

CLIENT:-



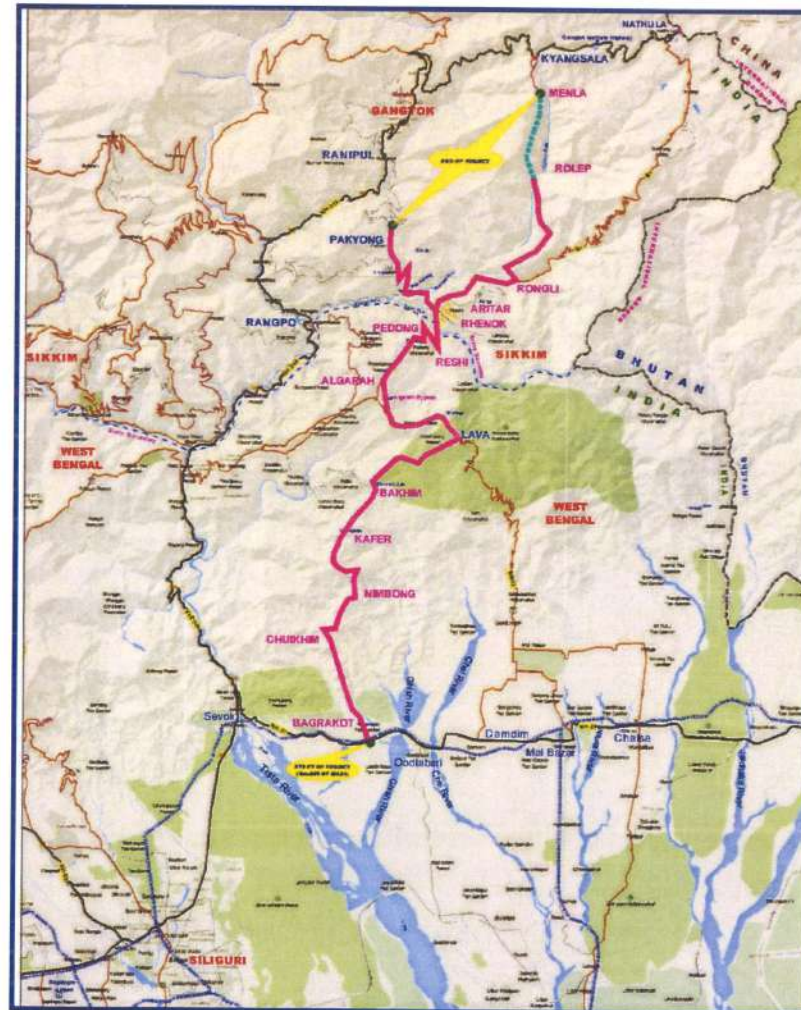
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED**  
(Ministry of Road Transport & Highways)

Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot-Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim.

**DRAFT DETAILED PROJECT REPORT**

PACKAGE- III (A)

DRAWING VOLUME: STRUCTURE (GAD)



July -2020

CONSULTANT :-

**SA INFRASTRUCTURE CONSULTANTS PVT. LTD.**

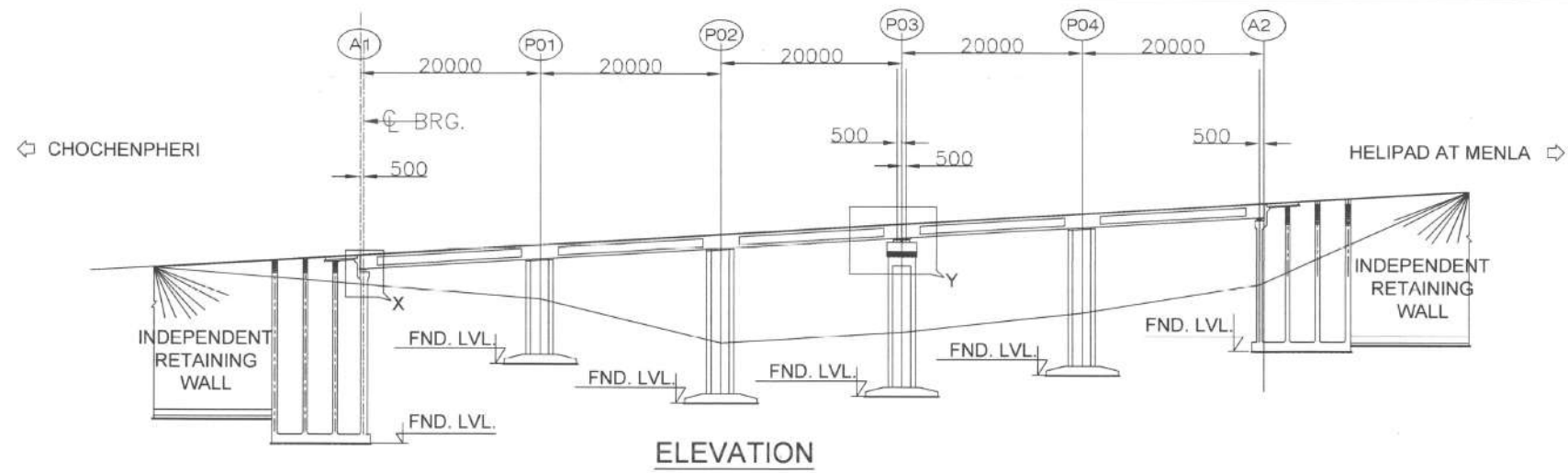


In Association with  
Specialized Engineering Service Pvt. Ltd.  
1101A, 11th Floor, Tower A-II, Corporate Park,  
Plot No. 7A/1, Sector-142, Noida 201301, Uttar Pradesh.

## LIST OF DRAWINGS SIKKIM PACKAGE-3A

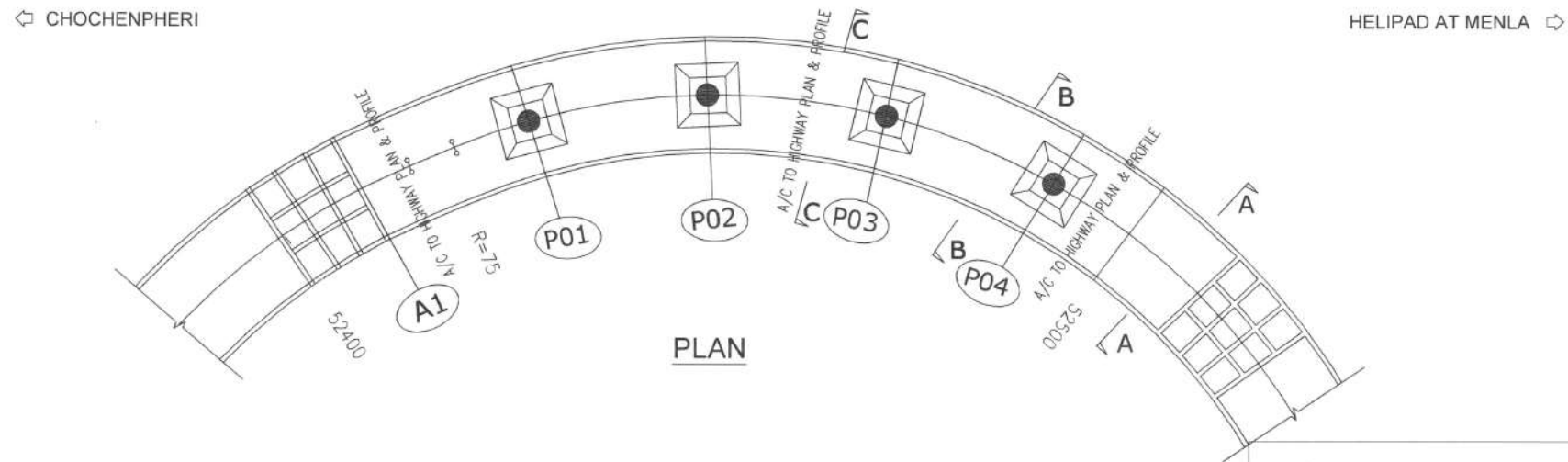
| Sl. No. | DESCRIPTION  | NO.OF SHEET | DRAWING NO.                             |
|---------|--|-------------|---|
| 01      | COVER PAGE   |             |   |
| 01      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 52+410 To Km 52+510 (SPAN 5X20m)                    | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/52+460/GAD-01 |
| 02      | GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT Km 53+310 To Km 53+490 (SPAN 9x20.0m)               | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/53+400/GAD-01 |
| 03      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 54+270 To Km 54+400 (SPAN 1x10.0+6x20m)             | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/54+335/GAD-01 |
| 04      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 54+810 To Km 55+110 (SPAN 6x30.0m+6x20.0m)          | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/54+960/GAD-01 |
| 05      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 55+650 To Km 55+690 (SPAN 2x20.0m)                  | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/55+670/GAD-01 |
| 06      | GENERAL ARRANGEMENT DRAWINGS IADUCT AT Km 56+540 To Km 56+580 (SPAN 2x20.0m)                   | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/56+560/GAD-01 |
| 07      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 56+960 To Km 57+120 (SPAN 8x20.0m)                  | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/57+040/GAD-01 |
| 08      | GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT Km 58+120 To Km 58+180 (SPAN 3x20.0m)               | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/58+150/GAD-01 |
| 09      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 58+280 To Km 58+630 (SPAN 6x20+7x30+1x20.0m)        | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/58+455/GAD-01 |
| 10      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 60+040 To Km 60+220 (SPAN 9x20.0m)         | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/60+130/GAD-01 |
| 11      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 60+410 To Km 60+500 (SPAN 3x30.0m)         | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/60+455/GAD-01 |
| 12      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 61+120 To Km 61+300 (SPAN 9x20.0m)         | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/61+210/GAD-01 |
| 13      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 61+390 To Km 61+700 (SPAN 15x20.0+1x10.0m) | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/61+545/GAD-01 |
| 14      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 61+790 To Km 61+910 (SPAN 6x20.0m)         | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/61+850/GAD-01 |
| 15      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 63+800 To Km 64+100 (SPAN 15x20.0m)        | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/63+950/GAD-01 |
| 16      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 65+390 To Km 65+500 (SPAN 1x20.0+3x30.0m)  | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/65+445/GAD-01 |
| 17      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 65+800 To Km 65+900 (SPAN 5x20m)                    | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/65+850/GAD-01 |
| 18      | GENERAL ARRANGEMENT DRAWINGS PROPOSED VIADUCT AT Km 67+910 To Km 68+100 (SPAN 5x20.0+3x30.0m)  | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/68+005/GAD-01 |
| 19      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 69+180 To Km 69+350 (SPAN 5x30.0m+1x20.0m)          | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/69+265/GAD-01 |
| 20      | GENERAL ARRANGEMENT DRAWINGS VIADUCT AT Km 70+450 To Km 70+850 (SPAN 7x30.0m+5x20.0m+3x30.0m)  | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/70+650/GAD-01 |
| 21      | GENERAL ARRANGEMENT DRAWINGS F VIADUCT AT CH- 71+790 TO 72+230 SPAN-22X20.0)                   | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/71+790/GAD-01 |
| 22      | GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 72+320 TO 72+450 (SPAN-4X30+1X10.0)             | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/72+385/GAD-01 |
| 23      | GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 72+720 TO 72+850 (SPAN-4X30+1X10.0)             | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/72+720/GAD-01 |
| 24      | GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 76+790 TO 77+040 (SPAN-5X30+5X20.0)             | 2 SHEETS    | SAICPL-SESPL/NHIDC/WB-SKM/76+915/GAD-01 |
|         |  |             |   |
|         |  |             |   |

|     |      |  |  |  |  |                                |                   |                        |                          |   |
|-----|------|--|--|--|--|--------------------------------|-------------------|------------------------|--------------------------|---|
|     |      | CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED<br>(Ministry of Road Transport & Highways) |  | PROJECT : Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim. (Package - III-A) |  | DATE : JUNE- 2020              |                   | REVISION R0            |                          | DRAWING LIST                                |
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT  |  |  |  | DESIGNED BY<br>B<br>RAVI KUMAR | DRAWN BY<br>A SEN | CHECKED BY<br>A REHMAN | APPROVED BY<br>S. Shukla |   |
| REV | DATE | DESCRIPTION OF REVISIONS   |  | INITIALS   |  | SCALE:- AS SHOWN               |                   | SHEET:- 01 OF 02       |                          | DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/DL-01 |

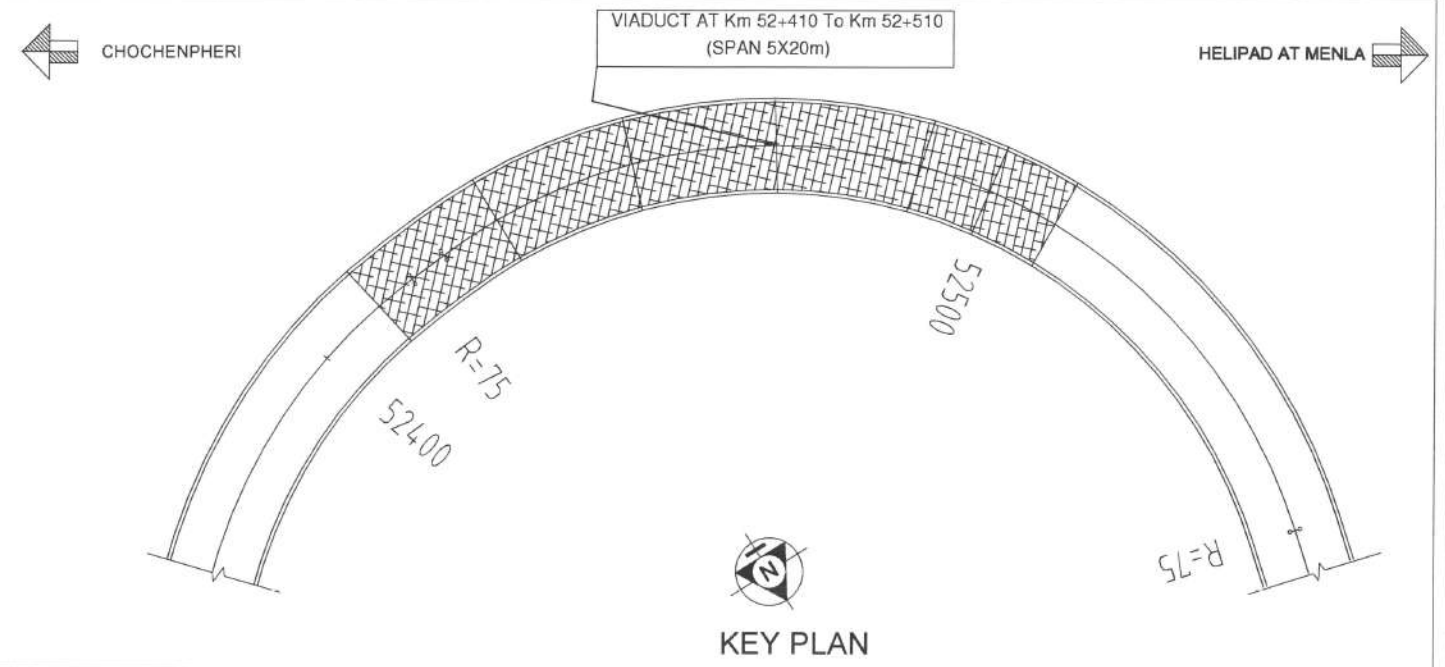


ELEVATION

|                 |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 1819.948 | 1820.751 | 1821.555 | 1822.358 | 1823.161 | 1823.965 |
| EX.GROUND LEVEL | 1826.693 | 1814.404 | 1809.425 | 1810.111 | 1812.435 | 1814.745 |
| CHAINAGE        | 52410    | 52430    | 52450    | 52470    | 52490    | 52510    |



PLAN



KEY PLAN

- NOTES**
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
  2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
  3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.

|    |           |                               |          |
|----|-----------|-------------------------------|----------|
| NO | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| 01 | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

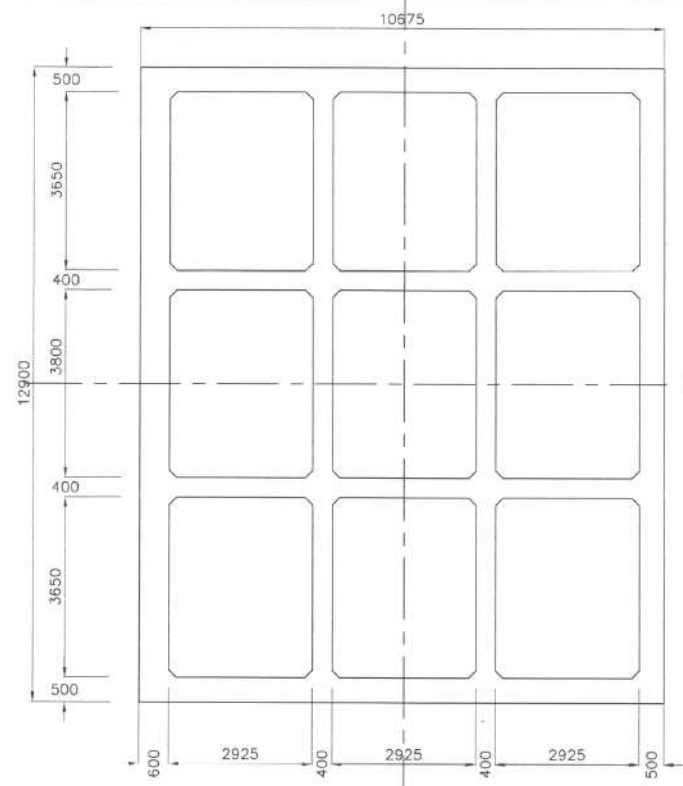
**CONSULTANT :** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

**PROJECT :** Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim. (Package:- III-A)

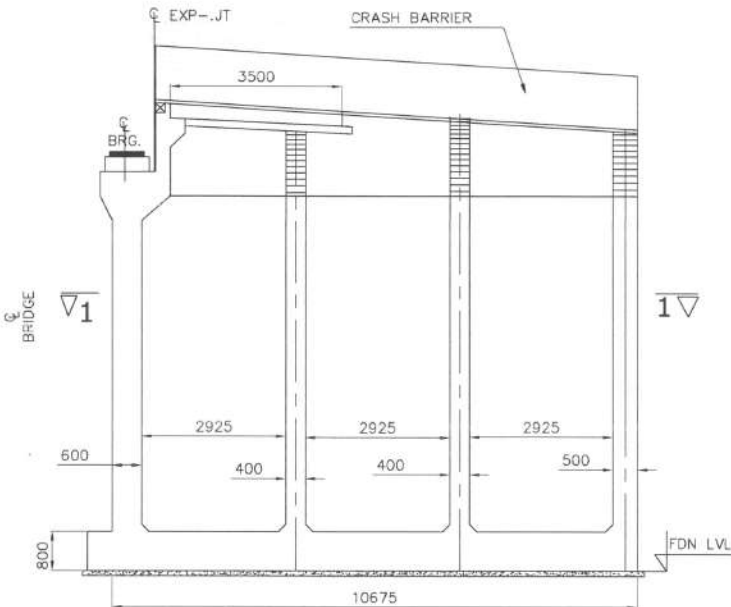
|                           |                          |
|---------------------------|--------------------------|
| DATE : JUNE-2020          | REVISION R0              |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>N S N SHARMA |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla  |
| SCALE:- AS SHOWN          | SHEET:- 01 OF 02         |

**PROJECT :** GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 52+410 To Km 52+510  
(SPAN 5X20m)

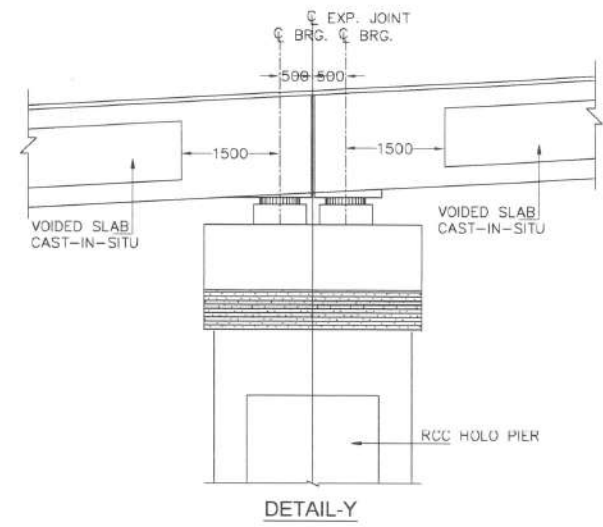
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/52+460/GAD-01



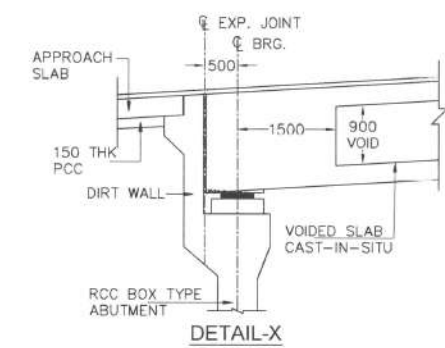
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100



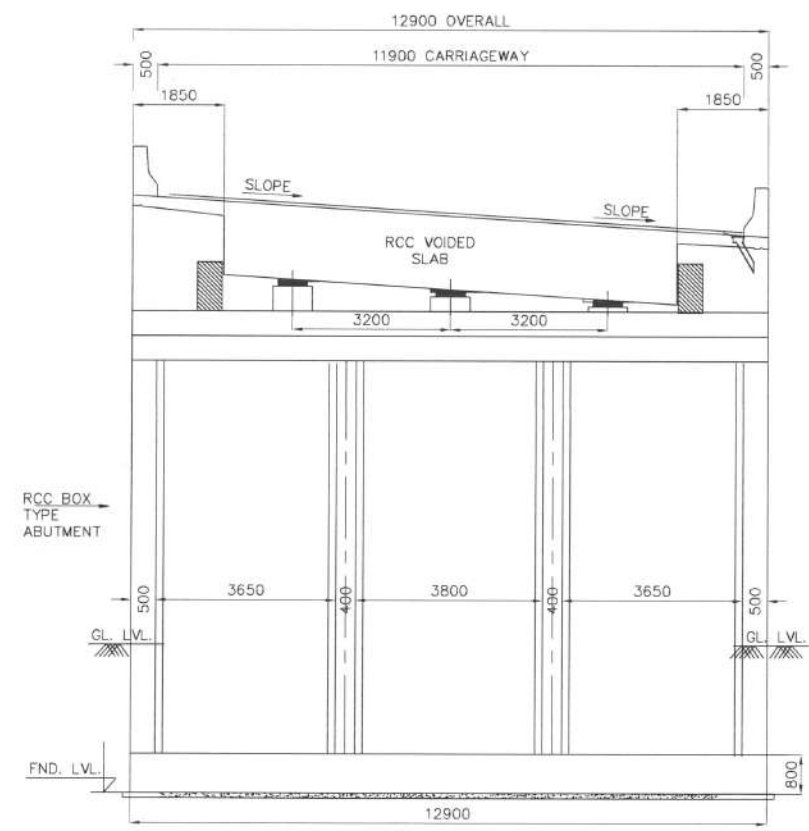
**DETAIL-Y**



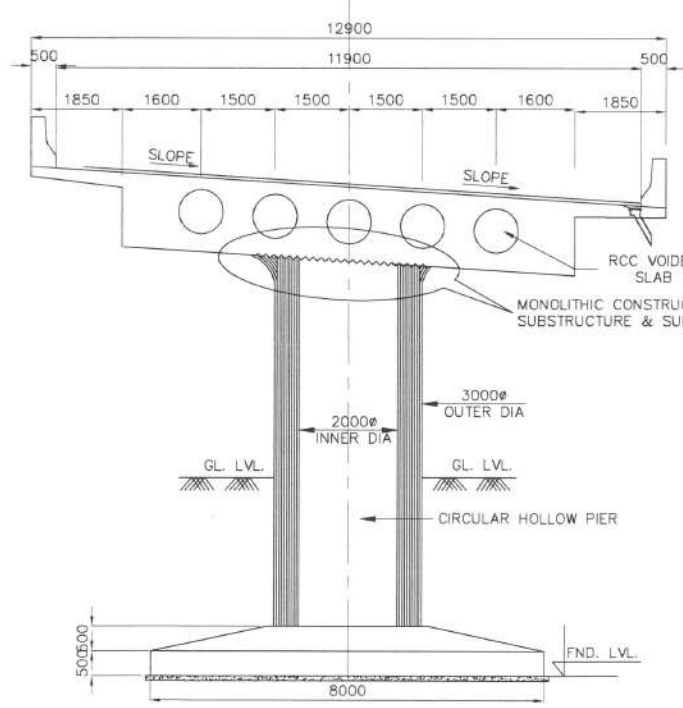
**DETAIL-X**

**NOTES**

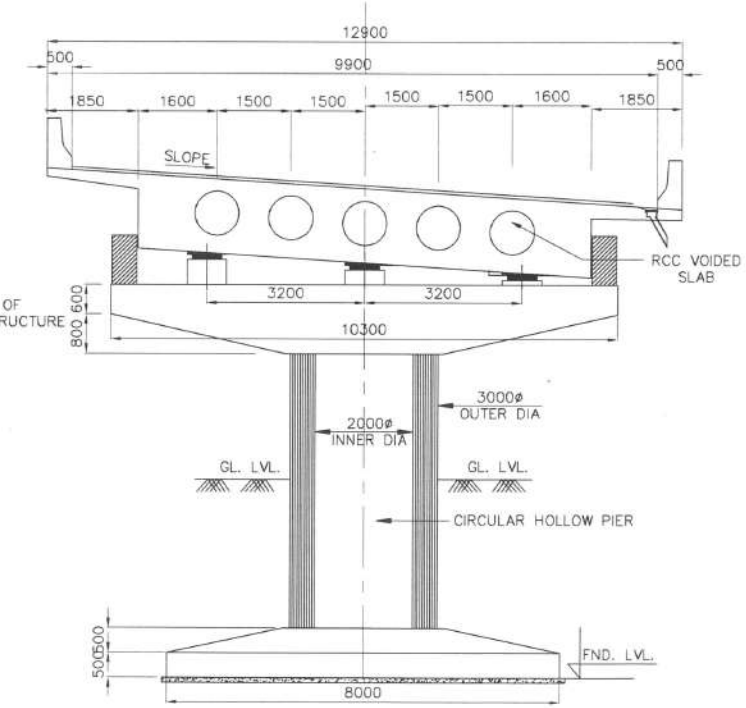
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4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R + 1 LANE CLASS A 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (ii) SUPERSTRUCTURE(VOIDED) ----- M40
  - (iii) RCC SUBSTRUCTURE & FOUNDATION ---- M35
  - (iv) RCC RAILING -----M30
  - (v) RCC CRASH BARRIER ----- M40
  - (vi) APPROACH SLAB ----- M30
  - (vii) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe5000) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100

|     |      |                          |          |
|-----|------|--------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|     |      |                          |          |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
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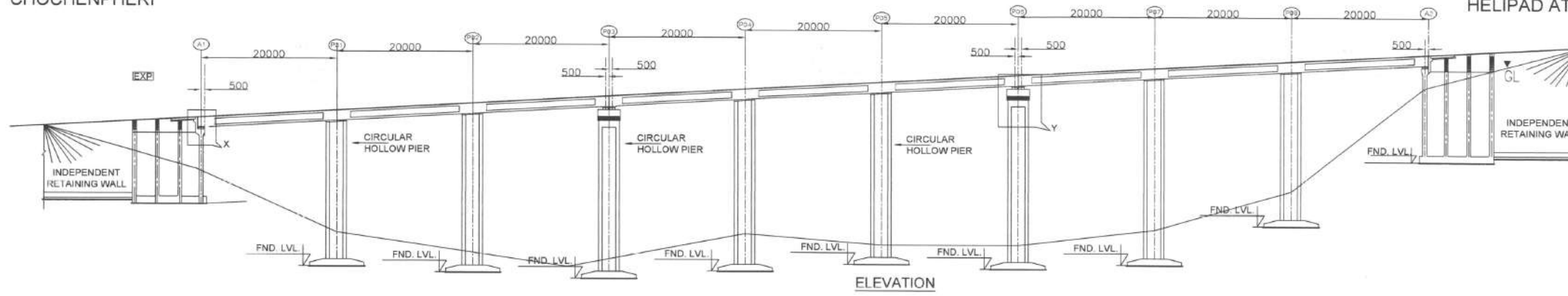
|                                  |                                 |
|----------------------------------|---------------------------------|
| <b>DATE :</b> JUNE-2020          | <b>REVISION</b> R0              |
| <b>DESIGNED BY</b><br>RAVI KUMAR | <b>DRAWN BY</b><br>N S N SHARMA |
| <b>CHECKED BY</b><br>A REHMAN    | <b>APPROVED BY</b><br>S Shukla  |
| <b>SCALE:-</b> AS SHOWN          | <b>SHEET:-</b> 02 OF 02         |

**GENERAL ARRANGEMENT DRAWINGS**  
VIADUCT AT Km 52+410 To Km 52+510  
(SPAN 5X20m)

**DWG. NO. :-** SAICPL-SESPL/NHDC/WB-SKM/52+460/GAD-01

CHOCHENPHERI

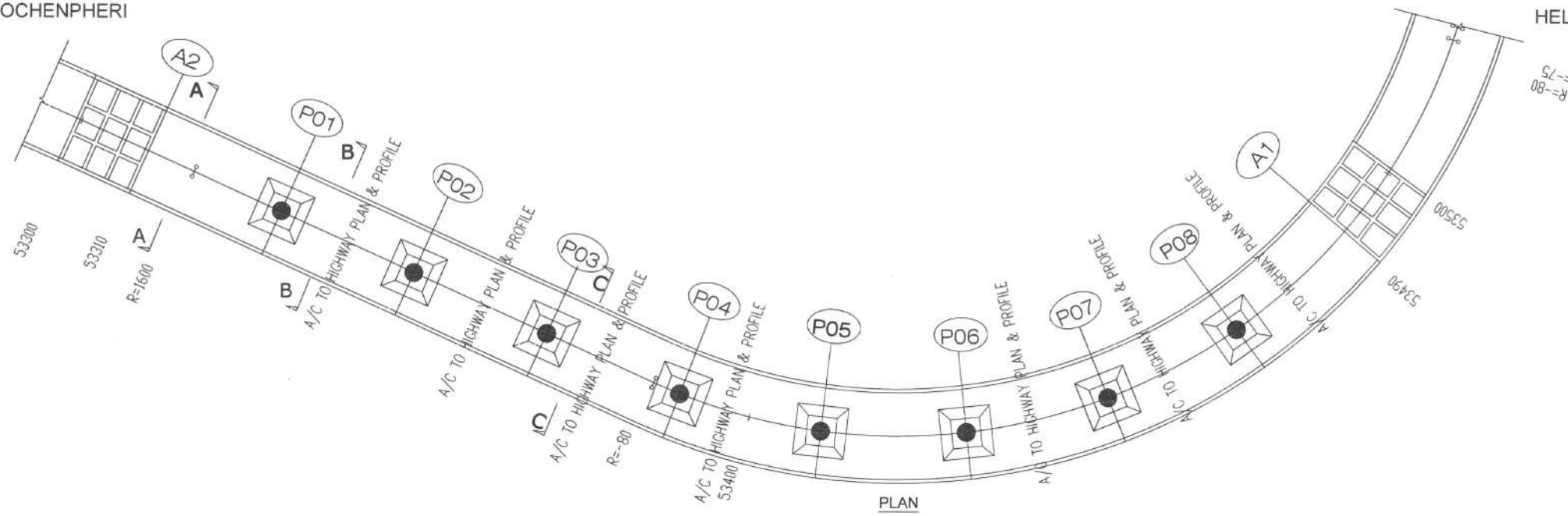
HELIPAD AT MENLA



|                 |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 1861.569 | 1862.768 | 1863.967 | 1865.167 | 1866.366 | 1867.565 | 1868.764 | 1869.964 | 1871.163 | 1872.362 |
| EX.GROUND LEVEL | 1851.187 | 1844.864 | 1841.871 | 1841.860 | 1842.431 | 1843.599 | 1845.908 | 1850.849 | 1857.431 | 1867.517 |
| CHAINAGE        | 53310    | 53330    | 53350    | 53370    | 53390    | 53410    | 53430    | 53450    | 53470    | 53490    |

CHOCHENPHERI

HELIPAD AT MENLA

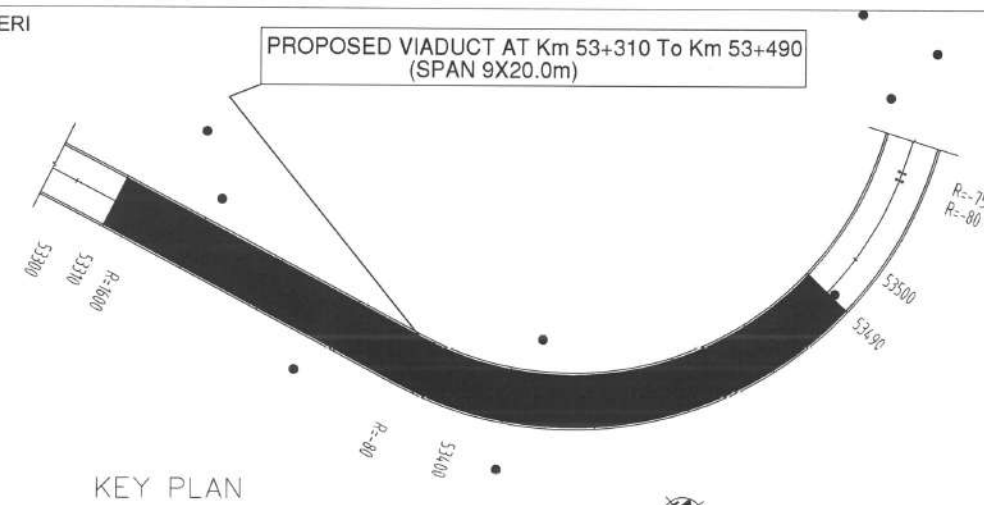


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CHOCHENPHERI

HELIPAD AT MENLA



|     |           |                               |          |
|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

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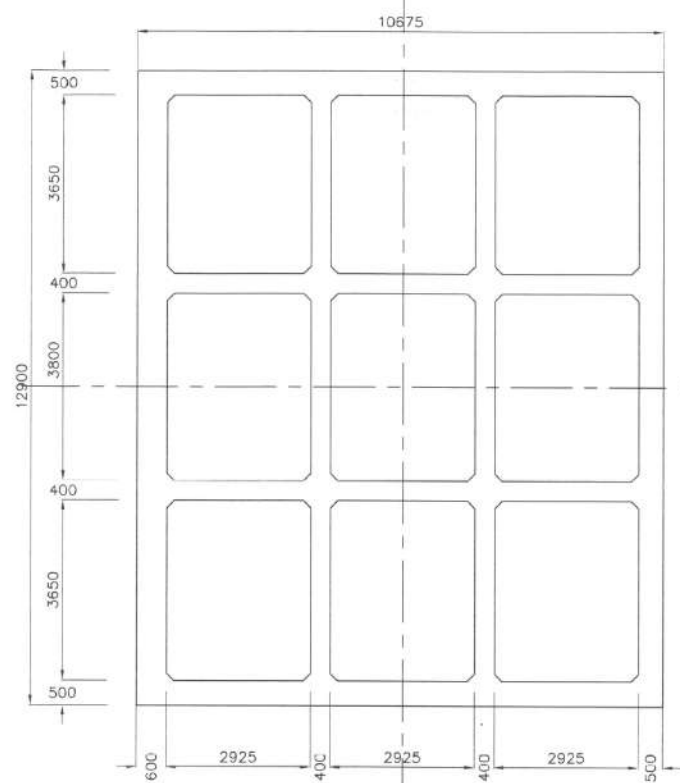
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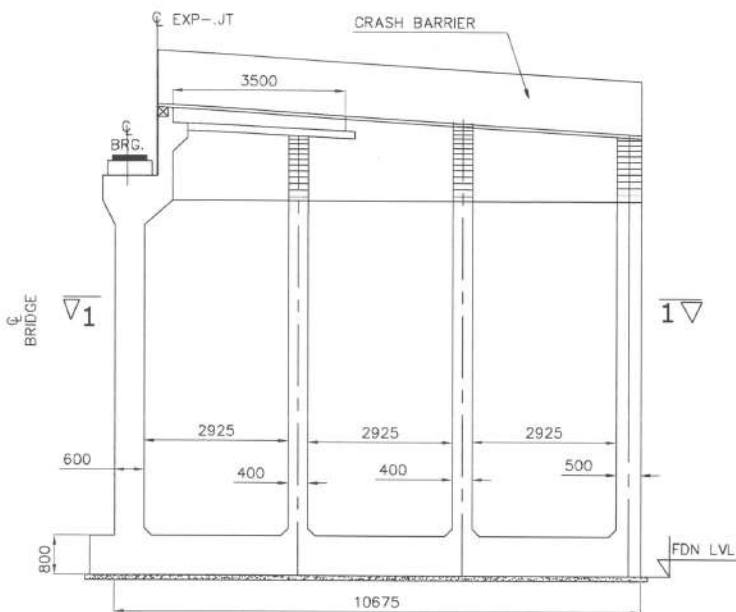
|                           |                         |
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| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla |
| SCALE:- AS SHOWN          | SHEET:- 01 OF 02        |

GENERAL ARRANGEMENT DRAWINGS  
OF VIADUCT AT Km 53+310 To Km 53+490  
(SPAN 9x20.0m)

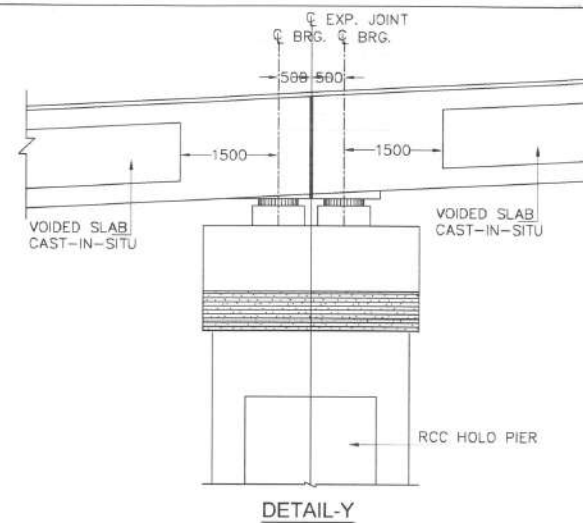
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/53+400/GAD-01



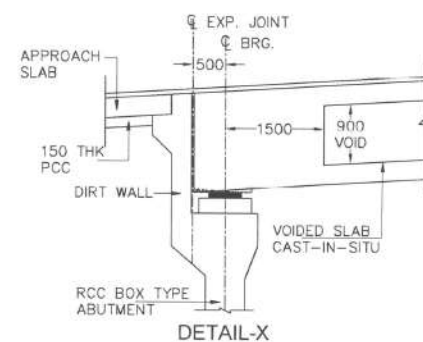
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100



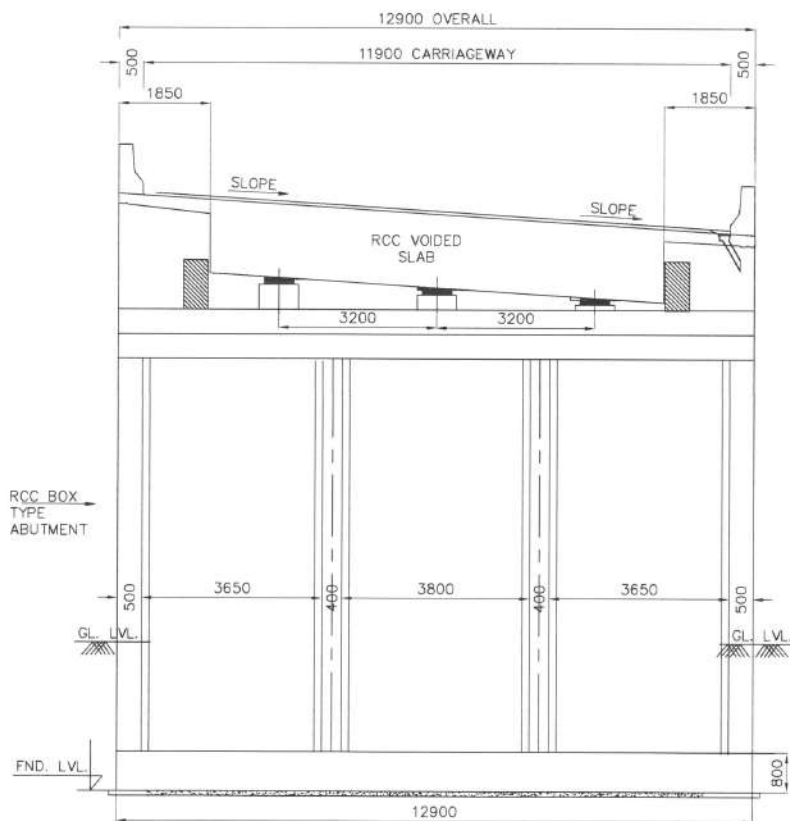
**DETAIL-Y**



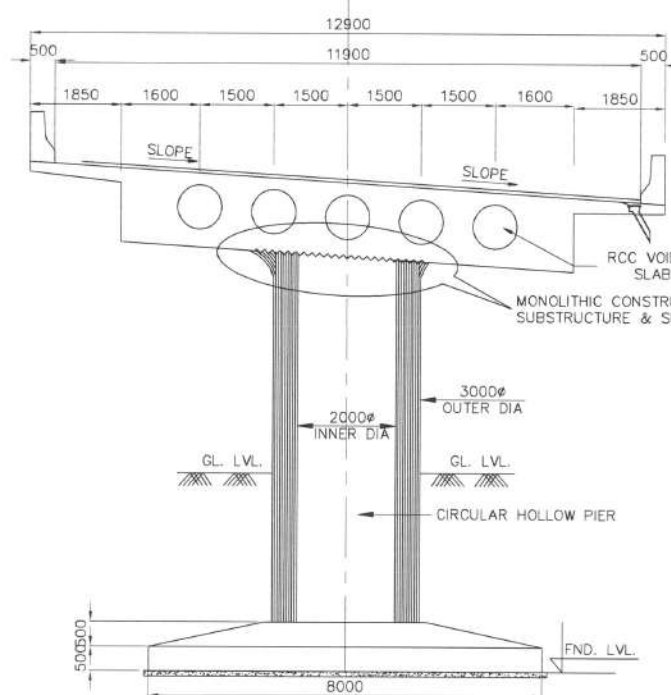
**DETAIL-X**

**NOTES**

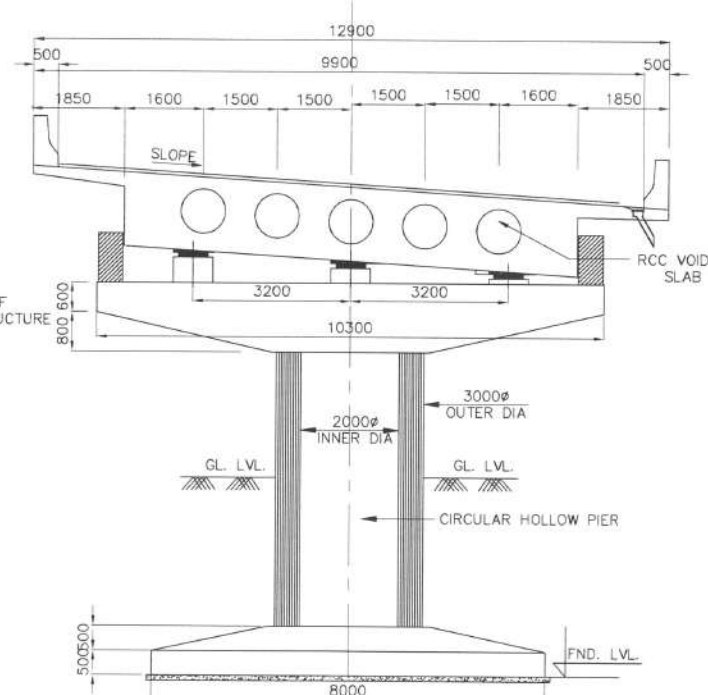
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- BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R + 1 LANE CLASS A 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
- GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
- ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
- BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>
- CONSTRUCTION JOINT



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100

|     |           |                               |          |
|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

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Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

**PROJECT :** Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Antar-Rolep-Mena in the State of Sikkim. (Package - III-A)

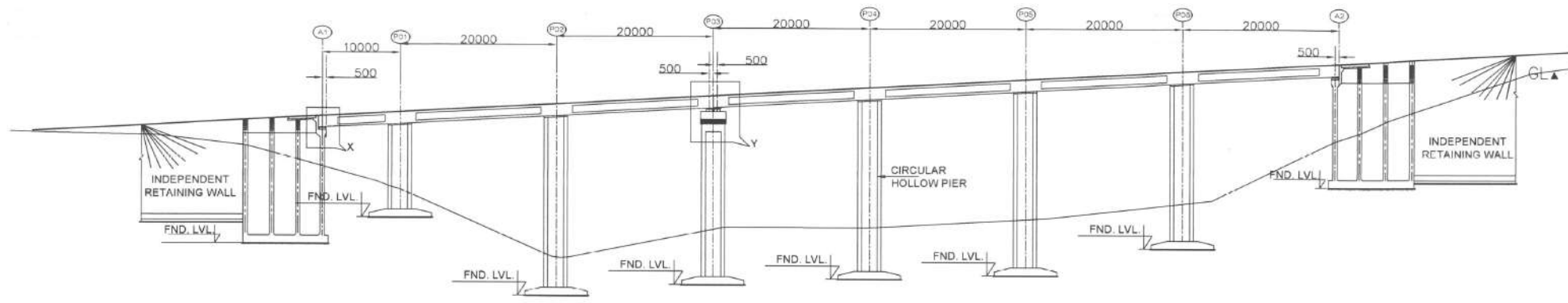
|             |            |             |          |
|-------------|------------|-------------|----------|
| DATE :      | JUNE- 2020 | REVISION    | R0       |
| DESIGNED BY | RAVI KUMAR | DRAWN BY    | A SEN    |
| CHECKED BY  | A REHMAN   | APPROVED BY | S.Shukla |
| SCALE-      | AS SHOWN   | SHEET-      | 02 OF 02 |

**GENERAL ARRANGEMENT DRAWINGS**  
OF VIADUCT AT Km 53+310 To Km 53+490  
(SPAN 9x20.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/53+400/GAD-01

CHOCHENPHERI

HELIPAD AT MENLA

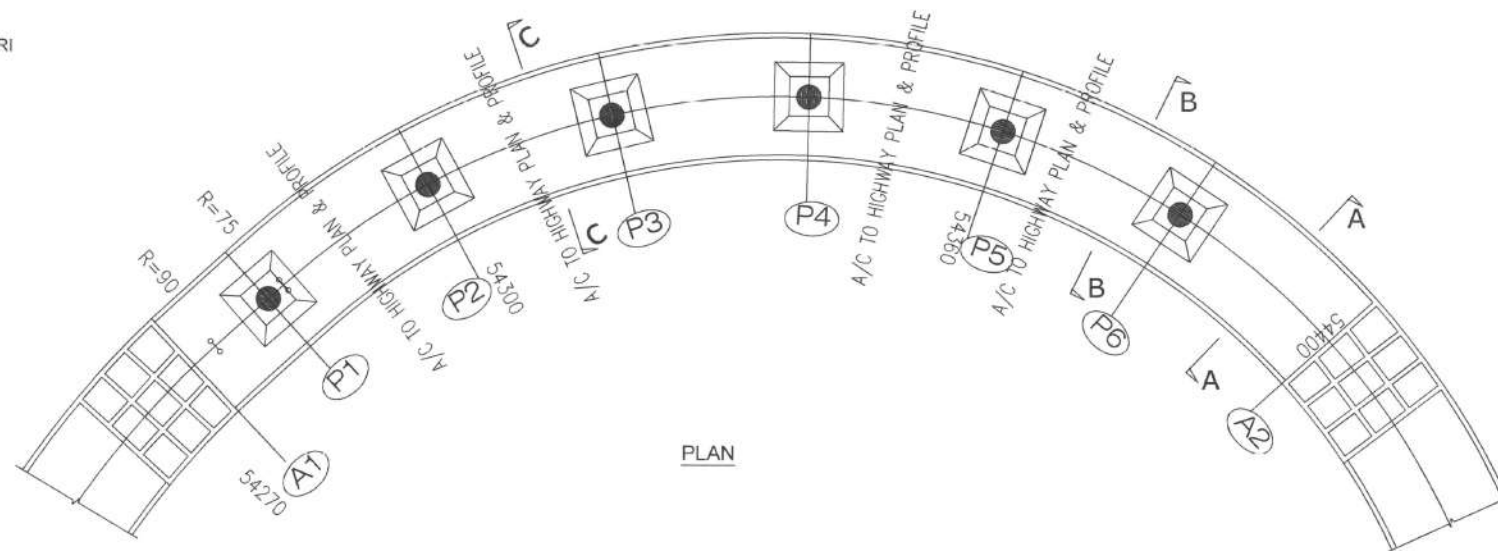


ELEVATION

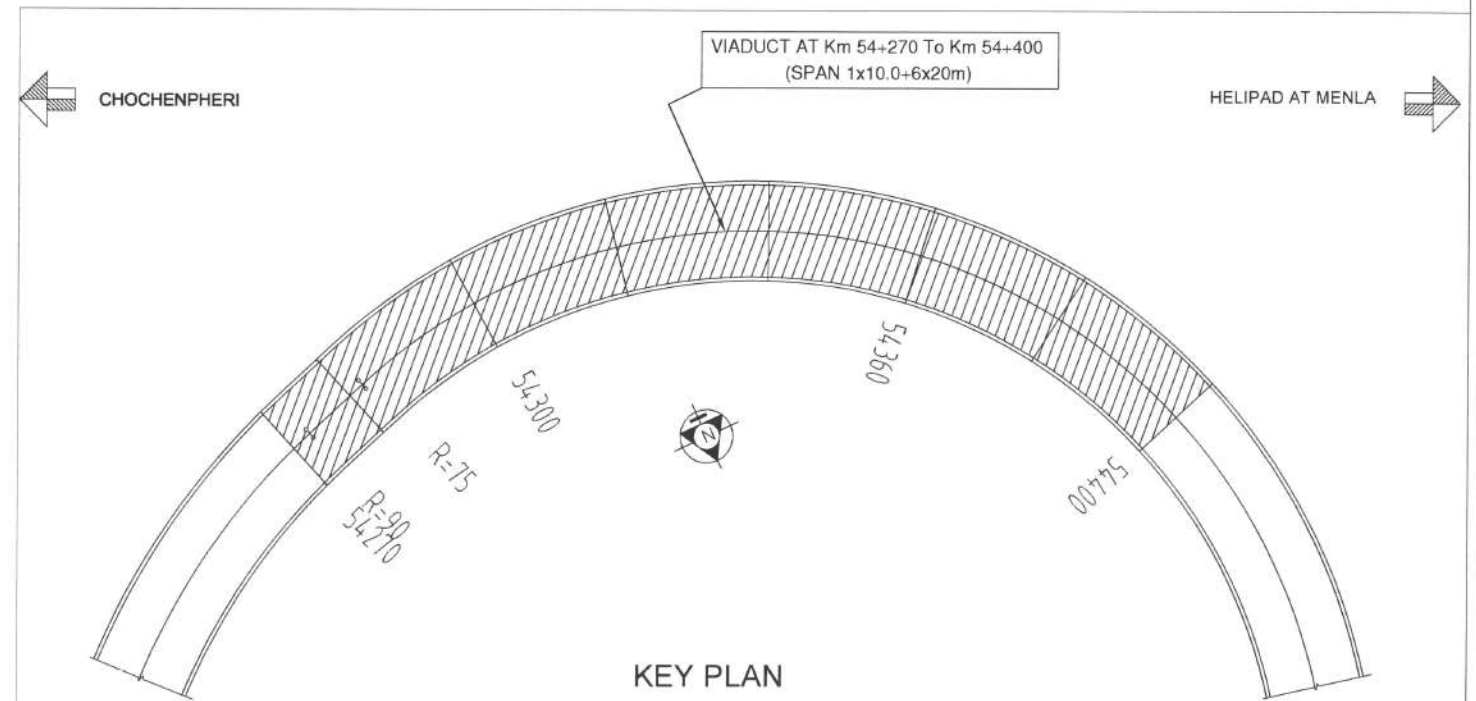
|                  |          |          |          |          |          |          |          |          |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL  | 1919.133 | 1919.733 | 1920.932 | 1922.132 | 1923.331 | 1924.530 | 1925.729 | 1926.929 |
| EX. GROUND LEVEL | 1917.106 | 1910.713 | 1900.990 | 1898.877 | 1905.771 | 1907.564 | 1908.186 | 1916.055 |
| CHAINAGE         | 54270    | 54280    | 54300    | 54320    | 54340    | 54360    | 54380    | 54400    |

CHOCHENPHERI

HELIPAD AT MENLA



PLAN



KEY PLAN

- NOTES**
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
  2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
  3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.

|    |      |                          |          |
|----|------|--------------------------|----------|
| NO | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|    |      |                          |          |
|    |      |                          |          |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

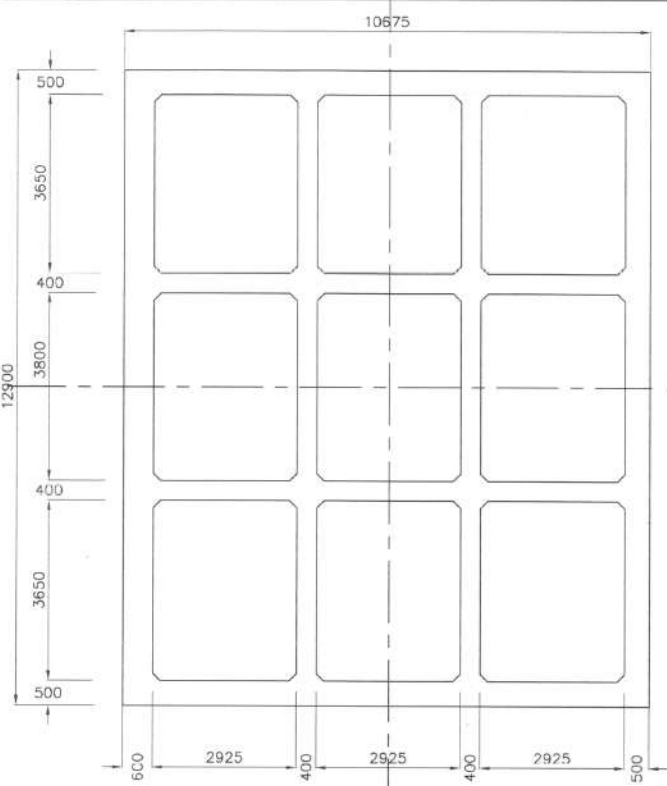
**CONSULTANT :** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
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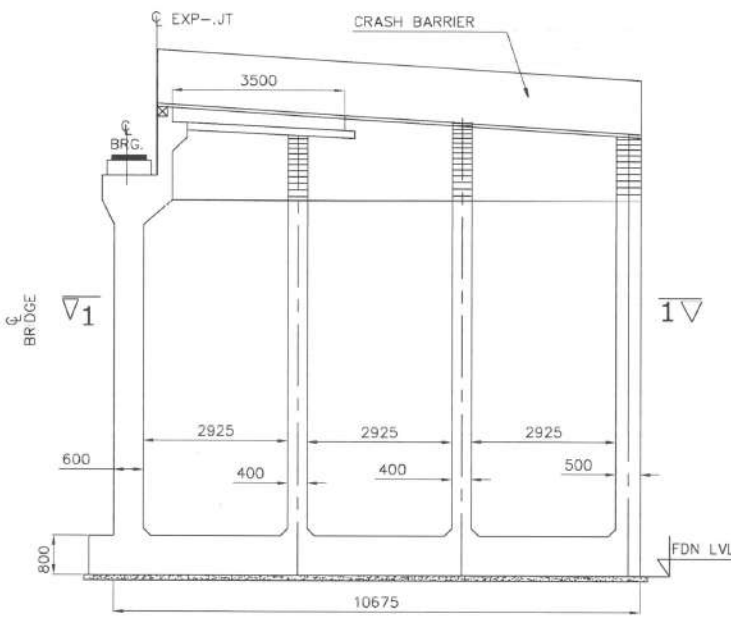
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|-------------------------|-----------------------|
| DATE: JUNE-2020         | REVISION: R0          |
| DESIGNED BY: RAVI KUMAR | DRAWN BY: A SEN       |
| CHECKED BY: A REHMAN    | APPROVED BY: S Shukla |
| SCALE: AS SHOWN         | SHEET: 01 OF 02       |

