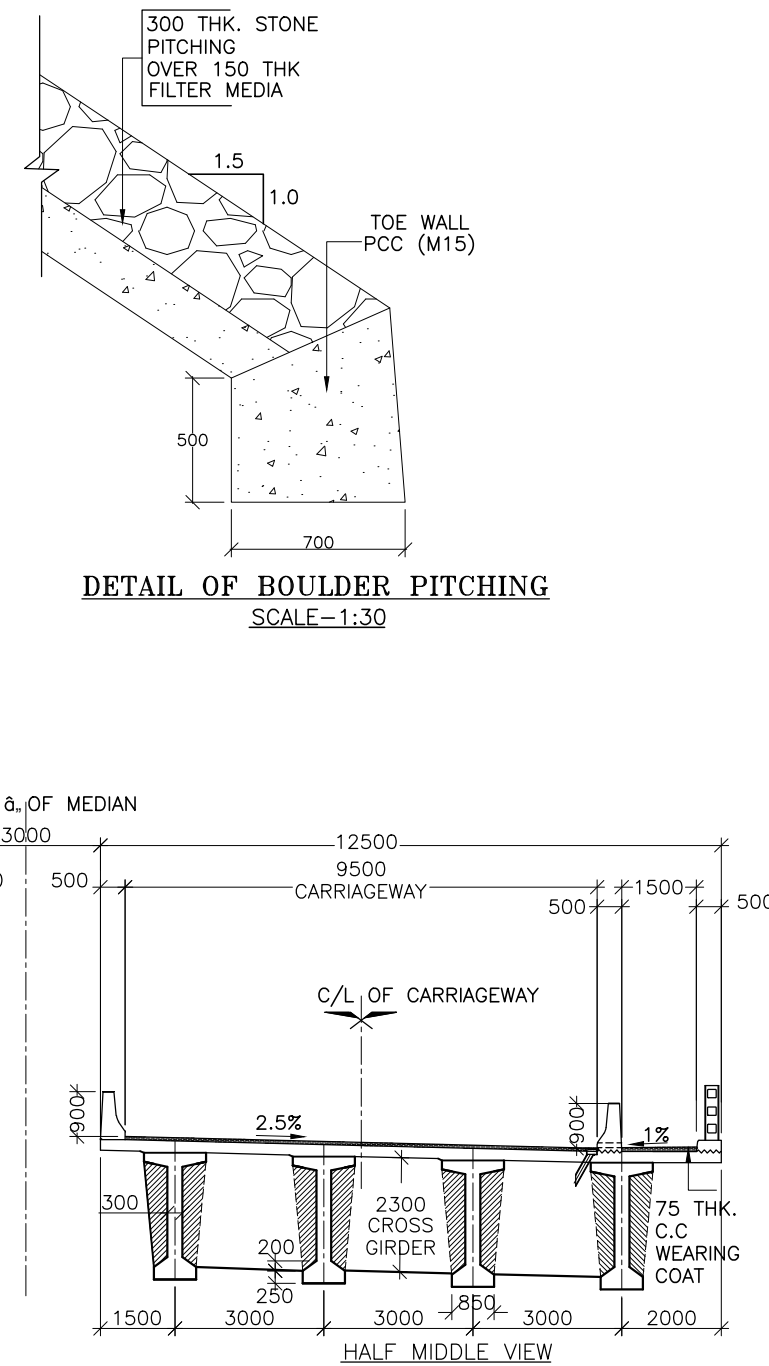
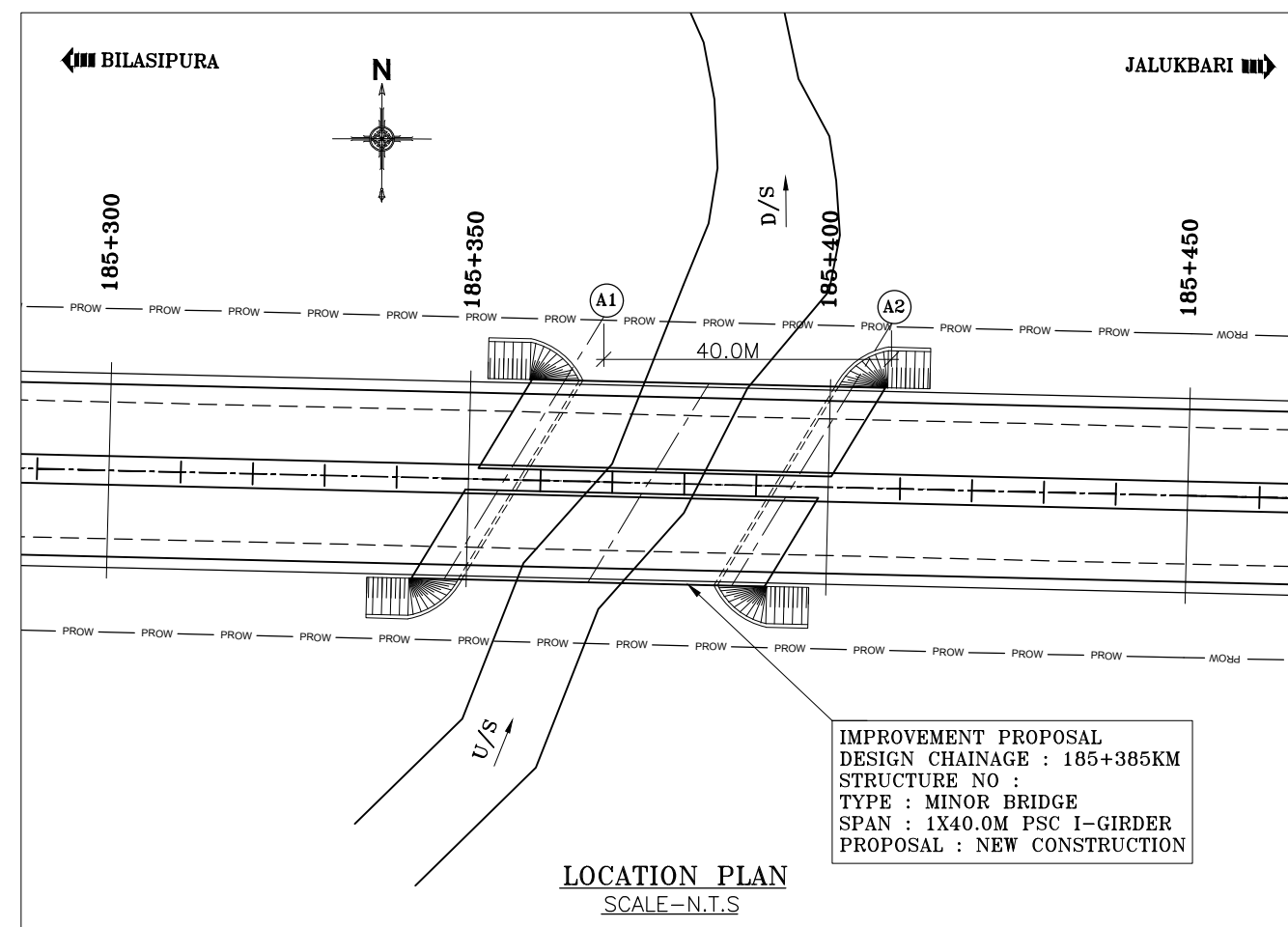




GENERAL NOTES :

A. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.

B. MATERIALS SPECIFICATIONS :

(I) CONCRETE :

1. GRADE OF CONCRETE USED :-

a) DECK SLAB = M45,
b) GIRDER = M45,
c) SUB STRUCTURE = M30,
d) RETURN WALL = M30,
e) DIRT WALL = M30,
f) PILE CAP = M30,
g) PILE = M35,
h) APPROACH SLAB = M30,
i) P.C.C. BELOW APPROACH SLAB = M15,
j) R.C.C. RAILING & KERB = M30,
k) CRASH BARRIER = M40,
l) PEDESTAL = M35,
m) REACTION BLOCK = M35.

2. CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO
ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON
150MM CUBES FOR MODERATE EXPOSURE.

3. 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING
TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT
CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT
CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE
REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.

4. TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES
CONFORMING TO IS:9103 MAY BE USED SUBJECT TO
SATISFACTORY PROVEN USE.

5. THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS
PER TABLE -14.2, IRC -112-2011

6. MAX. WATER CEMENT RATIO SHALL BE AS PER
TABLE-14.2, IRC:112-2011.

(II) REINFORCEMENT :

ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH
DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING
TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH
SHALL BE MS BARS GRADE. DESIGNATION Fe 250 CONFORMING
TO IS:432 PART-I MILD STEEL)

(III) WATER :

WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO IRC :
112 - 2011.

(IV) EXPANSION JOINTS :

THE EXPANSION JOINTS SHOULD BE STRIP SEAL TYPE.

(V) BEARING SHALL BE OF POT CUM PTFE TYPE. THE SIZE & DIMENSIONS
OF THE BEARINGS SHALL BE FINALIZED AS PER THE DETAILS PROVIDED
BY THE APPROVED VENDOR.

(VI) FILTER MATERIAL BEHIND ABUTMENT AND RETURN WALL SHALL
CONFORM TO CLAUSE 2504.2.2 OF MORTH SPECIFICATIONS TO
A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE
TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO
THE FULL HEIGHT.

(VII) PROPERTIES OF BACKFILL SOIL $\gamma=2.0t/m^3$, $\phi=30^\circ$.

C. WORKMANSHIP /DETAILING :

1. MINIMUM CLEAR COVER :

a) SUPERSTRUCTURE = 40MM
b) SUBSTRUCTURE : ABUTMENT = 75MM, RETURN WALL=50
c) FOUNDATION = 75MM

2. DESIGN LOAD :

a) CLASS A TWO LANES OR ONE LANE CLASS 70R
TRACKED/WHEELED OR IRC CLASS SV LOADING WHICHEVER
PRODUCES WORST EFFECT IS CONSIDERED FOR DESIGN.
b) THE BRIDGE IS IN SEISMIC ZONE-V.
c) FOOTPATH LOADING :- AS PER CL.NO. 206.1 OF IRC:6-2017

3. FOR ENSURING PROPER COVER OF CONCRETE TO REINFORCEMENT
SPECIALLY MADE POLYMER COVER BLOCKS SHALL ONLY BE USED.

4. BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.

5. SUPPORTING CHAIRS OF 16 MM DIAMETER SHALL BE PROVIDED
AT SUITABLE INTERVALS AS PER IS : 2502.

6. LAP LENGTH & DEVELOPMENT LENGTH (L_d) OF REINFORCING
BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE
15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.

7. PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY
USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL
WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN
DECK SLAB SHALL BE ENSURED.

8. SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO
ENABLE THE COMPACTION BY FORM VIBRATORS.

9. SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.

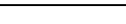
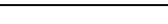
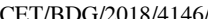
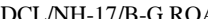
10. THE WEEP HOLES SHALL BE WITH 100MM DIA AC PIPE IN
1:20 SLOPE @ 1M C/C STAGGERED HORIZONTALLY & VERTICALLY
AT ABUTMENT & RETURN WALLS.

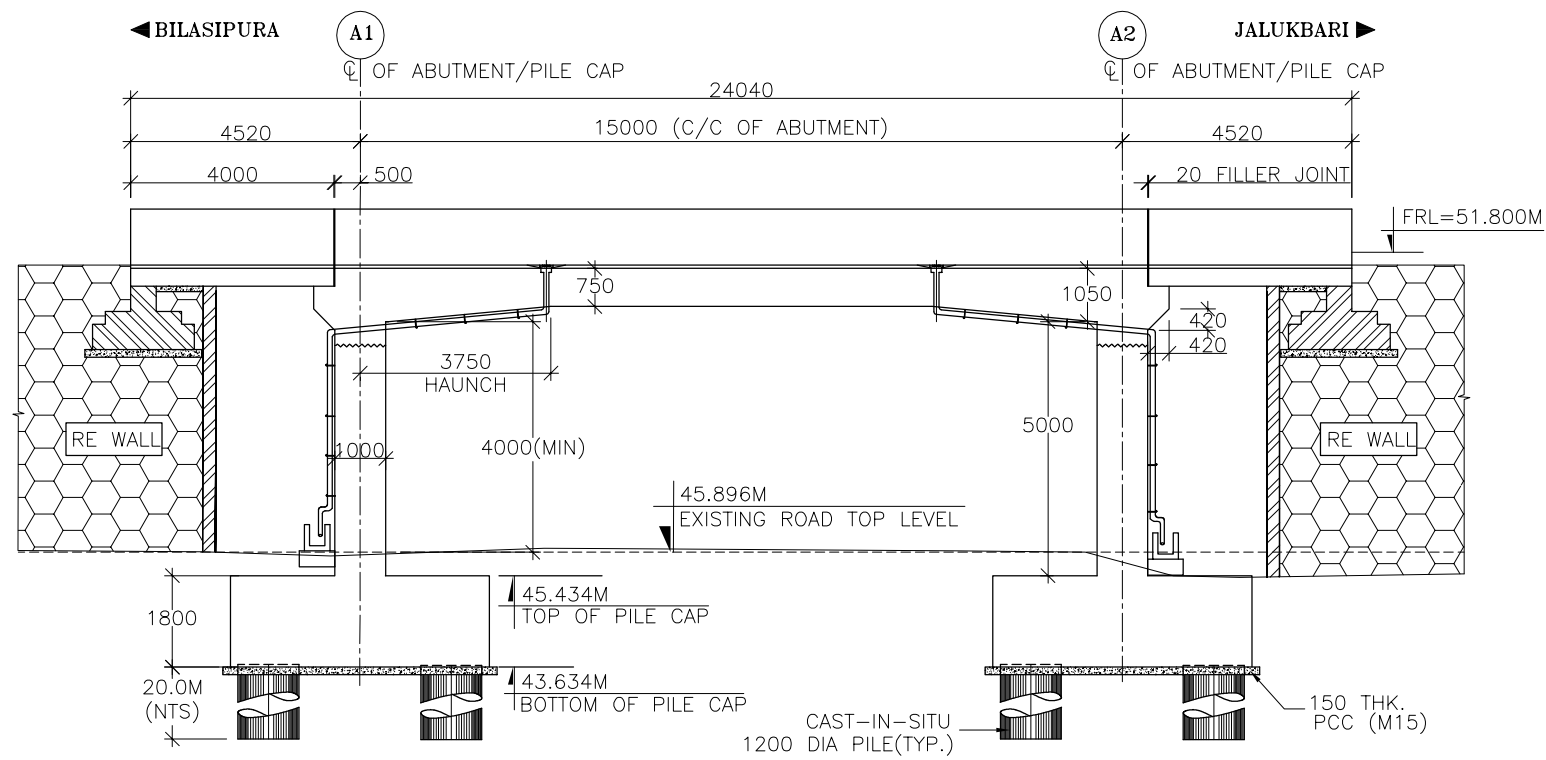
11. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE
TO REPLACE BEARINGS ETC. IS SHOWN THUS ↑. THIS SHALL BE
DISTINCTLY ETCHED ON END CROSS GIRDERS
AND ABUTMENT CAPS.

14. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:

CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/SUP/PSC/40.0M/GA
(SHEET NO. 01 TO 02)

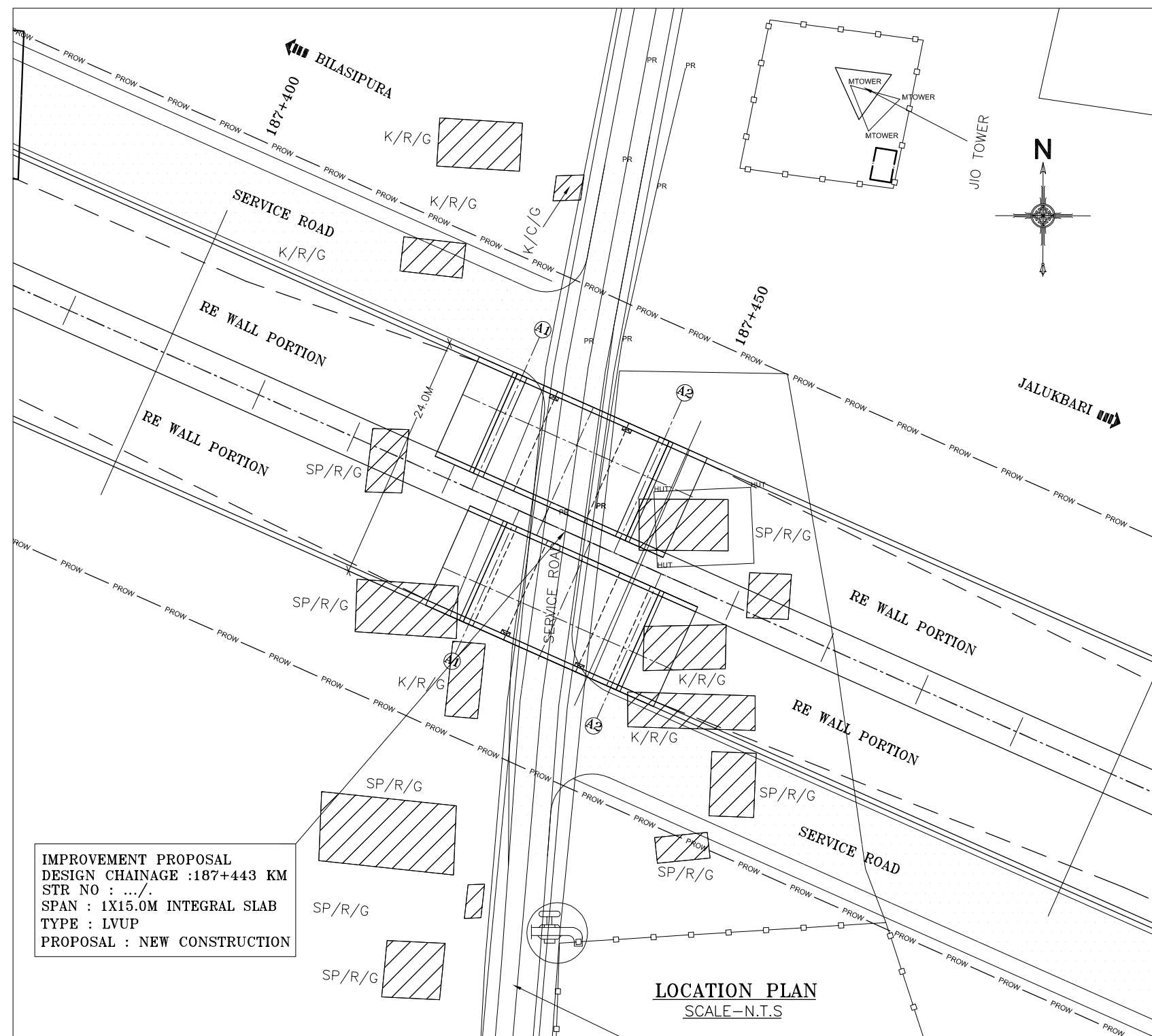
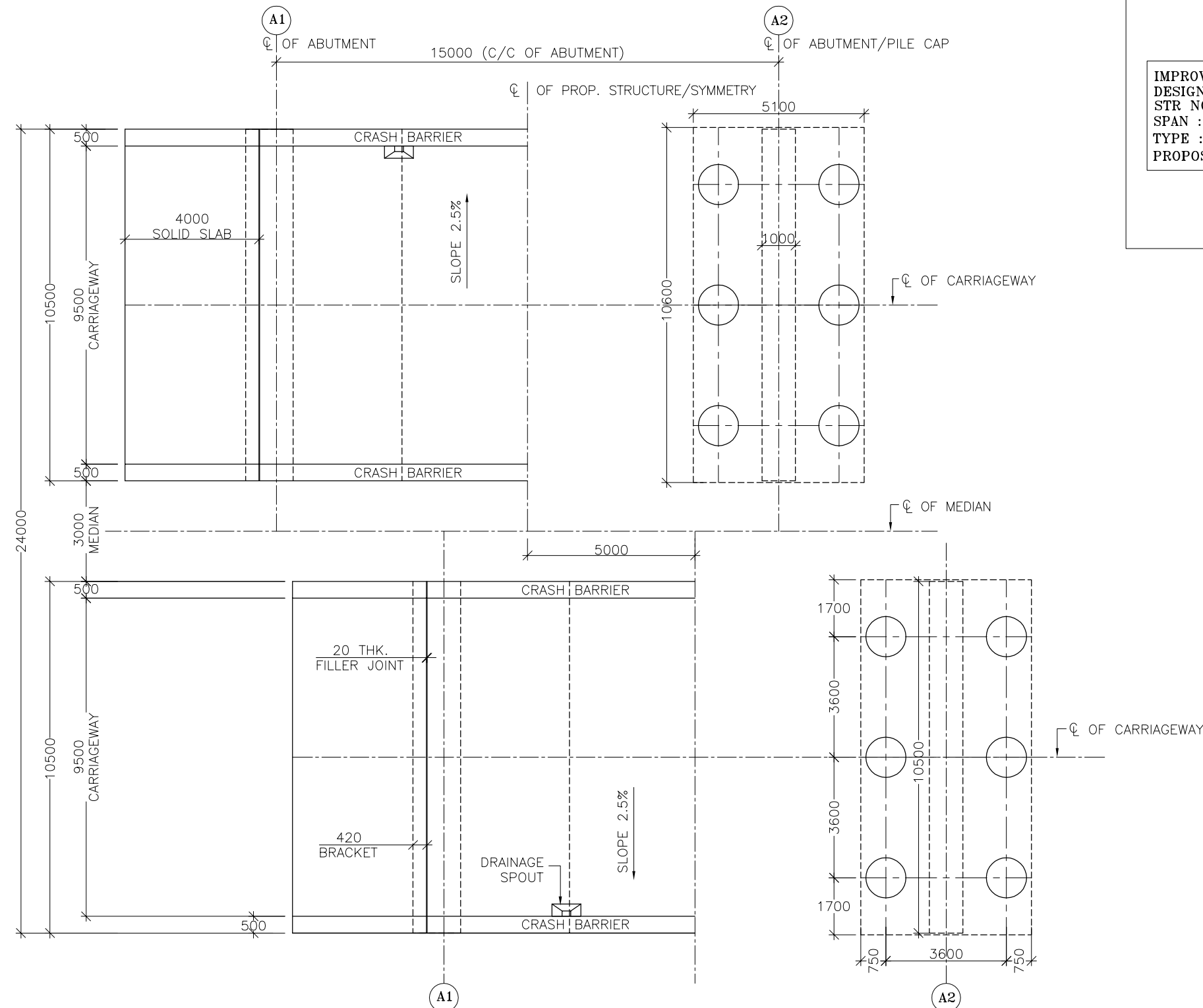
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/PSC T GIRDER
(SHEET NO. 01 OF 01)

					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: GENERAL ARRANGEMENT DRAWING OF 1 X 40.0M PSC T-GIRDER BRIDGE, 30° SKEW (AT CHAINAGE - 185.385KM) PACKAGE - 10	CONSULTANT :  CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/(STR-65/1)/GA			
R0					DATE: JANUARY, 2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	 C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	REVISION MKD. - R0	SHEET NO. - 01 OF 02		
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.					DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
REVISIONS									 A.M	 P.S	 S.D	 S.BHADRA



EGL (RL IN M)	45.823	45.950	45.831
CHAINAGE (IN KM)	187.436	187.443	187.450

SECTIONAL ELEVATION
SCALE 1:150



IMPROVEMENT PROPOSAL
DESIGN CHAINAGE :187+443 KM
STR NO : .../
SPAN : 1X15.0M INTEGRAL SLAB
TYPE : LVUP
PROPOSAL : NEW CONSTRUCTION

LOCATION PLAN
SCALE-N.T.S

GENERAL NOTES :

A. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.

B. MATERIALS SPECIFICATIONS :

(I) CONCRETE :

1. GRADE OF CONCRETE USED :-

- SUPERSTRUCTURE = M30,
- SUB STRUCTURE = M30,
- PILE CAP = M30,
- PILE = M35,
- SOLID SLAB = M30,
- P.C.C. BELOW SOLID SLAB = M15,
- CRASH BARRIER = M40

2. CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO
ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON
150MM CUBES FOR MODERATE EXPOSURE.

3. 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING
TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT
CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT
CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE
REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.

4. TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES
CONFORMING TO IS:9103 MAY BE USED SUBJECT TO
SATISFACTORY PROVEN USE.

5. THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS
PER TABLE 14.2, IRC -112-2011

6. MAX. WATER CEMENT RATIO SHALL BE AS PER
TABLE-14.2, IRC:112-2011.

(II) REINFORCEMENT :

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DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING
TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH
SHALL BE MS BARS GRADE, DESIGNATION Fe 250 CONFORMING
TO IS:432 PART-I MILD STEEL)

(III) WATER :

WATER TO BE USED IN CONCRETING AND CURING SHALL
CONFORM TO IRC : 112 - 2011.

C. WORKMANSHIP/DETAILING :

1. MINIMUM CLEAR COVER :

- SUPERSTRUCTURE = 50MM
- SUBSTRUCTURE : ABUTMENT = 50MM, PIER = 50
- FOUNDATION = 75MM

2. DESIGN LOAD :

- CLASS A TWO LANES OR CLASS 70R TRACKED/WHEELED OR
OR IRC CLASS SV LOADING WHICHEVER PRODUCES WORST
EFFECT IS CONSIDERED FOR DESIGN.
- THE BRIDGE IS IN SEISMIC ZONE-V.
- SEISMIC LOADING :- AS PER CL. NO. 219 OF IRC:6-2017.

3. BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.

4. SUPPORTING CHAIRS OF 16 MM DIAMETER SHALL BE PROVIDED
AT SUITABLE INTERVALS AS PER IS : 2502.

5. LAP LENGTH & DEVELOPMENT LENGTH (L_d) OF REINFORCING
BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE
15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.

6. PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY
USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL
WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN
DECK SLAB SHALL BE ENSURED.

7. SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO
ENABLE THE COMPACTION BY FORM VIBRATORS.

8. SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.

9. CONSTRUCTION JOINT SHOULD BE PROVIDED AT LOCATION OF
ZERO MOMENT AS FAR AS PRACTICABLE & SHOULD BE
PRE-APPROVED BY ENGINEER IN CHARGE.

10. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:

CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA
(SHEET NO. 02)

CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/INTEGRAL
(SHEET NO. 01)

R0					
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

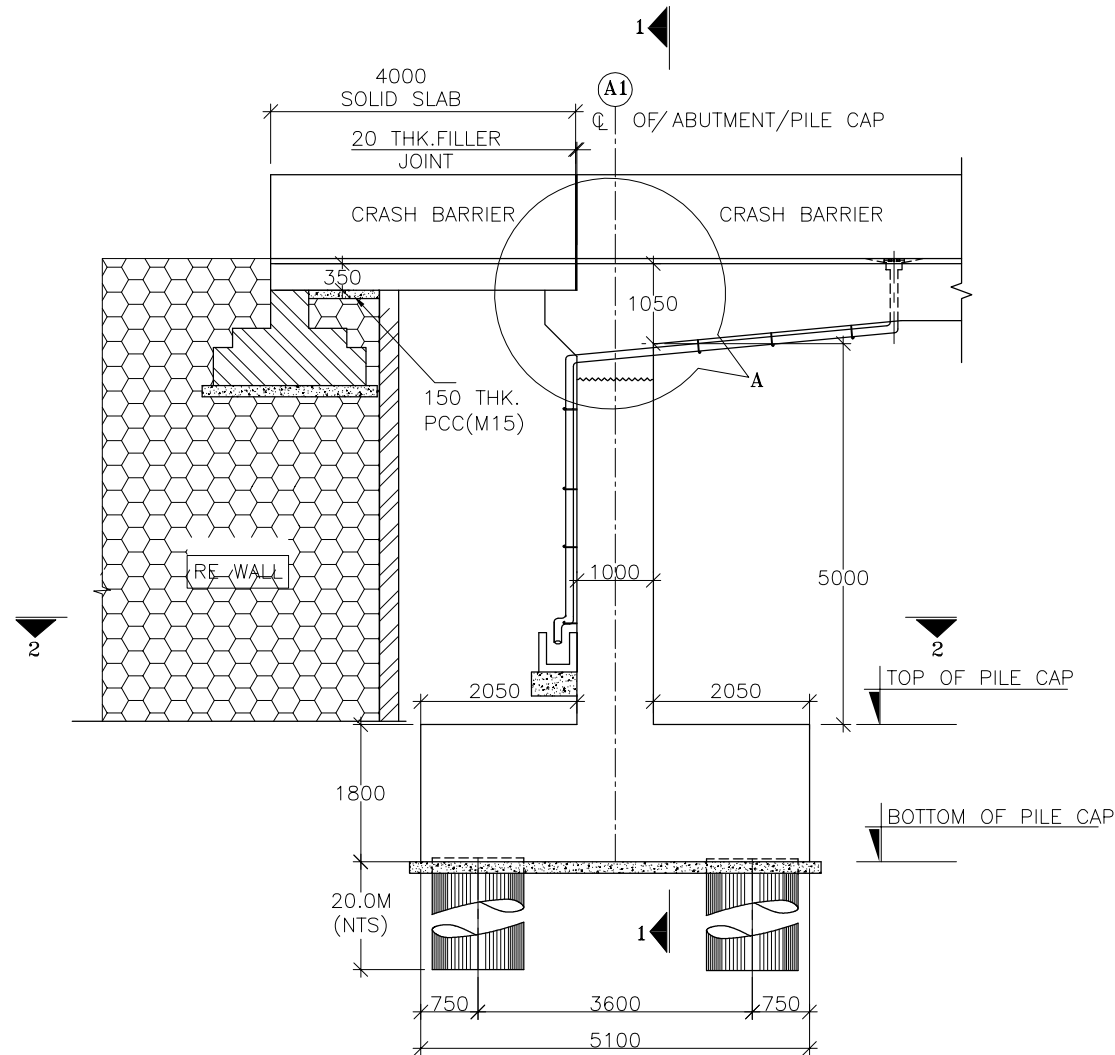
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DATE: JAN.,2023

CLIENT:	NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001
PROJECT:	CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.

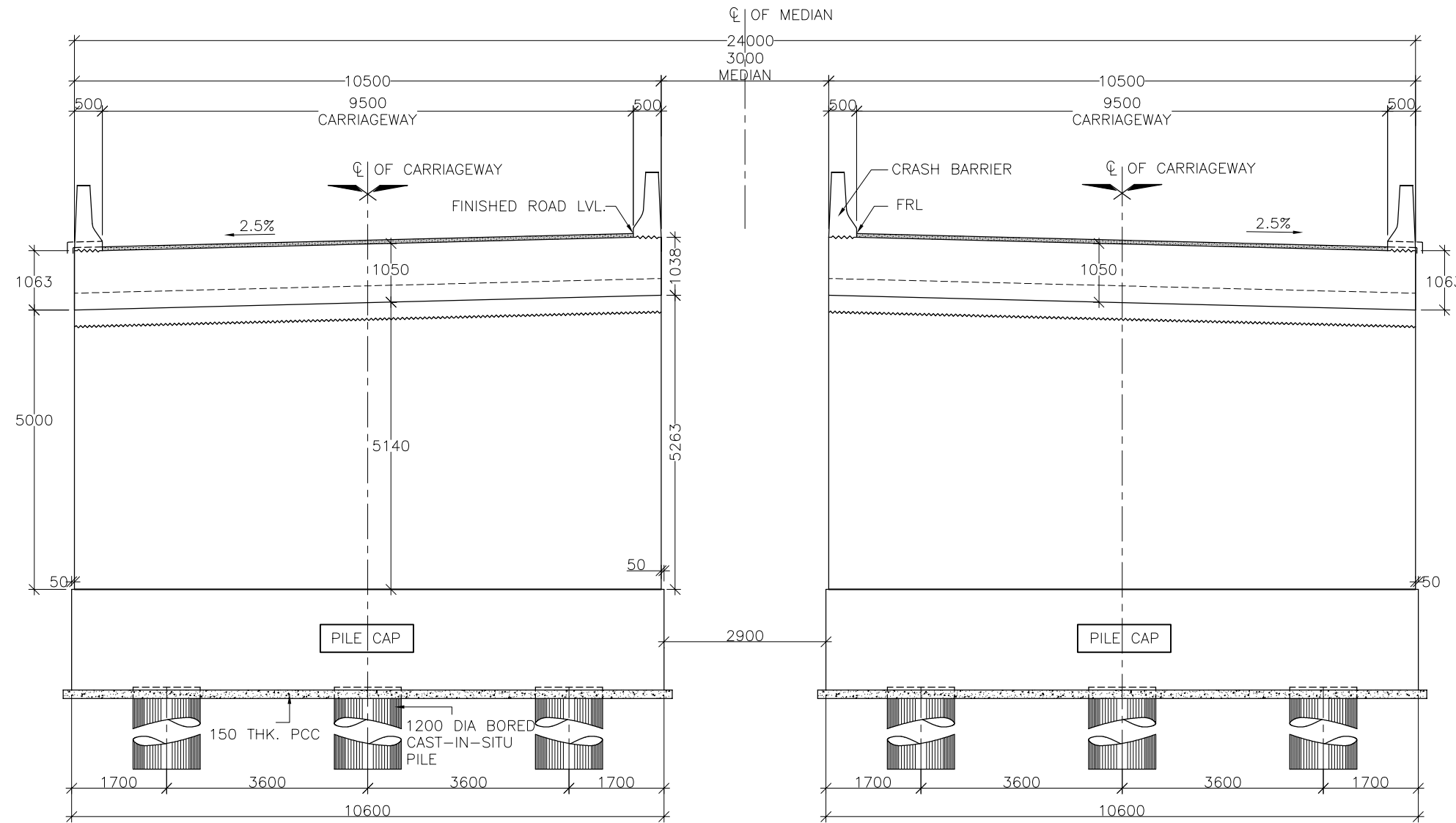
TITLE:	GENERAL ARRANGEMENT DRAWING OF 1 X 15.0M INTEGRAL SLAB BRIDGE_LVUP (AT CHAINAGE - 187.443KM) PACKAGE - 10
SUBMISSION TYPE :	FINAL DETAILED PROJECT REPORT
PACKAGE NO: (LOT-1) PACKAGE 1A	

CONSULTANT :	CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company
C.E. TESTING COMPANY PV 124-A, N.S.C. BOSE ROAL KOLKATA - 700092.	

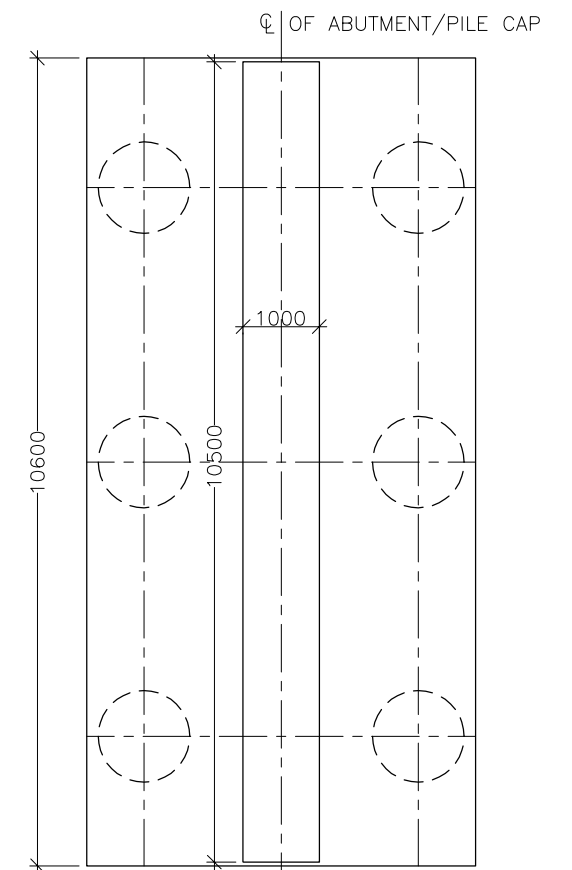
DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-....)/GA			
REVISION MKD. - R0		SHEET NO. - 01 OF 02	
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
 C.B	 P.S	 S.D	 S.BHADRA



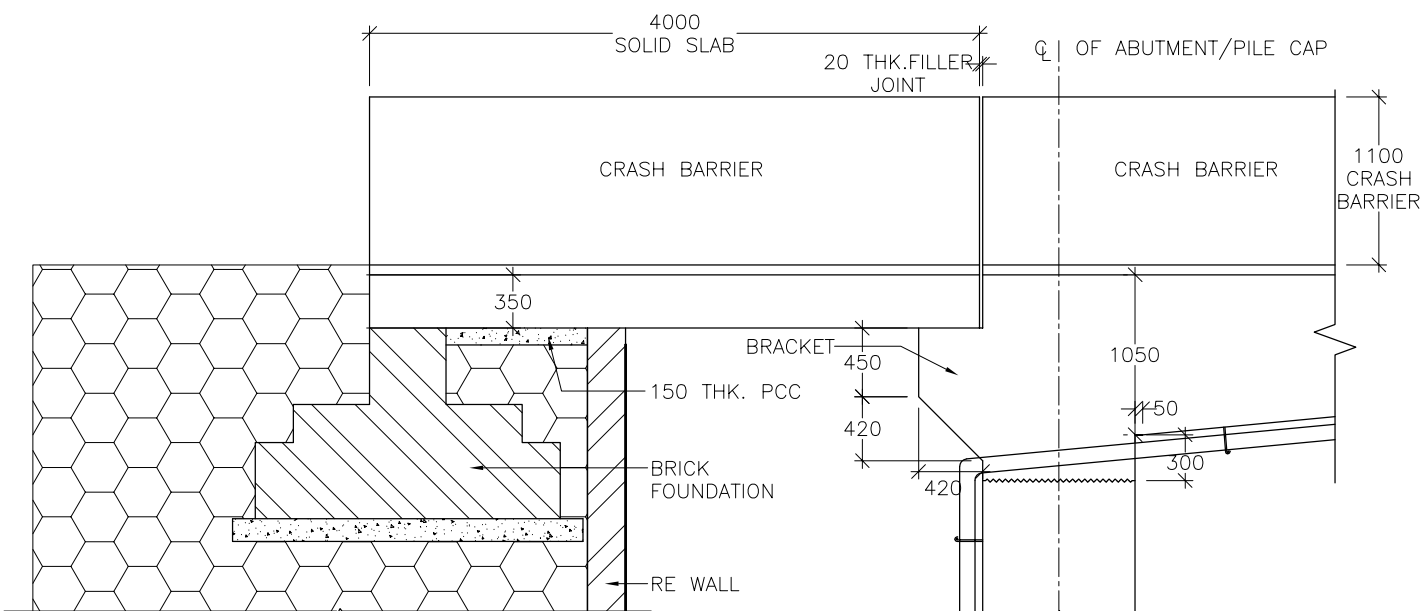
DETAIL OF ABUTMENT
SCALE - 1:100



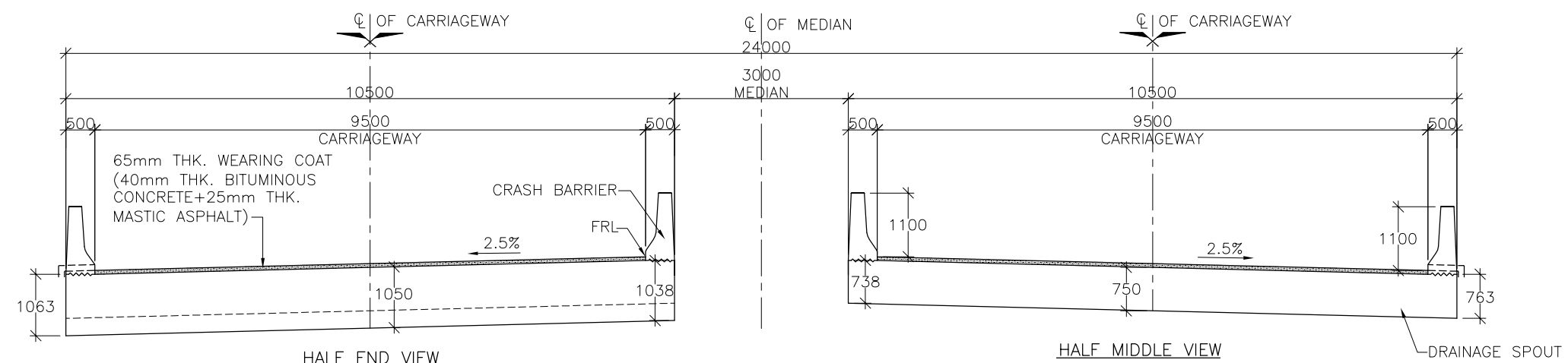
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SECTION 2-2
SCALE - 1:100



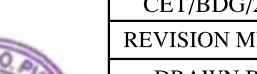
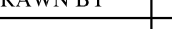
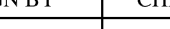
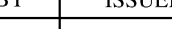
DETAIL-A
SCALE - 1:50

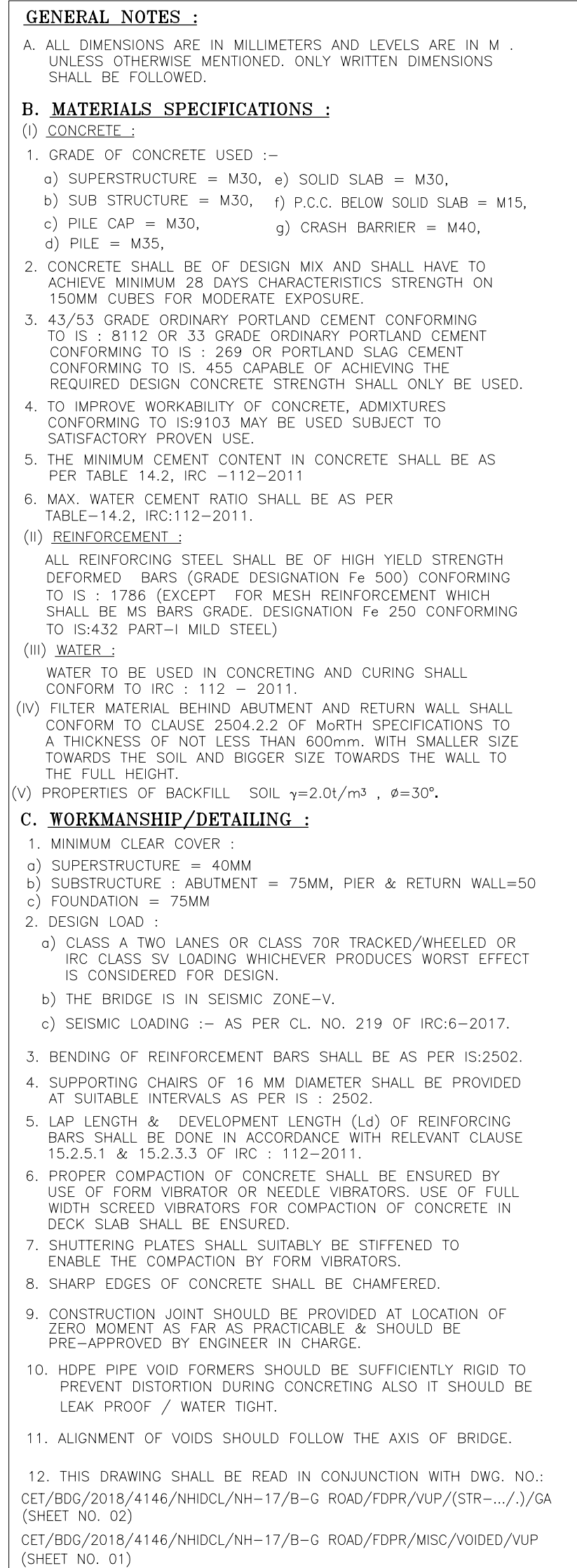
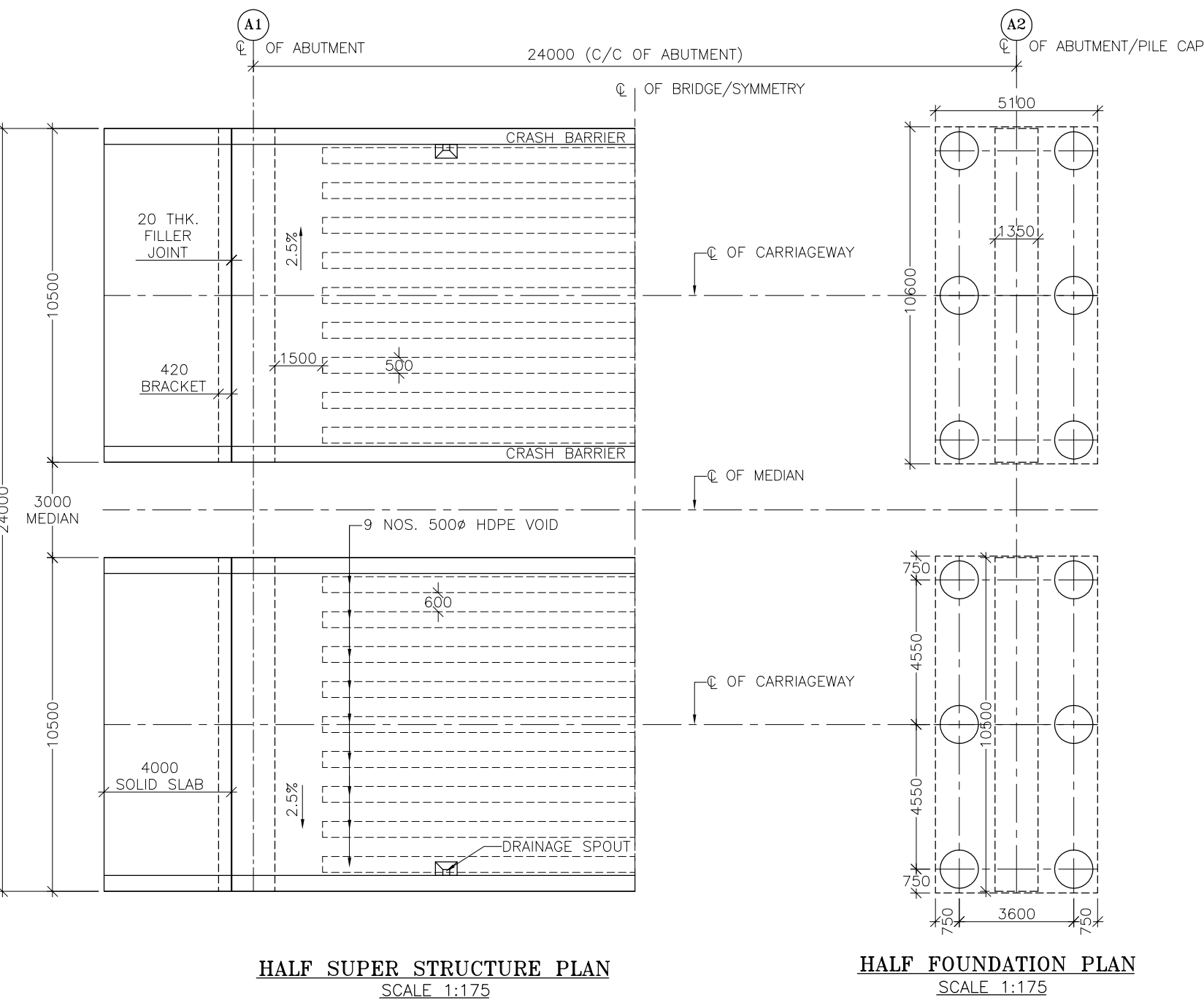


TYPICAL CROSS SECTION OF SUPER STRUCTURE
SCALE-1:100

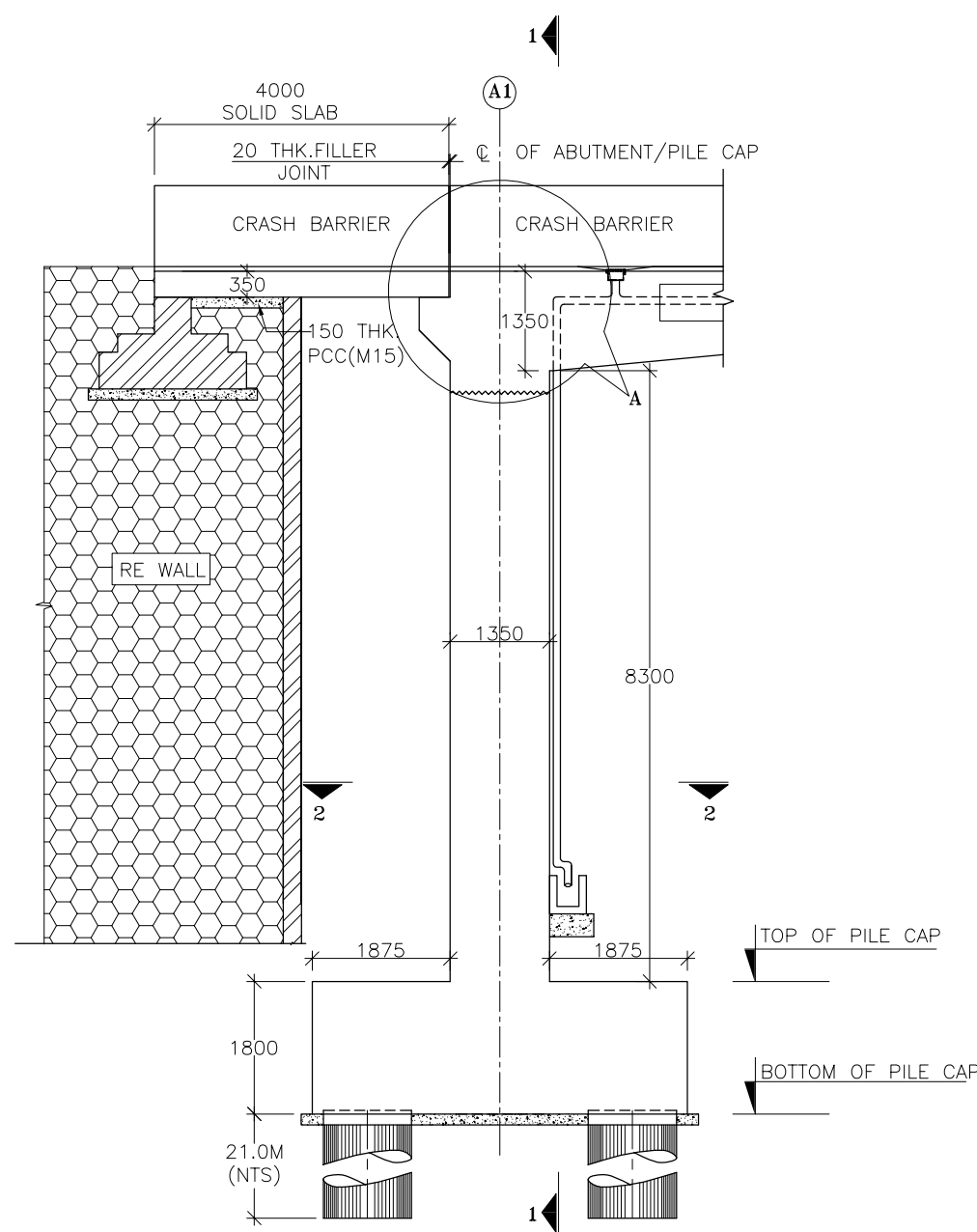
NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED, ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA
(SHEET NO. 01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/INTEGRAL
(SHEET NO. 01)

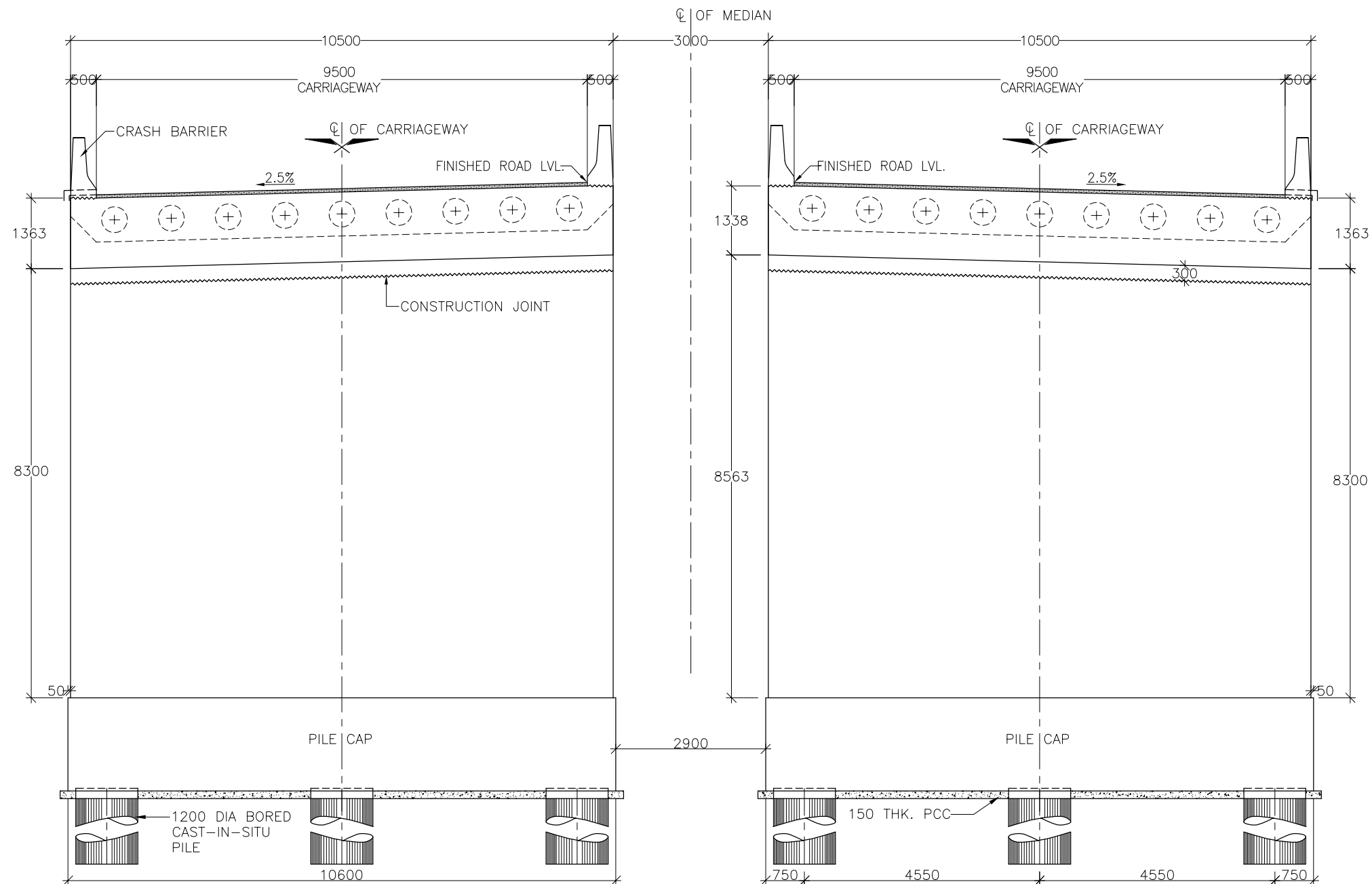
						SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE : DETAILS OF ABUTMENT	CONSULTANT :  CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company  C.E. TESTING COMPANY PV 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA			
										REVISION MKD. - R0 SHEET NO. - 02 OF 02			
R0							PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		DRAWN BY  C.B	DESIGN BY  P.S	CHECKED BY  S.D	ISSUED BY  S.BHADRA
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	JAN.,2023			PACKAGE NO: (LOT-1) PACKAGE 1A					
REVISIONS													



