

STRUCTURE DRAWING

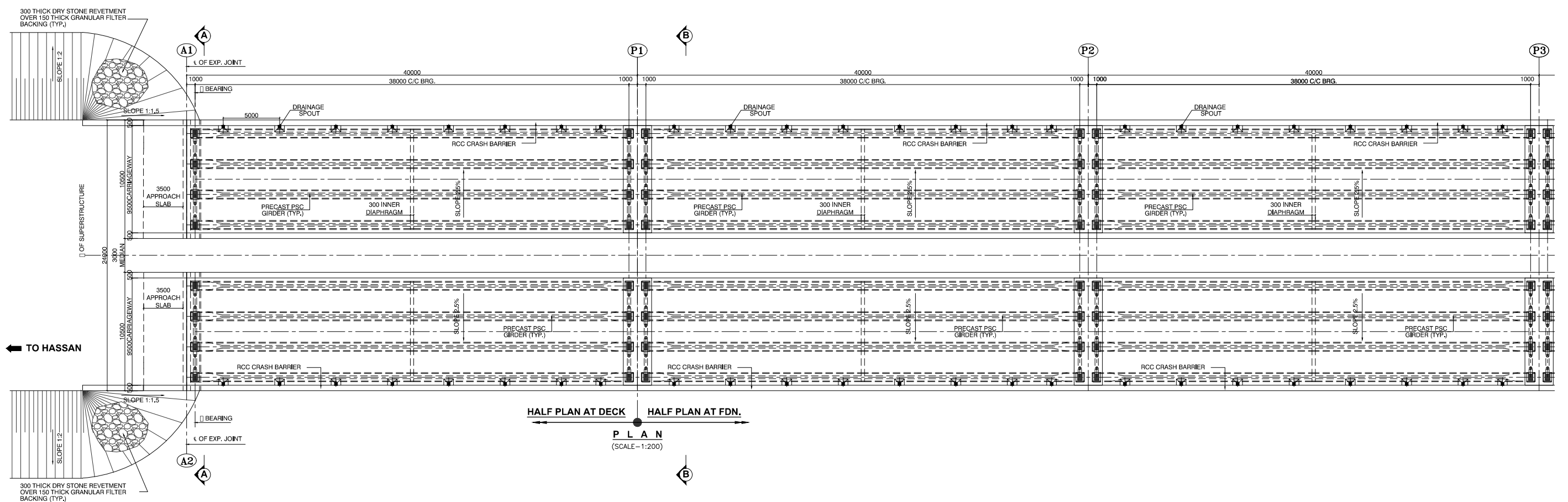
INDEX

Sl.No.	DRAWING TITLE	DRAWING No.	No. OF SHEETS
GENERAL ARRANGEMENT DRAWINGS			
MAJOR BRIDGE			
1	GENERAL ARRANGEMENT DRAWING OF MJB AT DESIGN CH:1+754	23-102/ITL/CB/MJB/1+754	05
MINOR BRIDGE			
1	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 2+103	23-102/ITL/CB/MNB/2+103	02
2	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 6+139	23-102/ITL/CB/MNB/6+139	02
3	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 7+878	23-102/ITL/CB/MNB/7+878	02
4	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 11+412	23-102/ITL/CB/MNB/11+412	02
5	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 3+524	23-102/ITL/CB/MNB/3+524	08
6	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 7+057	23-102/ITL/CB/MNB/7+057	
7	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 9+419	23-102/ITL/CB/MNB/9+419	
8	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 9+739	23-102/ITL/CB/MNB/9+739	
9	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 9+763	23-102/ITL/CB/MNB/9+763	
10	GENERAL ARRANGEMENT DRAWING MNB AT DESIGN CH:- 11+780	23-102/ITL/CB/MNB/11+780	
ROB			
1	GENERAL ARRANGEMENT DRAWING OF ROB AT DESIGN CH:1+130	23-102/ITL/CB/ROB/1+130	03
VUP			
1	GENERAL ARRANGEMENT DRAWING VUP AT DESIGN CH:- 5+360	23-102/ITL/CB/VUP/5+360	02
2	GENERAL ARRANGEMENT DRAWING VUP AT DESIGN CH:- 8+626	23-102/ITL/CB/VUP/8+626	02
2	GENERAL ARRANGEMENT DRAWING VUP AT DESIGN CH:- 11+918	23-102/ITL/CB/VUP/11+918	02
LVUP			
4	GENERAL ARRANGEMENT DRAWING LVUP AT DESIGN CH:- 4+547	23-102/ITL/CB/LVUP/4+547	02
CATTLE UNDER PASS			
1	GENERAL ARRANGEMENT DRAWING CULVERT	23-102/ITL/CB/CULVERT	04
BOX CULVERT			
1	GENERAL ARRANGEMENT DRAWING CULVERT	23-102/ITL/CB/BOX CULVERT	04
PIPE CULVERT			
1	GENERAL ARRANGEMENT DRAWING PIPE CULVERT	23-102/ITL/CB/HPC	01

GENERAL ARRANGEMENT

DRAWINGS

MJB



RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED

Client: PWD- National Highways,
Hassan Division
(Government of Karnataka)



Consultant:

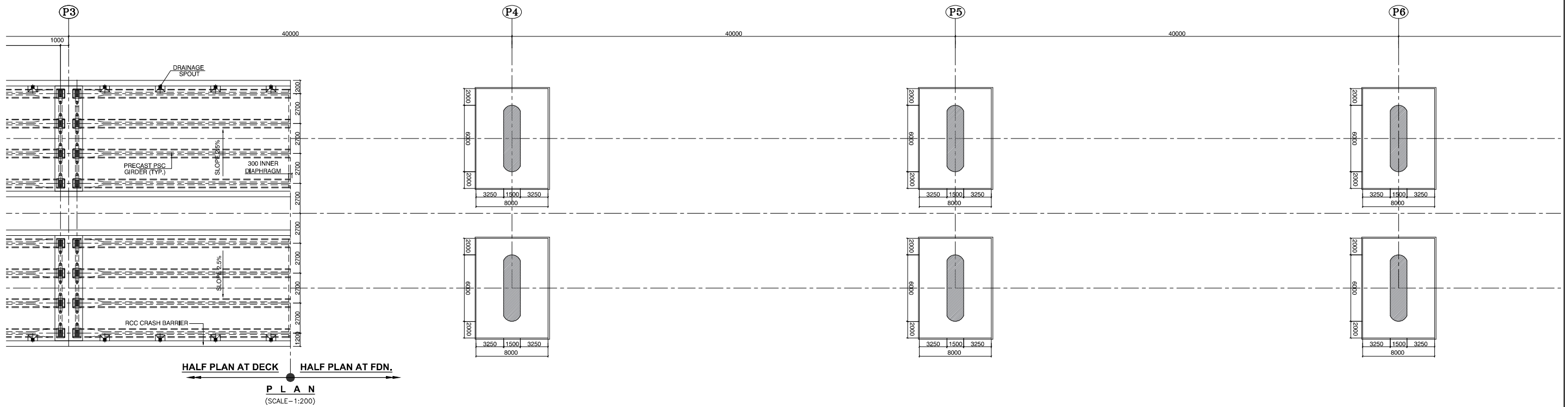
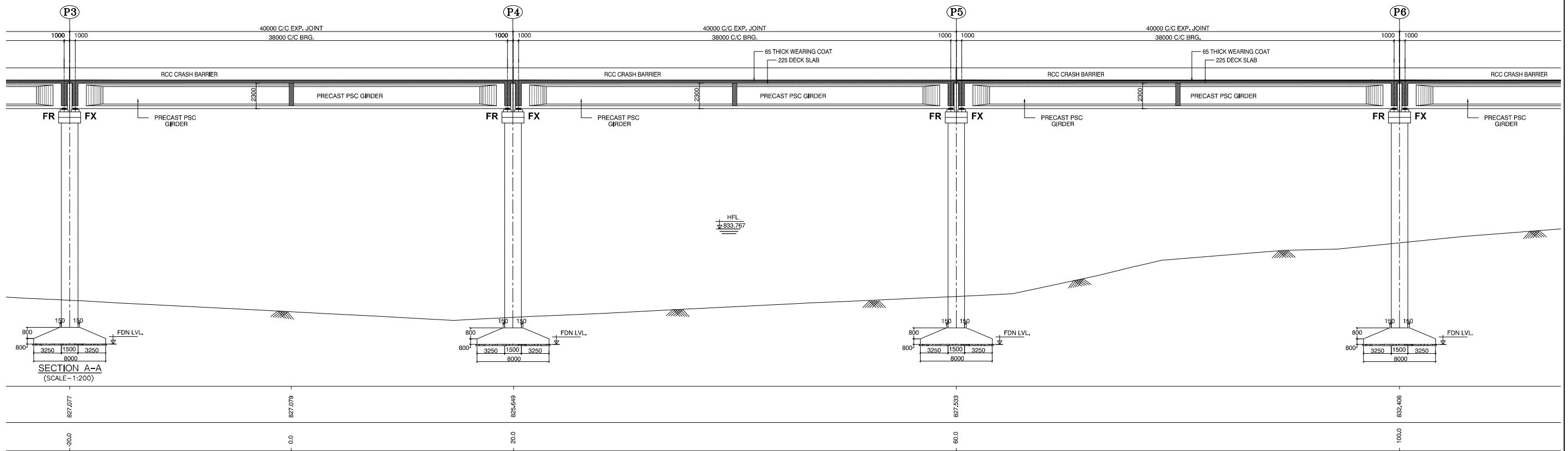


INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in



Project:	Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode
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Title:		GENERAL ARRANGEMENT DRAWING MAJOR BRIDGE CH:1+754	
DRG. NO.		23-102/ITL/NH373/HNP/MJB/1+754/GAD-01	
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 5	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



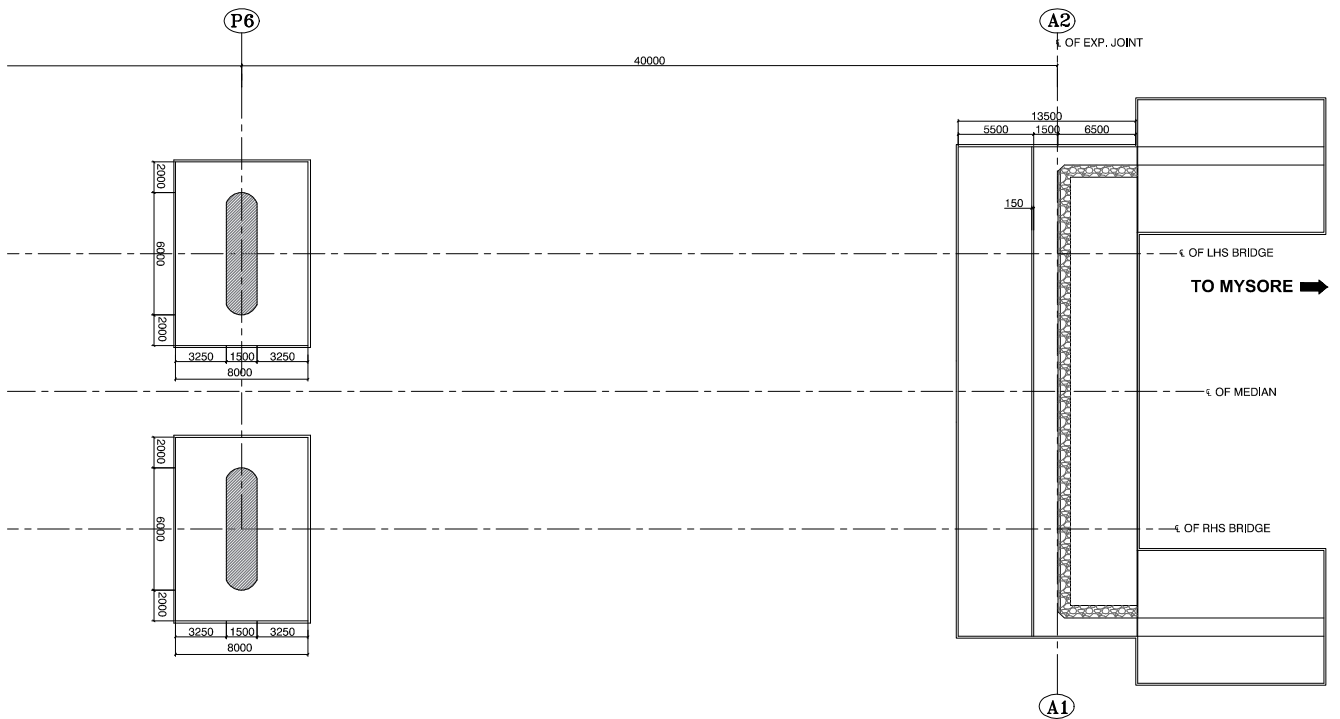
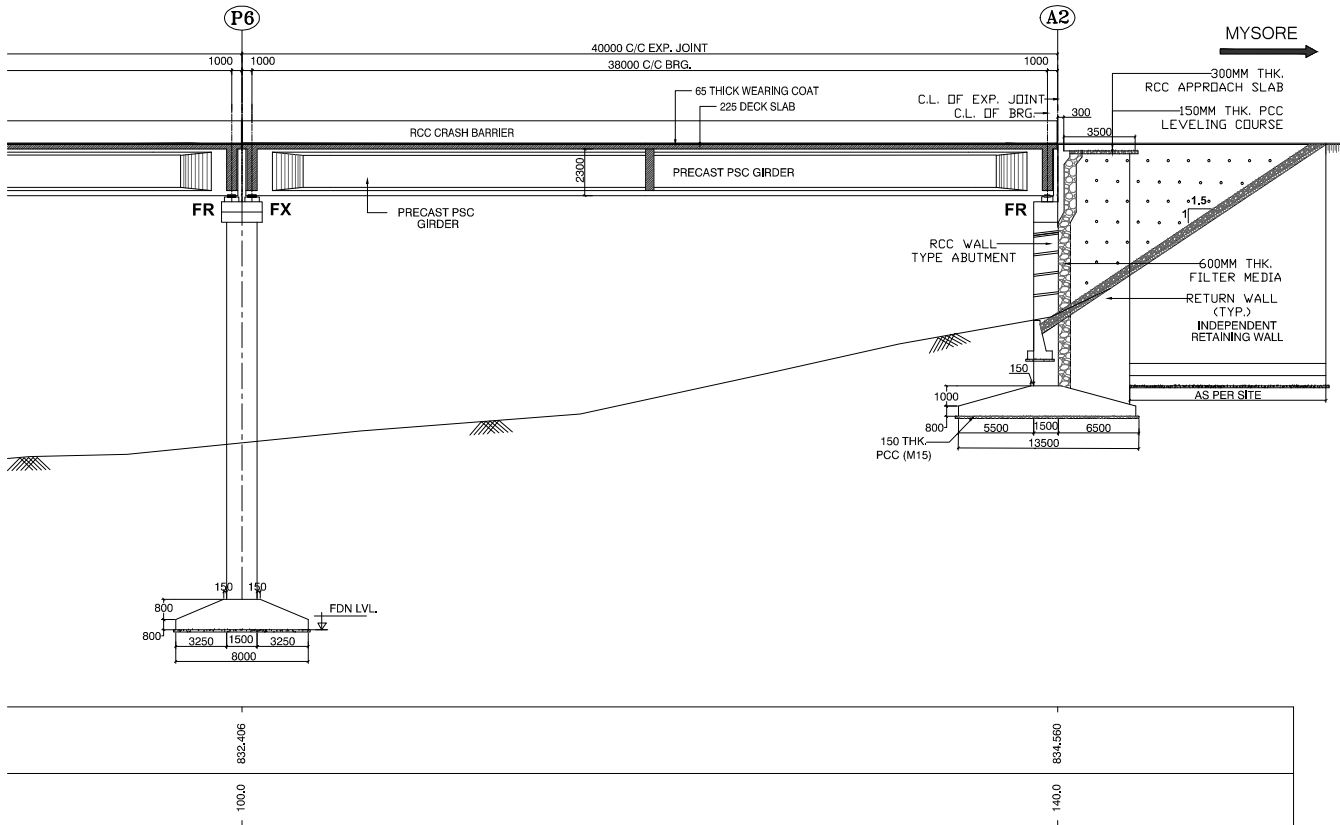
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Client:
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Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING MAJOR BRIDGE CH.1+754			
DRG. NO. 23-102/ITL/NH373/HNP/MJB/L+754/GAD-02			
DATE: 03-01-2024	SCALE:	SHEET NO: 2 OF 5	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



NOTES :-

1. TYPE OF BRIDGES - HIGH LEVEL BRIDGE.
2. TOTAL LENGTH OF BRIDGE - 280.00M. BETWEEN FACES OF DIRT WALL
3. SPAN ARRANGEMENT OF BRIDGE - 7NOS. @ 40.00 M. C/C
4. OVER ALL WIDTH OF BRIDGE - 2X10.5 M.
5. CLEAR CARRIAGEWAY WIDTH - 2X9.5 M.
6. FORMATION LEVEL - 845.991M.
7. SOFFIT LEVEL - 843.151M.
8. HIGH FLOOD LEVEL (H.F.L.) - 833.767M.
9. LOW BED LEVEL (L.B.L.) - 825.320M.
10. AFFLUX - 0.150M.
11. CATCHMENT AREA - 49.067 SQ.KM.
12. DESIGN DISCHARGE - 5120.51 Cumec
13. DESIGN VELOCITY - 5.68 M/SEC.
14. TYPE OF FOUNDATION - OPEN.
15. FOUNDATION LEVEL -
 - (a) ABUTMENT (A1) - 832.776M.
 - (b) PIER (P1) - 832.776M.
 - (c) PIER (P2) - 832.776M.
 - (d) PIER (P3) - 822.600M.
 - (e) PIER (P4) - 822.600M.
 - (f) PIER (P5) - 822.600M.
 - (g) PIER (P6) - 822.600M.
 - (h) ABUTMENT (A2) - 829.407M.
16. TYPE OF BEARINGS - POT CUM PTFE BEARING
17. TYPE OF EXPANSION JOINT - STRIP SEAL
18. TYPE OF RAILING - RCC RAILING
19. APPROACH SLAB - RCC APPROACH SLAB
20. GRADE OF CONCRETE -
 - ABUTMENT - RCC M-30
 - PSC GIRDER - RCC M-45
 - WEARING COAT - RCC M-30
 - CAP & DIRT WALL - RCC M-30
 - PIER - RCC M-30
 - DECK SLAB - RCC M-35
 - RCC CRASH BARRIER- RCC M-40
 - RCC RAILLING - RCC M-30
 - APPROACH SLAB - RCC M-30
21. SBC -
 - (A1) - 35.0 T/M2
 - (A2) - 35.0 T/M2
22. THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED (TMT) HYSD BARS (GRADE DESIGNATION Fe-500D). CONFIRMING TO IS:1786 STANDARDS.
23. WEEP HOLES 1000 SPACED AT 1000 C/C IN BOTH HORIZONTAL & VERTICAL DIRECTIONS SHALL BE PROVIDED IN A STAGGERED MANNER BEHIND ABUTMENTS/RETURN WALLS/RETAINING WALLS IN ONE OR TWO LAYERS ABOVE FOOTING TOP.
24. 65mm THK. CONCRETE WEARING COAT SHALL BE PROVIDED.AS PER MORTH SPECIFICATION SECTION 500.
25. LAYING OF FILTER MEDIA FOR DRAINAGE AND BACK FILLING BEHIND ABUTMENT/RETURN WALLS SHALL BE DONE IN ACCORDANCE WITH APPENDIX 6 OF IRC:78:2014 .
26. BACK FILLING BEHIND ABUTMENTS SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78-2014 HAVING PROPERTIES $C=0, \phi>30^\circ, \delta 20.0^\circ$ & $\gamma_d = 20 \text{ KN/m}^3$.
27. THE CARRIAGEWAY OF PROPOSED BRIDGE IS DESIGNED FOR SINGLE LANE OF IRC CLASS 70 R OR TWO LANE OF IRC CLASS A LOADING WHICHEVER GOVERNS.

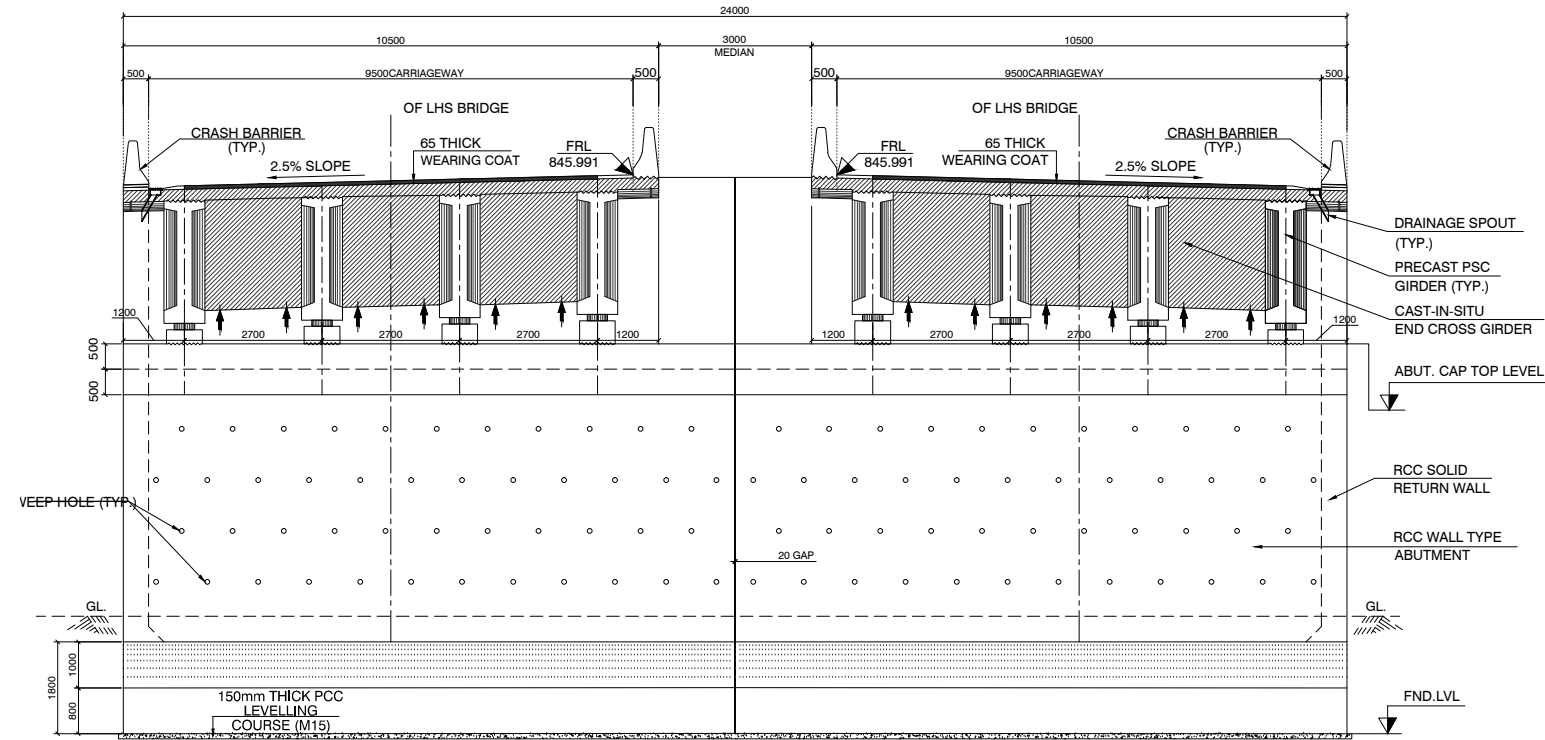
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Client: **PWD- National Highways,**
Hassan Division
(Government of Karnataka)

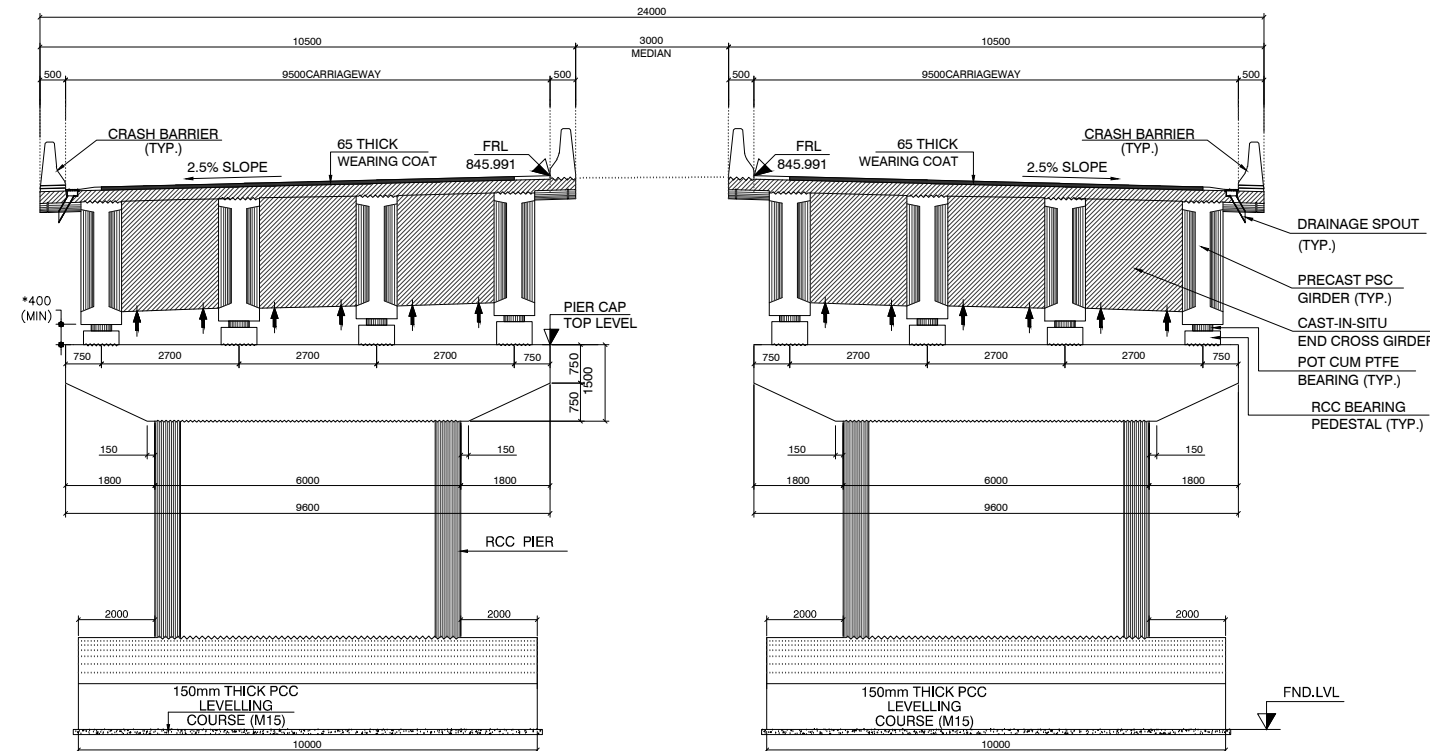
Consultant: **INDIAN TECHNOCRAT LIMITED**
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Email: info@itl.net.in

Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

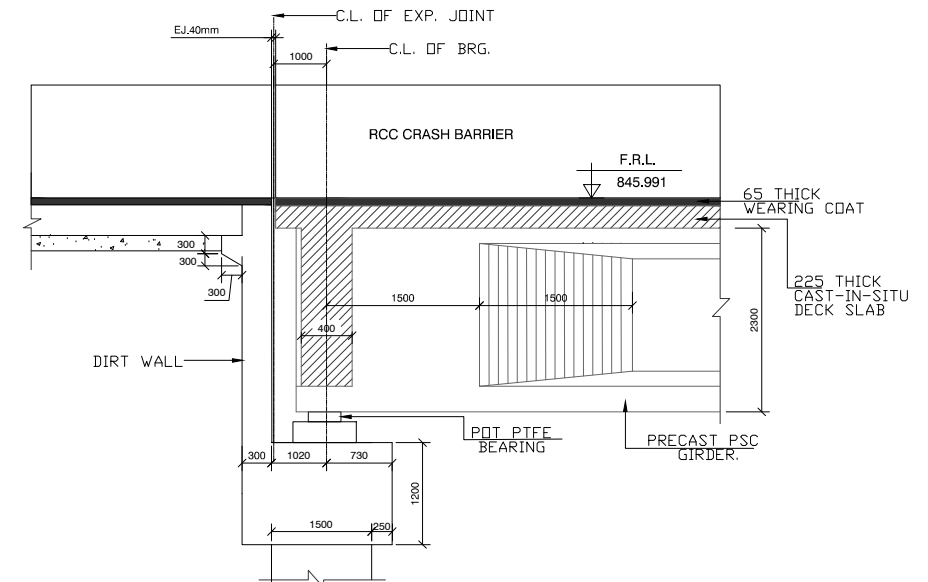
Title: GENERAL ARRANGEMENT DRAWING MAJOR BRIDGE CH:1+754			
DRG. NO. 23-102/ITL/NH373/HNP/MJB/1+754/GAD-03			
DATE:	03-01-2024	SCALE:	SHEET NO: 3 OF 5
DESIGN	B.D	DRAWN	R.S
CHECKED	S.K	APPROVED	S.K



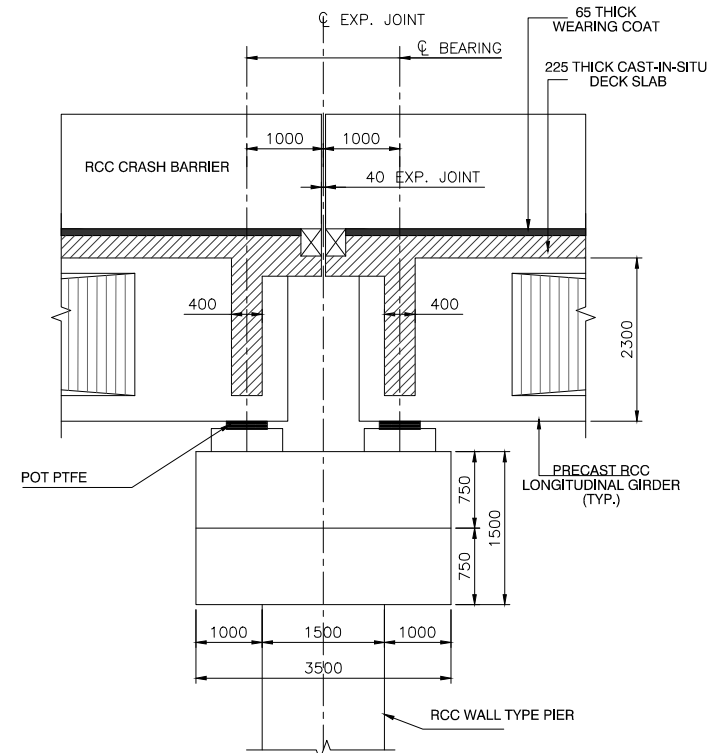
SECTION AT A-A
(SCALE=1:100)



SECTION AT B-B
(SCALE=1:100)



DETAIL-1
(SCALE=1:50)



DETAIL-2
(SCALE=1:50)