**PROJECT :** GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 54+270 To Km 54+400  
(SPAN 1x10.0+6x20m)

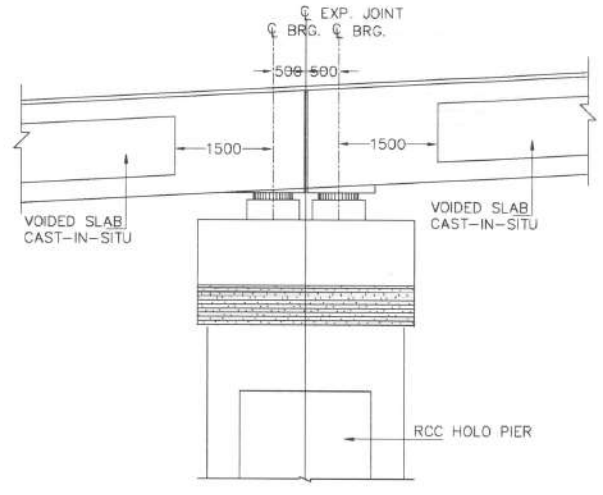
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/54+335/GAD-01



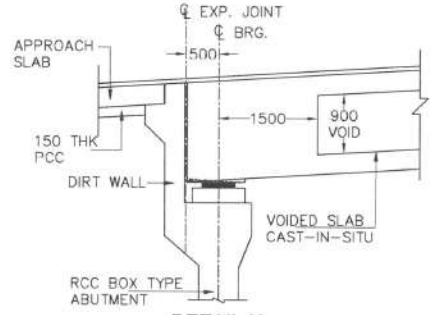
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100



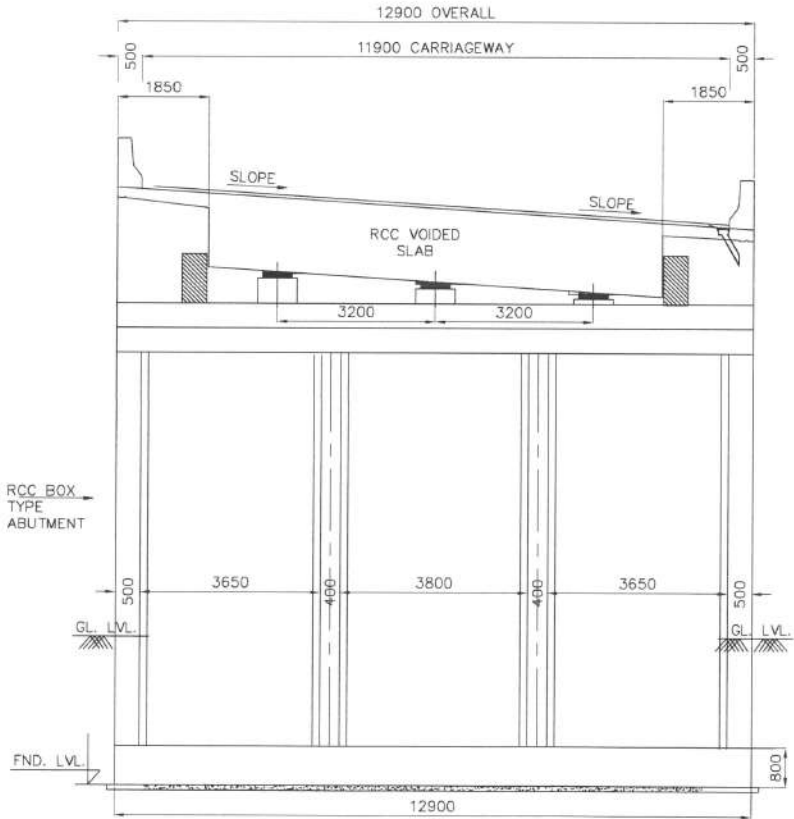
**DETAIL-Y**



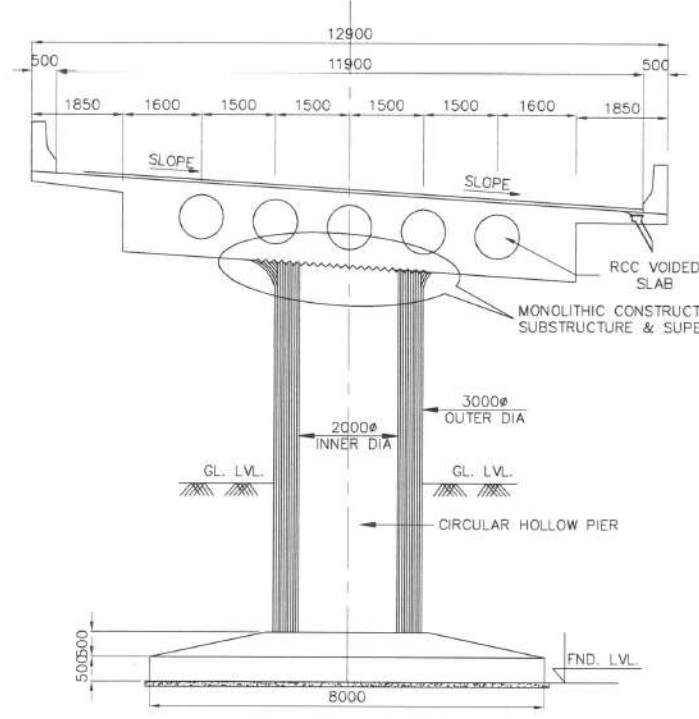
**DETAIL-X**

**NOTES**

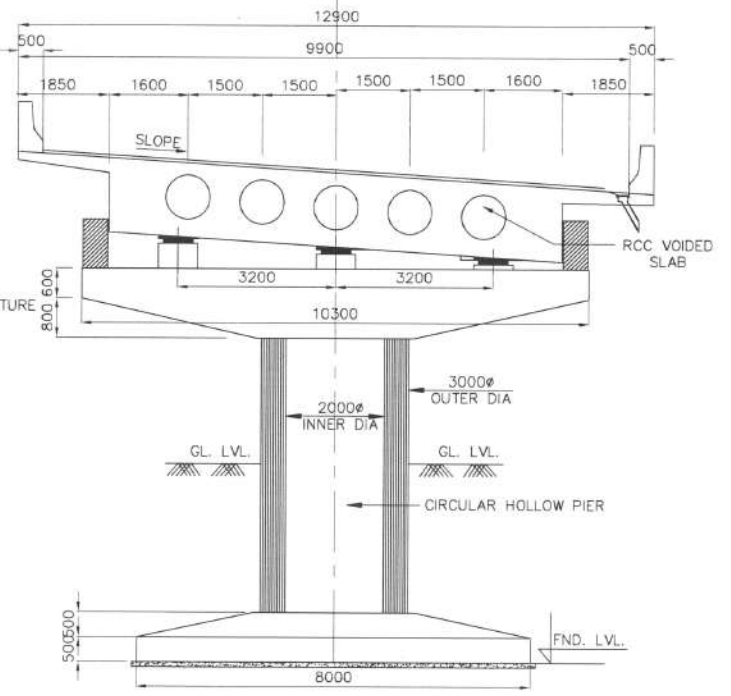
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3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R + 1 LANE CLASS A 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPC 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>
13. CONSTRUCTION JOINT



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100

|    |      |                          |          |
|----|------|--------------------------|----------|
| NO | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|    |      |                          |          |
|    |      |                          |          |

CLIENT : **NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED**  
(Ministry of Road Transport & Highways)

CONSULTANT: **S.A. Infrastructure Consultants Pvt. Ltd.**  
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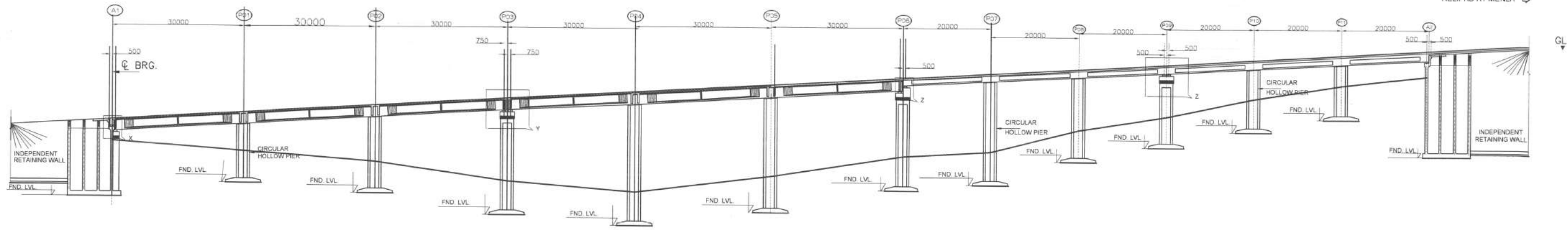
PROJECT :  
Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Antar-Rolep-Menla in the State of Sikkim. (Package- III-A)

|                           |                   |                        |
|---------------------------|-------------------|------------------------|
| DATE : JUNE-2020          | REVISION          | R0                     |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN | CHECKED BY<br>A.REHMAN |
| APPROVED BY<br>S.Shukla   |                   | SCALE:- AS SHOWN       |
| SHEET:- 02 OF 02          |                   |                        |

GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 54+270To Km 54+400  
(SPAN 1x10.0+6x20m)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/54+335/GAD-01

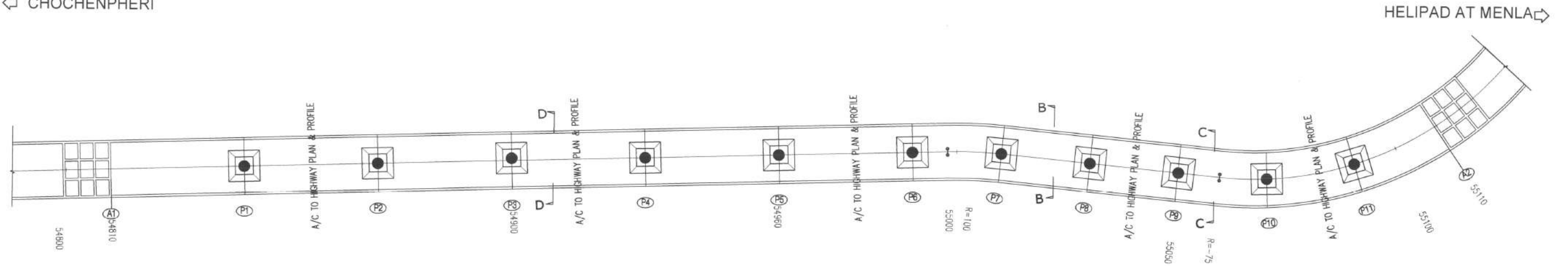
CHOCHENPHERI



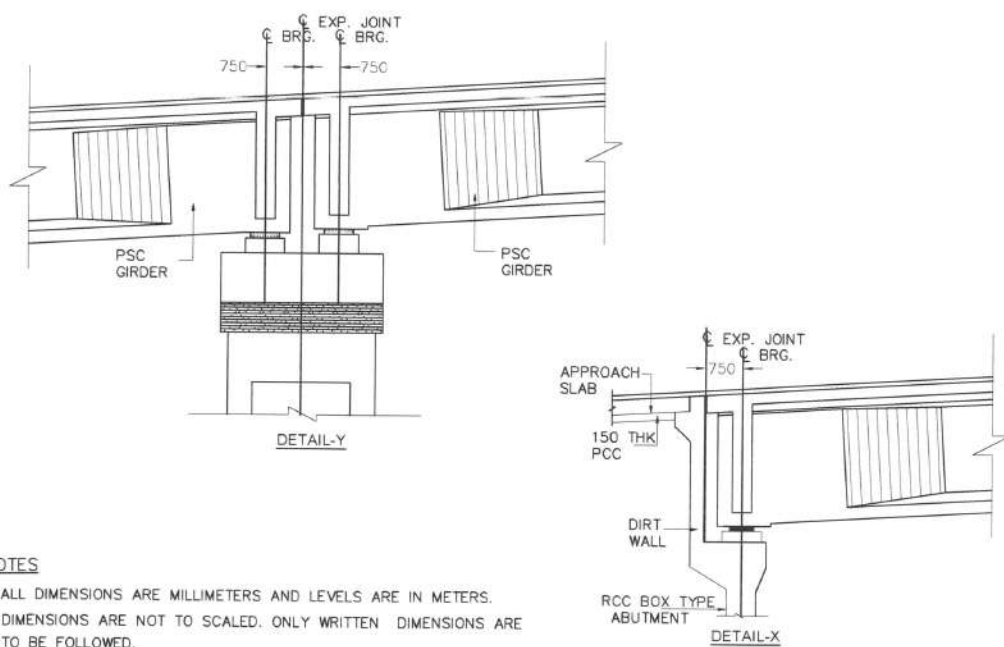
ELEVATION

|                 |          |          |          |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 1951.513 | 1953.312 | 1955.111 | 1956.910 | 1958.709 | 1960.508 | 1962.307 | 1963.506 | 1964.705 | 1965.905 | 1967.104 | 1968.303 | 1969.502 |
| EX.GROUND LEVEL | 1946.153 | 1944.496 | 1942.079 | 1937.669 | 1935.013 | 1939.499 | 1944.389 | 1945.206 | 1950.349 | 1953.567 | 1956.869 | 1961.268 | 1963.621 |
| CHAINAGE        | 54810    | 54840    | 54870    | 54900    | 54930    | 54960    | 54990    | 55010    | 55030    | 55050    | 55070    | 55090    | 55110    |

CHOCHENPHERI



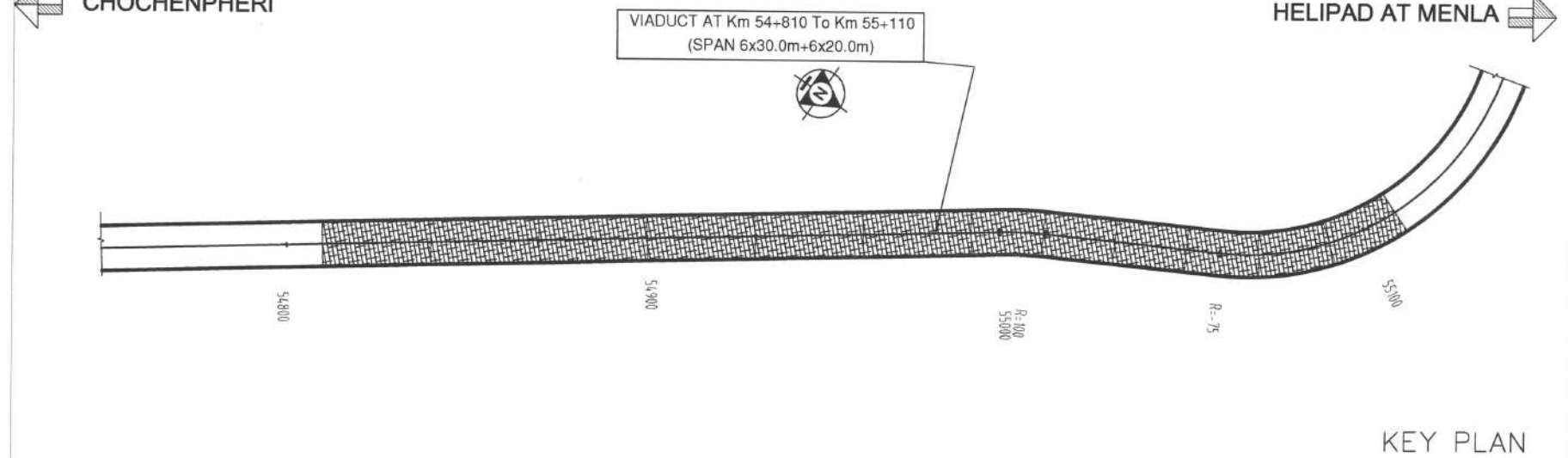
PLAN



NOTES

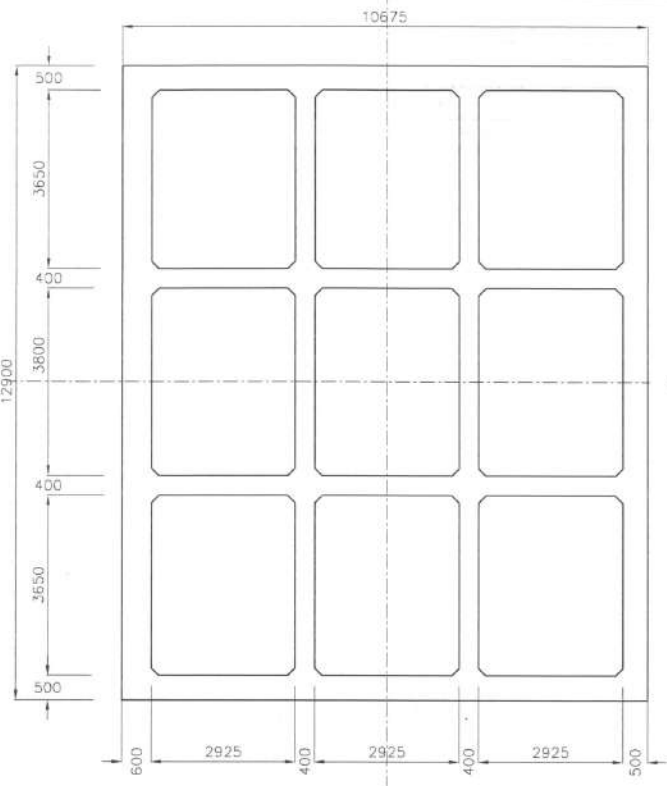
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CHOCHENPHERI

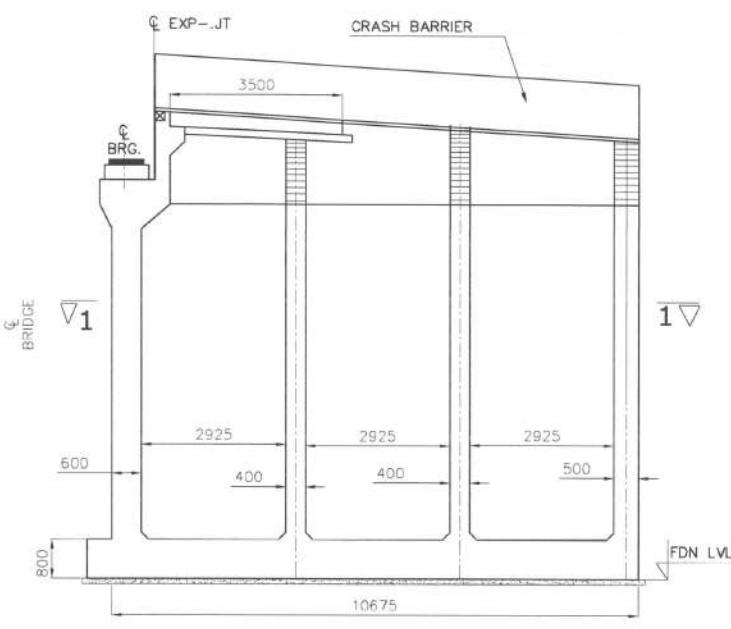


KEY PLAN

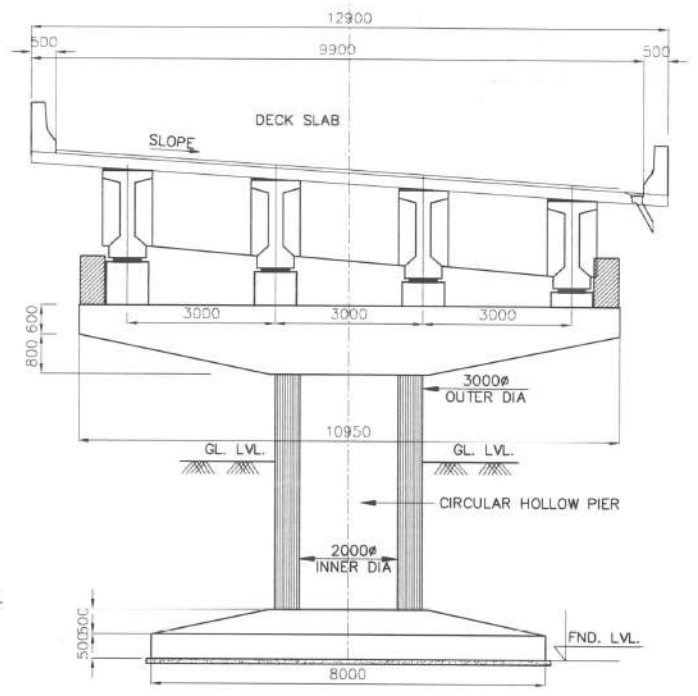
|   |  |   |                   |                       |                         |  |  |
|---|--|---|-------------------|-----------------------|-------------------------|--|--|
| CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED<br>(Ministry of Road Transport & Highways)  |  | PROJECT : Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Antar-Rolep-Menla in the State of Sikkim. (Package - III-A) |                   | DATE : JUNE- 2020     | REVISION R0             | PROJECT : GENERAL ARRANGEMENT DRAWINGS<br>VIADUCT AT Km 54+810 To Km 55+110 (SPAN 6x30.0m+6x20.0m) |  |
| CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.<br>1101A, 11 Floor Tower A-II, Ansal Corporate Park, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)<br>Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com |  | DESIGNED BY<br>RAVI KUMAR   | DRAWN BY<br>A SEN | CHECKED BY<br>AREHMAN | APPROVED BY<br>S.Shukla | DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/54+960/GAD-01   |  |
| REV DATE DESCRIPTION OF REVISIONS INITIALS  |  | SCALE - AS SHOWN  |                   | SHEET:- 01 OF 02      |                         |  |  |



**SECTION 1-1**  
SCALE 1:100

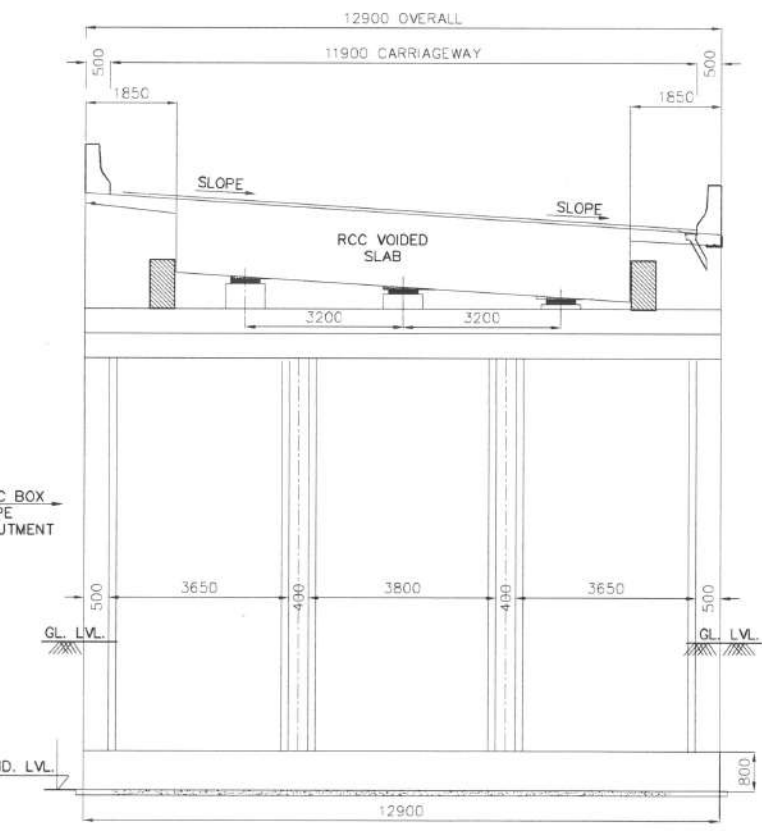


**BOX ABUTMENT**  
SCALE 1:100

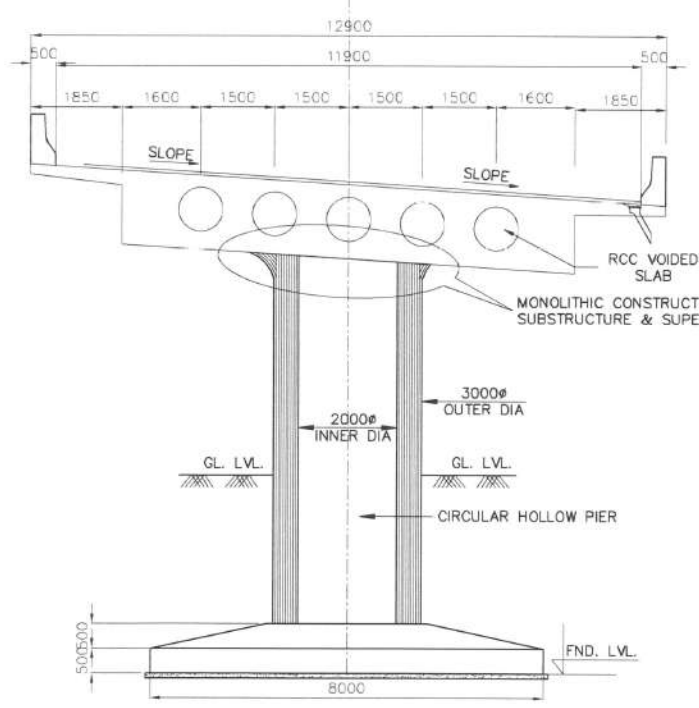


**SECTION D-D**  
SCALE 1:100

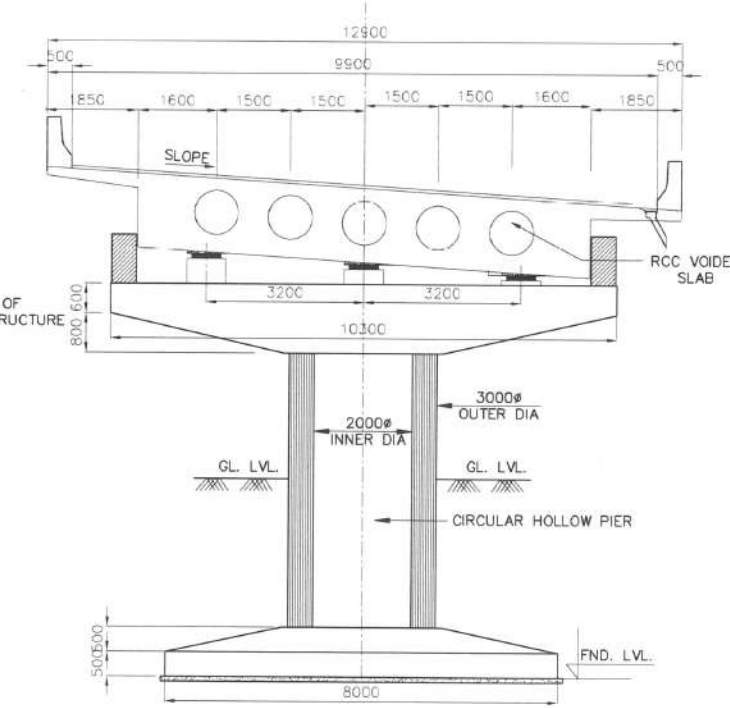
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    - (v) APPROACH SLAB ----- M30
    - (vi) PEDESTAL ----- M40
  - TYPE OF BEARING PROPOSED HERE IS POT-PTEE AS PER IRC:83, PART-III
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  - CONSTRUCTION JOINT



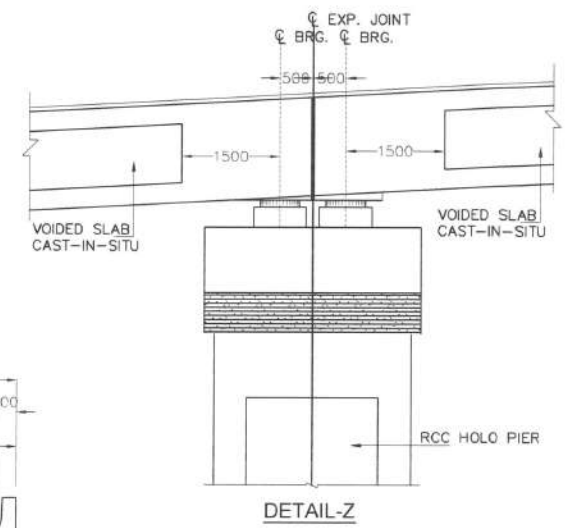
**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100



**DETAIL-Z**

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
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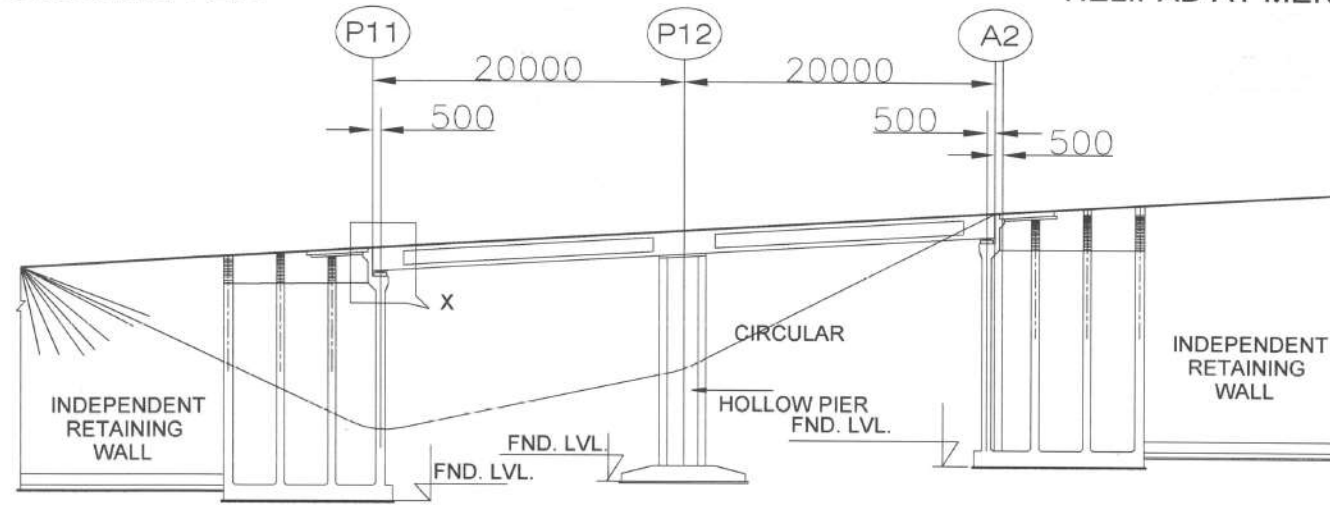
| DATE :           | REVISION         | RO         |
|------------------|------------------|------------|
| JUNE-2020        |                  |            |
| DESIGNED BY      | DRAWN BY         | CHECKED BY |
| RAVI KUMAR       | A SEN            | A REHMAN   |
| APPROVED BY      | S.Shukla         |            |
| SCALE:- AS SHOWN | SHEET:- 02 OF 02 |            |

**GENERAL ARRANGEMENT DRAWINGS**  
VIADUCT AT Km 54+810 To Km 55+110  
(SPAN 6x30.0m+6x20.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/54+960/GAD-01

← CHOCHENPHERI

HELIPAD AT MENLA →

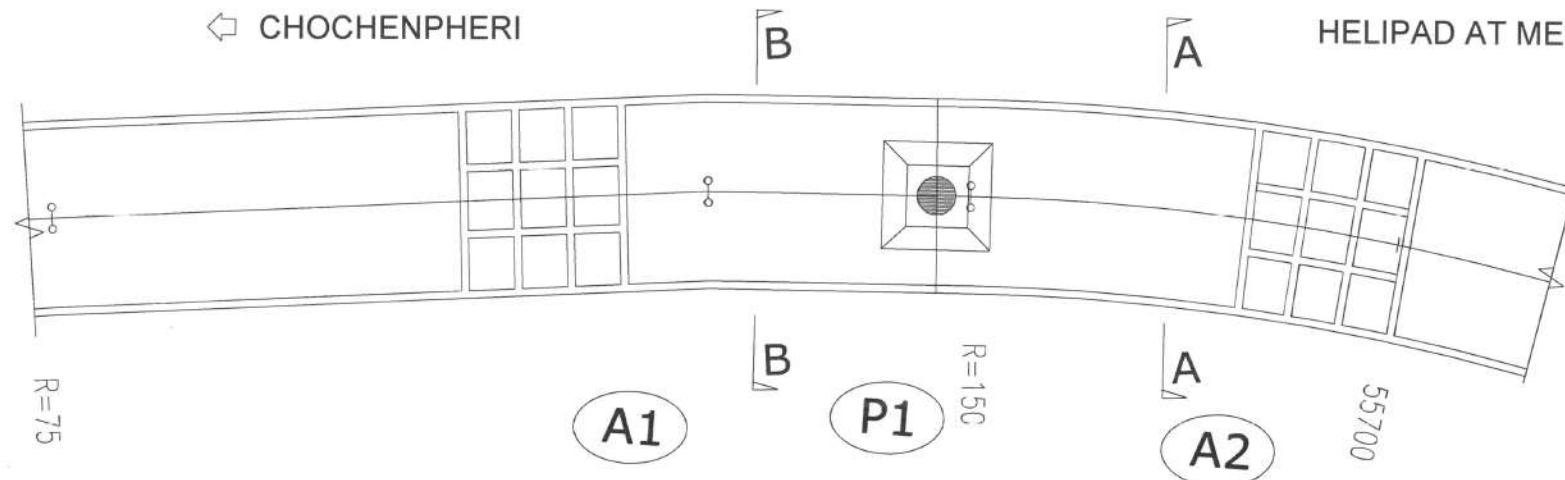


**ELEVATION**

|                 |          |          |          |
|-----------------|----------|----------|----------|
| FORMATION LEVEL | 2002.200 | 2003.083 | 2004.283 |
| EX.GROUND LEVEL | 1990.658 | 1994.901 | 2001.639 |
| CHAINAGE        | 55+650   | 55+670   | 55+690   |

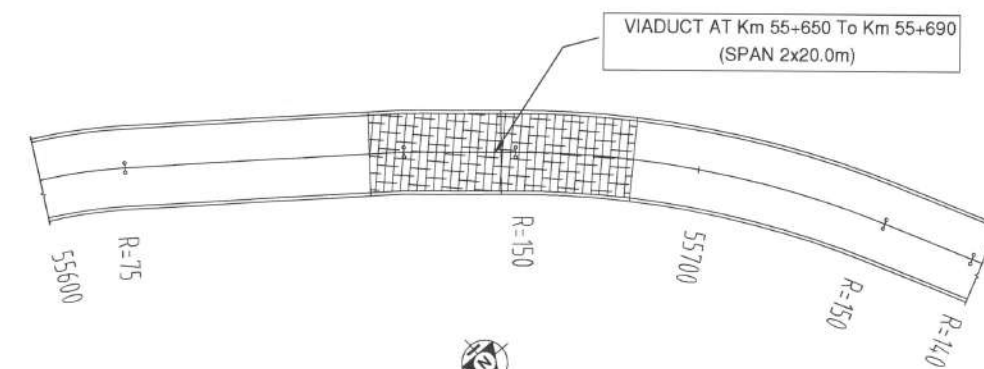
← CHOCHENPHERI

HELIPAD AT MENLA →



**PLAN**

← CHOCHENPHERI HELIPAD AT MENLA →



**KEY PLAN**

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|    |      |                          |          |
|----|------|--------------------------|----------|
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|    |      |                          |          |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
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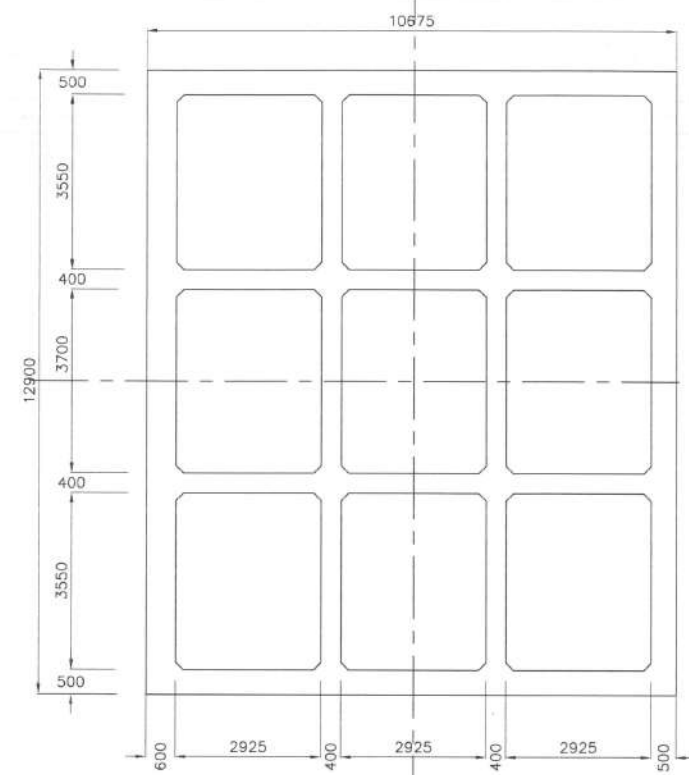
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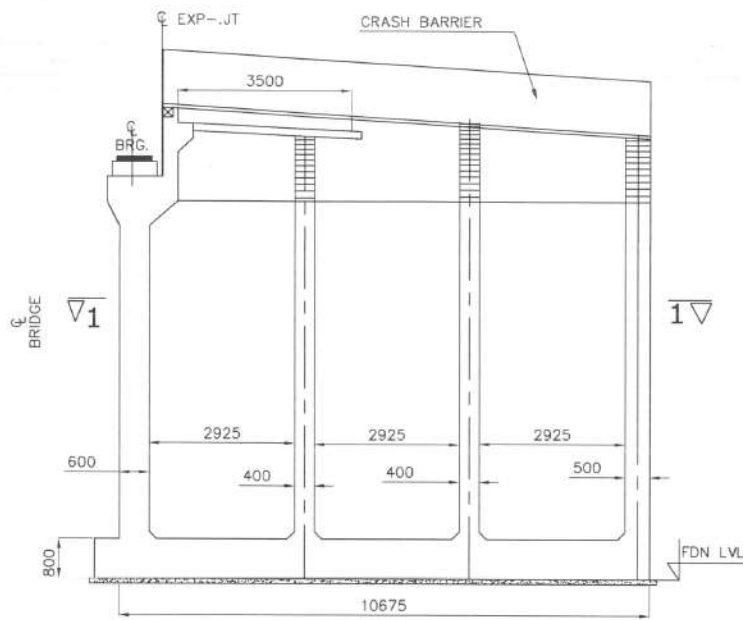
|                        |                      |
|------------------------|----------------------|
| DATE : JUNE- 2020      | REVISION R0          |
| DESIGNED BY RAVI KUMAR | DRAWN BY A SEN       |
| CHECKED BY A REHMAN    | APPROVED BY S Shukla |
| SCALE:- AS SHOWN       | SHEET- 01 OF 02      |

PROJECT : GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 55+650 To Km 55+690  
(SPAN 2x20.0m)

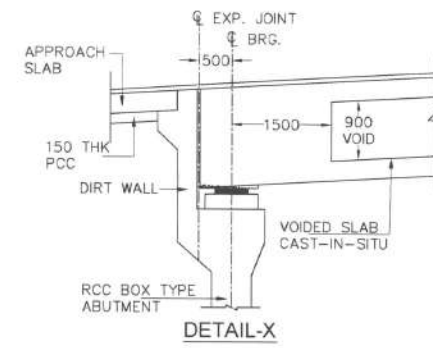
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/55+670/GAD-01



**SECTION 1-1**  
SCALE 1:100

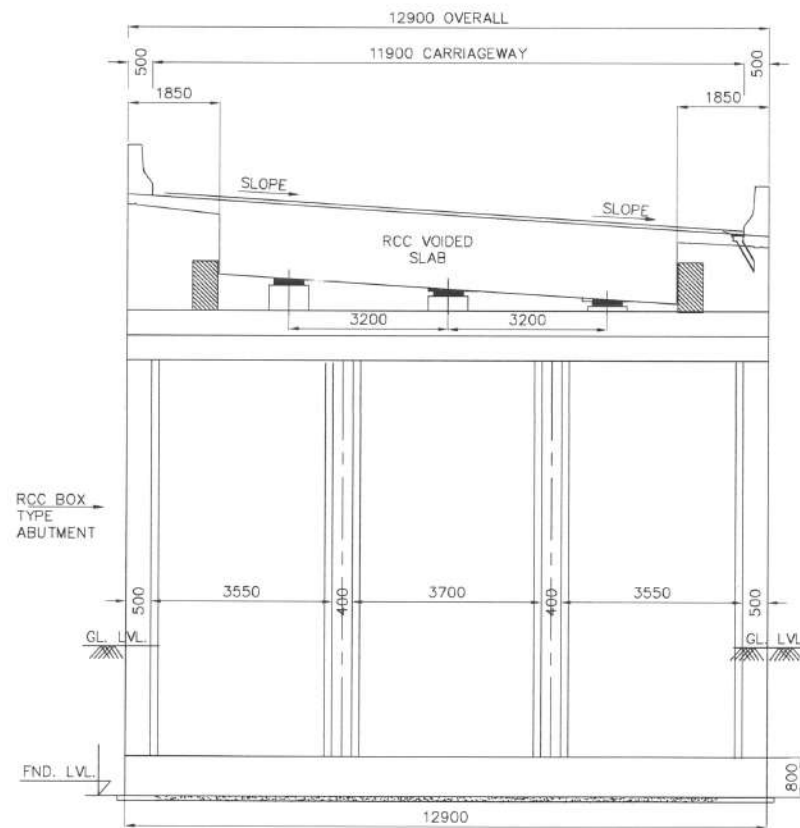


**BOX ABUTMENT**  
SCALE 1:100

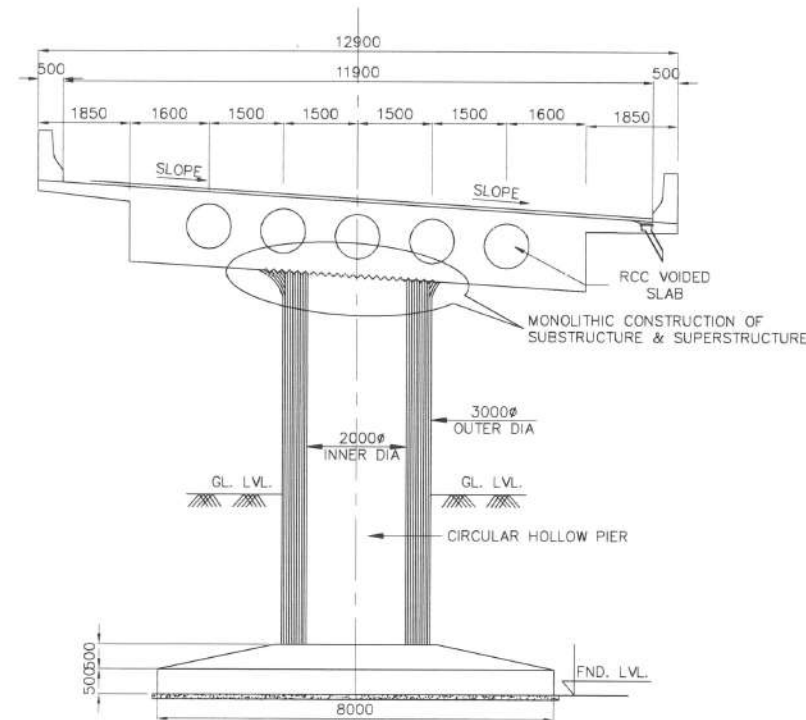


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  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
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6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
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8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| RD  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

**PROJECT :**  
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| DATE :      | REVISION    |
|-------------|-------------|
| JUNE-2020   | R0          |
| DESIGNED BY | CHECKED BY  |
| DRAWN BY    | APPROVED BY |
| RAVI KUMAR  | S. Shukla   |

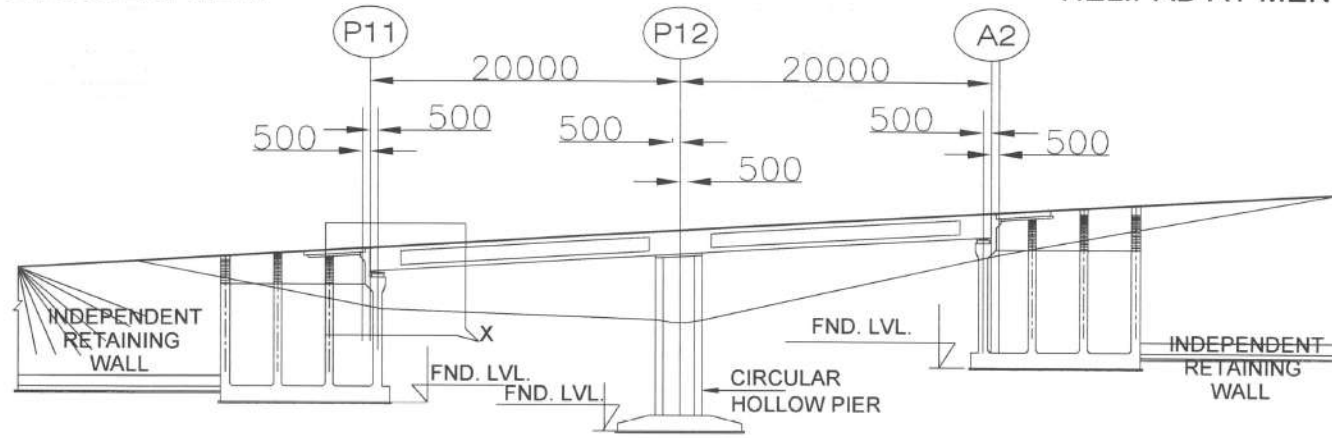
**GENERAL ARRANGEMENT DRAWINGS**  
VIADUCT AT Km 55+650 To Km 55+690  
(SPAN 2x20.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/55+670/GAD-01

SCALE:- AS SHOWN SHEET:- 02 OF 02

← CHOCHENPHERI

HELIPAD AT MENLA →

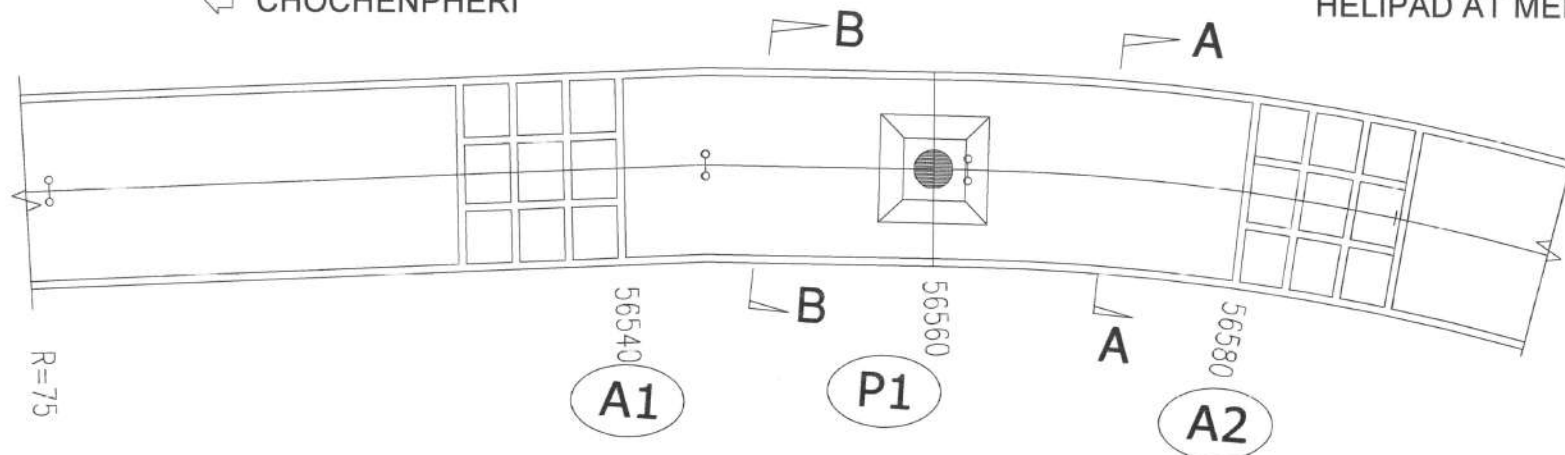


**ELEVATION**

|                 |          |          |          |
|-----------------|----------|----------|----------|
| FORMATION LEVEL | 2043.129 | 2043.847 | 2044.564 |
| EX.GROUND LEVEL | 2039.438 | 2037.832 | 2043.214 |
| CHAINAGE        | 56+540   | 56+560   | 56+580   |

← CHOCHENPHERI

HELIPAD AT MENLA →

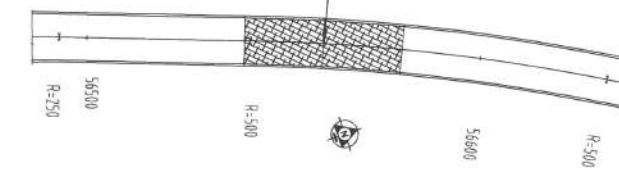


**PLAN**

← CHOCHENPHERI

VIADUCT AT Km 56+540 To Km 56+580 (SPAN 2x20.0m)

HELIPAD AT MENLA →



**KEY PLAN**

**NOTES**

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.

|    |           |                               |          |
|----|-----------|-------------------------------|----------|
| NO | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0 | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

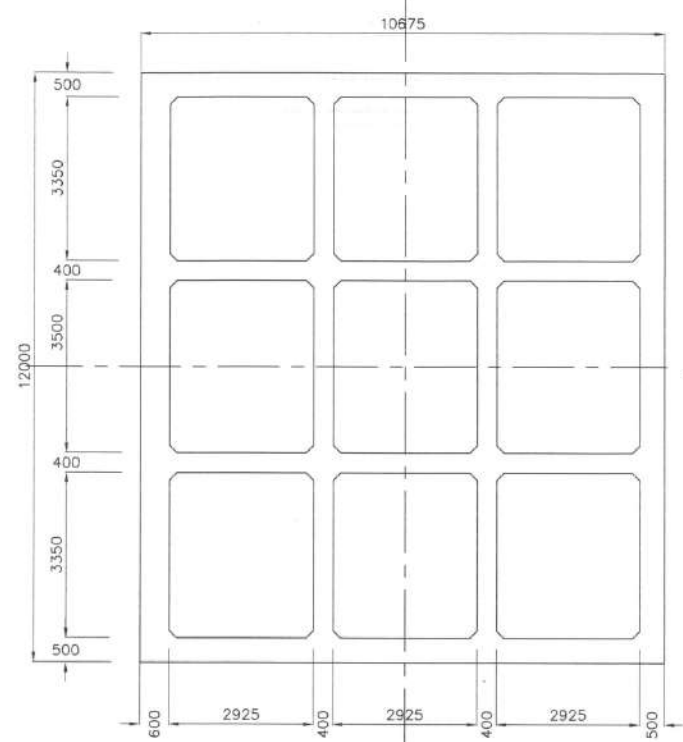
**CONSULTANT :** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
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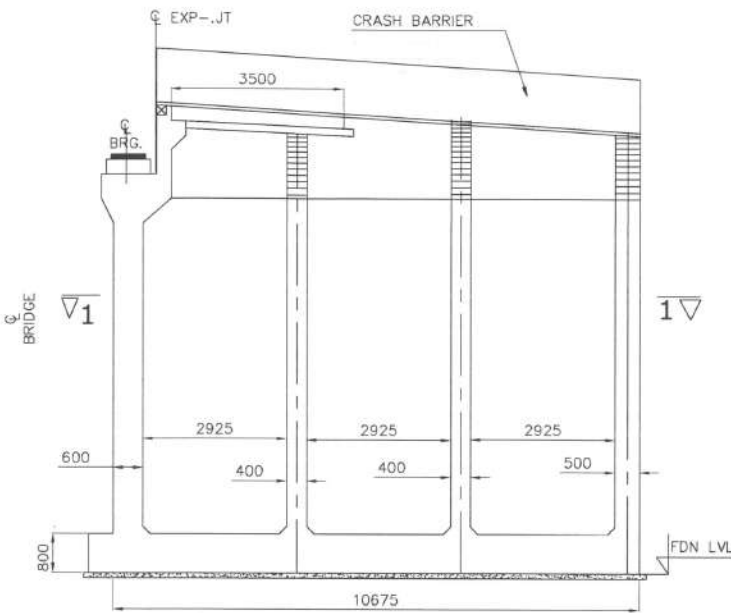
|             |            |             |           |
|-------------|------------|-------------|-----------|
| DATE :      | JUNE- 2020 | REVISION    | R0        |
| DESIGNED BY | RAVI KUMAR | CHECKED BY  | A REHMAN  |
| DRAWN BY    | A SEN      | APPROVED BY | S. Shukla |
| SCALE:-     | AS SHOWN   | SHEET:-     | 01 OF 02  |

**PROJECT :** GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 56+540 To Km 56+580  
(SPAN 2x20.0m)

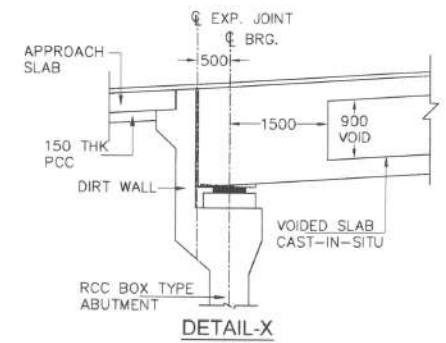
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/56+560/GAD-01