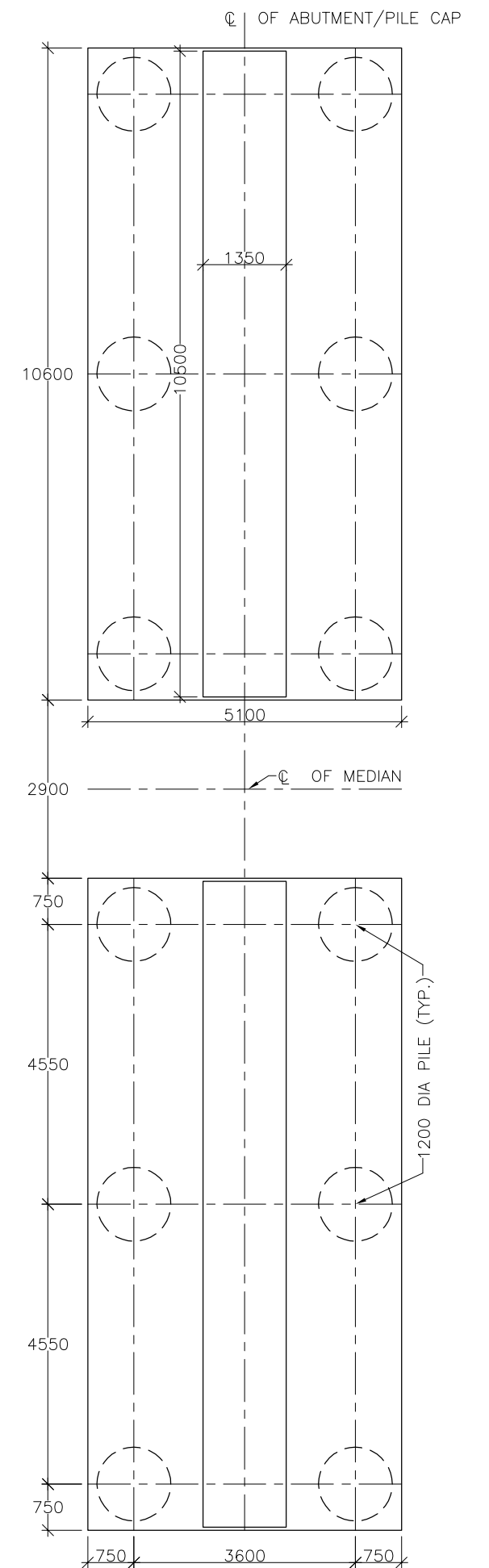
					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE : GENERAL ARRANGEMENT DRAWING OF 1 X 24.0M RCC INTEGRAL VOIDED SLAB BRIDGE_VUP (AT CHAINAGE - 188.595KM) PACKAGE-10	CONSULTANT :  Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/ VUP/(STR-.../.)Y/GA
R0					DATE: JAN.,2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	REVISION MKD. - R0 SHEET NO. - 01 OF 02
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.					DRAWN BY
REVISIONS									A. Manna A.M  T.T.A Koulik Datta K.D  S.BHADRA



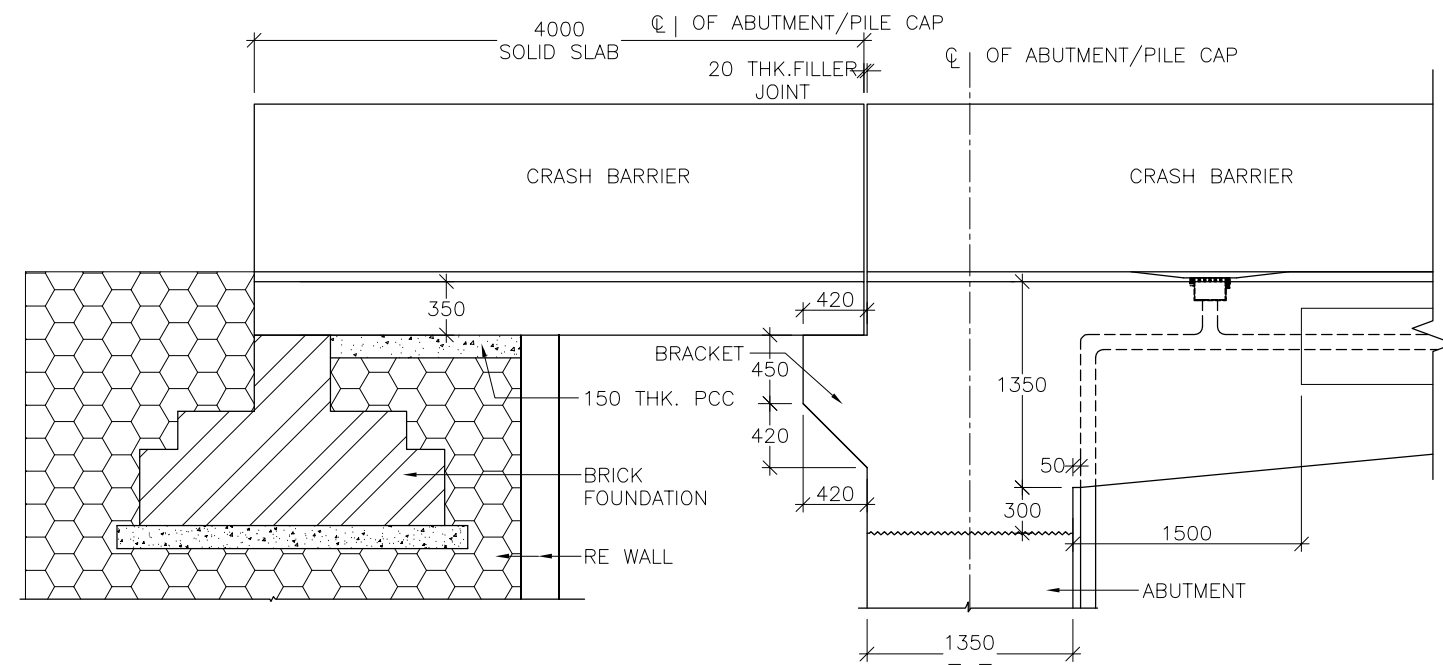
DETAIL OF ABUTMENT
SCALE - 1:100



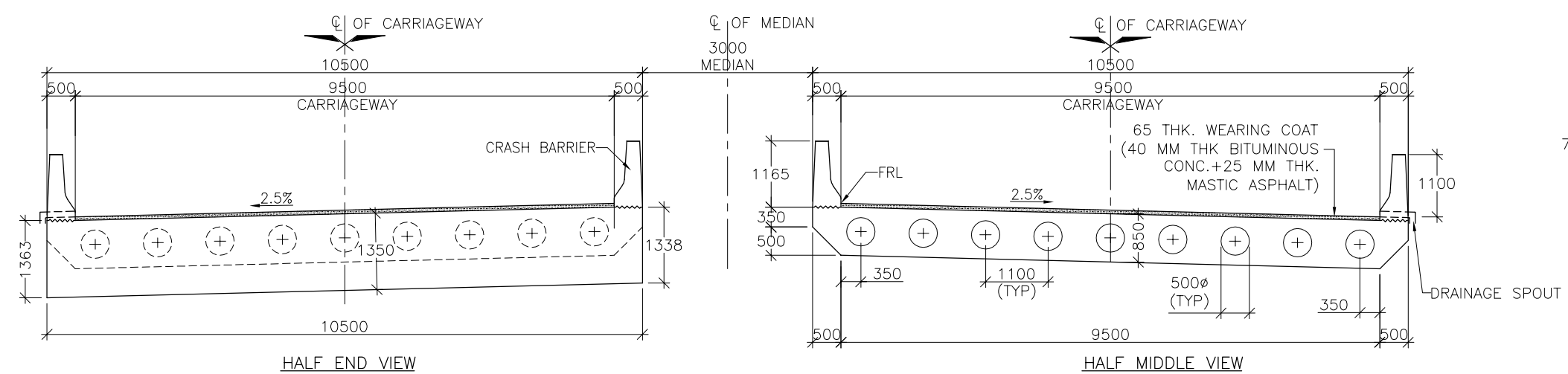
SECTION 1-1
SCALE - 1:100



SECTION 2-2
SCALE - 1:100



DETAIL-A
SCALE - 1:50

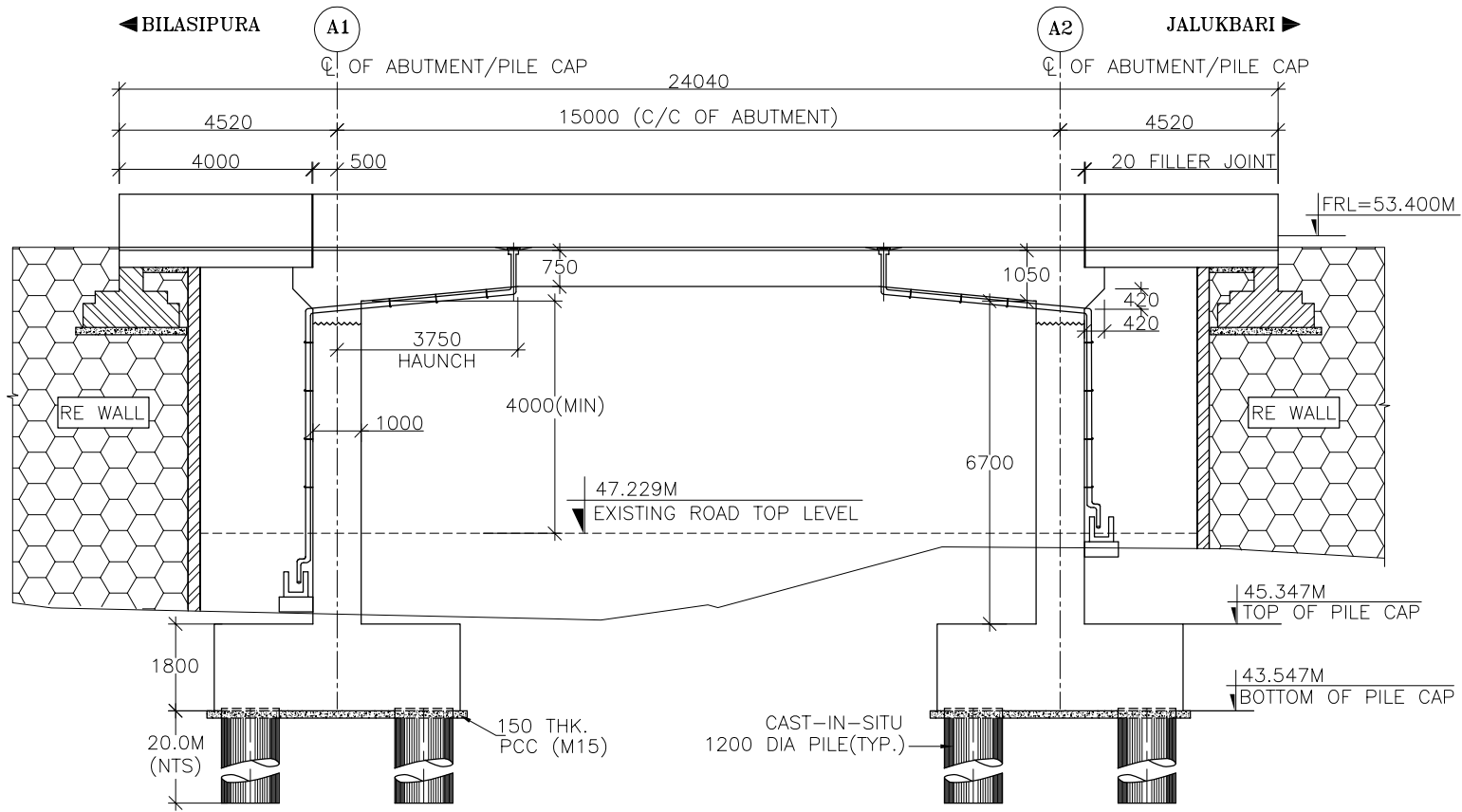


TYPICAL CROSS SECTION OF SUPER STRUCTURE
SCALE 1:100

NOTES :

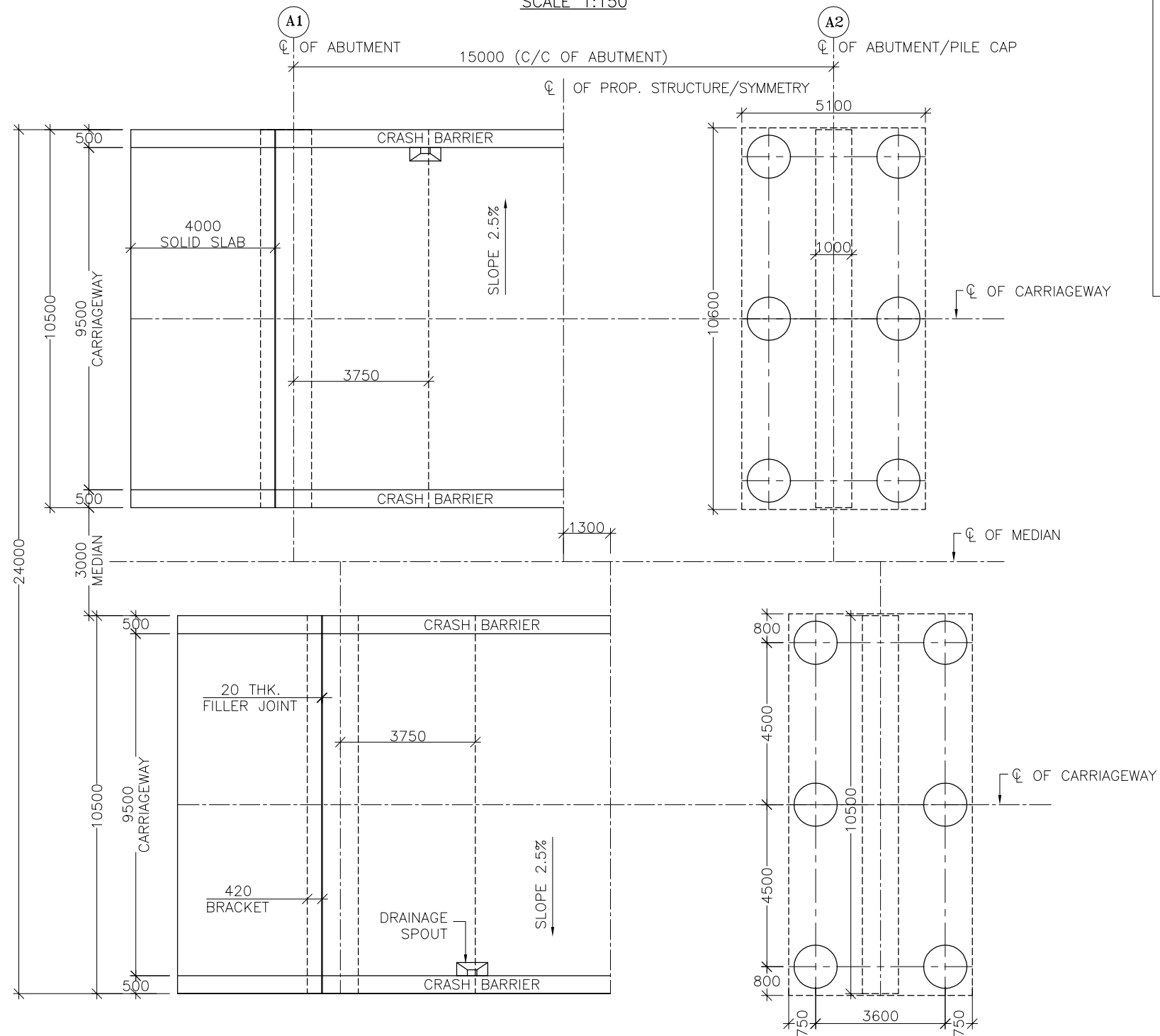
1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED, ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA
(SHEET NO. 01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/VOIDED/VUP
(SHEET NO. 01)

					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: DETAILS OF ABUTMENT	CONSULTANT :  C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA
R0					DATE: JAN., 2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		REVISION MKD. - R0
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE NO: (LOT-1) PACKAGE 1A		SHEET NO.- 02 OF 02
REVISIONS									DRAWN BY A.Manna
									DESIGN BY T.T.A
									CHECKED BY K.D
									ISSUED BY S.BHADRA



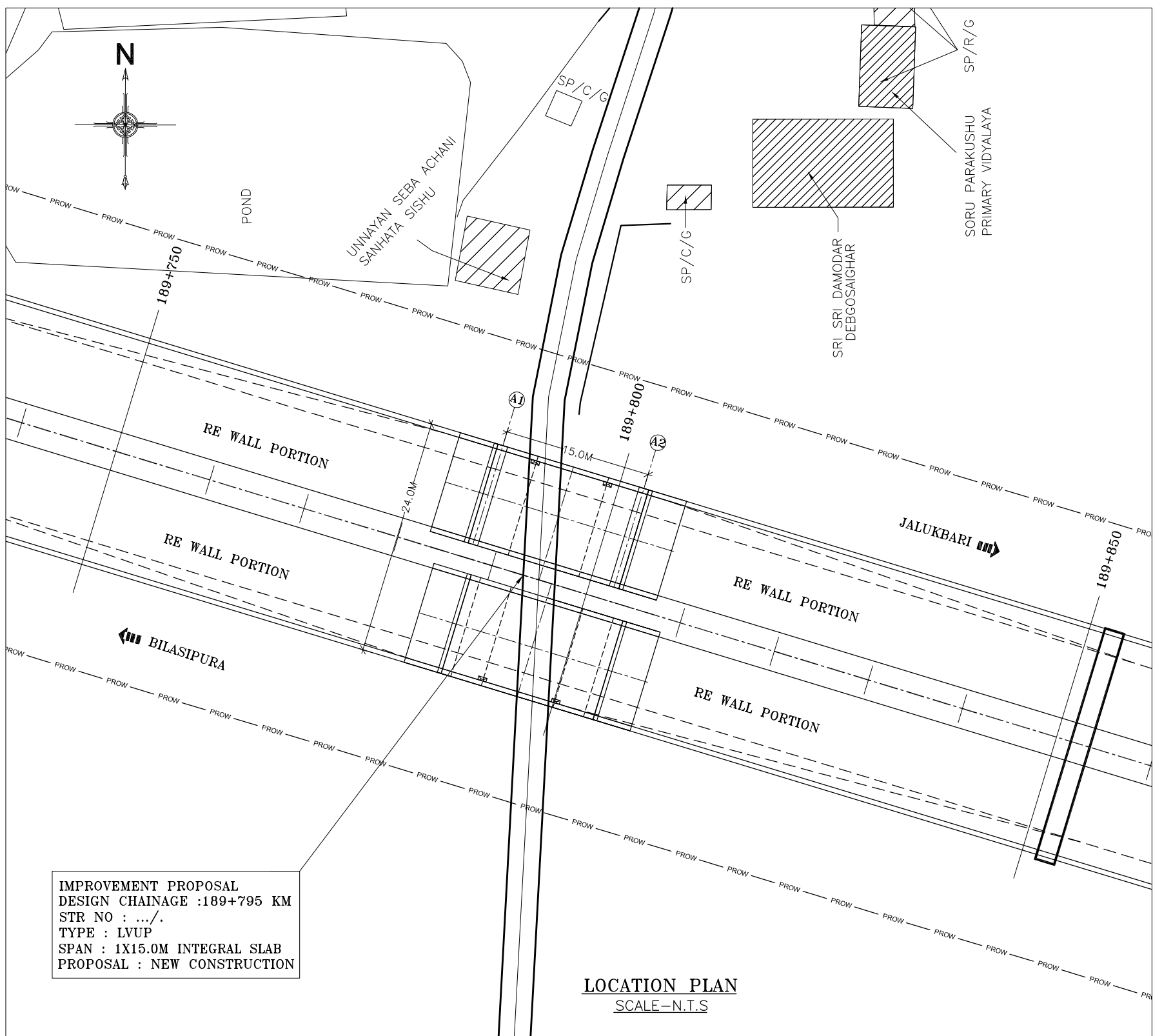
EGL (RL IN M)	45.550	45.710	46.930
CHAINAGE (IN KM)	189.788	189.795	189.803

SECTIONAL ELEVATION
SCALE 1:150



HALF SUPER STRUCTURE PLAN
SCALE 1:150

HALF FOUNDATION PLAN
SCALE 1:150



IMPROVEMENT PROPOSAL
DESIGN CHAINAGE :189+795 KM
STR NO : .../.
TYPE : LVUP
SPAN : 1X15.0M INTEGRAL SLAB
PROPOSAL : NEW CONSTRUCTION

LOCATION PLAN
SCALE-N.T.S

GENERAL NOTES :

A. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.

B. MATERIALS SPECIFICATIONS :

(I) CONCRETE :

1. GRADE OF CONCRETE USED :-

- SUPERSTRUCTURE = M30,
- SUB STRUCTURE = M30,
- PILE CAP = M30,
- PILE = M35,
- SOLID SLAB = M30,
- P.C.C. BELOW SOLID SLAB = M15,
- CRASH BARRIER = M40

2. CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO
ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON
150MM CUBES FOR MODERATE EXPOSURE.

3. 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING
TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT
CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT
CONFORMING TO IS : 455 CAPABLE OF ACHIEVING THE
REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.

4. TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES
CONFORMING TO IS:9103 MAY BE USED SUBJECT TO
SATISFACTORY PROVEN USE.

5. THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS
PER TABLE 14.2, IRC -112-2011

6. MAX. WATER CEMENT RATIO SHALL BE AS PER
TABLE-14.2, IRC:112-2011.

(II) REINFORCEMENT :

ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH
DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING
TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH
SHALL BE MS BARS GRADE, DESIGNATION Fe 250 CONFORMING
TO IS:432 PART-I MILD STEEL)

(III) WATER :

WATER TO BE USED IN CONCRETING AND CURING SHALL
CONFORM TO IRC : 112 - 2011.

C. WORKMANSHIP/DETAILING :

1. MINIMUM CLEAR COVER :

- SUPERSTRUCTURE = 50MM
- SUBSTRUCTURE : ABUTMENT = 75MM, PIER = 50
- FOUNDATION = 75MM

2. DESIGN LOAD :

- CLASS A TWO LANES OR CLASS 70R TRACKED/WHEELED OR
OR IRC CLASS SV LOADING WHICHEVER PRODUCES WORST
EFFECT IS CONSIDERED FOR DESIGN.
- THE BRIDGE IS IN SEISMIC ZONE-V.
- SEISMIC LOADING :- AS PER CL. NO. 219 OF IRC:6-2017.

3. BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.

4. SUPPORTING CHAIRS OF 16 MM DIAMETER SHALL BE PROVIDED
AT SUITABLE INTERVALS AS PER IS : 2502.

5. LAP LENGTH & DEVELOPMENT LENGTH (L_d) OF REINFORCING
BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE
15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.

6. PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY
USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL
WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN
DECK SLAB SHALL BE ENSURED.

7. SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO
ENABLE THE COMPACTION BY FORM VIBRATORS.

8. SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.

9. CONSTRUCTION JOINT SHOULD BE PROVIDED AT LOCATION OF
ZERO MOMENT AS FAR AS PRACTICABLE & SHOULD BE
PRE-APPROVED BY ENGINEER IN CHARGE.

10. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:

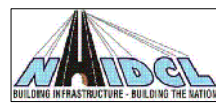
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA
(SHEET NO. 02)

CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/INTEGRAL
(SHEET NO. 01)

R0					
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

SCALE: AS SHOWN
DATE: JAN.,2023

CLIENT:



NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED.
3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET,
NEW DELHI - 110001

PROJECT:

CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC
CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF
FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A
BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD
(LENGTH 225.000 KM) IN THE STATE OF ASSAM.

TITLE: GENERAL ARRANGEMENT DRAWING OF
1 X 15.0M INTEGRAL SLAB BRIDGE LVUP
(AT CHAINAGE - 189.795KM)
PACKAGE - 10

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE NO: (LOT-1) PACKAGE 1A

CONSULTANT :



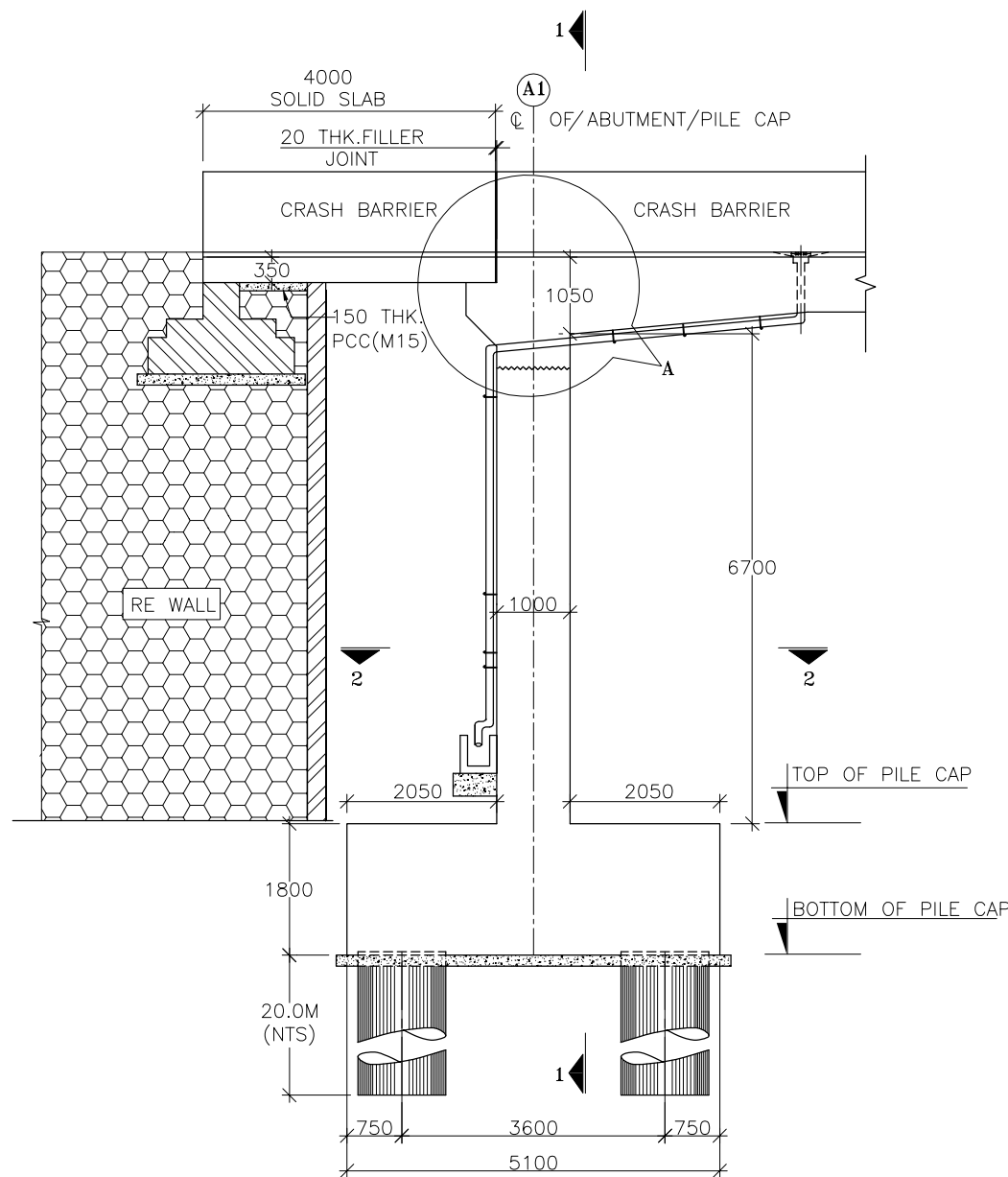
C.E. TESTING COMPANY PV
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.