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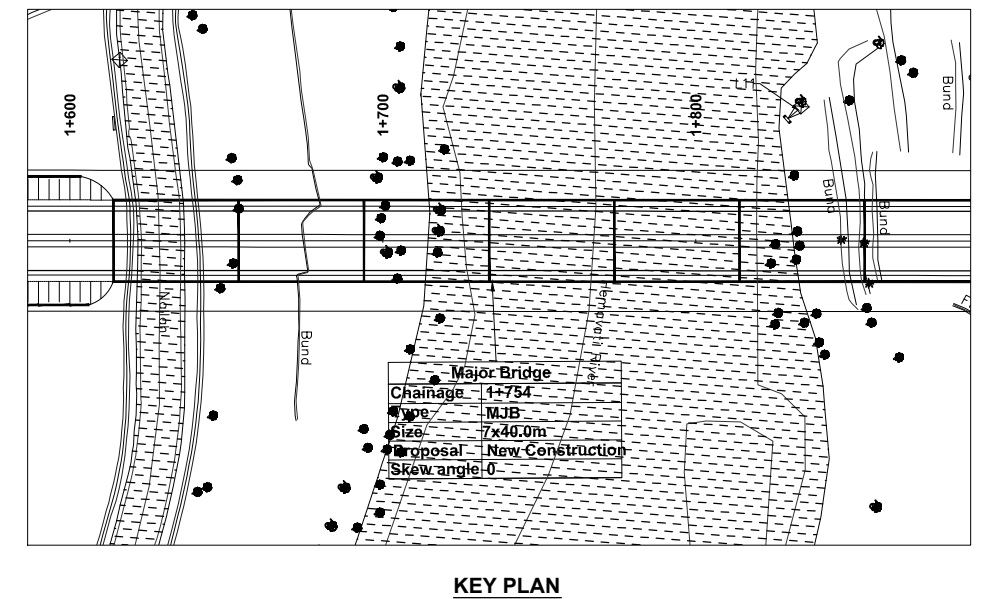
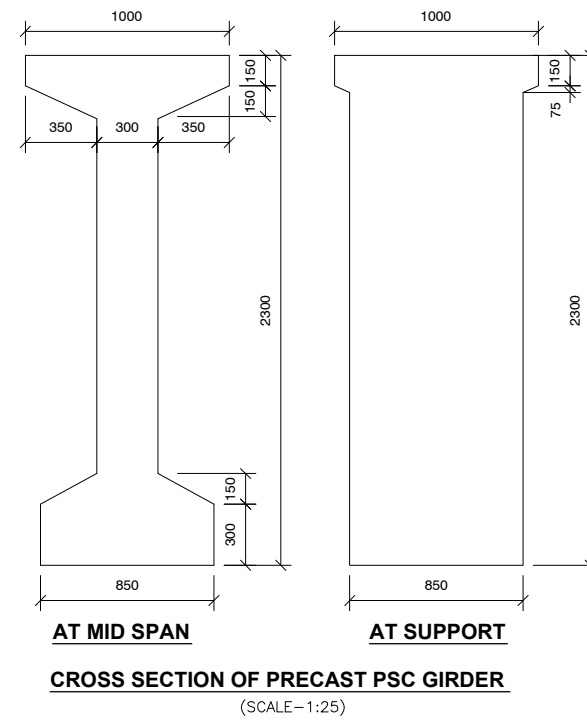
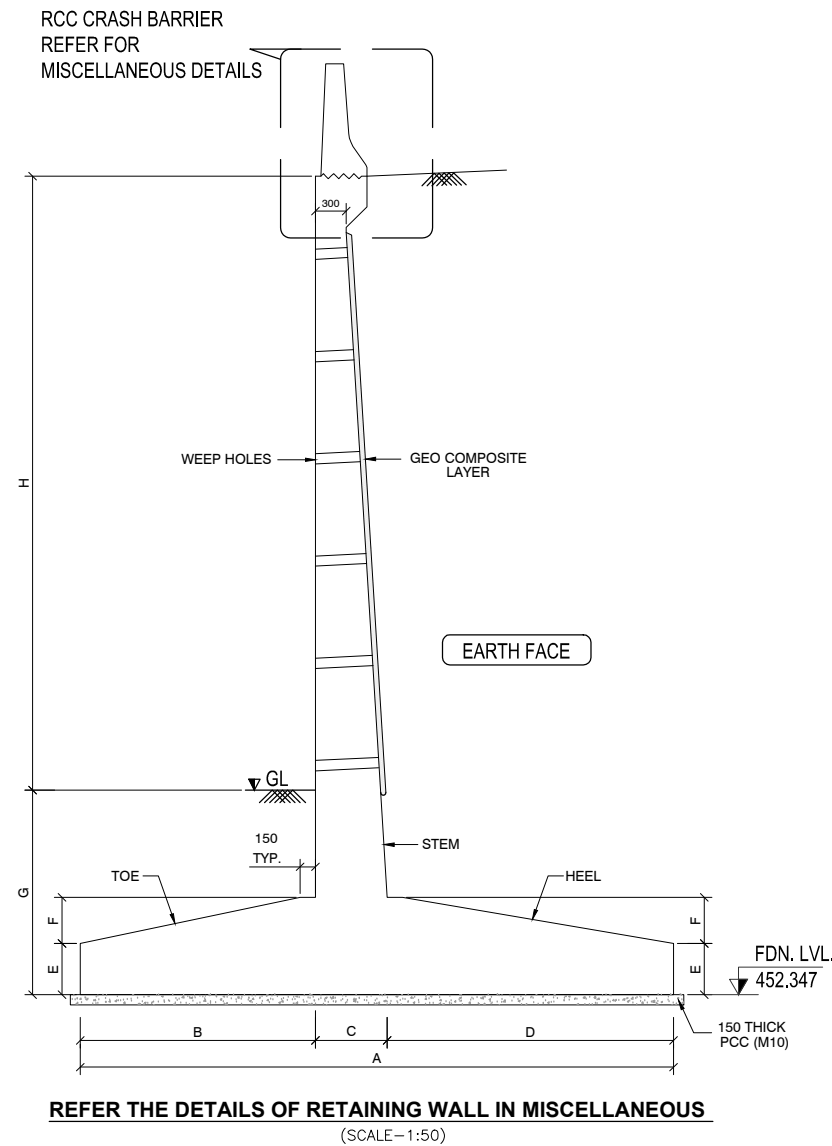
Client:
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Hassan Division
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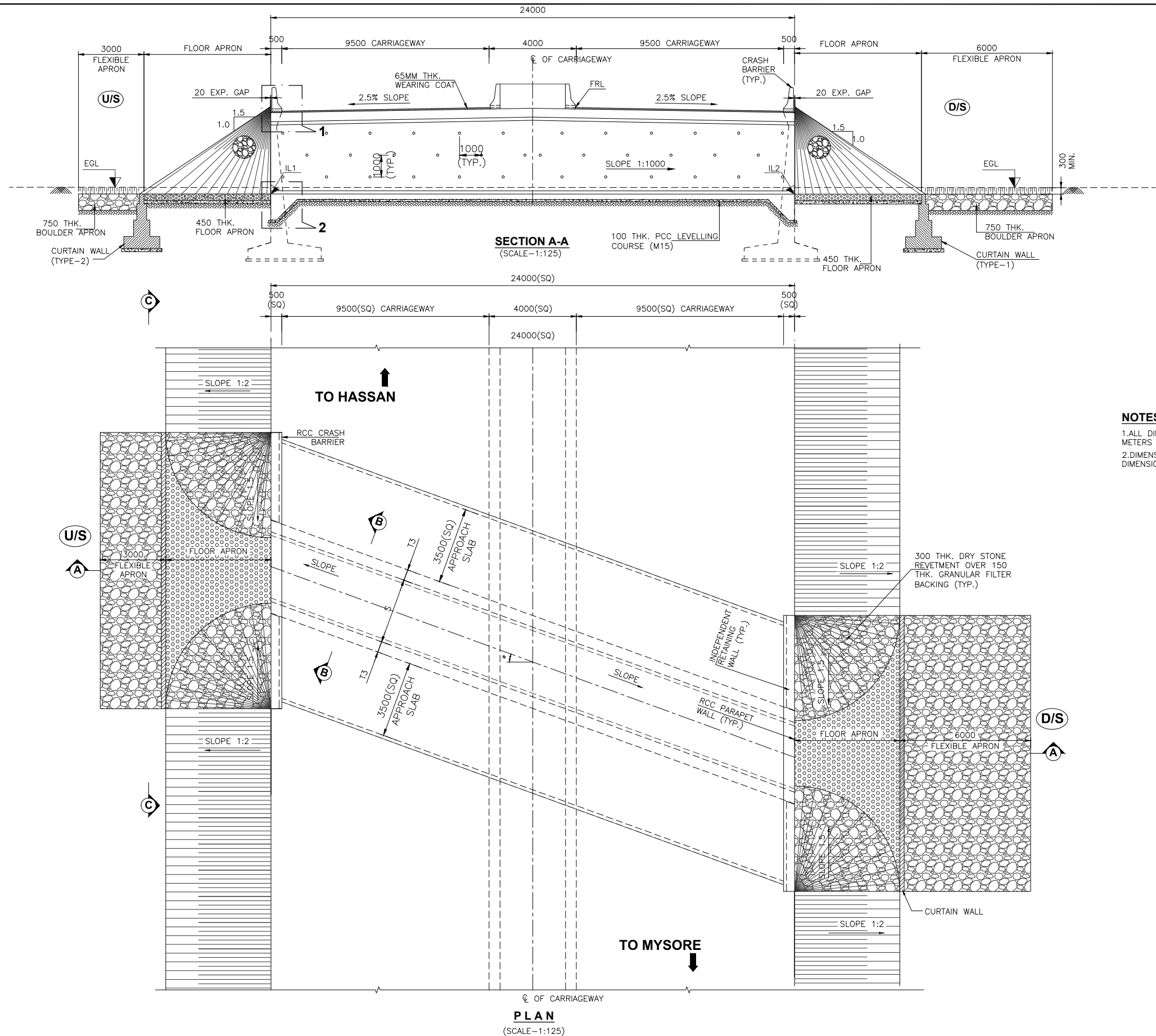
Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING MAJOR BRIDGE CH-1+754				
DRG. NO.	SCALE:	SHEET NO:	4 OF 5	REV : R0
DATE: 03-01-2024				
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K	



						Client:		Consultant:		Project:		Title:			
						PWD- National Highways,		INDIAN TECHNOCRAT LIMITED		Construction of Holenarasipura Bypass on NH-373 in the State of		GENERAL ARRANGEMENT DRAWING			
						Hassan Division		In Association with		Karnataka under NH(O) on EPC mode		MAJOR BRIDGE CH:1+754			
						(Government of Karnataka)		Vistaara Infra Consultants				23-102/ITL/NH373/HNP/MJB/1+754/GAD-05			
								New Delhi - 110 070, Ph. : 011-49531100,				DRG. NO.			
								Email: info@itl.net.in				DATE: 03-01-2024			
												SCALE:			
												SHEET NO: 5 OF 5			
												REV : R0			
												DESIGN			
												DRAWN			
												CHECKED			
												S.K			
												APPROVED			
												S.K			

MNB



NOTES:
 1. ALL DIMENSIONS ARE IN MM, & LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED
 2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED

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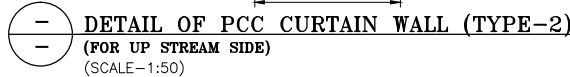
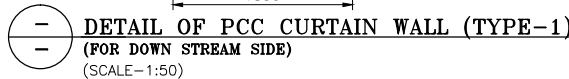
Client: **PWD- National Highways,**
 Hassan Division
 (Government of Karnataka)

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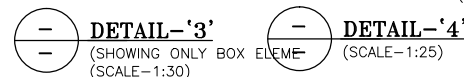
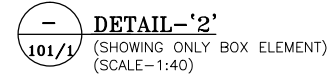


Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION SINGLE CELL BOX MNB			
DRG. NO. 23-102/ITL/NH373/HNP/BOXMNB/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 1OF2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



S.NO.	PRO. CHAINAGE (Km).	TYPE OF STRUCTURE	SIZE OF CULVERT NO. X CLEAR SPAN(m)	TOP SLAB (T1)(m)	SIDE WALL (T3)(m)	BOTTOM SLAB (T2)(m)	SKEW ANGLE	PROPOSAL
01	7+057	BOX MNB	1X8X1.7	0.500	0.500	0.550	16	NEW CONSTRUCTION

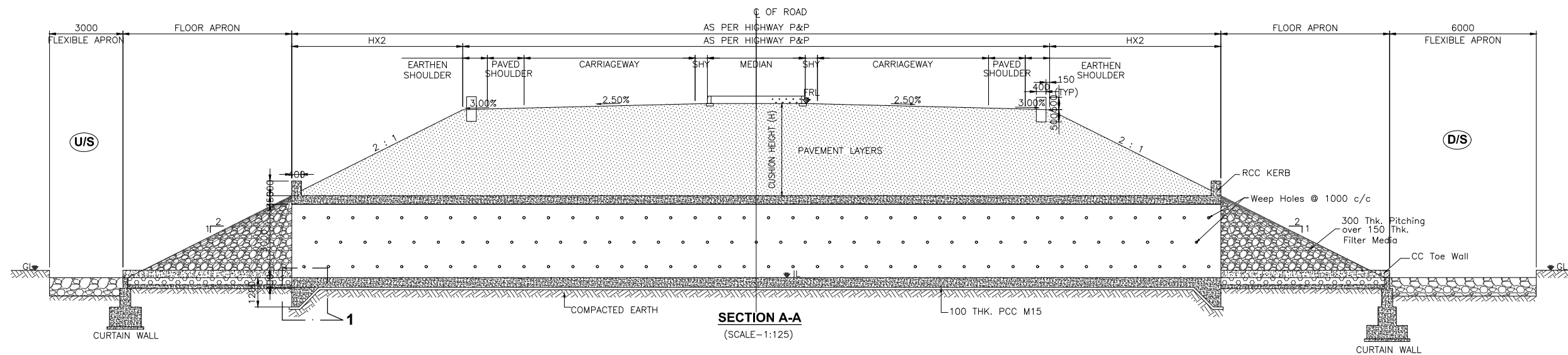


1. ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS IN METERS AND CHANGES IN KILOMETERS UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. WEARING COAT SHALL CONFORM TO CLAUSE 2702.1 OF "MORT&H" SPECIFICATION.
4. CONCRETE SHALL BE DESIGN MIX UNLESS OTHERWISE SPECIFIED IN DETAILED DRAWINGS, AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:
 - a) RCC PARAPET WALLM30
 - b) RCC BOX CELLM35
 - c) RCC RETAINING WALLM35
5. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS. (GRADE DESIGNATION Fe 550D) CONFORMING TO TABLE CL. 105.2-2011.
6. MINIMUM CLEAR COVER TO ANY REINFORCEMENT SHALL BE AS BELOW:
 - i) TOP SLAB (BOTH FACE)45mm
 - ii) VERTICAL WALL (EARTH FACE)75mm
 - iii) VERTICAL WALL (REAR FACE)45mm
 - iv) BOTTOM SLAB (BOTH FACE)75mm
 - v) RCC CRASH BARRIER45mm
 - vi) RCC RETAINING WALL75mm
 - FOOTING50mm
 - vii) STEM
7. 100 ϕ WEEP HOLES SPACED AT 1000 C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN A STAGGERED MANNER IN EARTH RETAINING VERTICAL WALLS ABOVE GROUND LEVEL.
8. 600 THICK FILTER MEDIA BEHIND EARTH RETAINING VERTICAL WALL SHALL BE PROVIDED AS PER "MORT&H" SPECIFICATION.
10. LAYING, COMPACTION AND EXTENT OF BACK FILL BEHIND EARTH RETAINING WALLS SHALL CONFORM TO SPECIFICATIONS IN APPENDIX 6 OF IRC: 78-2014.
11. BACK FILLING BEHIND EARTH RETAINING WALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC: 78-2014 HAVING PROPERTIES $C=0$, $\phi=30^\circ$ AND $\gamma=2.0 \text{ T/m}^3$.
12. THE DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT APPROVED HIGHWAY DRAWINGS FOR STRUCTURE ORIENTATION, SKEW ANGLE, FRL AND CAMBER/SUPERELEVATION ETC.
13. DURING WIDENING OPERATION ALL NECESSARY PRECAUTIONS SHALL BE TAKEN FOR THE SAFETY OF THE MOVING VEHICLES OVER THE CULVERT.
14. MAX DESIGN PRESSURE AT FOUNDED LEVEL OF BOX IS 15 T/m^2 .
15. COMPACTED EARTH SHALL CONFORM TO CL. 305.2.1.5 OF "MORT&H" SPECIFICATION.
16. NEW JERSEY CRASH BARRIER SHALL BE PROVIDED AS PER IRC:119-2015.

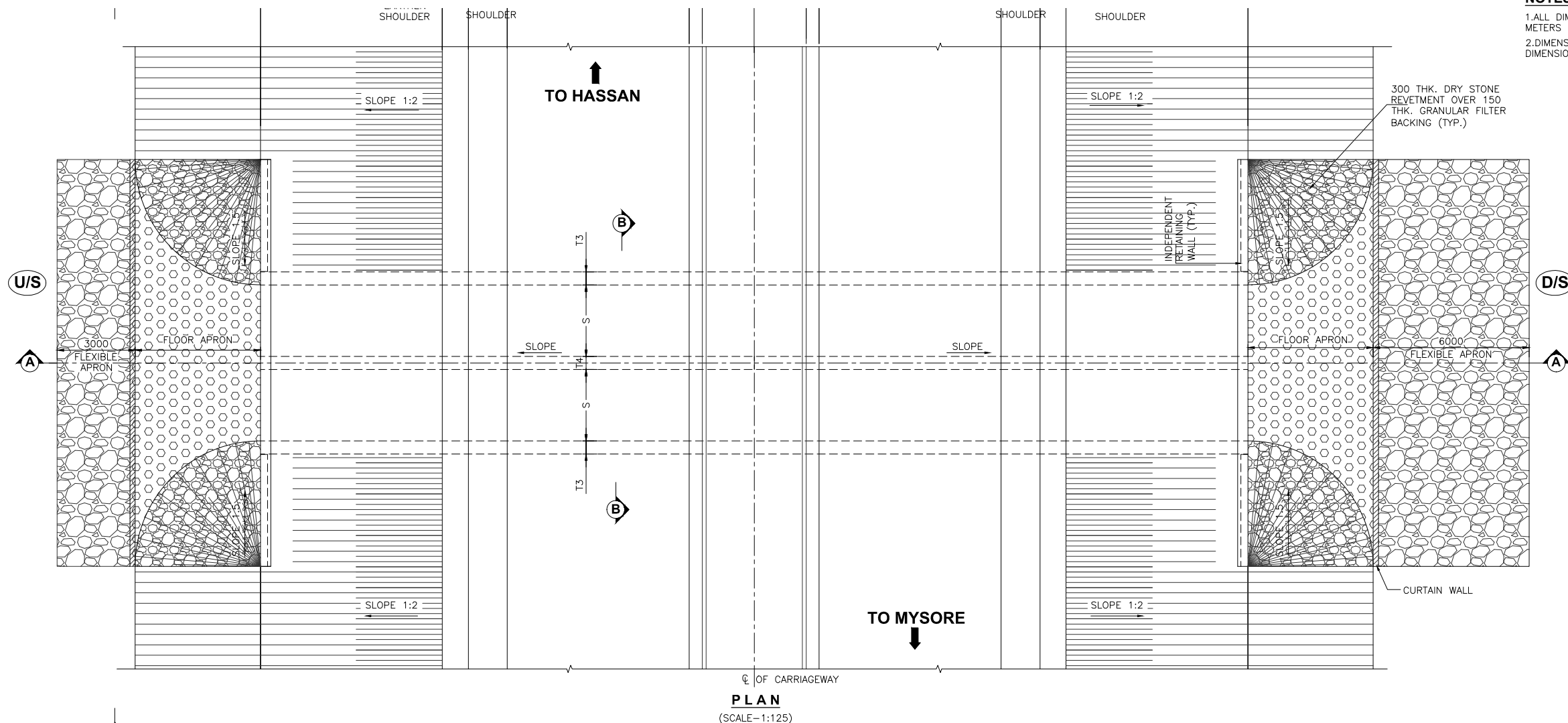
Client: PWD- National Highways,
Hassan Division
(Government of Karnataka)



Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION SINGLE CELL BOX MNB			
DRG. NO. 23-102/ITL/NH373/HNP/BOXMNB/GAD-02			
DATE: 03-01-2024	SCALE:	SHEET NO: 20F2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



- NOTES:**
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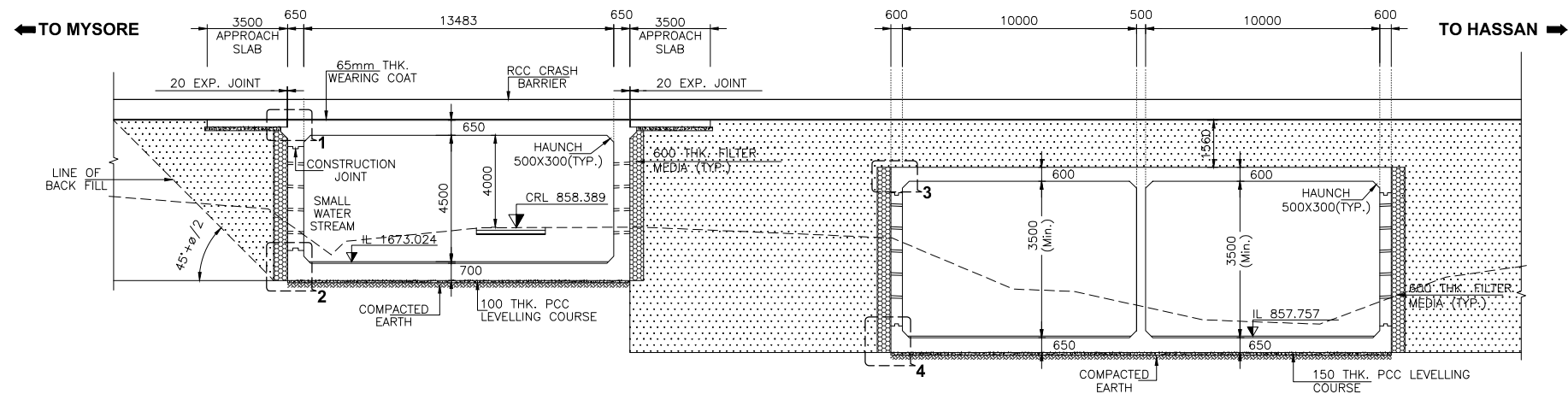
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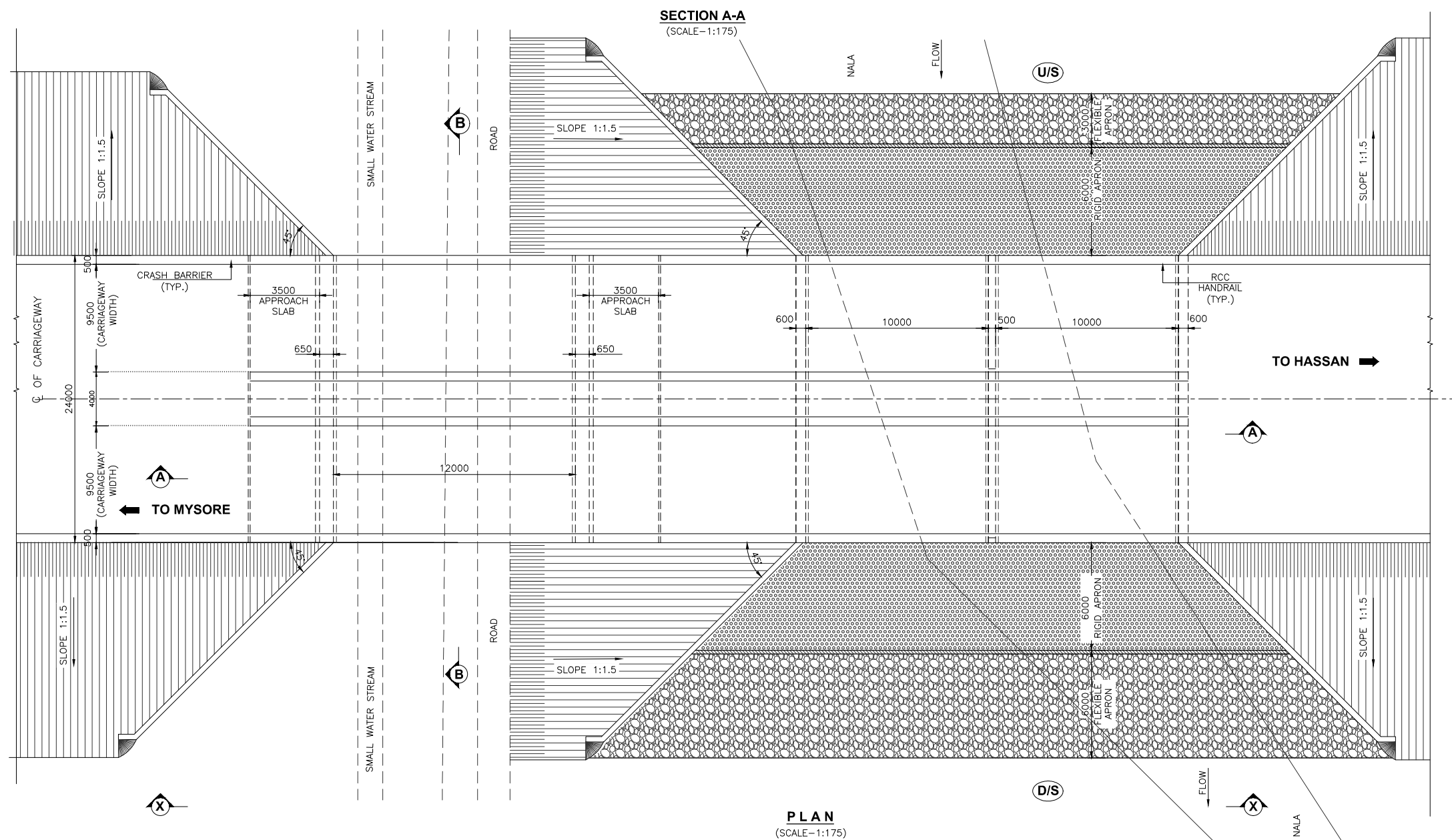


Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION TWO CELL BOX MNB			
DRG. NO. 23-102/ITL/NH373/HNP/BOXMNB/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 10F2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



FRL IN (m)	863.396	863.396	863.396	863.732	863.732	863.732
CHAINAGE (M)	9+757	9+763	9+769	9+729	9+739	9+749



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 - ONLY WRITTEN DIMENSIONS TO BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.

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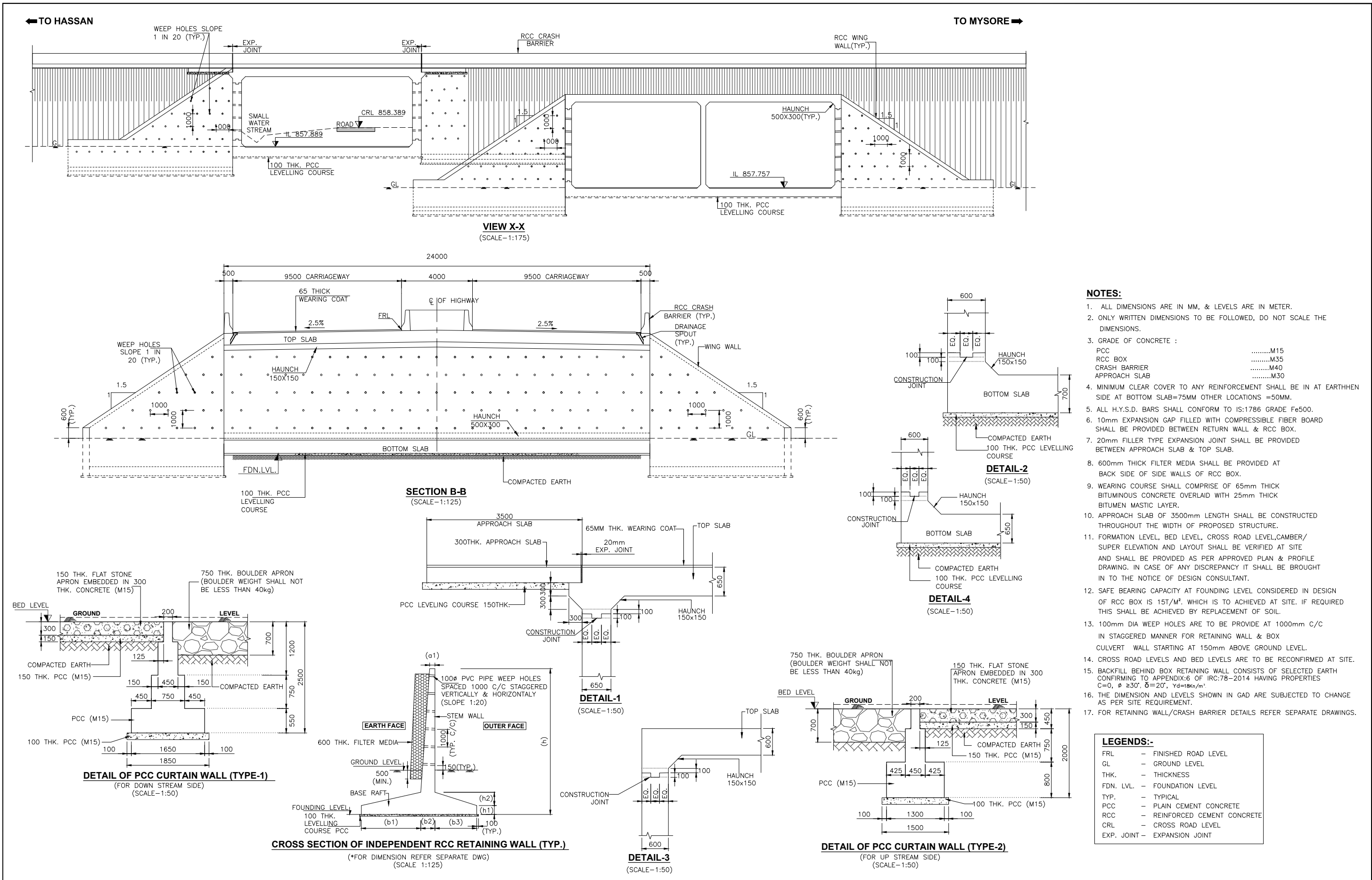
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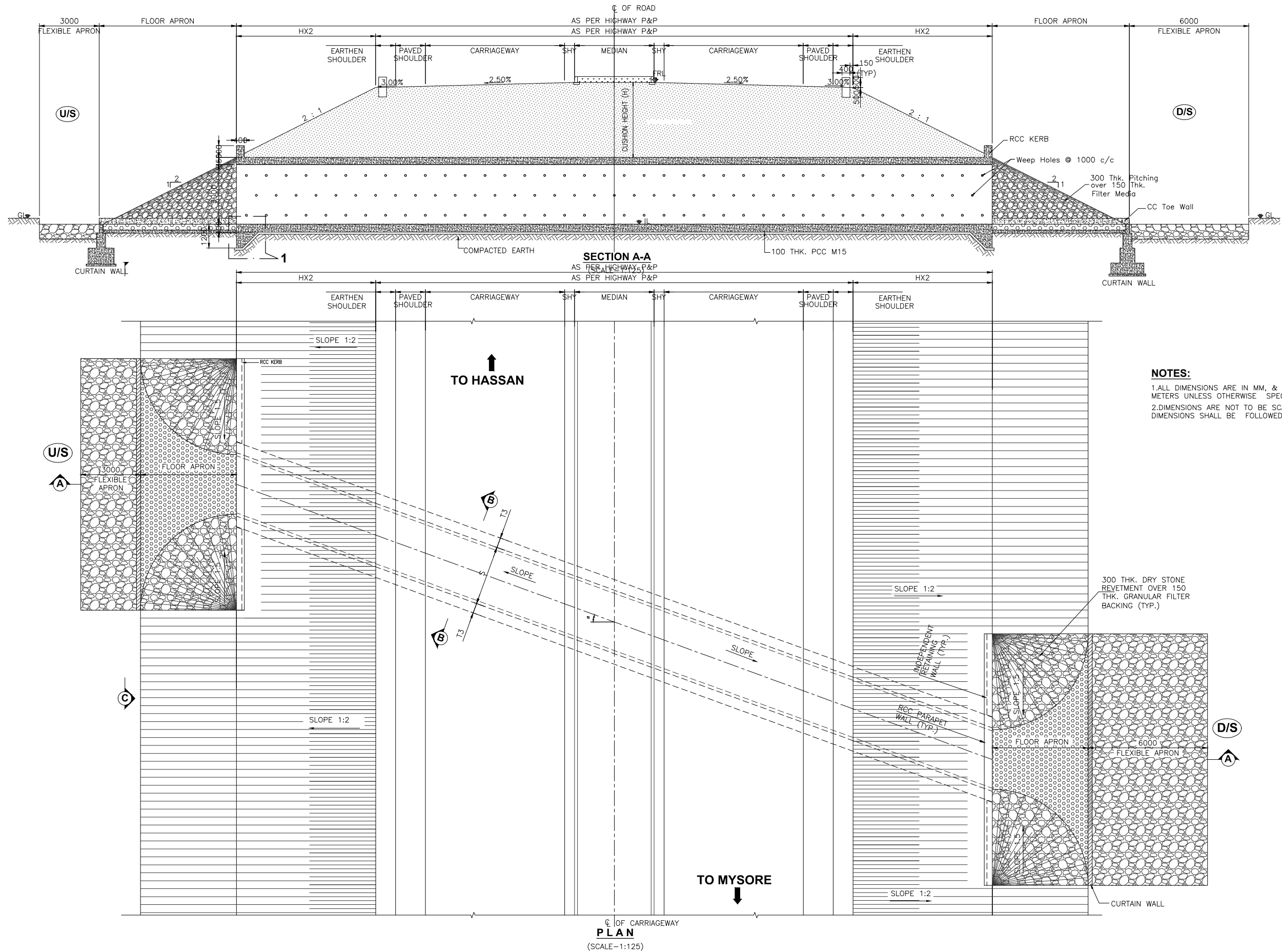


Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING OF BOX MNB AT DESIGN CH. 9+739 & 9+763			
DRG. NO.	23-102/ITL/NH373/HNP/BOXMNB/9+739&9+763/GAD-01		
DATE:	03-01-2024	SCALE:	1OF2
DESIGN	DRAWN	CHECKED	APPROVED
B.D	R.S	S.K	S.K



Client: PWD- National Highways, Hassan Division (Government of Karnataka)						Consultant: INDIAN TECHNOCRAT LIMITED In Association with Vistaara Infra Consultants New Delhi - 110 070, Ph. : 011-49531100, Email: info@itl.net.in						Project: Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode						Title: GENERAL ARRANGEMENT DRAWING OF BOX MNB AT DESIGN CH. 9+739 & 9+763					
RO 03.01.24 INITIAL SUBMISSION R.S S.K S.K						DRG. NO. 23-102/ITL/NH373/HNP/BOXMNB/9+739&9+763/GAD-02						DATE: 03-01-2024 SCALE: SHEET NO: 2 OF 2 REV : R0						DESIGN B.D DRAWN R.S CHECKED S.K APPROVED S.K					



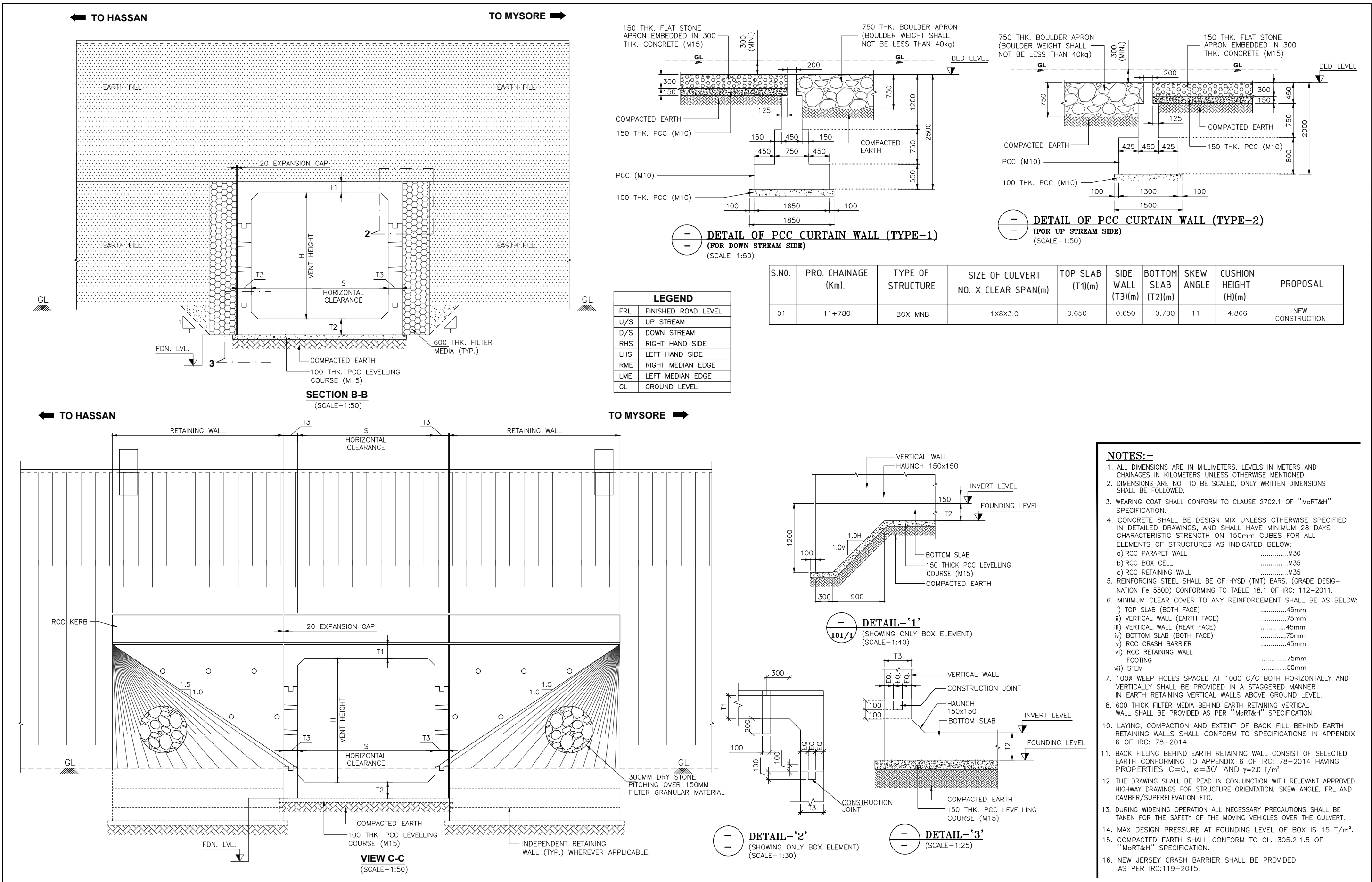
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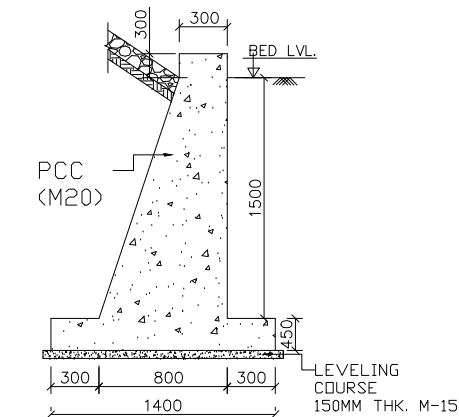
Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION SINGLE CELL BOX MNB			
DRG. NO. 23-102/ITL/NH373/HNP/BOXMNB/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 1OF2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