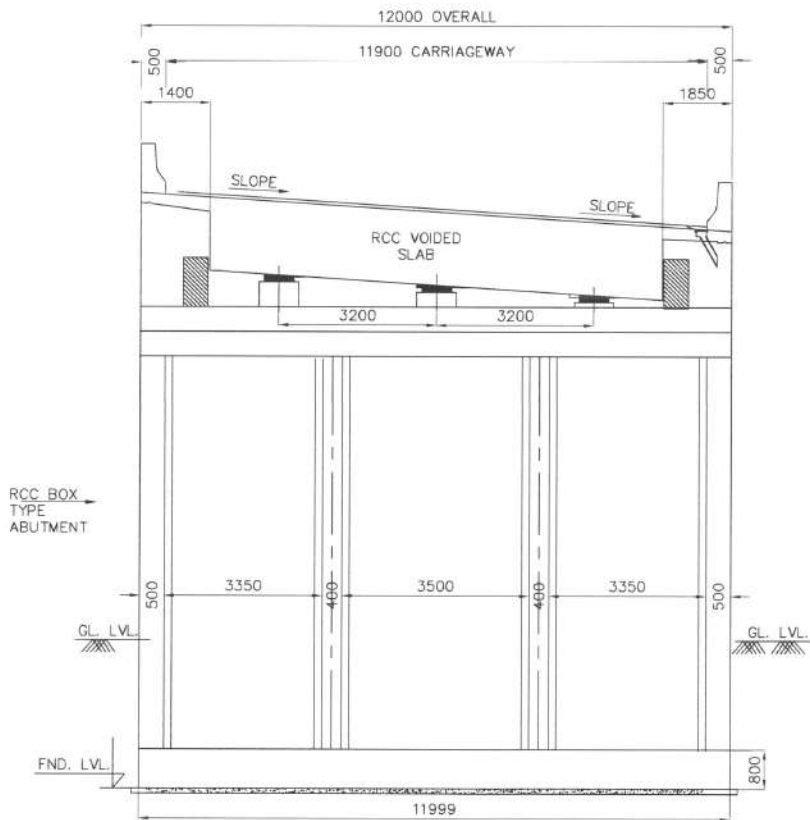
**SECTION 1-1**  
SCALE 1:100



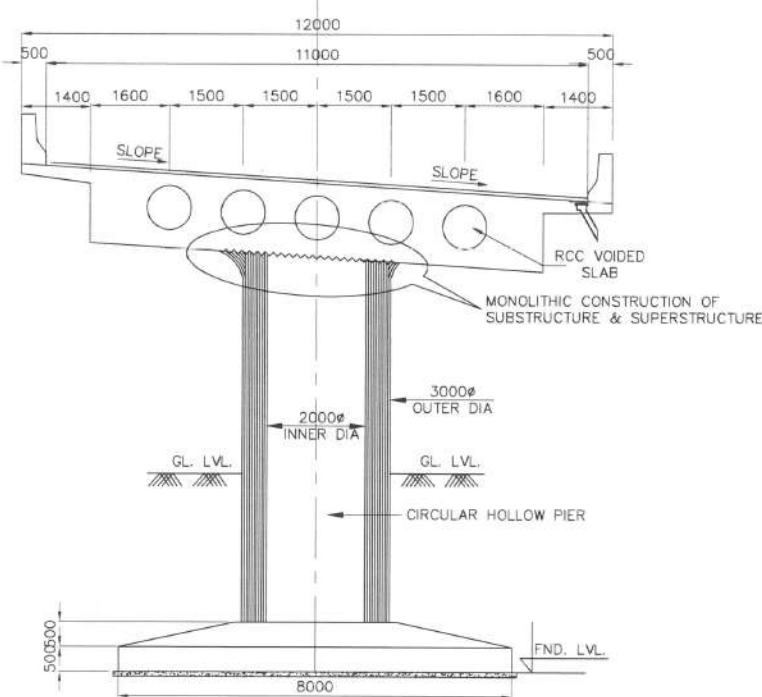
**BOX ABUTMENT**  
SCALE 1:100



**DETAIL-X**



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100

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5. GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
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|     |           |                               |          |   |   |   |
|-----|-----------|-------------------------------|----------|---|---|---|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A        | B | C | D |
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |   |   |   |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
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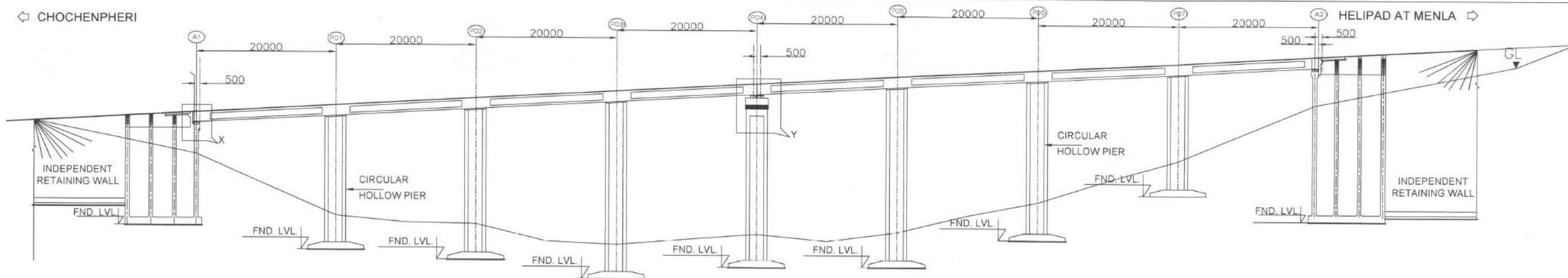
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|                  |          |                  |             |
|------------------|----------|------------------|-------------|
| DATE: JUNE-2020  |          | REVISION: R0     |             |
| DESIGNED BY      | DRAWN BY | CHECKED BY       | APPROVED BY |
| Ravi Kumar       | A SEN    | A REHMAN         | S Shukla    |
| SCALE:- AS SHOWN |          | SHEET:- 02 OF 02 |             |

**GENERAL ARRANGEMENT DRAWINGS**  
VIADUCT AT Km 56+540 To Km 56+580  
(SPAN 2x20.0m)

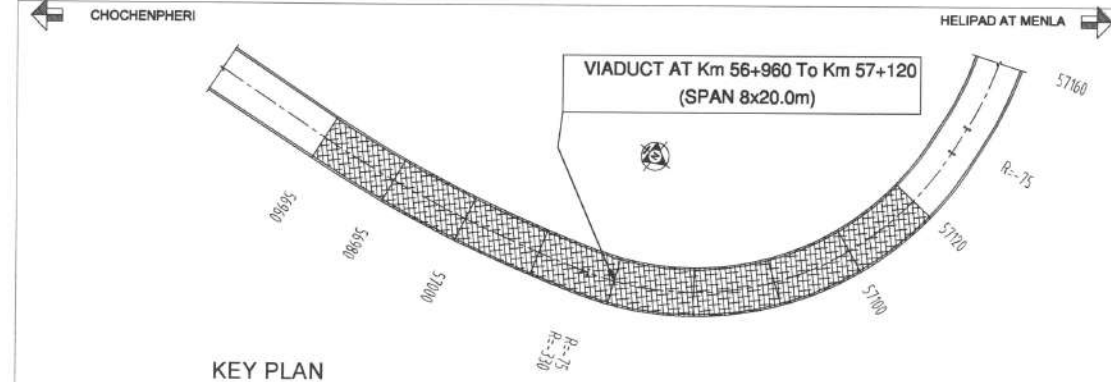
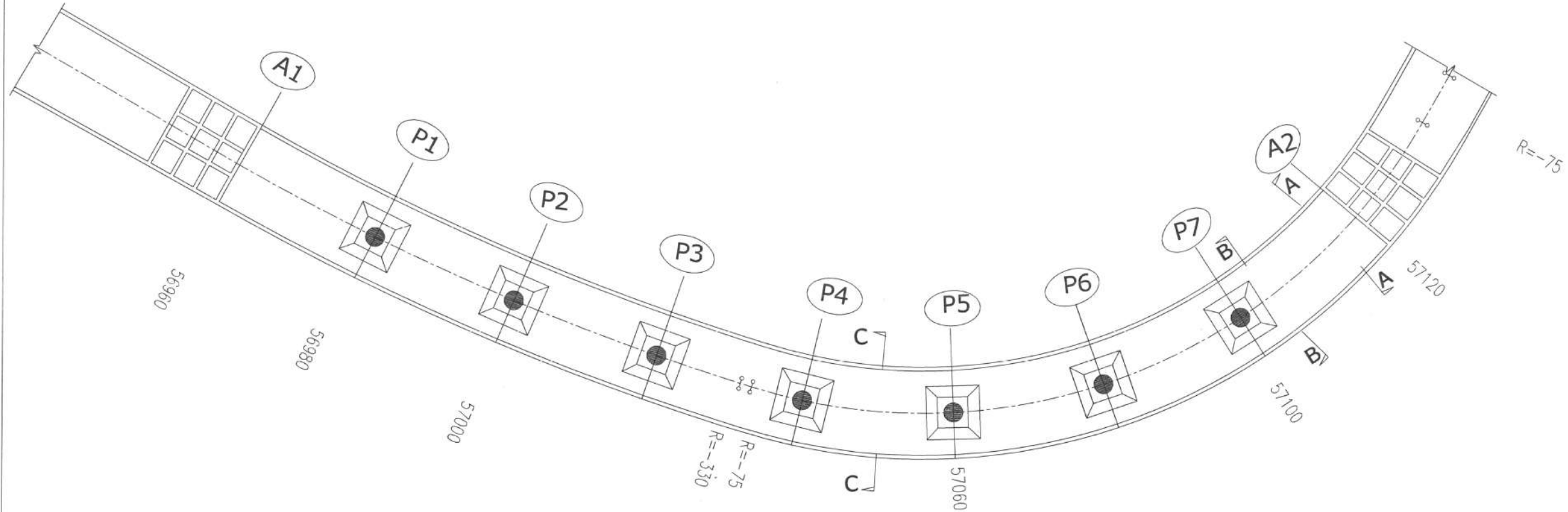
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/56+560/GAD-01

CHOCHENPHERI



**ELEVATION**

|                 |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2058.196 | 2058.913 | 2059.631 | 2060.348 | 2061.065 | 2061.783 | 2062.500 | 2063.218 | 2063.935 |
| EX.GROUND LEVEL | 2052.947 | 2046.751 | 2042.564 | 2038.184 | 2037.733 | 2040.527 | 2043.268 | 2049.455 | 2056.928 |
| CHAINAGE        | 56960    | 56980    | 57000    | 57020    | 57040    | 57060    | 57080    | 57100    | 57120    |



- NOTES**
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|    |      |                          |          |
|----|------|--------------------------|----------|
| NO | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|    |      |                          |          |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

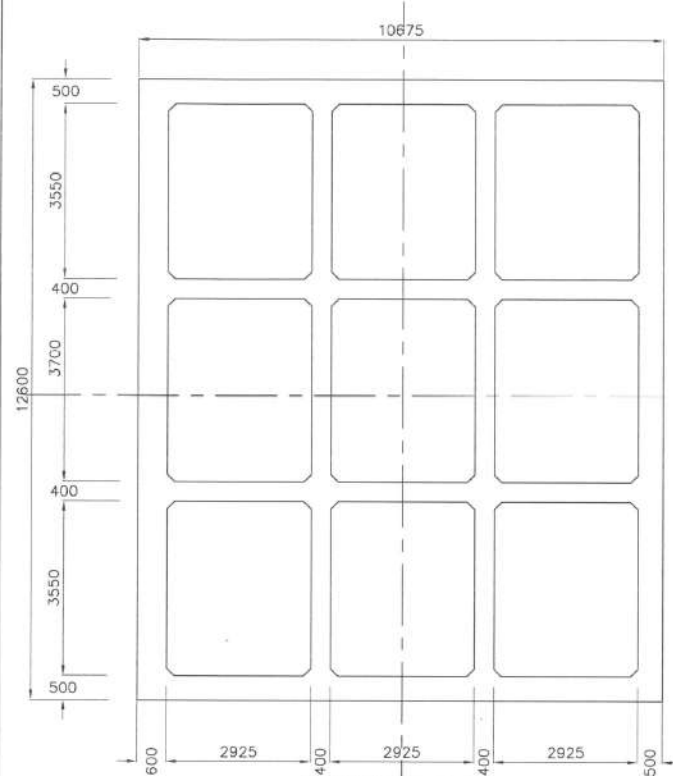
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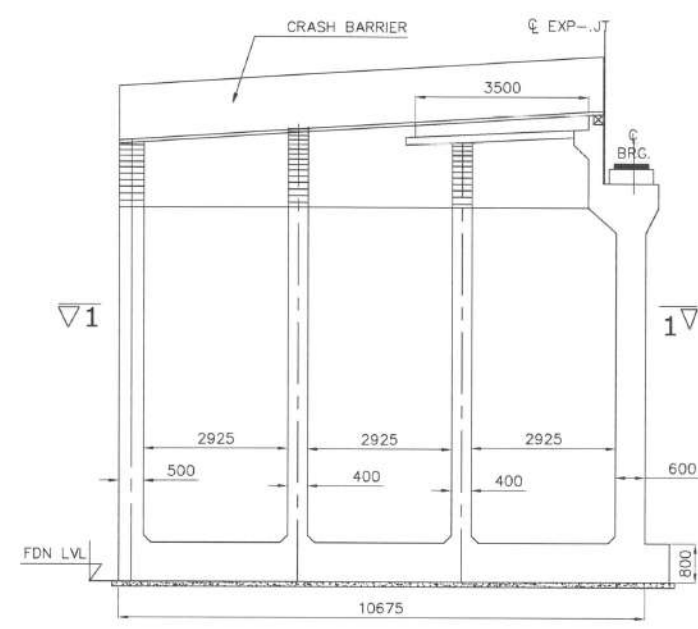
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|---------------------------|-------------------------|
| DATE : JUNE- 2020         | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S.Shukla |
| SCALE:- AS SHOWN          | SHEET:- 01 OF 02        |

**PROJECT :** GENERAL ARRANGEMENT DRAWINGS  
**VIADUCT AT Km 56+960 To Km 57+120 (SPAN 8x20.0m)**

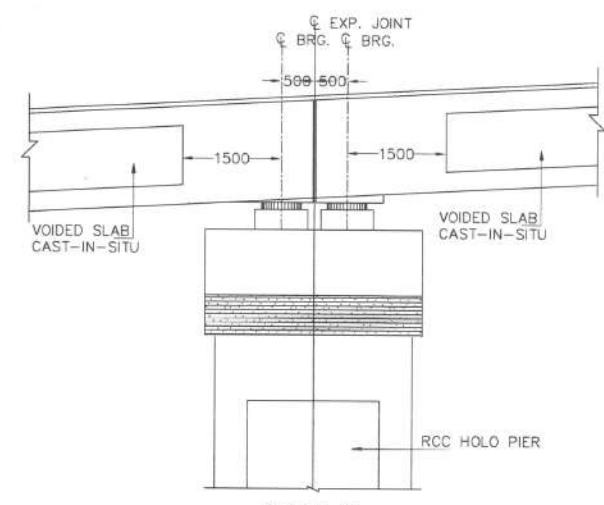
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/57+040/GAD-01



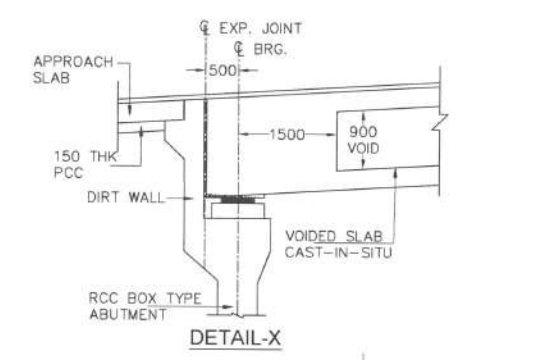
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100



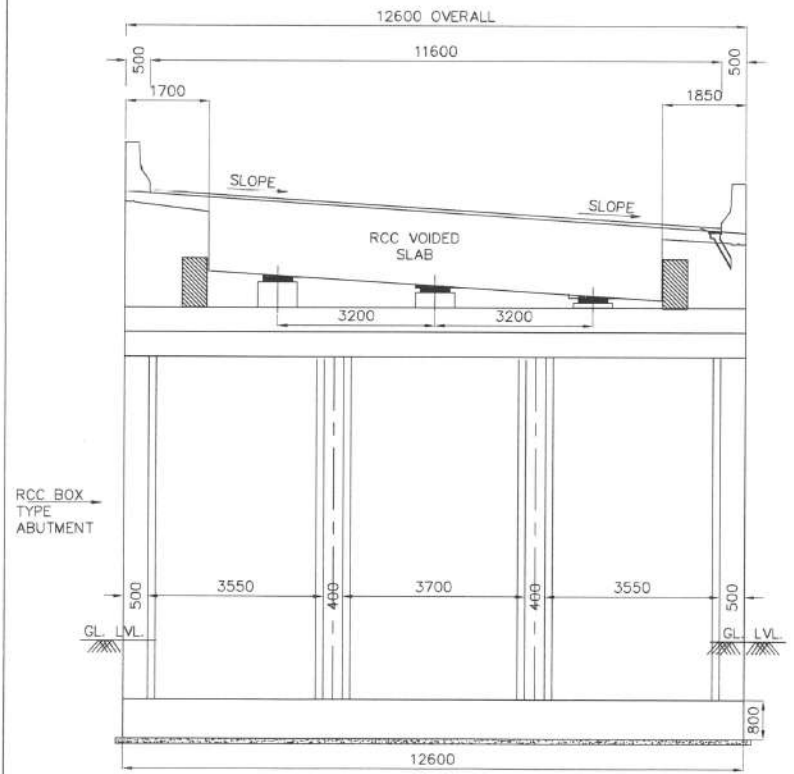
**DETAIL-Y**



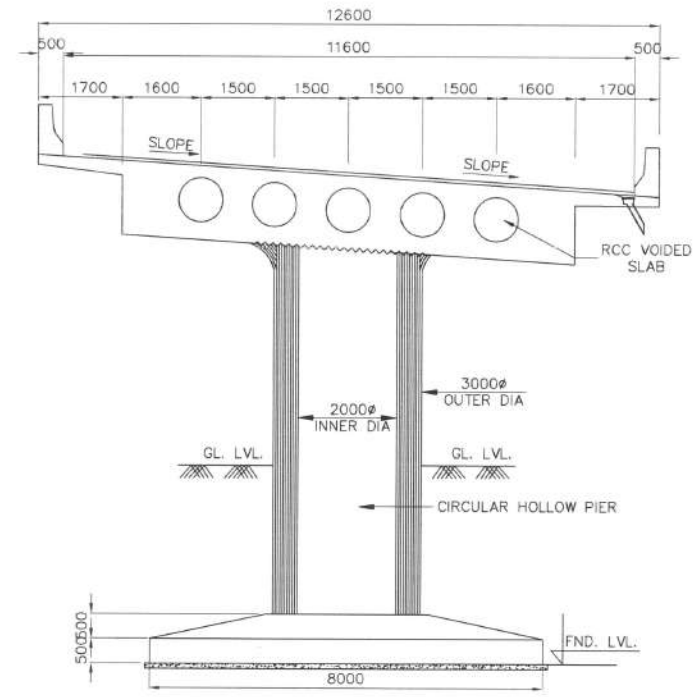
**DETAIL-X**

**NOTES**

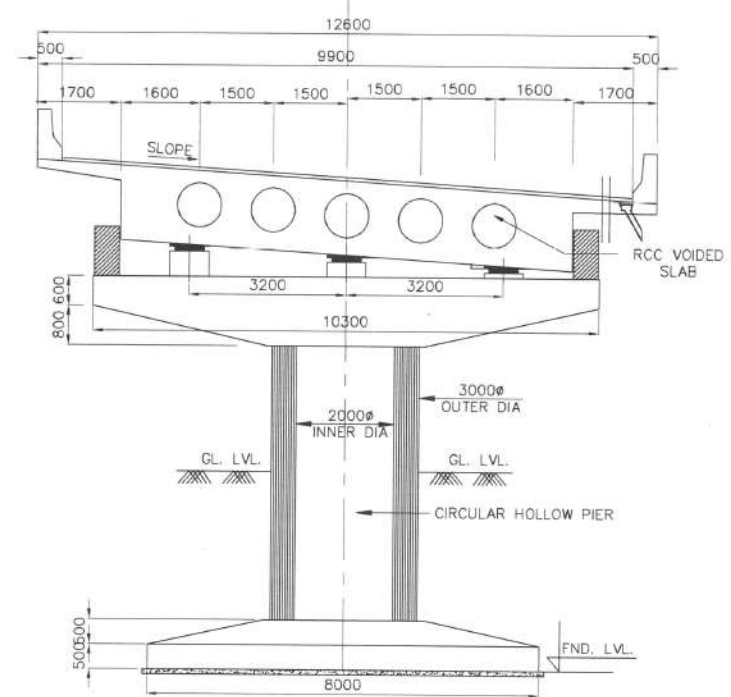
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13. CONSTRUCTION JOINT



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

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| DATE      | REVISION |
|-----------|----------|
| JUNE-2020 | R0       |

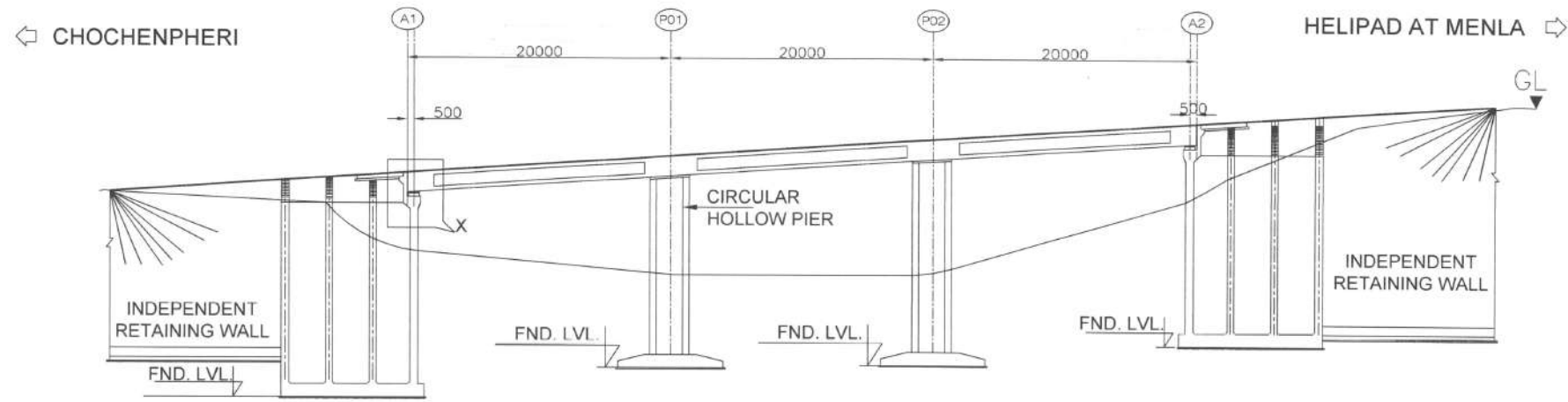
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED BY |
|-------------|----------|------------|-------------|
| R KUMAR     | A SEN    | A REHMAN   | S Shukla    |

SCALE:- AS SHOWN

SHEET- 02 OF 02

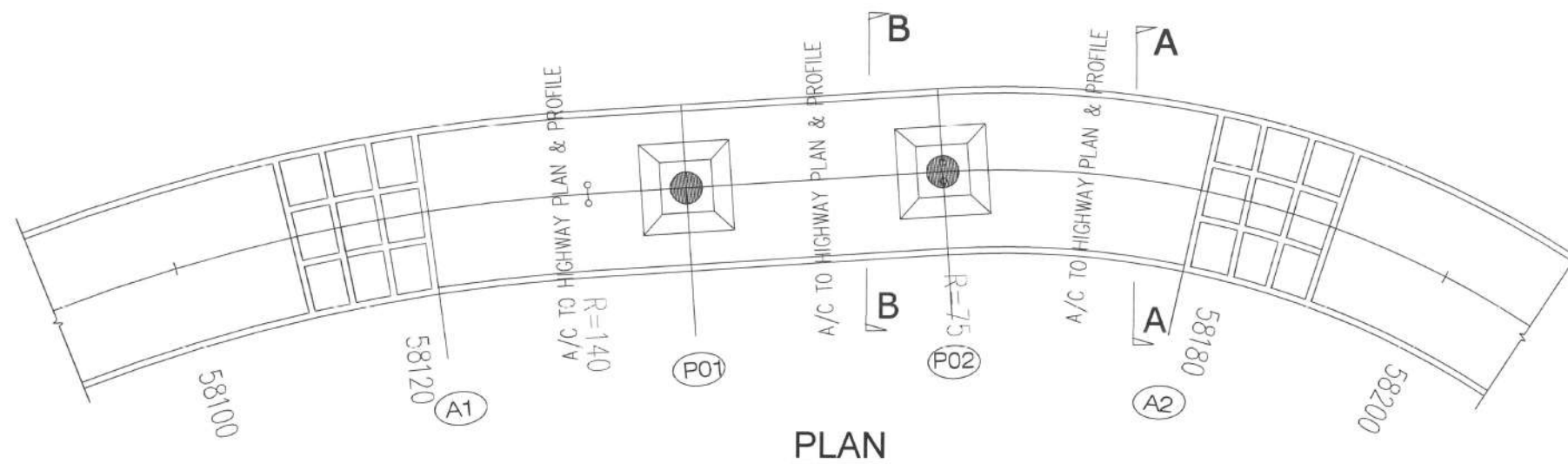
**GENERAL ARRANGEMENT DRAWINGS**  
**VIADUCT AT Km 56+960 To Km 57+120**  
(SPAN 8x20.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/57+040/GAD-01

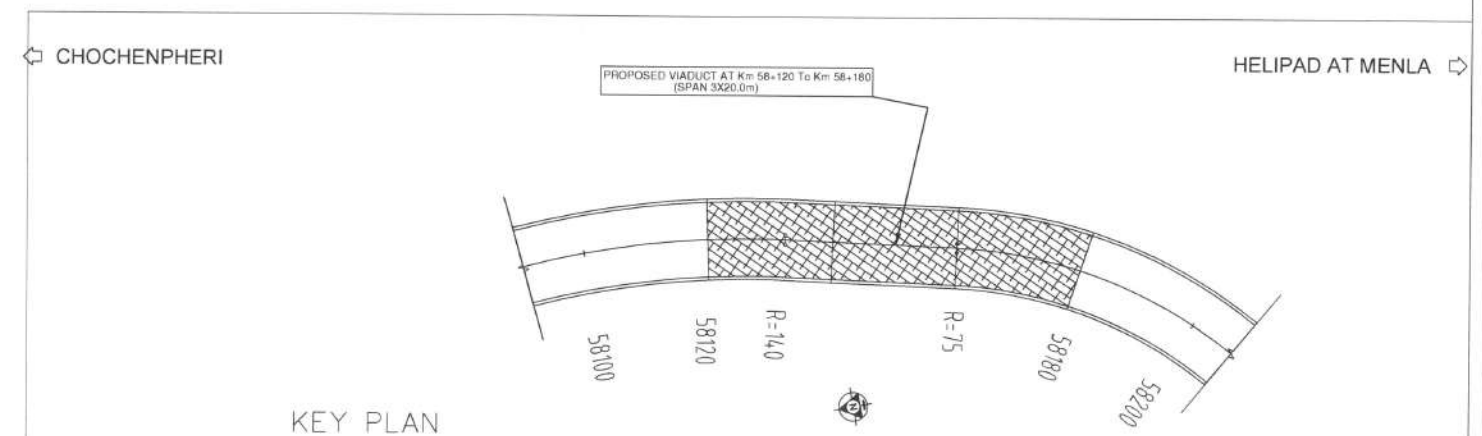


**ELEVATION**

|                 |          |          |          |          |
|-----------------|----------|----------|----------|----------|
| FORMATION LEVEL | 2087.909 | 2088.597 | 2089.321 | 2090.079 |
| EX.GROUND LEVEL | 2081.826 | 2079.490 | 2079.172 | 2084.786 |
| CHAINAGE        | 58+120   | 58+140   | 58+160   | 58+180   |



**PLAN**



**KEY PLAN**

**NOTES**

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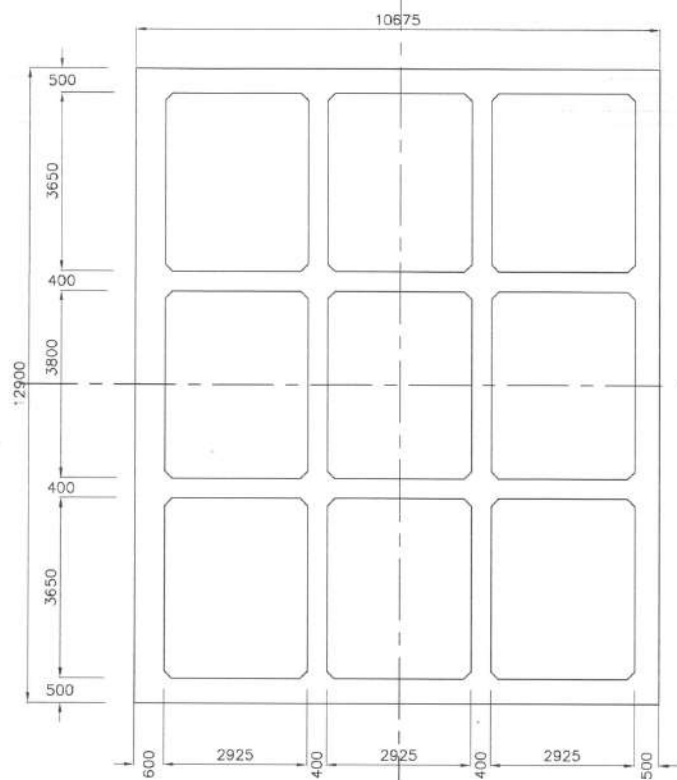
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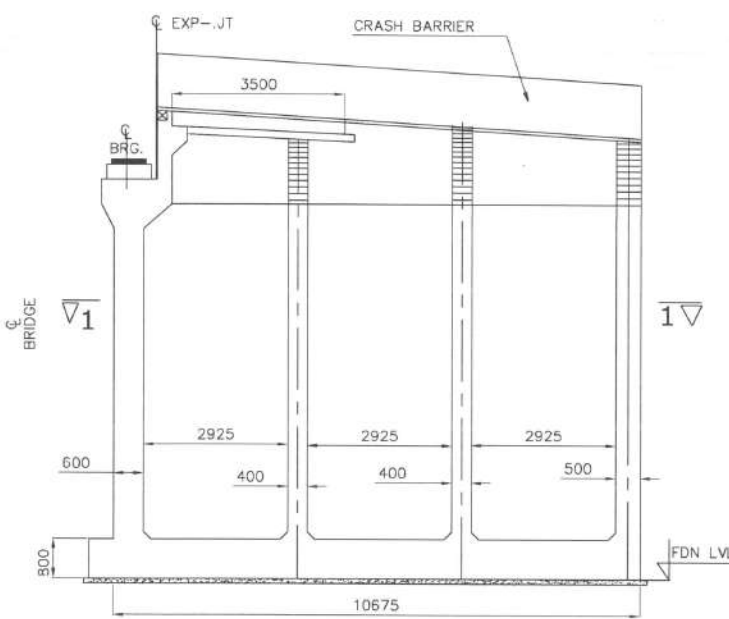
|                  |             |                  |           |
|------------------|-------------|------------------|-----------|
| DATE :           | JUNE - 2020 | REVISION         | R0        |
| DESIGNED BY      | RAVI KUMAR  | CHECKED BY       | A REHMAN  |
| DRAWN BY         | A SEN       | APPROVED BY      | S. Shukla |
| SCALE:- AS SHOWN |             | SHEET:- 01 OF 02 |           |

**GENERAL ARRANGEMENT DRAWINGS**  
OF VIADUCT AT Km 58+120 To Km 58+180  
(SPAN 3x20.0m)

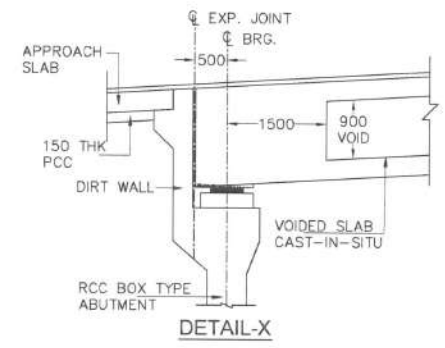
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/58+150/GAD-01



**SECTION 1-1**  
SCALE 1:100



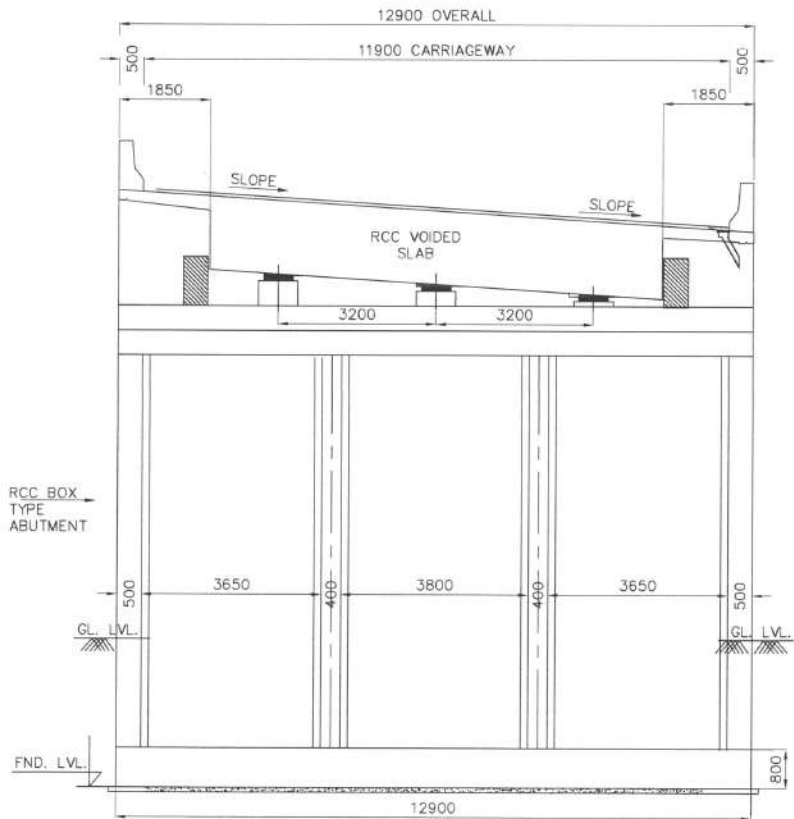
**BOX ABUTMENT**  
SCALE 1:100



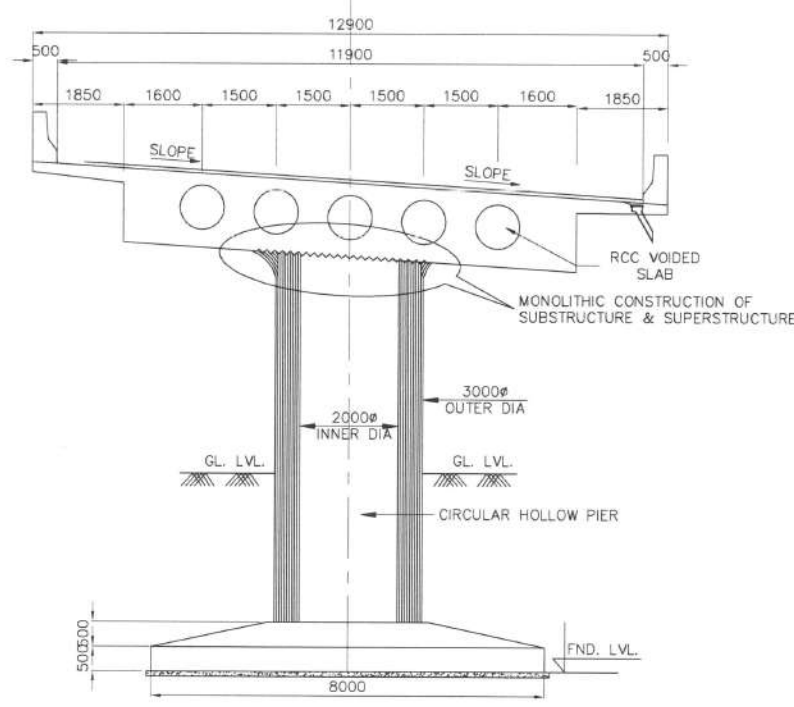
**DETAIL-X**

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  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION ---- M35
  - (iii) RCC RAILING -----M30
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  - (vi) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS: 1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>
13. CONSTRUCTION JOINT



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100

|    |      |                          |          |
|----|------|--------------------------|----------|
| NO | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|    |      |                          |          |
|    |      |                          |          |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

**PROJECT :**  
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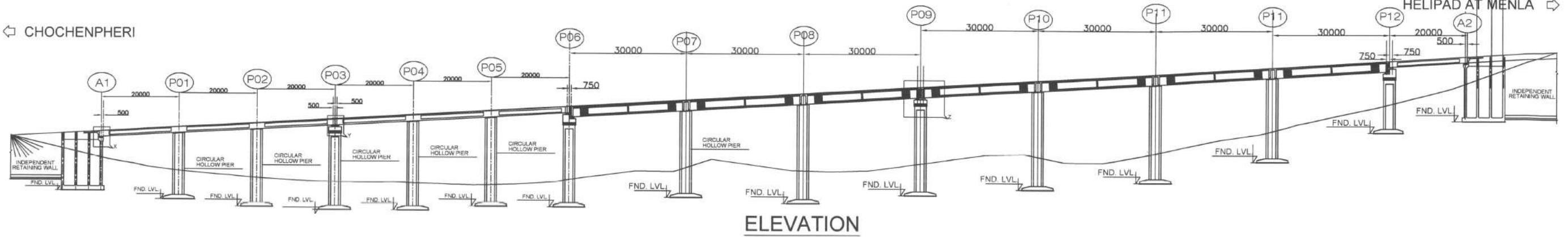
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|------------------|----------|------------------|-------------|
| DATE : JUNE-2020 |          | REVISION R0      |             |
| DESIGNED BY      | DRAWN BY | CHECKED BY       | APPROVED BY |
| Ravi Kumar       | A SEN    | A REHMAN         | S. Shukla   |
| SCALE:- AS SHOWN |          | SHEET:- 02 OF 02 |             |

**GENERAL ARRANGEMENT DRAWINGS**  
OF VIADUCT AT Km 58+120 To Km 58+180  
(SPAN 3x20.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/58+150/GAD-01

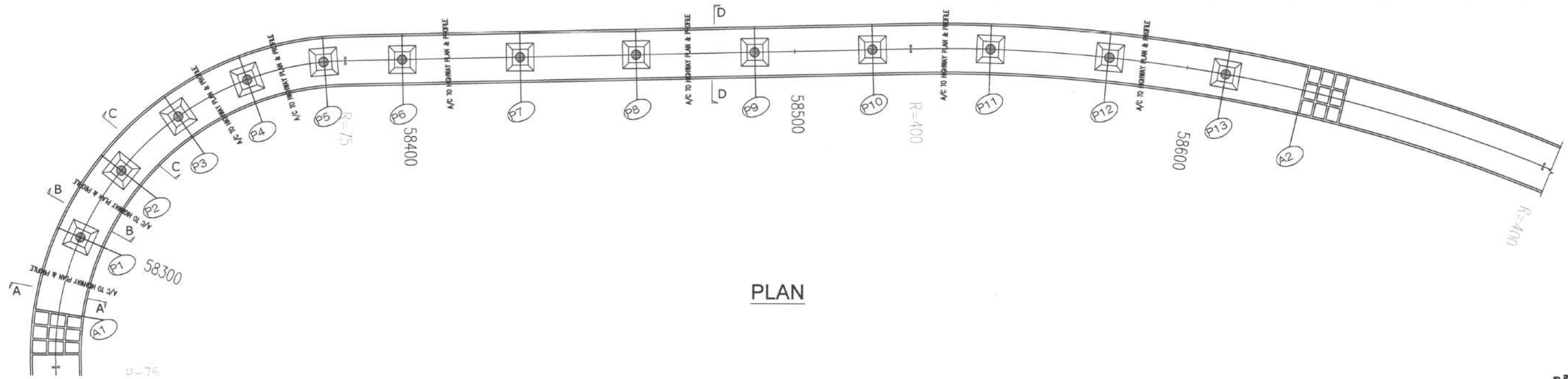
← CHOCHENPHERI

HELIPAD AT MENLA →

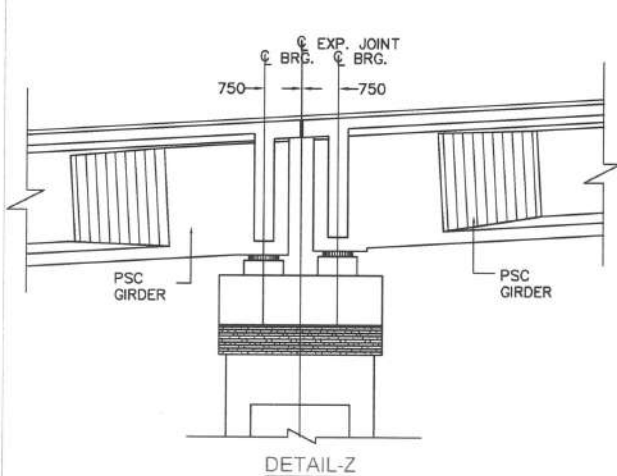


ELEVATION

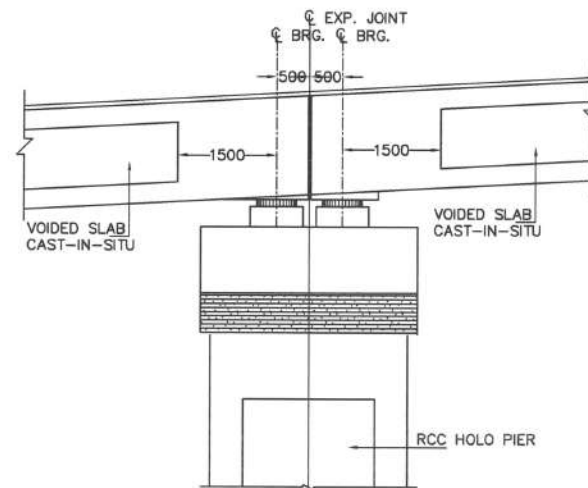
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|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2094.394 | 2095.363 | 2096.366 | 2097.391 | 2098.416 | 2099.441 | 2100.466 | 2102.004 | 2103.541 | 2105.079 | 2106.617 | 2108.154 | 2109.692 | 2111.230 | 2112.255 |
| EX.GROUND LEVEL | 2088.726 | 2081.251 | 2076.563 | 2073.284 | 2071.606 | 2069.427 | 2070.924 | 2075.313 | 2072.981 | 2075.718 | 2076.630 | 2078.649 | 2085.072 | 2096.886 | 2105.388 |
| CHAINAGE        | 58280    | 58300    | 58320    | 58340    | 58360    | 58380    | 58400    | 58430    | 58460    | 58490    | 58520    | 58550    | 58580    | 58610    | 58630    |



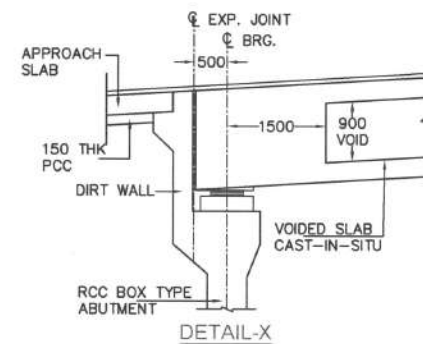
PLAN



DETAIL-Z



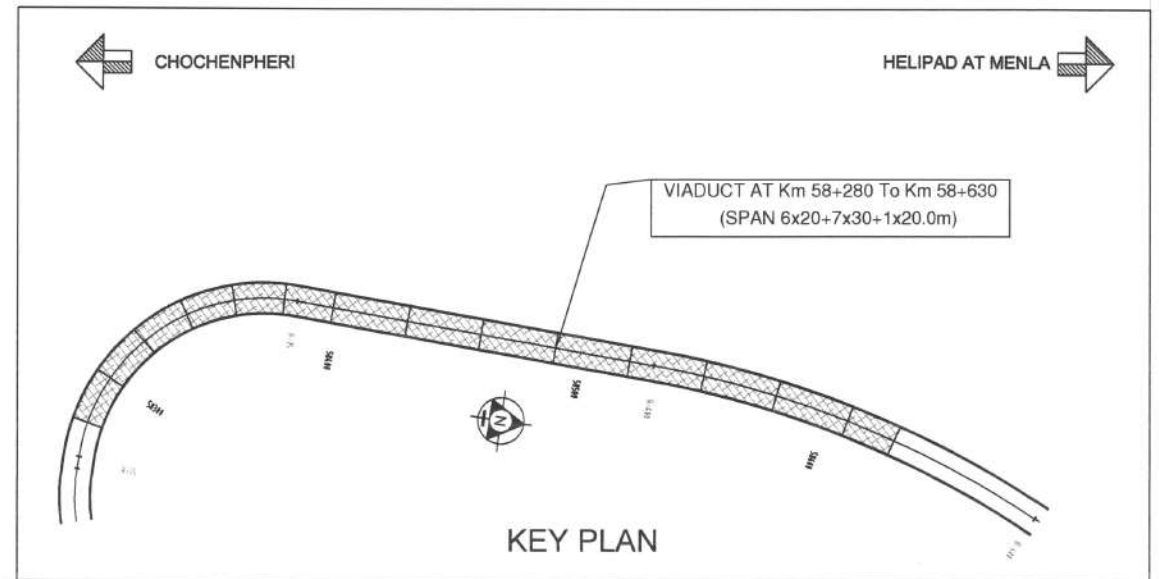
DETAIL-Y



DETAIL-X

Notes

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.



KEY PLAN

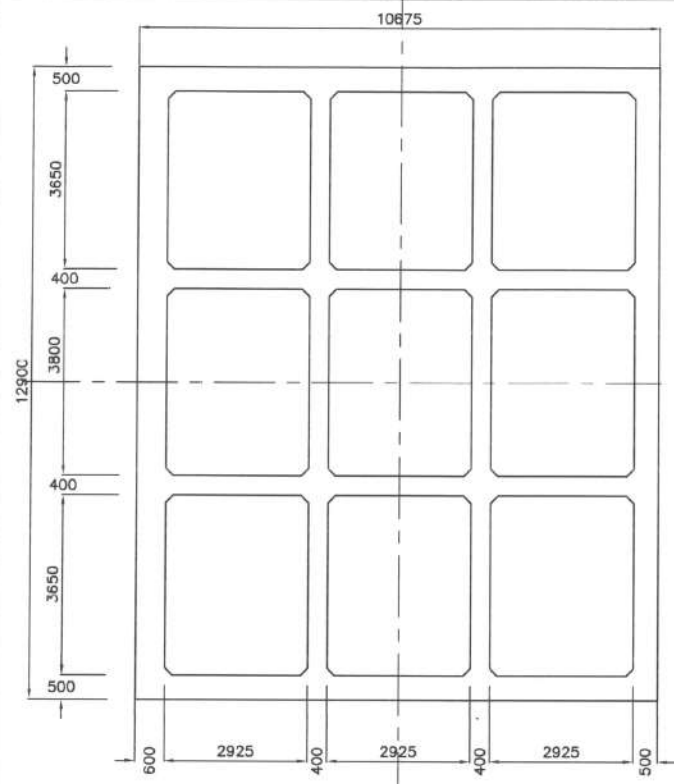
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|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
 (Ministry of Road Transport & Highways)  
 CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.  
 1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
 Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
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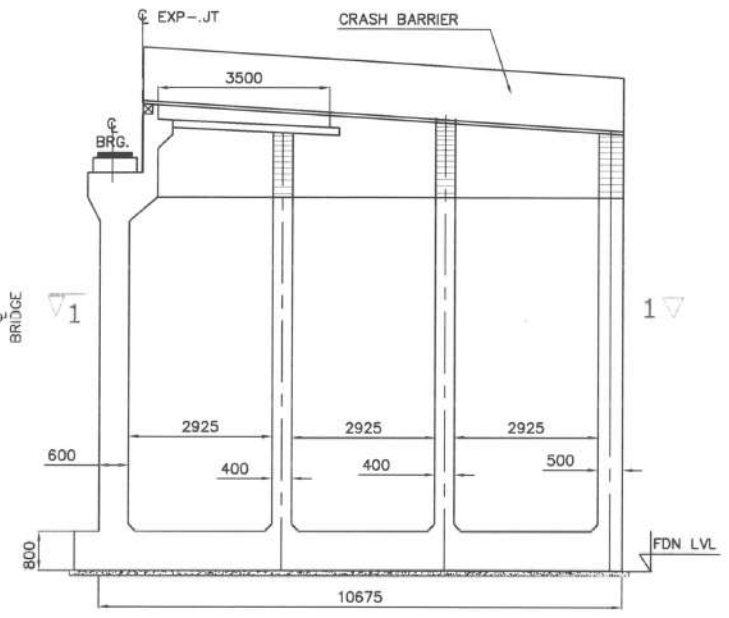
PROJECT : Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim. (Package- III-A)

|                           |                         |
|---------------------------|-------------------------|
| DATE : JUNE- 2020         | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A GEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S.Shukla |
| SCALE - AS SHOWN          | SHEET- 01 OF 02         |

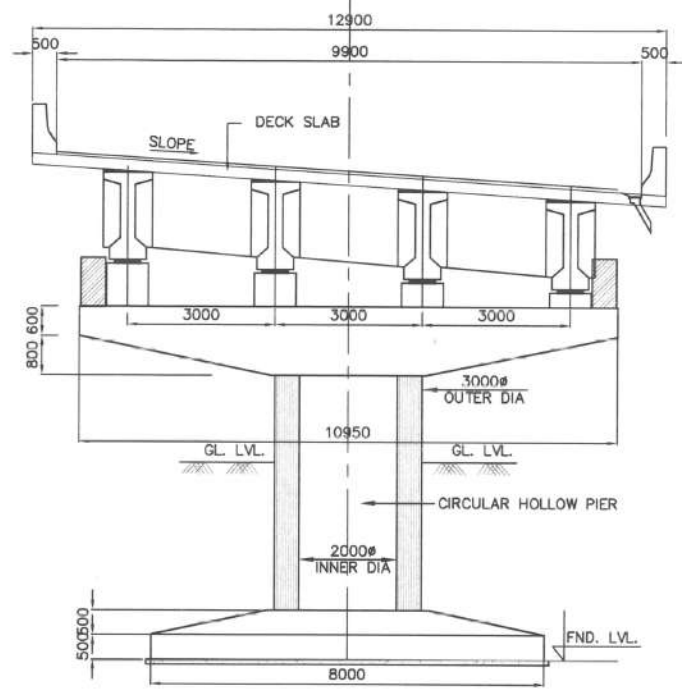
PROJECT : GENERAL ARRANGEMENT DRAWINGS  
 VIADUCT AT Km 58+280 To Km 58-630  
 (SPAN 6x20+7x30+1x20.0m)  
 DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/58+455/GAD-01



SECTION 1-1  
SCALE 1:100



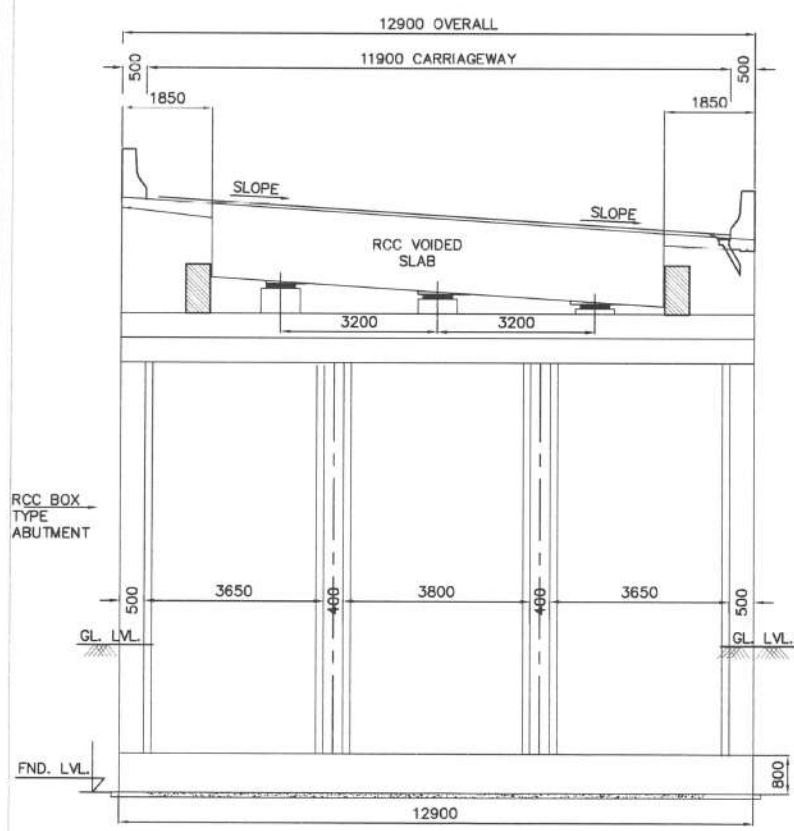
BOX ABUTMENT  
SCALE 1:100



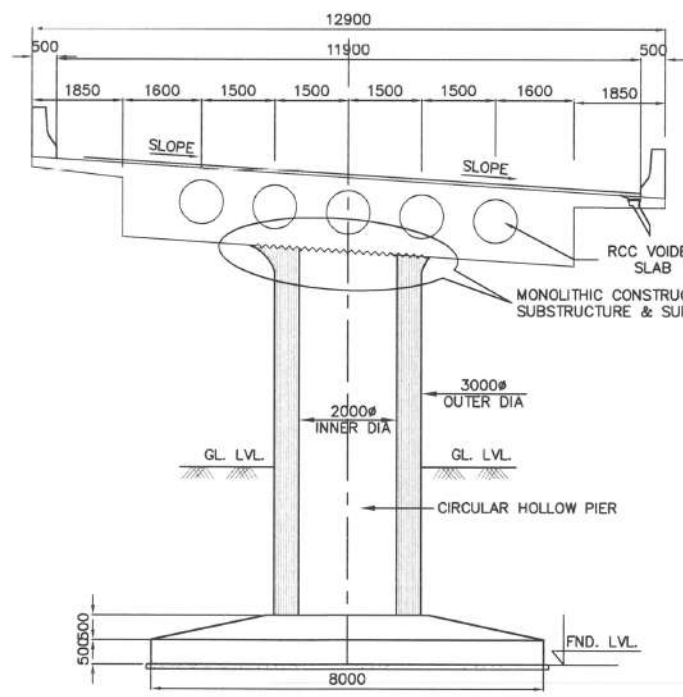
SECTION D-D  
SCALE 1:100

NOTES

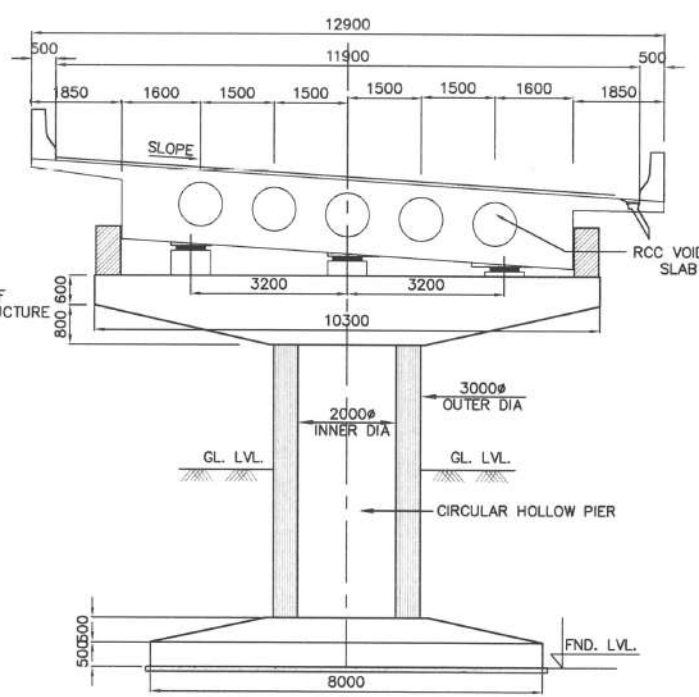
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  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
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- CONSTRUCTION JOINT



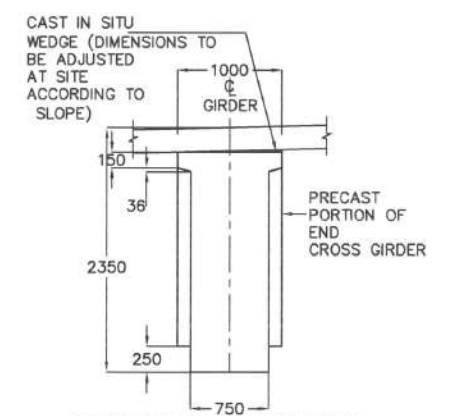
SECTION A-A  
SCALE 1:100



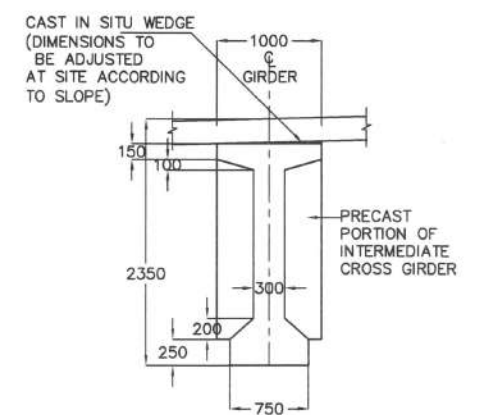
SECTION B-B  
SCALE 1:100



SECTION C-C  
SCALE 1:100



SECTION OF GIRDER AT SUPPORT



SECTION OF GIRDER AT MID

|    |      |                          |          |
|----|------|--------------------------|----------|
| NO | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|    |      |                          |          |
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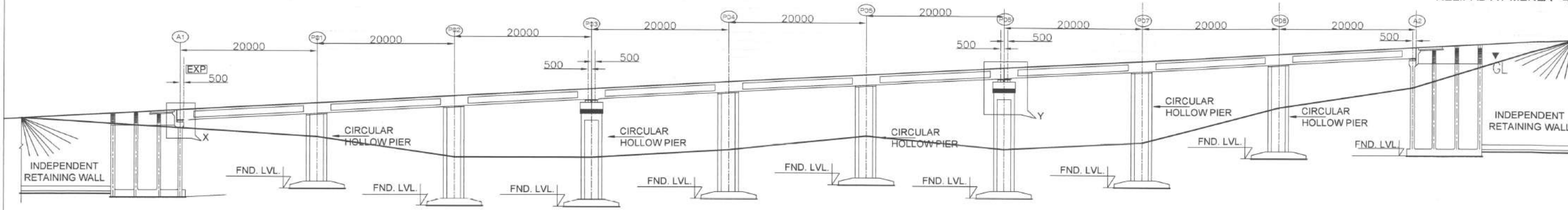
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|---------------------------|-------------------------|
| DATE : JUNE- 2020         | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla |
| SCALE : - AS SHOWN        | SHEET : 02 OF 02        |

GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 58+280 To Km 58+630  
(SPAN 6x20+7x30+1x20.0m)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/58+455/GAD-01

CHOCHENPHERI

HELIPAD AT MENLA

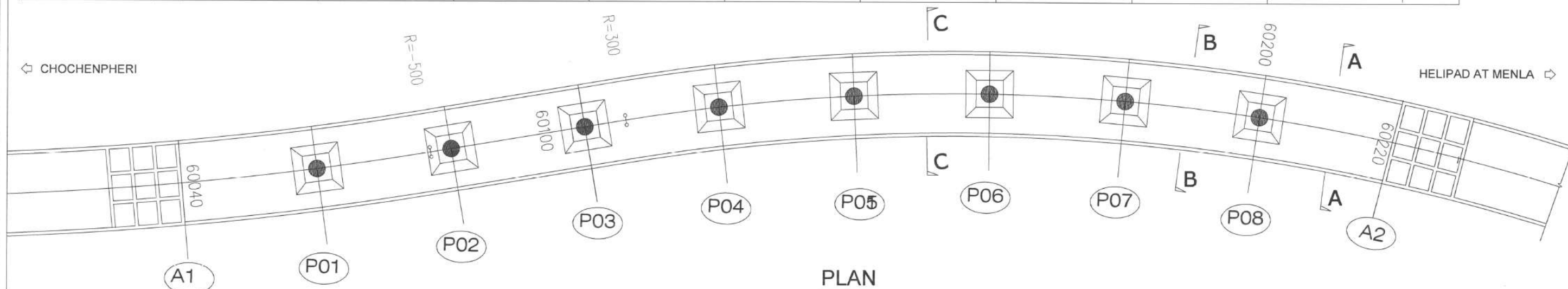


ELEVATION

|                 |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2160.796 | 2161.410 | 2162.025 | 2162.639 | 2163.254 | 2163.868 | 2164.483 | 2165.097 | 2165.712 | 2166.327 |
| EX.GROUND LEVEL | 2158.588 | 2152.837 | 2153.486 | 2152.655 | 2153.421 | 2154.310 | 2153.932 | 2153.491 | 2158.971 | 2160.499 |
| CHAINAGE        | 60040    | 60060    | 60080    | 60100    | 60120    | 60140    | 60160    | 60180    | 60200    | 60220    |

CHOCHENPHERI

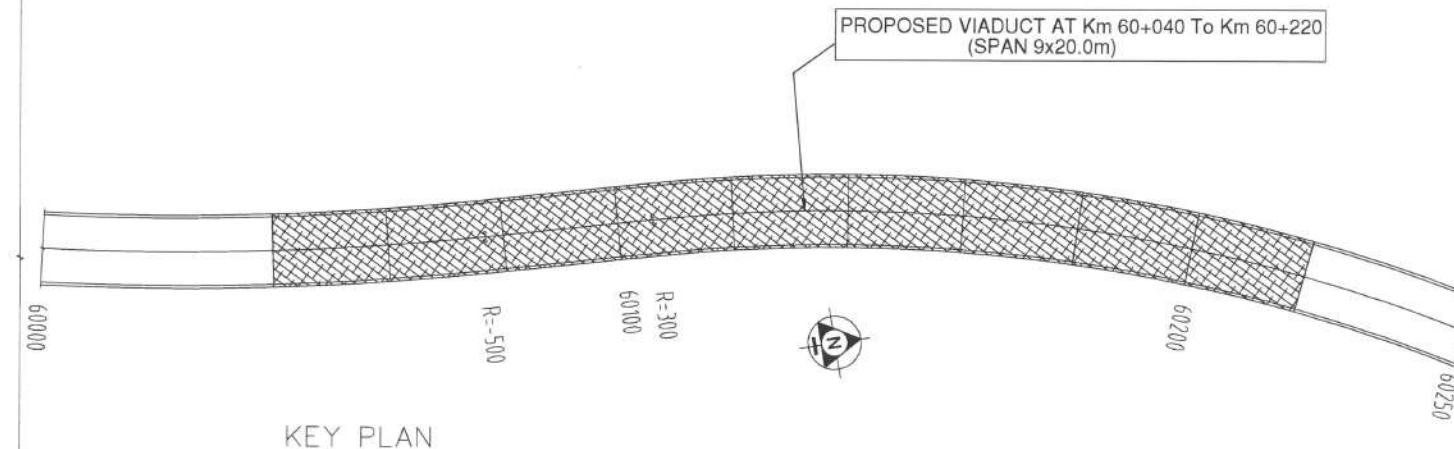
HELIPAD AT MENLA



PLAN

CHOCHENPHERI

HELIPAD AT MENLA



KEY PLAN

NOTES

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|     |           |                               |          |
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| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

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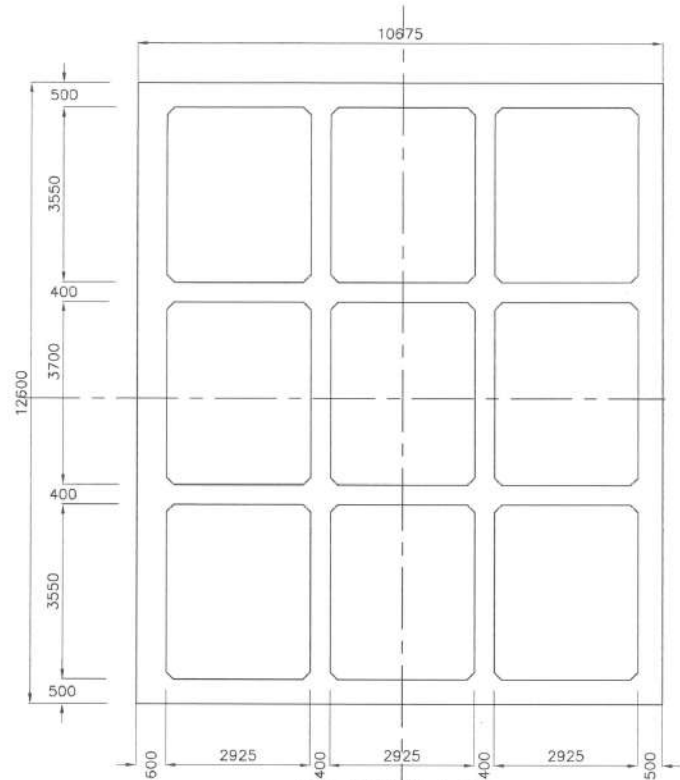
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|------------------------|----------------------|
| DATE : JUNE- 2020      | REVISION R0          |
| DESIGNED BY RAVI KUMAR | DRAWN BY A SEN       |
| CHECKED BY A REHMAN    | APPROVED BY S Shukla |
| SCALE:- AS SHOWN       | SHEET:- 01 OF 02     |

GENERAL ARRANGEMENT DRAWINGS  
PROPOSED VIADUCT AT Km 60+040 To Km 60+220 (SPAN 9x20.0m)

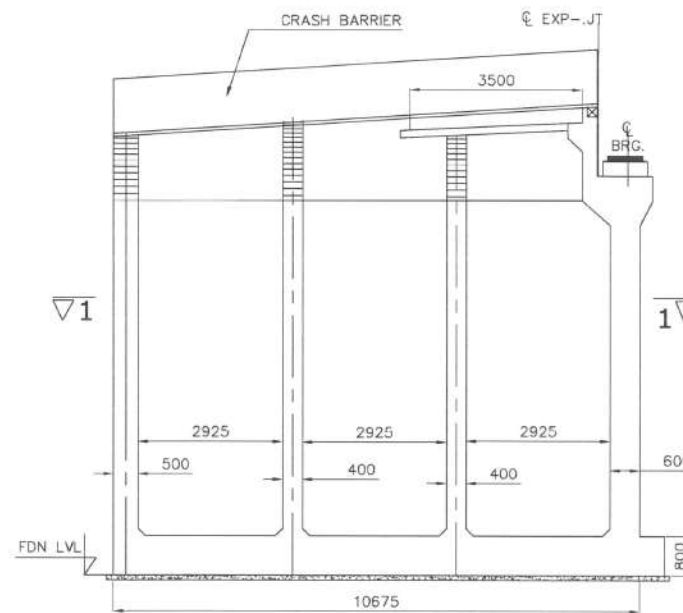
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/60+130/GAD-01

**NOTES**

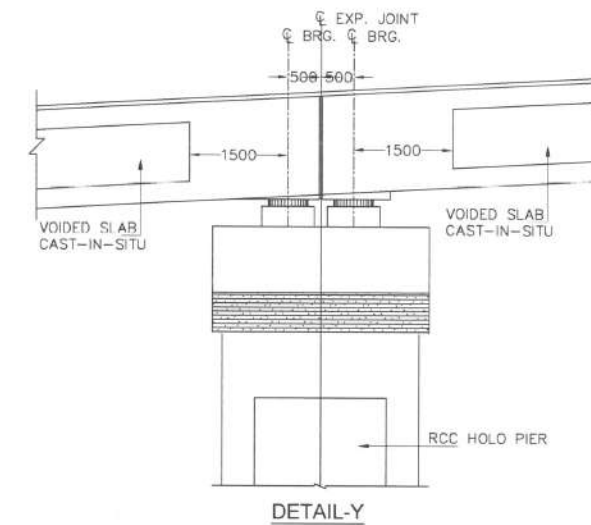
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- CONSTRUCTION JOINT



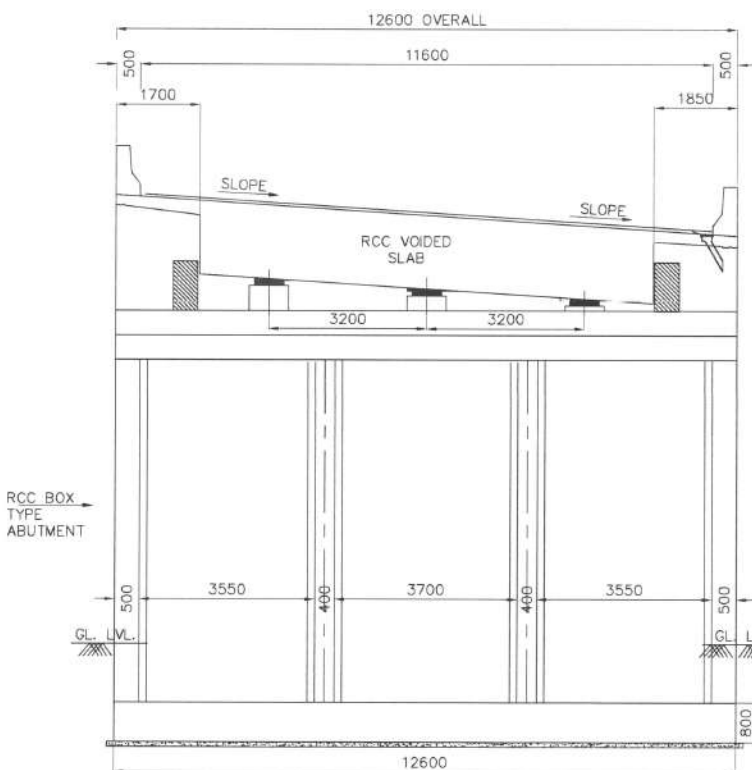
**SECTION 1-1**  
SCALE 1:100



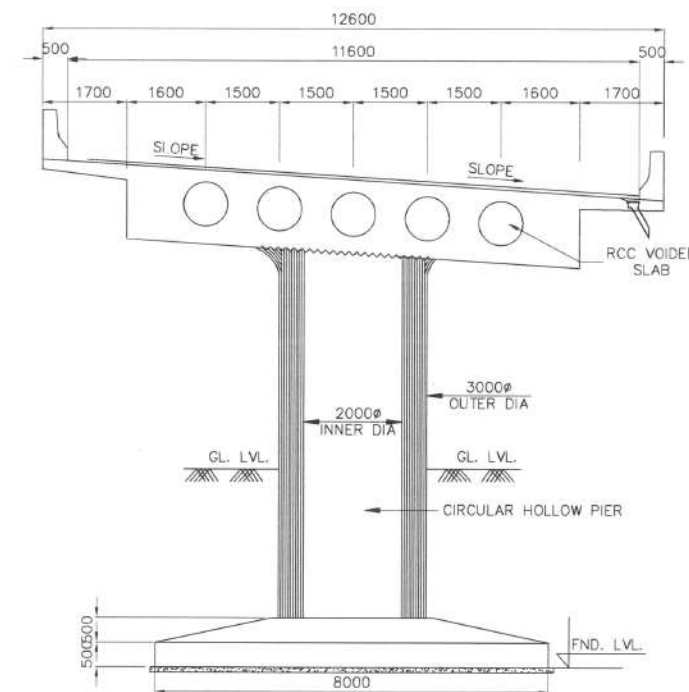
**BOX ABUTMENT**  
SCALE 1:100



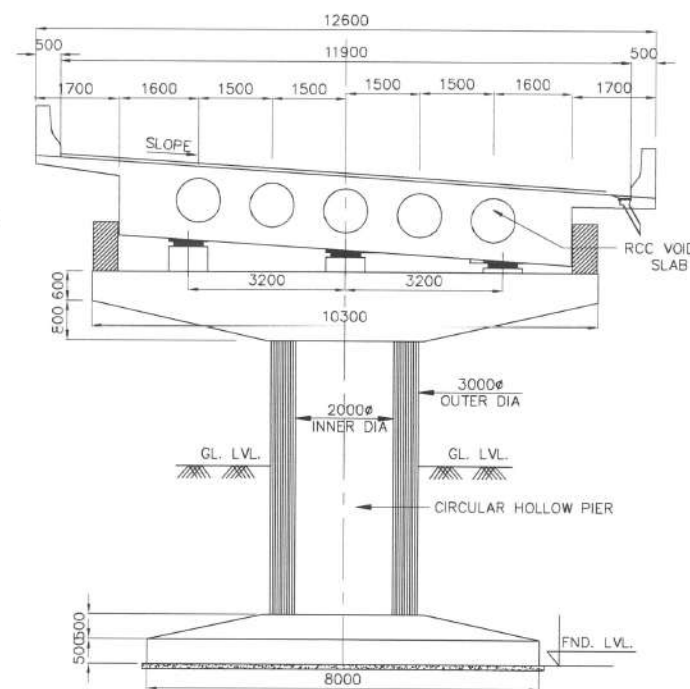
**DETAIL-Y**



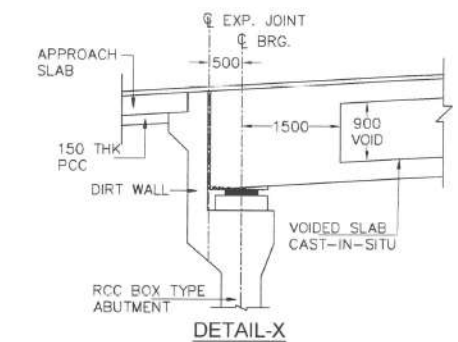
**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100



**DETAIL-X**

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

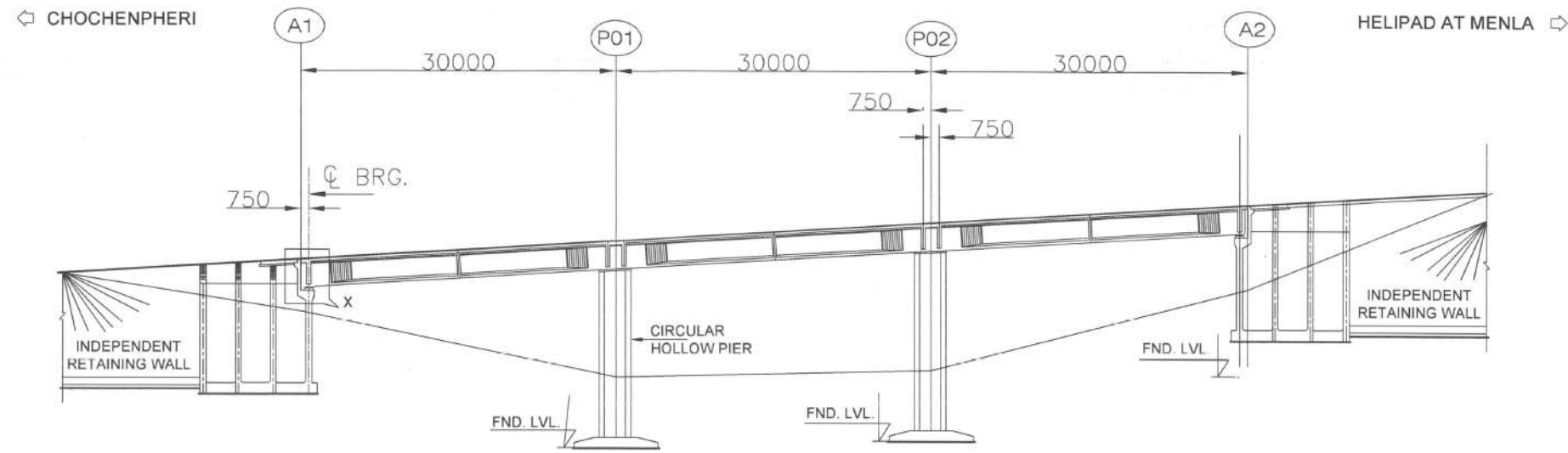
**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
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|                                  |                                |
|----------------------------------|--------------------------------|
| <b>DATE :</b> JUNE-2020          | <b>REVISION</b> R0             |
| <b>DESIGNED BY</b><br>RAVI KUMAR | <b>DRAWN BY</b><br>A SEN       |
| <b>CHECKED BY</b><br>A REHMAN    | <b>APPROVED BY</b><br>S Shukla |
| <b>SCALE:-</b> AS SHOWN          | <b>SHEET:-</b> 02 OF 02        |

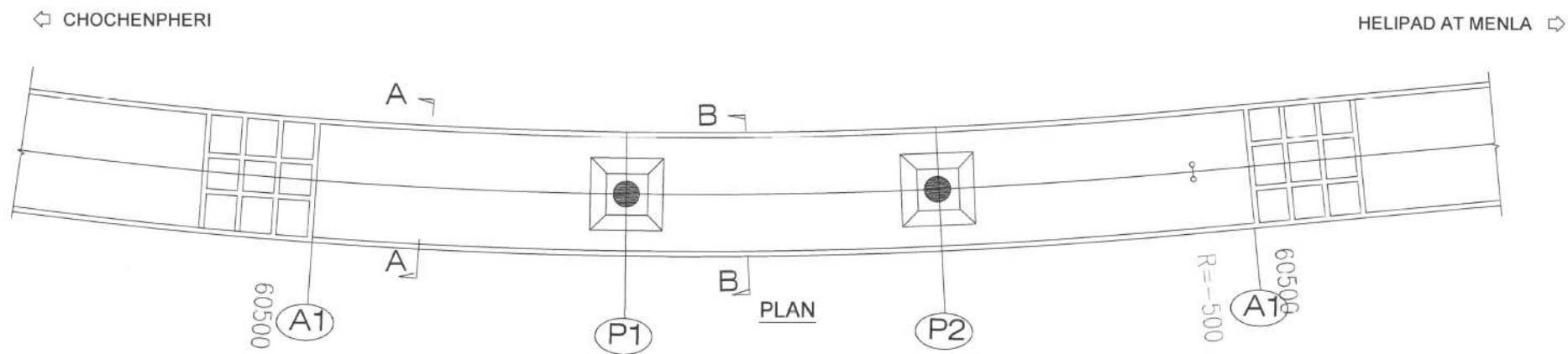
**GENERAL ARRANGEMENT DRAWINGS**  
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**DWG. NO. :-** SAICPL-SESPL/NHIDC/WB-SKM/60+130/GAD-01

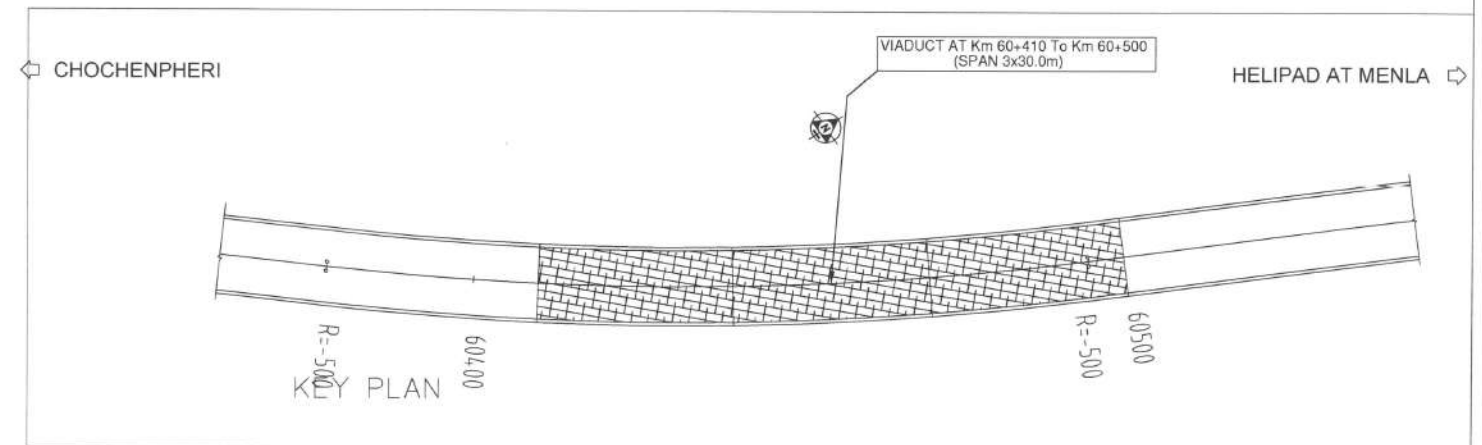


ELEVATION

|                 |          |          |          |          |
|-----------------|----------|----------|----------|----------|
| FORMATION LEVEL | 2172.164 | 2173.086 | 2174.008 | 2174.930 |
| EX.GROUND LEVEL | 2167.367 | 2160.301 | 2160.394 | 2166.624 |
| CHAINAGE        | 60410    | 60440    | 60470    | 60500    |



PLAN



KEY PLAN

- NOTES
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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|     |      |                          |          |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
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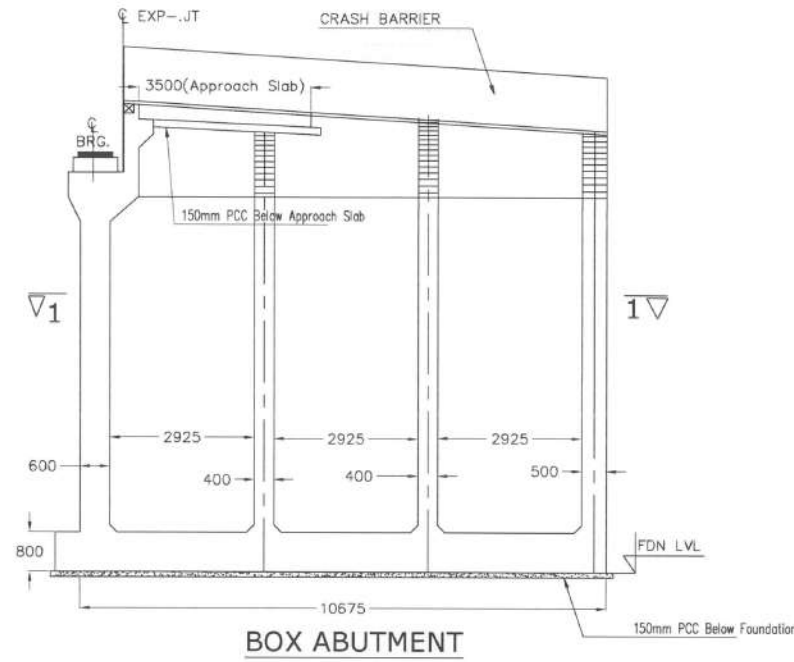
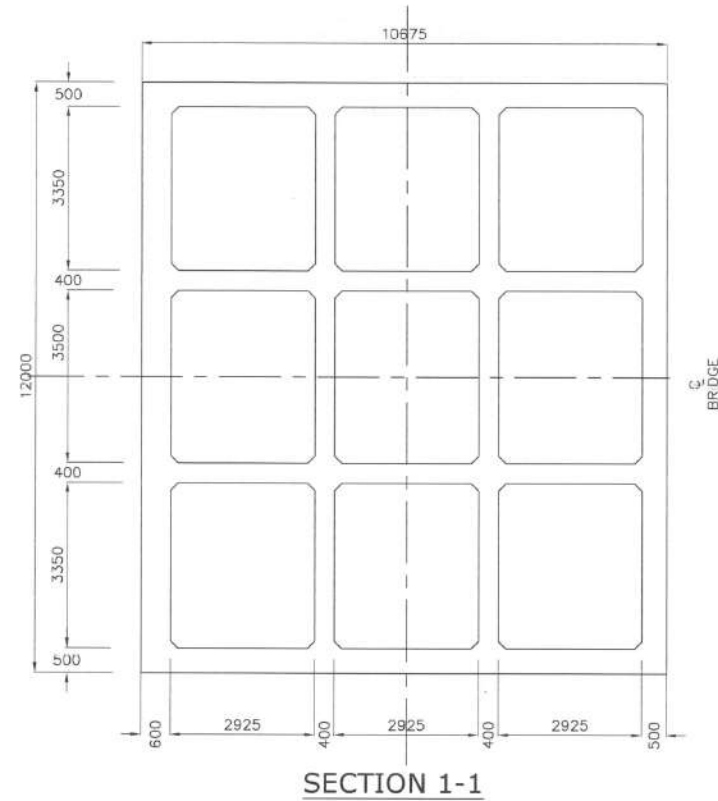
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| DATE : JUNE-2020          | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S.Shukla |
| SCALE - AS SHOWN          | SHEET- 01 OF 02         |

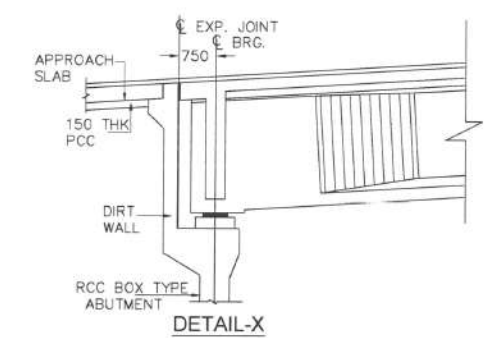
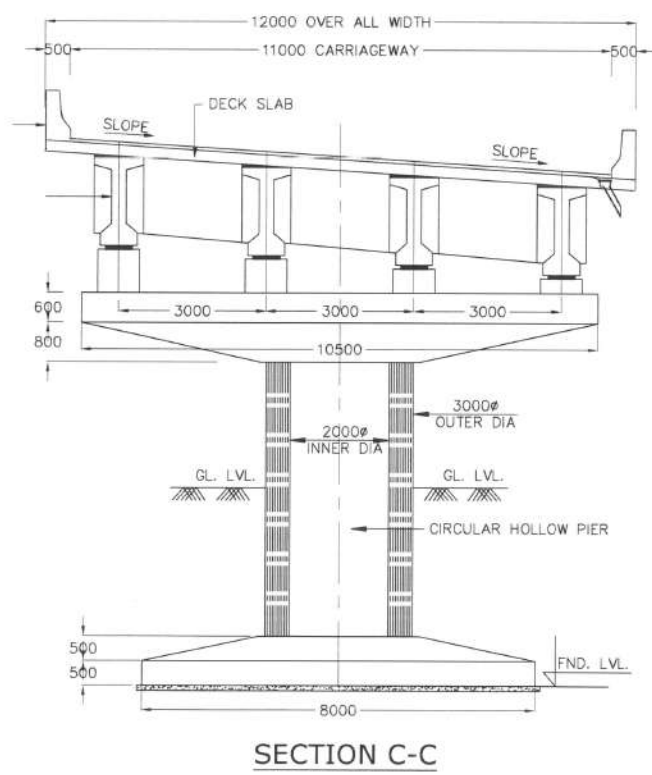
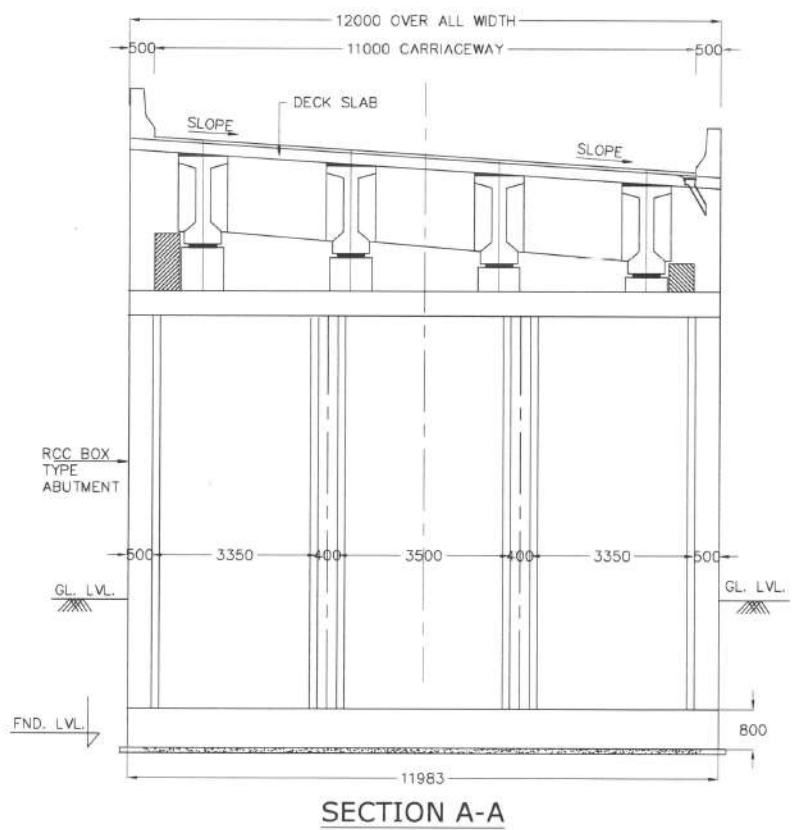
GENERAL ARRANGEMENT DRAWINGS  
PROPOSED VIADUCT AT Km 60+410 To Km 60+500 (SPAN 3x30.0m)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/60+455/GAD-01



**NOTES**

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  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION --- M35
  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
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- CONSTRUCTION JOINT ~~~~~



|     |           |                               |          |
|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
 (Ministry of Road Transport & Highways)

CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.  
 1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
 Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
 Phone No- 0120-6148000 Fax-0120-6148090  
 Email: info@sainfra.com

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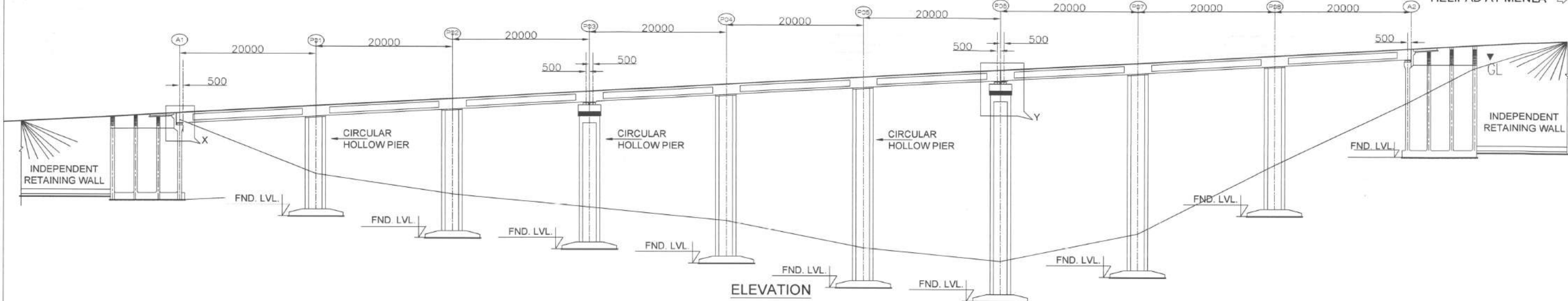
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|---------------------------|--------------------------|
| DATE : JUNE-2020          | REVISION R0              |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN        |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S. Shukla |
| SCALE:- AS SHOWN          | SHEET:- 02 OF 02         |

GENERAL ARRANGEMENT DRAWINGS  
 PROPOSED VIADUCT AT Km 60+410 To Km 60+500 (SPAN 3x30.0m)

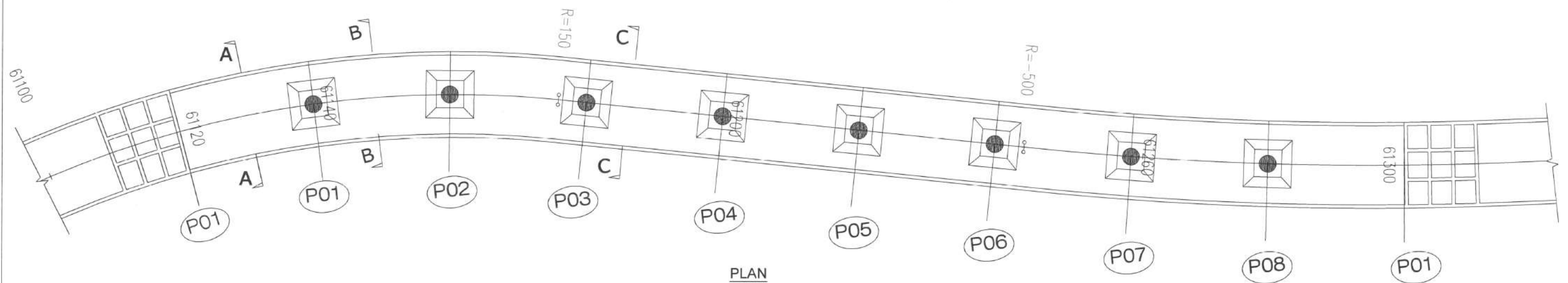
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/60+455/GAD-01

CHOCHENPHERI

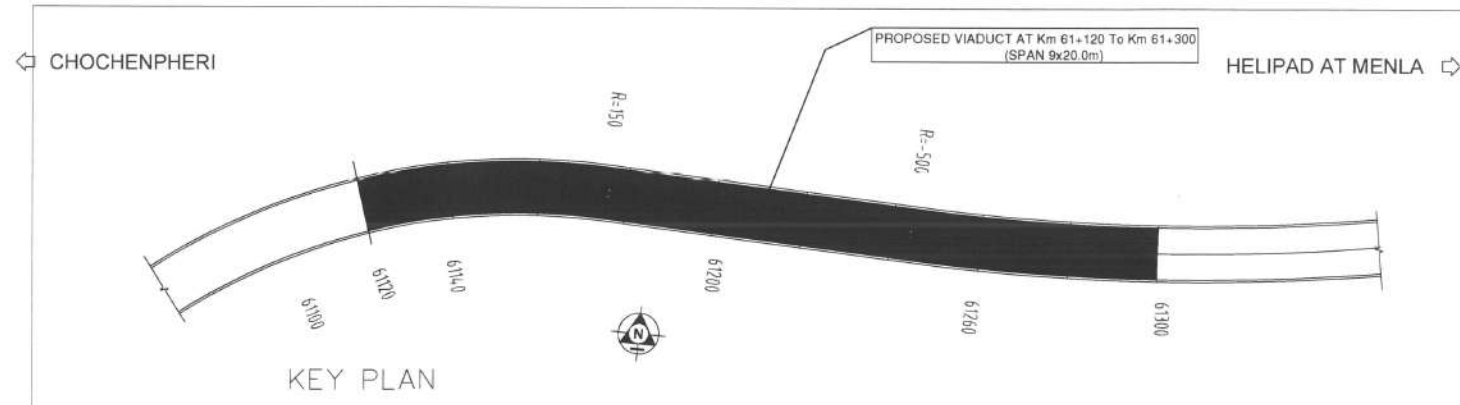
HELIPAD AT MENLA



|                 |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2193.980 | 2194.594 | 2195.209 | 2195.823 | 2196.438 | 2197.053 | 2197.667 | 2198.282 | 2198.896 | 2199.511 |
| EX.GROUND LEVEL | 2190.350 | 2184.607 | 2181.398 | 2178.915 | 2176.220 | 2172.578 | 2169.304 | 2173.429 | 2182.612 | 2191.888 |
| CHAINAGE        | 61120    | 61140    | 61160    | 61180    | 61200    | 61220    | 61240    | 61260    | 61280    | 61300    |



PLAN



KEY PLAN

- NOTES**
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|     |      |                          |          |
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| REV | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|     |      |                          |          |

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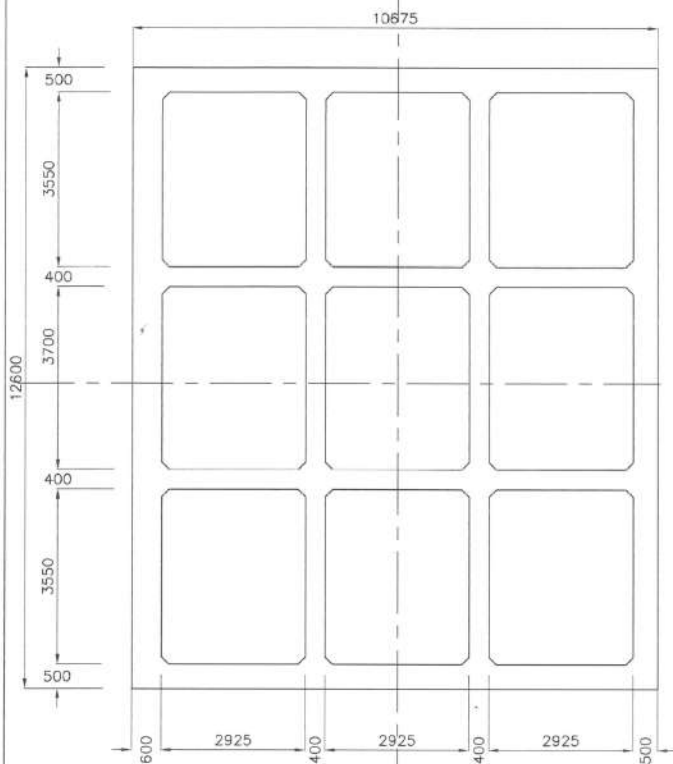
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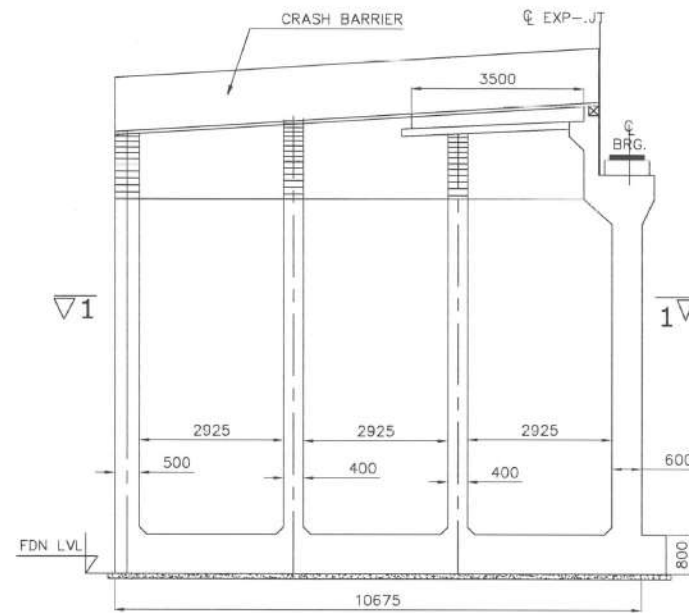
|                           |                         |
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| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla |
| SCALE :- AS SHOWN         | SHEET:- 01 OF 02        |

**GENERAL ARRANGEMENT DRAWINGS**  
PROPOSED VIADUCT AT Km 61+120 To Km 61+300  
(SPAN 9x20.0m)

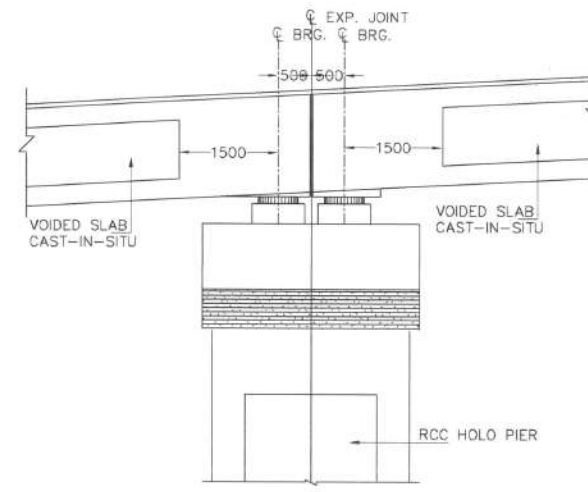
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/61+210/GAD-01



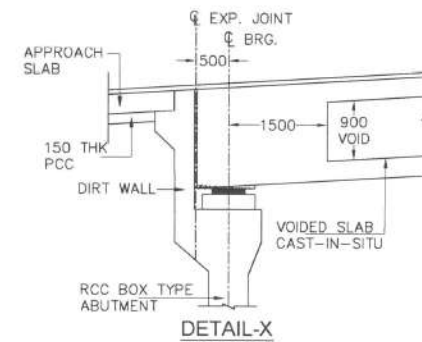
**SECTION 1-1**  
SCALE 1:100



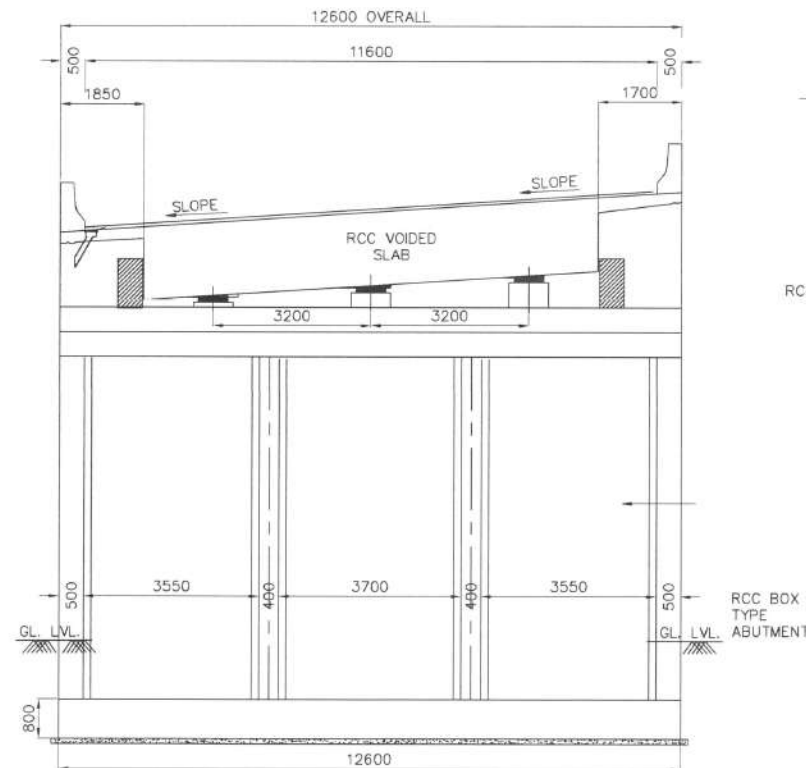
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SCALE 1:100



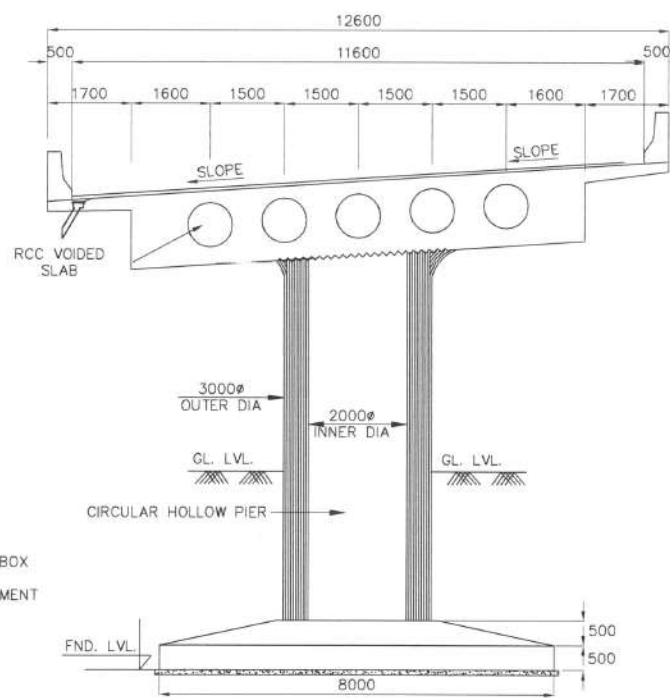
**DETAIL-Y**



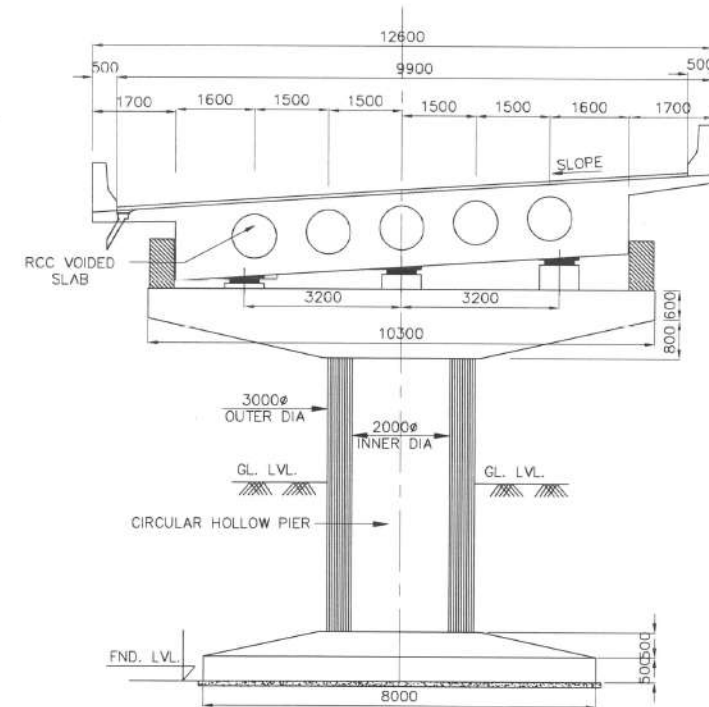
**DETAIL-X**



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100

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| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

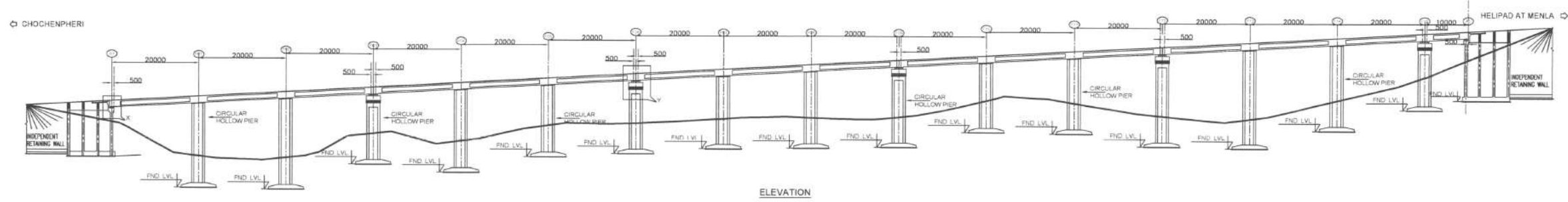
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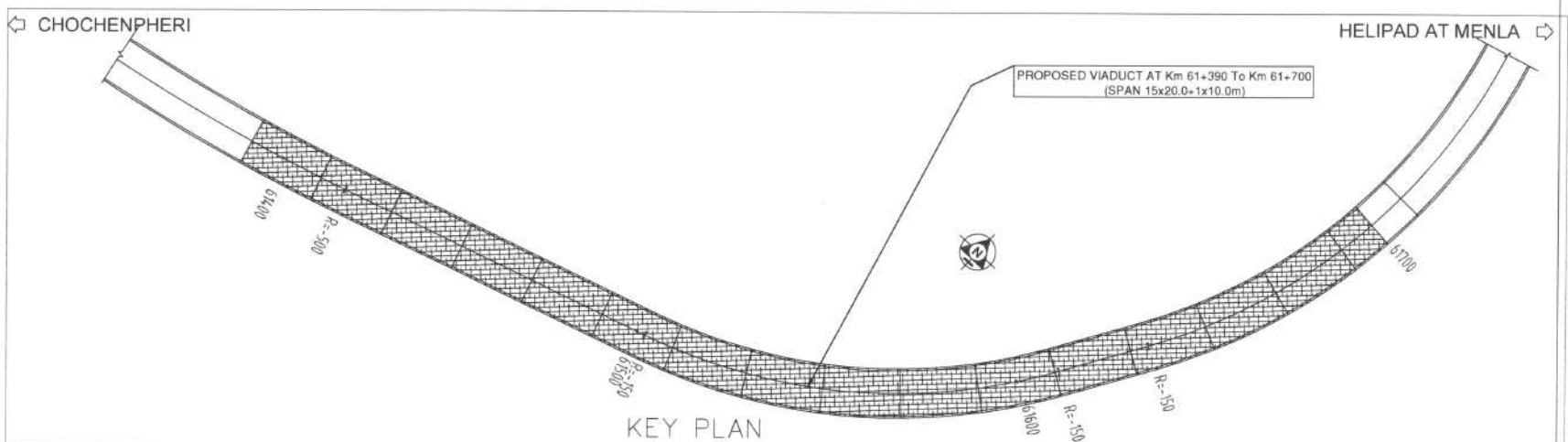
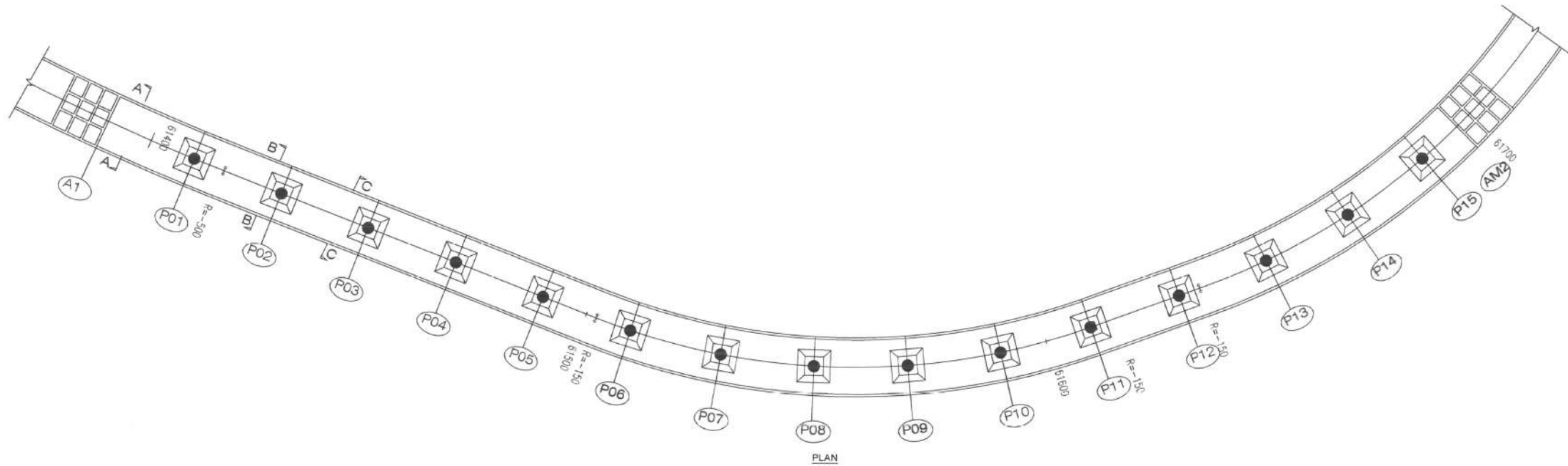
| DATE :           | REVISION | RO               |
|------------------|----------|------------------|
| JUNE-2020        |          |                  |
| DESIGNED BY      | DRAWN BY | CHECKED BY       |
| RAVI KUMAR       | A SEN    | A.REHMAN         |
| APPROVED BY      |          | S.Shukla         |
| SCALE:- AS SHOWN |          | SHEET:- 02 OF 02 |

**GENERAL ARRANGEMENT DRAWINGS**  
PROPOSED VIADUCT AT Km 61+120 To Km 61+300  
(SPAN 9x20.0m)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/61+210/GAD-01



|                 |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2202.276 | 2202.890 | 2203.505 | 2204.119 | 2204.734 | 2205.349 | 2205.963 | 2206.578 | 2207.192 | 2207.807 | 2208.421 | 2209.036 | 2209.650 | 2210.265 | 2210.879 | 2211.494 | 2211.801 |
| EX.GROUND LEVEL | 2197.913 | 2189.053 | 2188.304 | 2193.401 | 2191.274 | 2194.396 | 2194.461 | 2195.047 | 2194.832 | 2194.564 | 2197.940 | 2196.942 | 2193.604 | 2192.561 | 2196.374 | 2201.212 | 2205.006 |
| CHAINAGE        | 61390    | 61410    | 61430    | 61450    | 61470    | 61490    | 61510    | 61530    | 61550    | 61570    | 61590    | 61610    | 61630    | 61650    | 61670    | 61690    | 61700    |



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|     |      |                          |          |
|-----|------|--------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|     |      |                          |          |
|     |      |                          |          |

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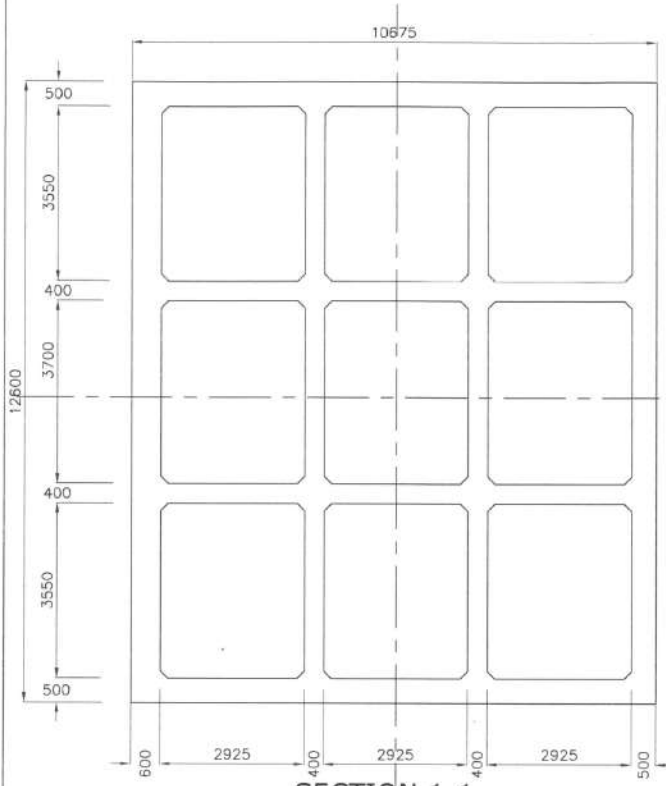
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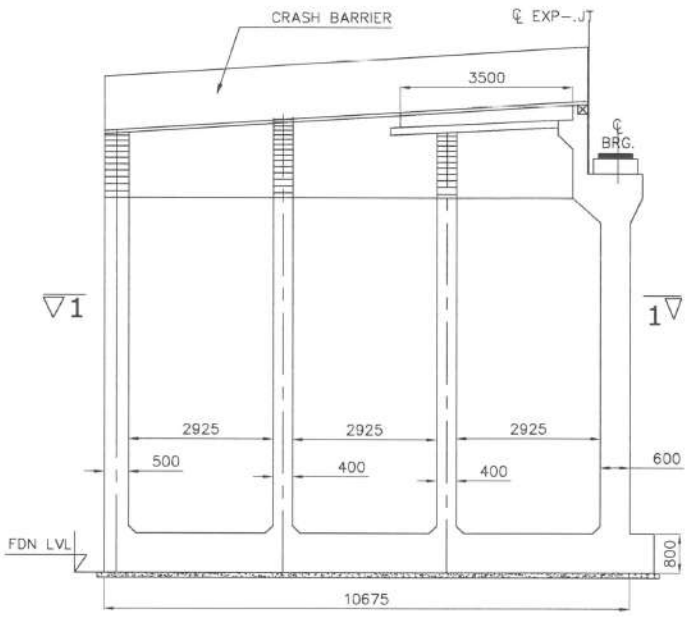
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|------------------|------------|------------------|----------|
| DATE :           | JUNE-2020  | REVISION         | R0       |
| DESIGNED BY      | RAVI KUMAR | CHECKED BY       | AREHMAN  |
| DRAWN BY         | A SEN      | APPROVED BY      | S.Shukla |
| SCALE:- AS SHOWN |            | SHEET:- 01 OF 02 |          |

