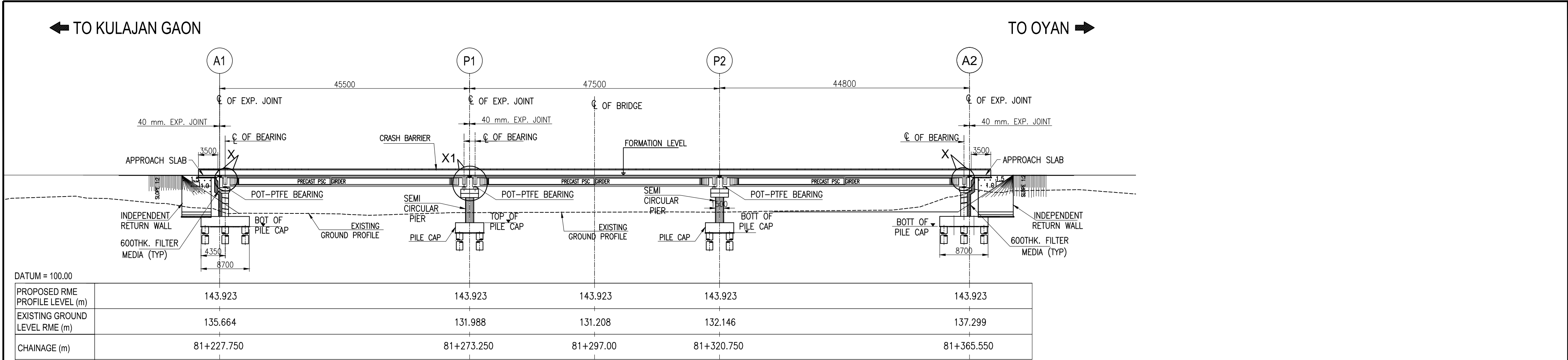
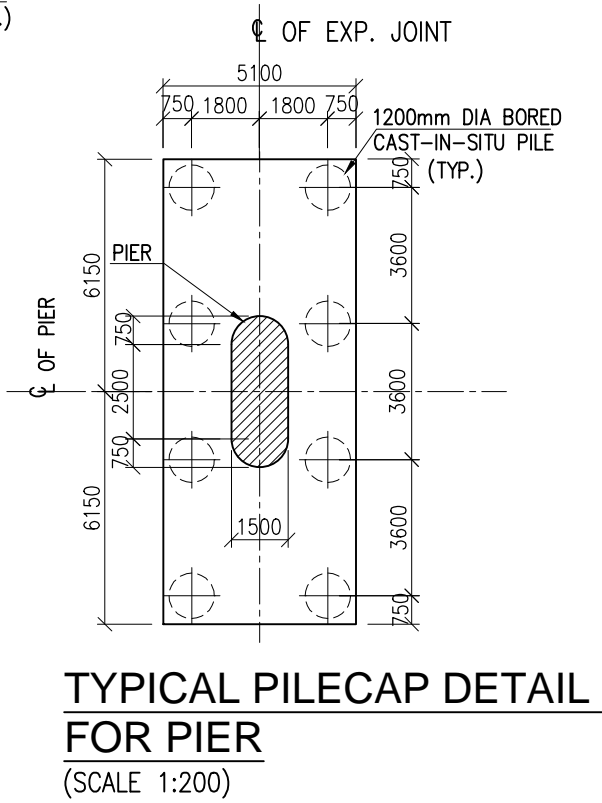
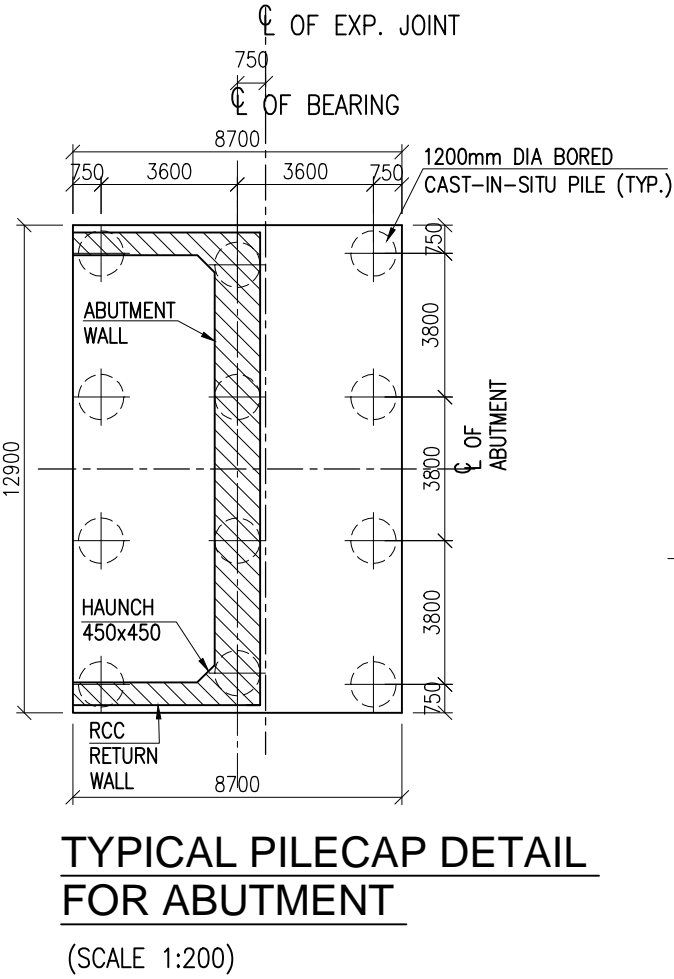
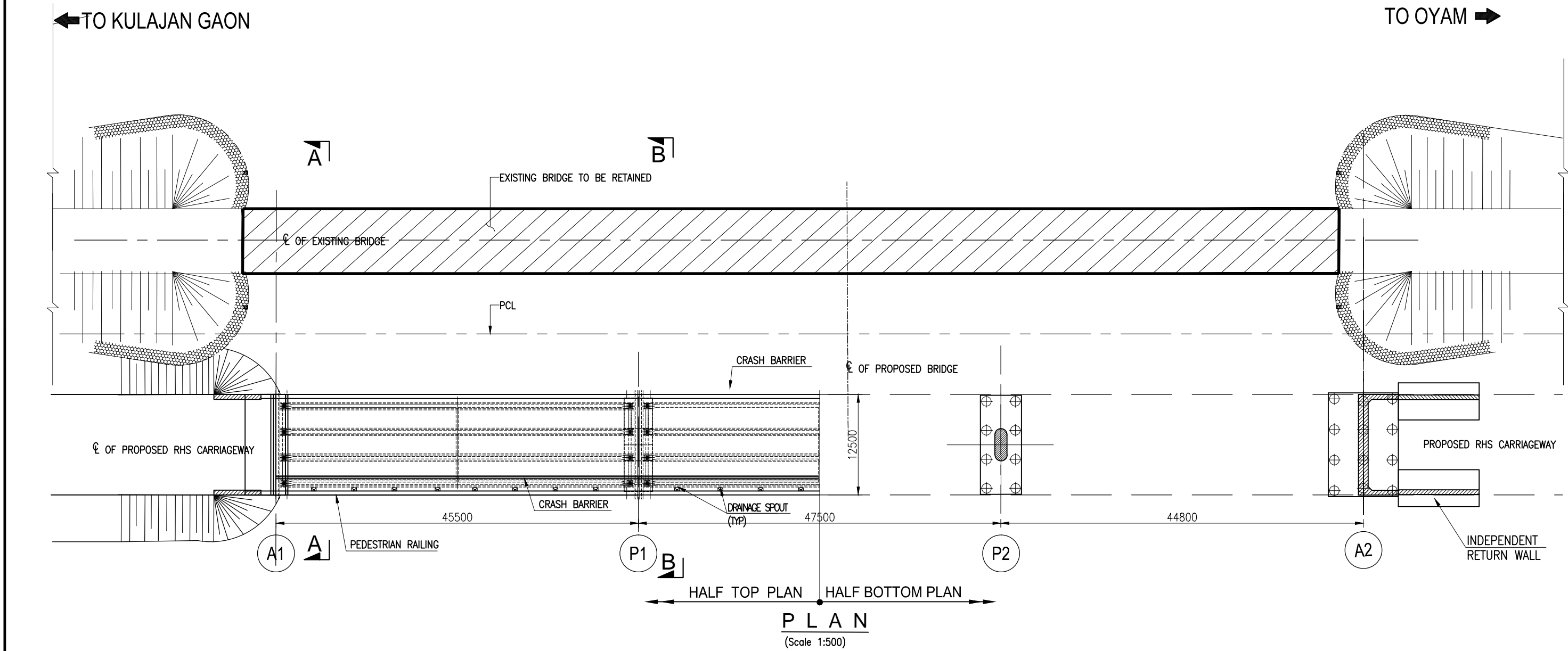


| | | | | | | | | | | | | |
|---|---|--|-------------------------|------|-------------|---|---|---|---|--|--|--|
| <div>CLIENT :</div> <div></div> <div>NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</div> | <div>PROJECT :</div> <div>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)</div> | <div>DESIGN CONSULTANT:</div> <div> VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div> | Detailed Project Report | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | TITLE : GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE AT Km. 70+980.700 (NEW) | | | |
| | | | | | SLM | G. Das | MK | SKC | | | | |
| | | | | | |  |  |  |  | DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MJB-02(Sht. 1 of 2) | | |
| | | | | | | SCALE : | | AS SHOWN | SHEET SIZE | | | |
| | | | REV. | DATE | DESCRIPTION | | | | | | | |

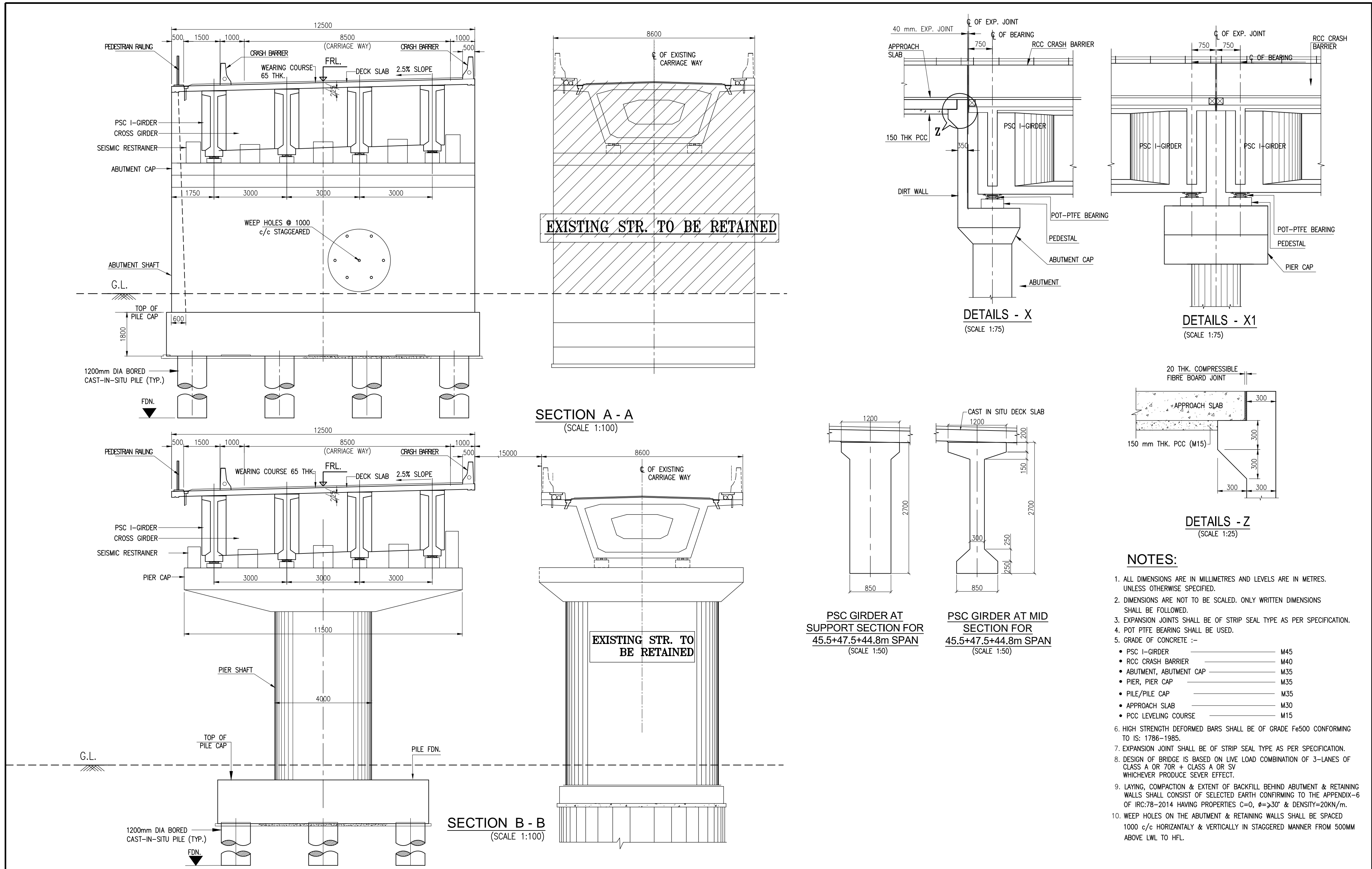


SECTIONAL ELEVATION
(SCALE 1:500)

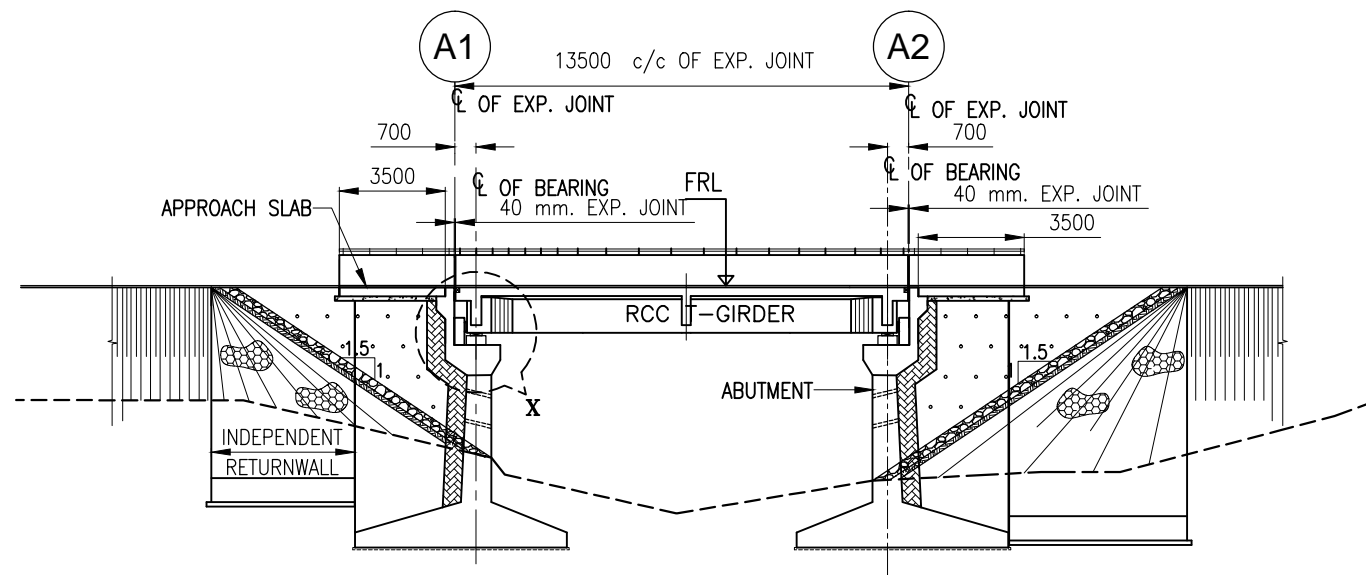


NOTES:-
FOR NOTE DETAILS REFER DWG NO:
VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MJB-03.(Sht-2)

| | | | | | | | | | | |
|---|---|--|------------------------|------|---|---|---|---|--|--|
| <div>CLIENT :</div> <div></div> <div>NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</div> | <div>PROJECT :</div> <div>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)</div> | <div>DESIGN CONSULTANT:</div> <div> VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div> | Detaild Project Report | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | TITLE : GENERAL ARRANGEMENT DRAWING OF MAJORR BRIDGE AT Km. Ch. 81+297.0 (RETAINED+NEW) | |
| | | | | | SLM | G. Das | MK | SKC | DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MJB-03 (Sht. 1 of 2) | |
| | | | | |  |  |  |  | REVISION: R1 January, 2023 | |
| | | | | | SCALE : | AS SHOWN | SHEET SIZE | A2 | | |
| | | | REV. | DATE | DESCRIPTION | | | | | |

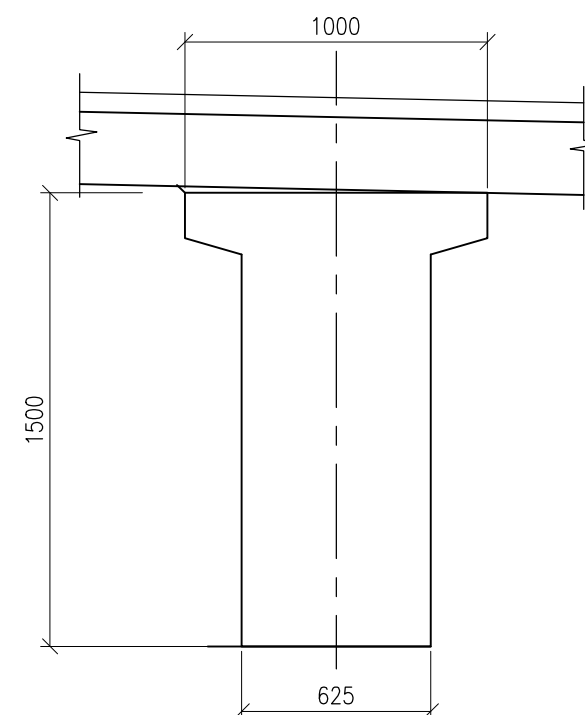


| | | | | | | | | | | | | |
|---|--|---|------------------------|------|-------------|---|---|---|---|--|--|--|
| CLIENT : <div><p>NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</p></div> | PROJECT : <p>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)</p> | DESIGN CONSULTANT: <div><p>VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</p></div> | Detaild Project Report | | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | TITLE : GENERAL ARRANGEMENT DRAWING OF MAJORR BRIDGE AT Km. Ch. 81+297.0 (RETAINED+NEW) | | |
| | | | | | | SLM | G. Das | MK | SKC | DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MJB-03 (Sht. 2 of 2) | | |
| | | | | | |  |  |  |  | REVISION: R1 January, 2023 | | |
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| | | | REV. | DATE | DESCRIPTION | | | | | | | |

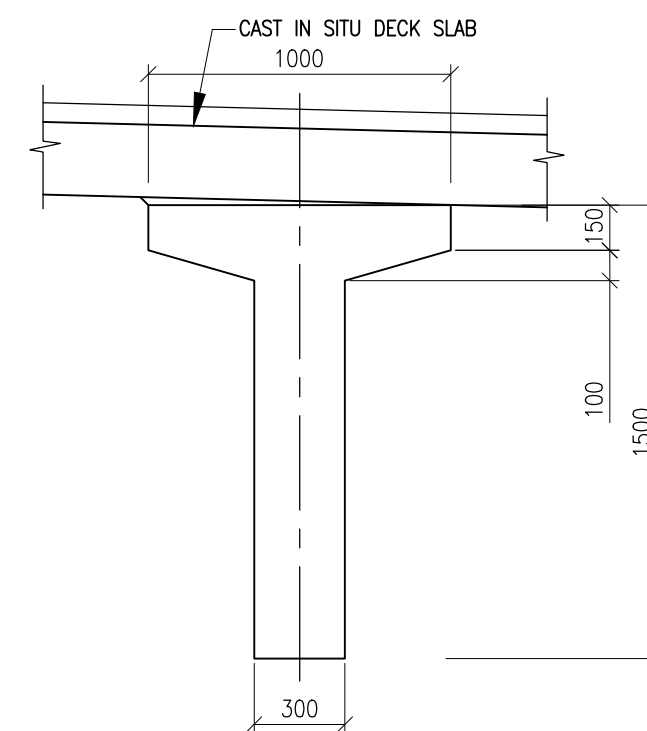


| | | | |
|-----------------|------------|-----------|------------|
| DATUM - 512.00m | | | |
| FRL | 121.717 | 121.730 | 121.742 |
| EGL(LHS) | 118.646 | | 119.162 |
| CHAINAGE | 55+328.250 | 55+335.00 | 55+341.750 |

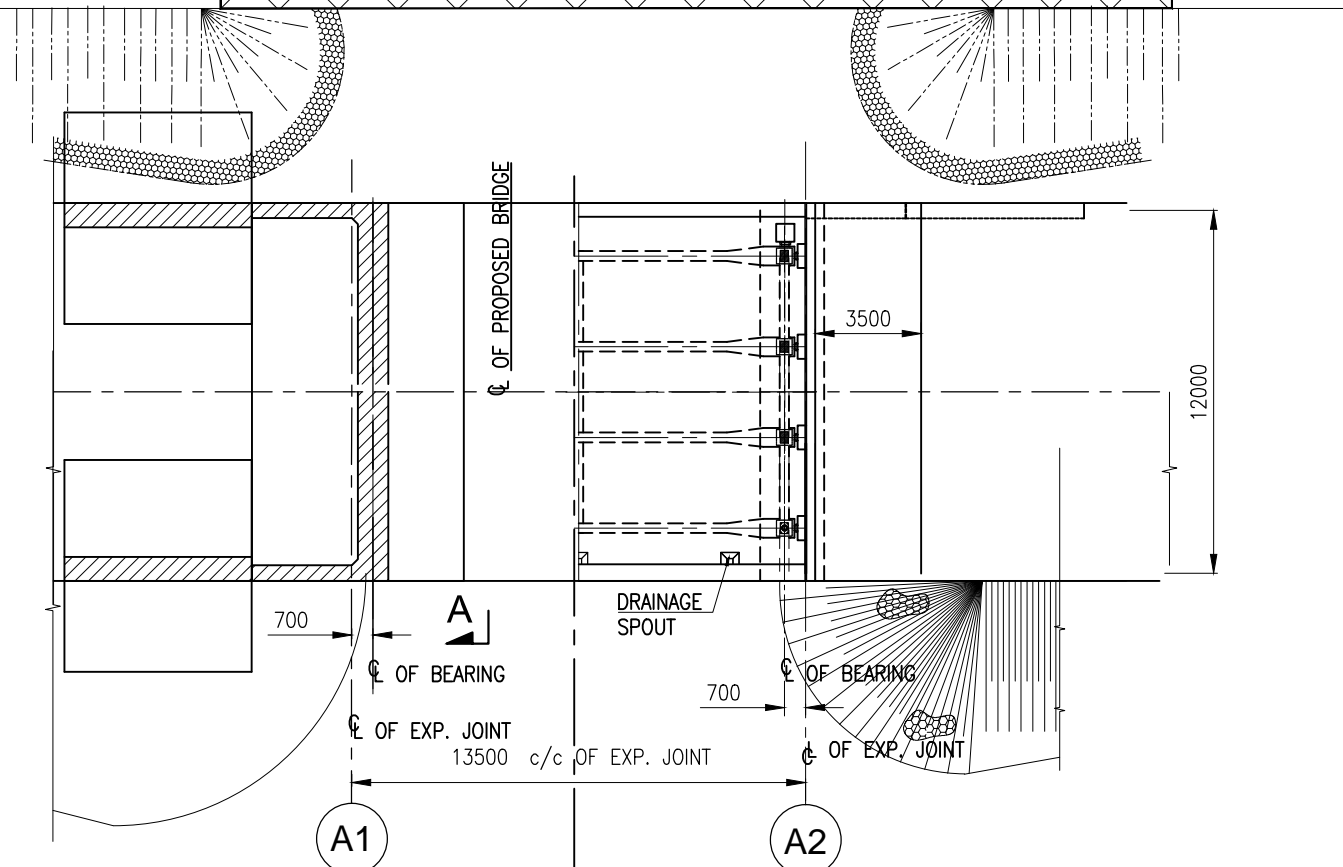
SECTIONAL ELEVATION
(SCALE 1:250)



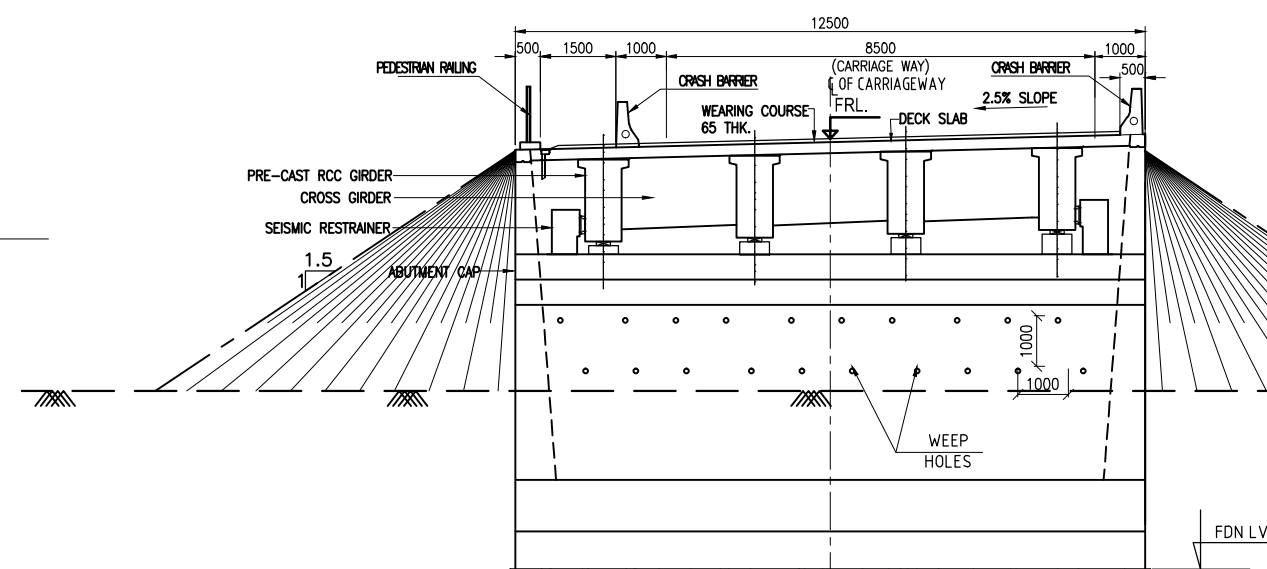
**PRE-CAST RCC GIRDER
AT MID SECTION**
(SCALE 1:25)



**PRE-CAST RCC GIRDER
AT SUPPORT SECTION**
(SCALE 1:25)

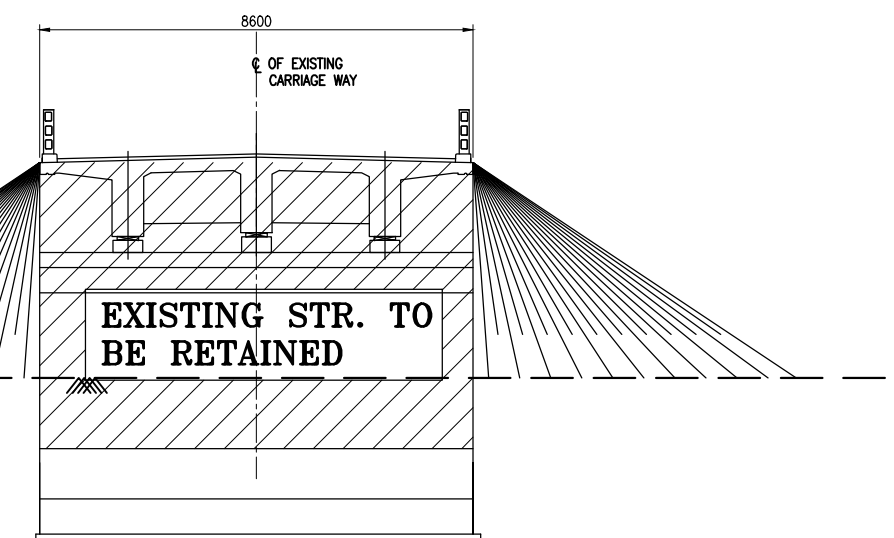


PLAN
(SCALE 1:250)



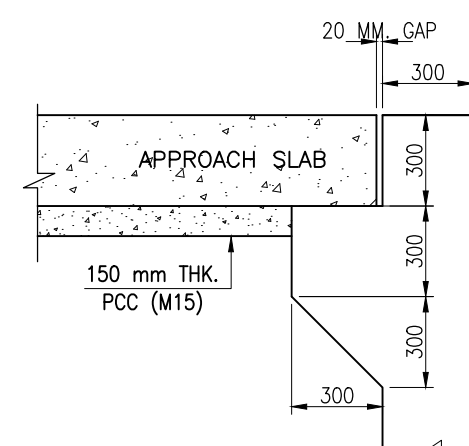
SECTION AT B-B
(Scale 1:100)

SECTION A - A
(SCALE 1:150)

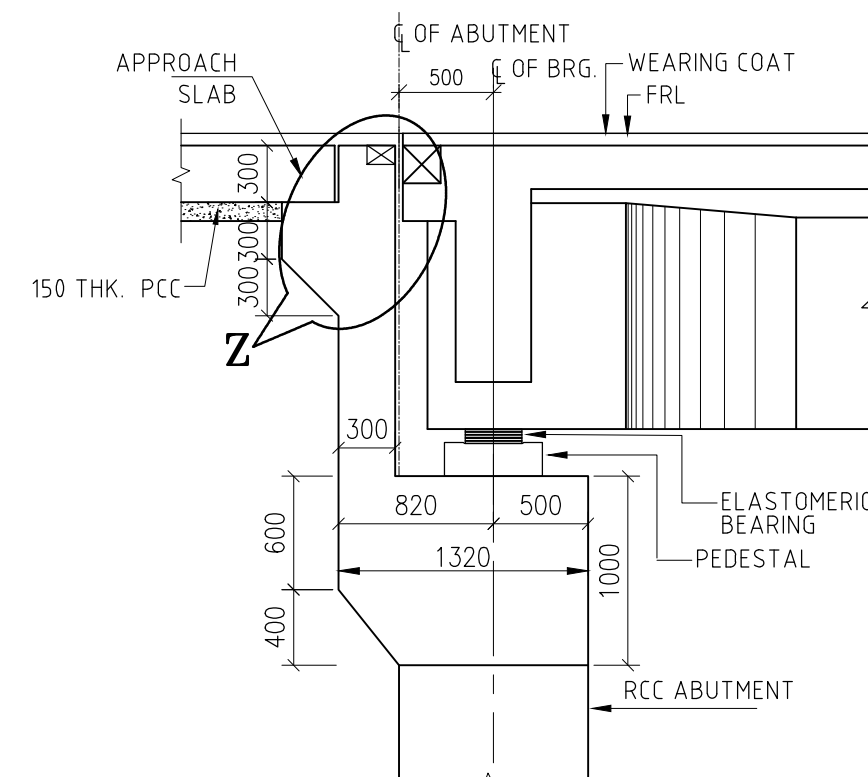


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES. UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
4. VARIOUS LEVELS (FRL,EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
5. GRADE OF CONCRETE :-
 - RCC T GIRDER.....M35
 - RCC CRASH BARRIER AND PEDESTAL.....M40
 - RCC SUBSTRUCTURE, FOUNDATION.....M35
 - APPROACH SLAB.....M30
 - PCC LEVELING COURSE.....M15
6. LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & DENSITY=20KN/m³
7. COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.
8. POT PTFE BEARING SHALL BE USED.
9. EXPANSION JOINTS SHALL BE OF STRIP SEAL TYPE AS PER SPECIFICATION.
10. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
11. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.



