



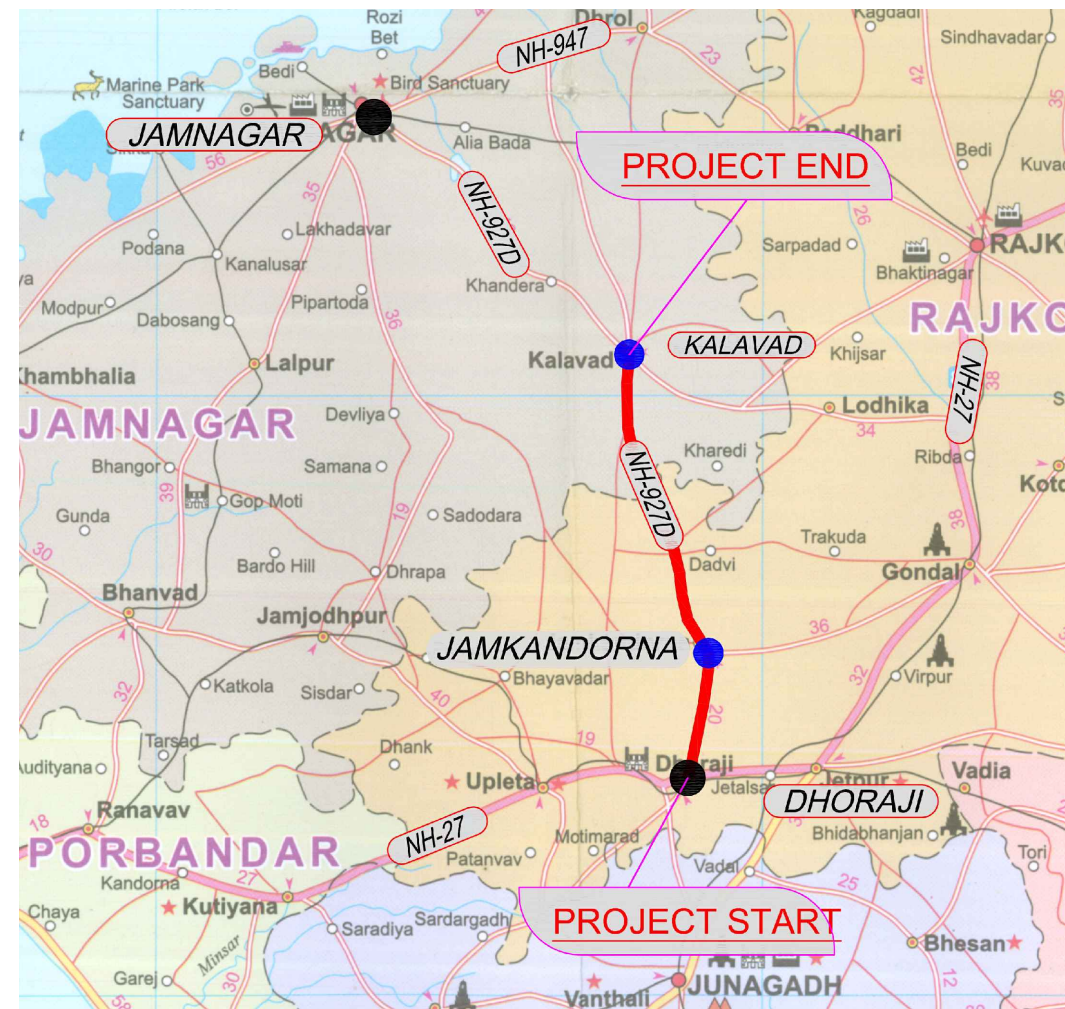
भारतीय राजमार्ग अभियन्ता अकादमी

Indian Academy of Highway Engineers

सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO.- NH/IAHE/18)



REVISED FINAL DETAILED PROJECT REPORT VOLUME IX

**DRAWING VOLUME
PART-II (STRUCTURE)**

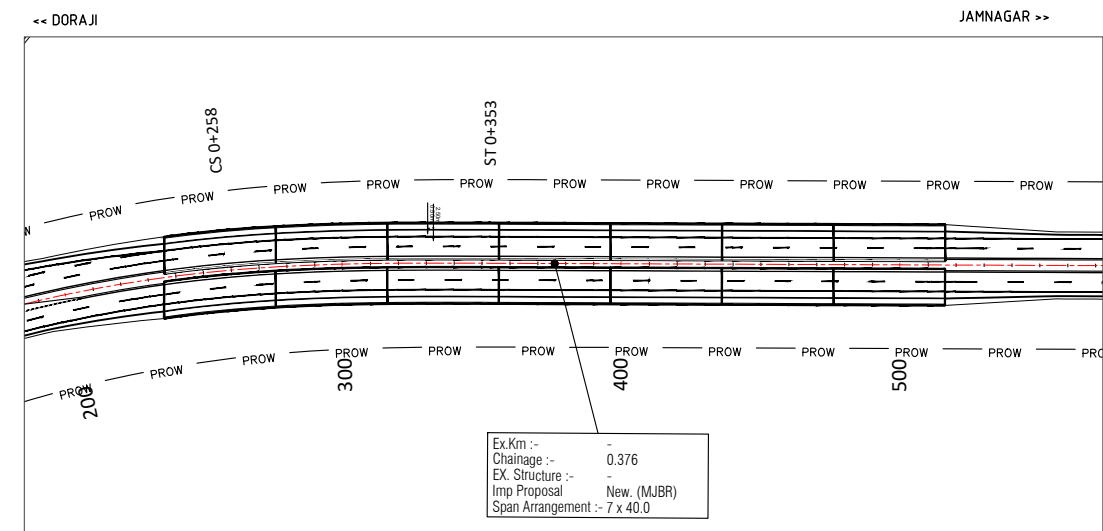
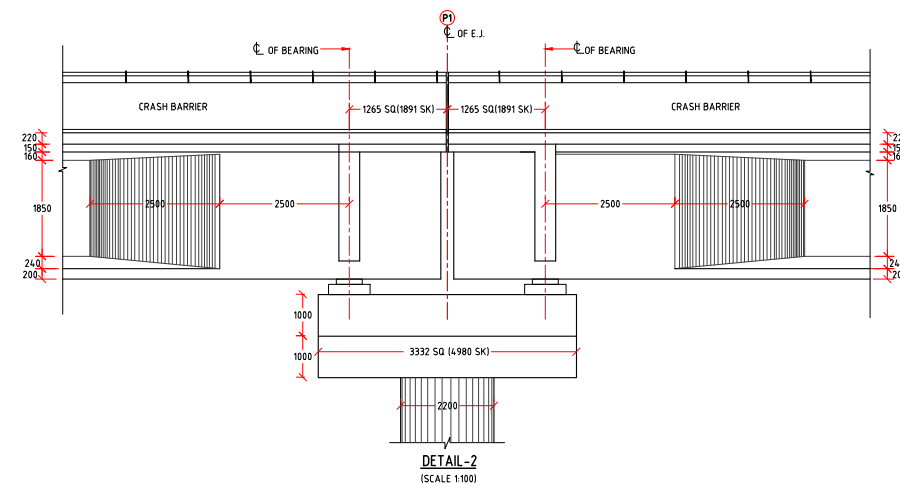
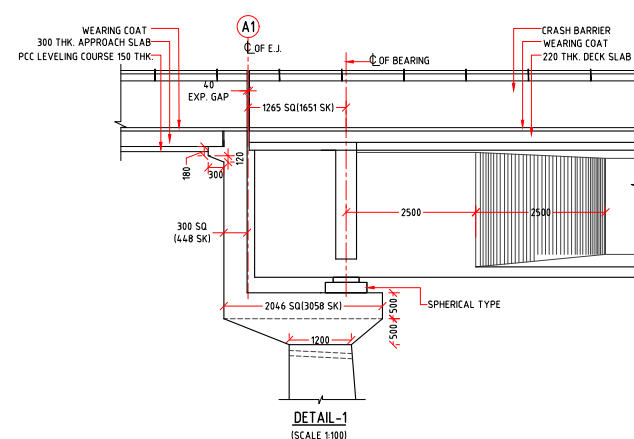
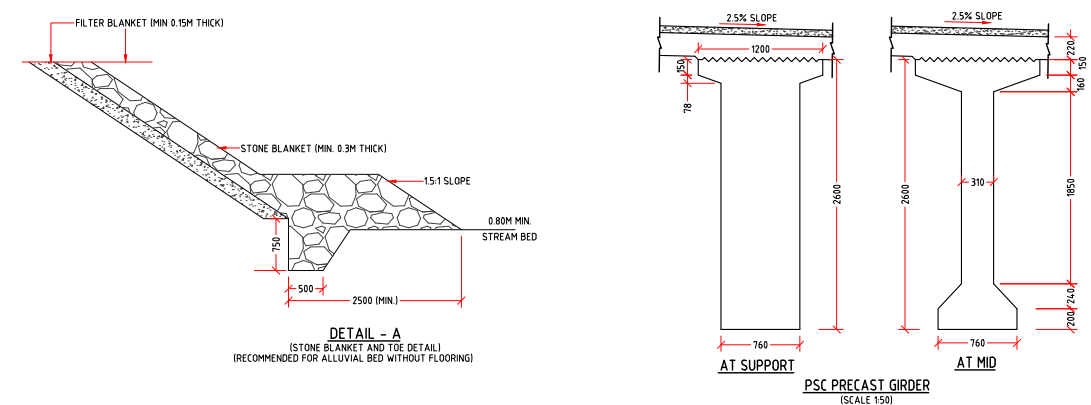
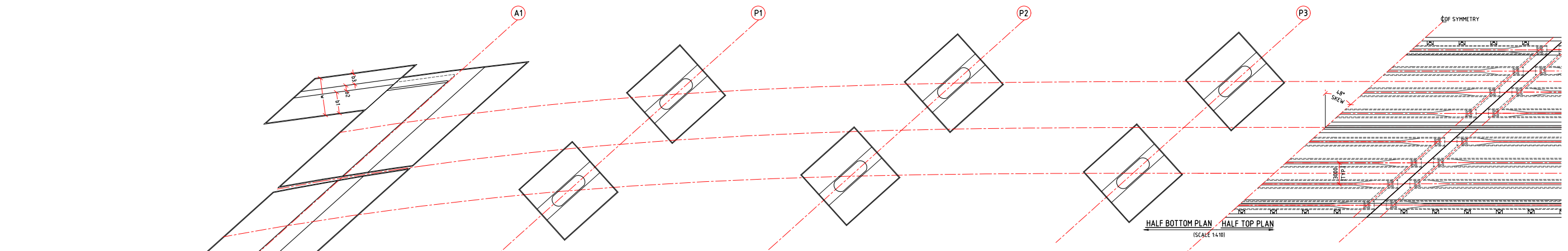
APRIL-2025

DESIGN CONSULTANT:-
**CONSULTING
ENGINEERS GROUP**
An ISO 9001:2008 Company
CEG Tower, B-11(G), Malviya Industrial Area, Jaipur - 302017 India
Tel: +91 141 2751801, 2751802, 2751803, 2751804 Fax: 0114-2751806
Email address: hqjpr@ceginia.com; URL: www.ceginia.com

SR.NO.	TITLE	CHAINAGE	DESCRIPTION	DRAWING NO.	PAGE NO.
1	TITLE PAGE				1
2	MAJOR BRIDGE				2
3	GENERAL ARRANGEMENT DRAWING	0+376	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/NEW/0.390/GAD/01	3
	GENERAL ARRANGEMENT DRAWING	0+376	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/NEW/0.390/GAD/02	4
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	GENERAL ARRANGEMENT DRAWING	6+111	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/REC/6.110/GAD/02	6
5	GENERAL ARRANGEMENT DRAWING	13+785	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/REC/13.785/GAD/01	7
	GENERAL ARRANGEMENT DRAWING	13+785	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/REC/13.785/GAD/02	8
6	GENERAL ARRANGEMENT DRAWING	16+354	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/NEW/16.354/GAD/01	9
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	GENERAL ARRANGEMENT DRAWING	33+740	GAD OF MAJOR BRIDGE	IAHE/CEG/D121/REC/33.740/GAD/02	12
8	MINOR BRIDGE				13
9	GENERAL ARRANGEMENT DRAWING	1+200	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/1.200/GAD/01	14
	GENERAL ARRANGEMENT DRAWING	1+200	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/1.200/GAD/02	15
10	GENERAL ARRANGEMENT DRAWING	8+659	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/8.660/GAD/01	16
	GENERAL ARRANGEMENT DRAWING	8+659	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/8.660/GAD/02	17
11	GENERAL ARRANGEMENT DRAWING	11+987	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/11.987/GAD/01	18
12	GENERAL ARRANGEMENT DRAWING	12+365	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/12.365/GAD/01	19
13	GENERAL ARRANGEMENT DRAWING	12+838	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/12.838/GAD/01	20
14	GENERAL ARRANGEMENT DRAWING	14+361	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/14.361/GAD/01	21
15	GENERAL ARRANGEMENT DRAWING	15+461	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/15.461/GAD/01	22
	GENERAL ARRANGEMENT DRAWING	15+461	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/15.461/GAD/02	23
16	GENERAL ARRANGEMENT DRAWING	22+977	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/22.977/GAD/01	24
	GENERAL ARRANGEMENT DRAWING	22+977	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/22.977/GAD/02	25
17	GENERAL ARRANGEMENT DRAWING	23+145	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/23.145/GAD/01	26
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18	GENERAL ARRANGEMENT DRAWING	29+915	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/29.915/GAD/01	28
	GENERAL ARRANGEMENT DRAWING	29+915	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/29.915/GAD/02	29

19	GENERAL ARRANGEMENT DRAWING	31+337	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/31.337/GAD/01	30
	GENERAL ARRANGEMENT DRAWING	31+337	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/31.337/GAD/02	31
20	GENERAL ARRANGEMENT DRAWING	38+764	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/38.764/GAD/01	32
	GENERAL ARRANGEMENT DRAWING	38+764	GAD OF MINOR BRIDGE	IAHE/CEG/D121/NEW/38.764/GAD/02	33
21	GENERAL ARRANGEMENT DRAWING	42+216	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/42.216/GAD/01	34
	GENERAL ARRANGEMENT DRAWING	42+216	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/42.216/GAD/02	35
22	GENERAL ARRANGEMENT DRAWING	44+812	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/44.812/GAD/01	36
	GENERAL ARRANGEMENT DRAWING	44+812	GAD OF MINOR BRIDGE	IAHE/CEG/D121/REC/44.812/GAD/02	37
23	RETAINING WALL				38
24	DRAIN CUM RETAINING WALL				39
25	VUP				40
26	GENERAL ARRANGEMENT DRAWING	1+216	GAD OF VUP	IAHE/CEG/D121/NEW/1.230/GAD/01	41
	GENERAL ARRANGEMENT DRAWING	1+216	GAD OF VUP	IAHE/CEG/D121/NEW/1.230/GAD/02	42
27	GENERAL ARRANGEMENT DRAWING	4+600	GAD OF VUP	IAHE/CEG/D121/NEW/4.607/GAD/01	43
	GENERAL ARRANGEMENT DRAWING	4+600	GAD OF VUP	IAHE/CEG/D121/NEW/4.607/GAD/02	44
28	GENERAL ARRANGEMENT DRAWING	8+255	GAD OF VUP	IAHE/CEG/D121/NEW/8.245/GAD/01	45
	GENERAL ARRANGEMENT DRAWING	8+255	GAD OF VUP	IAHE/CEG/D121/NEW/8.245/GAD/02	46
29	FLYOVER				47
30	GENERAL ARRANGEMENT DRAWING	46+670	GAD OF FLYOVER	IAHE/CEG/D121/NEW/46.670/GAD/01	48
	GENERAL ARRANGEMENT DRAWING	46+670	GAD OF FLYOVER	IAHE/CEG/D121/NEW/46.670/GAD/02	49
31	CULVERTS				50

MAJOR BRIDGE



R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
 *Indian Academy of Highway Engineers*
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND
 HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-



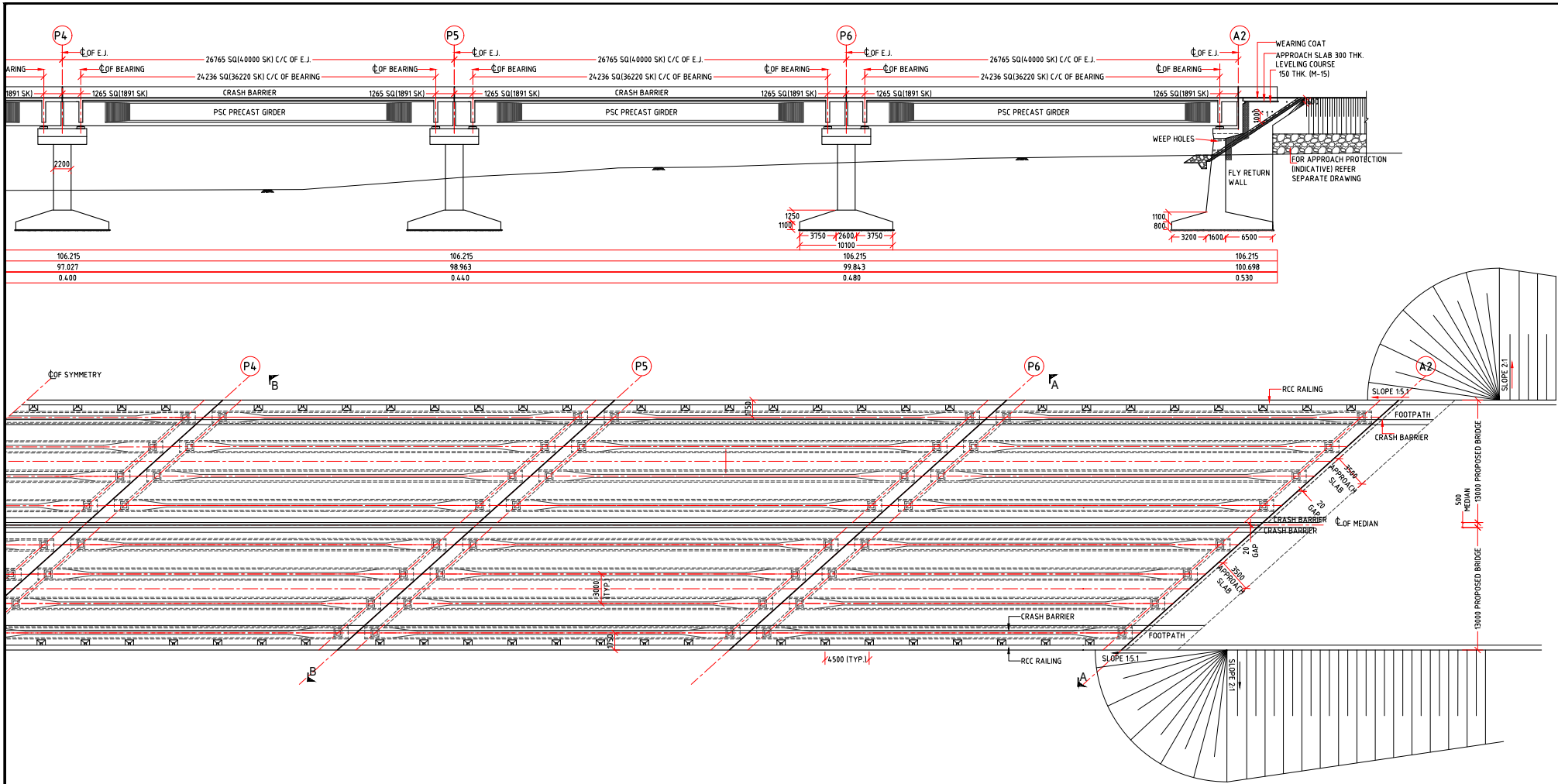
C O N S U L T I N G
E N G I N E E R S G R O U P L T D

An ISO 9001:2008 Company

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PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S	<i>Asir</i>	TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 0.376	REV:	R2
DRAWN	RMP	<i>Ramrath</i>		SIZE:	A3
CHECKED	K.S	<i>K.S</i>	DRAWING NO: IAHE/CEG/D121/NEW/0.376/GAD/01	DATE:	APR.-2025
APPROVED	AKJ	<i>AKJ</i>	SCALE: AS SHOWN	SHEET 1 OF 2	



TABLE

PROPOSED CHAINAGE	0.376
EXISTING KM (LOCATION)	-
PROPOSED STRUCTURE	MAJOR BRIDGE
SPAN ARRANGEMENT (M)	7x40.0 (EXP. TO EXP.)
PROPOSAL	NEW
FRL. (M)	106.215
HFL. (M)	101.015
MIN. BED LVL. (M)	97.027

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- GRADE OF CONCRETE :

GIRDER	M-35
SUB STRUCTURE	M-35
FOUNDATION	M-35
PSC GIRDER	M-35
ABUTMENT CAP	M-35
CRASH BARRIER	M-40
DIRT WALL	M-35
RETURN WALL	
PEDESTAL	M-40
APPROACH SLAB	M-30
RETAINING WALL	M-30
LEVELING COURSE	M-15
- REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
- BEARING TYPE : SPHERICAL TYPE
- SAFE BEARING CAPACITY AT FOUNDING LEVEL CONSIDERED IN DESIGN IS 35t/m².
- THE BRIDGE HAS BEEN DESIGNED FOR CLASS A3 LANE OR CLASS-70R + CLASS-A LOADING WHICH EVER PRODUCE WORST EFFECT.
- WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
- BACK FILL PARAMETERS ASSUMED ARE c=0, φ>30°. DRY DENSITY =18kN/m³.
- CLEAR COVER TO ANY REINFORCEMENT

IN FOUNDATION	= 75mm
IN SUB STRUCTURE	= 50mm
IN SUPERSTRUCTURE	= 40mm
- STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MOSRTH SPECIFICATION.
- 20 mm THK FILLER JOINT SHALL BE PROVIDED IN BETWEEN APPROACH SLAB & DIRT WALL.
- TAR PAPER BEARING SHALL BE PROVIDED BELOW APPROACH SLAB RESTING ON BRACKET.
- WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
- FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
- THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.

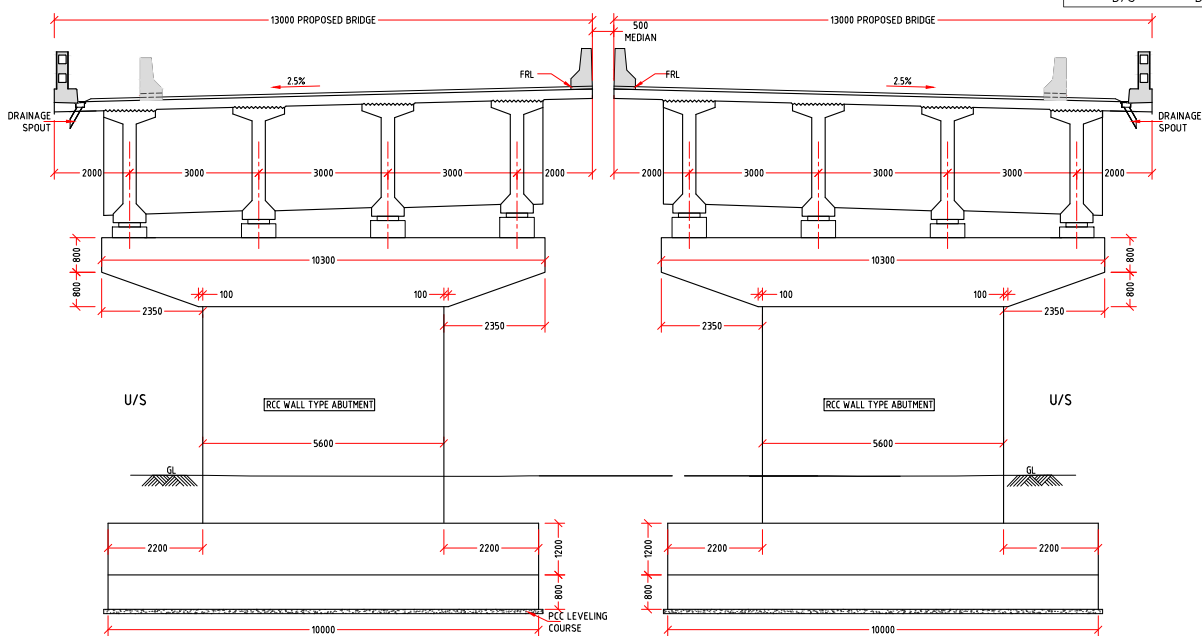
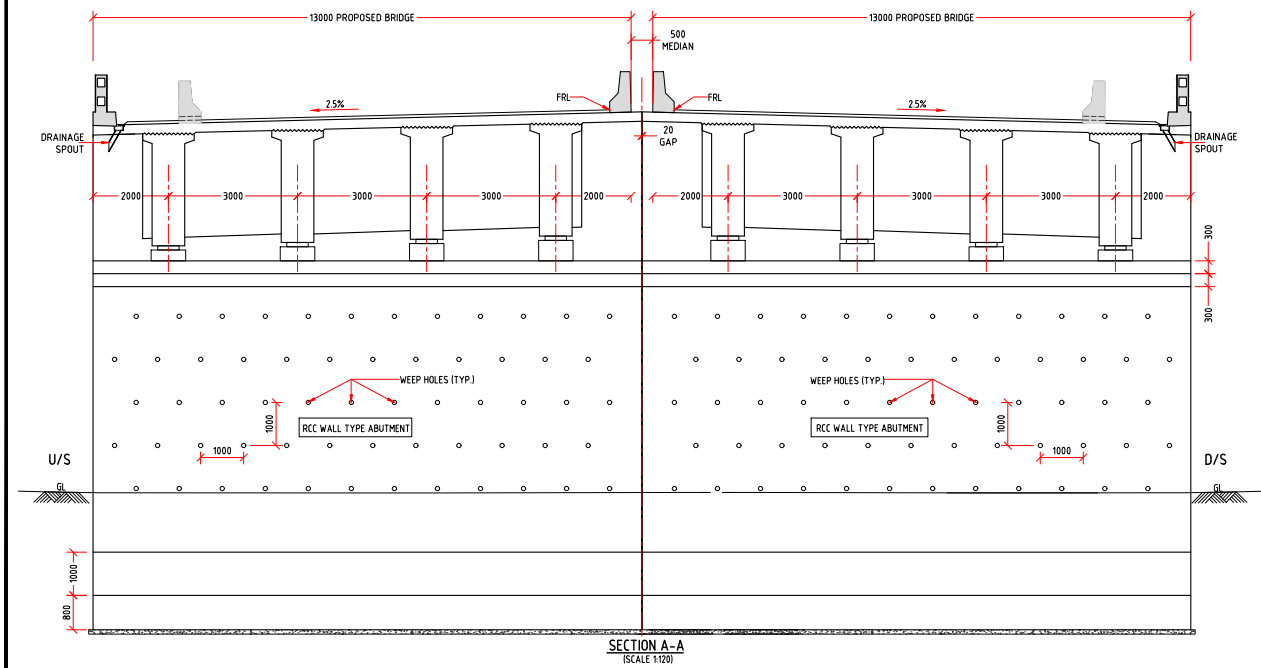
REFERENCE DRAWING:-

DETAILS OF APPROACH SLAB, CRASH BARRIER, EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC-1

FOR RETAINING WALL
IAHE/CEG/RET/TYP-1

LEGEND:-

- E.J. - EXPANSION JOINT
FRL. - FINISHED ROAD LEVEL
HFL. - HIGH FLOOD LEVEL
U/S - UP STREAM
D/S - DOWN STREAM



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION



OWNER:
भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
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MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
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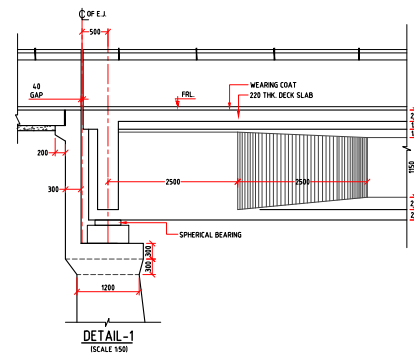
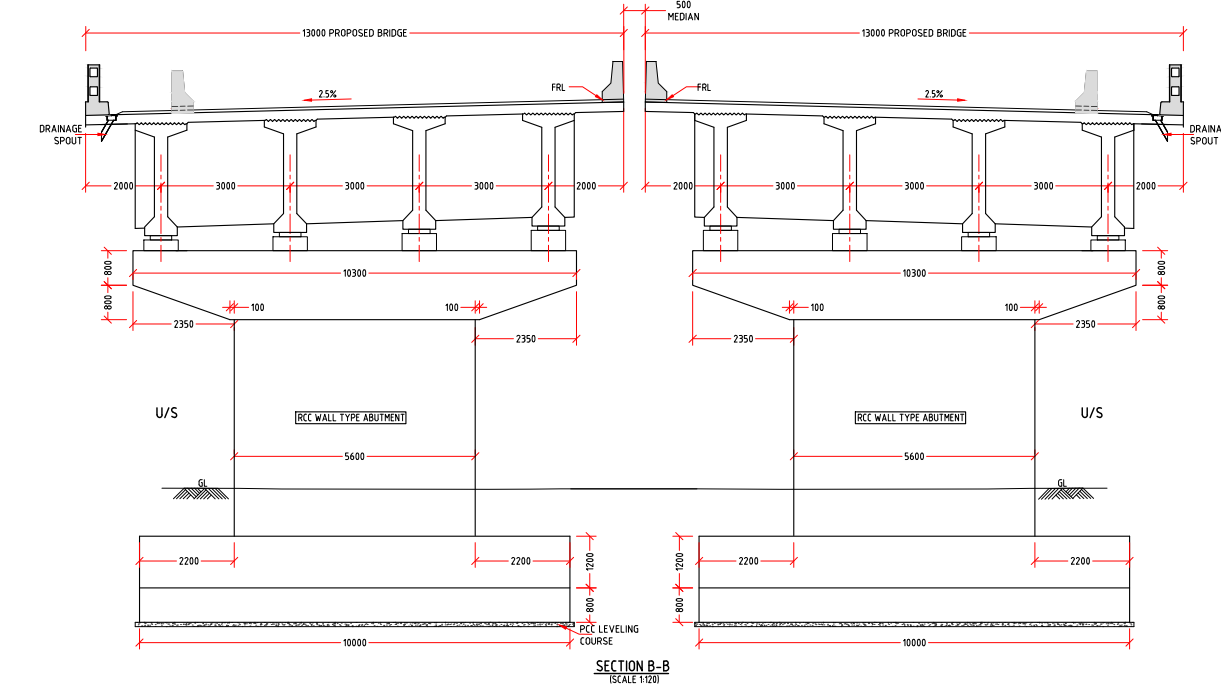
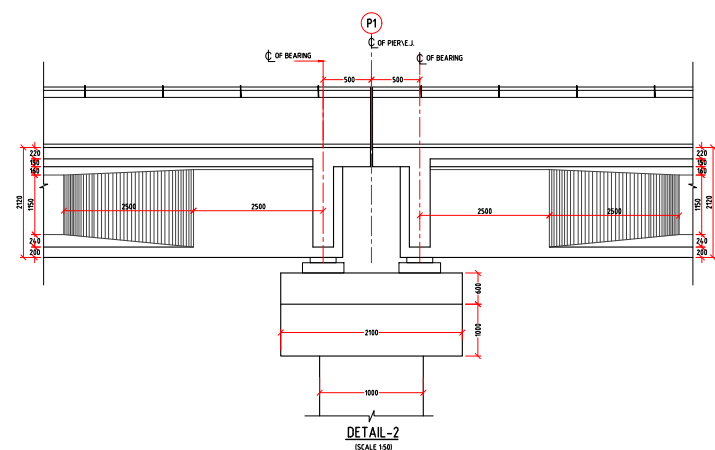
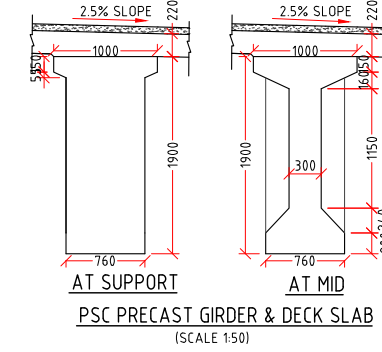
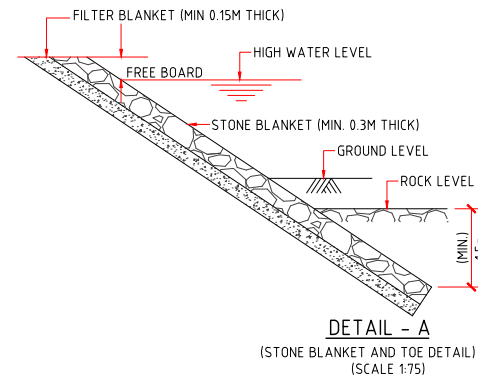
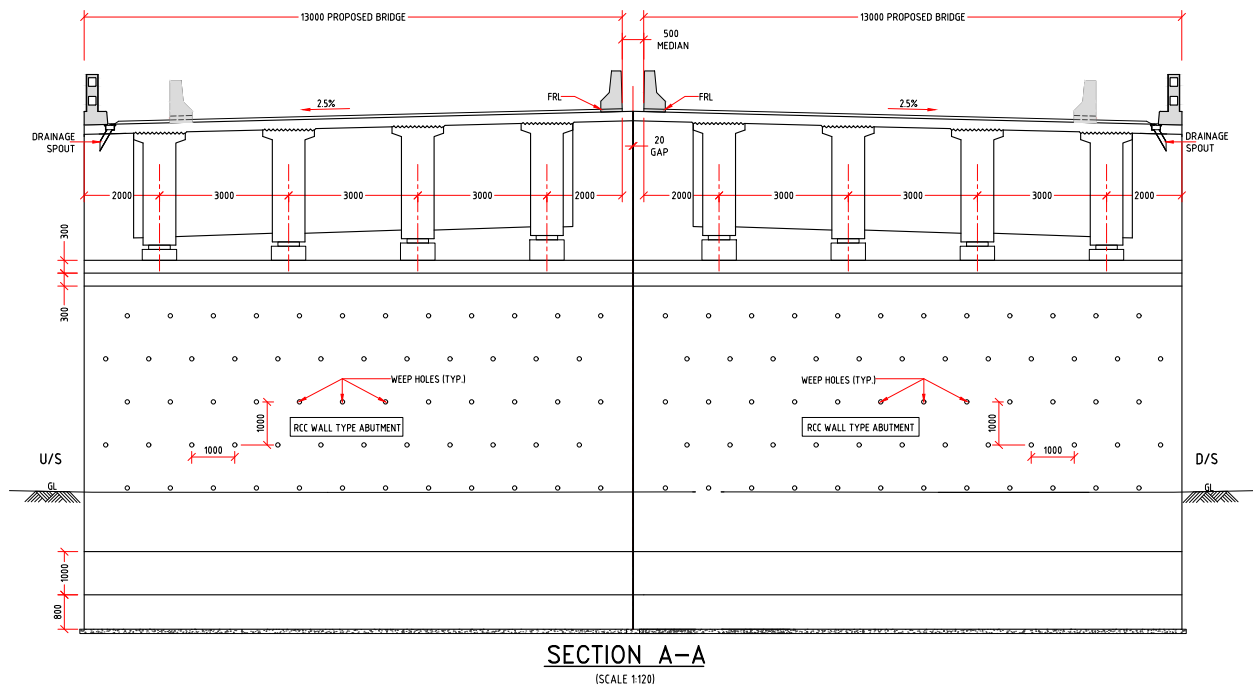


PROJECT:
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DESIGNED	A.S.	
DRAWN	J.A.	
CHECKED	K.S.	
APPROVED	AKJ	

TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 0.376
DRAWING NO: IAHE/CEG/D121/NEW/0.376/GAD/02
SCALE: AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
	SHEET 2 OF 2

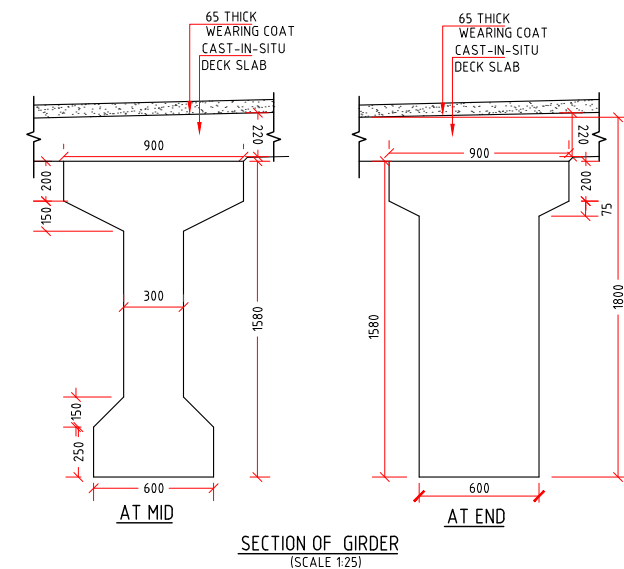
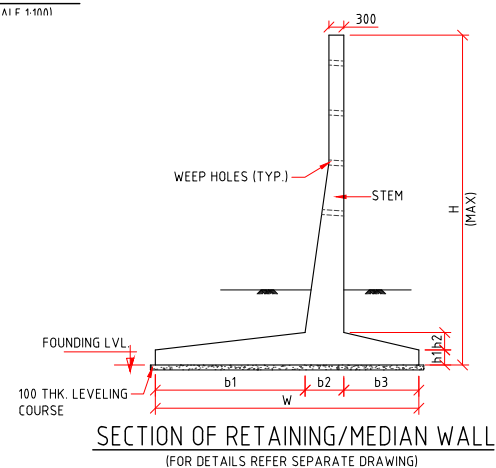
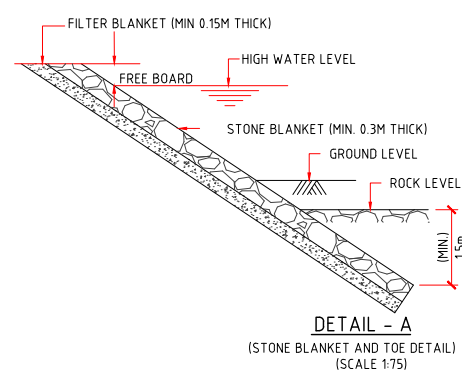
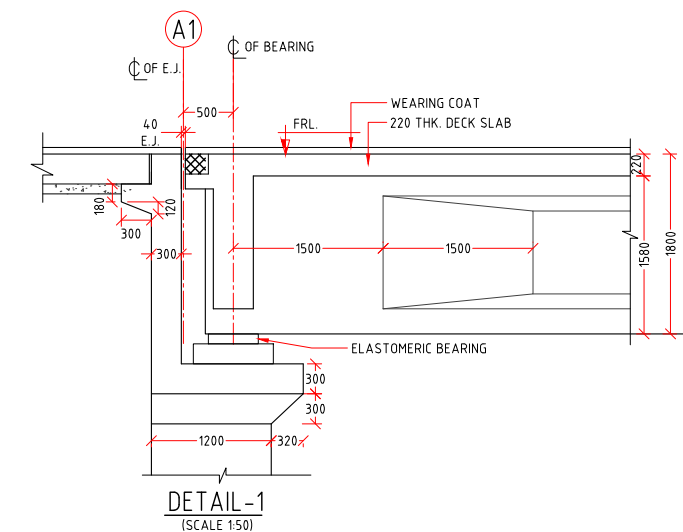
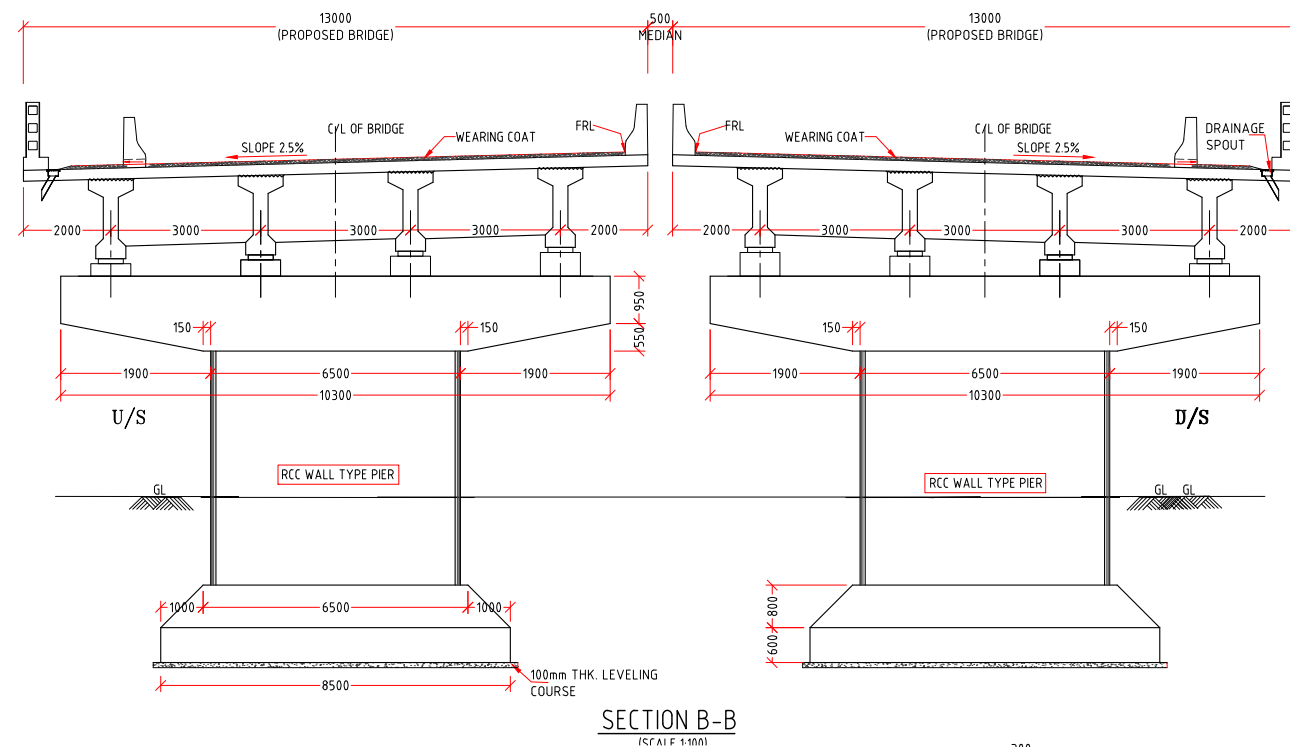
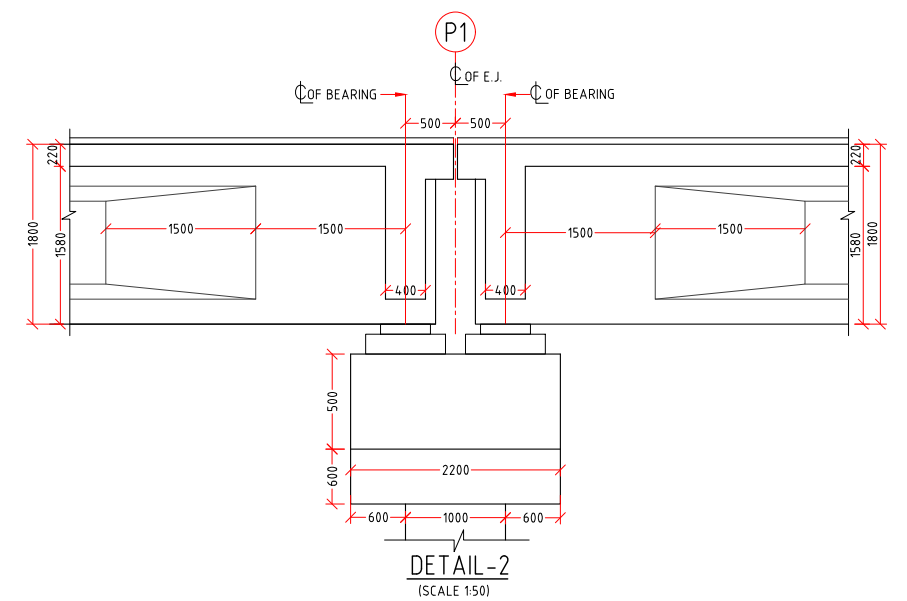
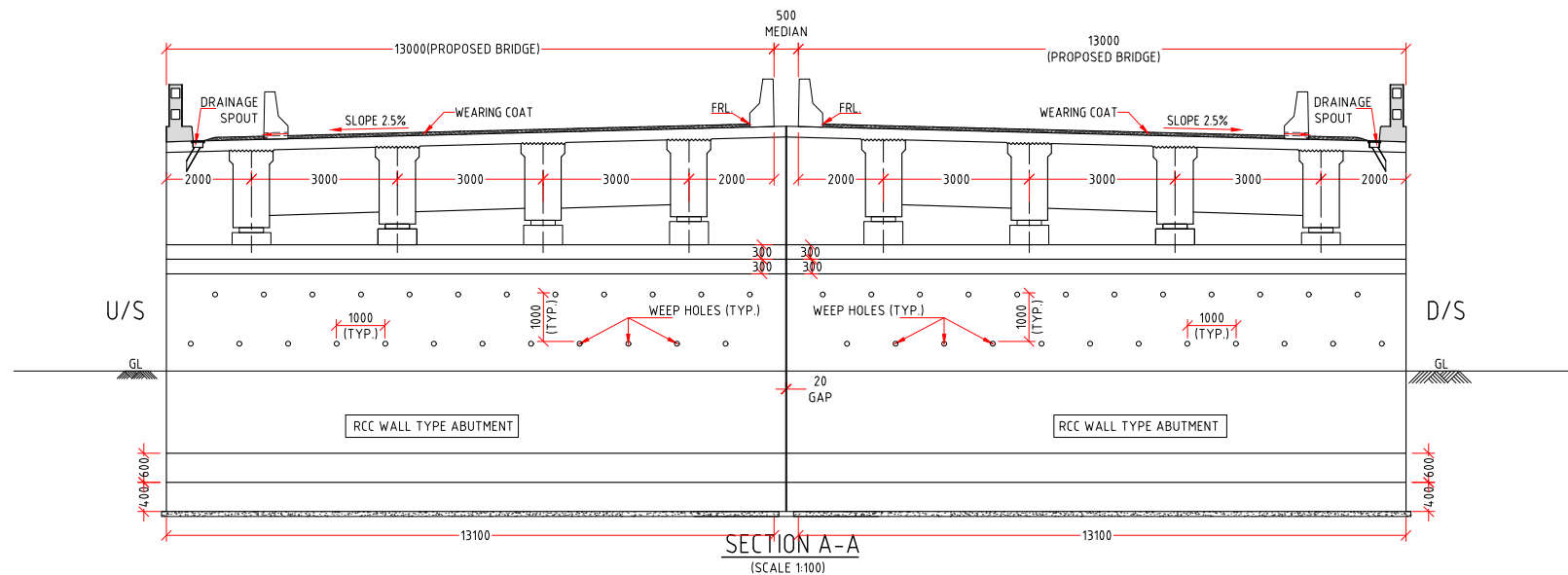


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APPROACH SLAB	M-30
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LEVELING COURSE	M-15
 - REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
 - BEARING TYPE : ELASTOMERIC BEARING
 - SAFE BEARING CAPACITY AT FOUNDING LEVEL CONSIDERED IN DESIGN IS 30t/m².
 - THE BRIDGE HAS BEEN DESIGNED FOR CLASS A3 LANE OR CLASS-70R + CLASS-A LOADING WHICH EVER PRODUCE WORST EFFECT.
 - WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
 - BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi=30^\circ$. DRY DENSITY $\approx 18\text{kN/m}^3$.
 - CLEAR COVER TO ANY REINFORCEMENT

IN FOUNDATION	$\approx 75\text{mm}$
IN SUB STRUCTURE	$\approx 50\text{mm}$
IN SUPERSTRUCTURE	$\approx 40\text{mm}$
 - STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MOSRTH SPECIFICATION.
 - 20 mm THK FILLER JOINT SHALL BE PROVIDED IN BETWEEN APPROACH SLAB & DIRT WALL.
 - SPHERICAL BEARING SHALL BE PROVIDED BELOW APPROACH SLAB RESTING ON BRACKET.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
 - THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
 - BACK FILLING BEHIND ABUTMENT SHALL BE COMPLETED BEFORE RESTING THE SUPERSTRUCTURE.
 - DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MORTH.
 - DIMENSIONS SHOWN ARE TENTATIVE, MAY LIKELY TO CHANGE DURING DETAIL DESIGN.
- LEGEND:-**
- | | | |
|------|---|---------------------|
| E.J. | - | EXPANSION JOINT |
| FRL | - | FINISHED ROAD LEVEL |
| HFL | - | HIGH FLOOD LEVEL |
| U/S | - | UP STREAM |
| D/S | - | DOWN STREAM |

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  C O N S U L T I N G E N G I N E E R S G R O U P L T D An ISO 9001:2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA Tel.: +91 141 2751801/802/803/804, Fax: 2751806 Email: ceg@ceginia.com, URL: www.ceginia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED DRAWN CHECKED APPROVED	A.S. J.A. K.S. AKJ	   	TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 6.111 DRAWING NO: IAHE/CEG/D121/REC/6.111/GAD/02 SCALE: AS SHOWN	REV: R2 SIZE: A3 DATE: APR.-2025 SHEET 2 OF 2
R2	APR.-2025	STRUCTURE WIDTH REVISED								
R1	OCT 2017	FINAL DPR SUBMISSION								
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MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-



C O N S U L T I N G
E N G I N E E R S G R O U P L T D

An ISO 9001 : 2008 Company

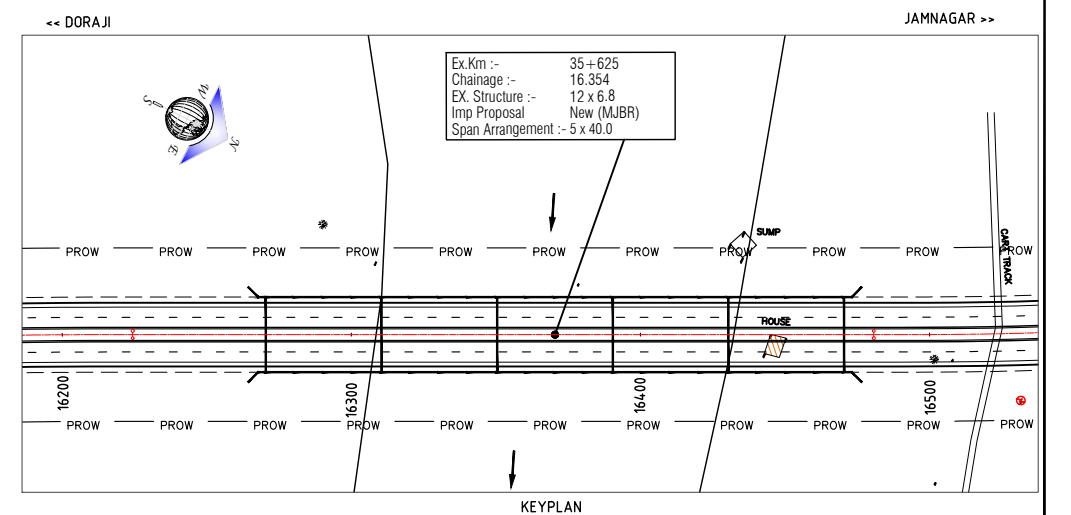
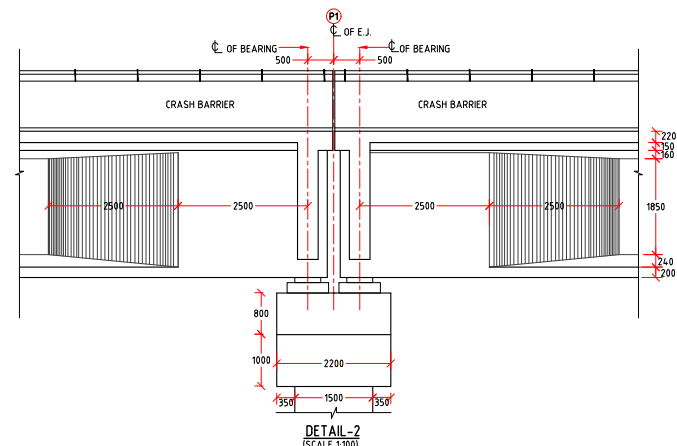
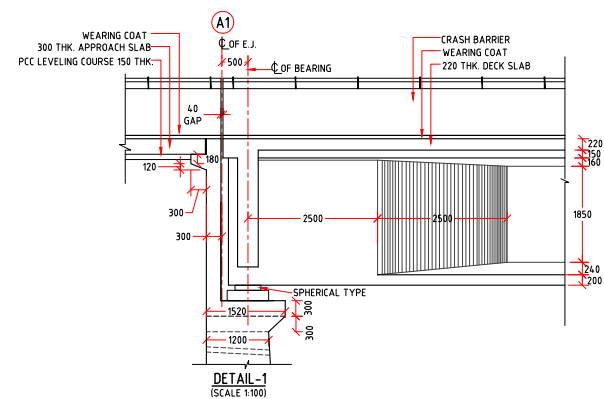
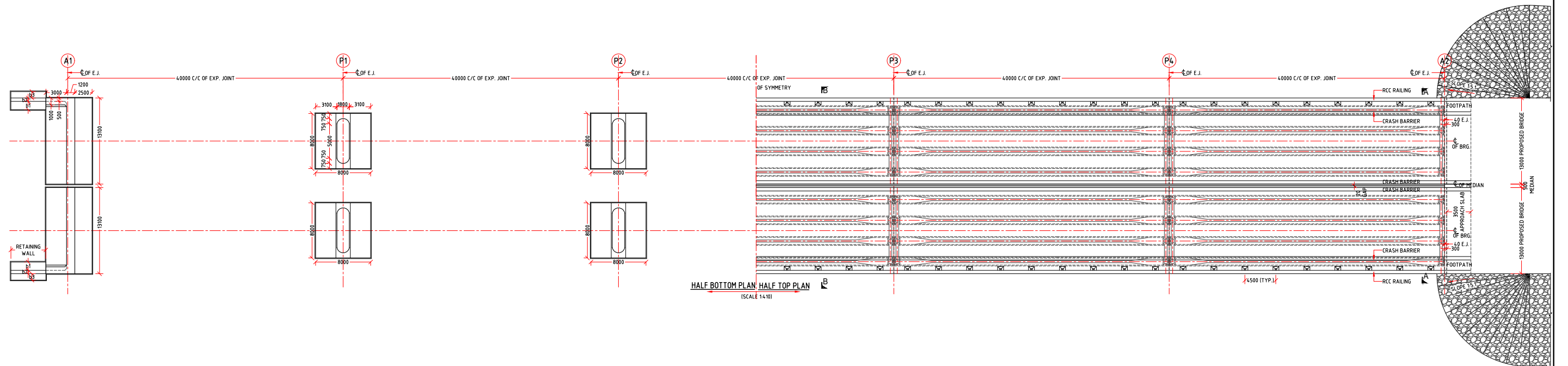
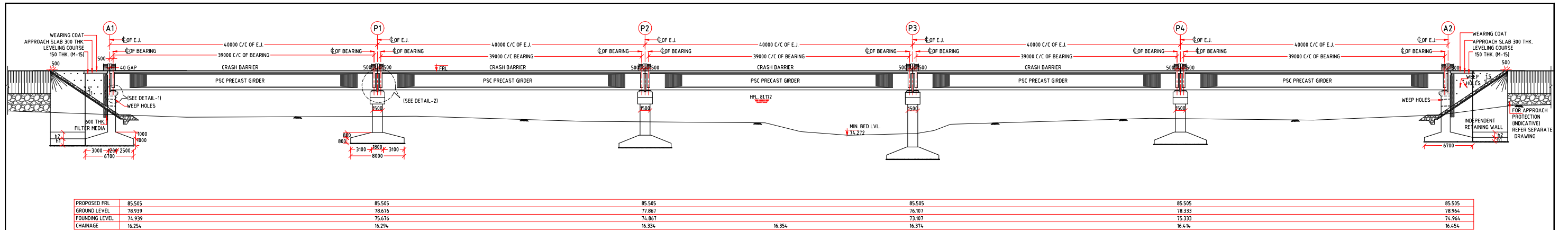
CEG Tower, B11(G), Malviya Industrial Area,
J A I P U R - 3 0 2 0 1 7 (Rajasthan) INDIA
Tel : +91 141 2751801/802/803/804, Fax : 2751806
Email: cegid@cegidna.com, URL: www.cegidna.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE- INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO -NH/IAHE/18)

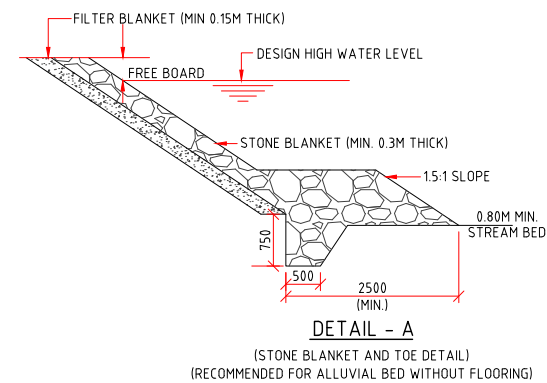
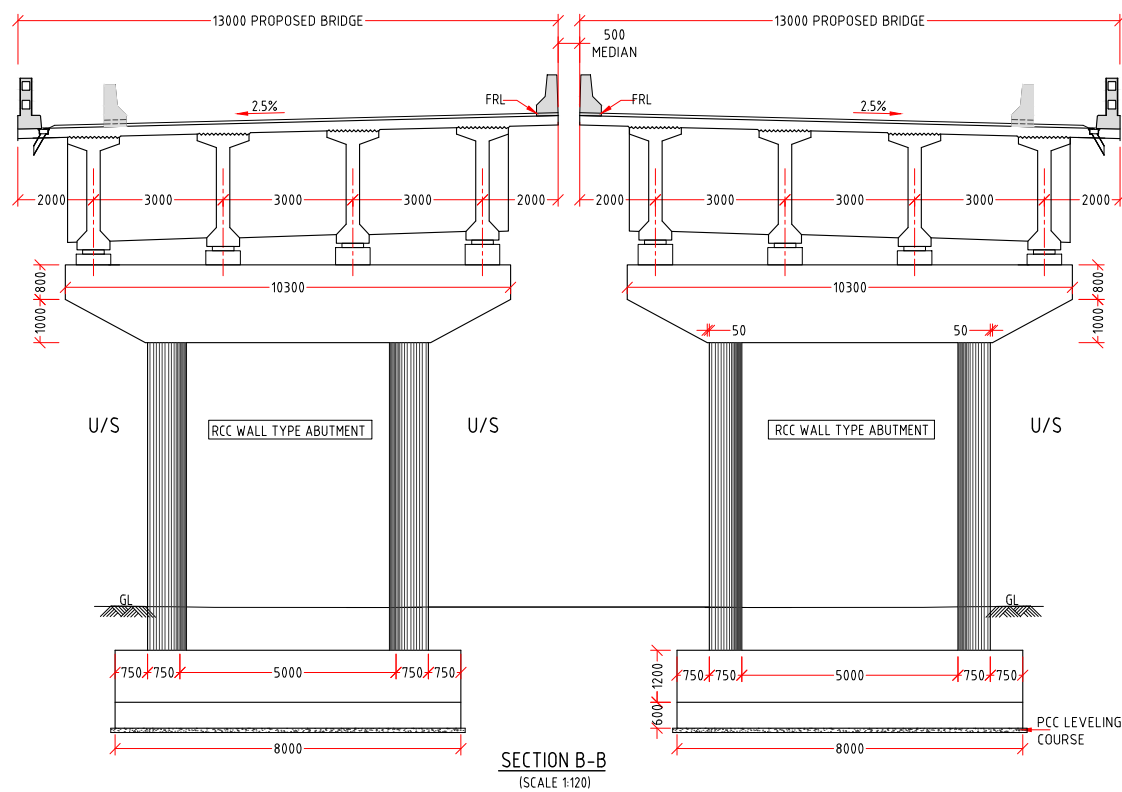
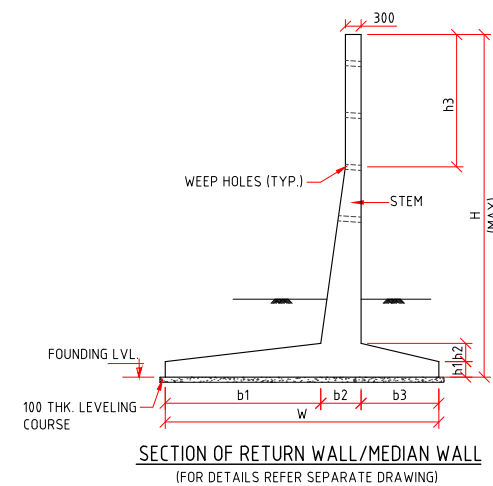
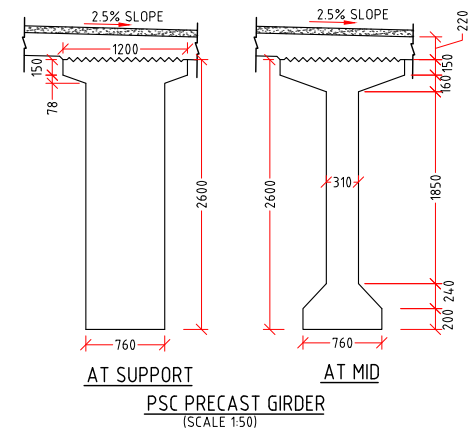
DESIGNED	A.S	<i>Shiv Sood</i>
DRAWN	RMP	<i>Ram Mohan</i>
CHECKED	K.S	<i>K. Sharma</i>
APPROVED	AKJ	<i>AKJ</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 13.785
DRAWING NO:	IAHE/CEG/D121/REC/13.785/GAD/02
SCALE:	AS SHOWN

REV:	R2
SIZE:	A2
DATE:	APR.-2025
SHEET 2 OF 2	



R2	APR.-2025	STRUCTURE WIDTH REVISED	OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA Tel: +91 141 2751801/802803/804, Fax: 2751806 Email: ceg@ceginia.com, URL: www.ceginia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S.	TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 16.354 DRAWING NO: IAHE/CEG/D121/NEW/16.354/GAD/01 SCALE: AS SHOWN	REV:	R2
R1	OCT.-2017	FINAL DPR SUBMISSION				DRAWN	J.A.		SIZE:	A2
R0	JUNE-2017	FIRST SUBMISSION				CHECKED	K.S.		DATE:	APR.-2025
REV	DATE	DESCRIPTION OF REVISIONS				APPROVED	AKJ		SHEET 1 OF 2	



- ### NOTES:-
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - GRADE OF CONCRETE :

GIRDER	M-35
SUB STRUCTURE	M-35
FOUNDATION	M-35
PSC GIRDER	M-35
ABUTMENT CAP	M-35
CRASH BARRIER	M-40
DIRT WALL	M-35
RETURN WALL	
PEDESTAL	M-40
APPROACH SLAB	M-30
RETAINING WALL	M-30
LEVELLING COURSE	M-15
 - REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS-1786 GRADE Fe 500.
 - BEARING TYPE : SPHERICAL TYPE
 - SAFE BEARING CAPACITY AT FOUNDING LEVEL CONSIDERED IN DESIGN IS $35t/m^2$.
 - THE BRIDGE HAS BEEN DESIGNED FOR CLASS A3 LANE OR CLASS-70R + CLASS-A LOADING WHICH EVER PRODUCE WORST EFFECT.
 - WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
 - BACK FILL PARAMETERS ASSUMED ARE $C=0$, $\phi=30^\circ$. DRY DENSITY $\gamma=18kN/m^3$.
 - CLEAR COVER TO ANY REINFORCEMENT

IN FOUNDATION	= 75mm
IN SUB STRUCTURE	= 50mm
IN SUPERSTRUCTURE	= 40mm
 - STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MOSRTH SPECIFICATION.
 - 20 mm THK FILLER JOINT SHALL BE PROVIDED IN BETWEEN APPROACH SLAB & DIRT WALL.
 - TAR PAPER BEARING SHALL BE PROVIDED BELOW APPROACH SLAB RESTING ON BRACKET.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS -2702 OF MOSRTH SPECIFICATIONS.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
 - The 600 mm TH FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.

