOT AND STUD SHEAR CONNECTORS
RDSO/C-11776/5	DETAILS OF BEARINGS (SHEET 1 OF 2)
RDSO/C-11776/6	DETAILS OF BEARINGS (SHEET 2 OF 2)
RDSO/C-11776/7	ALTERNATE SCHEME OF BEARINGS
RDSO/C-11776/8	PLAN, ELEVATION OF APPROACH SPANS
RDSO/C-11776/9	GENERAL NOTES
RDSO/C-11776	GENERAL LAYOUT

60.0 M. CAMEL BACK

Sr. No.	DRG.NO.	DESCRIPTION
1	RDSO/Sheet-1	GENERAL ARRANGEMENT
2	RDSO/Sheet-2	GENERAL ARRANGEMENT
3	RDSO/Sheet-3	GENERAL ARRANGEMENT
4	RDSO/Sheet-4	DETAILS OF CASHER
5	RDSO/Sheet-5	DETAILS OF BOTTOM CHORDS
6	RDSO/Sheet-6	DETAILS OF TOP CHORD
7	RDSO/Sheet-7	DETAILS OF TOP CHORD
8	RDSO/Sheet-8	DETAILS OF TOP CHORD
9	RDSO/Sheet-9	DETAILS OF TOP CHORD
10	RDSO/Sheet-10	DETAILS OF VERTICAL MEMBERS
11	RDSO/Sheet-11	DETAILS OF BRACING MEMBERS
12	RDSO/Sheet-12	DETAILS OF PORTAL GIRDER AND BRACING
13	RDSO/Sheet-13	DETAILS OF BOTTOM CHORD JOINT-L0
14	RDSO/Sheet-14	DETAILS OF BOTTOM CHORD JOINT-L1
15	RDSO/Sheet-15	DETAILS OF BOTTOM CHORD JOINT-L2
16	RDSO/Sheet-16	DETAILS OF BOTTOM CHORD JOINT-L3
17	RDSO/Sheet-17	DETAILS OF BOTTOM CHORD JOINT-L4
18	RDSO/Sheet-18	DETAILS OF TOP CHORD JOINT-T0
19	RDSO/Sheet-19	DETAILS OF TOP CHORD JOINT-T1
20	RDSO/Sheet-20	DETAILS OF INTERMEDIATE CROSS GIRDER
21	RDSO/Sheet-21	DETAILS OF END STRINGER
22	RDSO/Sheet-22	DETAILS OF INTERMEDIATE STRINGER
23	RDSO/Sheet-23	DETAILS OF TOP LATERAL BRACING
24	RDSO/Sheet-24	DETAILS OF TOP LATERAL BRACING
25	RDSO/Sheet-25	DETAILS OF BOTTOM LATERAL BRACING
26	RDSO/Sheet-26	DETAILS OF PORTAL BRACING
27	RDSO/Sheet-27	BEARING CONNECTIVITY

GENERAL NOTES (PART-I)

1. ALL DIMENSIONS ARE GIVEN IN MILLIMETER UNLESS OTHERWISE MENTIONED.
2. ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED AND RECONCILED BEFORE EXECUTION.
3. DIMENSIONS AND TYPES OF COLUMN STRUCTURE ARE INDICATION SHOWN ARE TENTATIVE ONLY AND ARE LIKELY TO CHANGE AFTER FINAL DESIGN
4. THE SUPERSTRUCTURE IS DESIGNED AS SIMPLY SUPPORTED GIRDER AND CONTINUOUS GIRDER.
5. THE DESIGNS HAVE BEEN DONE FOR IRS (WHEELED) AND ACLASS LIVE LOADS WITH APPROPRIATE CONGESTION FACTOR AS PER IRC:6-2017 AND FOR SPECIAL DEFINITIVE VEHICLE GIVEN IN RDSO DRAWING NO. CBS/0051 (PLATE 7 SHEET 1 OF 1).
6. SPC OF 2.5% SHALL BE PROVIDED FOR THE DECK SLAB.
7. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE STANDARD DRAWINGS OF RDSO GIRDER SERIES FOR 24.38 M CAMEL BACK TYPE TRUSS GIRDER & RDSO/S-1776 SERIES FOR 24M COMPOSITE GIRDER.
8. DIMENSIONS OF PIER RESTRAINING ATTACHED DESIGN OF PCC WILL BE PREPARED ACCORDING BY CEO/CN/SR DIMENSIONS MARKED * MAY VARY AT THE TIME OF FINAL DESIGN.
9. DETAILED DESIGN AND DRAWING OF SUPERSTRUCTURE AND FOUNDATION SHALL BE SUBJECT TO CHECKED BY STRUCTURAL ENGINEERING COLLEGE TO BE APPROVED BY CHIEF BRIDGE ENGINEER.

10. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTICS STRENGTH OF 150 MM CUBES AS FOLLOWS:-

FOR SUPERSTRUCTURE:	
CAST IN SITU SLAB	M-45
PCC SLAB	M-35
CRASH BARRIER	M-40
LEVELING COURSE	M-15
PEDESTAL BLOCK	M-40
PEDESTAL	M-40

11. THE REINFORCING STEEL SHALL BE CORROSION RESISTANT TMT 415 GRADE CONFORMING TO IS 1786.
12. STRUCTURAL STEEL SHALL BE OF GRADE QUALITY SHALL BE CONFORMING TO IS 2062.
13. FOR FABRICATION WORKMANSHIP INSPECTION AND TESTING, PROTECTION AGAINST CORROSION ETC. RELEVANT PROVISIONS OF IRC: 22-1986 SHALL BE FOLLOWED AND ALSO AS PER MANUAL FOR FABRICATION AND ERECTION OF STEEL GIRDER RAILWAY BRIDGES SPECIFICATIONS (INCORPORATING LATEST CORRECTION SLIPS) IS TO BE FOLLOWED. (SERIAL NO 17260) ADOPTED 1954 LAST VERSION 2001 REPRINTED 2018 (INCORPORATING ALL UP TO DATE CORRECTION SLIPS).
14. MANUAL TRENCHING WILL BE DONE AS PER REQUIREMENTS OF S&T DEPARTMENT.
15. STRUCTURAL TYPES/DESIGNS/DRGS OF PRE-WAY QUALITY SHALL BE PREPARED IN ACCORDANCE WITH IRC:6-2017 GUIDELINES AND SPECIFICATIONS FOR ROAD BRIDGES.
16. GRADE OF CONCRETE FOR PEDESTAL SHALL BE M-45 FOR FREE PORTION.
17. STATE OF THE ART WELDING PLATING AND COATING SHALL BE DONE AS PER IRC:112 - 2020 AND IRC:78 - 2020 & 24.
18. TYPE OF BEARING:-
   a. ELASTOMERIC BEARING UNDER CAMEL BACK TYPE OPEN VIEW GIRDER & ELASTOMERIC BEARING UNDER COMPOSITE GIRDER IN RAILWAY SPAN AS PER RDSO DRAWING NO TO BE USED.
19. CONSTRUCTION JOINTS SHALL BE NORMALLY ALLOWED IN CONCRETE WORKS WITHOUT SPECIAL PRECAUTIONS AS PER RELEVANT BRIDGE CODE AND SUITABLE PROTECTIVE PAINTING OF APPROVED MAKE SHOULD BE USED TO PAINT THE UNDERSIDE OF CONCRETE BEFORE CASTING.
20. PARTICULAR DETAILS OF CONSTRUCTION ACTIVITIES SHALL BE SUBJECT TO THE APPROVAL OF CHIEF ENGINEER/CONSTRUCTION/ KHURDA RAILWAY.
21. TRAFFIC BLOCK SHALL BE TAKEN AT THE TIME OF LAUNCHING OF GIRDER OVER THE TRACKS.
22. WHENEVER ANY WORKS IS TO BE EXECUTED WITHIN THE RAILWAY BOUNDARY AND RUNNING OF TRAINS, THE TRAIN SHOULD BE PROTECTED AS PER RAILWAY RULES MANUAL BY COMPETENT RAILWAY SUPERVISOR AND NEAREST I.C. GATE KEEPER/G.M. SHALL BE INFORMED.
23. ADEQUATE PROVISIONS SHALL BE MADE FOR SITE INSPECTION, SAFETY OF MAN AT WORKS AS WELL AS RAILWAY TRAFFICS.
24. NECESSARY PRECAUTIONS SHALL BE TAKEN DURING THE EXECUTION OF WORK SO THAT SIGNALING AND TELECOMMUNICATION CABLES ARE NOT BE DAMAGED.
25. GUARD RAILS AS PER G.E. PWAY DRAWING NO. TO BE PROVIDED ON BRIDGE ON SIDE OF TRACK AS PER RDSO STANDARD TO BE PROVIDED AGAINST DERAILMENT.
26. NO ELECTRIC WIRING UNDER LINE CROSSING IF ANY TO BE SHIFTED BY STATE GOVT AS PER THE REGULATION OF ELECTRICAL CROSSING OF RAILWAY TRACKS (MAY ALSO BE PROVIDED SEPARATELY FROM RAILWAY'S TOTAL COST WILL BE BORNE FROM PROJECT COST OF RDA).
27. ESTIMATED QUANTITY OF VARIOUS ITEMS OF WORKS INCLUDING SUPPORTING TYPE & TYPE OF MATERIALS SHALL BE AS PER RELEVANT DESIGNS TO BE FOLLOWED.
28. THE DRAWING OF PROPOSED LAND ACQUISITION, ENCROACHMENT EXISTING AND FUTURE TRACK.
29. DURING THE CONSTRUCTION ACTIVITIES BARRICADING WITH RELEASED PRESS OR SANDBAGS AND SHUTTERS SHALL BE DONE AROUND THE SITE FOR SAFE MOVEMENT OF TRAFFIC AND TO PREVENT ACCIDENT.
30. ALL THE WORKS SHALL BE EXECUTED AS PER STATE GOVT. TO BE EXECUTED BEFORE EXECUTION OF WORK.
31. THE FOUNDATION SHALL BE DESIGNED TO CATER FOR DEAD LOADING FROM NEARBY FUTURE TRACK IF APPLICABLE.
32. THE DESIGN OF SIGNALING ARRANGEMENTS WILL BE MADE AS PER OPTION II OF RDSO'S LETTER NO. TO BE DESIGNED AS PER RDSO'S LETTER NO.
33. DETAILS OF PROTECTIVE PAINTING WILL BE SHOWN IN STRUCTURAL DRAWING. INSPECTION PLATFORM ARRANGEMENTS OF BEARING SHALL BE AS PER RDSO DRAWING NO.
34. **PROPOSED LIGHT FOR SMITH RAMP IS ADJACENT TO LC NO-175 AS PER SITE FEASIBILITY.**
35. DETAILS OF PWAY WILL BE SHOWN IN DETAILED GENERAL ARRANGEMENT DRAWING.