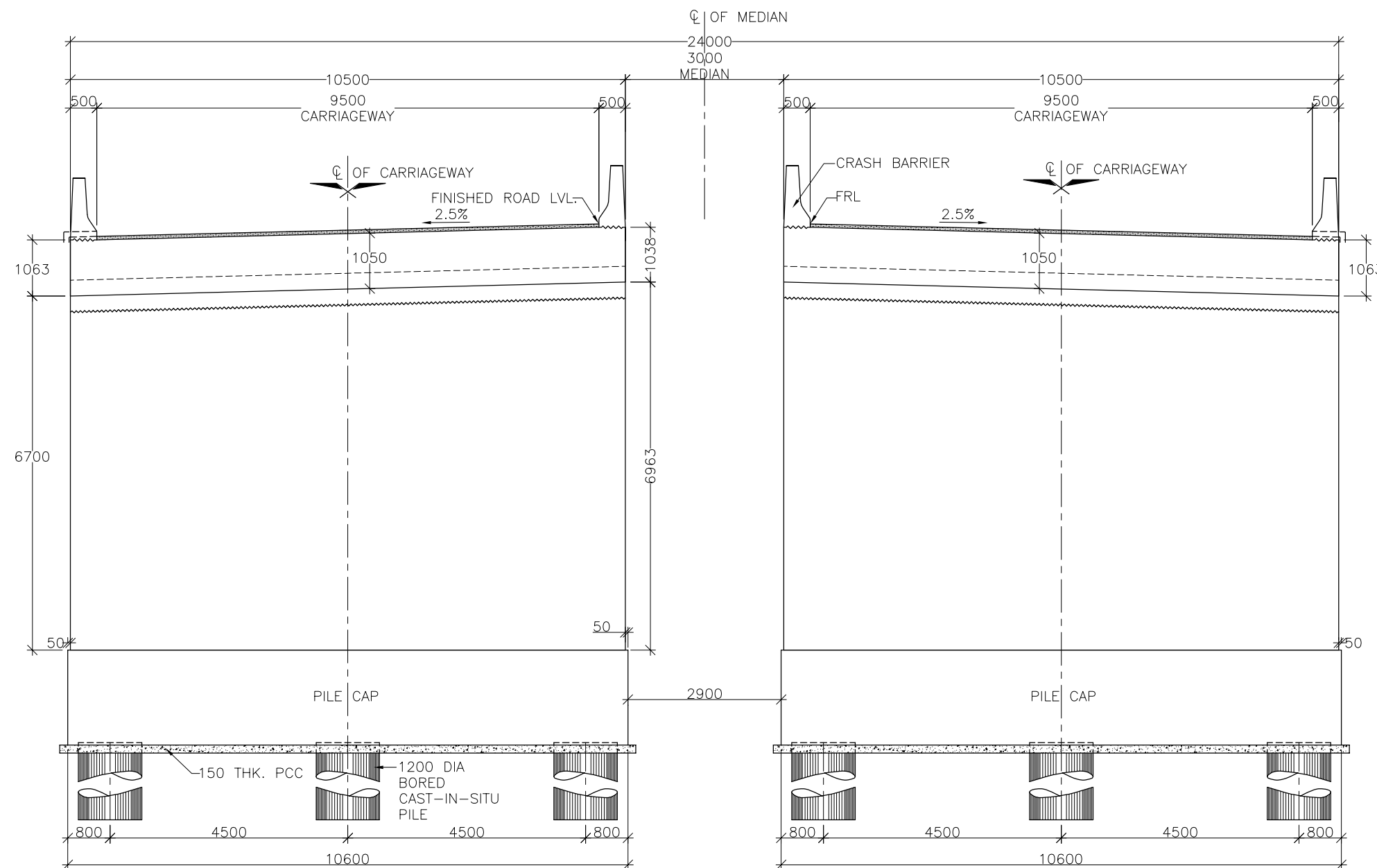
DRG. NO.:

CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA

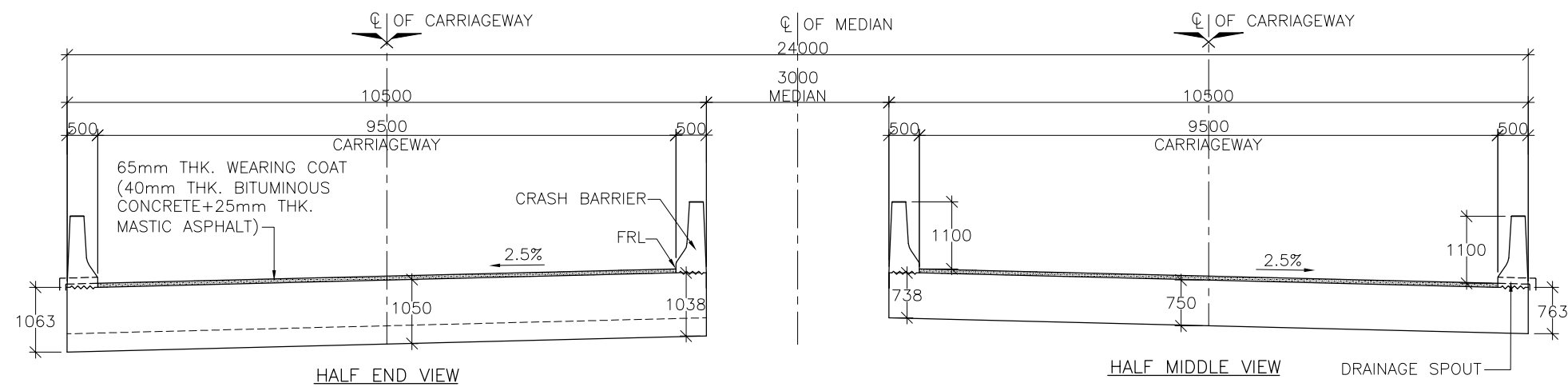
REVISION MKD. - R0		SHEET NO. - 01 OF 02	
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
C.B	P.S	S.D	S.BHADRA



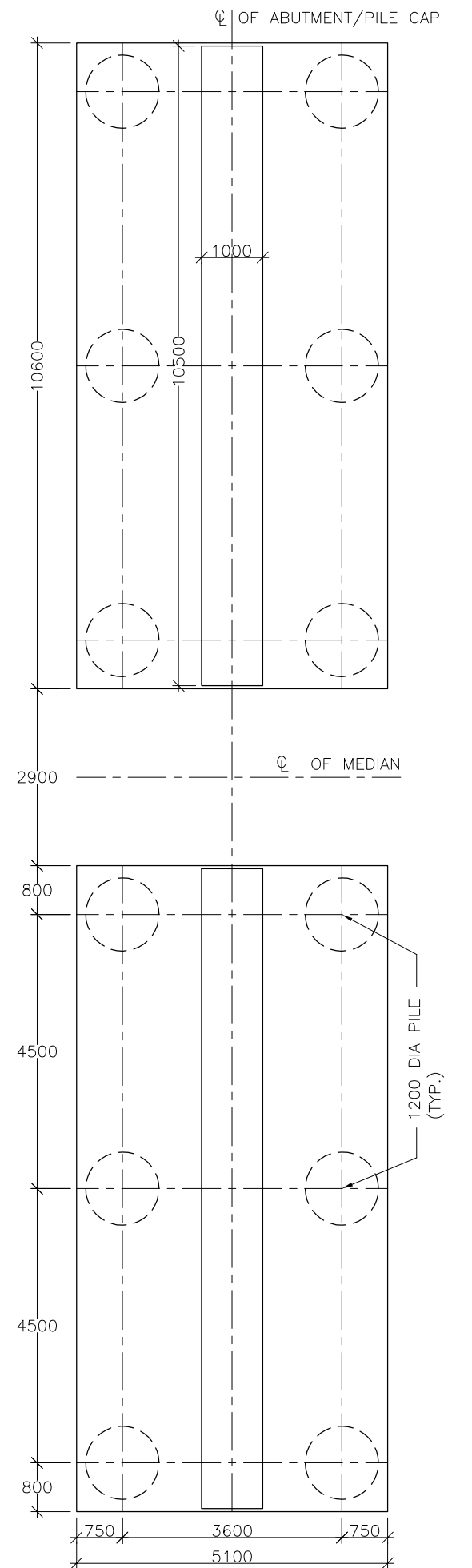
DETAIL OF ABUTMENT
SCALE - 1:100



SECTION 1-1
SCALE - 1:100



TYPICAL CROSS SECTION OF SUPER STRUCTURE
SCALE-1:100

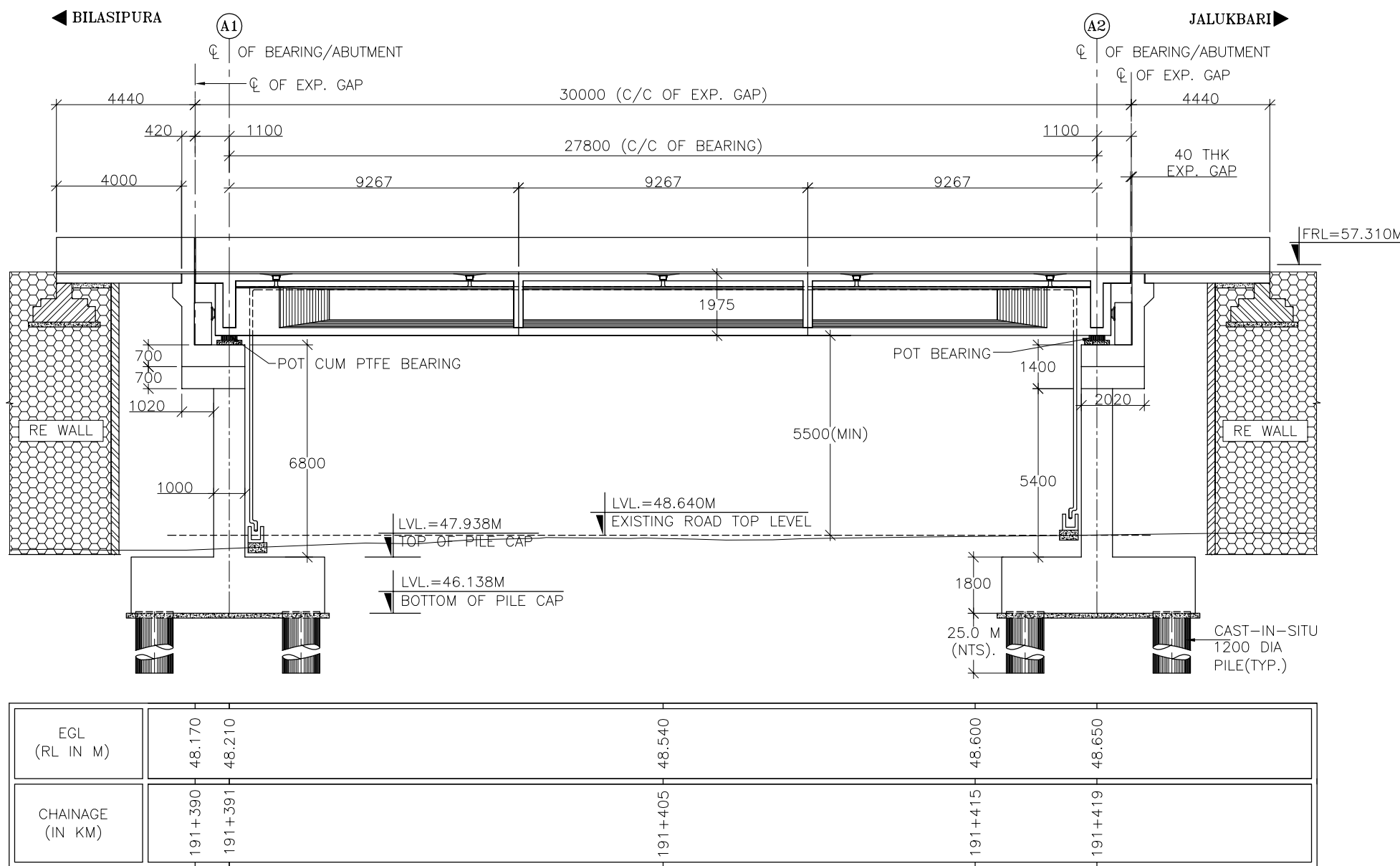


SECTION 2-2
SCALE - 1:100

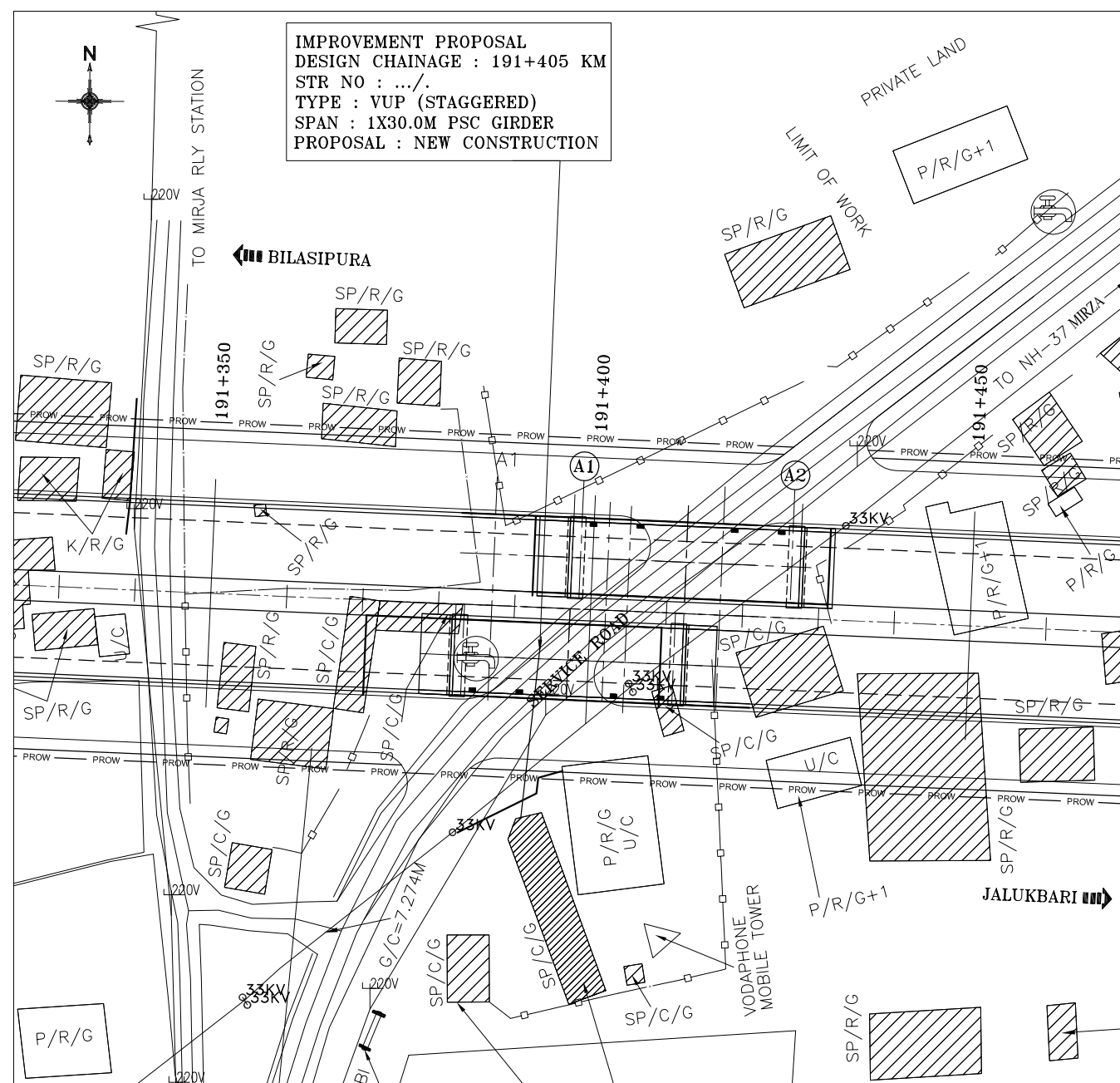
NOTES :

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED, ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA
(SHEET NO. 01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/INTEGRAL
(SHEET NO. 01)

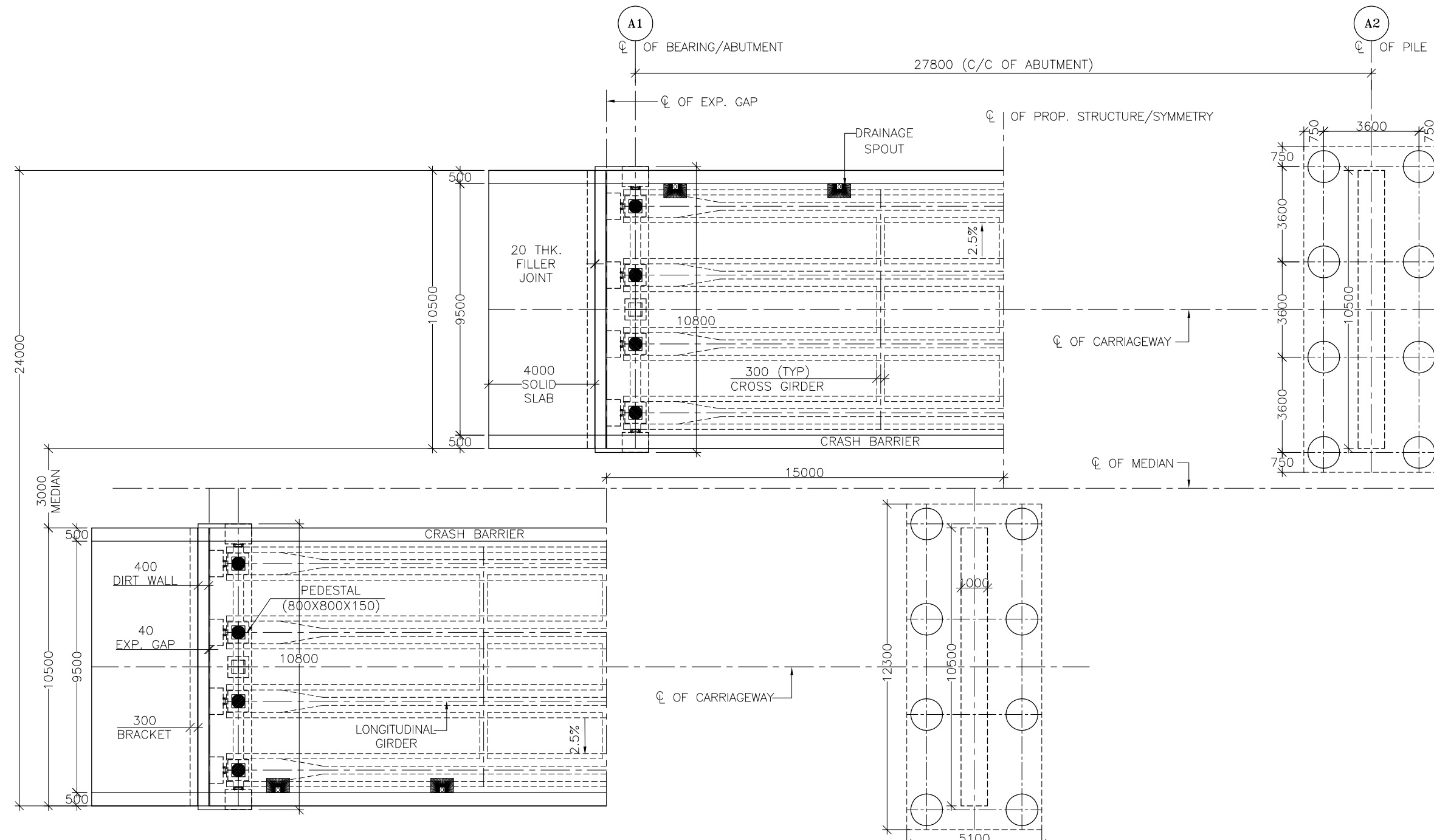
					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: DETAILS OF ABUTMENT	CONSULTANT:  C.E. TESTING COMPANY PV 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA
R0					DATE: JAN.,2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		REVISION MKD. - R0
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE NO: (LOT-1) PACKAGE 1A		SHEET NO.- 02 OF 02
		REVISIONS							DRAWN BY  C.B
									DESIGN BY  P.S
									CHECKED BY  S.D
									ISSUED BY  S.BHADRA



SECTIONAL ELEVATION
SCALE 1:175



LOCATION PLAN
(SCALE : NTS)



HALF SUPER-STRUCTURE PLAN

HALF FOUNDATION PLAN

REVISIONS	DATE	DESCRIPTION	CHKD.	APPRD.
R0				
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

SCALE: 1:175	CLIENT:
SCALE: AS SHOWN	
DATE: JAN., 2023	PROJECT:

	NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001
CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	

TITLE: GENERAL ARRANGEMENT DRAWING OF 1 X 30.0M PSC T-GIRDER VUP (AT CHAINAGE - 191.405KM) PACKAGE - 10	SUBMISSION TYPE: FINAL DETAILED PROJECT REPORT
PACKAGE NO: (LOT-1) PACKAGE 1A	

CONSULTANT: CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company	C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.
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DRG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA	REVISION MKD. - R0	SHEET NO. - 01 OF 02
DRAWN BY: A. Manna	DESIGN BY: P.S.	CHECKED BY: S.D.
ISSUED BY: S.BHADRA		

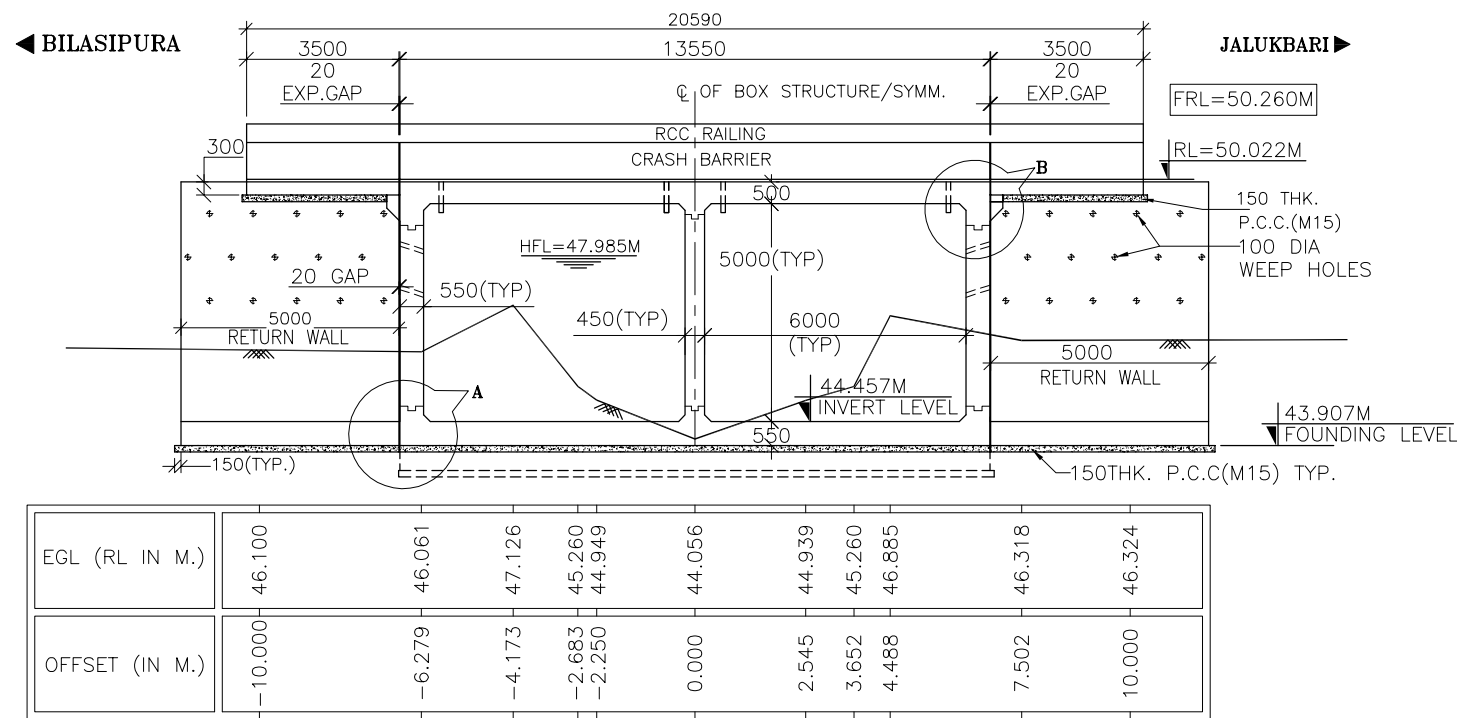
GENERAL NOTES :

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M . UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- MATERIALS SPECIFICATIONS :**
 - CONCRETE :**
 - GRADE OF CONCRETE USED :-
 - DECK SLAB = M40,
 - GIRDER = M45,
 - SUB STRUCTURE = M30,
 - DIRT WALL = M30,
 - PILE CAP = M30,
 - PILE = M35,
 - SOLID SLAB = M30,
 - P.C.C. BELOW SOLID SLAB = M15,
 - CRASH BARRIER = M40,
 - PEDESTAL = M35,
 - REACTION BLOCK = M35.
 - CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON 150MM CUBES FOR MODERATE EXPOSURE.
 - 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
 - TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES CONFORMING TO IS:9103 MAY BE USED SUBJECT TO SATISFACTORY PROVEN USE.
 - THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS PER TABLE 14.2, IRC -112-2011
 - MAX. WATER CEMENT RATIO SHALL BE AS PER TABLE-14.2, IRC:112-2011.
- REINFORCEMENT :**
 - ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH SHALL BE M5 BARS GRADE. DESIGNATION Fe 250 CONFORMING TO IS:432 PART-I MILD STEEL)
- WATER :**
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO IRC : 112 - 2011.
- EXPANSION JOINTS :**
 - THE EXPANSION JOINTS SHOULD BE STRIP SEAL TYPE.
- BEARING :**
 - BEARING SHALL BE OF POT CUM PTFE TYPE. THE SIZE & DIMENSIONS OF THE BEARINGS SHALL BE FINALIZED AS PER THE DETAILS PROVIDED BY THE APPROVED VENDOR.