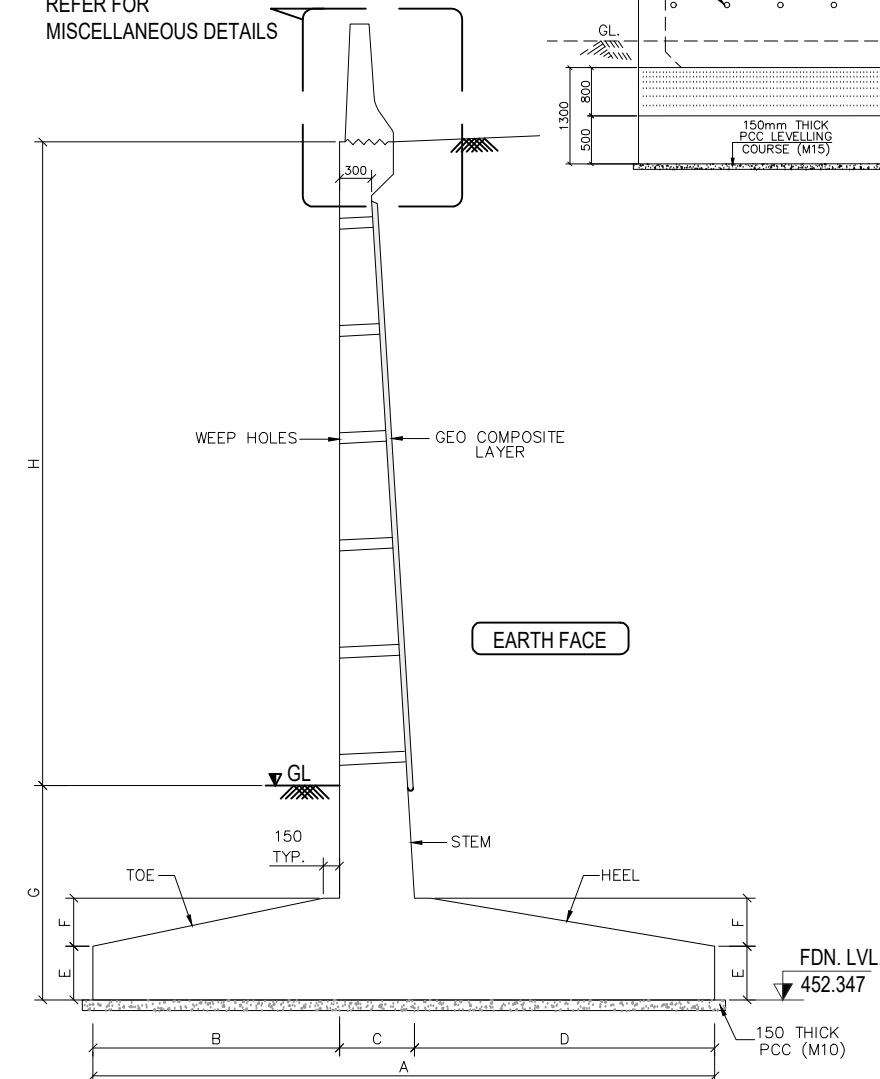
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Title: GENERAL ARRANGEMENT DRAWING MINOR BRIDGE AT CH.2+103 (NEW CONSTRUCTION)			
DRG. NO.		23-102/ITL/NH373/HNP/MNB/2+103/GAD-01	
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K

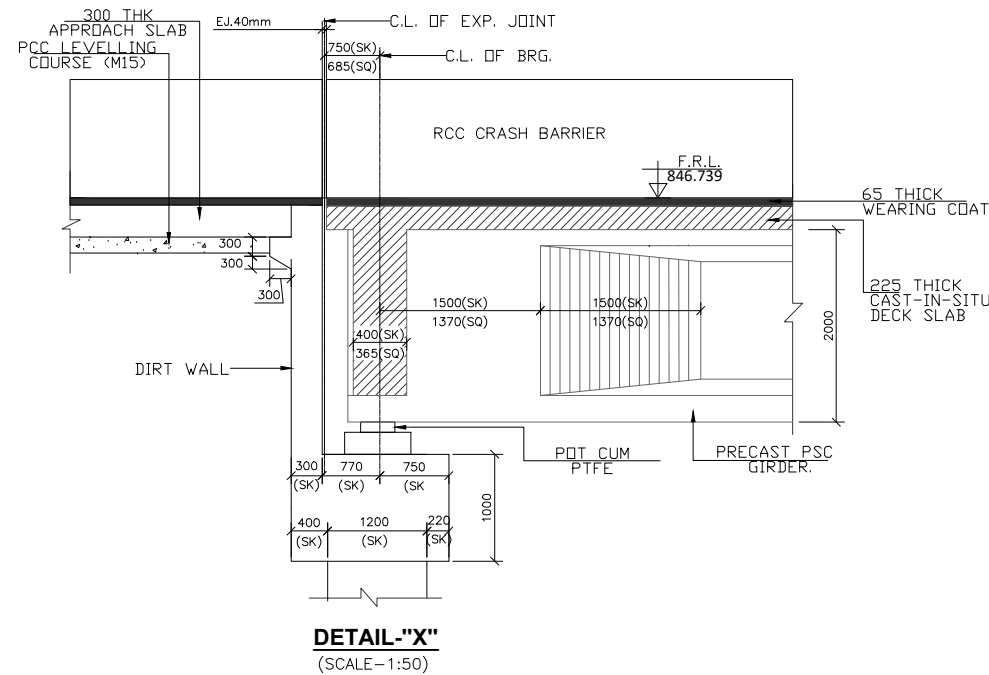


TYP. SECTION OF TOE WALL
(SCALE=1:75)

RCC CRASH BARRIER
REFER FOR
MISCELLANEOUS DETAILS

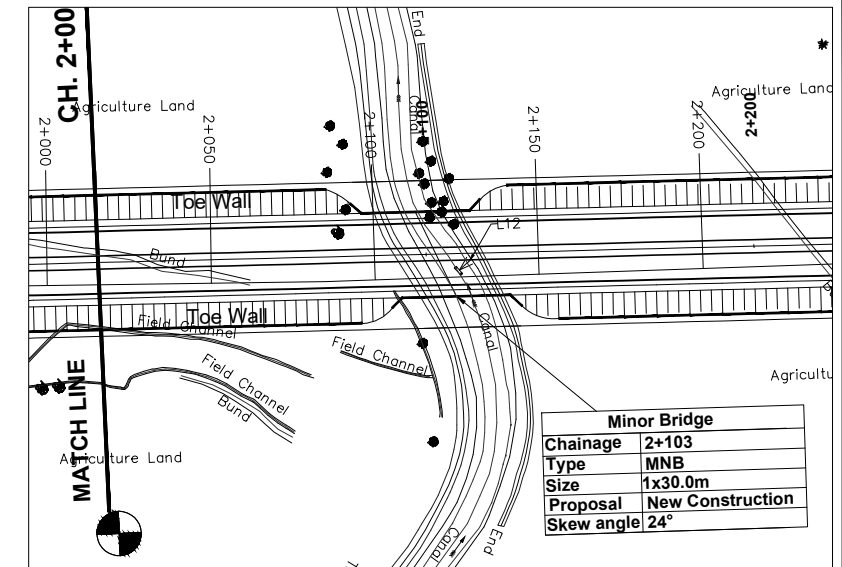


SECTION AT A-A
(SCALE=1:100)

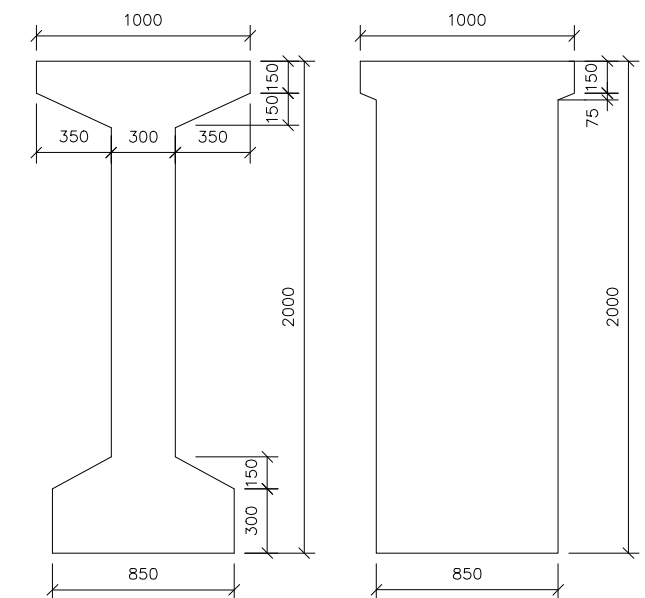


DETAIL "X"
(SCALE=1:50)

REFER THE DETAILS OF RETAINING WALL IN MISCELLANEOUS
(SCALE=1:50)



KEY PLAN



Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

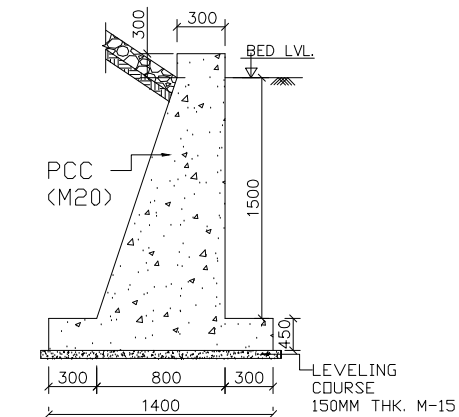
Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in



Project:
**Construction of Holenarasipura Bypass on NH-373 in the State of
Karnataka under NH(O) on EPC mode**

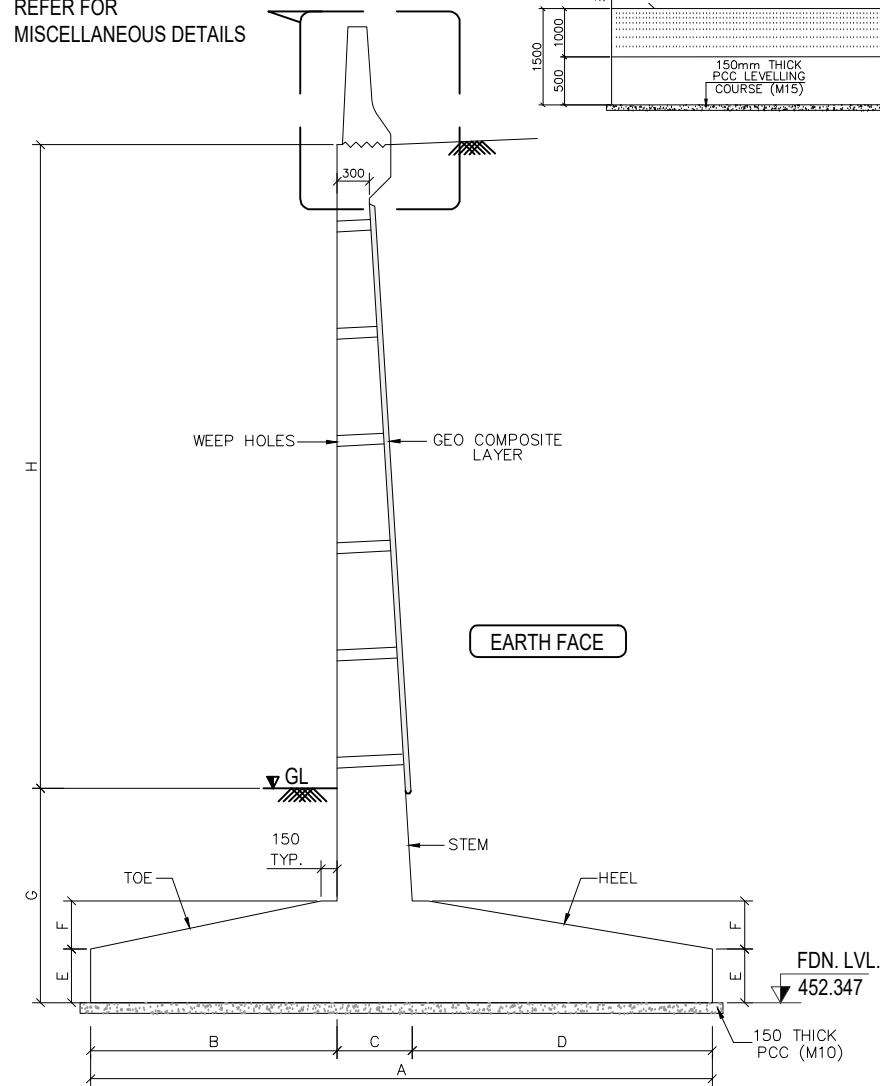
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MINOR BRIDGE AT CH.2+103 (NEW CONSTRUCTION)
DRG. NO. 23-102/ITL/NH373/HNP/MNB/2+103/GAD-02
DATE: 03-01-2024 SCALE: SHEET NO: 2 OF 2 REV : R0
DESIGN B.D. DRAWN R.S. CHECKED S.K. APPROVED S.K.

NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
R0	03.01.24	INITIAL SUBMISSION	R.S.	S.K.	S.K.

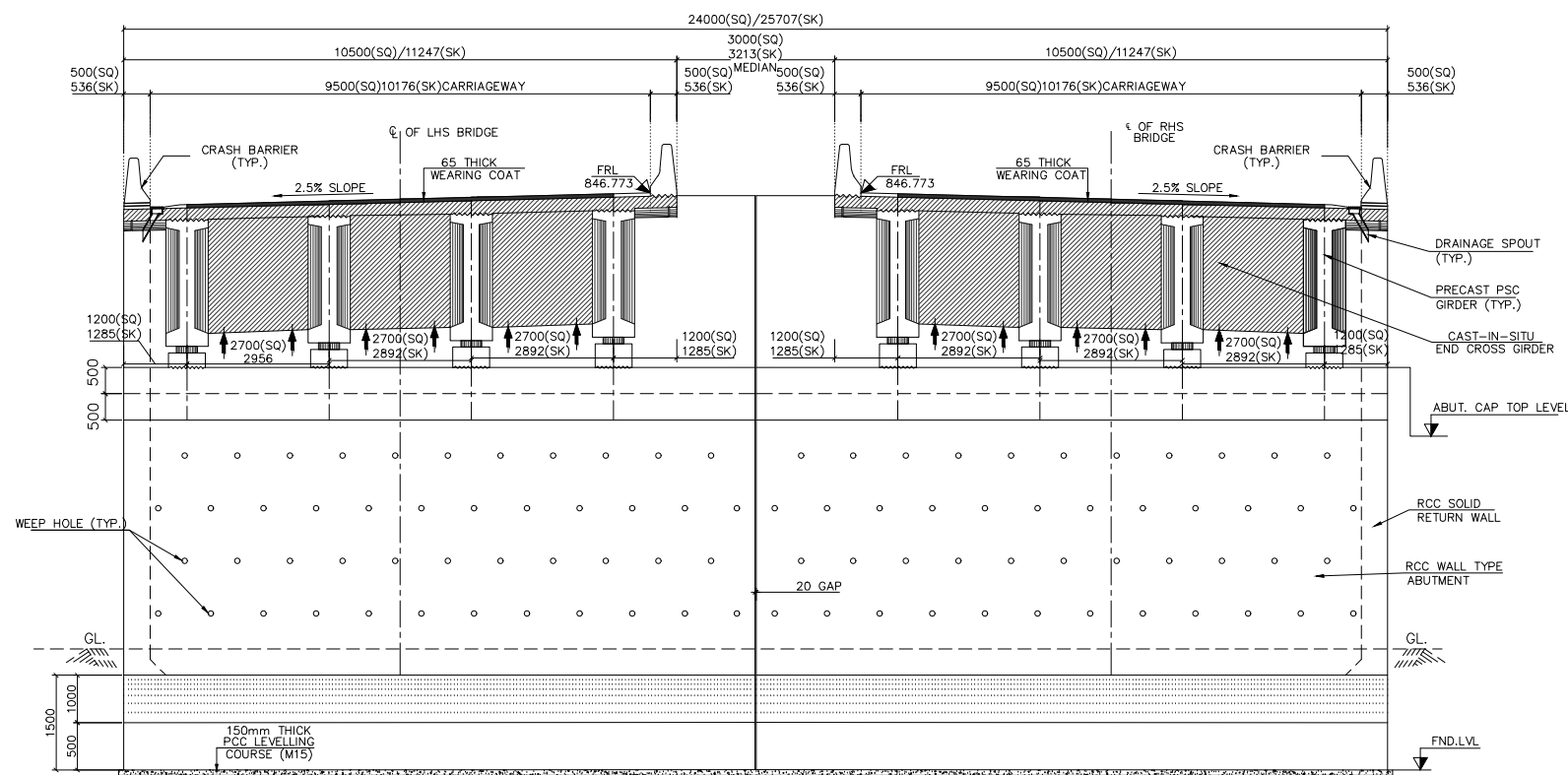


TYP. SECTION OF TOE WALL
(SCALE-1:75)

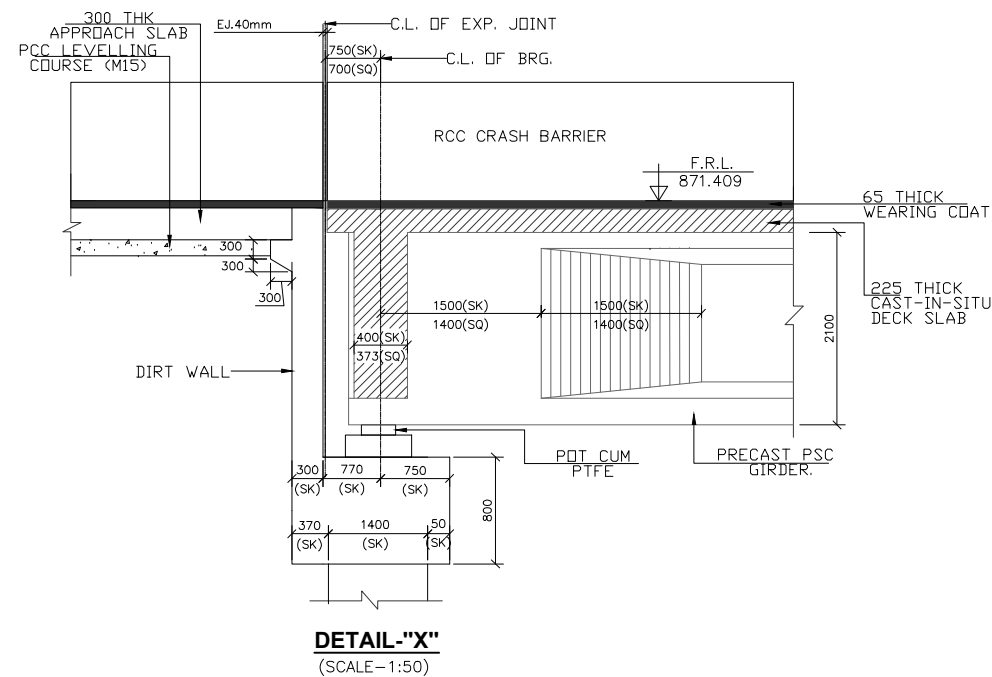
RCC CRASH BARRIER
REFER FOR
MISCELLANEOUS DETAILS



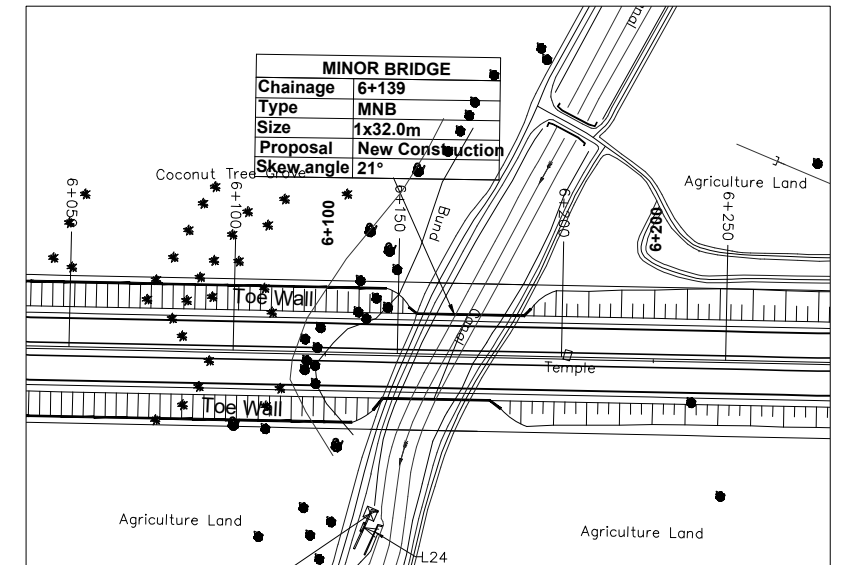
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(SCALE-1:50)



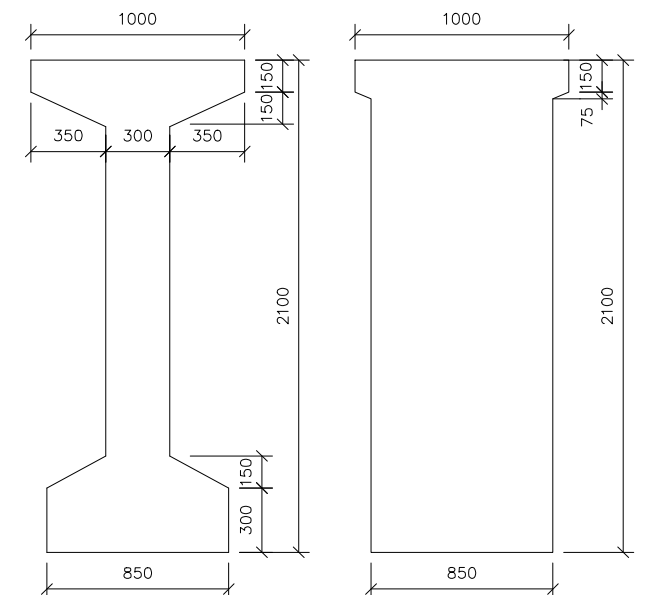
SECTION AT A-A
(SCALE-1:100)



DETAIL-'X'
(SCALE-1:50)



KEY PLAN



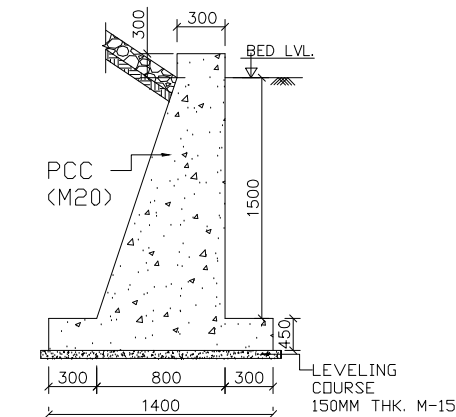
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

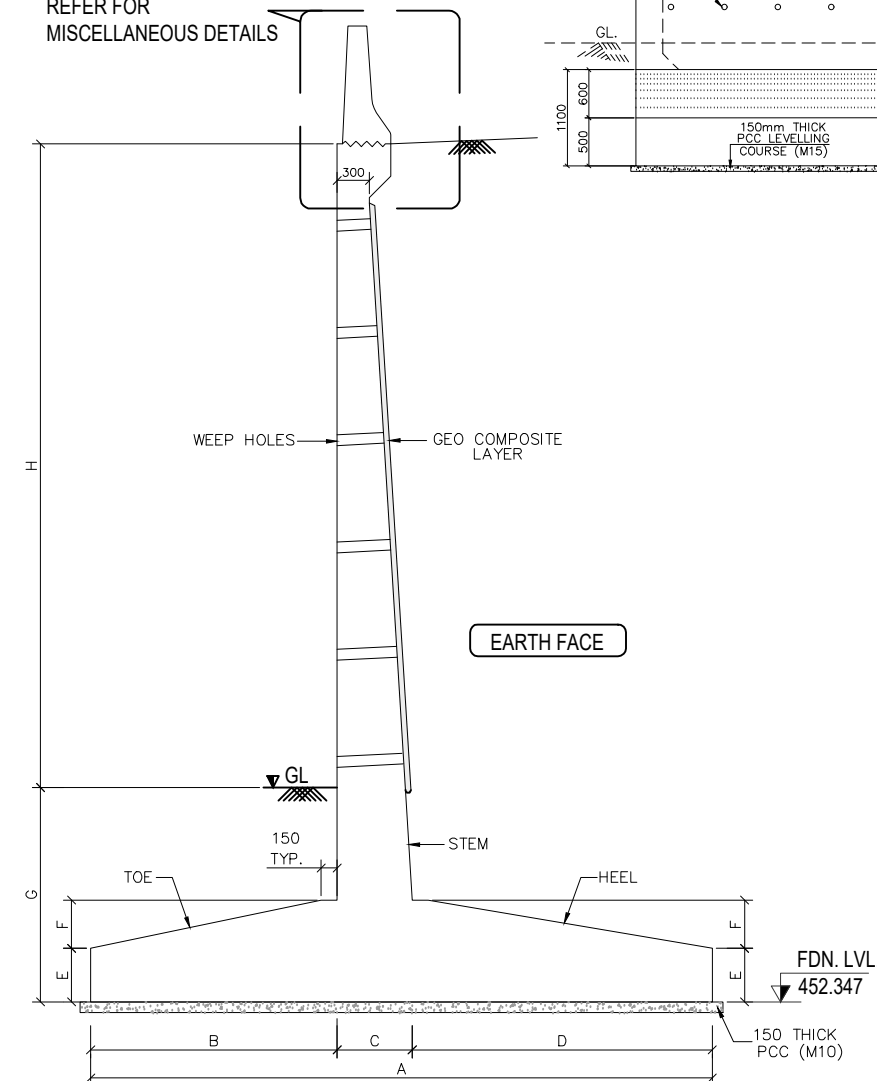
Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING MINOR BRIDGE AT CH.6+139 (NEW CONSTRUCTION)			
DRG. NO. 23-102/ITL/NH373/HNP/MNB/6+139/GAD-02			
DATE: 03.01.24	SCALE:	SHEET NO: 1 OF 1	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K

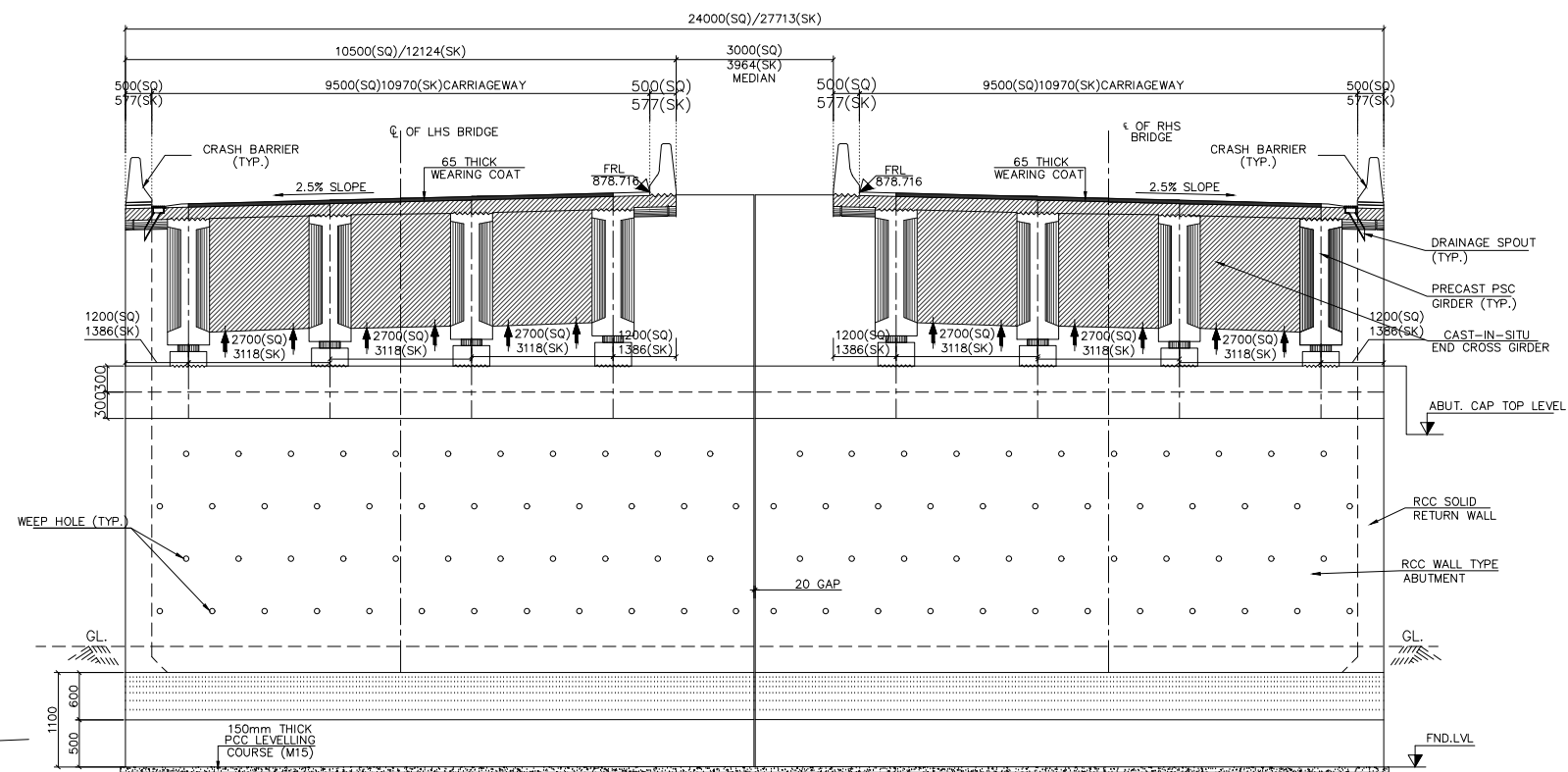


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(SCALE-1:75)

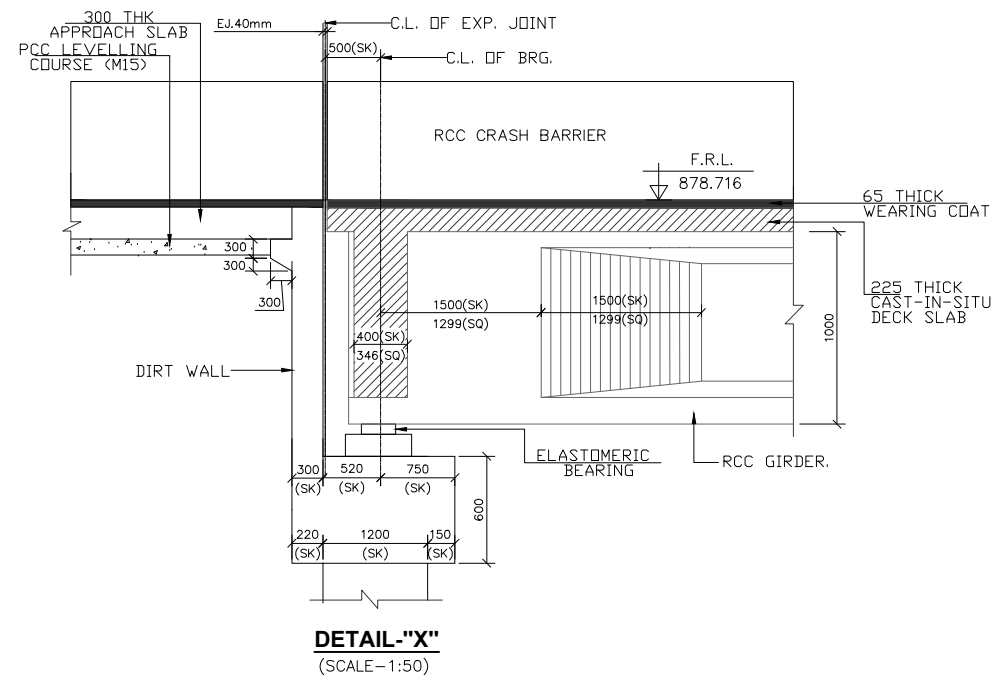
RCC CRASH BARRIER
REFER FOR
MISCELLANEOUS DETAILS



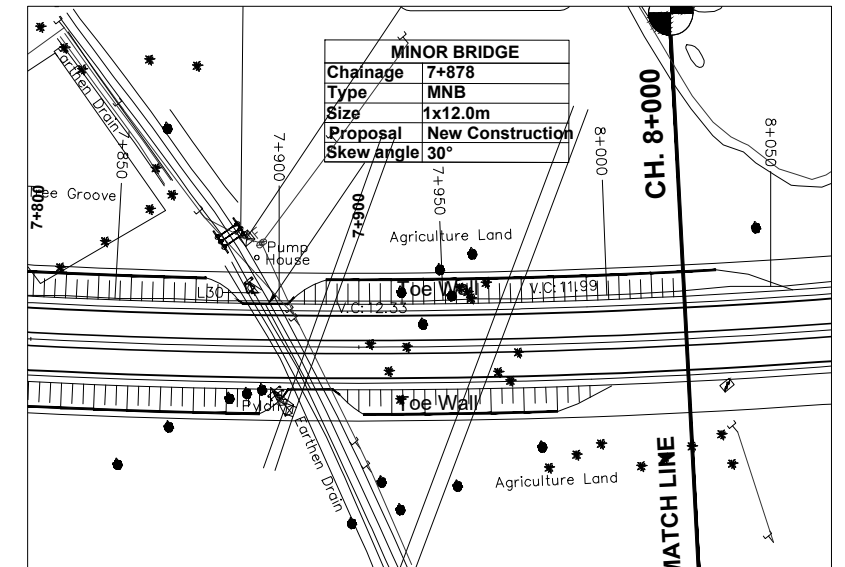
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(SCALE-1:50)



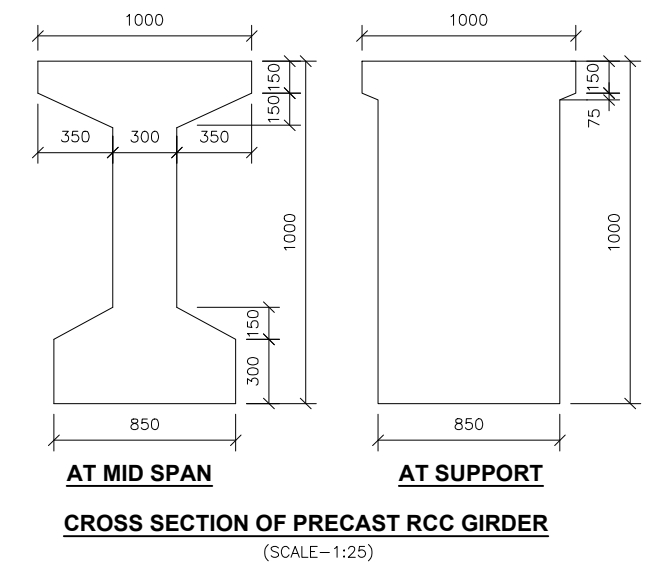
SECTION AT A-A
(SCALE-1:100)