DETAILS - Z
(SCALE 1:25)



DETAILS - X
(SCALE 1:40)

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:

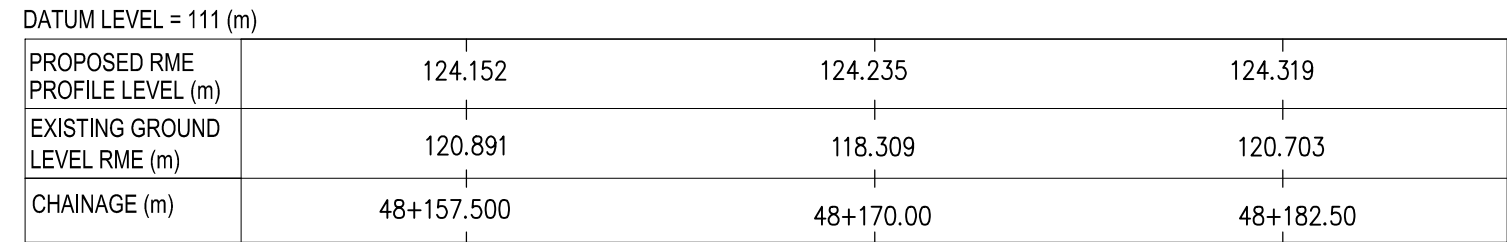
VOYANTS
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detaild Project Report

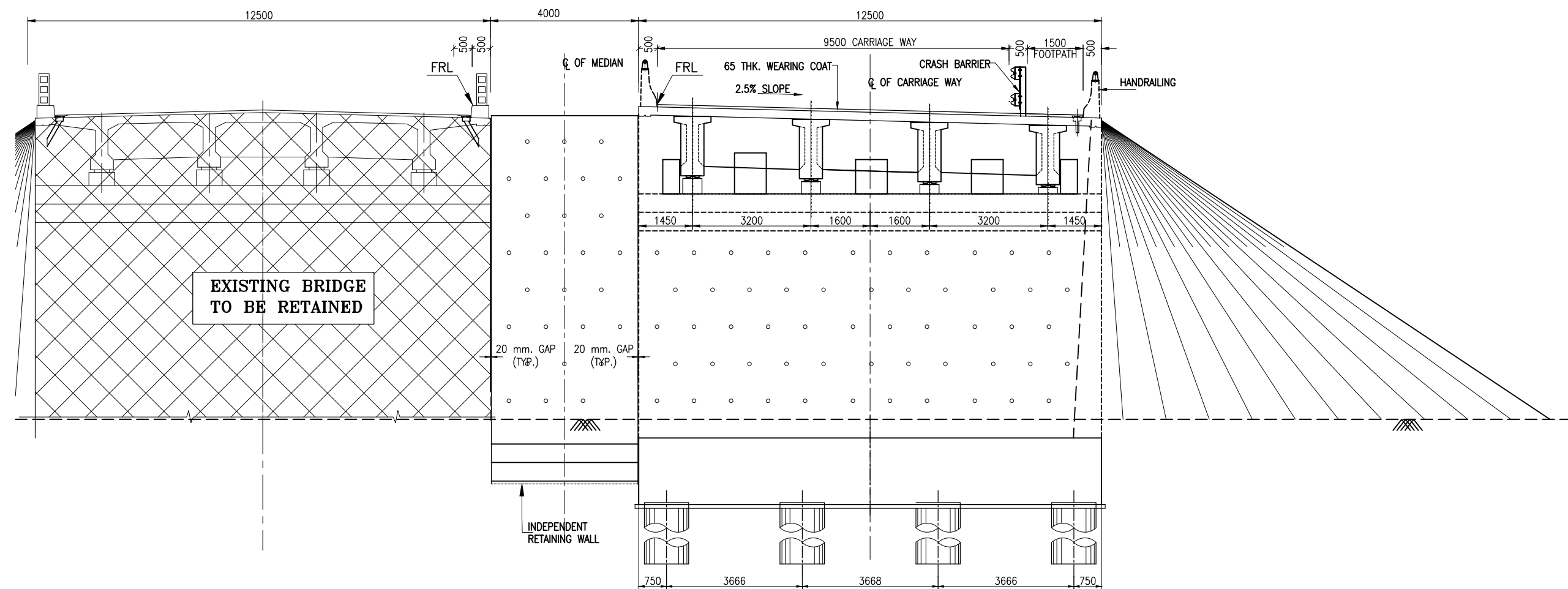
| REV. | DATE | DESCRIPTION |
|------|------|-------------|
| | | |
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| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|----------|------------|-------------|
| SLM | G. Das | MK | SKC |
| | | | |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

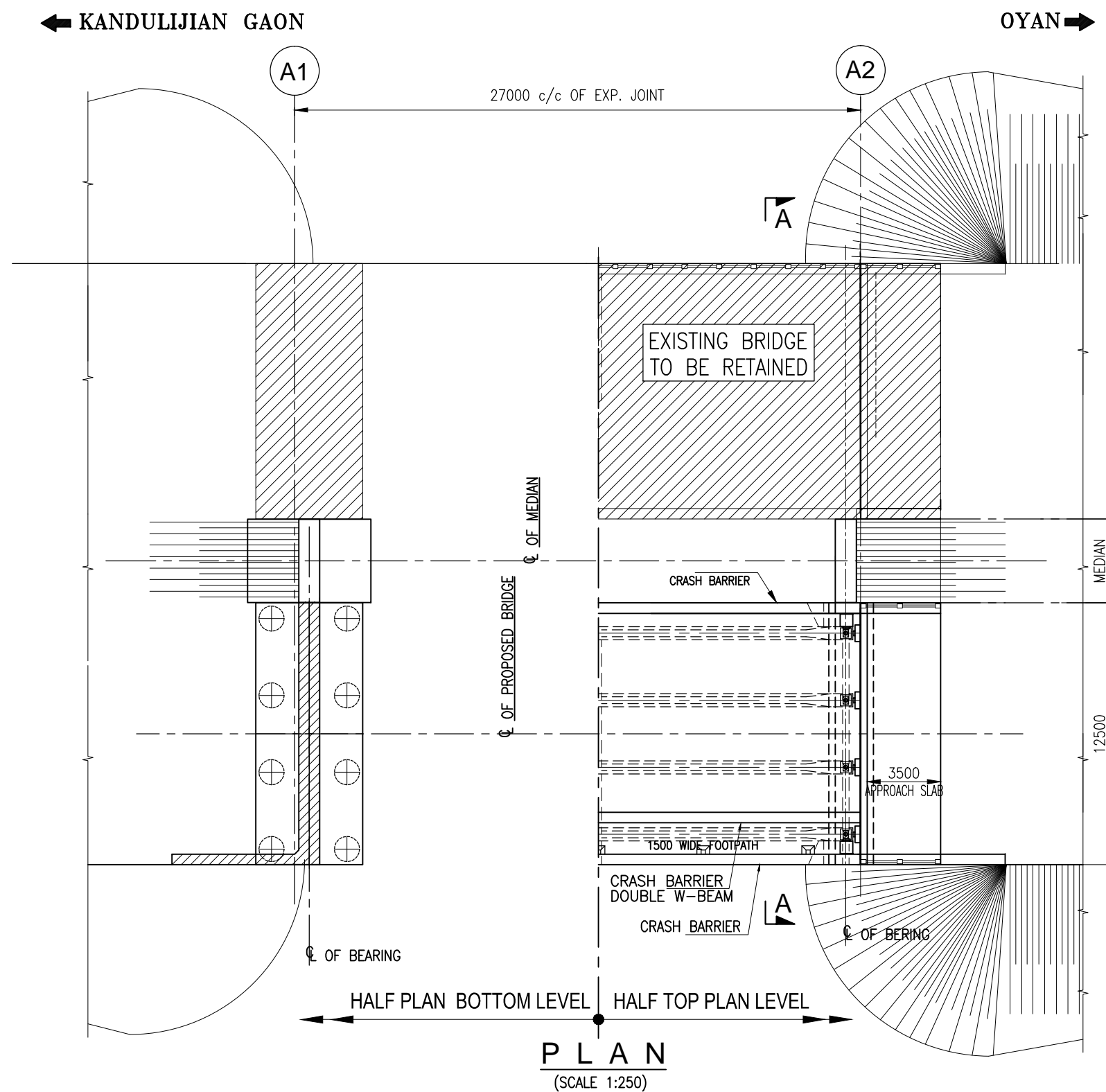
| | | |
|--|----|---------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Km. 55+335.00 (RETAINED+NEW) | | |
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-01 (Sht. 1 of 1) | | |
| REVISION: | R1 | January, 2023 |



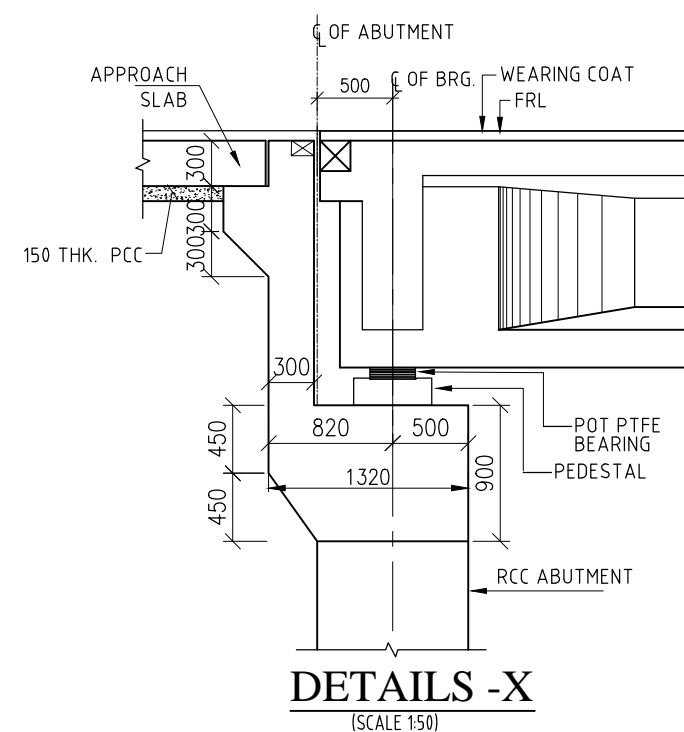
SECTIONAL ELEVATION
(SCALE 1:250)



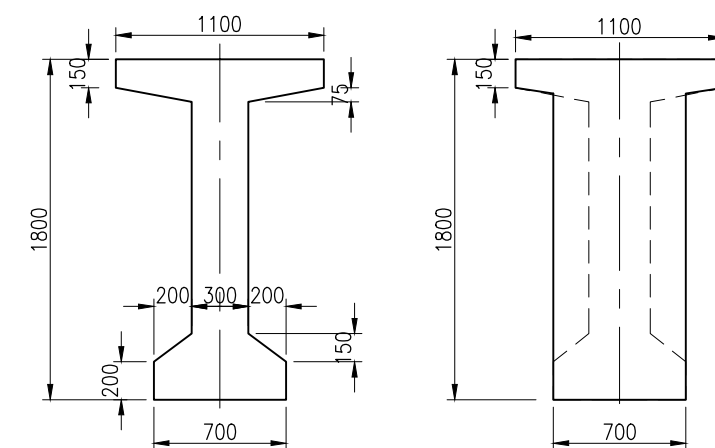
SECTION A - A
(Scale 1:100)



P L A N
(SCALE 1:250)



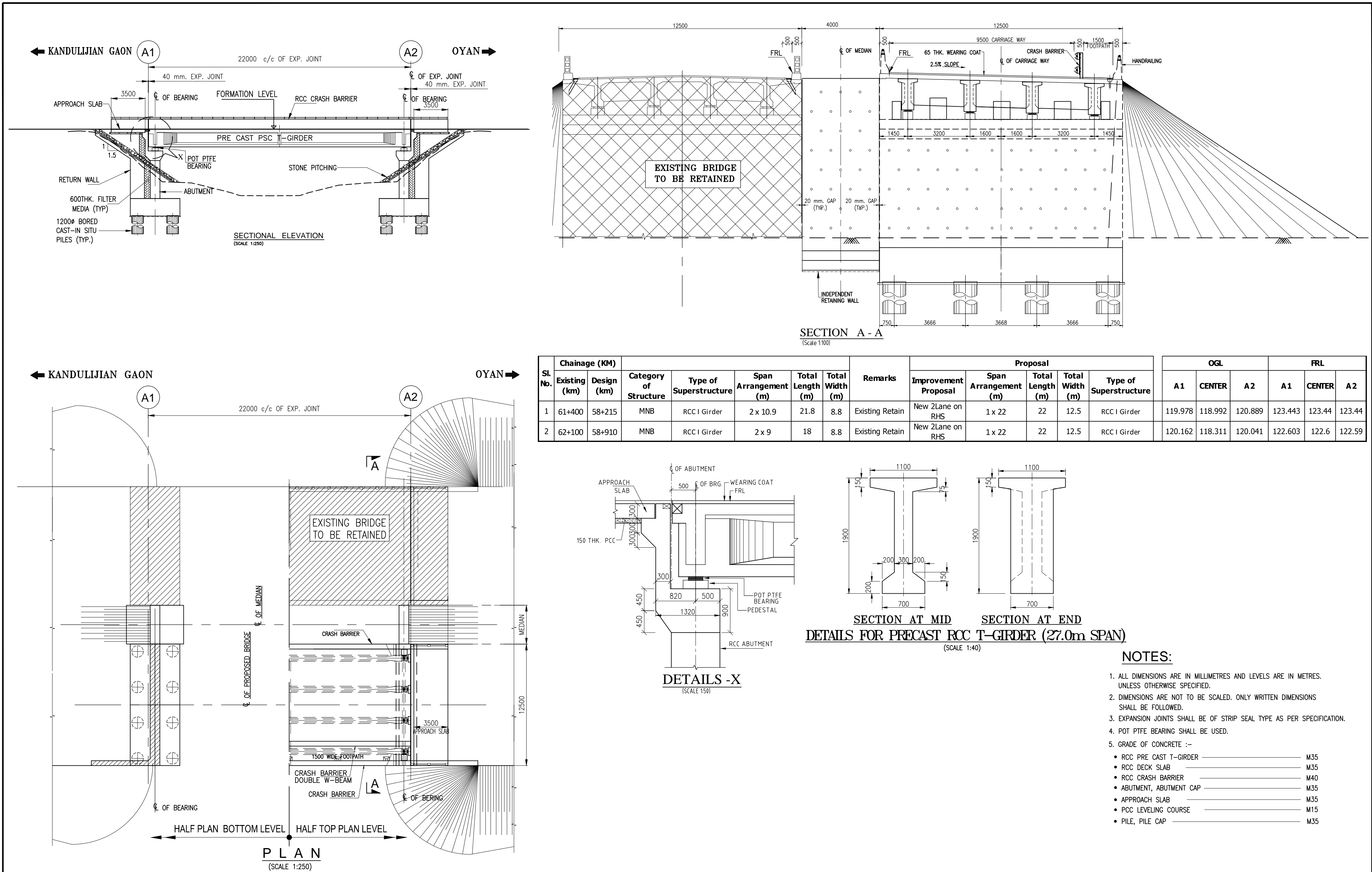
DETAILS -X
(SCALE 1:50)



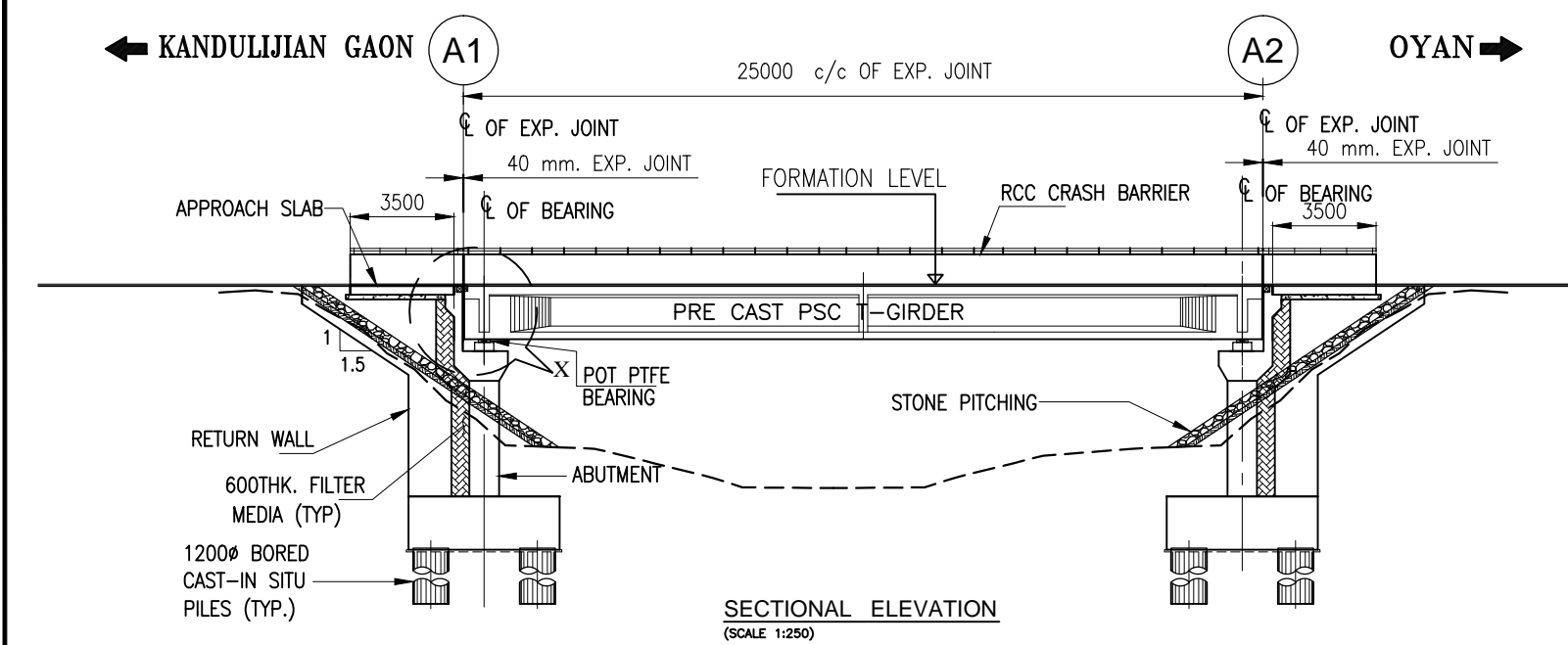
SECTION AT MID SECTION AT END
DETAILS FOR PRECAST RCC T-GIRDER (22.0m SPAN)
(SCALE 1:40)

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES. UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. EXPANSION JOINTS SHALL BE OF STRIP SEAL TYPE AS PER SPECIFICATION.
4. POT PTFE BEARING SHALL BE USED.
5. GRADE OF CONCRETE :-
 - RCC PRE CAST T-GIRDER _____ M35
 - RCC DECK SLAB _____ M35
 - RCC CRASH BARRIER _____ M40
 - ABUTMENT, ABUTMENT CAP _____ M35
 - APPROACH SLAB _____ M35
 - PCC LEVELING COURSE _____ M15
 - PILE, PILE CAP _____ M35

| | | |
|---|-----------|----------------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Km. 56+744.000 (RETAINED+NEW) | | |
| DRG. No. : VSP/L/1718-08/1/DPR/PKG-4/NH-515/SEC-3/MNB-02. (Sht. 1 of 1) | | |
| REVISION: | R1 | January, 2023 |

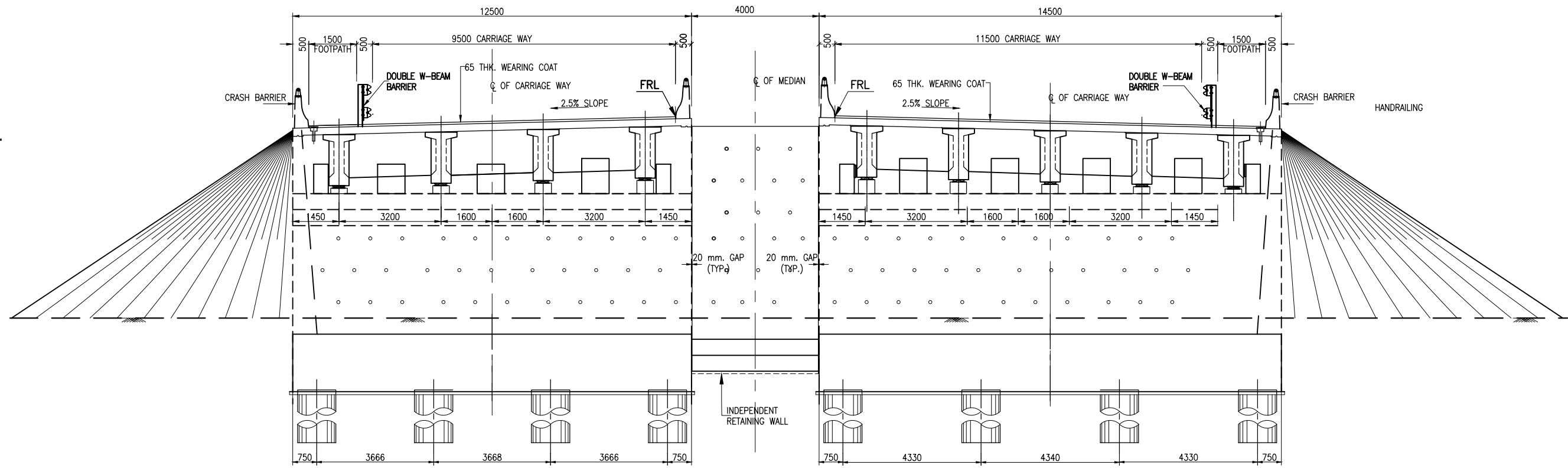


| | | | | | | | | | | |
|--|---|--|---|---|---|---|----------|------------|-------------|---|
| <div>CLIENT :</div> <div> NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</div> | <div>PROJECT :</div> <div>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)</div> | <div>DESIGN CONSULTANT:</div> <div> VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div> | <div>Detaild Project Report</div> | | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | <div>TITLE :</div> <div>GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Ch. 58+215.0 & AT Ch. 58.910.0 (RETAINED+NEW)</div> <div>DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-03. (Sht. 1 of 1)</div> <div>REVISION:</div> <div><div>R1</div><div>January, 2023</div></div> |
| | | | | | | SLM | G. Das | MK | SKC | |
| | | |  |  |  |  | | | | |
| | | | SCALE : | AS SHOWN | SHEET SIZE | A2 | | | | |
| | | | REV. | DATE | DESCRIPTION | | | | | |

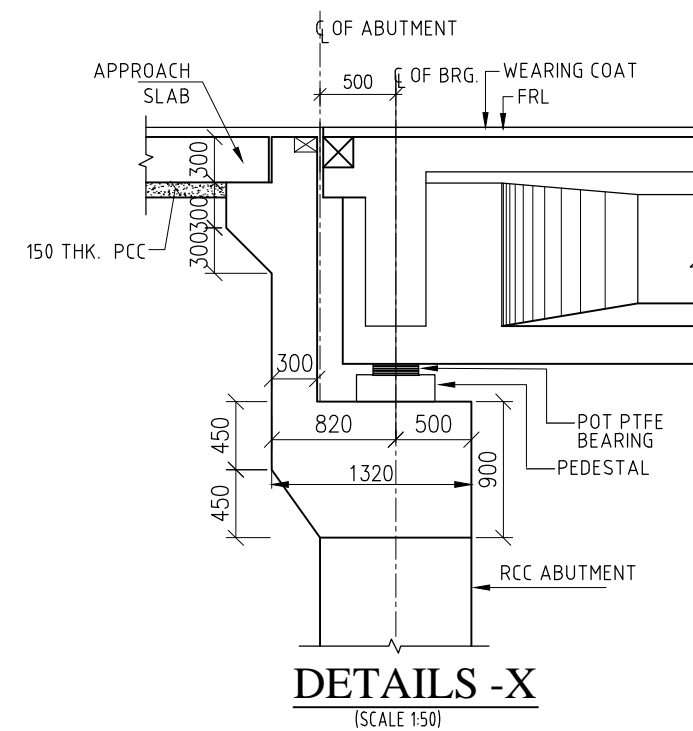
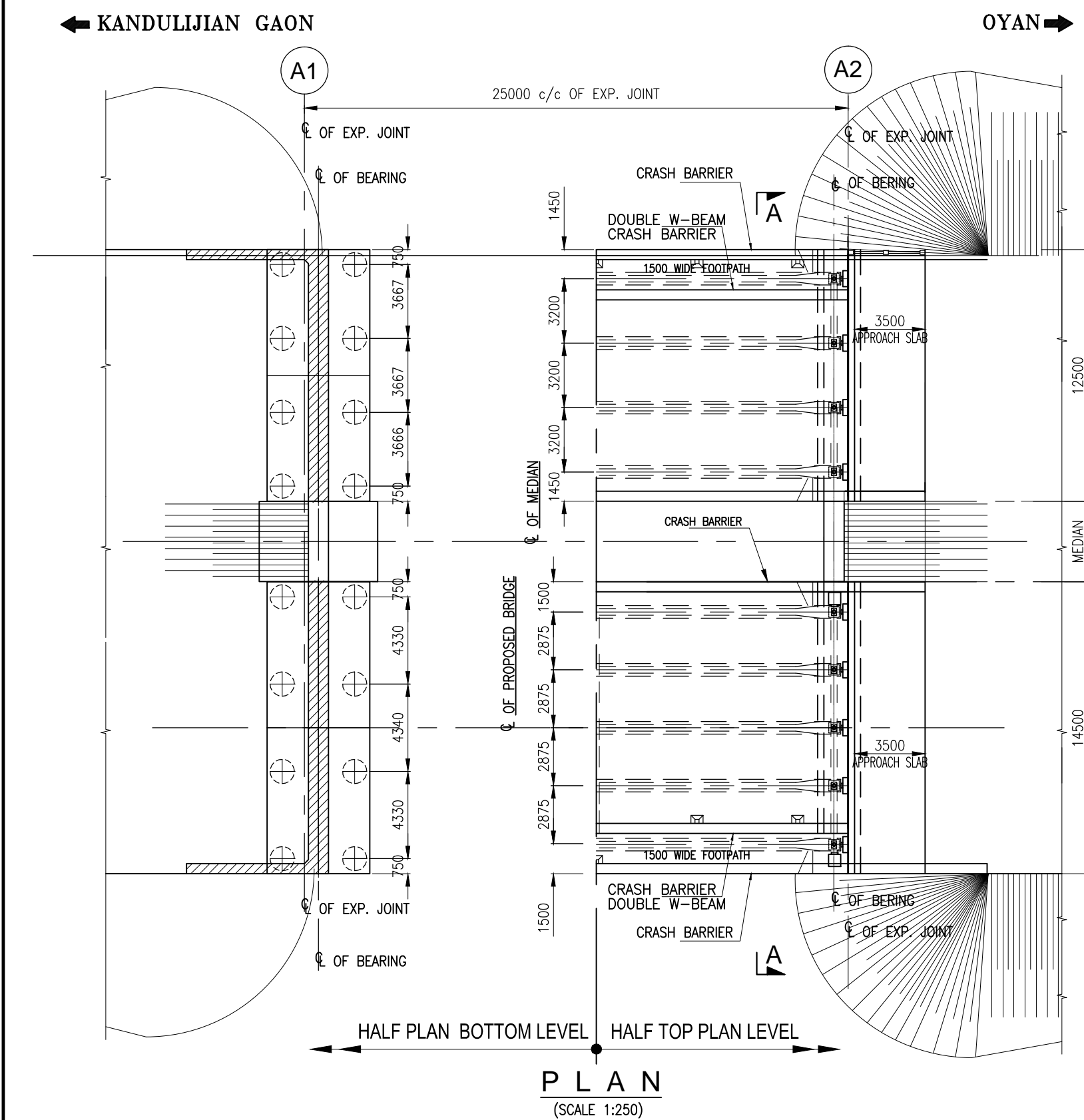


| | | | |
|--------------------------------|------------|-----------|-----------|
| PROPOSED RME PROFILE LEVEL (m) | 123+225 | 123.261 | 123.276 |
| EXISTING GROUND LEVEL RME (m) | 121.592 | 120.073 | 121.571 |
| CHAINAGE (m) | 66+202.500 | 66+215.00 | 66+227.50 |

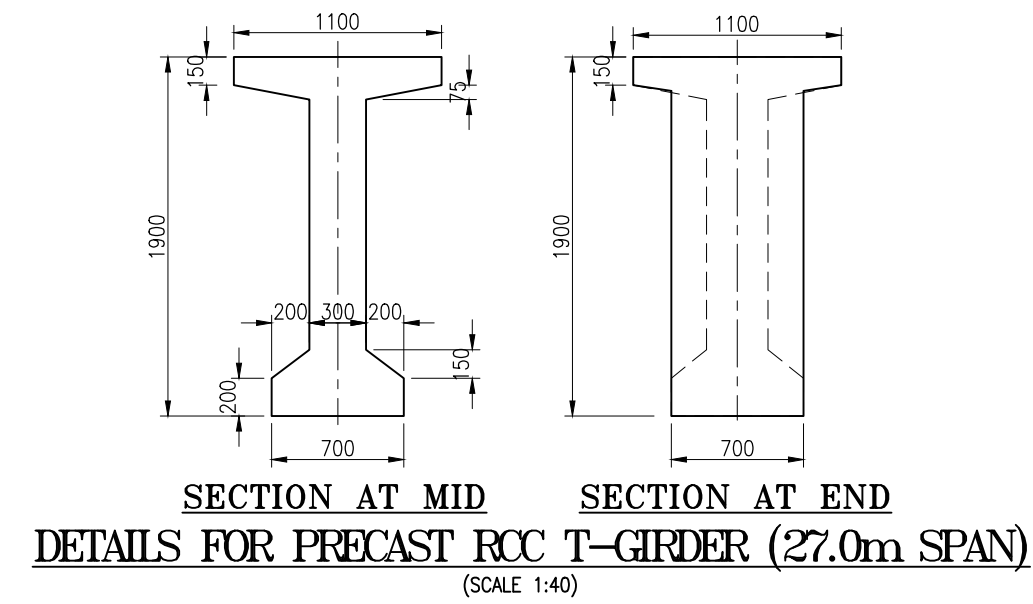
SECTIONAL ELEVATION
(SCALE 1:250)