**GENERAL ARRANGEMENT DRAWINGS**  
PROPOSED VIADUCT AT Km 61+390 To Km 61+700  
(SPAN 15x20.0+1x10.0m)

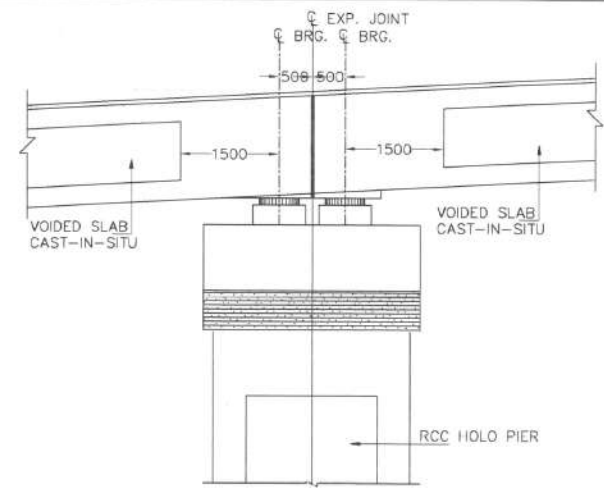
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/61+545/GAD-01



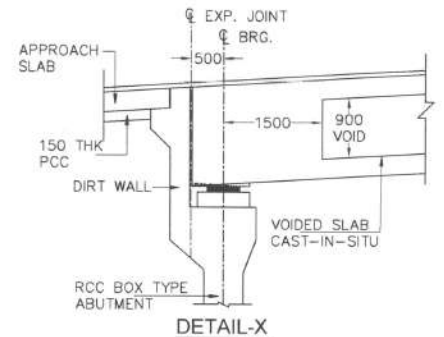
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100



**DETAIL-Y**



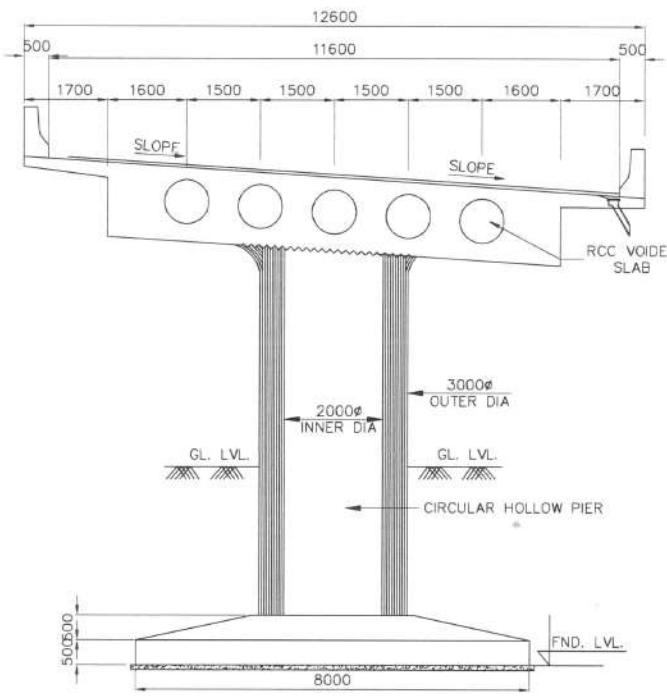
**DETAIL-X**

**NOTES**

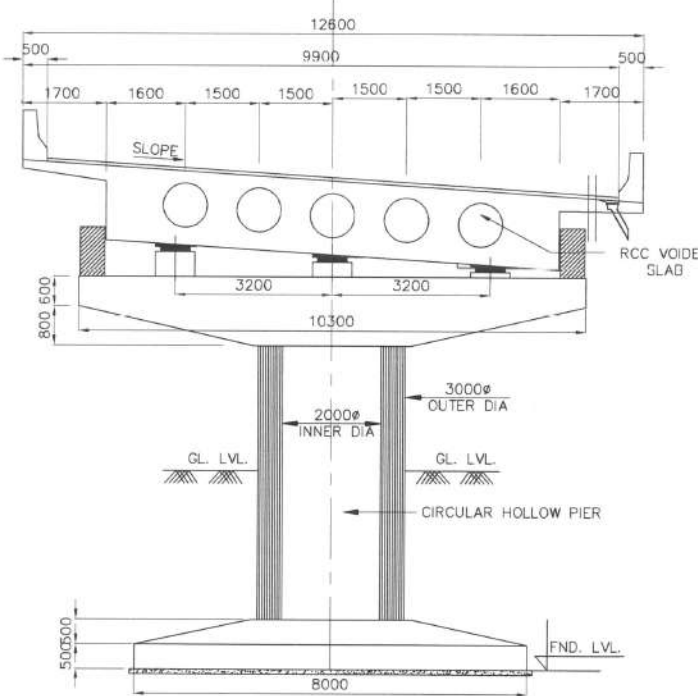
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- CONSTRUCTION JOINT



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SECTION NEAR FIX & FREE JOINT  
SCALE 1:100



**SECTION C-C**  
SECTION NEAR EXPANSION JOINT  
SCALE 1:100

|     |           |                               |          |
|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
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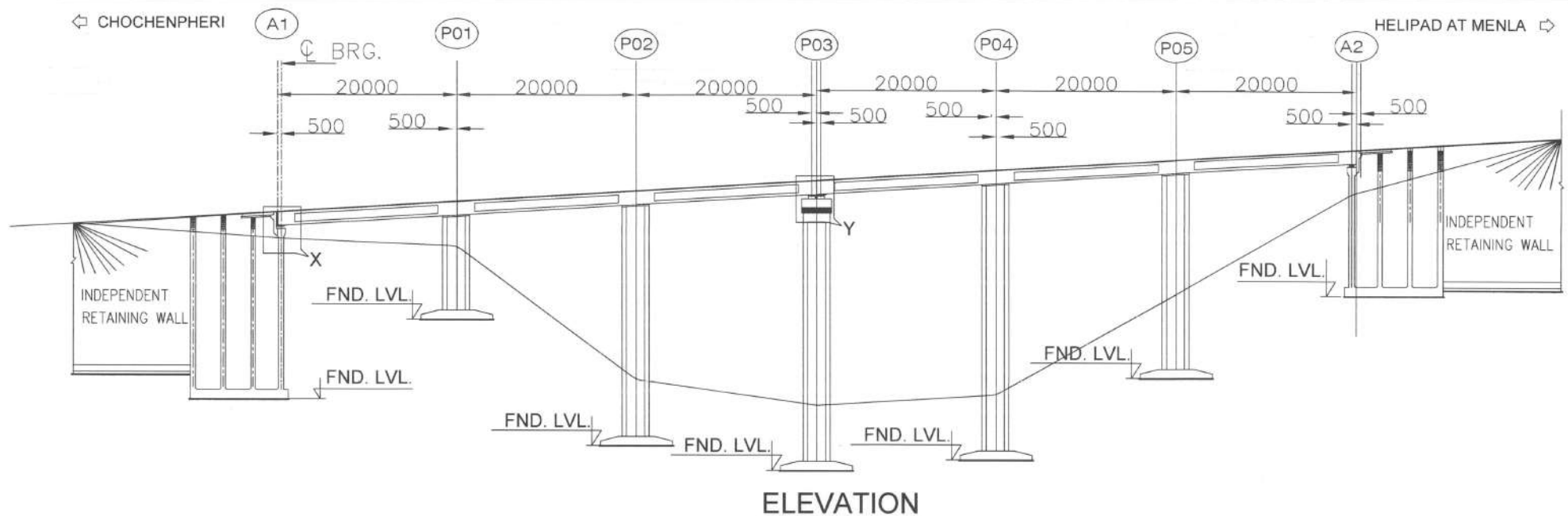
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|             |            |             |           |
|-------------|------------|-------------|-----------|
| DATE :      | JUNE-2020  | REVISION    | R0        |
| DESIGNED BY | RAVI KUMAR | DRAWN BY    | A SEN     |
| CHECKED BY  | A REHMAN   | APPROVED BY | S. Shukla |
| SCALE:-     | AS SHOWN   | SHEET:-     | 02 OF 02  |

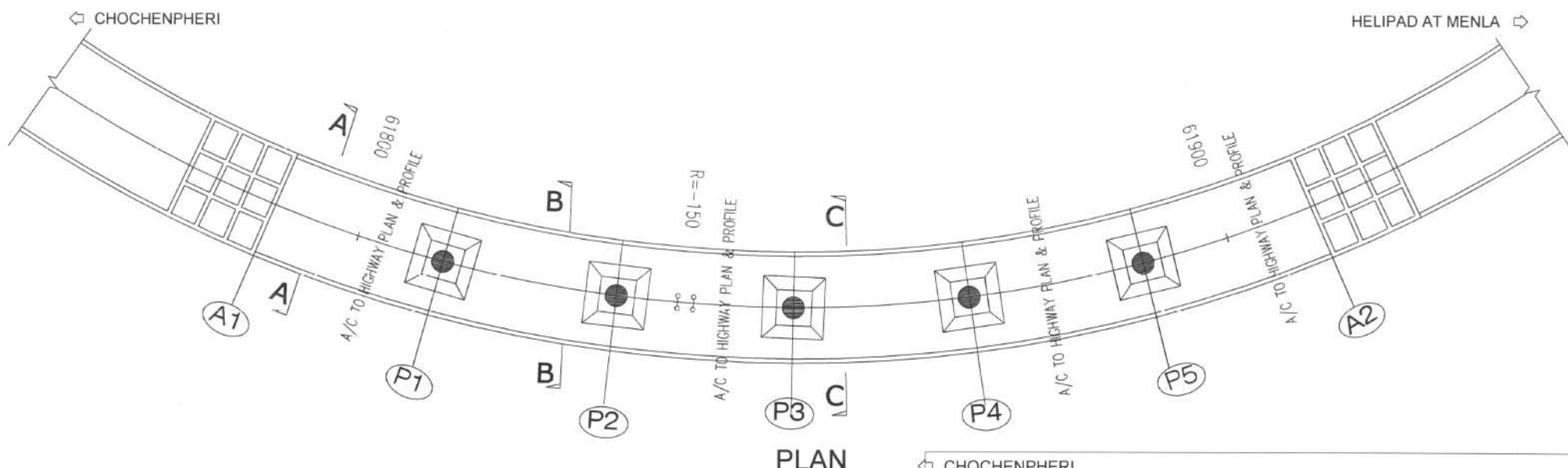
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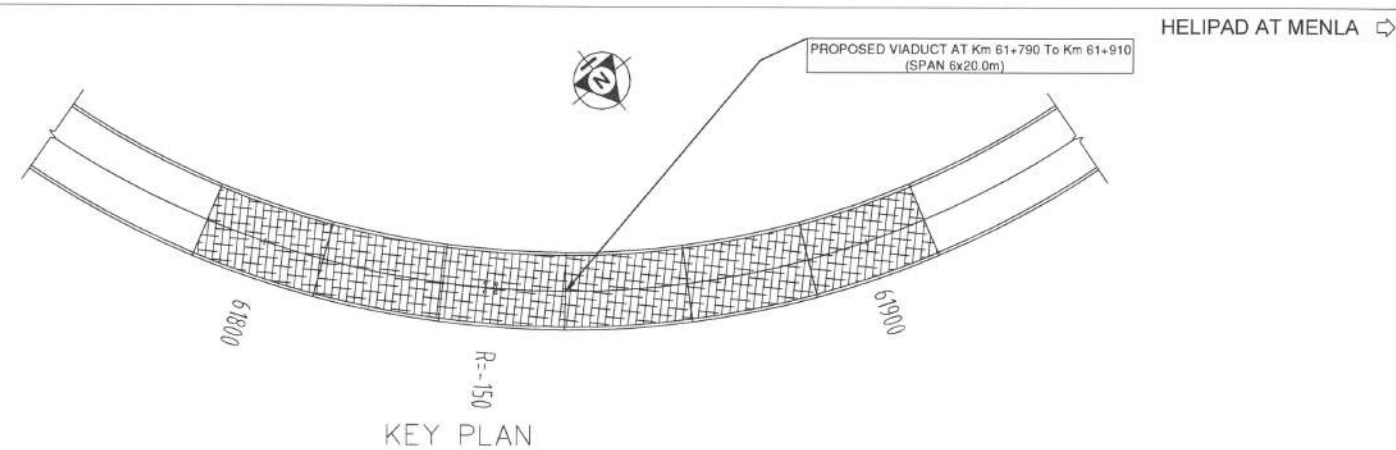


ELEVATION

|                 |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2214.566 | 2215.181 | 2215.795 | 2216.410 | 2217.024 | 2217.639 | 2218.253 |
| EX.GROUND LEVEL | 2211.824 | 2200.685 | 2194.636 | 2191.001 | 2192.547 | 2202.986 | 2213.078 |
| CHAINAGE        | 61,790   | 61,810   | 61,830   | 61,850   | 61,870   | 61,890   | 61,910   |



PLAN



KEY PLAN

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|     |           |                               |          |   |   |   |
|-----|-----------|-------------------------------|----------|---|---|---|
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| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |   |   |   |

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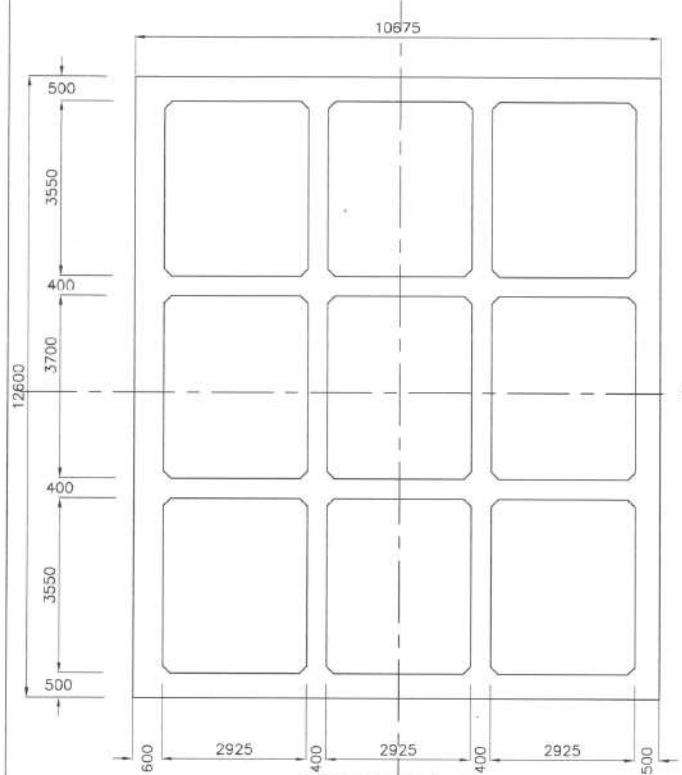
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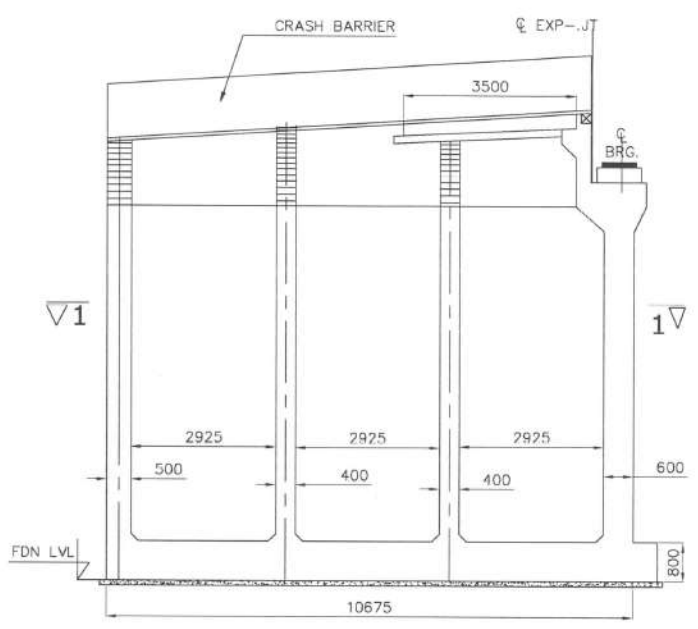
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|---------------------------|-------------------------|
| DATE : JUNE-2020          | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla |
| SCALE:- AS SHOWN          | SHEET:- 01 OF 02        |

GENERAL ARRANGEMENT DRAWINGS  
PROPOSED VIADUCT AT Km 61+790 To Km 61+910  
(SPAN 6x20.0m)

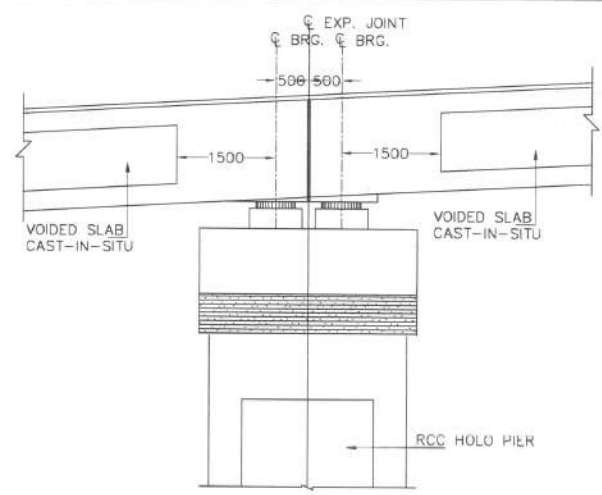
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/61+850/GAD-01



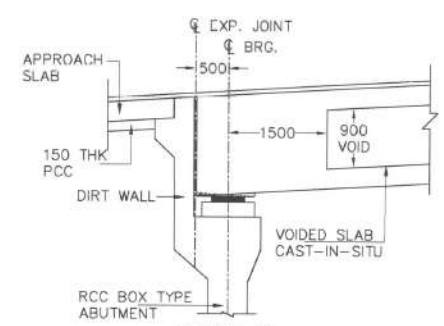
**SECTION 1-1**  
SCALE 1:100



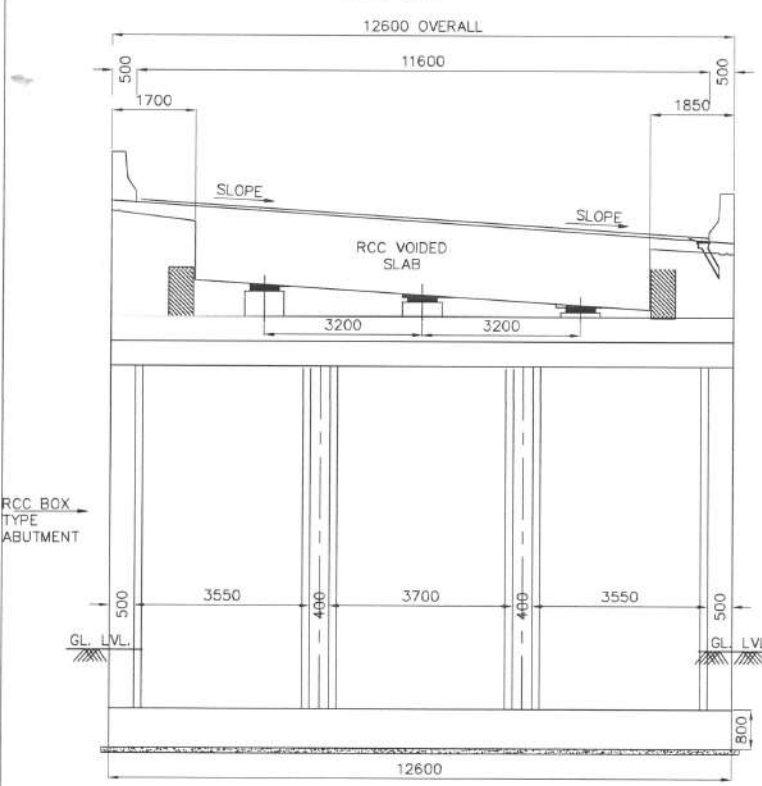
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SCALE 1:100



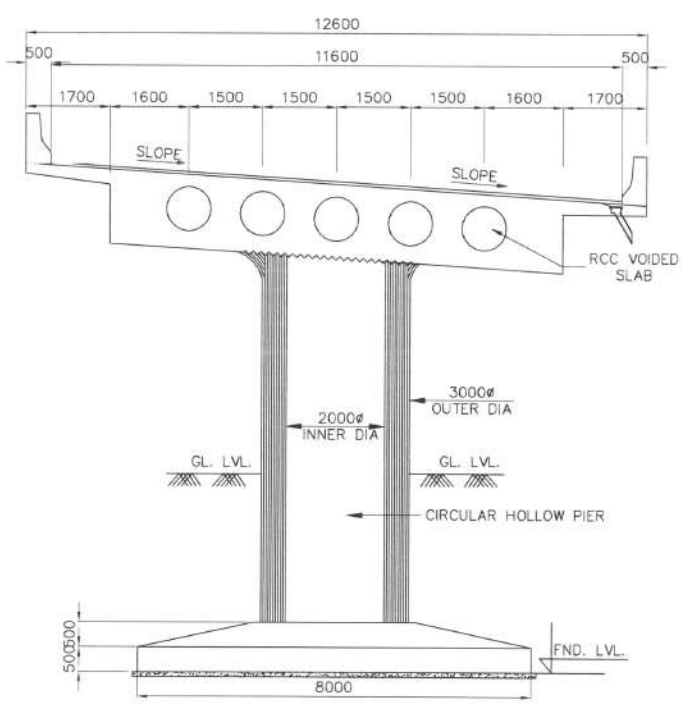
**DETAIL-Y**



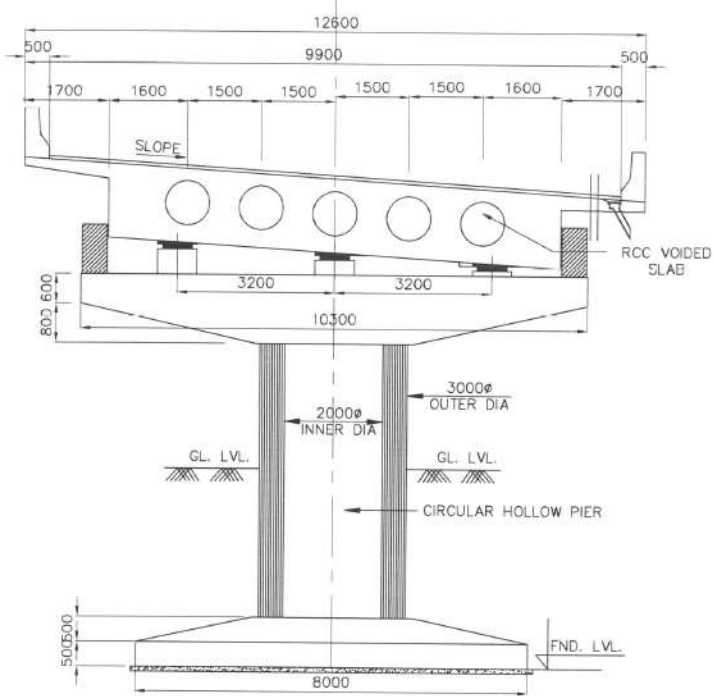
**DETAIL-X**



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SECTION NEAR FIX & FREE JOINT  
SCALE 1:100



**SECTION C-C**  
SECTION NEAR EXPANSION JOINT  
SCALE 1:100

**NOTES**

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
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  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPC 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
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11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>
13. CONSTRUCTION JOINT

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

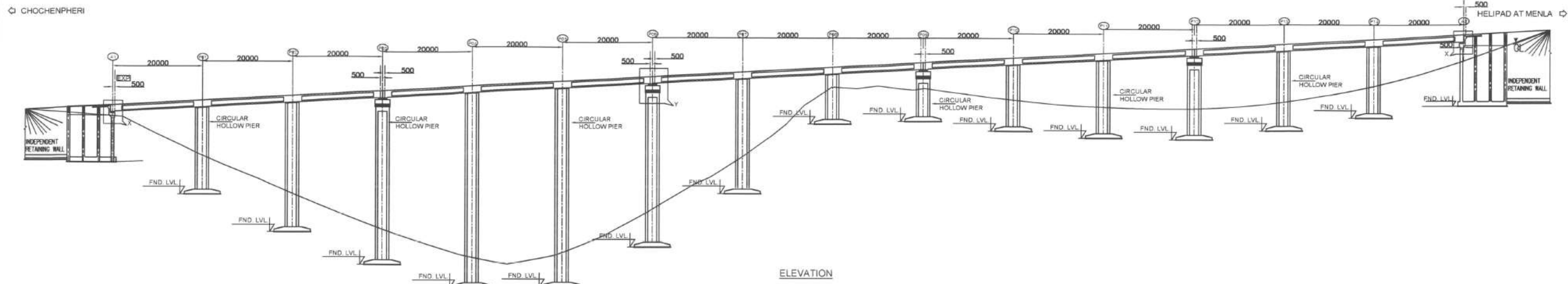
**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
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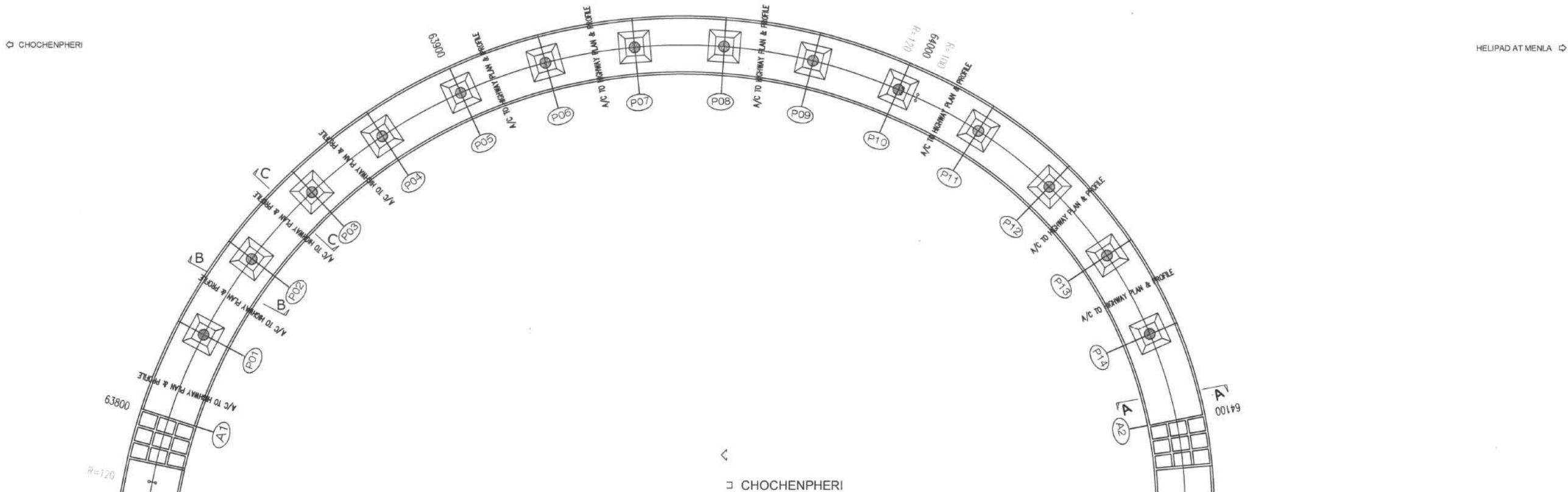
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|---------------------------|-------------------|------------------------|-------------------------|
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| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN | CHECKED BY<br>A REHMAN | APPROVED BY<br>S Shukla |
| SCALE:- AS SHOWN          |                   | SHEET:- 02 OF 02       |                         |

**GENERAL ARRANGEMENT DRAWINGS**  
PROPOSED VIADUCT AT Km 61+790 To Km 61+910  
(SPAN 6x20.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/61+850/GAD-01



|                 |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2292.090 | 2293.190 | 2294.290 | 2295.389 | 2296.489 | 2297.589 | 2298.689 | 2299.789 | 2300.888 | 2301.988 | 2303.088 | 2304.188 | 2305.288 | 2306.387 | 2307.487 | 2308.587 |
| EX.GROUND LEVEL | 2290.704 | 2280.830 | 2272.387 | 2264.486 | 2267.237 | 2267.344 | 2269.029 | 2280.729 | 2296.260 | 2295.929 | 2293.462 | 2291.935 | 2291.629 | 2293.167 | 2296.737 | 2302.424 |
| CHAINAGE        | 63800    | 63820    | 63840    | 63860    | 63880    | 63900    | 63920    | 63940    | 63960    | 63980    | 64000    | 64020    | 64040    | 64060    | 64080    | 64100    |



- NOTES**
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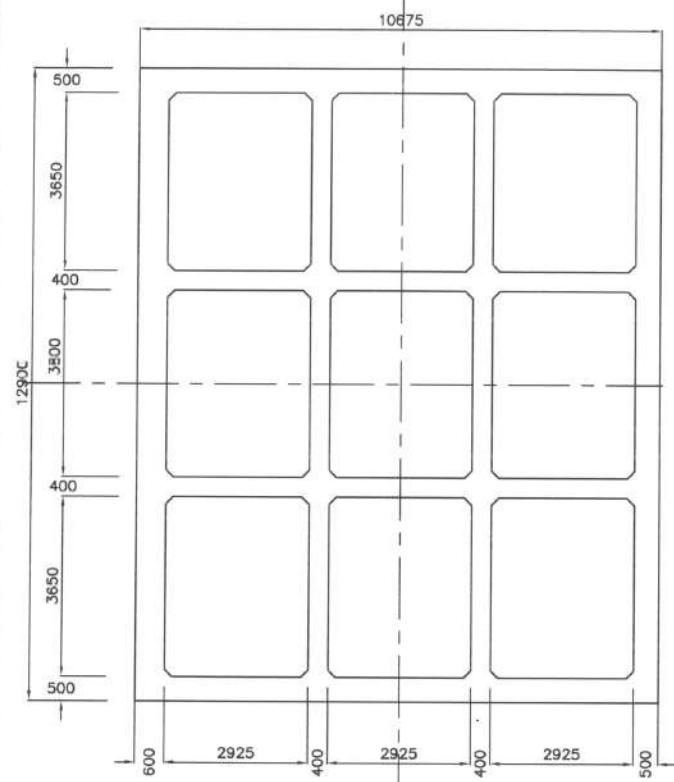
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|---------------------------|-------------------------|
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| SCALE:- AS SHOWN          | SHEET:- 01 OF 02        |

GENERAL ARRANGEMENT DRAWINGS  
 PROPOSED VIADUCT AT Km 63+800 To Km 64+100  
 (SPAN 15x20.0m)

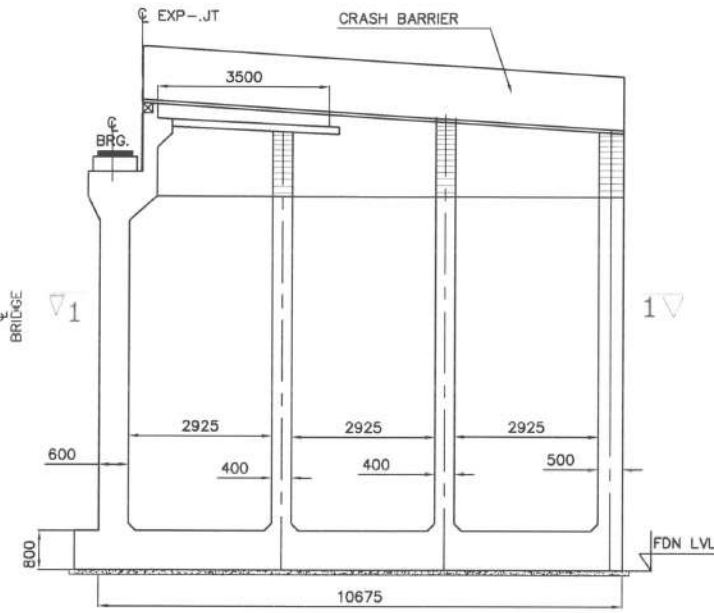
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/63+950/GAD-01

PROPOSED VIADUCT AT Km 63+800 To Km 64+100  
 (SPAN 15x20.0m)

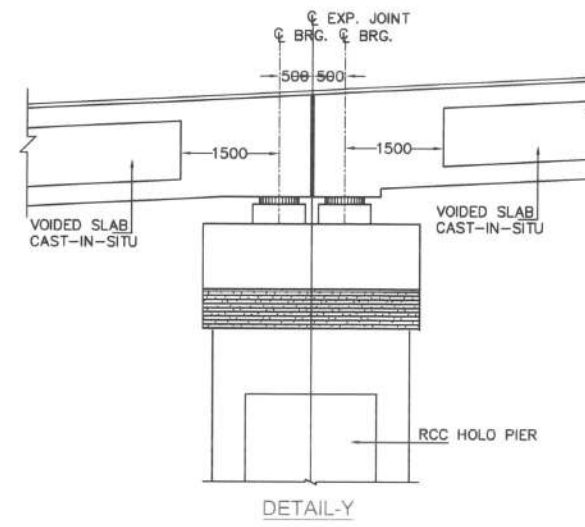
KEY PLAN



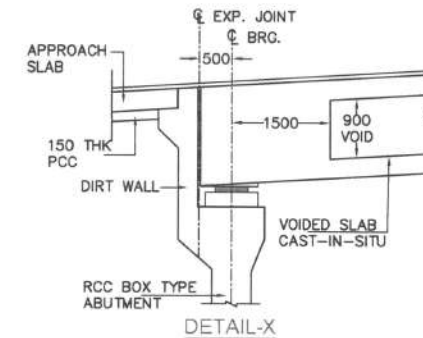
SECTION 1-1  
SCALE 1:100



BOX ABUTMENT  
SCALE 1:100



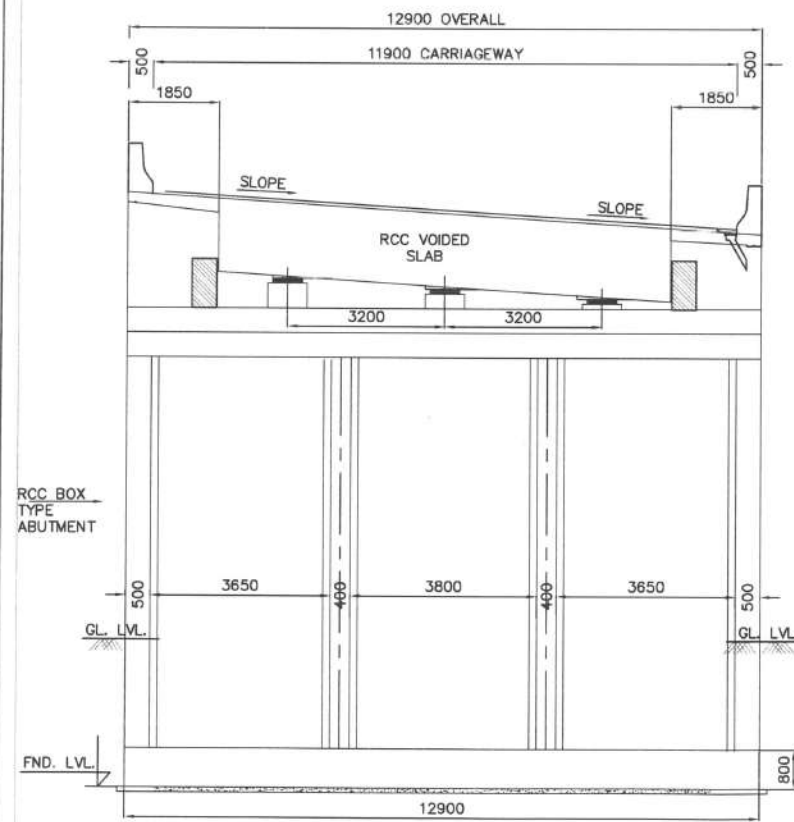
DETAIL-Y



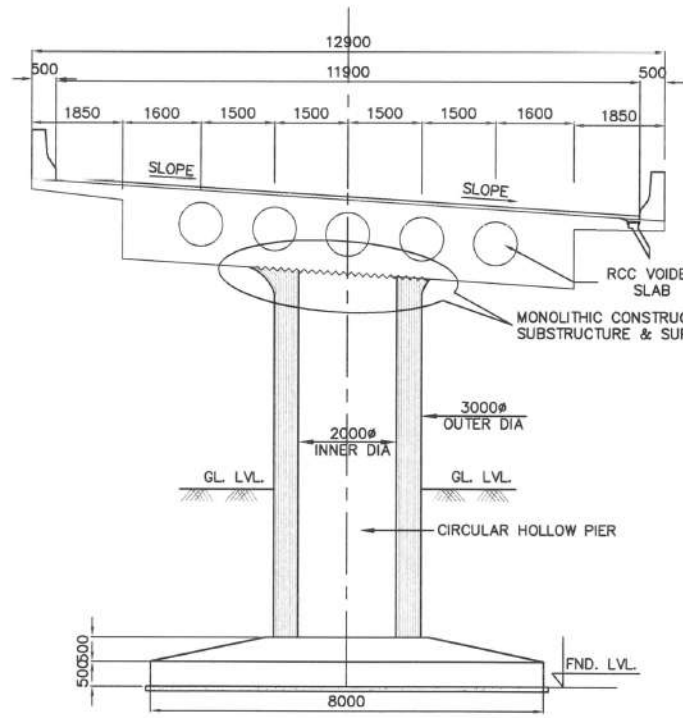
DETAIL-X

NOTES

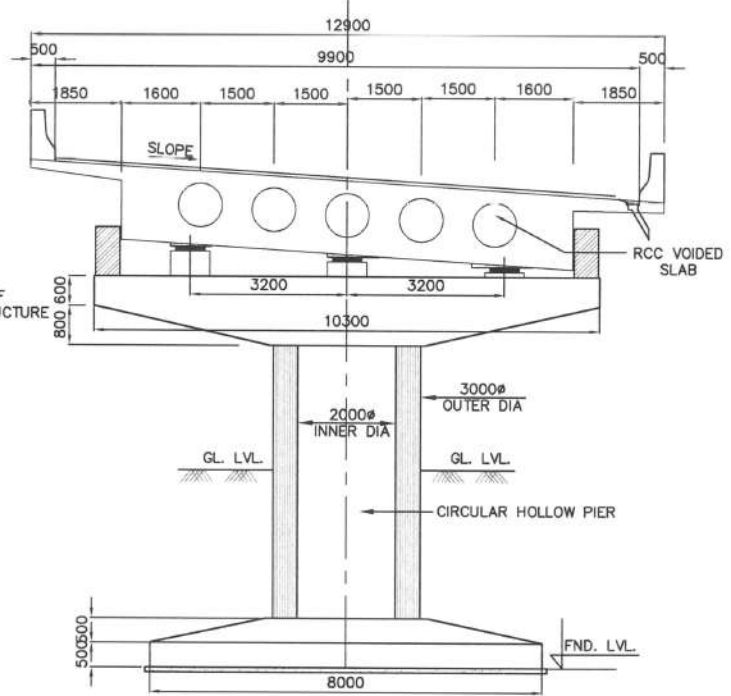
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- CONSTRUCTION JOINT



SECTION A-A  
SCALE 1:100



SECTION B-B  
SECTION NEAR FIX & FREE JOINT  
SCALE 1:100



SECTION C-C  
SECTION NEAR EXPANSION JOINT  
SCALE 1:100

|    |      |                          |          |
|----|------|--------------------------|----------|
| NO | DATE | DESCRIPTION OF REVISIONS | INITIALS |
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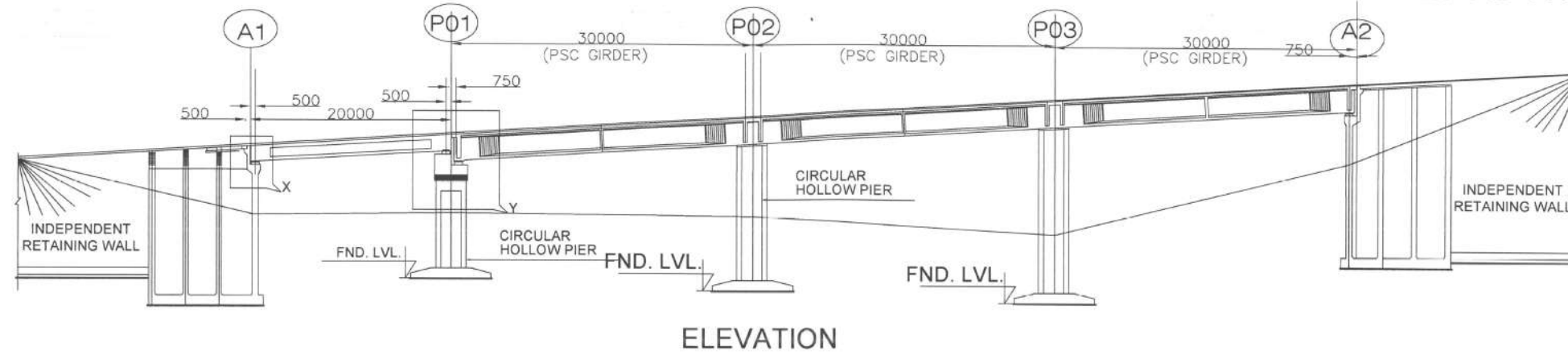
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| DATE: JUNE-2020         | REVISION: R0          |
| DESIGNED BY: RAVI KUMAR | DRAWN BY: A SEN       |
| CHECKED BY: A REHMAN    | APPROVED BY: S Shukla |
| SCALE: AS SHOWN         | SHEET: 02 OF 02       |

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DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM/63+950/GAD-01

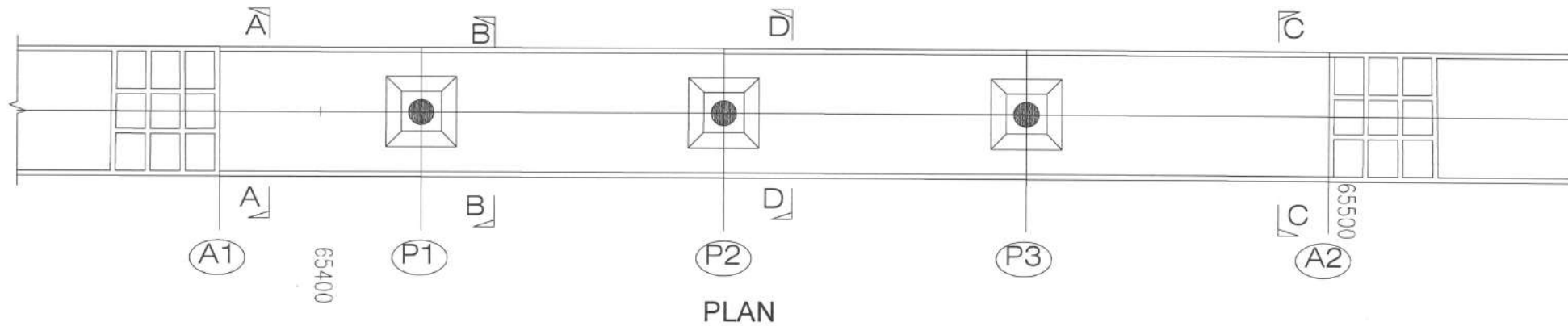
← CHOCHENPHERI

HELIPAD AT MENLA →



ELEVATION

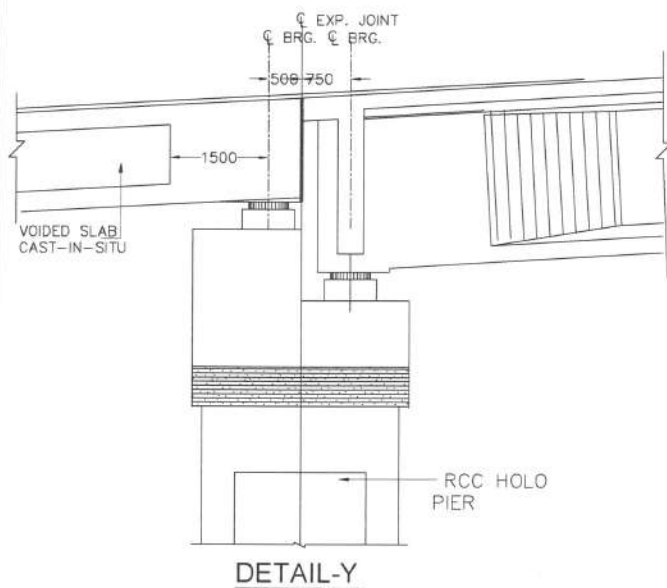
|                 |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2343.624 | 2343.043 | 2342.253 | 2341.563 | 2340.971 |
| EX.GROUND LEVEL | 2336.649 | 2335.230 | 2332.182 | 2327.935 | 2332.874 |
| CHAINAGE        | 65+390   | 65+410   | 65+440   | 65+470   | 65+500   |



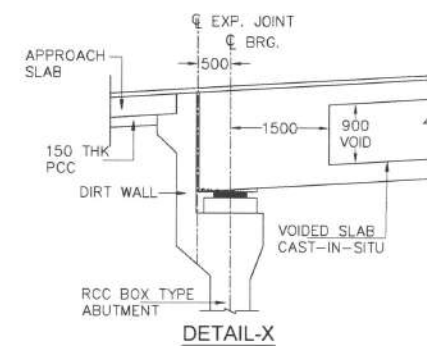
PLAN

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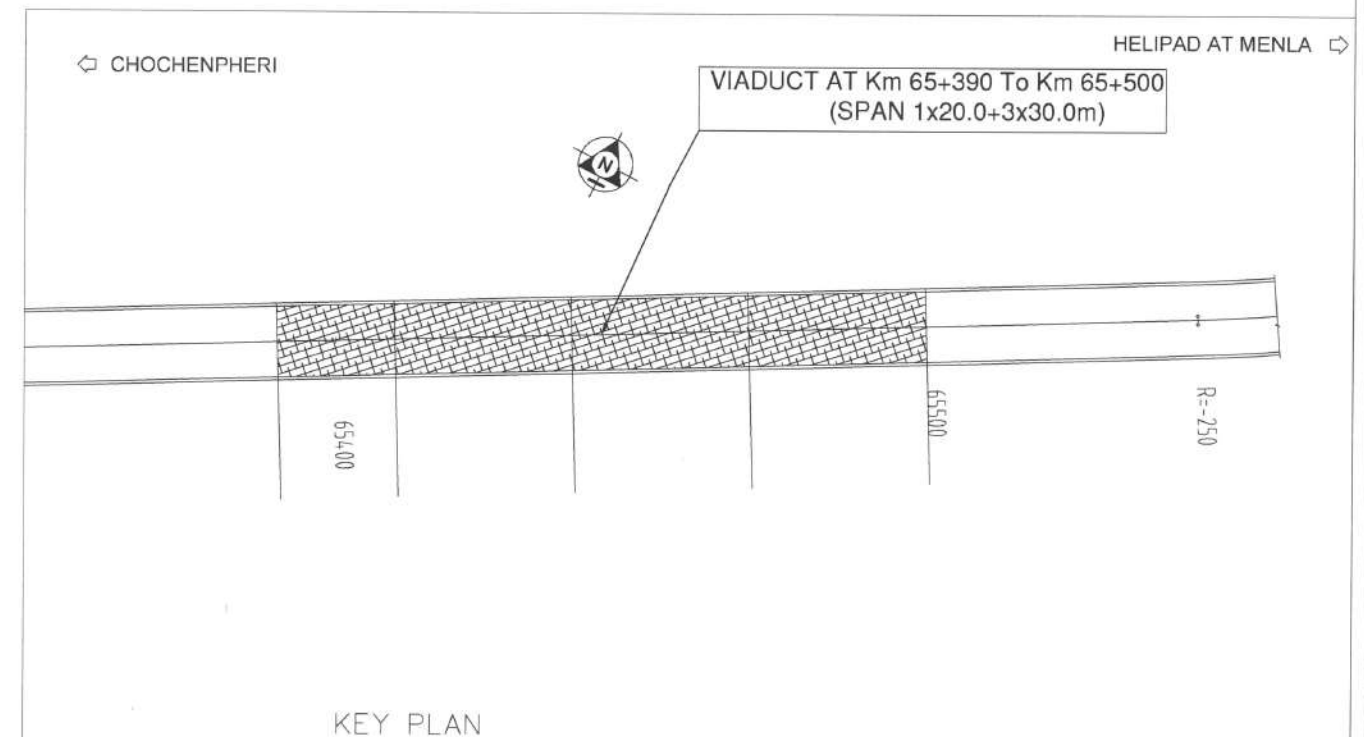
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- CONSTRUCTION JOINT ~~~~~



DETAIL-Y



DETAIL-X



KEY PLAN

|     |           |                               |          |
|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
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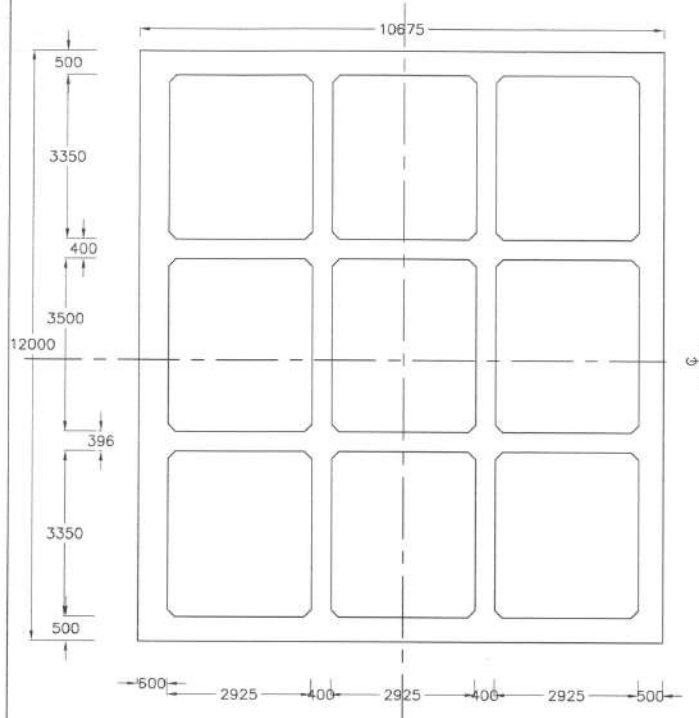
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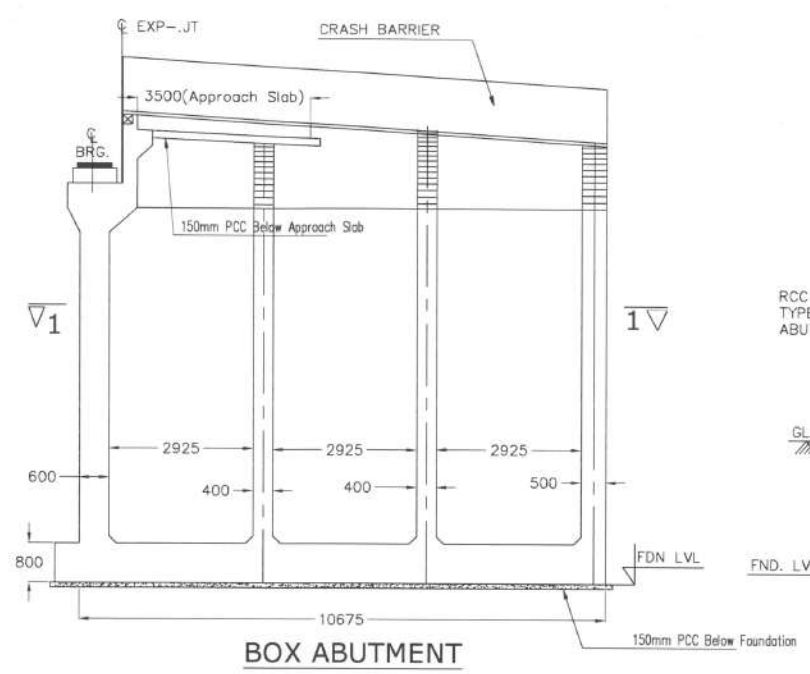
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| SCALE:- AS SHOWN          | SHEET:- 01 OF 02         |

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 (SPAN 1x20.0+3x30.0m)

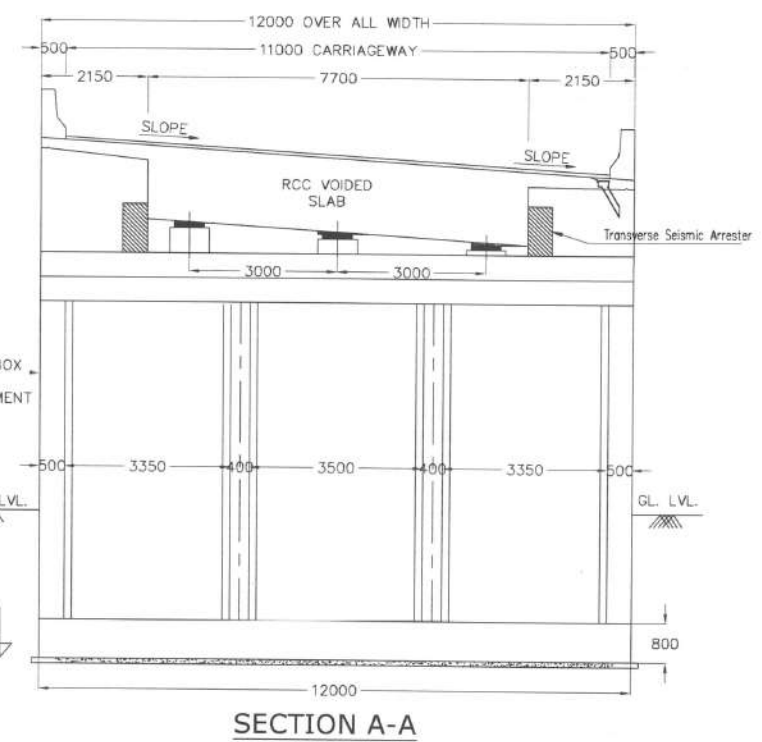
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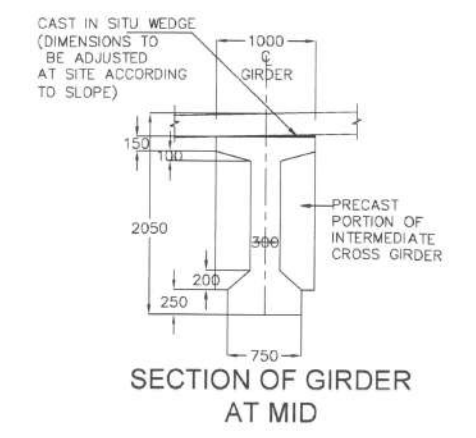
SECTION 1-1