DETAIL-'X'
(SCALE-1:50)



KEY PLAN



AT MID SPAN

AT SUPPORT

CROSS SECTION OF PRECAST RCC GIRDER
(SCALE-1:25)

Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

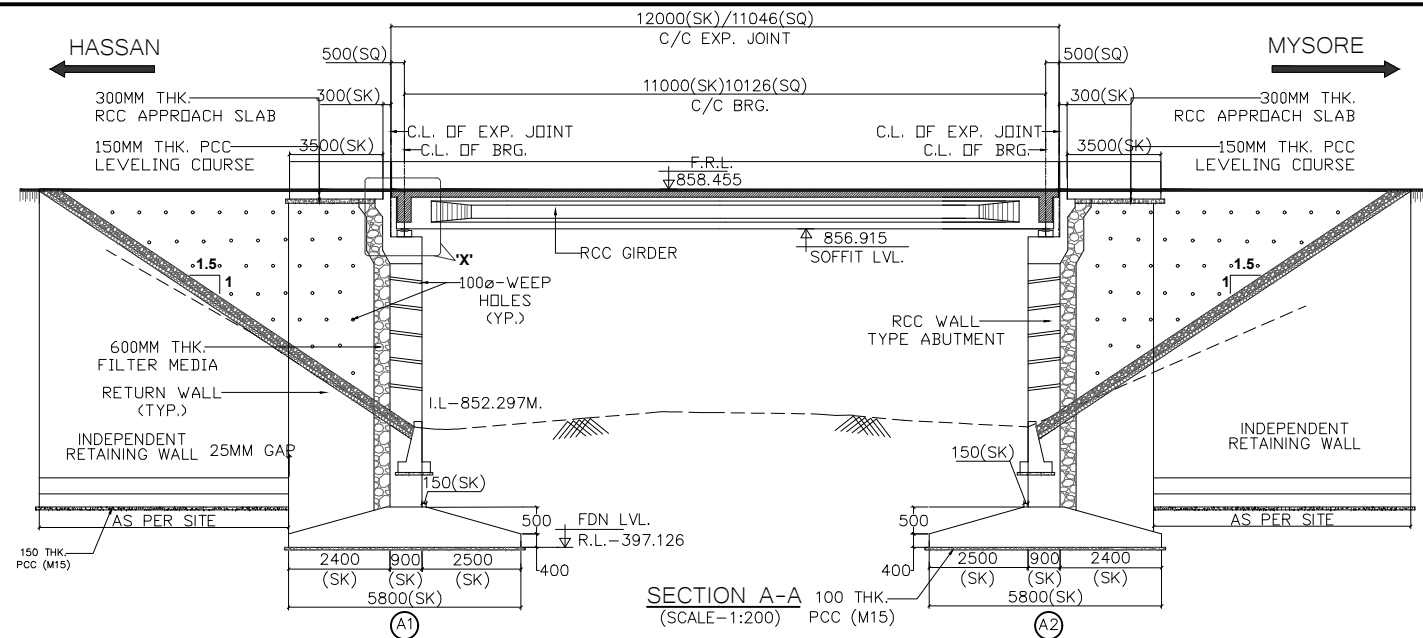
Consultant:
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New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in



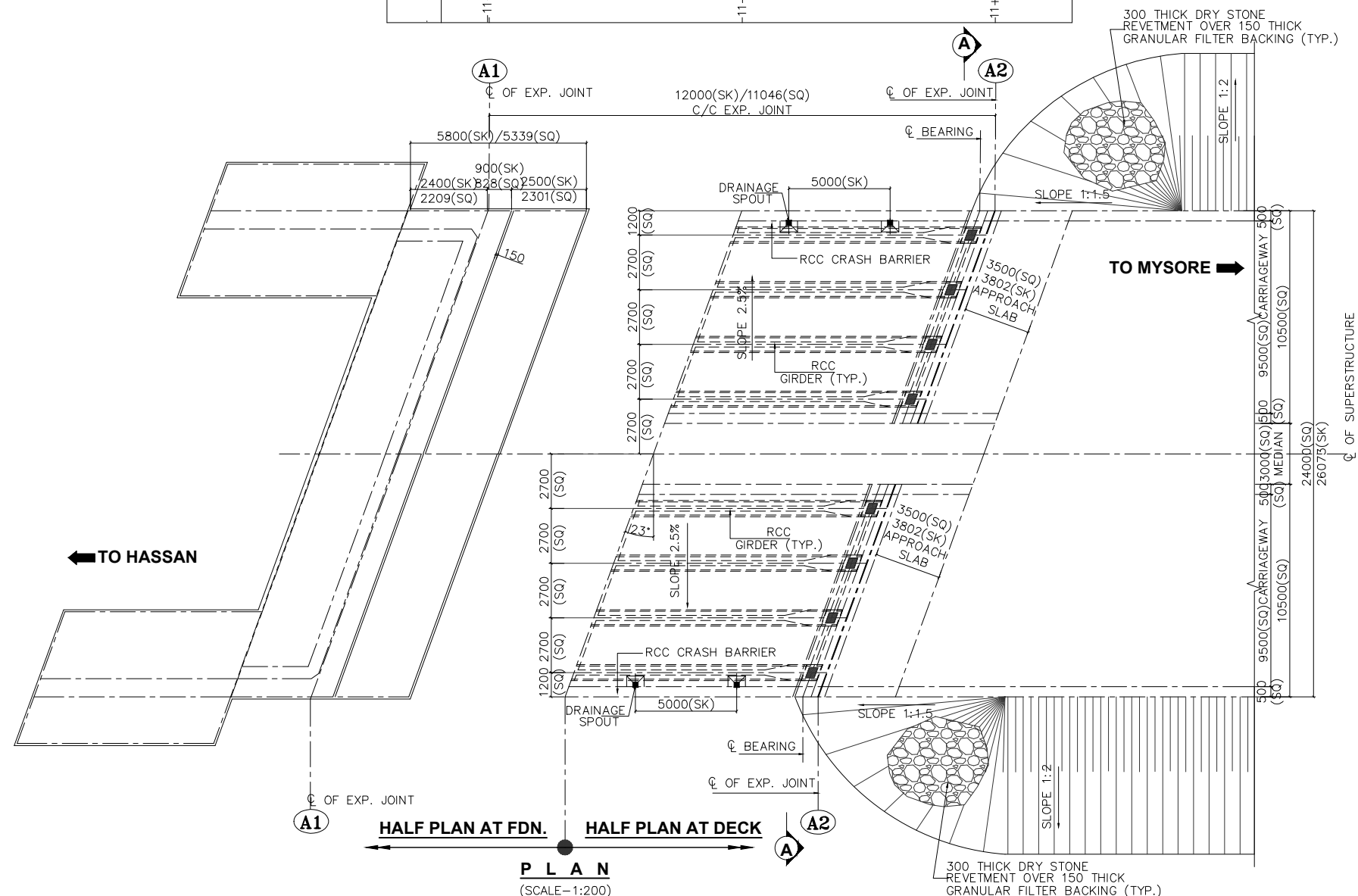
Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING MINOR BRIDGE AT CH.7+878 (NEW CONSTRUCTION)			
DRG. NO. 23-102/ITL/NH373/HNP/MNB/7+878/GAD-02			
DATE: 03-01-2024	SCALE:	SHEET NO: 2 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K

RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED



G.L.	852.351	852.956	852.638
CH.	11+346	11+412	11+477



NOTES :-

- TYPE OF BRIDGES - HIGH LEVEL BRIDGE.
- TOTAL LENGTH OF BRIDGE - 12.00M. BETWEEN FACES OF DIRT WALL
- SPAN ARRANGEMENT OF BRIDGE - 1NOS. @ 12.00 M. C/C
- OVER ALL WIDTH OF BRIDGE - 2X10.5 M.
- CLEAR CARRIAGEWAY WIDTH - 2X9.5 M.
- FORMATION LEVEL - 858.455M.
- SOFFIT LEVEL - 856.915M.
- INVERT LVL (I.L) - 852.297M.
- TYPE OF FOUNDATION - OPEN.
- FOUNDATION LEVEL (i) ABUTMENT - 849.351M.
- TYPE OF BEARINGS - ELASTOMERIC BEARING
- TYPE OF EXPANSION JOINT - STRIP SEAL
- TYPE OF RAILING - RCC RAILING
- APPROACH SLAB - RCC APPROACH SLAB
- GRADE OF CONCRETE - RCC M-35
- ABUTMENT - PSC GIRDER
- RCC M-45
- WEARING COAT - RCC M-30
- CAP & DIRT WALL - RCC M-35
- PIER - RCC M-35
- DECK SLAB - RCC M-35
- RCC CRASH BARRIER - RCC M-40
- RCC RAILING - RCC M-30
- APPROACH SLAB - RCC M-30
- SBC (A1) - 35.0 T/M2
- (A2) - 35.0 T/M2
- THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED (TMT) HYSD BARS (GRADE DESIGNATION Fe-500D). CONFIRMING TO IS:1786 STANDARDS.
- WEEP HOLES 100Ø SPACED AT 1000 C/C IN BOTH HORIZONTAL & VERTICAL DIRECTIONS SHALL BE PROVIDED IN A STAGGERED MANNER BEHIND ABUTMENTS/RETURN WALLS/RETAINING WALLS IN ONE OR TWO LAYERS ABOVE FOOTING TOP.
- 65mm THK. CONCRETE WEARING COAT SHALL BE PROVIDED.AS PER MORTH SPECIFICATION SECTION 500.
- LAYING OF FILTER MEDIA FOR DRAINAGE AND BACK FILLING BEHIND ABUTMENT/RETURN WALLS SHALL BE DONE IN ACCORDANCE WITH APPENDIX 6 OF IRC:78:2014 .
- BACK FILLING BEHIND ABUTMENTS SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78-2014 HAVING PROPERTIES $C=0, \phi > 30^\circ$, $\delta 20.0^\circ$ & $\gamma_d = 20 \text{ KN/m}^3$.
- THE CARRIAGEWAY OF PROPOSED BRIDGE IS DESIGNED FOR SINGLE LANE OF IRC CLASS 70 R OR TWO LANE OF IRC CLASS A LOADING WHICHEVER GOVERNS.

NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
R0	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

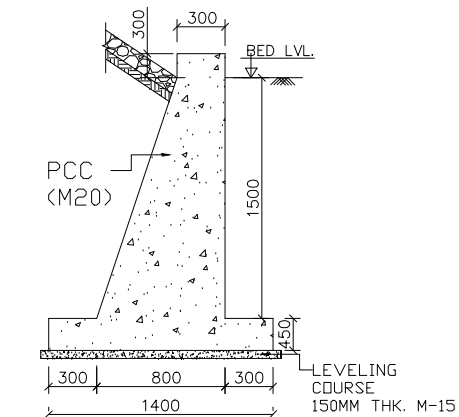
Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in



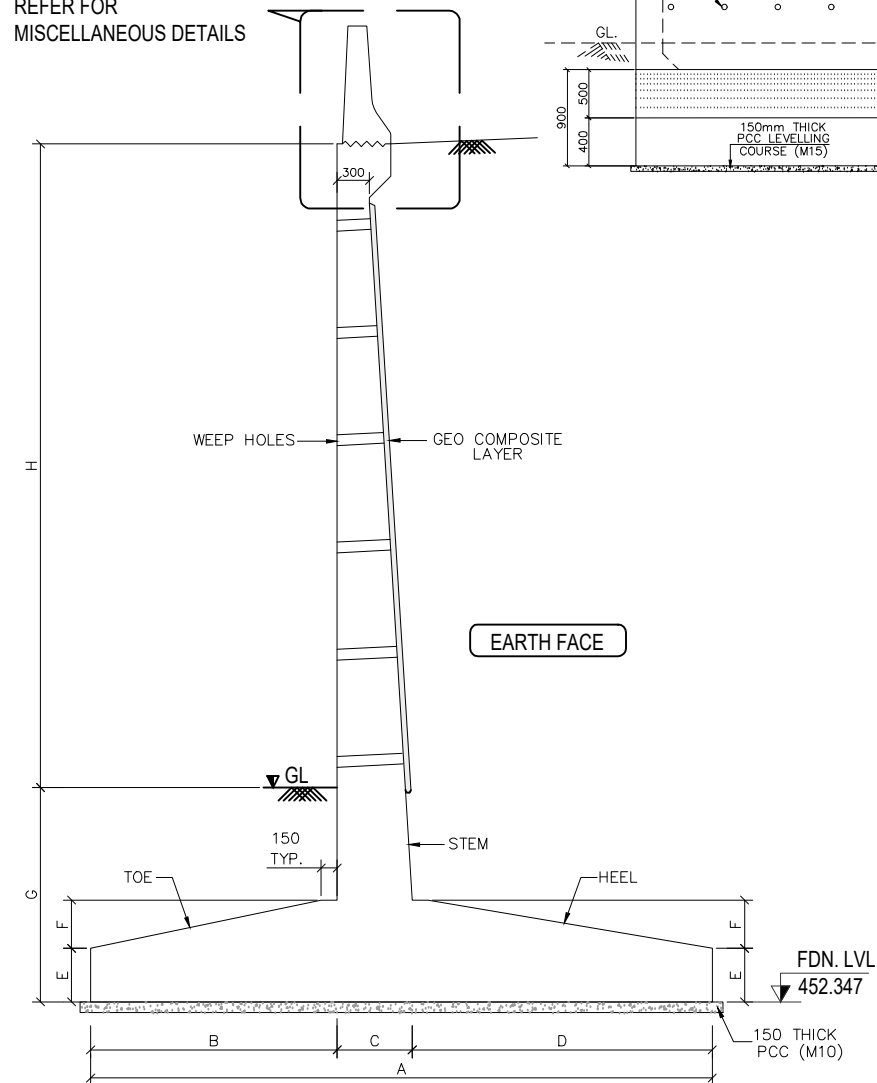
Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING MINOR BRIDGE AT CH.11+412 (NEW CONSTRUCTION)			
DRG. NO. 23-102/ITL/NH373/HNP/MNB/11+412/GAD-02			
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K

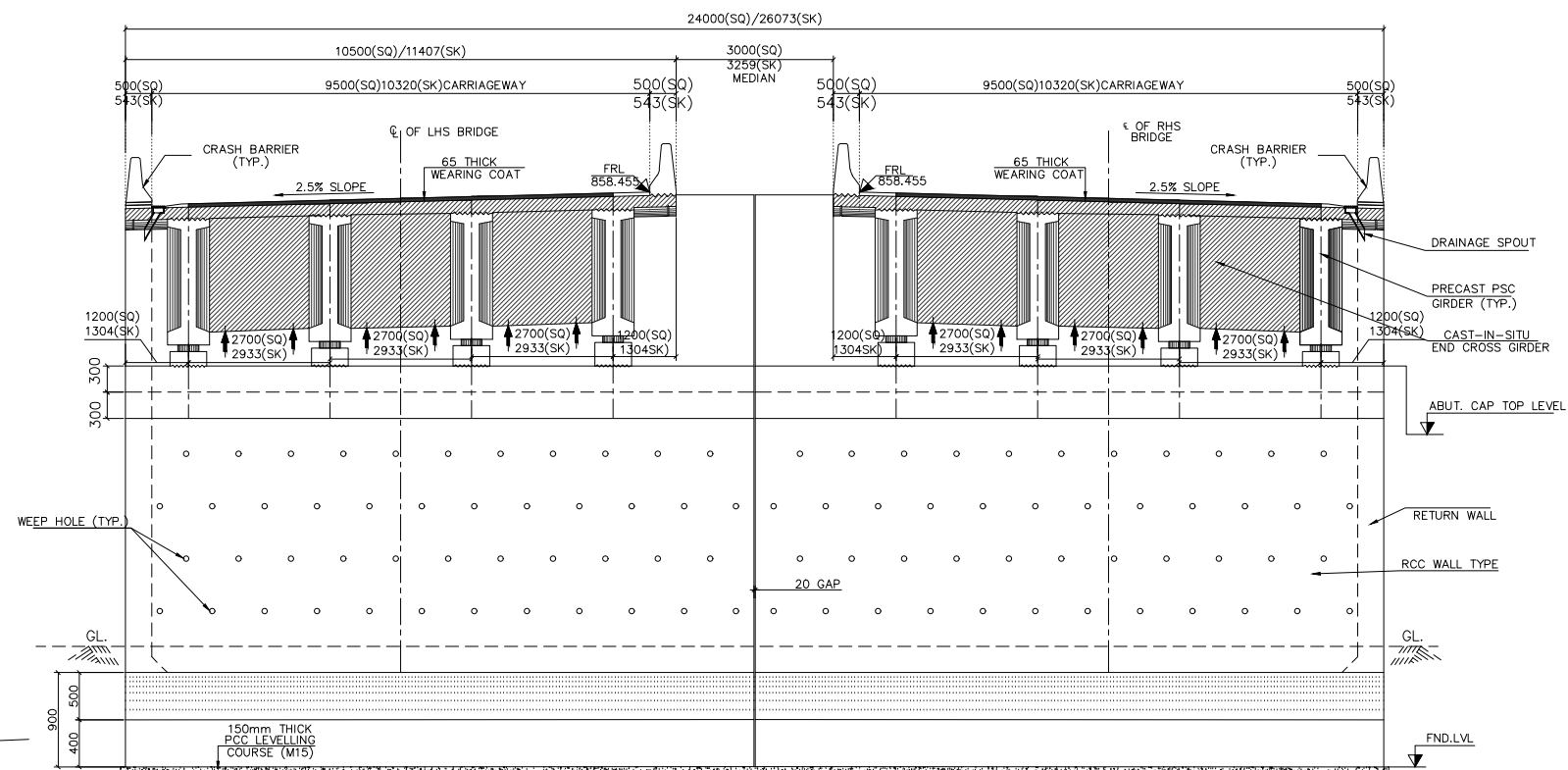


TYP. SECTION OF TOE WALL
(SCALE=1:75)

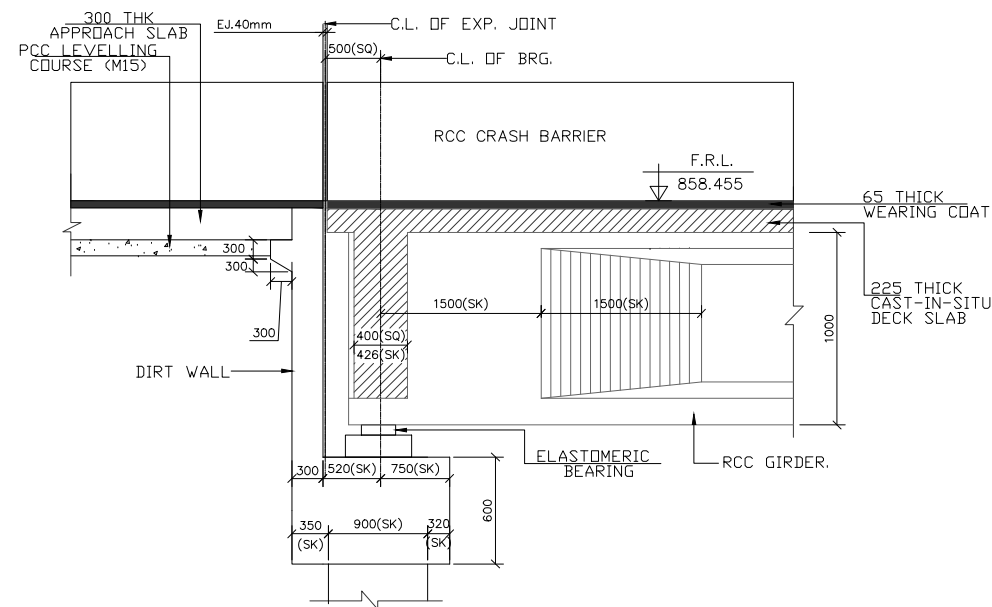
RCC CRASH BARRIER
REFER FOR
MISCELLANEOUS DETAILS



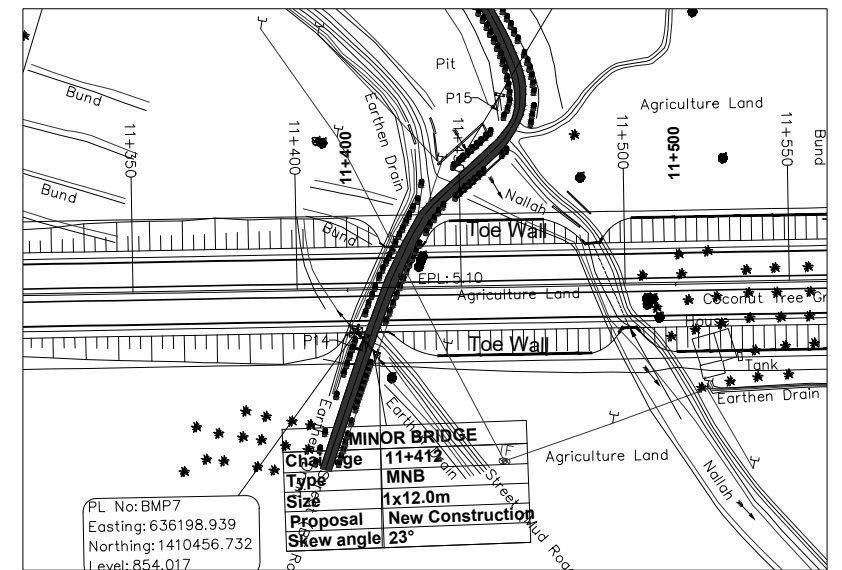
REFER THE DETAILS OF RETAINING WALL IN MISCELLANEOUS
(SCALE=1:50)



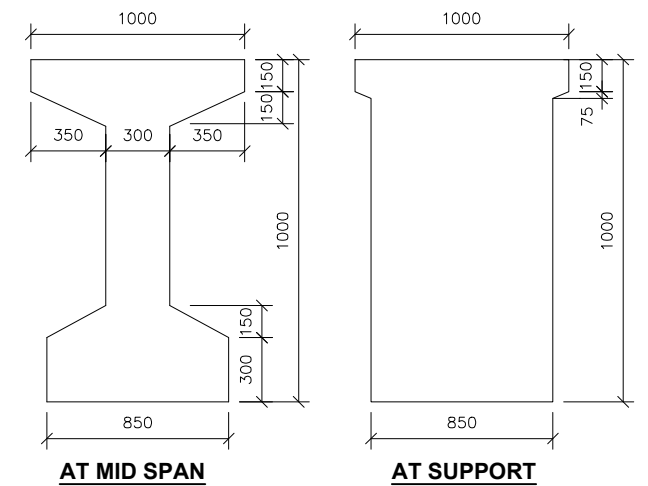
SECTION AT A-A
(SCALE=1:100)



DETAIL-'X'
(SCALE=1:50)



KEY PLAN



AT MID SPAN
AT SUPPORT
CROSS SECTION OF PRECAST RCC GIRDER
(SCALE=1:25)

NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

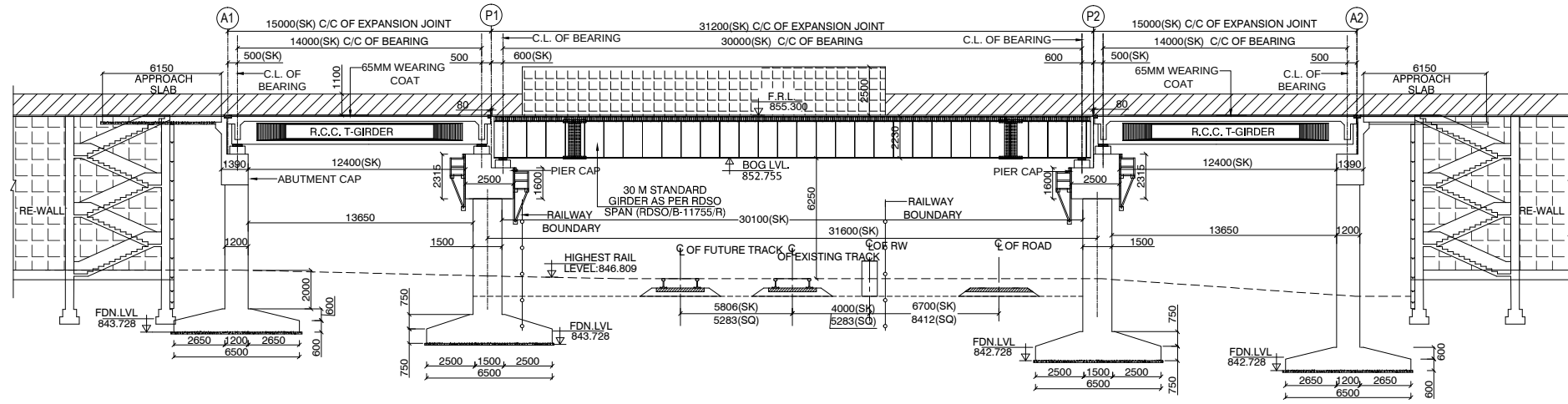
Client:	PWD- National Highways,
	Hassan Division
	(Government of Karnataka)

Consultant:	INDIAN TECHNOCRAT LIMITED
	In Association with
	Vistaara Infra Consultants
	New Delhi - 110 070, Ph. : 011-49531100,
	Email: info@itl.net.in

Project:	Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode
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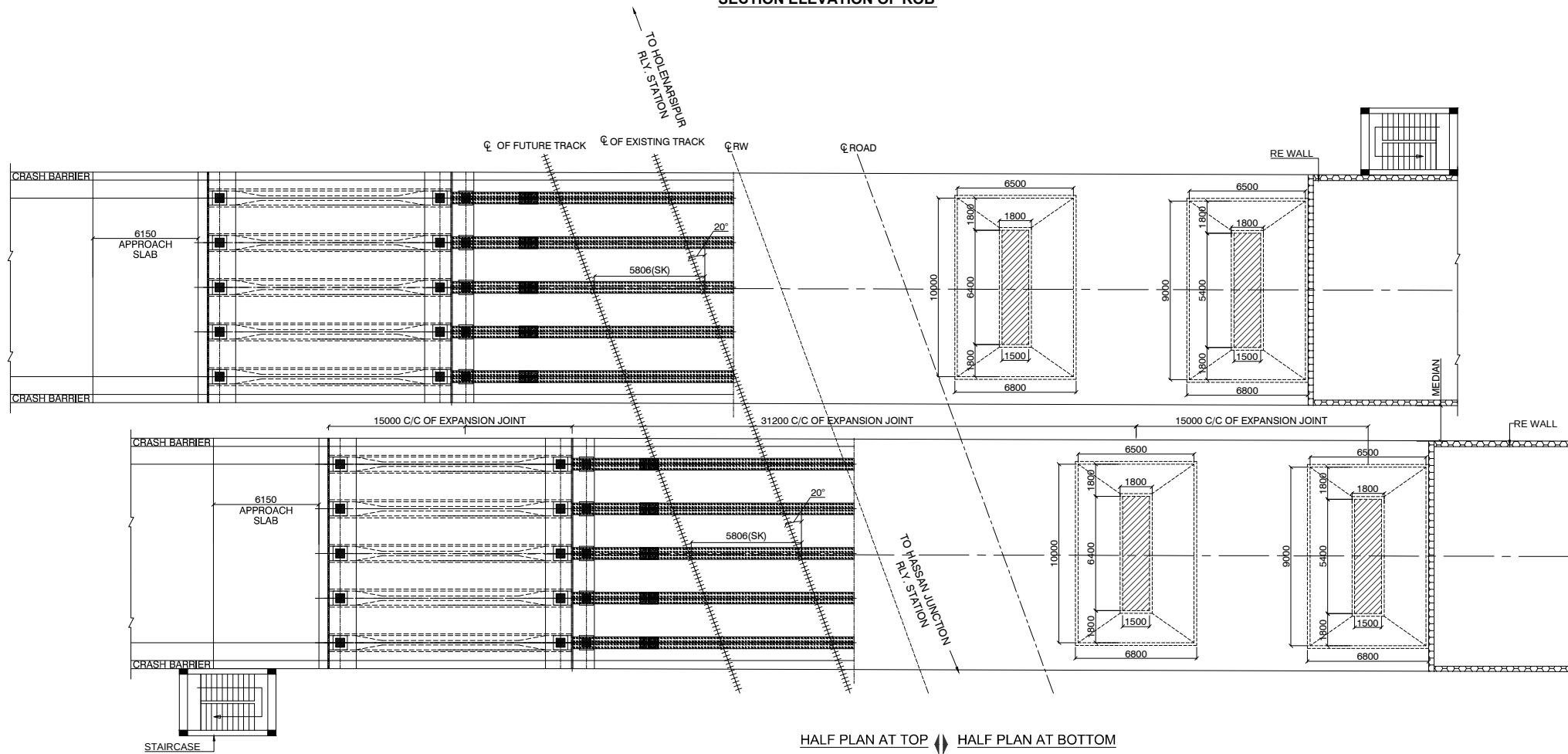
	Title: GENERAL ARRANGEMENT DRAWING MINOR BRIDGE AT CH.11+412 (NEW CONSTRUCTION)			
	DRG. NO. 23-102/ITL/NH373/HNP/MNB/11+412/GAD-02			
	DATE: 03-01-2024	SCALE:	SHEET NO: 2 OF 2	REV : R0
	DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K

ROB



PROPOSED F.R.L.	855.300	855.300	855.300	855.300	855.300
EXISTING G.L.	853.922	853.629	853.346	853.565	852.726
FOUNDATION LEVEL	843.728	843.728		842.728	842.728
CHAINAGE	1+100	1+115	1+130	1+145	1+160

SECTION ELEVATION OF ROB



HALF PLAN AT TOP HALF PLAN AT BOTTOM

NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

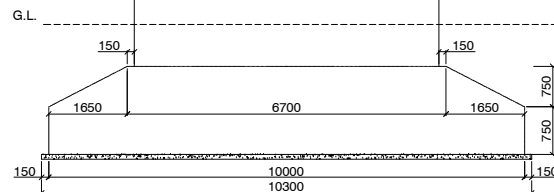
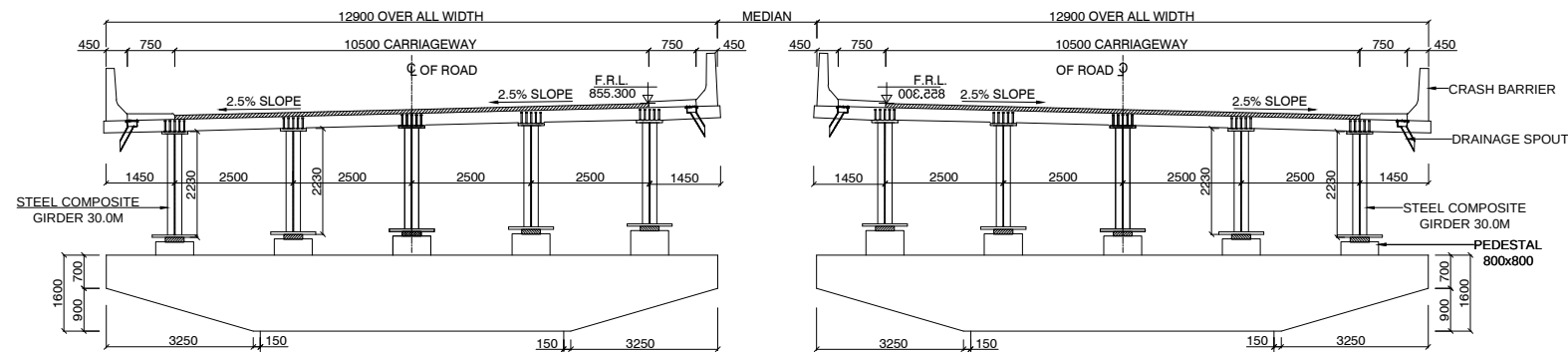
Client: **PWD- National Highways,**
Hassan Division
(Government of Karnataka)

Consultant: **INDIAN TECHNOCRAT LIMITED**
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
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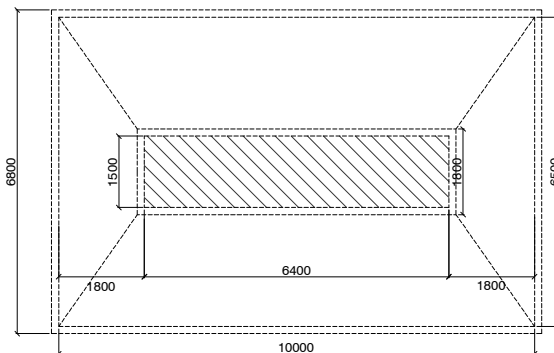


Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

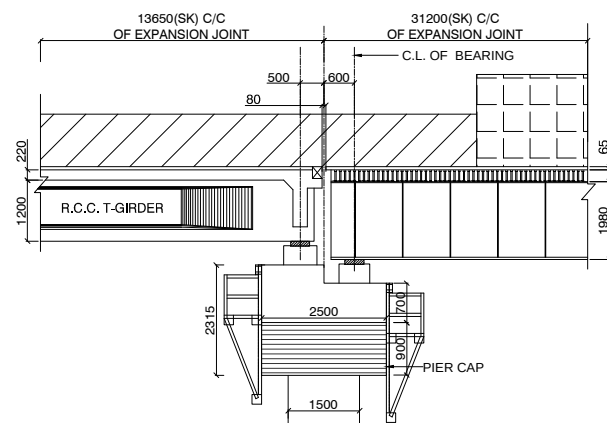
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DRG. NO. 23-102/ITL/NH373/HNP/ROB/1+130/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 3	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