SPECIAL NOTES (PART-II) :-RAILWAY PORTION

1. THE WORKS OF THIS PROJECT INCLUDES CONSTRUCTION OF ROB AT KM 396/11-12 IN LIEU OF LC.NO-175 BETWEEN KAPILAS ROAD TO NIRGUNDI STATIONS ON HOWRAH-VISHAKHAPATNAM MAIN LINE UNDER KHURDHA ROAD DIVISION.
2. THE WORKS OF THIS PROJECT INCLUDES CONSTRUCTION OF ROB AT KM 396/11-12 IN LIEU OF LC.NO-175 BETWEEN KAPILAS ROAD TO NIRGUNDI STATIONS ON HOWRAH-VISHAKHAPATNAM MAIN LINE UNDER KHURDHA ROAD DIVISION.
3. PCE SANCTIONING AUTHORITY TA/621 & PCE SEEKS TO START WORKS AFFECTING SAFETY OF PASSENGER RUNNING LINES.
4. SUITABLE SPEED RESTRICTION IF REQUIRED SHOULD BE IMPOSED BEFORE TAKING UP THE EXECUTION OF WORK WITH THE APPROVAL OF DIVISIONAL ENGINEER IN CHARGE.
5. ALL THE PRE-FABRICATED STEEL GIRDERS SHOULD BE LAUNCHED WITH SUITABLE LAUNCHING SCHEME AS PER SITE REQUIREMENT WITH THE APPROVAL OF RAILWAY AUTHORITY AND ENGINEERING PCE SANCTIONING AUTHORITY.
6. THE WORK TO BE EXECUTED IN PRESENCE OF CONCERNED SSE(ELECT),SSE(SIGNAL) AND SSE(TELE) AT SITE FOR ANY ELECTRICAL LINE AND S&T INFRINGEMENT.
6. **TVU OF LC NO-175 IS 54470, DATED AUG-2024 & CATEGORY OF ROAD CROSSING AT LC IS OGR.**
7. DESIGN SHALL BE AS PER LATEST IRC CODE.
8. SUITABLE UTILITY DUCTS IF REQUIRED SHOULD BE PROVIDED BELOW FOOTPATH SLAB WITH THE APPROVAL OF ENGINEER IN CHARGE.
9. HORIZONTAL & VERTICAL CLEARANCE SHALL BE OBSERVED AS PER REQUIREMENT OF WORK.
10. STAIRCASE IS OPTIONAL AND MAY BE MODIFIED AS PER SITE REQUIREMENT.
11. ALL STEEL WORK GIRDERS SHALL BE PAINTED ACCORDANCE WITH INDIAN RAILWAY CODES.
12. SEPARATE LAUNCHING SCHEME DRAWING WILL BE SUBMITTED FOR APPROVAL OF CHIEF ENGINEER LAUNCHING OF GIRDERS, ETC.
13. ADEQUATE SAFETY ARRANGEMENTS SHALL BE MADE DURING THE EXECUTION OF WORK.
14. ALL EXISTING S&T CABLES & CEARSE NEEDS TO BE DIVERTED THEN SAME TO BE CARRIED OUT WITH PROPER SAFETY PRECAUTIONS.
15. ~~SBC PWAY DRAWING NO. TO BE PROVIDED FOR 24.38 M CAMEL BACK GIRDER.~~