REFERENCE DRAWING:-

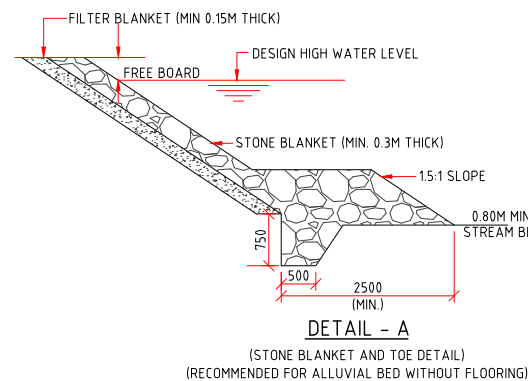
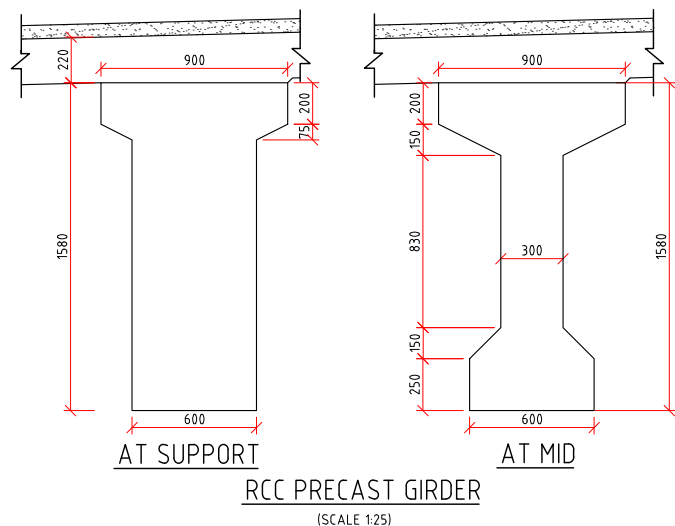
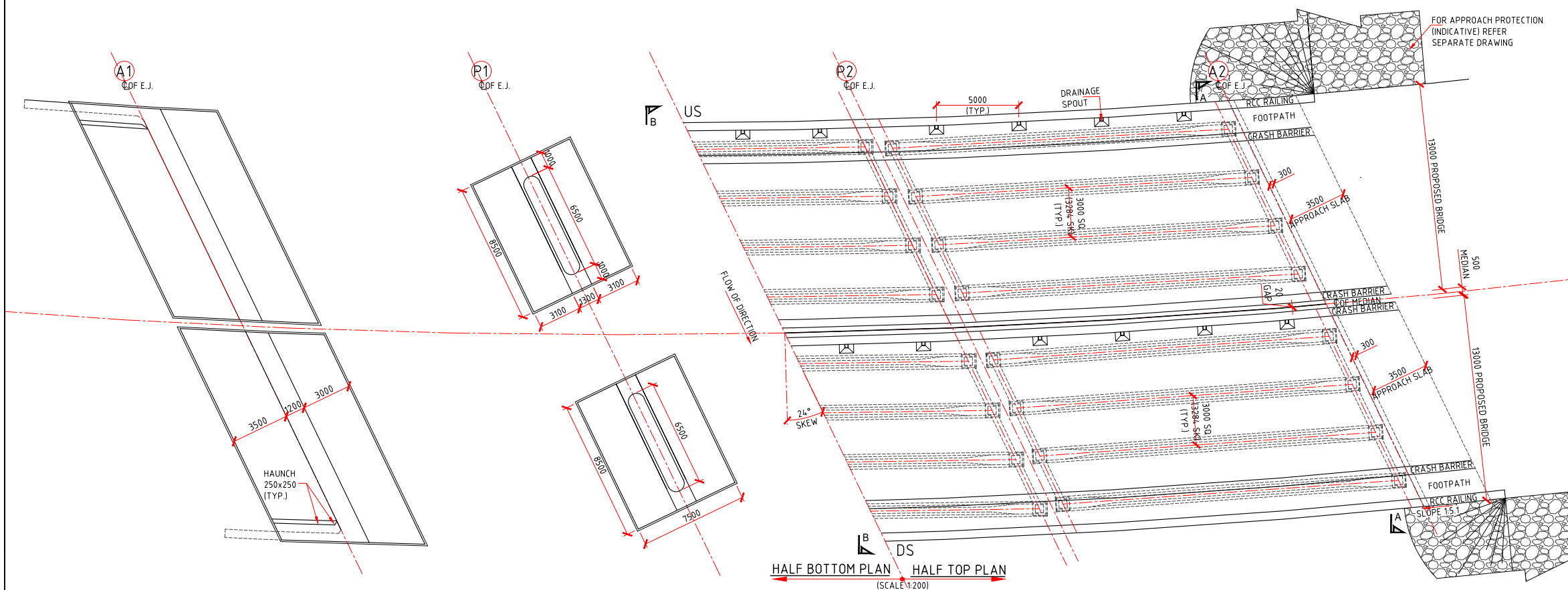
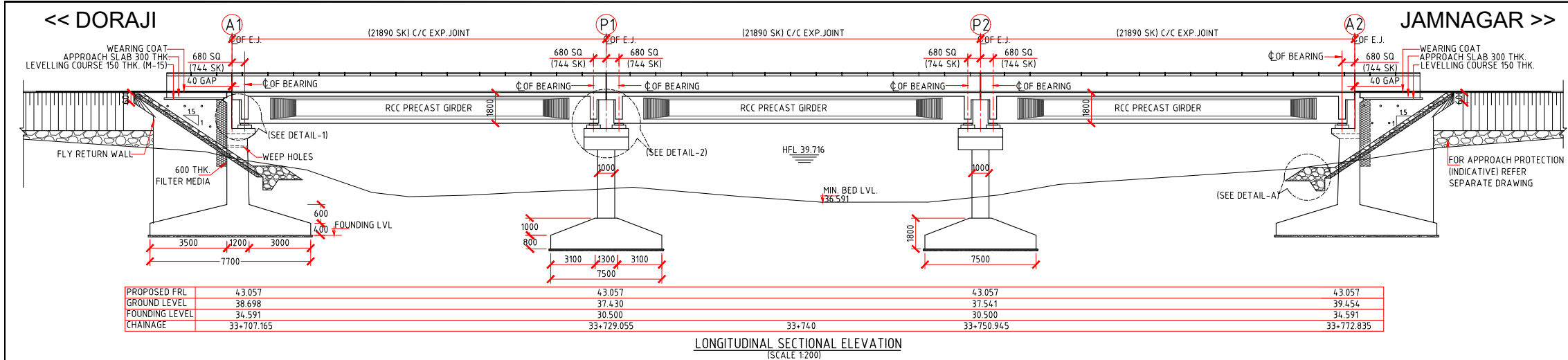
DETAILS OF APPROACH SLAB, CRASH BARRIER,
EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC-1

FOR RETAINING WALL
IAHE/CEG/RET/TYP-1

LEGEND:-

E.J.	-	EXPANSION JOINT
FRL.	-	FINISHED ROAD LEVEL
HFL.	-	HIGH FLOOD LEVEL
U/S	-	UP STREAM
D/S	-	DOWN STREAM

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी <u>Indian Academy of Highway Engineers</u> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  CONSULTING ENGINEERS GROUP LTD AN ISO 9001 : 2008 Company CEG Tower, B1 (G), Mahyva Industrial Area, JAI PUDR : 3-9-2-17 (Bajajnagar) - INDIA Tel : +91 441 2751801/ 802/803/804, Fax : 2751806 Email: ceg@ceginidm.com, URL: www.ceginidm.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED DRAWN CHECKED APPROVED	A.S J.A. K.S AKJ	   	TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 16.354 DRAWING NO: IAHE/CEG/D/121/NH/16.354/GAD/02 SCALE: AS SHOWN	REV: R2 SIZE: A2 DATE: APR.-2025 SHEET 2 OF 2
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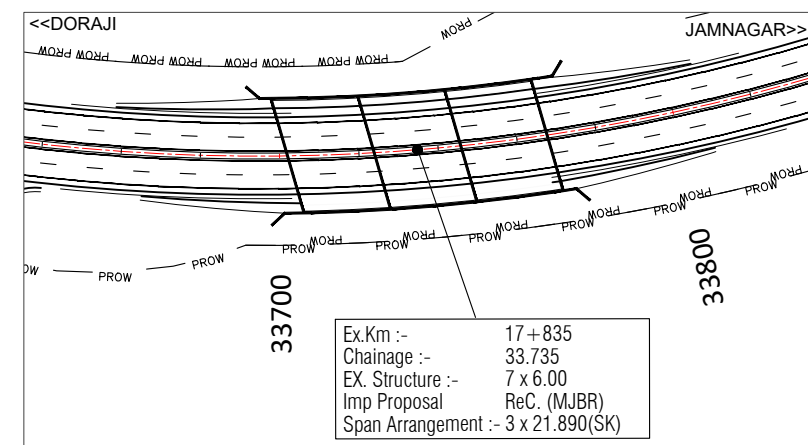
- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - GRADE OF CONCRETE :

GIRDER	M-35
SUB STRUCTURE	M-35
FOUNDATION	M-35
RCC GIRDER	M-35
ABUTMENT CAP	M-35
CRASH BARRIER	M-40
DIRT WALL	M-35
RETURN WALL	M-35
PEDESTAL	M-40
APPROACH SLAB	M-30
RETAINING WALL	M-30
LEVELLING COURSE	M-15
 - REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
 - BEARING TYPE : ELASTOMERIC BEARING
 - SAFE BEARING CAPACITY AT FOUNDED LEVEL CONSIDERED IN DESIGN IS 38t/m².
 - THE BRIDGE HAS BEEN DESIGNED FOR CLASS A3 LANE OR CLASS-70R + CLASS-A LOADING WHICH EVER PRODUCE WORST EFFECT.
 - WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
 - BACK FILL PARAMETERS ASSUMED ARE C=0, φ=30°. DRY DENSITY =18kN/m³.
 - CLEAR COVER TO ANY REINFORCEMENT

IN FOUNDATION	= 75mm
IN SUB STRUCTURE	= 50mm
IN SUPERSTRUCTURE	= 40mm
 - STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MOSRTH SPECIFICATION.
 - 20 mm THK FILLER JOINT SHALL BE PROVIDED IN BETWEEN APPROACH SLAB & DIRT WALL.
 - TAR PAPER BEARING SHALL BE PROVIDED BELOW APPROACH SLAB RESTING ON BRACKET.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLAUSE : 2702 OF MORT & H SPECIFICATIONS.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
 - THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
 - BACK FILLING BEHIND ABUTMENT SHALL BE COMPLETED BEFORE RESTING THE SUPERSTRUCTURE.
 - DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MORTH.

REFERENCE DRAWING:-
 DETAILS OF APPROACH SLAB, CRASH BARRIER, EXP. JOINT & DRAIN SPOUT
 IAHE/CEG/MISC-1
 FOR RETAINING WALL
 IAHE/CEG/RET/TYP-1

LEGEND:-
 E.J. - EXPANSION JOINT
 LVL. - LEVEL
 FRL. - FINISHED ROAD LEVEL
 THK. - THICK
 GL. - GROUND LEVEL
 C.J. - CONSTRUCTION JOINT
 HFL. - HIGH FLOOD LEVEL
 U/S - UP STREAM
 D/S - DOWN STREAM
 MCW - MAIN CARRIAGE WAY



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

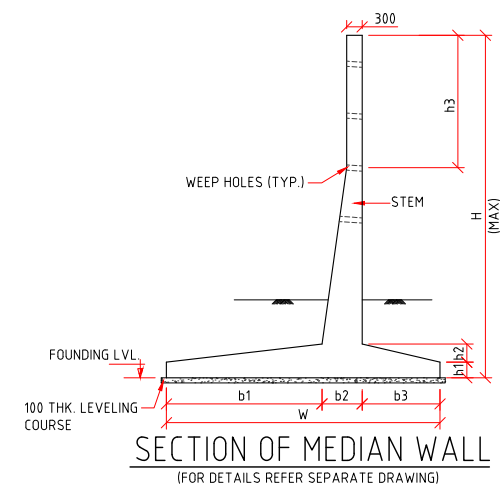
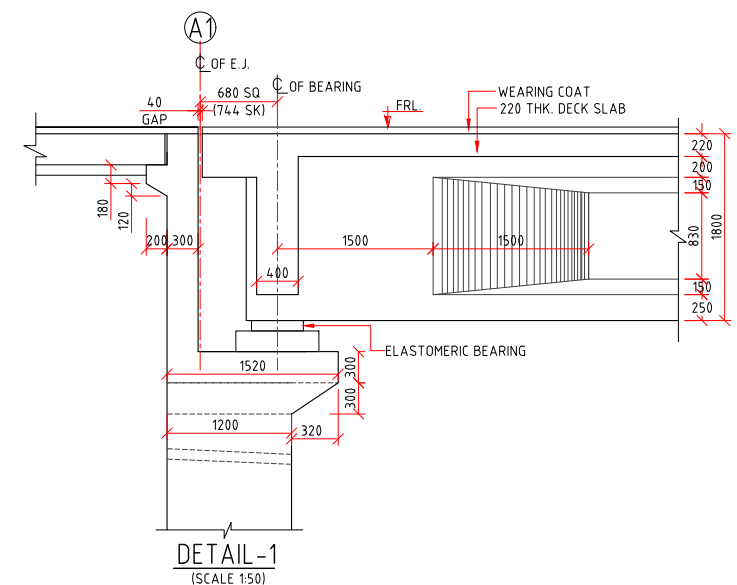
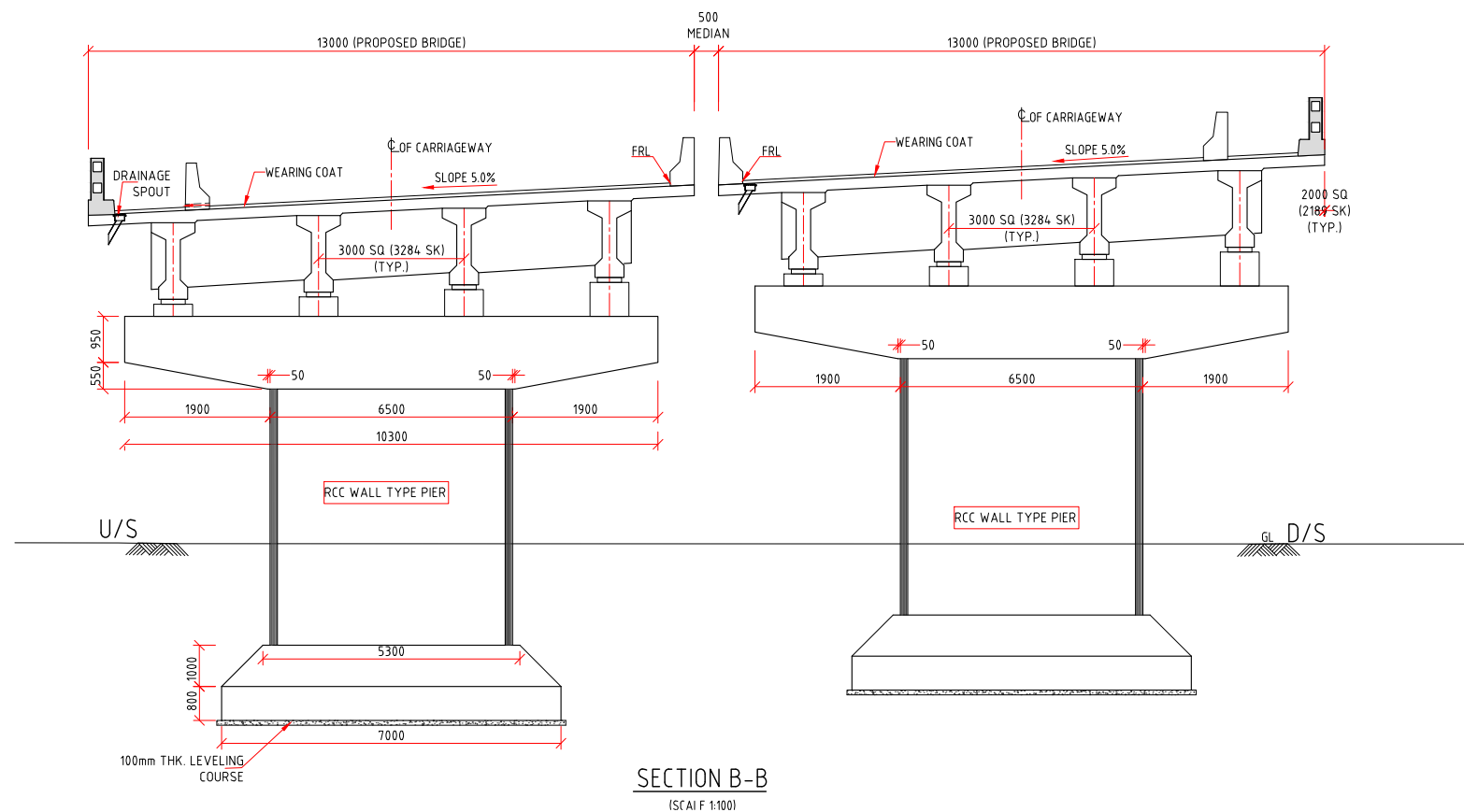
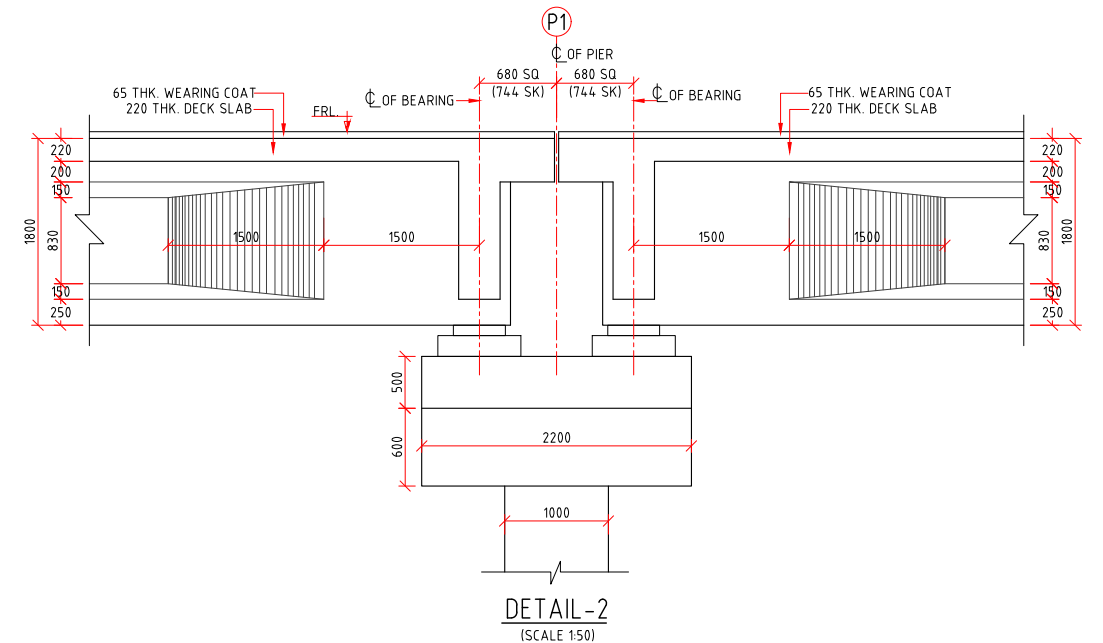
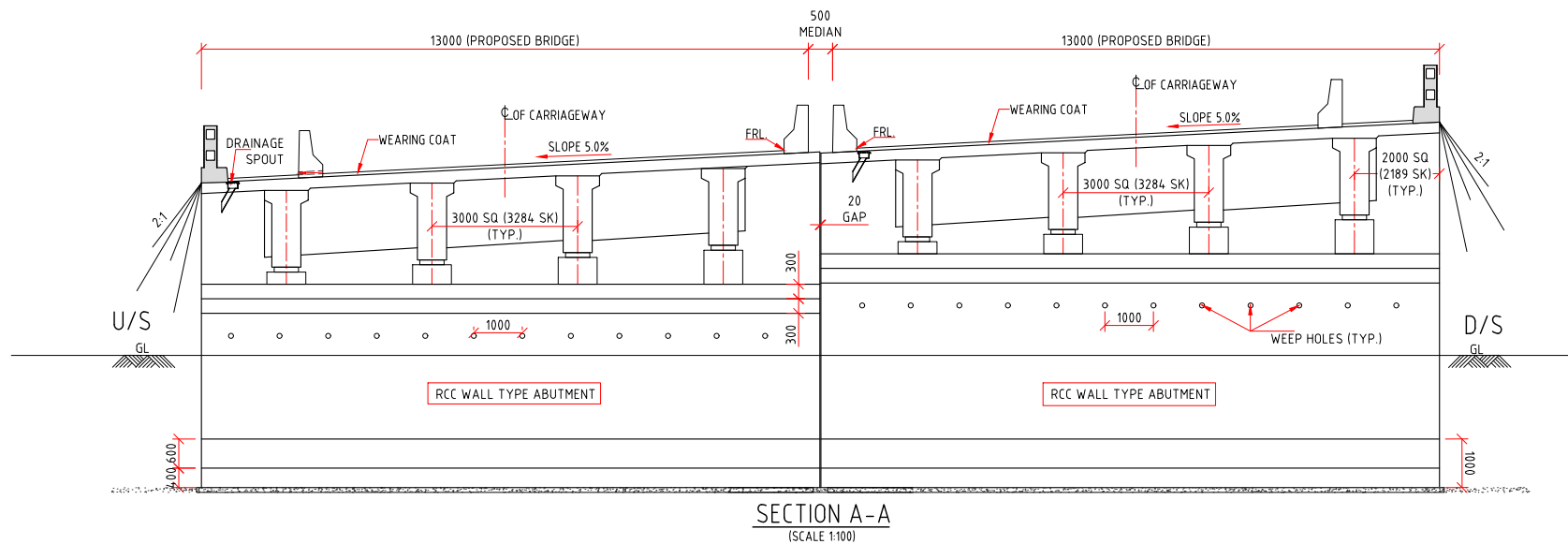
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
 An ISO 9001 : 2008 Company
 CEG Tower, B11(G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA
 Tel:- +91 141 2751800/ 8028033004. Fax: 2751806
 Email: ceg@cecindia.com, URL: www.cecindia.com

PROJECT:
 CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO -NH/IAHE/18)

DESIGNED	A.S.
DRAWN	RMP
CHECKED	K.S.
APPROVED	AKJ

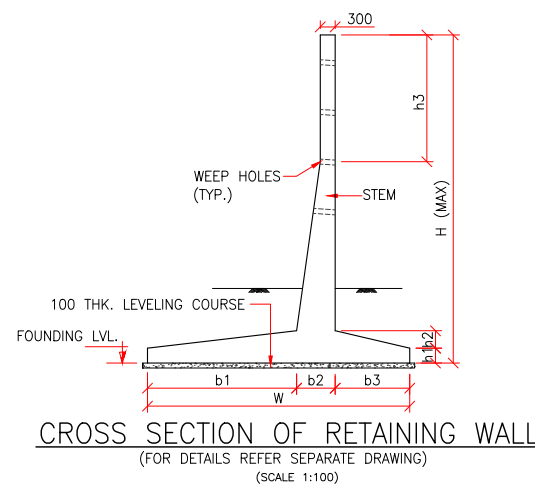
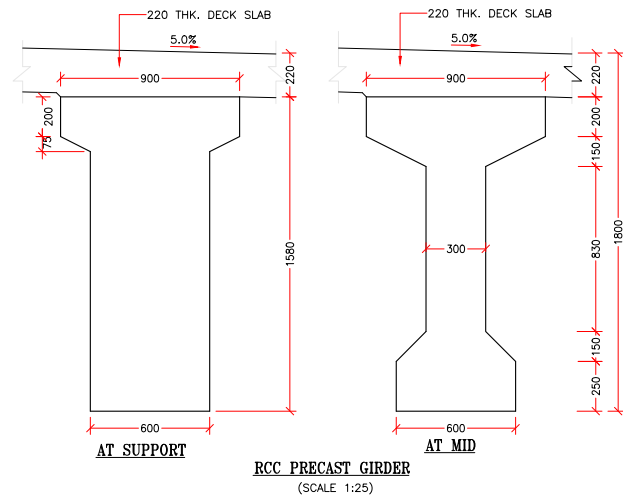
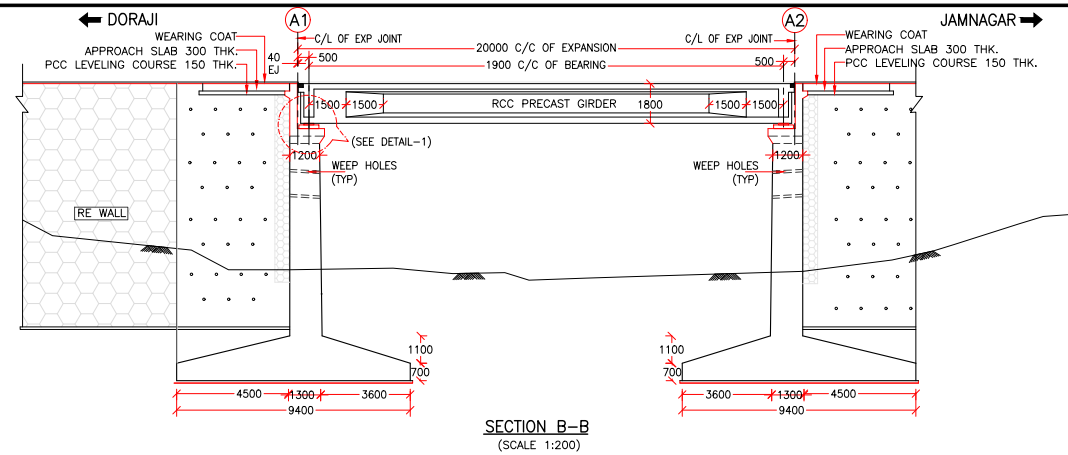
TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 33.735
DRAWING NO: IAHE/CEG/D121/REC/33.735/GAD/01
SCALE: AS SHOWN

REV:	R2
SIZE:	A2
DATE:	APR.-2025
SHEET	1 OF 2



			 OWNER: भारतीय राजमार्ग अभियन्ता अकादमी <i>Indian Academy of Highway Engineers</i> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	 DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11(G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA Tel : +91 141 2751801/ 8028033004, Fax : 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S.		TITLE: GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT DESIGN CH. 33.735	REV:	R2		
R2	APR.-2025	STRUCTURE WIDTH REVISED				DRAWN	RMP			SIZE:	A2		
R1	OCT.-2017	FINAL DPR SUBMISSION				CHECKED	K.S.			DRAWING NO:	IAHE/CEG/D121/REC/33.735/GAD/02	DATE:	APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	AKJ			SCALE:	AS SHOWN	SHEET 2 OF 2	
REV	DATE	DESCRIPTION OF REVISIONS											

MINOR BRIDGE

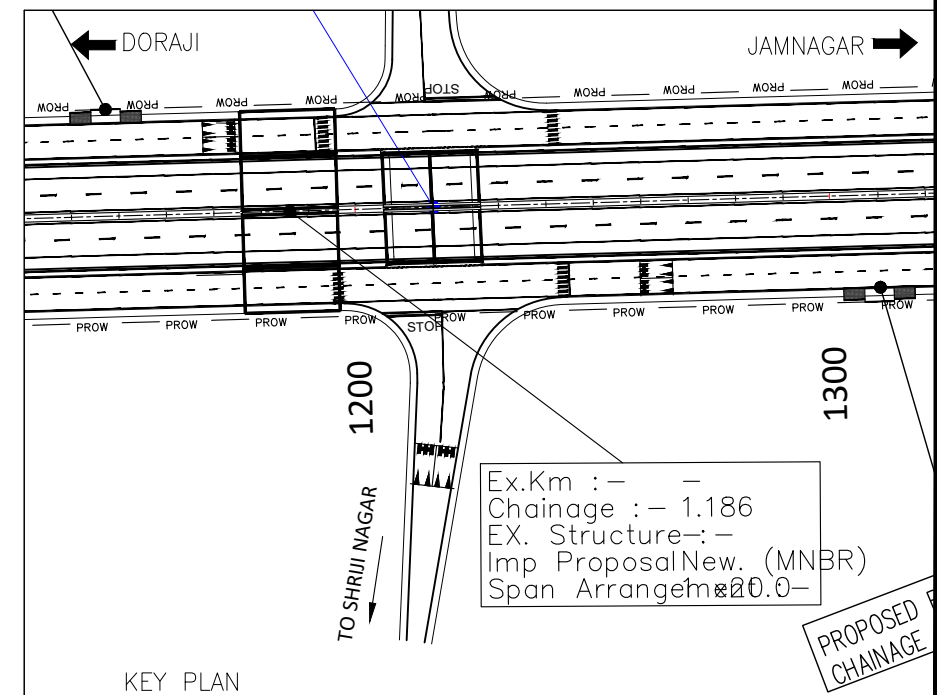


NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IMETRES.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- SAFE ALLOWABLE BEARING CAPACITY AT FOUNDED LEVEL SHALL NOT BE LESS THAN 30 t/SQMT.
- GRADE OF CONCRETE :
PCC LEVELLING COURSE M-15 SLAB M-35
FOUNDATION M-35 CRASH BARRIER M-40
SUB STRUCTURE M-35 RETURN WALL M-35
ABUTMENT CAP M-35 APPROACH SLAB M-30
DIRT WALL M-35
- REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
- BEARING TYPE : TAR PAPER
- WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
- BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi > 30^\circ$. DRY DENSITY = 18kN/m
- CLEAR COVER TO ANY REINFORCEMENT
IN FOUNDATION = 75mm
IN SUB STRUCTURE = 50mm
IN SUPERSTRUCTURE = 40mm
- FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MORT&H SPECIFICATIONS.
- WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
- FRL, CAMBER/ SUPEREROGATION LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING.
- THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
- TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET
- DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MORTH.

TABLE

PROPOSED CHAINAGE	1.186
EXISTING KM (LOCATION)	-
PROPOSED STRUCTURE	MINOR BRIDGE
SPAN ARRANGEMENT (M)	1x20.0 (EXP. TO EXP.)
EXISTING SPAN (M)	-
FRL. (M)	109.464
HFL. (M)	101.104
MIN. BED LVL. (M)	100.015



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION



OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA



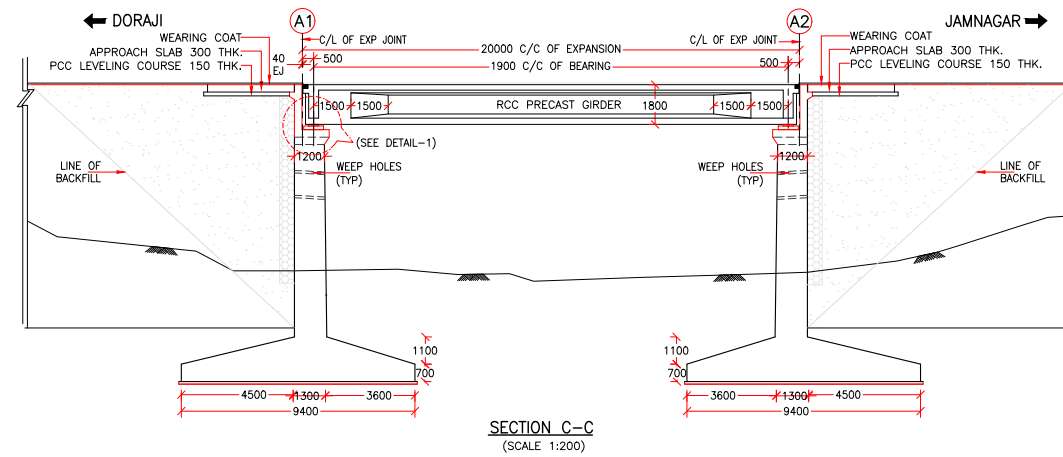
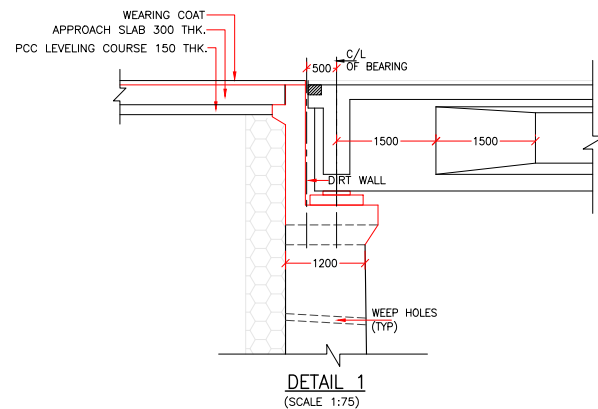
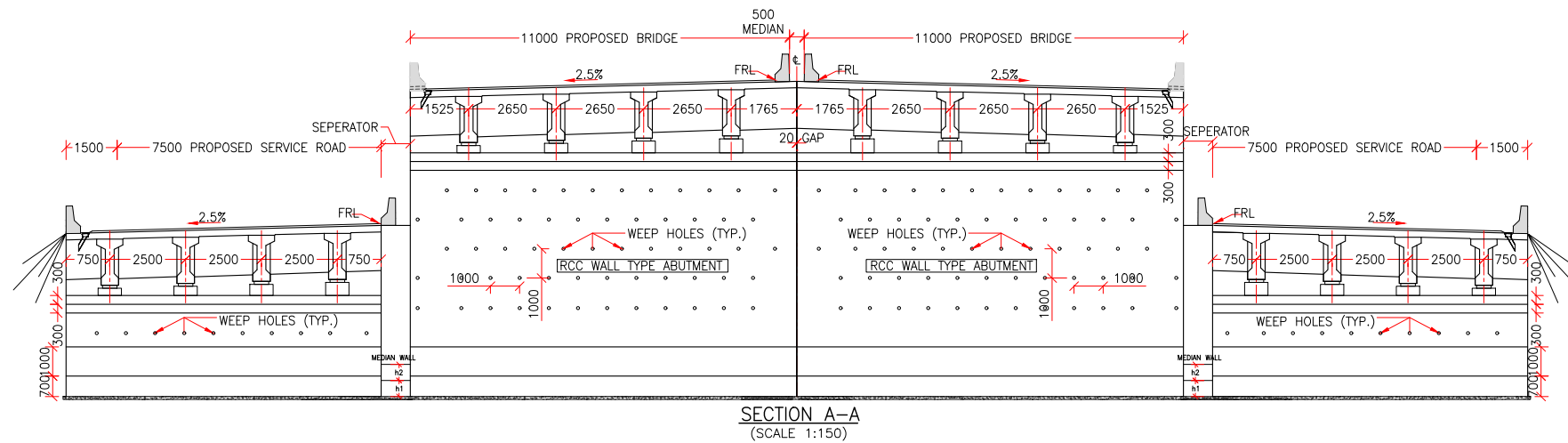
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA
Tel: +91 141 2751801/ 8008058004, Fax: 2751806
Email: ceg@cecindia.com, URL: www.cecindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

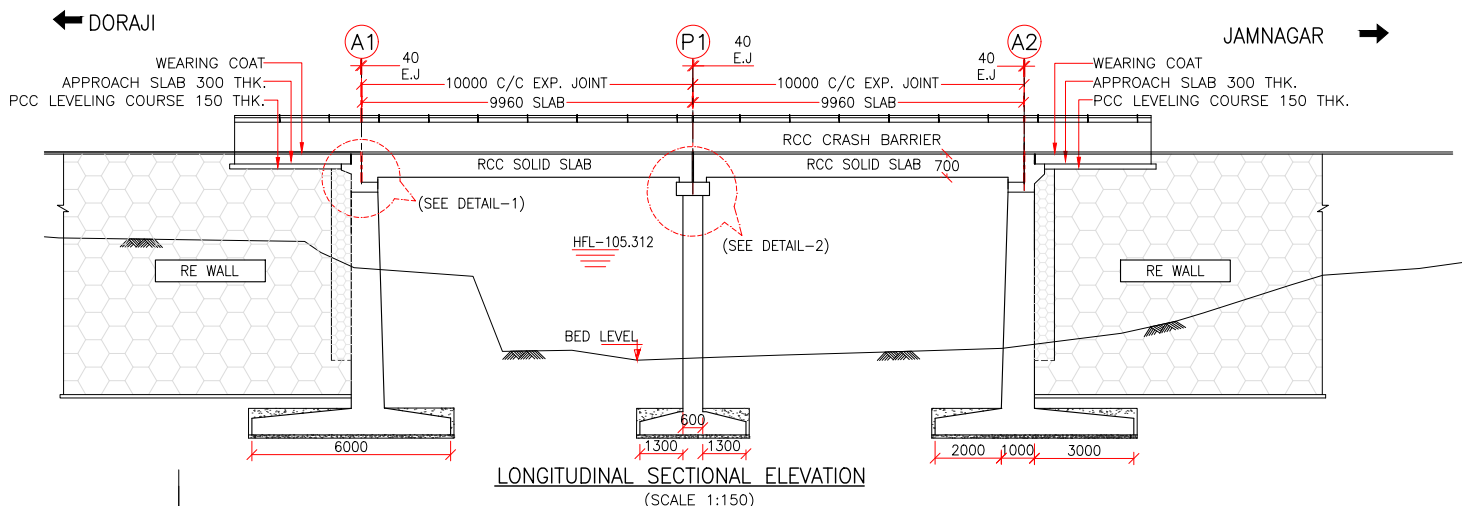
DESIGNED	YOGITA
DRAWN	RAM MOHAN
CHECKED	KAMAL SHARMA
APPROVED	ARVIND JAIN

TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH.1.186
DRAWING NO:	IAHE/CEG/D121/NEW/1.186/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025



			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JALPURI - 382017 (Rajasthan) INDIA Tel: +91 141 2751801/ 800 805 8804, Fax: 2751806 Email: ceg@cecindia.com, URL: www.cecindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	YOGITA	TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH.1.186	REV:	R2
R2	APR.-2025	STRUCTURE WIDTH REVISED				DRAWN	RAM MOHAN		SIZE:	A3
R1	OCT-2017	FINAL DPR SUBMISSION				CHECKED	KAMAL SHARMA		DATE:	APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	ARVIND JAIN		SCALE:	AS SHOWN
REV	DATE	DESCRIPTION OF REVISIONS								SHEET 2 OF 2



- NOTES:-
- 1 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
 - 2 DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - 3 SAFE ALLOWABLE BEARING CAPACITY AT FOUNDING LEVEL SHALL NOT BE LESS THAN 30 t/SQMT.
 - 4 GRADE OF CONCRETE :
PCC LEVELLING COURSE M-15 SLAB M-35
FOUNDATION M-35 CRASH BARRIER M-40
SUB STRUCTURE M-35 RETURN WALL M-35
ABUTMENT CAP M-35 APPROACH SLAB M-30
DIRT WALL M-35
 - 5 REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
 - 6 BEARING TYPE : TAR PAPER
 - 7 WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
 - 8 BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi > 30^\circ$. DRY DENSITY = 18kN/m
 - 9 CLEAR COVER TO ANY REINFORCEMENT
IN FOUNDATION = 75mm
IN SUB STRUCTURE = 50mm
IN SUPERSTRUCTURE = 40mm
 - 10 FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MoRT&H SPECIFICATIONS.
 - 11 WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MoRT&H SPECIFICATIONS.
 - 12 FRL, CAMBER/ SUPEREROGATION LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING.
 - 13 THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
 - 14 TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET
 - 15 DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MoRT&H.

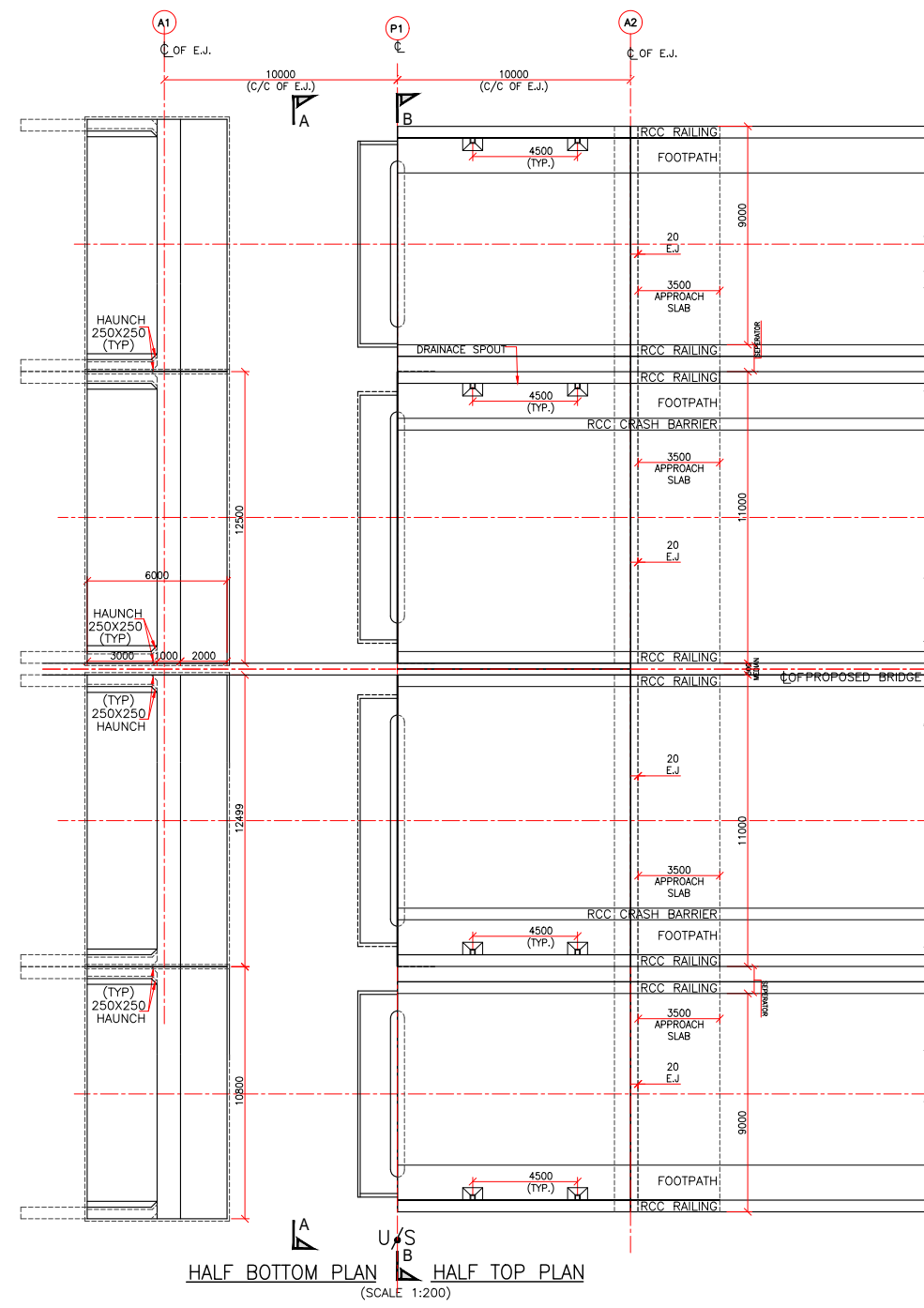
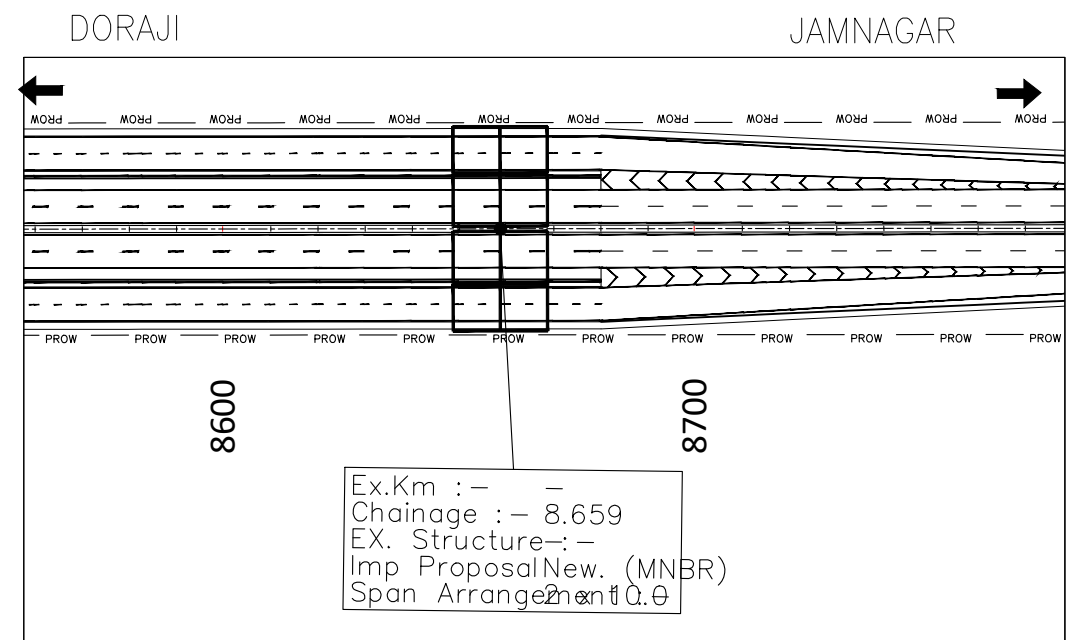
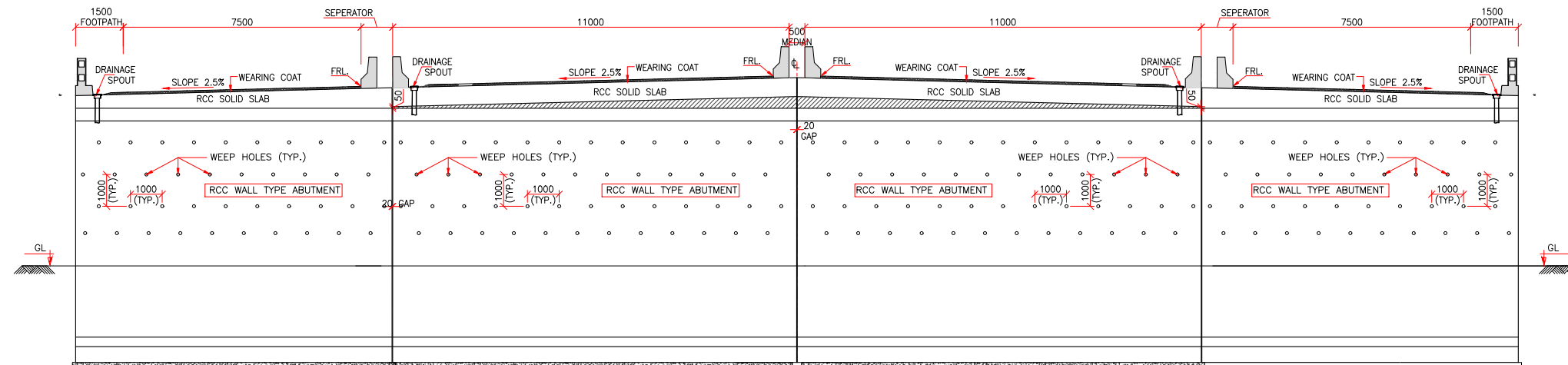


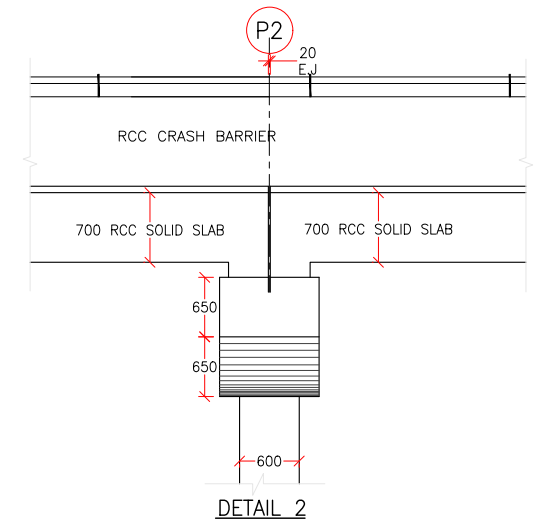
TABLE	
PROPOSED CHAINAGE	8.659
EXISTING KM (LOCATION)	-
PROPOSED STRUCTURE	RCC SOLID SLAB
SPAN ARRANGEMENT (M)	2x10.0 (EXP. TO EXP.)
EXISTING SPAN (M)	-
FRL. (M)	107.718
HFL. (M)	105.312
MIN. BED LVL. (M)	104.489



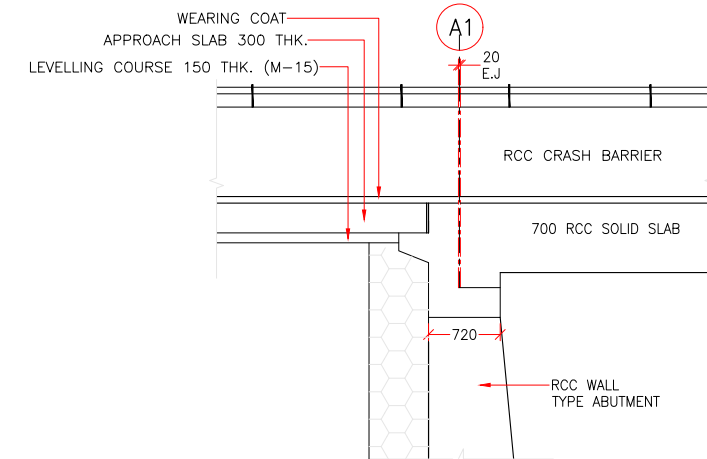
KEY PLAN



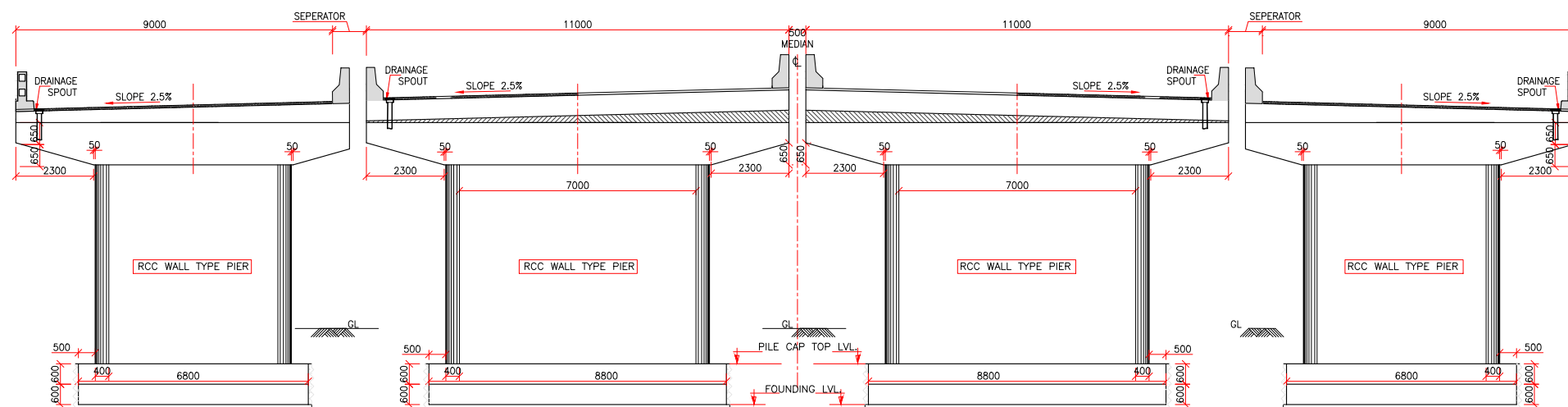
SECTION A-A
(SCALE 1:120)



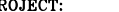
DETAIL 2



DETAIL 1
(SCALE 1:50)



SECTION B-B
(SCALE 1:120)

			OWNER:	भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-	 CONSULTING ENGINEERS GROUP LTD An ISO 9001:2008 Company CEG Tower, B11(G), Malviya Industrial Area, J A I P U R - 3 0 2 0 1 7 (Rajasthan) INDIA Tel.: +91 141 2751801/ 802/803/804, Fax.: 2751806 Email: ceg@cegroupindia.com, URL: www.cegroupindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	YOGITA		TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 8.659	REV:	R2	
R2	APR.-2025	STRUCTURE WIDTH REVISED						DRAWN	RAM MOHAN			SIZE:	A3		
R1	OCT-2017	FINAL DPR SUBMISSION						CHECKED	KAMAL SHARMA		DRAWING NO:	IAHE/CEG/D121/NEW/8.659/GAD/02	DATE:	APR.-2025	
R0	DEC-2015	FIRST SUBMISSION						APPROVED	ARVIND JAIN		SCALE:	AS SHOWN		SHEET 2 OF 2	
REV	DATE	DESCRIPTION OF REVISIONS													

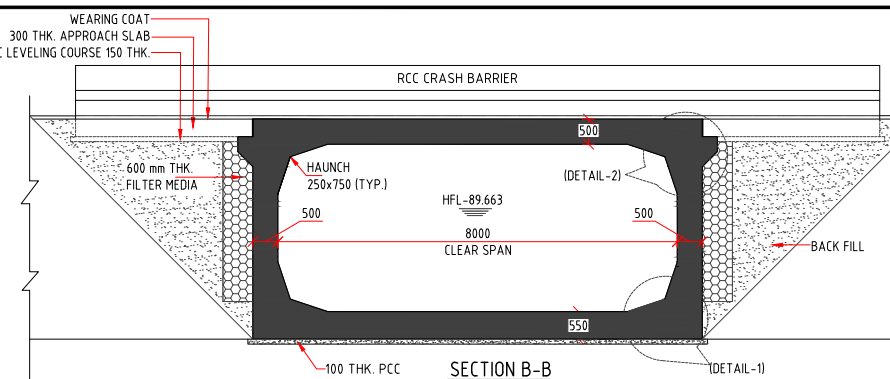
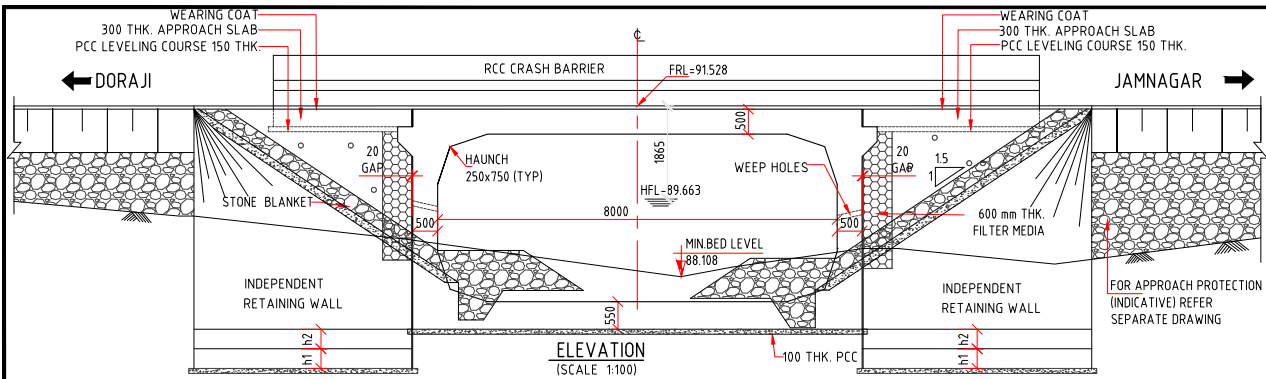


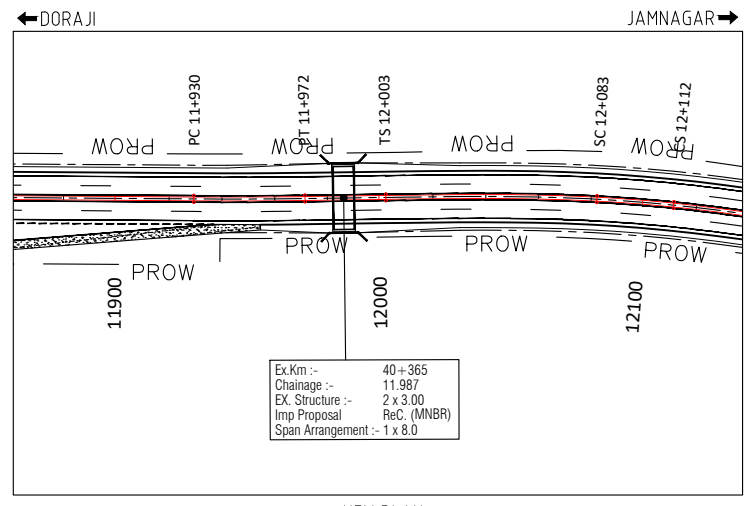
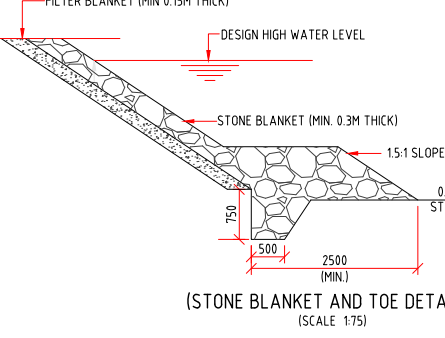
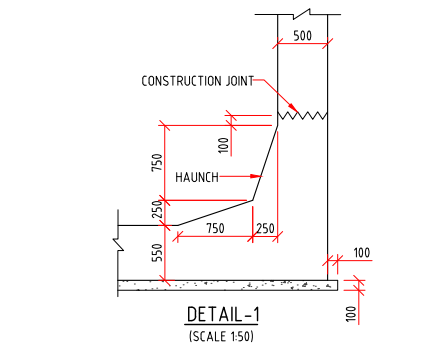
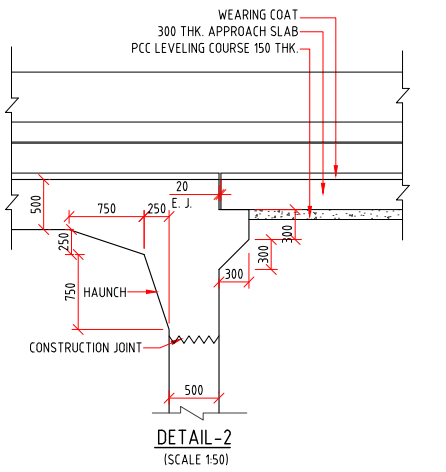
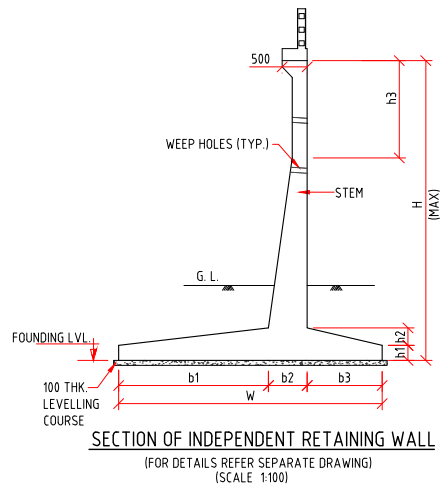
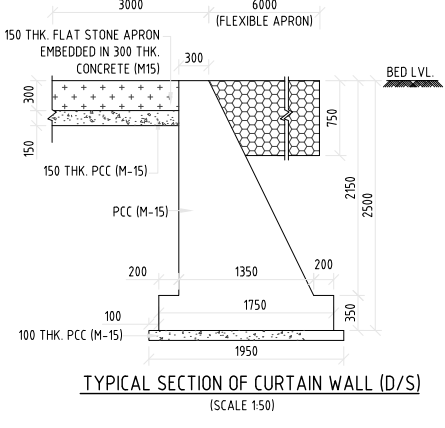
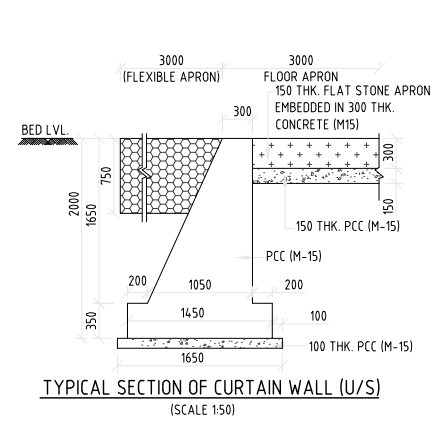
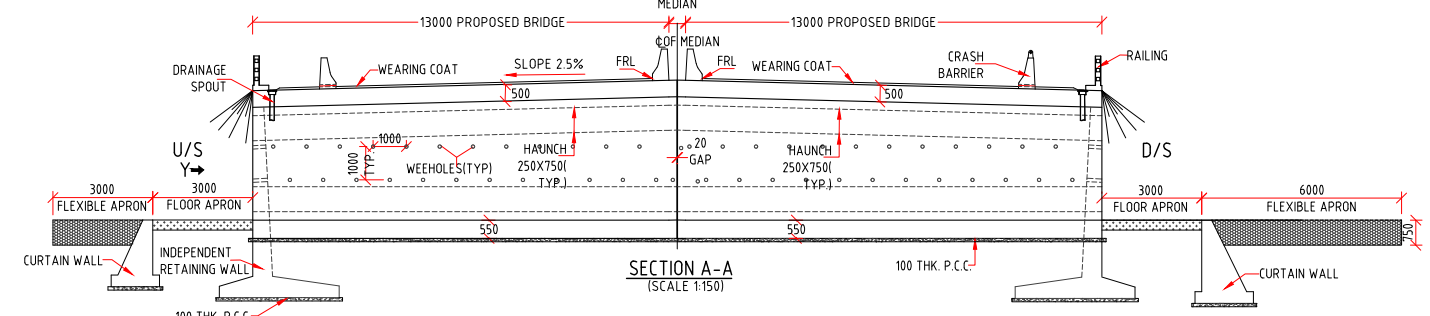
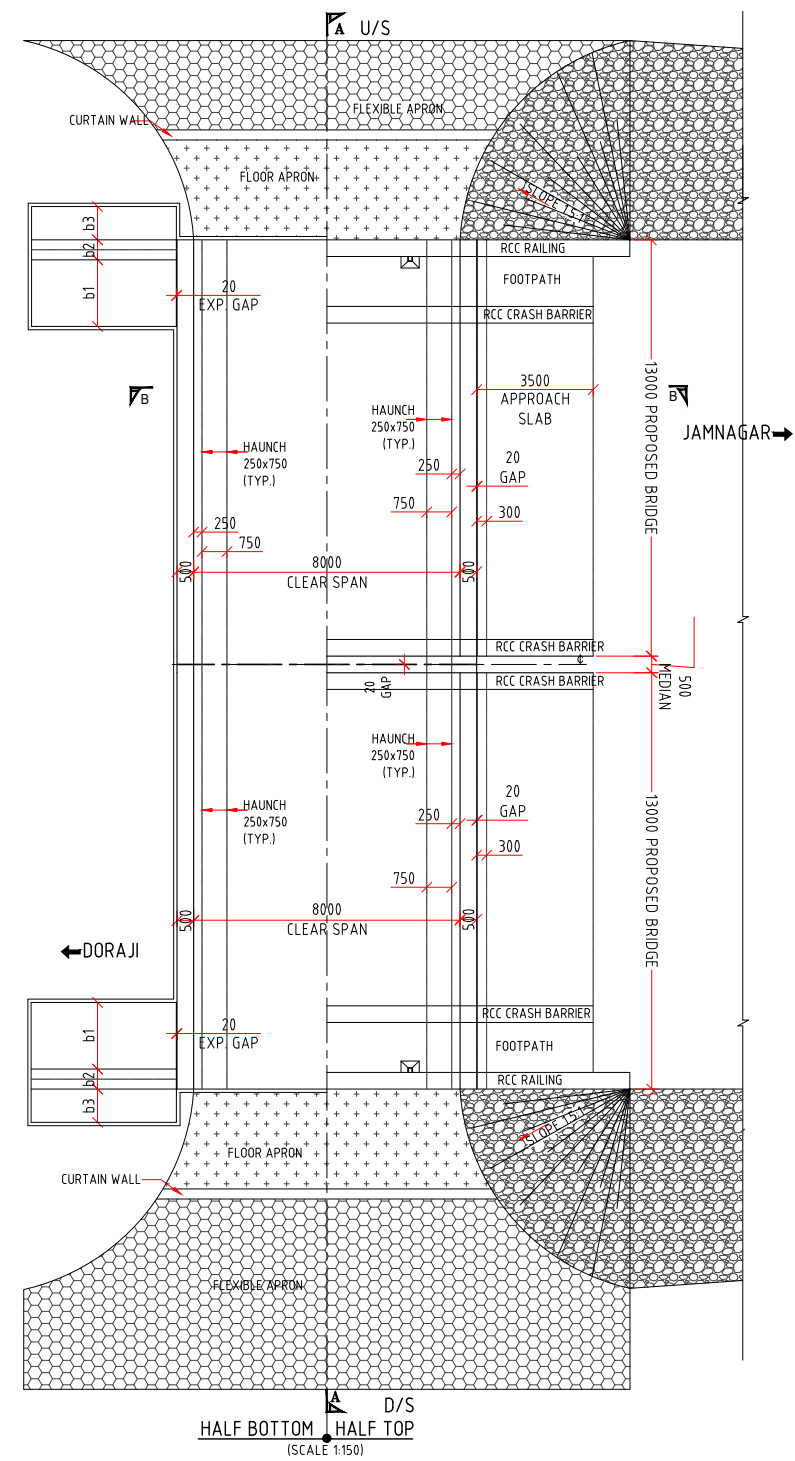
TABLE	
PROPOSED CHAINAGE	11.987
EXISTING (LOCATION KM)	40+365
PROPOSED STRUCTURE	MINOR BRIDGE
SPAN ARRANGEMENT	1x8.0
EXISTING STRUCTURE	RCC SLAB
EXISTING SPAN	2X3.0
FORMATION LVL.	91528
HFL LEVEL	89.663
MIN BED LEVEL	88.108
FOUNDING LVL OF BOX	87.058

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - GRADE OF CONCRETE SHALL BE AS FOLLOWS:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-35
PCC - M-15
RCC RETURN WALL - M-30
 - DESIGN CRITERIA :
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES.
II. THE BOX IS DESIGNED FOR ONE LANE OF IRC CLASS 70R + CLASS-A OR THREE LANES OF IRC CLASS A LOADING WHICHEVER GOVERNS.
 - 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT BACK SIDE OF ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
 - MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX.
 - ALL H.Y.S.D. BARS SHALL CONFORM TO IS-1786 GRADE Fe 500.
 - 100 DIA WEEP HOLES TO BE PROVIDED 1000C/C BOTH HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER IN ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
 - 20mm FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED BETWEEN APPROACH SLAB & TOP SLAB.
 - 10mm EXPANSION GAP FILLED WITH COMPRESSIBLE FIBER BOARD SHALL BE PROVIDED BETWEEN RETAINING WALL & RCC BOX.
 - TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS 2702 OF MORT&H SPECIFICATIONS.
 - BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 4 OF IRC-78-2000 HAVING PROPERTIES $c=0, \phi=30^\circ, \delta=20^\circ$ & $\gamma_d = 18 \text{ KN/M}^3$.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
 - THE BEARING PRESSURE AT FOUNDING LEVEL SHALL NOT BE LESS THAN 15 T/M^2 .
 - CURTAIN WALL/ FLEXIBLE APRON SHALL BE PROVIDED ONLY IN SOIL STRATA AND WHERE THE STRATA IS ROCKY, IT IS NOT REQUIRED.