SECTION A - A
(Scale 1:100)



DETAILS -X
(SCALE 1:50)



SECTION AT MID SECTION AT END
DETAILS FOR PRECAST RCC T-GIRDER (27.0m SPAN)
(SCALE 1:40)


NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES. UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- EXPANSION JOINTS SHALL BE OF STRIP SEAL TYPE AS PER SPECIFICATION.
- POT PTFE BEARING SHALL BE USED.
- GRADE OF CONCRETE :-
 - RCC PRE CAST T-GIRDER M35
 - RCC DECK SLAB M35
 - RCC CRASH BARRIER M40
 - ABUTMENT, ABUTMENT CAP M35
 - APPROACH SLAB M35
 - PCC LEVELING COURSE M15
 - PILE, PILE CAP M35





CLIENT :

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA

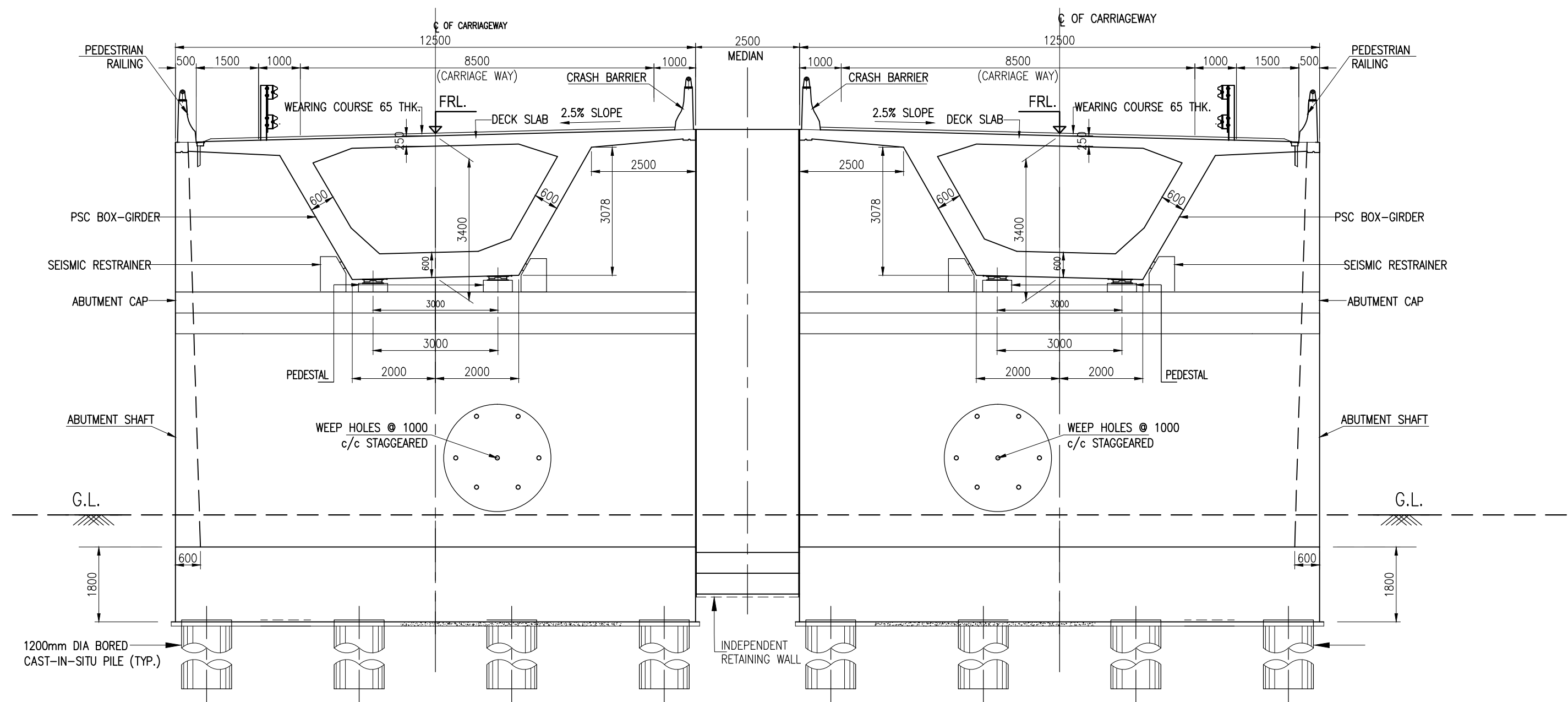
PROJECT :
CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

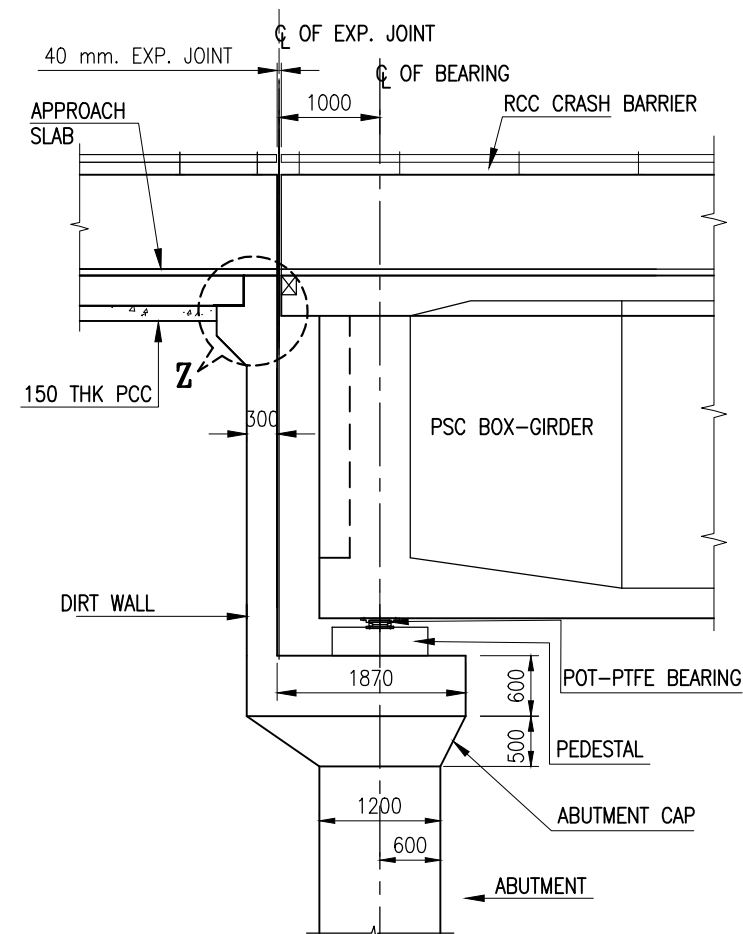
| Detaild Project Report | | |
|------------------------|------|-------------|
| REV. | DATE | DESCRIPTION |

| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|---|---|---|---|
| SLM | G. Das | MK | SKC |
|  |  |  |  |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

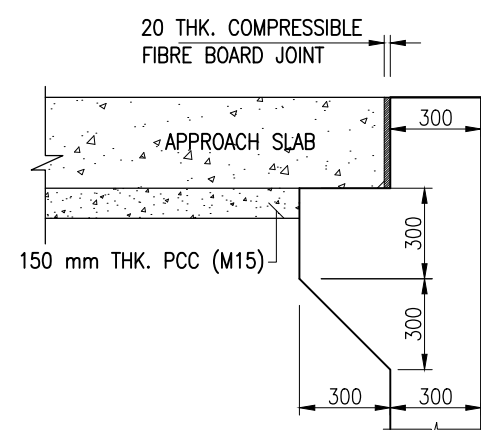
| TITLE : | | |
|---|--|---------------|
| GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Ch. 66+215.0 (NEW) | | |
| DRG. No. : | VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-04. (Sht. 1 of 1) | |
| REVISION: | R1 | January, 2023 |



SECTION A - A
(SCALE 1:100)



DETAILS - X
(SCALE 1:75)

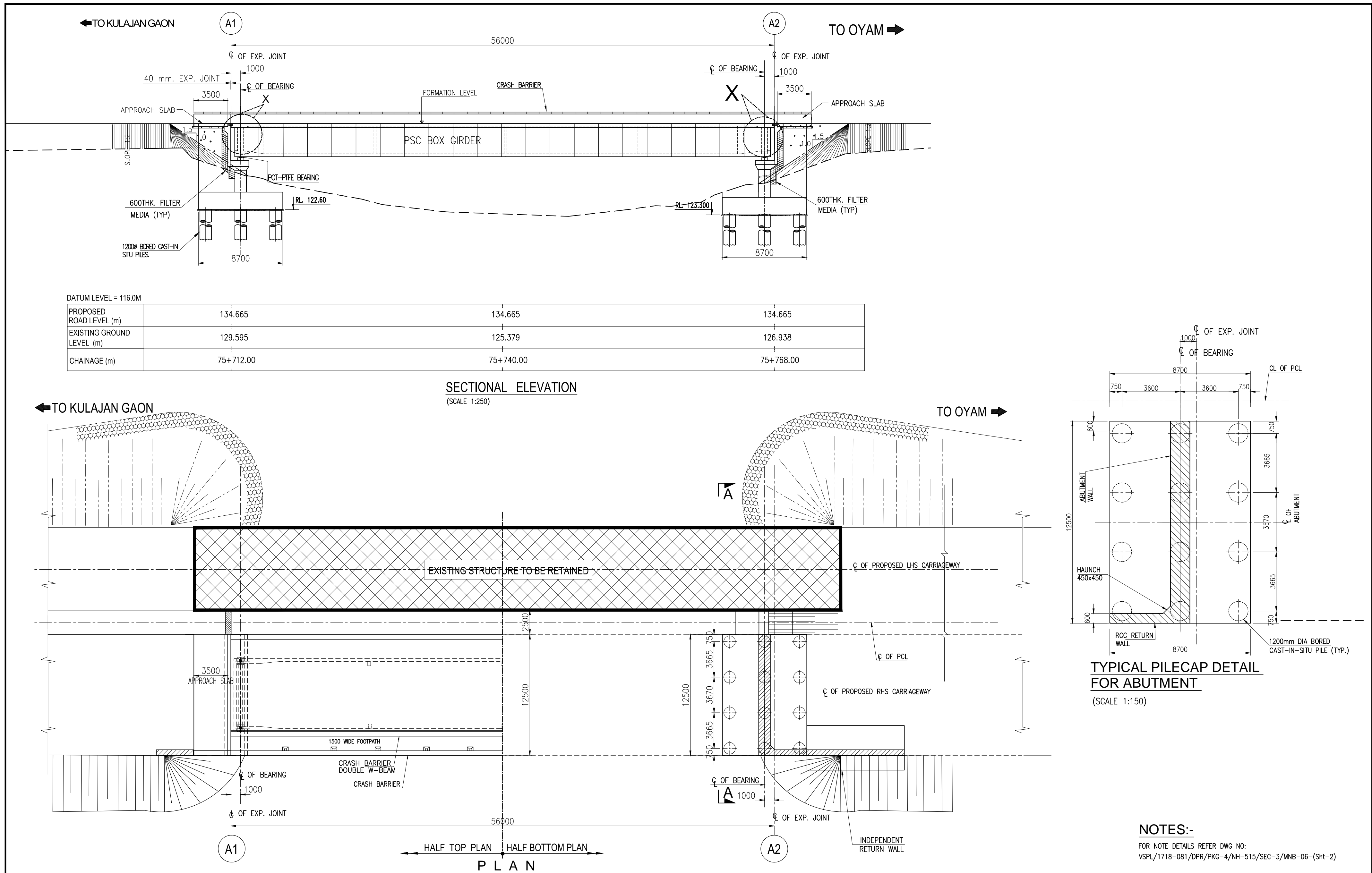


DETAILS - Z
(SCALE 1:25)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES. UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. EXPANSION JOINTS SHALL BE OF STRIP SEAL TYPE AS PER SPECIFICATION.
4. POT PTFE BEARING SHALL BE USED.
5. GRADE OF CONCRETE :-
 - PSC BOX _____ M50
 - RCC CRASH BARRIER _____ M40
 - ABUTMENT, ABUTMENT CAP _____ M40
 - PIER, PIER CAP _____ M40
 - APPROACH SLAB _____ M30
 - PCC LEVELING COURSE _____ M15
6. HIGH STRENGTH DEFORMED BARS SHALL BE OF GRADE Fe500 CONFORMING TO IS: 1786-1985.
7. EXPANSION JOINT SHALL BE OF STRIP SEAL TYPE AS PER SPECIFICATION.
8. DESIGN OF BRIDGE IS BASED ON LIVE LOAD COMBINATION OF CLASS A OR 70R + CLASS A OR SV WHICHEVER PRODUCE SEVER EFFECT.
9. LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFIRMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & DENSITY=20KN/m.
10. WEAP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZONTALY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL TO HFL.
11. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. No. VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-05-(Sht-1)








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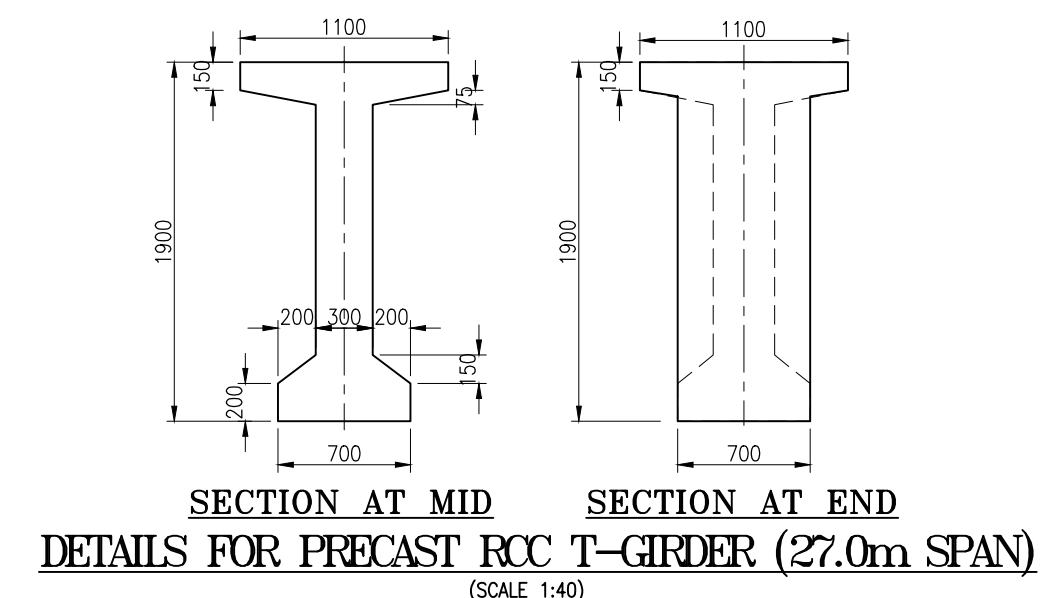
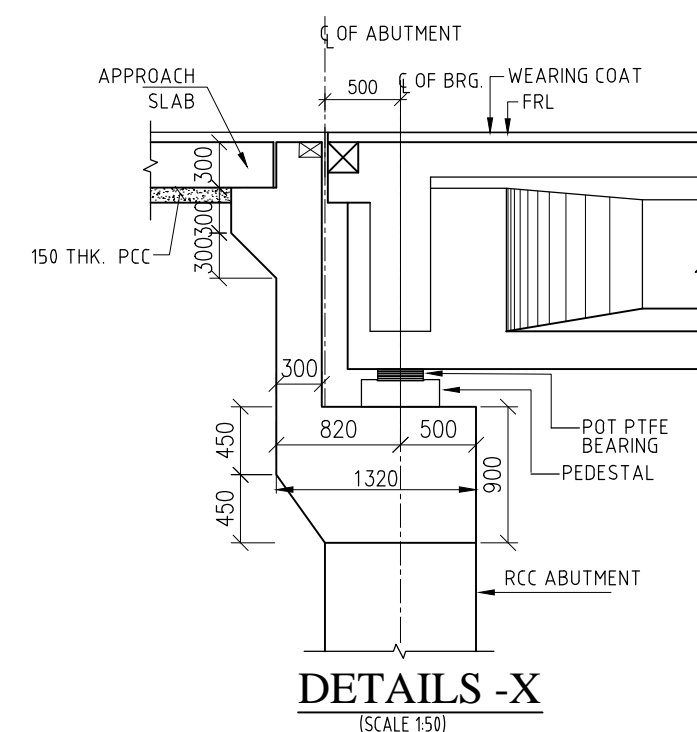
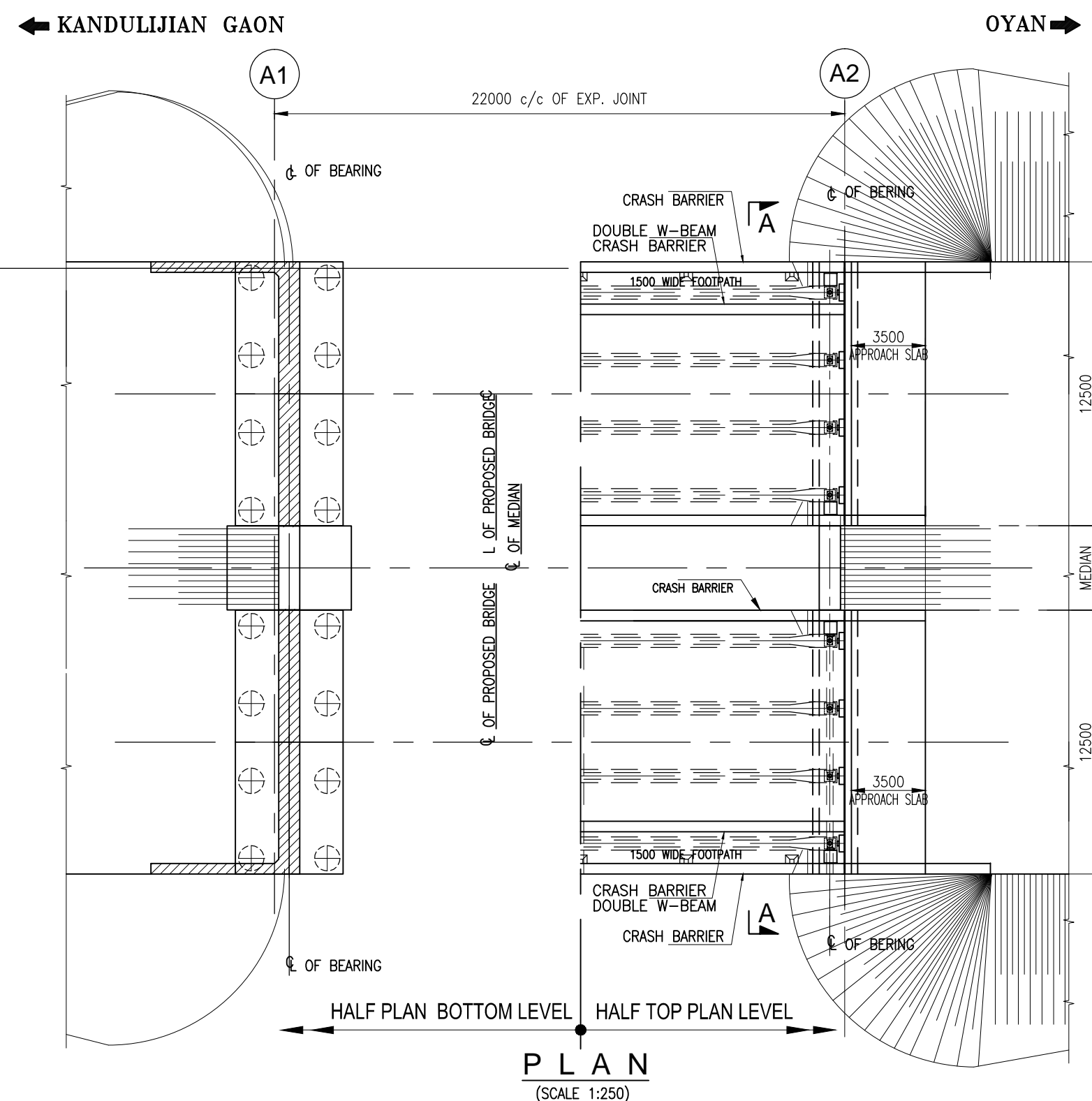
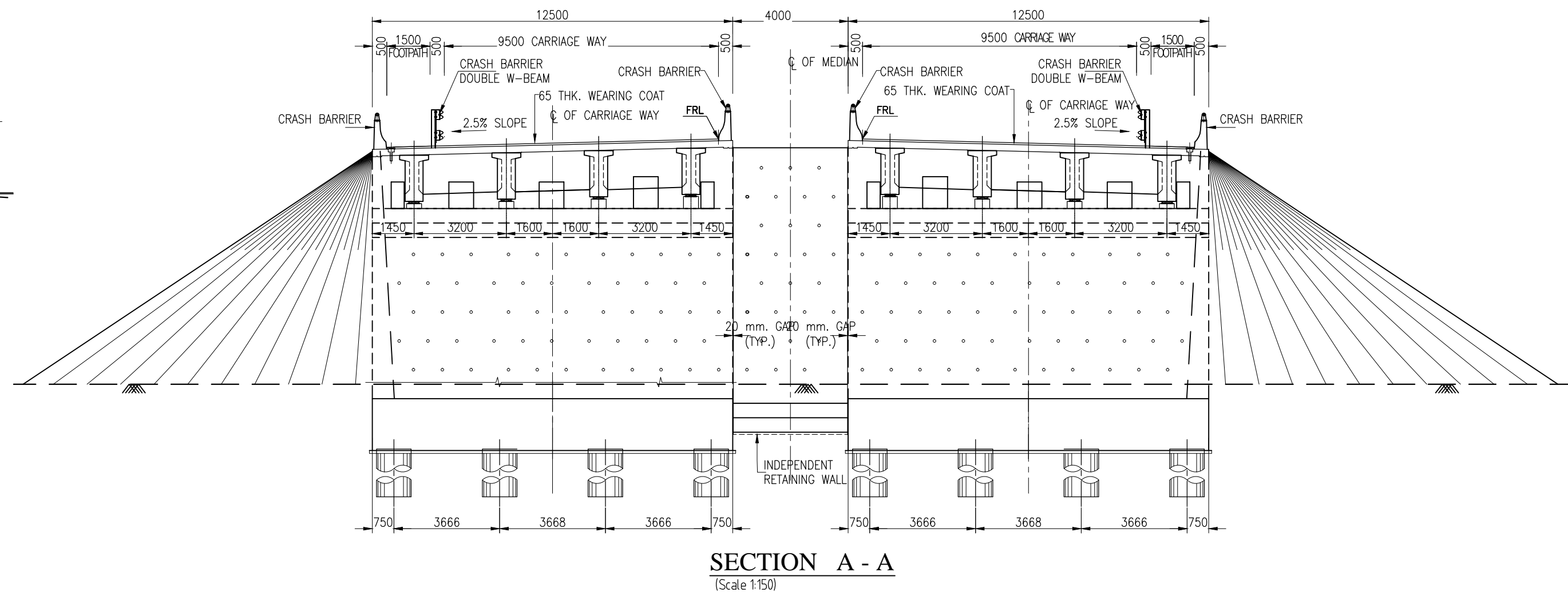
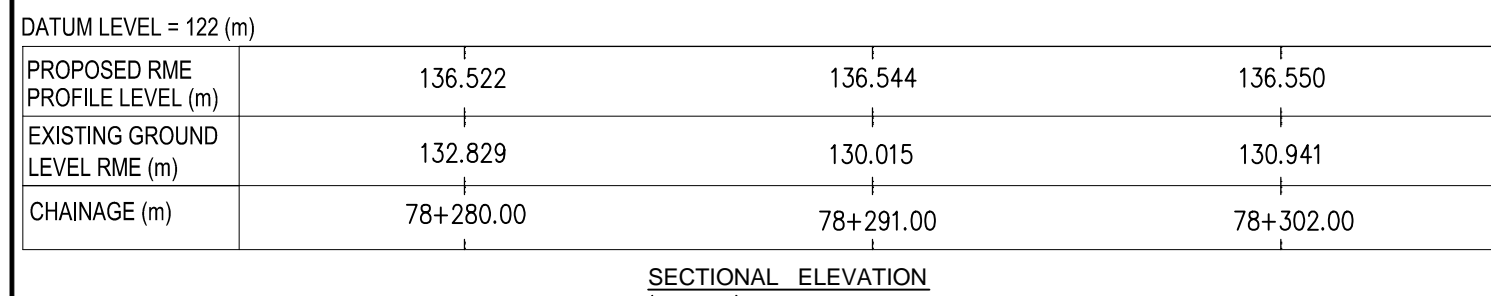


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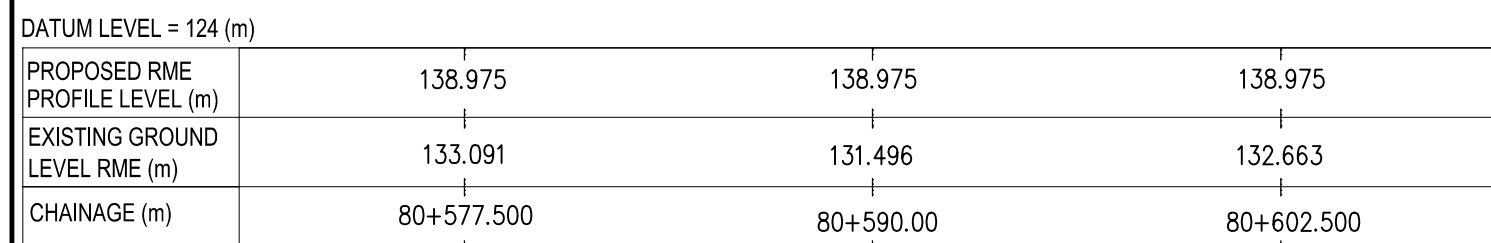
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4. POT PTFE BEARING SHALL BE USED.
5. GRADE OF CONCRETE :-
 - PSC BOX _____ M50
 - RCC CRASH BARRIER _____ M40
 - ABUTMENT, ABUTMENT CAP _____ M40
 - PIER, PIER CAP _____ M40
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8. DESIGN OF BRIDGE IS BASED ON LIVE LOAD COMBINATION OF 3-LANES OF
CLASS A OR 70R + CLASS A OR SV
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9. LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING
WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6
OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & DENSITY $\geq 20\text{KN/m}^3$.
10. WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED
1000 c/c HORIZONTALLY & VERTICALLY IN STAGGERED MANNER FROM 500MM
ABOVE LWL TO HFL.
11. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. No.
VSPL/1718-081/DPR/PGK-4/NH-515/SEC-3/MNB-06-(Sht-1)

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|------|------|-------------|---|---|---|-------------------|----------|------------|---|--|---|---|---|
| | | | <div>CLIENT :</div> <div></div> <div>NATIONAL HIGHWAYS AUTHORITY OF INDIA Regional Office, Hyderabad – First Floor, New Building Administrative Staff college of India (ASCI) Road No - 3, Banjara Hills, Hyderabad – 500034 Tele: 040-295662147/48, Email: rohyderabad@nhai.org</div> | <div>PROJECT :</div> <div>Consultancy Services for preparation of DPR for "Augmentation of existing 4 lane Section of NH-44 from Km.22.00 (Near Hyderabad Airport) to Km. 211.00 (Kurnool) to 6 lane Partial Access Controlled Highway in the State of Telangana"</div> | <div>DESIGN CONSULTANT:</div> <div><div>VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div><div>G-ENG ADVISORY SERVICES PVT. LTD. Middle Building, Emerald Estate Primary School-01, Adjacent Worldmark Mall, Sector 65, Gurugram-122018.</div></div> | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | <div>TITLE :</div> <div>GENERAL ARRANGEMENT DRAWING OF MAJOR BRIDGE PSC-BOX AT CH. km. 75+740.0 (1x56.0)</div> <div>DRG. No. : VSPU/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-06 (Sht. 2 of 2)</div> <div>REVISION: R1 January, 2023</div> | | | |
| | | | | | | | | | SB | | GD | MK | SKC |
| REV. | DATE | DESCRIPTION | | | | | | |  | |  |  |  |
| | | | | | | SCALE :- AS SHOWN | | | SHEET SIZE | A2 | | | |

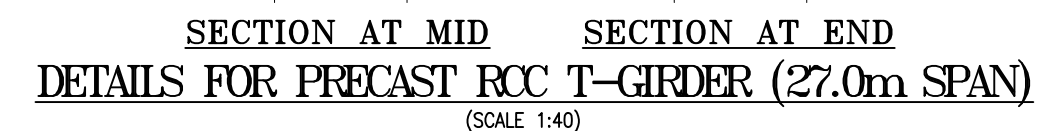


1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES. UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. EXPANSION JOINTS SHALL BE OF STRIP SEAL TYPE AS PER SPECIFICATION.
4. POT PTFE BEARING SHALL BE USED.
5. GRADE OF CONCRETE :-
 - RCC PRE CAST T-GIRDER _____ M35
 - RCC DECK SLAB _____ M35
 - RCC CRASH BARRIER _____ M40
 - ABUTMENT, ABUTMENT CAP _____ M35
 - APPROACH SLAB _____ M35
 - PCC LEVELING COURSE _____ M15
 - PILE, PILE CAP _____ M35

| | | |
|---|-----------|----------------------|
| <p>TITLE :</p> <p>GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Ch. Km.78+291.00</p> | | |
| <p>DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-07. (Sht. 1 of 1)</p> | | |
| REVISION: | R1 | January, 2023 |



SECTIONAL ELEVATION
(SCALE 1:250)







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4. POT PTFE BEARING SHALL BE USED.
5. GRADE OF CONCRETE :-
 - RCC PRE CAST T-GIRDER _____ M35
 - RCC DECK SLAB _____ M35
 - RCC CRASH BARRIER _____ M40
 - ABUTMENT, ABUTMENT CAP _____ M35
 - APPROACH SLAB _____ M35
 - PCC LEVELING COURSE _____ M15
 - PILE, PILE CAP _____ M35