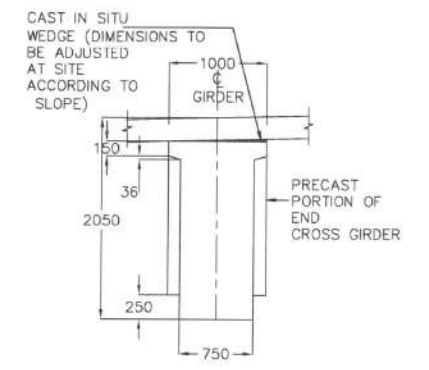
BOX ABUTMENT



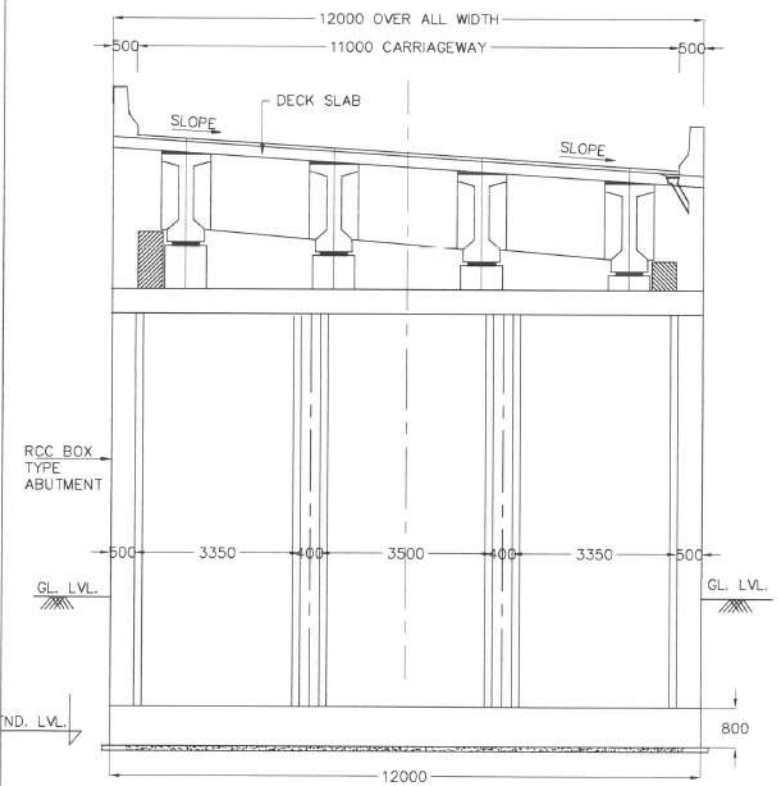
SECTION A-A



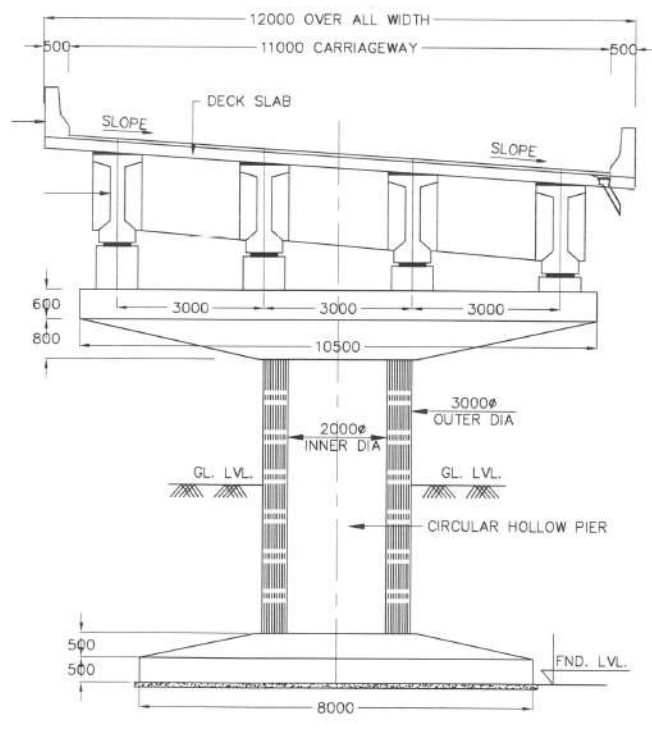
SECTION OF GIRDER AT MID



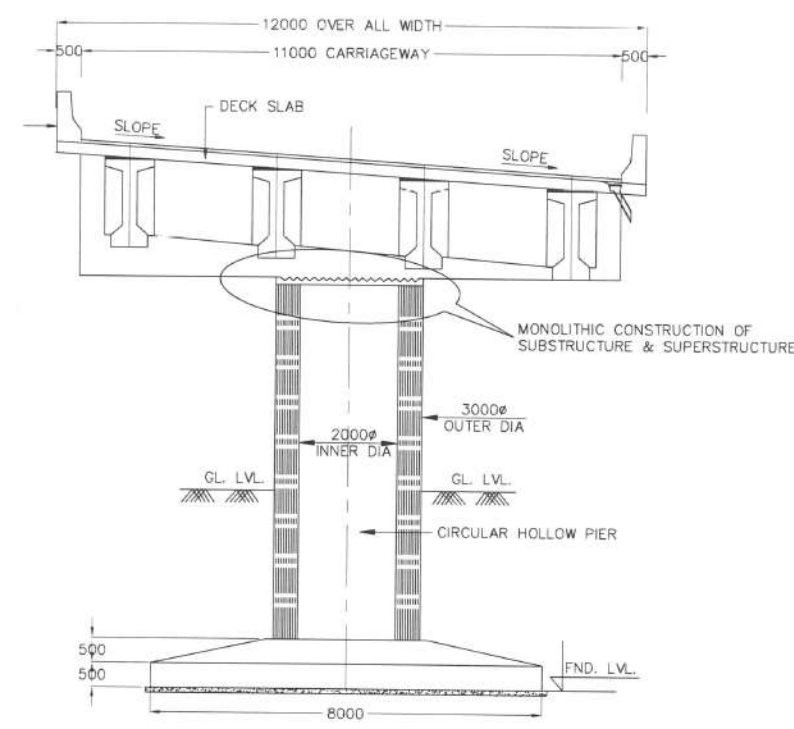
SECTION OF GIRDER AT SUPPORT



SECTION C-C



SECTION B-B



SECTION D-D

|     |           |                               |          |
|-----|-----------|-------------------------------|----------|
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

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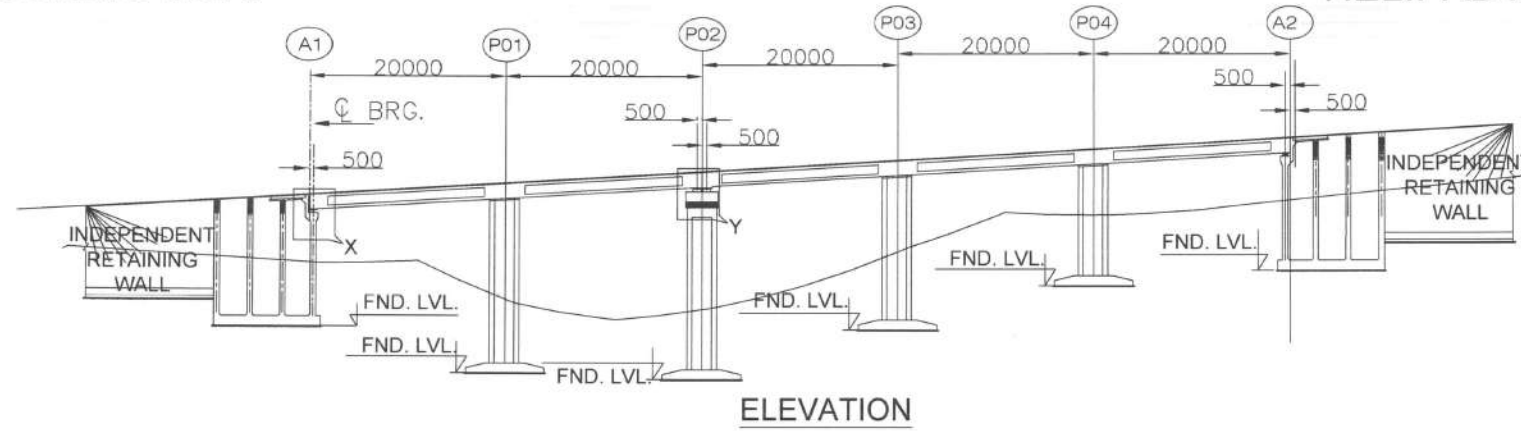
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← CHOCHENPHERI

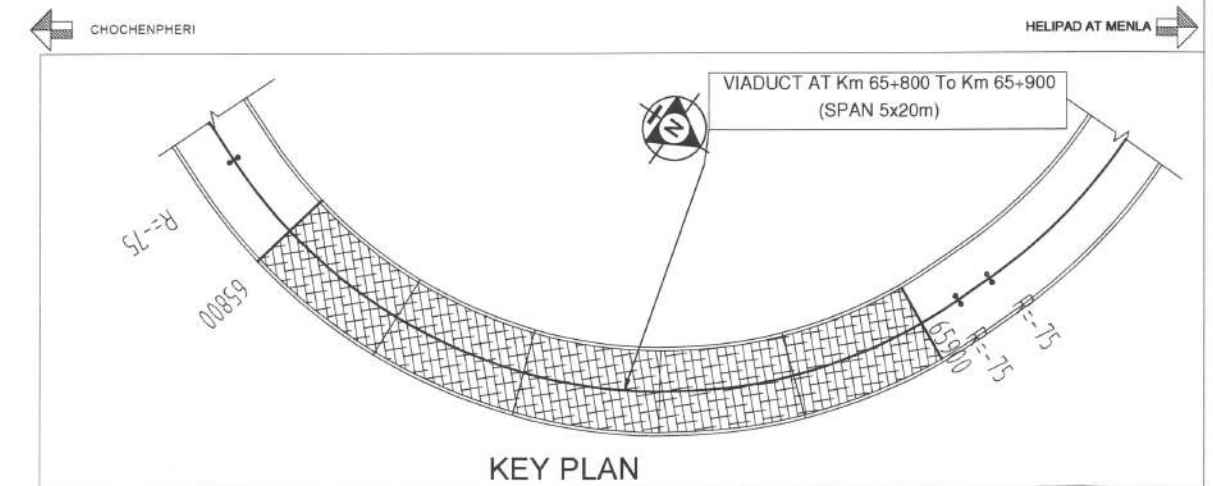
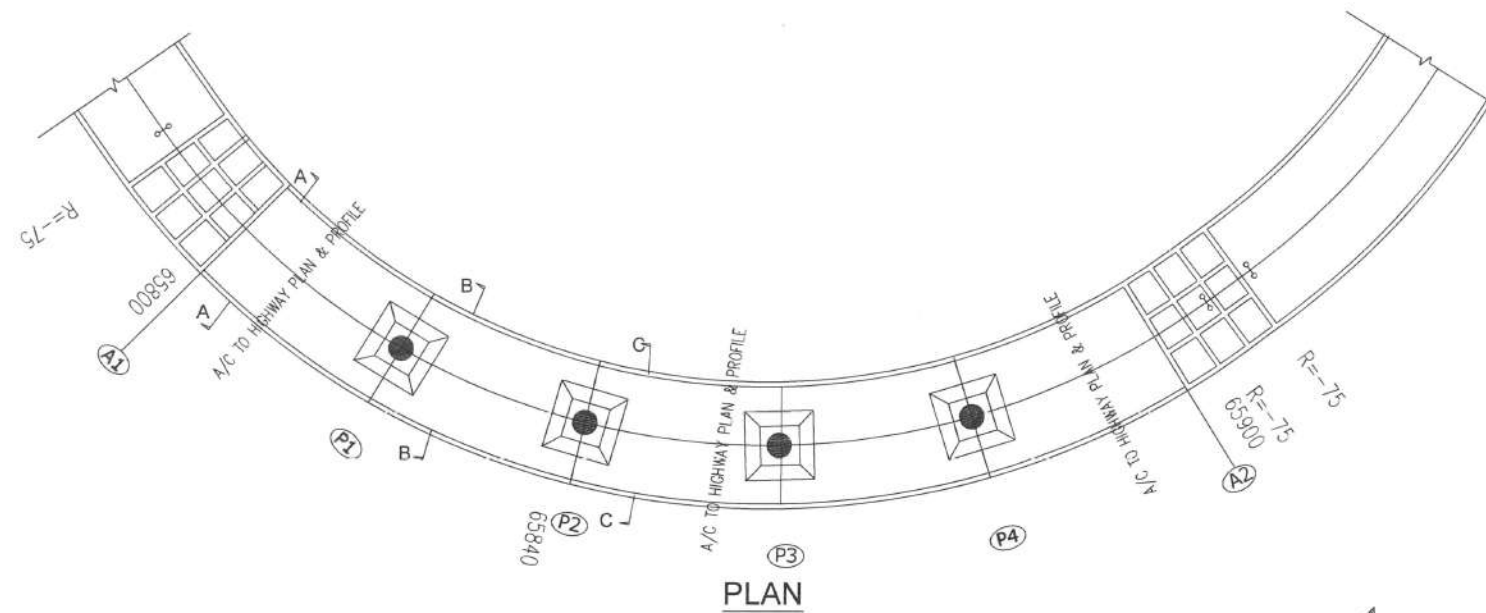
HELIPAD AT MENLA →



|                 |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2340.488 | 2340.807 | 2341.170 | 2341.577 | 2342.028 | 2342.523 |
| EX.GROUND LEVEL | 2333.153 | 2328.928 | 2327.357 | 2332.481 | 2335.375 | 2336.432 |
| CHAINAGE        | 65800    | 65820    | 65840    | 65860    | 65880    | 65900    |

← CHOCHENPHERI

HELIPAD AT MENLA →



- NOTES**
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
  2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
  3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.

|     |      |                          |          |
|-----|------|--------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|     |      |                          |          |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

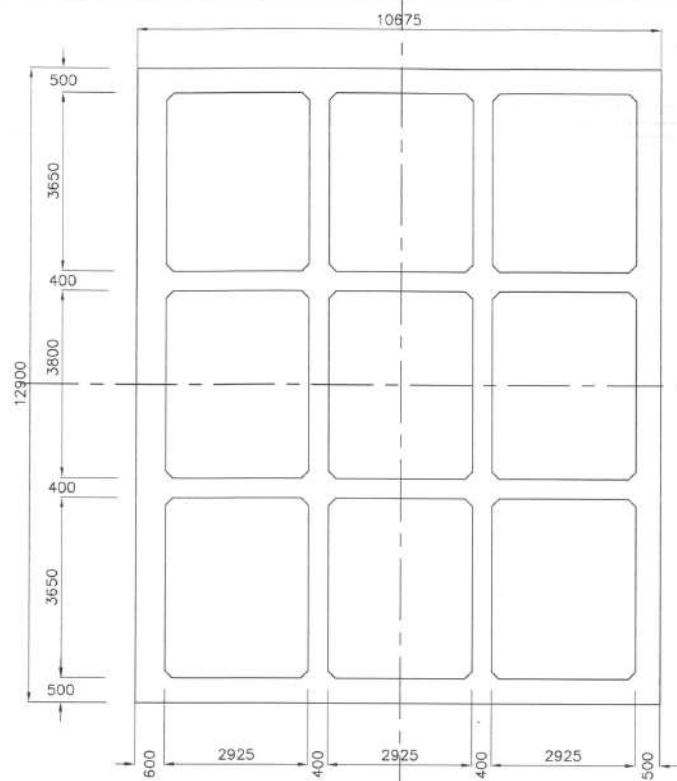
**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

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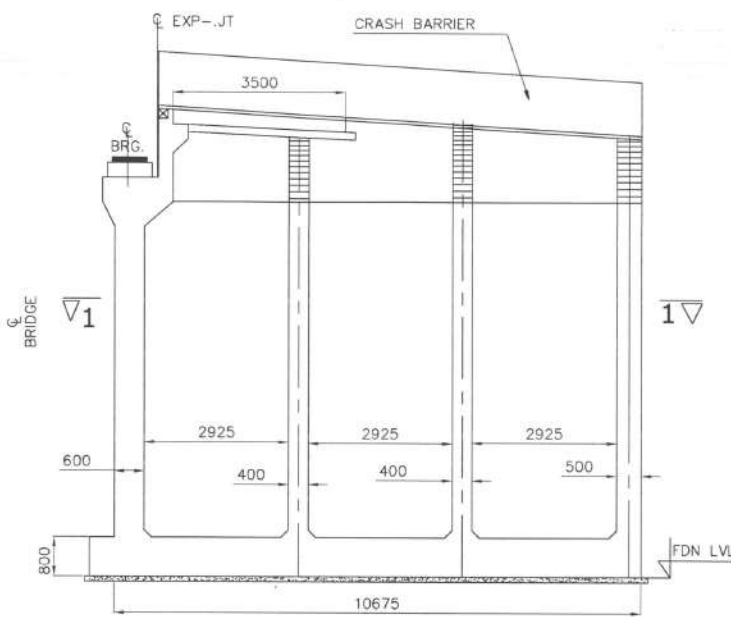
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|---------------------------|-------------------------|
| DATE : JUNE-2020          | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S.Shukla |
| SCALE:- AS SHOWN          | SHEET:- 01 OF 02        |

**PROJECT :** GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 65+800 To Km 65+900  
(SPAN 5x20m)

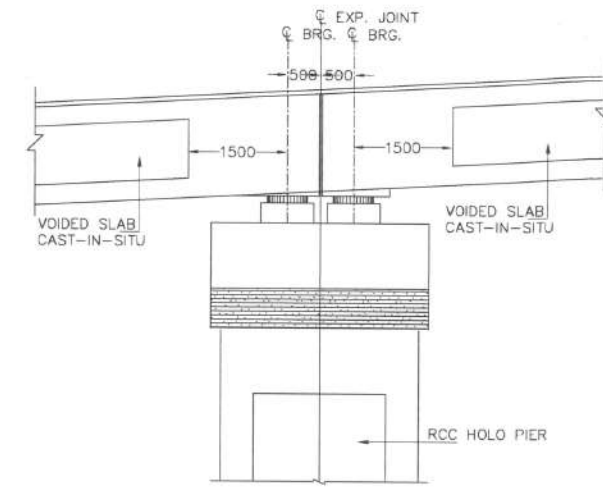
**DWG. NO. :-** SAICPL-SESPL/NHDC/WB-SKM/65+850/GAD-01



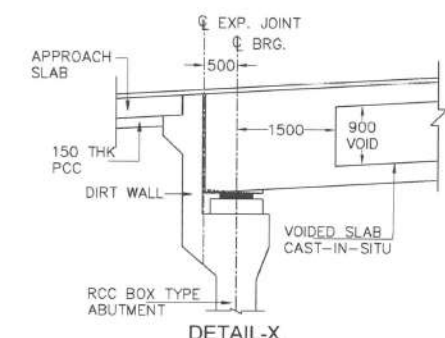
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100



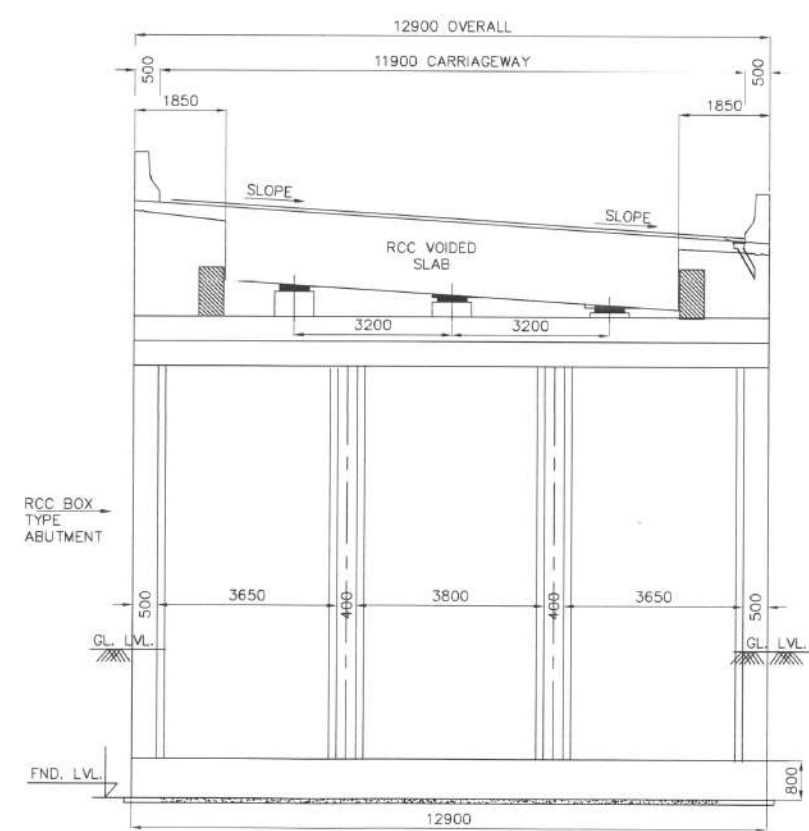
**DETAIL-Y**



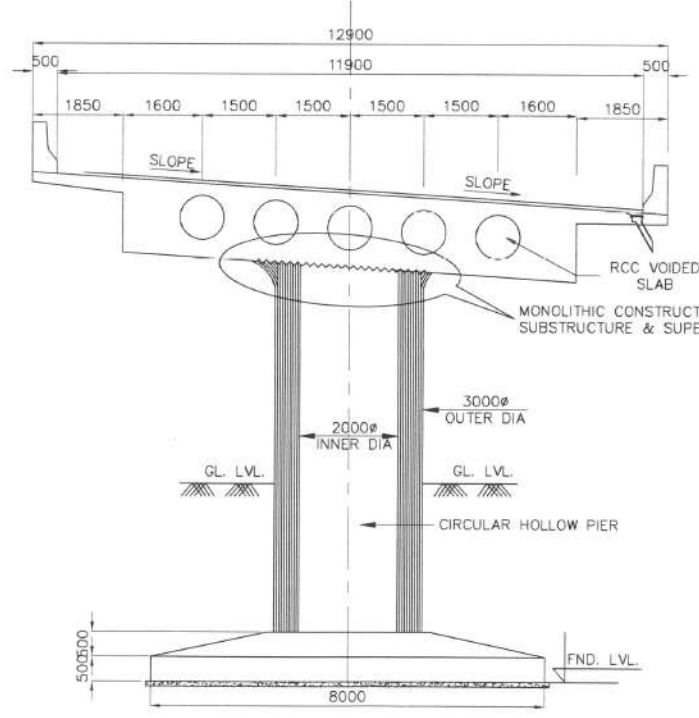
**DETAIL-X**

**NOTES**

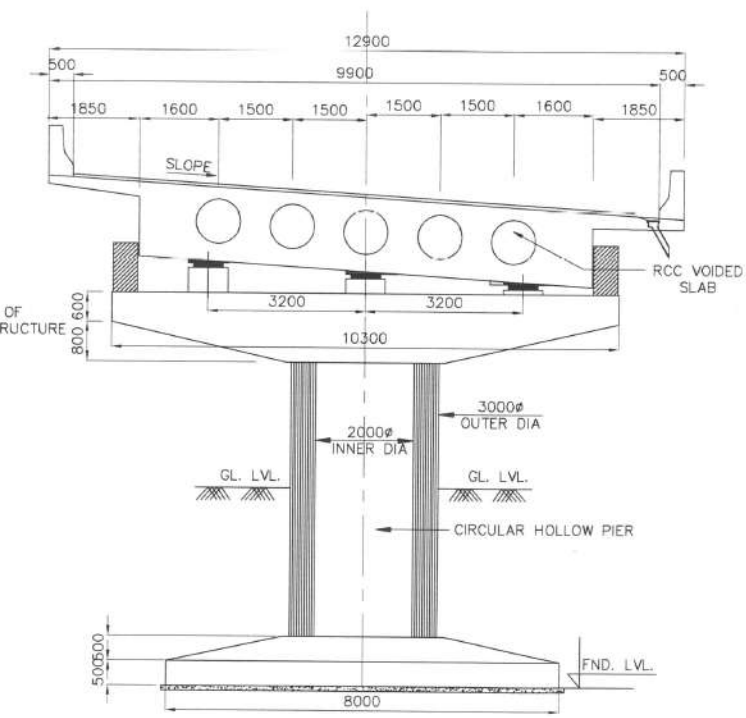
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4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R + 1 LANE CLASS A 3 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION ---- M35
  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
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**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
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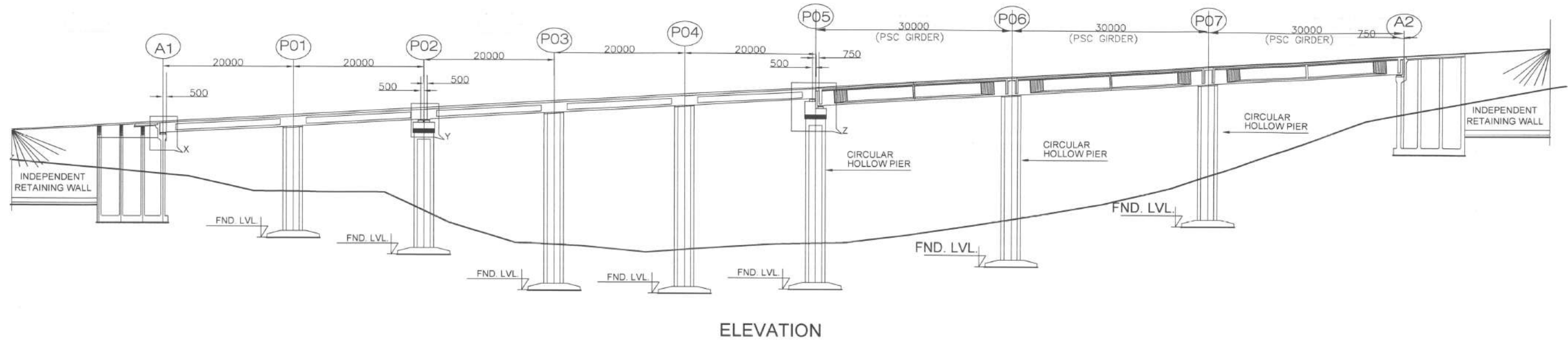
| DATE: JUNE-2020  |          | REVISION R0      |             |
|------------------|----------|------------------|-------------|
| DESIGNED BY      | DRAWN BY | CHECKED BY       | APPROVED BY |
| RAVI KUMAR       | A SEN    | A REHMAN         | S. Shukla   |
| SCALE:- AS SHOWN |          | SHEET:- 02 OF 02 |             |

**GENERAL ARRANGEMENT DRAWINGS**  
VIADUCT AT Km 65+800 To Km 65+900  
(SPAN 5x20m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/65+850/GAD-02

← CHOCHENPHERI

HELIPAD AT MENLA →

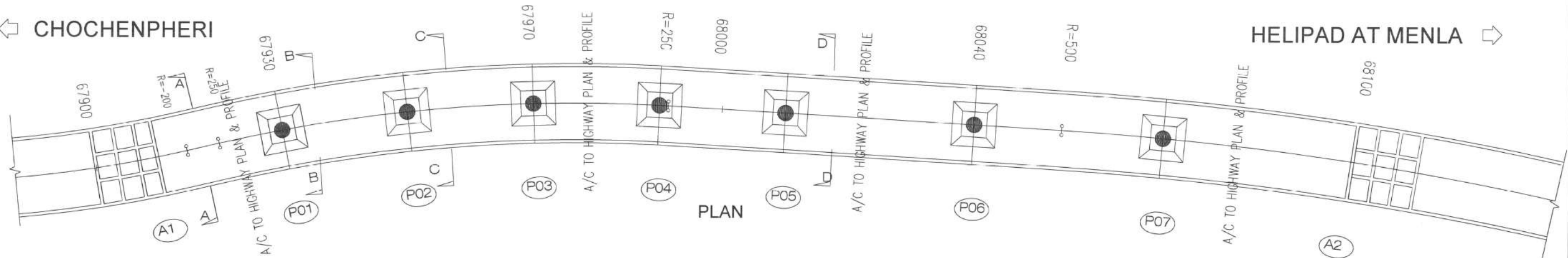


ELEVATION

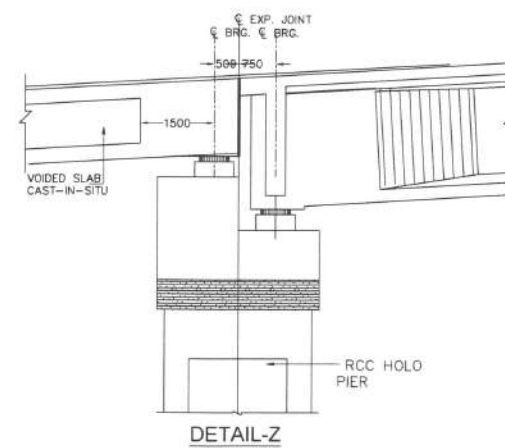
|                 |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2414.354 | 2415.400 | 2416.447 | 2417.494 | 2418.541 | 2419.587 | 2421.157 | 2422.728 | 2424.298 |
| EX.GROUND LEVEL | 2407.210 | 2403.947 | 2401.038 | 2395.928 | 2395.224 | 2396.225 | 2400.004 | 2406.791 | 2416.372 |
| CHAINAGE        | 67+910   | 67+930   | 67+950   | 67+970   | 67+990   | 68+010   | 68+040   | 68+070   | 68+100   |

← CHOCHENPHERI

HELIPAD AT MENLA →



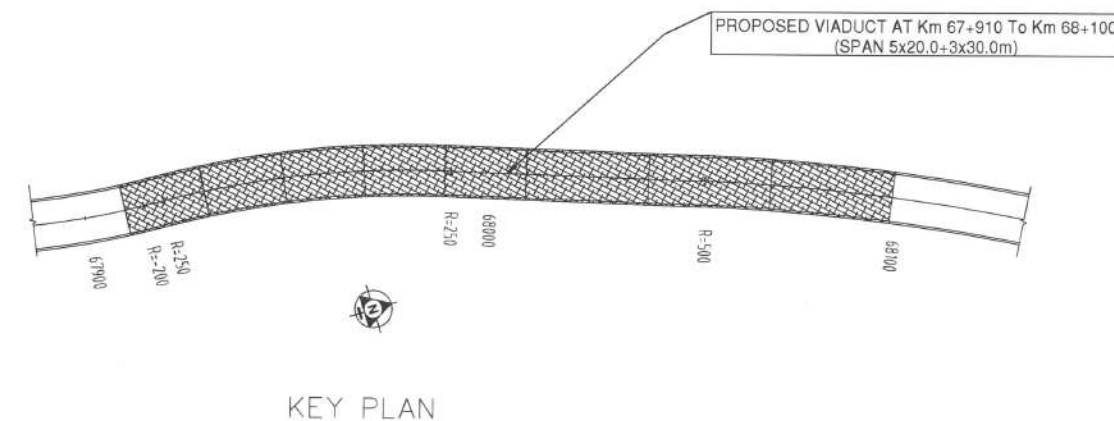
PLAN



DETAIL-Z

← CHOCHENPHERI

HELIPAD AT MENLA →



KEY PLAN

NOTES

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|-----|------|--------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS | INITIALS |
|     |      |                          |          |

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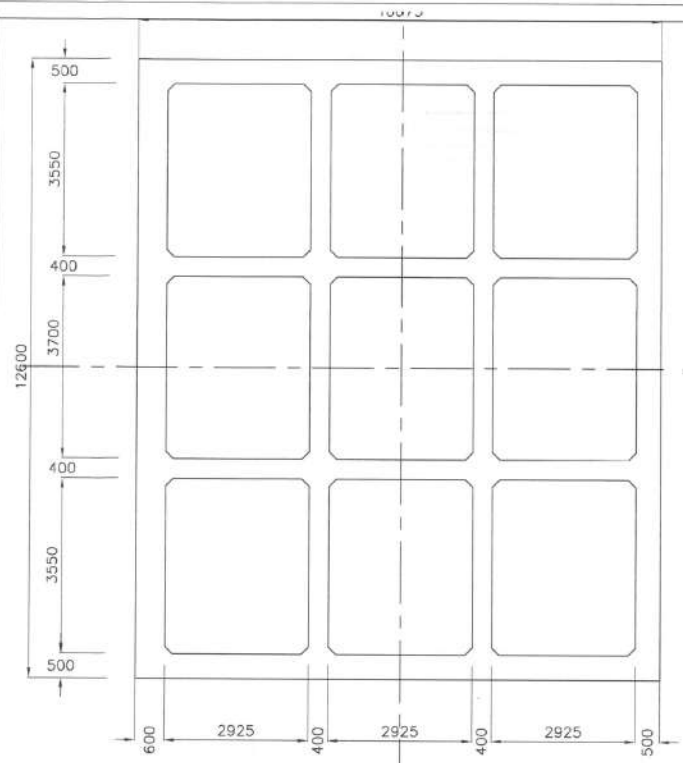
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|                        |                      |
|------------------------|----------------------|
| DATE : JUNE-2020       | REVISION R0          |
| DESIGNED BY RAVI KUMAR | DRAWN BY A SEN       |
| CHECKED BY A REHMAN    | APPROVED BY S.Shukla |
| SCALE:- AS SHOWN       | SHEET:- 01 OF 02     |

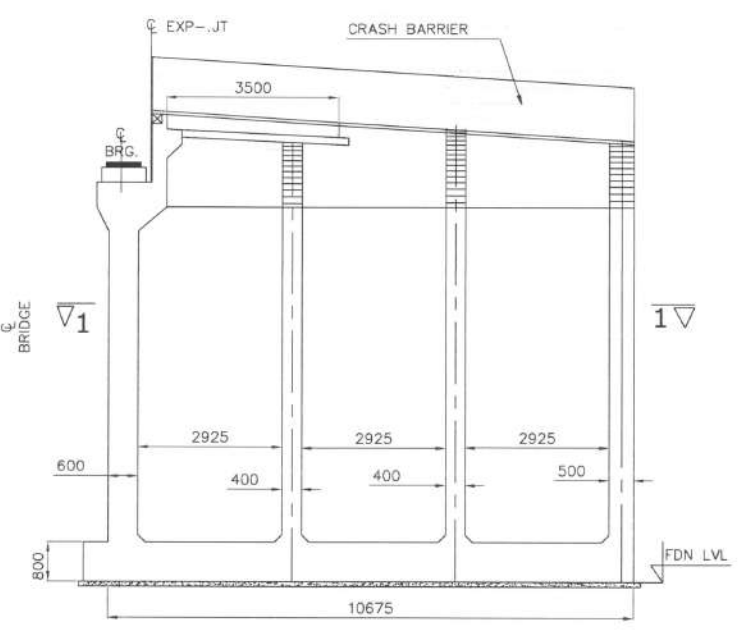
GENERAL ARRANGEMENT DRAWINGS

PROPOSED VIADUCT AT Km 67+910 To Km 68+100 (SPAN 5x20.0+3x30.0m)

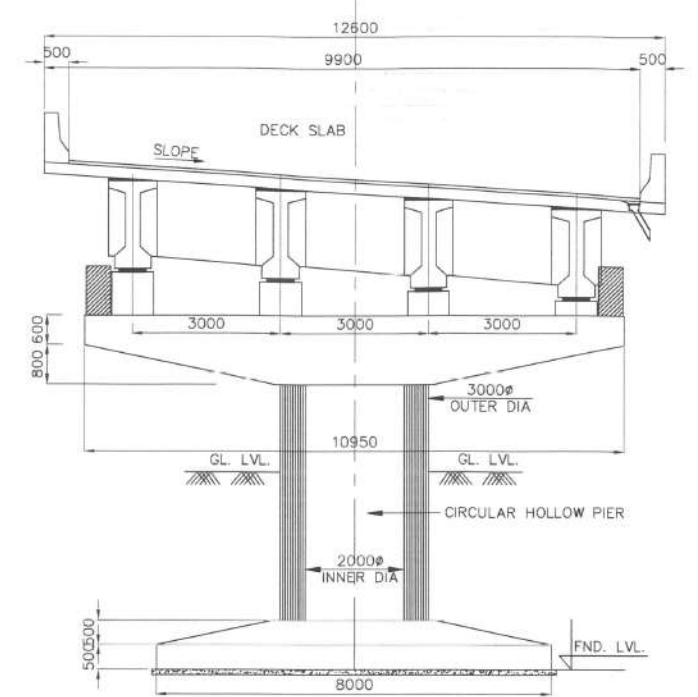
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/68+005/GAD-01



**SECTION 1-1**  
SCALE 1:100

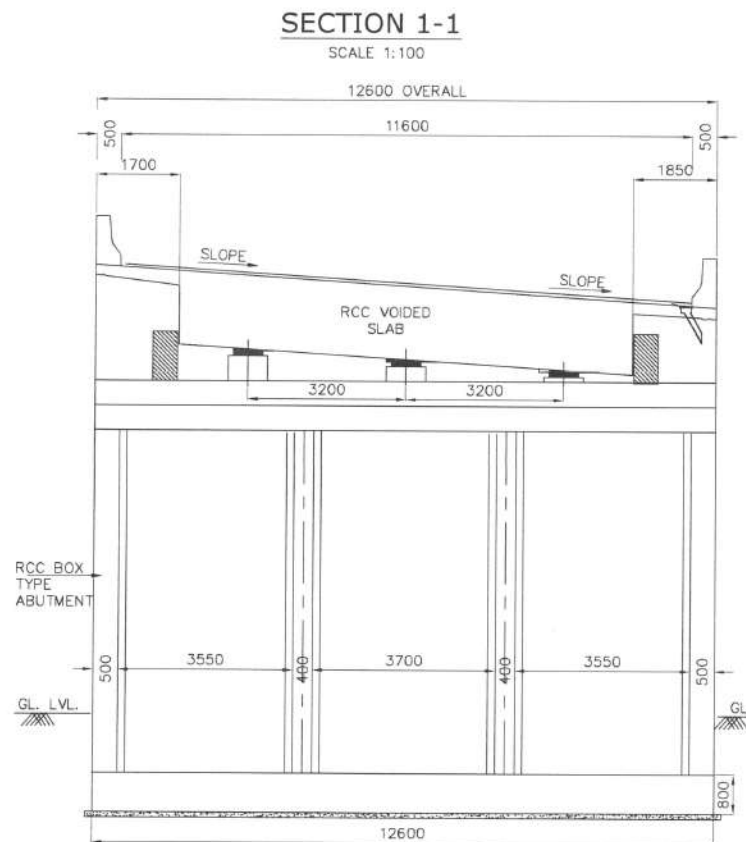


**BOX ABUTMENT**  
SCALE 1:100

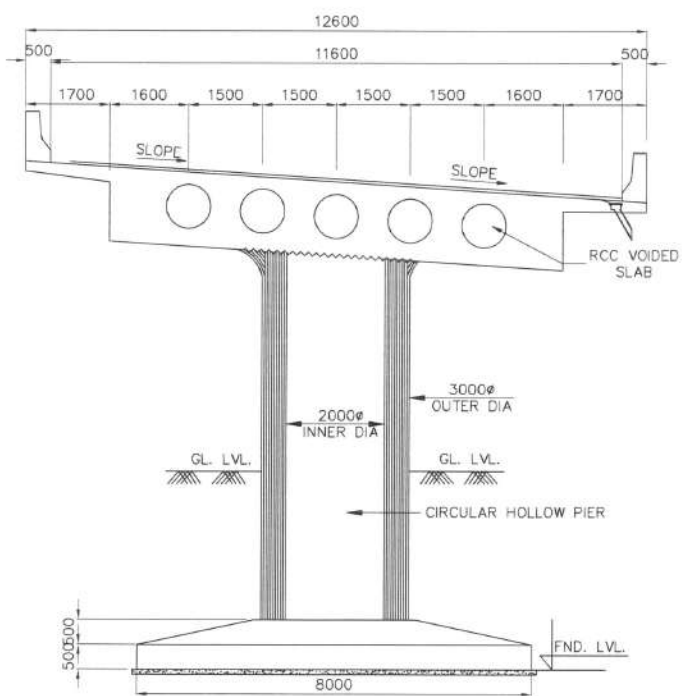


**SECTION D-D**  
SCALE 1:100

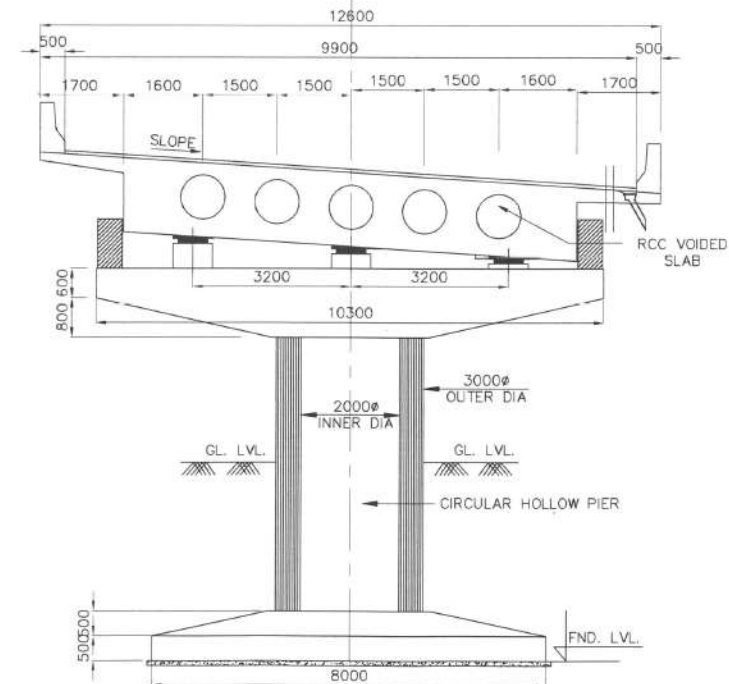
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  - CONSTRUCTION JOINT



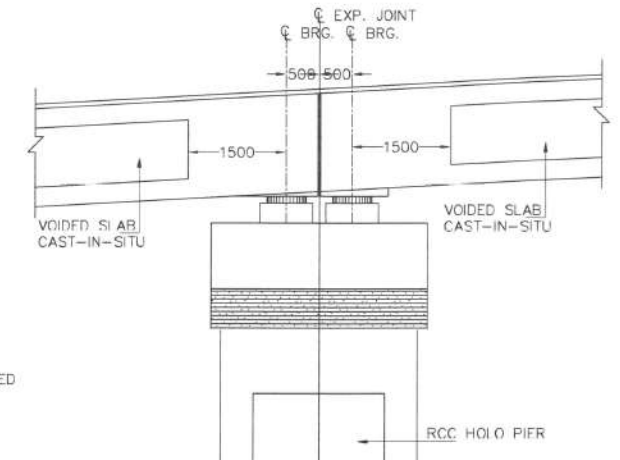
**SECTION 1-1**  
SCALE 1:100



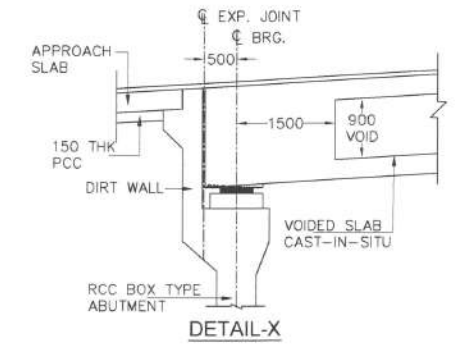
**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100



**DETAIL-Y**



**DETAIL-X**



**SECTION A-A**  
SCALE 1:100

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| R0  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

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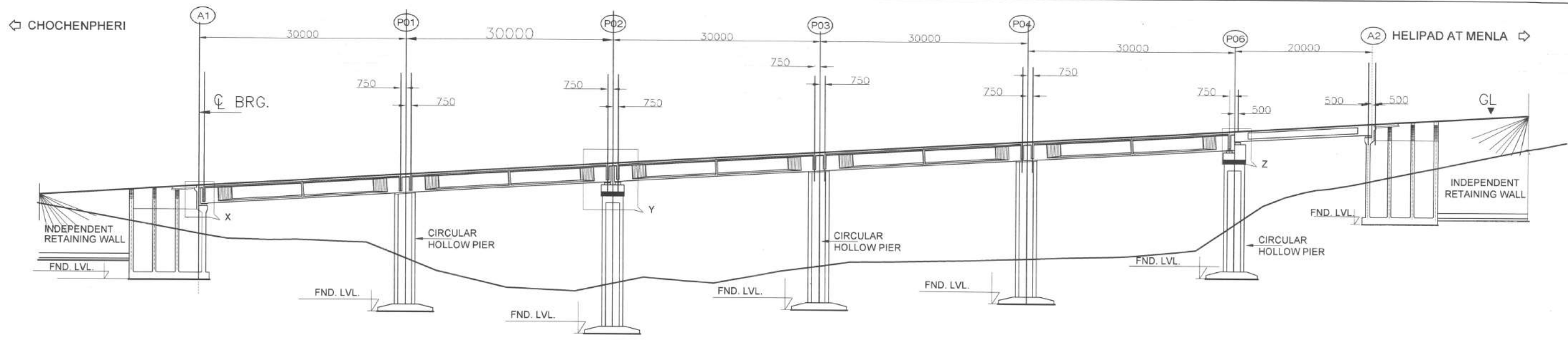
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|------------------|------------------|------------|
| JUNE-2020        |                  |            |
| DESIGNED BY      | DRAWN BY         | CHECKED BY |
| RAVI KUMAR       | A SEN            | A REHMAN   |
| APPROVED BY      | S.Shukla         |            |
| SCALE:- AS SHOWN | SHEET:- 02 OF 02 |            |

**GENERAL ARRANGEMENT DRAWINGS**

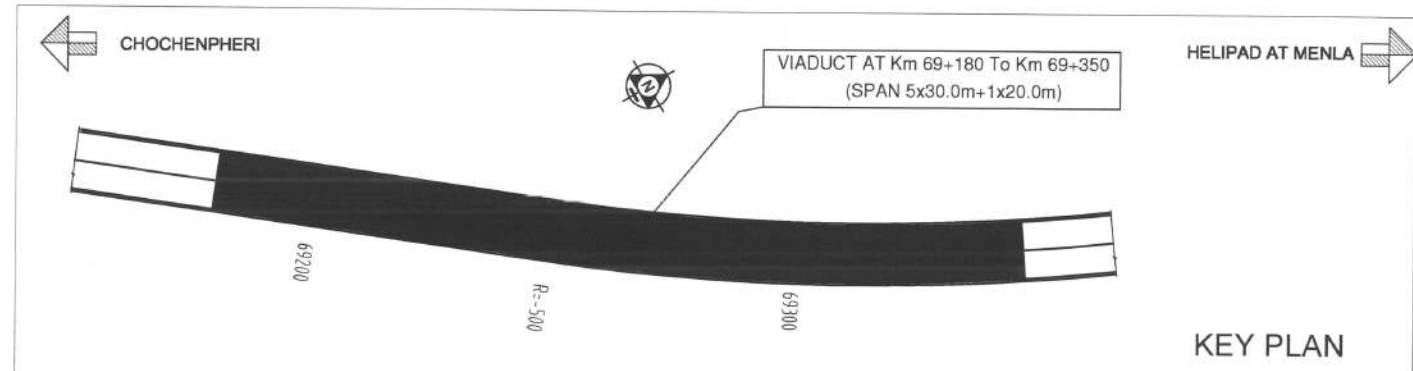
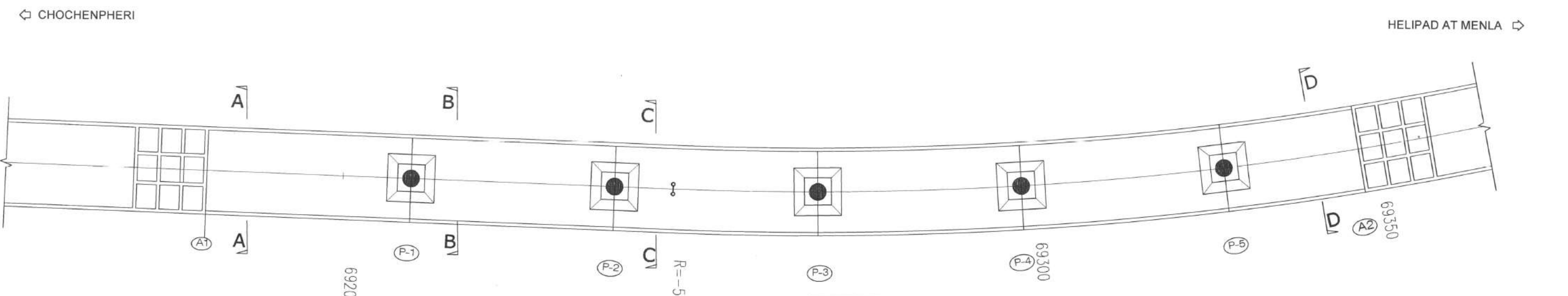
PROPOSED VIADUCT AT Km 67+910 To Km 68+100  
(SPAN 5x20.0+3x30.0m)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/68+005/GAD-01



ELEVATION

|                 |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2466.775 | 2467.379 | 2467.982 | 2468.585 | 2469.188 | 2469.791 | 2470.193 |
| EX.GROUND LEVEL | 2463.810 | 2454.989 | 2450.603 | 2452.076 | 2452.097 | 2456.305 | 2464.137 |
| CHAINAGE        | 69180    | 69210    | 69240    | 69270    | 69300    | 69330    | 69350    |



KEY PLAN

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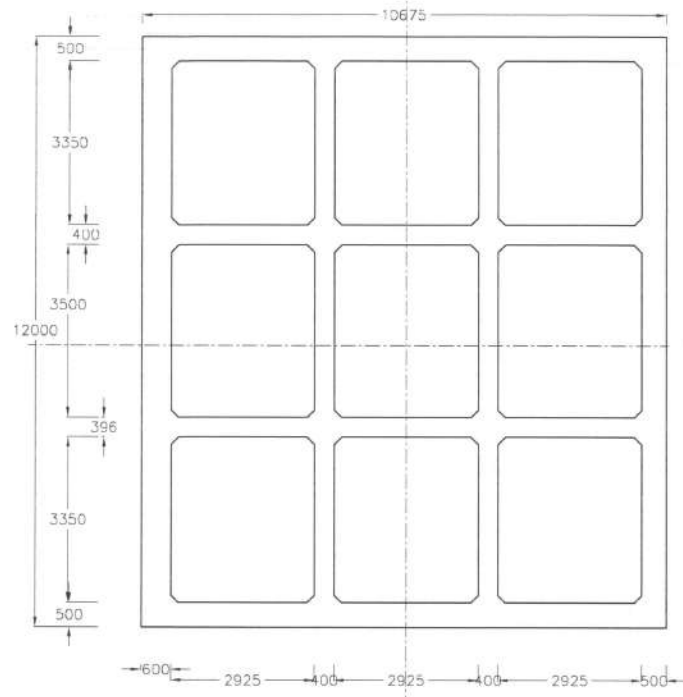
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| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla |
| SCALE:- AS SHOWN          | SHEET:- 01 OF 02        |

PROJECT : GENERAL ARRANGEMENT DRAWINGS  
 VIADUCT AT Km 69+180 To Km 69+350  
 (SPAN 5x30.0m+1x20.0m)

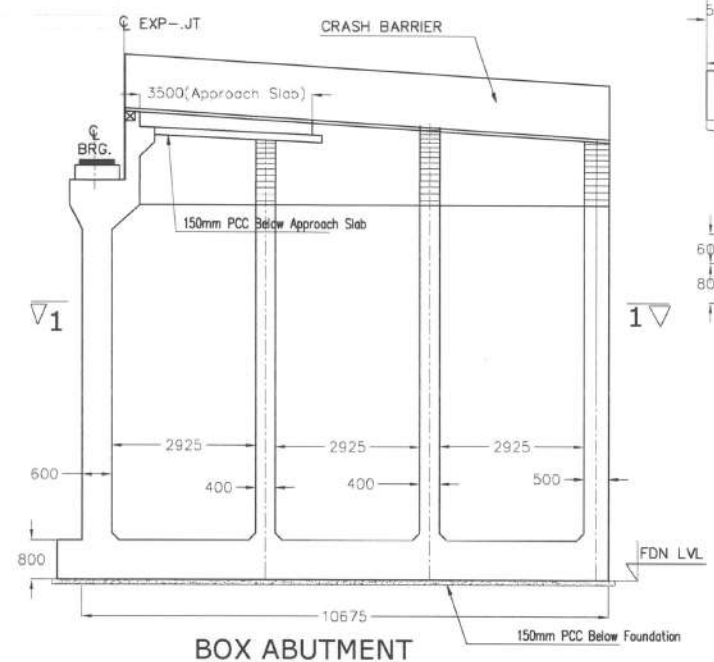
DWG. NO. :- SAICPL-SESPLN/HIDC/WB-SKM/69+265/GAD-01

**NOTES**

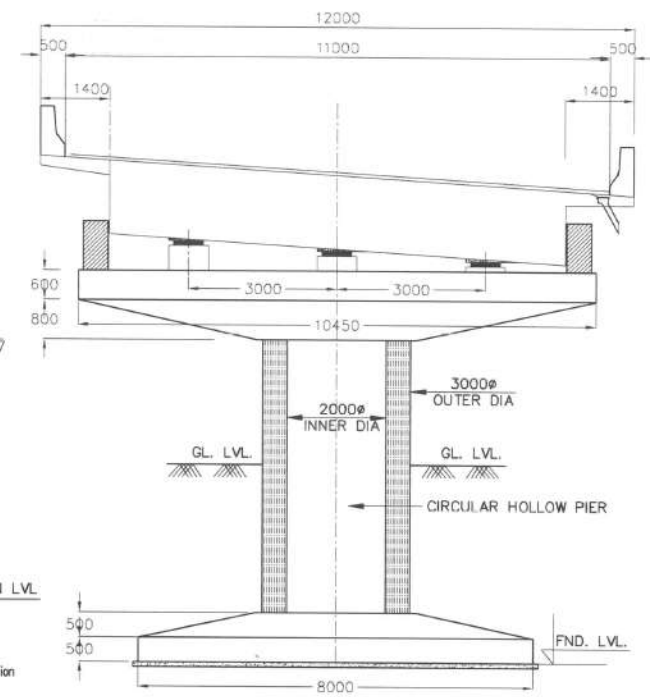
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- SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
- SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>
- CONSTRUCTION JOINT