REFERENCE DRAWING:-

DETAILS OF APPROACH SLAB, CRASH BARRIER, EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC-1
FOR RETAINING WALL
IAHE/CEG/RET/TYP-1

- LEGEND:-**
- E.J. - EXPANSION JOINT
 - LVL. - LEVEL
 - FRL - FINISHED ROAD LEVEL
 - THK. - THICK
 - GL - GROUND LEVEL
 - C.J. - CONSTRUCTION JOINT
 - HFL - HIGH FLOOD LEVEL
 - U/S - UP STREAM
 - D/S - DOWN STREAM
 - MCW - MAIN CARRIAGE WAY



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE.-2017	FIRST SUBMISSION

OWNER:

भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-

CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, J A T P U R - 3 0 2 0 1 7 (Rajasthan) INDIA
Tel. : +91 141 2751801/ 802803/804, Fax : 2751806
Email: ceg@cecindia.com, URL: www.cecindia.com

PROJECT:

CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

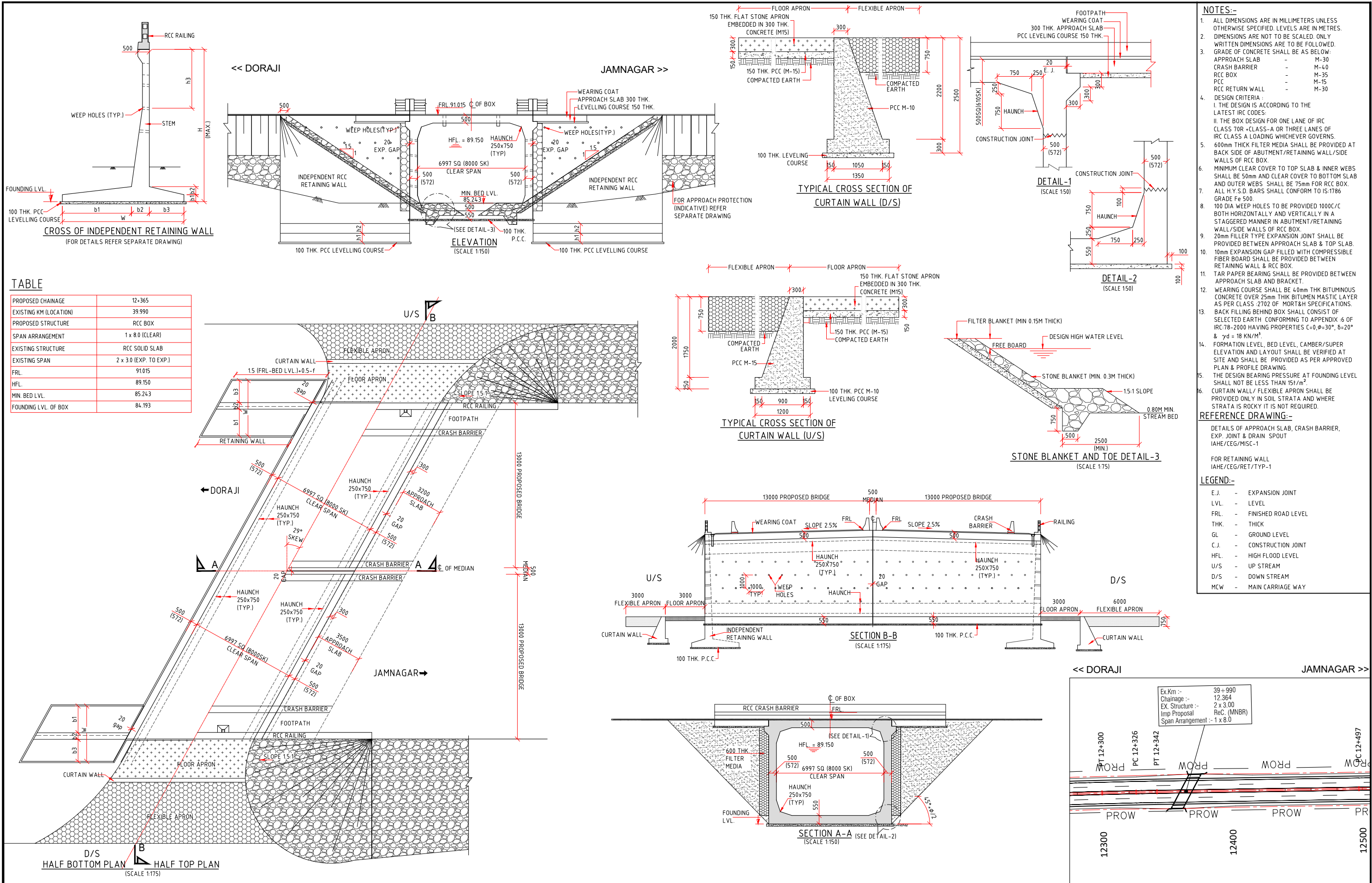
DESIGNED	A.S
DRAWN	R.M.P
CHECKED	K.S
APPROVED	AKJ

TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH.11.987

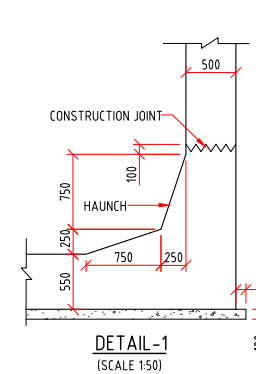
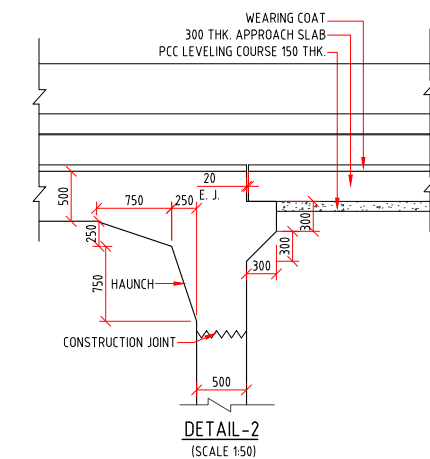
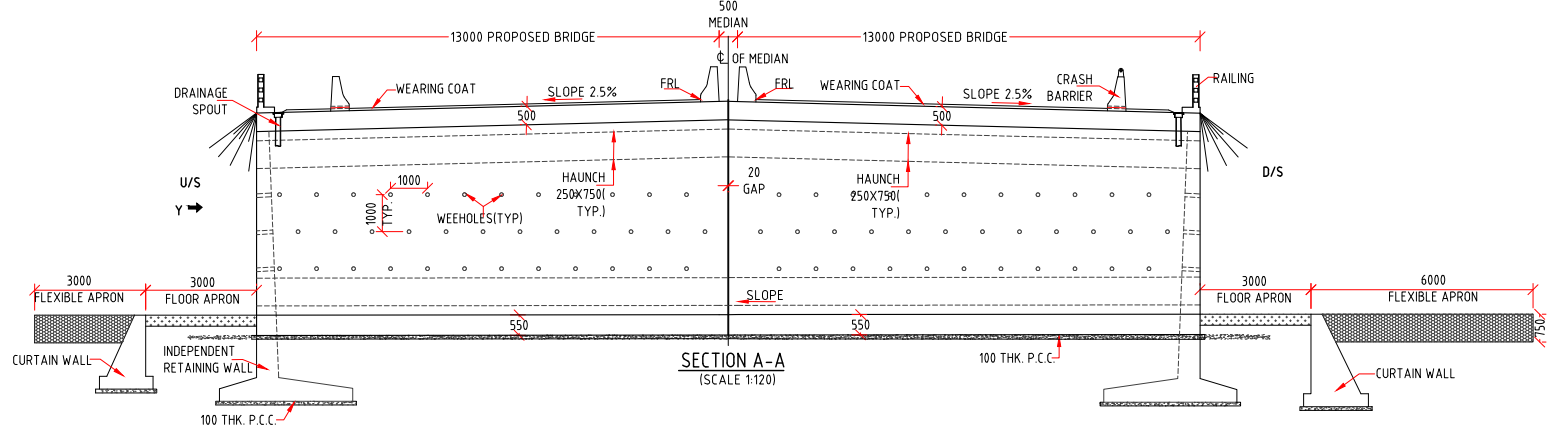
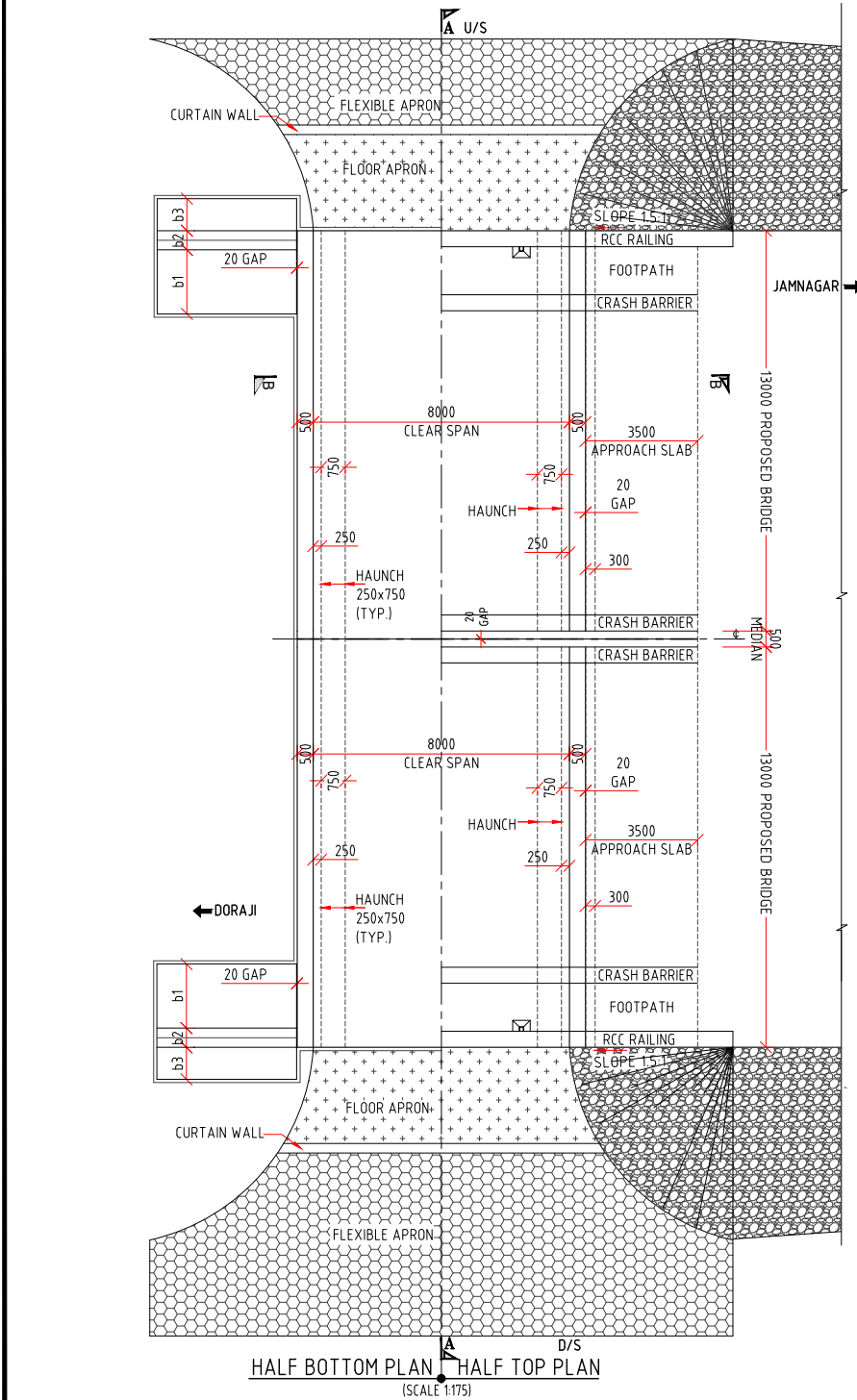
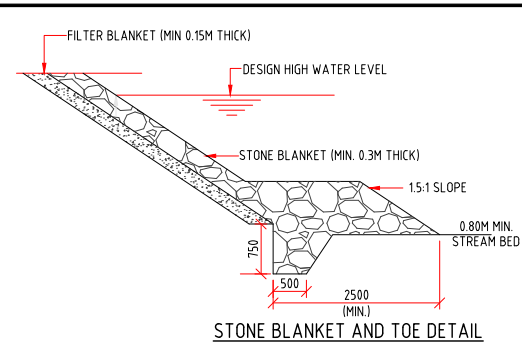
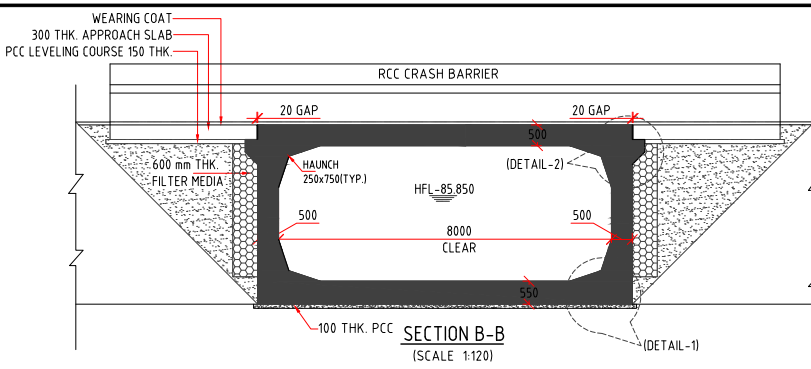
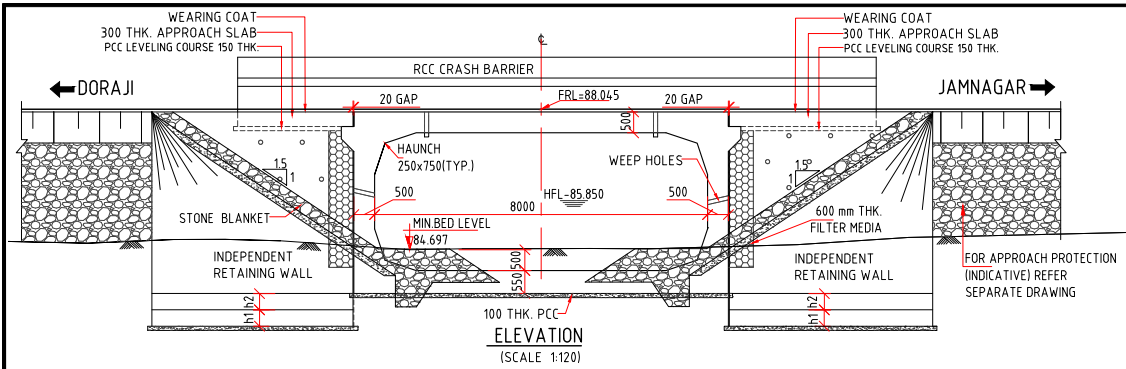
DRAWING NO: IAHE/CEG/D121/REC/11.987/GAD/01

SCALE: AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET	1 OF 1

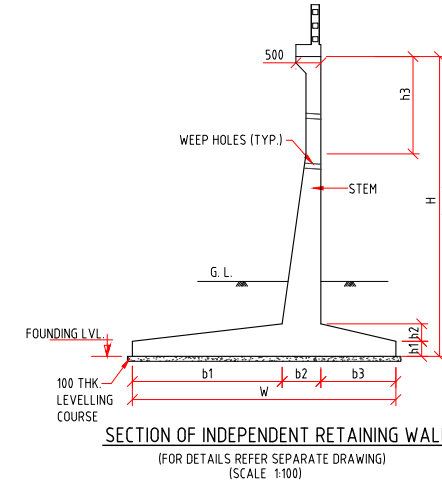


				OWNER: भारतीय राजमार्ग अभियन्ता अकादमी <u>Indian Academy of Highway Engineers</u> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA		DESIGN CONSULTANT:- C O N S U L T I N G E N G I N E E R S G R O U P L T D An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, J.A.P.U.R. - 392017. (Rajasthan) INDIA Tel: +91 141 2751801/ 802803/804, Fax: 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S.		TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 12.364	REV:	R2	
R2	APR.-2025	STRUCTURE WIDTH REVISED						DRAWN	R.M.P.			SIZE:	A3	
R1	OCT-2017	FINAL DPR SUBMISSION						CHECKED	K.S.			DRAWING NO: IAHE/CEG/D121/REC/12.364/GAD/01	DATE:	APR.-2025
R0	JUNE-2017	FIRST SUBMISSION						APPROVED	AKJ			SCALE: AS SHOWN		SHEET 1 OF 1
REV	DATE	DESCRIPTION OF REVISIONS												



TABLE

PROPOSED CHAINAGE	12.838
EXISTING KM (LOCATION)	39+520
PROPOSED STRUCTURE	MINOR BRIDGE
SPAN ARRANGEMENT	1x8.0
EXISTING STRUCTURE	RCC SLAB
EXISTING SPAN	2X3.0
FORMATION LVL.	88.045
HFL LEVEL	85.850
MIN BED LEVEL	84.697
FOUNDING LVL OF BOX	83.647



NOTES:-

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- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- GRADE OF CONCRETE SHALL BE AS BELOW:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-35
PCC - M-15
RCC RETURN WALL - M-30
- DESIGN CRITERIA :
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES.
II. THE BOX DESIGN FOR ONE LANE OF IRC CLASS 70R + CLASS-A OR THREE LANES OF IRC CLASS A LOADING WHICHEVER GOVERNS.
- 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT BACK SIDE OF ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
- MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX.
- ALL H.Y.S.D. BARS SHALL CONFORM TO IS-1786 GRADE Fe 500.
- 100 DIA WEEP HOLES TO BE PROVIDED 1000C/C BOTH HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER IN ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
- 20mm FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED BETWEEN APPROACH SLAB & TOP SLAB.
- 10mm EXPANSION GAP FILLED WITH COMPRESSIBLE FIBER BOARD SHALL BE PROVIDED BETWEEN RETAINING WALL & RCC BOX.
- TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET.
- WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
- BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX -6 OF IRC-78-2000 HAVING PROPERTIES $C=0$, $\phi=30^\circ$, $\delta=20^\circ$ & $\gamma_d = 18 \text{ KN/M}^3$.
- FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING IN CASE OF ANY DISCREPANCY. IT SHALL BE BROUGHT IN TO THE NOTICE OF DESIGN CONSULTANT.
- THE DESIGN BEARING PRESSURE AT FOUNDING LEVEL SHALL NOT BE LESS THAN 15 t/m^2 .
- CURTAIN WALL/ FLEXIBLE APRON SHALL BE PROVIDED ONLY IN SOIL STRATA AND WHERE STRATA IS ROCKY IT IS NOT REQUIRED.

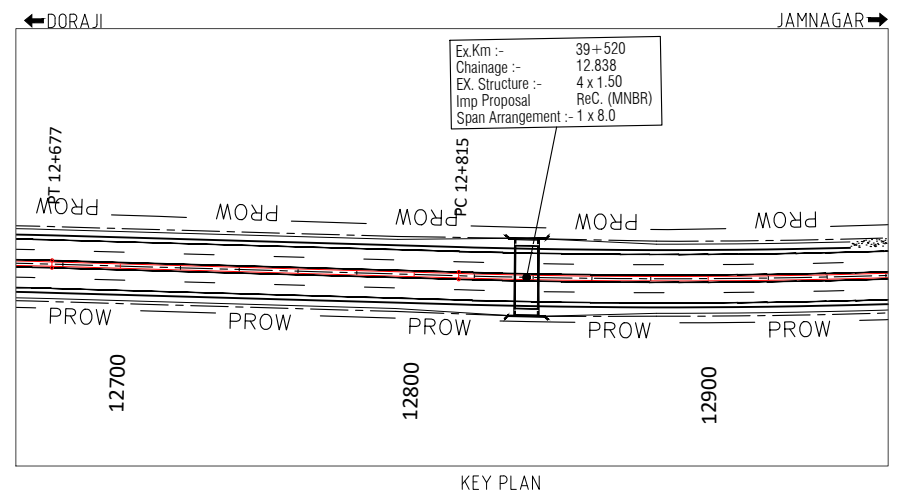
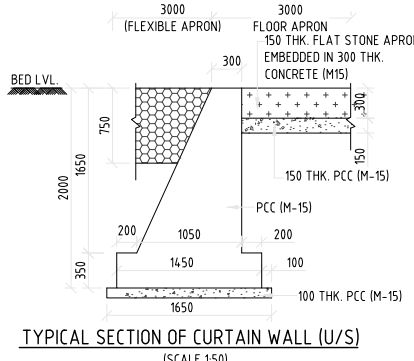
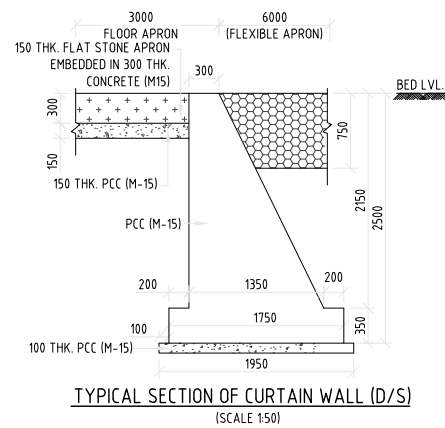
REFERENCE DRAWING:-

DETAILS OF APPROACH SLAB, CRASH BARRIER, EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC-1

FOR RETAINING WALL
IAHE/CEG/RET/TYP-1

LEGEND:-

E.J.	-	EXPANSION JOINT
LVL.	-	LEVEL
FRL.	-	FINISHED ROAD LEVEL
THK.	-	THICK
GL	-	GROUND LEVEL
C.J.	-	CONSTRUCTION JOINT
HFL.	-	HIGH FLOOD LEVEL
U/S	-	UP STREAM
D/S	-	DOWN STREAM
MCW	-	MAIN CARRIAGE WAY



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER:



भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-



CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area,
J A P U R - 302017 (Rajasthan) INDIA
Tdl : +91 141 2751801/802803804, Fax : 2751806
Email: ceg@cecindia.com, URL: www.cecindia.com

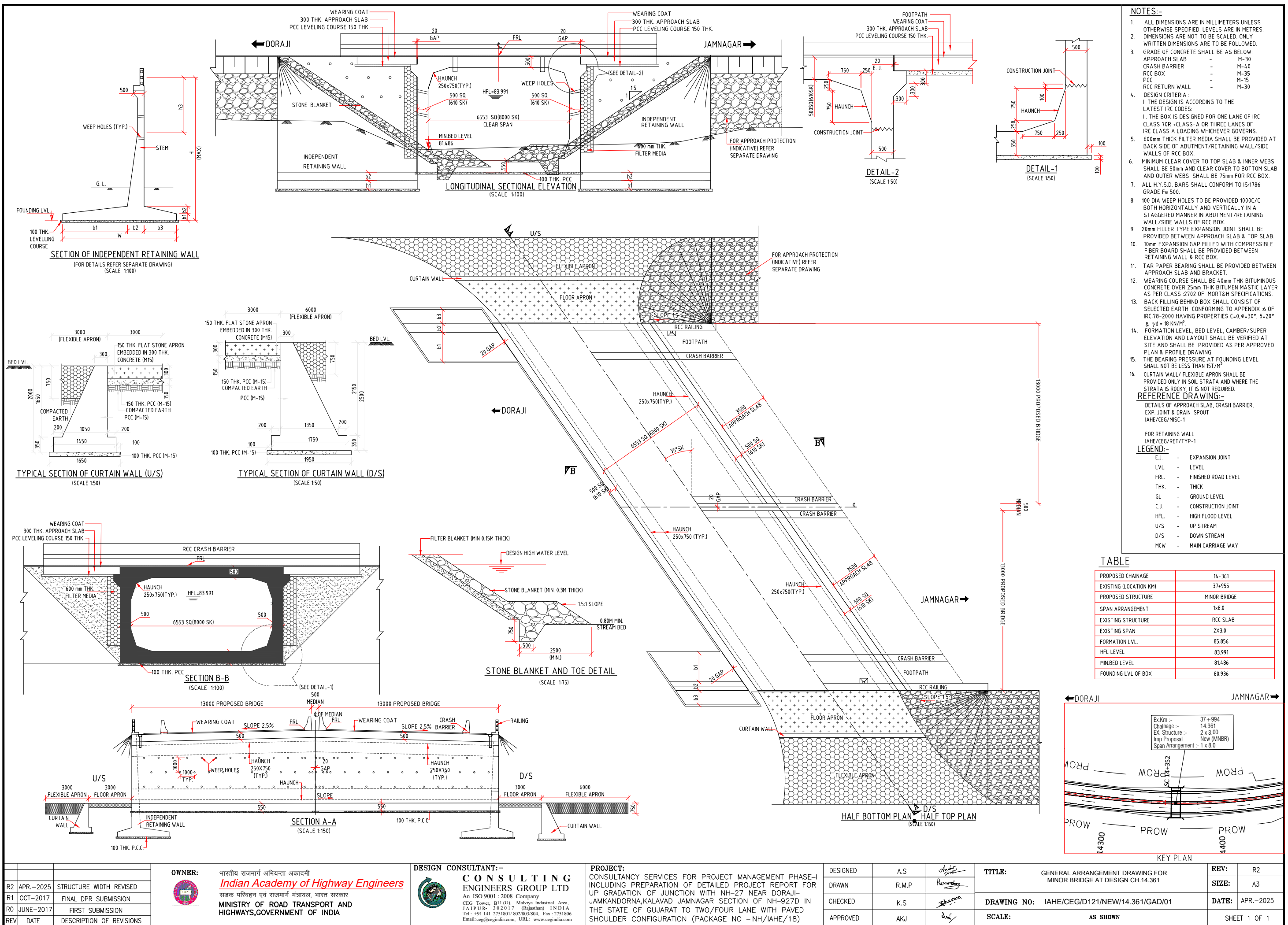
PROJECT:

CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S
DRAWN	R.M.P
CHECKED	K.S
APPROVED	AKJ

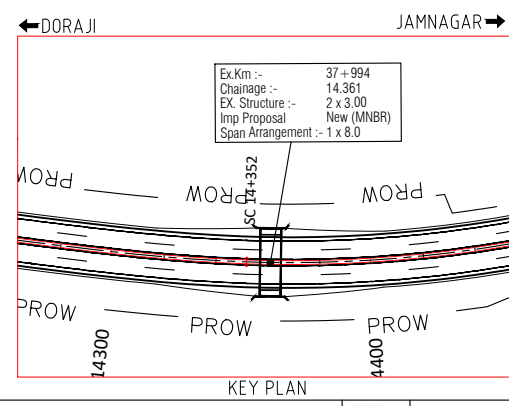
TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH.12.838
DRAWING NO:	IAHE/CEG/D121/REC/12.838/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET	1 OF 1



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 - GRADE OF CONCRETE SHALL BE AS BELOW:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-35
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RCC RETURN WALL - M-30
 - DESIGN CRITERIA :
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES.
II. THE BOX IS DESIGNED FOR ONE LANE OF IRC CLASS 70R + CLASS-A OR THREE LANES OF IRC CLASS A LOADING WHICHEVER GOVERNS.
 - 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT BACK SIDE OF ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
 - MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX.
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 - 100 DIA WEEP HOLES TO BE PROVIDED 1000C/C BOTH HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER IN ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
 - 20mm FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED BETWEEN APPROACH SLAB & TOP SLAB.
 - 10mm EXPANSION GAP FILLED WITH COMPRESSIBLE FIBER BOARD SHALL BE PROVIDED BETWEEN RETAINING WALL & RCC BOX.
 - TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
 - BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX -6 OF IRC:78-2000 HAVING PROPERTIES $c=0, \phi=30^\circ, \gamma_d=18 \text{ KN/M}^3$ & $\gamma_d = 18 \text{ KN/M}^3$.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
 - THE BEARING PRESSURE AT FOUNDING LEVEL SHALL NOT BE LESS THAN 15 T/M^2 .
 - CURTAIN WALL/ FLEXIBLE APRON SHALL BE PROVIDED ONLY IN SOIL STRATA AND WHERE THE STRATA IS ROCKY, IT IS NOT REQUIRED.
- REFERENCE DRAWING:-**
DETAILS OF APPROACH SLAB, CRASH BARRIER, EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC-1
- FOR RETAINING WALL
IAHE/CEG/RET/TYP-1
- LEGEND:-**
- | | | |
|------|---|---------------------|
| E.J. | - | EXPANSION JOINT |
| LVL. | - | LEVEL |
| FRL. | - | FINISHED ROAD LEVEL |
| THK. | - | THICK |
| GL. | - | GROUND LEVEL |
| C.J. | - | CONSTRUCTION JOINT |
| HFL. | - | HIGH FLOOD LEVEL |
| U/S | - | UP STREAM |
| D/S | - | DOWN STREAM |
| MCW | - | MAIN CARRIAGE WAY |

TABLE	
PROPOSED CHAINAGE	14+361
EXISTING (LOCATION KM)	37+955
PROPOSED STRUCTURE	MINOR BRIDGE
SPAN ARRANGEMENT	1x8.0
EXISTING STRUCTURE	RCC SLAB
EXISTING SPAN	2X3.0
FORMATION LVL.	85.856
HFL LEVEL	83.991
MIN BED LEVEL	81.486
FOUNDING LVL OF BOX	80.936



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER:
भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

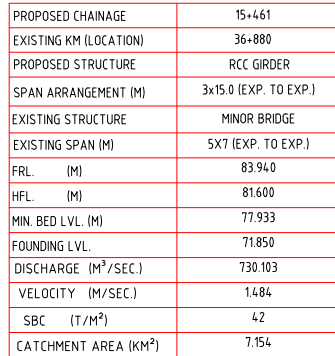
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA
Tel : +91 141 2751801/802/803/804, Fax: 2751806
Email: ceg@cegidia.com, URL: www.cegidia.com

PROJECT:
CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED: A.S.
DRAWN: R.M.P.
CHECKED: K.S.
APPROVED: AKJ.

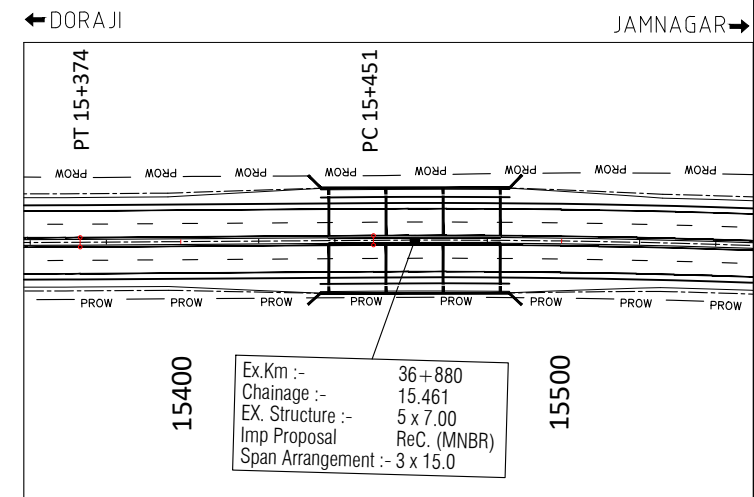
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DRAWING NO: IAHE/CEG/D121/NEW/14.361/GAD/01
SCALE: AS SHOWN

REV: R2
SIZE: A3
DATE: APR.-2025
SHEET 1 OF 1



LEGEND:-

E.J.	-	EXPANSION JOINT
LVL.	-	LEVEL
FRL.	-	FINISHED ROAD LEVEL
THK.	-	THICK
GL	-	GROUND LEVEL
C.J.	-	CONSTRUCTION JOINT
HFL.	-	HIGH FLOOD LEVEL
U/S	-	UP STREAM
D/S	-	DOWN STREAM
MCW	-	MAIN CARRIAGE WAY



R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
 Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND
 HIGHWAYS, GOVERNMENT OF INDIA

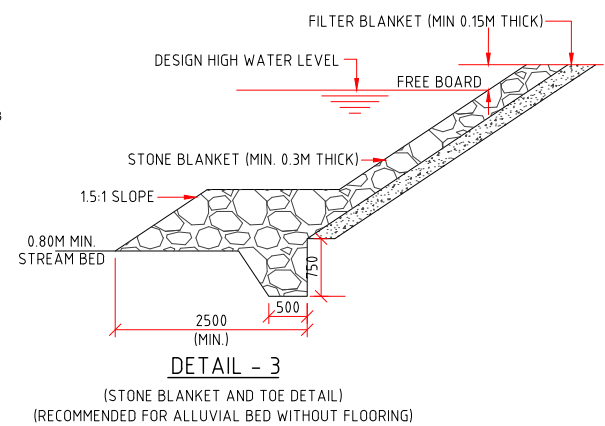
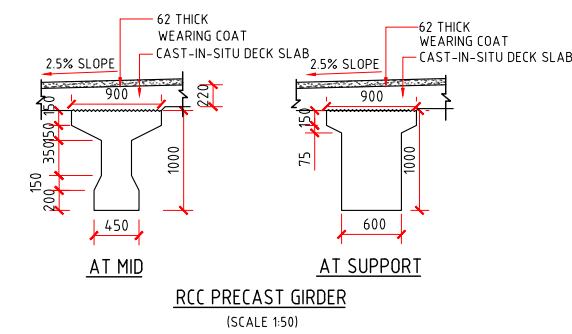
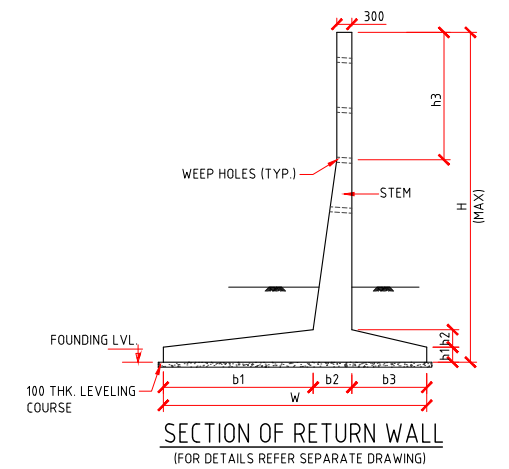
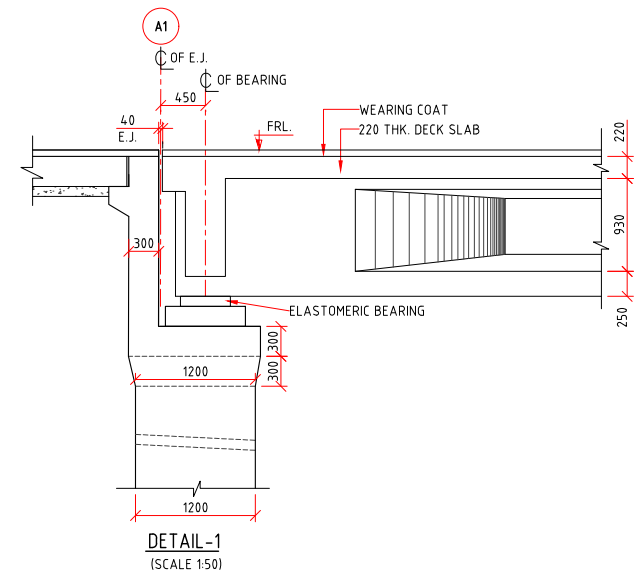
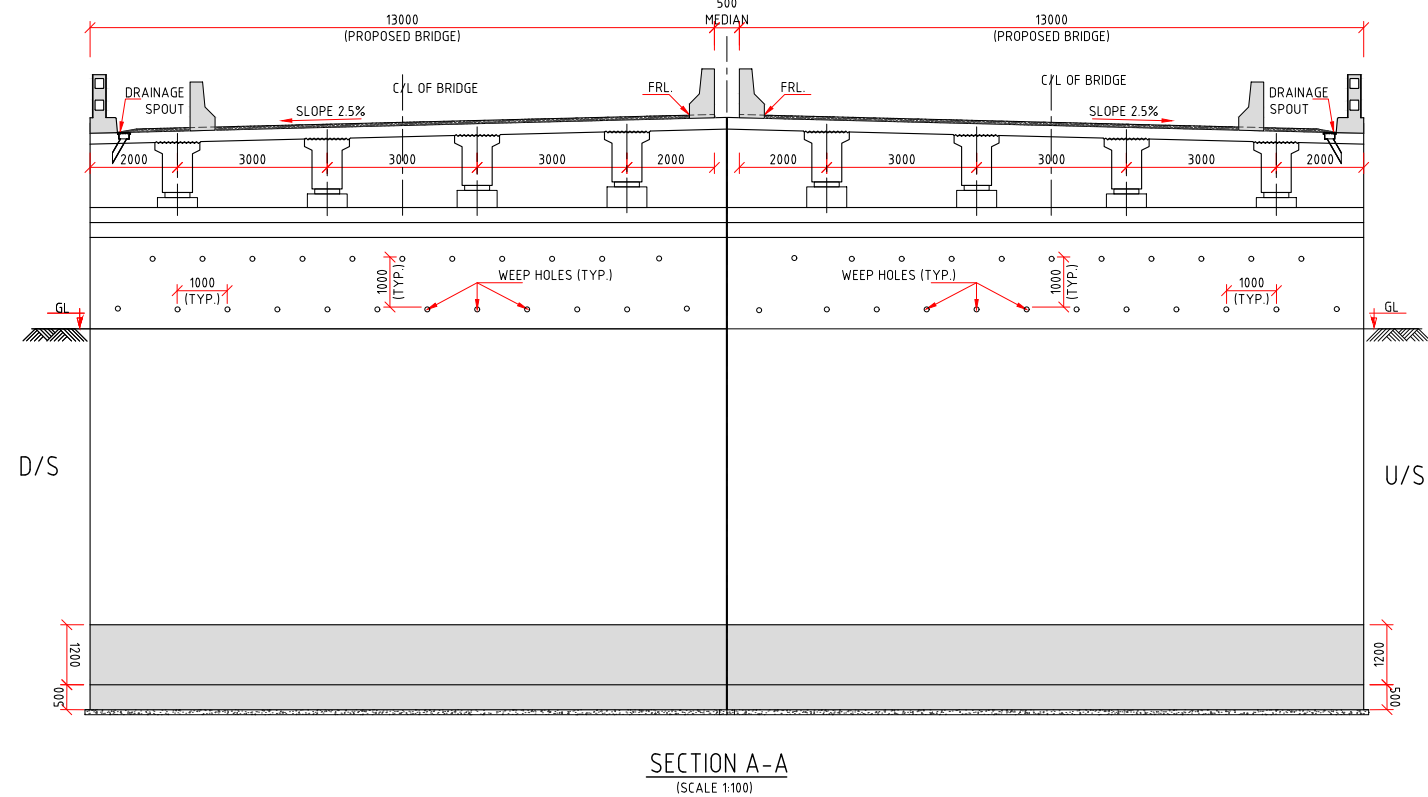
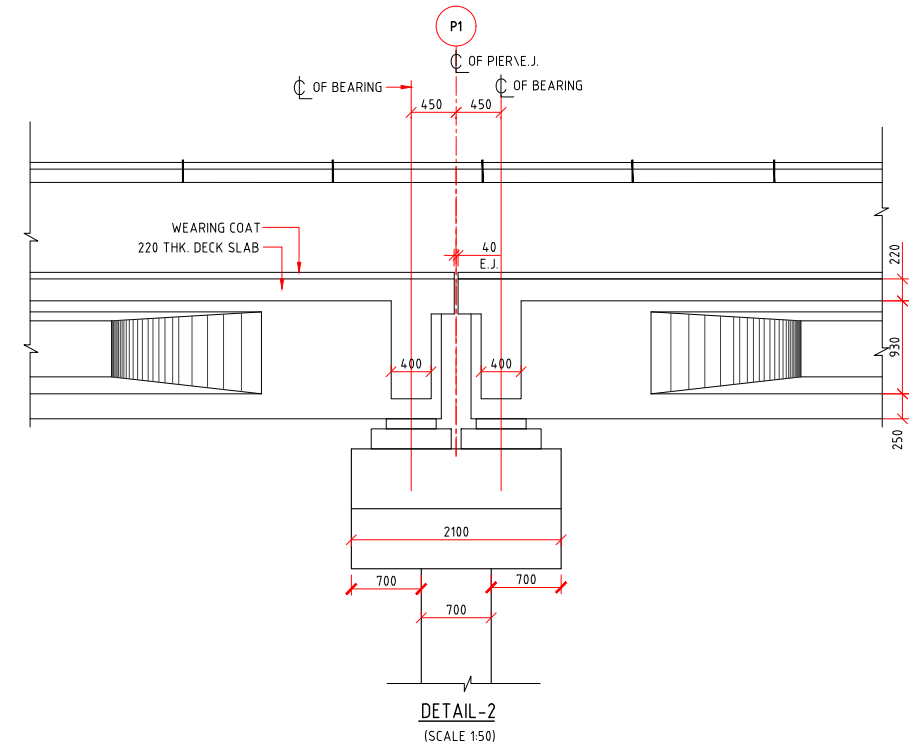
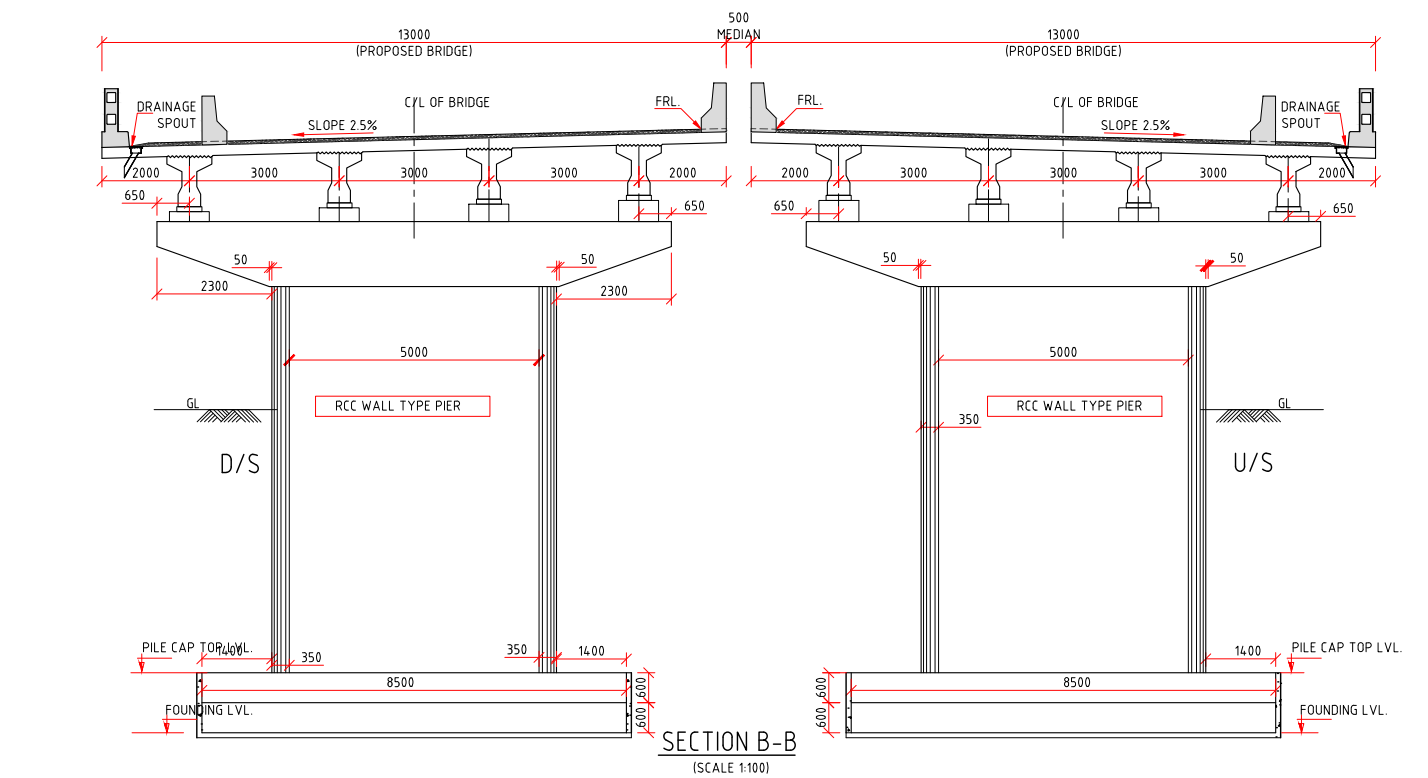
DESIGN CONSULTANT:-

 **CONSULTING
ENGINEERS GROUP LTD**
An ISO 9001:2008 Company
CEG Tower, B11 (G), Malviya Industrial Area,
JAIPUR - 302 017 (Rajasthan) INDIA
Tel: +91 141 2751801/ 802 803/804, Fax: 2751806
Email: ceg@cegidia.com, URL: www.cegidia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE- INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	YOGITA	<i>Y. 15</i>
DRAWN	RAM MOHAN	<i>Rammohan</i>
CHECKED	KAMAL SHARMA	<i>K. Sharma</i>
APPROVED	ARVIND JAIN	<i>Arv</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH-15.461	REV:	R2
DRAWING NO:	IAHE/CEG/D121/REC/15.461/GAD/01	SIZE:	A3
		DATE:	APR.-2025
SCALE:	AS SHOWN	SHEET 1 OF 2	



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

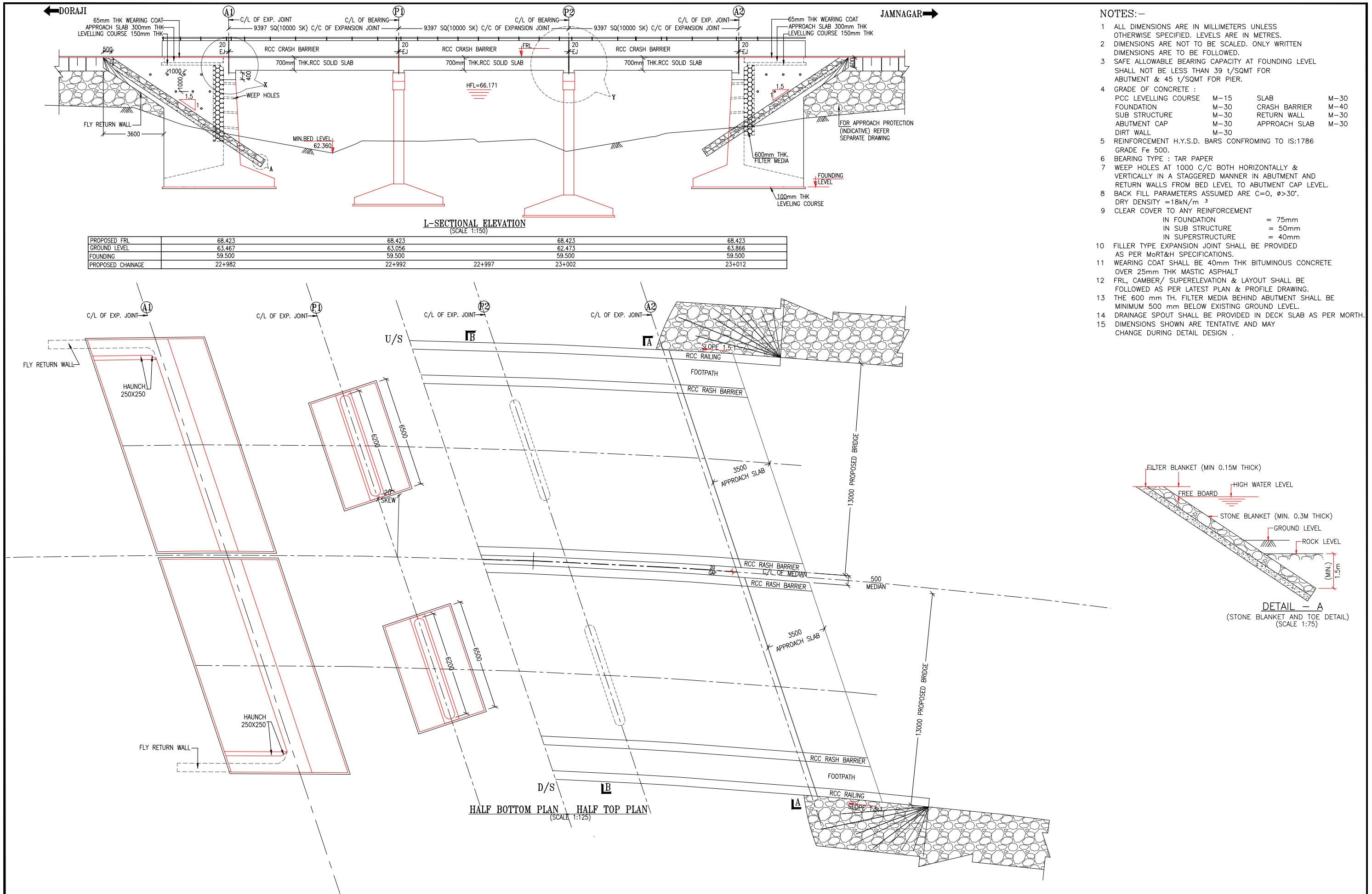
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
 An ISO 9001 : 2008 Company
 CEG Tower, B11 (G), Malviya Industrial Area,
 J A P U R - 302017 (Rajasthan) INDIA
 Tel : +91 141 2751801/802/803/804, Fax : 2751806
 Email: ceg@ceginia.com, URL: www.ceginia.com

PROJECT:
 CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I
 INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR
 UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-
 JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN
 THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED
 SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	YOGITA
DRAWN	RAM MOHAN
CHECKED	KAMAL SHARMA
APPROVED	ARVIND JAIN

TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH-15.461
DRAWING NO:	IAHE/CEG/D121/REC/15.461/GAD/02
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
	SHEET 2 OF 2



- NOTES:-
- 1 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
 - 2 DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - 3 SAFE ALLOWABLE BEARING CAPACITY AT FOUNDING LEVEL SHALL NOT BE LESS THAN 39 t/SQMT FOR ABUTMENT & 45 t/SQMT FOR PIER.
 - 4 GRADE OF CONCRETE :
PCC LEVELLING COURSE M-15 SLAB M-30
FOUNDATION M-30 CRASH BARRIER M-40
SUB STRUCTURE M-30 RETURN WALL M-30
ABUTMENT CAP M-30 APPROACH SLAB M-30
DIRT WALL M-30
 - 5 REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
 - 6 BEARING TYPE : TAR PAPER
 - 7 WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
 - 8 BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi>30^\circ$.
DRY DENSITY = 18 kN/m^3
 - 9 CLEAR COVER TO ANY REINFORCEMENT
IN FOUNDATION = 75mm
IN SUB STRUCTURE = 50mm
IN SUPERSTRUCTURE = 40mm
 - 10 FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MoRT&H SPECIFICATIONS.
 - 11 WEARING COAT SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK MASTIC ASPHALT
 - 12 FRL, CAMBER/ SUPERELEVATION & LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING.
 - 13 THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
 - 14 DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MORTH.
 - 15 DIMENSIONS SHOWN ARE TENTATIVE AND MAY CHANGE DURING DETAIL DESIGN .

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JULY-2017	FIRST SUBMISSION

OWNER:

भारतीय राजमार्ग अभियन्ता अकादमी

Indian Academy of Highway Engineers

सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-

CONSULTING ENGINEERS GROUP LTD

An ISO 9001 : 2008 Company

CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA

Tel: +91 141 2751801/ 802805804, Fax: 2751806

Email: ceg@cecindia.com, URL: www.cecindia.com

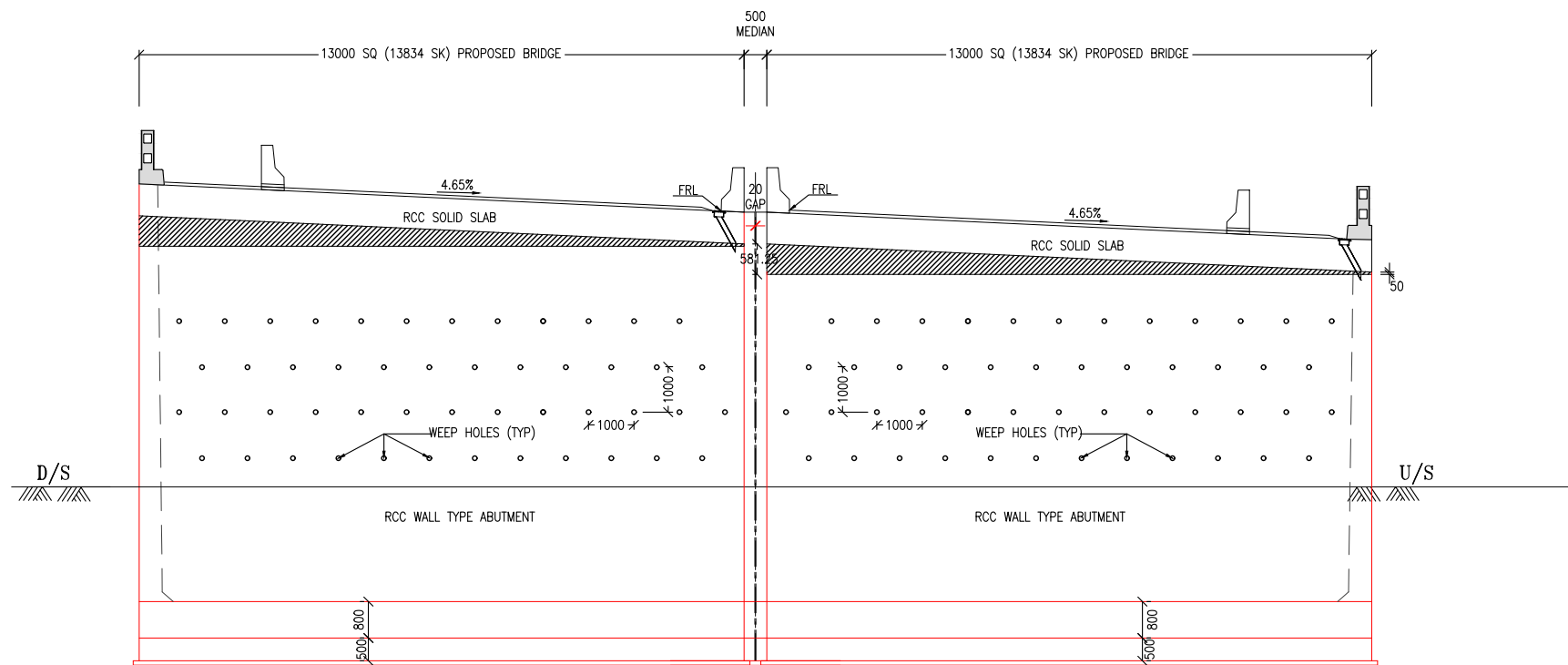
PROJECT:

CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

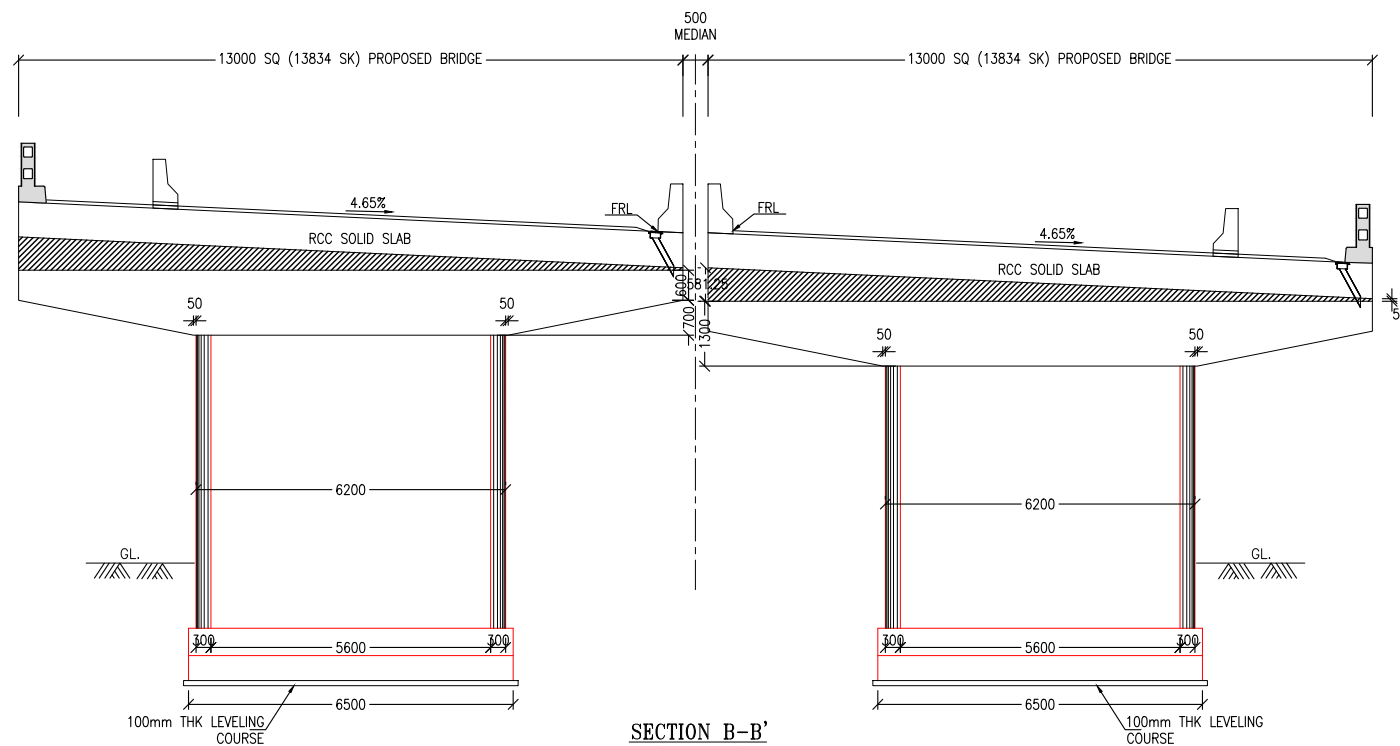
DESIGNED	A.S	
DRAWN	N.K	
CHECKED	K.S	
APPROVED	AKJ	

TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 22.977
DRAWING NO:	IAHE/CEG/D121/NEW/22.977/GAD/01
SCALE:	AS SHOWN

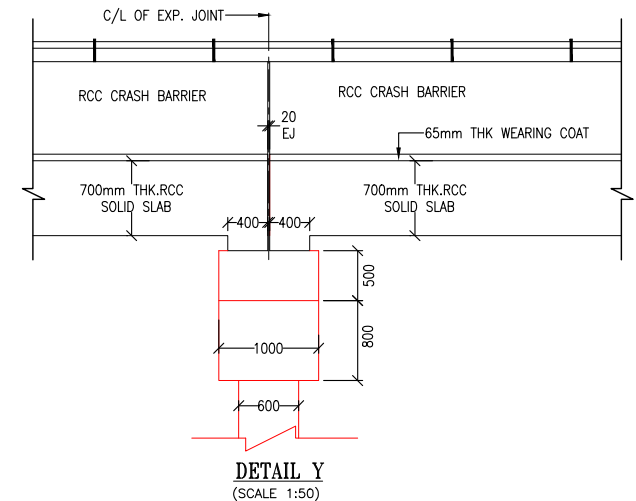
REV:	R2
SIZE:	A2
DATE:	APR.-2025
	SHEET 1 OF 2



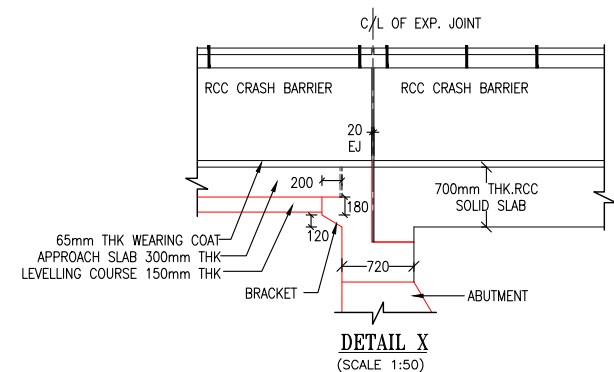
SECTION A-A'
(SCALE 1:100)



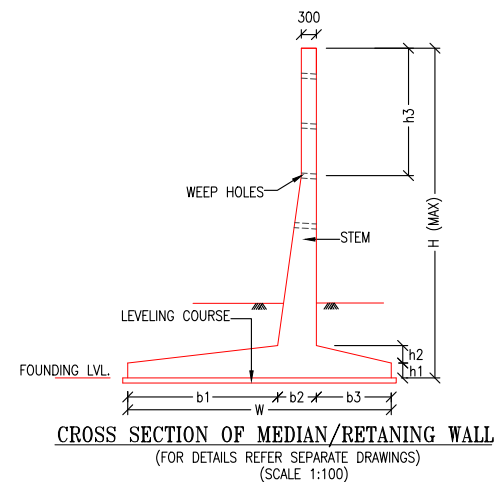
SECTION B-B'
(SCALE 1:100)



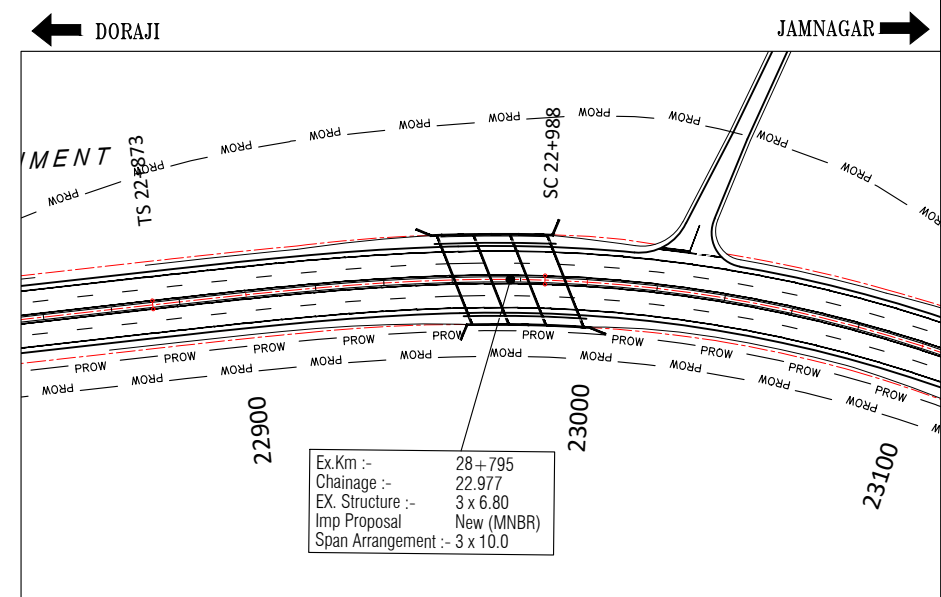
DETAIL Y
(SCALE 1:50)



DETAIL X
(SCALE 1:50)



CROSS SECTION OF MEDIAN/RETAINING WALL
(FOR DETAILS REFER SEPARATE DRAWINGS)
(SCALE 1:100)



KEY PLAN

R2	APR.-2025	STRUCTURE WIDTH REVISED	OWNER: भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, J A I P U R - 3 9 2 0 1 7 (Rajasthan) INDIA Tel: +91 141 2751801/ 800 805 804, Fax: 2751806 Email: ceg@cecindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED: A.S.	A.S.	TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 22.977	REV: R2
R1	OCT-2017	FINAL DPR SUBMISSION				DRAWN: N.K.	N.K.		SIZE: A3
R0	JULY-2017	FIRST SUBMISSION				CHECKED: K.S.	K.S.	DRAWING NO: IAHE/CEG/D121/NEW/22.977/GAD/02	DATE: APR.-2025
REV	DATE	DESCRIPTION OF REVISIONS				APPROVED: AKJ	AKJ	SCALE: AS SHOWN	SHEET 2 OF 2



- TABLE

PROPOSED CHAINAGE	23.145
EXISTING KM (LOCATION)	28+600
PROPOSED STRUCTURE	RCC SOLID SLAB
SPAN ARRANGEMENT (M)	4x10.0 (EXP. TO EXP.)
EXISTING STRUCTURE	RCC SOLID SLAB
EXISTING SPAN (M)	5X6.8 (EXP. TO EXP.)
FRL. (M)	68.423
HFL. (M)	66.158
MIN. BED LVL. (M)	61.346
FOUNDING LVL.	58.800
SBC (T/M ²)	39



R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUN-2016	FIRST SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

OWNER: भारतीय राजमार्ग अमियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-



C O N S U L T I N G
E N G I N E E R S G R O U P L T D

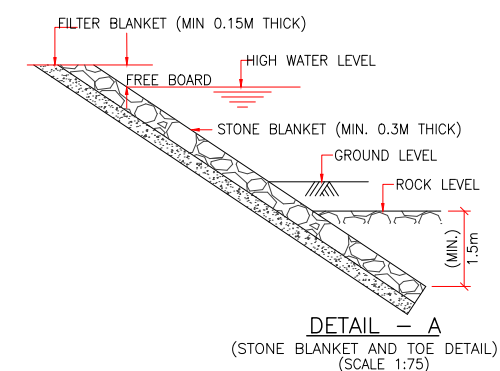
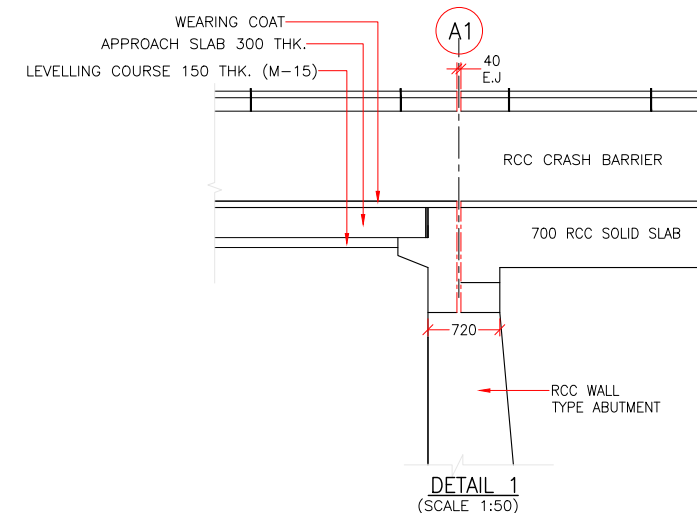
An ISO 9001 : 2008 Company

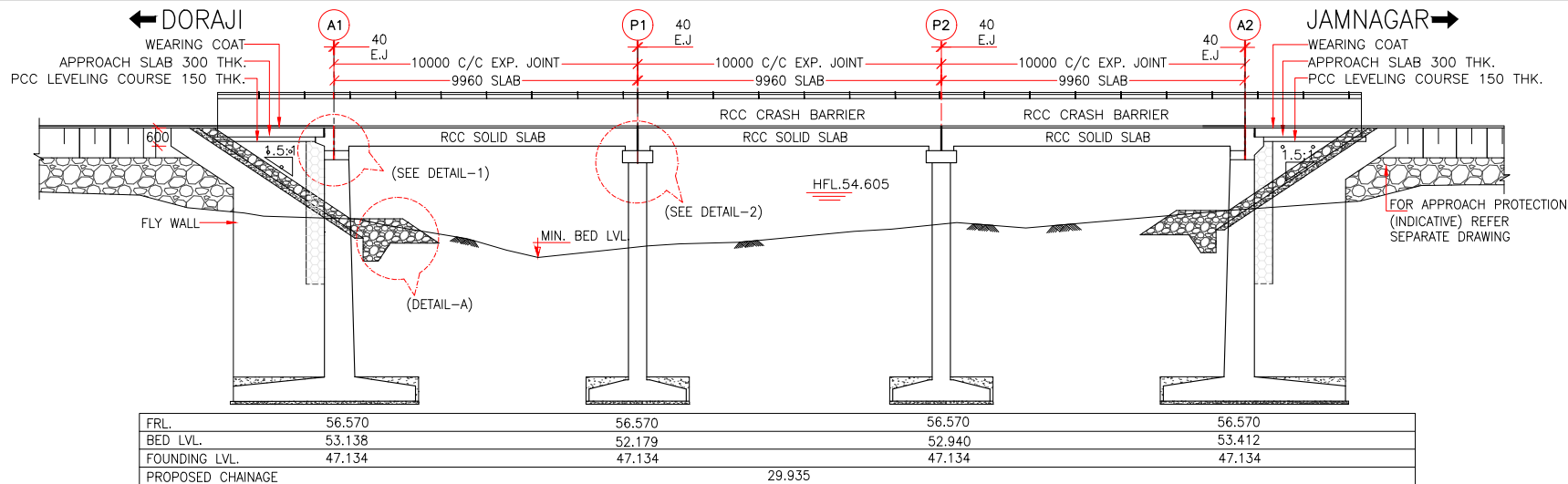
CEG Tower, B11(G), Malviya Industrial Area,
JAIPUR- 302017 (Rajasthan) INDIA
Tel : +91 141 2751801/ 802/803/804, Fax : 2751806
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PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA,KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/8)

DESIGNED	YOGITA	<i>Y-15</i>
DRAWN	RAM MOHAN	<i>Rammohan</i>
CHECKED	KAMAL SHARMA	<i>K Sharma</i>
APPROVED	ARVIND JAIN	<i>Ar</i>

TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 23.145		REV:	R2
		SIZE:	A3
DRAWING NO: IAHE/CEG/D121/REC/23.145/GAD/01		DATE:	APR.-2025
SCALE: AS SHOWN		SHEET 1 OF 2	

[illegible]

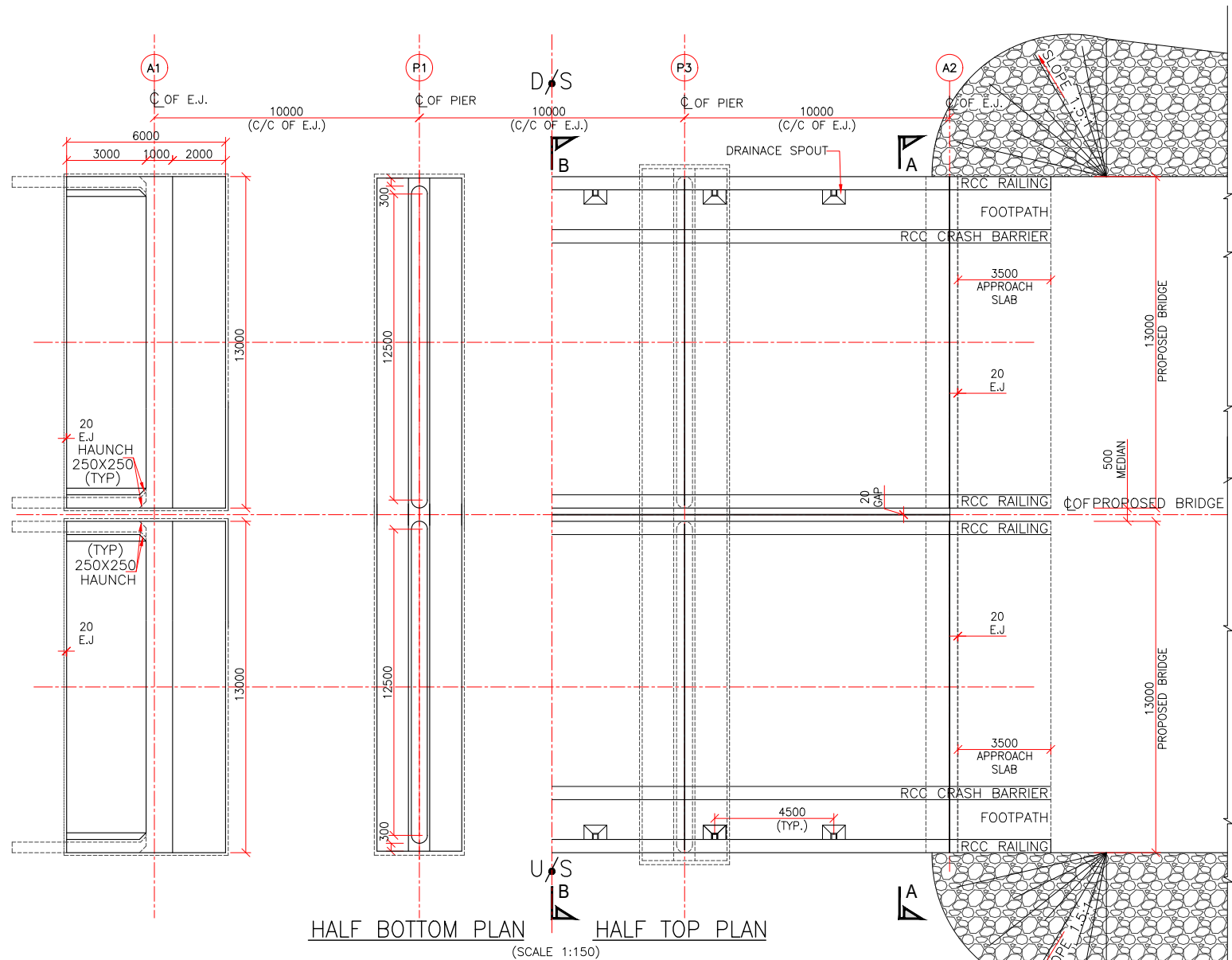


LONGITUDINAL SECTIONAL ELEVATION
(SCALE 1:150)

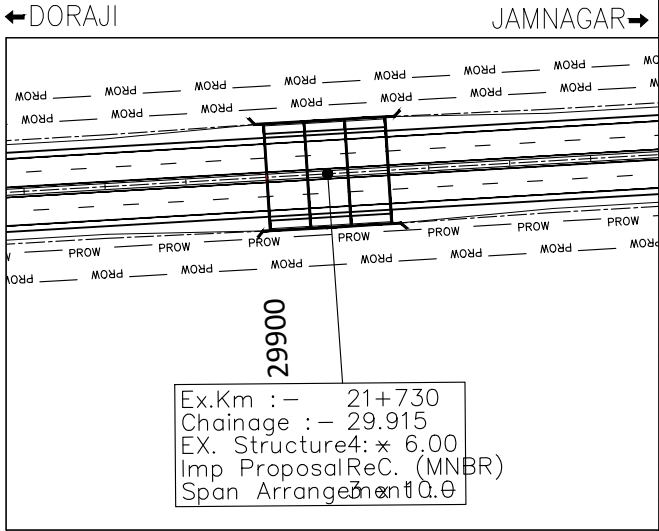
- NOTES:-
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IMETRES.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - SAFE ALLOWABLE BEARING CAPACITY AT FOUNDING LEVEL SHALL NOT BE LESS THAN 30 t/SQMT.
 - GRADE OF CONCRETE :
PCC LEVELLING COURSE M-15
SLAB M-35
FOUNDATION M-35
CRASH BARRIER M-40
SUB STRUCTURE M-35
RETURN WALL M-35
ABUTMENT CAP M-35
APPROACH SLAB M-30
DIRT WALL M-35
 - REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
 - BEARING TYPE : TAR PAPER
 - WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
 - BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi > 30^\circ$. DRY DENSITY = 18kN/m
 - CLEAR COVER TO ANY REINFORCEMENT
IN FOUNDATION = 75mm
IN SUB STRUCTURE = 50mm
IN SUPERSTRUCTURE = 40mm
 - FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MoRT&H SPECIFICATIONS.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THIK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MoRT&H SPECIFICATIONS.
 - FRL, CAMBER/ SUPEREROGATION LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING.
 - THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
 - TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET
 - DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MORTH.