16. ~~SBC PWAY DRAWING NO. TO BE PROVIDED FOR 24.38 M CAMEL BACK GIRDER.~~
17. EXPANSION JOINTS ARE TO BE PROVIDED AS PER IRC:SP:6-2011.
18. **LOAD TESTING OF BRIDGE SUPERSTRUCTURES ARE TO BE DONE AS PER IRC SP:51:2015 BEFORE COMMISSIONING.**
19. A JOINT SURVEY WITH REMARKS OF CONCERNED SSE/SM/TI TO BE CARRIED OUT BEFORE EXECUTION OF WORK.
20. **WITHIN 2 TO 3 MONTHS FROM THE DATE OF APPROVAL OF THIS GAD, A GAD FOR LHS IN LIEU OF THIS LC, BASING UPON SITE FEASIBILITY, WILL BE SUBMITTED TO RAILWAY FOR APPROVAL.**
21. BLOCKING PERIOD FOR ROB/RUB TO BE PROVIDED BY STATE GOVT. AS PER SITE REQUIREMENT.
22. LT/HT/EHT UG /OH POWER LINE CROSSINGS IF ANY TO BE REMOVED BY STATE GOVT AS PER THE REGULATION OF ELECTRICAL CROSSING OF RAILWAY TRACKS (MAY ALSO BE PROVIDED SEPARATELY FROM THE RAILWAY AUTHORITY'S TOTAL COST WILL BE BORNE FROM PROJECT COST OF RDA).
23. DURING EXCAVATION WORKS PROPER SAFETY PRECAUTIONS NEEDS TO BE TAKEN TO PROTECT THE EXISTING S&T CABLES FROM ANY DAMAGES.
24. BEFORE START OF WORK IF ANY S&T CABLE PRESENT IN THE PROPOSED LOCATION THEN DIVERSION OF THE SAME NEEDS TO BE ENSURED & AFTER THAT UNDERWORK MAY BE STARTED.
25. ALL OHE TRACING LIGHT POSTS IF REQUIRED TO BE SHIFTED FOR THE PROPOSED WORK THEN SAME TO BE ENSURED PRIOR TO EXECUTION OF WORK.
26. SUFFICIENT FLOW METER TO BE ENSURED FOR PROPER CURING AS PER ESTIMATE TO BE INCLUDED IN THE MAIN ESTIMATE.
27. WATER TO BE USED IN CONCRETING GROUTING AND COUPING SHALL CONFORMING TO IRC:112 - 2020/IRC:78 - 2020 & 304.

SPECIFICATIONS :

FOR RAILWAY PORTION :

1. DECK SLAB	RCC-M45
2. PIER	RCC-M35
3. CRASH BARRIER	RCC-M40
4. LEVELING COURSE	RCC-M15
5. BED BLOCK	RCC-M40

FOR STATE PORTION :-

1. SUPPORT/PIER/PIER CAP	RCC-M35
2. ABUTMENT CAP & PIER CAP	RCC-M35
3. ABUTMENT CAP & PIER CAP	RCC-M35
4. PEDESTAL	RCC-M40
5. DIP WALL	RCC-M30
6. ABUTMENT & PIER SHAFT	RCC-M35
7. RETAINING WALL & RETURN WALL	RCC-M40
8. CRASH BARRIER	R.C.C.-M40
9. PILE CAP & PILE	R.C.C.-M35