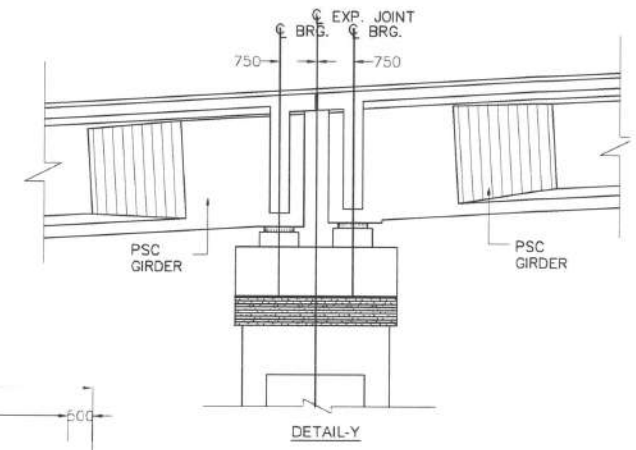
**SECTION 1-1**



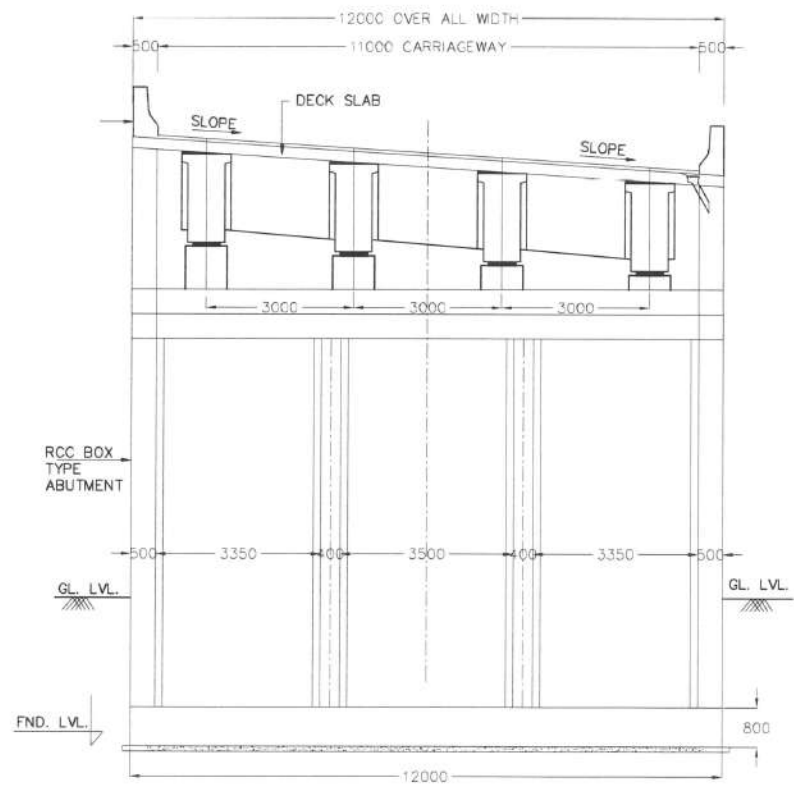
**BOX ABUTMENT**



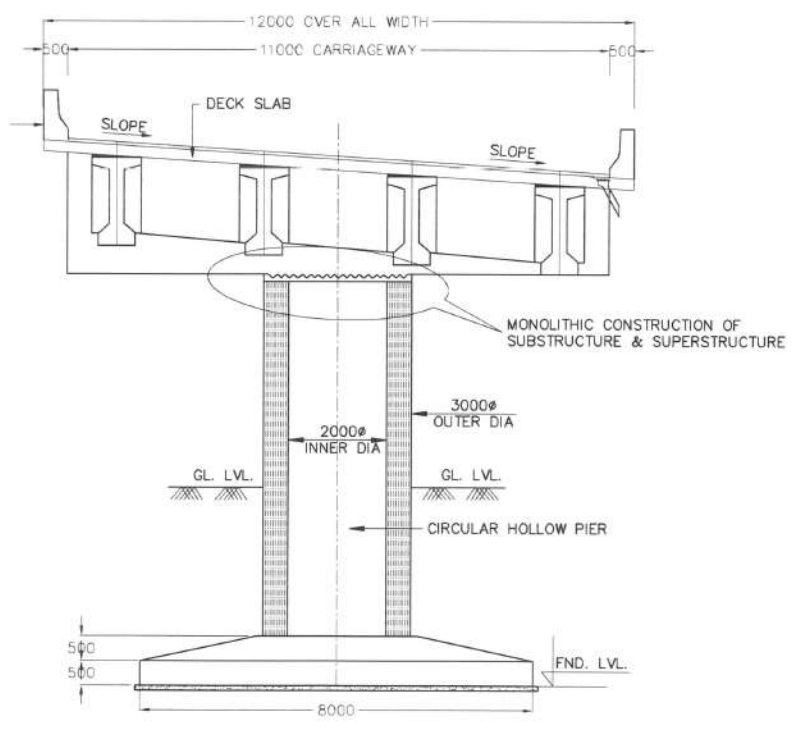
**SECTION D-D**



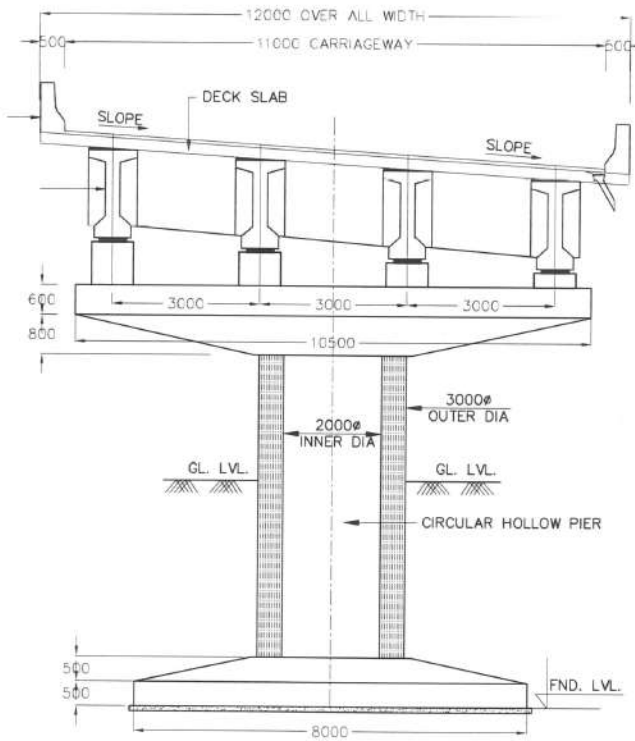
**DETAIL-Y**



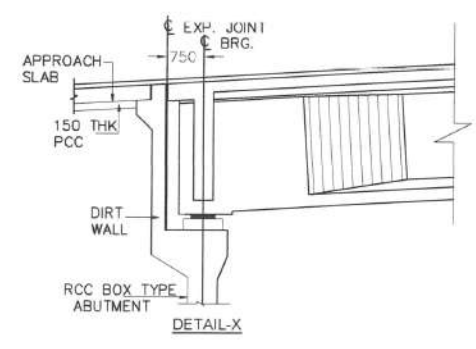
**SECTION A-A**



**SECTION B-B**



**SECTION C-C**



**DETAIL-X**

| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|-----------|-------------------------------|----------|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
 (Ministry of Road Transport & Highways)

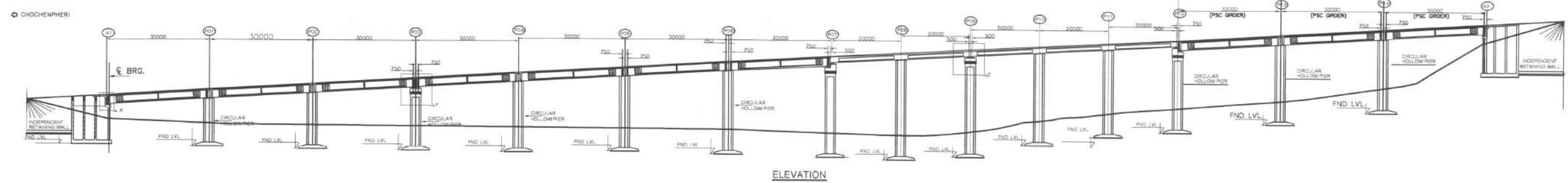
CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.  
 1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
 Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
 Phone No- 0120-6148000 Fax-0120-6148090  
 Email: info@sainfra.com

PROJECT : Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim. (Package- III-A)

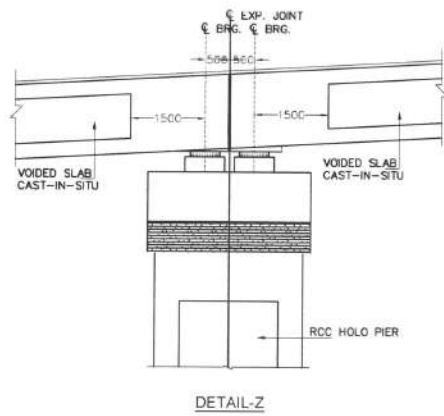
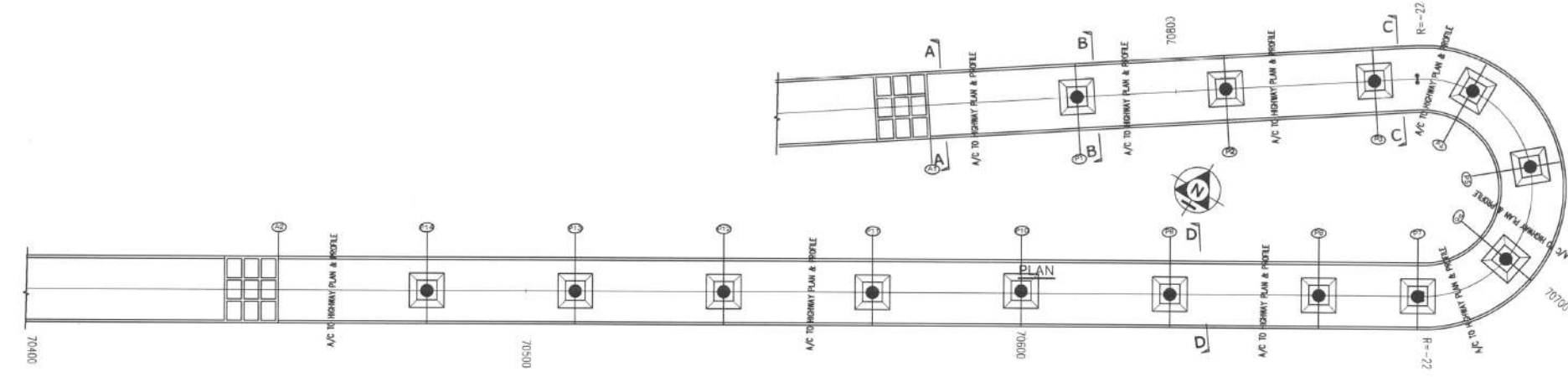
|                           |                         |
|---------------------------|-------------------------|
| DATE : JUNE- 2020         | REVISION R0             |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN       |
| CHECKED BY<br>A REHMAN    | APPROVED BY<br>S Shukla |
| SCALE:- AS SHOWN          | SHEET:- 02 OF 02        |

PROJECT : GENERAL ARRANGEMENT DRAWINGS  
 VIADUCT AT Km 69+180 To Km 69+350  
 (SPAN 5x30.0m+1x20.0m)

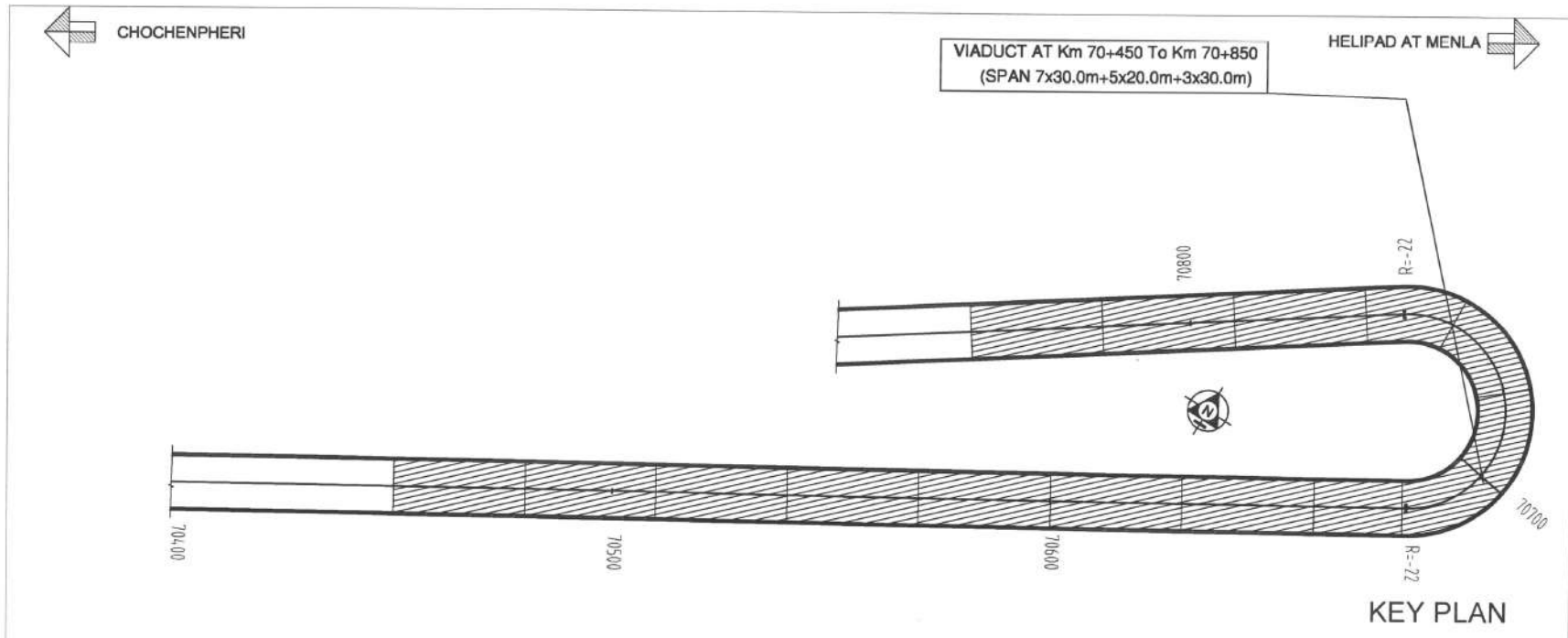
DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM69+265/GAD-01



|                 |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL | 2492.309 | 2492.912 | 2493.515 | 2494.119 | 2494.722 | 2495.325 | 2495.928 | 2496.531 | 2496.933 | 2497.335 | 2497.737 | 2498.140 | 2498.542 | 2499.145 | 2499.748 | 2500.351 |
| EX-GROUND LEVEL | 2485.309 | 2482.934 | 2481.499 | 2480.195 | 2478.892 | 2477.588 | 2476.250 | 2474.271 | 2473.005 | 2473.316 | 2475.910 | 2477.447 | 2478.456 | 2479.624 | 2482.443 | 2494.730 |
| CHAINAGE        | 70450    | 70480    | 70510    | 70540    | 70570    | 70600    | 70630    | 70660    | 70680    | 70700    | 70720    | 70740    | 70760    | 70790    | 70820    | 70850    |



- NOTES**
1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
  2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
  3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.



|     |           |                               |          |   |   |   |
|-----|-----------|-------------------------------|----------|---|---|---|
| RO  | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A        | B | C | D |
| REV | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |   |   |   |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
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Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

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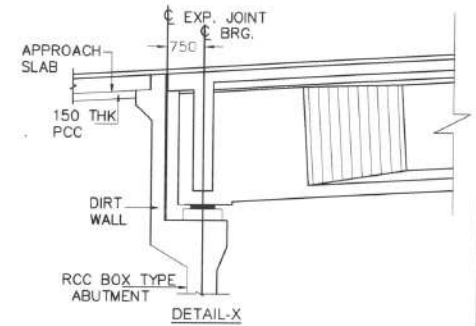
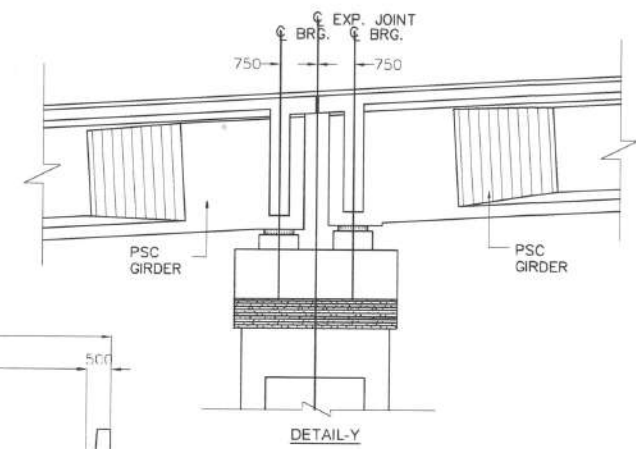
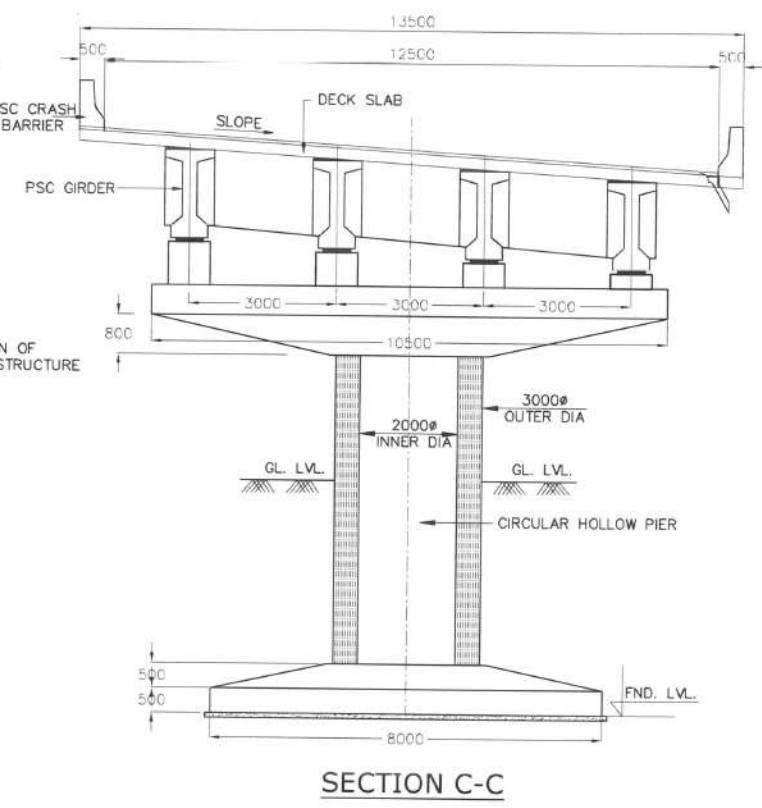
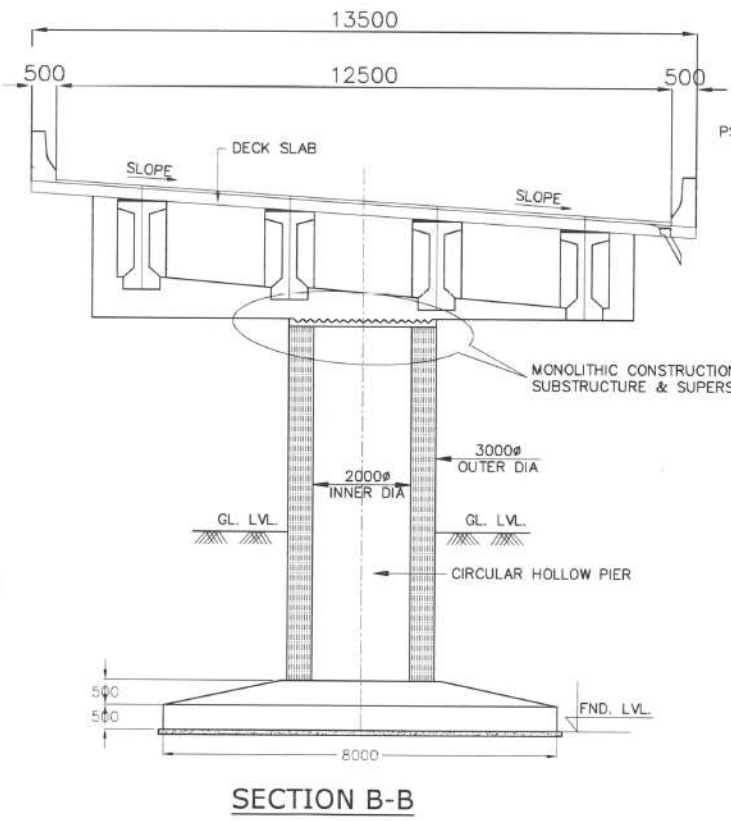
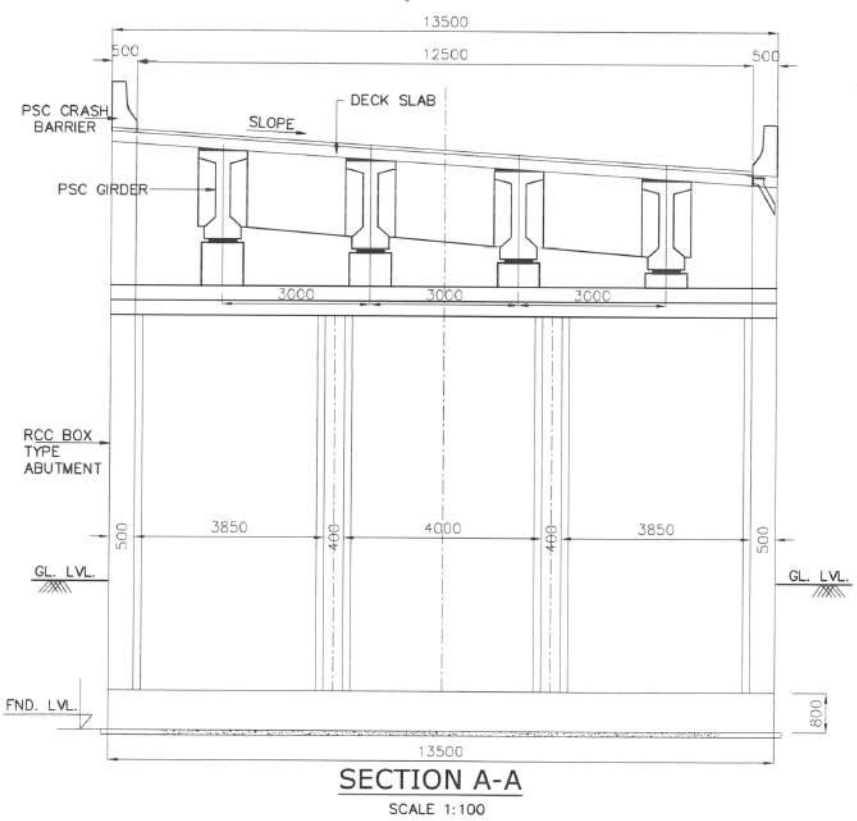
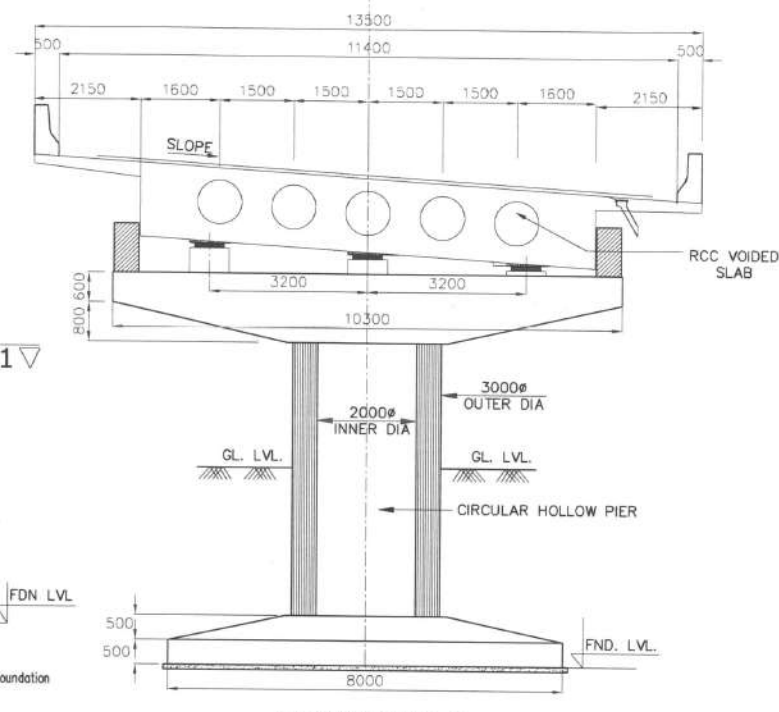
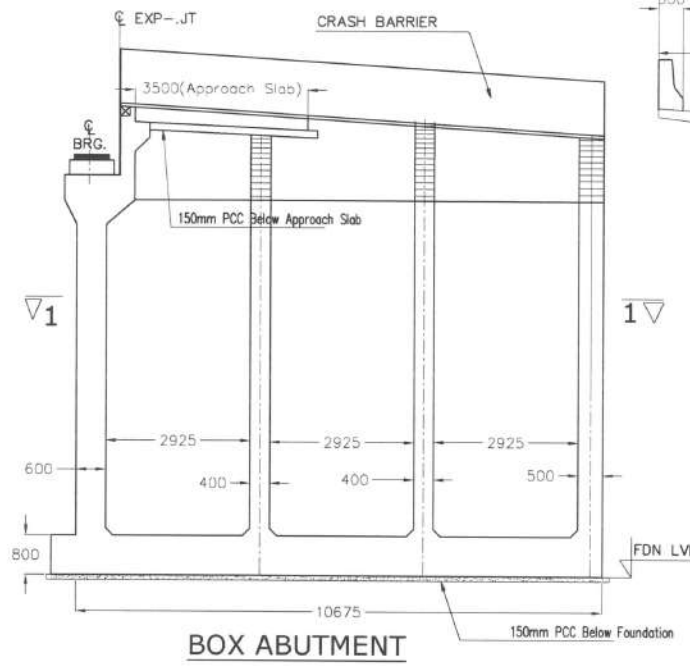
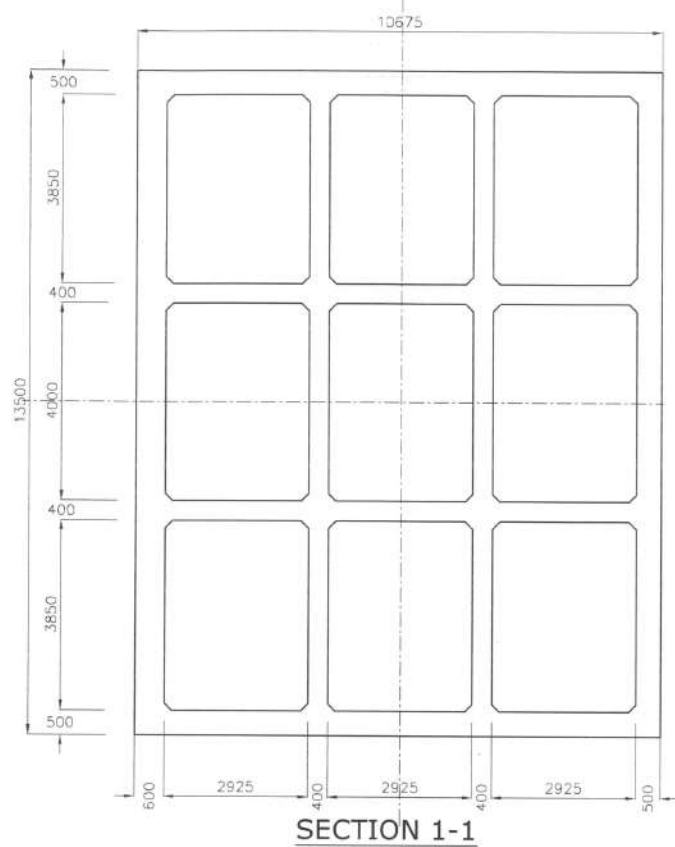
|                 |            |                 |           |
|-----------------|------------|-----------------|-----------|
| DATE :          | JUNE- 2020 | REVISION        | R0        |
| DESIGNED BY     | RAVI KUMAR | DRAWN BY        | A SEN     |
| CHECKED BY      | A REHMAN   | APPROVED BY     | S. Shukla |
| SCALE- AS SHOWN |            | SHEET- 01 OF 02 |           |

**PROJECT :** GENERAL ARRANGEMENT DRAWINGS  
VIADUCT AT Km 70+450 To Km 70+850  
(SPAN 7x30.0m+5x20.0m+3x30.0m)

DWG. NO. :- SAICPL-SESPL/NHDC/WB-SKM69+265/GAD-01

**NOTES**

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R + 1 LANE CLASS A 3 LANES OF CLASS A WHICH EVER GIVES WORST EFFECT.
5. GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS: -
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION ----- M35
  - (iii) RCC RAILING ----- M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PTE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
- 9 ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>
13. CONSTRUCTION JOINT



|    |           |                               |          |
|----|-----------|-------------------------------|----------|
| NO | DATE      | DESCRIPTION OF REVISIONS      | INITIALS |
| 01 | JUNE 2020 | DRAFT DETAILED PROJECT REPORT | A B C D  |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

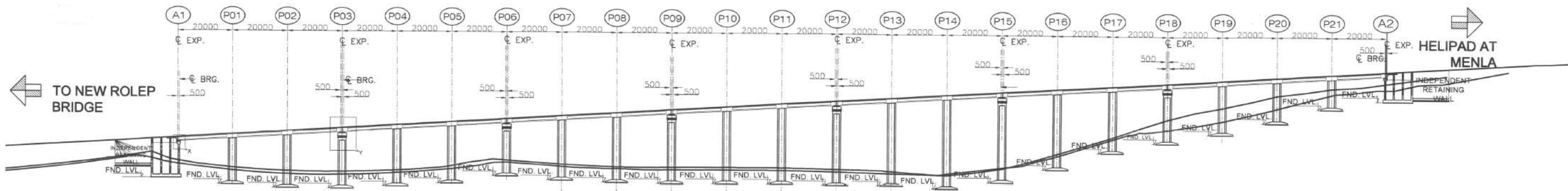
**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
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|                                  |                                |
|----------------------------------|--------------------------------|
| <b>DATE :</b> JUNE-2020          | <b>REVISION</b> R0             |
| <b>DESIGNED BY</b><br>RAVI KUMAR | <b>DRAWN BY</b><br>A SEN       |
| <b>CHECKED BY</b><br>AREHMAN     | <b>APPROVED BY</b><br>S.Shukla |
| <b>SCALE:</b> AS SHOWN           | <b>SHEET:</b> 02 OF 02         |

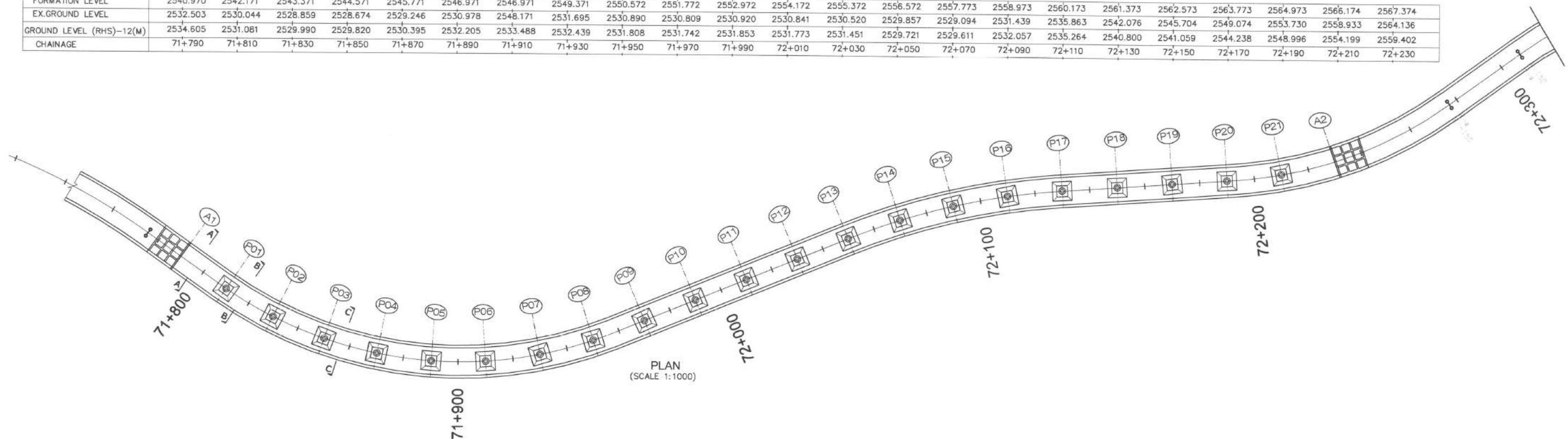
**GENERAL ARRANGEMENT DRAWINGS**  
VIADUCT AT Km 70+450 To Km 70+850  
(SPAN 7x30.0m+5x20.0m+3x30.0m)

**DWG. NO. :-** SAICPL-SESPL/NHDC/WB-SKM/69+265/GAD-01

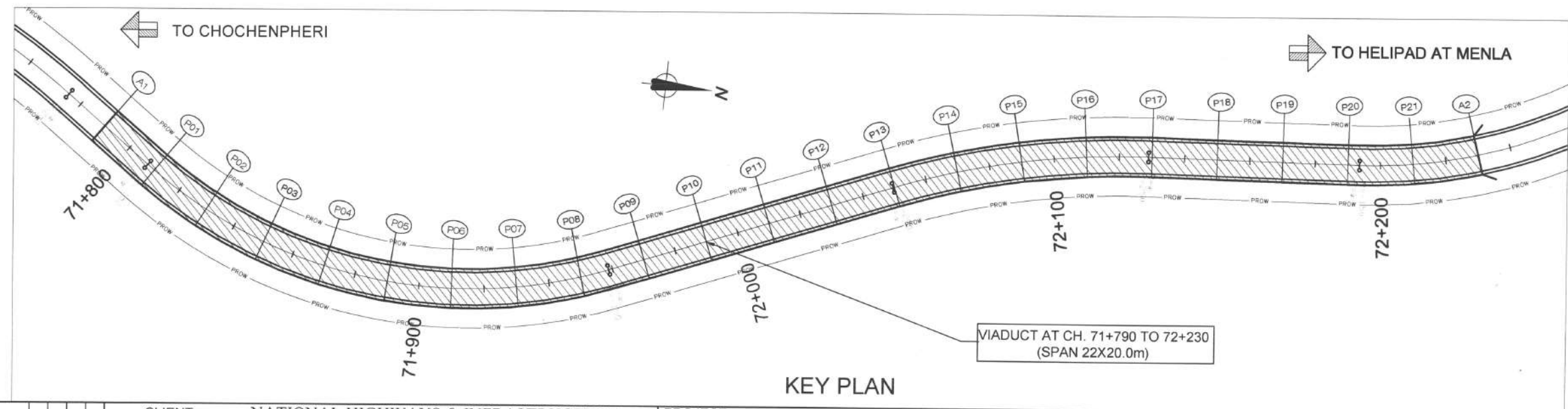


ELEVATION  
(SCALE 1:1000)

|                          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL          | 2540.970 | 2542.171 | 2543.371 | 2544.571 | 2545.771 | 2546.971 | 2546.971 | 2549.371 | 2550.572 | 2551.772 | 2552.972 | 2554.172 | 2555.372 | 2556.572 | 2557.773 | 2558.973 | 2560.173 | 2561.373 | 2562.573 | 2563.773 | 2564.973 | 2566.174 | 2567.374 |
| EX.GROUND LEVEL          | 2532.503 | 2530.044 | 2528.859 | 2528.674 | 2529.246 | 2530.978 | 2548.171 | 2531.695 | 2530.890 | 2530.809 | 2530.920 | 2530.841 | 2530.520 | 2529.857 | 2529.094 | 2531.439 | 2535.863 | 2542.076 | 2545.704 | 2549.074 | 2553.730 | 2558.933 | 2564.136 |
| GROUND LEVEL (RHS)-12(M) | 2534.605 | 2531.081 | 2529.990 | 2529.820 | 2530.395 | 2532.205 | 2533.488 | 2532.439 | 2531.808 | 2531.742 | 2531.853 | 2531.773 | 2531.451 | 2529.721 | 2529.611 | 2532.057 | 2535.264 | 2540.800 | 2541.059 | 2544.238 | 2548.996 | 2554.199 | 2559.402 |
| CHAINAGE                 | 71+790   | 71+810   | 71+830   | 71+850   | 71+870   | 71+890   | 71+910   | 71+930   | 71+950   | 71+970   | 71+990   | 72+010   | 72+030   | 72+050   | 72+070   | 72+090   | 72+110   | 72+130   | 72+150   | 72+170   | 72+190   | 72+210   | 72+230   |

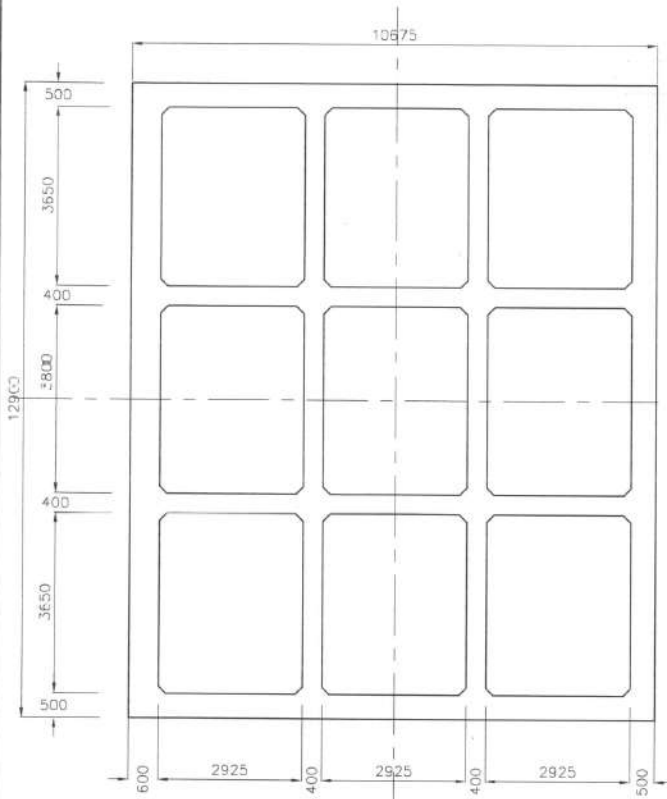


PLAN  
(SCALE 1:1000)

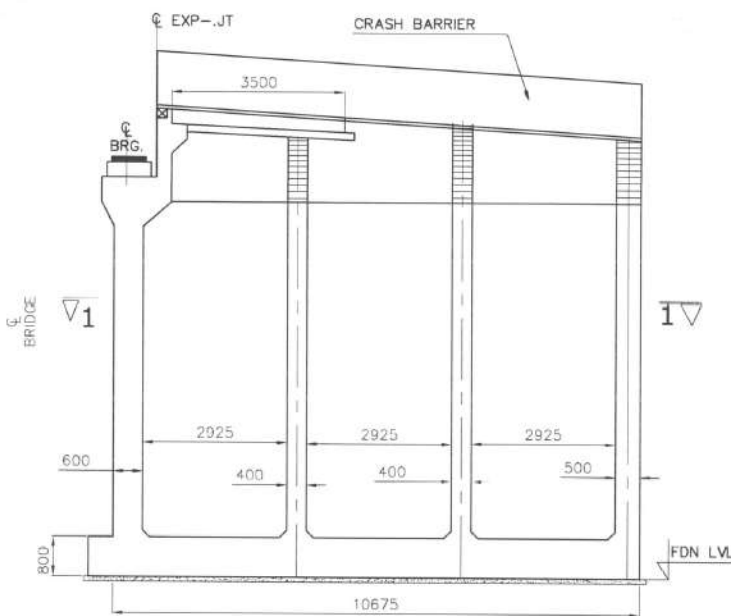


KEY PLAN

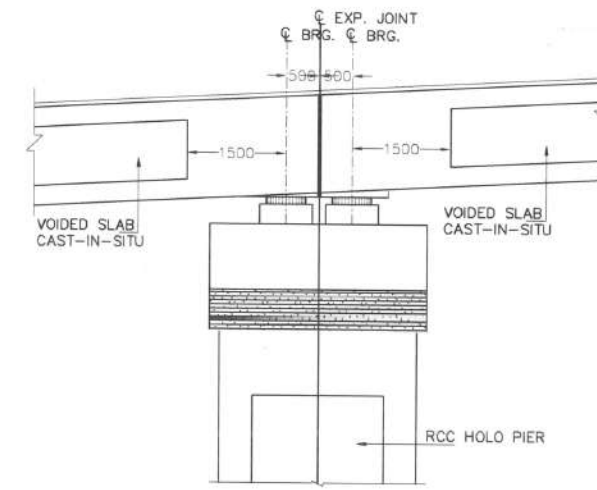
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|---|------|---|----------|-------------------------------------|---|--|--|
| CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED<br>(Ministry of Road Transport & Highways)   |      | PROJECT: Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhim -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim. (Package - III-A) |          | DATE: JUNE-2020<br>REVISION: R0     |   | GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 71+790 TO 72+230 (SPAN-22X20.0) |  |
| CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.<br>1101A, 11 Floor Tower A-II, Ansal Corporate Park, Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)<br>Phone No- 0120-6148000 Fax-0120-6148090 Email: info@sainfra.com |      | DESIGNED BY: RAVI KUMAR<br>DRAWN BY: A SEN<br>CHECKED BY: A REHMAN<br>APPROVED BY: S Shukla   |          | SCALE:- AS SHOWN<br>SHEET: 01 OF 02 | DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/71+790/GAD-01 |  |  |
| REV   | DATE | DESCRIPTION OF REVISIONS  | INITIALS |                                     |   |  |  |
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT   | A B C D  |                                     |   |  |  |



**SECTION 1-1**  
SCALE 1:100



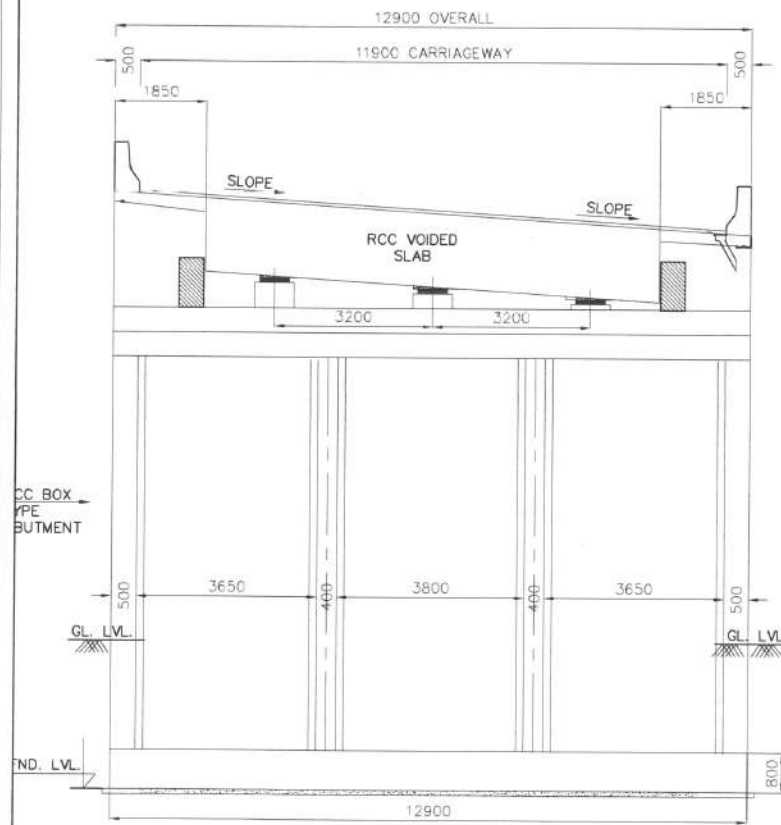
**BOX ABUTMENT**  
SCALE 1:100



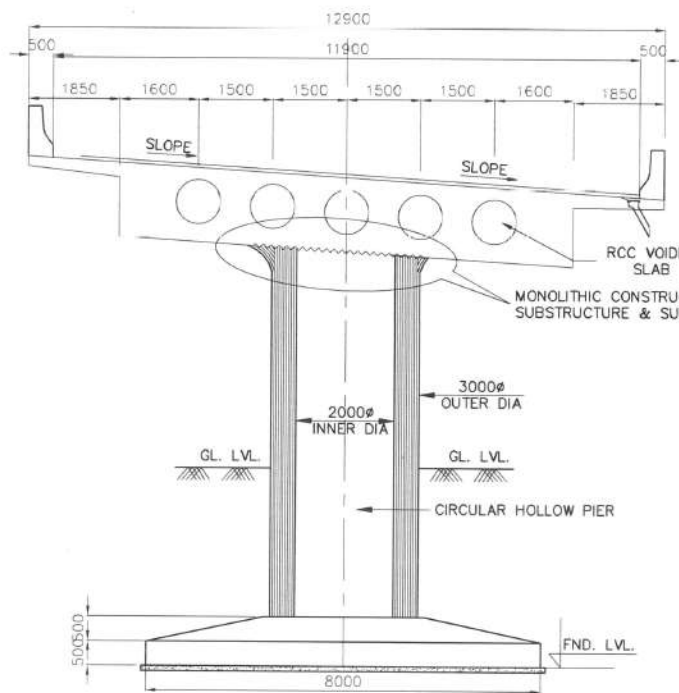
**DETAIL-Y**  
(SCALE 1:100)

**NOTES**

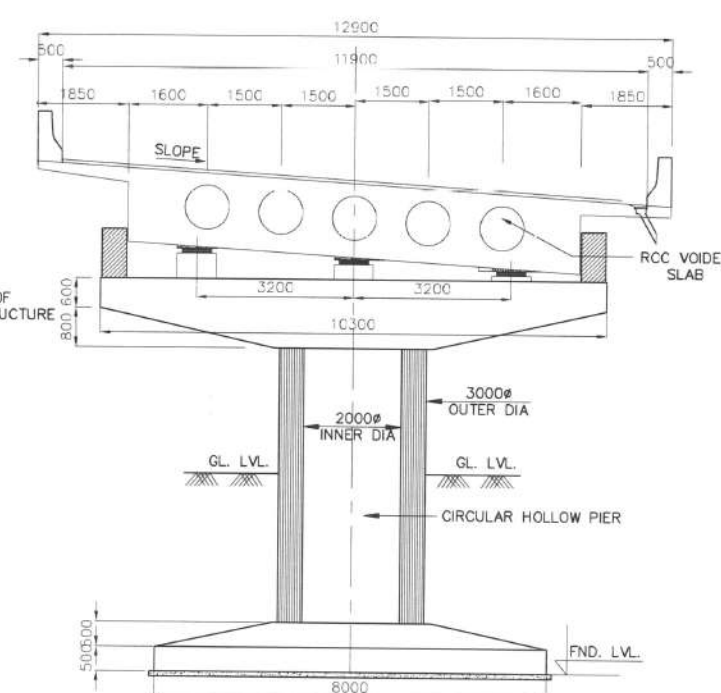
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 (iv) RCC CRASH BARRIER ----- M40  
 (v) APPROACH SLAB ----- M30  
 (vi) PEDESTAL ----- M40
- TYPE OF BEARING PROPOSED HERE IS POT-PTFE AS PER IRC:83, PART-III
- SINGLE STRIP SEAL EXPANSION JOINT IS USED.
- GRADE OF CEMENT IS USED HERE IS OPC 43/OPC 53.
- ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
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- SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>



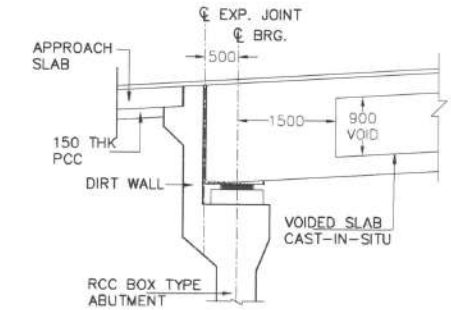
**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SECTION NEAR FIX & FREE JOINT  
SCALE 1:100



**SECTION C-C**  
SECTION NEAR EXPANSION JOINT  
SCALE 1:100



**DETAIL-X**  
(SCALE 1:100)

| REV | DATE | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|------|-------------------------------|----------|
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT |          |

CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

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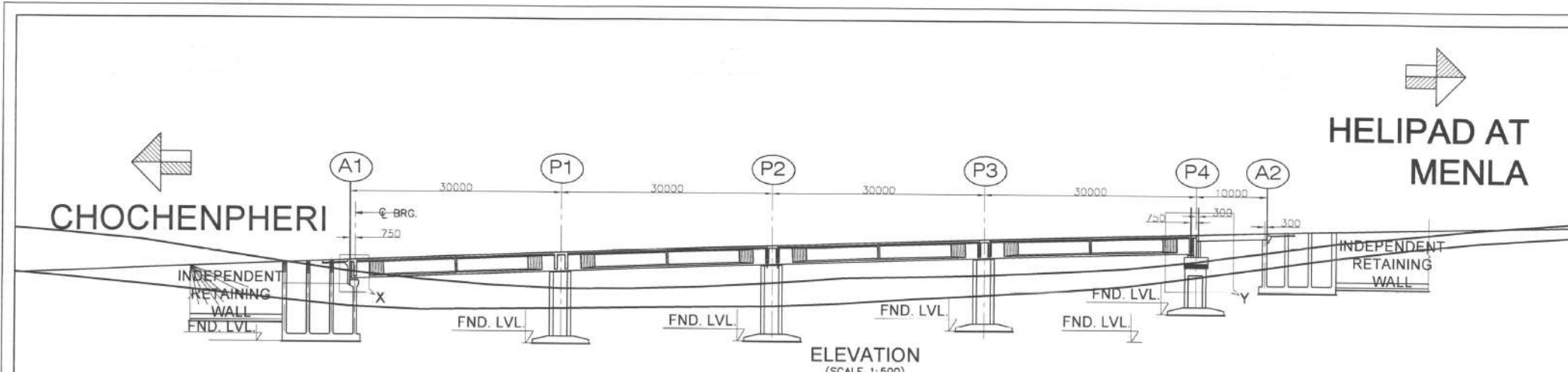
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| DATE        | REVISION    |
|-------------|-------------|
| JUNE-2020   | R0          |
| DESIGNED BY | DRAWN BY    |
| RAVI KUMAR  | A SEN       |
| CHECKED BY  | APPROVED BY |
| A REHMAN    | S Shukla    |

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 71+790 TO 72+230 (SPAN-22X20.0)

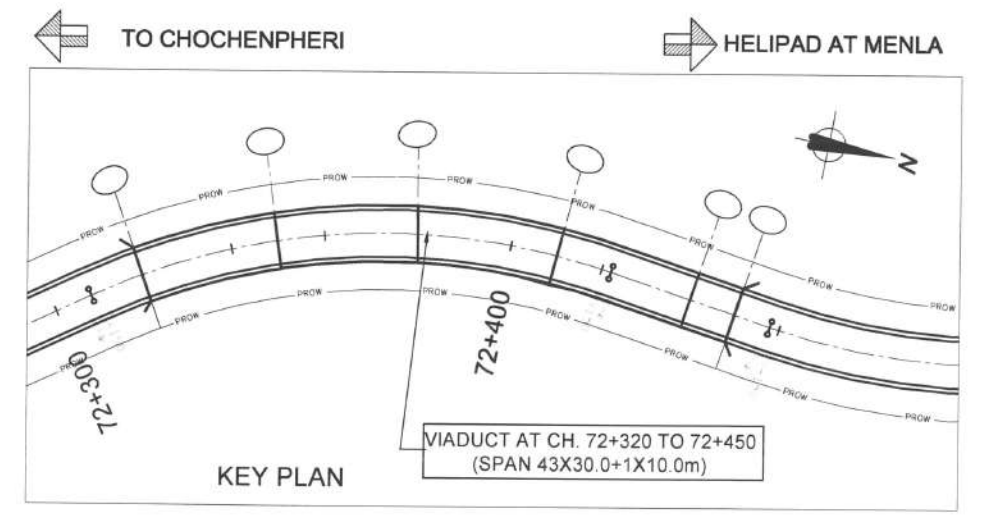
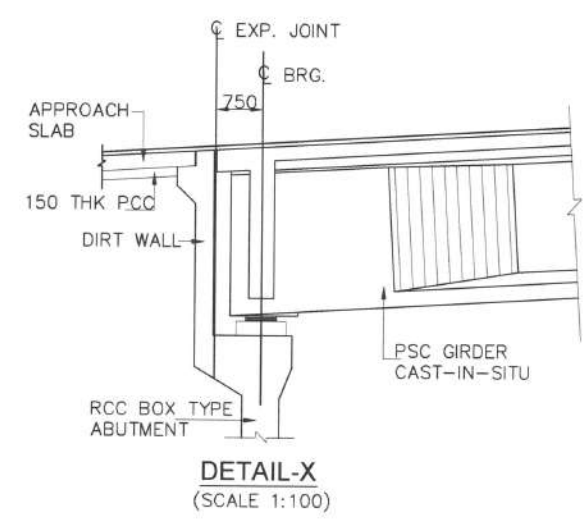
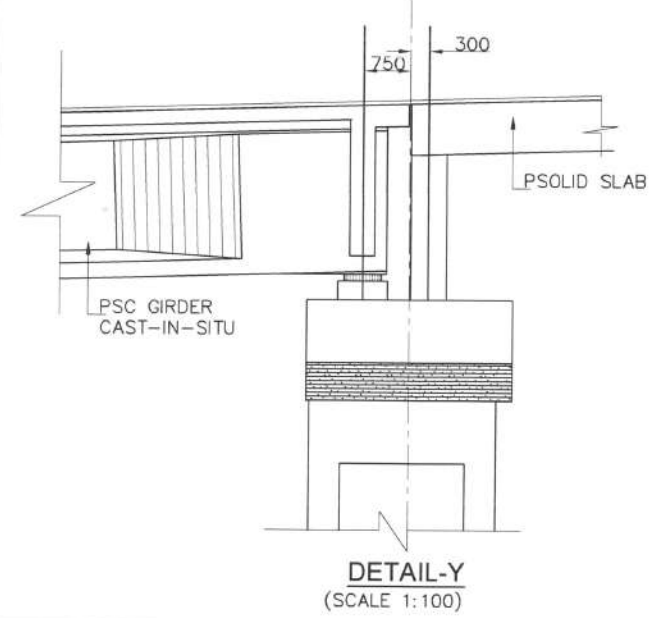
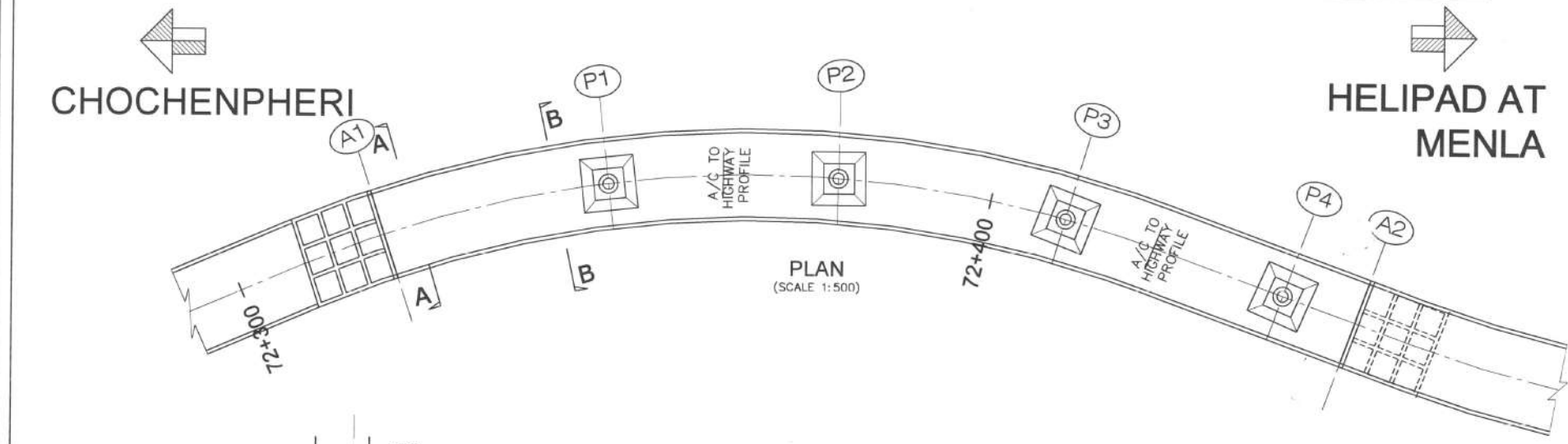
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/71+790/GAD-01

SCALE:- AS SHOWN SHEET:- 02 OF 02



|                          | 72+320   | 72+350   | 72+380   | 72+410   | 72+440   | 72+450   |
|--------------------------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL          | 2572.774 | 2574.575 | 2576.375 | 2578.175 | 2579.975 | 2580.575 |
| EX.GROUND LEVEL          | 2565.726 | 2546.371 | 2547.152 | 2555.268 | 2571.851 | 2577.177 |
| GROUND LEVEL (RHS)-12(M) | 2687.446 | 2685.284 | 2684.585 | 2684.737 | 2686.835 | 2687.834 |
| CHAINAGE                 | 72+320   | 72+350   | 72+380   | 72+410   | 72+440   | 72+450   |

- NOTES**
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  - BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
  - GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
    - (i) SUPERSTRUCTURE(PSC) ----- M45
    - (i) SUPERSTRUCTURE(VOIDED) ----- M40
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    - (iii) RCC RAILING -----M30
    - (iv) RCC CRASH BARRIER ----- M40
    - (v) APPROACH SLAB ----- M30
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  - TYPE OF BEARING PROPOSED HERE IS POT-PTEF AS PER IRC:83, PART-III
  - SINGLE STRIP SEAL EXPANSION JOINT IS USED.
  - GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
  - ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
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  - SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
  - SAFE BEARING CAPACITY FOR PRILIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>



| REV | DATE | DESCRIPTION OF REVISIONS      | INITIALS |
|-----|------|-------------------------------|----------|
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT |          |