**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE IV)**

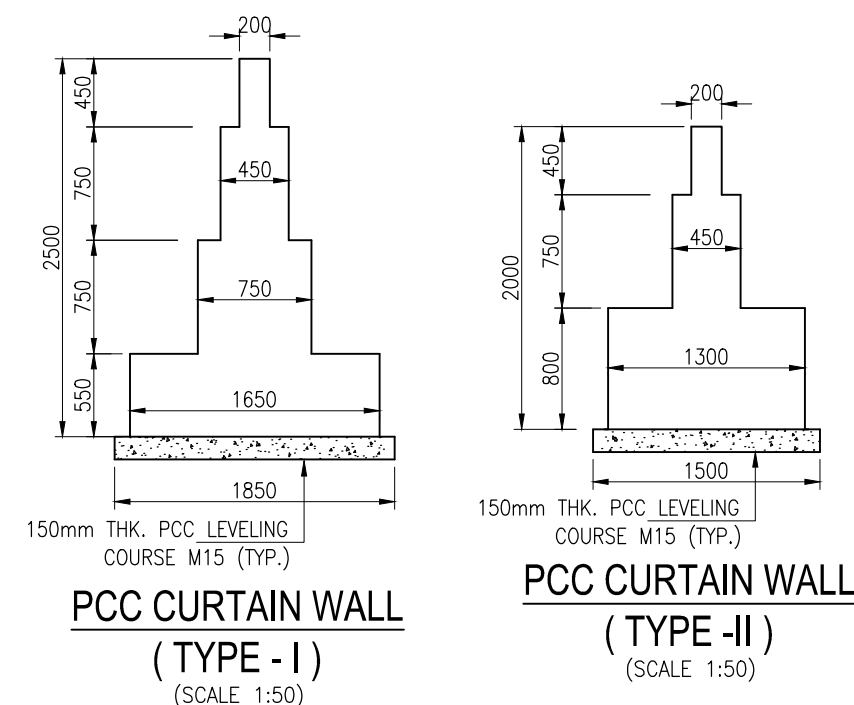
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

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|-----------|-------------|--|
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| REV. DATE | DESCRIPTION | |

| | | | |
|---|---|---|---|
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
| SLM | G. Das | MK | SKC |
|  |  |  |  |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

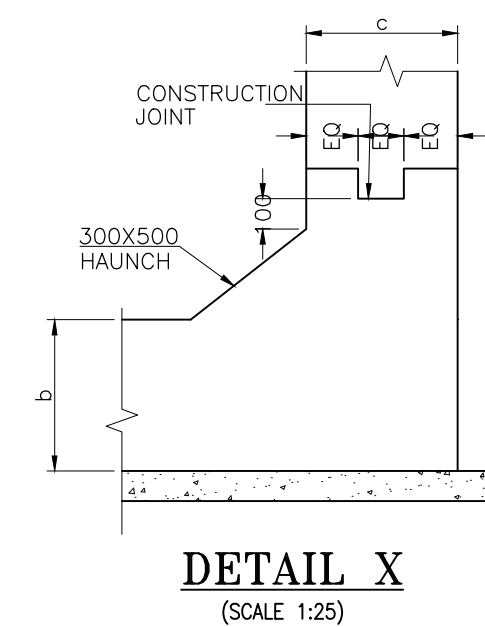
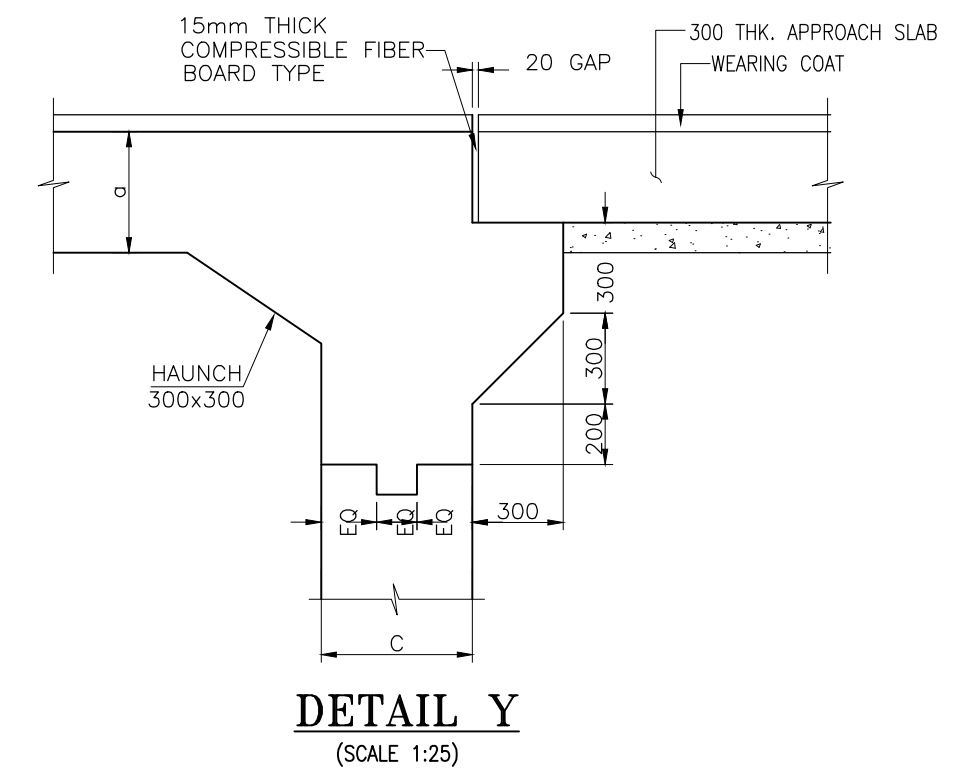
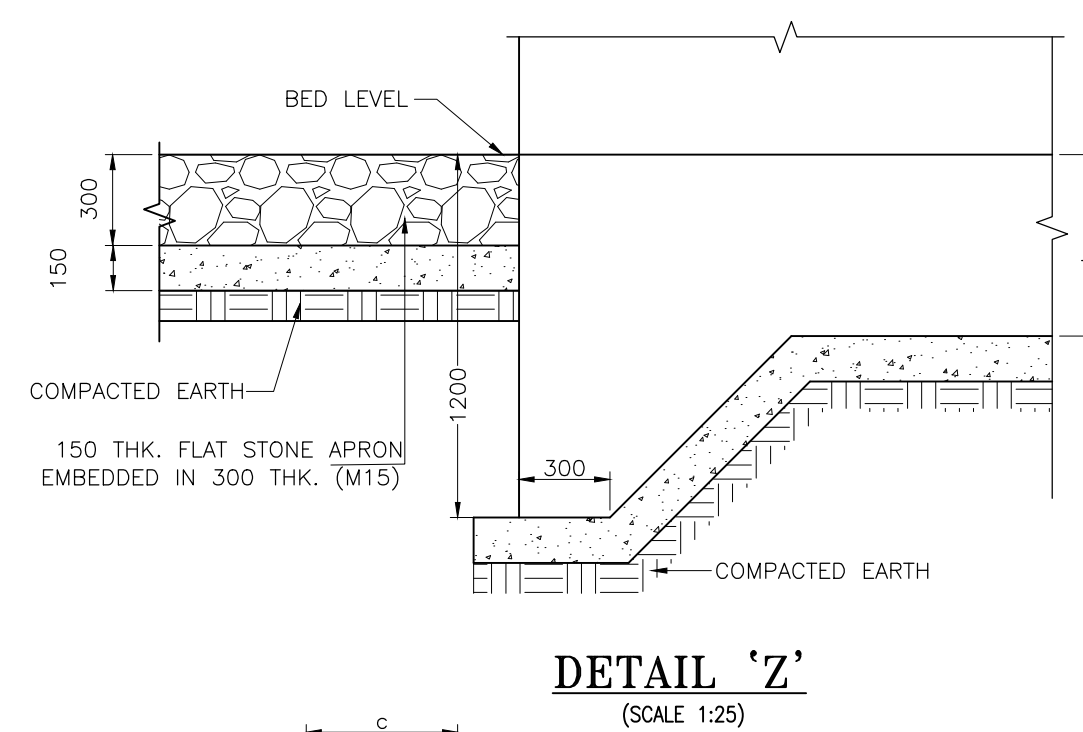
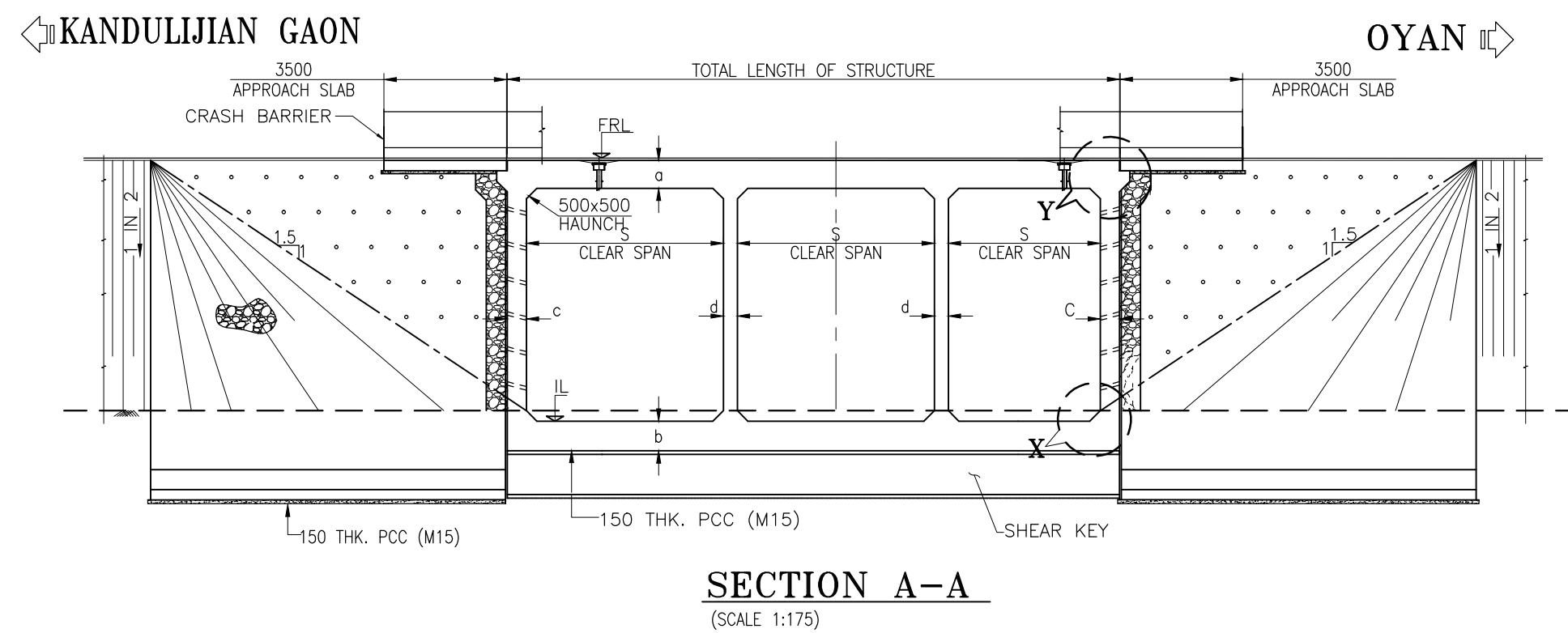
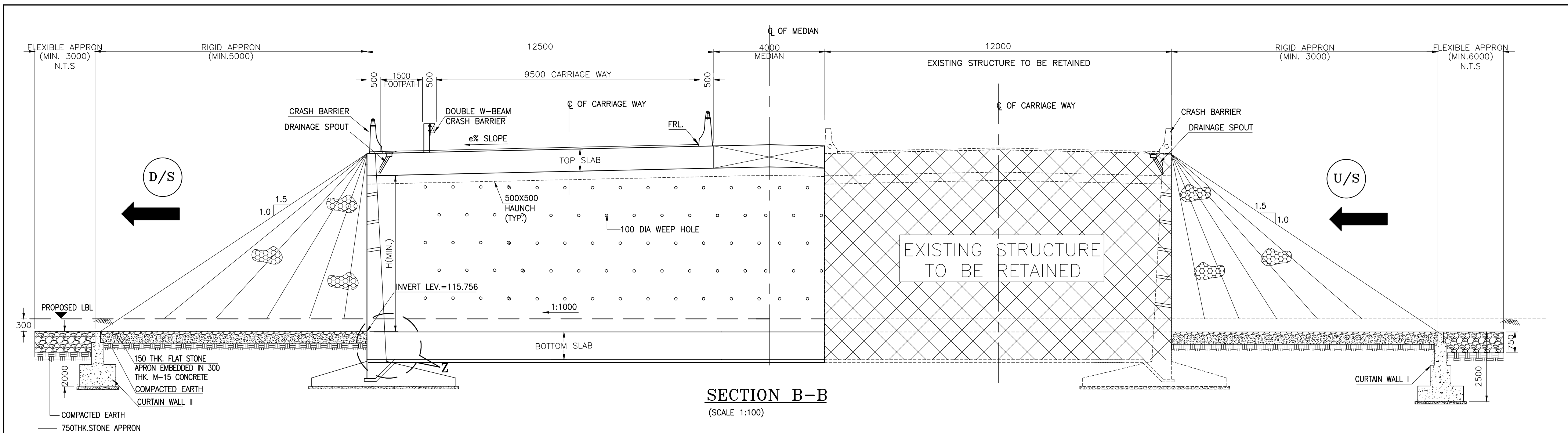
| | | |
|---|-----------|----------------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT Ch. 80+590.0 (RETAINED+NEW) | | |
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-55/SEC-3/MNB-08. (Sht. 1 of 2) | | |
| REVISION: | R1 | January, 2023 |

| Sl. No. | Chainage (KM) | | Existing Details | | | | | | Remarks | Proposal | | | | | Box data | | | | CLEAR HEIGHT - (H) | FRL m |
|---------|---------------|-------------|------------------|-----------------------|------------------------|----------------------|------------------|-----------------|-----------------|----------------------|------------------------|------------------|-----------------|------------------------|------------------|---------------------|-------------------|---------------------|----------------------|---------|
| | Existing (km) | Design (km) | Name of Stream | Category of Structure | Type of Superstructure | Span Arrangement (m) | Total Length (m) | Total Width (m) | | Improvement Proposal | Span Arrangement S (m) | Total Length (m) | Total Width (m) | Type of Superstructure | Top Slab (a) m | Bottom Slab (b) m | Side Wall (C) m | Middle Wall (d) m | | |
| 1 | 60+200 | 57+030 | Amarpur | MNB | RCC Box | 2 x 3 x 3.3 | 19.8 | 8.6 | Existing Retain | New 2Lane on LHS | 3 x 7.5 | 22.5 | 12.5 | RCC Box | 0.500 | 0.530 | 0.550 | 0.400 | 3.500 | 120.068 |



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3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
4. GRADE OF CONCRETE USED:
 - a) RCC BOX, RETURN WALLM35
 - b) CRASH BARRIER.....M40
 - c) APPROACH SLAB.....M30
 - d) PCC LEVELLING COURSE.....M15
5. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
6. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
7. VARIOUS LEVELS (FRL,EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
8. LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:7B-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & DENSITY= 20 kN/m^3
9. WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZANTALLY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL TO HFL.
10. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
11. COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

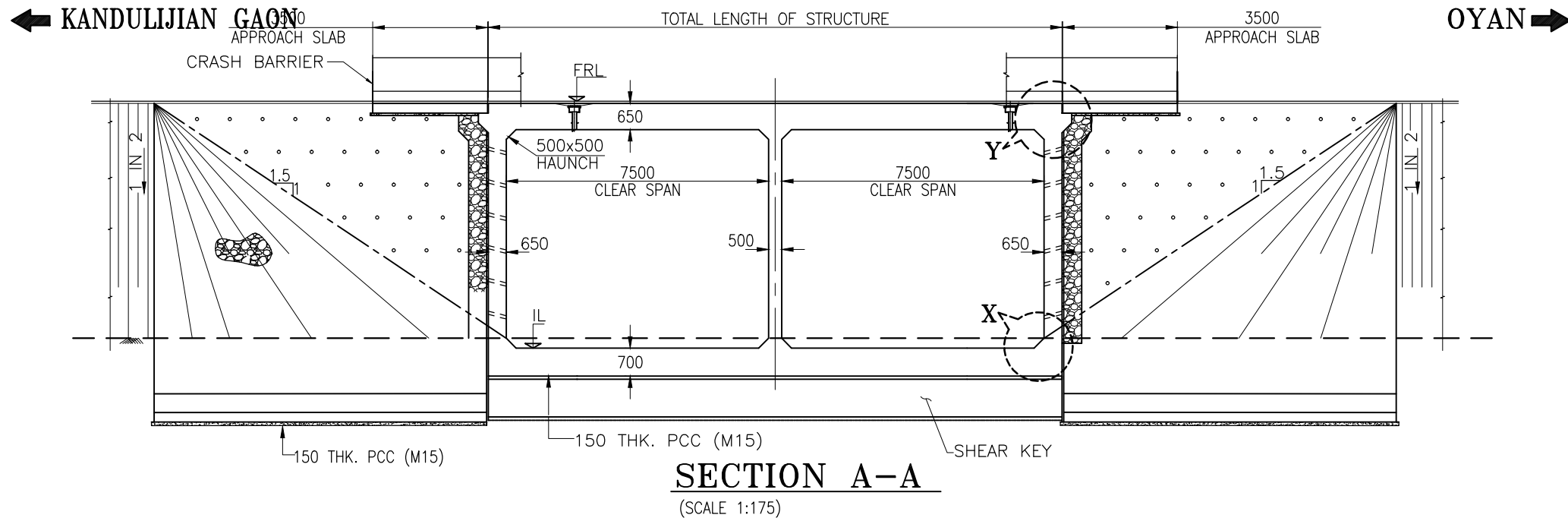
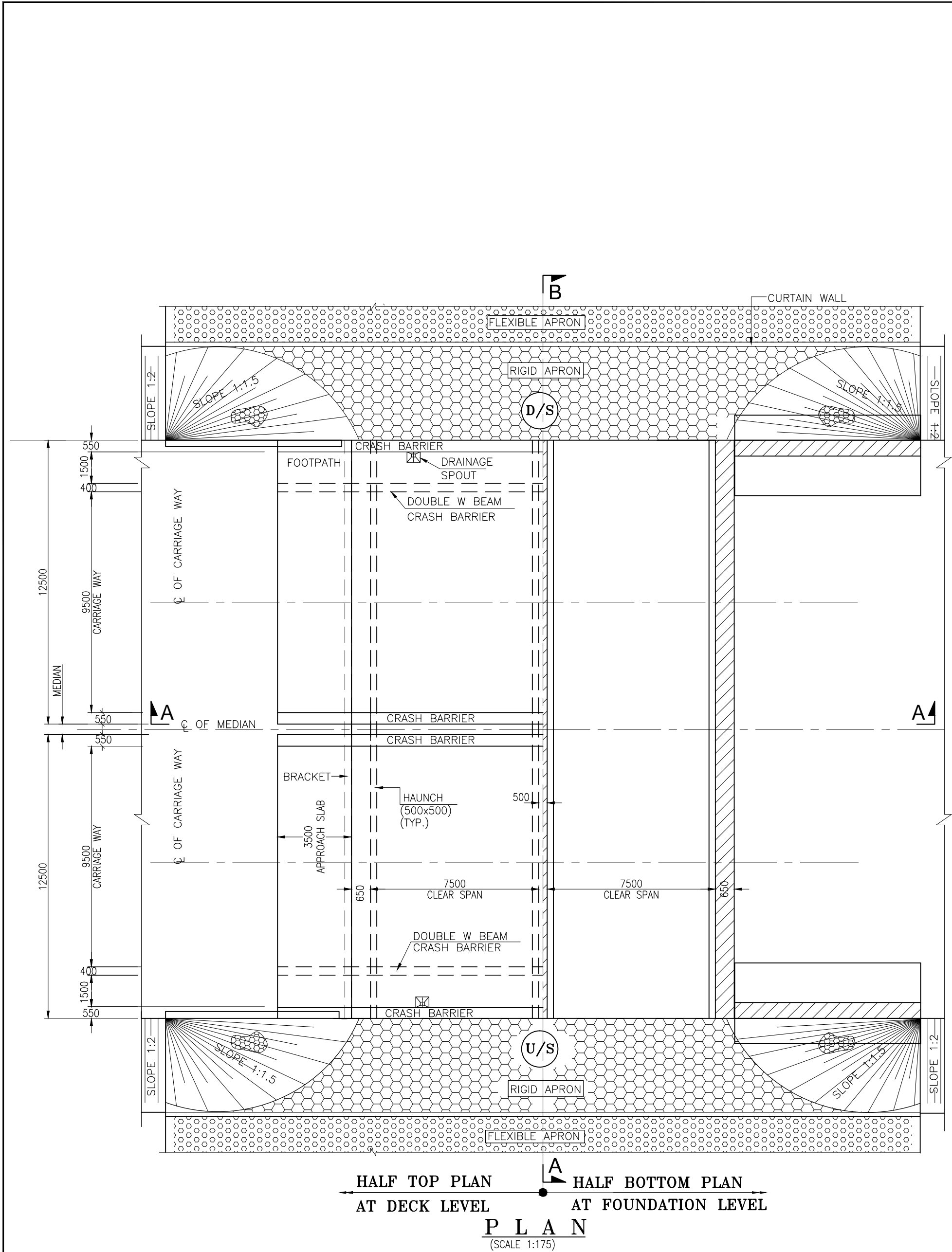
| | | |
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| REVISION: | R1 | January, 2023 |
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NOTES :-

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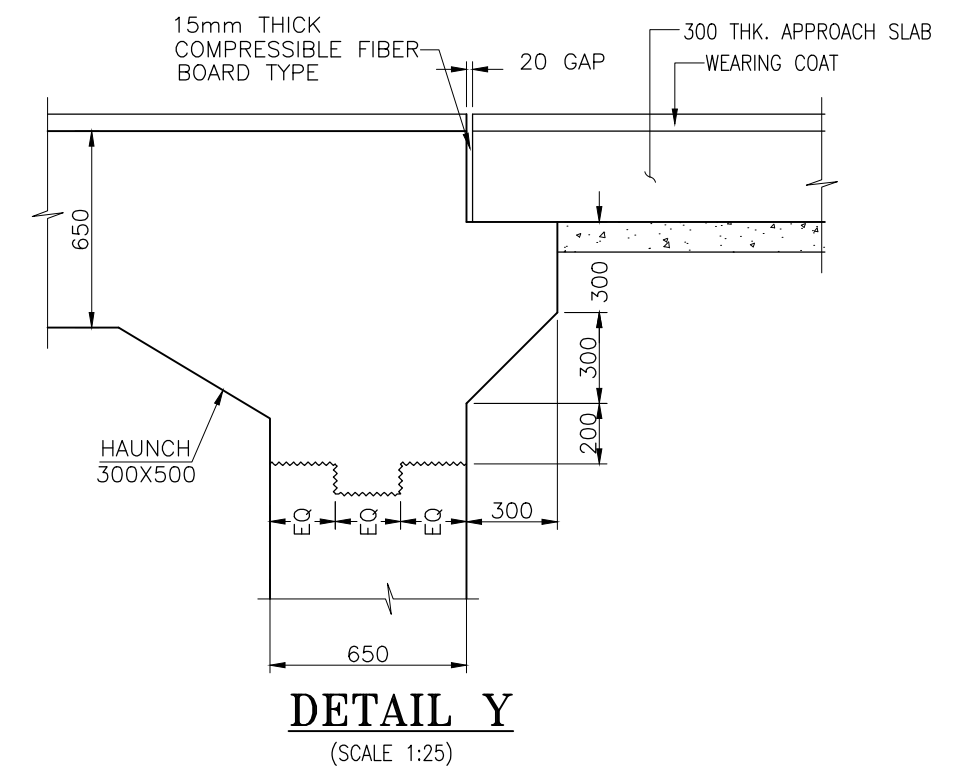
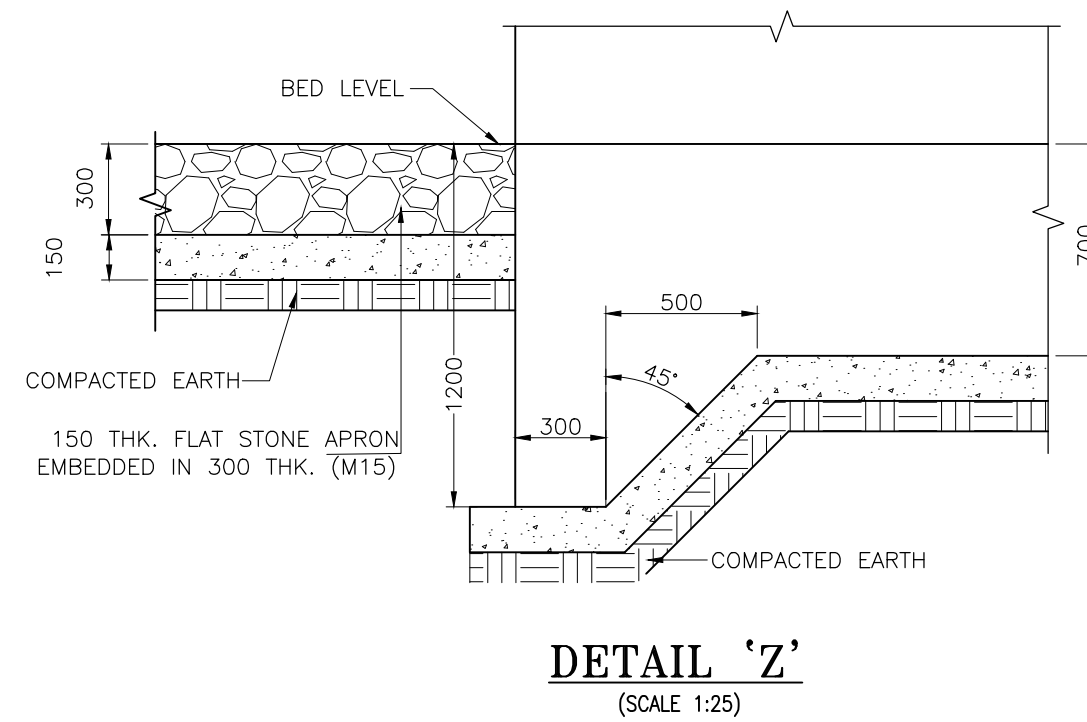
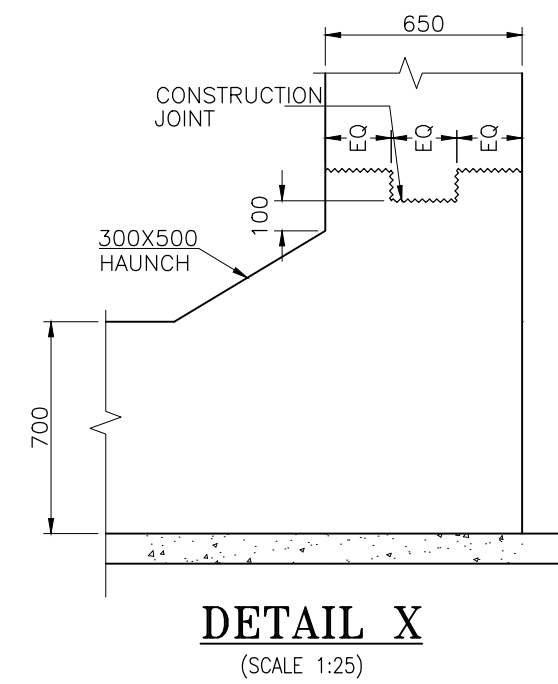
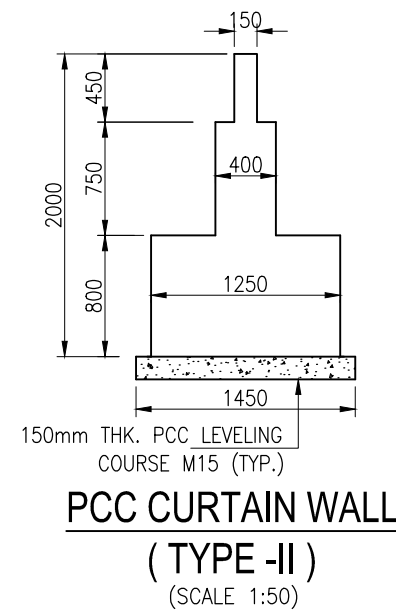
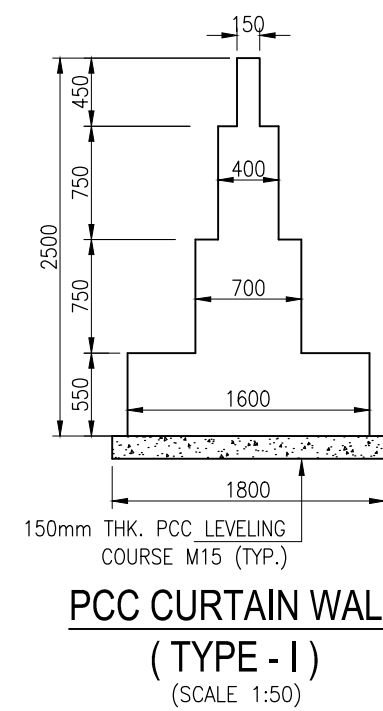
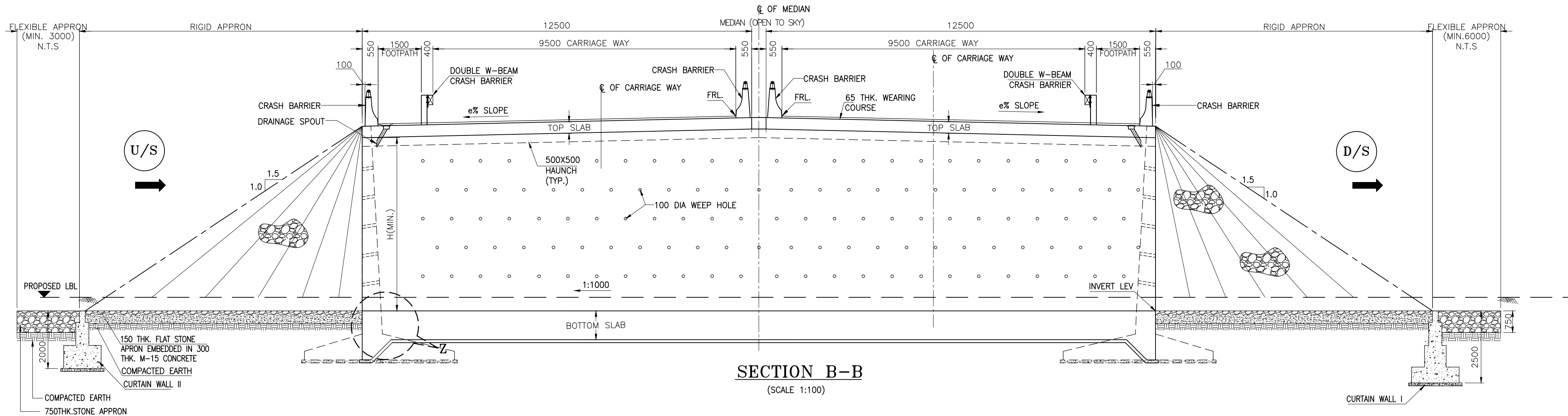
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|---|---|---|------------------------------------|------|-------------|--|---|---|---|---|---|----------------------------|
| <div>CLIENT :</div> <div></div> <div>NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</div> | <div>PROJECT :</div> <div>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II) (FROM KM 38+500 TO KM 56+084)</div> | <div>DESIGN CONSULTANT:</div> <div></div> <div>VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div> | <div>Detailed Project Report</div> | | | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | TITLE : GENERAL ARRANGEMENT DRAWING OF THREE CELL BOX TYPE MINOR BRIDGE AT Ch. Km. 57+030.00 (RETAINED + NEW) | |
| | | | | | | | SB | GD | SG | SKC | | |
| | | | | | | |  |  |  |  | | |
| | | | | | | | | | | | DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-09(Sht. 1 of 2) | |
| | | | REV. | DATE | DESCRIPTION | | SCALE : | | AS SHOWN | SHEET SIZE | A2 | REVISION: R1 January, 2023 |



| Structure List : NH-515_PKG-3 | | | | | | | | | | | | | | | |
|-------------------------------|-------------|-----------------------|------------------------|----------------------|------------------|-----------------|------------------------|---------|---------|---------|---------|---------|---------|-----------------------------|--|
| Sl. No. | Design (km) | Category of Structure | Improvement Proposal | Proposal | | | | OGL | | | FRL | | | CLEAR HEIGHT IN METRE (H) | |
| | | | | Span Arrangement (m) | Total Length (m) | Total Width (m) | Type of Superstructure | A1 | CENTER | A2 | A1 | CENTER | A2 | | |
| 1 | 69+570 | MNB | New 2Lane on LHS & RHS | 2 x 7.5 | 15 | 2 x 12.5 | RCC Box | 122.553 | 122.391 | 122.66 | 124.886 | 124.856 | 124.876 | 3.600 | |
| 2 | 70+150 | MNB | New 2Lane on LHS & RHS | 2 x 7.5 | 15 | 2 x 12.5 | RCC Box | 122.732 | 122.761 | 122.807 | 127.469 | 127.353 | 127.232 | 7.200 | |
| 3 | 73+910 | MNB | New 2Lane on LHS & RHS | 2 x 7.5 | 15 | 2 x 12.5 | RCC Box | 128.992 | 128.971 | 128.97 | 131.479 | 131.487 | 131.494 | 3.400 | |