TABLE

PROPOSED CHAINAGE	29.915
EXISTING KM (LOCATION)	21+730
PROPOSED STRUCTURE	RCC SOLID SLAB
SPAN ARRANGEMENT (M)	3x10.0 (EXP. TO EXP.)
EXISTING STRUCTURE	RCC SOLID SLAB
EXISTING SPAN (M)	4x6 (EXP. TO EXP.)
FRL (M)	56.570
HFL (M)	54.605
MIN. BED LVL. (M)	52.179
FOUNDING LVL.	47.134
SBC (T/M ²)	33.00



HALF BOTTOM PLAN HALF TOP PLAN
(SCALE 1:150)



KEY PLAN

R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS



OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

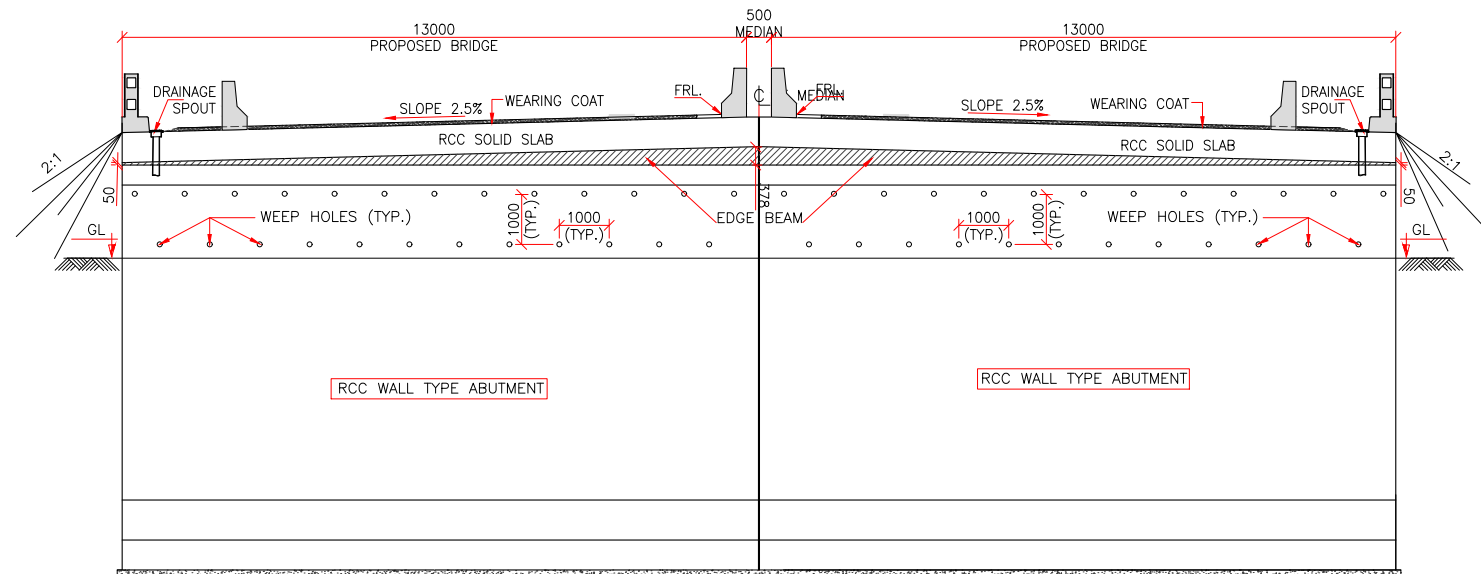
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, JALPURI, 302017 (Rajasthan) INDIA
Tel: +91 141 2751801/ 802803/804, Fax: 2751806
Email: ceg@cegroupindia.com, URL: www.cegroupindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

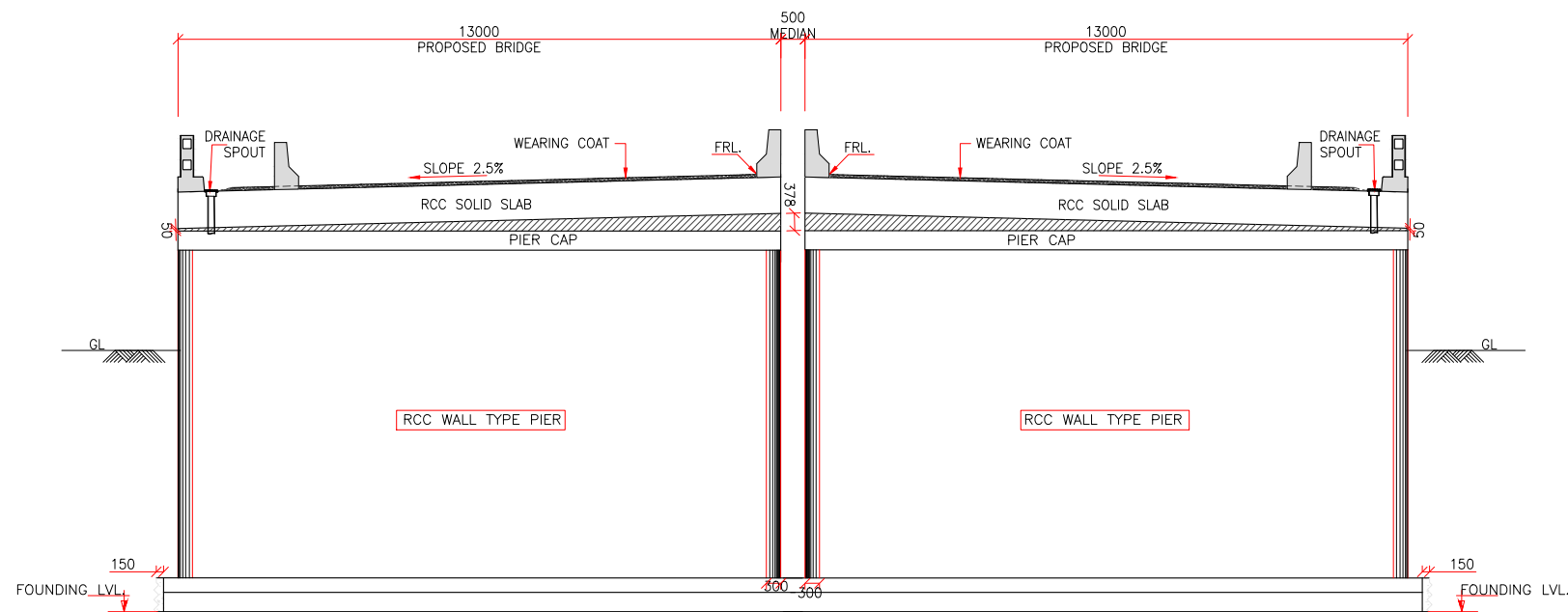
DESIGNED	YOGITA
DRAWN	RAM MOHAN
CHECKED	KAMAL SHARMA
APPROVED	ARVIND JAIN

TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 29.915
DRAWING NO: IAHE/CEG/D121/REC/29.915/GAD/01
SCALE: AS SHOWN

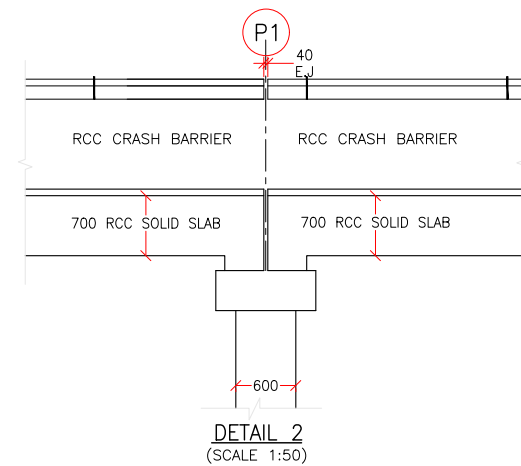
REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET	1 OF 2



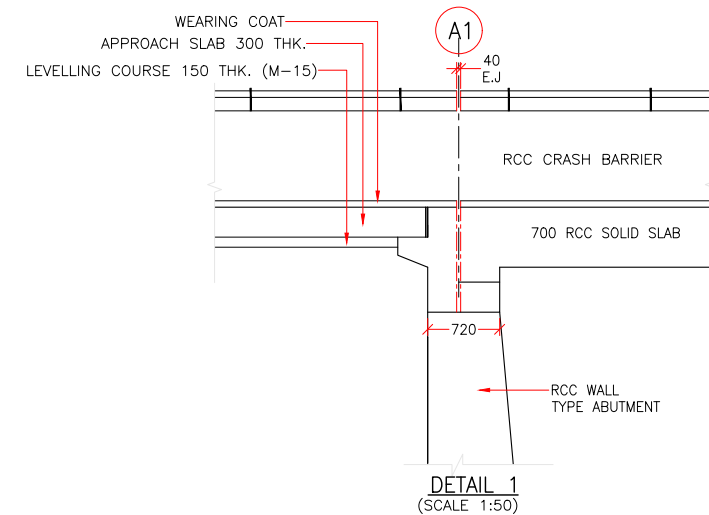
SECTION A-A
(SCALE 1:100)



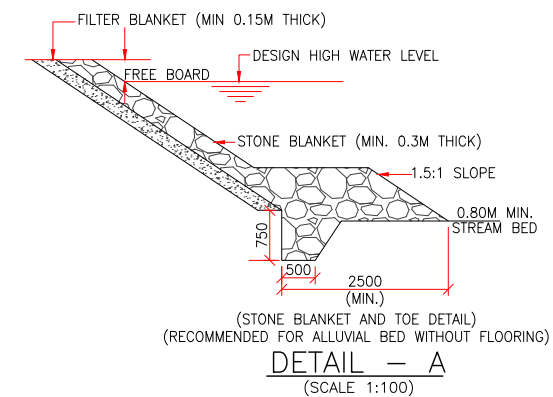
SECTION B-B
(SCALE 1:100)



DETAIL 2
(SCALE 1:50)

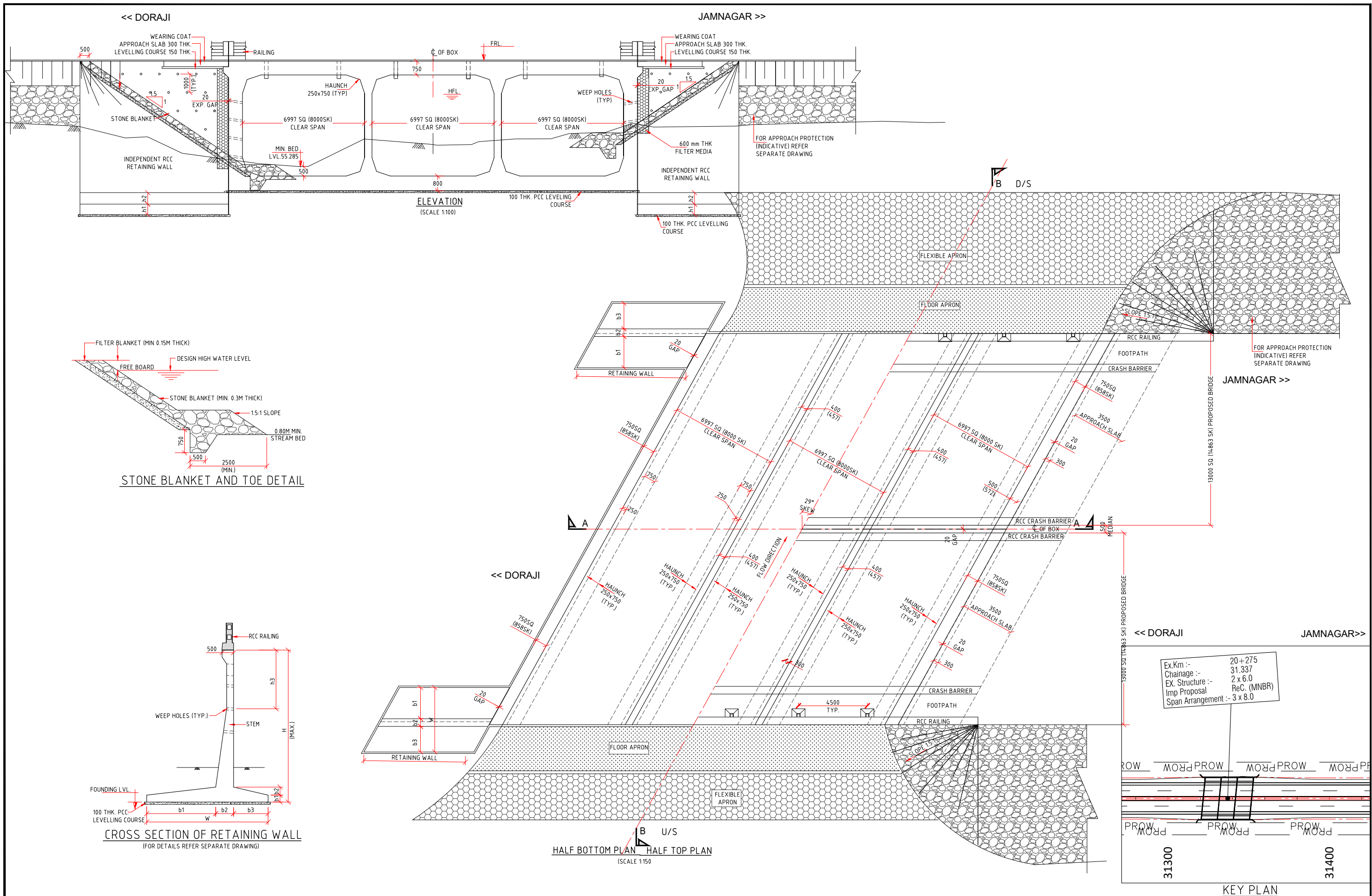


DETAIL 1
(SCALE 1:50)



DETAIL - A
(SCALE 1:100)

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी <u>Indian Academy of Highway Engineers</u> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS,GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR - 302017. (Rajasthan) INDIA Tel : +91 141 2751801/802/803/804, Fax: 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA,KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	YOGITA		TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 29.915 DRAWING NO: IAHE/CEG/D121/REC/29.915/GAD/02 SCALE: AS SHOWN	REV:	R2
R2	APR.-2025	STRUCTURE WIDTH REVISED				DRAWN	RAM MOHAN			SIZE:	A3
R1	OCT-2017	FINAL DPR SUBMISSION				CHECKED	KAMAL SHARMA			DATE:	APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	ARVIND JAIN			SHEET 2 OF 2	
REV	DATE	DESCRIPTION OF REVISIONS									



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION



OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

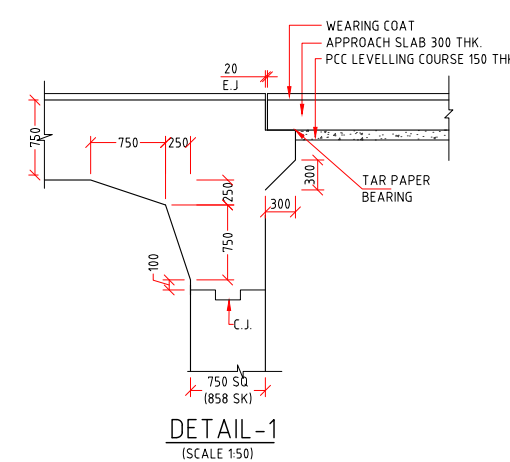
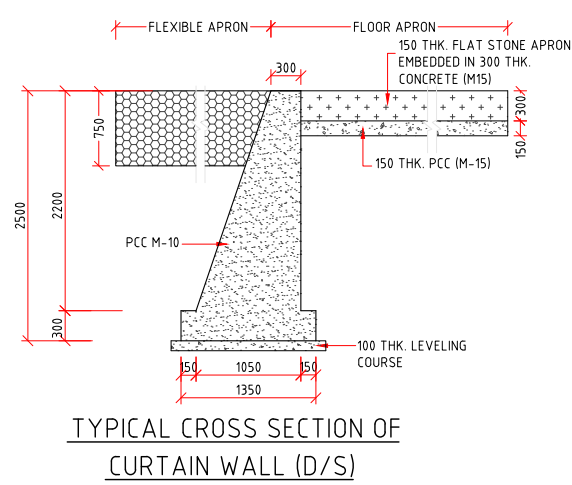
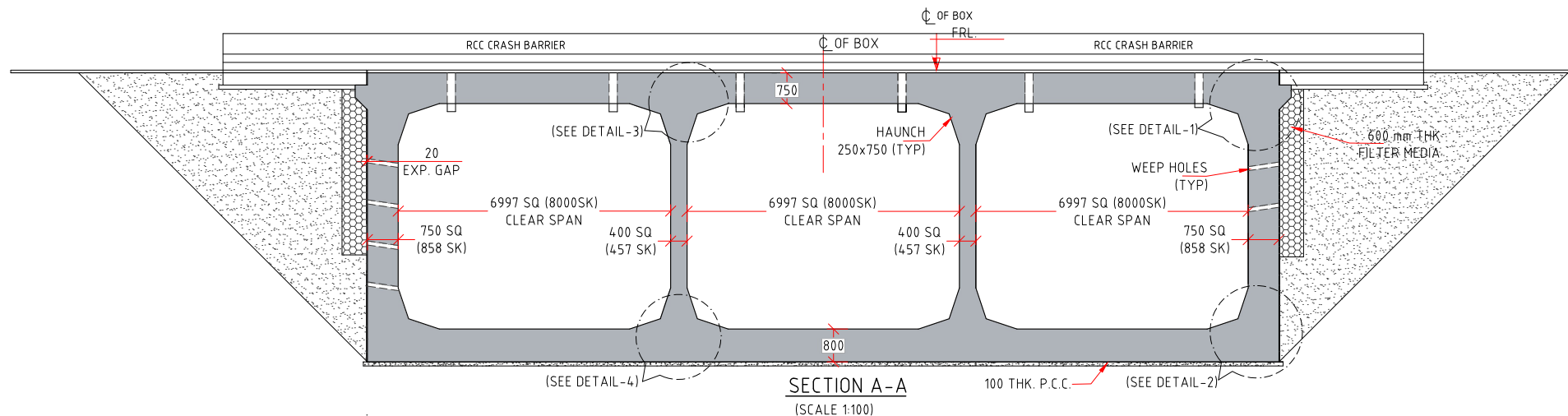
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area,
JAIPUR- 302017 (Rajasthan) INDIA
Tel: +91 141 2751801/ 8008058004, Fax: 2751806
Email: ceg@ceginia.com, URL: www.ceginia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.
DRAWN	R.M.P.
CHECKED	K.S.
APPROVED	AKJ

TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 31.337
DRAWING NO: IAHE/CEG/D121/REC/31.337/GAD/01
SCALE: AS SHOWN

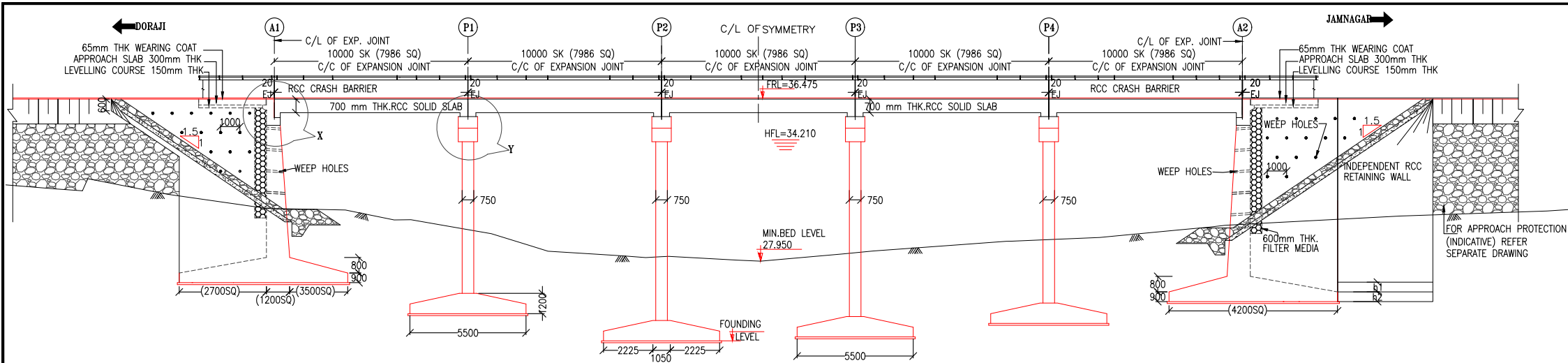
REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET	1 OF 2



- ## REFERENCE DRAWING:-
- DETAILS OF APPROACH SLAB, CRASH BARRIER,
EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC - 1
- FOR RETAINING WALL
IAHE/CEG/RET/TYP - 1
- ### LEGEND:-
- | | | |
|------|---|---------------------|
| E.J. | - | EXPANSION JOINT |
| LVL. | - | LEVEL |
| FRL. | - | FINISHED ROAD LEVEL |
| THK. | - | THICK |
| GL | - | GROUND LEVEL |
| C.J. | - | CONSTRUCTION JOINT |
| HFL. | - | HIGH FLOOD LEVEL |
| U/S | - | UP STREAM |
| D/S | - | DOWN STREAM |
| MCW | - | MAIN CARRIAGE WAY |

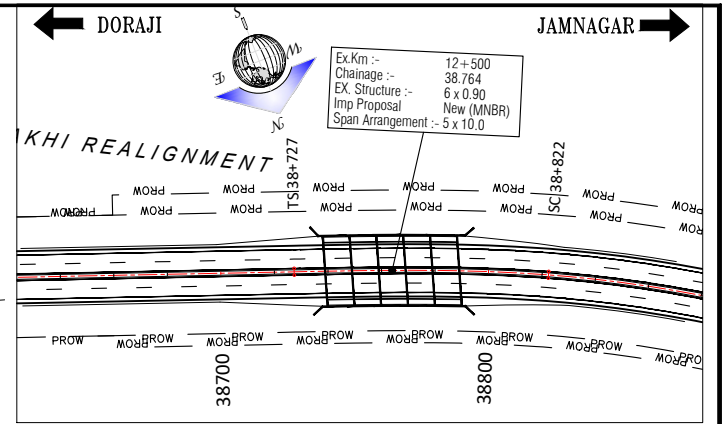
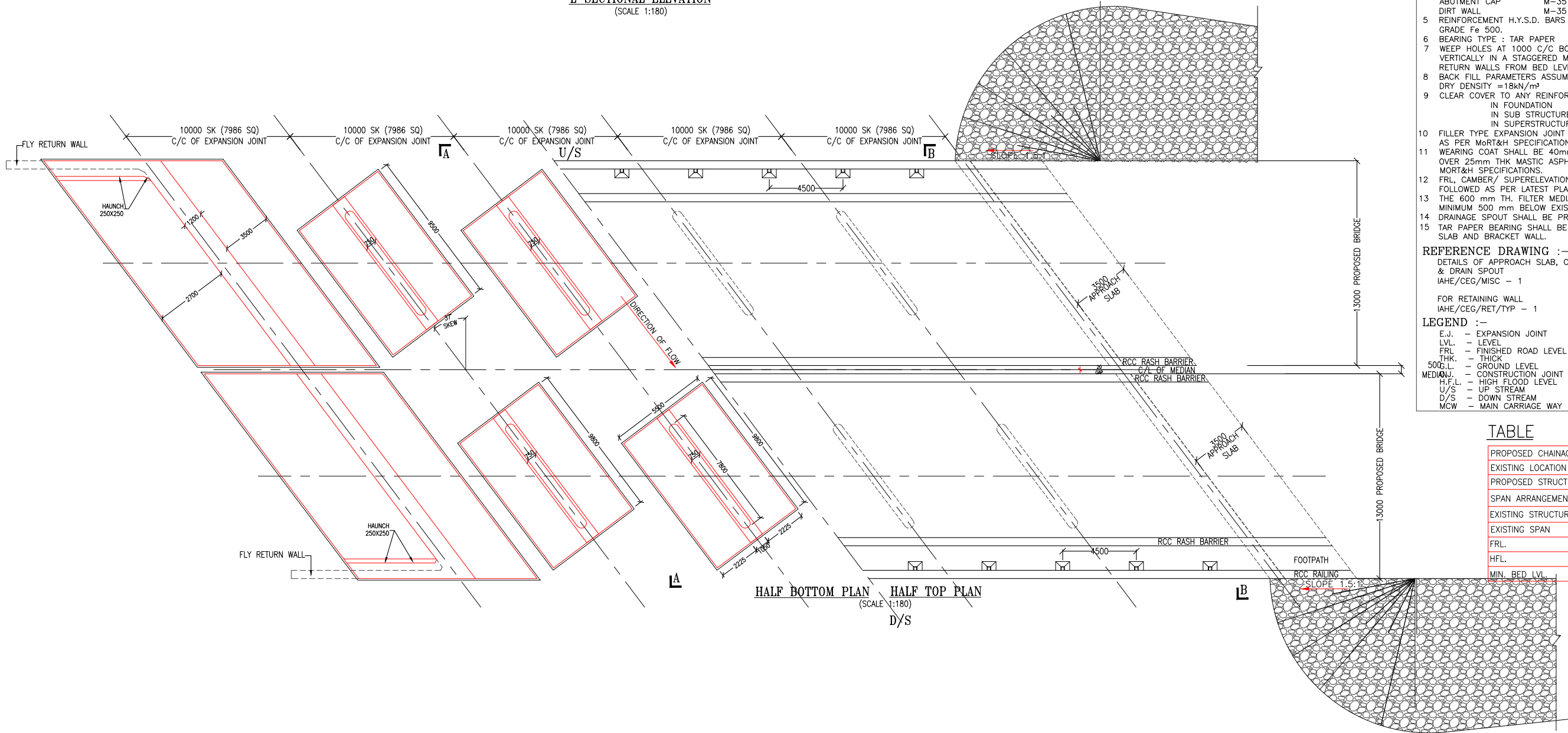
TABLE	
PROPOSED CHAINAGE	31337
EXISTING KM (LOCATION)	20+275
PROPOSED STRUCTURE	RCC BOX
SPAN ARRANGEMENT	3 x 8.0 (CLEAR)
EXISTING STRUCTURE	RCC SOLID SLAB
EXISTING SPAN	2X6.0 (EXP. TO EXP.)
SKEW	29°
FRL	61.072
HFL	59.207
MIN. BED LVL.	55.518
FOUNDING LVL. OF BOX	54.468

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  C O N S U L T I N G ENGINEERS GROUP LTD AN ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, J A P U R : 3 0 2 0 1 7 (Rajasthan) - INDIA Tel : +91 141 2751801/802/803/804, Fax : 2751806 Email: ceg@cegidia.com. URL: www.cegidia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED A.S 	TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 31.337	REV: R2
R2	APR.-2025	STRUCTURE WIDTH REVISED				DRAWN R.M.P 		SIZE: A3
R1	OCT-2017	FINAL DPR SUBMISSION				CHECKED K.S 	DRAWING NO: IAHE/CEG/D121/REC/31.337/GAD/02	DATE: APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED AKJ 	SCALE: AS SHOWN	SHEET 2 OF 2
REV	DATE	DESCRIPTION OF REVISIONS						



PROPOSED FRL	36.475	36.475	36.475	36.475	36.475	36.475
GROUND LEVEL	30.667	29.574	28.178	28.384	29.060	29.846
FOUNDING LEVEL	26.375	26.075	26.075	26.075	26.075	26.375
PROPOSED CHAINAGE	38+759	38+769	38+779	38+784	38+789	38+809

L-SECTIONAL ELEVATION
(SCALE 1:180)



KEY PLAN

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- SAFE ALLOWABLE BEARING CAPACITY AT FOUNDING LEVEL SHALL NOT BE LESS THAN 30 t/SQMT.
- GRADE OF CONCRETE :
PCC, LEVELLING COURSE M-15
FOUNDATION M-35
SUB STRUCTURE M-35
ABUTMENT CAP M-35
DIRT WALL M-35
SLAB M-35
CRASH BARRIER M-35
RETURN WALL M-35
APPROACH SLAB M-30
RETAINING WALL M-30
- REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
- BEARING TYPE : TAR PAPER
- WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
- BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi>30^\circ$. DRY DENSITY =18kN/m³
- CLEAR COVER TO ANY REINFORCEMENT
IN FOUNDATION = 75mm
IN SUB STRUCTURE = 50mm
IN SUPERSTRUCTURE = 40mm
- FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MoRT&H SPECIFICATIONS.
- WEARING COAT SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK MASTIC ASPHALT AS PER CLASS :202 OF MoRT&H SPECIFICATIONS.
- FRL, CAMBER/ SUPERELEVATION & LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING.
- THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
- DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MoRT&H SPECIFICATIONS.
- TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET WALL.

REFERENCE DRAWING :-

DETAILS OF APPROACH SLAB, CRASH BARRIER, EXP. JOINT & DRAIN SPOUT
IAHE/CEG/MISC - 1

FOR RETAINING WALL
IAHE/CEG/RET/TYP - 1

LEGEND :-

- E.J. - EXPANSION JOINT
- LVL. - LEVEL
- FRL - FINISHED ROAD LEVEL
- THK. - THICK
- 500 G.L. - GROUND LEVEL
- MEDIA. - CONSTRUCTION JOINT
- H.F.L. - HIGH FLOOD LEVEL
- U/S - UP STREAM
- D/S - DOWN STREAM
- MCW - MAIN CARRIAGE WAY

TABLE

PROPOSED CHAINAGE	38+764
EXISTING LOCATION (KM)	12.500
PROPOSED STRUCTURE	RCC SOLID SLAB
SPAN ARRANGEMENT	5x10 (EXP. TO EXP.)
EXISTING STRUCTURE	RCC SOLID SLAB
EXISTING SPAN	6x0.90 (EXP. TO EXP.)
FRL	36.475
HFL	34.210
MIN. BED LVL	27.950

R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT.-2017	FINAL DPR SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

OWNER:



भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-



CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area,
JAIPUR- 302017 (Rajasthan) INDIA
Tel: +91 141 2751801/ 8008058004, Fax: 2751806
Email: ceg@cecindia.com, URL: www.cegindia.com

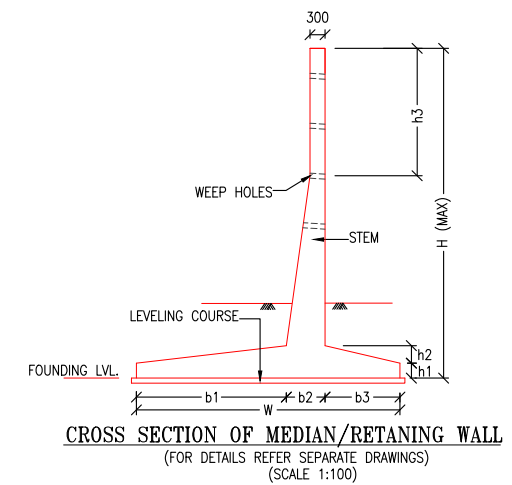
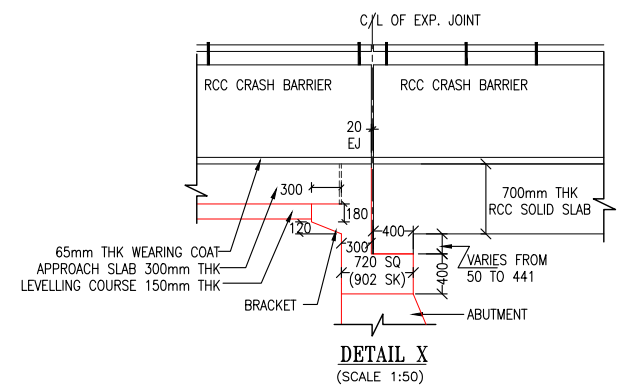
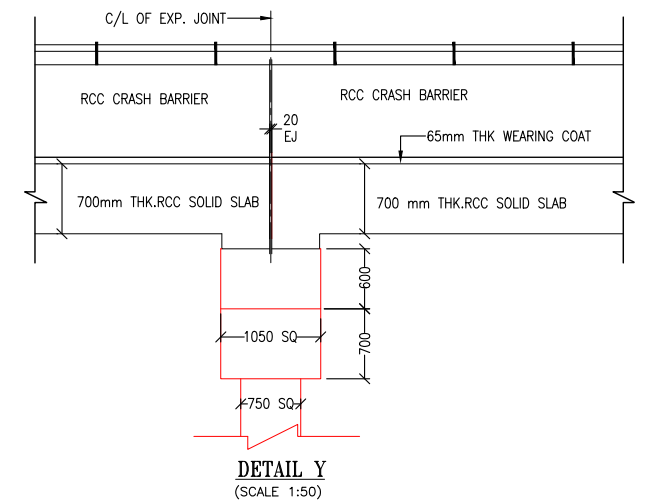
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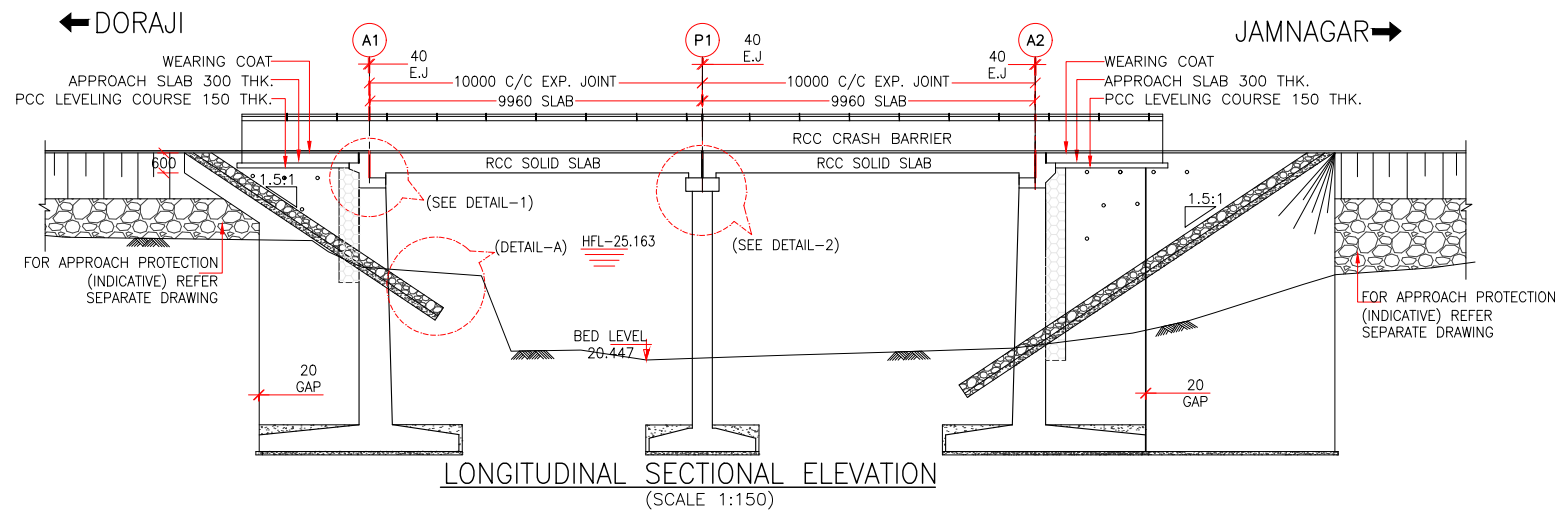
CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.	<i>Asst. Eng.</i>
DRAWN	R.M.P.	<i>Rev. Eng.</i>
CHECKED	K.S.	<i>Sup. Eng.</i>
APPROVED	AKJ	<i>Asst. Eng.</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 38.764
DRAWING NO:	IAHE/CEG/D121/NEW/38.764/GAD/01
SCALE:	AS SHOWN

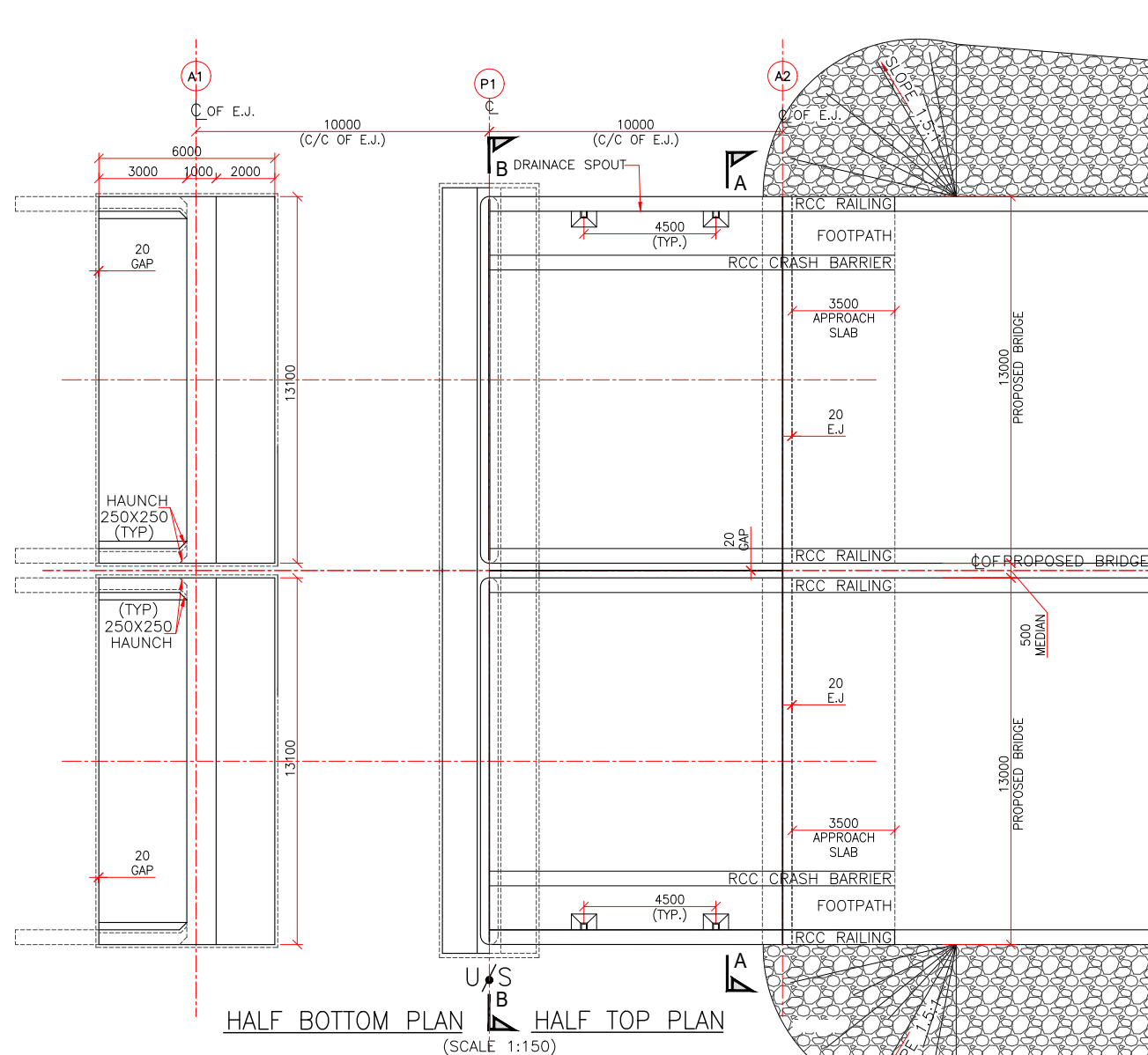
REV:	R2
SIZE:	A3
DATE:	APR.-2025

[illegible]



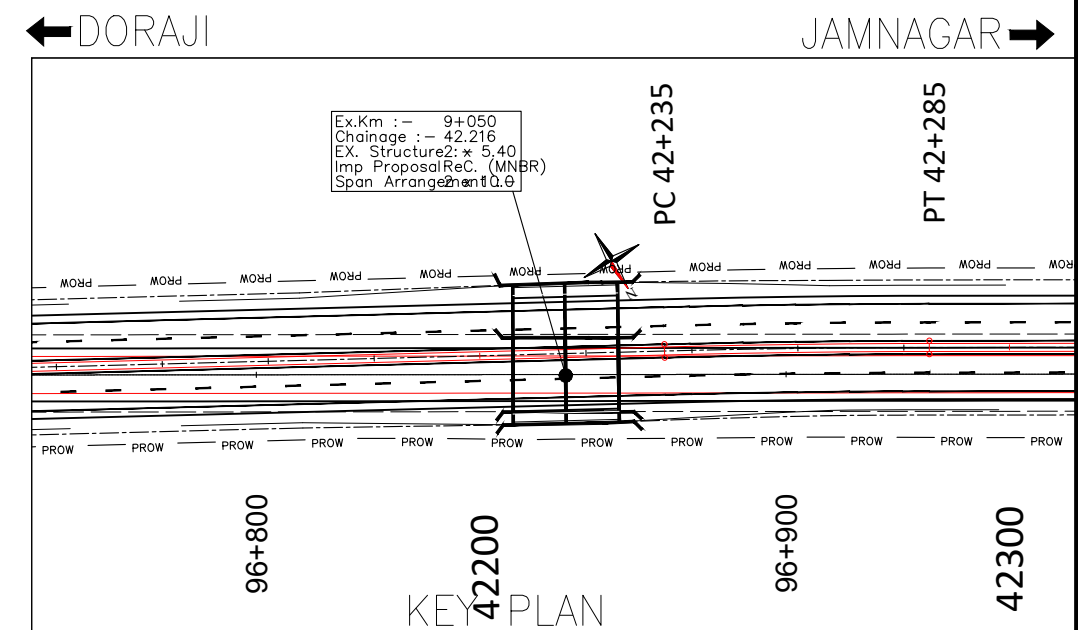
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- SAFE ALLOWABLE BEARING CAPACITY AT FOUNDING LEVEL SHALL NOT BE LESS THAN 30 t/SQMT.
- GRADE OF CONCRETE :
PCC LEVELLING COURSE M-15 SLAB M-35
FOUNDATION M-35 CRASH BARRIER M-40
SUB STRUCTURE M-35 RETURN WALL M-35
ABUTMENT CAP M-35 APPROACH SLAB M-30
DIRT WALL M-35
- REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
- BEARING TYPE : TAR PAPER
- WEEP HOLES AT 1000 C/C BOTH HORIZONTALLY & VERTICALLY IN A STAGGERED MANNER IN ABUTMENT AND RETURN WALLS FROM BED LEVEL TO ABUTMENT CAP LEVEL.
- BACK FILL PARAMETERS ASSUMED ARE C=0, $\phi > 30^\circ$. DRY DENSITY = 18kN/m
- CLEAR COVER TO ANY REINFORCEMENT
IN FOUNDATION = 75mm
IN SUB STRUCTURE = 50mm
IN SUPERSTRUCTURE = 40mm
- FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MoRT&H SPECIFICATIONS.
- WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MoRT&H SPECIFICATIONS.
- FRL, CAMBER/ SUPEREROGATION LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING.
- THE 600 mm TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE MINIMUM 500 mm BELOW EXISTING GROUND LEVEL.
- TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET
- DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MoRTH.



TABLE

PROPOSED CHAINAGE	42.216
EXISTING KM (LOCATION)	09.050
PROPOSED STRUCTURE	RCC SOLID SLAB
SPAN ARRANGEMENT (M)	2x10.0 (EXP. TO EXP.)
EXISTING STRUCTURE	RCC SOLID SLAB
EXISTING SPAN (M)	2x5.4 (EXP. TO EXP.)
FRL (M)	27.128
HFL (M)	25.163
MIN. BED LVL. (M)	20.447
FOUNDING LVL.	17.700
SBC (T/M ²)	30



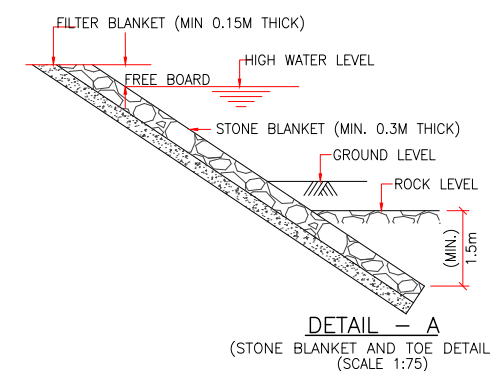
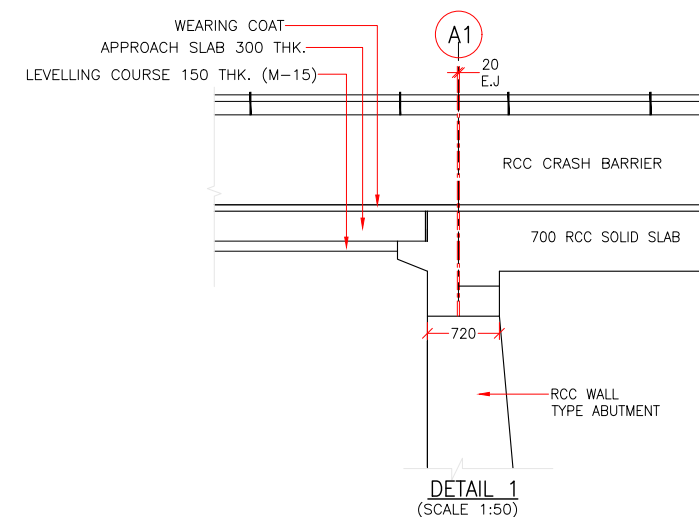
REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

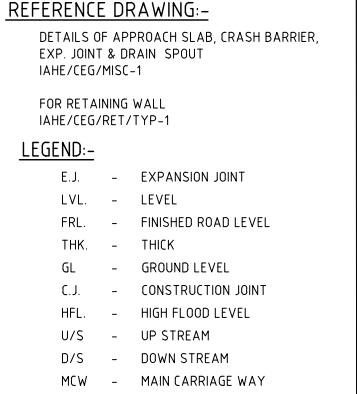
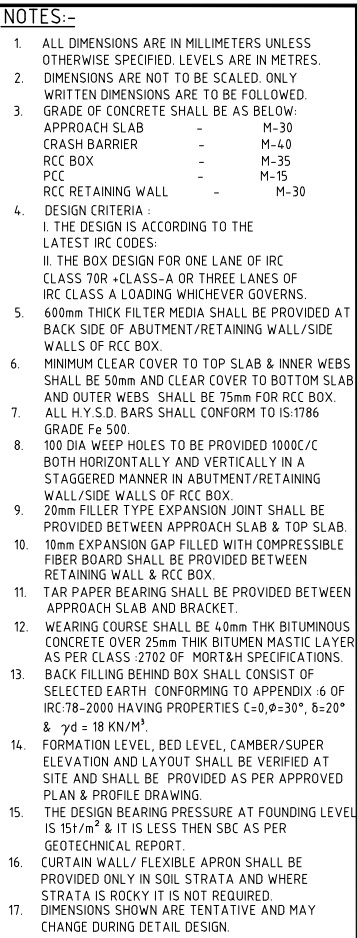
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA
Tel: +91 141 2751801/ 802803804, Fax: 2751806
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DESIGNED	YOGITA		TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH.42.216	REV: R2
DRAWN	RAM MOHAN			SIZE: A3
CHECKED	KAMAL SHARMA		DRAWING NO: IAHE/CEG/D121/REC/42.216/GAD/01	DATE: APR.-2025
APPROVED	ARVIND JAIN		SCALE: AS SHOWN	SHEET 1 OF 2

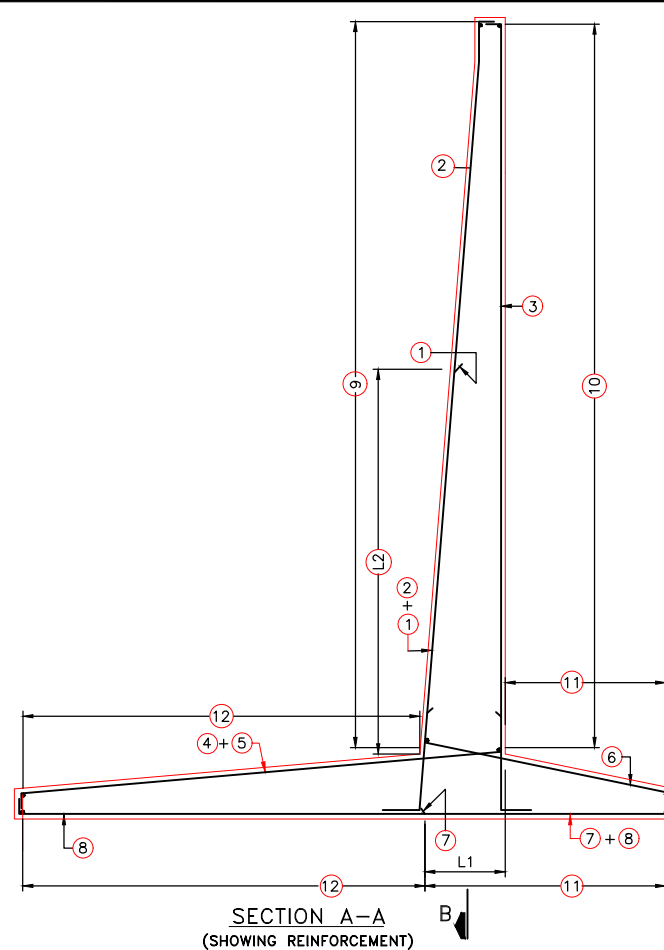
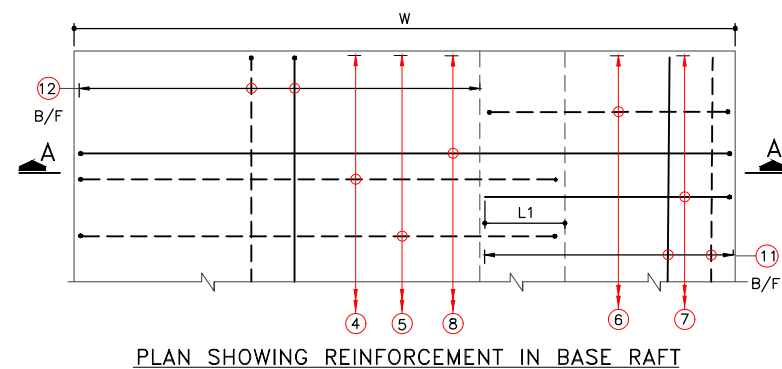
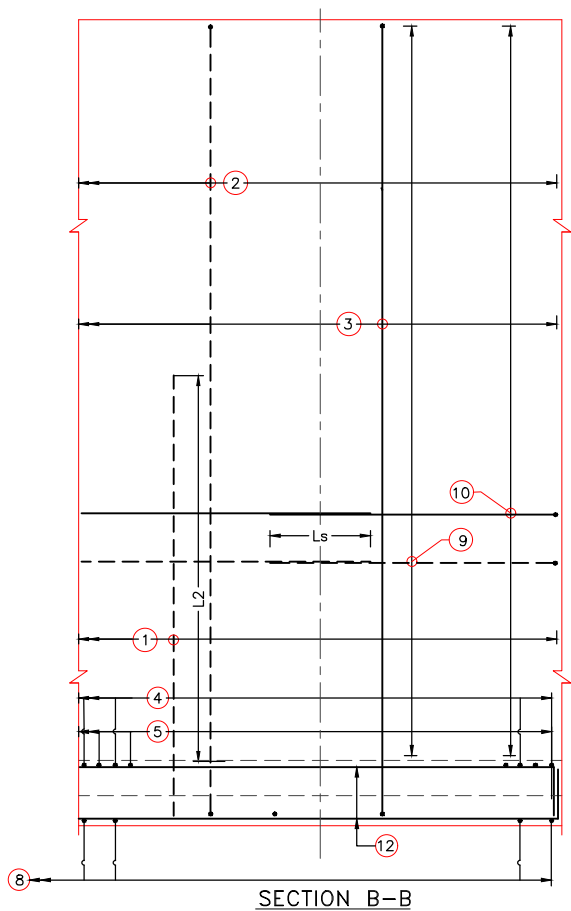
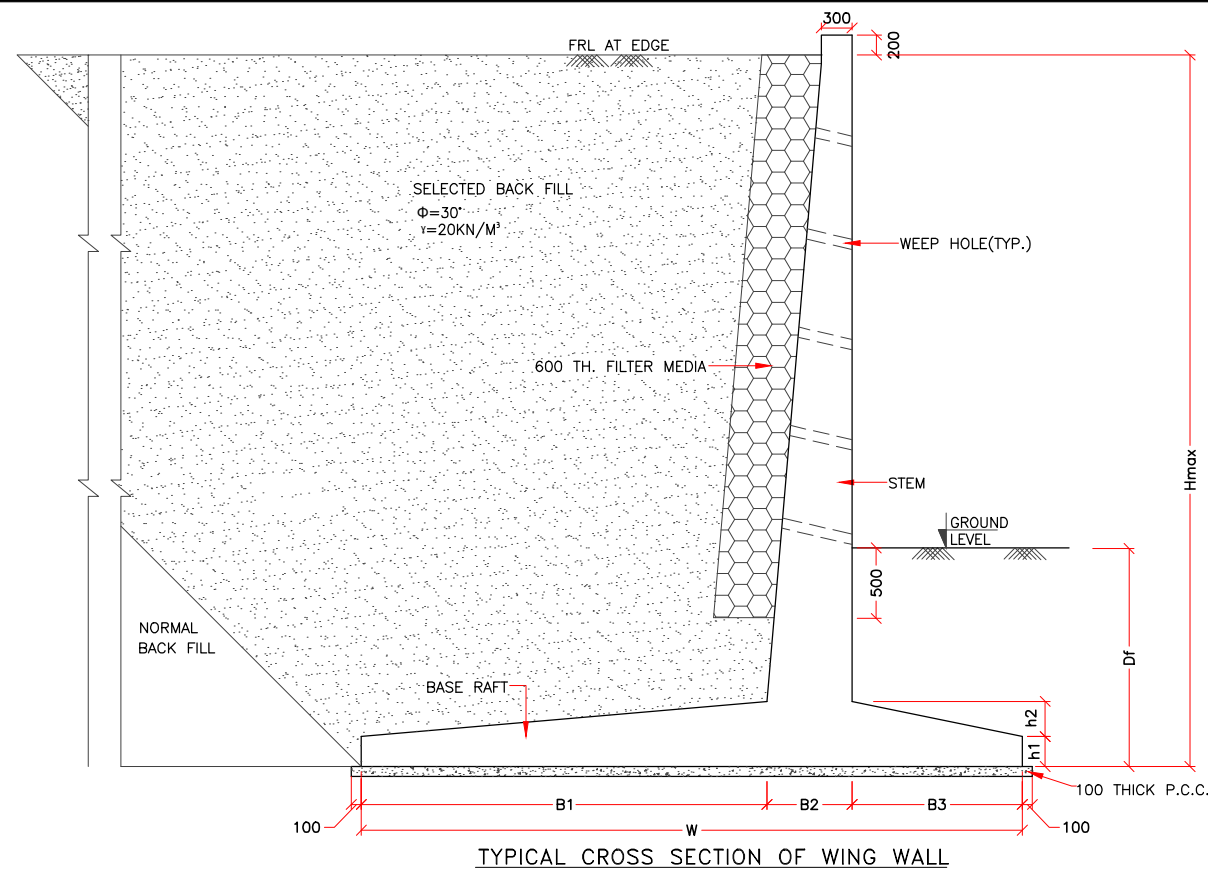


			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी <i>Indian Academy of Highway Engineers</i> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  C O N S U L T I N G E N G I N E E R S G R O U P L T D An ISO 9001 : 2008 Company CEG Tower, B11(G), Malviya Industrial Area, JAIPUR - 302012 (Rajasthan) INDIA Tel. : +91 141 2751801/802/803/804, Fax: 2751806 Email: ceg@cegroupindia.com, URL: www.cegroupindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED DRAWN CHECKED APPROVED	YOGITA RAM MOHAN KAMAL SHARMA ARVIND JAIN	   	TITLE: GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT DESIGN CH. 42.216 DRAWING NO: IAHE/CEG/D121/REC/42.216/GAD/02 SCALE: AS SHOWN	REV: R2 SIZE: A2 DATE: APR.-2025
R2	APR.-2025	STRUCTURE WIDTH REVISED								
R1	OCT-2017	FINAL DPR SUBMISSION								
R0	DEC-2015	FIRST SUBMISSION								
REV	DATE	DESCRIPTION OF REVISIONS								



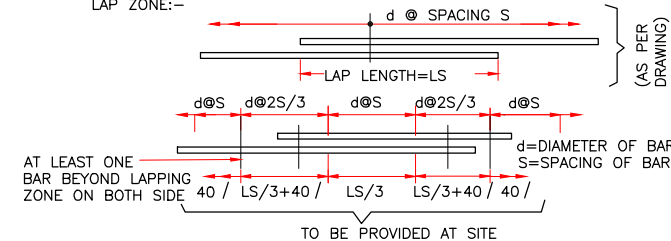
Plan view of the proposed bridge structure. The diagram shows the bridge alignment (red line) crossing the road (black line). The bridge is labeled with 'SC 44+755' and 'CS 44+809'. The approach roads are labeled 'PROW'. The bridge is located between chainage 44700 and 44900. The bridge is a 6x3.70 structure. The bridge is located between chainage 44700 and 44900. The bridge is a 6x3.70 structure. The bridge is located between chainage 44700 and 44900. The bridge is a 6x3.70 structure.