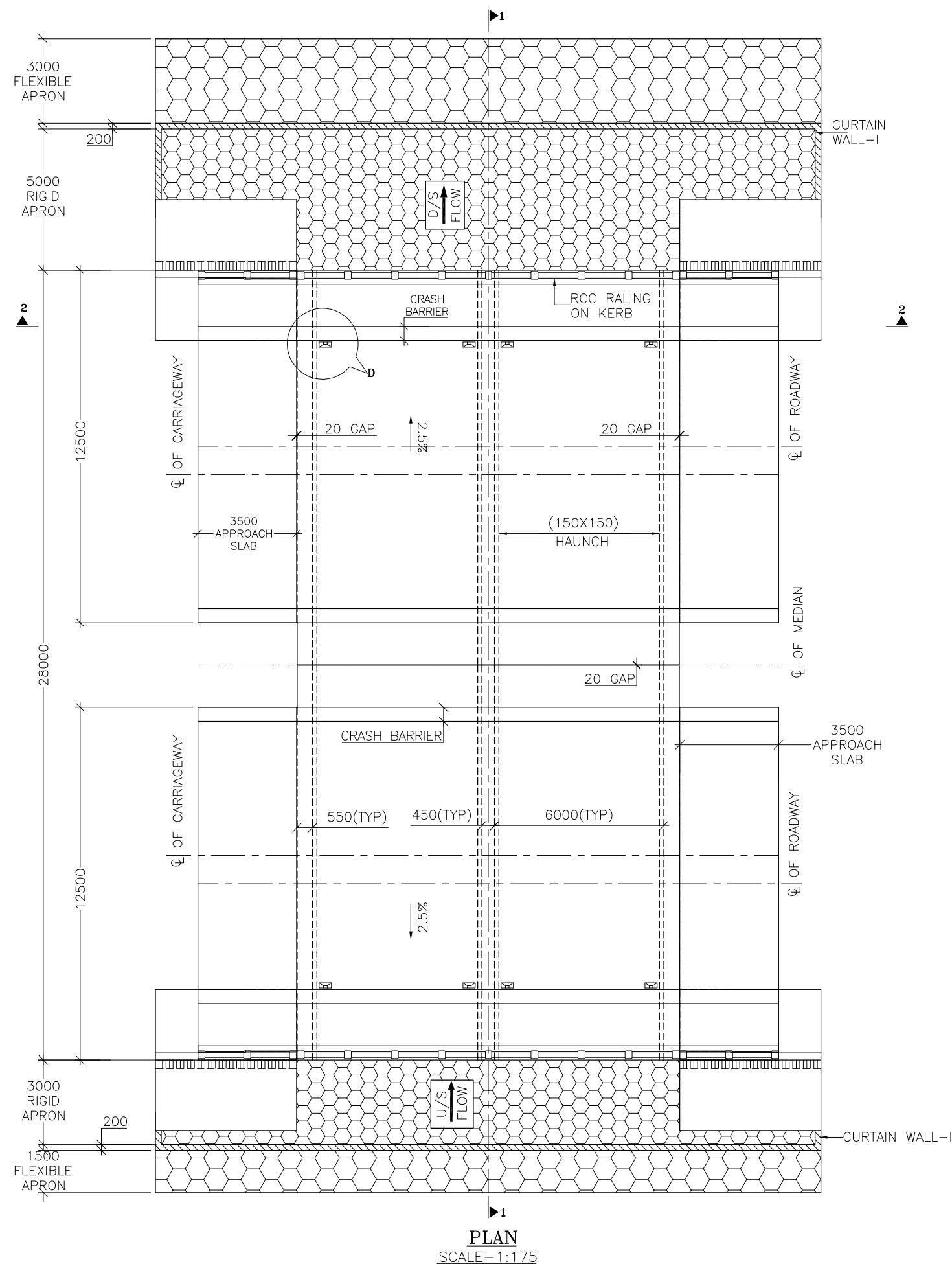
C. WORKMANSHIP/DETAILING :

- MINIMUM CLEAR COVER :
 - SUPERSTRUCTURE = 40MM
 - SUBSTRUCTURE : ABUTMENT = 50MM, PIER =50
 - FOUNDATION = 75MM
- DESIGN LOAD :
 - CLASS A TWO LANES OR CLASS 70R TRACKED/WHEELED OR OR IRC CLASS SV LOADING WHICHEVER PRODUCES WORST EFFECT IS CONSIDERED FOR DESIGN.
 - THE BRIDGE IS IN SEISMIC ZONE-V.
 - SEISMIC LOADING :- AS PER CL. NO. 219 OF IRC:6-2017.
- FOR ENSURING PROPER COVER OF CONCRETE TO REINFORCEMENT SPECIALLY MADE POLYMER COVER BLOCKS SHALL ONLY BE USED.
- BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
- SUPPORTING CHAIRS OF 16 MM DIAMETER SHALL BE PROVIDED AT SUITABLE INTERVALS AS PER IS : 2502.
- LAP LENGTH & DEVELOPMENT LENGTH (Ld) OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE 15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.
- PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN DECK SLAB SHALL BE ENSURED.
- SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO ENABLE THE COMPACTION BY FORM VIBRATORS.
- SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
- THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN THUS: . THIS SHALL BE DISTINCTLY ETCHED ON END CROSS GIRDERS ABUTMENT CAPS.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA (SHEET NO. 02)
- CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/SUP/PSC/30.0M/GA (SHEET NO. 01 TO 02)
- CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/PSC T GIRDER (SHEET NO. 01 OF 01)

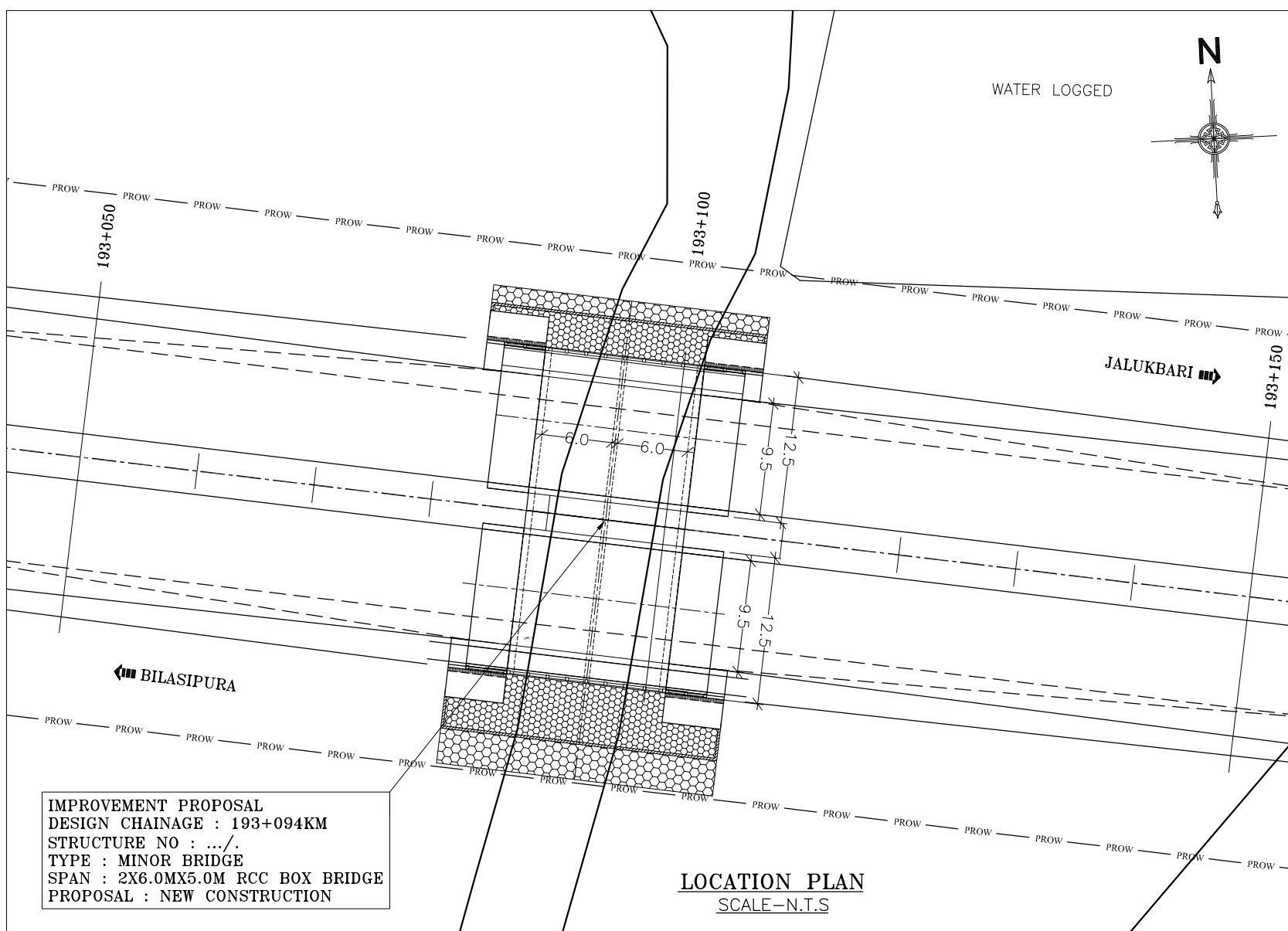
					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: DETAILS OF ABUTMENT	CONSULTANT:  Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company  C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../).YGA			
R0					DATE: JAN.,2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.00 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		REVISION MKD. - R0	SHEET NO. - 02 OF 02		
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.					DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
REVISIONS									A. Manna			
									A.M	P.S	S.D	S.BHADRA



SECTION 2-2
SCALE-1:175



PLAN
SCALE-1:175



SECTION 1-1
SCALE-1:150

GENERAL NOTES :

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 - MATERIALS SPECIFICATIONS :**
 - CONCRETE :**
 - GRADE OF CONCRETE USED :-

a) BOX STRUCTURE = M30,	e) R.C.C. RAILING & KERB = M30,
b) RETURN WALL = M30,	f) CRASH BARRIER = M40,
c) APPROACH SLAB = M30,	g) CURTAIN WALL (P.C.C) = M20.
 - LEVELING COURSE (P.C.C) = M15,
 - CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON 150MM CUBES FOR MODERATE EXPOSURE.
 - 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
 - TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES CONFORMING TO IS:9103 MAY BE USED SUBJECT TO SATISFACTORY PROVEN USE.
 - THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS PER TABLE 14.2, IRC -112-2011.
 - MAX. WATER CEMENT RATIO SHALL BE AS PER TABLE-14.2, IRC:112-2011.
 - REINFORCEMENT :**
 - ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH SHALL BE MS BARS GRADE, DESIGNATION Fe 250 CONFORMING TO IS:432 PART-I MILD STEEL)
 - WATER :**
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO IRC : 112 - 2011.
 - FILTER MATERIAL BEHIND SIDE WALL AND RETURN WALL SHALL CONFORM TO CLAUSE 2504.2.2 OF MORTH SPECIFICATIONS TO A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO THE FULL HEIGHT.**
 - PROPERTIES OF BACKFILL SOIL $\gamma=2.0t/m^3$, $\phi=30^\circ$.**
- WORKMANSHIP/DETAILING :**
 - MINIMUM CLEAR COVER : 50MM
 - DESIGN LOAD :
 - CLASS A TWO LANES OR ONE LANE OF CLASS 70R TRACKED/WHEELED OR IRC CLASS SV LOADING WHICHEVER PRODUCES WORST EFFECT IS CONSIDERED FOR DESIGN.
 - THE BRIDGE IS IN SEISMIC ZONE-V.
 - FOOTPATH LOADING :- AS PER CL.NO. 206.1 OF IRC:6-2017
 - BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
 - LAP LENGTH & DEVELOPMENT LENGTH (Ld) OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE 15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.
 - PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN TOP SLAB SHALL BE ENSURED.
 - SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO ENABLE COMPACTION BY FORM VIBRATORS.
 - SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
 - THE WEEP HOLES SHALL BE WITH 100MM DIA AC PIPE IN 1:20 SLOPE @ 1M C/C STAGGERED HORIZONTALLY & VERTICALLY AT SIDE WALL & RETURN WALLS.
 - CONSTRUCTION JOINT SHOULD BE PROVIDED AT LOCATION OF ZERO MOMENT AS FAR AS PRACTICABLE & SHOULD BE PRE-APPROVED BY ENGINEER IN CHARGE. CONCRETING NEAR CONSTRUCTION JOINT SHALL BE DONE AS SPECIFIED IN MORTH/MOST STANDARD DRAWING(SD/101).
 - THE SOIL BELOW FOUNDATION LEVEL SHOULD BE WELL COMPACTED TO ACHIEVE MINIMUM BEARING CAPACITY OF 9t/SQM.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/(STR-.../)/GA (SHEET NO. 02)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/BOX (SHEET NO. 01 OF 01)

R0					
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

SCALE:
AS SHOWN

DATE:
JAN.,2023

CLIENT:
NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001

PROJECT:
CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A
BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD
(LENGTH 225.000 KM) IN THE STATE OF ASSAM.

TITLE:
GENERAL ARRANGEMENT DRAWING OF
2 X 6.0M X 5.0M RCC BOX BRIDGE
(AT CHAINAGE - 193.094KM)
PACKAGE 10

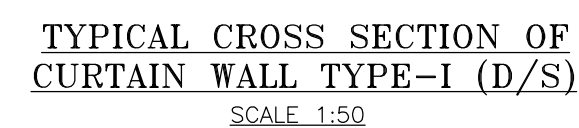
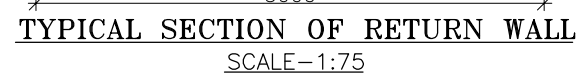
SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

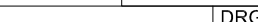
PACKAGE NO: (LOT-1) PACKAGE 1A

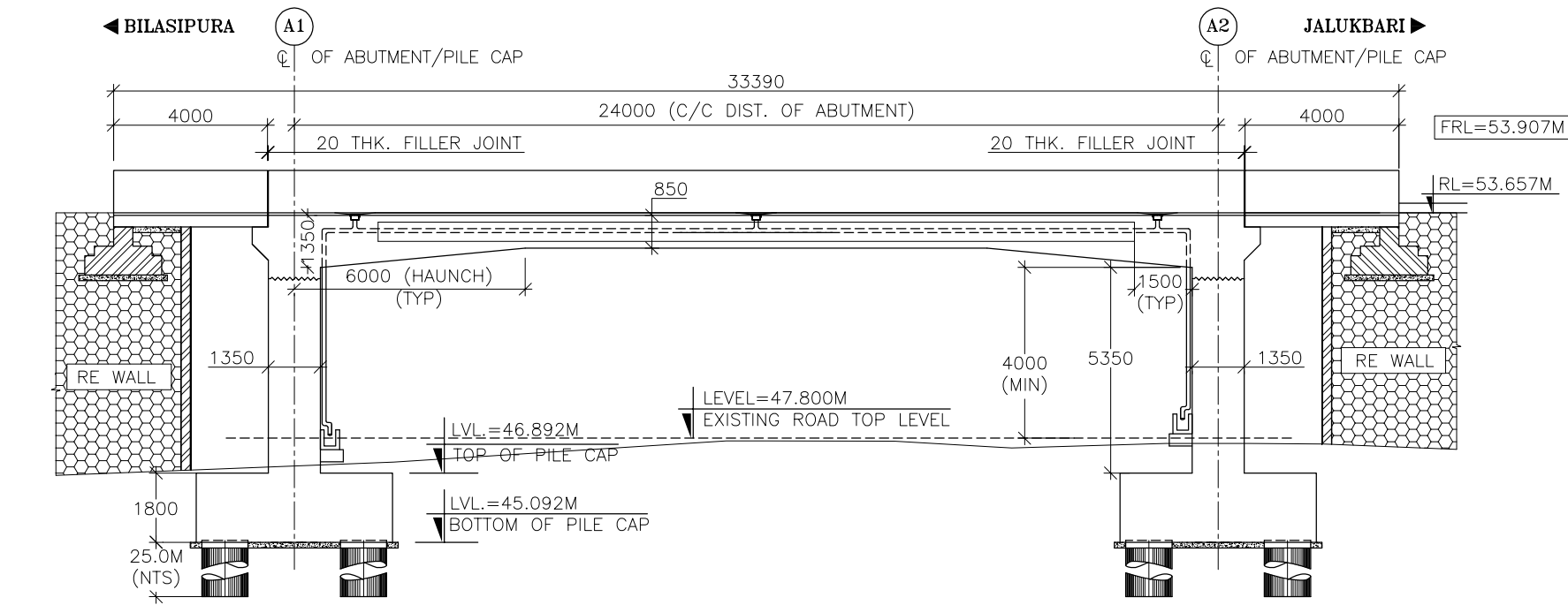
CONSULTANT :
CETEST
Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001
Certified Company

C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/(STR-.../)/GA			
REVISION MKD. - R0		SHEET NO. - 01 OF 02	
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
A.M	T.T.A	S.D	S.BHADRA

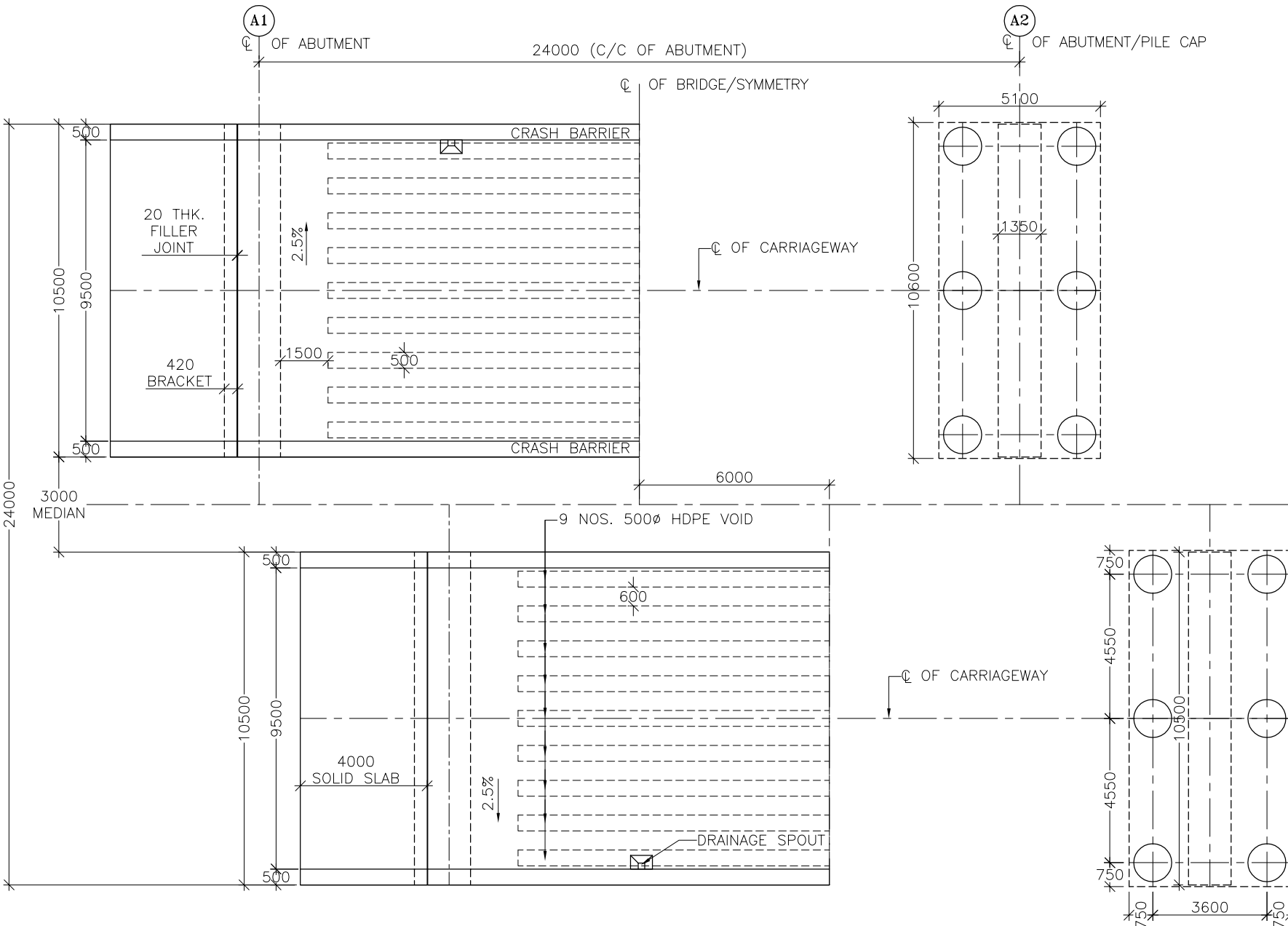


					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE : GENERAL ARRANGEMENT DRAWING OF 2 X 6.0M X 5.0M RCC BOX BRIDGE	CONSULTANT :  An ISO 9001, 14001 & OHSAS 18001 Certified Company  C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/(STR-.../)/GA REVISION MKD. - R0 SHEET NO. - 02 OF 02
R0					DATE: JAN, 2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		 A.M  T.T.A  S.D S.BHADRA
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			REVISIONS		



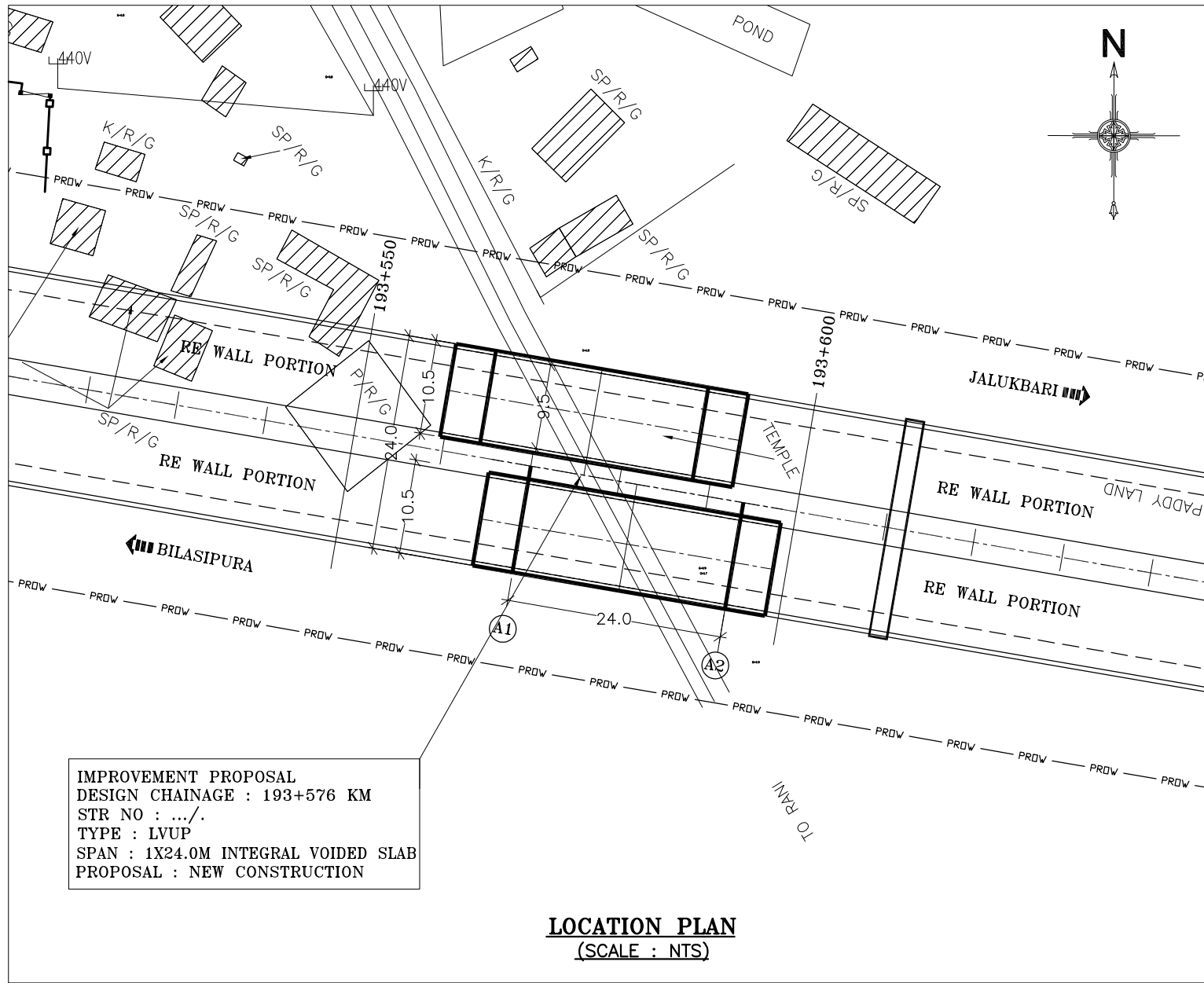
EGL (RL IN M)	47.075	47.725	47.593	47.660
CHAINAGE (IN KM)	193+564	193+576	193+584	193+588

SECTIONAL ELEVATION
SCALE 1:175



HALF SUPER STRUCTURE PLAN
SCALE 1:175

HALF FOUNDATION PLAN
SCALE 1:175



LOCATION PLAN
(SCALE : NTS)

GENERAL NOTES :

A. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.

B. MATERIALS SPECIFICATIONS :

(I) CONCRETE :

- GRADE OF CONCRETE USED :-
 - SUPERSTRUCTURE = M30, e) SOLID SLAB = M30,
 - SUB STRUCTURE = M30, f) P.C.C. BELOW SOLID SLAB = M15,
 - PILE CAP = M30, g) CRASH BARRIER = M40,
 - PILE = M35,
- CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO
ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON
150MM CUBES FOR MODERATE EXPOSURE.
- 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING
TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT
CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT
CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE
REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
- TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES
CONFORMING TO IS:9103 MAY BE USED SUBJECT TO
SATISFACTORY PROVEN USE.
- THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS
PER TABLE 14.2, IRC -112-2011
- MAX. WATER CEMENT RATIO SHALL BE AS PER
TABLE-14.2, IRC:112-2011.

(II) REINFORCEMENT :

ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH
DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING
TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH
SHALL BE MS BARS GRADE. DESIGNATION Fe 250 CONFORMING
TO IS:432 PART-I MILD STEEL)

(III) WATER :

WATER TO BE USED IN CONCRETING AND CURING SHALL
CONFORM TO IRC : 112 - 2011.

(IV) FILTER MATERIAL BEHIND ABUTMENT AND RETURN WALL SHALL
CONFORM TO CLAUSE 2504.2.2 OF MoRTH SPECIFICATIONS TO
A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE
TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO
THE FULL HEIGHT.

(V) PROPERTIES OF BACKFILL SOIL $\gamma=2.0t/m^3$, $\phi=30^\circ$.

C. WORKMANSHIP/DETAILING :

- MINIMUM CLEAR COVER :
 - SUPERSTRUCTURE = 40MM
 - SUBSTRUCTURE : ABUTMENT = 75MM, PIER & RETURN WALL=50
 - FOUNDATION = 75MM
- DESIGN LOAD :
 - CLASS A TWO LANES OR CLASS 70R TRACKED/WHEELED OR
IRC CLASS SV LOADING WHICHEVER PRODUCES WORST EFFECT
IS CONSIDERED FOR DESIGN.
 - THE BRIDGE IS IN SEISMIC ZONE-V.
 - SEISMIC LOADING :- AS PER CL. NO. 219 OF IRC:6-2017.
- BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
- SUPPORTING CHAIRS OF 16 MM DIAMETER SHALL BE PROVIDED
AT SUITABLE INTERVALS AS PER IS : 2502.
- LAP LENGTH & DEVELOPMENT LENGTH (Ld) OF REINFORCING
BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE
15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.
- PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY
USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL
WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN
DECK SLAB SHALL BE ENSURED.
- SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO
ENABLE THE COMPACTION BY FORM VIBRATORS.
- SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
- CONSTRUCTION JOINT SHOULD BE PROVIDED AT LOCATION OF
ZERO MOMENT AS FAR AS PRACTICABLE & SHOULD BE
PRE-APPROVED BY ENGINEER IN CHARGE.
- HDPE PIPE VOID FORMERS SHOULD BE SUFFICIENTLY RIGID TO
PREVENT DISTORTION DURING CONCRETING ALSO IT SHOULD BE
LEAK PROOF / WATER TIGHT.
- ALIGNMENT OF VOIDS SHOULD FOLLOW THE AXIS OF BRIDGE.
- PILE LOAD :
 - AT ABUTMENT : HORIZONTAL = TON
VERTICAL = TON
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA
(SHEET NO. 02)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/VOIDED/VUP
(SHEET NO. 01)

R0					
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

SCALE:
AS SHOWN

DATE:
JAN.,2023

CLIENT:



NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED.
3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET,
NEW DELHI - 110001

PROJECT:

CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC
CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF
FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A
BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD
(LENGTH 225.000 KM) IN THE STATE OF ASSAM.