- NOTES :-**
- ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
 - DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
 - GRADE OF CONCRETE USED:
a) RCC BOX, RETURN WALLM35
b) CRASH BARRIER.....M40
c) APPROACH SLAB.....M30
d) PCC LEVELLING COURSE.....M15
 - ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
 - THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHEEL + 1 LANE OF CLASS A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
 - VARIOUS LEVELS (FRL,EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
 - LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND SIDE WALL & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES C=0, $\phi \geq 30^\circ$ & DENSITY=20KN/m³.
 - WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZANTALLY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL.
 - SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED FILLER FILLS WITH LAYERS NOT EXCEEDING 300MM.
 - COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

| | | | | | | | | | | | |
|---|---|--|-------------------------|------|-------------|---------|-------------|------------|------------|-------------|--|
| <div>CLIENT :</div> <div></div> <div>NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</div> | <div>PROJECT :</div> <div>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)</div> | <div>DESIGN CONSULTANT:</div> <div> VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN: U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div> | Detailed Project Report | | | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | TITLE : GENERAL ARRANGEMENT DRAWING OF DOUBLE CELL BOX TYPE MINOR BRIDGE (TYPICAL) DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-10 (Sht. 1 of 2) REVISION: R1 January, 2023 |
| | | | | | | | SLM | G.Das | MK | SKC | |
| | | | | | | | SL | GD | MK | SKC | |
| | | | REV. | DATE | DESCRIPTION | SCALE : | AS SHOWN | SHEET SIZE | A2 | | |



NOTES :-

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CLIENT :

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)

DESIGN CONSULTANT:

VOYANTS
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

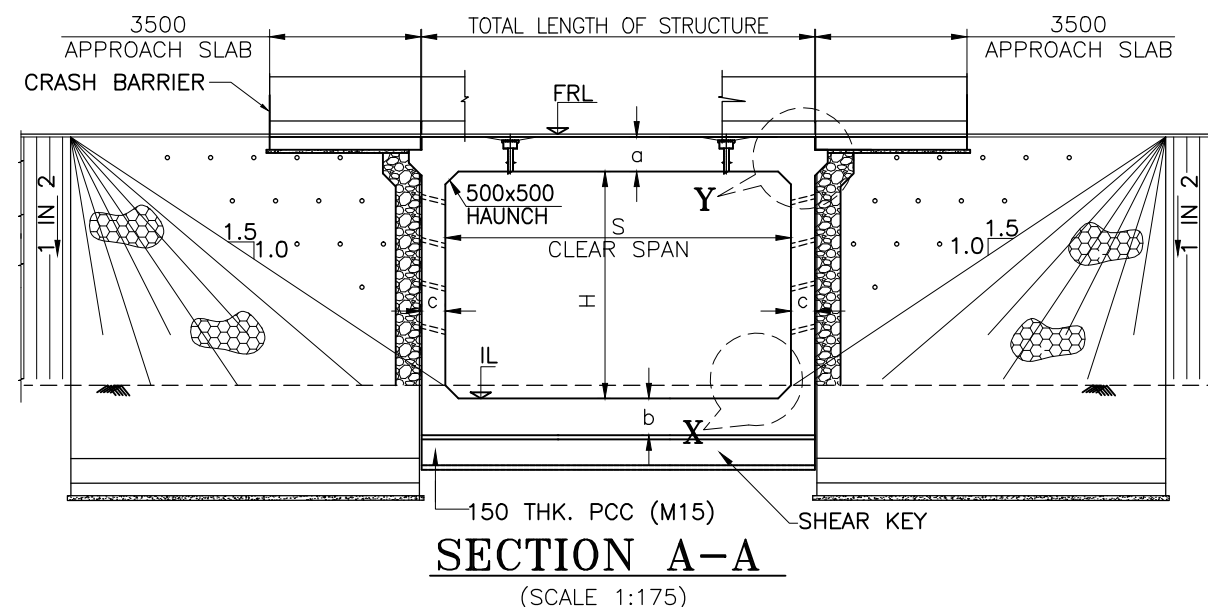
| REV. | DATE | DESCRIPTION |
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| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|--------------|------------|-------------|
| SLM | G.Das | MK | SKC |
| <i>SLM</i> | <i>G.Das</i> | <i>MK</i> | <i>SKC</i> |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

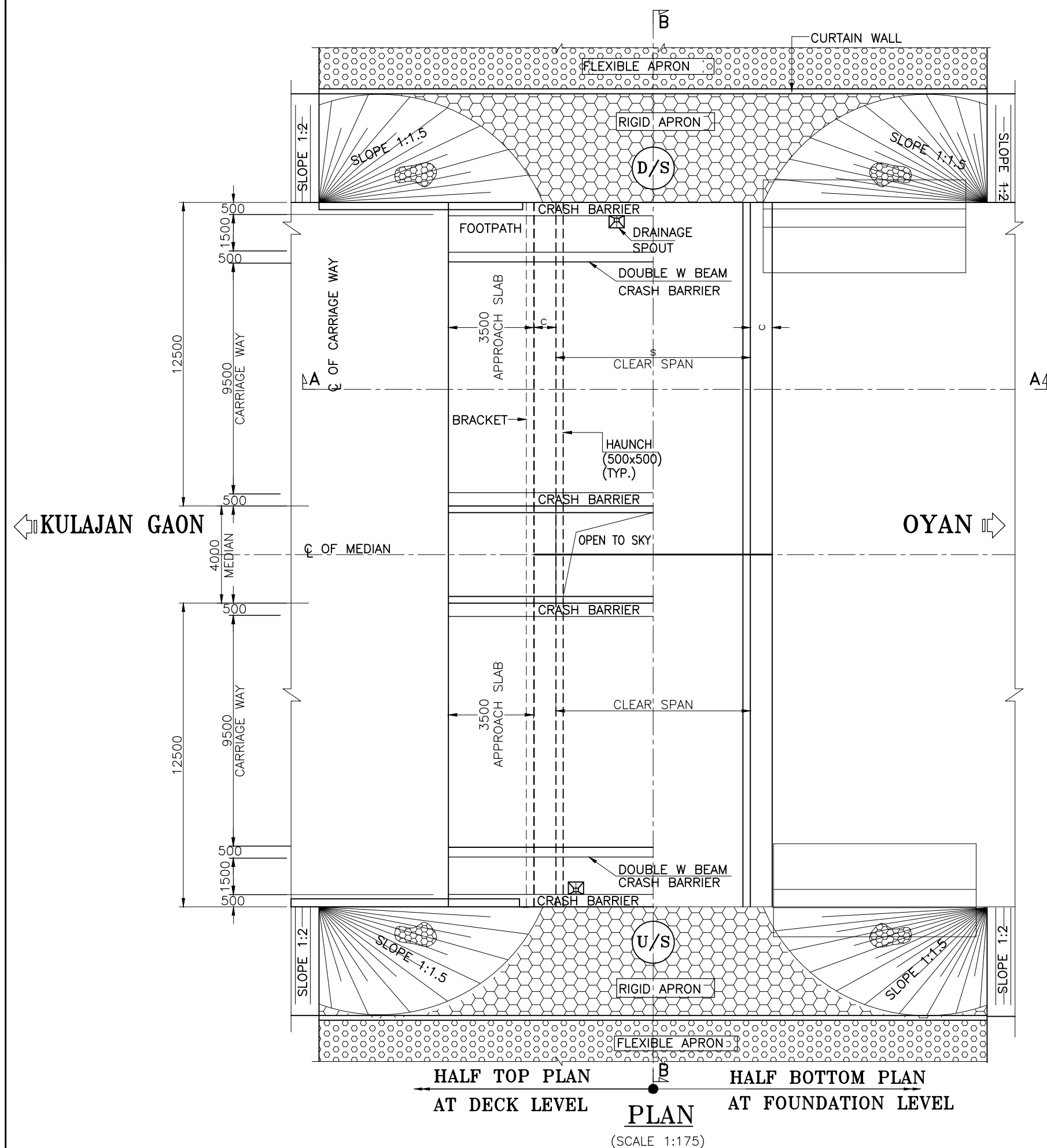
TITLE :
GENERAL ARRANGEMENT DRAWING OF
DOUBLE CELL BOX TYPE MINOR BRIDGE
(TYPICAL)

DRG. No. :
VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-10 (Sht. 1 of 2)
REVISION: R1 January, 2023

◀ KULAJAN GAON



OYAN 

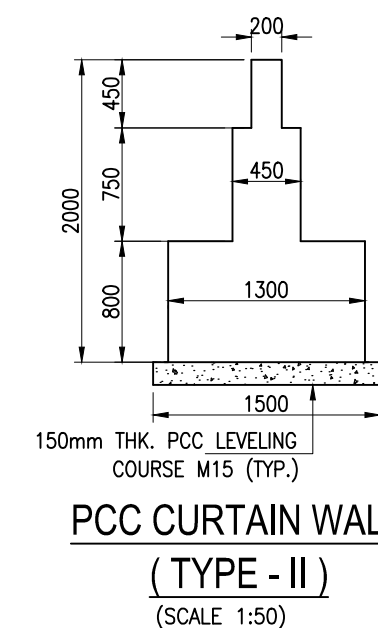
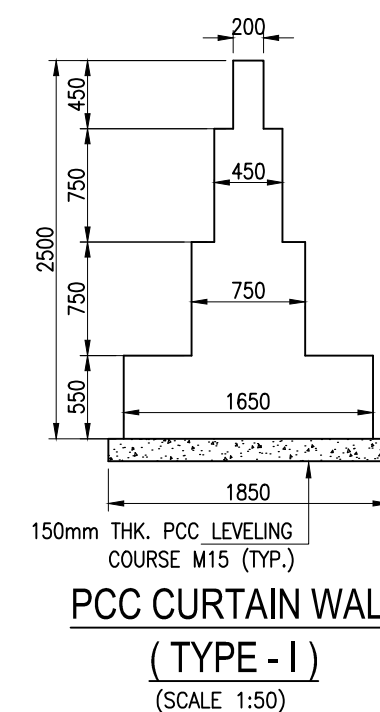


Structure List : NH-515_PKG-3

| Sl. No. | Proposal | | | | | | | | Box data | | | | CLEAR HEIGHT - (H) | FRL m |
|---------|-------------|----------------|-----------------------|------------------------|----------------------|------------------|-----------------|------------------------|------------------|---------------------|-------------------|---------------------|----------------------|---------|
| | Design (km) | Name of Stream | Category of Structure | Improvement Proposal | Span Arrangement (m) | Total Length (m) | Total Width (m) | Type of Superstructure | Top Slab (a) m | Bottom Slab (b) m | Side Wall (C) m | Middle Wall (d) m | | |
| 1 | 69+570 | Amarpur | MNB | New 2Lane on LHS & RHS | 3 x 7.5 | 22.5 | 2x12.5 | RCC Box | 0.750 | 0.850 | 0.650 | | 4.500 | 122.219 |

NOTES :-

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5. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
6. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
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CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.
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**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**





DESIGN CONSULTANT:

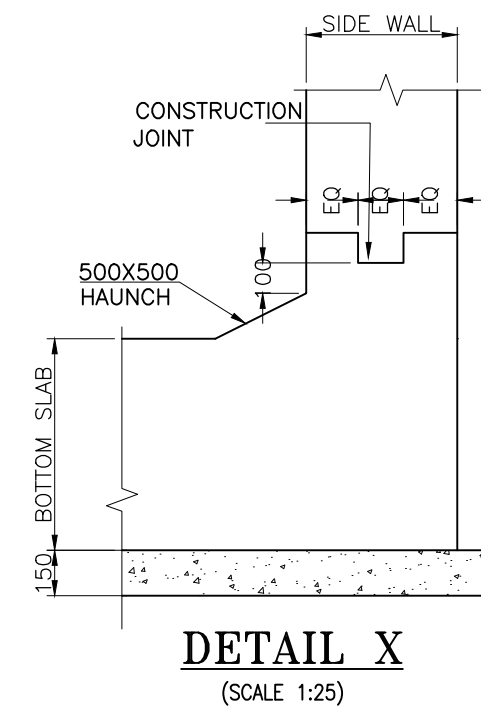
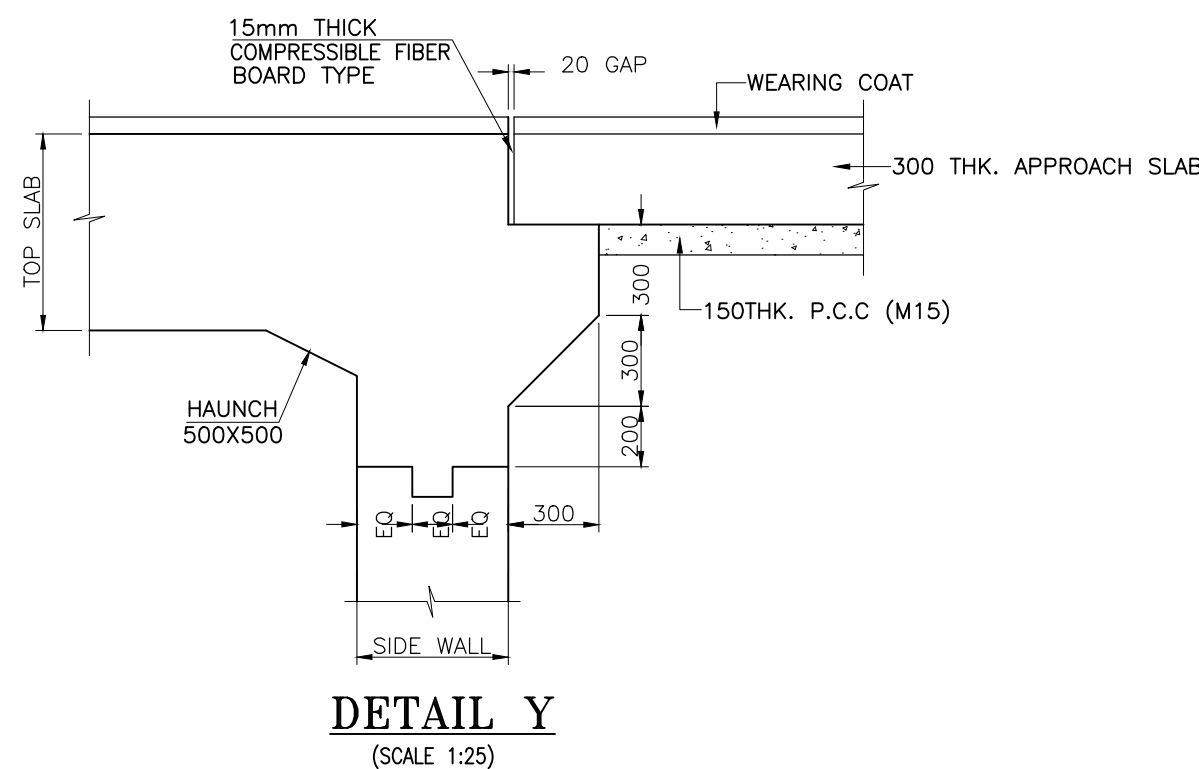
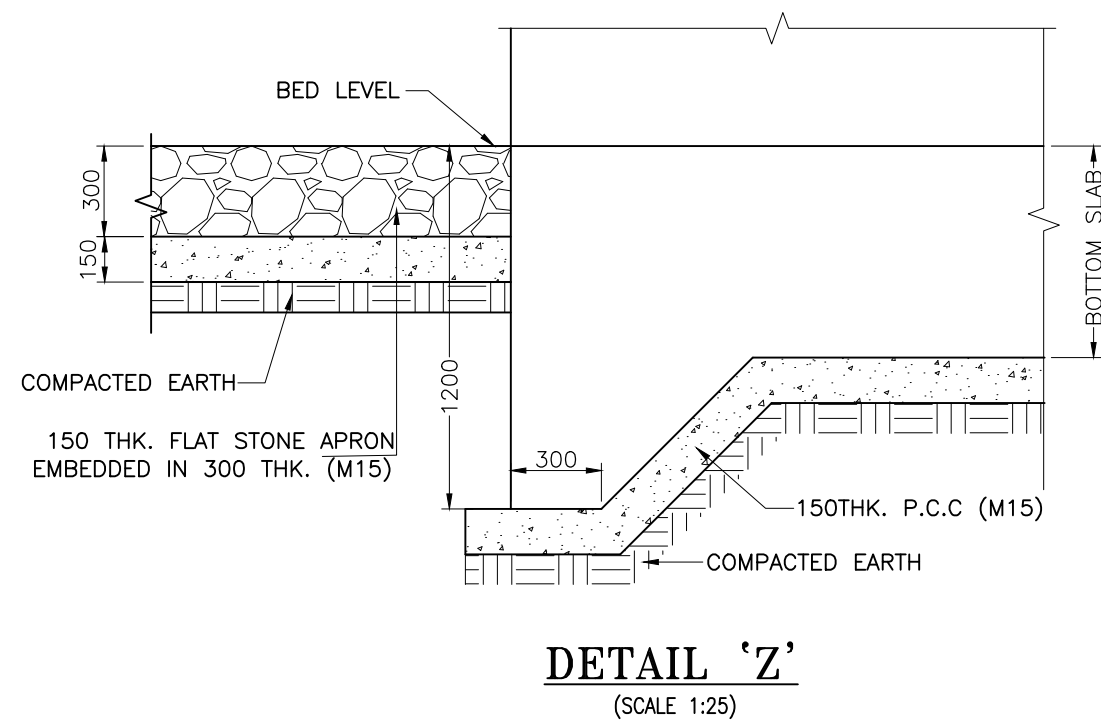
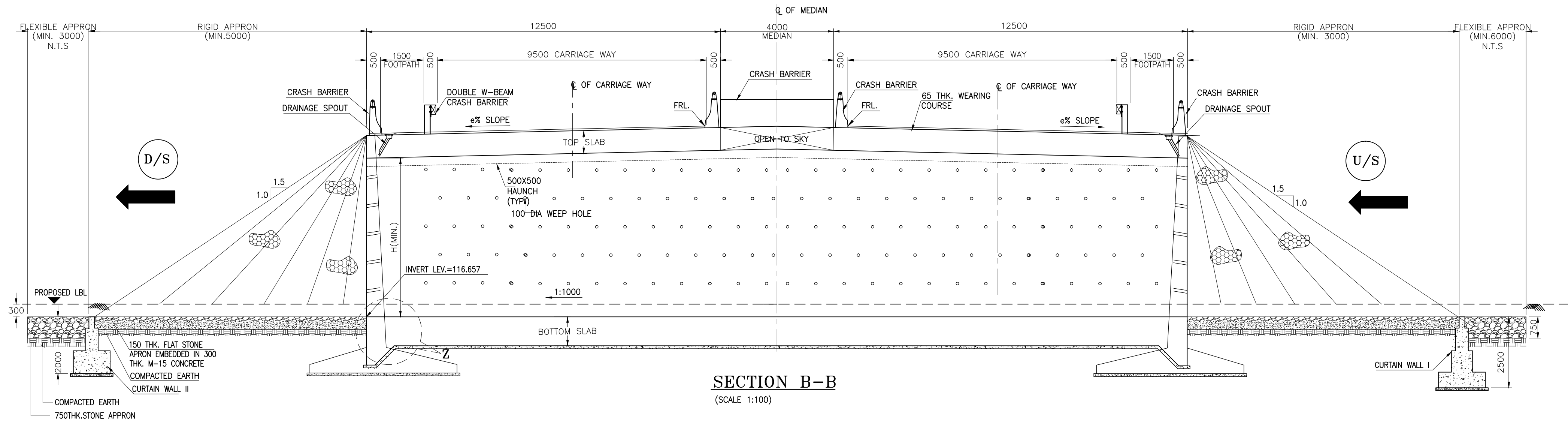


VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U71410HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

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| REV. DATE | DESCRIPTION | |

| | | | | |
|---|---|---|---|---|
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | TITLE : GENERAL ARRANGEMENT DRAWING OF SINGLE CELL BOX TYPE MINOR BRIDGE (TYPICAL) |
| SLM | G.Das | MK | SKC | |
|  |  |  |  | |
| SCALE : | AS SHOWN | SHEET SIZE | A2 | DRG. No. : VSP/L1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-11(Sht. 1 of 2) |
| | | | | REVISION: R1 January, 2023 |



NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.

CLIENT :

**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN: U74140HR2004PTC046918
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E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

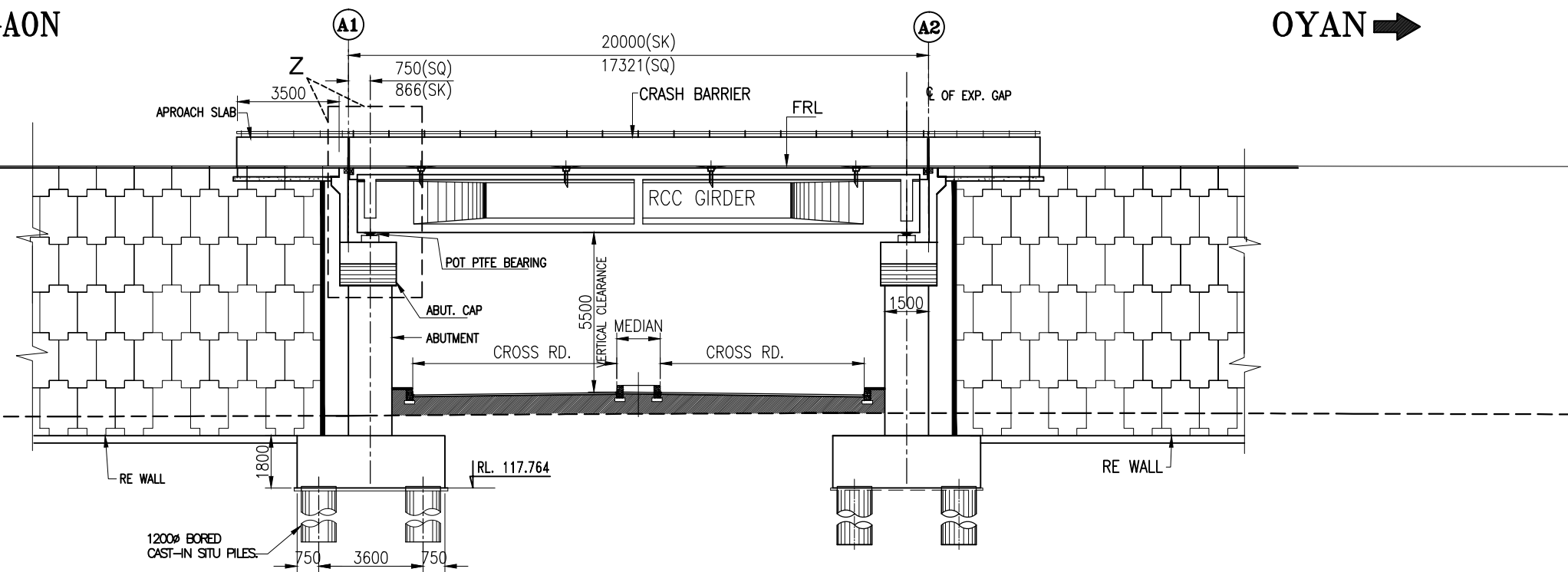
| REV. | DATE | DESCRIPTION |
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| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|--------------|------------|-------------|
| SLM | G.Das | MK | SKC |
| <i>SLM</i> | <i>G.Das</i> | <i>MK</i> | <i>SKC</i> |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

| | |
|---|------------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF SINGLE CELL BOX TYPE MINOR BRIDGE (TYPICAL) | |
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/MNB-11(Sht. 2 of 2) | |
| REVISION: | R1 January, 2023 |

← KANDULIJIAN GAON

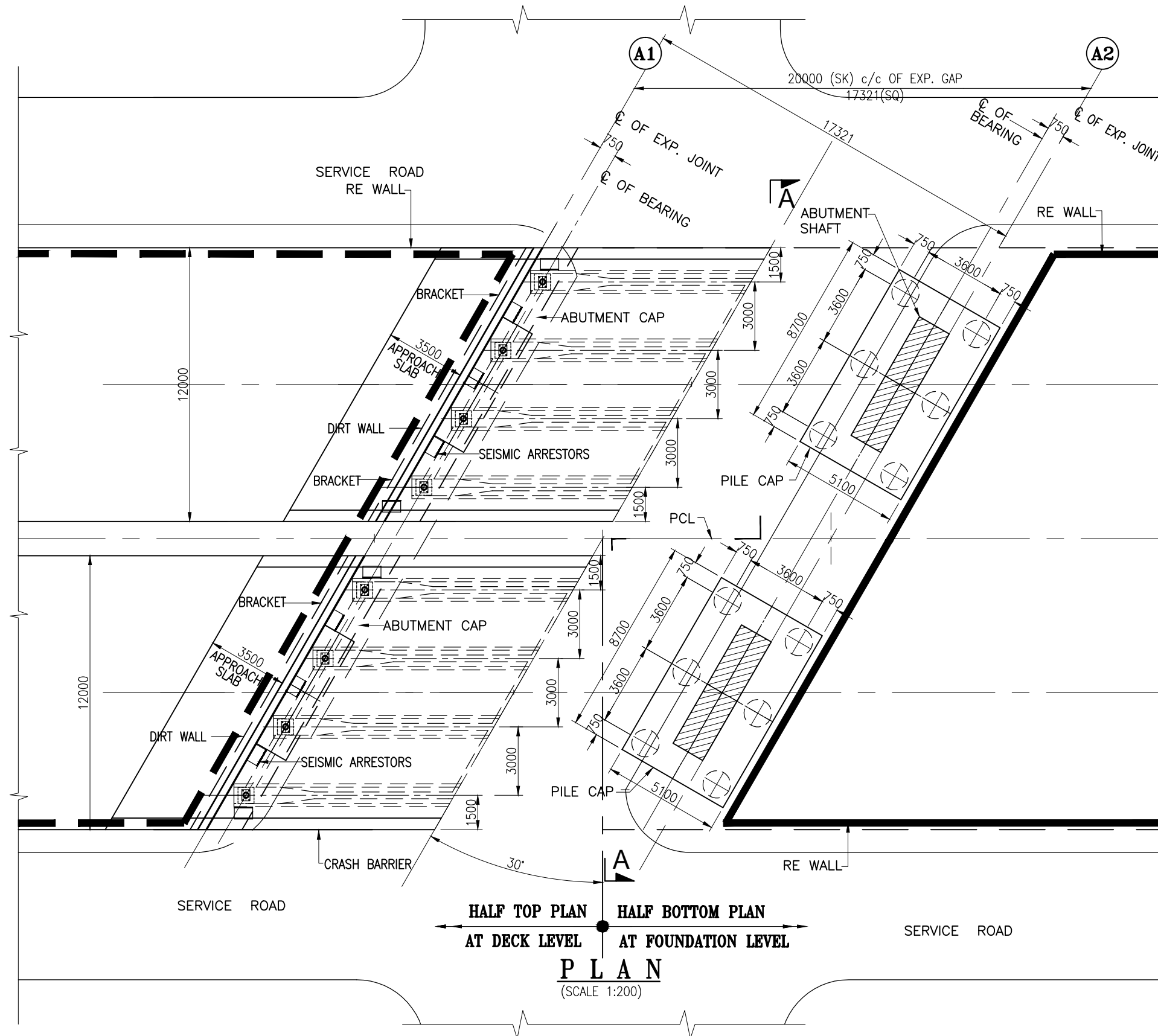
OYAN ➡



| | | | |
|---------------|-----------|-----------|-----------|
| FRL (m) | 134.810 | 134.817 | 134.816 |
| EGL (m) | 125.139 | 126.258 | 125.109 |
| CHAINAGE (Km) | 66+810.00 | 66+820.00 | 66+830.00 |

SECTIONAL ELEVATION

(SCALE 1:200)



NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE LAYOUT OF THE STRUCTURE SHALL BE SET WITH RESPECT TO THE RELEVANT HIGHWAY PROFILE.
4. ALL CONCRETE SHALL BE DESIGN MIX & MINIMUM GRADE OF WHICH IN VARIOUS COMPONENTS SHALL BE AS FOLLOWS :-

| | |
|--------------------------------|-----|
| RCC GIRDER | M35 |
| RCC SLAB OVER GIRDER | M35 |
| RCC CRASH BARRIER AND PEDESTAL | M35 |
| RCC SUBSTRUCTURE | M35 |
| PILE CAP & PILE | M35 |
| APPROACH SLAB | M30 |
| PCC LEVELLING COURSE | M15 |
5. HIGH STRENGTH DEFORMED BARS SHALL BE OF GRADE Fe500 CONFORMING TO IS: 1786-1985
6. DESIGN OF STRUCTURE IS BASED ON LIVE LOAD COMBINATION OF 4-LANES OF CLASS A OR 2-LANE OF 70R OR 2-LANE OF CLASS A + 1-LANE OF 70R OR IRC SV. WHICHEVER PRODUCE SEVER EFFECT.
7. THE FORMATION LEVEL GIVEN IN THIS DRAWING SHALL BE VERIFIED FROM THE RELEVANT HIGHWAY DRAWING. IN CASE OF ANY DISCREPANCY THE HIGHWAY DRAWING SHALL BE CONSIDERED CORRECT.