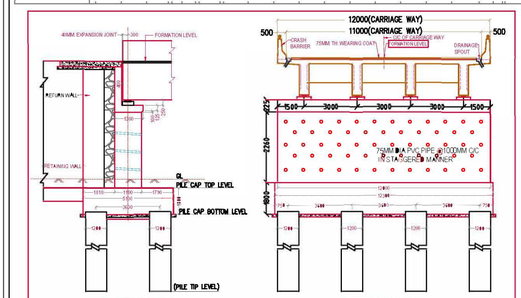
DEPTH OF CONSTRUCTION AND BRIEF CAMEL BACK DETAILS

1.	THICKNESS OF WEARING COAT	75mm.
2.	DECK SLAB	25mm.
3.	HEIGHT OF CROSS GIRDER	1250mm.
4.	RIB PLATE	15mm.
5.	BOTTOM OF RIB PLATE TO BOTTOM OF LONG BEAM	15mm.
	TOTAL	1740mm.

FRL CALCULATION AT ROB

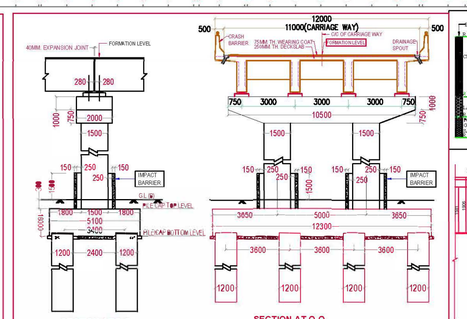
Rail top Level:	22.473m
Vertical Clearence:	6.571m
Girder/Beam:	1.250m
Bottom Rib Plate :	0.015m
Slab Thickness:	0.250m
Rib Plate:	0.150m
Chamber Height:	0.145m
Wearing Coat:	0.075m
Finished Road Level:	30.929m
Railway Boundary:	54.430m

Abutment/ Pier	Chainage	Finished Road Level	Ground Level	Existing Rail Level in mm	Existing Bottom Level in mm	Bed rock with
A1	396°200	24.375	15.588	22.298	13.310	12.000
P1	376.738	24.375	16.700	15.445	13.553	12.450
P2	344.738	25.227	17.400	15.445	13.553	12.450
P3	312.738	25.406	16.443	17.240	12.456	11.900
P4	280.738	25.215	15.353	15.240	12.456	11.900
P5	248.738	27.125	15.672	13.972	12.987	11.900
P6	216.738	27.775	15.672	13.972	12.987	11.900
P7	184.738	28.225	15.672	13.725	13.642	11.900
P8	152.738	28.675	15.672	13.725	13.642	11.900
P9	120.738	29.125	15.672	13.725	13.642	11.900
P10	88.738	29.575	15.672	13.725	13.642	11.900
P11	56.738	30.025	15.672	13.725	13.642	11.900
P12	24.738	30.475	15.672	13.725	13.642	11.900
P13	340.738	24.925	15.201	15.791	12.745	11.900
P14	308.738	24.925	15.201	15.791	12.745	11.900
P15	276.738	24.925	15.201	15.791	12.745	11.900
P16	244.738	24.925	15.201	15.791	12.745	11.900
P17	212.738	24.925	15.201	15.791	12.745	11.900
P18	180.738	24.925	15.201	15.791	12.745	11.900
P19	148.738	24.925	15.201	15.791	12.745	11.900
P20	116.738	24.925	15.201	15.791	12.745	11.900
P21	84.738	24.925	15.201	15.791	12.745	11.900
P22	52.738	24.925	15.201	15.791	12.745	11.900
P23	20.738	24.925	15.201	15.791	12.745	11.900
P24	348.738	24.925	15.588	15.445	13.310	12.000
P25	316.738	24.925	15.588	15.445	13.310	12.000
P26	284.738	24.925	15.588	15.445	13.310	12.000
P27	252.738	24.925	15.588	15.445	13.310	12.000
P28	220.738	24.925	15.588	15.445	13.310	12.000
P29	188.738	24.925	15.588	15.445	13.310	12.000
A2	156.738	24.925	15.588	15.445	13.310	12.000



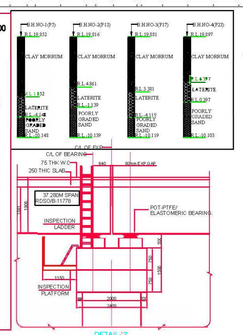
SECTION AT B-B

SECTION AT C-C

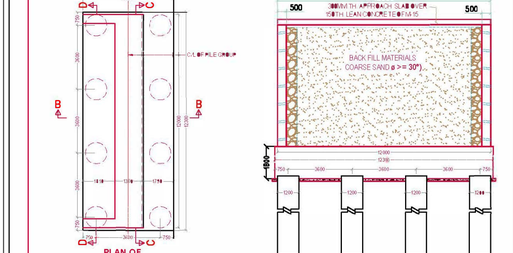


SECTION AT P-P

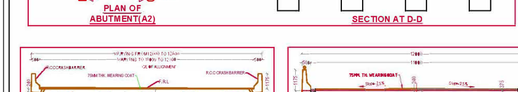
SECTION AT Q-Q



STRIP SEAL EXPANSION JOINT STATE PORTION 40MM.