TITLE:

GENERAL ARRANGEMENT DRAWING OF
1 X 24.0M RCC INTEGRAL VOIDED SLAB
BRIDGE_LVUP (AT CHAINAGE - 193.576KM)
PACKAGE-10

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE NO: (LOT-1) PACKAGE 1A

CONSULTANT :



C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. :

CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA

REVISION MKD. - R0

SHEET NO. - 01 OF 02

DRAWN BY

DESIGN BY

CHECKED BY

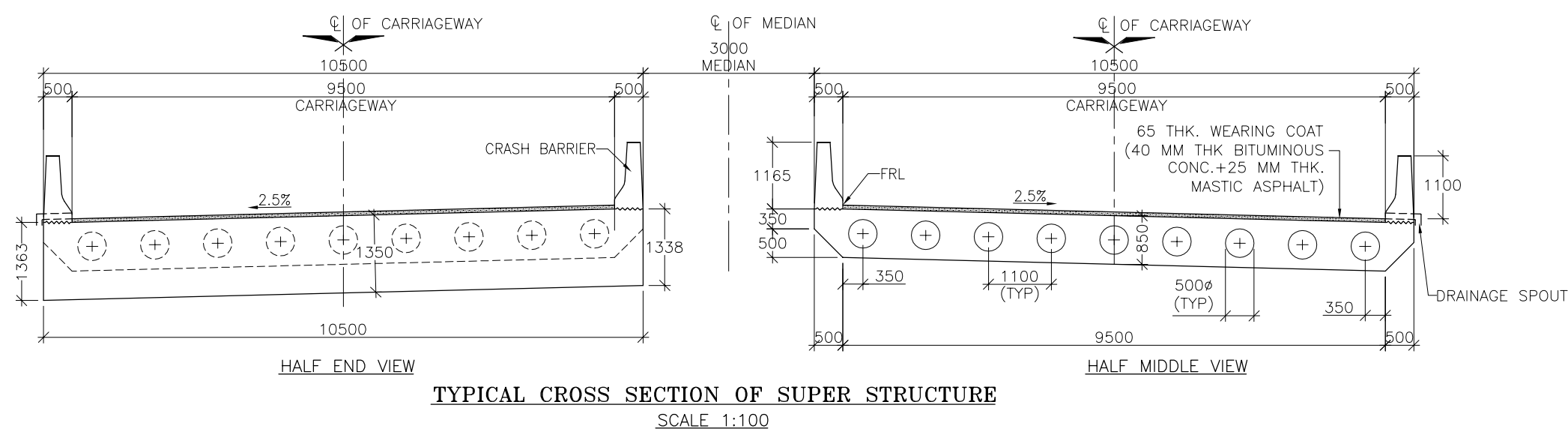
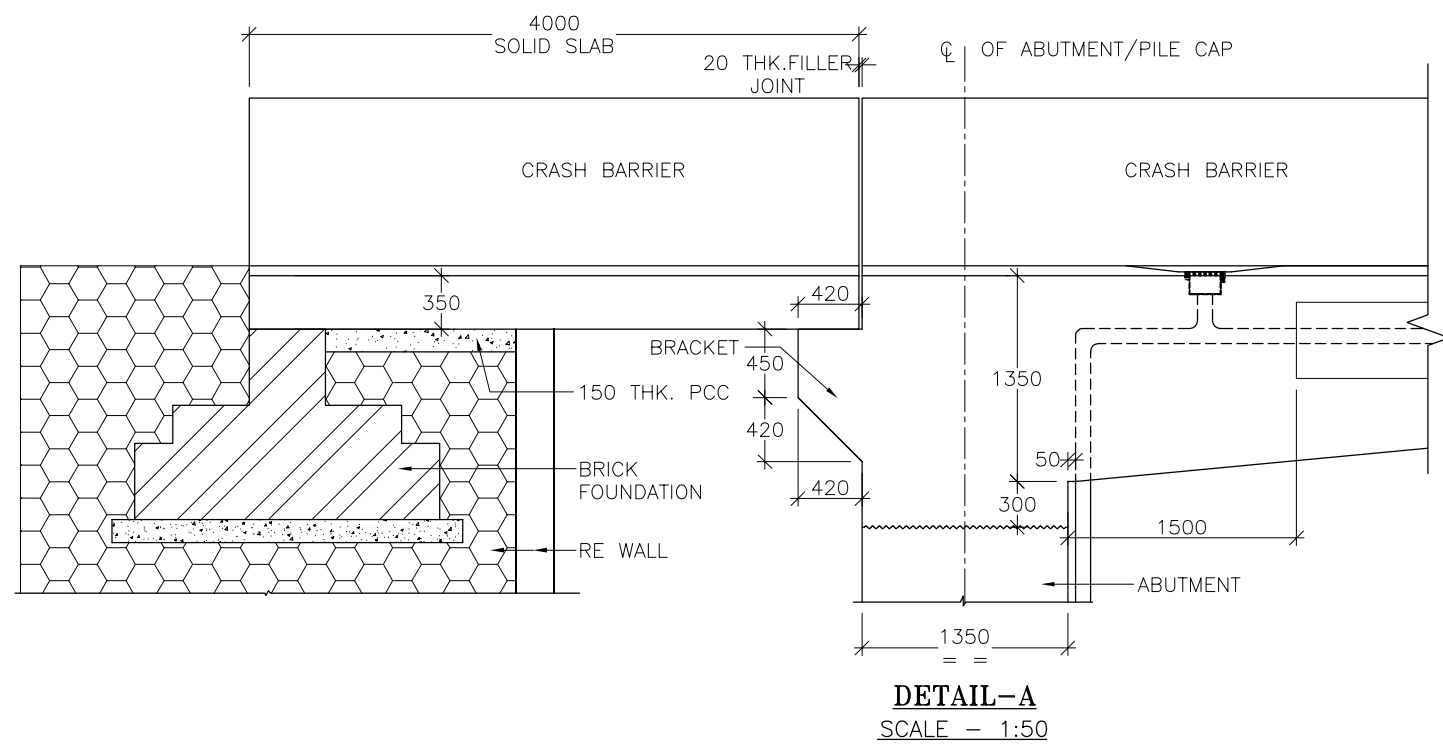
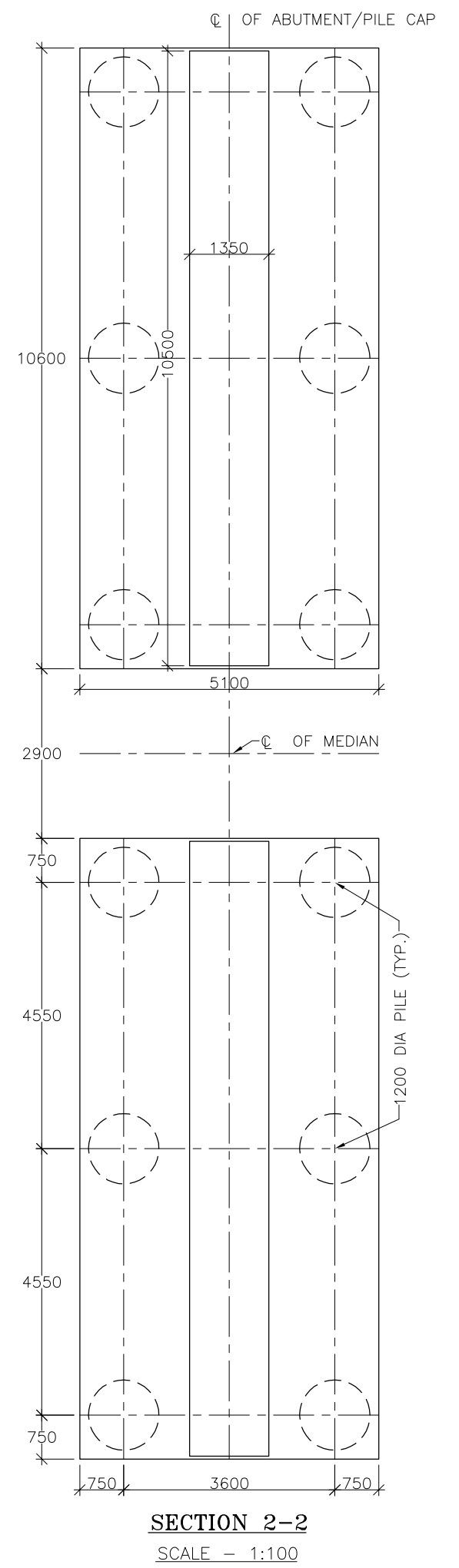
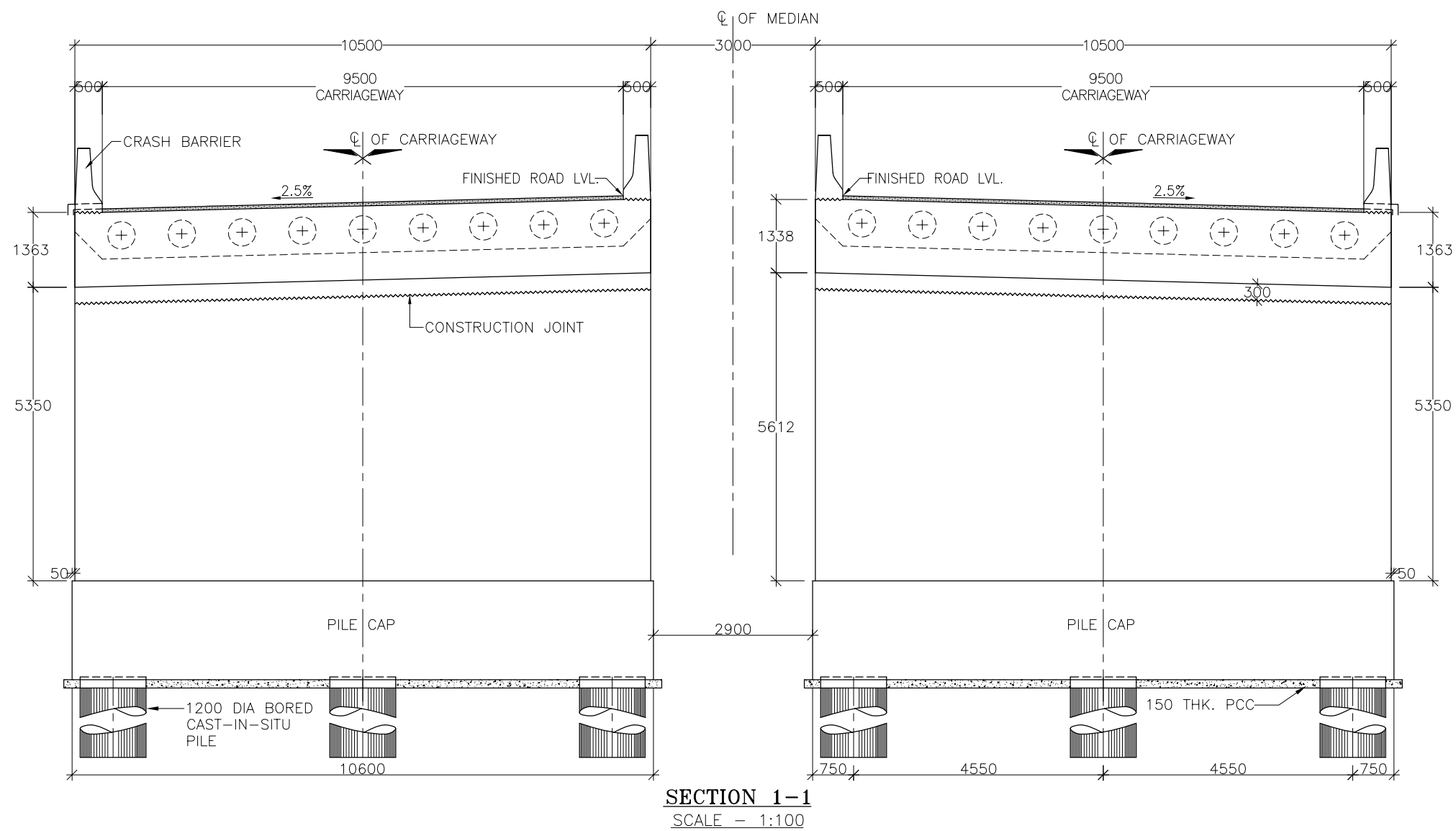
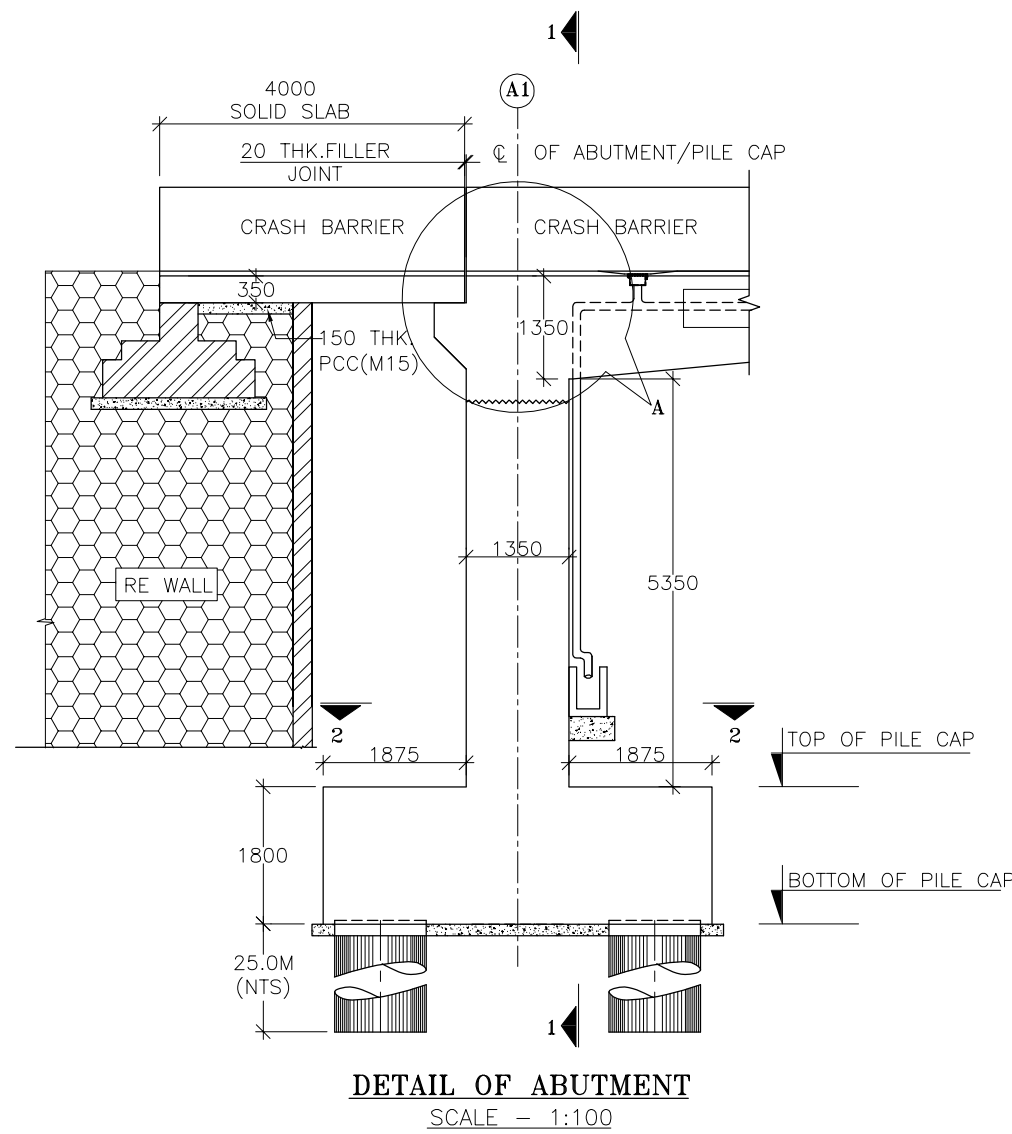
ISSUED BY

A. Manna

T.T.A

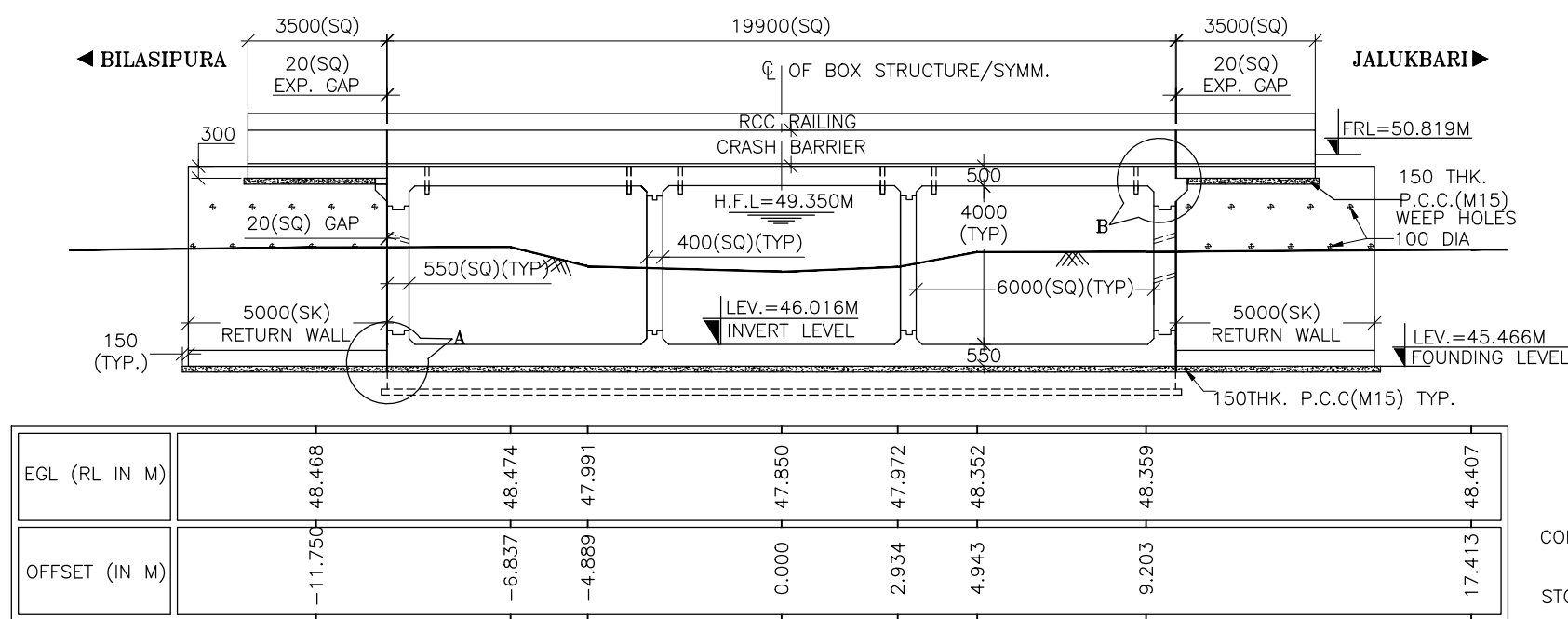
K.D

S.BHADRA

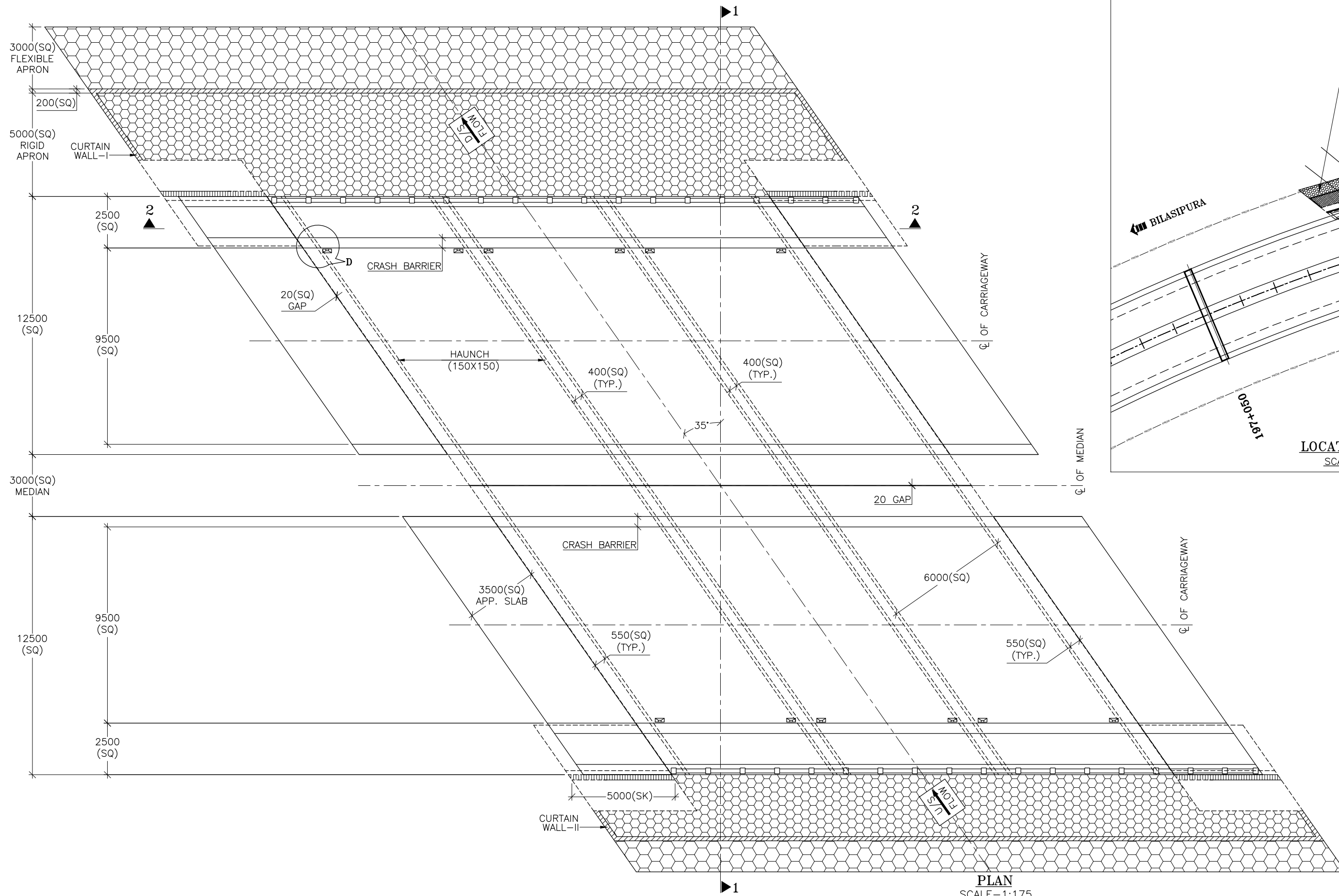


- NOTES :**
1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.
 2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA
(SHEET NO. 01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/VOIDED/VUP
(SHEET NO. 01)

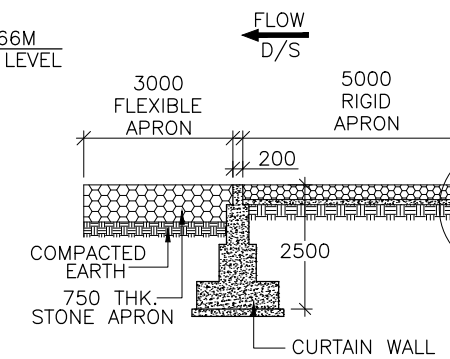
					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: DETAILS OF ABUTMENT	CONSULTANT :  C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../)/GA
R0					DATE: JAN., 2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		REVISION MKD. - R0
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE NO: (LOT-1) PACKAGE 1A		SHEET NO.- 02 OF 02
REVISIONS									DRAWN BY A.Manna
									DESIGN BY T.T.A
									CHECKED BY K.D
									ISSUED BY S.BHADRA



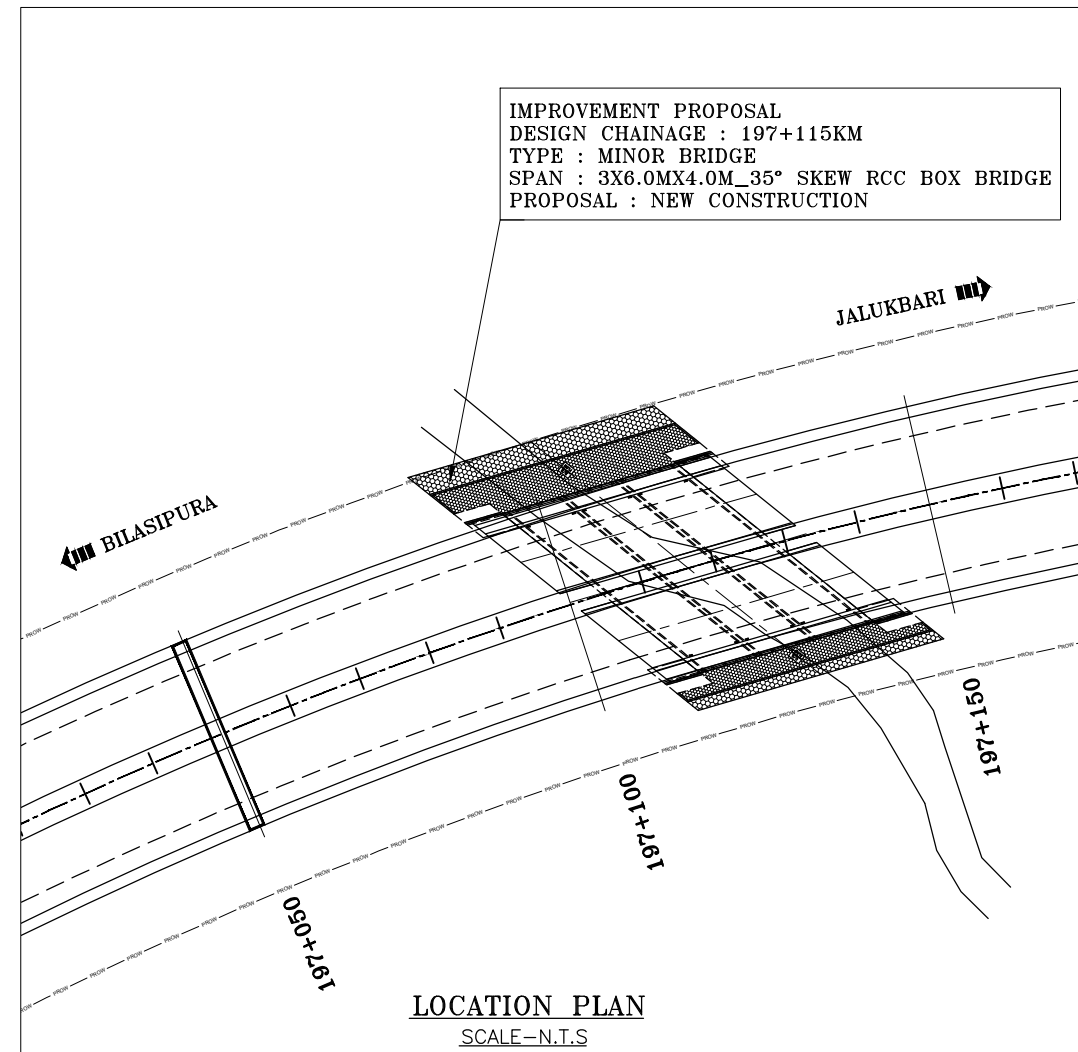
SECTION 2-2
SCALE-1:175



PLAN
SCALE-1:175



SECTION 1-1
(SCALE-1:150)