**CLIENT :** NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

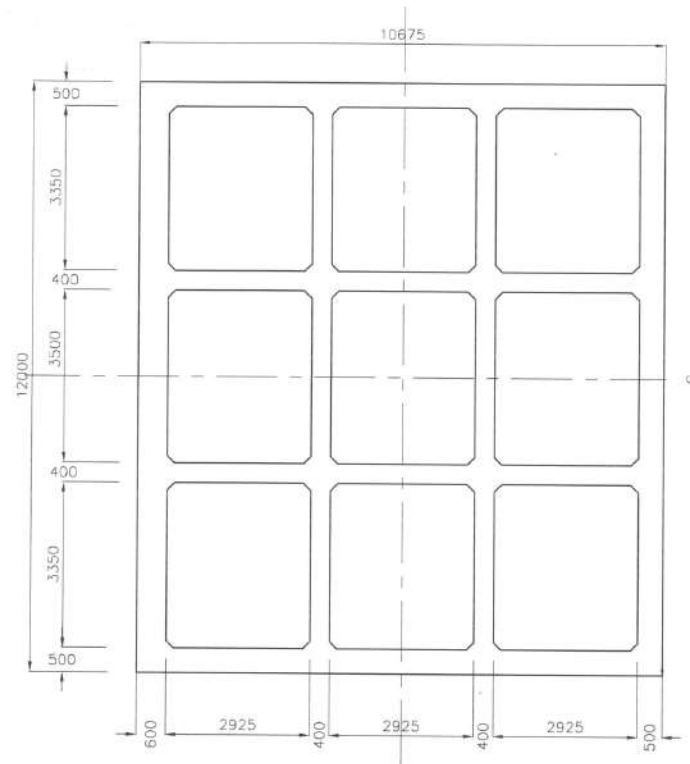
**CONSULTANT:** S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
Plot No. 7A/1, Sector 142, Noida-201301 (Uttar Pradesh)  
Phone No- 0120-6148000 Fax-0120-6148090  
Email: info@sainfra.com

**PROJECT :** Against Supplementary Agreement dated 05.12.2019 - To execute the work of preparation of DPR as 'Additional work' for Package-II, III, IV-C and V which forms part of the original Contract Agreement dated 30.09.2014 for Preparation of Feasibility Report cum Preliminary Design for alternative Highway to Gangtok in Sikkim via Bagrakot- Chuikhum -Nimbong-Kafer-Bakhim-Algarah-Rhenok in the State of West Bengal and from Rhenok-Rorathang-Pakyong along with spur from Aritar-Rolep-Menla in the State of Sikkim (Package - II-C)

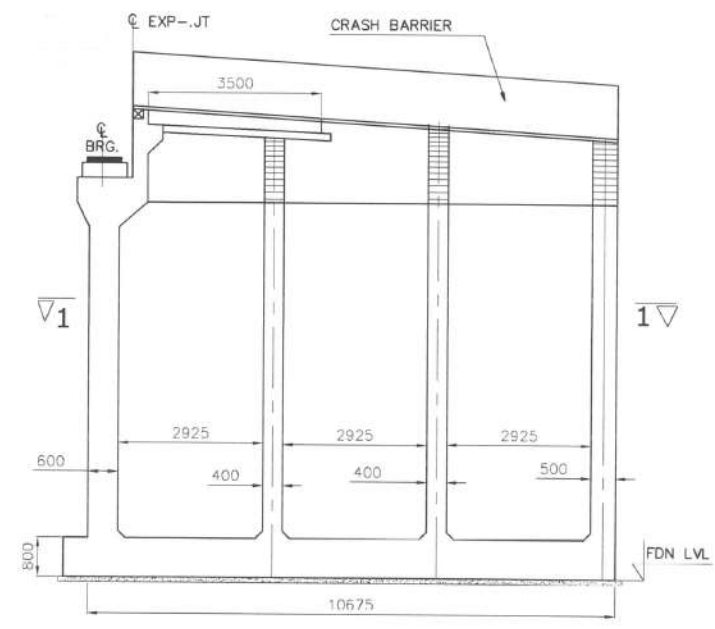
| DATE        | JUNE-2020  | REVISION    | R0       |
|-------------|------------|-------------|----------|
| DESIGNED BY | RAVI KUMAR | CHECKED BY  | AREHMAN  |
| DRAWN BY    | A SEN      | APPROVED BY | S Shukla |
| SCALE       | AS SHOWN   |             |          |
| SHEET       | 01 OF 02   |             |          |

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH. 72+320 TO 72+450 (SPAN-4X30+1X10.0)

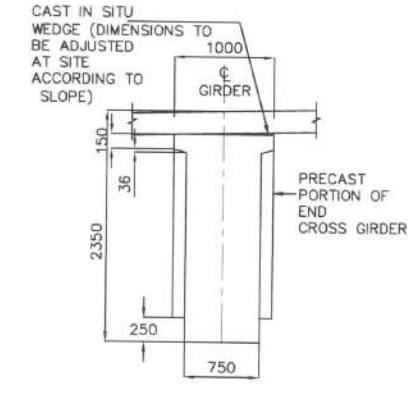
DWG NO. :- SAICPL-SESPL/NHIDC/WB-SKM/72+385/GAD-01



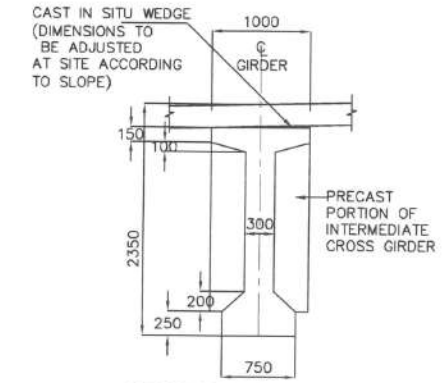
**SECTION 1-1**  
SCALE 1:100



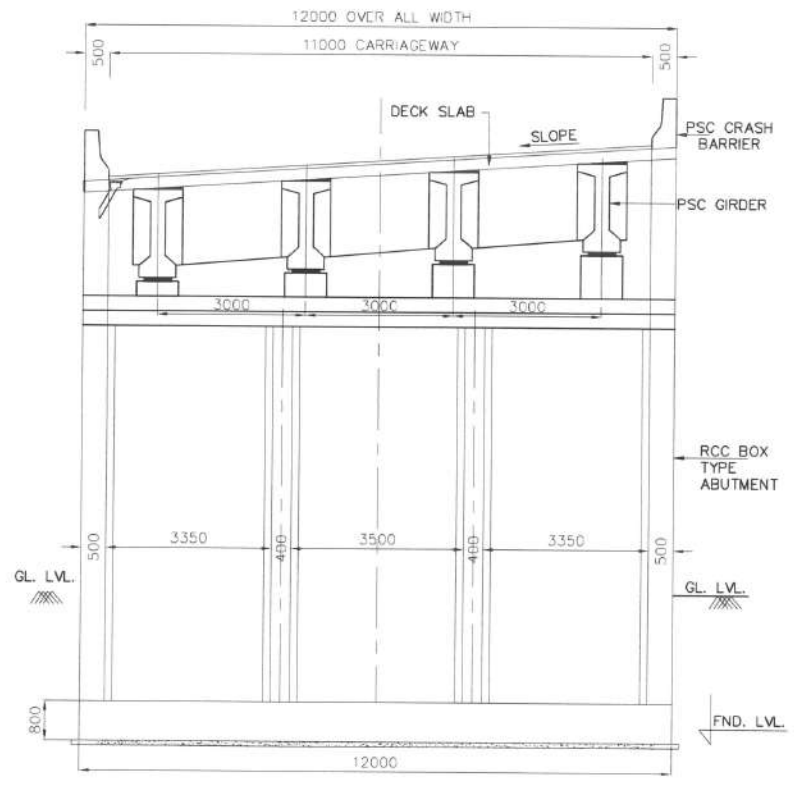
**BOX ABUTMENT**  
SCALE 1:100



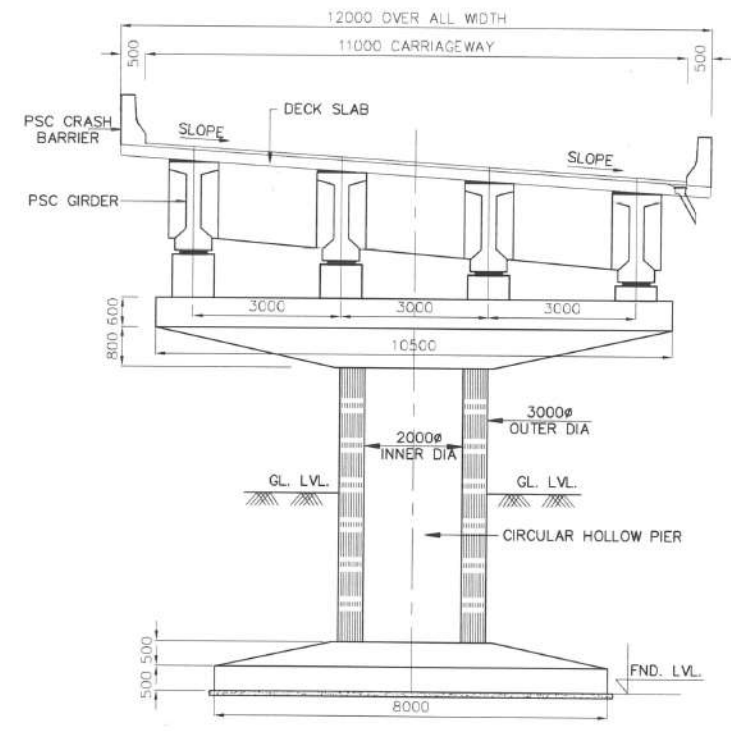
**SECTION OF GIRDER AT SUPPORT**  
(SCALE 1:50)



**SECTION OF GIRDER AT MID**  
(SCALE 1:50)



**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100

|     |      |                               |          |
|-----|------|-------------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT | A B C D  |

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Email: info@sainfra.com

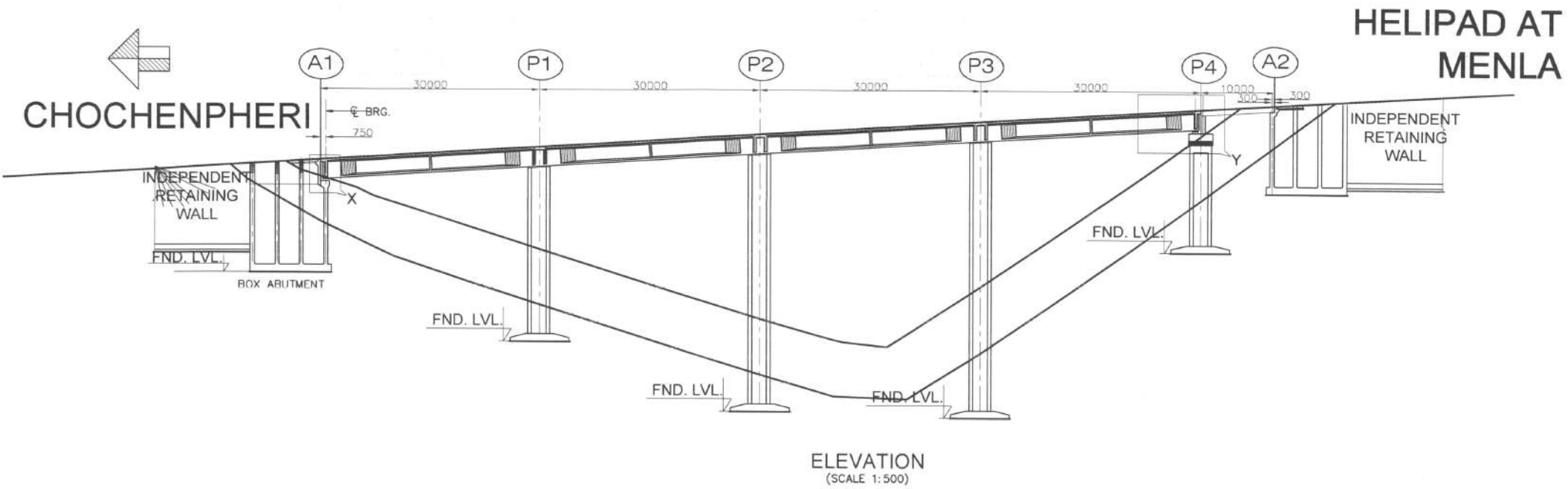
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|                 |            |             |             |
|-----------------|------------|-------------|-------------|
| DATE :          | JUNE- 2020 | REVISION    | R0          |
| DESIGNED BY     | DRAWN BY   | CHECKED BY  | APPROVED BY |
| B<br>RAVI KUMAR | A<br>SEN   | A<br>REHMAN | S<br>Shukla |

**GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 72+320 TO 72+450 (SPAN-4X30+1X10.0)**

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/72+385/GAD-01

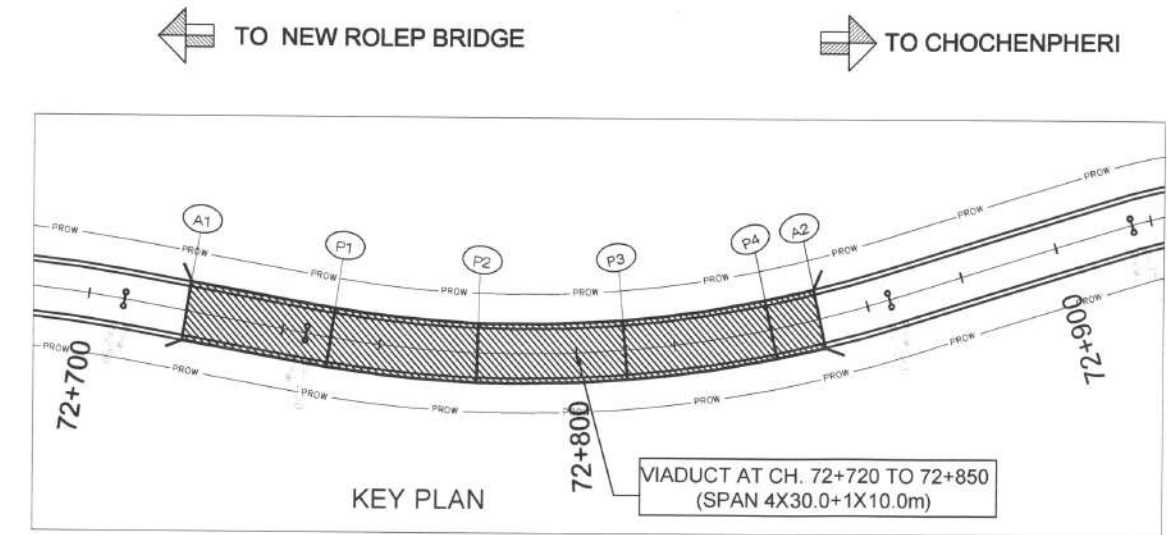
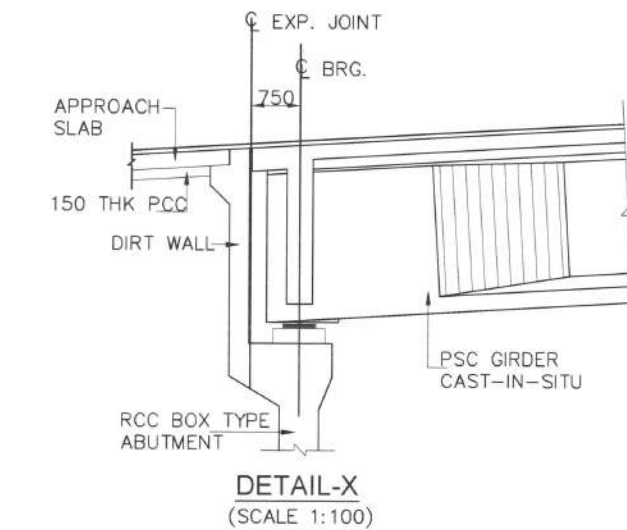
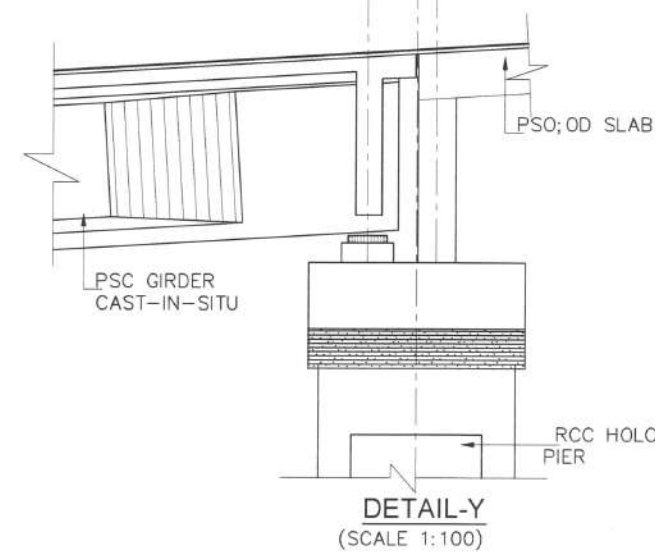
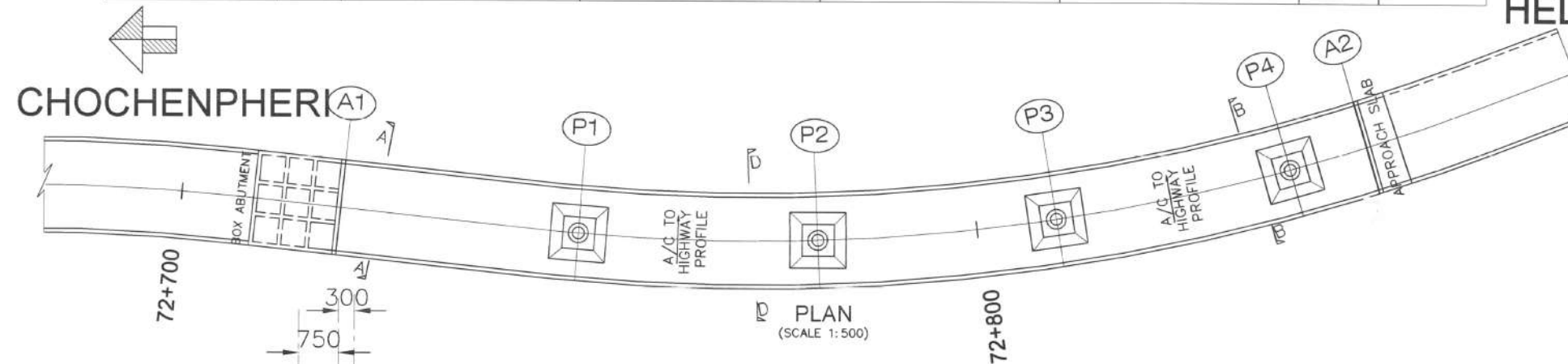
SCALE:- AS SHOWN SHEET:- 02 OF 02



### NOTES

1. ALL DIMENSIONS ARE MILLIMETERS AND LEVELS ARE IN METERS.
2. DIMENSIONS ARE NOT TO SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THE DIMENSION OF THE FOUNDATION SHOWN HERE TENTATIVE ONLY. THIS SHALL BE FINALIZED AFTER DETAILED SUBSOIL INVESTIGATION.
4. BRIDGE HAS BEEN DESIGNED FOR CARRIAGEWAY LIVE LOAD OF 1 LANE 70R OR 2 LANES OF CLASS A WHICHEVER GIVES WORST EFFECT.
5. GRADE OF CONCRETE FOR VARIOUS ELEMENTS ARE AS FOLLOWS:-
  - (i) SUPERSTRUCTURE(PSC) ----- M45
  - (i) SUPERSTRUCTURE(VOIDED) ----- M40
  - (ii) RCC SUBSTRUCTURE & FOUNDATION ---- M40
  - (iii) RCC RAILING -----M30
  - (iv) RCC CRASH BARRIER ----- M40
  - (v) APPROACH SLAB ----- M30
  - (vi) PEDESTAL ----- M40
6. TYPE OF BEARING PROPOSED HERE IS POT-PITFE AS PER IRC:83, PART-III
7. SINGLE STRIP SEAL EXPANSION JOINT IS USED.
8. GRADE OF CEMENT IS USED HERE IS OPC 43/OPc 53.
9. ALL REINFORCEMENT BARS ARE TMT BARS (GRADE DESIGNATION Fe500D) AS PER IS:1786.
10. BRIDGE HAS BEEN DESIGNED CONSIDERING SEISMIC ZONE AS IV.
11. SUPERELEVATION SHALL BE MAINTAINED AS PER HIGHWAY PLAN & PROFILE.
12. SAFE BEARING CAPACITY FOR PRELIMINARY DESIGN AT FOUNDING LEVEL IS CONSIDERED AS 40t/m<sup>2</sup>

HELIPAD AT MENLA



|     |      |                               |          |
|-----|------|-------------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT | A B C D  |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

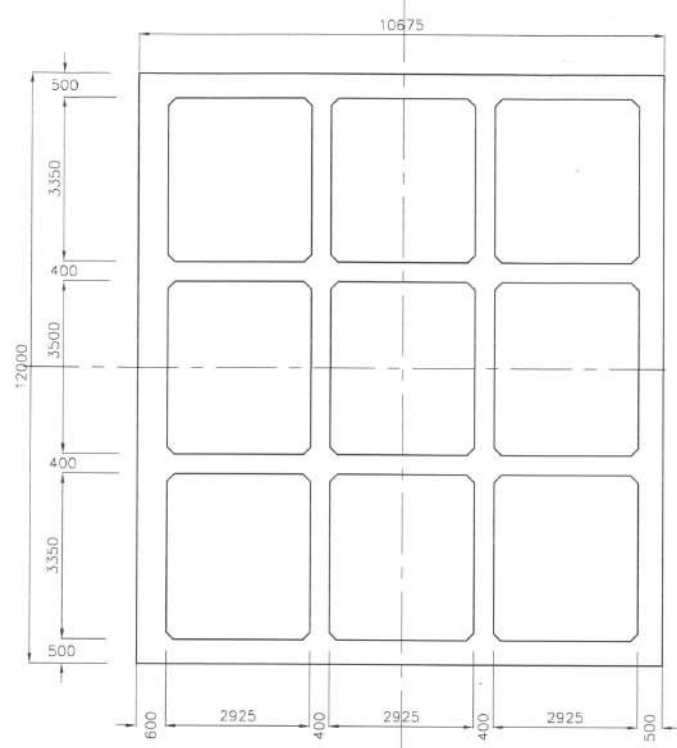
CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.  
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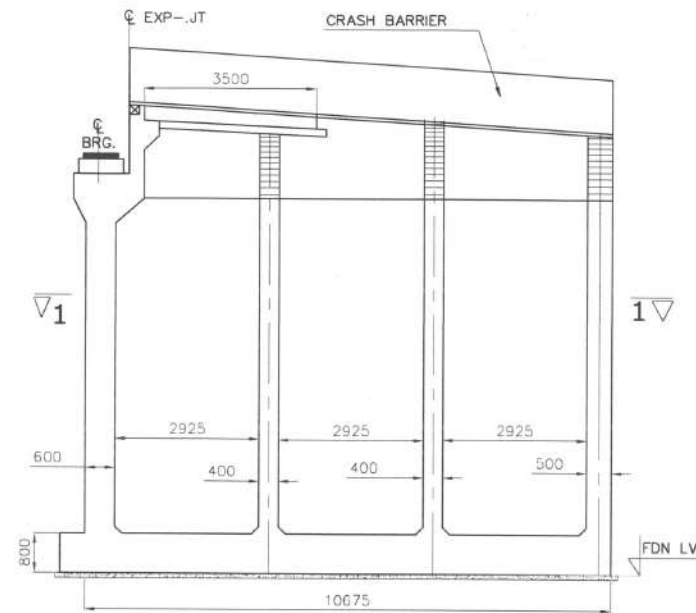
|                           |                   |                        |                          |
|---------------------------|-------------------|------------------------|--------------------------|
| DATE : JUNE-2020          |                   | REVISION R0            |                          |
| DESIGNED BY<br>RAVI KUMAR | DRAWN BY<br>A SEN | CHECKED BY<br>A REHMAN | APPROVED BY<br>S. Shukla |
| SCALE:- AS SHOWN          |                   | SHEET:- 01 OF 02       |                          |

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 72+720 TO 72+850 (SPAN-4X30+1X10.0)

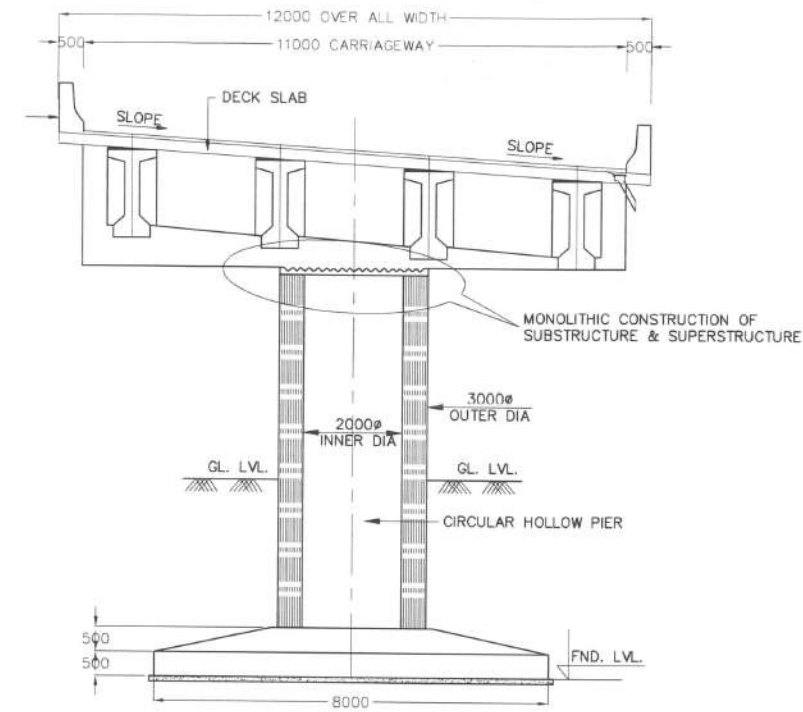
DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/72+720/GAD-01



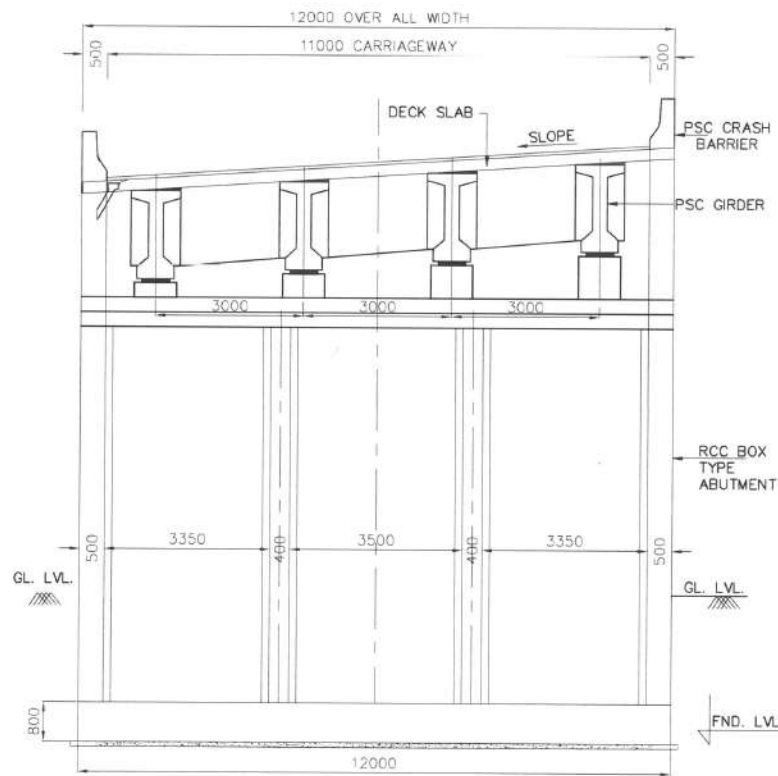
**SECTION 1-1**  
SCALE 1:100



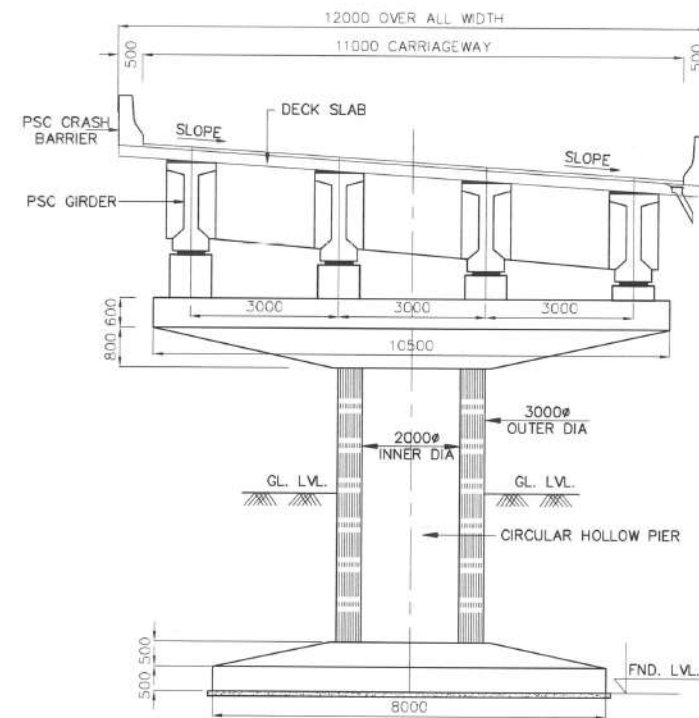
**BOX ABUTMENT**  
SCALE 1:100



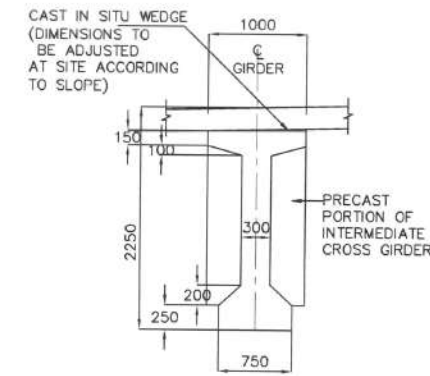
**SECTION D-D**



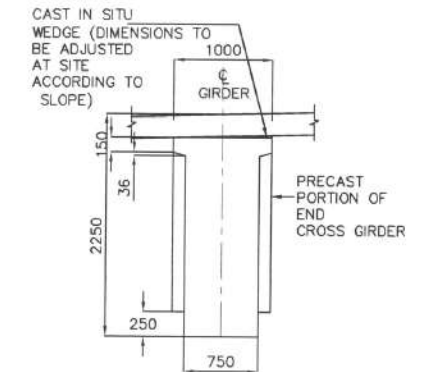
**SECTION A-A**  
SCALE 1:100



**SECTION B-B**  
SCALE 1:100



**SECTION OF GIRDER AT MID**  
(SCALE 1:50)



**SECTION OF GIRDER AT SUPPORT**  
(SCALE 1:50)

|     |      |                               |          |
|-----|------|-------------------------------|----------|
| REV | DATE | DESCRIPTION OF REVISIONS      | INITIALS |
| R0  | JUNE | DRAFT DETAILED PROJECT REPORT | A B C D  |

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
(Ministry of Road Transport & Highways)

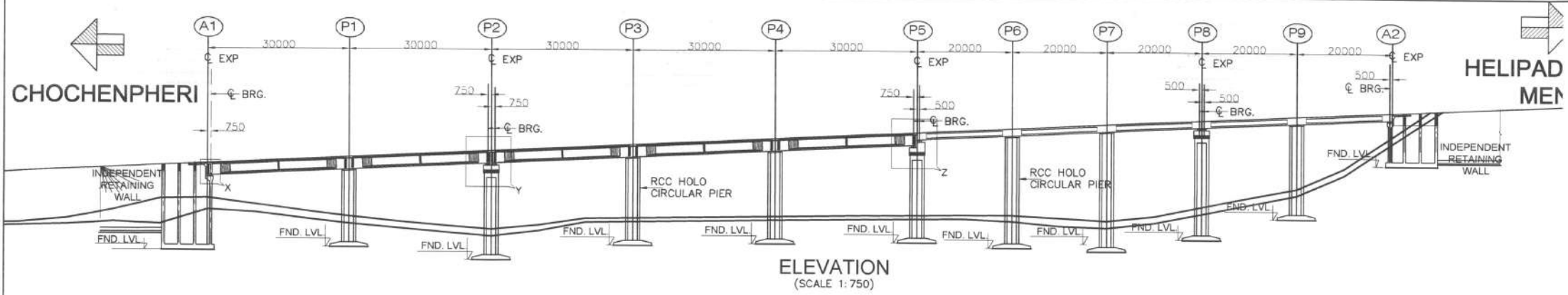
CONSULTANT: S.A. Infrastructure Consultants Pvt. Ltd.  
1101A, 11 Floor Tower A-II, Ansal Corporate Park,  
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|                        |                      |
|------------------------|----------------------|
| DATE : JUNE-2020       | REVISION R0          |
| DESIGNED BY RAVI KUMAR | DRAWN BY A SEN       |
| CHECKED BY A REHMAN    | APPROVED BY S Shukla |
| SCALE:- AS SHOWN       | SHEET:- 02 OF 02     |

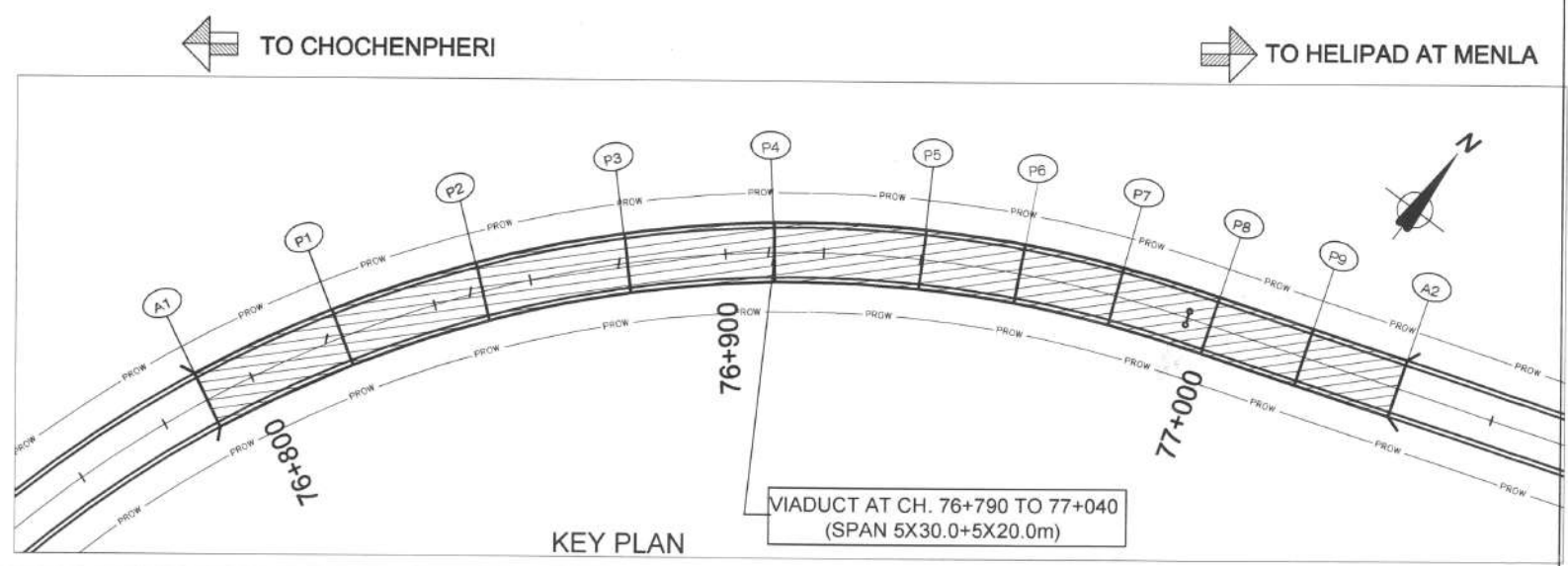
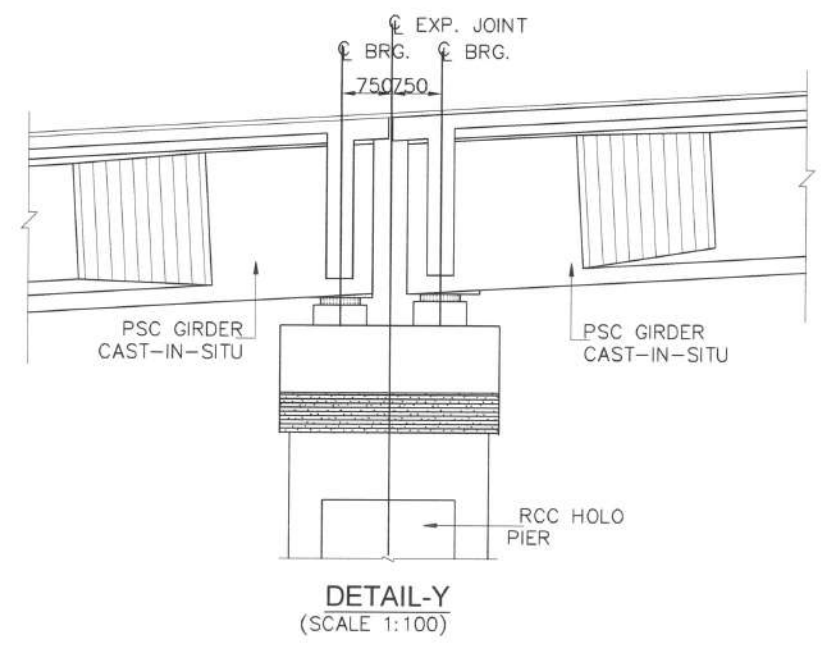
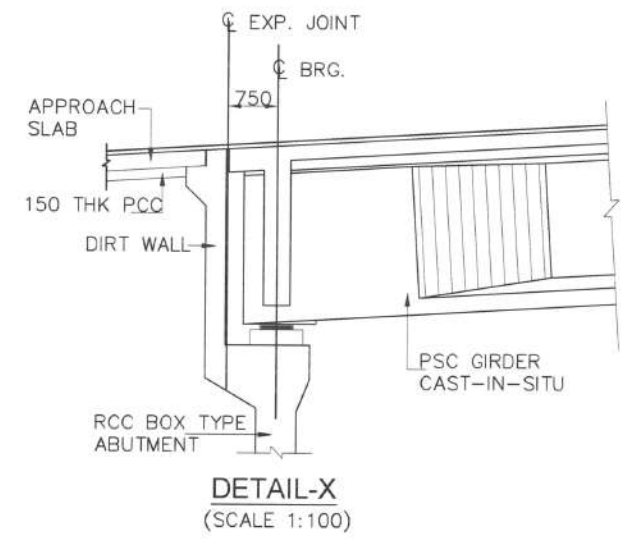
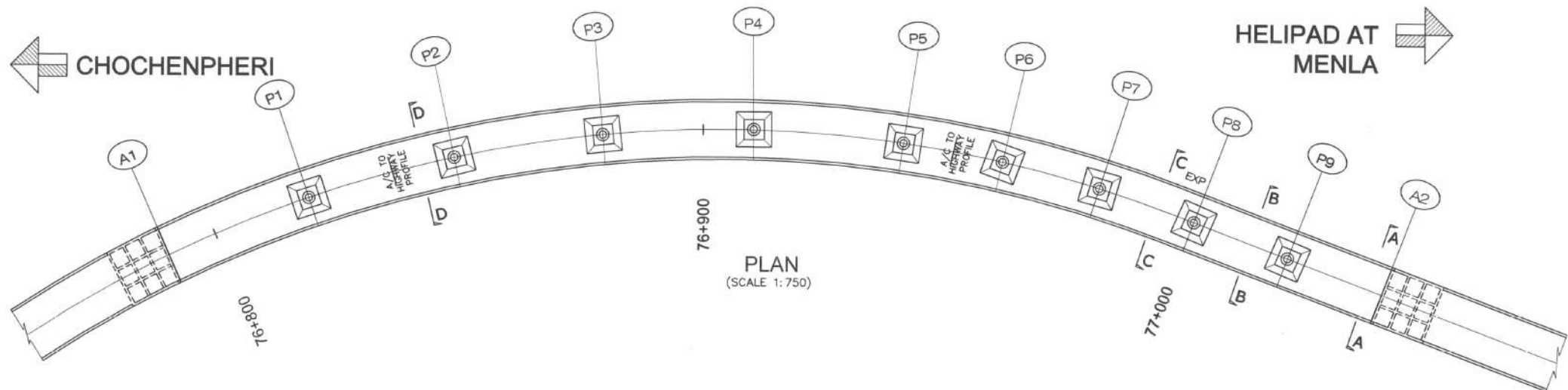
GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 72+720 TO 72+850 (SPAN-4X30+1X10.0)

DWG. NO. :- SAICPL-SESPL/NHIDC/WB-SKM/72+720/GAD-01



|                          |          |          |          |          |          |          |          |          |          |          |          |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| FORMATION LEVEL          | 2768.318 | 2769.733 | 2771.148 | 2772.563 | 2773.978 | 2775.393 | 2776.337 | 2777.280 | 2778.223 | 2779.167 | 2780.110 |
| EX.GROUND LEVEL          | 2760.906 | 2757.106 | 2754.434 | 2756.975 | 2757.387 | 2757.794 | 2757.910 | 2756.745 | 2759.830 | 2763.770 | 2774.945 |
| GROUND LEVEL (RHS)-12(M) | 2758.471 | 2755.576 | 2752.984 | 2756.183 | 2756.595 | 2757.001 | 2756.640 | 2755.285 | 2758.375 | 2762.340 | 2773.467 |
| CHAINAGE                 | 76+790   | 76+820   | 76+850   | 76+880   | 76+910   | 76+940   | 76+960   | 76+980   | 77+000   | 77+020   | 77+040   |

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|    |      |                               |   |   |   |   |
|----|------|-------------------------------|---|---|---|---|
| RO | JUNE | DRAFT DETAILED PROJECT REPORT | A | B | C | D |
|----|------|-------------------------------|---|---|---|---|

CLIENT : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED  
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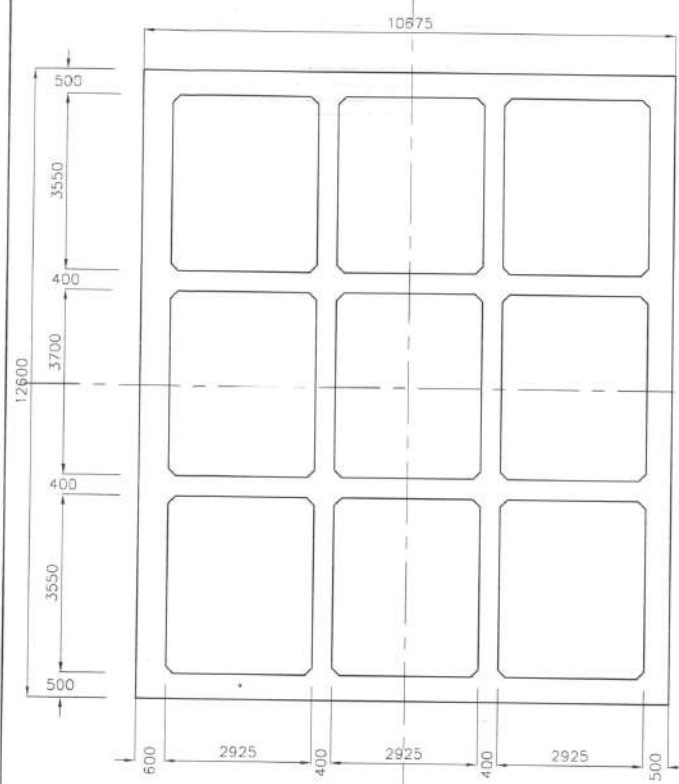
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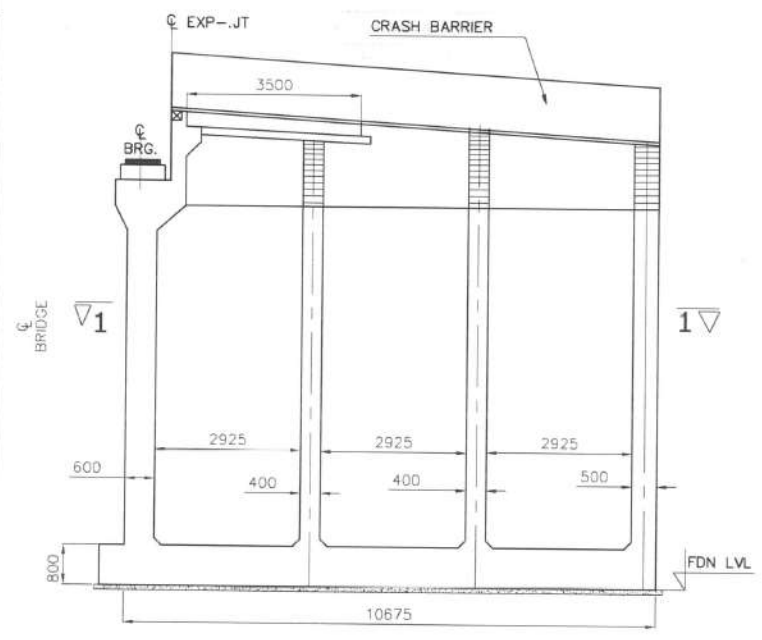
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|-----------------------------|-------------------|------------------------|
| DATE : JUNE- 2020           | REVISION          | R0                     |
| DESIGNED BY<br>B RAVI KUMAR | DRAWN BY<br>A SEN | CHECKED BY<br>A REHMAN |
| APPROVED BY<br>S Shukla     |                   |                        |

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 76+790 TO 77+040 (SPAN-5X30+5X20.0)

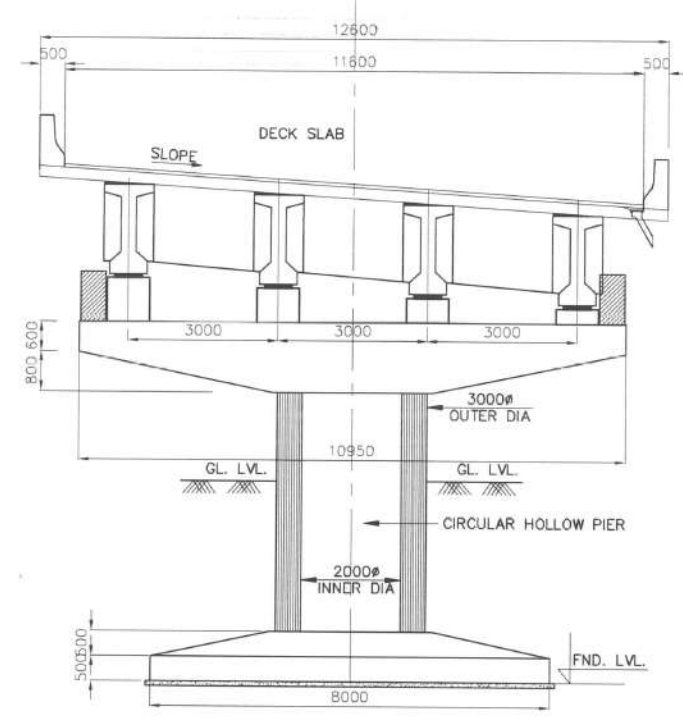
DWG. NO. :-



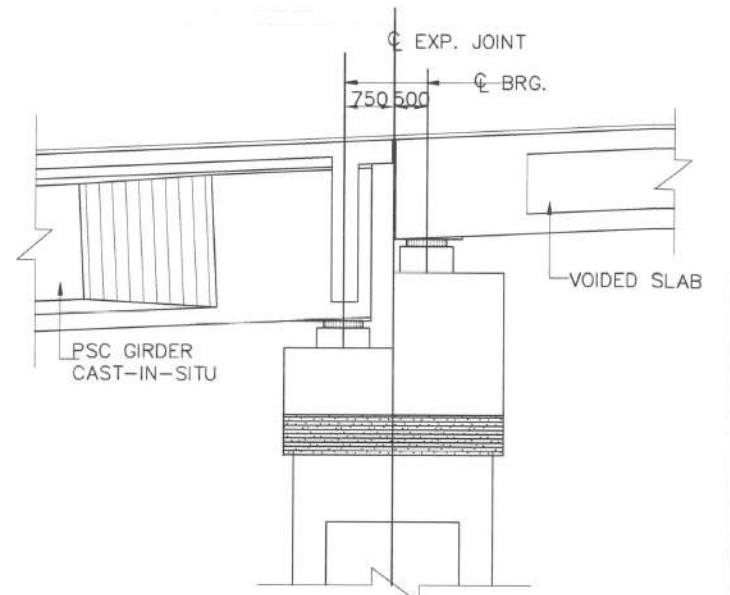
**SECTION 1-1**  
SCALE 1:100



**BOX ABUTMENT**  
SCALE 1:100

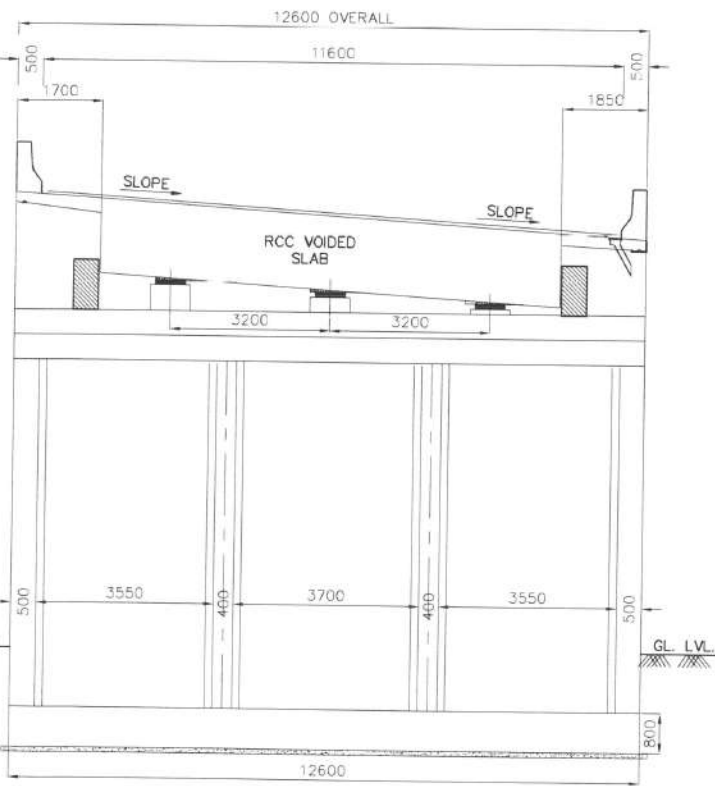


**SECTION D-D**  
SCALE 1:100

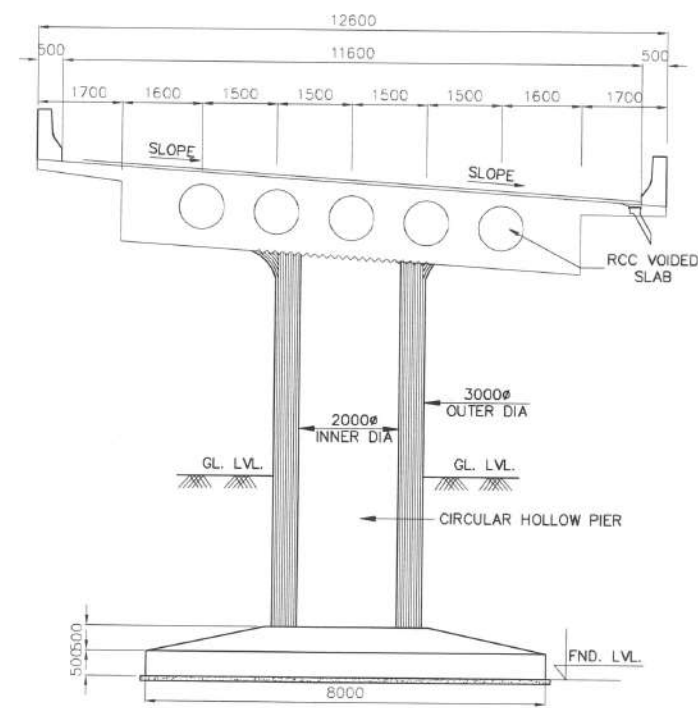


**DETAIL-Z**  
(SCALE 1:100)

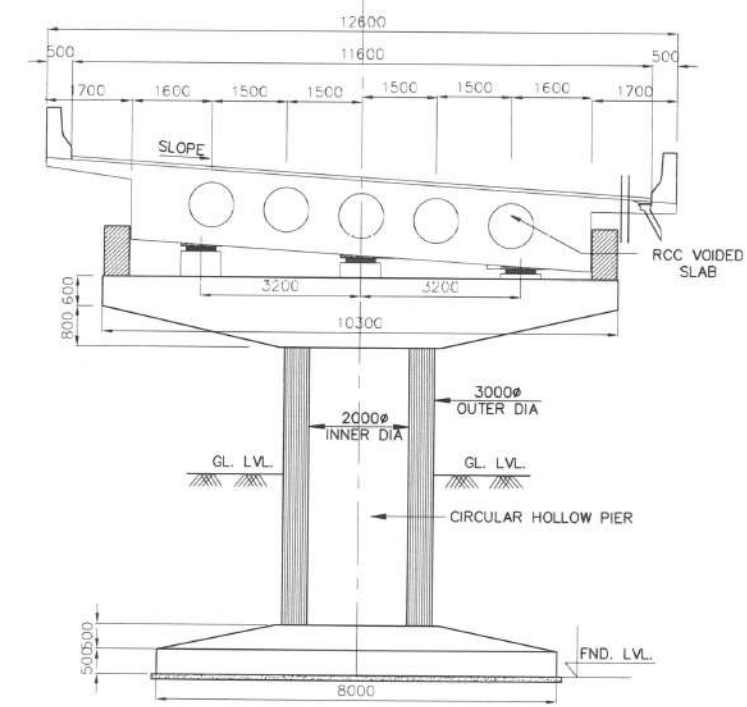
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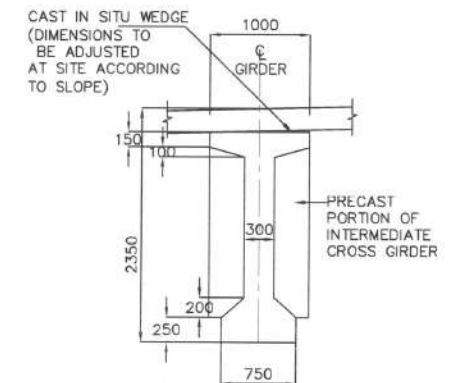
**SECTION A-A**  
SCALE 1:100



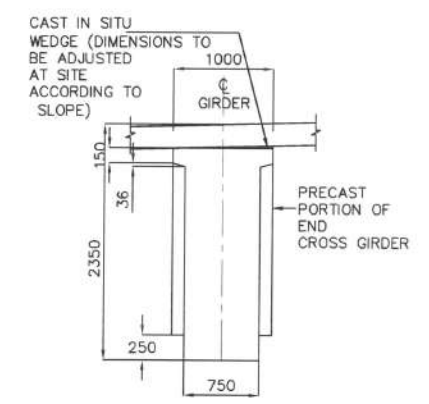
**SECTION B-B**  
SCALE 1:100



**SECTION C-C**  
SCALE 1:100



**SECTION OF GIRDER AT MID**  
(SCALE 1:50)



**SECTION OF GIRDER AT SUPPORT**  
(SCALE 1:50)

|    |      |                               |   |   |   |   |
|----|------|-------------------------------|---|---|---|---|
| RO | JUNE | DRAFT DETAILED PROJECT REPORT | A | B | C | D |
|----|------|-------------------------------|---|---|---|---|

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|                         |                       |
|-------------------------|-----------------------|
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| DESIGNED BY: RAVI KUMAR | DRAWN BY: A SEN       |
| CHECKED BY: A REHMAN    | APPROVED BY: S.Shukla |

GENERAL ARRANGEMENT DRAWINGS OF VIADUCT AT CH- 76+790 TO 77+040 (SPAN-5X30+5X20.0)

DWG. NO. :-