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
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FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF
FREIGHT MOVEMENTS IN INDIA UNDER
BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)**





DESIGN CONSULTANT:



VOYANTS SOLUTIONS PVT LTD.
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CIN- U74140HR2004PTC046918
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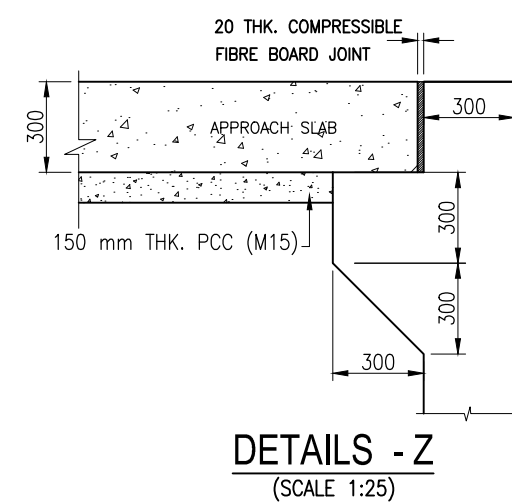
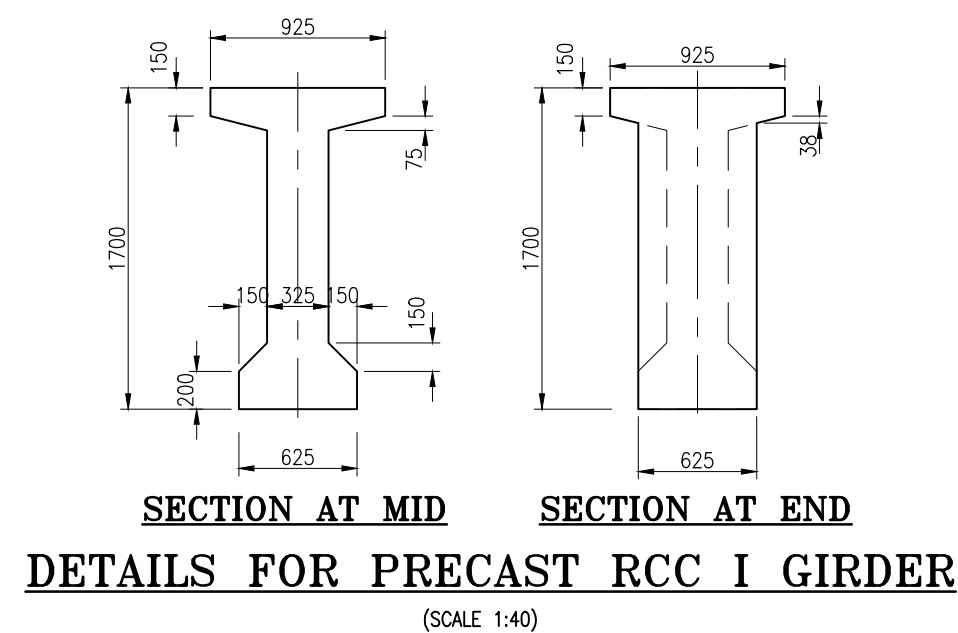
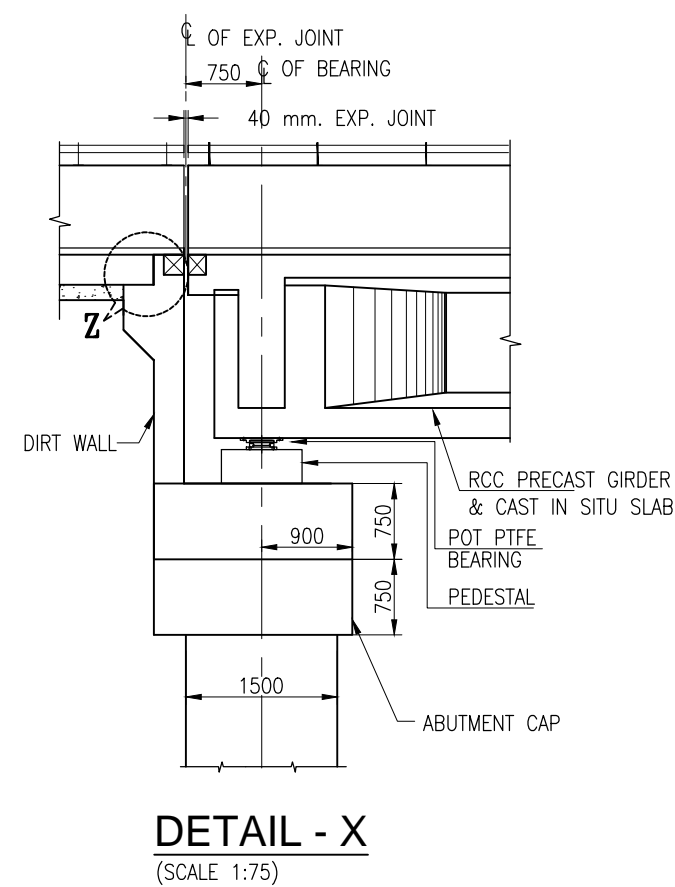
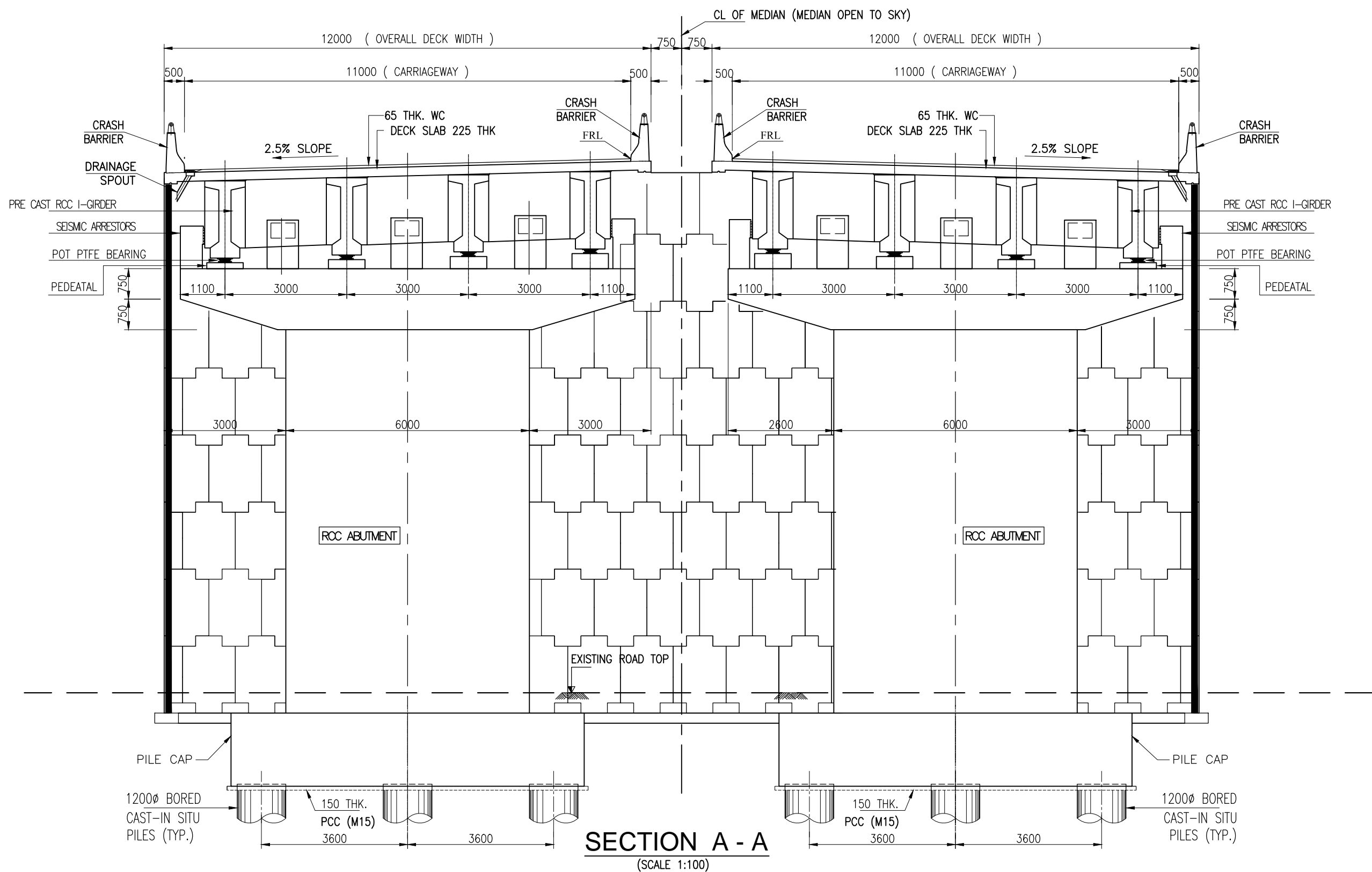
Detaild Project Report

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| REV. | DATE | DESCRIPTION |

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|---|---|---|---|
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
| SB | G. Das | SG | SKC |
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| SCALE : | AS SHOWN | SHEET SIZE | A2 |

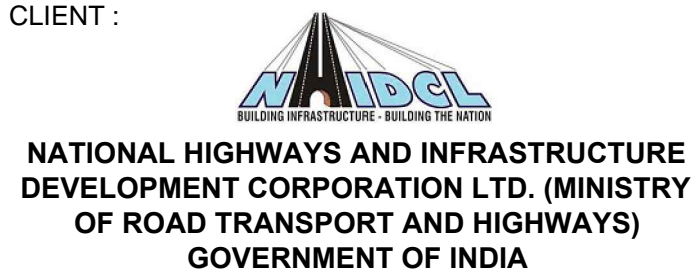
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|---|---|
| 7 | TITLE : |
| | <p>GENERAL ARRANGEMENT DRAWING OF VEHICULAR UNDERPASS AT KM. CH. 66+820.000</p> |

| | | |
|--|----|---------------|
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/VUP-01(Sht. 1 of 2) | | |
| REVISION: | R1 | January, 2023 |



- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
 2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:

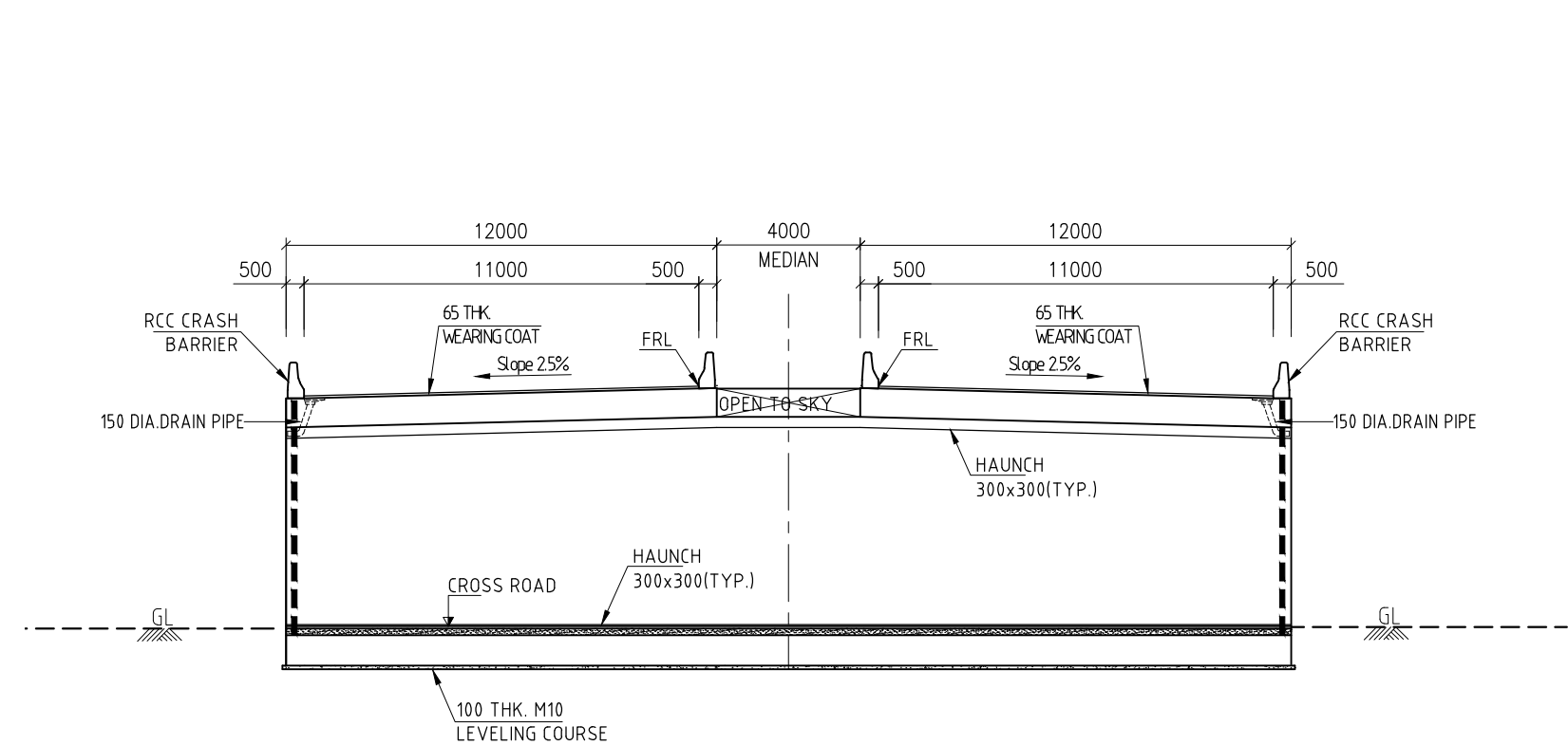


Detaild Project Report

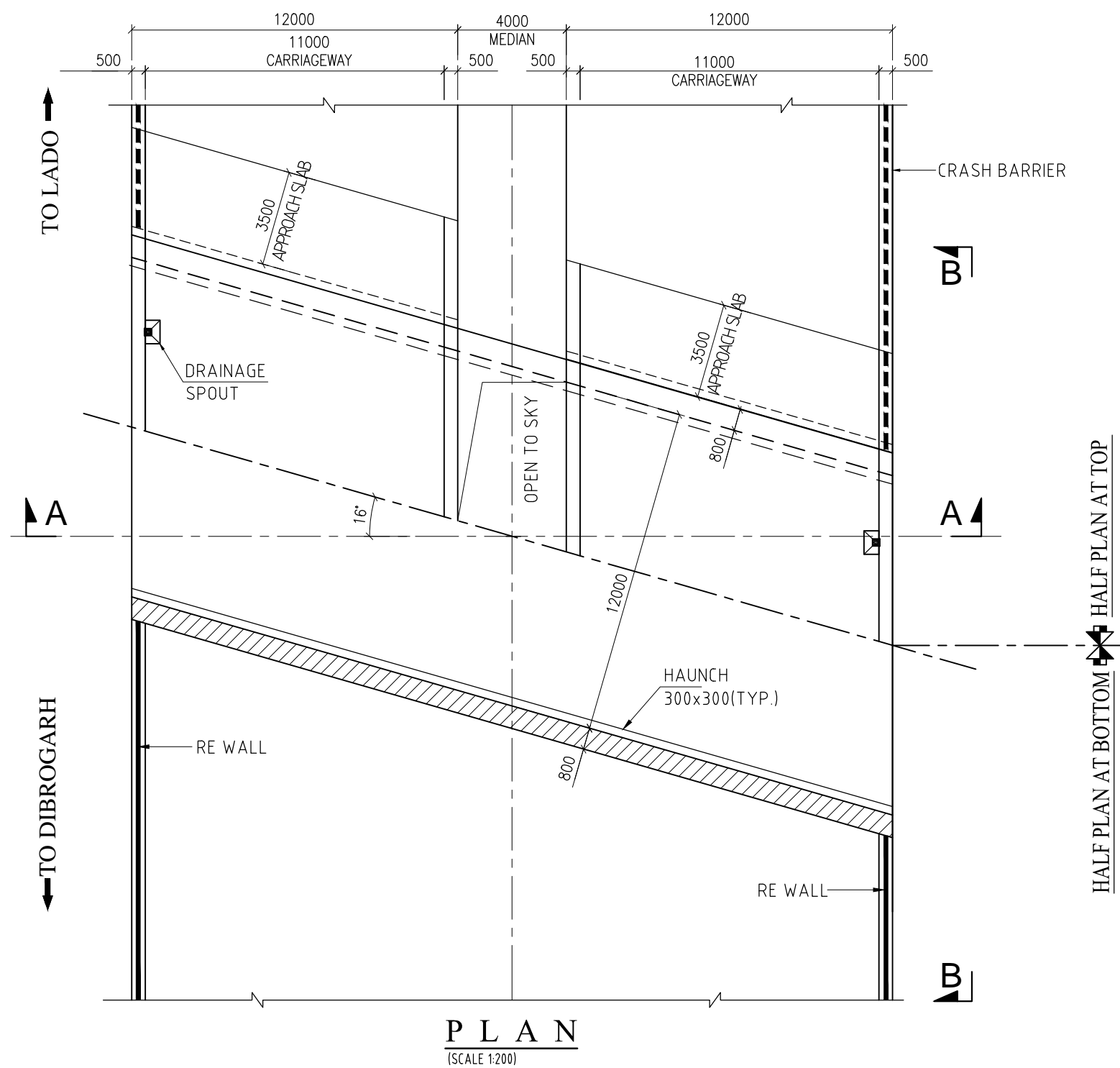
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| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|----------|------------|-------------|
| SB | G. Das | SG | SKC |
| SB | | | |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

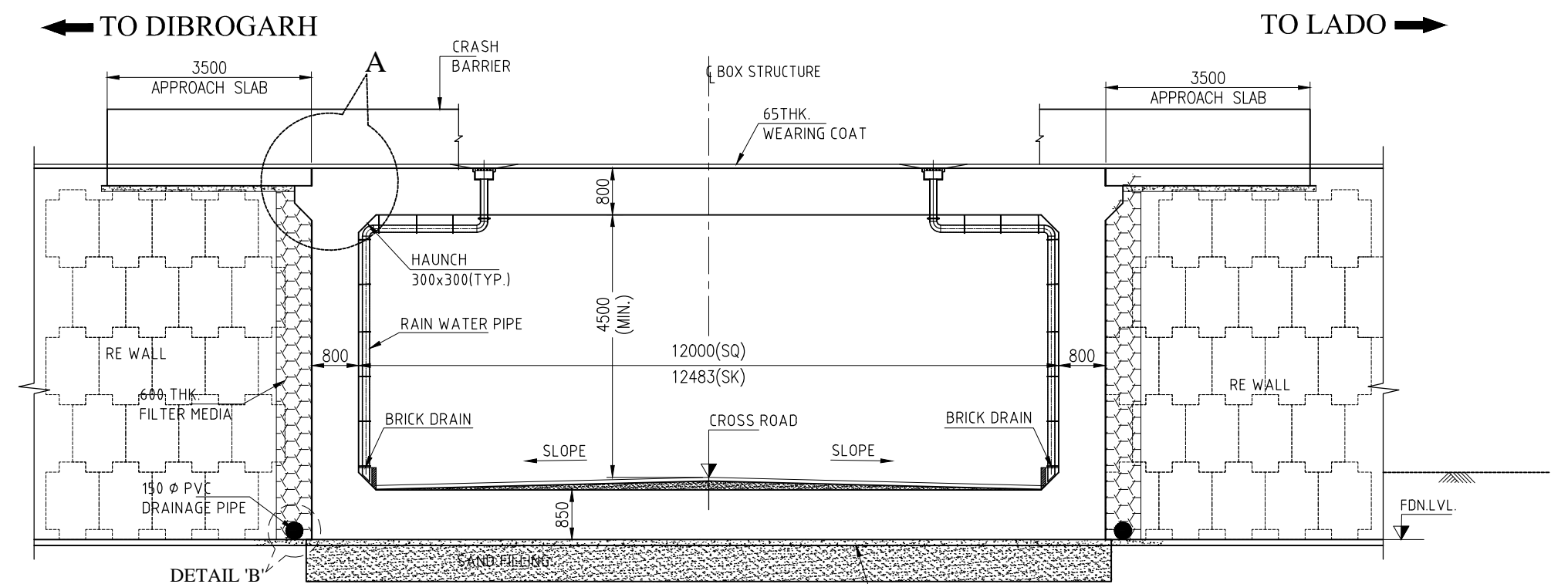
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|---|----|---------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF VEHICULAR UNDERPASS AT KM. CH. 66+820.000 | | |
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/VUP-01(Sht. 1 of 2) | | |
| REVISION: | R1 | January, 2023 |



SECTION: A-A
(SCALE 1:200)



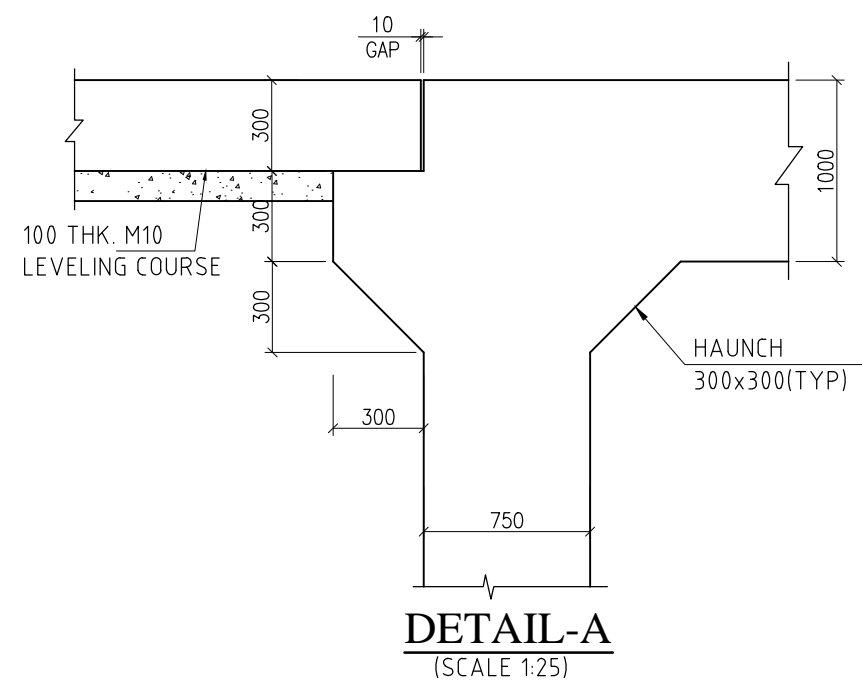
PLAN
(SCALE 1:200)



VIEW A - A
(SCALE 1:100)

DATUM = 120.00m

| | | | |
|-------------------------|------------|------------|------------|
| FINISHED ROAD LEVEL (m) | 128.669 | 128.682 | 128.962 |
| GROUND LEVEL (m) | 122.044 | 122.048 | 122.140 |
| CHAINAGE (km) | 69+936.000 | 69+936.000 | 69+936.000 |



DETAIL-A
(SCALE 1:25)

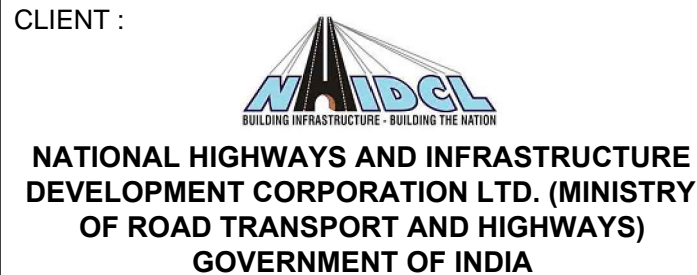
NOTES :-

- ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
- GRADE OF CONCRETE USED:
 - RCC BOX, RETURN WALLM35
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
 - PCC LEVELLING COURSE.....M15
- ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
- THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
- VARIOUS LEVELS (FRL, EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
- LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFIRMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES C=0, $\phi > 30^\circ$ & DENSITY=20KN/m.
- WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZANTALLY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL TO HFL.
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

LEGENDS:

- SQ - SQUAIRE
- SK - SKEW
- FRL - FORMATION LEVEL

CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:

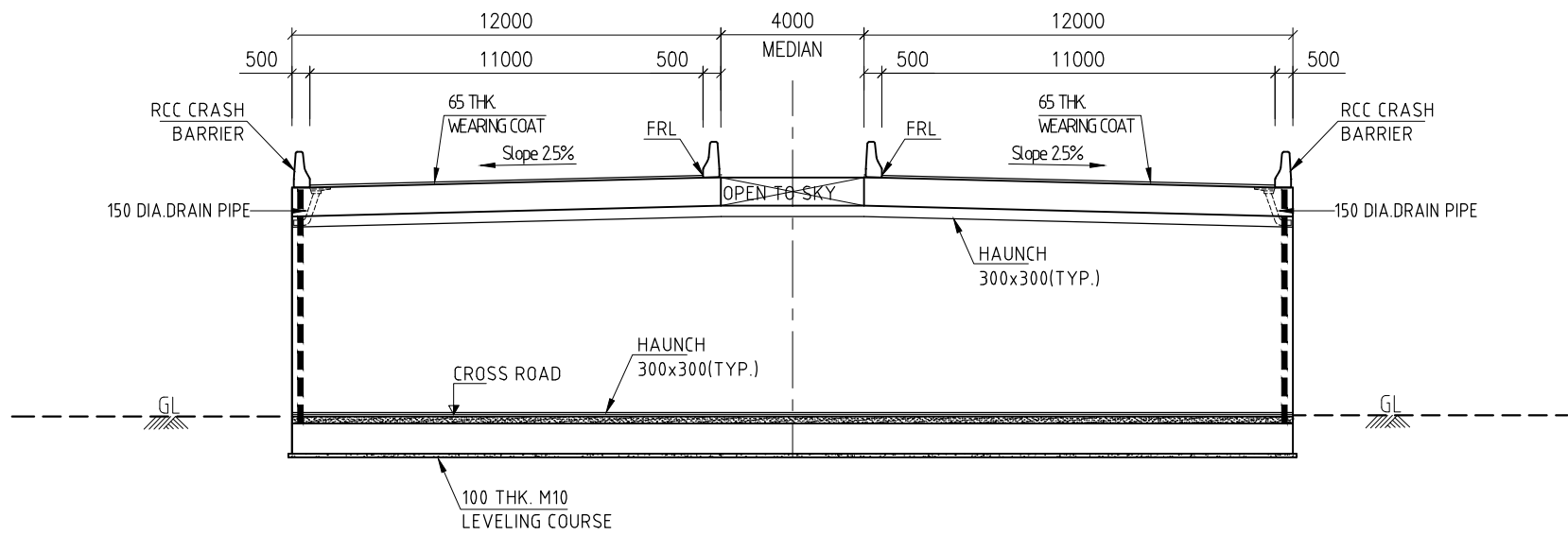


Detaild Project Report

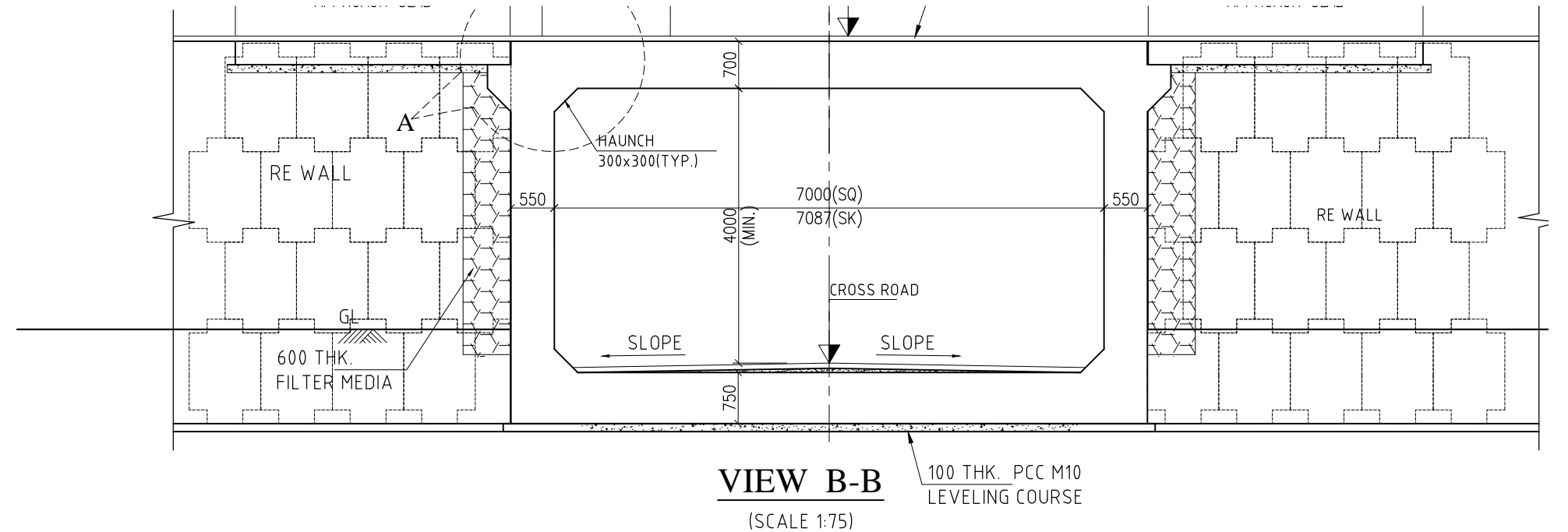
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| REV. | DATE | DESCRIPTION |

| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|---------------|------------|-------------|
| SB | G. Das | SG | SKC |
| <i>SB</i> | <i>G. Das</i> | <i>SG</i> | <i>SKC</i> |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

| | | |
|--|----|---------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF LIGHT VEHICULAR UNDERPASS AT Ch. Km. 69+936.00 (1 x 12.0 x 4.5) | | |
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/LVUP-01 (Sht. 1 of 1) | | |
| REVISION: | R1 | January, 2023 |