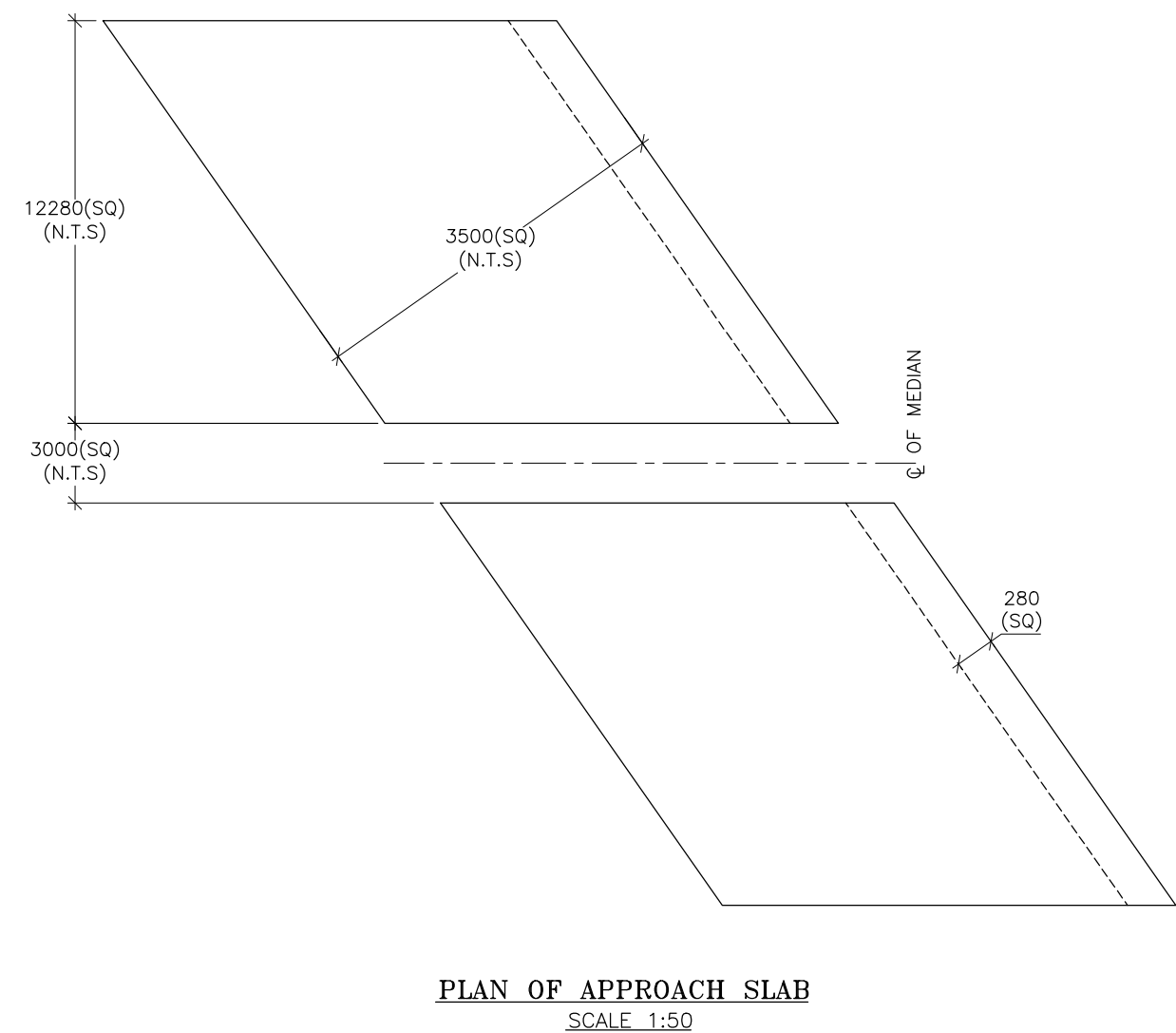
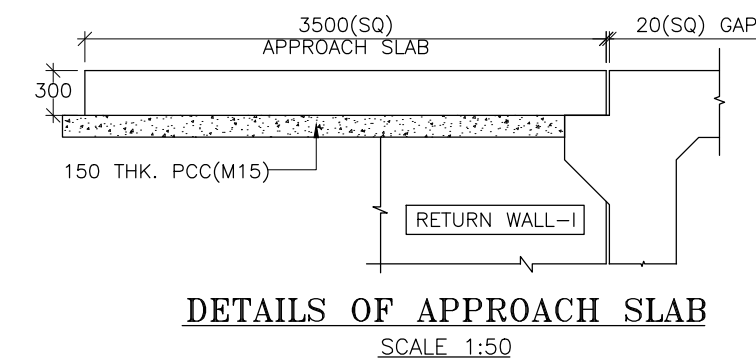
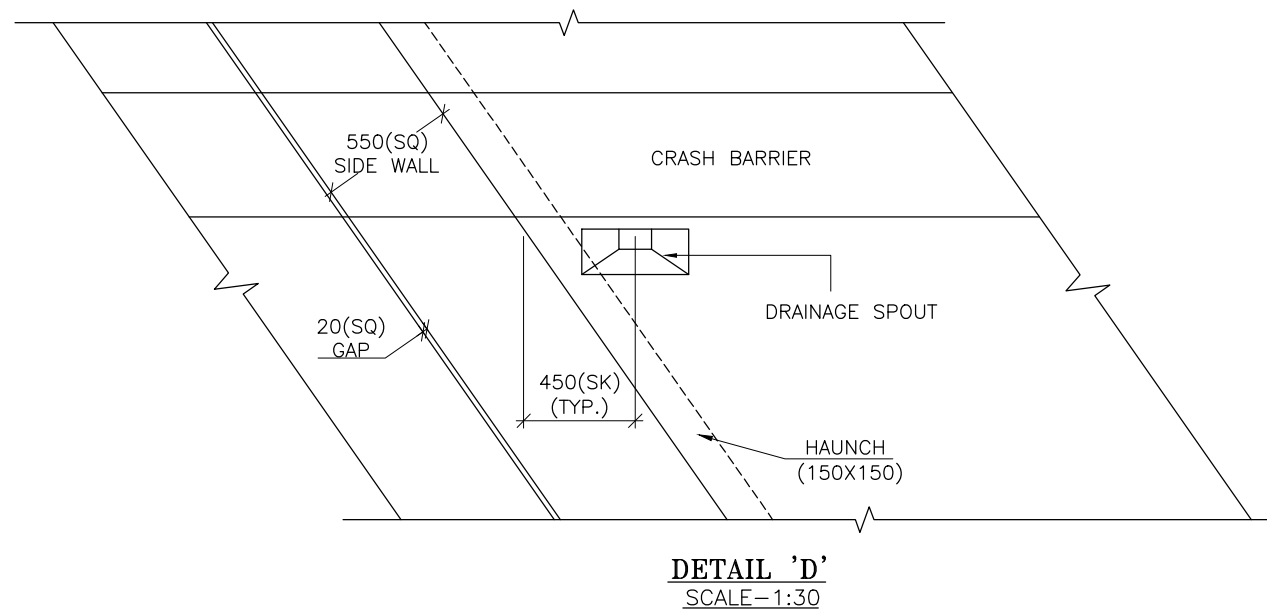
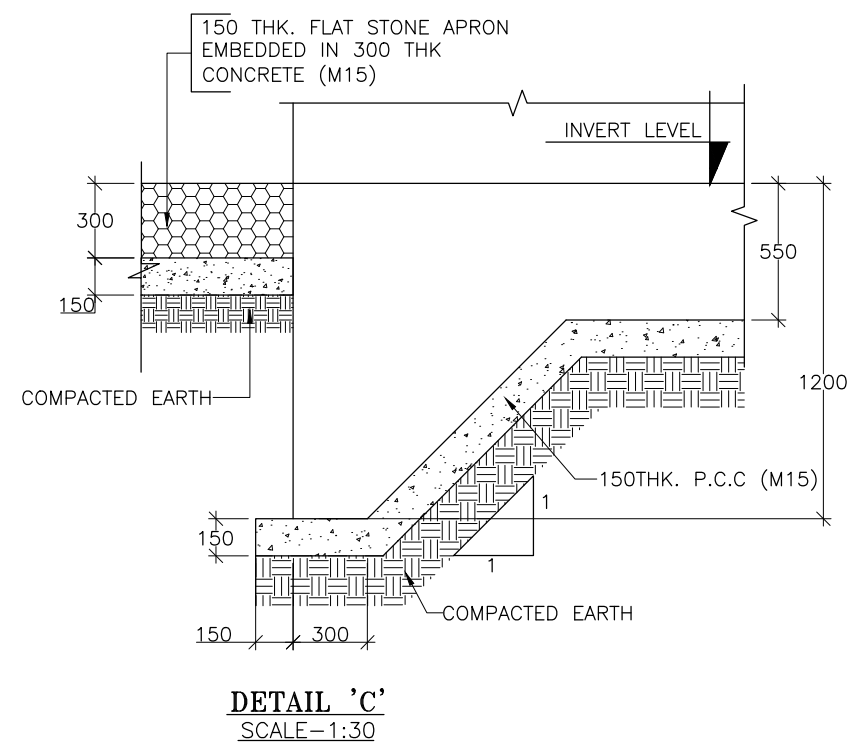
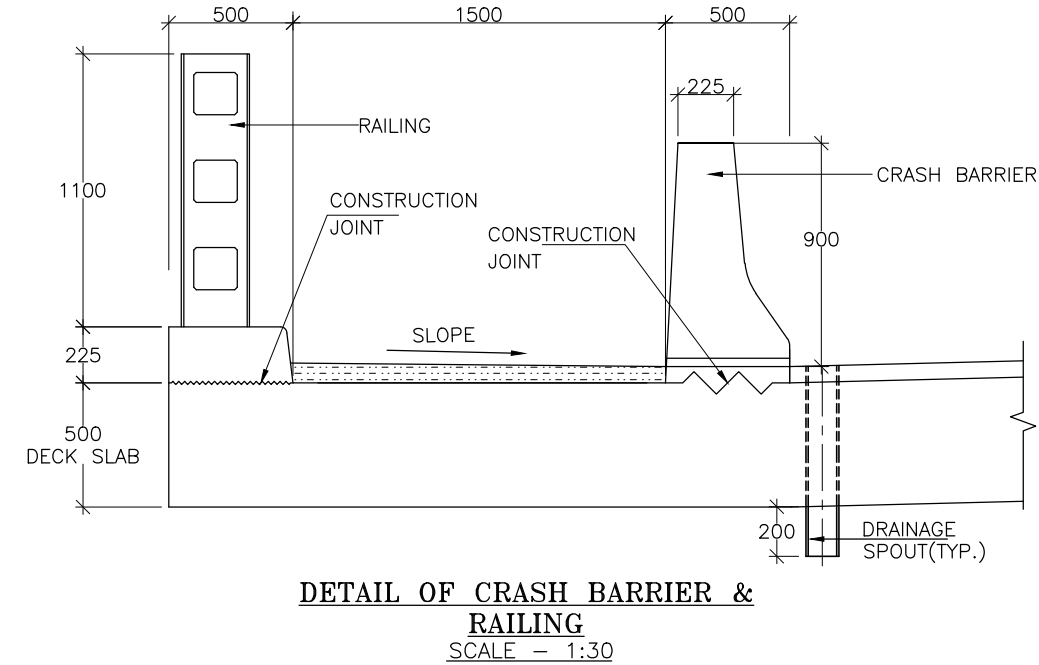
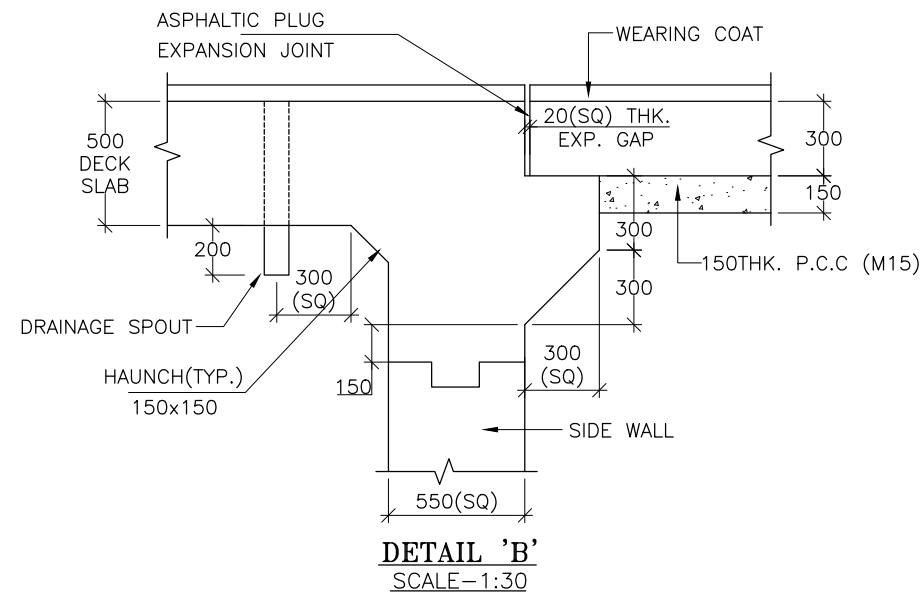
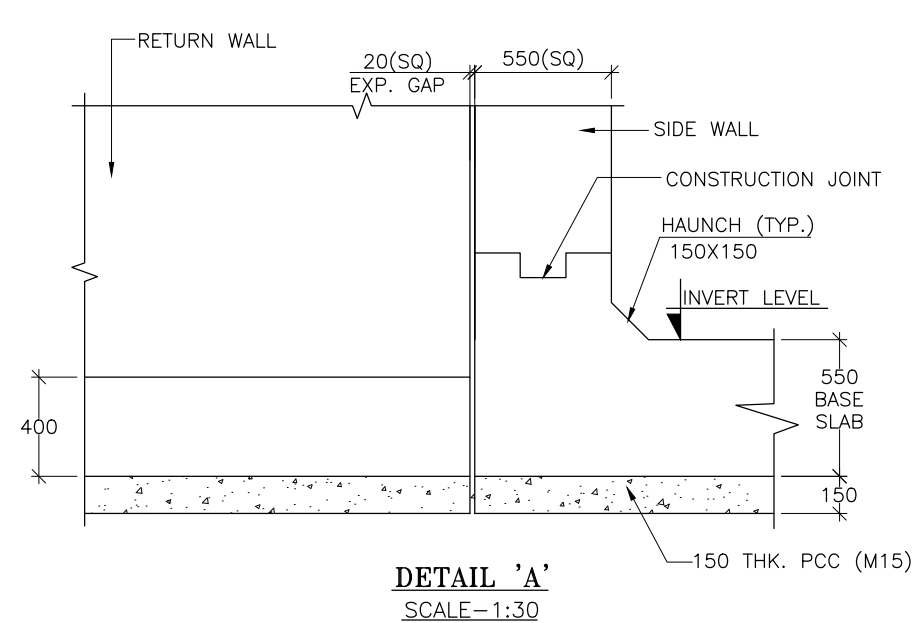


LOCATION PLAN
SCALE-N.T.S

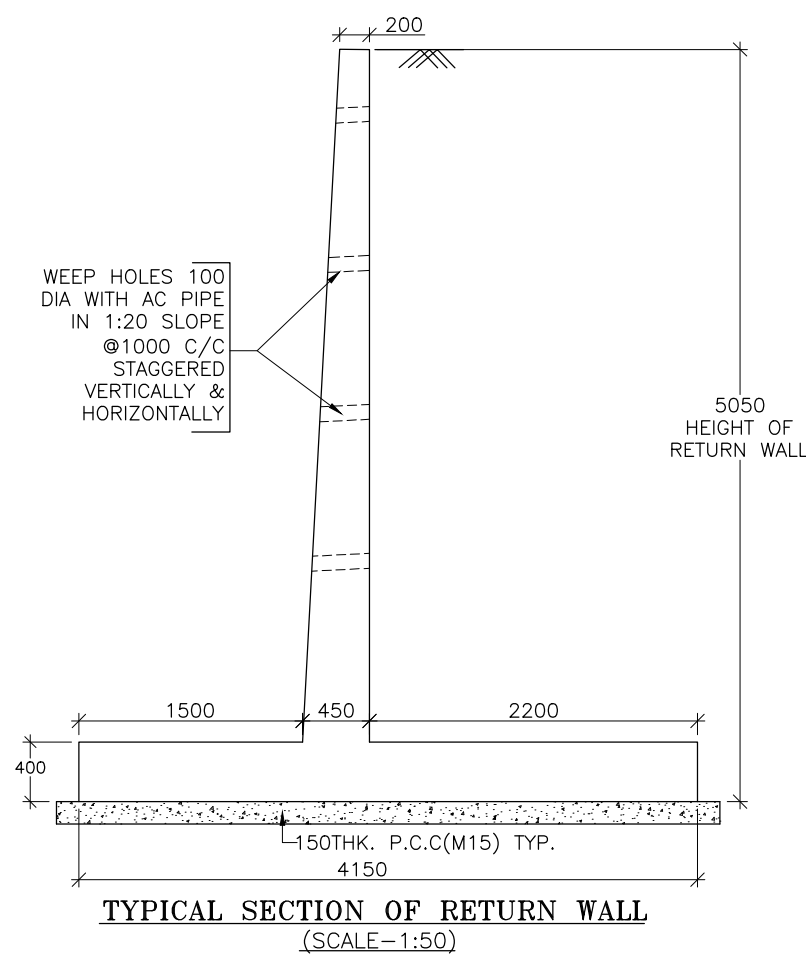
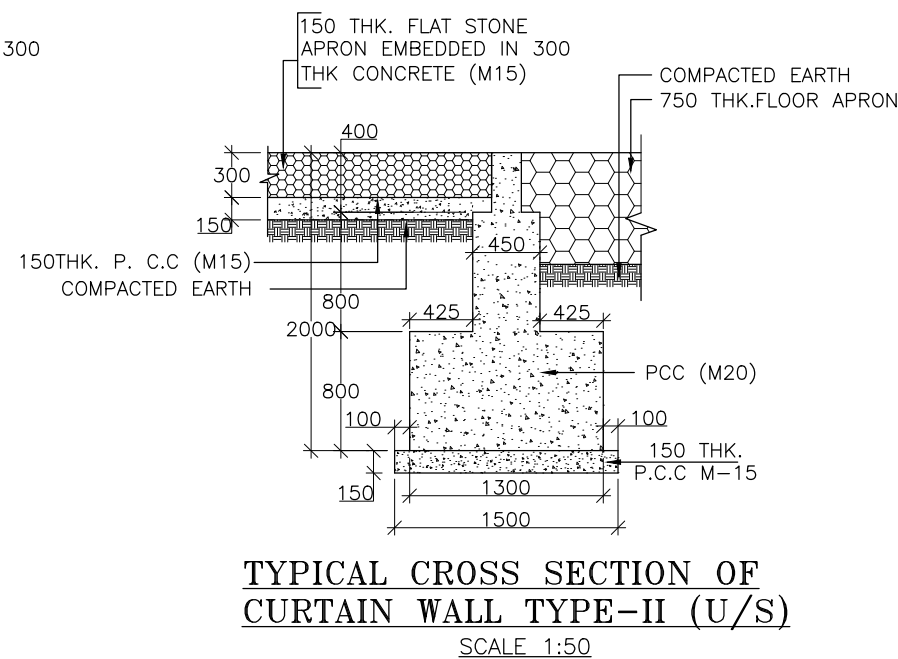
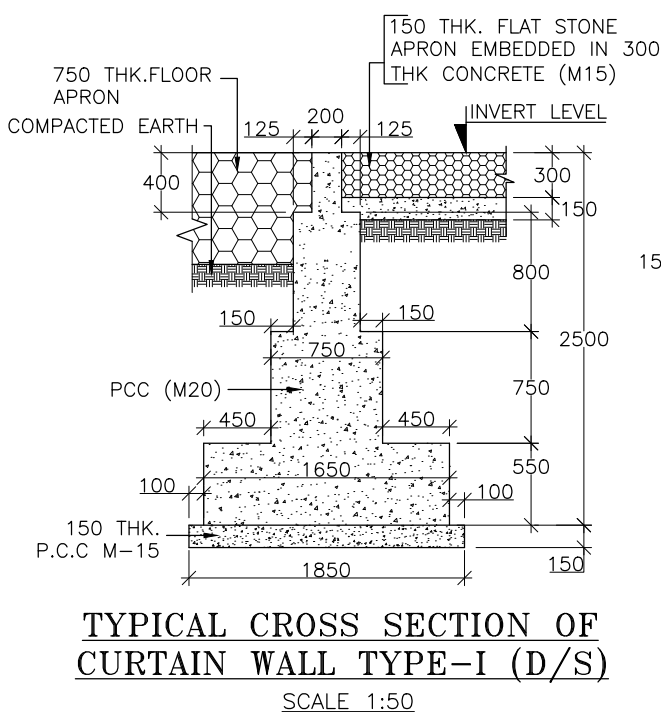
GENERAL NOTES :

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M . UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- MATERIALS SPECIFICATIONS :**
 - CONCRETE :**
 - GRADE OF CONCRETE USED :-
 - BOX STRUCTURE = M30,
 - RETURN WALL = M30,
 - APPROACH SLAB = M30,
 - LEVELING COURSE (P.C.C) = M15,
 - R.C.C. RAILING & KERB = M30,
 - CRASH BARRIER = M40,
 - CURTAIN WALL (P.C.C) = M20.
 - CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON 150MM CUBES FOR MODERATE EXPOSURE.
 - 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
 - TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES CONFORMING TO IS:9103 MAY BE USED SUBJECT TO SATISFACTORY PROVEN USE.
 - THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS PER TABLE 14.2, IRC -112-2011.
 - MAX. WATER CEMENT RATIO SHALL BE AS PER TABLE-14.2, IRC:112-2011.
 - REINFORCEMENT :**
 - ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH SHALL BE MS BARS GRADE. DESIGNATION Fe 250 CONFORMING TO IS:432 PART-I MILD STEEL)
 - WATER :**
 - WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO IRC : 112 - 2011.
 - FILTER MATERIAL BEHIND SIDE WALL AND RETURN WALL SHALL CONFORM TO CLAUSE 2504.2.2 OF MORTH SPECIFICATIONS TO A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO THE FULL HEIGHT.
 - PROPERTIES OF BACKFILL SOIL $\gamma=2.0t/m^3$, $\phi=30^\circ$.
- WORKMANSHIP/DETAILING :**
 - MINIMUM CLEAR COVER : 50MM
 - DESIGN LOAD :
 - CLASS A TWO LANES OR ONE LANE OF CLASS 70R TRACKED/WHEELED OR IRC CLASS SV LOADING WHICHEVER PRODUCES WORST EFFECT IS CONSIDERED FOR DESIGN.
 - THE BRIDGE IS IN SEISMIC ZONE-V.
 - FOOTPATH LOADING :- AS PER CL.NO. 206.1 OF IRC:6-2017
 - BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
 - LAP LENGTH & DEVELOPMENT LENGTH (Ld) OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE 15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.
 - PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN TOP SLAB SHALL BE ENSURED.
 - SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO ENABLE COMPACTION BY FORM VIBRATORS.
 - SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
 - THE WEEP HOLES SHALL BE WITH 100MM DIA AC PIPE IN 1:20 SLOPE @ 1M C/C STAGGERED HORIZONTALLY & VERTICALLY AT SIDE WALL & RETURN WALLS.
 - CONSTRUCTION JOINT SHOULD BE PROVIDED AT LOCATION OF ZERO MOMENT AS FAR AS PRACTICABLE & SHOULD BE PRE-APPROVED BY ENGINEER IN CHARGE. CONCRETING NEAR CONSTRUCTION JOINT SHALL BE DONE AS SPECIFIED IN MORTH/MOST STANDARD DRAWING(SD/101).
 - THE SOIL BELOW FOUNDATION LEVEL SHOULD BE WELL COMPACTED TO ACHIEVE MINIMUM BEARING CAPACITY OF 8t/SQM.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/GA (SHEET NO. 02)
 - CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/BOX (SHEET NO. 01)

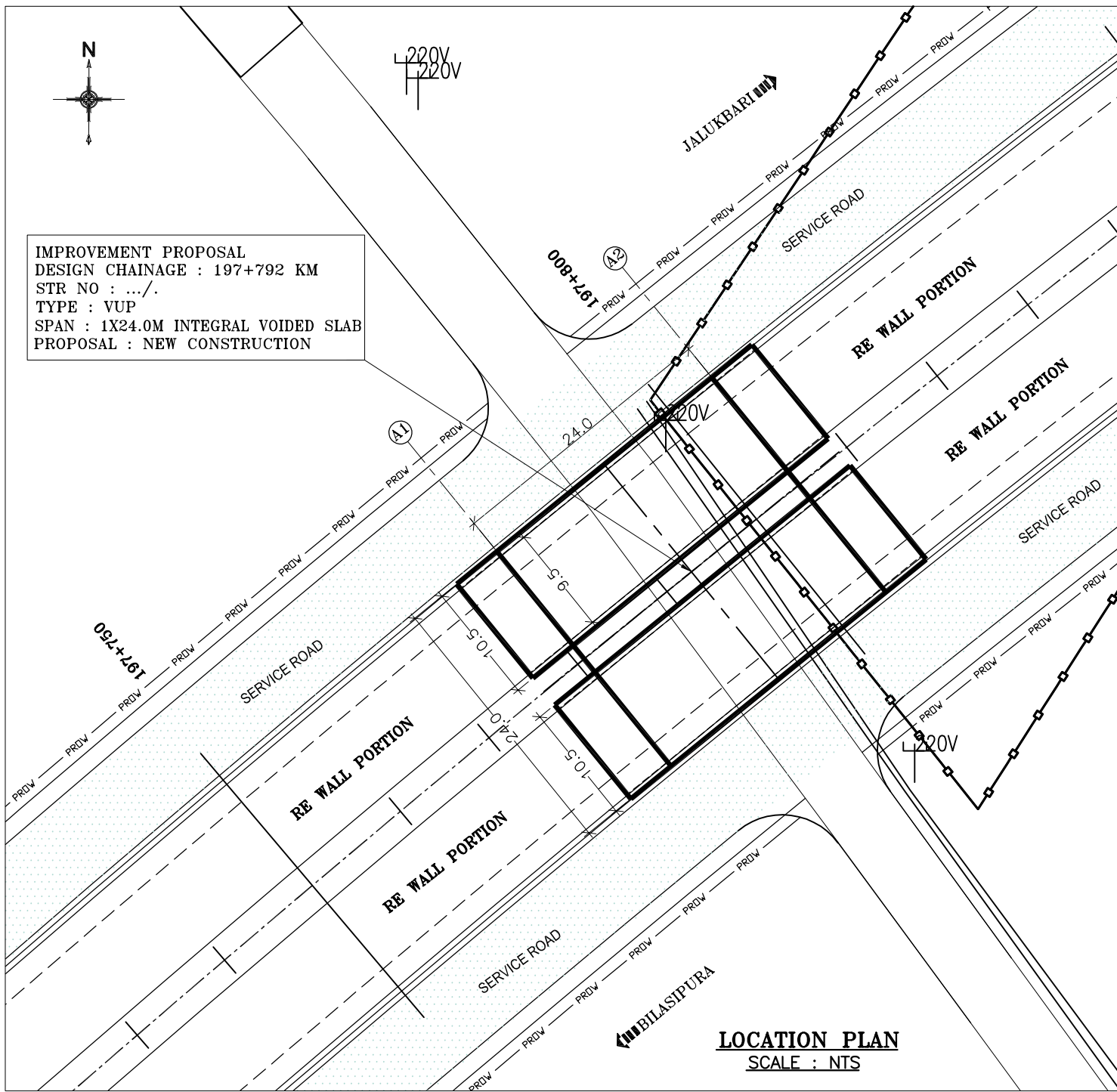
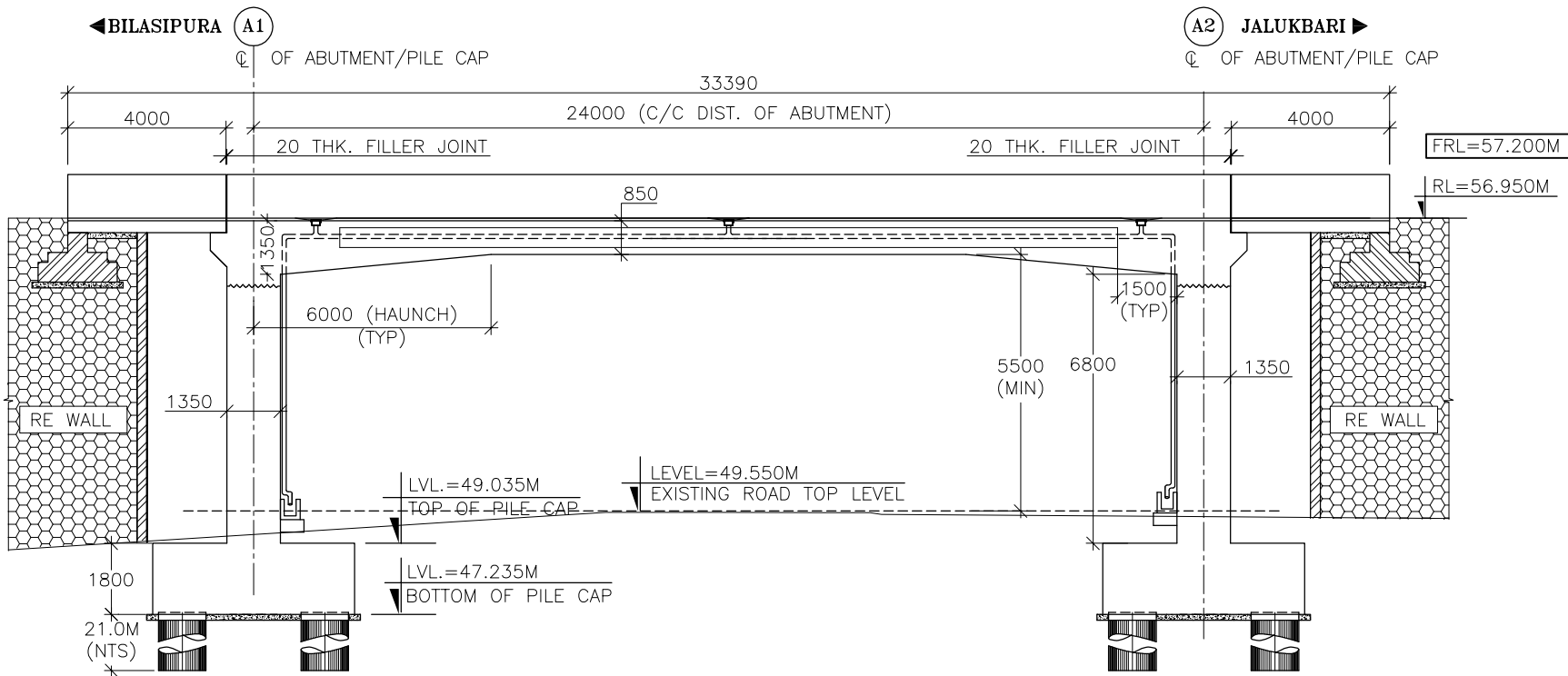
SCALE: AS SHOWN					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001		TITLE : GENERAL ARRANGEMENT DRAWING OF 3 X 6.0M X 4.0M RCC BOX BRIDGE_35° SKEW (AT CHAINAGE - 197.115KM) PACKAGE - 10		CONSULTANT: CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company		DRG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/GA	
DATE: JANUARY, 2023					PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.		SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		C.E. TESTING COMPANY PV 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.		REVISION MKD. - R0 SHEET NO. - 01 OF 02	
REVISIONS					PACKAGE NO: (LOT-1) PACKAGE 1A						DRAWN BY: A.M. DESIGN BY: P.S. CHECKED BY: S.D. ISSUED BY: S.BHADRA	