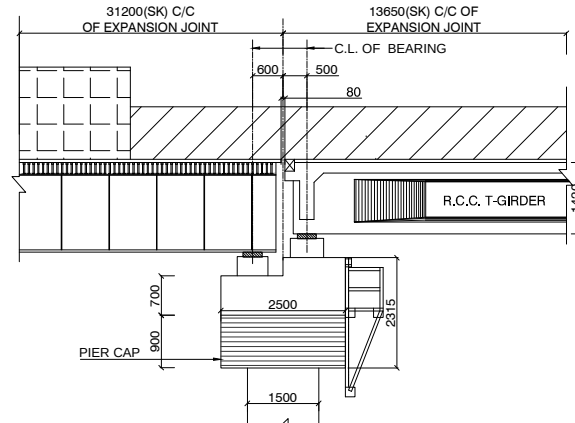
CROSS SECTION AT PIER



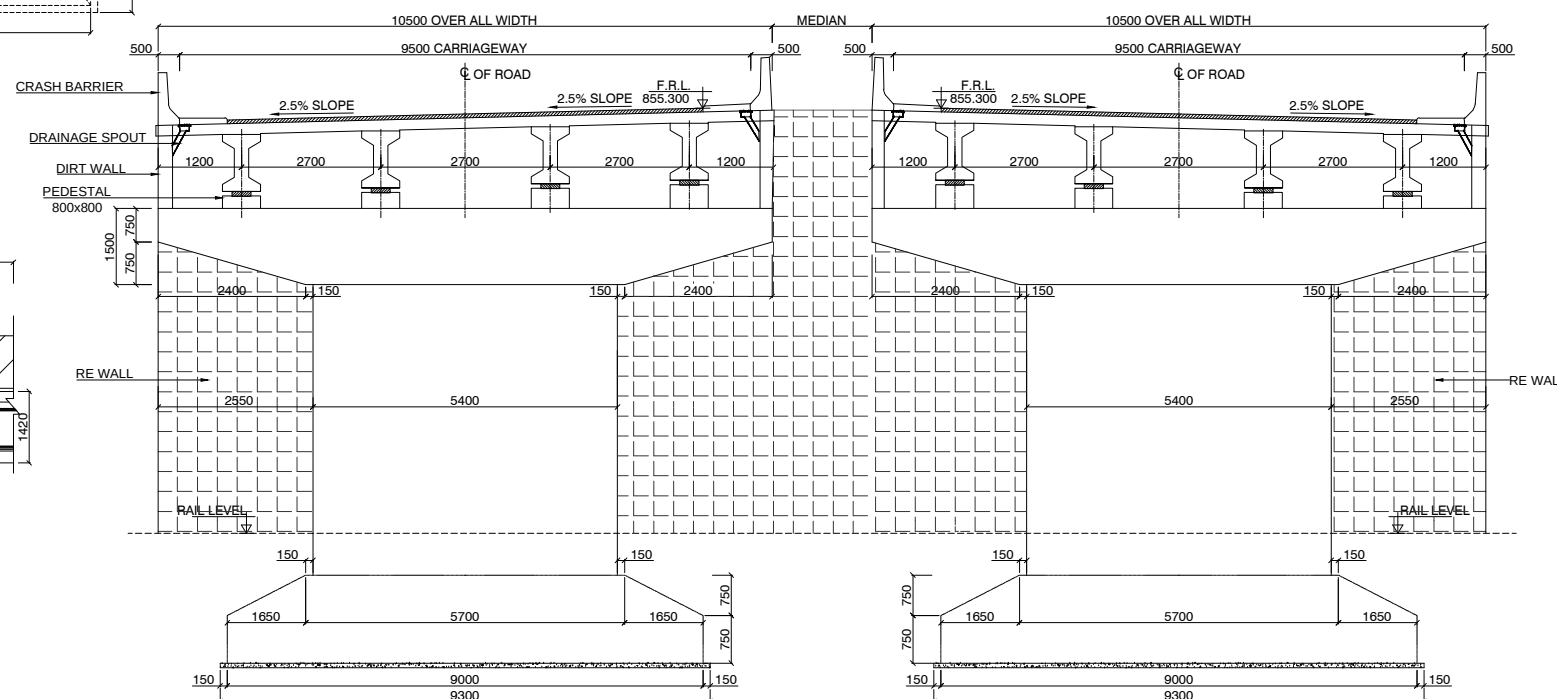
FOUNDATION PLAN



DETAIL OF PIER CAP P1

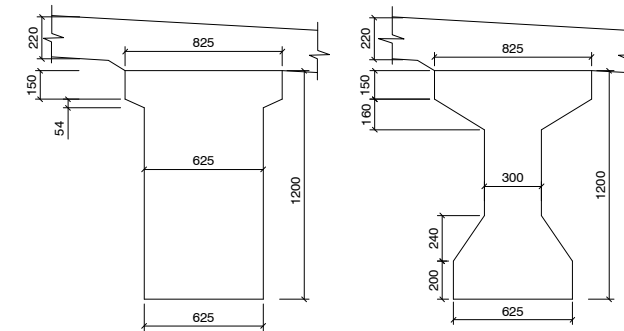


DETAIL OF PIER CAP P2

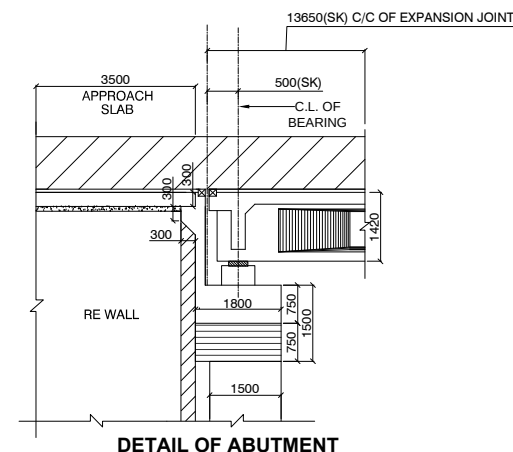


CROSS SECTION AT ABUTMENT

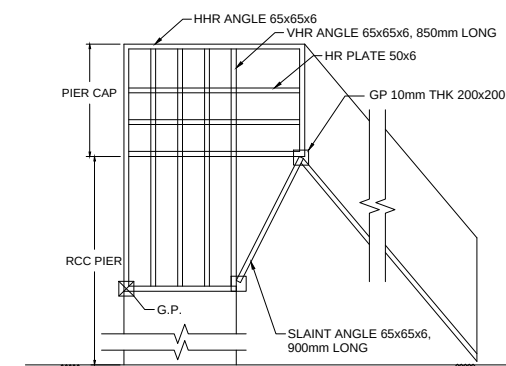
CROSS SECTION AT ABUTMENT



AT SUPPORT
AT MID
DIMENSION DETAILS OF RCC-I GIRDER



DETAIL OF ABUTMENT



SIDE ELEVATION SHOWING
LADDER DETAILS

NO.	DATE	INITIAL SUBMISSION	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION		R.S	S.K	S.K

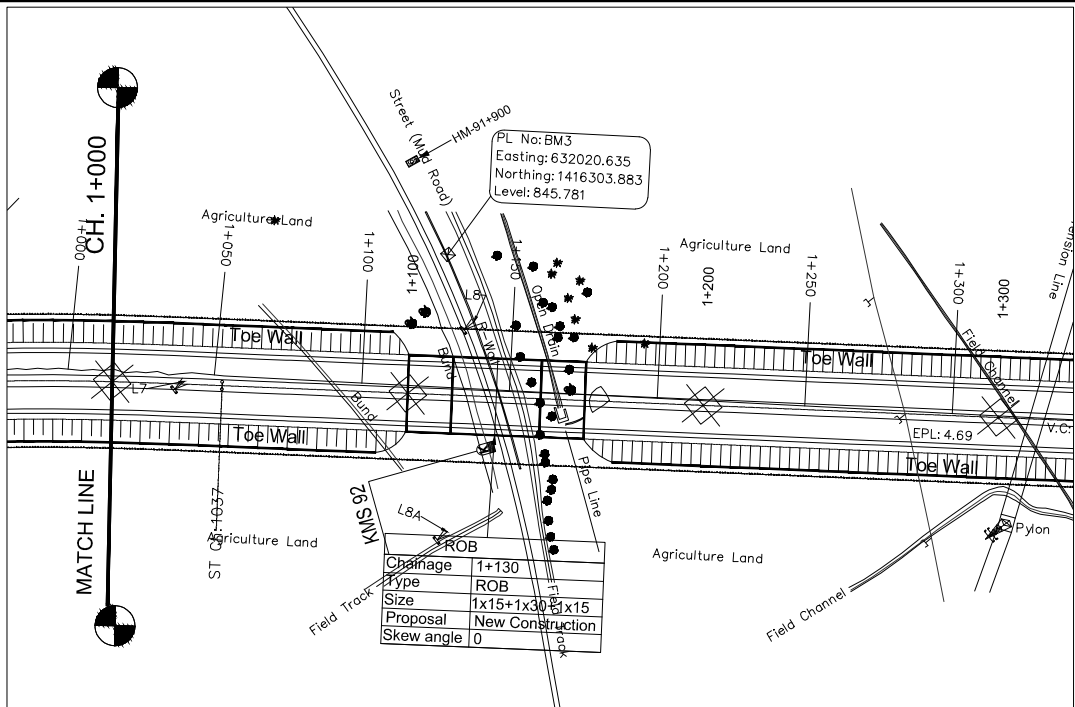
Client:
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Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING ROAD OVER BRIDGE (ROB) AT CHAINAGE:-1+130			
DRG. NO.	23-102/ITL/NH373/HNP/ROB/1+130/GAD-02		
DATE: 03-01-2024	SCALE:	SHEET NO: 2 OF 3	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



SAFETY NOTES:-

1. ADEQUATE SAFETY MEASURES FOR RUNNING TRAINS SHALL BE ADOPTED WHILE DOING THE EARTH WORK BELOW THE TRACK.
2. DURING CONSTRUCTION OF BRIDGE, THE EXISTING TRACK SHALL BE PROTECTED SUITABLY BY IMPOSING NECESSARY SPEED RESTRICTION BY PROVIDING TEMPORARY ENGINEERING INDICATORS.
3. DURING THE CONSTRUCTION OF PROPOSED BRIDGE PROPER SAFETY PRECAUTIONS TO BE TAKEN WHILE EXECUTING FOUNDATION WORK CLOSE TO EXISTING BRIDGE FOUNDATION INCLUDING IMPOSING OF SPEED RESTRICTIONS IF REQUIRED.
4. THE GRADUAL RELEASE OF SPEED RESTRICTION SHALL BE AS PER PARA 637(1)(F) OF NEW IRPWM JUNE 2020.
5. NECESSARY SHORING ARRANGEMENTS TO BE MADE TO PROTECT EXISTING BRIDGE STRUCTURE WHEREVER NECESSARY.
6. JOINT PROCEDURE ORDER ON SAFETY RELATED ISSUES PERTAINING TO WORK SITE IN CONSTRUCTION PROJECTS (JPO NO. W.339/SAFETY PRECAUTION, DT: 18.02.2011) ISSUED VIDE CTE LR.NO. SWR/W.247/SAFETY AT WORK SPOT, DT: 20.06.2017 IS TO BE STRICTLY FOLLOWED.
7. DURING EXECUTION OF WORK THE MATERIAL/ EQUIPMENTS SUCH AS RELEASED MATERIAL ETC. SHOULD NOT INFRINGE THE TRAIN TRAFFIC. ALL SAFETY MEASURES TO BE TAKEN BY ENGINEER IN CHARGE DURING EXECUTION.
8. SUITABLE SAFETY BARRICADING IS REQUIRED TO BE PROVIDED WHENEVER WORK IS BEING EXECUTED PARALLEL TO THE RUNNING TRACK.

FOLLOWING INSTRUCTIONS ISSUED VIDE PCE CIRCULAR NO.5/2021, DATED 01.09.2021 IS TO BE STRICTLY FOLLOWED :-

- a). PROPER DRAINAGE ARRANGEMENTS TO BE PROVIDED DULY ASSESSING CATCHMENT AREA INCLUDING HIGHEST RAINFALL INCURRED DURING PAST 20 YEARS.
- b). RAIN WATER HARVESTING SHOULD BE PLANNED AS PER SITE CONDITIONS.
- c). DRAINAGE ARRANGEMENTS SHOULD BE MADE INTEGRAL PART OF THE CONSTRUCTION OF THE RUB/SUBWAY (SUCH AS PROVISION OF CROSS DRAINS, CATCH WATER DRAINS AT APPROACHES WITH GRATING ARRANGEMENTS BEFORE HUMP, SIDE DRAINS, SOAK PIT/ COLLECTION WELL/ INJECTION WELL, ETC).
- d). ON THE APPROACH ROAD, THERE SHOULD BE A PROPER HUMP.
- e). A RETAINING WALL OF ADEQUATE HEIGHT SHOULD BE CONTINUED FOR A SUFFICIENT LENGTH, PREFERABLY UP TO THE HUMP TO AVOID FLOODING OF WATER FROM SIDES.
- f). JOINTS BETWEEN RCC BOX SEGMENTS IN RUB/SUBWAY SHOULD BE PROPERLY SEALED TO PREVENT SEEPAGE OF WATER.
- g). BACKFILL MATERIAL SHOULD BE AS PER CLAUSE 7.5 OF IRS BRIDGE SUBSTRUCTURE AND FOUNDATION CODE. IN LIEU OF GRADED FILTER (IN THE FORM OF BOULDER/COBBLES) ON THE VERTICAL WALLS.
- h). HUMP ON ROAD SIDE OR PROVISION OF REVERSE SLOPE OF ROAD BEFORE START OF DOWNWARD RAMP TO RUB/SUBWAY TO AVOID INGRESS OF WATER THROUGH RAMP AND SIDE RETAINING WALL SHOULD CONTINUE ALONG THE APPROACH SLOPE UP TO THE HUMP OR FROM WHERE REVERSE SLOPE STARTS.
- i). ELABORATE DRAINAGE ARRANGEMENT SHOULD BE DONE TO DIVERT SURROUNDING WATER.
- j). WHEREVER THE GROUND WATER TABLE WILL BE LOW, INJECTION RECHARGEABLE WELLS ARE TO BE PROVIDED.
- k). NO WEEP HOLES TO BE PROVIDED IN THE WING WALLS.
- l). ENGINEER-IN-CHARGE SHOULD DECIDE THE PROPER ARRANGEMENTS IN ADDITION TO ABOVE AS PER SITE CONDITION.
- m). CROSS SLOPE ARRANGEMENT (1 IN 40 SLOPE TOWARDS SIDE DRAIN) TO BE PROVIDED.
- n). CLEANING OF THE OUTLETS SHOULD BE ENSURED, SO THAT THERE IS NO STAGNATION OF WATER ON THIS ACCOUNT.

TENTATIVE MODUS OPERANDI:-

1. BEFORE EXECUTION OF WORK, TEMPORARILY DIVERT THE ROAD TRAFFIC AS SHOWN IN KEY PLAN.
2. CAST THE PRECAST RCC BOX SEGMENTS 3.0 M EACH OVER THE THRUST BED ALREADY CAST AND KEPT READY FOR PUSHING.
3. UNDER LINE BLOCK, DISCONNECT THE P.WAY TO REQUIRED LENGTH, EXCAVATE EARTH & INSERT THE TEMPORARY GIRDER OVER CRIBS, USING CRANE.
4. ALLOW THE TRAFFIC AT RESTRICTED SPEED OF 20KMPH.
5. UNDER LINE BLOCK,PUSH THE BOX SEGMENTS WITH THE HELP OF JACKS AND REMOVE THE SOIL IN FRONT OF THE BOX. ALLOW THE TRAFFIC AT RESTRICTED SPEED OF 20KMP.
6. UNDER LINE BLOCK, REMOVE THE TEMPORARY GIRDER, FILL THE EARTH AND LINK THE TRACK & ALLOW THE TRAFFIC AT THE RESTRICTED SPEED OF 20KMPH.
7. PENDING WORKS BEYOND THE BRIDGE PROPER WILL BE COMPLETED ALONG WITH DRAINAGE ARRANGEMENTS.
8. COMMISSION THE RUB AT CH:4719.00 DULY TAKING CRS SANCTION AND GOK APPROVAL.
9. AFTER COMPLETING ALL WORKS SR SHALL BE RELAXED AS PER IRPWM.

NOTES:-

01. ALL DIMENSIONS AND LEVELS ARE ARE IN METERS/ MILLIMETER UNLESS OTHERWISE SPECIFIED.
02. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
03. ACTUAL DIMENSIONS OF ROB SHALL BE DECIDED BY ENGINEER INCHARGE IN CONSULTATION WITH ROAD AUTHORITIES AT THE TIME OF CONSTRUCTION
04. DEPTH OF FOUNDATION MAY BE ALTERED BY ENGINEER IN CHARGE TO SUITE THE SOIL STRATA MET WITH AT SITE.
05. SHAPE AND SIZE OF COMPOSITE GIRDERS, BEARINGS,PEDESTALS, R.C.C. COLUMN, PIER CAP AND FOUNDATION SHOWN IN THIS DRAWING ARE TENTATIVE SUBJECT TO CHANGE DURING FINALIZATION OF DESIGN.
06. HE DESIGN AND DRAWING BEFORE SUBMITTING TO THE RAILWAY SHOULD BE PROOF CHECKED BY APPROVED PROOF CHECKERS, I,E, R.O.S.O, RITES, IIT, VJTI, GOVT COLLEGE OF ENGINEERING AND VNIT.
07. EXISTING HIGHEST RAIL TOP LEVEL, 567.265M HAS BEEN CONSIDERED FOR ALL PURPOSE FOR PREPARING GAD.
08. EXPOSURE CONDITIONS ARE MODERATE.
09. VERTICAL AND HORIZONTAL CLEARANCE SHOWN FROM THE RAILWAY TRACK IS OBLIGATORY AND SHOULD NOT BE REDUCED.
10. CASTING AND FABRICATION OF STEEL GIRDER SHALL NOT BE PERMITTED OVER THE RAILWAY TRACKS. THEY SHALL BE CAST /FABRICATED OUTSIDE AND THEN LAUNCHED/LIFTED OVER PIER CAP.
11. WEARING COAT OF THICKNESS 65MM.
12. STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED.
13. ANTI CRASH BARRIER TO BE PROVIDED AS PER APPROVED DRAWING OF MORT&H STANDARD AND SHALL BE CAST IN SITU.
14. POT PT.F.E. BEARING SHALL BE PROVIDED UNDER STEEL COMPOSITE GIRDERS.
15. WHILE CARRYING OUT EXCAVATION WORK FOR FOUNDATION, SHORING HAS TO BE DONE TO PROTECT SLIPPING OF SOIL, NECESSARY SPEED RESTRICTION WILL BE IMPOSED BY RAILWAY IF ANY EXCAVATION IS DONE BY THE SIDE OF THE RAILWAY.
16. THE STANDARD MINIMUM VERTICAL CLEARANCE OF 6.525 MTRS. FROM TOP OF RAILWAY TRACK BOTTOM OF GIRDER.
17. DRAWING AND DESIGN OF APPROACH SPANS AND APPROACHES SHALL BE DECIDED BY SPONSORING AUTHORITY AS PER CLAUSE 217-3 OF IRC CODE.
18. SAFE BEARING CAPACITY AT FOUNDATION LEVEL SHALL BE 150T/SGM.
19. MINIMUM GRIP LENGTH IN ROCK SHALL BE KEPT 1.0M AS PER BRIDGE MANUAL(PARA 403) APPROVED BY CRS.
20. A SEPARATE LAUNCHING SCHEME HAS TO BE SUBMITTED WHICH WILL BE APPROVED BY CRS BEFORE COMMENCEMENT OF LAUNCHING OF GIRDER.
21. STOPPERS SHOULD BE PROVIDED AT THE TOP OF PIER TO PREVENT POSSIBILITIES OF TOPPING OF GIRDER WHILE LAUNCHING.
22. EXECUTION OF ANY WORK WITHIN RAILWAY BOUNDARY FOR CONSTRUCTION OF ROB SHALL BE DONE ONLY IN PRESENCE OF RAILWAYS AUTHORIZED REPRESENTATIVE TO ENSURE THE SAFETY OF RUNNING TRAINS, NO HEAVY MACHINERY WILL WORK ALONG THE TRACK WITHOUT THE PRESENCE OF ANY RAILWAY AUTHORITY.
23. ADEQUATE PRECAUTIONS SHALL BE TAKEN AT SITE TO ENSURE SAFETY OF MEN AT WORK AS WELL AS RAIL TRAFFIC.
24. EXCAVATION BY BLASTING IS NOT ALLOWED.
25. THE DESIGN IS BASED ON THE FOLLOWING CODES. IRC 6-2014, IRC 18-2000, IRC 78-2014, IRC-24-2010, IRC: 83-1987, IRC: 37-2000
26. GRADE OF MATERIALS SHALL BE AS FOLLOWS:-
 - A) CONCRETE:
 - RAFT PIER ABUTMENT-M35
 - DECK SLAB, PSC GIRDER-M40
 - LEVELING COURSE-M20
 - RETAINING WALL-M30
 - B) SEISMIC COEFFICIENT CORRESPONDING TO SEISMIC ZONE-III WITH IMPORTANCE FACTOR OF 1.5 SHALL BE ADOPTED.
 - C) NO PLASTERING & CEMENT WORK PROTECTIVE COATING OVER THE CONCRETE IS PERMITTED. NO REPAIRS SHALL BE PERMITTED & BAD WORK WILL SUMMARIES QUALITY FOR REJECTION OF MEMBERS /ELEMENTS.
 - D) GUARD RAIL WILL BE PROVIDED AS PER STANDARD DRAWING AND ESTIMATED COST FOR PROVISION OF GUARD RAIL TO BE BORN BY SPONSORING AUTHORITY P.W.D.
 - E) ONE LANE OF IRC 70R OR TWO LANE OF IRC CLASS WHICHEVER PRODUCE MAXIMUM EFFECT SHALL BE CONSIDERED IN DESIGN.
 - F) LXING GATE WILL BE CLOSE AFTER COMMISSIONING OF ROB.
 - G) STANDARD PROTECTIVE SCREEN ABOVE EACH TRACK ON EITHER SIDE OF ROB ON CRASH BARRIER/ PARAPET SHALL BE PROVIDED AS PER DIRECTED BY ENGINEER IN CHARGE.
 - H) ELECTRICAL (G) WORKS INVOLVED IF ANY SHALL BE CARRIED OUT BY CONCERN ELECTRICAL DEPT.
 - I) PAINTING OF NEW STEEL WORK OF ROB SANDBLASTING OF STEEL GIRDE/MEMBER METALLIZING LONG LINES PAINTING OF STEEL COMPONENTS COMPLETE APPROVED ALUMINIUM/ ZINC METAL FOLLOWED BY PROTECTIVE COATING PAINTING AS PER IRBM 1998 PARA 218.
 - J) FOR FABRICATION OF STEEL GIRDER FOLLOW THE R.D.S.O. GUIDE LINE
 - K) BS-110,112 AND SPECIFICATION OF B-1.2001
 - L) FABRICATION OF STEEL GIRDER SHALL BE FABRICATED RDS.S.O APPROVED WORK SHOP.

ADDITIONAL NOTES:-

34. INSPECTION FACILITIES ARE TO BE PROPERLY DESIGNED WITH ADEQUATE SPACE ON PIER CAP TOP FOR KEEPING JACKS AND OTHER EQUIPMENTS REQUIRED DURING MAINTENANCE.
35. FABRICATION OF GIRDER WILL BE INSPECTED BY REPUTED THIRD PARTY LIKE RITES/WRUCEIL IN ACCORDANCE TO RAILWAY BOARD'S LETTER No. 2017/16/CEI/BR/GIRDER INSPECTED DATED 28/05/2017.
36. SAFETY, RELIABILITY AND LONG TERM DURABILITY OF THE OVERHEAD STRUCTURES SHALL BE ENSURED DURING THE DESIGN AND EXECUTION STAGES AS PER CENTRAL RAIL WAY No W 641 RR POLICY DATED 10.10.2018.
37. ARRANGEMENT FOR PROTECTION OF WORKSITE, AS PER PROVISION OF IRPWM AND RLY. BOARD INSTRUCTIONS SHOULD BE PROVIDED.

ROB DATA	
LENGTH OF RAILWAY PORTION SPANS	1X15.00M.+1X31.20m+1X15.00M
1. OVERALL WIDTH	12900
2. FOOTPATH	AS PER RDSO DRAWING-RDSO/B-11755/R
3. DECK SLAB THICKNESS	250/COMPOSITE STEEL GIRDER),220(RCC GIRDER)
4. WEARING COAT	65
5. RAIL TOP LEVEL	846.809M
6. FORMATION LEVEL	855.300M
7. FOUNDATION TYPE	OPEN FOUNDATION
8. TYPE OF SUBSTRUCTURE	RCC WALL TYPE
9. TYPE OF SUPER STRUCTURE	COMPOSITE STEEL GIRDER
10. SEISMIC ZONE	II
11. APPROACH GRADIENT	ROB AT APPROACHES BOTH SIDE
12. SOFFIT LVL	852.755
13. ROB SKEW ANGLE	20.0°
14. L.C. NUMBER	-

GENERAL NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS (W.R.TO MSL) IN M UNLESS OTHERWISE SPECIFIED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. EXPOSURE CONDITION IS MODERATE.
4. SEISMIC ZONE IS ZONE - II
5. STANDARD OF LOADING ON BRIDGE 2ST AXLE LOADING-2008 STANDARD
6. STANDARD OF LOADING ON ROAD: IRC LOADING
7. PROPOSAL IS SHOWN IN RED COLOR IN KEY PLAN.
8. THE TRACK FOR THE BRIDGE PORTION IS WITH LONG WELDED RAILS.
9. THIS DRAWING IS PREPARED BASED ON DATA COLLECTED FROM SITE BY FIELD EXECUTIVES.
10. THE ENTIRE WORK SHALL BE EXECUTED AS PER THE INSTRUCTIONS AND TO THE SATISFACTION OF ENGINEER IN CHARGE AT SITE.
11. RAIL LEVEL FORMATION LEVEL ETC. SHOULD BE CROSS VERIFIED BY THE ENGINEER-IN-CHARGE DURING EXECUTION AS PER LATEST APPROVED WORKING SECTION.
12. THIS GAD IS SUBJECT TO MAINTAINING SAME LEVELS, ALIGNMENT, GRADE & TRACK CENTRE DISTANCE AS THAT OF APPROVED WORKING SECTION WORKING PLAN AND YARD PLANS IF ANY.
13. THE MINIMUM HORIZONTAL AND VERTICAL DISTANCES HAS BEEN PROVIDED AS PER THE LATEST SOD FOR RAILWAY.
14. ON TOP OF CONCRETE AT THE END OF EACH DAY WORK, DEPRESSION SHALL BE MADE TO RAILW FORM KEYS FOR ADEQUATE BOND FOR NEXT DAY CONCRETING.
15. ALL RCC SURFACES COMING IN CONTACT WITH THE SOIL, MUST BE PAINTED WITH APPROVED PROTECTIVE PAINT NO OTHER CONCRETE SURFACE SHALL BE PAINTED AND IN THIS CONNECTION INSTRUCTIONS 94/600-700 ISSUED VIDE CAO LETTER NO W 148/contral/policy/Vol.IV. DATED 04.05.2019 TO BE FOLLOWED STRICTLY
16. NO CONSTRUCTION JOINT SHALL BE NORMALLY ALLOWED IN CONCRETE WITHOUT SPECIAL PRECAUTIONS AS PER RELEVANT CODES.
17. CONTROLLED CONCRETE WITH WEIGH BATCHING SHALL BE USED FOR CONCRETE.
18. CURING OF ALL CONCRETE WORK AS PER RELEVANT CODES OF PRACTICE SHALL BE ENSURED.
19. UNDERGROUND CABLE ETC. IF ANY SHALL BE REMOVED AND RE ALIGNED BEFORE THE EXECUTION OF WORK STARTS &T CABLES SHALL BE PROTECTED AT SITE BY EXECUTING AGENCY ALL PRECAUTIONARY STEPS MUST BE TAKEN ACCORDING TO TELECOMMUNICATION CIRCULAR NO 17/2013 ISSUED BY RAILWAY BOARD VIDE LETTER NO 2003/TELE/RCIL/PT IX,DATED: 24.06.2013.
20. THE TYPE AND DEPTH OF THE FOUNDATION SHOWN IN GAD ARE INDICATIVE ONLY ACTUAL TYPE AND DEPTH WILL BE DECIDED BY THE ENGINEER-IN-CHARGE AS PER THE ACTUAL SOIL ENCOUNTERED AT SITE DURING EXECUTION.
21. ALL STRUCTURAL DIMENSIONS SHOWN IN THIS GAD ARE TENTATIVE. THE DIMENSIONS SHOWN IN THIS GAD ARE BASED ON THE PRELIMINARY DESIGN.THE DETAILED DESIGN DRAWING WILL BE PROCESSED SEPARATELY AFTER THE APPROVAL OF GAD.
22. OPEN FOUNDATION DY CE/CN SHOULD ENSURE MAXIMUM CALCULATED FOUNDATION PRESSURE AT FOUNDATION LEVEL SHALL NOT EXCEED SAFE BEARING CAPACITY OF SOIL AT THAT LOCATION.
23. PROPER DRAINAGE ARRANGEMENTS HAVE TO BE PROVIDED TO LEAD THE WATER FROM RUB TO LOW LYING AREAS EITHER BY LAYING UNDERGROUND PIPES/ OPEN DRAINS WITH PROPER MAINTAINABILITY OR BY USING RAINWATER HARVESTING TECHNIQUES.
24. NECESSARY GUARD RAILS SHALL BE PROVIDED ON TRACK AT RUB LOCATIONS.
25. IT SHOULD BE ENSURED THAT THE REDUCED LEVELS OF ROAD TOP IN APPROACHES AND RAILWAY PORTION SHOULD BE SMOOTH WITHOUT ANY ABRUPT CHANGE IN LEVELS.
26. SUITABLE HEIGHT GAUGE TO BE PROVIDED ON EITHER SIDE OF RUB LOCATION.
27. DURING EXECUTION OF WORK, MEASURES AS ADVISED BY CCRS/LUCKNOW VIDE LETTER NO M 15013/0132017-18-T N, DATED: 27.04.2018 AS COMMUNICATED BY CRS/SBC LETTER NO. 0.22011/12/2013-14-5WR, DATED: 09.05.2018 SHALL BE ADOPTED.
28. DETAILED INSTRUCTIONS ISSUED ON CONSTRUCTION OF BOX SEGMENTS/ RUB LHS BY CCRS/LKO VIDE LETTER NO:M.15013/01/2017-18-T-W. DATED: 27.04.2018 FORWARDED BY CRS/SBC VIDE LETTER NO 02201/12/2013-14-SWR/189-190, DATED: 09.05.2018 SHALL BE FOLLOWED.
29. THE JOINTS OF RCC BOX SEGMENTS SHALL BE SEALED AS ADVISED IN THE DETAILED SCHEME ISSUED BY CBE/BR/CBE, LR NO SWR/W/POLICY 2020, DT: 12/07/2021.
30. INSTRUCTIONS CONVEYED VIDE PCE'S CIRCULAR NO 01/2015 DATED 09/03/2015 REGARDING WORK DISCIPLINE AT SITE AND AS PER PCE CIRCULAR NO 01/2021 DATED 22.06.2021 REGARDING ENSURING QUALITY OF WORK AND MAINTAINING SITE RECORDS IN WORKS CONTRACTS TO BE STRICTLY FOLLOWED.
31. THE RCC BOXES SHALL BE PLACED OVER PRECAST BASE SLAB IN SUCH A MANNER THAT JOINT OF BOXES ARE STAGGERED WITH JOINT OF SLAB.
32. THE PRESSURE GROUTING OF JOINTS BETWEEN THE BOX SEGMENTS TO BE ENSURED AND STAGGERING OF JOINTS BETWEEN THE LEVELLING SLAB AND RCC BOXES, COVERING THE TOP AND SIDES OF THE BOX USING CONCRETE CONVAS WITH COMPOSITE DRAIN, PROPER LEVEL AND ALIGNMENT OF THE BOXES. PRECAUTIONS AS PER LWR WHILE ISOLATING AND CONVERTING INTO LWR ARE TO BE PERSONALLY ENSURED BY DY CE CONCERNED.
33. GAP BETWEEN BOTTOM OF RH GIRDER AND TOP OF PROPOSED BOX IS TO BE ENSURED BY ENGINEER IN CHARGE PERSONALLY PRESENTED DURING THE LAUNCHING OF RCC BOX TO ENSURE THAT THE CRANE DOES NOT HIT THE RH GIRDER THE PLACEMENT OF THE BOXES AND GEOMETRY OF THE TRACK TO BE ENSURED BEFORE ALLOWING EVERY TRAIN.
34. THE LENGTH OF THE LEVEL PORTION OF THE RUB ACROSS THE TRACK IS PLANNED TO CATER TO THE FUTURE EXPANSION OF HOLENARASIPUR YARD.
35. BEFORE & DURING EXECUTION OF WORK, CONCERNED STATE GOVERNMENT OFFICIALS SHOULD BE CONTACTED IN CONNECTION WITH CLOSURE OF LC.
36. ENGINEER IN-CHARGE SHALL ENSURE THAT PROPER DRAINAGE ARRANGEMENTS SHALL BE PROVIDED, SO THAT RUNOFF FROM NEARBY CATCHMENT AREA WILL NOT ENTER THE APPROACHES OF THE ROB.