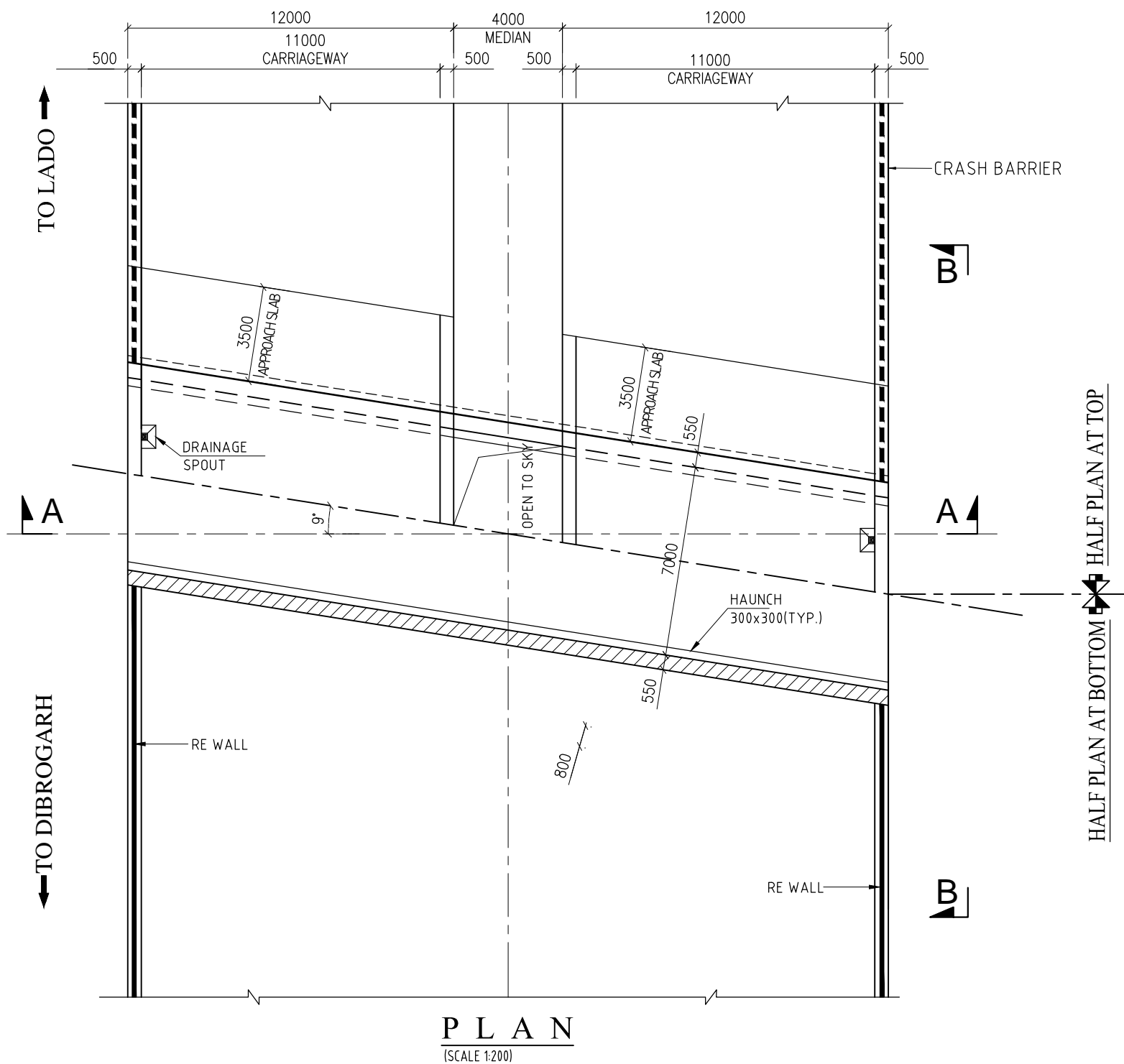
SECTION: A-A
(SCALE 1:200)



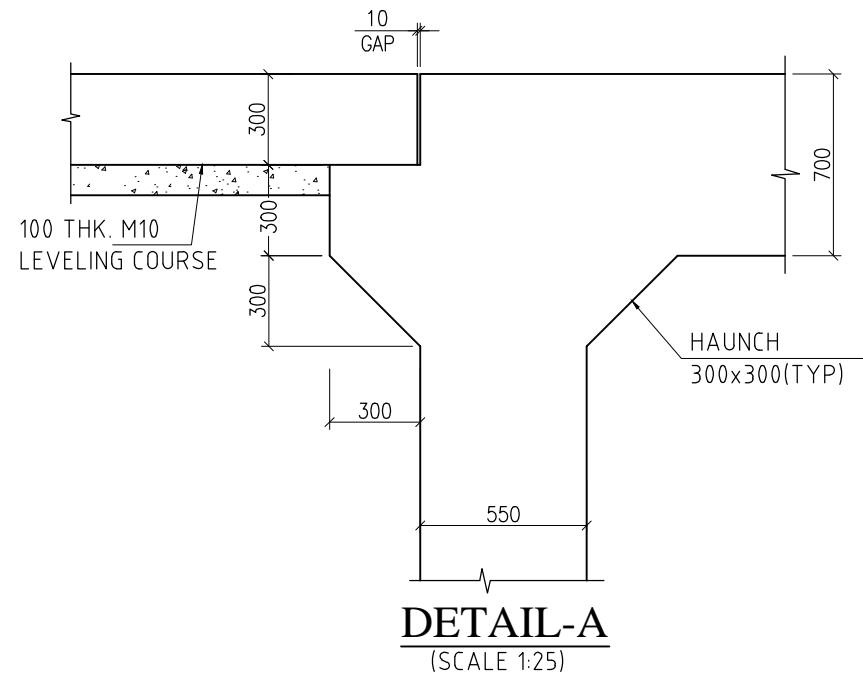
VIEW B-B
(SCALE 1:75)

DATUM =122.00m

| FINISHED ROAD LEVEL (m) | 129.777 | 129.779 | 129.779 |
|-------------------------|---------|---------|---------|
|-------------------------|---------|---------|---------|



PLAN
(SCALE 1:200)



DETAIL-A
(SCALE 1:25)

NOTES:-

- ALL DIMENSIONS ARE IN mm, LEVELS ARE IN m. & CHAINAGE ARE IN KILOMETER + METER. UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- STRUCTURE LOCATION REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
- THIS DRAWING TO BE READ IN CONJUNCTION TO THE HIGHWAY DRAWINGS. IF THERE IS ANY DIFFERENCE IN CHAINAGE OR LEVELS H/W DRAWINGS WILL PREVAIL.
- THE STRUCTURE IS DESIGNED TO CATER TO MAXIMUM OF:-
 - ONE LANE, TWO LANE, THREE AND FOUR LANE OF CLASS A.
 - TWO LANE OF CLASS A IN ADDITION OF ONE LANE OF 70R WHEEL OR ONE LANE OF CLASS 70R TRACKED WHICHEVER IS GOVERNING
- SEISMIC ZONE = III AS PER IRC:SP:114-2018 HAS BEEN CONSIDERED.
- GRADE OF CONCRETE:-
 - FOR RCC BOX.....M35
 - FOR LEVELING COURSE.....M10
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
- GRADE OF STEEL SHALL BE Fe-500 CONFIRMING TO IS:1786.
- ALL CONSTRUCTION SHALL CONFIRM TO CONTRACT SPECIFICATIONS.
- COMPACTED EARTH SHOULD CONFORM TO CLAUSE 305.2.15 OF MORTH SPECIFICATIONS.
- SOFT AND LOOSE PATCHES UNDER THE FOUNDING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- BACKFILL GRANULAR SOIL MATERIAL BEHIND BOX STRUCTURE SHALL HAVE THE FOLLOWS PROPERTIES AS . $\gamma = 1800 \text{ Kg/M}^3$ $g C = 0$, $\phi = 30^\circ$.
- 600mm THICK. FILTER MATERIAL BEHIND BOX/RETAINING WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC 78-2000.
- THE STRUCTURE IS DESIGNED FOR NET SAFE BEARING CAPACITY OF 10.0 t/m^2 . GROUND IMPROVEMENT UP TO 900mm BELOW THE FOUNDATION TO BE PROVIDED TO ACHIEVE REQUIRED SBC AS PER GEOTECH REPORT.
- PERFORATED P.V.C. PIPE 150 ϕ TO BE PROVIDED OF GROUND LEVEL BEHIND WALL FOR DRAINAGE.

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
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GOVERNMENT OF INDIA**

PROJECT :

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FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF
FREIGHT MOVEMENTS IN INDIA UNDER
BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)**

DESIGN CONSULTANT:



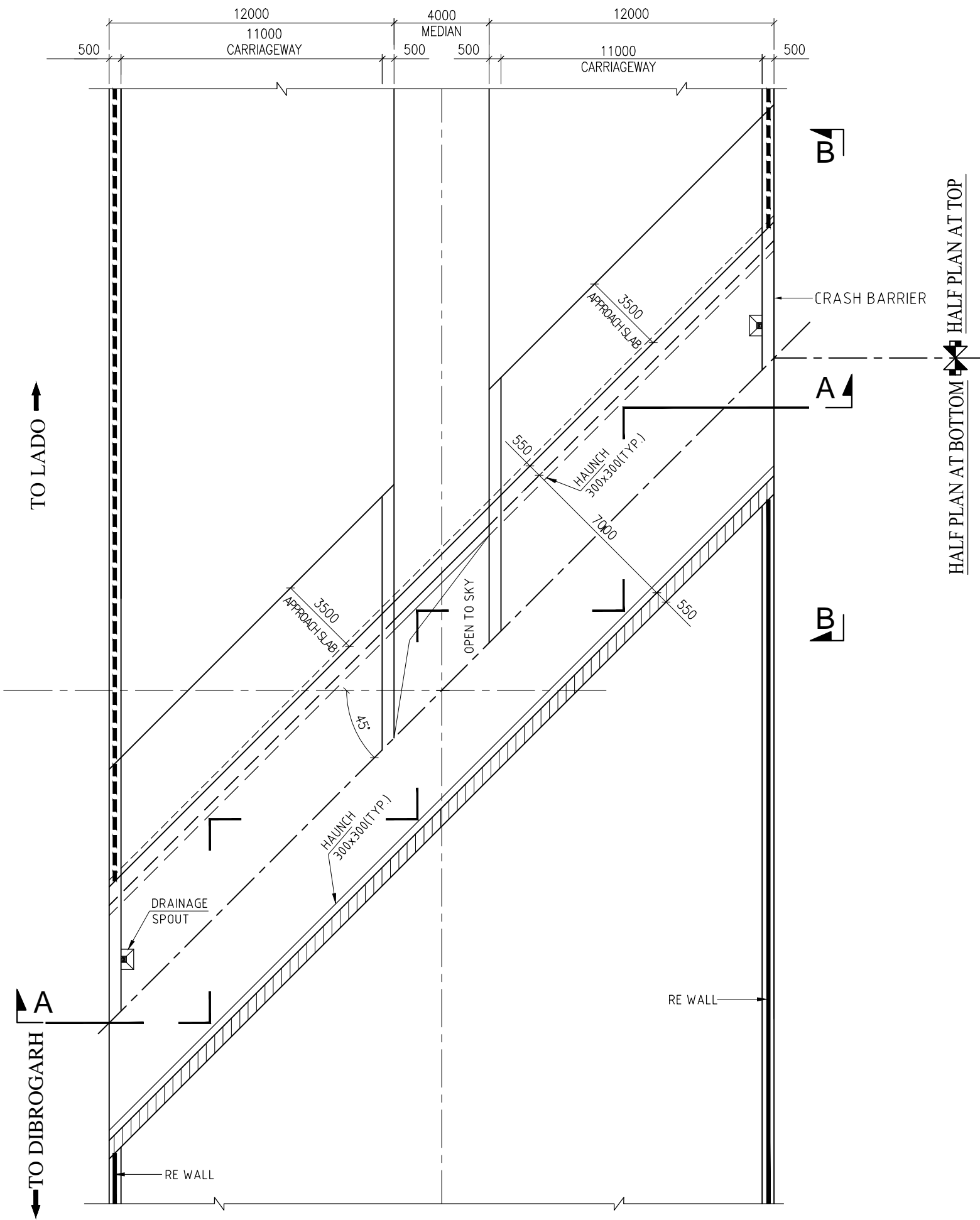
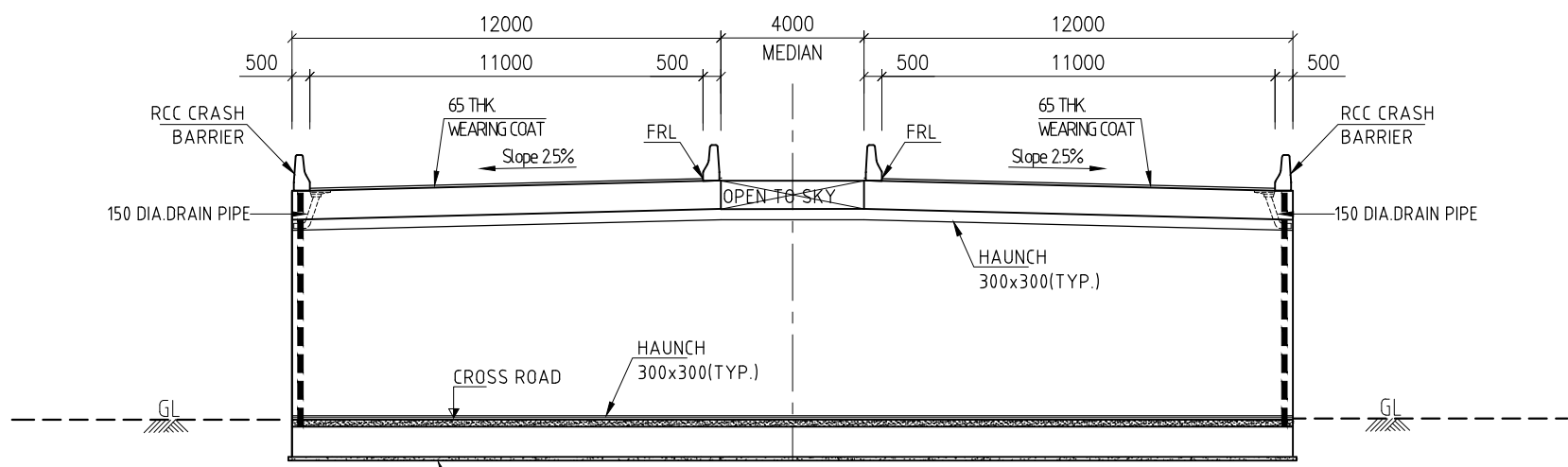
VOYANTS SOLUTIONS PVT LTD.
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Detaild Project Report

| REV. | DATE | DESCRIPTION |
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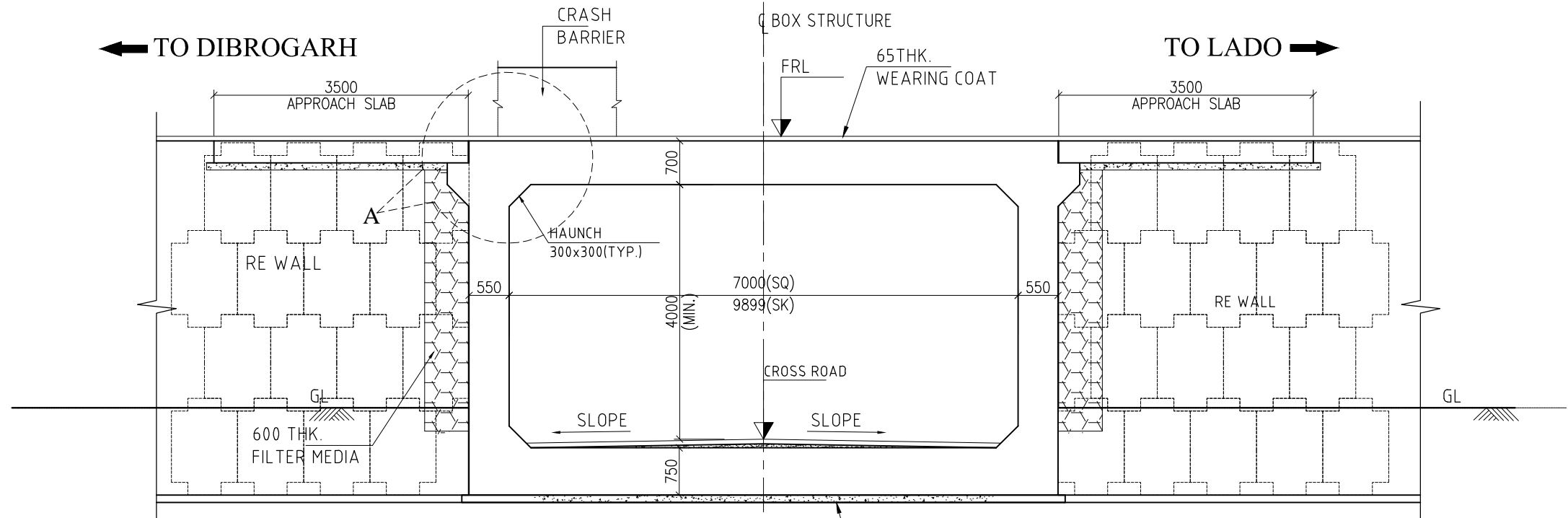
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|---------------|------------|-------------|
| SB | G. Das | SG | SKC |
| <i>SB</i> | <i>G. Das</i> | <i>SG</i> | <i>SKC</i> |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

| | | |
|---|----|---------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF SMALL VEHICULAR UNDERPASS AT Ch. Km. 68+083.00 (1 x 7.0 x 4.5) | | |
| DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/SVUP-01(Sht. 1 of 1) | | |
| REVISION: | R1 | January, 2023 |



P L A N
(SCALE 1:200)

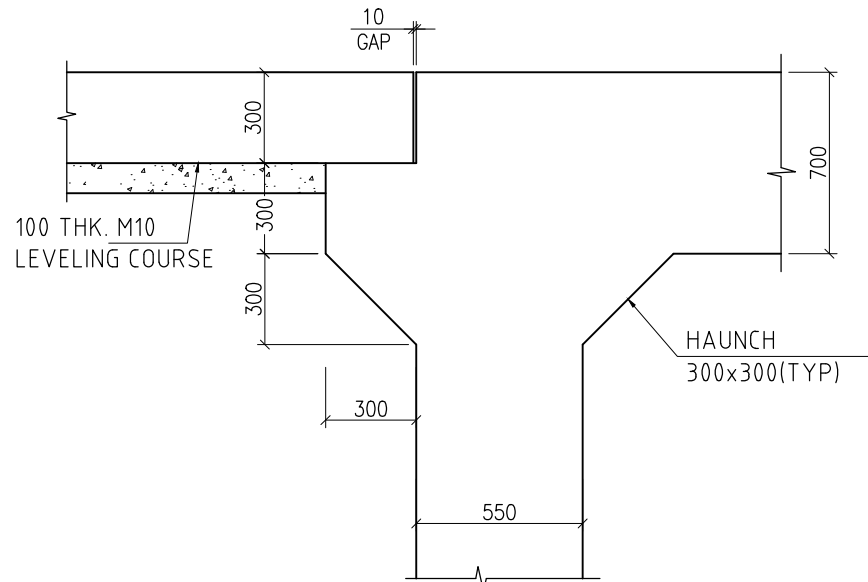
HALF PLAN AT TOP
HALF PLAN AT BOTTOM



VIEW B-B
(SCALE 1:75)

DATUM =123.00m

| | | | |
|-------------------------|------------|------------|------------|
| FINISHED ROAD LEVEL (m) | 130.634 | 130.671 | 130.698 |
| GROUND LEVEL (m) | 124.338 | 124.671 | 124.883 |
| CHAINAGE (KM) | 70+803.180 | 70+807.260 | 70+811.310 |



DETAIL-A
(SCALE 1:25)

NOTES:-

- ALL DIMENSIONS ARE IN mm, LEVELS ARE IN m. & CHAINAGE ARE IN KILOMETER + METER. UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- STRUCTURE LOCATION REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
- THIS DRAWING TO BE READ IN CONJUNCTION TO THE HIGHWAY DRAWINGS. IF THERE IS ANY DIFFERENCE IN CHAINAGE OR LEVELS H/W DRAWINGS WILL PREVAIL.
- THE STRUCTURE IS DESIGNED TO CATER TO MAXIMUM OF:-
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 - FOR LEVELING COURSE.....M10
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
- GRADE OF STEEL SHALL BE Fe-500 CONFIRMING TO IS:1786.
- ALL CONSTRUCTION SHALL CONFIRM TO CONTRACT SPECIFICATIONS.
- COMPACTED EARTH SHOULD CONFORM TO CLAUSE 305.2.15 OF MORTH SPECIFICATIONS.
- SOFT AND LOOSE PATCHES UNDER THE FOUNDING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- BACKFILL GRANULAR SOIL MATERIAL BEHIND BOX STRUCTURE SHALL HAVE THE FOLLOWS PROPERTIES AS : $\gamma = 1800 \text{ Kg/M}^3$ $q_c = 0$, $\phi = 30^\circ$.
- 600mm THICK. FILTER MATERIAL BEHIND BOX/RETAINING WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC 78-2000.
- THE STRUCTURE IS DESIGNED FOR NET SAFE BEARING CAPACITY OF 10.0 t/m^2 . GROUND IMPROVEMENT UP TO 900mm BELOW THE FOUNDATION TO BE PROVIDED TO ACHIEVE REQUIRED SBC AS PER GEOTECH REPORT.
- PERFORATED P.V.C. PIPE 150 ϕ TO BE PROVIDED OF GROUND LEVEL BEHIND WALL FOR DRAINAGE.

CLIENT :



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DESIGN CONSULTANT:



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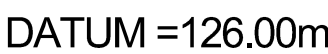
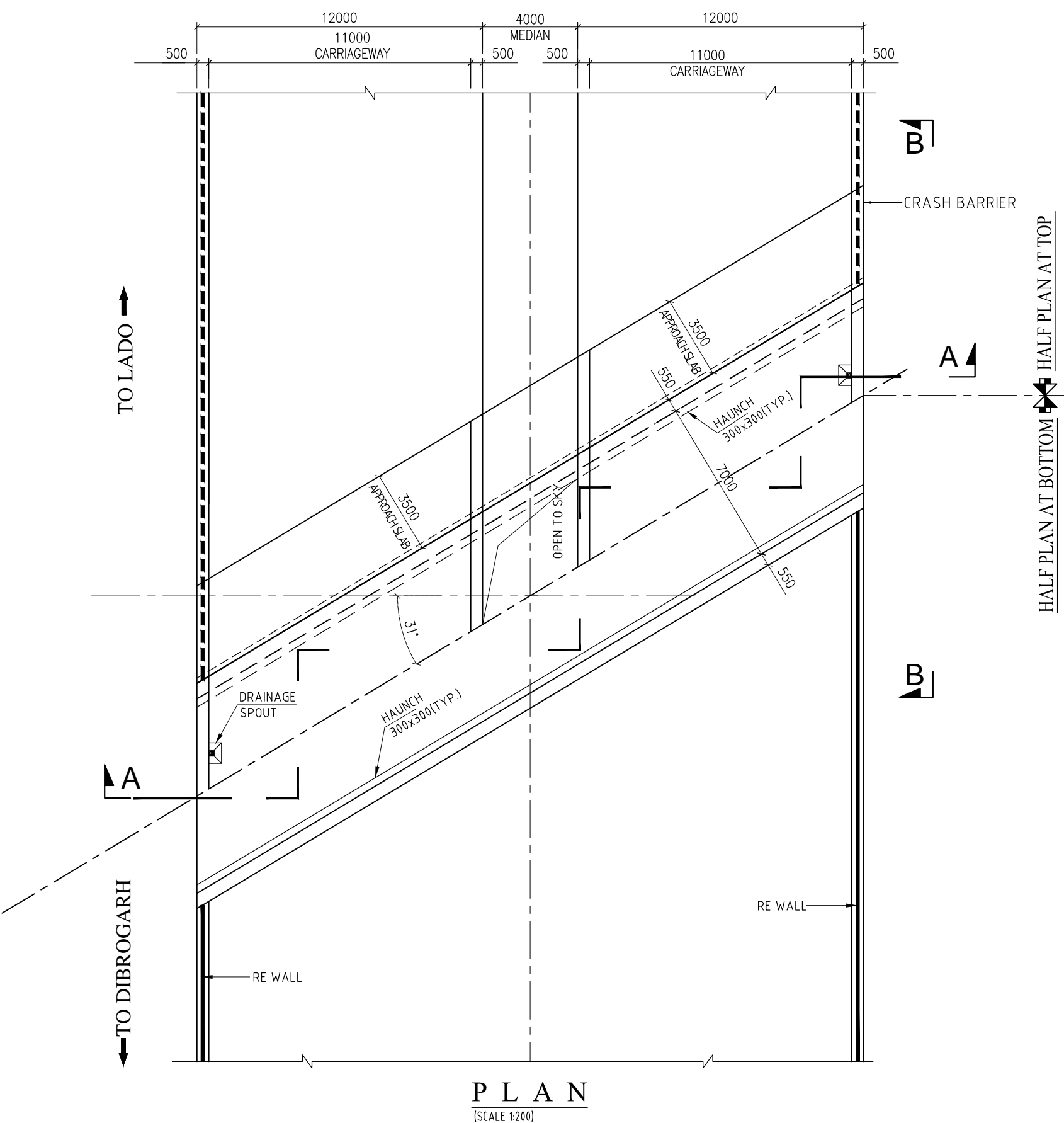
Detaild Project Report

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| REV. | DATE | DESCRIPTION |
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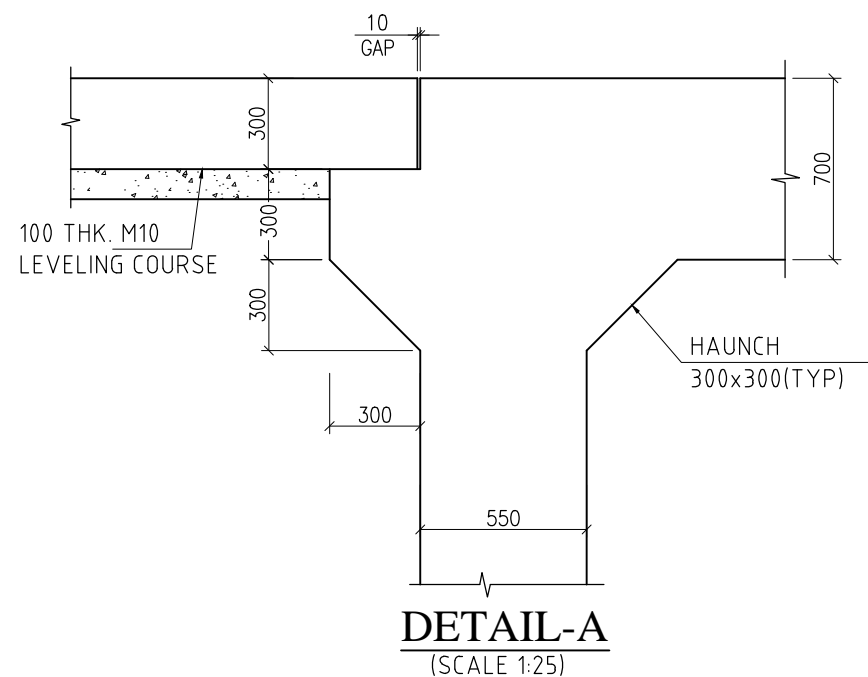
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|---------------|------------|-------------|
| SB | G. Das | SG | SKC |
| <i>SB</i> | <i>G. Das</i> | <i>SG</i> | <i>SKC</i> |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

TITLE :
**GENERAL ARRANGEMENT DRAWING OF
SMALL VEHICULAR UNDERPASS
AT Ch. Km. 70+807.260
(1 x 7.0 x 4.5)**

| | |
|------------|---|
| DRG. No. : | VSP/L1718-081/DPR/PKG-4/NH-515/SEC-3/SVUP-02(Sht. 1 of 1) |
| REVISION: | January, 2023 |



| | | | |
|----------------------------|------------|-----------|------------|
| FINISHED ROAD LEVEL (m) | 133.564 | 133.570 | 133.576 |
| GROUND LEVEL (m) | 126.740 | 126.739 | 126.789 |
| CHAINAGE (km) | 72+786.950 | 72+791.00 | 72+795.050 |



NOTES:-

1. ALL DIMENSIONS ARE IN mm, LEVELS ARE IN m. & CHAINAGE ARE IN KILOMETER + METER. UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. STRUCTURE LOCATION REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
3. THIS DRAWING TO BE READ IN CONJUNCTION TO THE HIGHWAY DRAWINGS. IF THERE IS ANY DIFFERENCE IN CHAINAGE OR LEVELS H/W DRAWINGS WILL PREVAIL.
5. THE STRUCTURE IS DESIGNED TO CATER TO MAXIMUM OF:-
 - a. ONE LANE, TWO LANE, THREE AND FOUR LANE OF CLASS A.
 - b. TWO LANE OF CLASS A IN ADDITION OF ONE LANE OF 70R WHEEL OR ONE LANE OF CLASS 70R TRACKED WHICHEVER IS GOVERNING
6. SEISMIC ZONE = III AS PER IRC:SP:114-2018 HAS BEEN CONSIDERED.
7. GRADE OF CONCRETE:-
 - FOR RCC BOX.....M35
 - FOR LEVELING COURSE.....M10
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
7. GRADE OF STEEL SHALL BE Fe-500 CONFIRMING TO IS:1786.
8. ALL CONSTRUCTION SHALL CONFIRM TO CONTRACT SPECIFICATIONS.
9. COMPACTED EARTH SHOULD CONFORM TO CLAUSE 305.2.15 OF MORTH SPECIFICATIONS.
10. SOFT AND LOOSE PATCHES UNDER THE FOUNDING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
11. BACKFILL GRANULAR SOIL MATERIAL BEHIND BOX STRUCTURE SHALL HAVE THE FOLLOWS PROPERTIES AS $\gamma = 1800 \text{ Kg/M}^3$ $g \text{ C} = 0$, $\phi = 30^\circ$,
12. 600mm THICK. FILTER MATERIAL BEHIND BOX/RETAINING WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC 78-2000.
13. THE STRUCTURE IS DESIGNED FOR NET SAFE BEARING CAPACITY OF 10.0 t/m^2 . GROUND IMPROVEMENT UP TO 900mm BELOW THE FOUNDATION TO BE PROVIDED TO ACHIEVE REQUIRED SBC AS PER GEOTECH REPORT.
14. PERFORMED P.V.C. PIPE 150 ϕ TO BE PROVIDED OF GROUND LEVEL BEHIND WALL FOR DRAINAGE.