Ex Km :-	6 + 480
Chainage :-	44.812
EX. Structure :-	6 x 3.70
Imp Proposal	Rec. (MNBR)
Span Arrangement :-	3 x 7.0



NOTES:

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES AS FOLLOWS :-
CONCRETE — M30
PCC LEVELLING COURSE — M15
- THE REINFORCEMENT STEEL SHALL BE TMT BARS (Fe-500D) CONFORMING TO IS:1786.
- CLEAR COVER TO ANY REINFORCEMENT :-
IN FOUNDATION — 75mm
IN STEM (EARTH FACE) — 75mm
IN STEM (NON EARTH FACE) — 50mm
- LAPS SHALL BE STAGGERED AND NOT MORE THAN 50% BAR. SHALL BE LAPPED AT ANY LOCATION. LAP LENGTH SHALL NOT BE LESS THAN
* 81 x DIA OF BAR
- ANCHORAGE LENGTH SHALL NOT BE LESS THAN
* 58 x DIA OF BAR
- THE BEARING CAPACITY AT FOUNDING LEVEL IS AS SHOWN IN DIMENSION TABLE AND SHALL BE ENSURED AT SITE BEFORE EXECUTION. INCASE OF ANY DISCREPANCY, THE FOUNDATION SOIL SHALL BE REPLACED BY SUITABLE DEPTH TO OBTAIN THE REQUIRED SBC.
- WEEP HOLES 100Ø SHALL BE PROVIDED AT A SPACING OF 1000MM C/C IN BOTH HORIZONTAL AND VERTICAL DIRECTION IN STAGGERED MANNER.
- ARRANGEMENT OF TRANSVERSE REINFORCEMENT IN LAP ZONE:-



REFERENCE DRAWING:-

- MISC. ITEMS (CRASH BARRIER, FRICTION SLAB & RCC RAILING POST)
IAHE/CEG/MISC-1

LEGENDS:

- BAR ON TOP/ EARTH FACE
- BAR ON BOTTOM/ OUTER FACE
- B/F BAR ON BOTH FACE

LENGTH OF CURTAILMENT

Hmax	L1	L2
10000	1200	4450
9000	950	3850
8000	950	3600
7000	950	2800
6000	700	2250
5000	700	2700
4000	600	2000

DIMENSIONAL DETAILS

Hmax	h1 (mm)	h2 (mm)	Df (mm)	B1 (mm)	B2 (mm)	B3 (mm)	Bearing pressure (T/m ²)	Required Bearing Capacity (T/m ²)
10000	600	950	2000	4050	1500	3250	15.76	16
9000	500	900	2000	3800	1350	2850	14.92	16
8000	400	750	2000	3600	1200	2250	14.66	16
7000	350	550	2000	3350	950	1750	14.55	16
6000	350	450	2000	3100	750	1350	13.80	16
5000	300	350	2000	2750	650	1050	12.32	16
4000	300	200	2000	2450	500	700	11.06	16

REINFORCEMENT DETAILS

BAR No.	1	2	3	4	5	6	7	8	9	10	11	12
BAR SHAPE	500/	150/300	150/300	300/500	300/500	500/300	300	300/300	150/150	150/150	150/150	150/150
Hmax	500/	300	150/300	300/500	300/500	500/300	300	300/300	150/150	150/150	150/150	150/150
10000	25 @ 200	20 @ 200	12 @ 100	20 @ 200	20 @ 200	12 @ 100	20 @ 200	20 @ 200	12 @ 120	12 @ 120	12 @ 150	12 @ 150
9000	20 @ 200	16 @ 200	12 @ 100	16 @ 200	16 @ 200	12 @ 100	16 @ 200	16 @ 200	12 @ 150	12 @ 150	12 @ 150	12 @ 150
8000	20 @ 220	16 @ 220	12 @ 110	16 @ 220	16 @ 220	12 @ 110	16 @ 220	16 @ 220	12 @ 150	12 @ 150	12 @ 150	12 @ 150
7000	16 @ 200	16 @ 200	12 @ 200	16 @ 200	12 @ 200	12 @ 200	16 @ 200	10 @ 200	10 @ 100	12 @ 200	12 @ 150	12 @ 150
6000	16 @ 220	16 @ 220	12 @ 220	16 @ 220	12 @ 220	10 @ 110	12 @ 220	12 @ 220	10 @ 100	10 @ 150	12 @ 200	12 @ 200
5000	16 @ 220	12 @ 220	10 @ 110	12 @ 220	12 @ 220	10 @ 110	12 @ 220	10 @ 220	10 @ 100	10 @ 150	10 @ 100	10 @ 100
4000	10 @ 200	10 @ 200	10 @ 100	10 @ 200	10 @ 200	10 @ 100	10 @ 200	10 @ 200	10 @ 100	10 @ 150	10 @ 100	10 @ 100

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION



OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

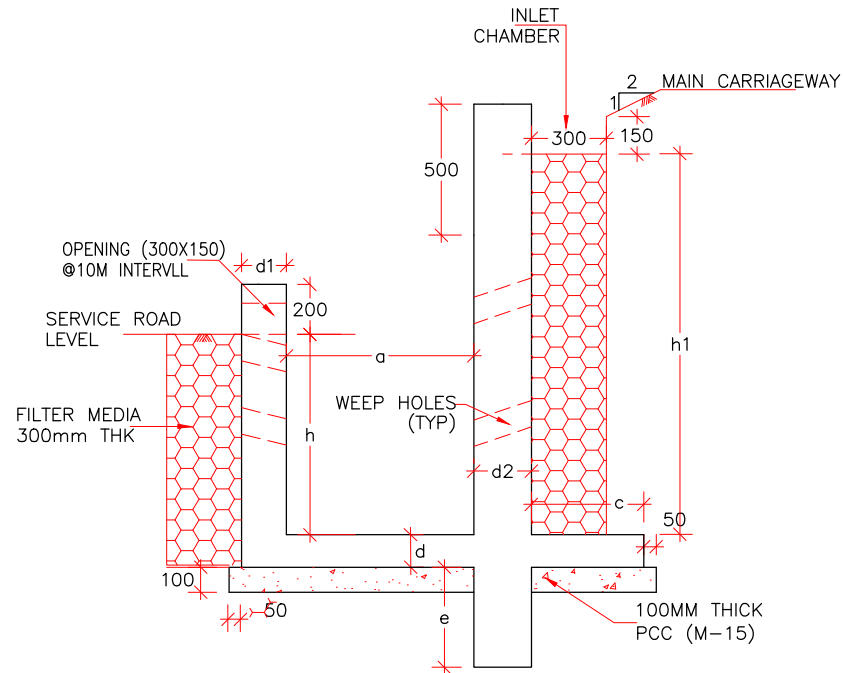
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, J.A.P.U.R. - 302017 (Rajasthan) INDIA
Tel: +91 141 2751801/802/803/804, Fax: 2751806
Email: ceg@cegindia.com, URL: www.cegindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

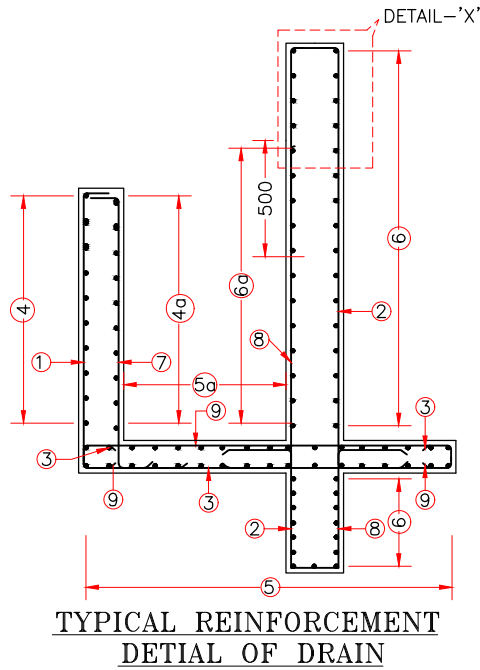
DESIGNED	YOGITA	
DRAWN	RAM MOHAN	
CHECKED	KAMAL SHARMA	
APPROVED	ARVIND JAIN	

TITLE: GENERAL ARRANGEMENT DRAWING FOR RETAINING WALL
DRAWING NO: IAHE/CEG/D121/RETAINING WALL/GAD/01
SCALE: AS SHOWN

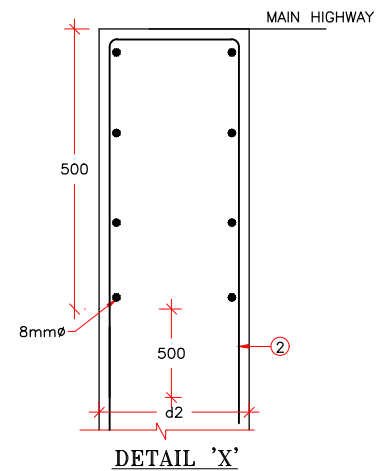
REV: R2
SIZE: A3
DATE: APR.-2025
SHEET 1 OF 1



TYPICAL SECTION OF DRAIN



TYPICAL REINFORCEMENT
DETIAL OF DRAIN



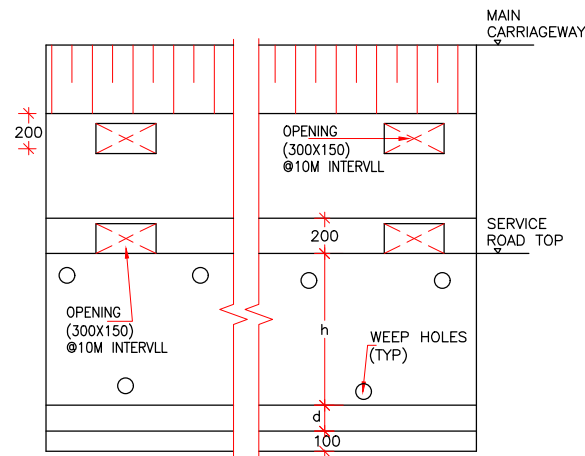
DETAIL 'X'

NOTES: —

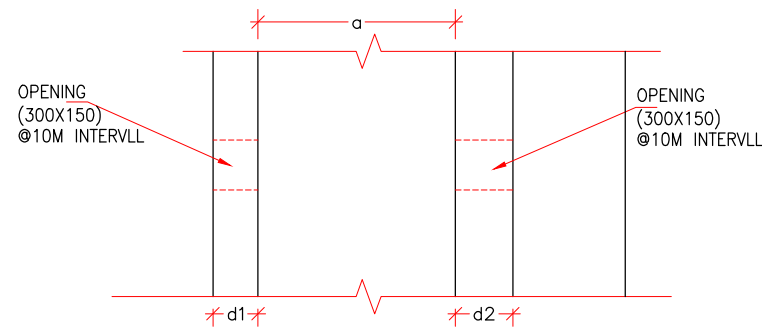
1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
3. GRADE OF CONCRETE M-25.
4. GRADE OF STEEL Fe 500D
5. FRL, OFFSET AND LEVEL OF DRAIN SHALL BE AS PER APPROVED PLAN & PROFILE DRAWING.
6. CLEAR COVER FOR
STEMS - 40mm
BOTTOM SLAB - 50 mm
7. WEEP HOLES AT 1000 C/C HORIZONTALLY & 750 C/C VERTICALLY IN A STAGGERED.
8. FILTER MEDIA SHALL BE PROVIDED AS PER STANDARD & SPECIFICATION.
9. THE AREA UNDER THE CANTILEVER PORTION OF SLAB SHALL BE FILLED WITH SOIL AND PROPERLY COMPACTED.
10. NECESSARY MEASURES SHALL BE TAKEN TO PREVENT LOSS OF BACKFILL BELOW THE CANTILEVER PORTION OF SLAB.

IMPORTANT NOTE:—

THIS DRAWING IS VALID FOR THE
CONSTRUCTION SEQUENCE REFEREED ABOVE



TYPICAL ELEVATION DRAIN STEM



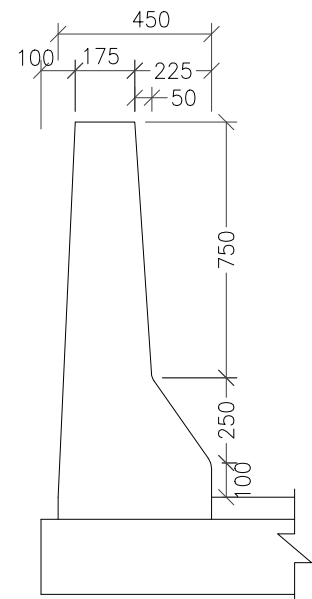
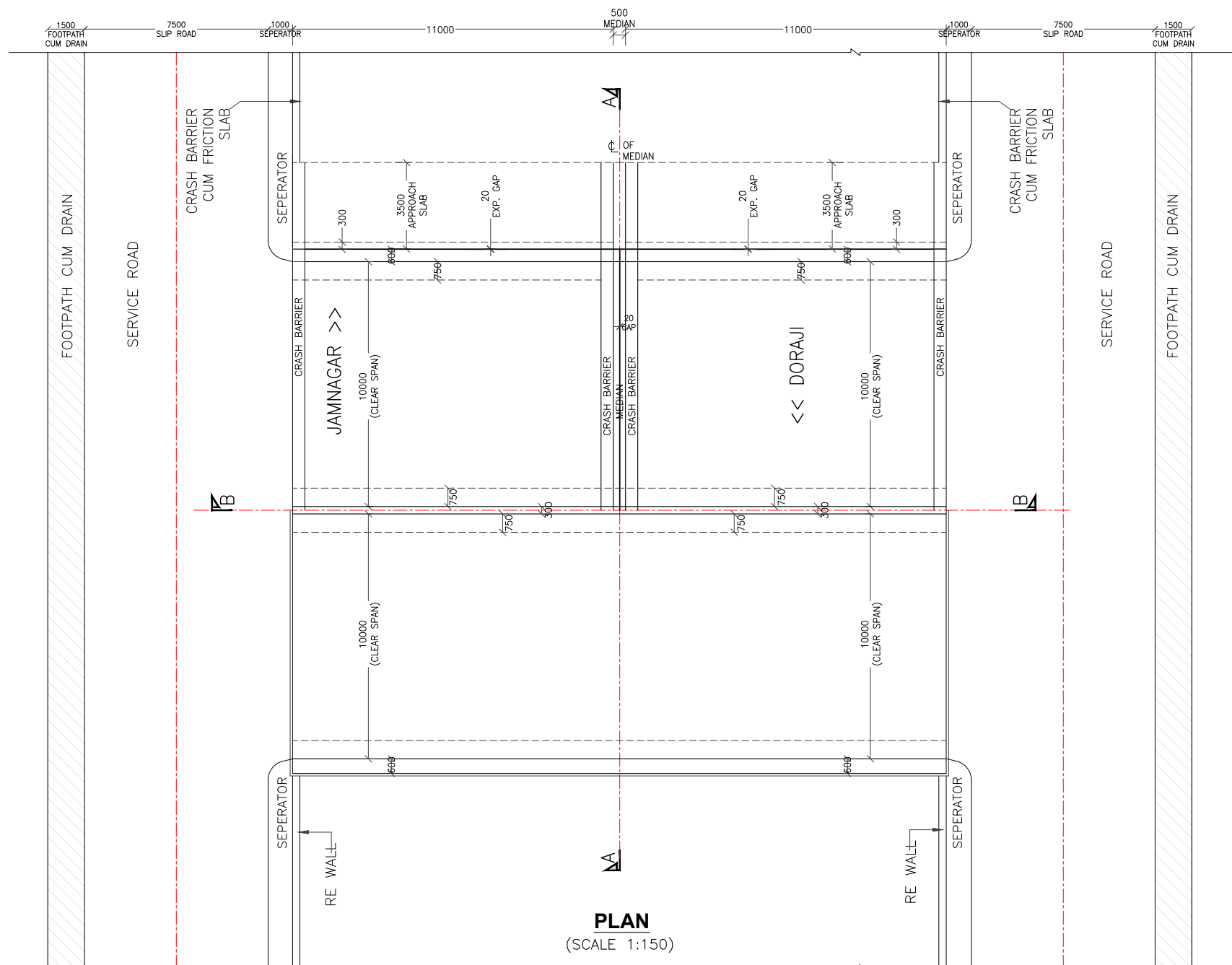
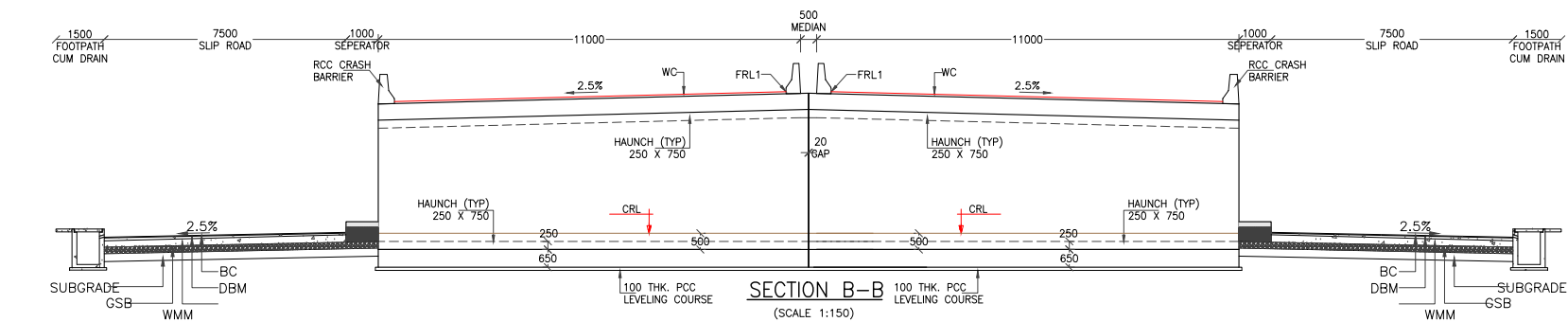
PLAN OF DRAIN

Summary of Dimension and Reinforcement of Drains

Bar Mark										1		2		3		4		4a		5		5a		6		6a		7		8		9	
Bar Shape																																	
S. No.	a	h	h1	d	d1	d2	c	e		Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing	Dia.	Spacing		
1	1000	1000	3500	350	275	350	1000	450		12	80	10	100	10	100	10	200	10	200	10	200	10	200	8	200	8	200	10	80	8	100	10	100

			OWNER:	DESIGN CONSULTANT:-	PROJECT:	DESIGNED	A.S	TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS BOX CULVERT WITH CUSHION (26 m WIDTH)	REV:	R2
R2	APR.-2025	WIDENING TO RECONSTRUCTION				DRAWN	R.P		SIZE:	A3
R1	OCT.-2017	FINAL DPR SUBMISSION				CHECKED	K.S		DATE:	APR-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	AKJ		SCALE:	AS SHOWN
REV	DATE	DESCRIPTION OF REVISIONS								SHEET 1 OF 2

VUP



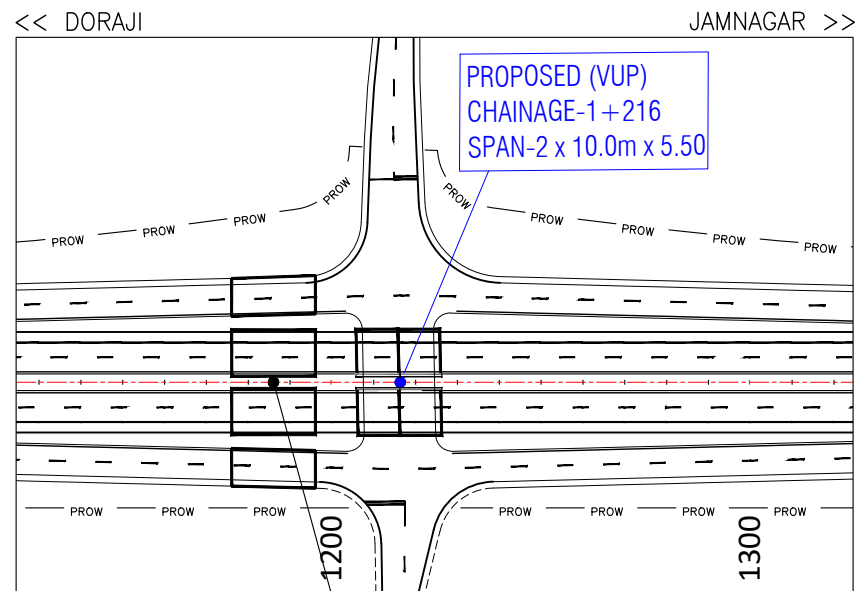
CRASH BARRIER DETAL-3
(FOR REFER SEPERATE DRAWINGS)
(SCALE 1:15)

NOTES:-

- ALL DIMENSIONS IN MILLIMETERS, LEVELS ARE IN METERS & LOCATION IN KILOMETERS UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- GRADE OF CONCRETE SHALL BE AS BELOW:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-35
PCC LEVELING COURSE - M-15
- DESIGN CRITERIA :
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES.
II. THE BOX IS DESIGNED FOR ONE LANE OF CLASS 70R+CLASS A LOADING OR THREE LANES OF CLASS A LOADING (WHICH EVER GOVERNS).
- 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT ABUTMENT/RETAINING WALL/OUTER BACK SIDE OF WALLS OF RCC BOX.
- MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX.
- ALL H.Y.S.D. BARS SHALL CONFORM TO IS:1786 GRADE Fe 500 D.
- 20mm FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED BETWEEN APPROACH SLAB & TOP SLAB.
- TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET.
- WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
- BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX :6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi=30^\circ$, $\delta=20^\circ$ & $\gamma_d = 20 \text{ KN/M}^3$.
- FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING. IN CASE OF ANY DEVIATION, SAME NEED TO BE BROUGHT INTO NOTICE OF ENGINEER IN-CHARGE/DESIGN CONSULTANT.
- THE DESIGN BEARING PRESSURE AT FOUNDING LEVEL IS 10 t/m^2 .
- INVERT LEVEL SHALL BE MINIMUM 500mm BELOW CROSS ROAD LEVEL & SAME SHALL BE VERIFIED AT SITE BEFORE EXECUTION.
- UNSATURABLE SOIL OF FOUNDING LEVEL IS TO BE REPLACED BY GRANULAR MATERIAL AND COMPACTED. EARTH SHOULD CONFORM TO MORT&H SPECIFICATION.
- BITUMINOUS CONCRETE OF 50mm MIN SHALL BE LAID FOR SERVICE/CROSS ROAD IN ONE LAYER AS PER MORT&H SPECIFICATION.
- GAD HAS BEEN PREPARED BASED ON THE PLAN AND PROFILE SUBMITTED VIA MAIL DATED 01-04-2017.

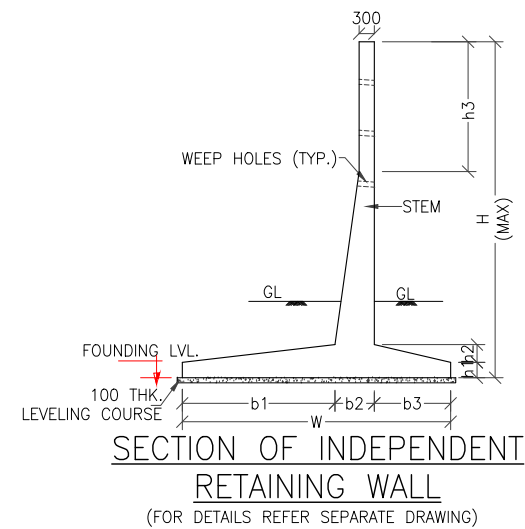
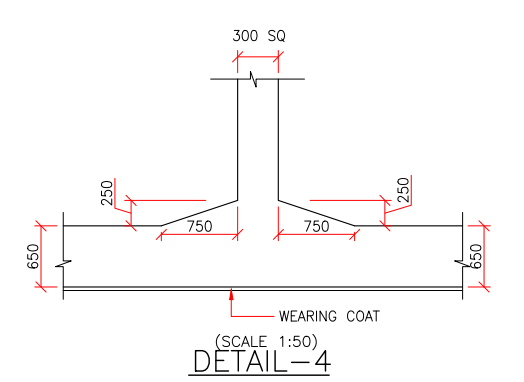
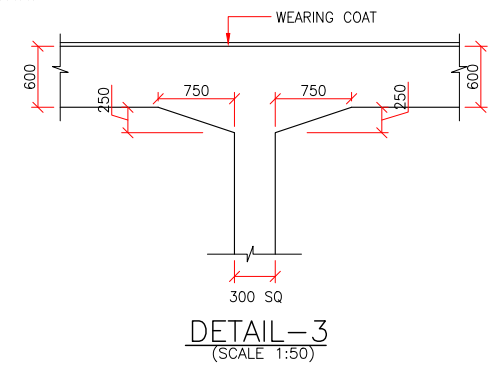
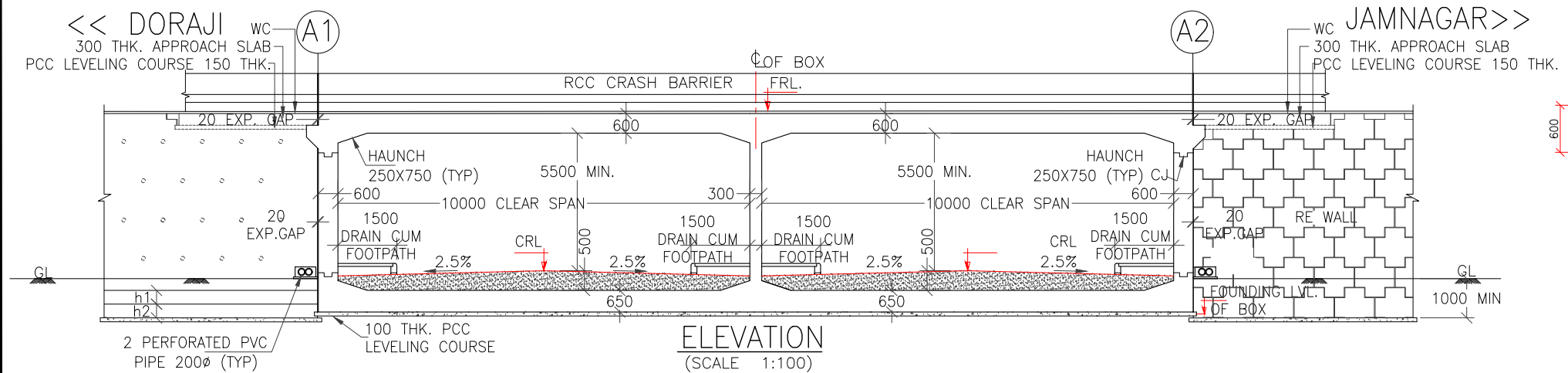
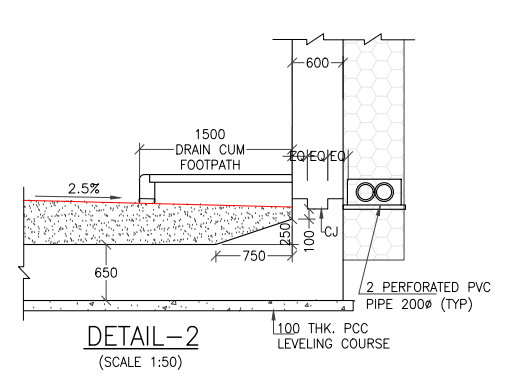
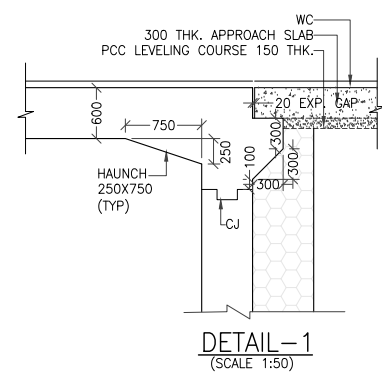
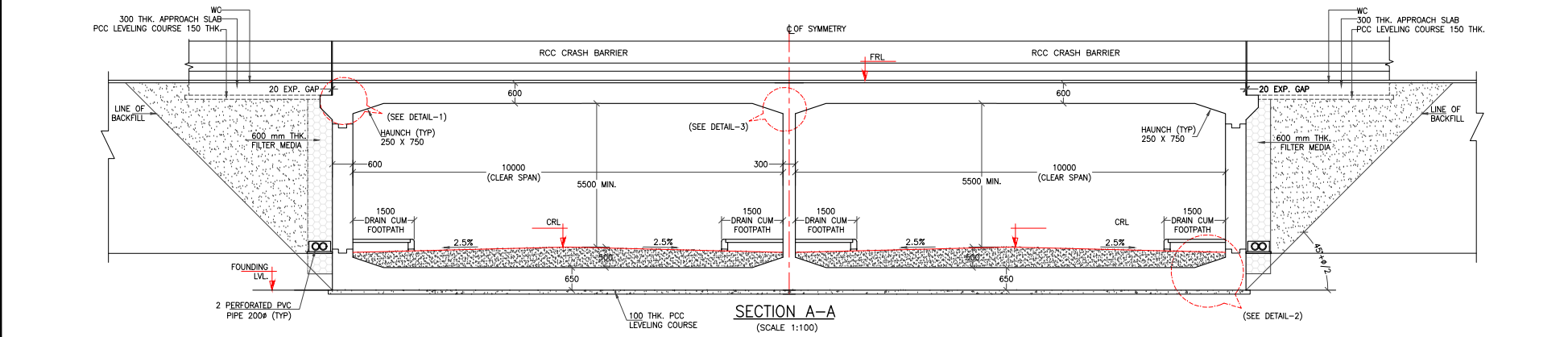
LEGEND:-

- BL - BED LEVEL
- CJ - CONSTRUCTION JOINT
- CRL - CROSS ROAD LEVEL
- C - CENTER LINE
- EXP - EXPANSION
- ETC - ETCETERA
- FRL - FINISHED ROAD LEVEL
- GL - GROUND LEVEL
- IL - INVERT LEVEL
- KS - KERB SHYNESS
- LVL - LEVEL
- MCW - MAIN CARRIAGEWAY
- MIN - MINIMUM
- PCC - PLAIN CEMENT CONCRETE
- PS - PAVED SHOULDER
- RCC - REINFORCEMENT CEMENT CONCRETE
- RE - REINFORCED EARTH
- TYP - TYPICAL
- THK - THICK
- U/S - UP STREAM
- WC - WEARING COAT



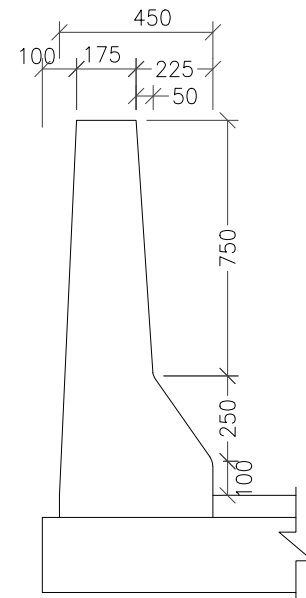
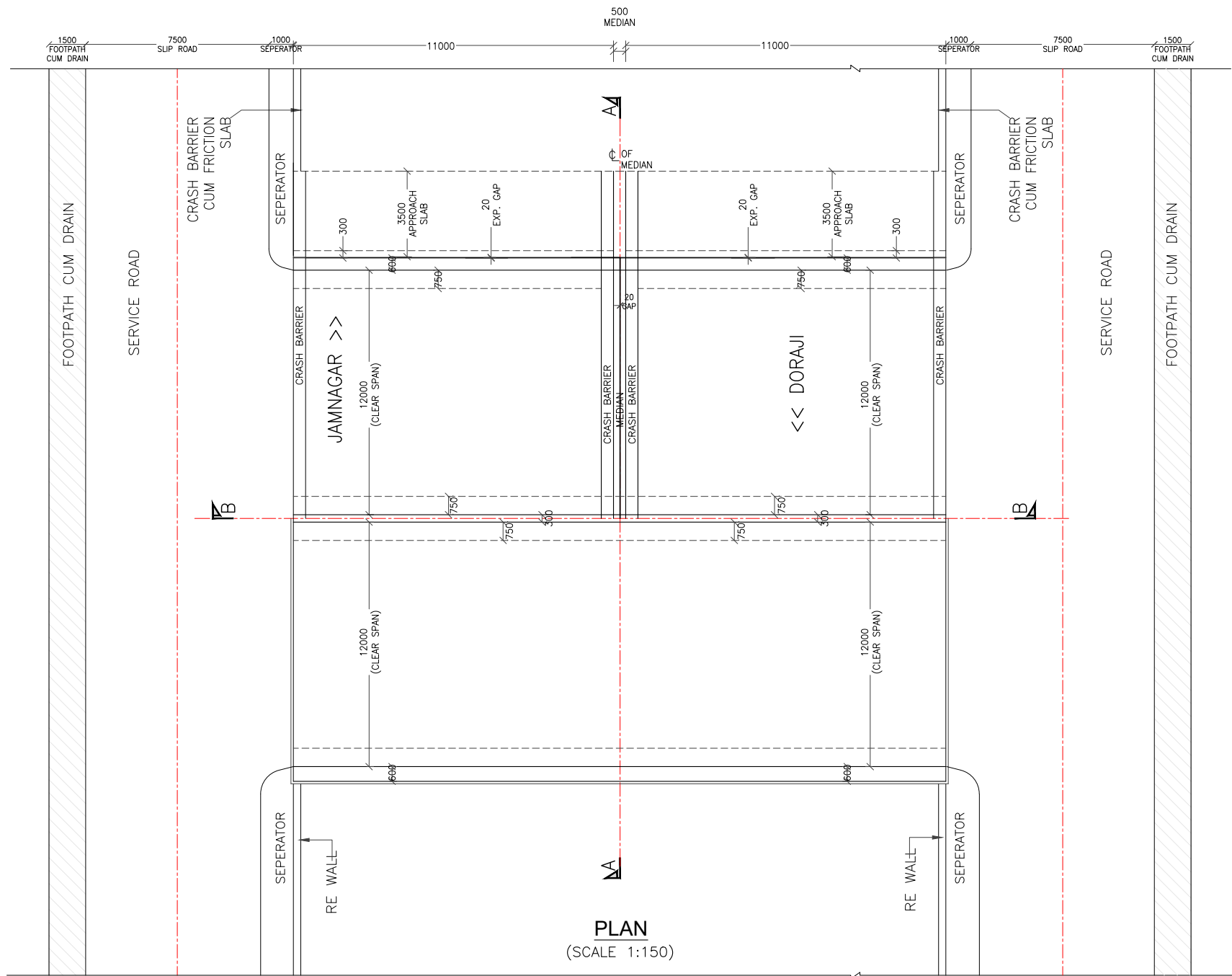
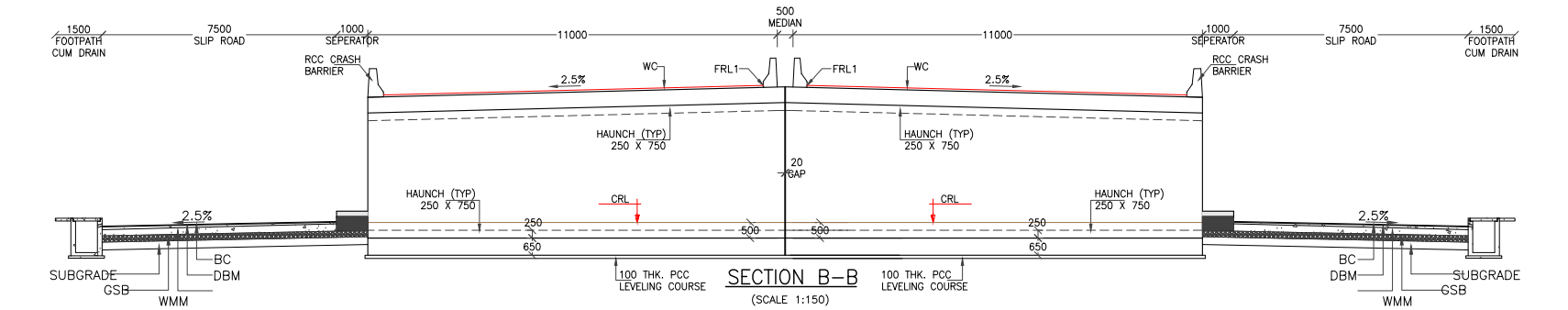
KEY PLAN

			OWNER: भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA Tel : +91 141 2751801/ 802803/804, Fax : 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED DRAWN CHECKED APPROVED	A.S S.K.P K.S AKJ	 	TITLE: GENERAL ARRANGEMENT DRAWING FOR VUP AT DESIGN CH. 1.216 DRAWING NO: IAHE/CEG/D121/NEW/1.216/GAD/01 SCALE: AS SHOWN	REV: R2 SIZE: A3 DATE: APR.-2025
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PARTICULARS

		A1	A2
FRL	1	109.499	109.499
GROUND LVL	L1	102.373	102.749
	R1	101.735	102.575
CHAINAGE		1.210	1.223

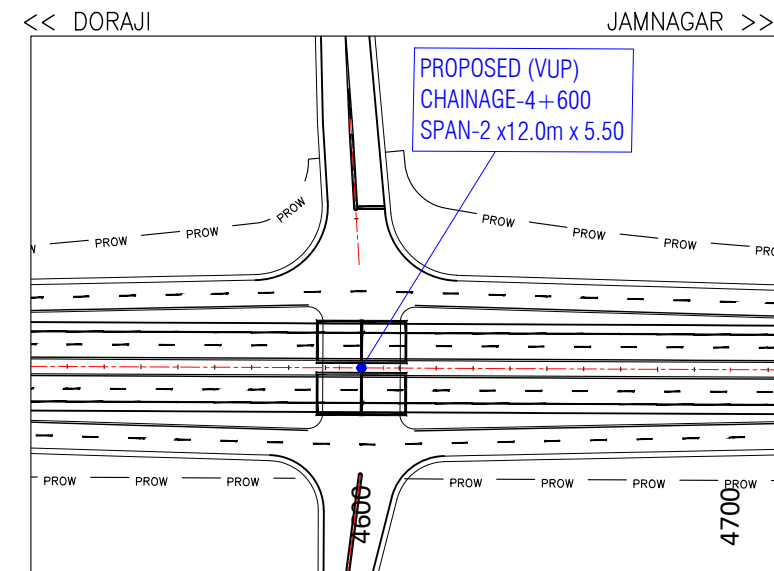


CRASH BARRIER DETAL-3
(FOR REFER SEPERATE DRAWINGS)
(SCALE 1:15)

- NOTES:-**
- ALL DIMENSIONS IN MILLIMETERS, LEVELS ARE IN METERS & LOCATION IN KILOMETERS UNLESS OTHERWISE SPECIFIED.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - GRADE OF CONCRETE SHALL BE AS BELOW:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-35
PCC LEVELING COURSE - M-15
 - DESIGN CRITERIA :-
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES.
II. THE BOX IS DESIGNED FOR ONE LANE OF CLASS 70R+CLASS A LOADING OR THREE LANES OF CLASS A LOADING (WHICH EVER GOVERNS).
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 - ALL H.Y.S.D. BARS SHALL CONFORM TO IS:1786 GRADE Fe 500 D.
 - 20mm FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED BETWEEN APPROACH SLAB & TOP SLAB.
 - TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET.
 - WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS -2702 OF MORT&H SPECIFICATIONS.
 - BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX :6 OF IRC:78-2014 HAVING PROPERTIES $C=0, \phi=30^\circ, \delta=20^\circ$ & $\gamma_d = 20 \text{ KN/M}^3$.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING. IN CASE OF ANY DEVIATION, SAME NEED TO BE BROUGHT INTO NOTICE OF ENGINEER IN-CHARGE/DESIGN CONSULTANT.
 - THE DESIGN BEARING PRESSURE AT FOUNDING LEVEL IS 10 t/m^2 .
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 - UNSUITABLE SOIL OF FOUNDING LEVEL IS TO BE REPLACED BY GRANULAR MATERIAL AND COMPACTED. EARTH SHOULD CONFORM TO MORT&H SPECIFICATION.
 - BITUMINOUS CONCRETE OF 50mm MIN SHALL BE LAID FOR SERVICE/CROSS ROAD IN ONE LAYER AS PER MORT&H SPECIFICATION.
 - GAD HAS BEEN PREPARED BASED ON THE PLAN AND PROFILE SUBMITTED VIA MAIL DATED 01-04-2017.

LEGEND:-

BL	-	BED LEVEL
CJ	-	CONSTRUCTION JOINT
CRL	-	CROSS ROAD LEVEL
CL	-	CENTER LINE
EXP	-	EXPANSION
ETC	-	ETCETERA
FRL	-	FINISHED ROAD LEVEL
GL	-	GROUND LEVEL
IL	-	INVERT LEVEL
KS	-	KERB SHYNESS
LVL	-	LEVEL
MCW	-	MAIN CARRIAGEWAY
MIN	-	MINIMUM
PCC	-	PLAIN CEMENT CONCRETE
PS	-	PAVED SHOULDER
RCC	-	REINFORCEMENT CEMENT CONCRETE
RE	-	REINFORCED EARTH
TYP	-	TYPICAL
THK	-	THICK
U/S	-	UP STREAM
WC	-	WEARING COAT



KEY PLAN

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT. 2017	FINAL DPR SUBMISSION
R0	JUN. 2017	FIRST SUBMISSION

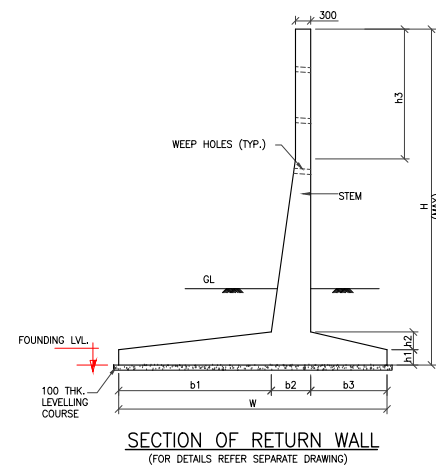
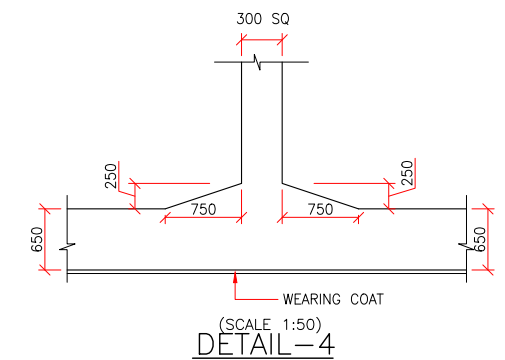
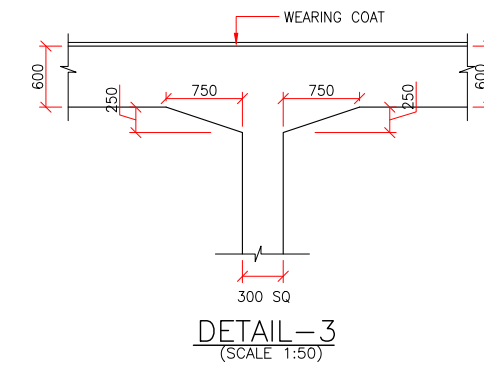
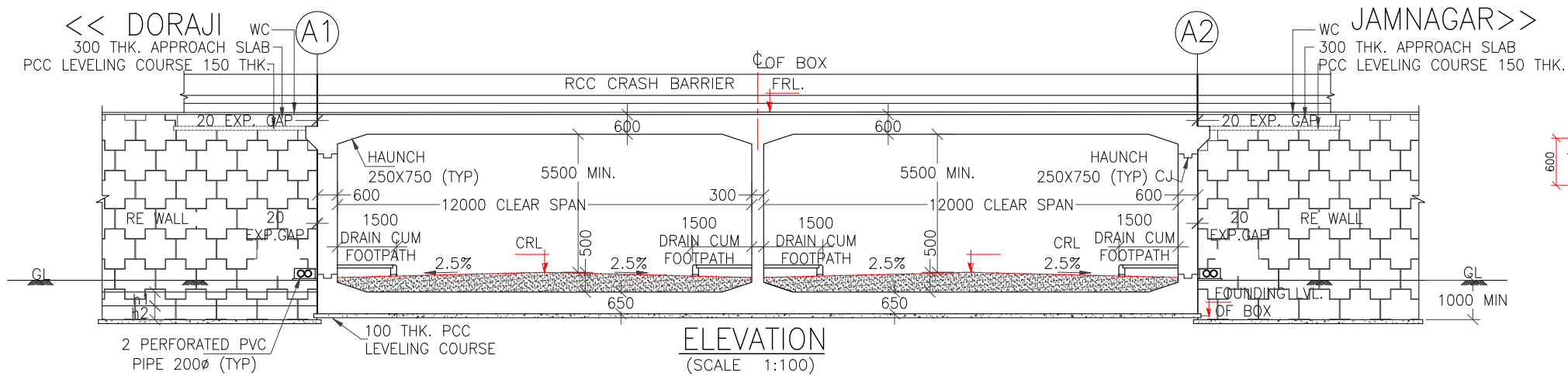
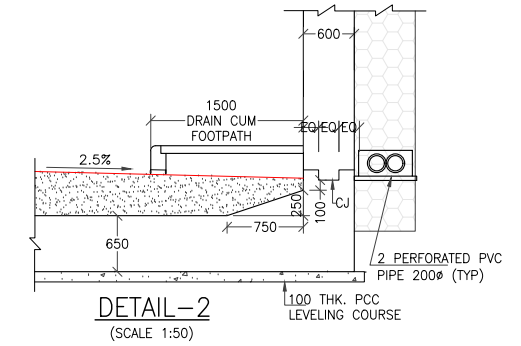
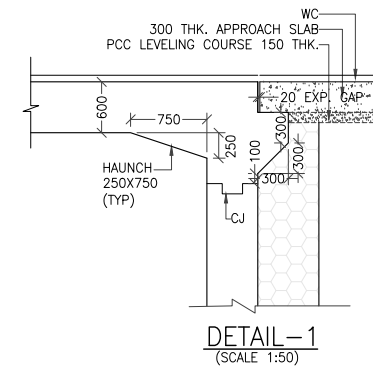
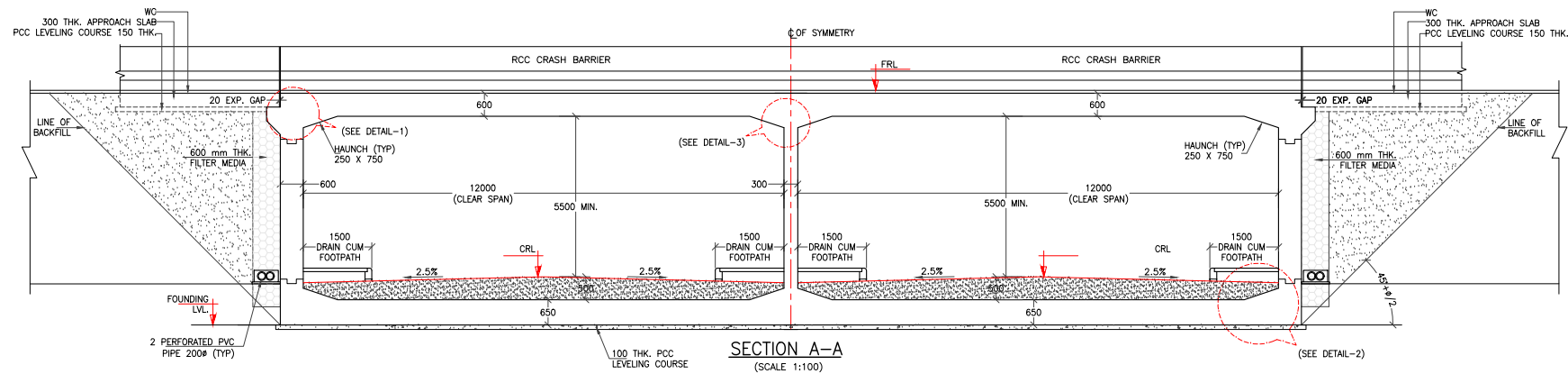
OWNER:
भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, J A P U R - 302017 (Rajasthan) INDIA
Tel : +91 141 2751801/ 802803804, Fax : 2751806
Email: ceg@cegindia.com, URL: www.cegindia.com

PROJECT:
CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S	<i>Asish</i>
DRAWN	S.K.P	<i>Shreyas</i>
CHECKED	K.S	<i>Shreyas</i>
APPROVED	AKJ	<i>Asish</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR VUP AT DESIGN CH. 4.600	REV:	R2
DRAWING NO:	IAHE/CEG/D121/NEW/4.600/GAD/01	SIZE:	A3
SCALE:	AS SHOWN	DATE:	APR.-2025



PARTICULARS

		A1	A2
FRL	1	99.704	99.704
GROUND LVL.	L1	92.409	92.479
	R1	92.464	92.603
CHAINAGE		4.593	4.607

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT. 2017	FINAL DPR SUBMISSION
R0	JUN. 2017	FIRST SUBMISSION

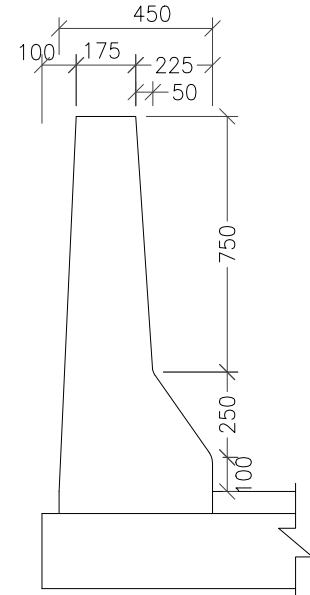
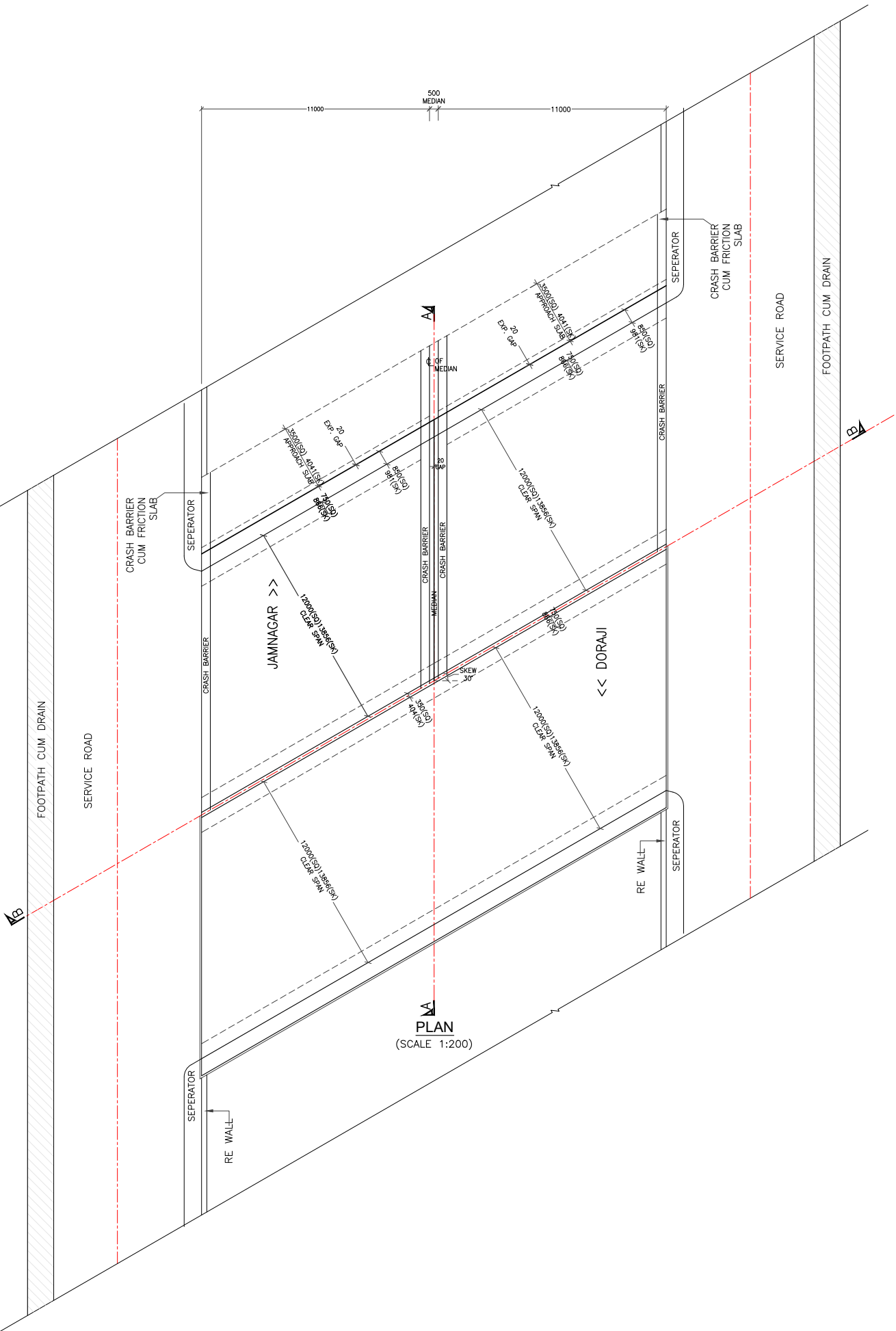
OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND
 HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
 An ISO 9001 : 2008 Company
 CEG Tower, B11 (G), Malviya Industrial Area,
 J A P U R - 302017 (Rajasthan) INDIA
 Tel : +91 141 2751801/ 802803/804, Fax : 2751806
 Email: ceg@cegroupindia.com, URL: www.cegroupindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.	
DRAWN	S.K.P.	
CHECKED	K.S.	
APPROVED	AKJ	

TITLE:	GENERAL ARRANGEMENT DRAWING FOR VUP AT DESIGN CH. 4.600	REV:	R2
DRAWING NO:	IAHE/CEG/D121/NEW/4.600/GAD/02	SIZE:	A3
SCALE:	AS SHOWN	DATE:	APR.-2025
		SHEET 2 OF 2	



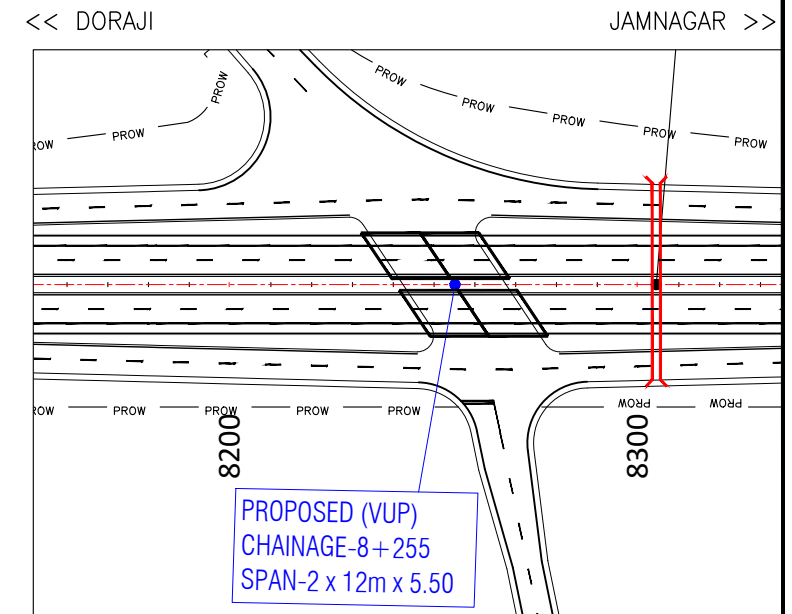
CRASH BARRIER DETAL-3
(FOR REFER SEPERATE DRAWINGS)
(SCALE 1:15)

- NOTES:-
1. ALL DIMENSIONS IN MILLIMETERS, LEVELS ARE IN METERS & LOCATION IN KILOMETERS UNLESS OTHERWISE SPECIFIED.
 2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 3. GRADE OF CONCRETE SHALL BE AS BELOW:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-35
PCC LEVELING COURSE - M-15
 4. DESIGN CRITERIA :
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES.
II. THE BOX IS DESIGNED FOR ONE LANE OF CLASS 70R+CLASS A LOADING OR THREE LANES OF CLASS A LOADING (WHICH EVER GOVERNS).
5. 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT ABUTMENT/RETAINING WALL/OUTER BACK SIDE OF WALLS OF RCC BOX.
6. MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX.
7. ALL H.Y.S.D. BARS SHALL CONFORM TO IS:1786 GRADE Fe 500 D.
8. 20mm FILLER TYPE EXPANSION JOINT SHALL BE PROVIDED BETWEEN APPROACH SLAB & TOP SLAB.
9. TAR PAPER BEARING SHALL BE PROVIDED BETWEEN APPROACH SLAB AND BRACKET.
10. WEARING COURSE SHALL BE 40mm THK BITUMINOUS CONCRETE OVER 25mm THK BITUMEN MASTIC LAYER AS PER CLASS :2702 OF MORT&H SPECIFICATIONS.
11. BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX :6 OF IRC:78-2014 HAVING PROPERTIES $C=0, \phi=30^\circ, \delta=20^\circ$ & $\gamma_d = 20 \text{ KN/M}^3$.
12. FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING. IN CASE OF ANY DEVIATION, SAME NEED TO BE BROUGHT INTO NOTICE OF ENGINEER IN-CHARGE/DESIGN CONSULTANT.
13. THE DESIGN BEARING PRESSURE AT FOUNDING LEVEL IS $101/\text{m}^2$.
14. INVERT LEVEL SHALL BE MINIMUM 500mm BELOW CROSS ROAD LEVEL & SAME SHALL BE VERIFIED AT SITE BEFORE EXECUTION.
15. UNSUITABLE SOIL OF FOUNDING LEVEL IS TO BE REPLACED BY GRANULAR MATERIAL AND COMPACTED EARTH SHOULD CONFORM TO MORT&H SPECIFICATION.
16. BITUMINOUS CONCRETE OF 50mm MIN SHALL BE LAID FOR SERVICE/CROSS ROAD IN ONE LAYER AS PER MORT&H SPECIFICATION.
17. GAD HAS BEEN PREPARED BASED ON THE PLAN AND PROFILE SUBMITTED VIA MAIL DATED 01-04-2017.

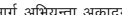
- LEGEND:-
- BL - BED LEVEL
 - CJ - CONSTRUCTION JOINT
 - CRL - CROSS ROAD LEVEL
 - CL - CENTER LINE
 - EXP - EXPANSION
 - ETC - ETCETERA
 - FRL - FINISHED ROAD LEVEL
 - GL - GROUND LEVEL
 - IL - INVERT LEVEL
 - KS - KERB SHYNESS
 - LVL - LEVEL
 - MCW - MAIN CARRIAGEWAY
 - MIN - MINIMUM
 - PCC - PLAIN CEMENT CONCRETE
 - PS - PAVED SHOULDER
 - RCC - REINFORCEMENT CEMENT CONCRETE
 - RE - REINFORCED EARTH
 - TYP - TYPICAL
 - THK - THICK
 - U/S - UP STREAM
 - WC - WEARING COAT

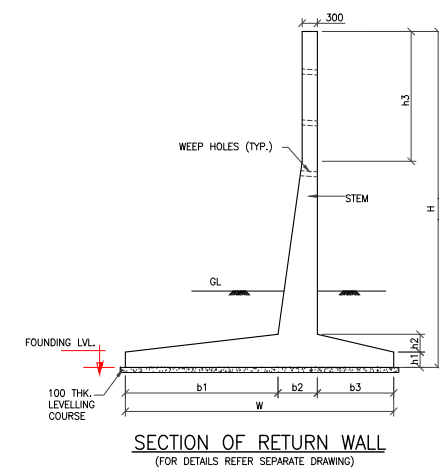
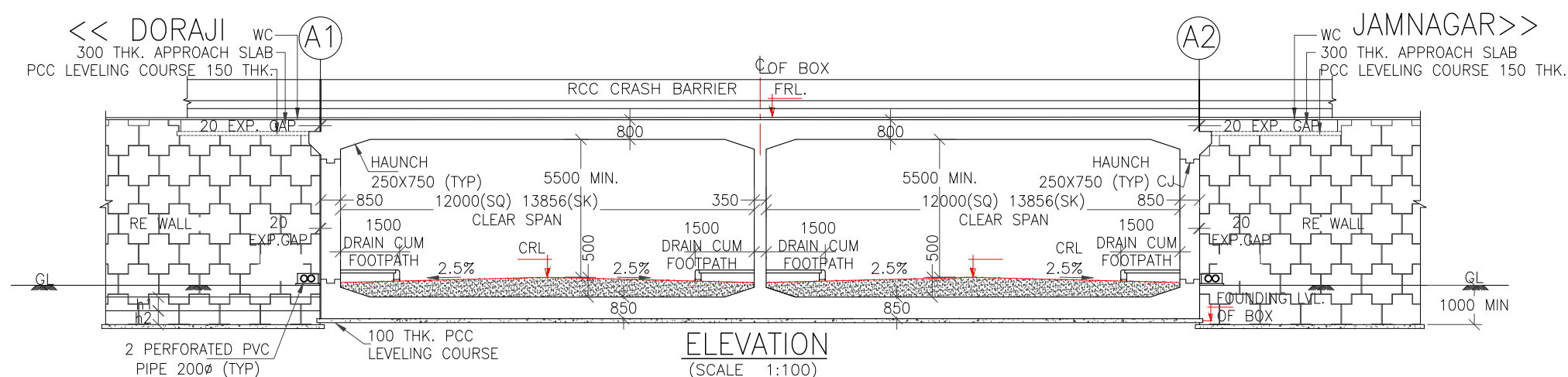
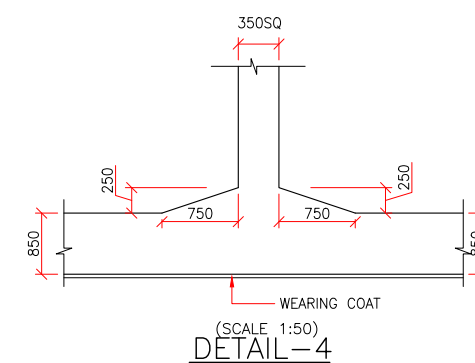
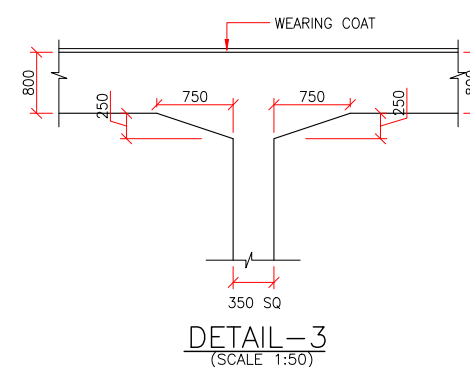
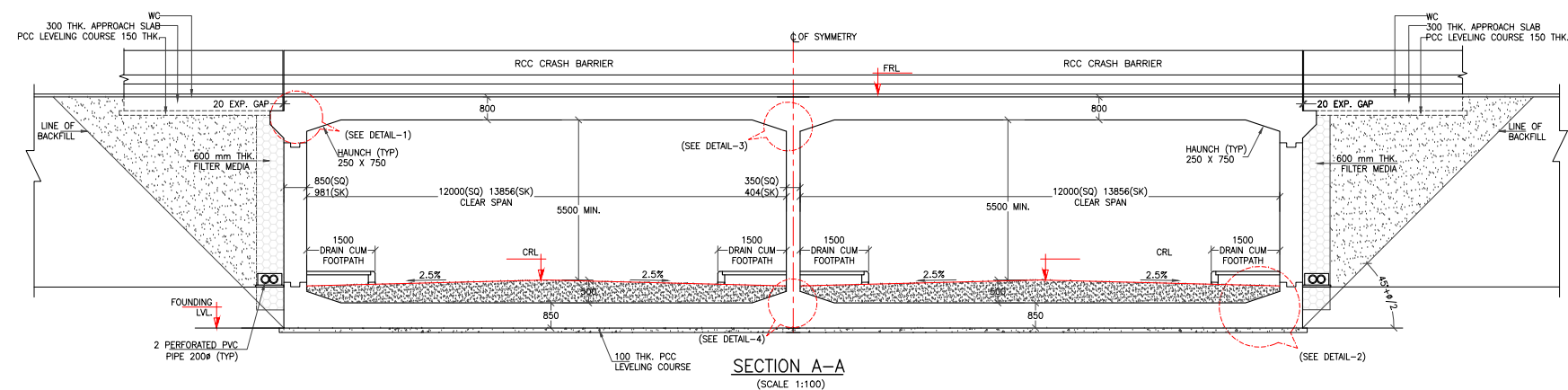
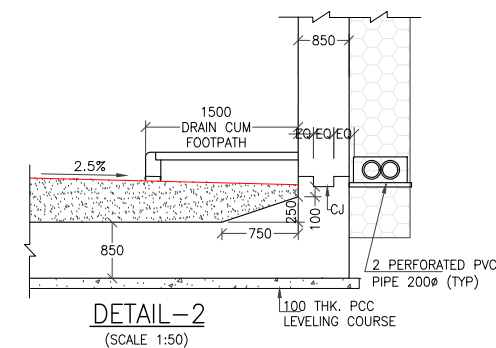
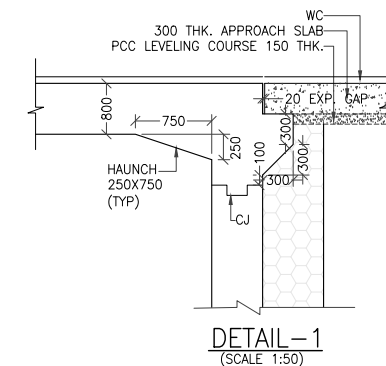
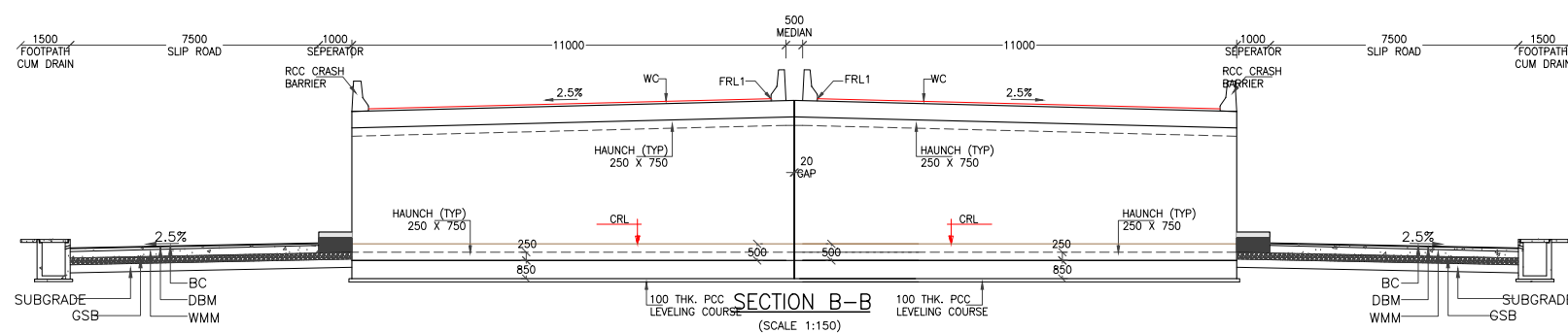
PARTICULARS

		A1	A2
FRL	1	110.660	110.652
GROUND LVL.	L1	103.344	103.371
	R1	101.614	102.938
CHAINAGE		8.248	8.263



KEY PLAN

			 OWNER: भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	 DESIGN CONSULTANT:- C O N S U L T I N G E N G I N E E R S G R O U P L T D An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, J A P U R - 3 0 2 0 1 7 (Rajasthan) INDIA Tel : +91 141 2751801/ 802/803/804, Fax : 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S.		TITLE: GENERAL ARRANGEMENT DRAWING FOR VUP AT DESIGN CH. 8.255	REV:	R2	
R2	APR.-2025	STRUCTURE WIDTH REVISED				DRAWN	S.K.P.			SIZE:	A3	
R1	OCT 2017	FINAL DPR SUBMISSION				CHECKED	K.S.		DRAWING NO:	IAHE/CEG/D121/NEW/8.255/GAD/01	DATE:	APR.-2025
R0	JULY 2017	FIRST SUBMISSION				APPROVED	AKJ		SCALE:	AS SHOWN	SHEET 1 OF 2	
REV	DATE	DESCRIPTION OF REVISIONS										



R2	APR.-2025	STRUCTURE WIDTH REVISED
R1	OCT 2017	FINAL DPR SUBMISSION
R0	JULY 2017	FIRST SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिचयन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-

C O N S U L T I N G
E N G I N E E R S G R O U P L T D

An ISO 9001 : 2008 Company

C/E Tower, B11 (G), Malviya Industrial Area,
 JAIPUR- 302017 (Rajasthan) INDIA
 Tel : +91 141 2751801/ 802/803/804, Fax : 2751806
 Email: cecg@cecgindia.com, URL: www.cecgindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE- I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S	<i>Amir</i>
DRAWN	S.K.P	<i>S.K.P</i>
CHECKED	K.S	<i>K.S</i>
APPROVED	AKJ	<i>AKJ</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR VUP AT DESIGN CH. 8.255	REV:	R2
		SIZE:	A3
DRAWING NO:	IAHE/CEG/D121/NEW/8.255/GAD/02	DATE:	APR.-2025
SCALE:	AS SHOWN	SHEET 2 OF 2	

FLYOVER

<<DORAJI

JAMNAGAR >>

NOTES:-

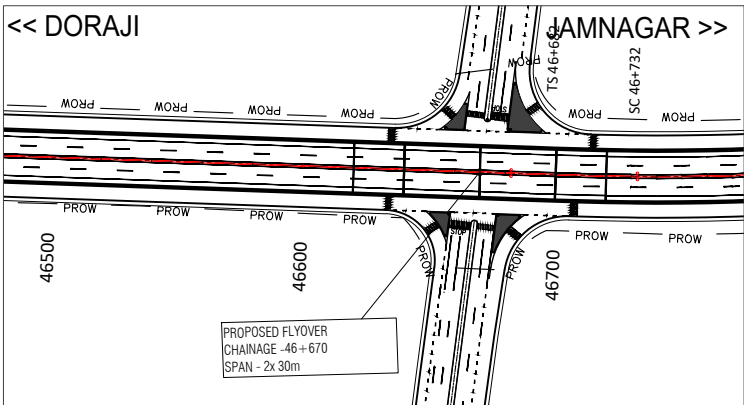
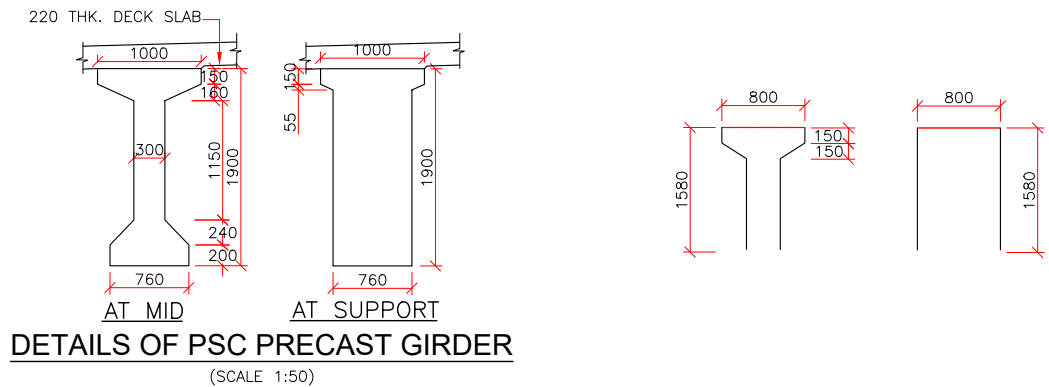
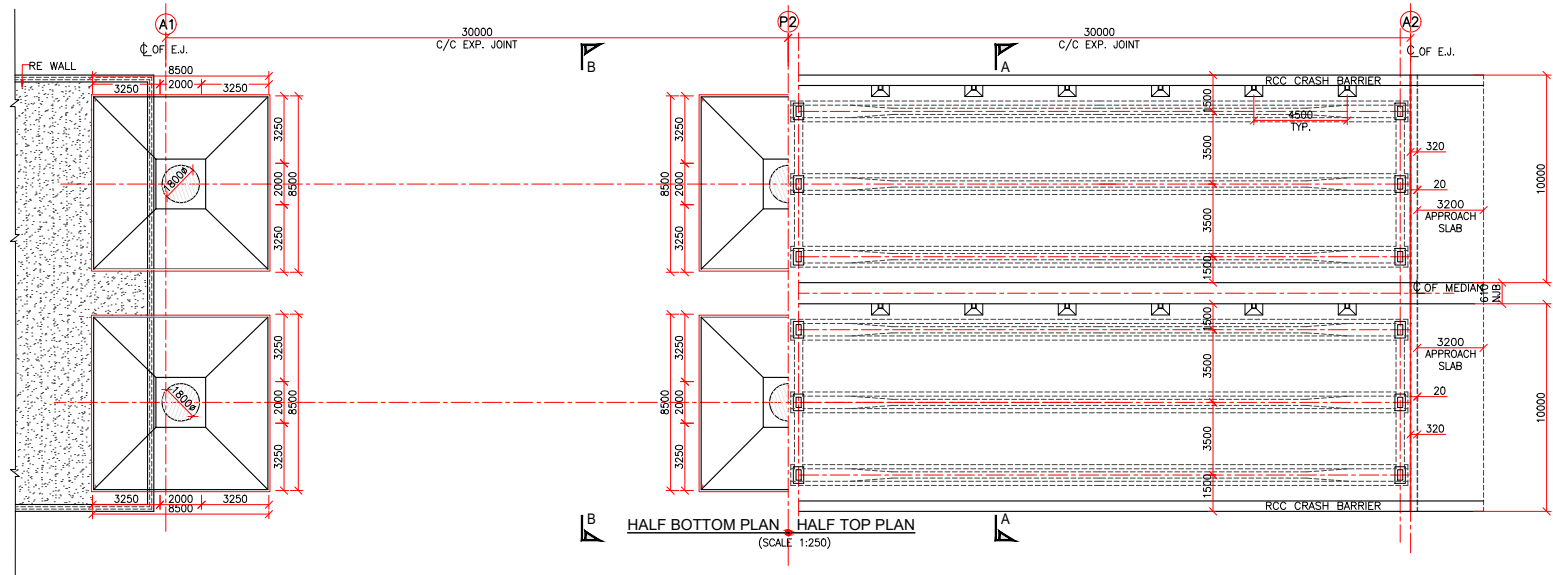
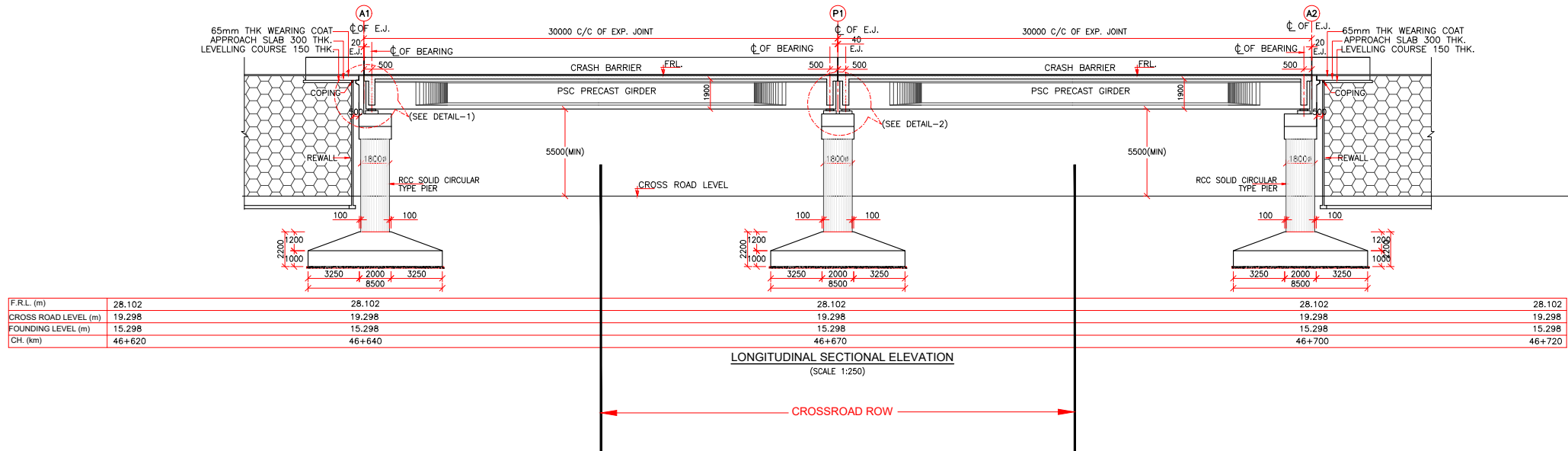
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METERS.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- GRADE OF CONCRETE :
 - PCC LEVELLING COURSE M-15
 - PSC GIRDER M-45
 - DECK SLAB M-40
 - SUB STRUCTURE M-35
 - ABUTMENT CAP M-35
 - CRASH BARRIER M-40
 - DIRT WALL M-35
 - PEDESTAL M-45
 - APPROACH SLAB M-30
- REINFORCEMENT H.Y.S.D. BARS CONFORMING TO IS:1786 GRADE Fe 500.
- BEARING TYPE : ELASTOMERIC
- CLEAR COVER TO ANY REINFORCEMENT
 - IN FOUNDATION = 75mm
 - IN SUB STRUCTURE = 50mm
 - IN SUPERSTRUCTURE = 40mm
- STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MOST SPECIFICATION.
- WEARING COAT SHALL BE 65mm THK BITUMINOUS CONCRETE LOAD OVER 3mm THK ASPHALT/SEAL.
- FRL, CAMBER/ SUPER ELEVATION & LAYOUT SHALL BE FOLLOWED AS PER LATEST PLAN & PROFILE DRAWING. IN CASE OF ANY MAJOR DEVIATION THE MATTER SHALL BE INFORMED TO DESIGN CONSULTANT.
- DRAINAGE SPOUT SHALL BE PROVIDED IN DECK SLAB AS PER MORTH SPECIFICATION.
- DOWNTAKE PIPE SHALL BE PROVIDED FOR DRAINAGE IN FLYOVER. SEPARATE DRAWING SHALL BE REFER FOR DOWNTAKE PIPE ARRANGEMENT
- 20 MM GAP FILLER TYPE EXPANSION JOINT IN BETWEEN DIRT WALL & APPROACH SLAB SHALL BE PROVIDED.
- TAR PAPER BEARING BELOW APPROACH SLAB SHALL BE PROVIDED.