SOUTH WESTERN RAILWAY	
DIVISION – SECUNERABAD	SECTION –
CHECKED BY NHAI	
EE	CE
CE	RO
RO	SE
SE	CE
DRM	
Sr.DEN (CO.)	CBE
Sr.DOM	DY.C.E./BR./DESIGN
Sr.DSTE	
Sr.DEE (TRD)	AXEN/BRIDGE DESIGN/HQ
Sr.DEN (S.)	
DIVISIONAL OFFICERS SIGNATURE	SSE/DRAWING
CE'S DRAWING NO.	NCR HQ OFFICERS SIGNATURE

RO NO.	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K
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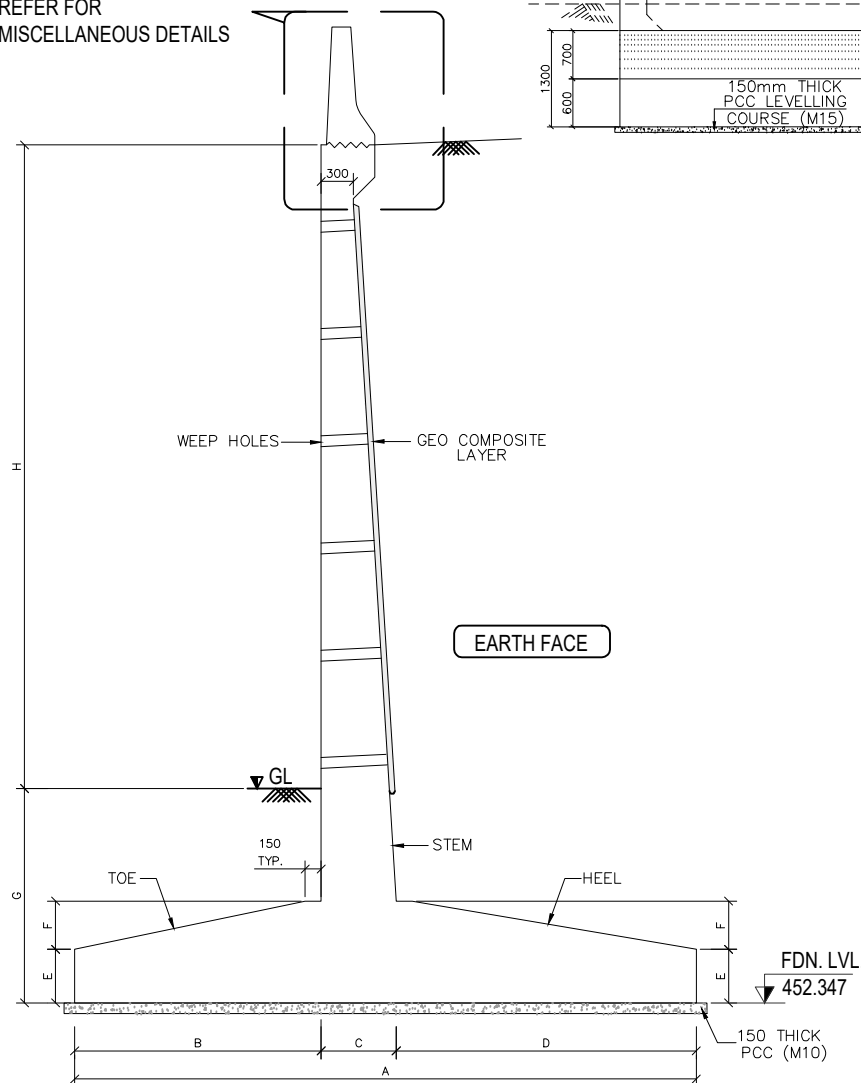
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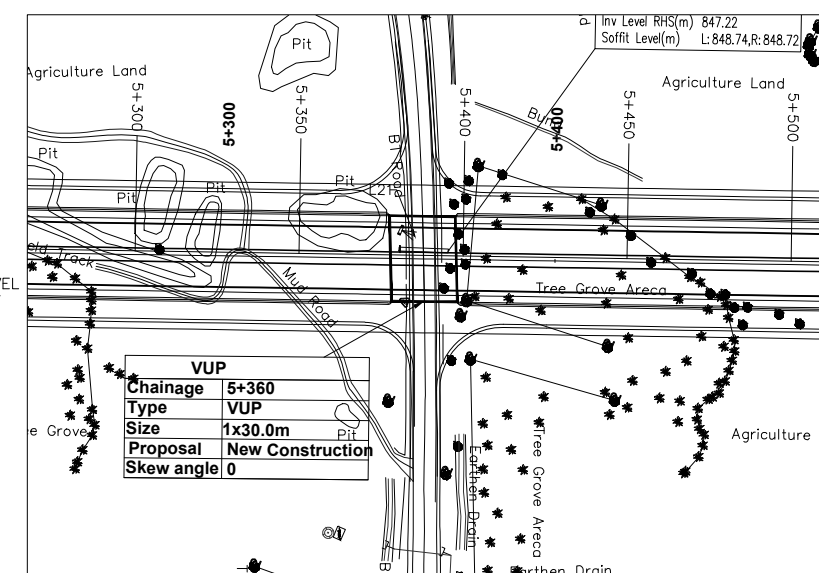
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APPROVED	S.K

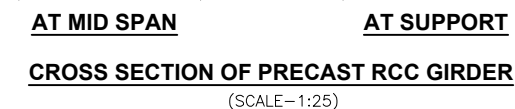
VUP



REFER THE DETAILS OF RETAINING WALL IN MISCELLANEOUS
(SCALE-1:50)



KEY PLAN



RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K
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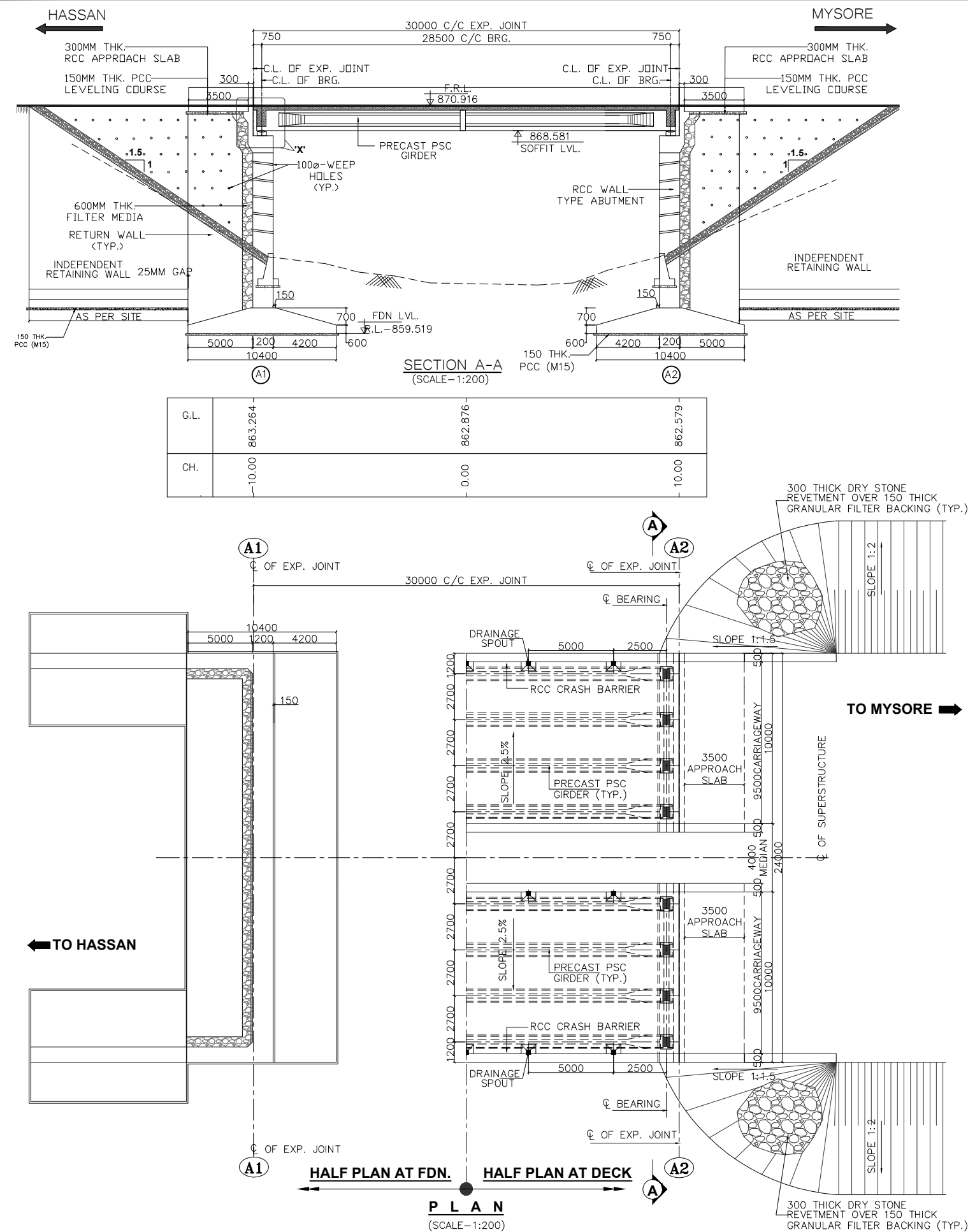
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Email: info@iti.net.in



Project:	Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode
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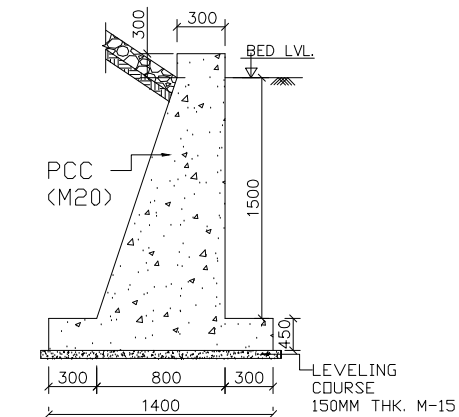
Title: GENERAL ARRANGEMENT DRAWING VEHICLE UNDERPASSES AT CH.5+360 (NEW CONSTRUCTION)			
DRG. NO.		23-102/ITL/NH373/HNP/VUP/5+360/GAD-02	
DATE: 03-01-2024	SCALE:	SHEET NO: 2 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



NOTES :-

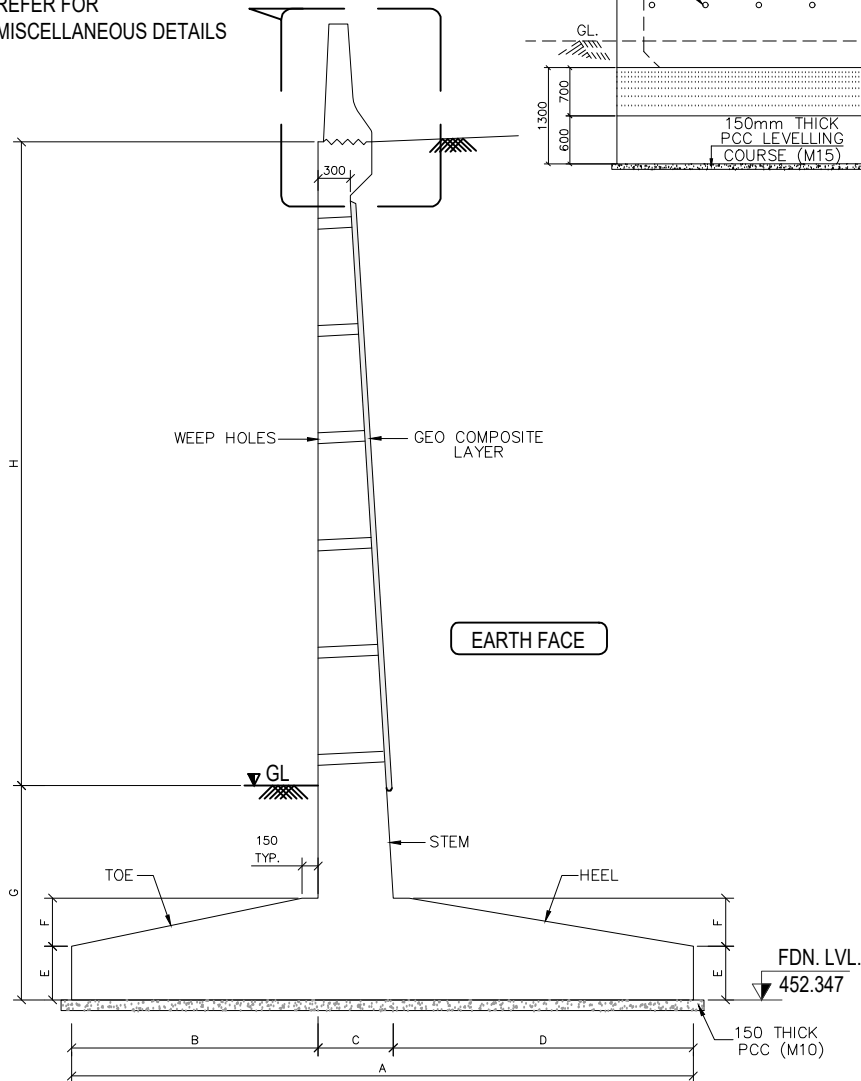
- TYPE OF BRIDGES - HIGH LEVEL BRIDGE.
 - TOTAL LENGTH OF BRIDGE - 30.00M. BETWEEN FACES OF DIRT WALL
 - SPAN ARRANGEMENT OF BRIDGE - 1NOS. @ 30.00 M. C/C
 - OVER ALL WIDTH OF BRIDGE - 2X10.5 M.
 - CLEAR CARRIAGEWAY WIDTH - 2X9.5 M.
 - FORMATION LEVEL - 870.916M.
 - SOFFIT LEVEL - 868.5813M.
 - CROSS ROAD LVL (C.R.S) - 862.876M.
 - TYPE OF FOUNDATION - OPEN.
 - FOUNDATION LEVEL (i) ABUTMENT - 859.519M.
 - TYPE OF BEARINGS - POT CUM PTFE
 - TYPE OF EXPANSION JOINT - STRIP SEAL
 - TYPE OF RAILING - RCC RAILING
 - APPROACH SLAB - RCC APPROACH SLAB
 - GRADE OF CONCRETE -
- | Part | Material | Thickness/Width |
|-------------------|-----------|-----------------|
| ABUTMENT | RCC M-35 | |
| PSC GIRDER | | |
| RCC M-45 | | |
| WEARING COAT | RCC M-30 | |
| CAP & DIRT WALL | RCC M-35 | |
| PIER | RCC M-35 | |
| DECK SLAB | RCC M-35 | |
| RCC CRASH BARRIER | RCC M-40 | |
| RCC RAILING | RCC M-30 | |
| APPROACH SLAB | RCC M-30 | |
| (A1) | 35.0 T/M2 | |
| (A2) | 35.0 T/M2 | |
- THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED (TMT) HYSD BARS (GRADE DESIGNATION Fe-500D). CONFIRMING TO IS:1786 STANDARDS.
 - WEEP HOLES 100Ø SPACED AT 1000 C/C IN BOTH HORIZONTAL & VERTICAL DIRECTIONS SHALL BE PROVIDED IN A STAGGERED MANNER BEHIND ABUTMENTS/RETURN WALLS/RETAINING WALLS IN ONE OR TWO LAYERS ABOVE FOOTING TOP.
 - 65mm THK. CONCRETE WEARING COAT SHALL BE PROVIDED.AS PER MORTH SPECIFICATION SECTION 500.
 - LAYING OF FILTER MEDIA FOR DRAINAGE AND BACK FILLING BEHIND ABUTMENT/RETURN WALLS SHALL BE DONE IN ACCORDANCE WITH APPENDIX 6 OF IRC:78:2014 .
 - BACK FILLING BEHIND ABUTMENTS SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78-2014 HAVING PROPERTIES $C=0, \phi>30^\circ, \delta 20.0^\circ$ & $\gamma_d = 20 \text{ KN/m}^3$.
 - THE CARRIAGEWAY OF PROPOSED BRIDGE IS DESIGNED FOR SINGLE LANE OF IRC CLASS 70 R OR TWO LANE OF IRC CLASS A LOADING WHICHEVER GOVERNS.

						Client:	PWD- National Highways,																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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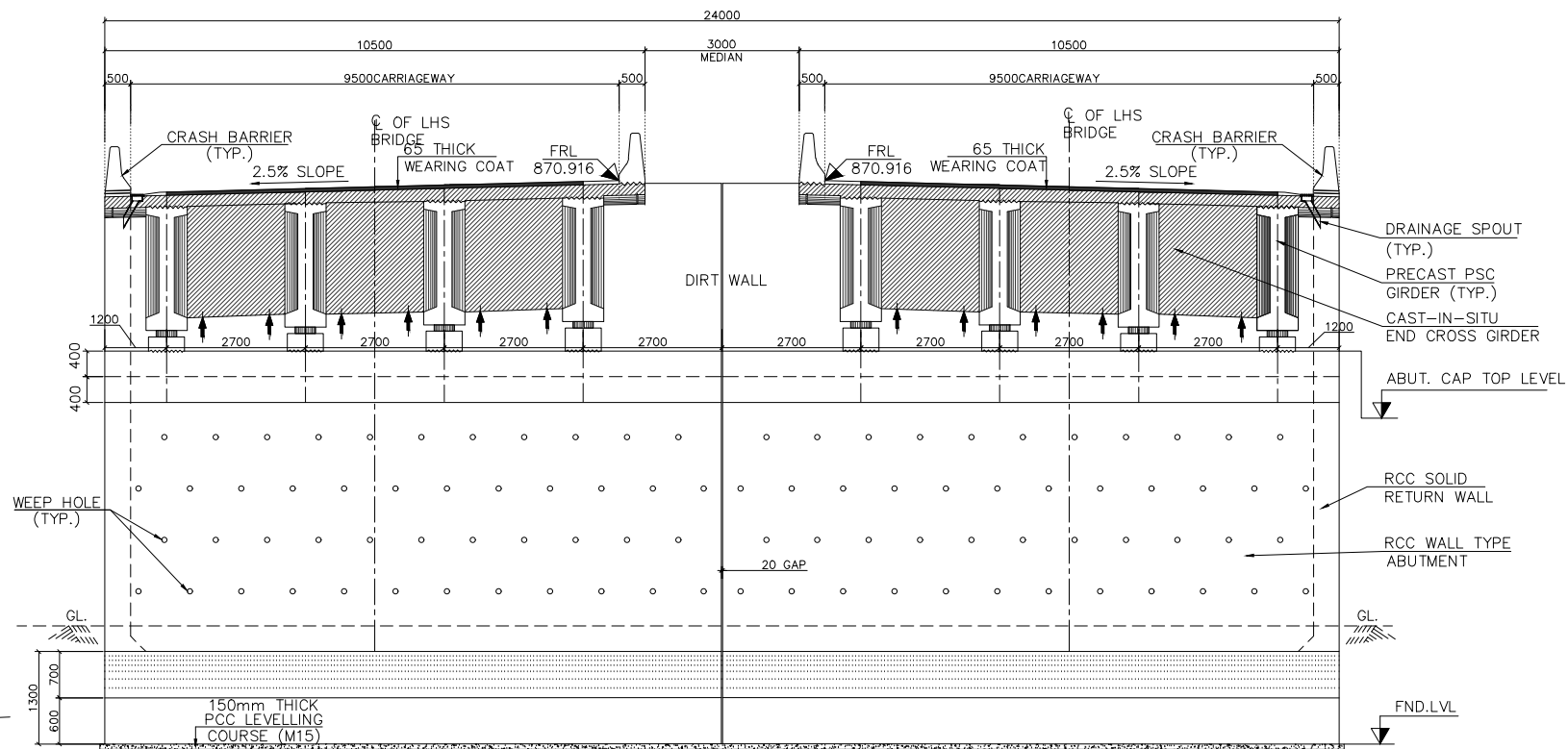


TYP. SECTION OF TOE WALL
(SCALE-1:75)

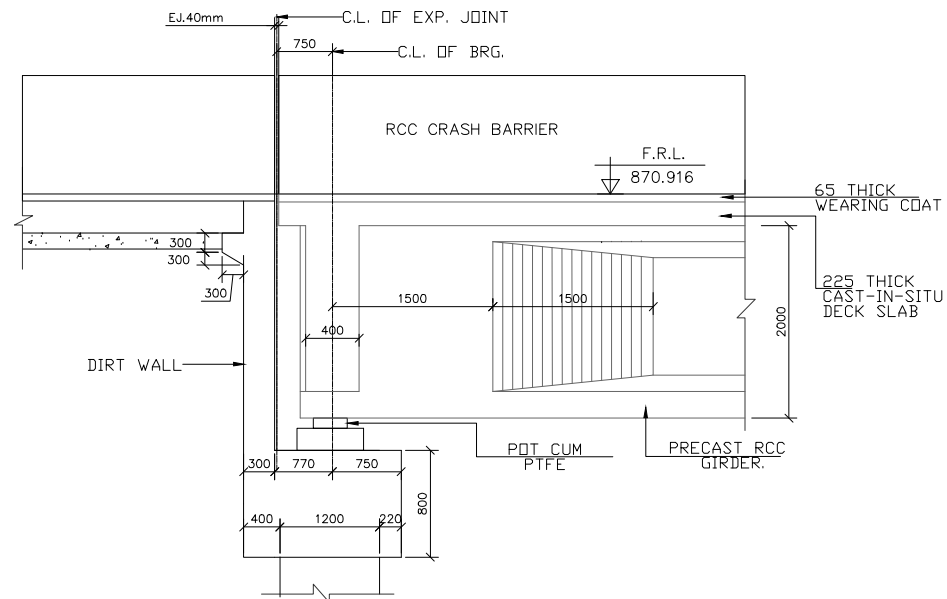
RCC CRASH BARRIER
REFER FOR
MISCELLANEOUS DETAILS



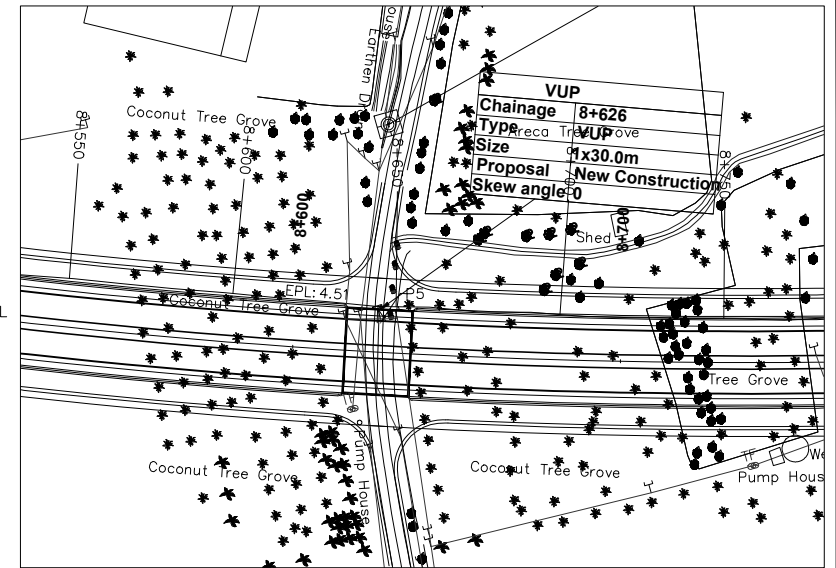
REFER THE DETAILS OF RETAINING WALL IN MISCELLANEOUS
(SCALE-1:50)



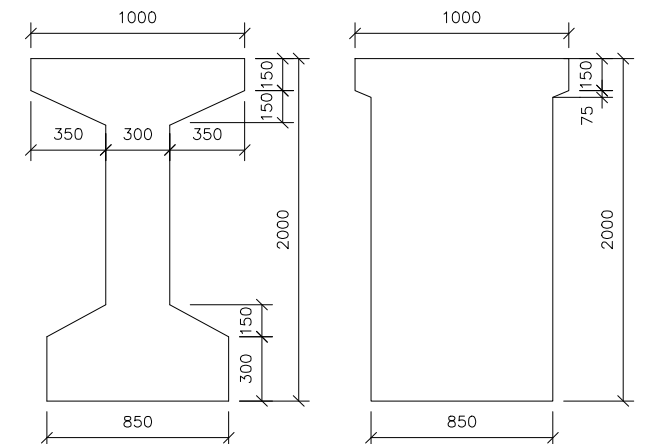
SECTION AT A-A
(SCALE-1:100)



DETAIL 'X'
(SCALE-1:50)



KEY PLAN



AT MID SPAN
AT SUPPORT
CROSS SECTION OF PRECAST PSC GIRDER
(SCALE-1:25)

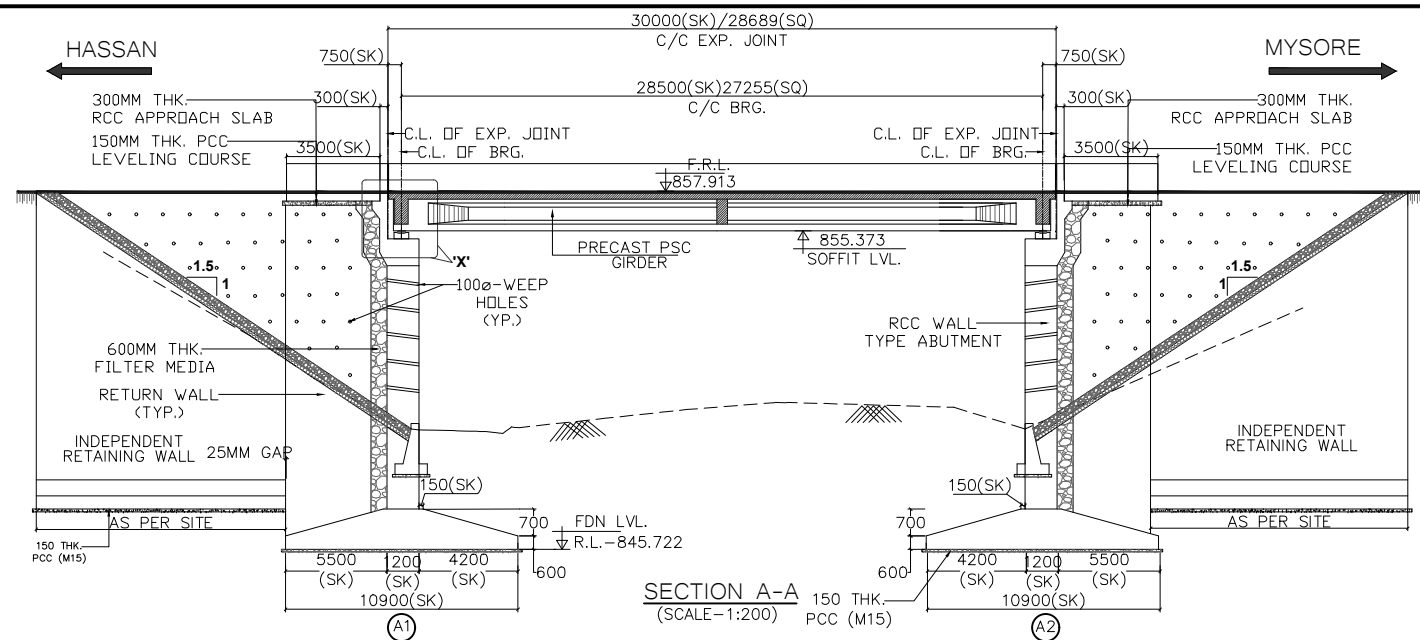
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
R0	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

Client:	PWD- National Highways,
	Hassan Division
	(Government of Karnataka)

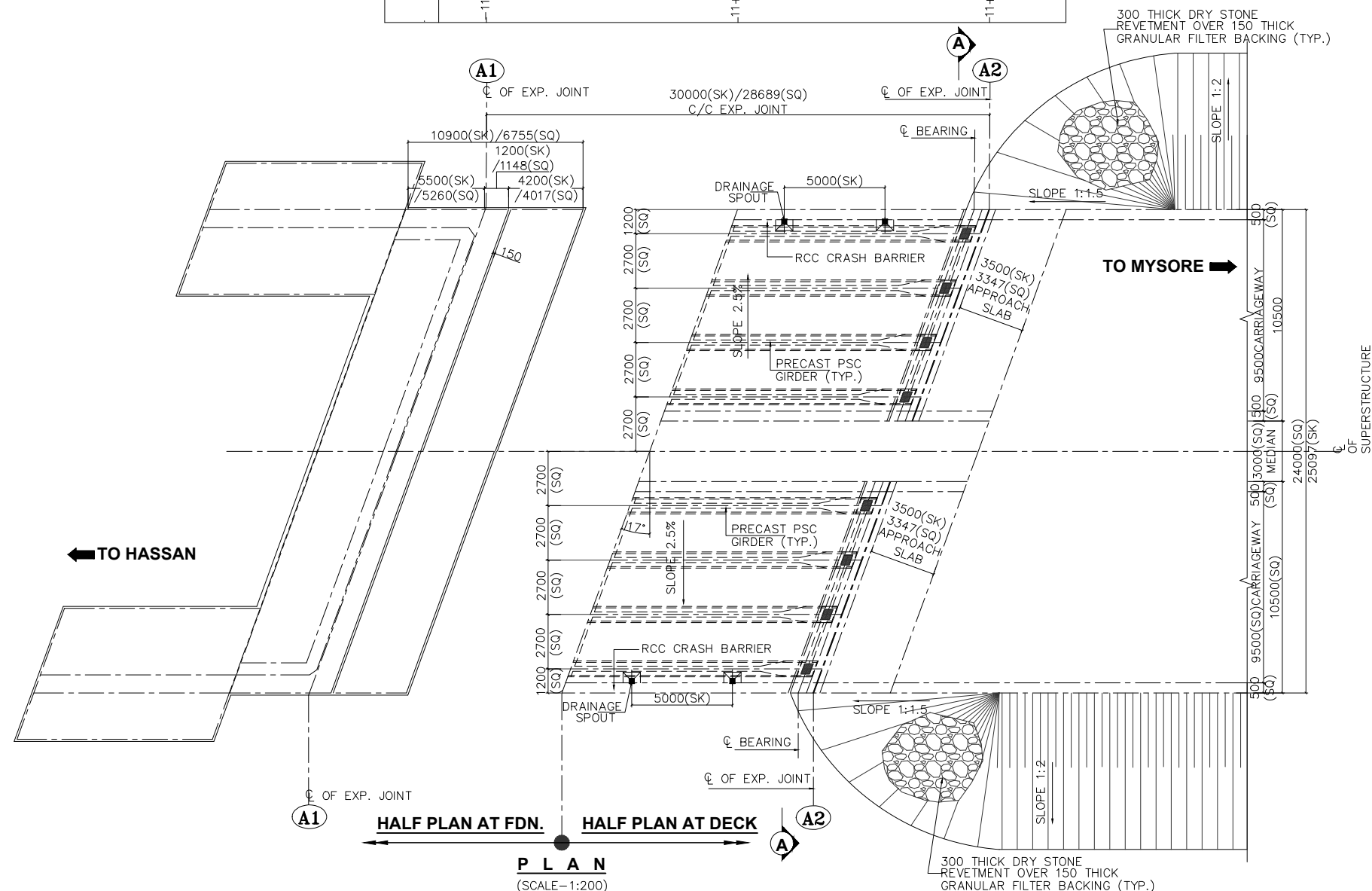
Consultant:	INDIAN TECHNOCRAT LIMITED
	In Association with
	Vistaara Infra Consultants
	New Delhi - 110 070, Ph. : 011-49531100,
	Email: info@itl.net.in

Project:	Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode
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Title:	GENERAL ARRANGEMENT DRAWING VEHICLE UNDERPASSES AT CH.8+626 (NEW CONSTRUCTION)			
DRG. NO.	23-102/ITL/NH373/HNP/VUP/8+626/GAD-02			
DATE:	03-01-2024	SCALE:	SHEET NO: 2 OF 2	REV : R0
DESIGN	B.D	DRAWN	14-02-23	CHECKED
				S.K
				APPROVED
				S.K



G.L.	848.722	849.483	849.569
CH.	11+922	11+918	11+943



NOTES :-

- TYPE OF BRIDGES - HIGH LEVEL BRIDGE.
- TOTAL LENGTH OF BRIDGE - 30.00M. BETWEEN FACES OF DIRT WALL
- SPAN ARRANGEMENT OF BRIDGE - 1NOS. @ 30.00 M. C/C
- OVER ALL WIDTH OF BRIDGE - 2X10.5 M.
- CLEAR CARRIAGEWAY WIDTH - 2X9.5 M.
- FORMATION LEVEL - 857.913M.
- SOFFIT LEVEL - 855.373M.
- INVERT LVL (I.L) - 848.587M.
- TYPE OF FOUNDATION - OPEN.
- FOUNDATION LEVEL (i) ABUTMENT - 845.722M.
- TYPE OF BEARINGS - POT
- PTFE
- TYPE OF EXPANSION JOINT - STRIP SEAL
- TYPE OF RAILING - RCC RAILING
- APPROACH SLAB - RCC APPROACH SLAB
- GRADE OF CONCRETE - RCC M-35
- ABUTMENT - PSC GIRDER
- RCC M-45
- WEARING COAT - RCC M-30
- CAP & DIRT WALL - RCC M-35
- PIER - RCC M-35
- DECK SLAB - RCC M-35
- RCC CRASH BARRIER - RCC M-40
- RCC RAILING - RCC M-30
- APPROACH SLAB - RCC M-30
- SBC (A1) - 35.0 T/M2
- (A2) - 35.0 T/M2
- THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED (TMT) HYSD BARS (GRADE DESIGNATION Fe-500D). CONFIRMING TO IS:1786 STANDARDS.
- WEEP HOLES 100Ø SPACED AT 1000 C/C IN BOTH HORIZONTAL & VERTICAL DIRECTIONS SHALL BE PROVIDED IN A STAGGERED MANNER BEHIND ABUTMENTS/RETURN WALLS/RETAINING WALLS IN ONE OR TWO LAYERS ABOVE FOOTING TOP.
- 65mm THK. CONCRETE WEARING COAT SHALL BE PROVIDED.AS PER MORTH SPECIFICATION SECTION 500.
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- THE CARRIAGEWAY OF PROPOSED BRIDGE IS DESIGNED FOR SINGLE LANE OF IRC CLASS 70 R OR TWO LANE OF IRC CLASS A LOADING WHICHEVER GOVERNS.