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD. (MINISTRY
OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND
FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF
FREIGHT MOVEMENTS IN INDIA UNDER
BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)**





DESIGN CONSULTANT:



VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detaild Project Report

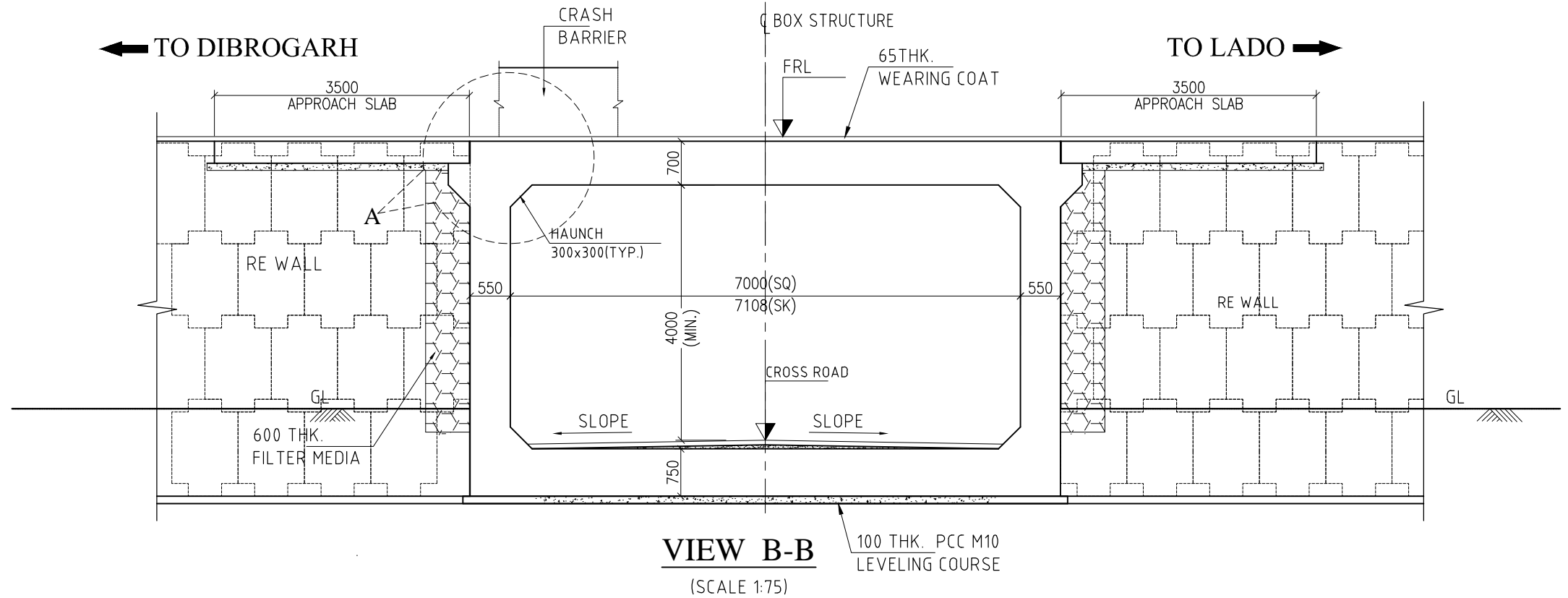
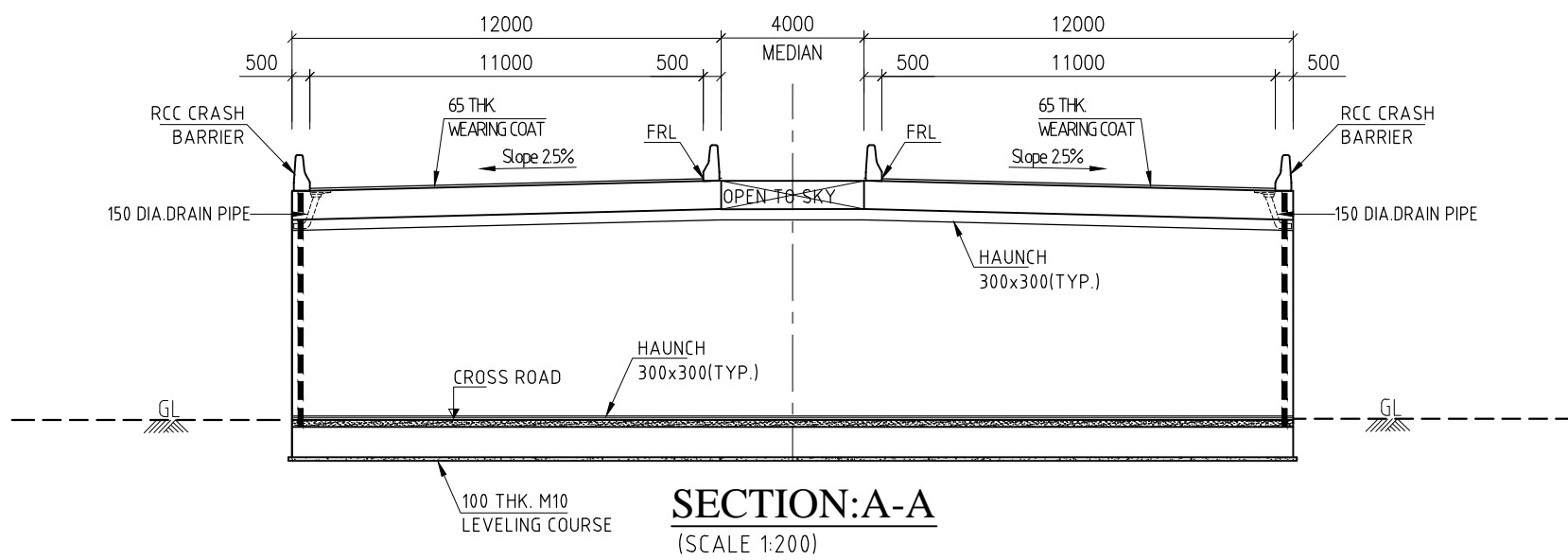
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| REV. DATE | DESCRIPTION | |

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|---|---|---|---|
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
| SB | G. Das | SG | SKC |
|  |  |  |  |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

TITLE :
GENERAL ARRANGEMENT DRAWING OF
SMALL VEHICULAR UNDERPASS
AT Ch. Km. 72+791.260
(1 x 7.0 x 4.5)

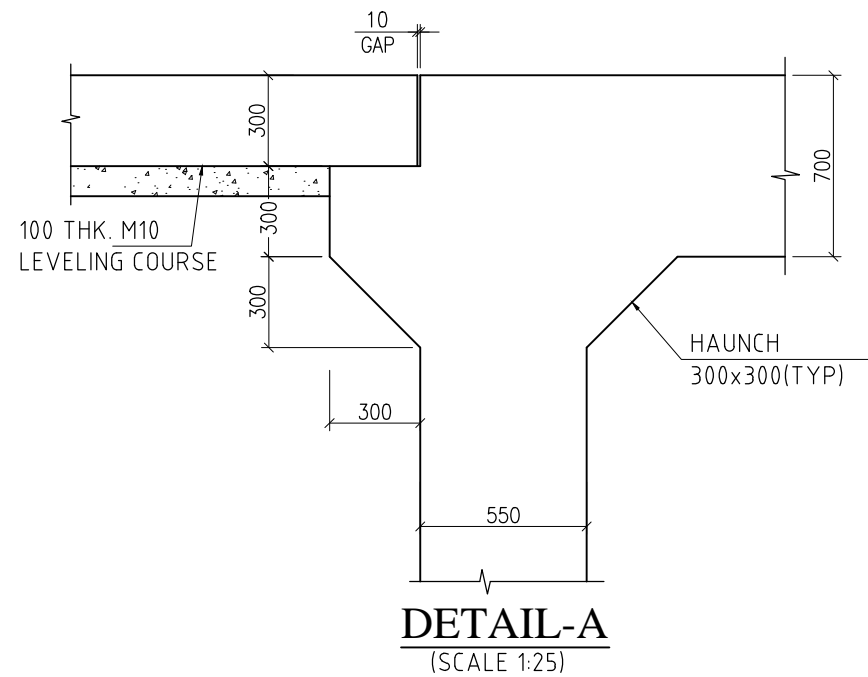
DRG. No. :
VSPI /1718-081/DPB/PKG-4/NH-515/SEC-3/SV/JP-03(Sht. 1 of 1)

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| REVISION: | | January, 2023 |
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DATUM =126.00m

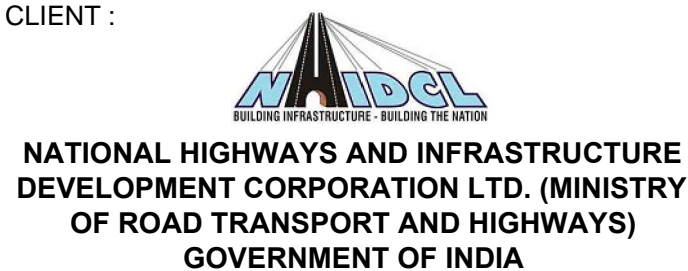
| | | | |
|-------------------------|------------|-----------|------------|
| FINISHED ROAD LEVEL (m) | 133.564 | 133.570 | 133.576 |
| GROUND LEVEL (m) | 126.740 | 126.739 | 126.789 |
| CHAINAGE (km) | 72+786.950 | 72+791.00 | 72+795.050 |



NOTES:-

- ALL DIMENSIONS ARE IN mm, LEVELS ARE IN m. & CHAINAGE ARE IN KILOMETER + METER. UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- STRUCTURE LOCATION REFER TO THE CHAINAGE AT STRUCTURE CENTER AND LEVELS AT MEDIAN EDGE.
- THIS DRAWING TO BE READ IN CONJUNCTION TO THE HIGHWAY DRAWINGS. IF THERE IS ANY DIFFERENCE IN CHAINAGE OR LEVELS H/W DRAWINGS WILL PREVAIL.
- THE STRUCTURE IS DESIGNED TO CATER TO MAXIMUM OF:-
 - ONE LANE, TWO LANE, THREE AND FOUR LANE OF CLASS A.
 - TWO LANE OF CLASS A IN ADDITION OF ONE LANE OF 70R WHEEL OR ONE LANE OF CLASS 70R TRACKED WHICHEVER IS GOVERNING
- SEISMIC ZONE = III AS PER IRC:SP:114-2018 HAS BEEN CONSIDERED.
- GRADE OF CONCRETE:-
 - FOR RCC BOX.....M35
 - FOR LEVELING COURSE.....M10
 - CRASH BARRIER.....M40
 - APPROACH SLAB.....M30
- GRADE OF STEEL SHALL BE Fe-500 CONFIRMING TO IS:1786.
- ALL CONSTRUCTION SHALL CONFIRM TO CONTRACT SPECIFICATIONS.
- COMPACTED EARTH SHOULD CONFORM TO CLAUSE 305.2.15 OF MORTH SPECIFICATIONS.
- SOFT AND LOOSE PATCHES UNDER THE FOUNDING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- BACKFILL GRANULAR SOIL MATERIAL BEHIND BOX STRUCTURE SHALL HAVE THE FOLLOWS PROPERTIES AS : $\gamma = 1800 \text{ Kg/M}^3$ & $C = 0$, $\phi = 30^\circ$.
- 600mm THICK. FILTER MATERIAL BEHIND BOX/RETAINING WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC 78-2000.
- THE STRUCTURE IS DESIGNED FOR NET SAFE BEARING CAPACITY OF 10.0 t/m^2 . GROUND IMPROVEMENT UP TO 900mm BELOW THE FOUNDATION TO BE PROVIDED TO ACHIEVE REQUIRED SBC AS PER GEOTECH REPORT.
- PERFORATED P.V.C. PIPE 150 ϕ TO BE PROVIDED OF GROUND LEVEL BEHIND WALL FOR DRAINAGE.

CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:

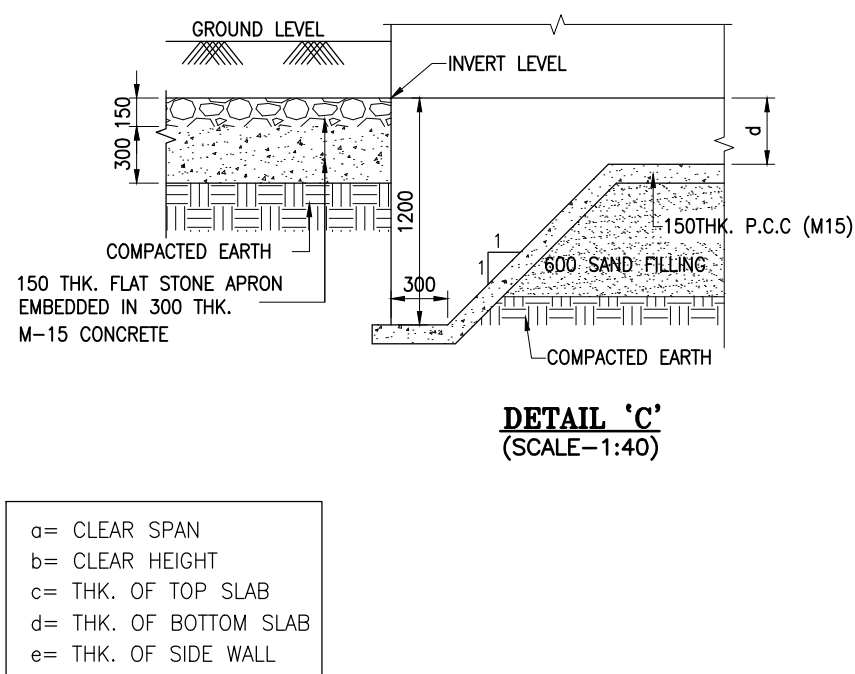
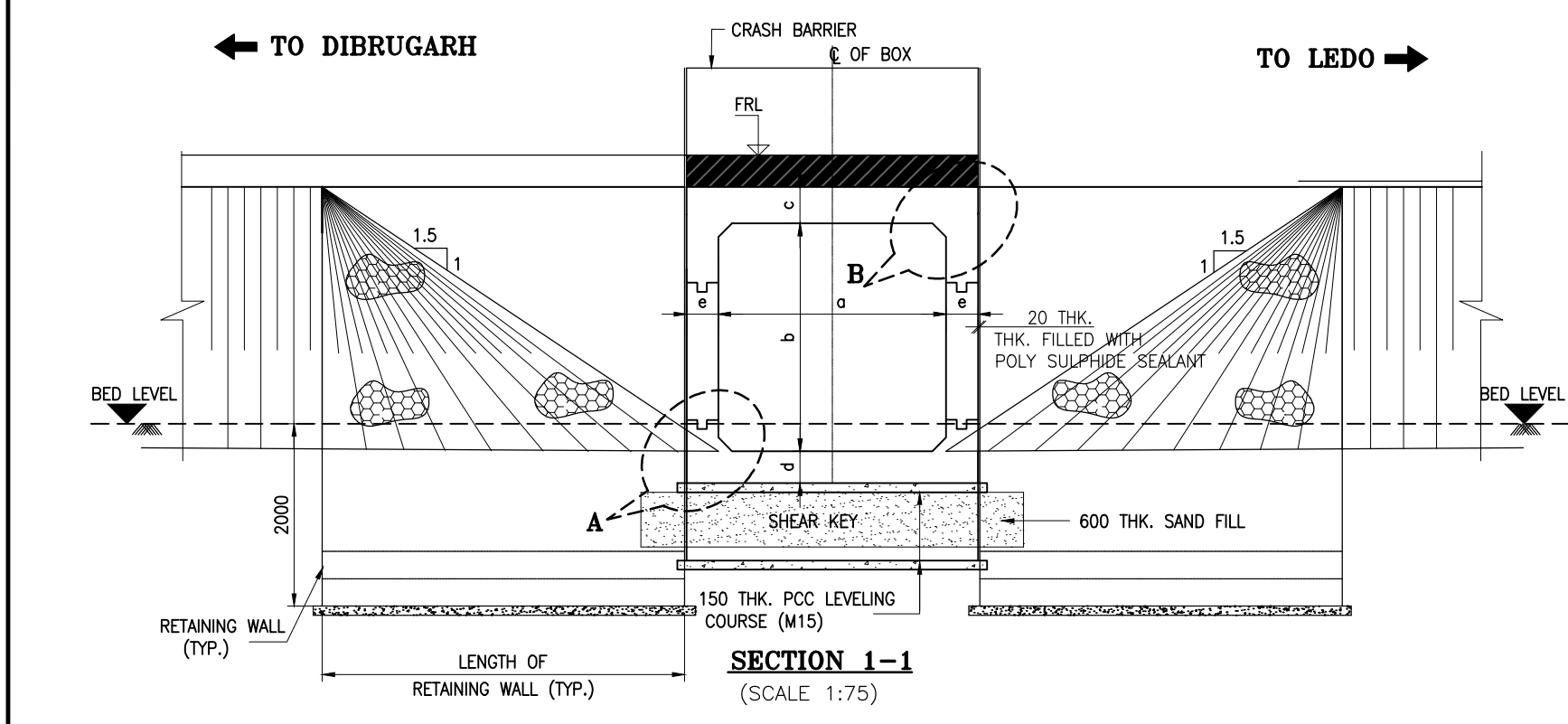
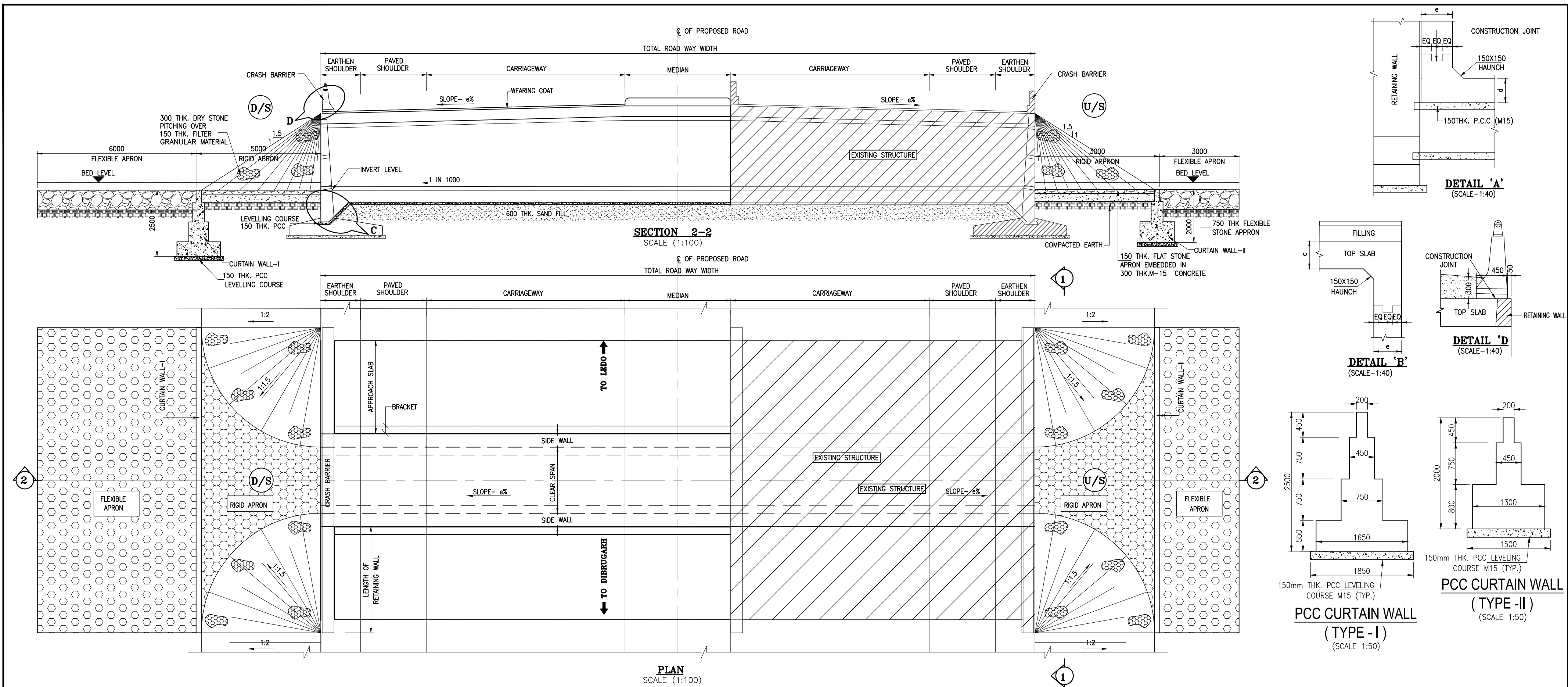


Detaild Project Report

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| REV. | DATE | DESCRIPTION |
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| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|---------------|------------|-------------|
| SB | G. Das | SG | SKC |
| <i>SB</i> | <i>G. Das</i> | <i>SG</i> | <i>SKC</i> |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

| | | |
|--|----|---------------|
| TITLE : GENERAL ARRANGEMENT DRAWING OF SMALL VEHICULAR UNDERPASS AT Ch. Km. 74+609.000 (1 x 7.0 x 4.5) | | |
| DRG. No. : VSP/L1718-081/DPR/PKG-4/NH-515/SEC-3/SVUP-04(Sht. 1 of 1) | | |
| REVISION: | R1 | January, 2023 |



NOTES:-

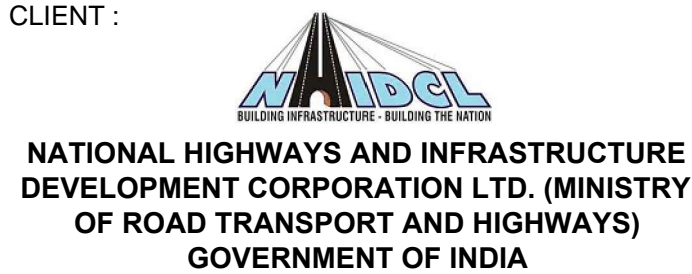
- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT HIGHWAY PLAN AND PROFILE DRAWING.
- THE STRUCTURE IS DESIGNED FOR LIVE LOAD COMBINATION OF 3 LANE CLASS A OR 1-LANE OF 70 R+1-LANE OF CLASS A, WHICHEVER PRODUCES SEVERE.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS SHALL BE AS FOLLOWS:
 - RCC BOX.....M35
 - RCC RETAINING WALL & APPROACH SLAB.....M30
 - PCC LEVELLING COURSE.....M15
 - PCC CURTAIN WALL.....M20
 - PARAPET WALL.....M30
- GRADE OF STEEL SHALL BE Fe-500 (H.Y.S.D. REBAR CONFORMING TO IS-1786)
- BACK FILLING BEHIND THE STRUCTURE SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES $\phi \geq 30^\circ$, $C=0$, $\gamma = 2.0T/M^3$
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.
- THE SAFE BEARING CAPACITY AT FOUNDING LEVEL HAS BEEN CONSIDERED AS $12T^2/M$ & THE SAME SHALL BE VERIFIED BEFORE EXECUTION.
- FOUNDATION OF BOX SHALL BE PLACED OVER A FIRM STRATA HAVING BEARING CAPACITY EQUAL TO $12T/M^2$ IN GENERAL. IF THE MATERIAL ENCOUNTERED IS SOFT, SPONZY OR OTHER UNSUITABLE SOIL, SUCH UNSUITABLE MATERIAL SHALL BE TOTALLY REMOVED TO SUCH DEPTH, WIDTH & LENGTH, AS DIRECTED BY THE ENGINEER. THE EXCAVATED AREA SHALL BE BACKFILLED WITH APPROVED GRANULAR MATERIAL & THOROUGHLY COMPACTED UP TO THE SPECIFIED LEVEL.
- 600MM THICK FILTER MEDIA SHALL BE PROVIDED BEHIND SIDE WALLS AND WING WALLS AS PER IR:78-2014.
- ALL THE LEVELS AND CAMBERS TO BE VERIFIED WITH RESPECT TO PLAN & PROFILE DRAWINGS BEFORE STARTING UP OF EXCAVATION. ANY DISCREPANCY NOTED SHOULD BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
- BACK FILLING BEHIND WALLS SHALL BE DONE SIMULTANEOUSLY ON EITHER SIDE OF THE STRUCTURE WITH HEIGHT DIFFERENCE NOT MORE THAN 1.0M. BACK FILLING SHALL BE DONE ONLY AFTER THE TOP SLAB IS CONCRETED AND CURED FOR 14 DAYS.
- SPRADING & COMPACTED OF SAND WILL BE DONE IN ACCORDANCE WITH CLAUSE 401.3.2 OF SPECIFICATION FOR ROAD & BRIDGE WORKS BY MINISTRY OF ROAD TRANSPORT & HIGHWAY

| | | | | | | | | | | | |
|--|---|--|-----------------------------------|------|-------------|--|---|---|---|---|---|
| <div>CLIENT :</div> <div><div>NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA</div></div> | <div>PROJECT :</div> <div>CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)</div> | <div>DESIGN CONSULTANT:</div> <div><div>VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in</div></div> | <div>Detaild Project Report</div> | | | | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY | <div>TITLE : GENERAL ARRANGEMENT DRAWING OF BOX CULVERT (RETAINED +NEW CONSTRUCTION)</div> <div>DRG. No. : VSPL/1718-081/DPR/PKG-4/NH-515/SEC-3/BC-01. (Sht.2 of 3)</div> <div>REVISION: R1 January, 2023</div> |
| | | | | | | | SB | G. Das | SG | SKC | |
| | | | | | | |  |  |  |  | |
| | | | | | | | | | | | |
| | | | REV. | DATE | DESCRIPTION | | SCALE : | AS SHOWN | SHEET SIZE | A2 | |

Culvert List : NH-515_PKG-3

| Sl. No. | Chainage (km) | | STATE | Existing Details | | | Improvement Proposal | Proposed Details | | | | |
|---------|---------------|--------|-------|------------------|---------|-----------|----------------------|------------------|---------------|------------|-------------|----------------|
| | Existing | Design | | Type | Span | Width (m) | | Type | Span | TCS Type | Total Width | Widening Width |
| 1 | 57+675 | 57+663 | ASSAM | Box | 1 x 2.5 | 12.0 | Retain & widen | Box | 1 x 2.5 x 2.5 | Type - 05 | 24.5 | 12.5 |
| 2 | 58+720 | 58+702 | ASSAM | Slab | 1 x 2.5 | 12.0 | Retain & widen | Box | 1 x 2.5 x 2.0 | Type - 05 | 24.5 | 12.5 |
| 3 | 59+160 | 59+148 | ASSAM | Slab | 1 x 2.5 | 12.0 | Retain & widen | Box | 1 x 2.5 x 1.8 | Type - 05 | 24.5 | 12.5 |
| 4 | 59+350 | 59+335 | ASSAM | Box | 1 x 2.0 | 12.0 | Retain & widen | Box | 1 x 2.0 x 2.0 | Type - 05A | 24.5 | 12.5 |
| 5 | 59+820 | 59+804 | ASSAM | Box | 1 x 2.0 | 12.2 | Retain & widen | Box | 1 x 2.0 x 2.5 | Type - 05 | 24.5 | 12.3 |
| 6 | 60+225 | 60+207 | ASSAM | Box | 1 x 2.0 | 12.0 | Retain & widen | Box | 1 x 2.0 x 1.5 | Type - 05 | 24.5 | 12.5 |
| 7 | 60+525 | 60+507 | ASSAM | Box | 1 x 2.0 | 12.0 | Retain & widen | Box | 1 x 2.0 x 2.0 | Type - 05 | 24.5 | 12.5 |
| 8 | 61+225 | 61+195 | ASSAM | Box | 1 x 2.2 | 12.0 | Retain & widen | Box | 1 x 2.2 x 2.0 | Type - 03 | 42.25 | 30.3 |
| 9 | 62+710 | 62+680 | ASSAM | Box | 1 x 2.0 | 12.0 | Retain & widen | Box | 1 x 2.0 x 2.5 | Type - 05 | 24.5 | 12.5 |
| 10 | 64+790 | 64+748 | ASSAM | Slab | 1 x 2.0 | 12.0 | Retain & widen | Box | 1 x 2.0 x 1.5 | Type - 05 | 24.5 | 12.5 |
| 11 | 65+225 | 65+177 | ASSAM | Slab | 1 x 2.5 | 12.0 | Retain & widen | Box | 1 x 2.5 x 1.0 | Type - 05 | 24.5 | 12.5 |
| 12 | 65+350 | 65+303 | ASSAM | Slab | 1 x 2.5 | 12.0 | Retain & widen | Box | 1 x 2.5 x 1.2 | Type - 05 | 24.5 | 12.5 |
| 13 | 65+925 | 65+873 | ASSAM | Slab | 1 x 2.3 | 12.0 | Retain & widen | Box | 1 x 2.3 x 2.0 | Type - 05 | 24.5 | 12.5 |
| 14 | - | 67+170 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 4.0 | Type - 04 | 33.1 | 33.1 |
| 15 | - | 67+520 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.0 | Type - 01B | 26.0 | 26.0 |
| 16 | - | 67+830 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 3.0 | Type - 01B | 26.0 | 26.0 |
| 17 | - | 68+850 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.0 | Type - 01B | 26.0 | 26.0 |
| 18 | - | 70+580 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 3.0 | Type - 01B | 26.0 | 26.0 |
| 19 | - | 71+330 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 3.2 | Type - 01B | 26.0 | 26.0 |
| 20 | - | 71+680 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.2 | Type - 01B | 26.0 | 26.0 |
| 21 | - | 72+030 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.5 | Type - 01B | 26.0 | 26.0 |
| 22 | - | 73+144 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.5 | Type - 01B | 26.0 | 26.0 |
| 23 | - | 73+494 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.2 | Type - 01B | 26.0 | 26.0 |
| 24 | - | 75+000 | ASSAM | Box | - | - | New construction | Box | 1 x 2.5 x 2.0 | Type - 01B | 26.0 | 26.0 |
| 25 | 75+590 | 75+531 | ASSAM | Slab | 1 x 6.0 | 13.0 | Retain & widen | Box | 1 x 6.0 x 3.5 | Type - 01 | 24.5 | 11.5 |
| 26 | 75+600 | 75+545 | ASSAM | Slab | 1 x 6.0 | 13.0 | Retain & widen | Box | 1 x 6.0 x 3.5 | Type - 01 | 24.5 | 11.5 |
| 27 | 76+025 | 75+957 | ASSAM | Slab | 1 x 2.0 | 11.8 | Retain & widen | Box | 1 x 2.0 x 2.0 | Type - 05A | 24.5 | 12.7 |
| 28 | 76+160 | 76+112 | ASSAM | Slab | 1 x 1.0 | 11.8 | Retain & widen | Box | 1 x 1.0 x 1.0 | Type - 05A | 24.5 | 12.7 |
| 29 | - | 77+456 | ASSAM | Slab | 1 x 3.5 | 11.8 | Retain & widen | Box | 1 x 3.5 x 1.0 | Type - 05A | 24.5 | 12.7 |
| 30 | 78+610 | 78+544 | ASSAM | Slab | 1 x 6.0 | 14.8 | Retain & widen | Box | 1 x 6.0 x 1.5 | Type - 05A | 24.5 | 9.7 |
| 31 | 79+740 | 79+688 | ASSAM | Slab | 1 x 2.5 | 12.5 | Retain & widen | Box | 1 x 2.5 x 1.2 | Type - 02 | 24.5 | 12.0 |
| 32 | - | 79+795 | ASSAM | Slab | 1 x 1.7 | 11.8 | Retain & widen | Box | 1 x 1.7 x 1.2 | Type - 02 | 24.5 | 12.7 |

CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE IV)

DESIGN CONSULTANT:



Detaild Project Report

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| | | |
| REV. | DATE | DESCRIPTION |

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|-------------|----------|------------|-------------|
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
| SB | G. Das | SG | SKC |
| | | | |
| SCALE : | AS SHOWN | SHEET SIZE | A2 |

TITLE : GENERAL ARRANGEMENT
DRAWING OF BOX CULVERT
(NEW CONSTRUCTION)

| | | |
|------------|--|---------------|
| DRG. No. : | VSPL/1718-081/DPR/PKG-4/NH-515/SEC-1/BC-01. (Sht.3 of 3) | |
| REVISION: | R1 | January, 2023 |