REFERENCE DRAWING:-

- DETAILS OF APPROACH SLAB, CRASH BARRIER,EXP. JOINT & DRAINAGE SPOUT IAHE/CEG/MISC-1

LEGEND:-

E.J. - EXPANSION JOINT
LVL. - LEVEL
FRL. - FINISHED ROAD LEVEL
THK. - THICK



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR-2025	REVISED FINAL DPR
R1	OCT-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER:	भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA
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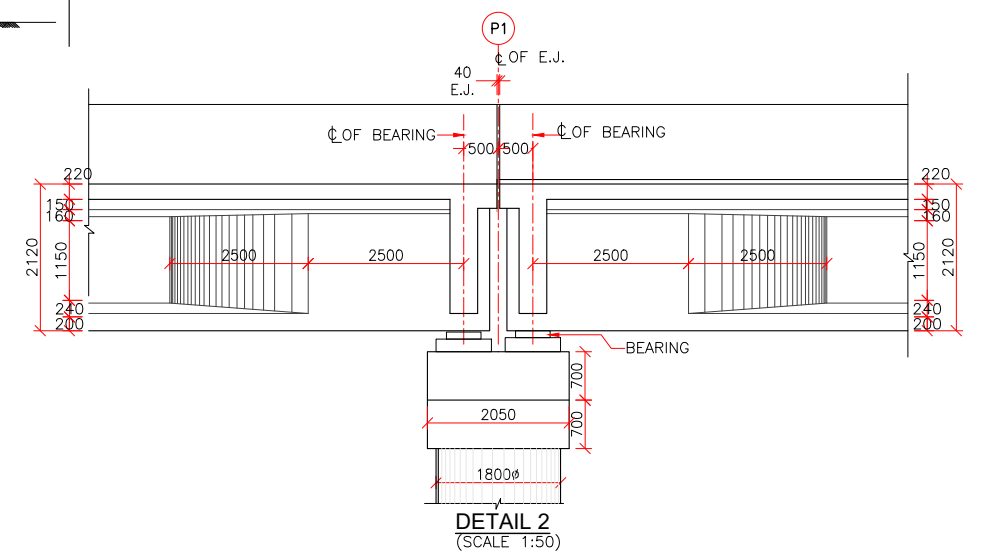
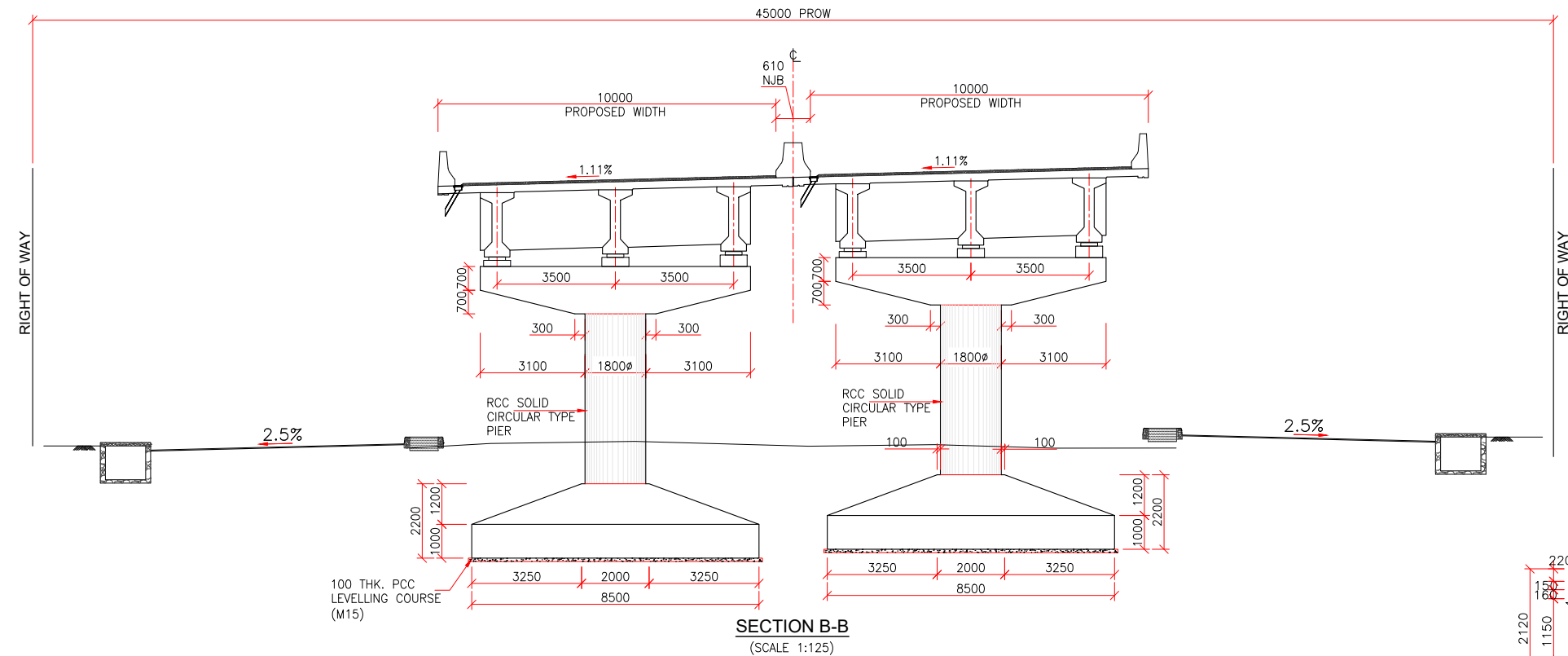
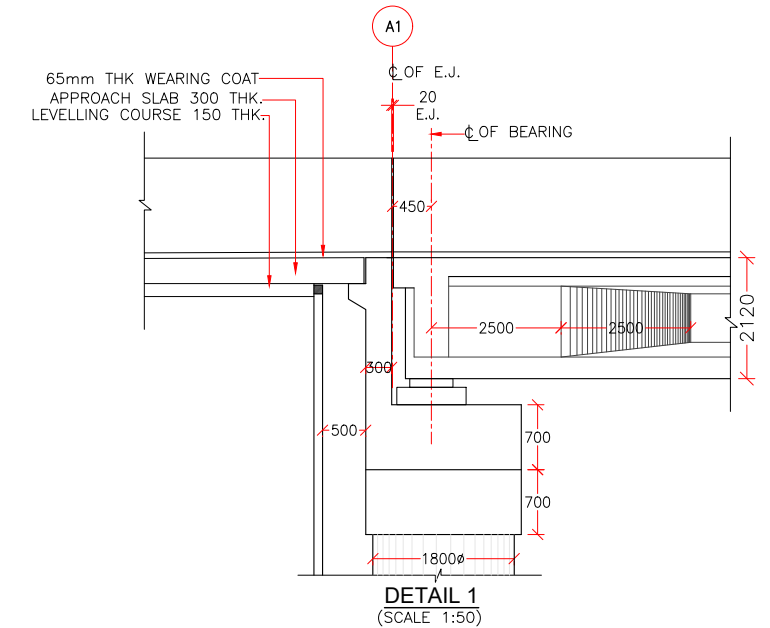
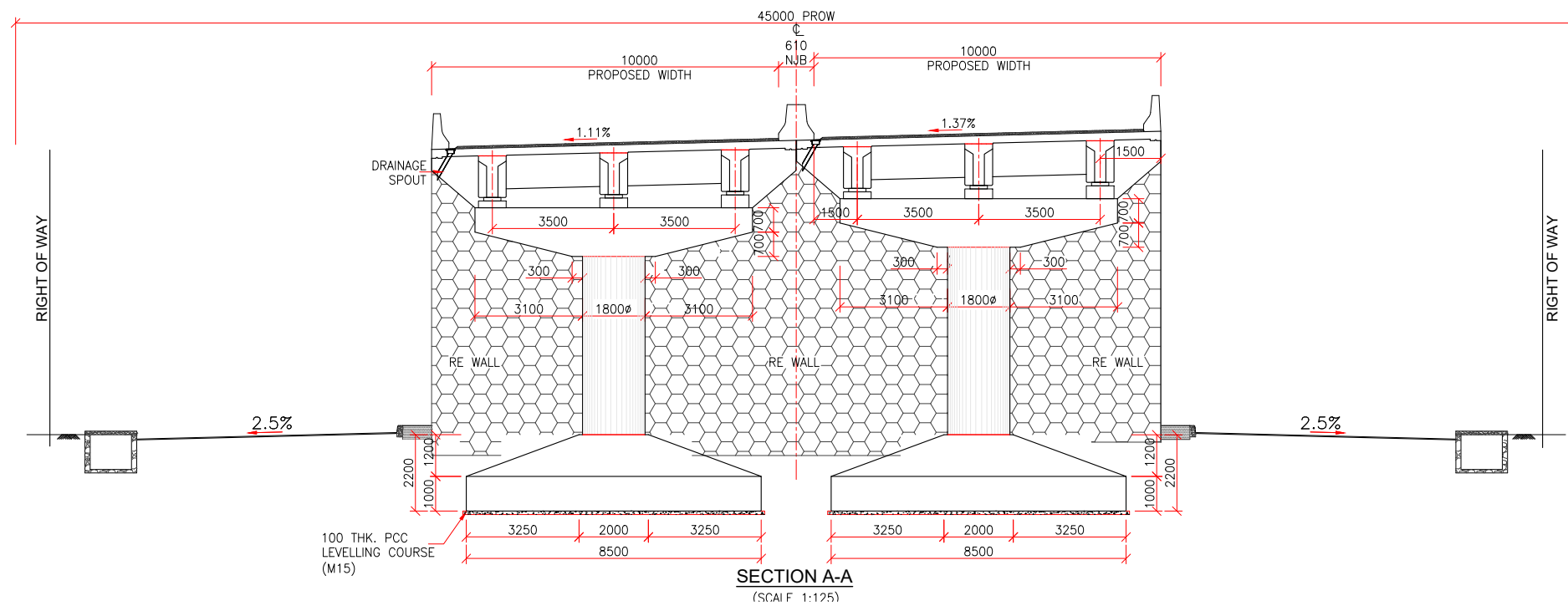
DESIGN CONSULTANT:-	CONSULTING ENGINEERS GROUP LTD An ISO 9001:2008 Company CEG Tower, B11(G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA Tel.: +91 141 2751801/ 802803/804, Fax: 2751806 Email: ceg@ceginodia.com, URL: www.ceginodia.com
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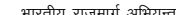
PROJECT:	CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D FROM KM 50+145 TO 107+500 (DESIGN CH_0.000 TO 57.000) AS PACKAGE -I IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)
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DESIGNED	A.S.
DRAWN	M.K.
CHECKED	K.S.
APPROVED	AKJ

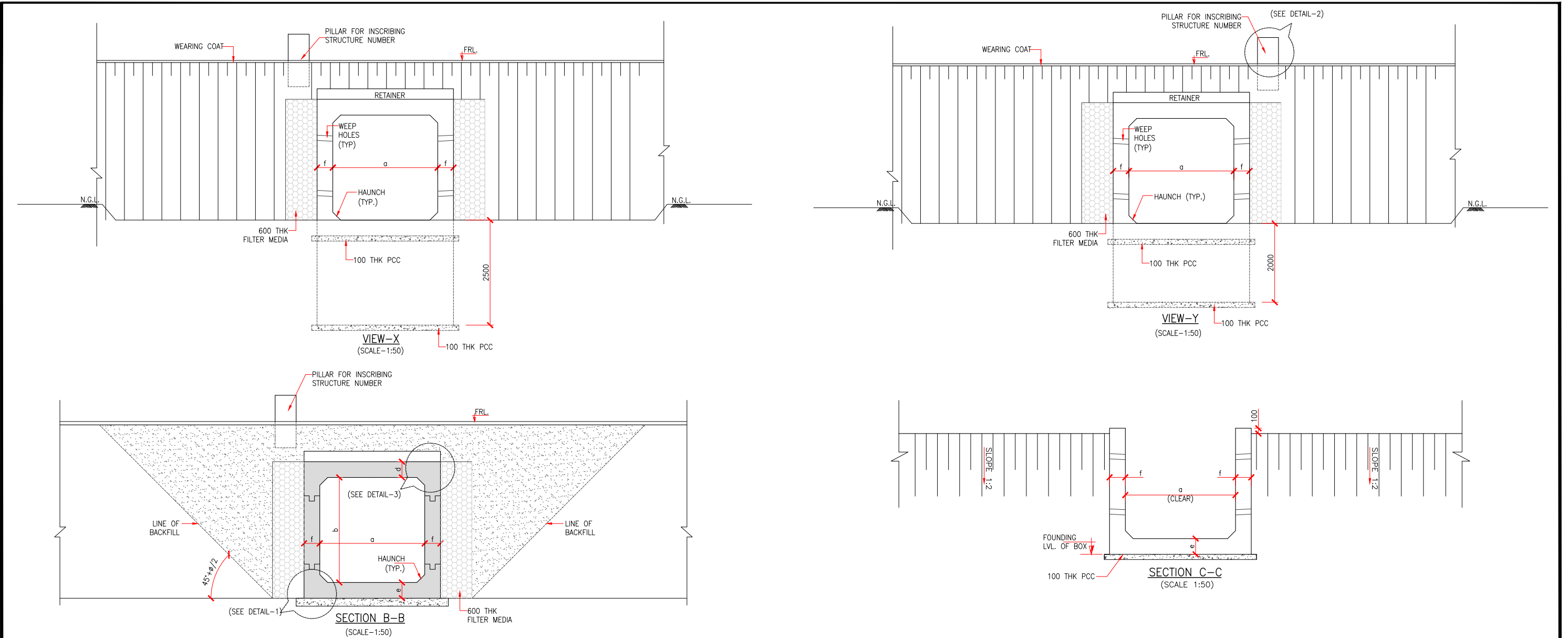
TITLE:	GENERAL ARRANGEMENT DRAWING FOR FLYOVER AT DESIGN CH. 46.670
DRAWING NO:	IAHE/CEG/D121/NEW/46.670/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR-2025
SHEET	1 OF 2



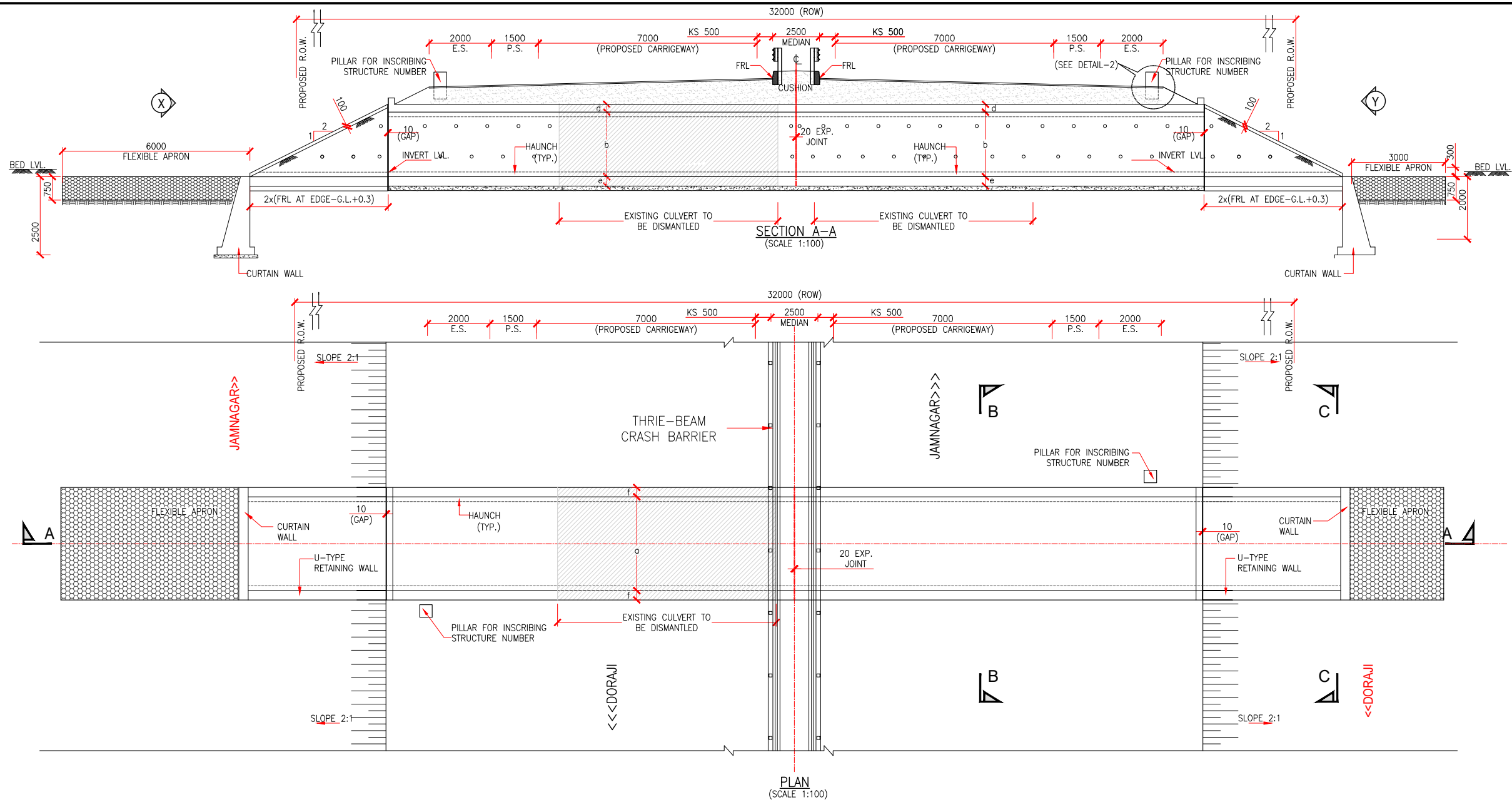
				OWNER: भारतीय राजमार्ग अभियन्ता अकादमी <i>Indian Academy of Highway Engineers</i> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA		DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD AN ISO 9001 : 2008 Company CEG Tower, B11(G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA Tel : +91 141 2751801/ 802/803/804, Fax : 2751806 Email: ceg@ceginde.com, URP : www.ceginde.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D FROM KM 50+145 TO 107+500 (DESIGN CH_0.000 TO 57.000) AS PACKAGE -I IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S		TITLE: GENERAL ARRANGEMENT DRAWING FOR FLYOVER AT DESIGN CH. 46.670 DRAWING NO: IAHE/CEG/D121/NEW/46.670/GAD/02	REV:	R2
R2	APR-2025	REVISED FINAL DPR						DRAWN	M.K.			SIZE:	A3
R1	OCT-2017	FINAL DPR SUBMISSION						CHECKED	K.S			DATE:	APR-2025
R0	JUNE-2017	FIRST SUBMISSION						APPROVED	AKJ			SCALE:	AS SHOWN
REV	DATE	DESCRIPTION OF REVISIONS											

CULVERT



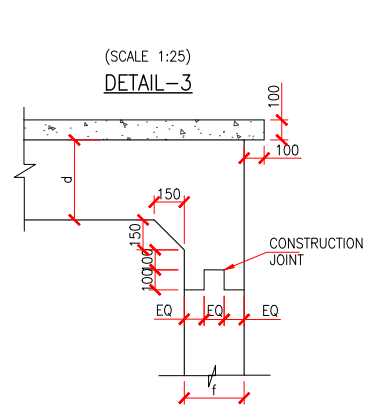
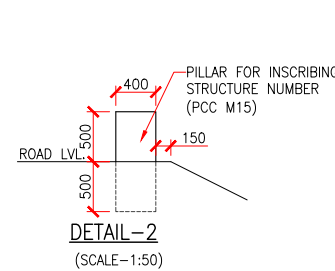
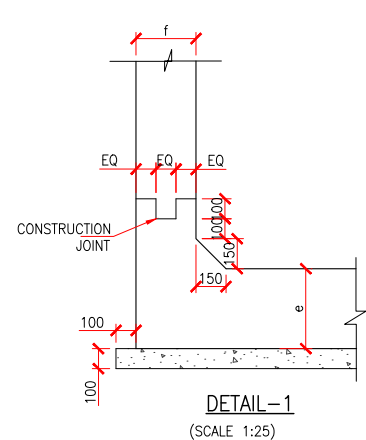
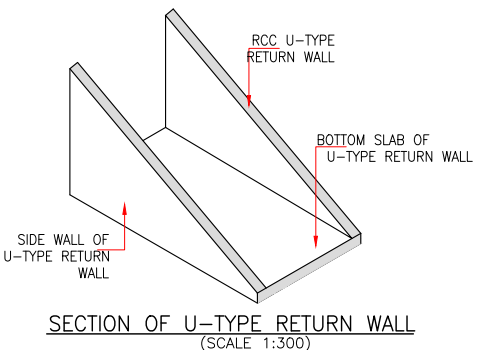
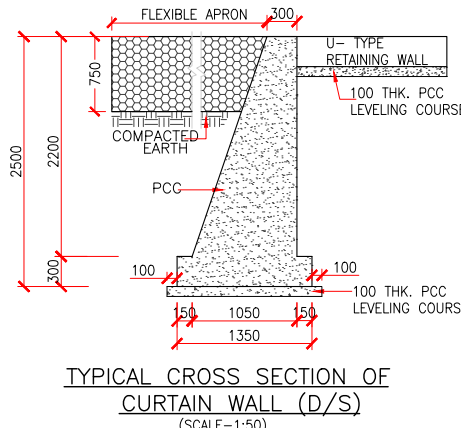
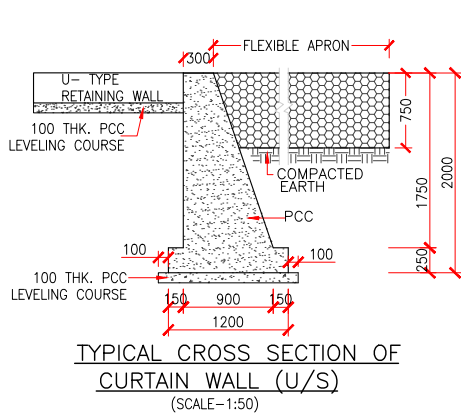
S. No.	Existing Details				Proposed Features						Culvert Width		Bed Level (GAD)		Invert Level		Camber/ Super elevation		FRL
	Location as per toposurvey	Span Arrangement	Type of Structure	Width	TCS	Proposal	Design Ch	Proposed Span	Proposed type	Flow Direction	Left	Right	Left	Right	Left	Right	Left	Right	Centre
1.	35+180	-	-	-	TCS-1	NEW	16.654	1 x 3.00	Box	R-L	12.000	12.000	81.704	81.730	81.404	81.430	-5	5	84.039
2.	34+700	-	-	-	TCS-1	NEW	16.875	1 x 4.00	Box	R-L	12.000	12.000	82.840	69.0500	82.514	82.540	-2.5	0.852	84.925
3.	12+955	-	-	-	TCS-1	NEW	38.495	1 x 3.00	Box	L-R	12.000	12.000	33.162	33.136	32.862	32.840	2.5	2.5	36.827

			OWNER: भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA Tel: +91 141 2751801/ 802803/804, Fax: 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S		TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS BOX CULVERT WITH CUSHION (26 m WIDTH)	REV:	R2
R2	APR.-2025	WIDENING TO RECONSTRUCTION	DRAWN	R.P		SIZE:	A3				
R1	OCT.-2017	FINAL DPR SUBMISSION	CHECKED	K.S		DRAWING NO: IAHE/CEG/D121/CUL/BOX/NEW/GAD/01	DATE:	APR.-2025			
R0	JUNE-2017	FIRST SUBMISSION	APPROVED	AKJ			SCALE:	AS SHOWN			
REV	DATE	DESCRIPTION OF REVISIONS					SHEET 2 OF 2				

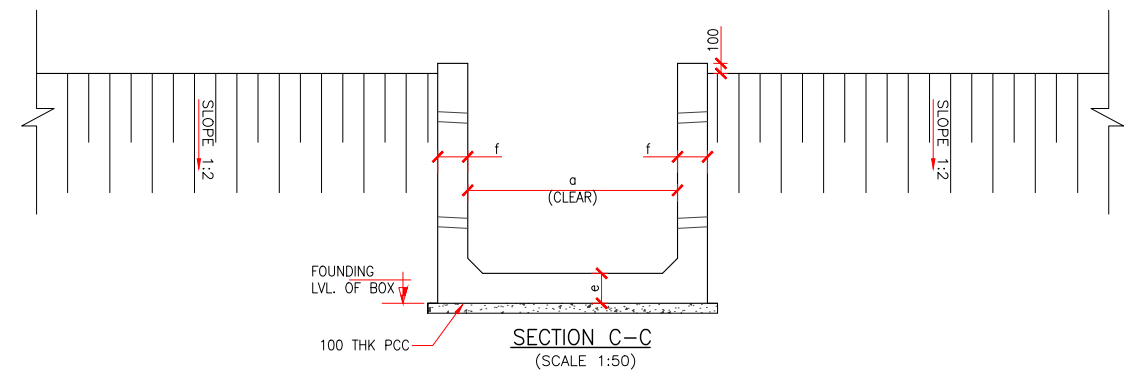
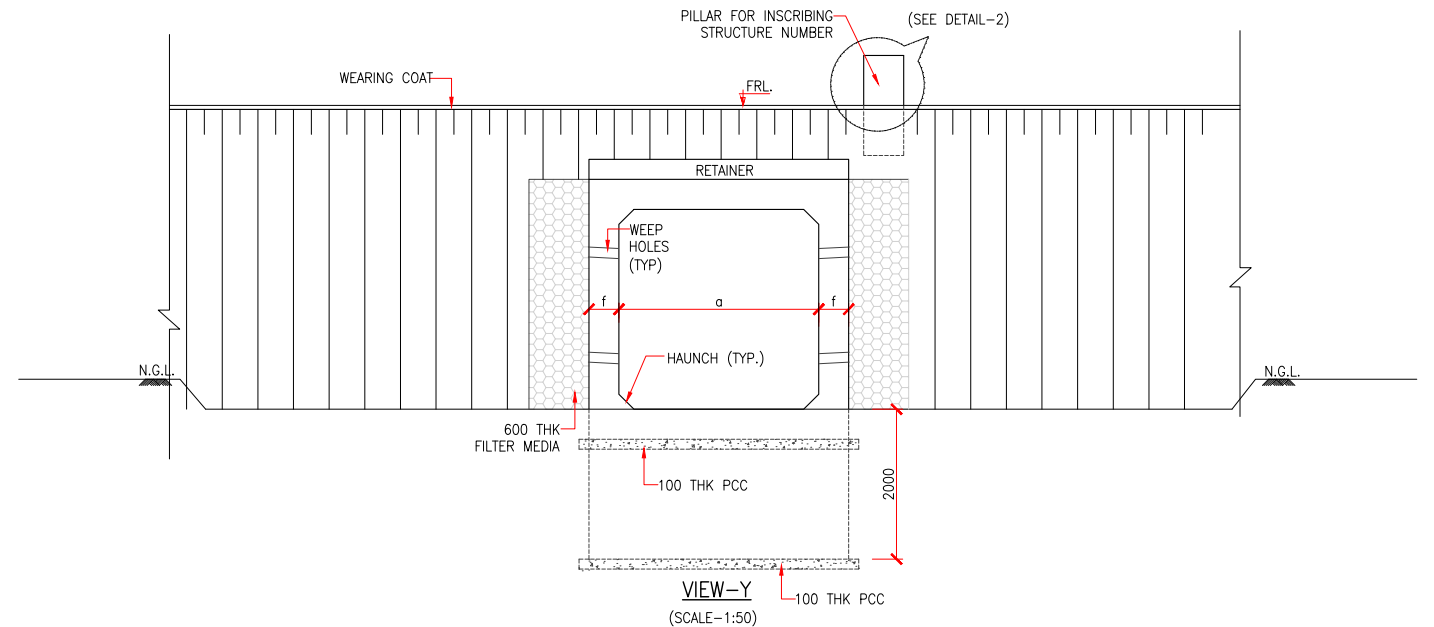
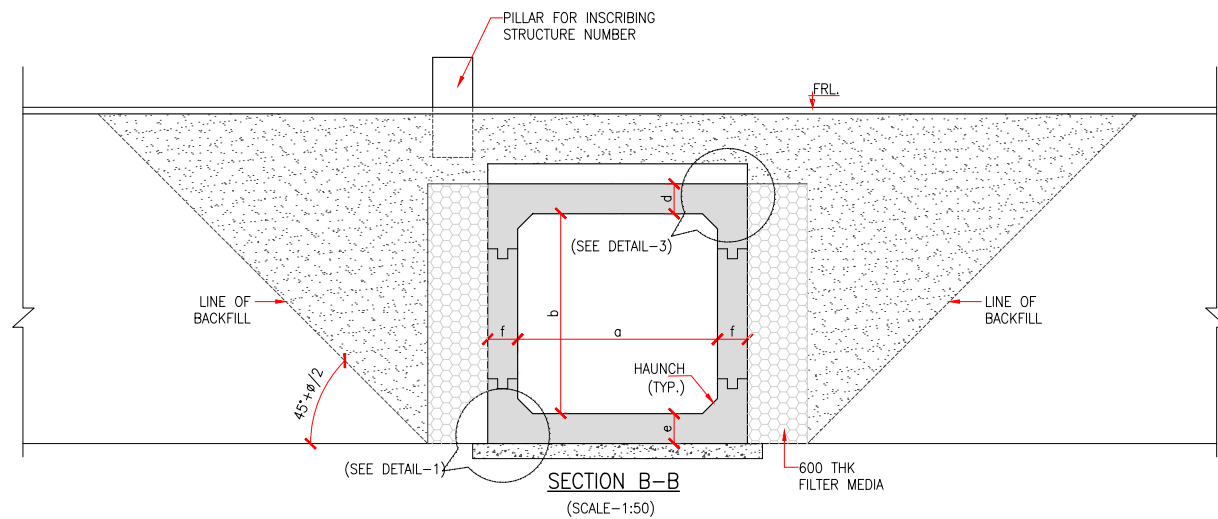
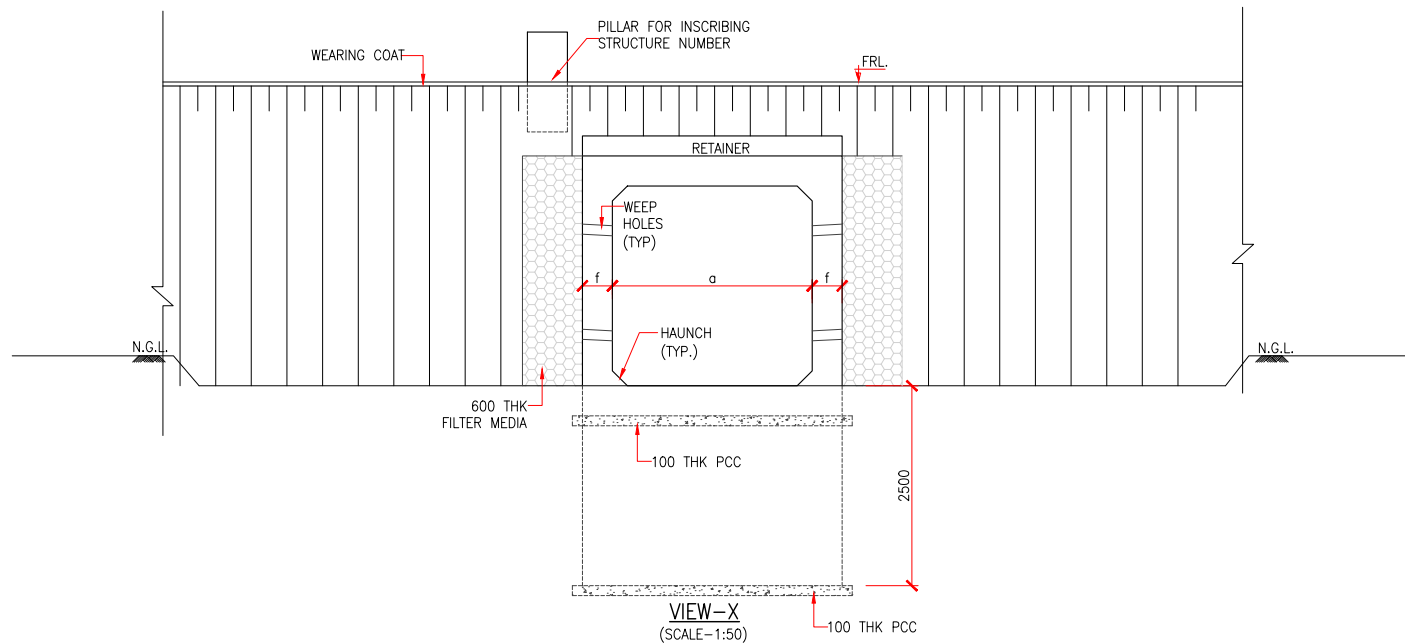


- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - GRADE OF CONCRETE SHALL BE AS BELOW:
APPROACH SLAB - M-30
CRASH BARRIER - M-40
RCC BOX - M-30
PCC - M-15
RCC RETAINING WALL - M-30
 - DESIGN CRITERIA :
I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES:
II. THE BOX DESIGN FOR ONE LANE OF IRC CLASS 70R +CLASS-A OR THREE LANES OF IRC CLASS A LOADING WHICHEVER GOVERNS.
 - 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT BACK SIDE OF ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
 - MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX. ALL H.Y.S.D. BARS SHALL CONFORM TO IS:1786 GRADE Fe 500.
 - 100 DIA WEEP HOLES TO BE PROVIDED 1000C/C BOTH HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER IN ABUTMENT/ U-TYPE RETURN WALL/SIDE WALLS OF RCC BOX.
 - 10mm EXPANSION GAP FILLED WITH COMPRESSIBLE FIBER BOARD SHALL BE PROVIDED BETWEEN U-TYPE RETURN WALL & RCC BOX.
 - BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX :6 OF IRC:78-2000 HAVING PROPERTIES $C=0, \phi=30^\circ, \gamma=20^\circ$ & $\gamma_d = 18 \text{ KN/M}^3$.
 - FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
 - THE DESIGN BEARING PRESSURE AT FOUNDING LEVEL SHALL NOT BE LESS THAN 10 t/m^2 .
 - CURTAIN WALL/ FLEXIBLE APRON SHALL BE PROVIDED ONLY IN SOIL STRATA AND WHERE STRATA IS ROCKY IT IS NOT REQUIRED.
 - SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S
 - STONE PITCHING BEHIND U-TYPE RETURN WALL (f) SHALL BE DONE UPTO MINIMUM LENGTH OF 1.5M WITH A SLOPE OF 2:1

- REFERENCE DRAWING:-**
- DETAIL OF U-TYPE RETURN WALL
IAHE/CEG/D121/U-TYPE
 - DETAIL OF RETAINER
IAHE/CEG/D121/MISC/TYPE
- LEGEND:-**
- EJ - EXPANSION JOINT
LVL - LEVEL
FRL - FINISHED ROAD LEVEL
THK - THICK
U/S - UP STREAM
D/S - DOWN STREAM
W.C. - WEARING COAT
G.L. - GROUND LEVEL



			OWNER: भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA		DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, J A P U R - 302017 (Rajasthan) INDIA Tcl : +91 141 2751801/ 802/803/804, Fax : 2751806 Email: ceg@cegroupindia.com, URL: www.cegroupindia.com		PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)		DESIGNED DRAWN CHECKED APPROVED	A.S R.P K.S AKJ	 	TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS BOX CULVERT WITH CUSHION (26 m WIDTH) DRAWING NO: IAHE/CEG/D121/CUL/BOX/REC/GAD/01 SCALE: AS SHOWN	REV: R2 SIZE: A3 DATE: APR.-2025 SHEET 1 OF 2
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S. No.	Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch._	Proposed Span (Final)	Proposed Type	Flow direction	Culvert Width		Bed Level		Invert Level		Camber/ Super elevation		FRL	
											Left	Right	Left	Right	Left	Right	Left	Right	Left	Right
1	42+320	2 x 2.25	Slab	7.35	TCS-1B	ReC	10.044	1 x 5.00	Box	L-R	12	12	100.032	100.006	99.732	99.706	-2.5	-2.5	102.322	102.322
2	41+670	2 x 1.50	Slab	7.05	TCS-1B	ReC	10.697	1 x 4.00	Box	L-R	12	12	96.173	96.147	95.873	95.847	-2.5	-2.5	98.156	98.156
3	40+790	2 x 2.50	Slab	7.65	TCS-1C	ReC	11.551	1 x 5.00	Box	R-L	12	12	90.511	90.485	90.211	90.185	2.5	-0.168	94.710	94.363
4	39+235	2 x 1.20	Slab	7.5	TCS-1E	ReC	13.123	1 x 3.00	Box	R-L	12	12	84.953	85.338	84.653	85.038	-2.5	-2.5	87.143	87.143
5	37+330	3 x 1.50	Slab	7.2	TCS-1B	ReC	15.018	1 x 5.00	Box	L-R	12	12	81.375	81.349	81.075	81.049	-2.5	-2.5	83.665	83.665
6	32+325	2 x 2.50	Slab	6.6	TCS-1C	ReC	19.481	1 x 5.00	Box	L-R	12	12	86.595	86.569	86.295	86.269	-2.5	-2.5	88.572	88.572
7	32+050	2 x 1.20	Slab	7.25	TCS-1C	ReC	19.740	1 x 3.00	Box	R-L	12	12	88.433	88.459	88.133	88.159	-2.5	-2.5	90.650	90.650
8	31+770	2 x 1.80	Slab	6.7	TCS-1C to TCS-1	ReC	20.032	1 x 4.00	Box	R-L	12	12	87.886	87.912	87.586	87.612	-3.35	3.35	89.988	90.859
9	31+530	3 x 1.80	Slab	7.05	TCS-1 to TCS-1B	ReC	20.261	1 x 6.00	Box	R-L	12	12	87.601	88.997	87.301	88.697	-5	5	90.293	91.593
10	31+325	2 x 1.80	Slab	10.9	TCS-1B	ReC	20.473	1 x 4.00	Box	R-L	12	12	92.390	92.052	92.09	91.752	-0.034	-2.5	94.318	93.998
11	28+275	2 x 2.50	Slab	7.7	TCS-1B	ReC	23.454	1 x 5.00	Box	L-R	12	12	64.631	64.605	64.331	64.305	-2.5	0.686	67.642	68.056
12	11+670	1 x 1.60	Slab	9.7	TCS-1C	ReC	39.666	1 x 2.00	Box	L-R	12	12	32.499	33.120	32.199	32.82	-3.197	3.197	34.730	35.561
13	9+515	1 x 1.50	Slab	10.1	Toll plaza Tapering	ReC	41.745	1 x 2.00	Box	L-R	12	12	26.508	26.482	26.208	26.182	-2.5	-2.5	28.648	28.648
14	8+730	3 x 1.50	Slab	10.95	TCS-1C	ReC	42.529	1 x 5.00	Box	L-R	12	12	24.529	24.555	24.229	24.255	-2.5	-2.5	29.633	29.633
15	23+260	1 x 4.30	Slab	9.5	TCS-1B	ReC	28.374	1 x 5.00	Box	R-L	12	12	61.407	61.433	61.107	61.133	-2.5	-2.5	66.348	66.348

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND
 HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
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 An ISO 9001 : 2008 Company
 CEG Tower, B11(G), Malviya Industrial Area,
 JAIPUR- 302017 (Rajasthan) INDIA
 Tel : +91 141 2751801/ 802/803/804, Fax : 2751806
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 THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED
 SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S	<i>Asim Singh</i>
DRAWN	R.P	<i>Ramendra</i>
CHECKED	K.S	<i>Kishor</i>
APPROVED	AKJ	<i>AKJ</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS BOX CULVERT WITH CUSHION (26 m WIDTH)
DRAWING NO:	IAHE/CEG/D121/CUL/BOX/REC/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET 2 OF 2	

NOTES:-

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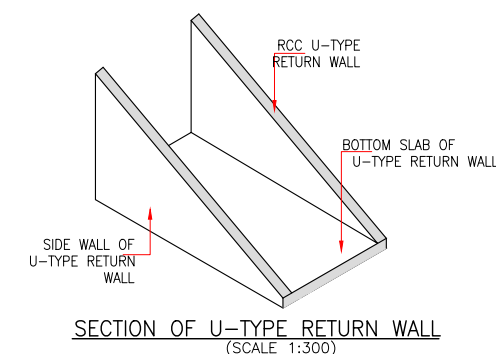
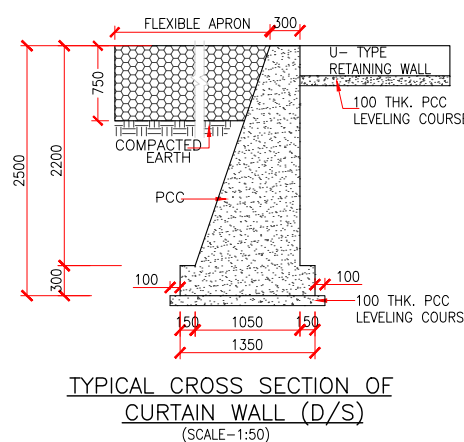
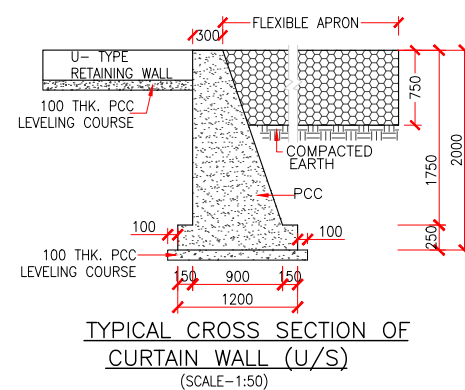
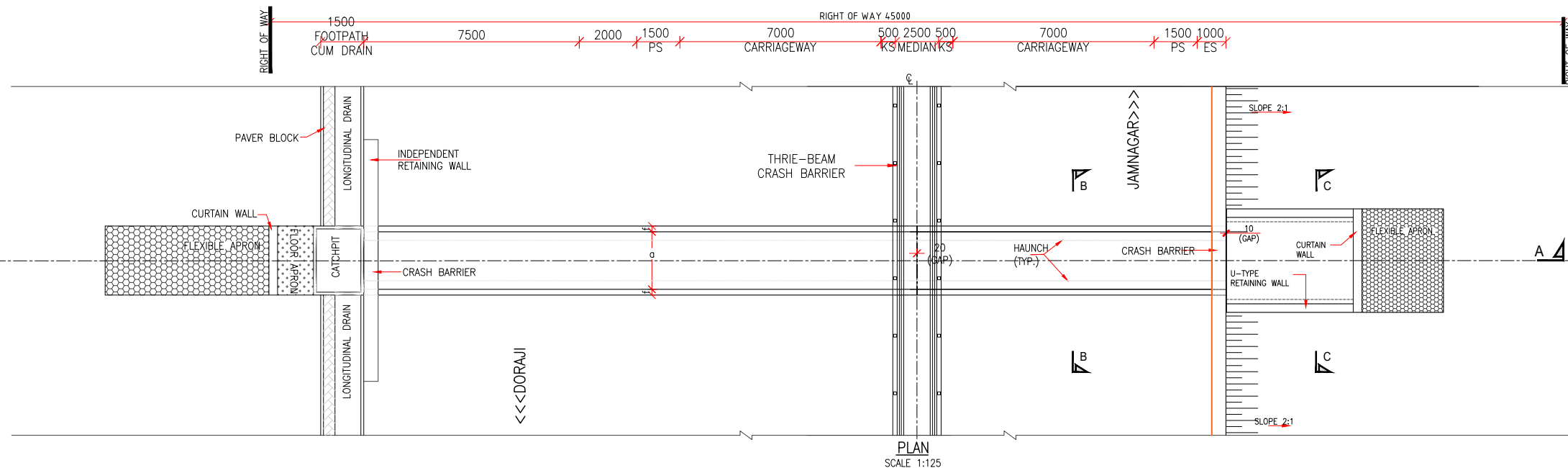
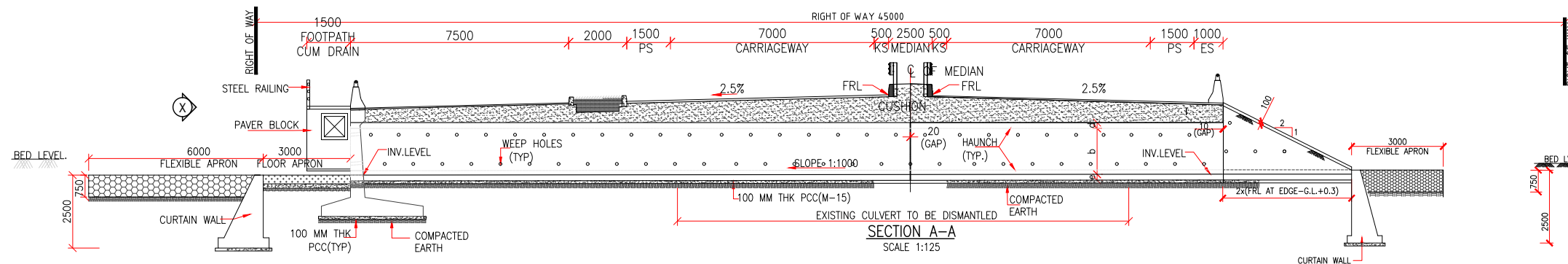
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REFERENCE DRAWING:-

- DETAIL OF U-TYPE RETURN WALL
IAHE/CEG/D121/U-TYPE
- DETAIL OF RETAINER
IAHE/CEG/D121/MISC/TYPE
- FOR REINFORCEMENT DRAWING REFER MORT&H DRAWING.
SD/102,SD/103,SD/108 & SD/109.

LEGEND:-

EJ	-	EXPANSION JOINT
LVL	-	LEVEL
FRL	-	FINISHED ROAD LEVEL
THK	-	THICK
U/S	-	UP STREAM
D/S	-	DOWN STREAM
W.C.	-	WEARING COAT
G.L.	-	GROUND LEVEL



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR-2025	WIDENING TO RECONSTRUCTION
R1	OCT-2017	FINAL DPR SUBMISSION
R0	MAY-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

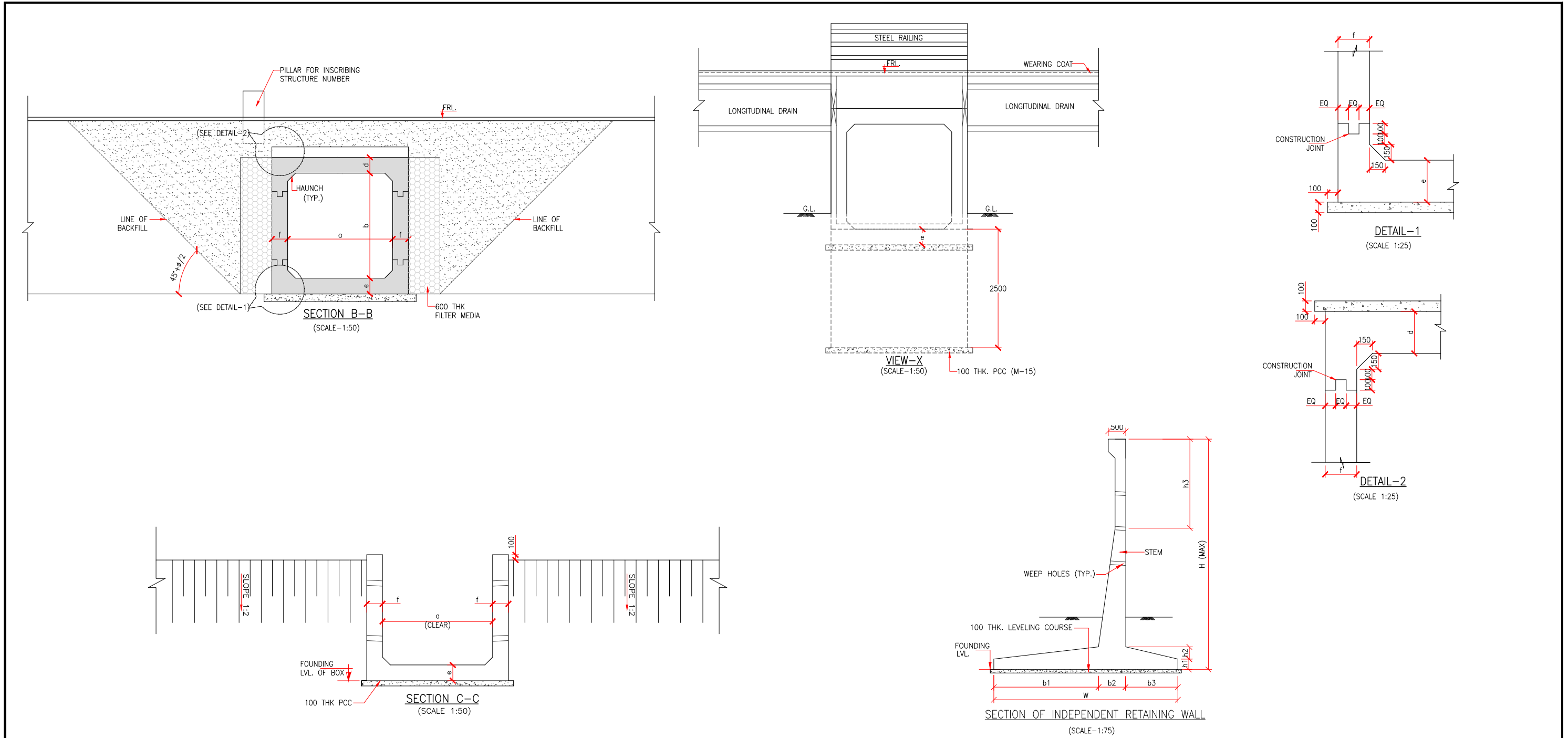
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area,
J A I P U R - 302017 (Rajasthan) INDIA
Tel : +91 141 2751801/802803804, Fax : 2751806
Email: ceg@cegroupindia.com, URL: www.cegroupindia.com

PROJECT:
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THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED
SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.	
DRAWN	G.R.	
CHECKED	K.S.	
APPROVED	AKJ	

TITLE:	GENERAL ARRANGEMENT DRAWING FOR NEW-CONSTRUCTION AS BOX CULVERT (TCS-7A)
DRAWING NO:	IAHE/CEG/D121/CUL/BOX/NEW/BYP/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR-2025
SHEET	1 OF 2



S. No.	Existing Details			Proposed Features						Culvert Width		Bed Level (GAD)		Invert Level		Camber/Super elevation		FRL
	Location as per toposurvey	Span Arrangement	Type of Structure	Proposal	Design Ch	TCS	Proposed Span	Proposed type	Flow Direction	Left	Right	Left	Right	Left	Right	Left	Right	
1.	—	—	—	NEW	2.323	TCS-7A	1 x 5.00	Box	L-R	19.250	10.750	100.031	99.958	99.731	99.658	-2.500	2.500	103.443
2.	—	—	—	NEW	3.653	TCS-7A	1 x 2.00	Box	R-L	19.250	10.750	95.387	95.498	95.087	95.198	-2.500	2.500	98.830

REV	DATE	DESCRIPTION OF REVISIONS
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R1	OCT-2017	FINAL DPR SUBMISSION
R0	MAY-2017	FIRST SUBMISSION



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सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND
HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-



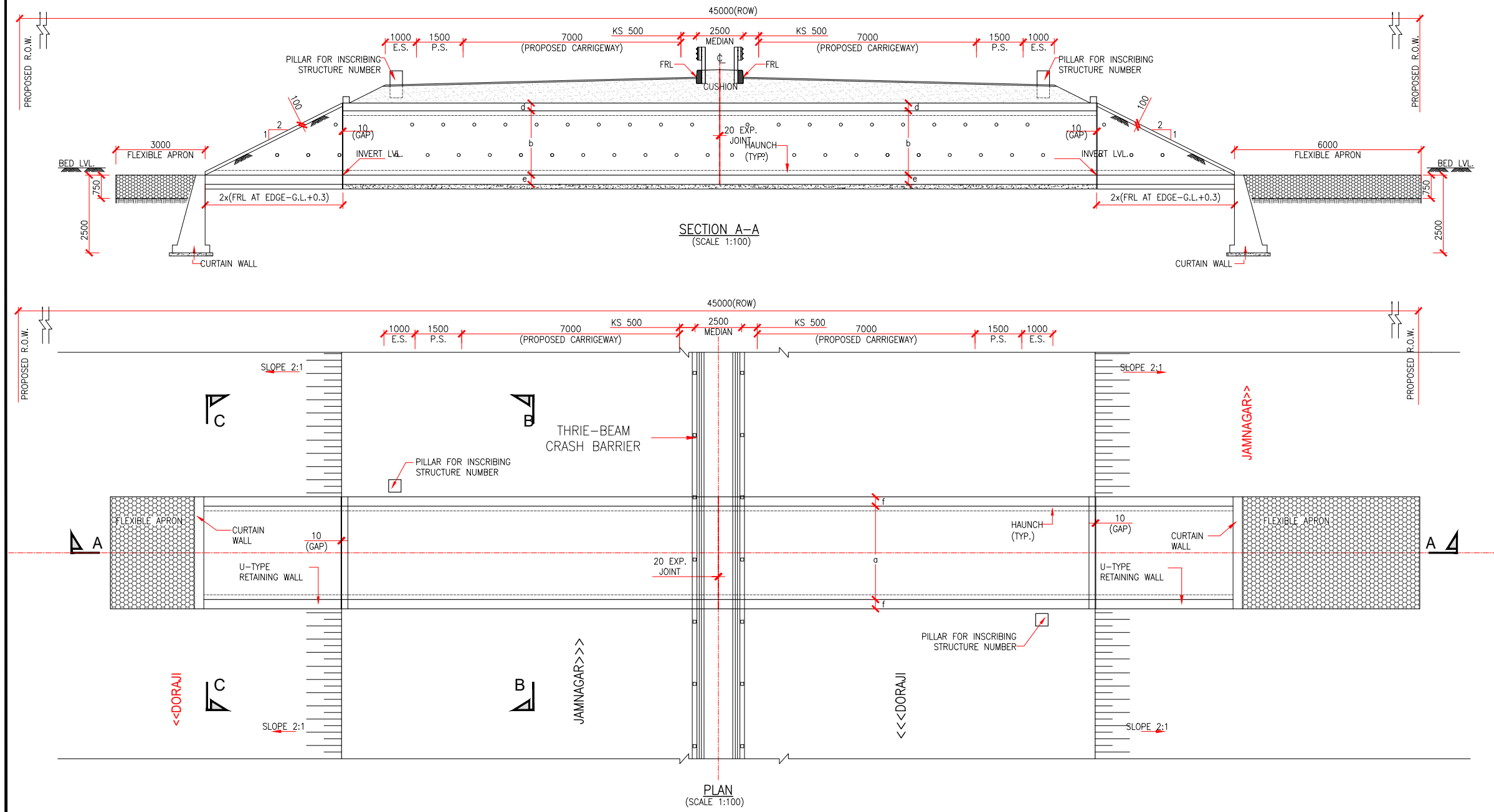
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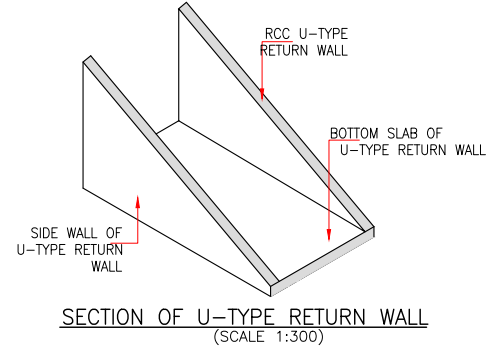
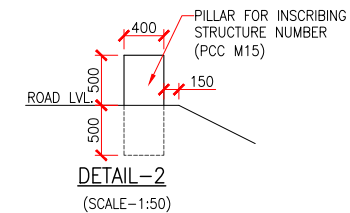
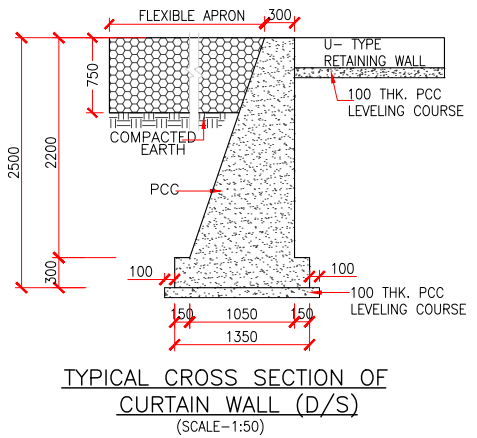
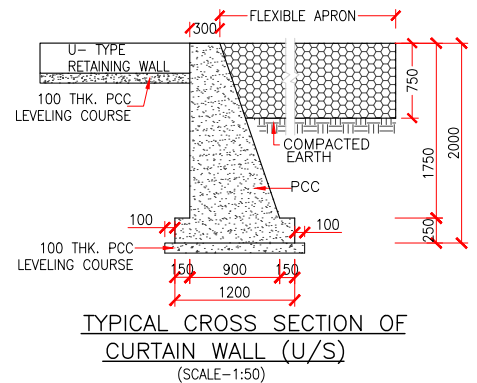
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DRAWN	G.R.	
CHECKED	K.S	
APPROVED	AKJ	

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DRAWING NO:	IAHE/CEG/D121/CUL/BOX/NEW/BYP/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR-2025
SHEET 2 OF 2	



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- LEGEND:-**
- EJ - EXPANSION JOINT
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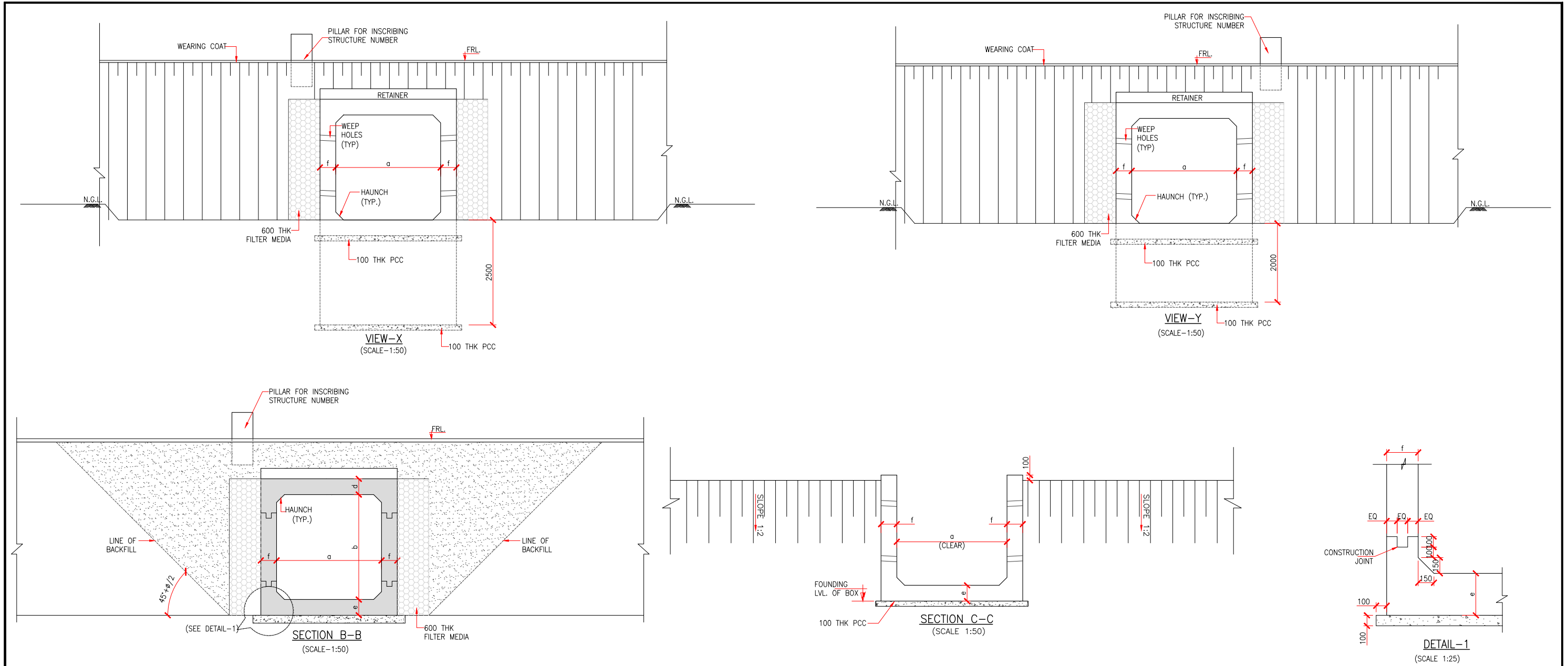
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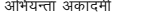
DESIGNED	A.S.
DRAWN	G.R.
CHECKED	K.S.
APPROVED	AKJ