HALT TOP PLAN HALF BOTTOM PLAN

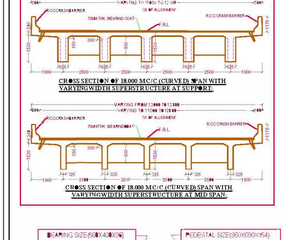


PLAN OF DRAINAGE SPOUT

DETAILS OF CRASH BARRIER

SECTION ON P-P

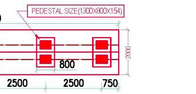
SECTION OF RETAINING WALL



DETAILS OF BEARING FOR ABUTMENT(A2)

DETAILS OF PEDESTAL & BEARING FOR PIER (P5 TO P14 & P17 TO P22)

DETAILS OF BEARING WITH PEDESTAL FOR ABUTMENT(A1)



DETAILS OF PEDESTAL & BEARING FOR PIER (P5 TO P14 & P17 TO P22)

PLAN OF PIER (P5 TO P14 & P17 TO P22)

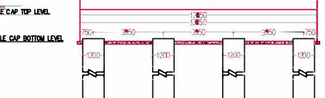
SECTION AT X-X

SECTION AT Y-Y

DETAILS OF BEARING WITH PEDESTAL FOR PIER(P1 TO P3 & P24 TO P29)

DETAILS OF BEARING OF PIERS OF P4,P15,P16 & P23(AT JUNCTION)

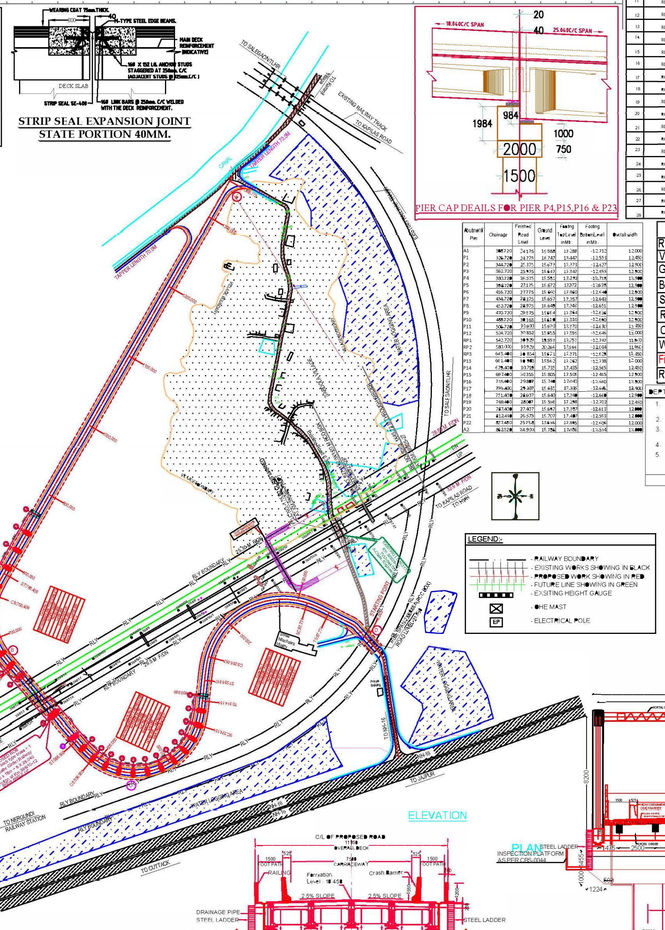
SECTION AT M-M



SECTION AT N-N

DETAILS OF PEDESTAL WITH PEDESTAL FOR ABUTMENT(A1 & A2)

SECTION AT O-O


TO KAPILAS ROAD
TO NIRGUNDI
EXISTING RAILWAY TRACK
TO SERVICE ROAD
EXISTING RAILWAY TRACK
TO SERVICE ROAD
EXISTING ROAD
TO NIRGUNDI
TO KAPILAS ROAD
TO HWH
TO KHURDA ROAD
TO BERHAMPUR