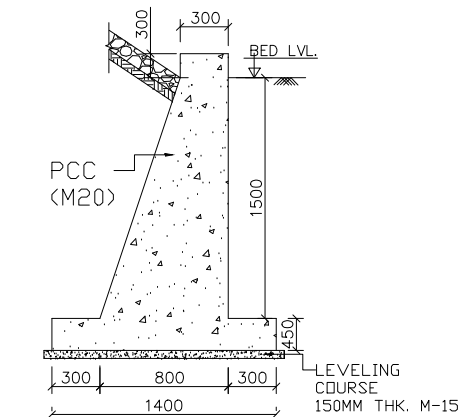
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

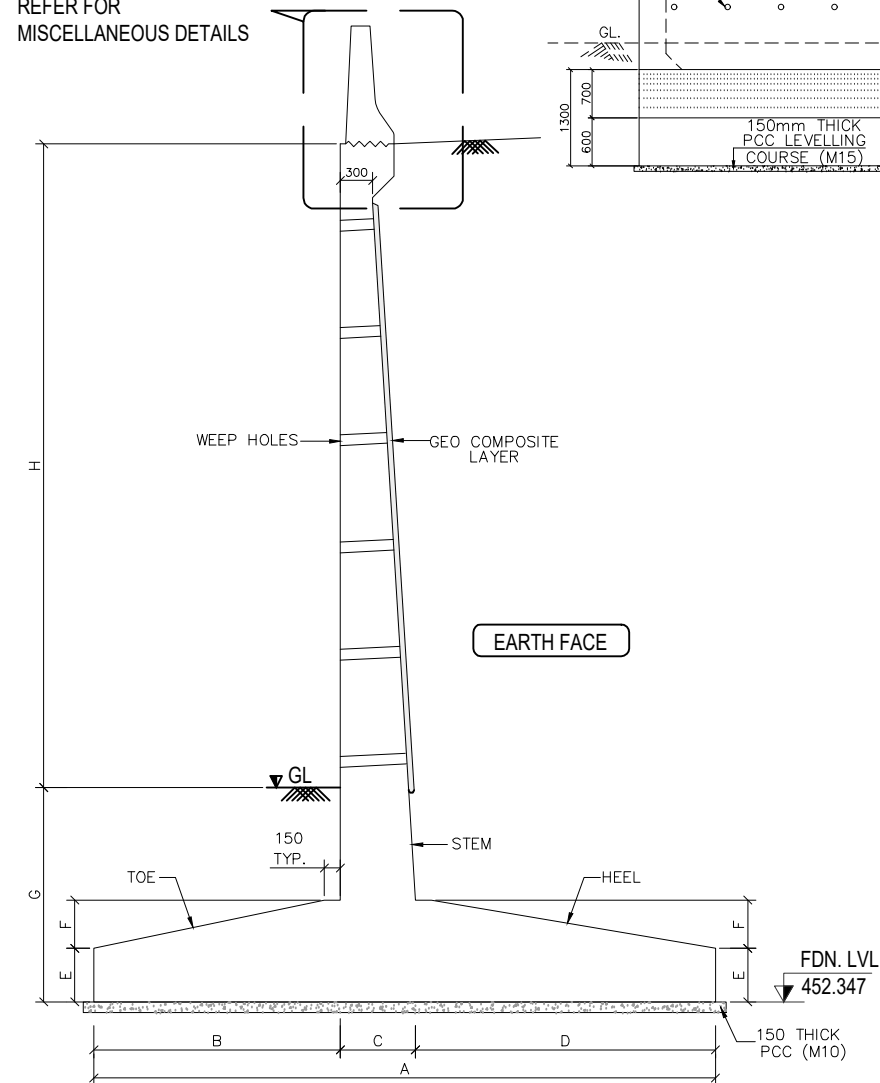
Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING VUP AT CH.11+918 (NEW CONSTRUCTION)			
DRG. NO. 23-102/ITL/NH373/HNP/VUP/11+918/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K

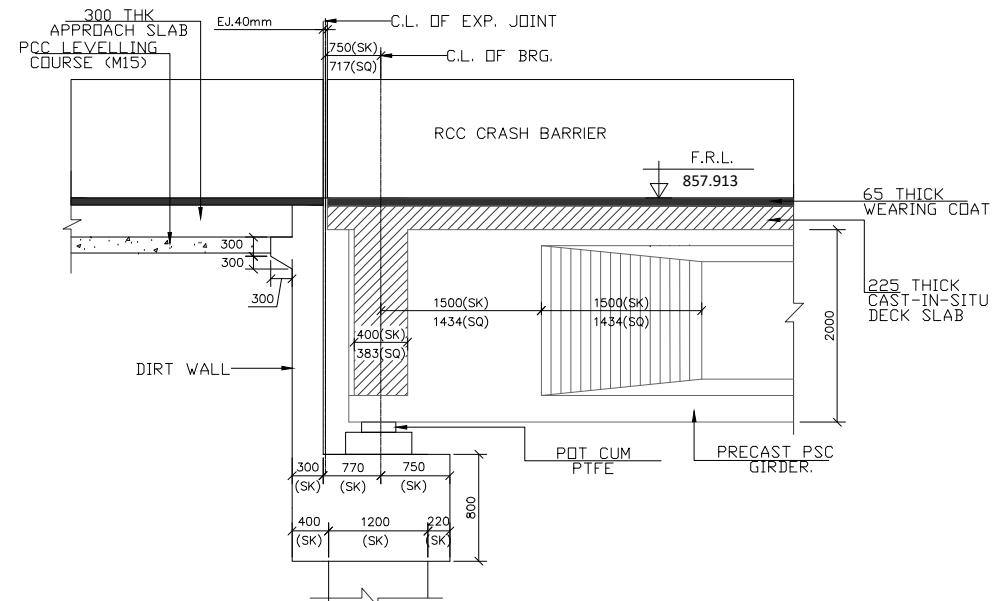


TYP. SECTION OF TOE WALL
(SCALE=1:75)

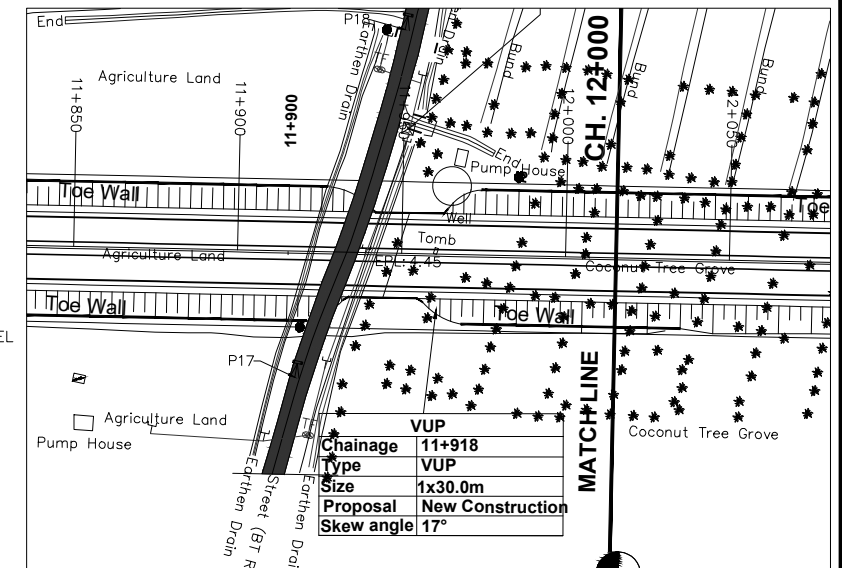
RCC CRASH BARRIER
REFER FOR
MISCELLANEOUS DETAILS



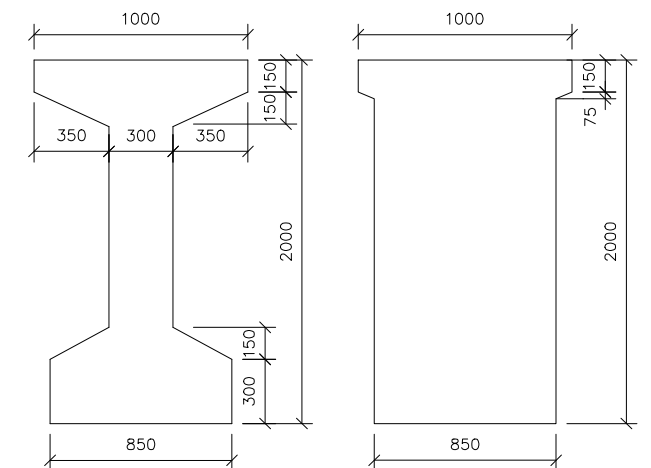
SECTION AT A-A
(SCALE=1:100)



DETAIL-'X'
(SCALE=1:50)



KEY PLAN



AT MID SPAN

AT SUPPORT

CROSS SECTION OF PRECAST RCC GIRDER
(SCALE=1:25)

REFER THE DETAILS OF RETAINING WALL IN MISCELLANEOUS
(SCALE=1:50)

Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

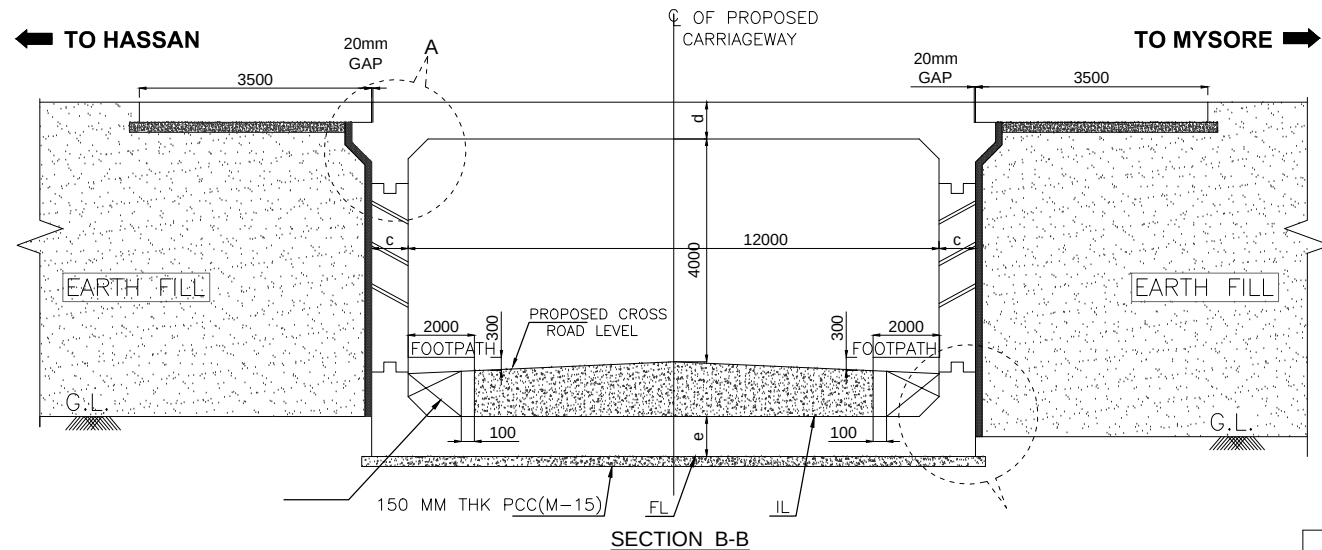


Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: GENERAL ARRANGEMENT DRAWING
VUP AT CH.11+918 (NEW CONSTRUCTION)
DRG. NO. 23-102/ITL/CB/VUP/11+918/GAD-01
DATE: 03-01-2024 SCALE: SHEET NO: 2 OF 2 REV : R0
DESIGN B.D. DRAWN R.S. CHECKED S.K. APPROVED S.K.

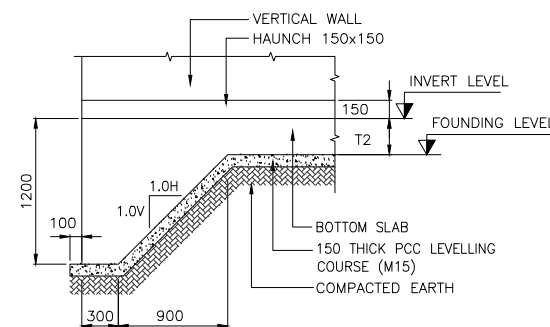
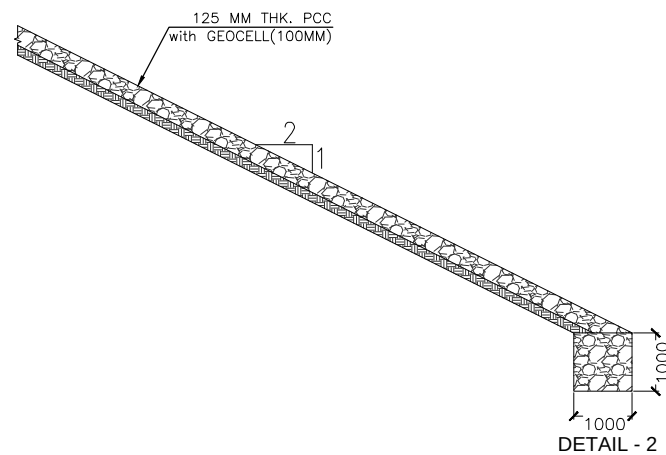
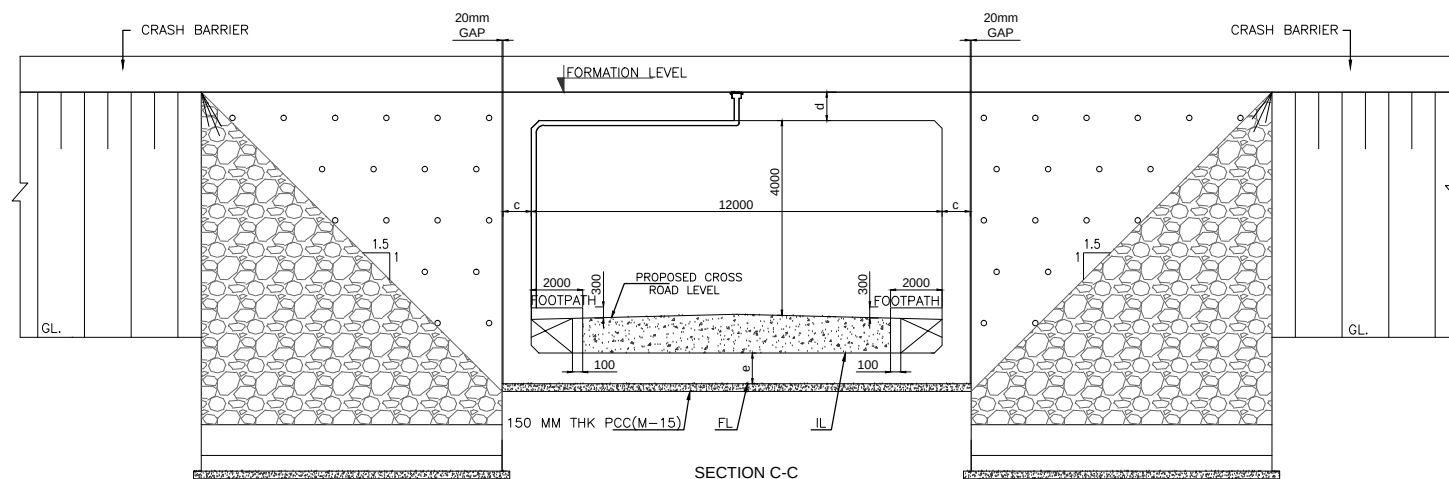
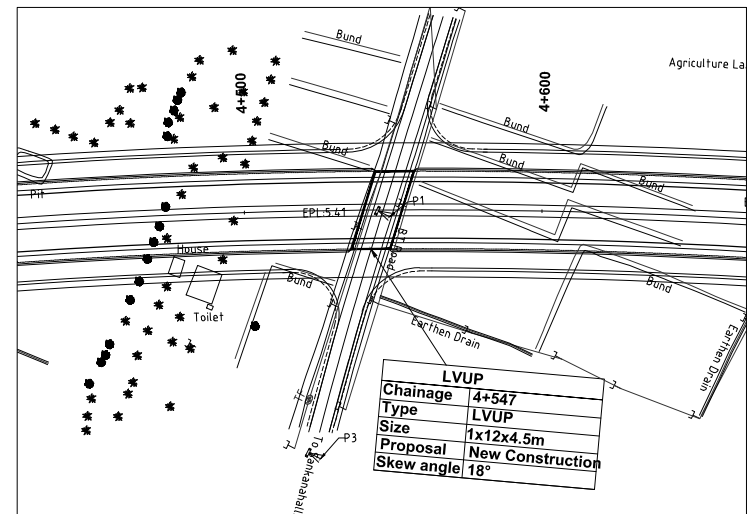
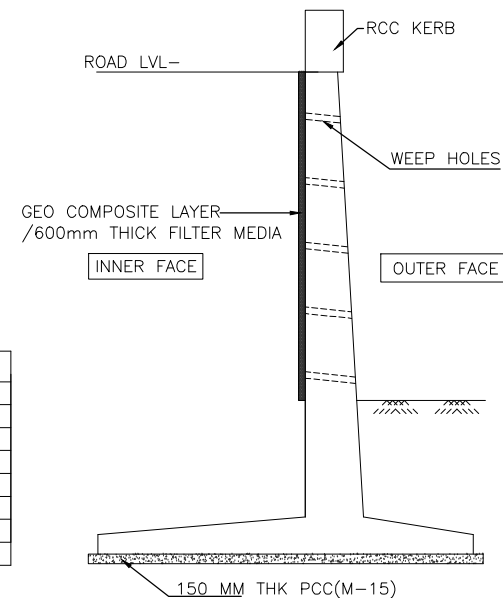
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
R0	03.01.24	INITIAL SUBMISSION	R.S.	S.K.	S.K.

LVUP

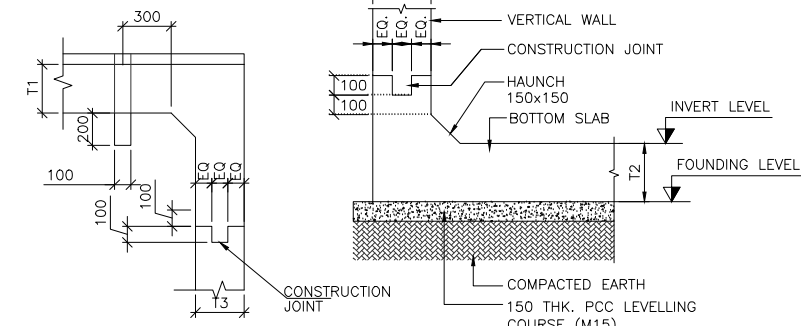


LEGEND	
FRL	FINISHED ROAD LEVEL
U/S	UP STREAM
D/S	DOWN STREAM
RHS	RIGHT HAND SIDE
LHS	LEFT HAND SIDE
RME	RIGHT MEDIAN EDGE
LME	LEFT MEDIAN EDGE
GL	GROUND LEVEL

S.NO.	PRO. CHAINAGE (Km).	TYPE OF STRUCTURE	SIZE OF CULVERT NO. X CLEAR SPAN(m)	TOP SLAB (T1)(m)	SIDE WALL (T3)(m)	BOTTOM SLAB (T2)(m)	SKEW ANGLE	CUSHION HEIGHT (H)(m)	PROPOSAL
01	4+547	LVUP	1X12X4	0.650	0.650	0.700	18	0.00	NEW CONSTRUCTION



DETAIL - 1
(SHOWING ONLY BOX ELEMENT)
(SCALE-1:40)



DETAIL - 3
(SHOWING ONLY BOX ELEMENT)
(SCALE-1:30)

DETAIL - 4
(SCALE-1:25)

KEY PLAN

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS IN METERS AND CHAINAGES IN KILOMETERS UNLESS OTHERWISE MENTIONED.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- WEARING COAT SHALL CONFORM TO CLAUSE 2702.1 OF "MoRT&H" SPECIFICATION.
- CONCRETE SHALL BE DESIGN MIX UNLESS OTHERWISE SPECIFIED IN DETAILED DRAWINGS, AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:

a) RCC PARAPET WALL	M30
b) RCC BOX CELL	M35
c) RCC RETAINING WALL	M35
- REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS. (GRADE DESIGNATION Fe 550D) CONFORMING TO TABLE 18.1 OF IRC: 112-2011.
- MINIMUM CLEAR COVER TO ANY REINFORCEMENT SHALL BE AS BELOW:

i) TOP SLAB (BOTH FACE)	45mm
ii) VERTICAL WALL (EARTH FACE)	75mm
iii) VERTICAL WALL (REAR FACE)	45mm
iv) BOTTOM SLAB (BOTH FACE)	75mm
v) RCC CRASH BARRIER	45mm
vi) RCC RETAINING WALL	75mm
FOOTING	50mm
vii) STEM	50mm
- 100Ø WEEP HOLES SPACED AT 1000 C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN A STAGGERED MANNER IN EARTH RETAINING VERTICAL WALLS ABOVE GROUND LEVEL.
- 600 THICK FILTER MEDIA BEHIND EARTH RETAINING VERTICAL WALL SHALL BE PROVIDED AS PER "MoRT&H" SPECIFICATION.
- LAYING, COMPACTION AND EXTENT OF BACK FILL BEHIND EARTH RETAINING WALLS SHALL CONFORM TO SPECIFICATIONS IN APPENDIX 6 OF IRC: 78-2014.
- BACK FILLING BEHIND EARTH RETAINING WALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC: 78-2014 HAVING PROPERTIES $C=0$, $\phi=30^\circ$ AND $\gamma=2.0 \text{ T/m}^3$.
- THE DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT APPROVED HIGHWAY DRAWINGS FOR STRUCTURE ORIENTATION, SKEW ANGLE, FRL AND CAMBER/SUPERELEVATION ETC.
- DURING WIDENING OPERATION ALL NECESSARY PRECAUTIONS SHALL BE TAKEN FOR THE SAFETY OF THE MOVING VEHICLES OVER THE CULVERT.
- MAX DESIGN PRESSURE AT FOUNDING LEVEL OF BOX IS 15 T/m^2 .
- COMPACTED EARTH SHALL CONFORM TO CL. 305.2.1.5 OF "MoRT&H" SPECIFICATION.
- NEW JERSEY CRASH BARRIER SHALL BE PROVIDED AS PER IRC:119-2015.

RO NO.	DATE	INITIAL SUBMISSION	REVISION	R.S	S.K	S.K

Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

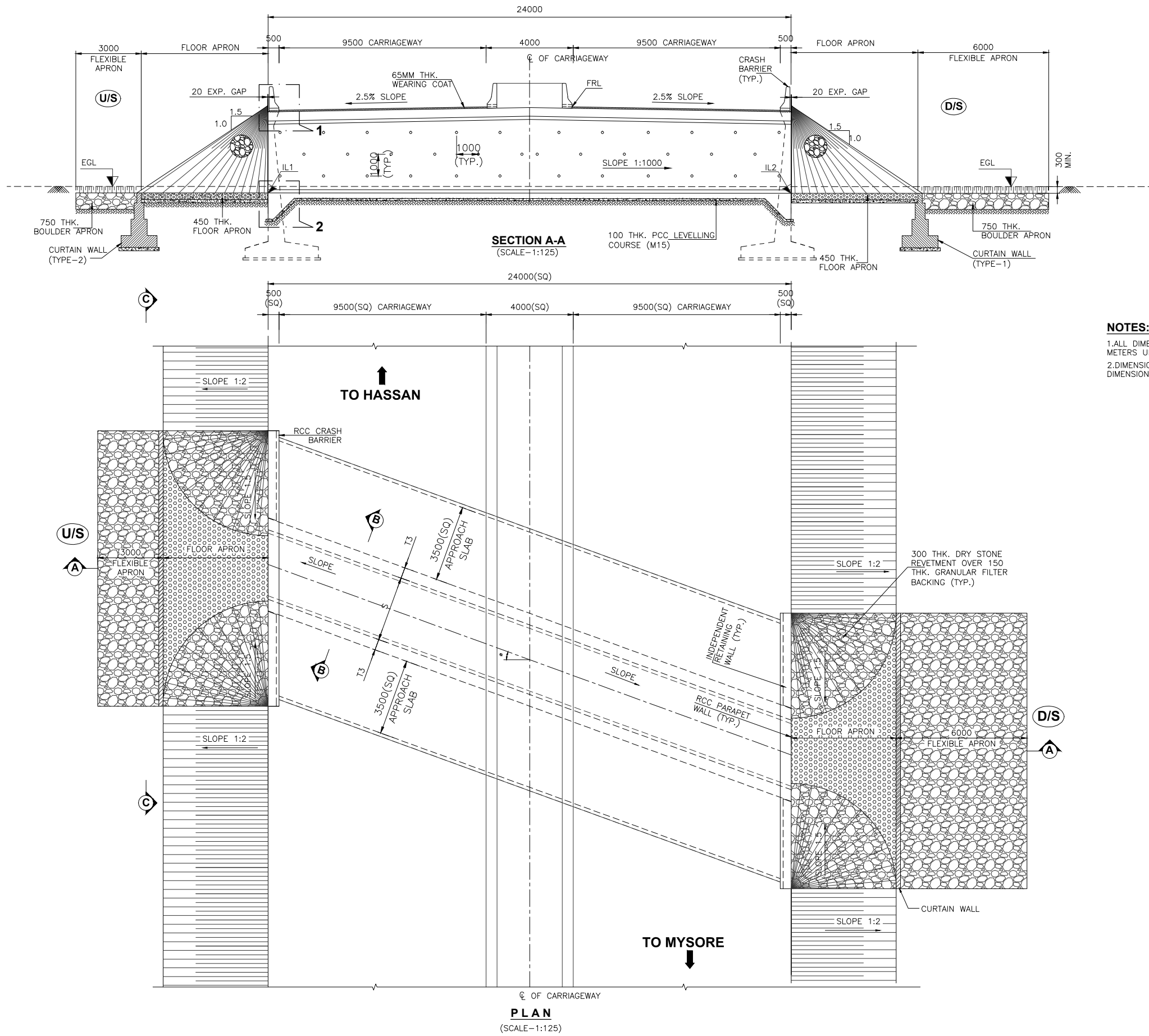
Consultant:
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Email: info@itl.net.in



Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title:		TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION SINGLE CELL LVUP CH.4+547			
DRG. NO.		23-102/ITL/NH373/HNP/LVUP/4+547/GAD-02			
DATE:	03-01-2024	SCALE:	SHEET NO:	20F2	REV : R0
DESIGN	B.D	DRAWN	R.S	CHECKED	S.K
				APPROVED	S.K

CATTLE UNDER PASS



NOTES:

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED

NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

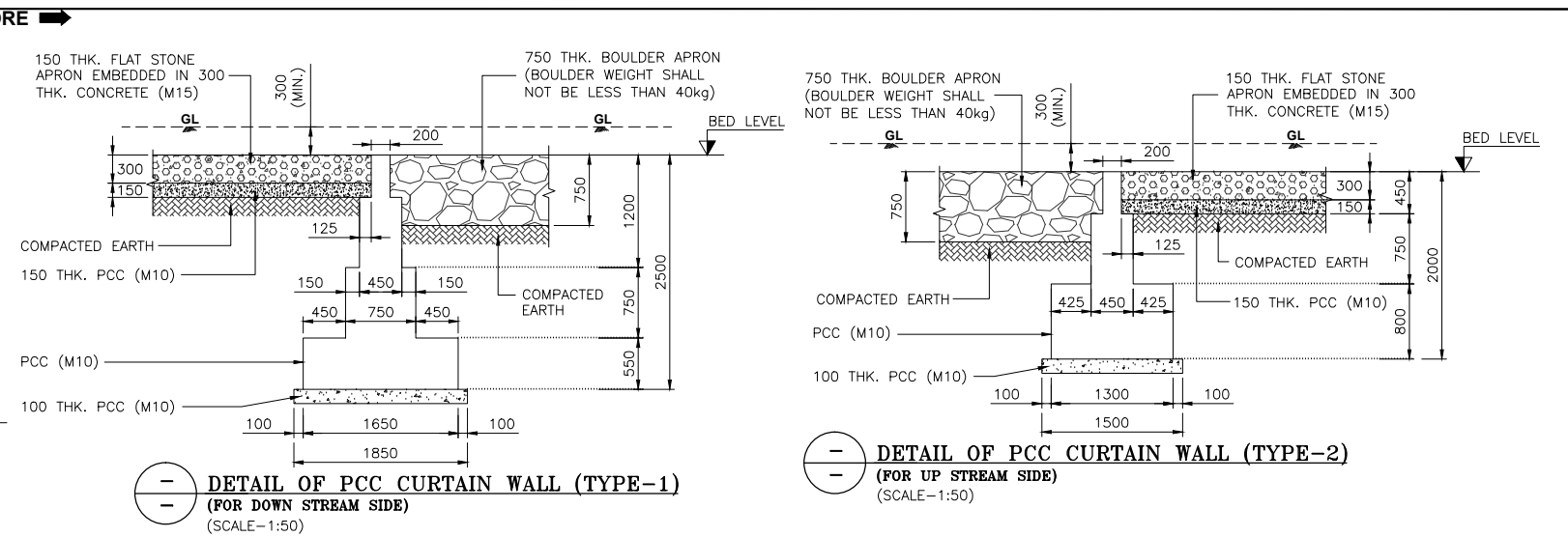
Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

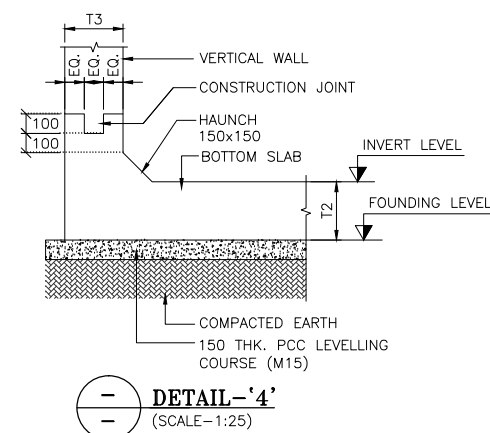
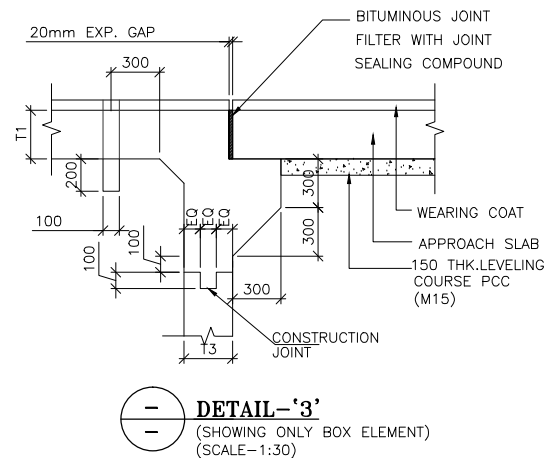
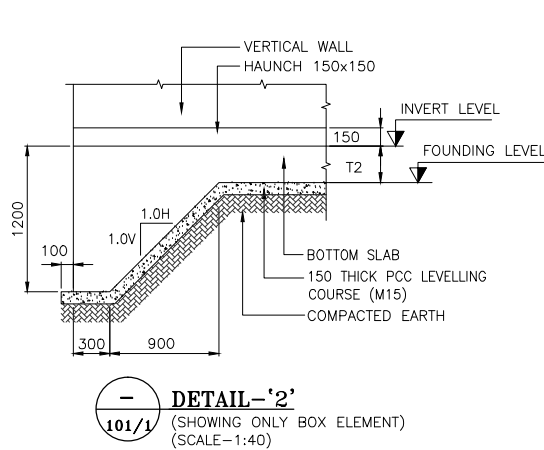
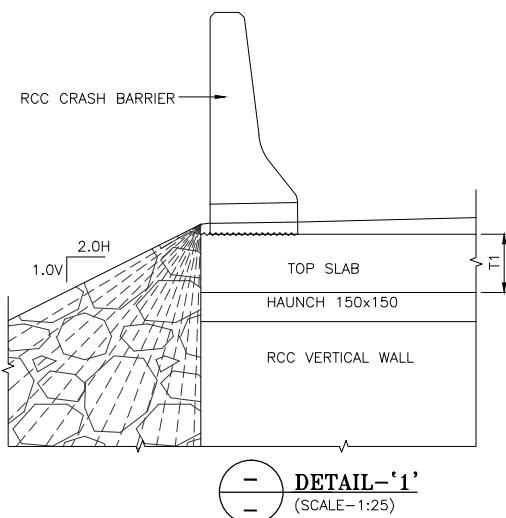


Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION CATTLE UNDER PASS			
DRG. NO. 23-102/ITL/NH373/HNP/CUP/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 1OF2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



S.NO.	PRO. CHAINAGE (Km).	TYPE OF STRUCTURE	SIZE OF CULVERT NO. X CLEAR SPAN(m)	TOP SLAB (T1)(m)	SIDE WALL (T3)(m)	BOTTOM SLAB (T2)(m)	SKEW ANGLE	PROPOSAL
01	2+543	CATTLE UNDER PASS	1X3X3	0.300	0.300	0.350	37	NEW CONSTRUCTION
02	3+080	CATTLE UNDER PASS	1X3X3	0.300	0.300	0.350	20	NEW CONSTRUCTION



- ## NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS IN METERS AND CHAINAGES IN KILOMETERS UNLESS OTHERWISE MENTIONED.
 2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. WEARING COAT SHALL CONFORM TO CLAUSE 2702.1 OF "MoRT&H" SPECIFICATION.
 4. CONCRETE SHALL BE DESIGN MIX UNLESS OTHERWISE SPECIFIED IN DETAILED DRAWINGS, AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:
 - a) RCC PARAPET WALLM30
 - b) RCC BOX CELLM35
 - c) RCC RETAINING WALLM35
 5. REINFORCING STEEL SHALL BE OF HYSD (TMT) BARS. (GRADE DESIGNATION Fe 550D) CONFORMING TO TABLE 18.1 OF IRC: 112-2011.
 6. MINIMUM CLEAR COVER TO ANY REINFORCEMENT SHALL BE AS BELOW:
 - i) TOP SLAB (BOTH FACE)45mm
 - ii) VERTICAL WALL (EARTH FACE)75mm
 - iii) VERTICAL WALL (REAR FACE)45mm
 - iv) BOTTOM SLAB (BOTH FACE)75mm
 - v) RCC CRASH BARRIER45mm
 - vi) RCC RETAINING WALL FOOTING75mm
 - vii) STEM50mm
 7. 100 ϕ WEEP HOLES SPACED AT 1000 C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN A STAGGERED MANNER IN EARTH RETAINING VERTICAL WALLS ABOVE GROUND LEVEL.
 8. 600 THICK FILTER MEDIA BEHIND EARTH RETAINING VERTICAL WALL SHALL BE PROVIDED AS PER "MoRT&H" SPECIFICATION.
 10. LAYING, COMPACTION AND EXTENT OF BACK FILL BEHIND EARTH RETAINING WALLS SHALL CONFORM TO SPECIFICATIONS IN APPENDIX 6 OF IRC: 78-2014.
 11. BACK FILLING BEHIND EARTH RETAINING WALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC: 78-2014 HAVING PROPERTIES $C=0$, $\phi=30^\circ$ AND $\gamma=2.0 \text{ T/m}^3$.
 12. THE DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT APPROVED HIGHWAY DRAWINGS FOR STRUCTURE ORIENTATION, SKEW ANGLE, FRL AND CAMBER/SUPERELEVATION ETC.
 13. DURING WIDENING OPERATION ALL NECESSARY PRECAUTIONS SHALL BE TAKEN FOR THE SAFETY OF THE MOVING VEHICLES OVER THE CULVERT.
 14. MAX DESIGN PRESSURE AT FOUNDING LEVEL OF BOX IS 15 T/m^2 .
 15. COMPACTED EARTH SHALL CONFORM TO CL. 305.2.1.5 OF "MoRT&H" SPECIFICATION.
 16. NEW JERSEY CRASH BARRIER SHALL BE PROVIDED AS PER IRC:119-2015.

RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED

Client: PWD- National Highways,
Hassan Division
(Government of Karnataka)

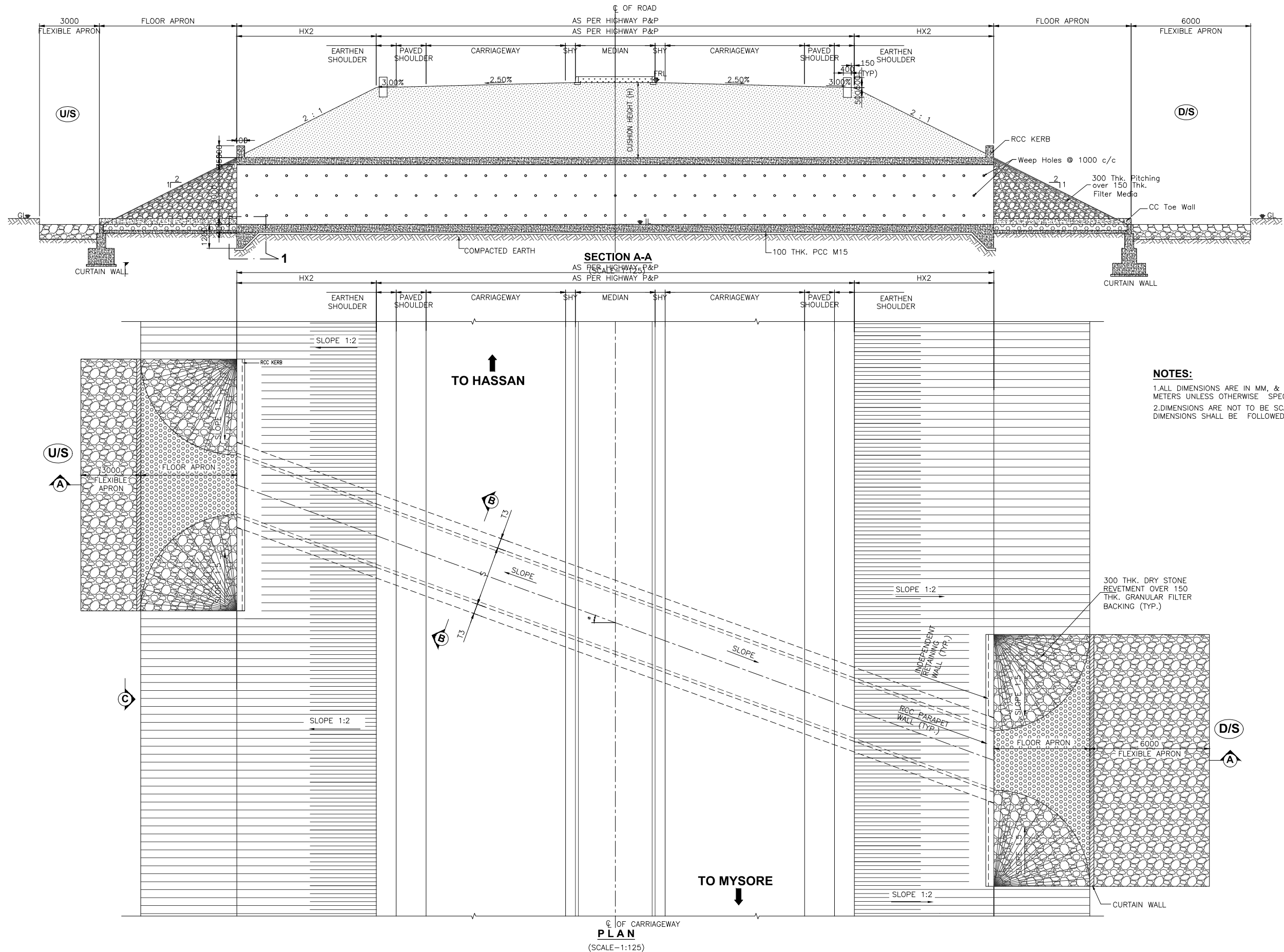
Consultant:

 INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@iti.net.in



Project:	Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode
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Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION CATTLE UNDER PASS			
DRG. NO.		23-02/ITL/NH373/HNP/CUP/GAD-02	
DATE: 03-01-2024	SCALE:	SHEET NO: 20F2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



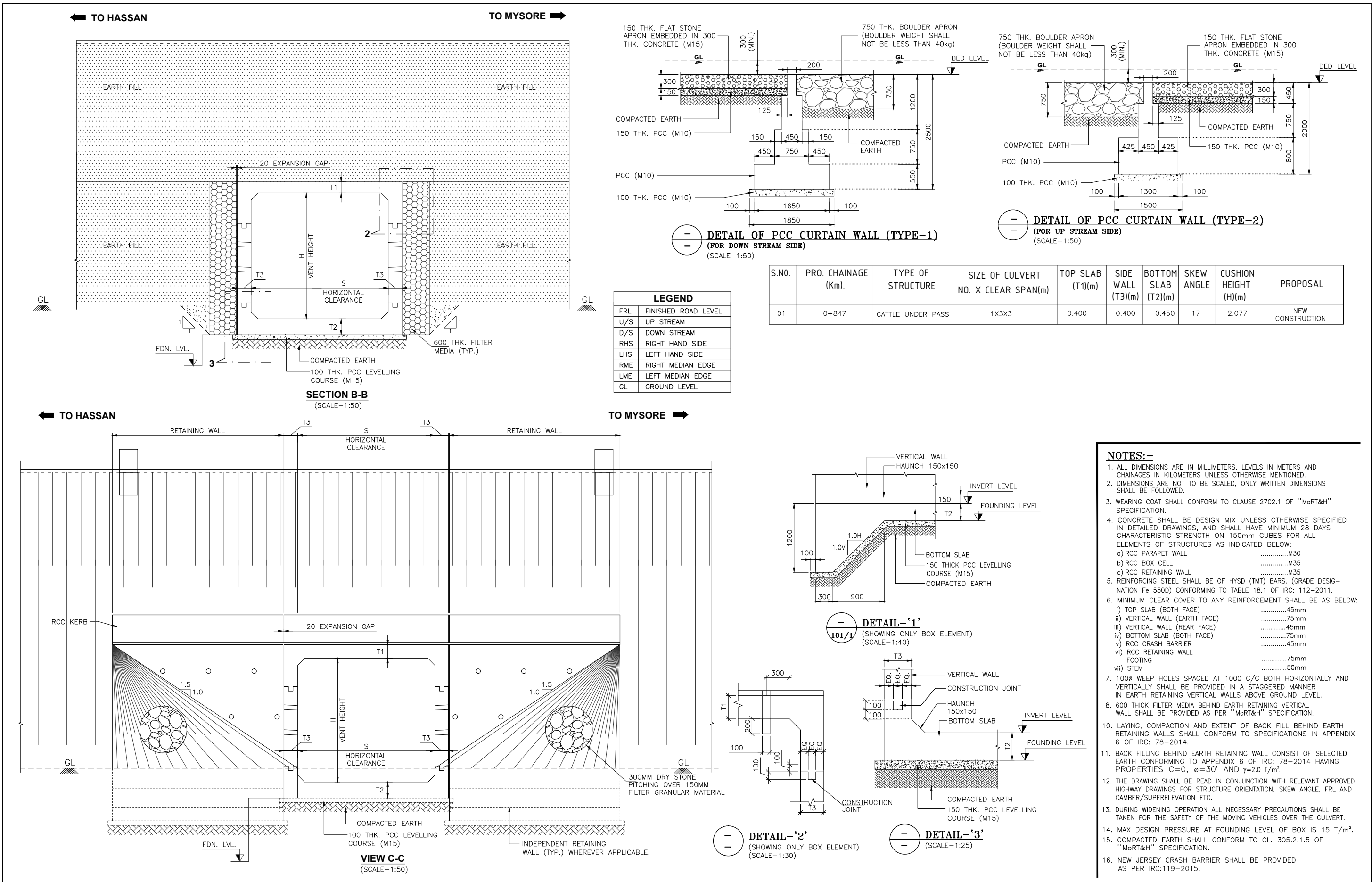
RO NO.	DATE	INITIAL SUBMISSION	REVISION	R.S	S.K	S.K

Client: **PWD- National Highways,**
Hassan Division
(Government of Karnataka)

Consultant: **INDIAN TECHNOCRAT LIMITED**
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

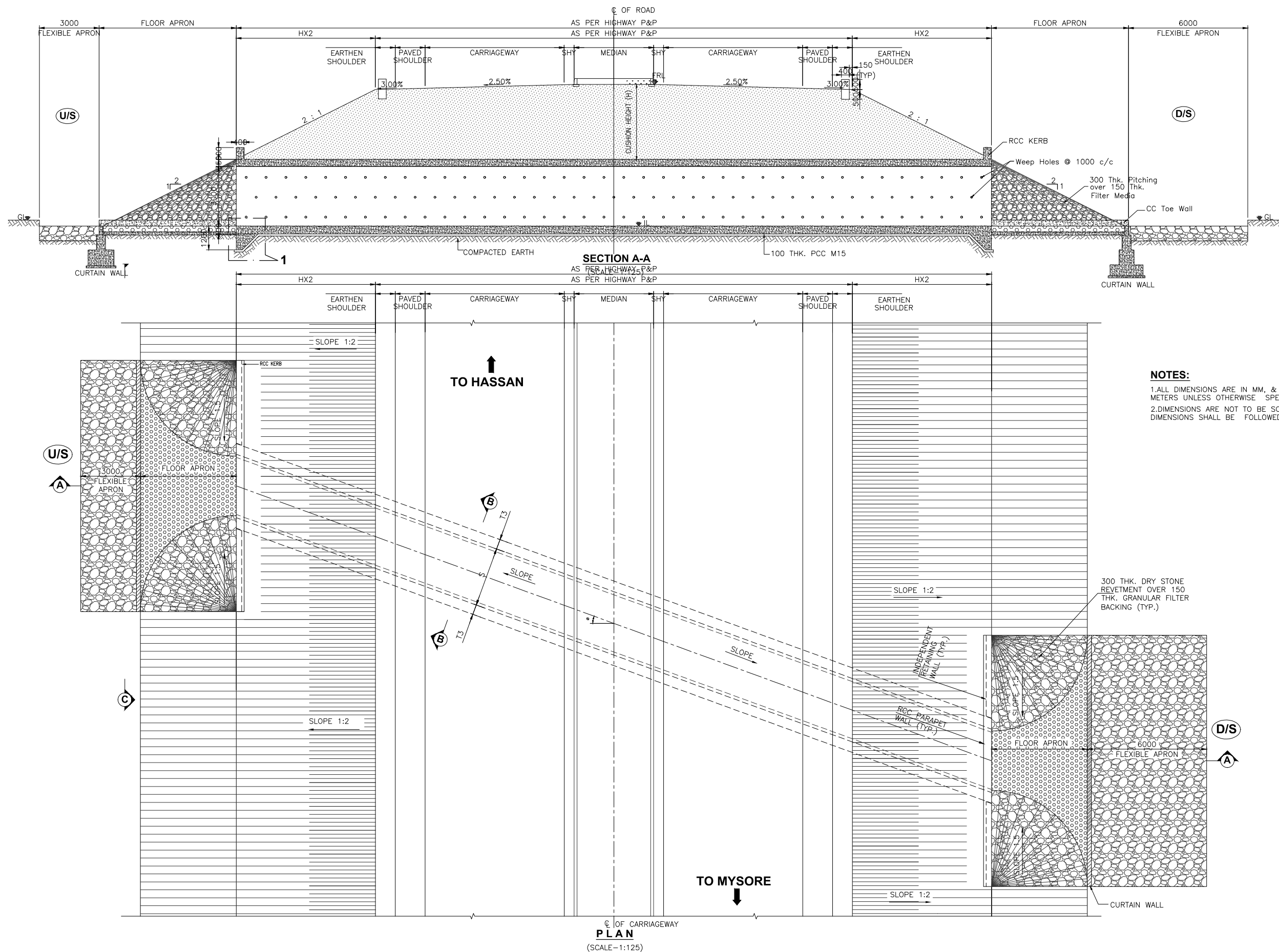
Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION CATTLE UNDER PASS			
DRG. NO.	23-102/ITL/NH373/HNP/CUP/GAD-02		
DATE: 03-01-2024	SCALE:	SHEET NO: 1OF2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



						Client:	PWD- National Highways,		Consultant:	INDIAN TECHNOCRAT LIMITED		Project:	Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode			Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION CATTLE UNDER PASS			
							Hassan Division			In Association with Vistaara Infra Consultants						DRG. NO. 23-102/ITL/NH373/HNP/CUP/GAD-02			
							(Government of Karnataka)			New Delhi - 110 070, Ph. : 011-49531100, Email: info@itl.net.in						DATE: 03-01-2024			
										SCALE:									
										SHEET NO: 20F2									
										REV : R0									
										DESIGN									
										DRAWN									
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										S.K									
										APPROVED									
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BOX CULVERT



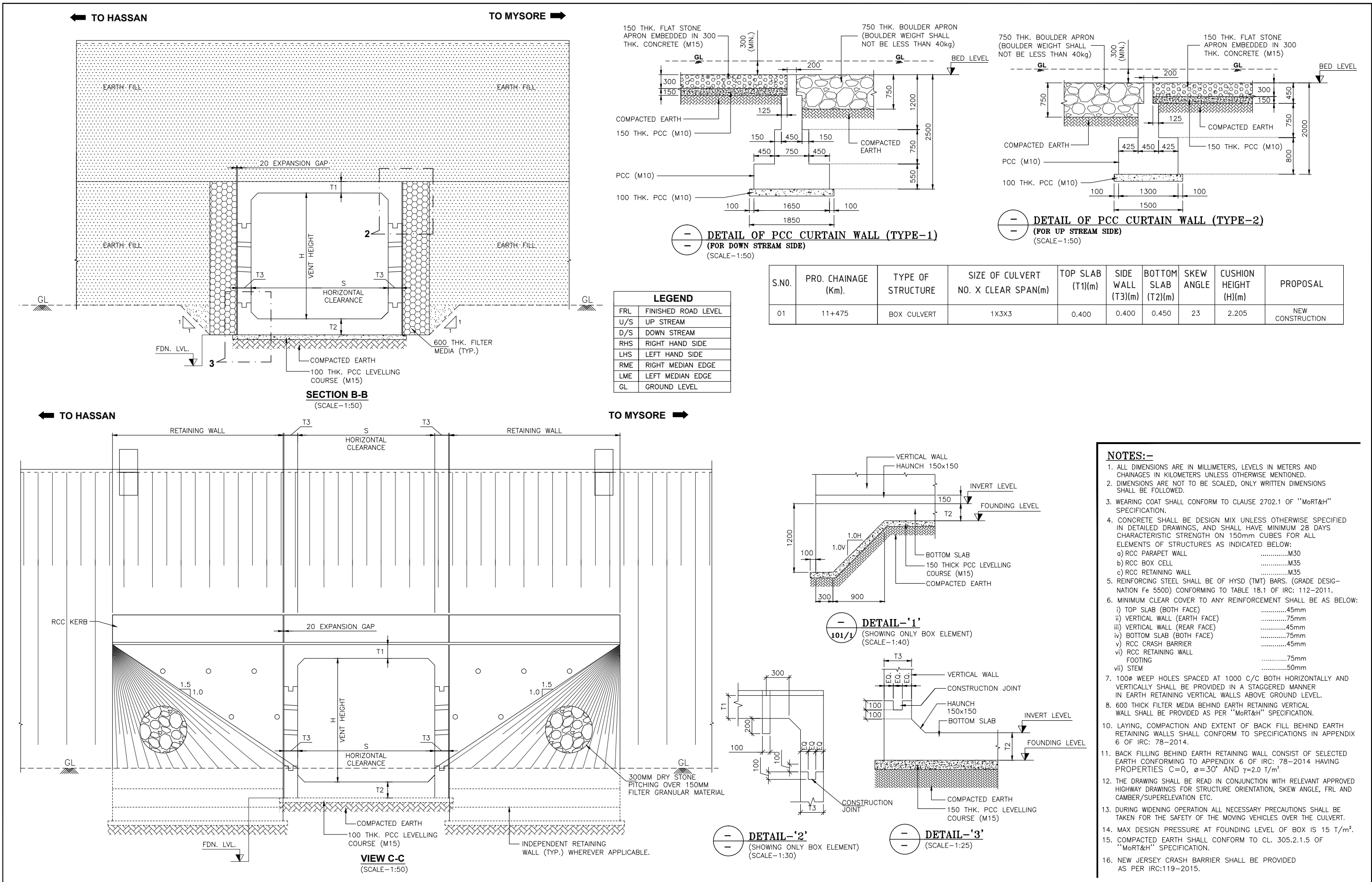
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED
RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K

Client: **PWD- National Highways,**
Hassan Division
(Government of Karnataka)

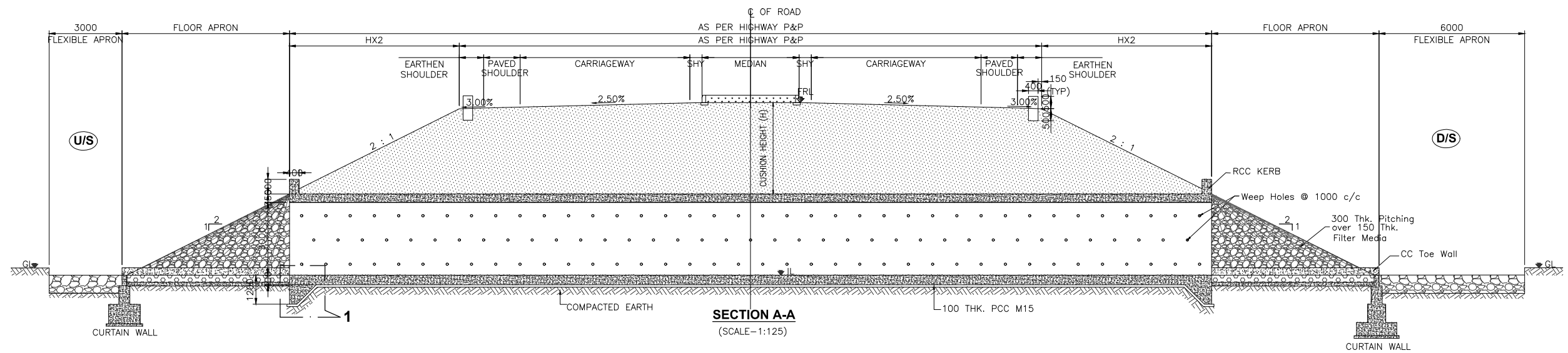
Consultant: **INDIAN TECHNOCRAT LIMITED**
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION SINGLE CELL BOX CULVERT			
DRG. NO.	23-102/ITL/NH373/HNP/BC/GAD-01		
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



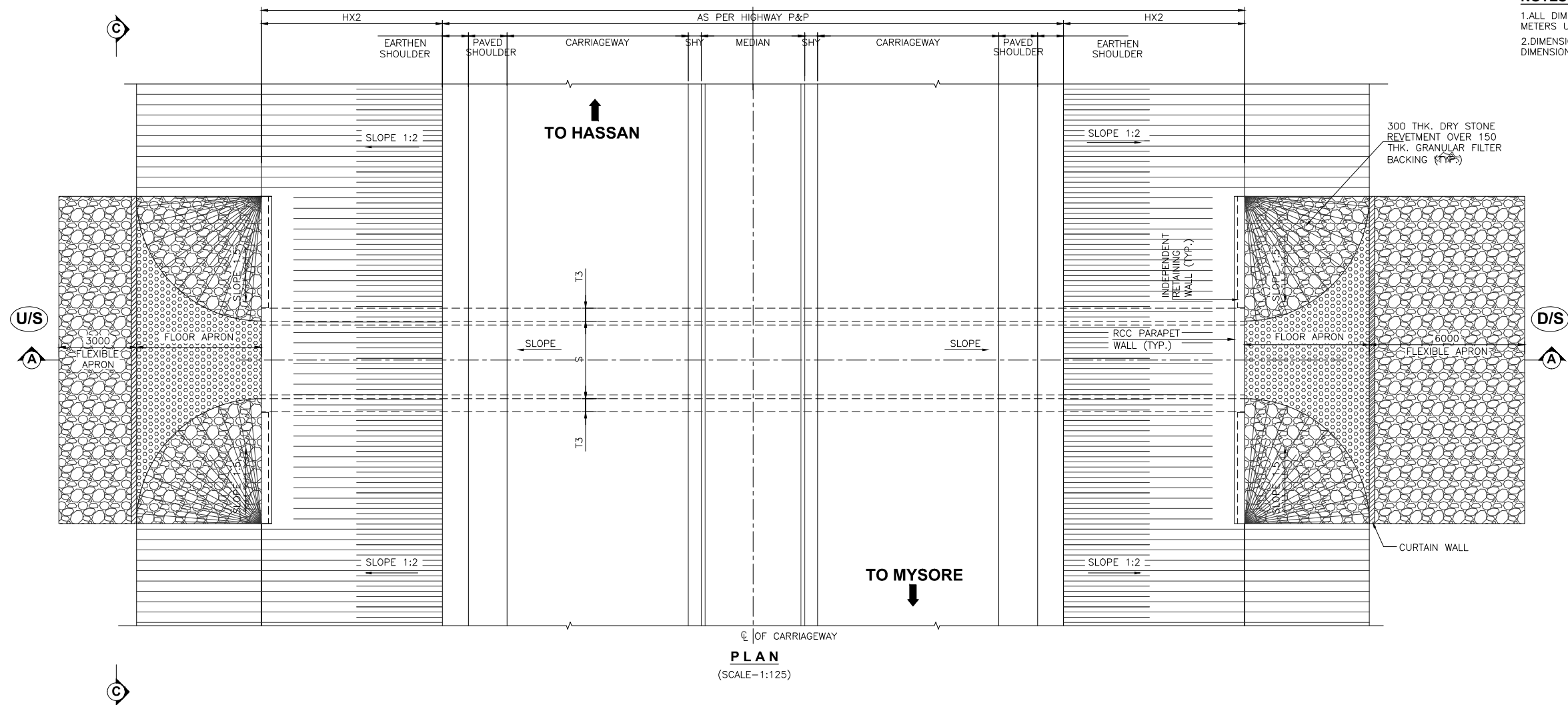
						Client:		Consultant:		Project:		Title:	
						PWD- National Highways,		INDIAN TECHNOCRAT LIMITED		Construction of Holenarasipura Bypass on NH-373 in the State of		TYPICAL GENERAL ARRANGEMENT DRAWING	
						Hassan Division		In Association with		Karnataka under NH(O) on EPC mode		PROPOSED NEW CONSTRUCTION SINGLE CELL	
						(Government of Karnataka)		Vistaara Infra Consultants				BOX CULVERT	
								New Delhi - 110 070, Ph. : 011-49531100,				DRG. NO.	
								Email: info@itl.net.in				23-102/ITL/NH373/HNP/BC/GAD-02	
												DATE: 03-01-2024	
												SCALE:	
												SHEET NO:	
												20F2	
												REV : R0	
												DESIGN	
												DRAWN	
												CHECKED	
												S.K	
												APPROVED	
												S.K	



SECTION A-A
(SCALE-1:125)

NOTES:

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED



PLAN
(SCALE-1:125)

RO NO.	DATE	INITIAL SUBMISSION	REVISION	R.S	S.K	S.K

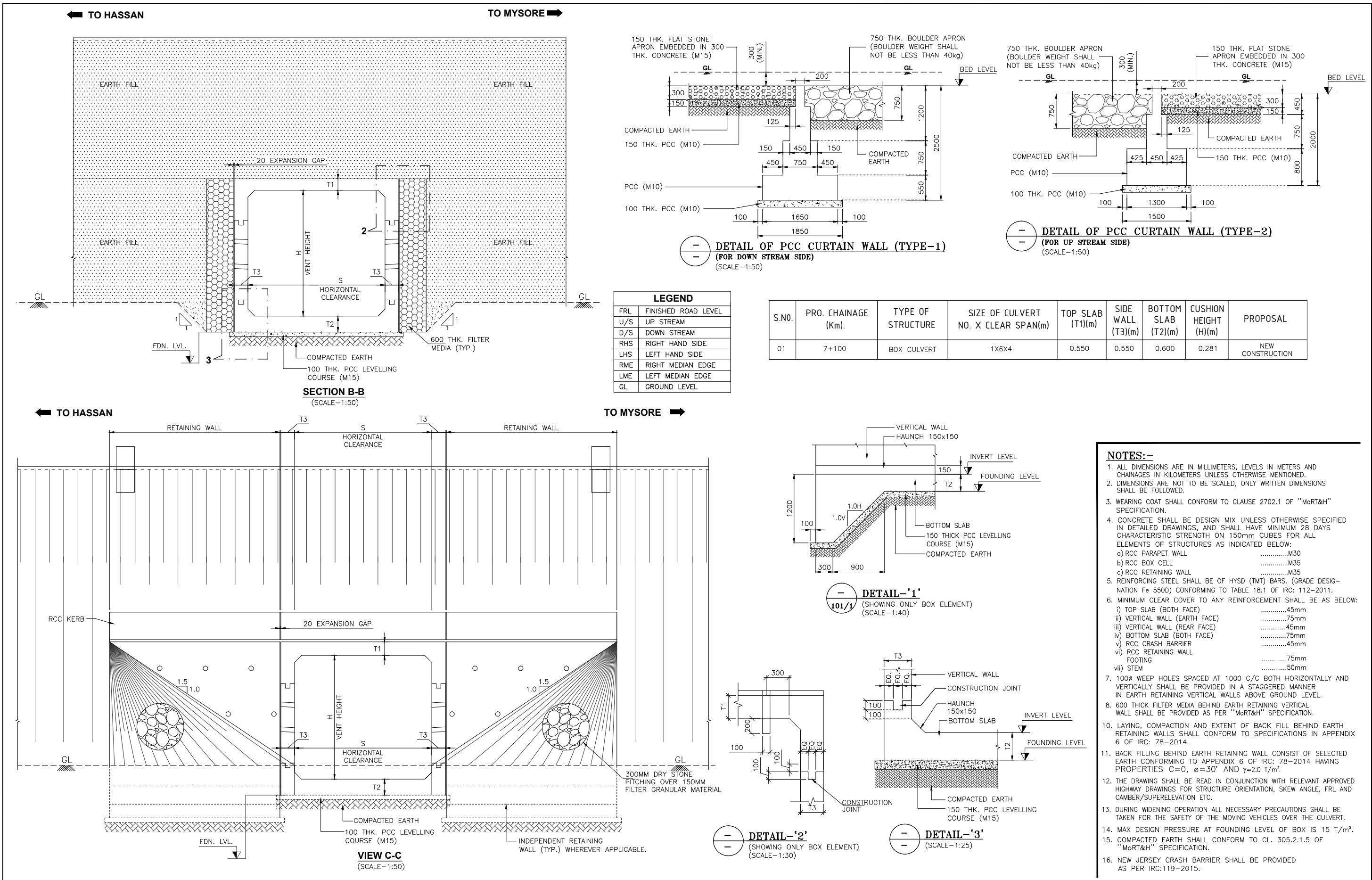
Client:
PWD- National Highways,
Hassan Division
(Government of Karnataka)

Consultant:
INDIAN TECHNOCRAT LIMITED
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in



Project:
Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION SINGLE CELL BOX CULVERT			
DRG. NO. 23-102/ITL/NH373/HNP/BC/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 1 OF 2	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K



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HPC

NOTES:

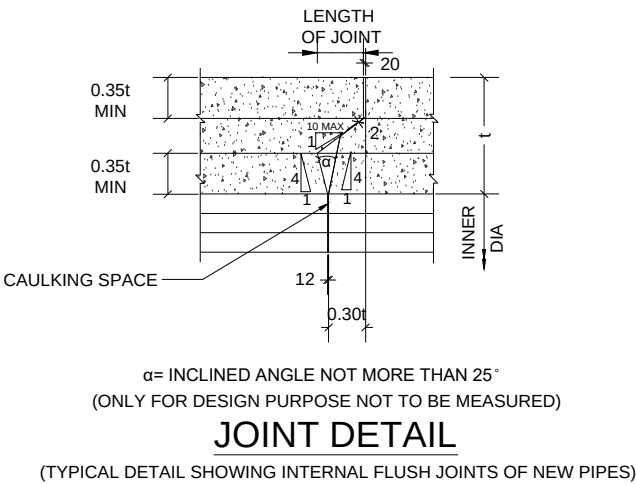
1. ALL DIMENSIONS ARE IN mm, LEVELS ARE IN mm & CHAINAGE ARE IN Km UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. STRUCTURES LOCATED REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
3. FOR STRUCTURE LOCATION SUPER ELEVATION REFER LATEST APPROVED HIGHWAY DRAWINGS. FOR ANY VARIATION HIGHWAY DRAWING TO BE FOLLOWED.
4. GRADE OF CONCRETE :-
FOR PCC HEAD WALL M15
FOR MARKER POST M20
5. CLASS NP4 NON-PRESSURE CONCRETE PIPES SHALL CONFIRM TO IS: 458.
6. ALL PIPE LAYING WORK SHALL CONFIRM TO MORTH & H SPECIFICATION CL. 2900.
7. LONGITUDINAL SLOPE OF PIPE SHOULD BE 1:1000 MINIMUM.
8. MINIMUM FILL ON PIPE CULVERTS SHALL BE 0.6m. IF REQUIRED FILL IS NOT ACHIEVED ENCASING SHOULD BE DONE.
9. THE BEDDING SURFACE SHALL PROVIDE FIRM FOUNDATION OF UNIFORM OF UNIFORM DENSITY THROUGHOUT THE LENGTH OF THE CULVERT, AND SHALL CONFORM TO CL.2904 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS. LOOSE/UNSTABLE SOIL BELOW CULVERT TO BE REPLACED WITH SUITABLE GRANULAR MATERIAL.

NOTES FOR PITCHING:

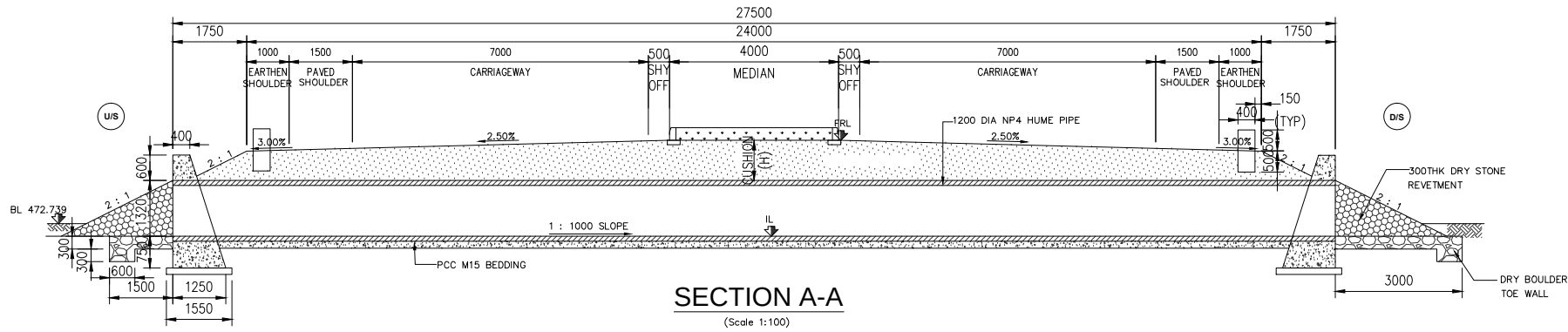
1. 300mm THICK DRY STONE REVETMENT SHOULD BE DONE OVER FILTER GRANULAR MATERIAL BACKING OF 150mm THICK.
2. FIRST CLASS BEDDING CAN BE USE IN PLACE OF CRADLE CONCRETE FOR A MAXIMUM HEIGHT OF FILL OF 4METER.
3. 300mm THICK. DRY STONE PITCHING APRON PROVIDED U/S STONE PITCHING APRON SHALL BE OF 1.5m LENGTH AND D/S SHALL BE 3m.

LEGEND:

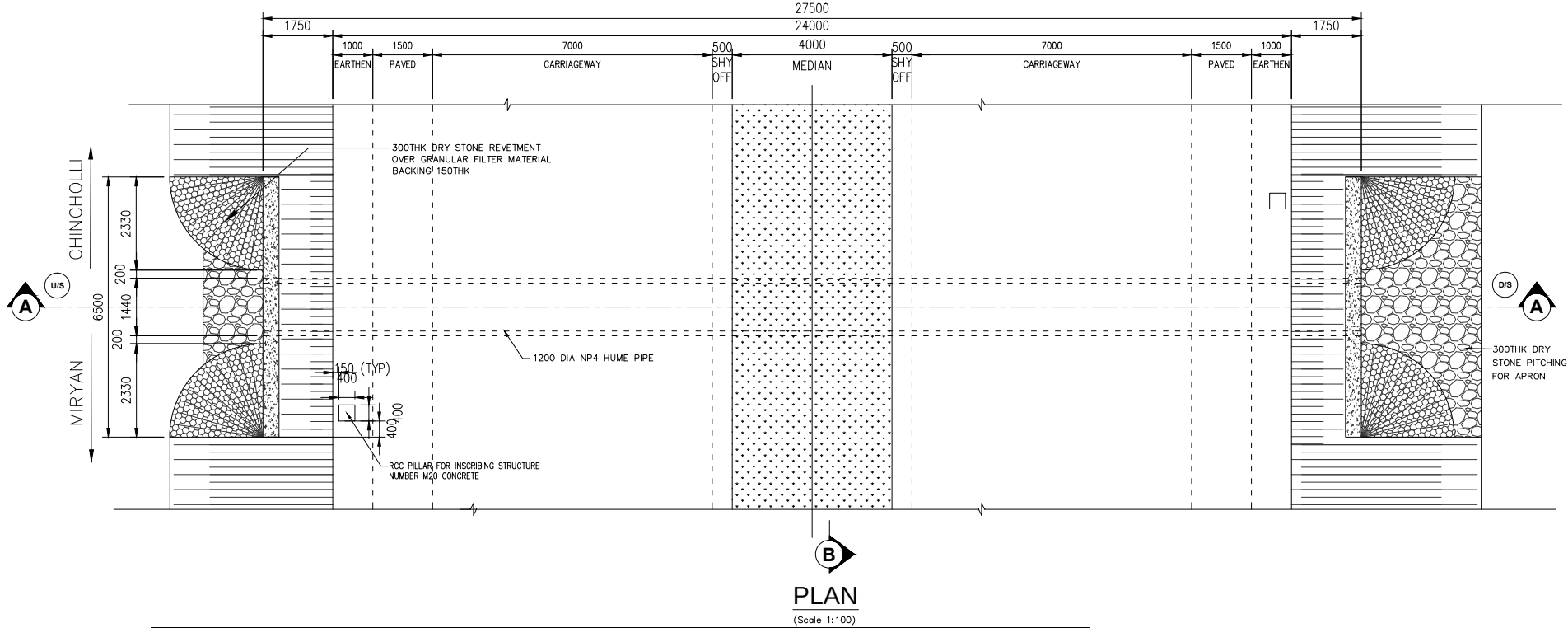
FRL : FINISHED ROAD LEVEL
U/S : UP STREAM
D/S : DOWN STREAM
CW : CARRIAGEWAY
ES : EARTHEN SHOULDER
PS : PAVED SHOULDER
FP : FOOTPATH
IL : INVERT LEVEL
C/L : CENTER LINE
THK : THICKNESS
TYP : TYPICAL
SO : SHY OFF



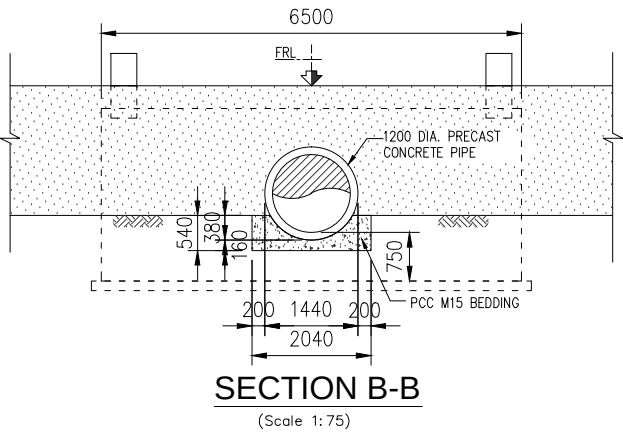
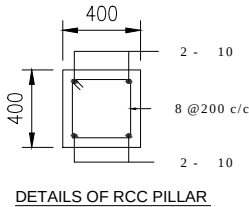
JOINT DETAIL
(TYPICAL DETAIL SHOWING INTERNAL FLUSH JOINTS OF NEW PIPES)



SECTION A-A
(Scale 1:100)



PLAN
(Scale 1:100)



SECTION B-B
(Scale 1:75)

S.No.	Chainage	Type of Proposed Structure	Span Arrangement	Type of Super-structure	VERTICAL CLEARANCE	IL	FRL	Cushion height	Skew Angle
1	0+620	HPC	1x1200	NP-4 Pipe	1.2	845.876	848.661	0.000	0
2	1+420	HPC	1x1200	NP-4 Pipe	1.2	838.912	850.679	8.952	0
3	2+767	HPC	1x1200	NP-4 Pipe	1.2	851.925	853.324	0.000	29
4	4+420	HPC	1x1200	NP-4 Pipe	1.2	853.033	856.384	0.536	40
5	5+080	HPC	1x1200	NP-4 Pipe	1.2	847.164	852.100	2.121	0
6	5+550	HPC	1x1200	NP-4 Pipe	1.2	850.362	860.721	7.544	0
7	5+820	HPC	1x1200	NP-4 Pipe	1.2	854.379	865.120	7.926	0
8	8+130	HPC	1x1200	NP-4 Pipe	1.2	867.680	872.717	2.222	0
9	9+065	HPC	1x1200	NP-4 Pipe	1.2	857.421	861.109	0.872	0
10	10+116	HPC	1x1200	NP-4 Pipe	1.2	853.757	856.830	0.258	0
11	10+684	HPC	1x1200	NP-4 Pipe	1.2	849.004	852.729	0.910	0
12	12+160	HPC	1x1200	NP-4 Pipe	1.2	859.039	863.811	1.957	29
13	12+500	HPC	1x1200	NP-4 Pipe	1.2	869.675	871.311	0.000	0

RO	03.01.24	INITIAL SUBMISSION	R.S	S.K	S.K
NO.	DATE	REVISION	DRAWN	CHECKED	APPROVED

Client: **PWD- National Highways,**
Hassan Division
(Government of Karnataka)

Consultant: **INDIAN TECHNOCRAT LIMITED**
In Association with
Vistaara Infra Consultants
New Delhi - 110 070, Ph. : 011-49531100,
Email: info@itl.net.in

Project: **Construction of Holenarasipura Bypass on NH-373 in the State of Karnataka under NH(O) on EPC mode**

Title: TYPICAL GENERAL ARRANGEMENT DRAWING PROPOSED NEW CONSTRUCTION NP-4 PIPE CULVERT (1X1200)			
DRG. NO. 23-102/ITL/NH373/HNP/HPC/GAD-01			
DATE: 03-01-2024	SCALE:	SHEET NO: 10F1	REV : R0
DESIGN B.D	DRAWN R.S	CHECKED S.K	APPROVED S.K