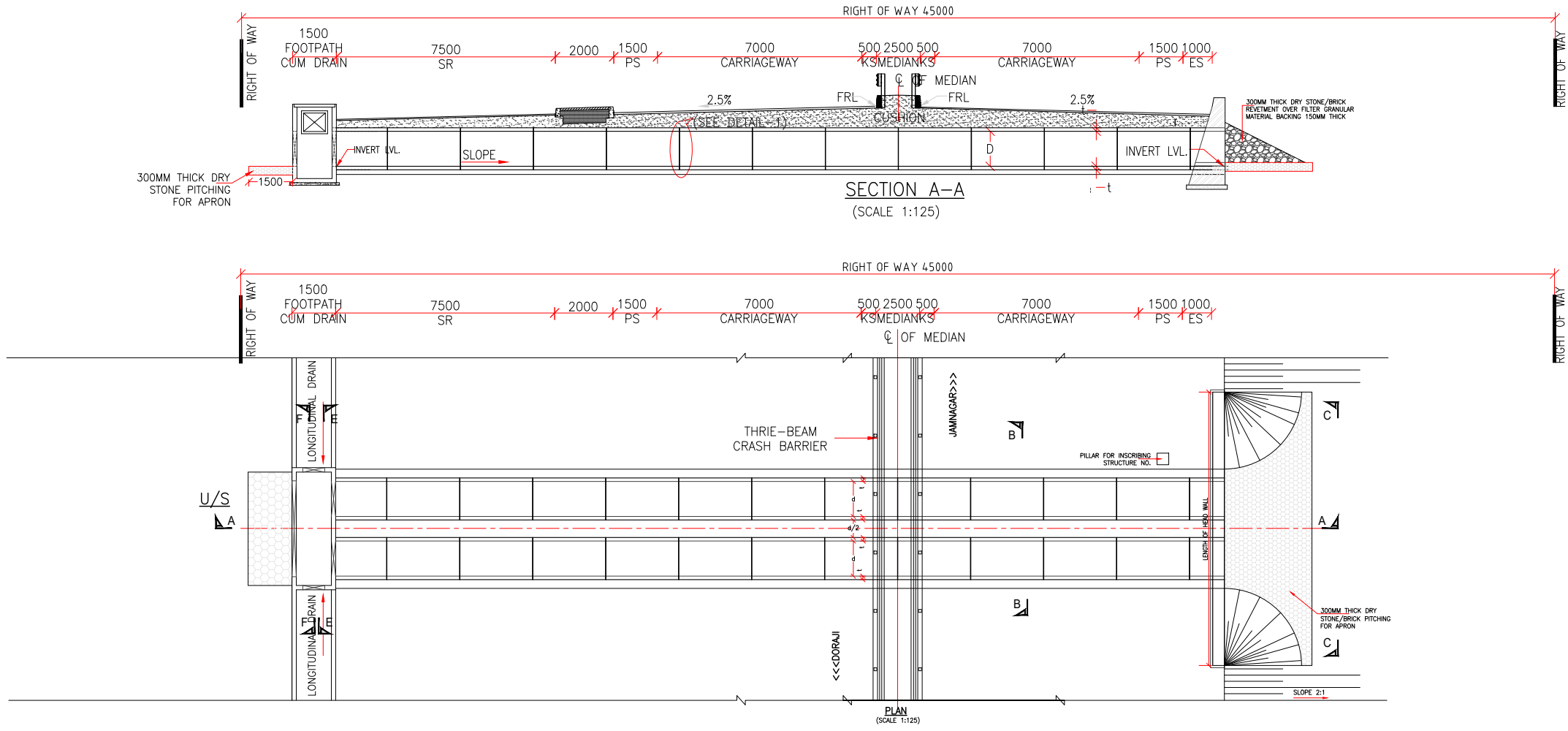
TITLE:	GENERAL ARRANGEMENT DRAWING FOR NEW-CONSTRUCTION AS BOX CULVERT (14M WIDTH)
DRAWING NO:	IAHE/CEG/D121/CUL/BOX/NEW/BYP/GAD/01
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR-2025
SHEET 1 OF 2	

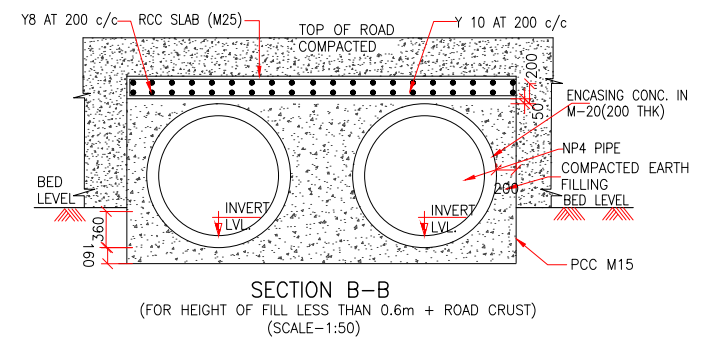
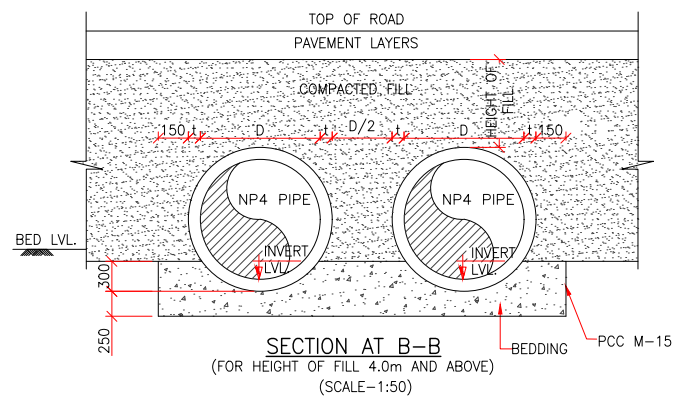
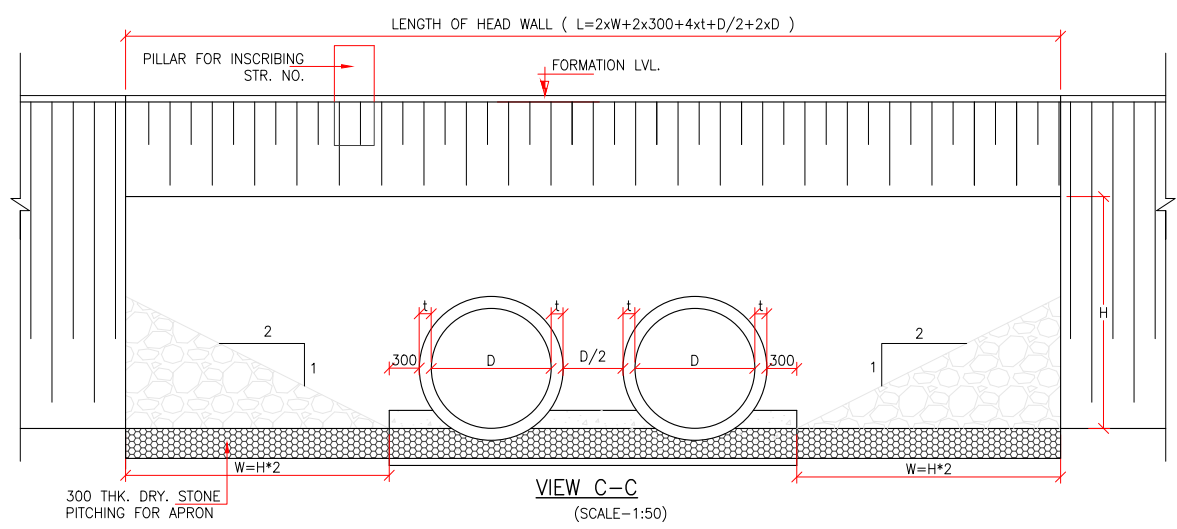


S. No.	Existing Details			Proposed Features						Culvert Width		Bed Level (GAD)		Invert Level		Camber/Super elevation		FRL
	Location as per toposurvey	Span Arrangement	Type of Structure	Proposal	Design Ch	TCS	Proposed Span	Proposed type	Flow Direction	Left	Right	Left	Right	Left	Right	Left	Right	
1.	—	—	—	NEW	8.976	TCS-7	1 x 3.00	Box	L-R	11.000	11.000	106.225	105.382	105.925	105.082	5.00	-5.00	108.822
2.	—	—	—	NEW	9.122	TCS-7	1 x 4.00	Box	L-R	11.000	11.000	105.895	105.385	105.595	105.085	5.00	-5.00	107.440

			 OWNER: भारतीय राजमार्ग अभियन्ता अकादमी <u>Indian Academy of Highway Engineers</u> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	 DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR - 302017 (Rajasthan) INDIA Tel: +91 141 2751801/ 802803/804, Fax: 2751806 Email: ceg@ceginia.com, URL: www.ceginia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO – NH/IAHE/18)	DESIGNED	A.S.		TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW-CONSTRUCTION AS BOX CULVERT (14M WIDTH)	REV:	R2
R2	APR-2025	WIDENING TO RECONSTRUCTION	DRAWN	G.R.		SIZE:	A3				
R1	OCT-2017	FINAL DPR SUBMISSION	CHECKED	K.S.		DRAWING NO:	IAHE/CEG/D121/CUL/BOX/NEW/BYP/GAD/01				
R0	MAY-2017	FIRST SUBMISSION	APPROVED	AKJ		SCALE:	AS SHOWN				
REV	DATE	DESCRIPTION OF REVISIONS							SHEET 2 OF 2		

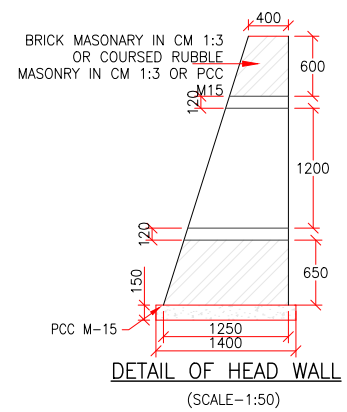
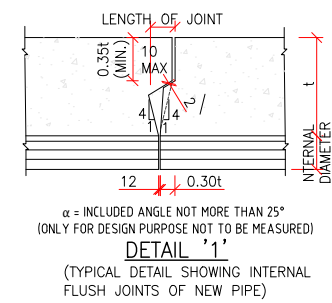
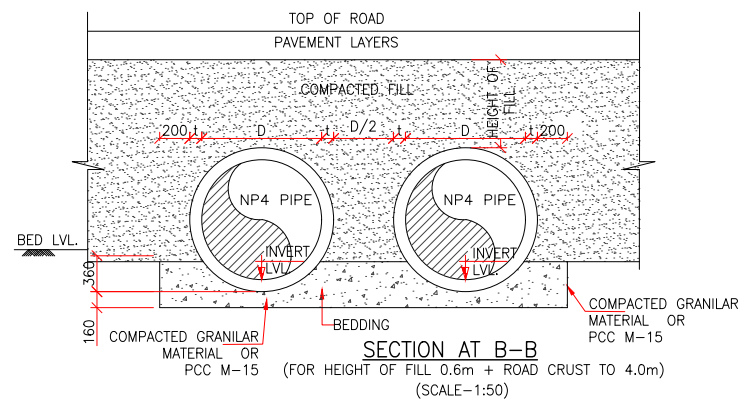
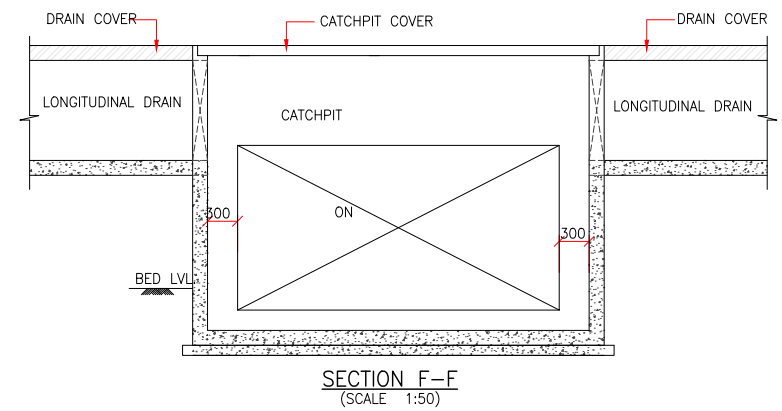
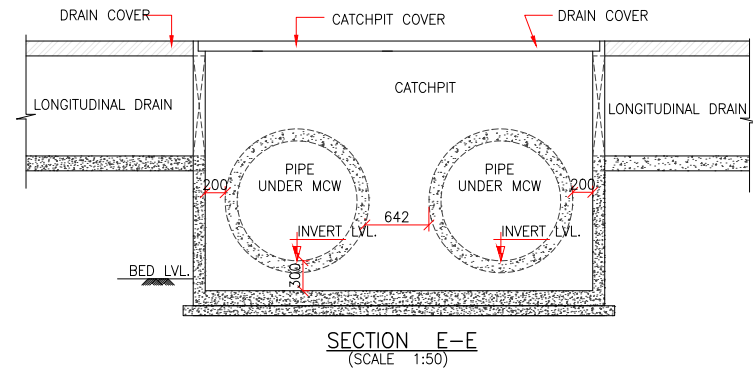


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 - CHAINAGE / FORMATION LEVEL SHALL BE AS PER APPROVED PLAN & PROFILE DRAWING.
 - IN CASES WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE UNSUITABLE SOIL IS TO BE REPLACED BY GRANULAR MATERIAL, PROVIDE ADEQUATE CUT OFF WALLS AT ENDS OF CULVERT TO PREVENT SCOUR/EROSION.
 - THE JOINTING SPACE SHALL BE FILLED AS PER IS 458:2003.
 - CLASS NP4 PIPE SHALL BE USED AS PER IS 458: 2003.
 - EXTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER UPTO 700MM & INTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER OF PIPE ABOVE 700 MM AS PER IS 458:2003.
 - STANDARD LENGTH OF PIPE IS CONSIDERED AS 2.5m. THE LENGTH OF PIPE HAS BEEN ROUNDED UP TO 0.5 TIMES OF STANDARD LENGTH OF PIPE ON EITHER SIDE OF PROPOSED CENTER LINE.
 - MINIMUM DEPTH OF CUSHION OVER PIPE (INCLUDING ROAD CRUST) SHALL NOT BE LESS THAN 600mm FOR NEW/RECONSTRUCTION. INCASE CUSHION IS LESS THAN 600mm ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING.
 - IF CUSHION IS MORE THAN 4.00 M THE THICKNESS OF BEDDING UNDER PIPE CULVERTS SHALL CONFORM TO PLATE-23 OF IRC: SP:13-2004.
 - FOR CULVERTS SKEW TO THE TRAFFIC DIRECTION LENGTH OF CULVERT SHALL BE ADJUSTED AS PER SITE CONDITION.
 - THE JOINTING SPACE SHALL BE FILLED WITH CEMENT MORTAR (1 CEMENT TO 2 SAND) MIXED SUFFICIENTLY.
 - SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S.
 - SPACING BETWEEN PIPES SHALL BE AS SHOWN FOR RECONSTRUCTION/NEW CONSTRUCTION & FOR WIDENING CASE SPACING SHALL BE ADJUSTED AS PER SITE CONDITION.
- LEGEND:-**
- LVL - LEVEL
 - FRL - FINISHED ROAD LEVEL
 - THK. - THICK
 - U/S - UP STREAM
 - D/S - DOWN STREAM
 - P.S. - PAVED SHOULDER
 - K.S. - KERB SHYNESS
 - E.S. - EARTHEN SHOULDER
 - D - DIAMETER OF PIPE
 - t - THICKNESS OF PIPE
 - L - LENGTH OF HEAD WALL



EXISTING DETAILS			PROPOSED FEATURES					Flow direction	CULVERT WIDTH			No. of pipes reqd (considering all single)		Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRL
Location as per toposurvey	Span Arrangement	Type of Structure	TCS	Proposal	Design Ch.	Proposed Span (Final)	Proposed Type		Total	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Centre
-	-	-	TCS-7A	NEW	2.703	2 x 1.20	Pipe	L-R	30	19.250	10.750	8	5	98.932	98.579	98.632	98.279	-2.50	2.50	100.646
-	-	-	TCS-7A	NEW	5.518	2 x 1.20	Pipe	L-R	30	19.250	10.750	8	5	88.983	88.950	88.683	88.650	4.444	-4.444	90.819
-	-	-	TCS-7A to TCS-4A	NEW	7.454	2 x 1.20	Pipe	R-L	30	19.250	10.750	8	5	95.689	96.246	95.389	95.946	-2.50	2.50	97.959

R2 APR.-2025	WIDENING TO RECONSTRUCTION	OWNER: भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:- CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, J A P U R - 302017 (Rajasthan) INDIA Tel : +91 141 2751801/ 8023853/804, Fax : 2751806 Email: ceg@cecindia.com, URL: www.cecindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S.	TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS DOUBLE PIPE CULVERT (TCS-7A)	REV:	R2
R1 OCT.-2017	FINAL DPR SUBMISSION				DRAWN	R.P.		SIZE:	A3
R0 DEC.-2016	FIRST SUBMISSION				CHECKED	K.S.		DRAWING NO:	IAHE/CEG/D121/CUL/PIPE/NEW/DOUBLE/GAD/01
REV	DATE	DESCRIPTION OF REVISIONS			APPROVED	AKJ	SCALE:	AS SHOWN	SHEET 1 OF 2



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	DEC.-2016	FIRST SUBMISSION

OWNER:

 भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-

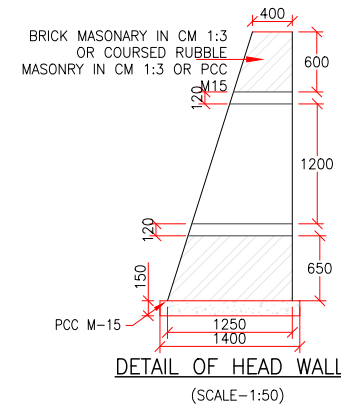
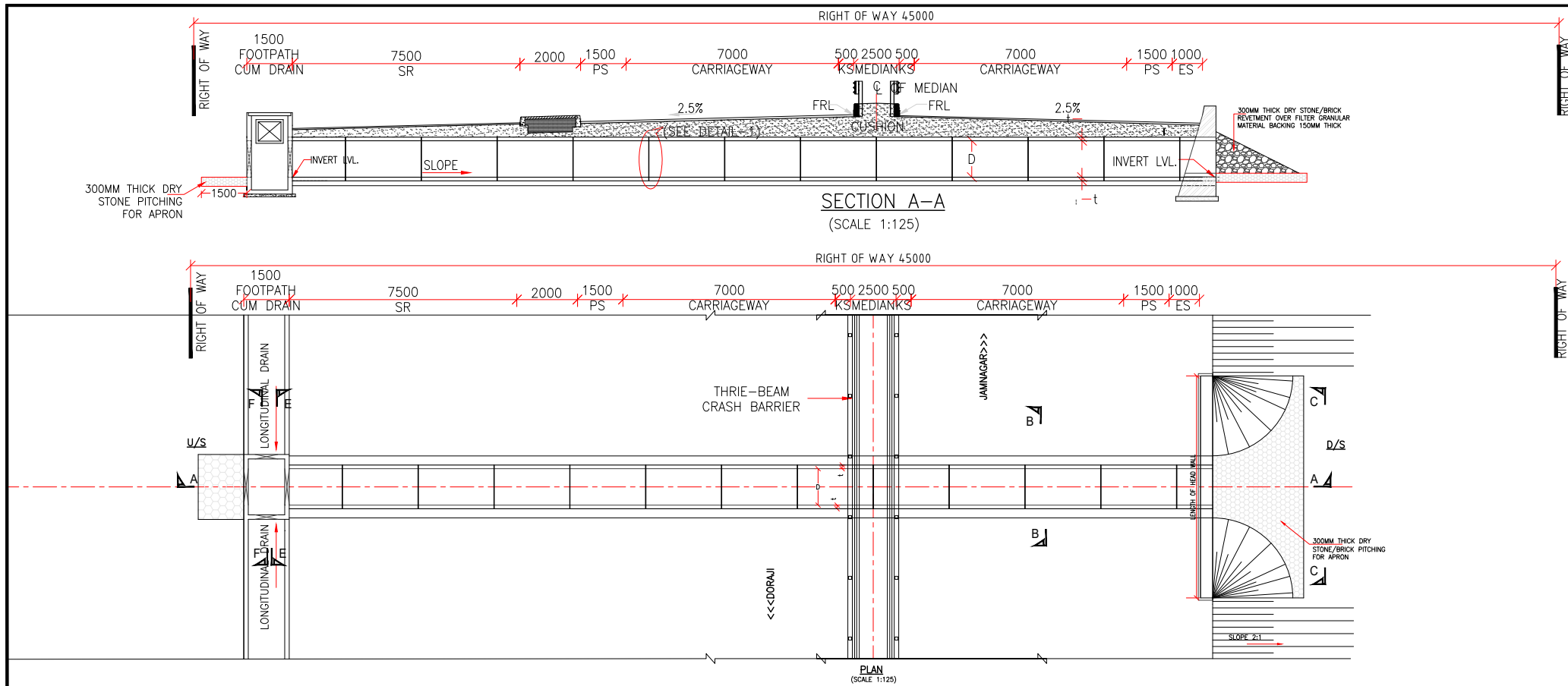
CONSULTING ENGINEERS GROUP LTD
 An ISO 9001 : 2008 Company
 CEG Tower, B11 (G), Malviya Industrial Area,
 JAIPUR- 302017 (Rajasthan) INDIA
 Tel : +91 141 2751801/ 802803/804, Fax : 2751806
 Email: ceg@cegindia.com, URL: www.cegindia.com

PROJECT:
 CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.	
DRAWN	R.P.	
CHECKED	K.S.	
APPROVED	AKJ	

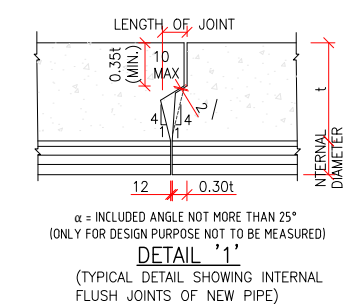
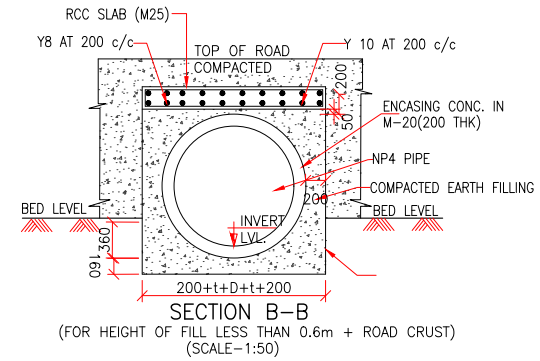
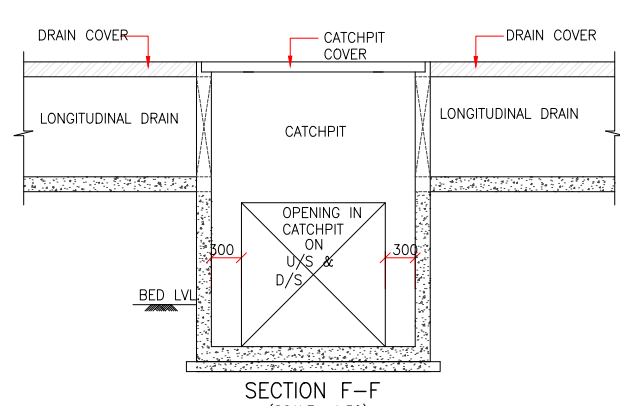
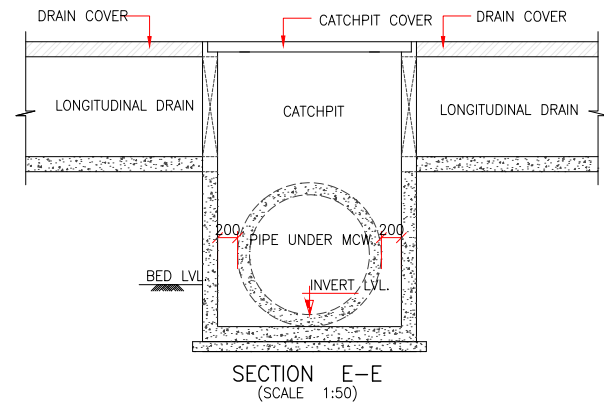
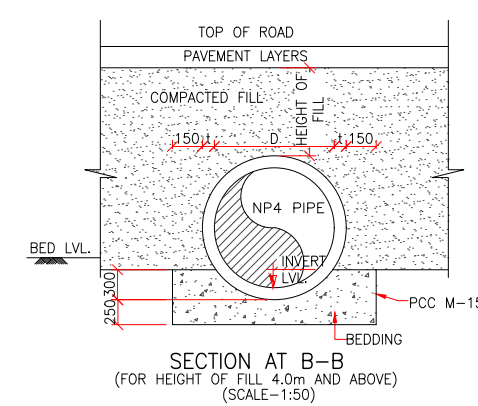
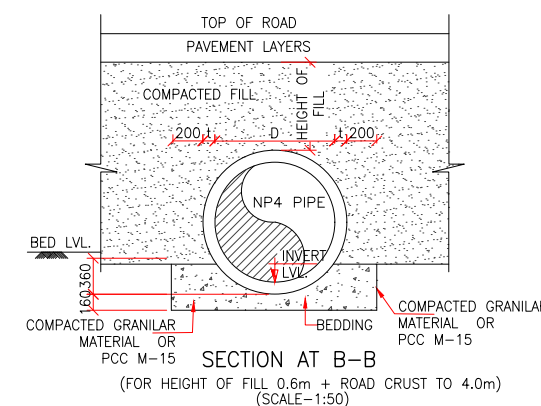
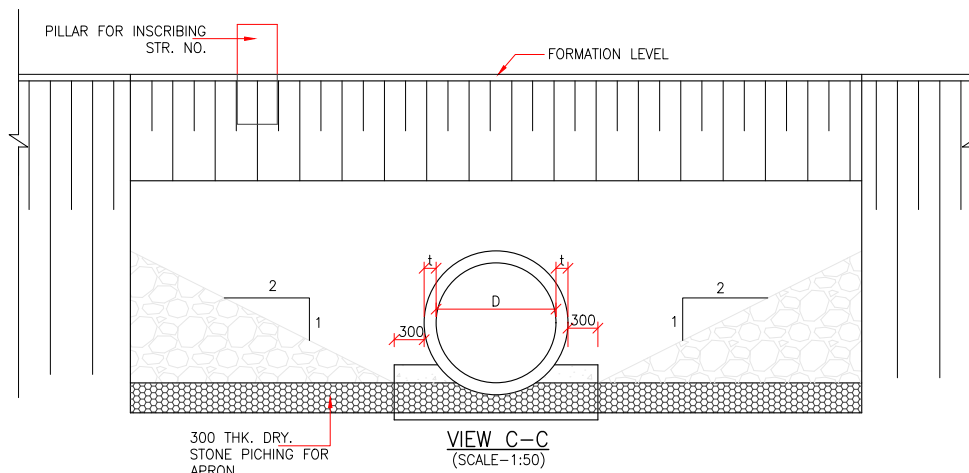
TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS DOUBLE PIPE CULVERT (TCS-7A)
DRAWING NO: IAHE/CEG/D121/CUL/PIPE/NEW/DOUBLE/GAD/01
SCALE: AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET 2 OF 2	



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- LEGEND:-**
- LVL - LEVEL
 - FRL - FINISHED ROAD LEVEL
 - THK - THICK
 - U/S - UP STREAM
 - D/S - DOWN STREAM
 - P.S - PAVED SHOULDER
 - K.S - KERB SHYNESS
 - E.S - EARTHEN SHOULDER
 - D - DIAMETER OF PIPE
 - t - THICKNESS OF PIPE
 - L - LENGTH OF HEAD WALL



EXISTING DETAILS			PROPOSED FEATURES					Flow direction	CULVERT WIDTH			No. of pipes reqd (considering all single)		Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRI
Location as per topography	Span Arrangement	Type of Structure	TCS	Proposal	Design Ch.	Proposed Span (Final)	Proposed Type		Total	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Centre
—	—	—	TCS-4A to TCS-7A	NEW	1.813	1 x 1.20	Pipe	R-L	30	19.250	10.750	8	5	102.105	102.153	101.805	101.853	-5.00	5.00	103.812
—	—	—	TCS-4A to TCS-7A	NEW	5.335	1 x 1.20	Pipe	L-R	30	19.250	10.750	8	5	89.822	89.808	89.522	89.508	-4.444	4.444	91.512
—	—	—	TCS-7A	NEW	6.962	1 x 1.20	Pipe	L-R	30	19.250	10.750	8	5	91.962	91.690	91.662	91.390	-2.50	2.50	94.474

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	DEC.-2016	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

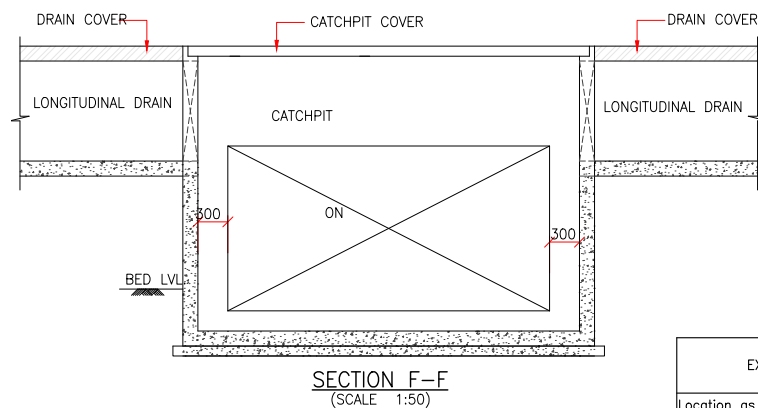
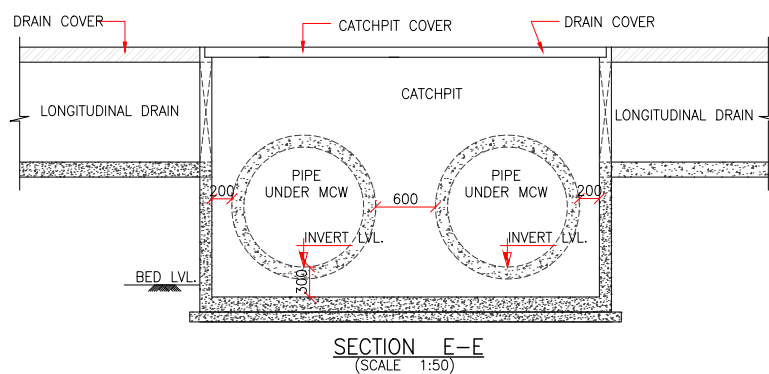
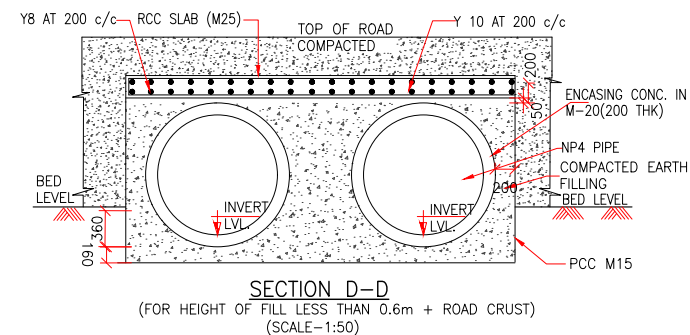
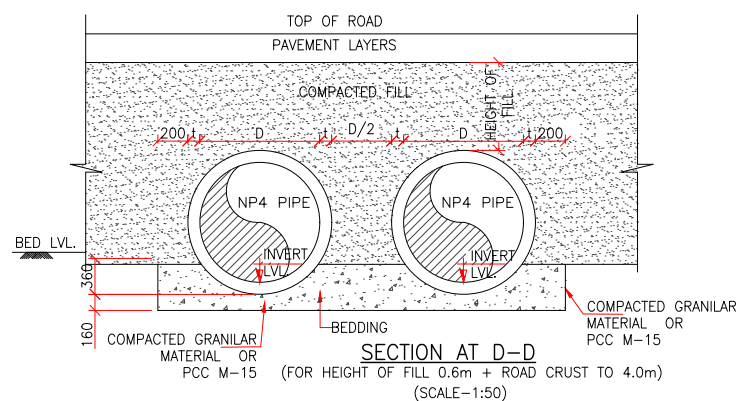
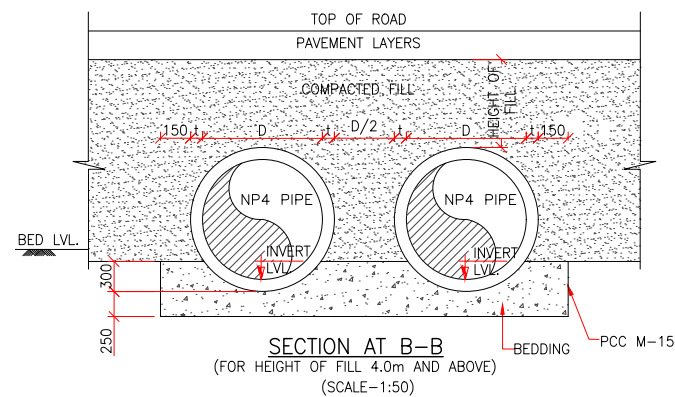
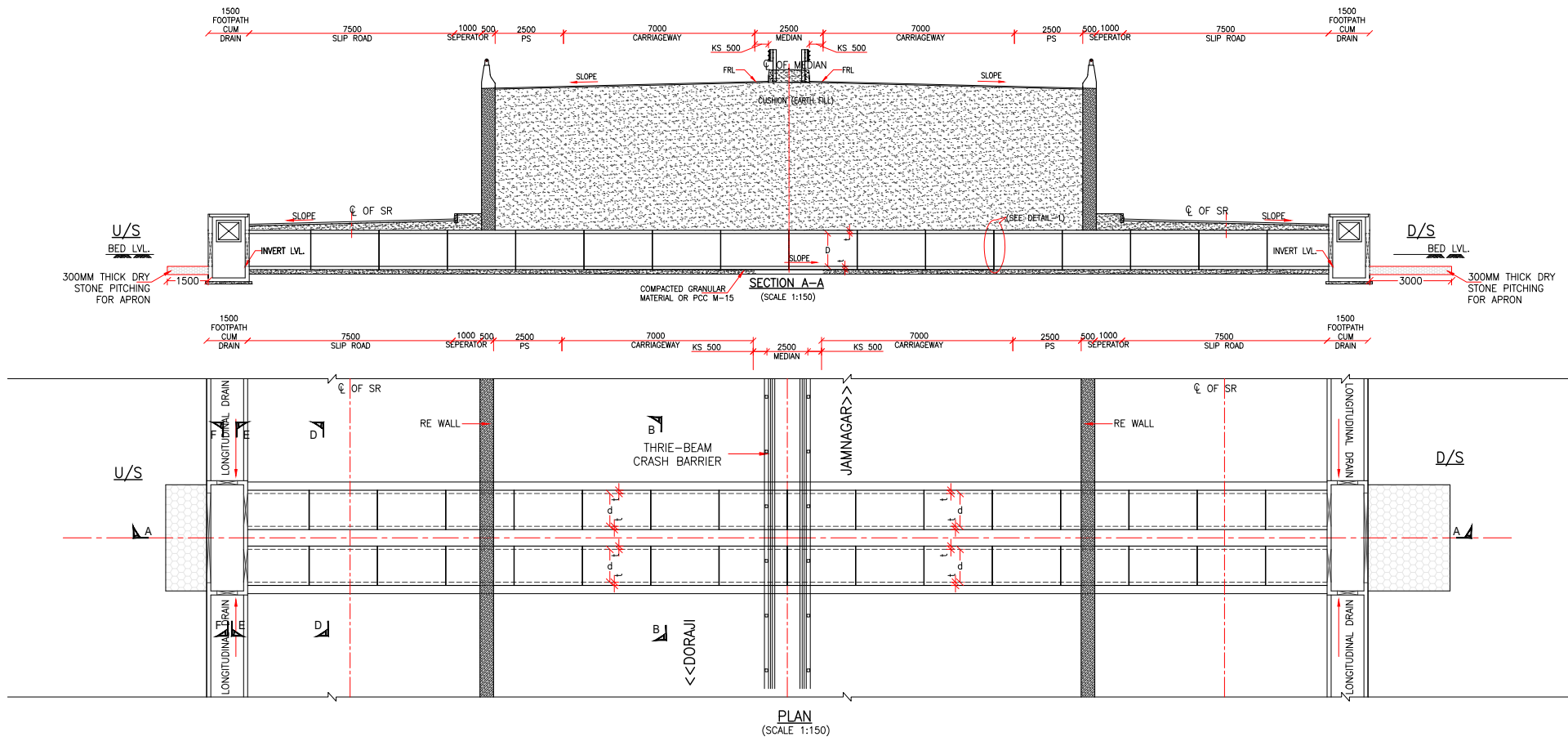
DESIGN CONSULTANT:-
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 Tel: +91 141 2751801/802/803/804, Fax: 2751806
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PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED: A.S.
 DRAWN: R.P.
 CHECKED: K.S.
 APPROVED: AKJ

TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS SINGLE PIPE CULVERT (TCS-7A)
DRAWING NO: IAHE/CEG/D121/CUL/PIPE/NEW/SINGLE/GAD/01
SCALE: AS SHOWN

REV: R2
SIZE: A3
DATE: APR.-2025
SHEET 1 OF 1

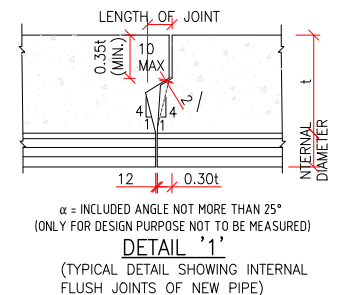


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LEGEND:-

LVL.	-	LEVEL
FRL.	-	FINISHED ROAD LEVEL
THK.	-	THICK
U/S	-	UP STREAM
D/S	-	DOWN STREAM
P.S.	-	PAVED SHOULDER
K.S.	-	KERB SHYNESS
E.S.	-	EARTHEN SHOULDER
D	-	DIAMETER OF PIPE
t	-	THICKNESS OF PIPE
L	-	LENGTH OF HEAD WALL



EXISTING DETAILS			PROPOSED FEATURES					Flow direction	CULVERT WIDTH			No. of pipes reqd (considering all single)		Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRL
Location as per toposurvey	Span Arrangement	Type of Structure	TCS	Proposal	Design Ch.	Proposed Span (Final)	Proposed type		Total	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Centre
—	—	—	TCS—4A	NEW	7.685	2 x 1.20	Pipe		R—L	39.5	19.75	19.75	8	8	97.433	97.447	97.133	97.147	—2.50	2.50

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	DEC.-2016	FIRST SUBMISSION



OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

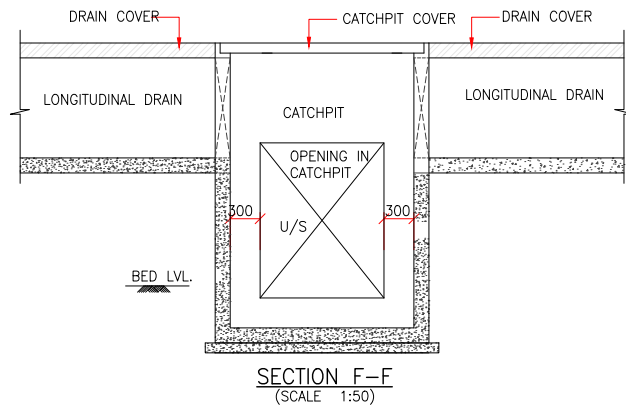
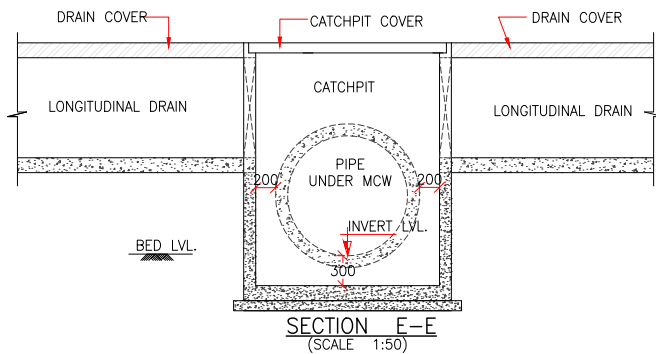
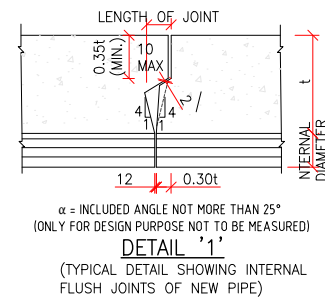
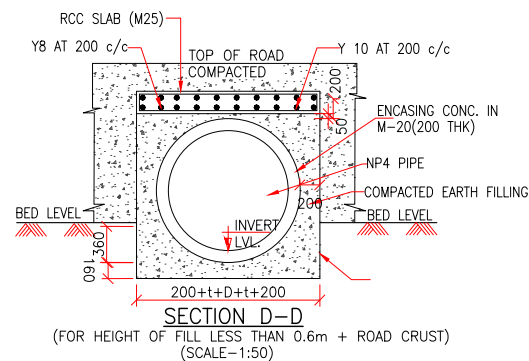
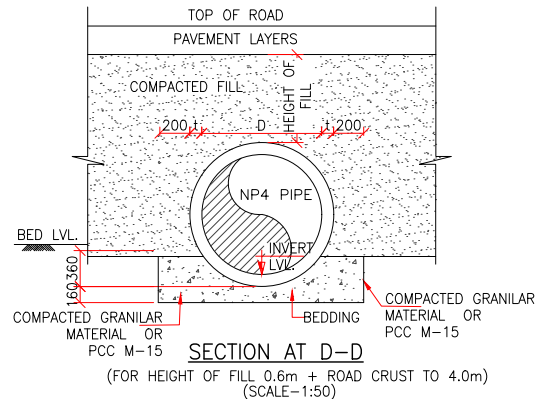
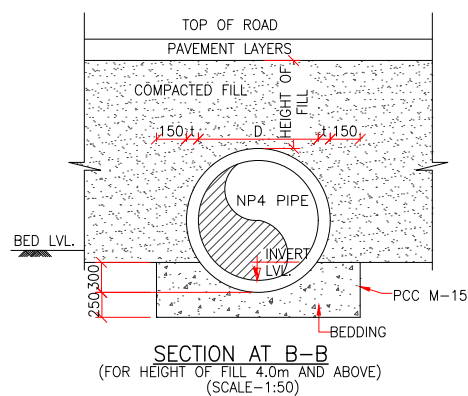
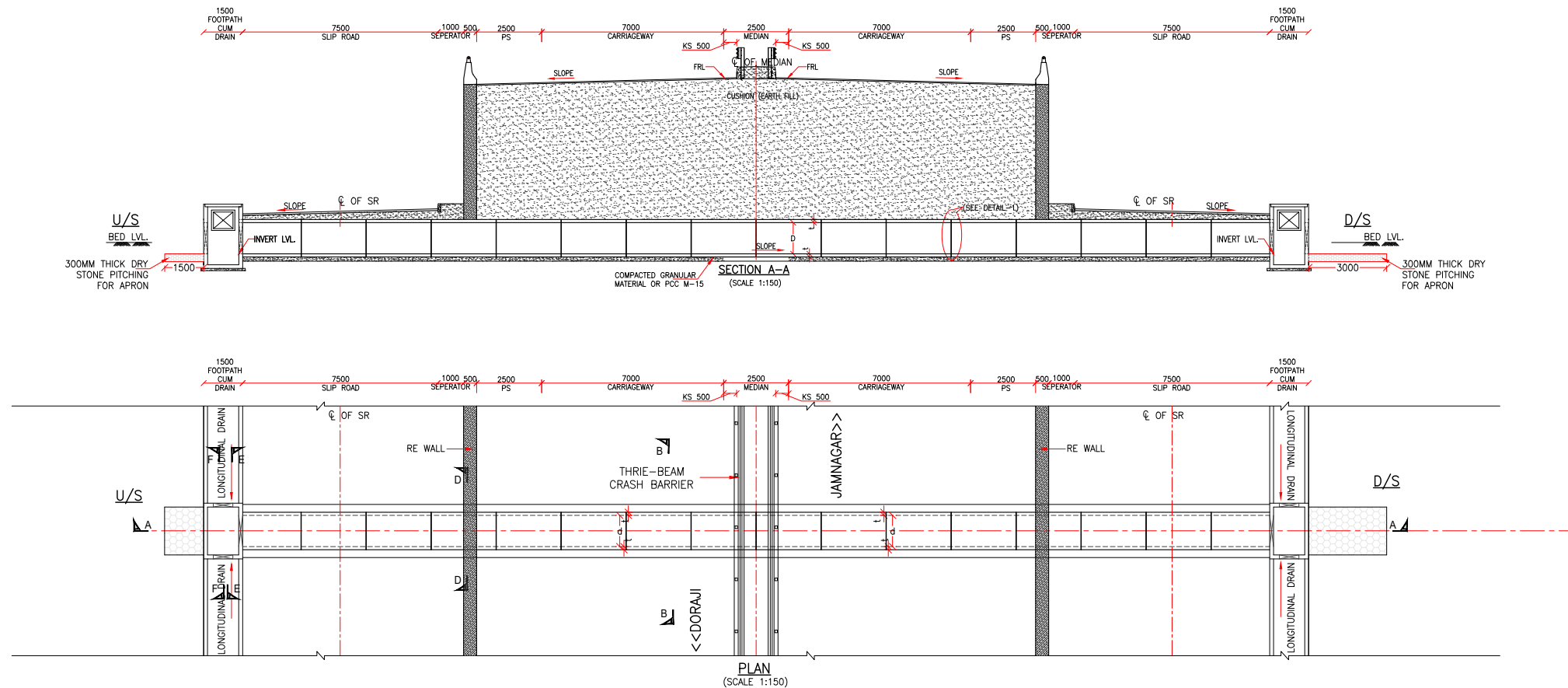
DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, JALPURI, 302017 (Rajasthan) INDIA
Tel.: +91 141 2751801/ 8023853004, Fax: 2751806
Email: ceg@cegroupindia.com, URL: www.cegroupindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.	<i>Asst. Eng.</i>
DRAWN	J.A.	<i>J.A.</i>
CHECKED	K.S.	<i>K.S.</i>
APPROVED	AKJ	<i>AKJ</i>

TITLE: GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS DOUBLE PIPE CULVERT (TCS-4A)
DRAWING NO: IAHE/CEG/D121/CUL/PIPE/NEW/DOUBLE/GAD/02
SCALE: AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET 1 OF 1	



EXISTING DETAILS			PROPOSED FEATURES					Flow direction	CULVERT WIDTH			No. of pipes reqd (considering all single)		Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRL
Location as per toposurvey	Span Arrangement	Type of Structure	TCS	Proposal	Design Ch.	Proposed Span (Final)	Proposed Type		Total	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Centre
—	—	—	TCS-4A	NEW	4.393	1 x 1.20	Pipe	L-R	39.5	19.75	19.75	8	8	92.654	92.514	92.354	92.214	-2.50	2.50	98.064
—	—	—	TCS-4A	NEW	4.994	1 x 1.20	Pipe	L-R	39.5	19.75	19.75	8	8	90.816	90.674	90.516	90.374	-2.50	2.50	94.521
—	—	—	TCS-4A	NEW	8.305	1 x 1.20	Pipe	L-R	39.5	19.75	19.75	8	8	103.255	102.986	102.955	102.686	-2.50	2.50	110.569

NOTES:-

- ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
- LOOSE/UNSUITABLE SOIL BELOW CULVERTS SHALL BE REPLACED WITH SUITABLE GRANULAR MATERIAL.
- CHAINAGE / FORMATION LEVEL SHALL BE AS PER APPROVED PLAN & PROFILE DRAWING.
- IN CASES WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE UNSUITABLE SOIL IS TO BE REPLACED BY GRANULAR MATERIAL, PROVIDE ADEQUATE CUT OFF WALLS AT ENDS OF CULVERT TO PREVENT SCOUR/EROSION.
- THE JOINTING SPACE SHALL BE FILLED AS PER IS 458:2003.
- CLASS NP4 PIPE SHALL BE USED AS PER IS 458: 2003.
- EXTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER UPTO 700MM & INTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER OF PIPE ABOVE 700 MM AS PER IS 458:2003.
- STANDARD LENGTH OF PIPE IS CONSIDERED AS 2.5m. THE LENGTH OF PIPE HAS BEEN ROUNDED UP TO 0.5 TIMES OF STANDARD LENGTH OF PIPE ON EITHER SIDE OF PROPOSED CENTER LINE.
- MINIMUM DEPTH OF CUSHION OVER PIPE (INCLUDING ROAD CRUST) SHALL NOT BE LESS THAN 600mm FOR NEW/RECONSTRUCTION. INCASE CUSHION IS LESS THAN 600mm ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING.
- IF CUSHION IS MORE THAN 4.00 M THE THICKNESS OF BEDDING UNDER PIPE CULVERTS SHALL CONFORM TO PLATE-23 OF IRC: SP:13-2004.
- FOR CULVERTS SKEW TO THE TRAFFIC DIRECTION LENGTH OF CULVERT SHALL BE ADJUSTED AS PER SITE CONDITION.
- THE JOINTING SPACE SHALL BE FILLED WITH CEMENT MORTAR (1 CEMENT TO 2 SAND) MIXED SUFFICIENTLY.
- SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S.
- SPACING BETWEEN PIPES SHALL BE AS SHOWN FOR RECONSTRUCTION/NEW CONSTRUCTION & FOR WIDENING CASE SPACING SHALL BE ADJUSTED AS PER SITE CONDITION.

LEGEND:-

LVL.	-	LEVEL
FRL.	-	FINISHED ROAD LEVEL
THK.	-	THICK
U/S	-	UP STREAM
D/S	-	DOWN STREAM
P.S.	-	PAVED SHOULDER
K.S.	-	KERB SHYNESS
E.S.	-	EARTHEN SHOULDER
D	-	DIAMETER OF PIPE
t	-	THICKNESS OF PIPE
L	-	LENGTH OF HEAD WALL

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	DEC.-2016	FIRST SUBMISSION



OWNER:
भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001 : 2008 Company
CEG Tower, B11 (G), Malviya Industrial Area, J A P U R - 302017 (Rajasthan) INDIA
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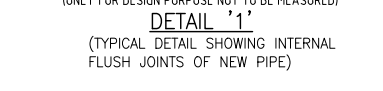
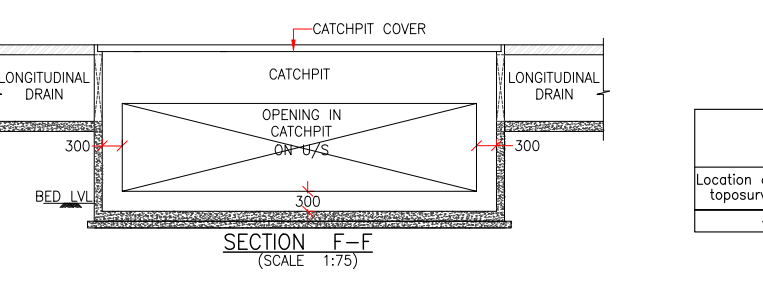
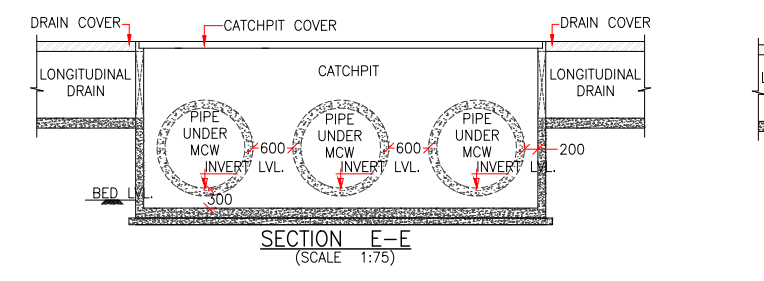
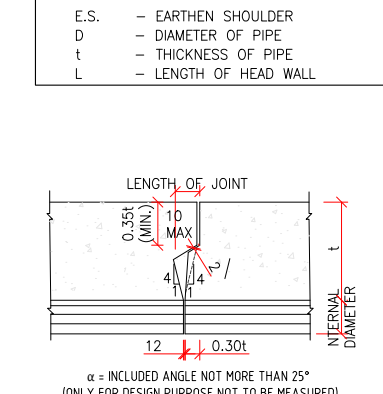
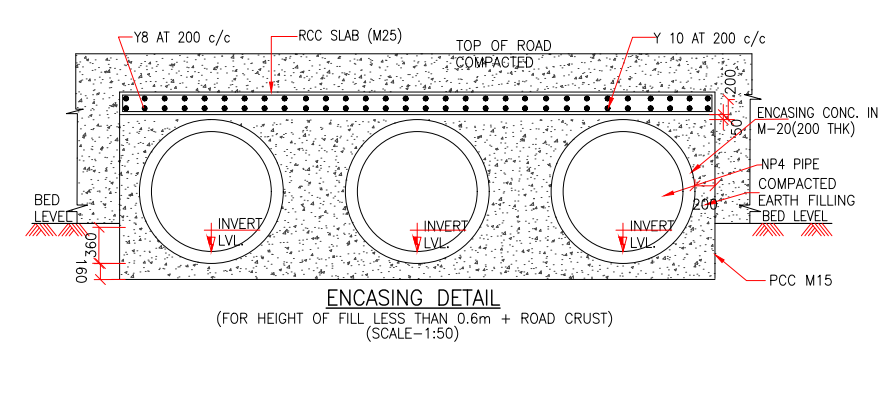
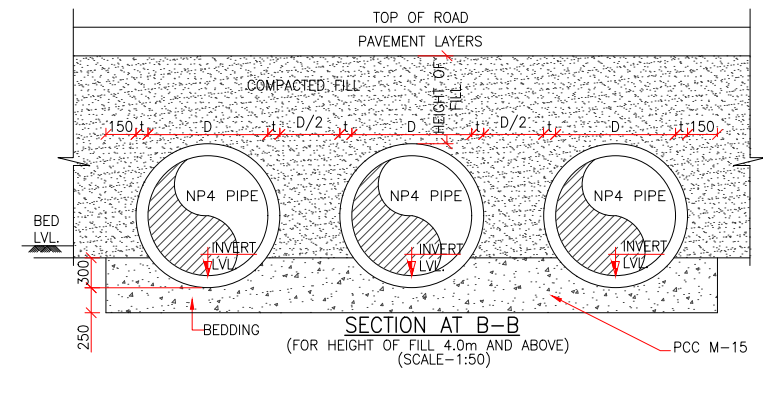
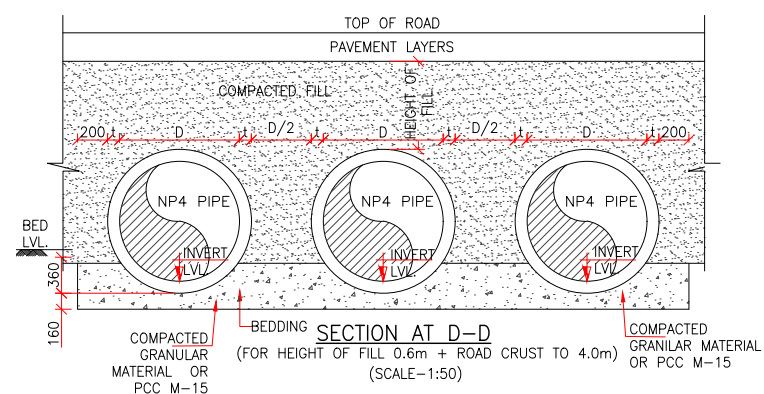
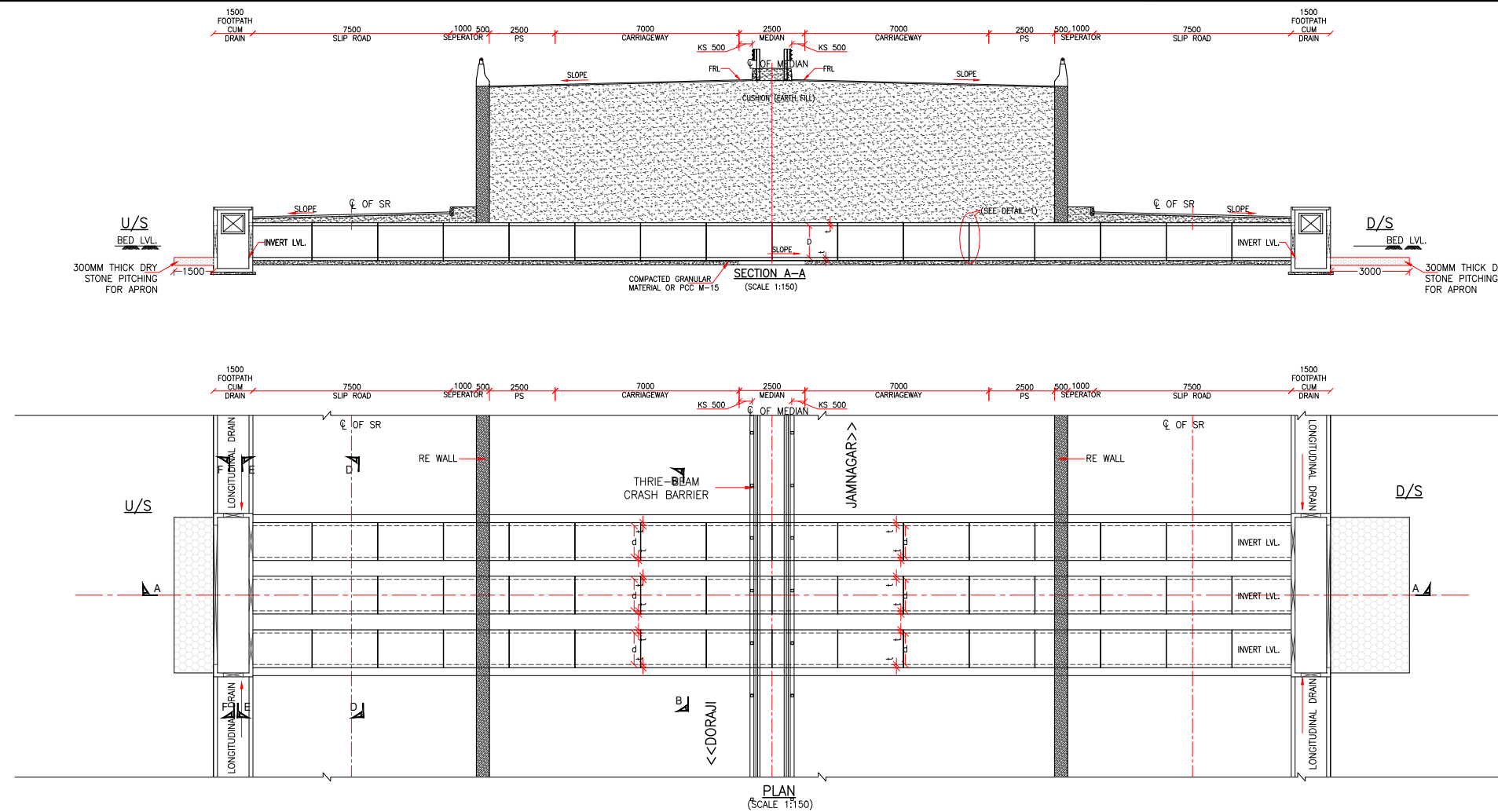


PROJECT:
CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.	<i>Asst. Eng.</i>
DRAWN	J.A.	<i>Asst. Eng.</i>
CHECKED	K.S.	<i>Asst. Eng.</i>
APPROVED	AKJ	<i>Asst. Eng.</i>

TITLE:
GENERAL ARRANGEMENT DRAWING FOR
NEW CONSTRUCTION AS SINGLE PIPE CULVERT (TCS-4A)
DRAWING NO: IAHE/CEG/D121/CUL/PIPE/NEW/SINGLE/GAD/03
SCALE: AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET 1 OF 1	



- NOTES:-**
- ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER.
 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
 - LOOSE/UNSUITABLE SOIL BELOW CULVERTS SHALL BE REPLACED WITH SUITABLE GRANULAR MATERIAL.
 - CHAINAGE / FORMATION LEVEL SHALL BE AS PER APPROVED PLAN & PROFILE DRAWING.
 - IN CASES WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE UNSUITABLE SOIL IS TO BE REPLACED BY GRANULAR MATERIAL, PROVIDE ADEQUATE CUT OFF WALLS AT ENDS OF CULVERT TO PREVENT SCOUR/EROSION.
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- LEGEND:-**
- LVL - LEVEL
 - FRL - FINISHED ROAD LEVEL
 - THK - THICK
 - U/S - UP STREAM
 - D/S - DOWN STREAM
 - P.S - PAVED SHOULDER
 - K.S - KERB SHYNESS
 - E.S - EARTHEN SHOULDER
 - D - DIAMETER OF PIPE
 - t - THICKNESS OF PIPE
 - L - LENGTH OF HEAD WALL

EXISTING DETAILS			PROPOSED FEATURES					Flow direction	CULVERT WIDTH			No. of pipes reqd (considering all single)		Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRL
Location as per toposurvey	Span Arrangement	Type of Structure	TCS	Proposal	Design Ch.	Proposed Span (Final)	Proposed Type		Total	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Centre
-	-	-	TCS-4A	NEW	4.880	3 x 1.20	Pipe	L-R	39.5	19.75	19.75	8	8	90.896	90.706	90.596	90.406	-2.50	2.50	96.819

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	DEC.-2016	FIRST SUBMISSION

OWNER:

भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-

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 Email: ceg@cegroupindia.com, URL: www.cegroupindia.com

PROJECT:

CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

DESIGNED	A.S.
DRAWN	J.A.
CHECKED	K.S.
APPROVED	AKJ

TITLE:

GENERAL ARRANGEMENT DRAWING FOR NEW CONSTRUCTION AS TRIPLE PIPE CULVERT (TCS-4A)

DRAWING NO: IAHE/CEG/D121/CUL/PIPE/NEW/TRIPLE/GAD/01

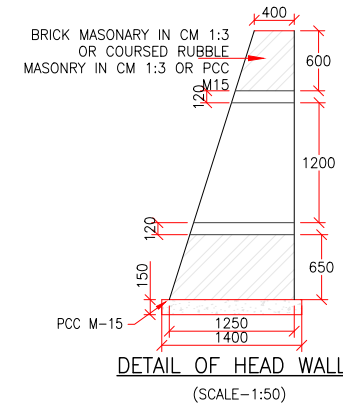
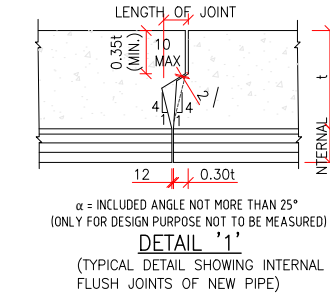
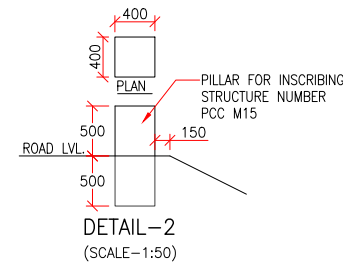
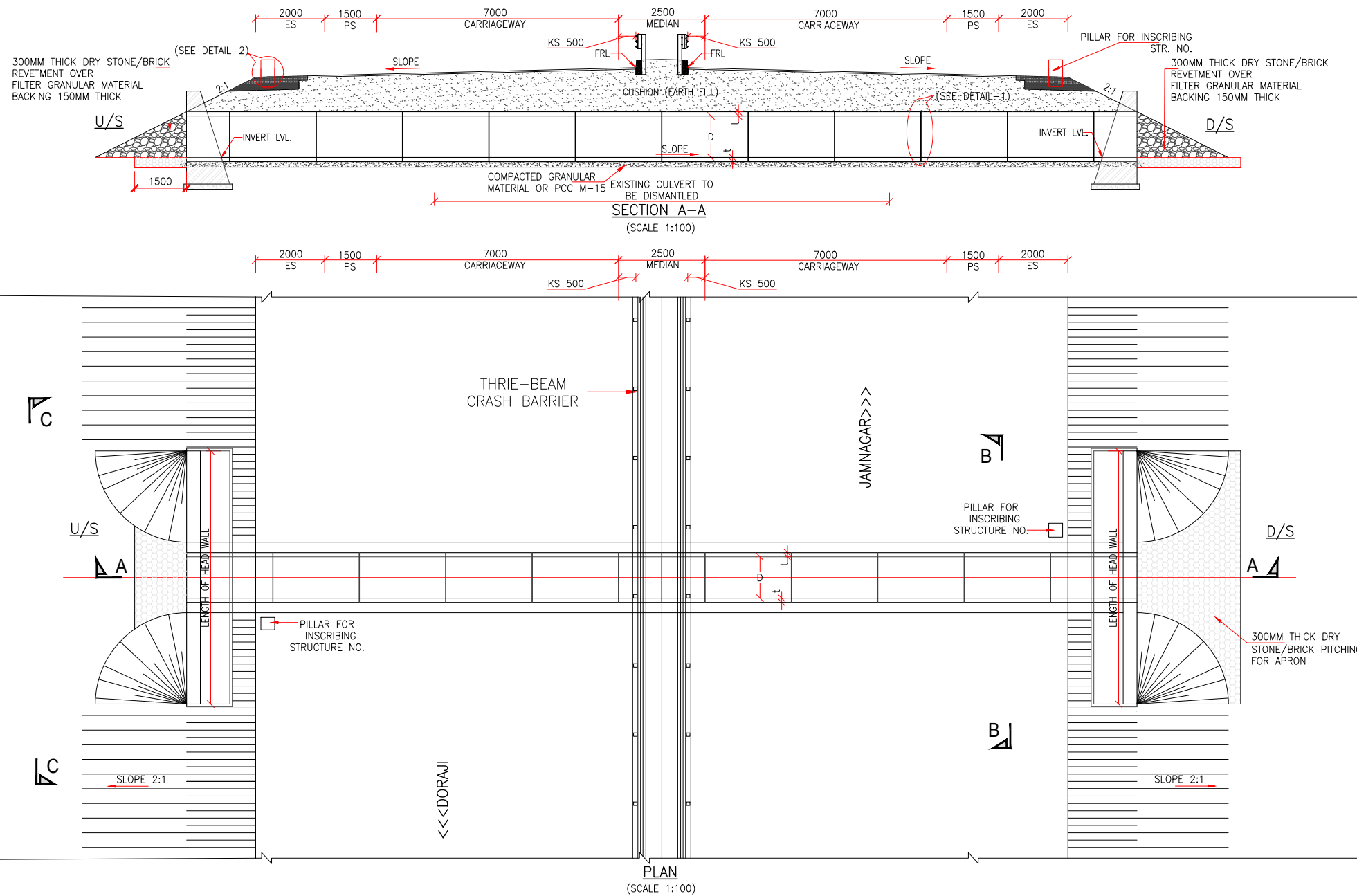
SCALE: AS SHOWN