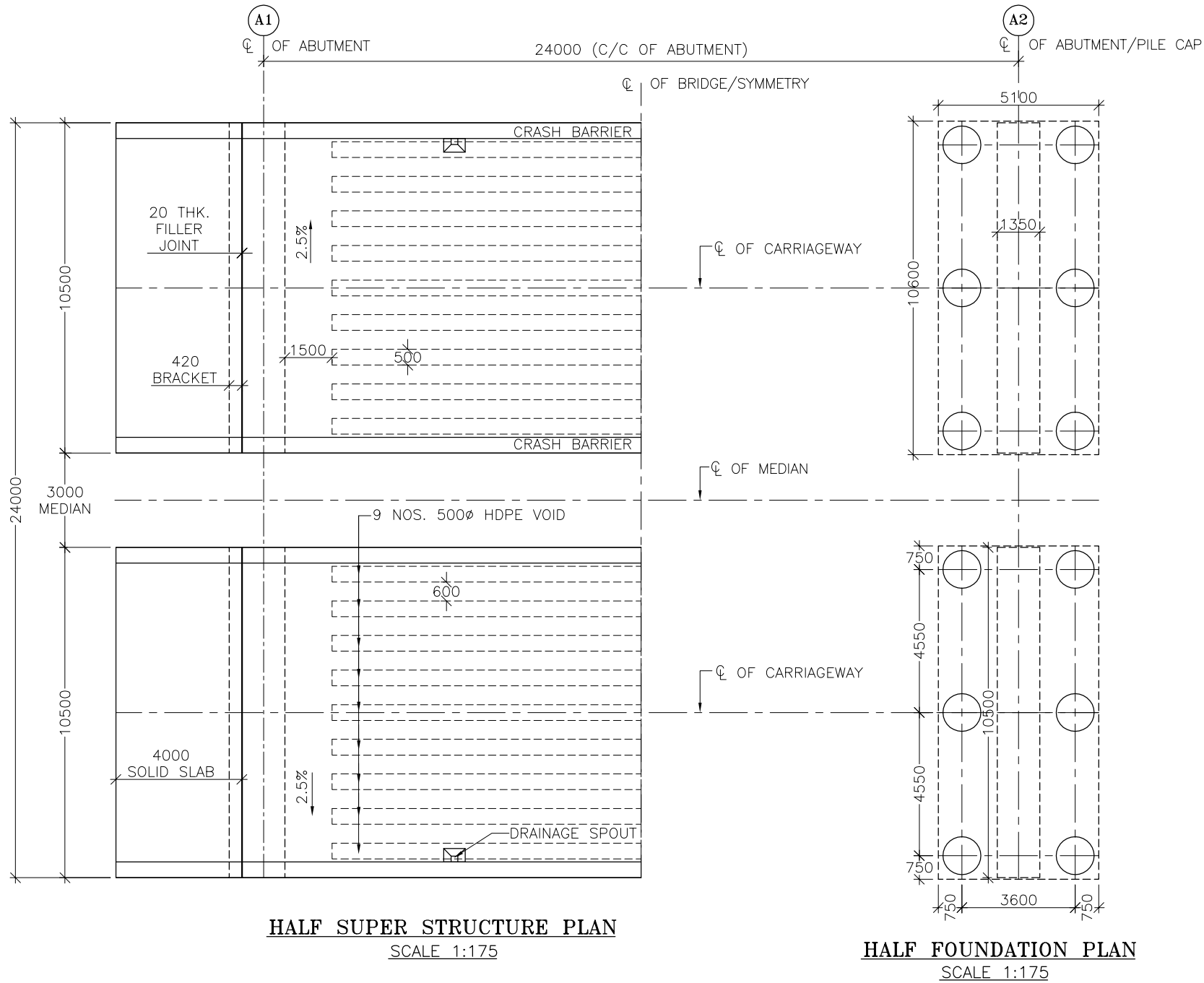
- NOTES :**
1. ALL DIMENTIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
 2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:-
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/GA
(SHEET NO-01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/BOX
(SHEET NO-01)



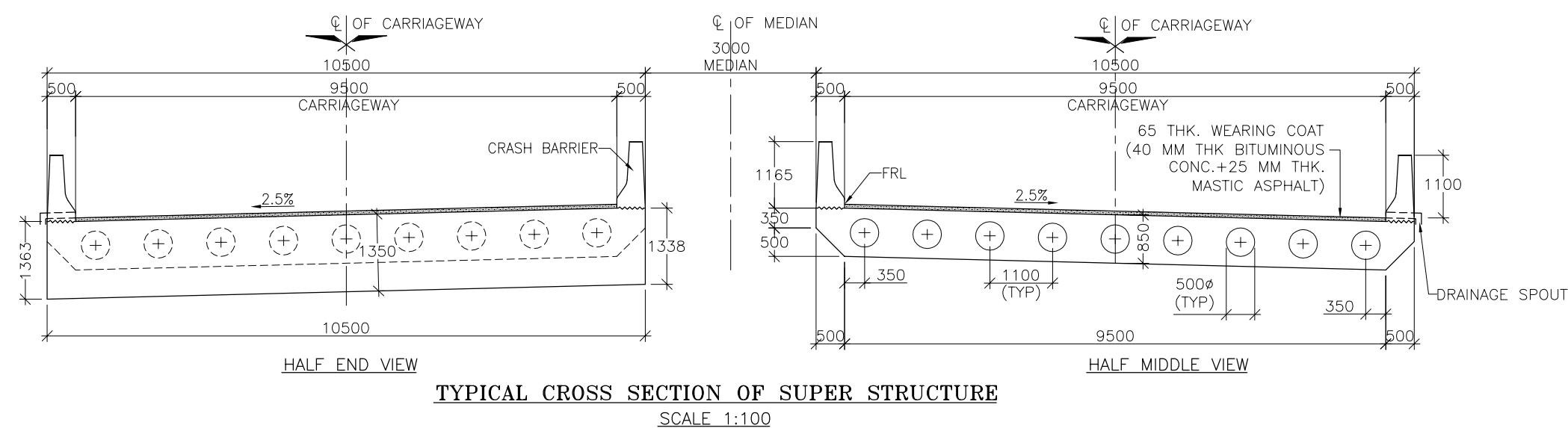
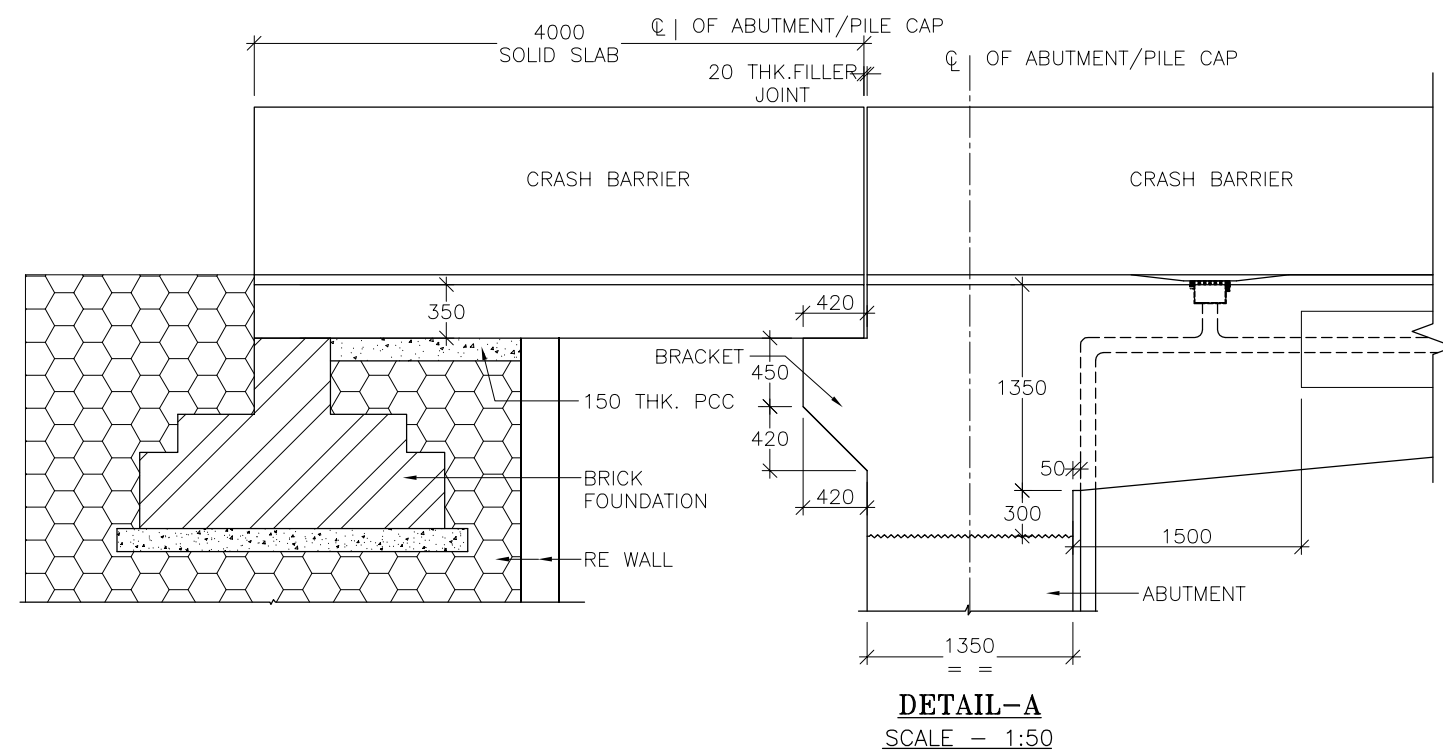
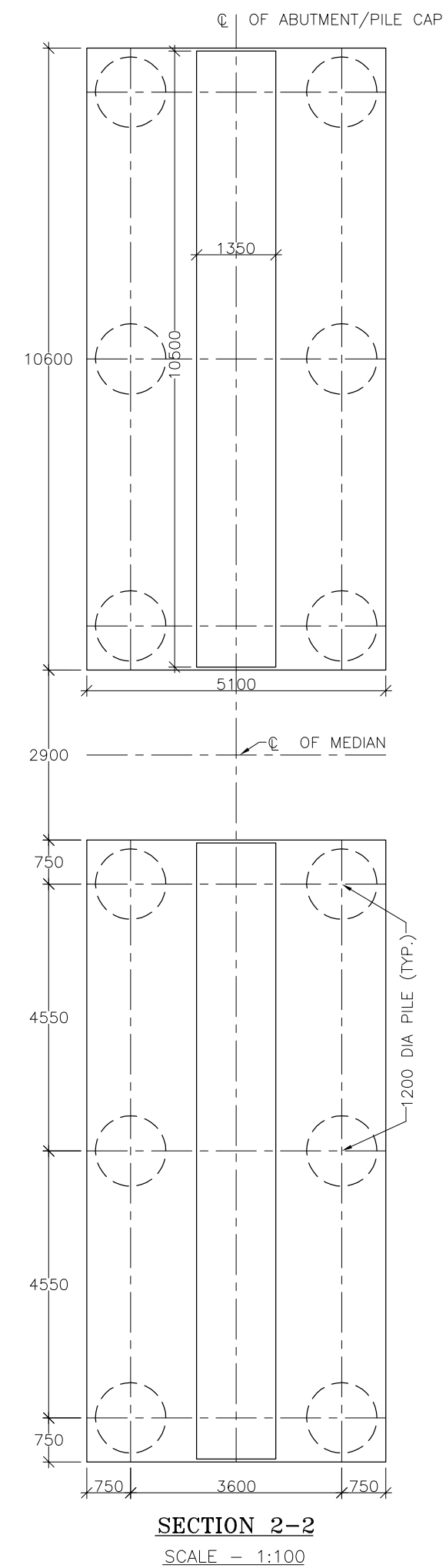
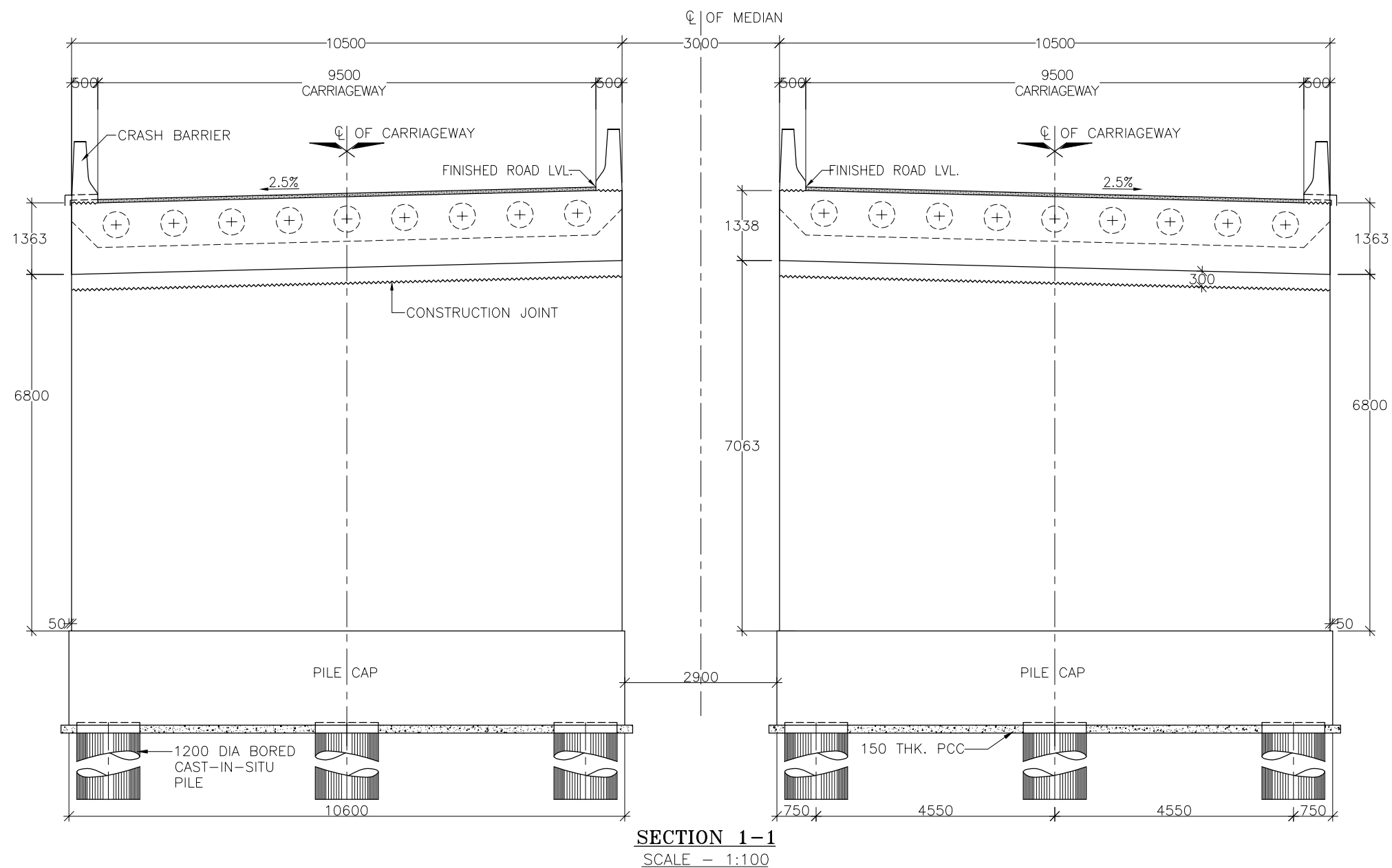
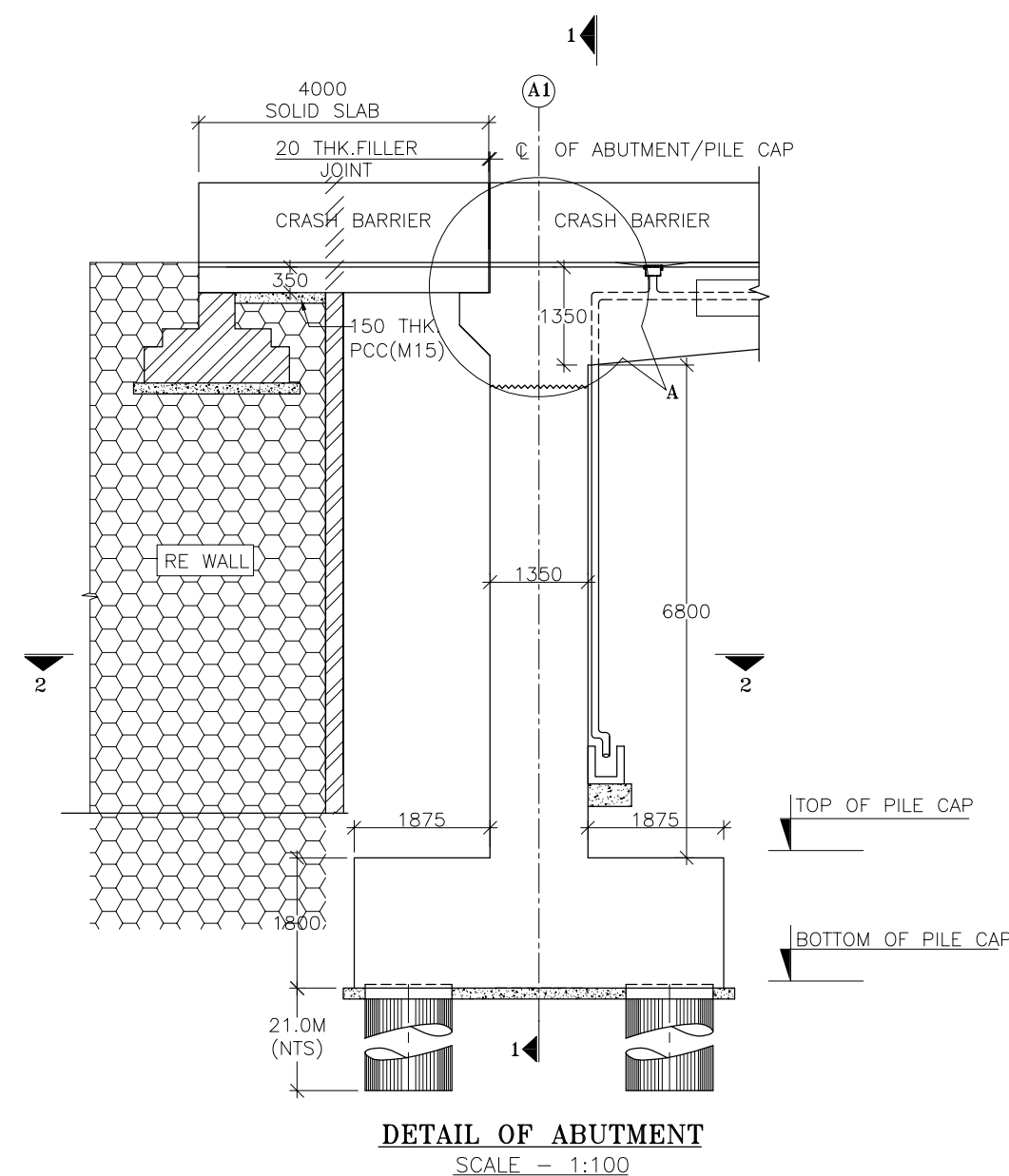
					SCALE: AS SHOWN		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001		TITLE: GENERAL ARRANGEMENT DRAWING OF 3 X 6.0M X 4.0M RCC BOX BRIDGE_35° SKEW		CONSULTANT: CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company		DRG. NO.: CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MN/GA	
R0					DATE: JANUARY, 2023		PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-I) - PACKAGE 1A BILASPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.		SUBMISSION TYPE: FINAL DETAILED PROJECT REPORT		C.E. TESTING COMPANY PV 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.		REVISION MKD. - R0 SHEET NO. - 02 OF 02	
REVISIONS									PACKAGE NO: (LOT-I) PACKAGE 1A				DRAWN BY: A.M. DESIGN BY: P.S. CHECKED BY: S.D. ISSUED BY: S.BHADRA	



- GENERAL NOTES :**
- A. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.
- B. MATERIALS SPECIFICATIONS :**
- (i) **CONCRETE :**
- GRADE OF CONCRETE USED :-
 - SUPERSTRUCTURE = M30, e) SOLID SLAB = M30,
 - SUB STRUCTURE = M30, f) P.C.C. BELOW SOLID SLAB = M15,
 - PILE CAP = M30, g) CRASH BARRIER = M40,
 - PILE = M35,
 - CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO
ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON
150MM CUBES FOR MODERATE EXPOSURE.
 - 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING
TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT
CONFORMING TO IS : 269 OR PORTLAND SLAG CEMENT
CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE
REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
 - TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES
CONFORMING TO IS:9103 MAY BE USED SUBJECT TO
SATISFACTORY PROVEN USE.
 - THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS
PER TABLE 14.2, IRC -112-2011
 - MAX. WATER CEMENT RATIO SHALL BE AS PER
TABLE-14.2, IRC:112-2011.
- (ii) **REINFORCEMENT :**
- ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH
DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING
TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH
SHALL BE MS BARS GRADE. DESIGNATION Fe 250 CONFORMING
TO IS:432 PART-I MILD STEEL)
- (iii) **WATER :**
- WATER TO BE USED IN CONCRETING AND CURING SHALL
CONFORM TO IRC : 112 - 2011.
- (iv) **FILTER MATERIAL BEHIND ABUTMENT AND RETURN WALL SHALL**
CONFORM TO CLAUSE 2504.2.2 OF MoRTH SPECIFICATIONS TO
A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE
TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO
THE FULL HEIGHT.
- (v) **PROPERTIES OF BACKFILL** SOIL $\gamma=2.0t/m^3$, $\phi=30^\circ$.
- C. WORKMANSHIP/DETAILING :**
- MINIMUM CLEAR COVER :
 - SUPERSTRUCTURE = 40MM
 - SUBSTRUCTURE : ABUTMENT = 50MM
 - FOUNDATION = 75MM
 - DESIGN LOAD :
 - CLASS A TWO LANES OR CLASS 70R TRACKED/WHEELED OR
IRC CLASS SV LOADING WHICHEVER PRODUCES WORST EFFECT
IS CONSIDERED FOR DESIGN.
 - THE BRIDGE IS IN SEISMIC ZONE-V.
 - SEISMIC LOADING :- AS PER CL. NO. 219 OF IRC:6-2017.
 - BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
 - SUPPORTING CHAIRS OF 16 MM DIAMETER SHALL BE PROVIDED
AT SUITABLE INTERVALS AS PER IS : 2502.
 - LAP LENGTH & DEVELOPMENT LENGTH (Ld) OF REINFORCING
BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE
15.2.5.1 & 15.2.3.3 OF IRC : 112-2011.
 - PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY
USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL
WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN
DECK SLAB SHALL BE ENSURED.
 - SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO
ENABLE THE COMPACTION BY FORM VIBRATORS.
 - SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
 - CONSTRUCTION JOINT SHOULD BE PROVIDED AT LOCATION OF
ZERO MOMENT AS FAR AS PRACTICABLE & SHOULD BE
PRE-APPROVED BY ENGINEER IN CHARGE.
 - HDPE PIPE VOID FORMERS SHOULD BE SUFFICIENTLY RIGID TO
PREVENT DISTORTION DURING CONCRETING ALSO IT SHOULD BE
LEAK PROOF / WATER TIGHT.
 - ALIGNMENT OF VOIDS SHOULD FOLLOW THE AXIS OF BRIDGE.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/GA
(SHEET NO. 02)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/VOIDED/VUP
(SHEET NO. 01)

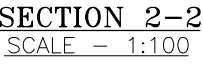
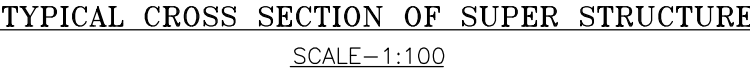


SCALE: AS SHOWN					CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001					TITLE: GENERAL ARRANGEMENT DRAWING OF 1 X 24.0M RCC INTEGRAL VOIDED SLAB BRIDGE_VUP (AT CHAINAGE - 197.792KM) PACKAGE-10					CONSULTANT :  C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.					DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/GA				
DATE: JAN.,2023					PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT					REVISION MKD. - R0					SHEET NO. - 01 OF 02				
REVISIONS					PACKAGE NO: (LOT-1) PACKAGE 1A					DRAWN BY  C.B.					DESIGN BY  T.T.A.					CHECKED BY  S.D.				

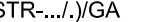


- NOTES :**
- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M .
UNLESS OTHERWISE MENTIONED, ONLY WRITTEN DIMENSIONS
SHALL BE FOLLOWED.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/(STR-.../),/GA
(SHEET NO. 01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/VOIDED/VUP
(SHEET NO. 01)

					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: DETAILS OF ABUTMENT	CONSULTANT :  C.E. TESTING COMPANY PVT. LTD. 124-A, N.S.C. BOSE ROAD KOLKATA - 700092.	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/VUP/GA
R0					DATE: JAN., 2023	PROJECT: CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENT IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1) - PACKAGE 1A BILASIPURA-CHAPAR-TULUNGIA-JOGIGHOPA-GENDERA-PAIKAN-DUDHNOI-GUWAHATI ROAD (LENGTH 225.000 KM) IN THE STATE OF ASSAM.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		REVISION MKD. - R0
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE NO: (LOT-1) PACKAGE 1A		SHEET NO.- 02 OF 02
REVISIONS									DRAWN BY 
									DESIGN BY 
									CHECKED BY 
									ISSUED BY 
									C.B
									T.T.A
									S.D
									S.BHADRA



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CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/LVUP/(STR-.../)/GA
(SHEET NO. 01)
CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/MISC/INTEGRAL
(SHEET NO. 01)

					SCALE: AS SHOWN	CLIENT:  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. 3RD FLOOR, PTI BUILDING, 4-PARLIAMENT STREET, NEW DELHI - 110001	TITLE: DETAILS OF ABUTMENT	CONSULTANT :  An ISO 9001, 14001 & OHSAS 18001 Certified Company	DRG. NO. : CET/BDG/2018/4146/NHIDCL/NH-17/B-G ROAD/FDPR/ LVUP/(STR-.../)/GA			
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MKD.	DATE	DESCRIPTION	CHKD.	APPRD.					DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
REVISIONS									 C.B	 P.S	 S.D	 S.BHADRA