REV: R2

SIZE: A3

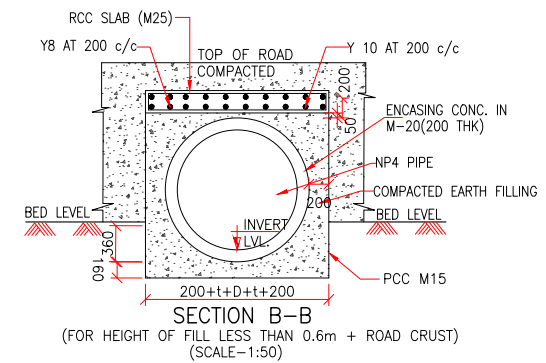
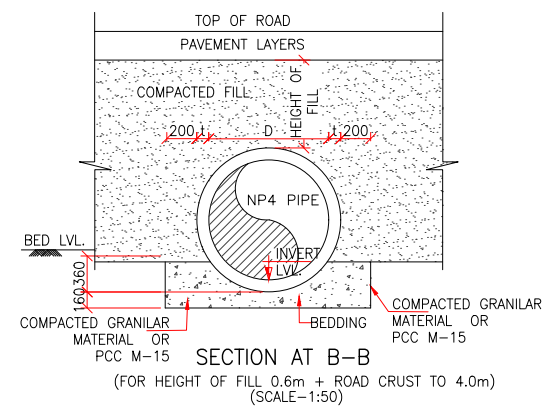
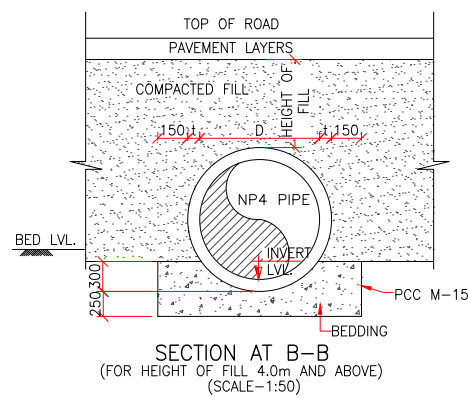
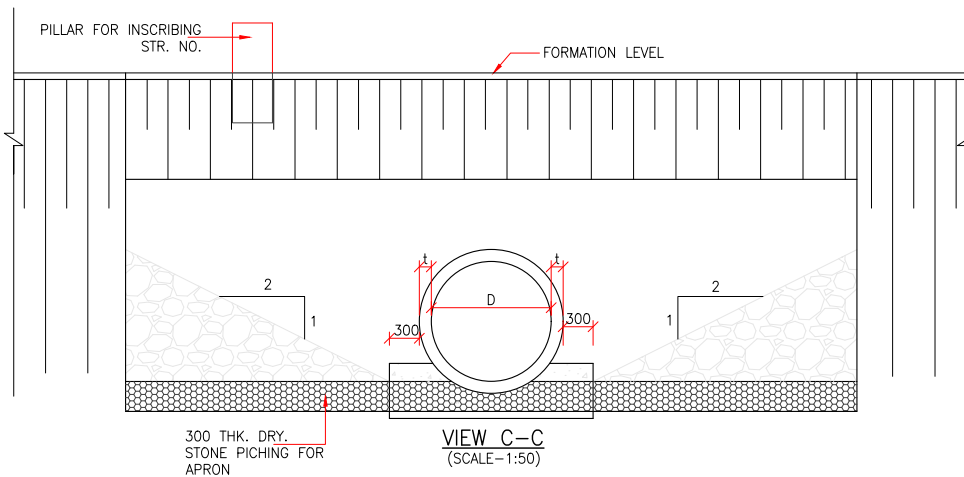
DATE: APR.-2025

SHEET 1 OF 1



- NOTES:-**
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- LEGEND:-**
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 - D - DIAMETER OF PIPE
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 - L - LENGTH OF HEAD WALL



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

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PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

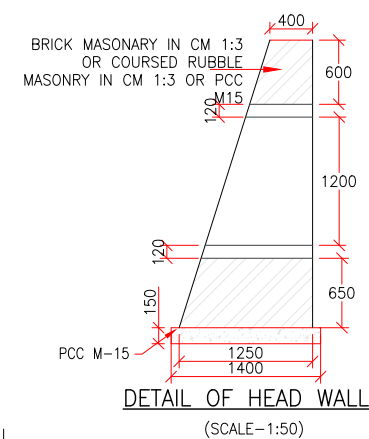
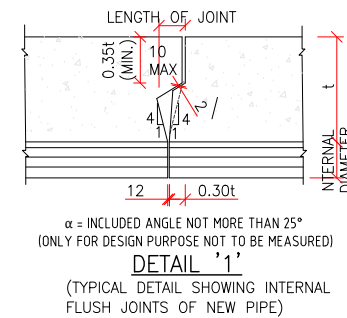
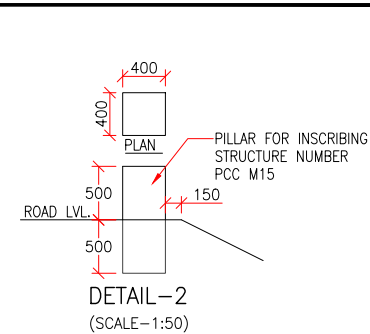
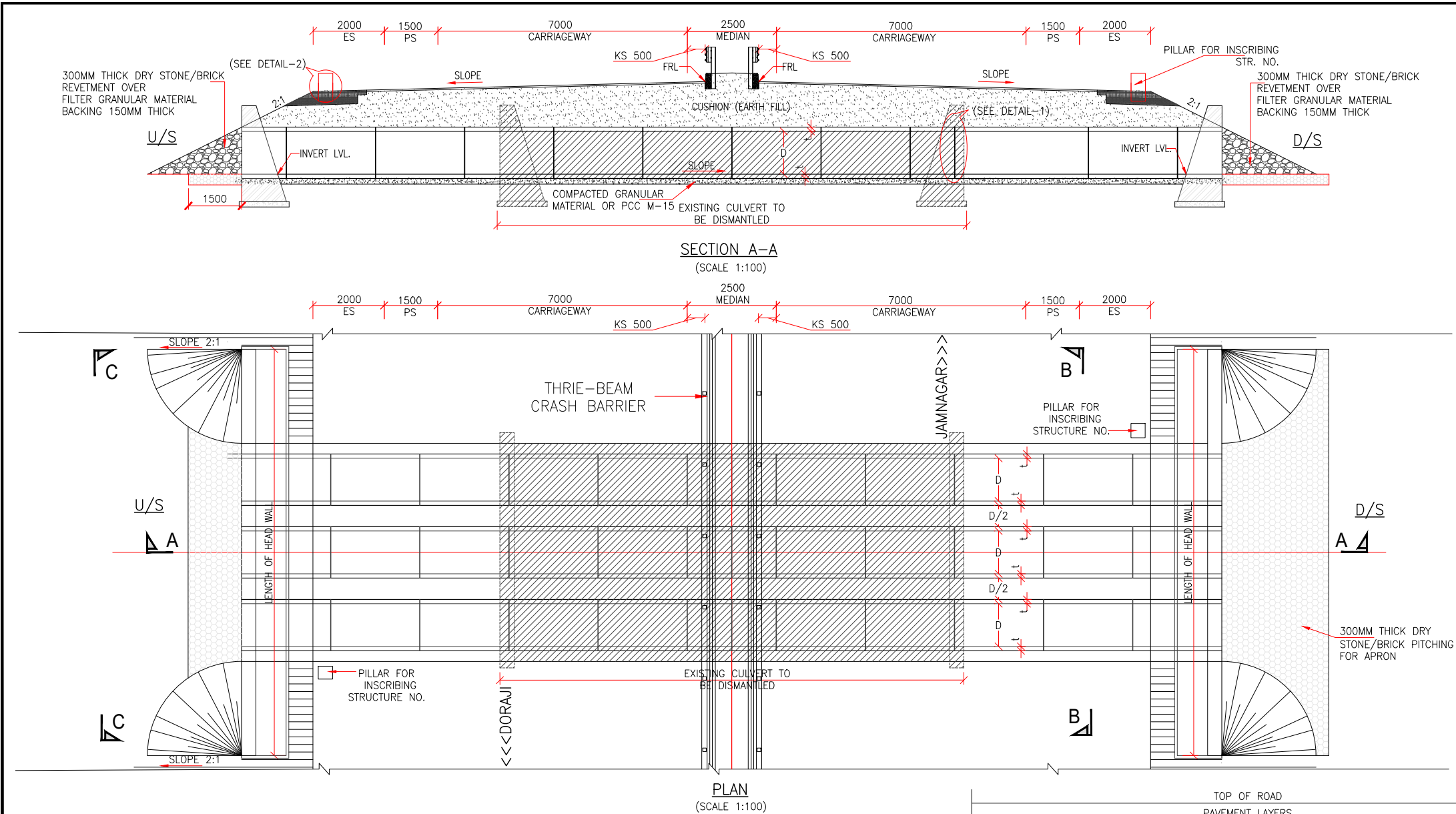
DESIGNED	A.S
DRAWN	R.P
CHECKED	K.S
APPROVED	AKJ

TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS SINGLE PIPE CULVERT (26 m WIDTH)
DRAWING NO: IAHE/CEG/D121/CUL/PIPE/REC/SINGLE/GAD/01
SCALE: AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET	1 OF 2

Existing Details				Proposal					Flow direction	Culvert Width			No. of pipes reqd (considering all single)		Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRL	
Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch.	Proposed Span (Final)	Proposed Type		Total	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right
36+340	1 x 1.20	Pipe	12	TCS-1	Rec	16.014	1 x 1.20	Pipe	L-R	26	13	13	6	6	82.769	82.988	82.469	82.688	4.444	-4.444	83.629	83.629
34+430	1 x 0.30	Pipe	17.8	TCS-1B	ReC	17.340	1 x 1.20	Pipe	L-R	26	13	13	6	6	86.072	85.470	85.772	85.170	0.693	-2.5	86.724	86.724
18+620	1 x 0.75	Pipe	8.3	TCS-1A	ReC	32.976	1 x 1.20	Pipe	L-R	26	13	13	6	6	48.833	49.925	48.533	49.625	-5.0	5.0	49.967	49.967
33+220	1 x 0.90	Pipe	11.5	TCS-1B	ReC	18.593	1 x 1.20	Pipe	L-R	26	13	13	6	6	86.059	85.891	85.759	85.544	-2.5	-2.5	86.905	86.905
30+625	1 x 0.90	Pipe	9.8	TCS-1B	ReC	21.170	1 x 1.20	Pipe	L-R	26	13	13	6	6	87.760	86.286	87.460	85.986	-2.5	-2.5	88.172	88.172
27+160	1 x 1.20	Pipe	9.7	TCS-1B	ReC	24.596	1 x 1.20	Pipe	L-R	26	13	13	6	6	74.002	72.747	73.702	72.447	-2.5	-2.5	74.895	74.895
27+005	1 x 0.90	Pipe	12.3	TCS-1B	ReC	24.751	1 x 1.20	Pipe	R-L	26	13	13	6	6	73.915	73.976	73.615	73.676	-2.5	-2.5	75.384	75.384
26+532	1 x 0.90	Pipe	12.4	TCS-1B to TCS-1	ReC	25.254	1 x 1.20	Pipe	L-R	26	13	13	6	6	80.675	79.742	80.375	79.442	4.345	-4.345	81.921	81.921
25+625	1 x 0.90	Pipe	12.4	TCS-1B	ReC	26.006	1 x 1.20	Pipe	R-L	26	13	13	6	6	77.031	77.186	76.731	76.886	-2.5	-2.5	78.940	79.281
24+340	1 x 1.20	Pipe	9.95	TCS-1B	ReC	27.300	1 x 1.20	Pipe	R-L	26	13	13	6	6	69.267	70.639	68.967	70.339	-2.5	-2.5	72.291	72.291
22+650	1 x 0.90	Pipe	9.7	TCS-1B	ReC	28.999	1 x 1.20	Pipe	R-L	26	13	13	6	6	62.264	63.347	61.964	63.047	1.028	-2.5	64.048	64.048
17+450	1 x 0.90	Pipe	9.30	TCS-1	ReC	34.147	1 x 1.20	Pipe	L-R	26	13	13	6	6	47.978	46.141	47.678	45.841	-5	5	48.698	48.698
17+325	1 x 0.90	Pipe	8.6	TCS-1B	ReC	34.264	1 x 1.20	Pipe	L-R	26	13	13	6	6	52.479	50.161	52.179	49.861	-2.683	2.683	52.089	52.089
16+140	1 x 0.90	Pipe	9.7	TCS-1 to TCS-1C	ReC	35.411	1 x 1.20	Pipe	L-R	26	13	13	6	6	55.835	55.399	55.535	55.099	5	-5	57.542	57.542
6+915	1 x 0.90	Pipe	9.9	TCS-1A	ReC	44.381	1 x 1.20	Pipe	R-L	26	13	13	6	6	21.263	21.388	20.963	21.088	5.0	-5.0	22.629	22.629

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS,GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JALPUR- 302017 (Rajasthan) INDIA Tel : +91 141 2751801/ 802803804, Fax : 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA,KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S		TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS SINGLE PIPE CULVERT (26 m WIDTH)	REV:	R2		
R2	APR.-2025	WIDENING TO RECONSTRUCTION				DRAWN	R.P			SIZE:	A3		
R1	OCT.-2017	FINAL DPR SUBMISSION				CHECKED	K.S			DRAWING NO:	IAHE/CEG/D121/CUL/PIPE/REC/SINGLE/GAD/01	DATE:	APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	AKJ			SCALE:	AS SHOWN	SHEET 2 OF 2	
REV	DATE	DESCRIPTION OF REVISIONS											

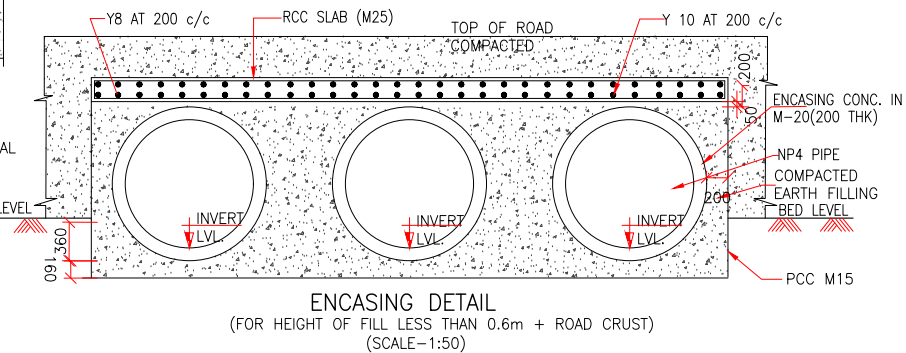
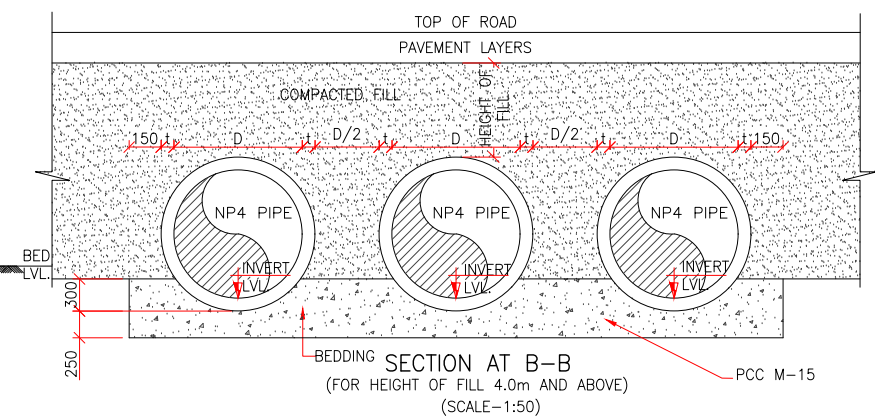
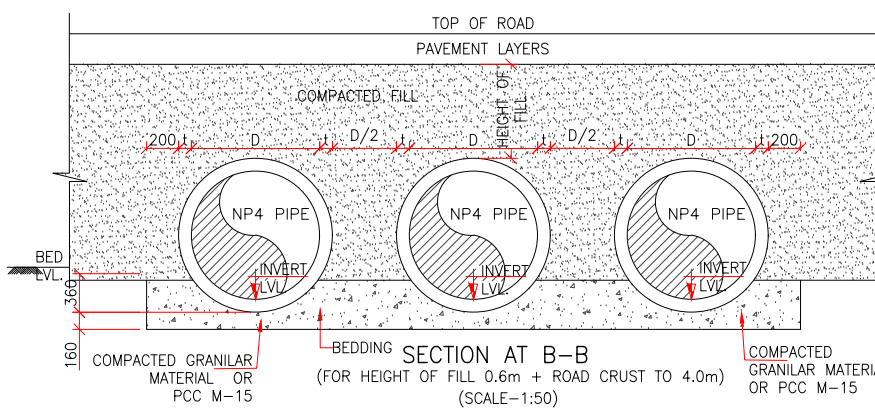
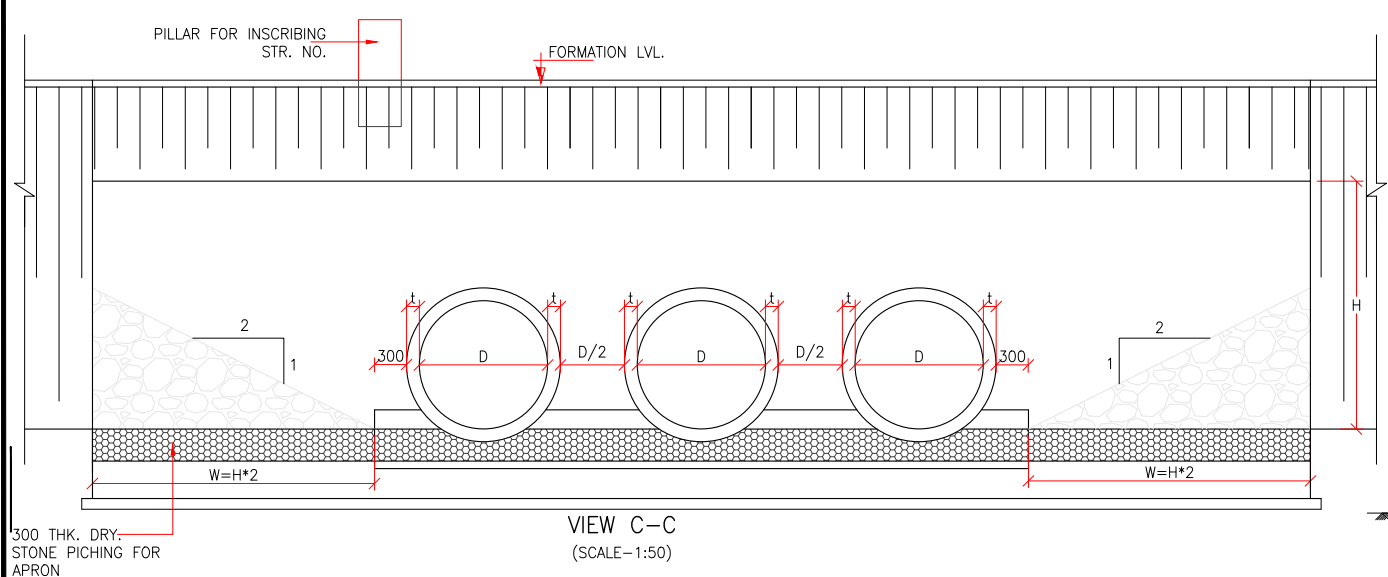


NOTES:-

- ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
- LOOSE/UNSUITABLE SOIL BELOW CULVERTS SHALL BE REPLACED WITH SUITABLE GRANULAR MATERIAL.
- CHAINAGE / FORMATION LEVEL SHALL BE AS PER APPROVED PLAN & PROFILE DRAWING.
- IN CASES WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE UNSUITABLE SOIL IS TO BE REPLACED BY GRANULAR MATERIAL, PROVIDE ADEQUATE CUT OFF WALLS AT ENDS OF CULVERT TO PREVENT SCOUR/EROSION.
- THE JOINTING SPACE SHALL BE FILLED AS PER IS 458:2003.
- CLASS NP4 PIPE SHALL BE USED AS PER IS 458: 2003.
- EXTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER UPTO 700MM & INTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER OF PIPE ABOVE 700 MM AS PER IS 458:2003.
- STANDARD LENGTH OF PIPE IS CONSIDERED AS 2.5m. THE LENGTH OF PIPE HAS BEEN ROUNDED UP TO 0.5 TIMES OF STANDARD LENGTH OF PIPE ON EITHER SIDE OF PROPOSED CENTER LINE.
- MINIMUM DEPTH OF CUSHION OVER PIPE (INCLUDING ROAD CRUST) SHALL NOT BE LESS THAN 600mm FOR NEW/RECONSTRUCTION. INCASE CUSHION IS LESS THAN 600mm ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING.
- IF CUSHION IS MORE THAN 4.00 M THE THICKNESS OF BEDDING UNDER PIPE CULVERTS SHALL CONFORM TO PLATE-23 OF IRC: SP:13-2004.
- FOR CULVERTS SKEW TO THE TRAFFIC DIRECTION LENGTH OF CULVERT SHALL BE ADJUSTED AS PER SITE CONDITION.
- THE JOINTING SPACE SHALL BE FILLED WITH CEMENT MORTAR (1 CEMENT TO 2 SAND) MIXED SUFFICIENTLY.
- SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S.
- SPACING BETWEEN PIPES SHALL BE AS SHOWN FOR RECONSTRUCTION/NEW CONSTRUCTION & FOR WIDENING CASE SPACING SHALL BE ADJUSTED AS PER SITE CONDITION.

LEGEND:-

LVL.	- LEVEL
FRL.	- FINISHED ROAD LEVEL
THK.	- THICK
U/S	- UP STREAM
D/S	- DOWN STREAM
P.S.	- PAVED SHOULDER
K.S.	- KERB SHYNESS
E.S.	- EARTHEN SHOULDER
D	- DIAMETER OF PIPE
t	- THICKNESS OF PIPE
L	- LENGTH OF HEAD WALL



REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
CONSULTING ENGINEERS GROUP LTD
An ISO 9001:2008 Company
CEG Tower, B11(G), Malviya Industrial Area, JAIPUR-362017 (Rajasthan) INDIA
Tel: +91 141 2751801/802803804, Fax: 2751806
Email: ceg@cegindia.com, URL: www.cegindia.com

PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

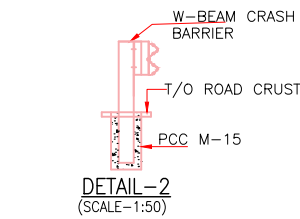
DESIGNED	A.S.	<i>Asis</i>
DRAWN	R.P.	<i>Ramman</i>
CHECKED	K.S.	<i>Sharma</i>
APPROVED	AKJ	<i>AKJ</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS TRIPLE PIPE CULVERT (26 m WIDTH)
DRAWING NO:	IAHE/CEG/D121/CUL/PIPE/REC/TRIPLE/GAD/01
SCALE:	AS SHOWN

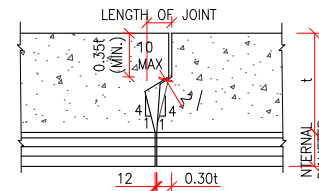
REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET	1 OF 2

EXISTING DETAIL					PROPOSAL																		
S. No.	Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch._	Proposed Span (Final)	Proposed Type	Culvert Width			No. of pipes reqd (considering all single)		Flow Dir	Bed Level		Invert Level		Camber/ Super elevation		FRL	
										Total	Left	Right	Left	Right		Left	Right	Left	Right	Left	Right	Left	Right
1	33+316	1 x 0.90	Pipe	24.5	TCS-1B	ReC	18.486	3 x 1.20	Pipe	26	13	13	6	6	L-R	87.559	87.426	87.259	87.126	-2.5	-2.5	87.205	87.205
2	22+460	3 x 0.90	Pipe	9.7	TCS-1B	ReC	29.191	3 x 1.20	Pipe	26	13	13	6	6	R-L	59.883	60.481	59.583	60.181	-0.451	-2.5	62.770	62.770
3	14+950	3 x 0.90	Pipe	9.1	TCS-1C	ReC	36.603	3 x 1.20	Pipe	26	13	13	6	6	R-L	44.899	45.780	44.599	45.480	-2.5	-2.5	47.552	47.552

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS,GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  C O N S U L T I N G ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11(G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA Tel.: +91 141 2751801/ 802803/804, Fax: 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA,KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO – NH/IAHE/18)	DESIGNED	A.S		TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS TRIPLE PIPE CULVERT (26 m WIDTH)	REV:	R2
R2	APR.-2025	WIDENING TO RECONSTRUCTION				DRAWN	R.P			SIZE:	A3
R1	OCT.-2017	FINAL DPR SUBMISSION				CHECKED	K.S		DRAWING NO: IAHE/CEG/D121/CUL/PIPE/REC/TRIPLE/GAD/01	DATE:	APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	AKJ			SCALE:	AS SHOWN
REV	DATE	DESCRIPTION OF REVISIONS				SHEET 2 OF 2					

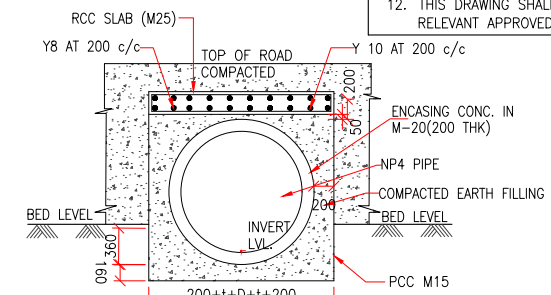


DETAIL-2
(SCALE-1:50)

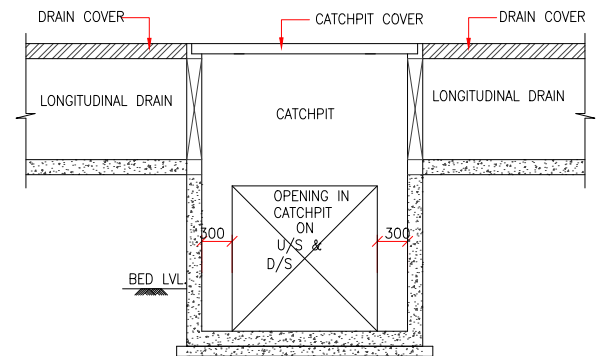


α = INCLUDED ANGLE NOT MORE THAN 25°
(ONLY FOR DESIGN PURPOSE NOT TO BE MEASURED)

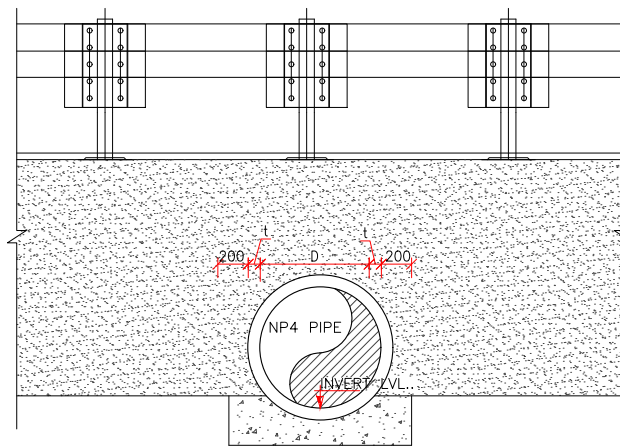
DETAIL '1'
(TYPICAL DETAIL SHOWING INTERNAL
FLUSH JOINTS OF NEW PIPE)



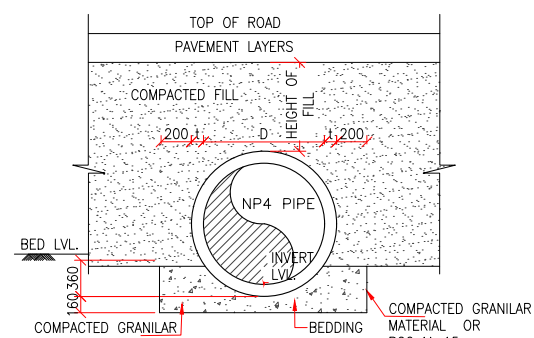
ENCASING DETAIL
(FOR HEIGHT OF FILL LESS THAN 0.6m + ROAD CRUST)
(SCALE-1:50)



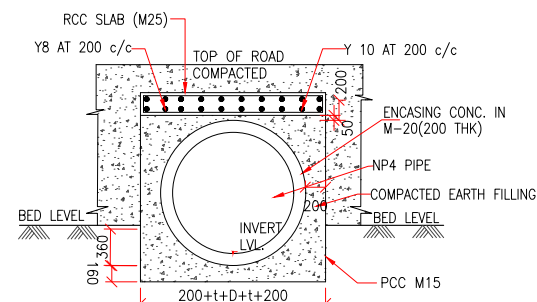
SECTION D-D
(SCALE 1:50)



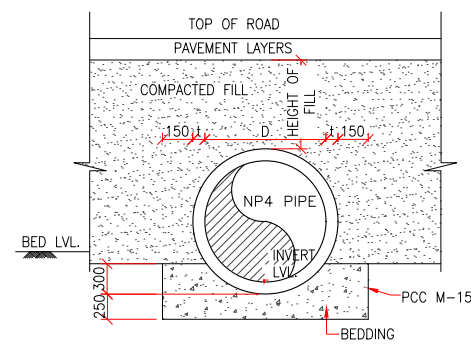
SECTION C-C
(SCALE-1:50)



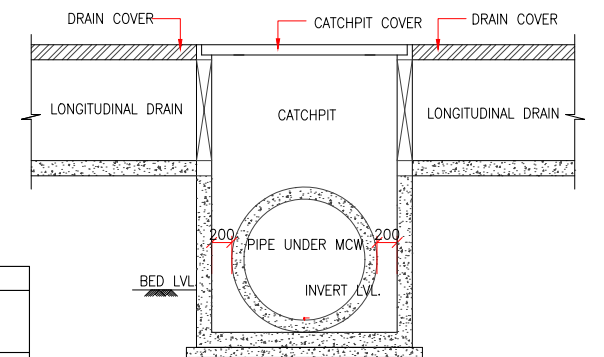
MATERIAL OR PCC M-15 SECTION AT B-B
(FOR HEIGHT OF FILL 0.6m + ROAD CRUST TO 4.0m)
(SCALE-1:50)



ENCASING DETAIL
(FOR HEIGHT OF FILL LESS THAN 0.6m + ROAD CRUST)
(SCALE-1:50)



SECTION AT B-B
(FOR HEIGHT OF FILL 4.0m AND ABOVE)
(SCALE-1:50)



SECTION E-E
(SCALE 1:50)

R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

DESIGN CONSULTANT:-



C O N S U L T I N G
E N G I N E E R S G R O U P L T D

An ISO 9001 : 2008 Company

CEG Tower, B11(G), Malviya Industrial Area,
JAIPUR - 302017 (Rajasthan) INDIA
Tel : +91 141 2751801/802/803/804, Fax : 2751806
Email: ceg@cecindia.com, URL: www.cecindia.com

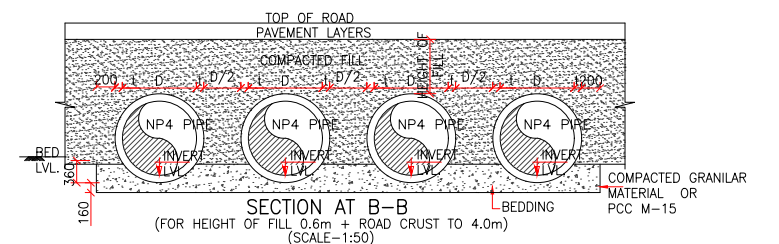
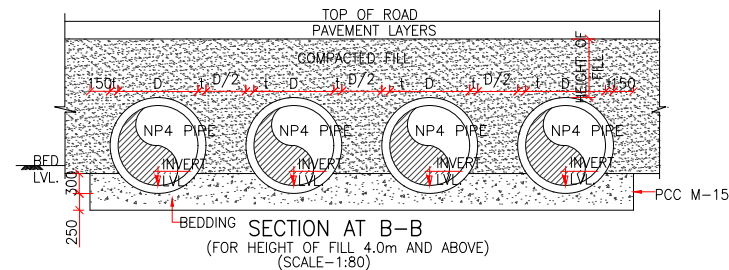
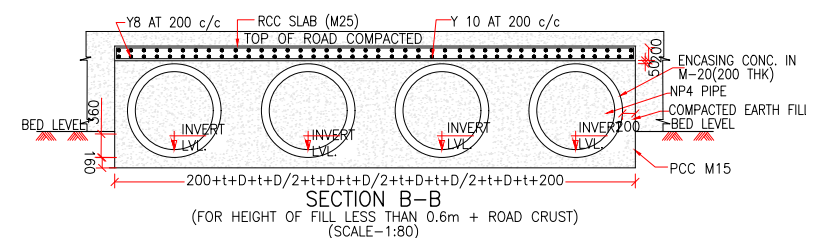
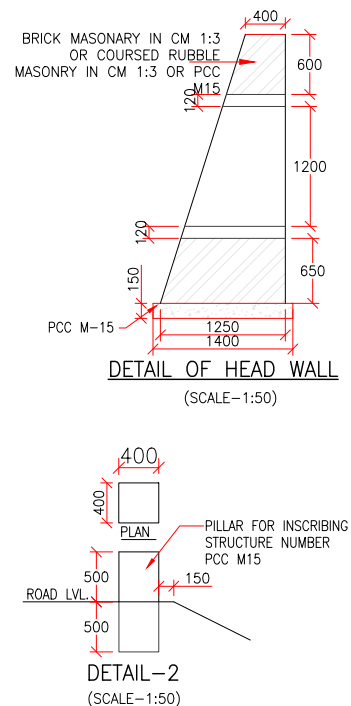
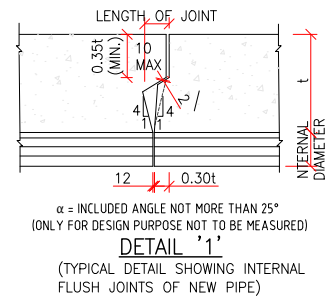
DESIGNED	A.S	<i>Anshu Shah</i>
DRAWN	R.P	<i>Ramratan</i>
CHECKED	K.S	<i>Khanna</i>
APPROVED	AKJ	<i>AKJ</i>

SCALE:	AS SHOWN
--------	----------

SHEET 1 OF 1

EXISTING DETAIL					PROPOSAL																		
S. No.	Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch._	Proposed Span (Final)	Proposed Type	Culvert Width			No. of pipes reqd (considering all single)		Flow Dir	Bed Level		Invert Level		Camber/ Super elevation		FRL	
										Total	Left	Right	Left	Right		Left	Right	Left	Right	Left	Right	Left	Right
1	33+300	2 x 0.75	Pipe	11.5	TCS-1B	ReC	18.503	2 x 1.20	Pipe	26	13	13	6	6	R-L	86.562	86.694	86.262	86.394	-2.5	-2.5	87.184	87.184
2	31+910	2 x 0.60	Pipe	7.1	TCS-1C	ReC	19.889	2 x 1.20	Pipe	26	13	13	6	6	R-L	89.419	92.171	89.119	91.871	-2.5	-2.5	91.335	91.335
3	31+085	2 x 0.75	Pipe	6.8	TCS-1B	ReC	20.703	2 x 1.20	Pipe	26	13	13	6	6	R-L	93.642	94.131	93.342	93.831	-5.0	-5.0	94.958	94.958
4	30+915	2 x 0.75	Pipe	6.45	TCS-1B	ReC	20.872	2 x 1.20	Pipe	26	13	13	6	6	R-L	91.713	91.763	91.413	91.463	-2.5	-2.5	93.127	93.127
5	19+510	1x0.9+1x0.6	Pipe	12.4	TCS-1B	ReC	32.075	2 x 1.20	Pipe	26	13	13	6	6	L-R	52.913	53.898	52.613	53.598	-2.5	-2.5	54.523	54.523
6	30+180	2 x 0.90	Pipe	10.1	TCS-1B	ReC	21.605	2 x 1.20	Pipe	26	13	13	6	6	L-R	80.376	78.727	80.076	78.427	-2.5	-2.5	80.977	80.977
7	24+995	2 x 0.90	Pipe	11.9	TCS-1B	ReC	26.640	2 x 1.20	Pipe	26	13	13	6	6	R-L	70.356	71.303	70.056	71.003	-2.5	-2.5	72.798	72.798
8	24+160	2 x 1.20	Pipe	9.5	TCS-1B	ReC	27.481	2 x 1.20	Pipe	26	13	13	6	6	R-L	68.856	70.558	68.556	70.258	-2.5	-2.5	71.957	71.957
9	23+510	2 x 0.90	Pipe	9.7	TCS-1B	ReC	28.124	2 x 1.20	Pipe	26	13	13	6	6	R-L	64.628	66.330	64.328	66.030	-2.5	-2.5	67.309	67.309
10	21+220	2 x 0.90	Pipe	17	TCS-1E	ReC	30.417	2 x 1.20	Pipe	26	13	13	6	6	R-L	55.546	56.567	55.246	56.267	1.311	0.394	61.609	61.609
11	18+085	2 x 0.90	Pipe	12.9	TCS-1E	ReC	33.501	2 x 1.20	Pipe	26	13	13	6	6	R-L	39.724	41.096	39.424	40.796	-3.579	3.579	42.787	42.787
12	15+900	2 x 0.90	Pipe	9.7	TCS-1C	ReC	35.660	2 x 1.20	Pipe	26	13	13	6	6	L-R	55.096	53.721	54.796	53.421	-2.5	-2.5	55.542	55.542
13	7+145	2 x 0.90	Pipe	10.56	TCS-1C	ReC	44.148	2 x 1.20	Pipe	26	13	13	6	6	R-L	21.888	22.197	21.588	21.897	-2.5	-2.5	23.104	23.104

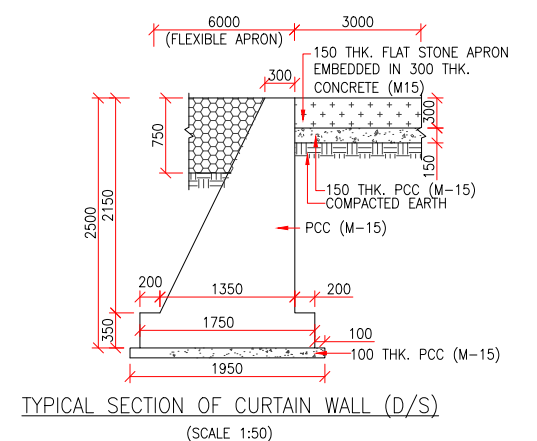
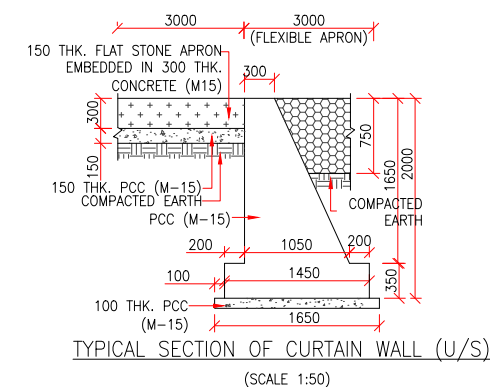
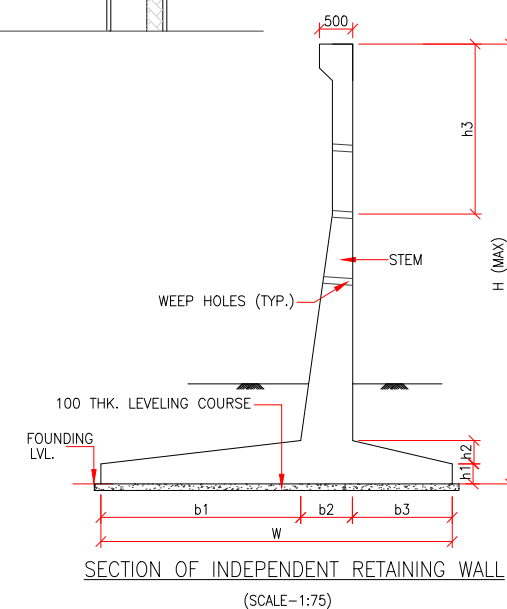
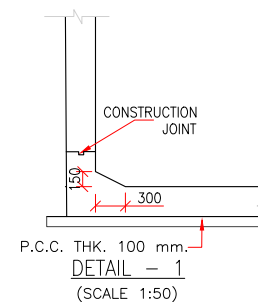
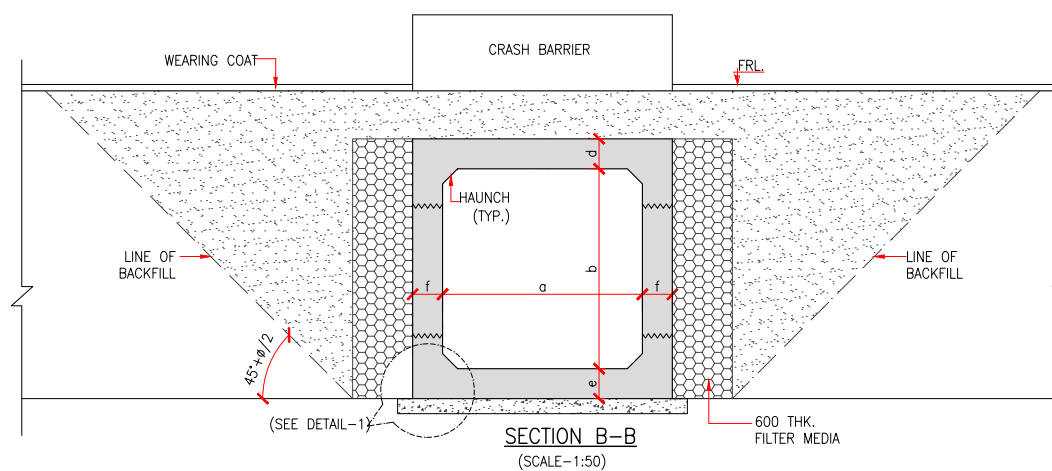
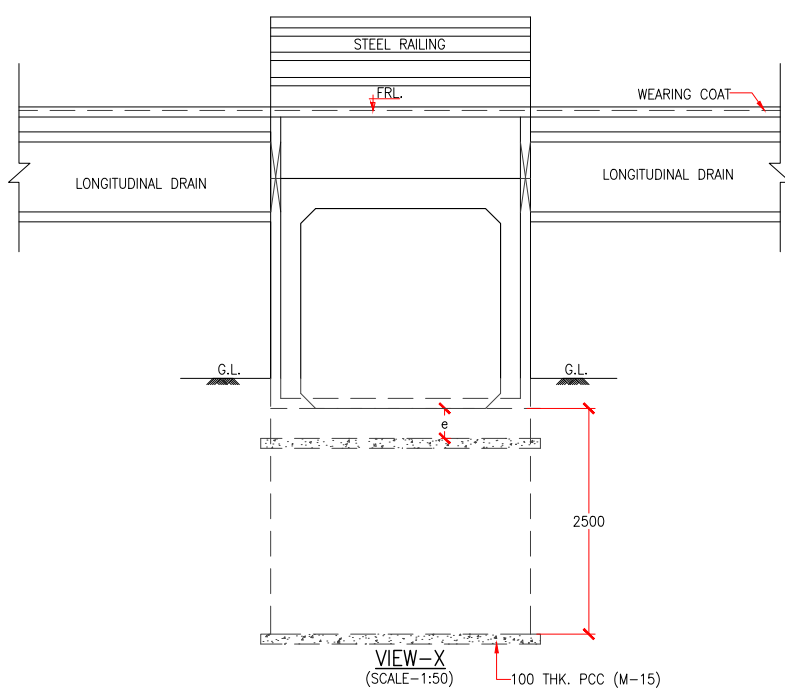
			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी <u>Indian Academy of Highway Engineers</u> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS,GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  CONSULTING ENGINEERS GROUP LTD An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JAIPUR- 302017 (Rajasthan) INDIA Tel : +91 141 2751801/ 802803804, Fax : 2751806 Email: ceg@cegindia.com, URL: www.cegindia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA,KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED	A.S		TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS DOUBLE PIPE CULVERT (26 m WIDTH)	REV: R2
R2	APR.-2025	WIDENING TO RECONSTRUCTION				DRAWN	R.P			SIZE: A3
R1	OCT.-2017	FINAL DPR SUBMISSION				CHECKED	K.S		DRAWING NO: IAHE/CEG/D121/CUL/PIPE/REC/DOUBLE/GAD/01	DATE: APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED	AKJ			SCALE: AS SHOWN
REV	DATE	DESCRIPTION OF REVISIONS								SHEET 2 OF 2



- NOTES:-**
1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER.
 2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
 3. LOOSE/UNSUITABLE SOIL BELOW CULVERTS SHALL BE REPLACED WITH SUITABLE GRANULAR MATERIAL.
 4. CHAINAGE / FORMATION LEVEL SHALL BE AS PER APPROVED PLAN & PROFILE DRAWING.
 5. IN CASES WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE UNSUITABLE SOIL IS TO BE REPLACED BY GRANULAR MATERIAL, PROVIDE ADEQUATE CUT OFF WALLS AT ENDS OF CULVERT TO PREVENT SCOUR/EROSION.
 6. THE JOINTING SPACE SHALL BE FILLED AS PER IS 458:2003.
 7. CLASS NP4 PIPE SHALL BE USED AS PER IS 458: 2003.
 8. EXTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER UPTO 700MM & INTERNAL FLUSH JOINT SHALL BE PROVIDED FOR DIAMETER OF PIPE ABOVE 700 MM AS PER IS 458:2003.
 9. STANDARD LENGTH OF PIPE IS CONSIDERED AS 2.5m. THE LENGTH OF PIPE HAS BEEN ROUNDED UP TO 0.5 TIMES OF STANDARD LENGTH OF PIPE ON EITHER SIDE OF PROPOSED CENTER LINE.
 10. MINIMUM DEPTH OF CUSHION OVER PIPE (INCLUDING ROAD CRUST) SHALL NOT BE LESS THAN 600mm FOR NEW/RECONSTRUCTION. INCASE CUSHION IS LESS THAN 600mm ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING.
 11. IF CUSHION IS MORE THAN 4.00 M THE THICKNESS OF BEDDING UNDER PIPE CULVERTS SHALL CONFORM TO PLATE-23 OF IRC: SP:13-2004.
 12. FOR CULVERTS SKEW TO THE TRAFFIC DIRECTION LENGTH OF CULVERT SHALL BE ADJUSTED AS PER SITE CONDITION.
 13. THE JOINTING SPACE SHALL BE FILLED WITH CEMENT MORTAR (1 CEMENT TO 2 SAND) MIXED SUFFICIENTLY.
 14. SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S.
 15. SPACING BETWEEN PIPES SHALL BE AS SHOWN FOR RECONSTRUCTION/NEW CONSTRUCTION & FOR WIDENING CASE SPACING SHALL BE ADJUSTED AS PER SITE CONDITION.
- LEGEND:-**
- | | |
|------|-----------------------|
| LVL. | - LEVEL |
| FRL. | - FINISHED ROAD LEVEL |
| THK. | - THICK |
| U/S | - UP STREAM |
| D/S | - DOWN STREAM |
| P.S. | - PAVED SHOULDER |
| K.S. | - KERB SHYNESS |
| E.S. | - EARTHEN SHOULDER |
| D | - DIAMETER OF PIPE |
| t | - THICKNESS OF PIPE |
| L | - LENGTH OF HEAD WALL |

			OWNER:  भारतीय राजमार्ग अभियन्ता अकादमी <u>Indian Academy of Highway Engineers</u> सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:-  C O N S U L T I N G E N G I N E E R S G R O U P L T D AN ISO 9001:2008 Company CEG Tower, B11(G), Malviya Industrial Area, J A P O U R - 3 0 2 0 1 7 (Rajasthan) IN-DIA Tel.:- +91 141 2751801/ 802 363 804, Fax:- 2751806 Email: ceg@ceginodia.com, URL: www.ceginodia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED A.S 	TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION AS FOUR PIPE CULVERT (26 m WIDTH)	REV: R2
R2	APR.-2025	WIDENING TO RECONSTRUCTION				DRAWN R.P 		SIZE: A3
R1	OCT.-2017	FINAL DPR SUBMISSION				CHECKED K.S 	DRAWING NO: IAHE/CEG/D121/CUL/PIPE/REC/FOUR/GAD/01	DATE: APR.-2025
R0	JUNE-2017	FIRST SUBMISSION				APPROVED AKJ 	SCALE: AS SHOWN	SHEET 1 OF 2
REV	DATE	DESCRIPTION OF REVISIONS						

EXISTING DETAIL					PROPOSAL																		
S.No.	Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch.---	Proposed Span (Final)	Proposed Type	Culvert WIDTH			No. of pipes reqd (considering all single)		Flow Dir	Bed Level (GAD)		Invert Level (GAD)		Camber/ Super elevation		FRL	
										Total	Left	Right	Left	Right		Left	Right	Left	Right	Left	Right	Left	Right
1	25+320	4 x 0.75	Pipe	9.7	TCS-1B	ReC	26.319	4 x 1.20	Pipe	26	13	13	6	6	R-L	72.745	73.698	72.445	73.398	-2.5	0.703	75.113	75.113
2	24+890	4 x 1.20	Pipe	9.8	TCS-1B	ReC	26.753	4 x 1.20	Pipe	26	13	13	6	6	R-L	69.084	69.968	68.784	69.668	-2.5	-2.5	72.111	72.111
3	24+630	4 x 1.20	Pipe	9.5	TCS-1B	ReC	27.006	4 x 1.20	Pipe	26	13	13	6	6	R-L	67.573	68.663	67.273	68.363	-2.5	-2.5	70.423	70.423



1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. GRADE OF CONCRETE SHALL BE AS BELOW:

APPROACH SLAB	—	M-30
CRASH BARRIER	—	M-40
RCC BOX	—	M-30
PCC	—	M-15
RCC RETAINING WALL	—	M-30
4. DESIGN CRITERIA :
 - I. THE DESIGN IS ACCORDING TO THE LATEST IRC CODES:
 - II. THE BOX DESIGN FOR ONE LANE OF IRC CLASS 70R +CLASS-A OR THREE LANES OF IRC CLASS A LOADING WHICHEVER GOVERNS.
5. 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT BACK SIDE OF ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
6. MINIMUM CLEAR COVER TO TOP SLAB & INNER WEBS SHALL BE 50mm AND CLEAR COVER TO BOTTOM SLAB AND OUTER WEBS SHALL BE 75mm FOR RCC BOX.
7. ALL H.Y.S.D. BARS SHALL CONFORM TO IS:1786 GRADE Fe 500.
8. 100 DIA WEEP HOLES TO BE PROVIDED 1000C/C BOTH HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER IN ABUTMENT/RETAINING WALL/SIDE WALLS OF RCC BOX.
9. 10mm EXPANSION GAP FILLED WITH COMPRESSIBLE FIBER BOARD SHALL BE PROVIDED BETWEEN RETAINING WALL & RCC BOX.
10. BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX :6 OF IRC:78-2000 HAVING PROPERTIES $C=0, \phi=30^{\circ}, \gamma=20^{\circ}$ & $\gamma_d = 18 \text{ KN/M}^3$.
11. FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
12. THE DESIGN BEARING PRESSURE AT FOUNDING LEVEL SHALL NOT BE LESS THAN $10t/\text{m}^2$.
13. CURTAIN WALL/ FLEXIBLE APRON SHALL BE PROVIDED ONLY IN SOIL STRATA AND WHERE STRATA IS ROCKY IT IS NOT REQUIRED.
14. SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S
15. WC/BC SHALL BE LAID OVER THE TOP AS PER HIGHWAY DRAWING.
16. FLEXIBLE APRON HAS BEEN INDICATED AS PER GUIDELINES OF IRC:SP-13 HOWEVER, THE LENGTH OF FLEXIBLE APRON SHALL BE AS PER SITE CONDITIONS.

1. DETAIL OF U-TYPE RETURN WALL
IAHE/CEG/D121/U-TYPE
2. DETAIL OF RETAINER
IAHE/CEG/D121/MISC/TYPE

EJ - EXPANSION JOINT
LVL - LEVEL
FRL - FINISHED ROAD LEVEL
THK - THICK
U/S - UP STREAM
D/S - DOWN STREAM
W.C. - WEARING COAT
G.L. - GROUND LEVEL

R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE-2017	FIRST SUBMISSION
REV	DATE	DESCRIPTION OF REVISIONS

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
 Indian Academy of Highway Engineers
 सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
 MINISTRY OF ROAD TRANSPORT AND
 HIGHWAYS GOVERNMENT OF INDIA

DESIGN CONSULTANT:-

C O N S U L T I N G
ENGINEERS GROUP LTD

An ISO 9001: 2008 Company

CEG Tower, B11(G), Malviya Industrial Area,
 JAIPUR- 302017 (Rajasthan) INDIA
 Tel: +91 141 2751801/ 802/803/804, Fax: 2751806
 Email: ceg@cegidia.com, URL: www.cegidia.com

PROJECT:
CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-
INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR
UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI-
JAMKANDORNA,KALAVAD JAMNAGAR SECTION OF NH-927D IN
THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED
SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)

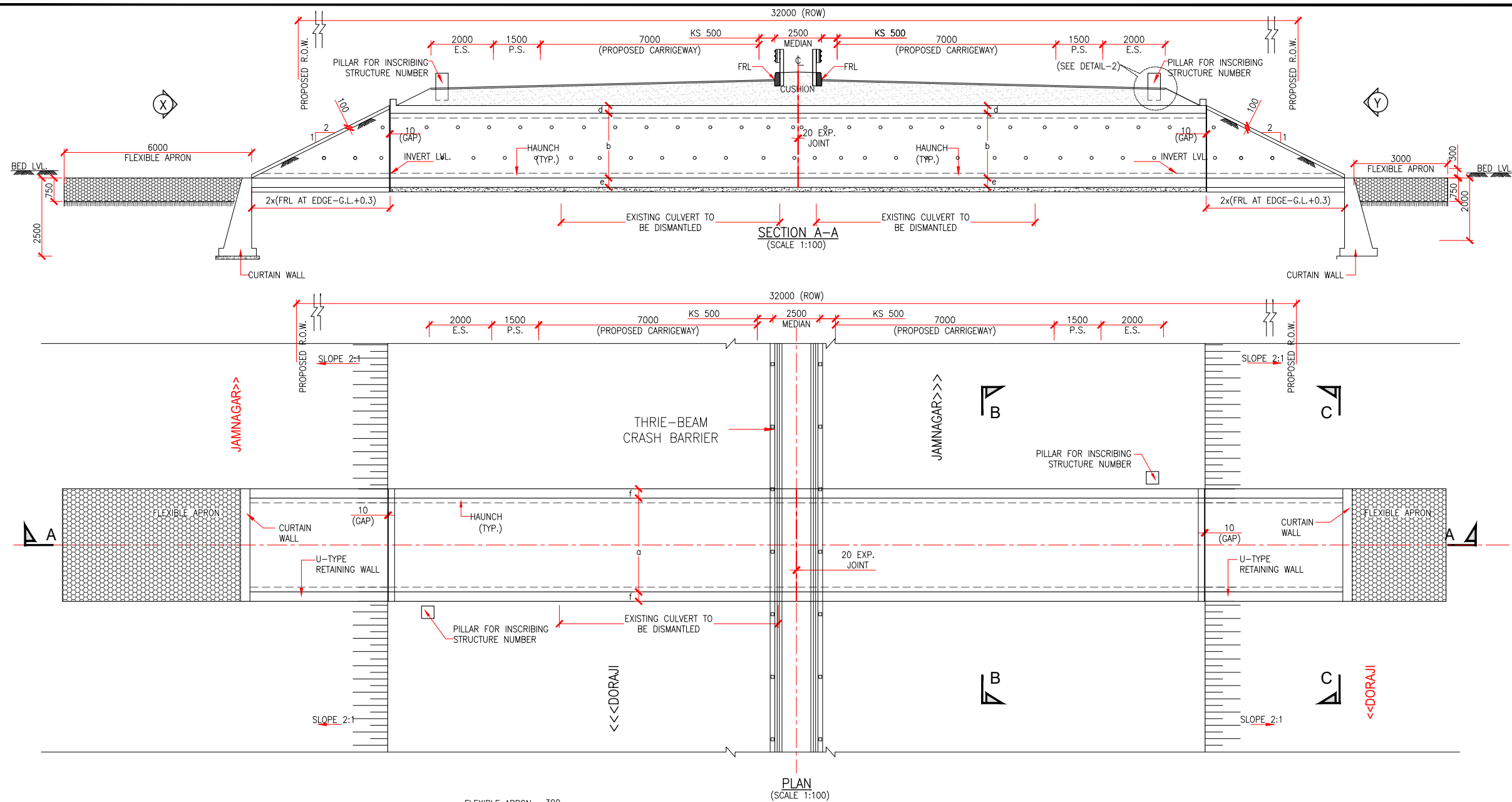
DESIGNED	A.S	<i>Amir Shari</i>
DRAWN	R.P	<i>Ramadhan</i>
CHECKED	K.S	<i>Shanna</i>
APPROVED	AKJ	<i>dar</i>

TITLE:	GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION OF SINGLE SPAN SLAB CULVERT (39.5 M WIDTH)
DRAWING NO:	IAHE/CEG/D121/CUL/SLAB/REC/GAD/02
SCALE:	AS SHOWN

REV:	R2
SIZE:	A3
DATE:	APR.-2025
SHEET 1 OF 1	

EXISTING DETAIL					PROPOSAL																		
S. No.	Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch._	Proposed Span	Proposed Type	TCS WIDTH			Culvert Width		Flow Direction	Bed Level		Invert Level		Camber/ Super elevation		FRL	
										Total	Left	Right	Left	Right		Left	Right	Left	Right	Left	Right	Left	Right
1	6+180	1 x 2.50	Slab	10.9	TCS-2	Wid	45.116	1 x 2.50	Box	45	22.5	22.5	20	20	L-R	20.270	20.149	19.970	19.849	-2.5	-2.5	22.005	22.005
2	3+795	1 x 5.0	Slab	10.9	TCS-2	Wid	47.496	1 x 5.0	Box	45	22.5	22.5	20	20	R-L	15.772	15.562	15.472	15.262	-2.5	-2.5	16.750	16.750

			OWNER: भारतीय राजमार्ग अभियन्ता अकादमी  Indian Academy of Highway Engineers सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA	DESIGN CONSULTANT:- C O N S U L T I N G E N G I N E E R S G R O U P L T D An ISO 9001 : 2008 Company CEG Tower, B11 (G), Malviya Industrial Area, JALPUR - 302017 (Rajasthan) INDIA Tel: +91 141 2751801/802/803/804, Fax: 2751806 Email: ceg@ceginidia.com, URL: www.ceginidia.com	PROJECT: CONSULTANCY SERVICES FOR PROJECT MANAGEMENT PHASE-I INCLUDING PREPARATION OF DETAILED PROJECT REPORT FOR UP GRADATION OF JUNCTION WITH NH-27 NEAR DORAJI- JAMKANDORNA, KALAVAD JAMNAGAR SECTION OF NH-927D IN THE STATE OF GUJARAT TO TWO/FOUR LANE WITH PAVED SHOULDER CONFIGURATION (PACKAGE NO - NH/IAHE/18)	DESIGNED A.S  DRAWN R.P  CHECKED K.S  APPROVED AKJ 	TITLE: GENERAL ARRANGEMENT DRAWING FOR RECONSTRUCTION OF SINGLE SPAN SLAB CULVERT (39.5 M WIDTH) DRAWING NO: IAHE/CEG/D121/CUL/SLAB/REC/GAD/02 SCALE: AS SHOWN	REV: R2 SIZE: A3 DATE: APR.-2025 SHEET 2 OF 2	
R2	APR.-2025	WIDENING TO RECONSTRUCTION							
R1	OCT.-2017	FINAL DPR SUBMISSION							
R0	JUNE-2017	FIRST SUBMISSION							
REV	DATE	DESCRIPTION OF REVISIONS							

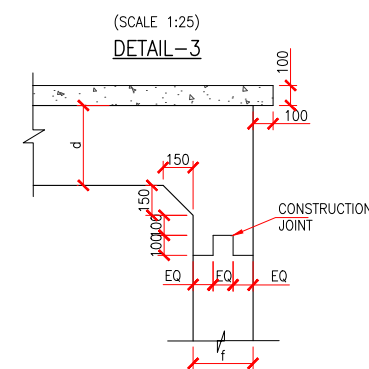
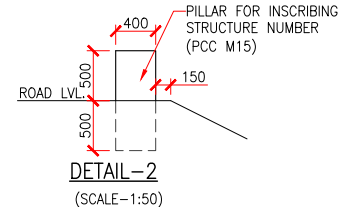
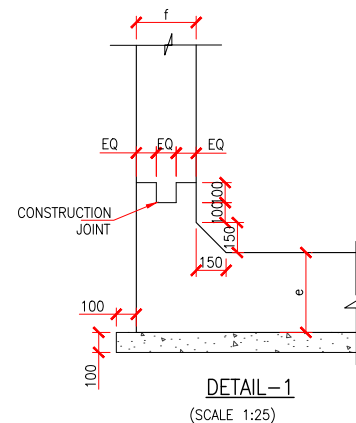
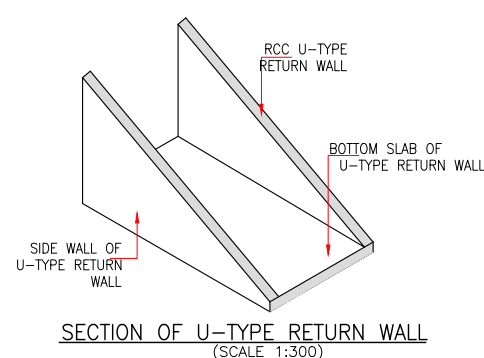
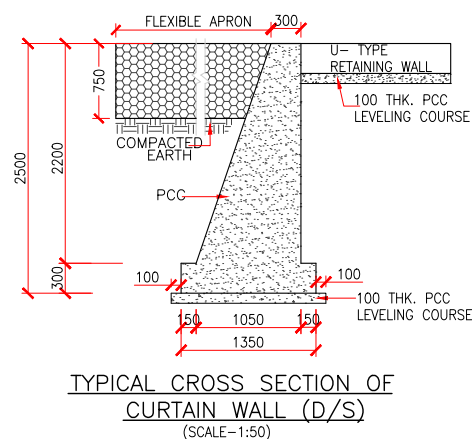
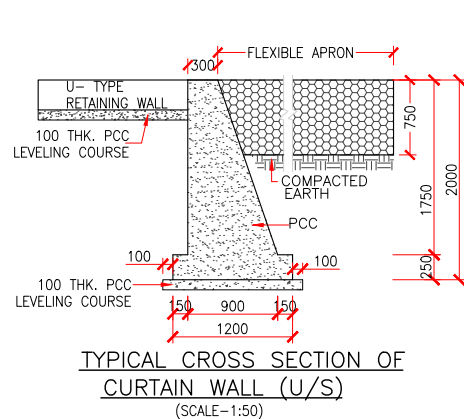


NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. LEVELS ARE IN METRES.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- GRADE OF CONCRETE SHALL BE AS BELOW:
CRASH BARRIER - M-40
RCC SLAB - M-30
PCC - M-15
RCC RETAINING WALL - M-30
- 600mm THICK FILTER MEDIA SHALL BE PROVIDED AT BACK SIDE OF ABUTMENT/ U-TYPE RETURN WALL/SIDE WALLS OF RCC BOX.
- ALL H.Y.S.D. BARS SHALL CONFORM TO IS:1786 GRADE Fe 500.
- 100 DIA WEEP HOLES TO BE PROVIDED 1000C/C BOTH HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER IN ABUTMENT/U-TYPE RETURN WALL/SIDE WALLS OF RCC BOX.
- 10mm EXPANSION GAP FILLED WITH COMPRESSIBLE FIBER BOARD SHALL BE PROVIDED BETWEEN U-TYPE RETURN WALL & RCC BOX.
- BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX :6 OF IRC:78-2000 HAVING PROPERTIES $C=0, \phi=30^\circ, \gamma=20^\circ$ & $\gamma_d = 18 \text{ KN/M}^3$.
- FORMATION LEVEL, BED LEVEL, CAMBER/SUPER ELEVATION AND LAYOUT SHALL BE VERIFIED AT SITE AND SHALL BE PROVIDED AS PER APPROVED PLAN & PROFILE DRAWING.
- CURTAIN WALL/ FLEXIBLE APRON SHALL BE PROVIDED ONLY IN SOIL STRATA AND WHERE STRATA IS ROCKY IT IS NOT REQUIRED.
- SLOPE FOR CULVERT SHALL BE MAINTAINED AS 1:1000 FROM U/S TO D/S
- WC/BC SHALL BE LAID OVER THE TOP AS PER HIGHWAY DRAWING.
- FLEXIBLE APRON HAS BEEN INDICATED AS PER GUIDELINES IRC:SP-13 HOWEVER, THE LENGTH OF FLEXIBLE APRON SHALL BE AS PER SITE CONDITIONS.

LEGEND:-

EJ	-	EXPANSION JOINT
LVL	-	LEVEL
FRL	-	FINISHED ROAD LEVEL
THK	-	THICK
U/S	-	UP STREAM
D/S	-	DOWN STREAM
W.C.	-	WEARING COAT
G.L.	-	GROUND LEVEL



EXISTING DETAIL					PROPOSAL																		
S. No.	Location as per toposurvey	Span Arrangement	Type of Structure	Width (m)	TCS	Final (Alignment)	Design Ch._	Proposed Span (Final)	Proposed Type	TCS WIDTH			Culvert Width		Flow Dir	Bed Level		Invert Level		Camber/ Super elevation		FRL	
										Total	Left	Right	Left	Right		Left	Right	Left	Right	Left	Right	Left	Right
2	11+490	1 x 3.50	Slab	9.7	TCS-1C	ReC	39.843	1 x 3.50	Box	26	13	13	13	13	R-L	33.075	33.454	32.775	33.154	-2.5	-2.5	34.913	34.913
3	11+100	1 x 3.80	Slab	9.7	TCS-1C	ReC	40.225	1 x 4.0	Box	26	13	13	13	13	L-R	30.892	30.238	30.592	29.938	-4.092	4.092	32.751	32.751
4	10+800	1 x 3.80	Slab	9.7	TCS-1C to 2	ReC	40.494	1 x 4.0	Box	26	13	13	13	13	L-R	31.140	30.148	30.840	29.848	4.342	-4.342	32.750	32.750

REV	DATE	DESCRIPTION OF REVISIONS
R2	APR.-2025	WIDENING TO RECONSTRUCTION
R1	OCT.-2017	FINAL DPR SUBMISSION
R0	JUNE.-2017	FIRST SUBMISSION

OWNER: भारतीय राजमार्ग अभियन्ता अकादमी
Indian Academy of Highway Engineers
सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, GOVERNMENT OF INDIA

DESIGN CONSULTANT:-
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DESIGNED	A.S.	
DRAWN	R.P.	
CHECKED	K.S.	
APPROVED	AKJ	

TITLE: GENERAL ARRANGEMENT DRAWING FOR RESTRUCTION OF SINGLE SPAN SLAB CULVERT (26 M WIDTH)
DRAWING NO: IAHE/CEG/D121/CUL/SLAB/REC/GAD/01
SCALE: AS SHOWN

REV: R2
SIZE: A3
DATE: APR.-2025
SHEET 1 OF 2

