

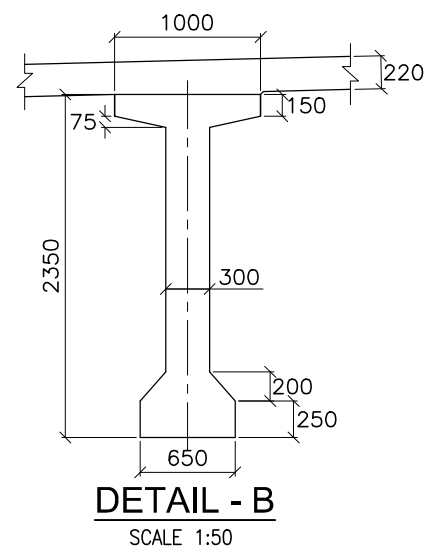




NOTES:-

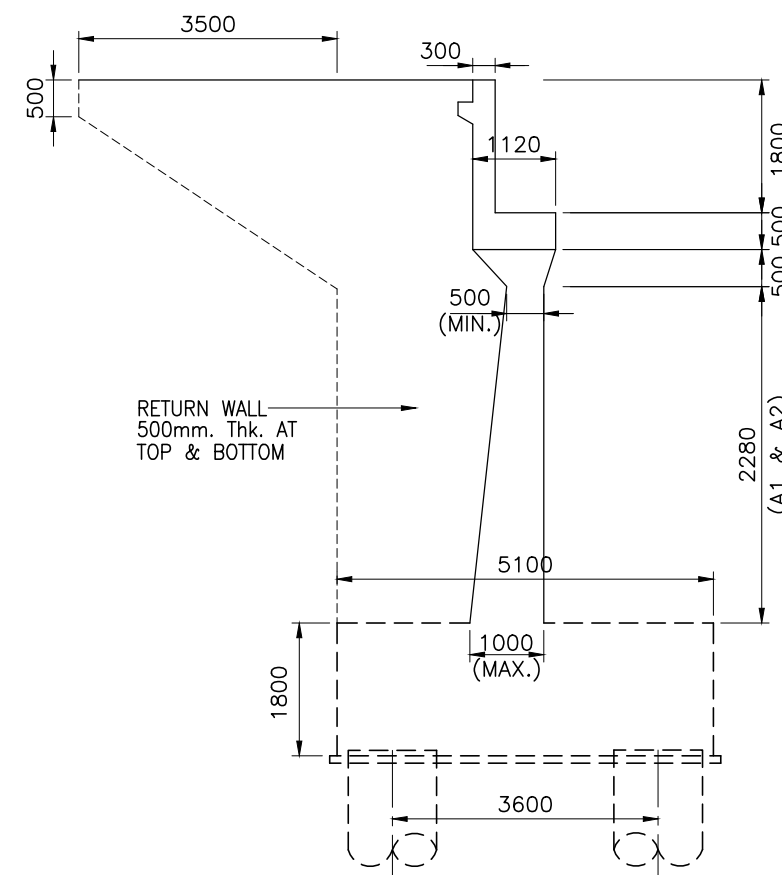
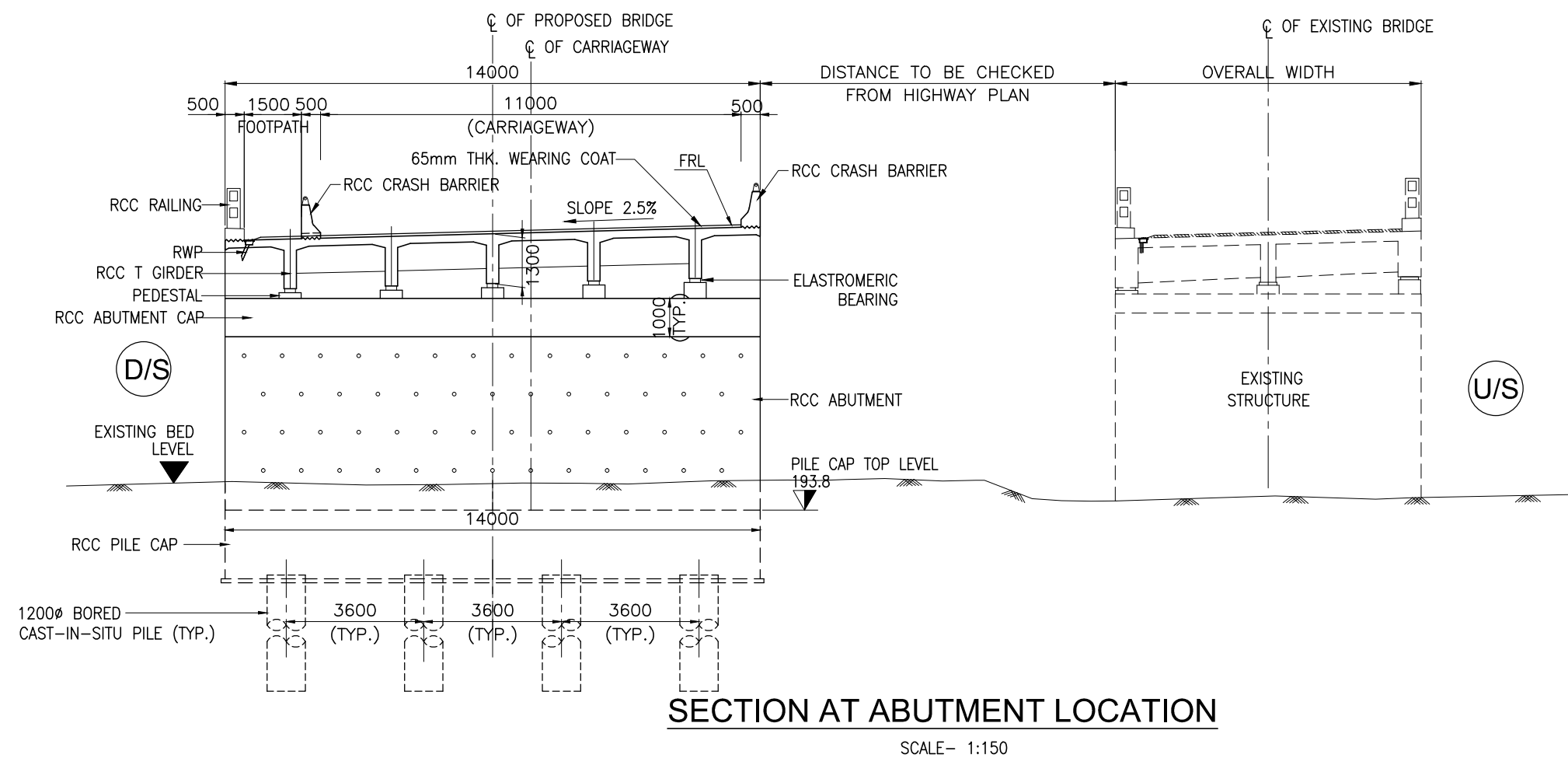
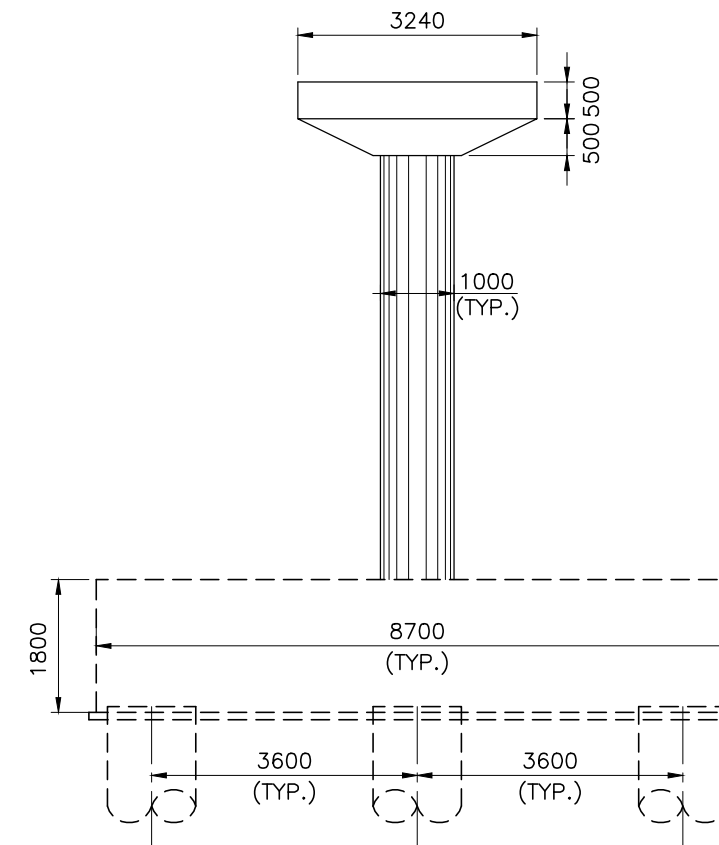
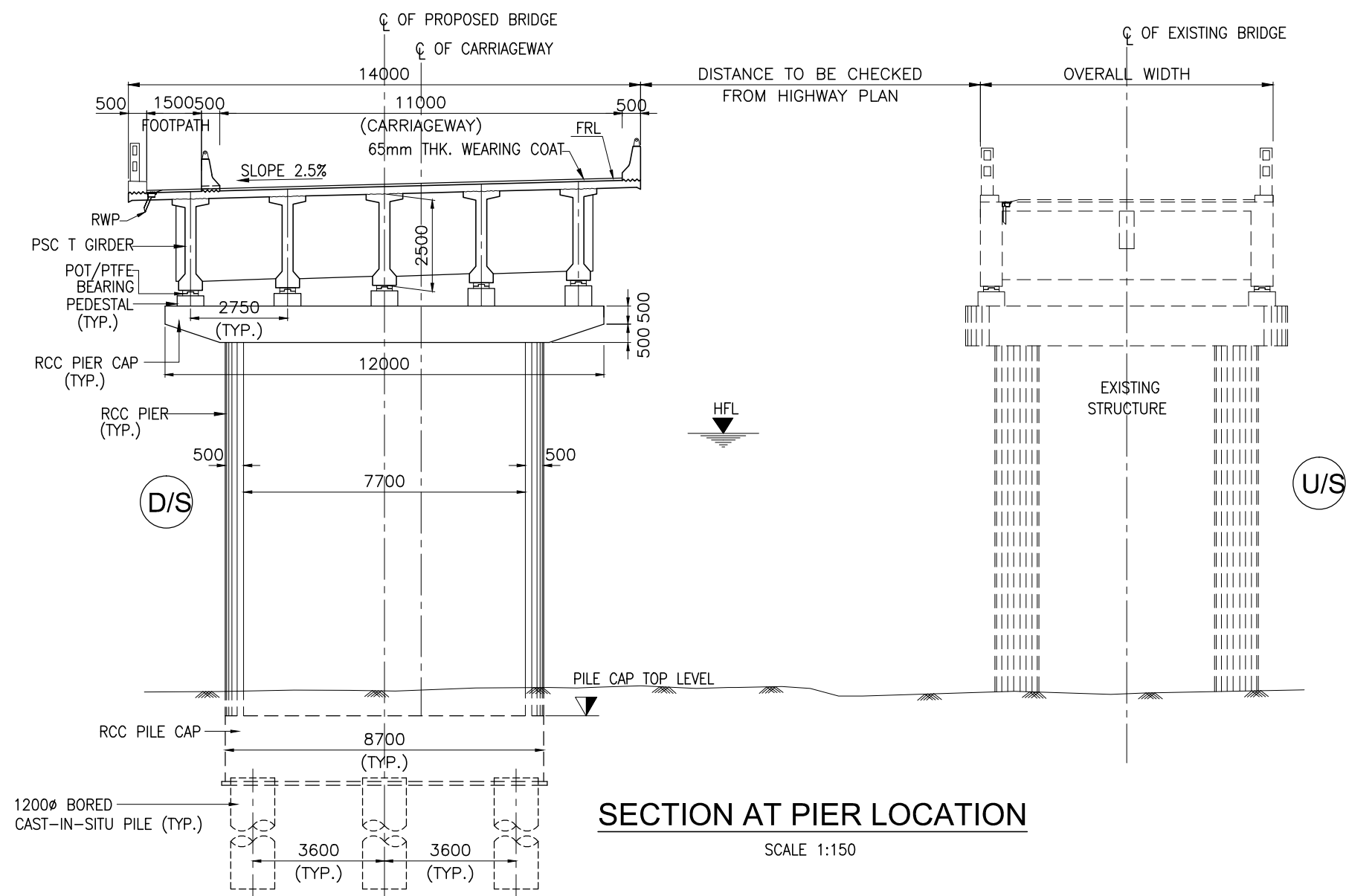
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE FLYOVER.
5. PILE CAPACITY HAS BEEN ASSUMED 300t AS PER GEOTECHNICAL REPORT.

| | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|----------------------------|--------------|--|----------|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: |  Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With  LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF FLYOVER AT CH. 77+826.005 | AS SHOWN | | | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| | | | | Designed By | Sanjay Mandal | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\FLYGA-01 | | | | |



1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
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5. PILE CAPACITY HAS BEEN ASSUMED 300t AS PER GEOTECHNICAL REPORT.

| | | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|-----------------------------|-----------------|---|----------|--|--|
| | | | | Date | March 2010 | Drawing Title : | | Scale : | <div>CONSULTANTS:</div> <div> Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With</div> <div> LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</div> | Client: | GOVERNMENT OF ORISSA | |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF FLYOVER AT CH. 143+721.013 | | AS SHOWN | | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA | |
| | | | | Designed By | Sanjay Mandal | | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\FLY\GA-02 | | | | | |

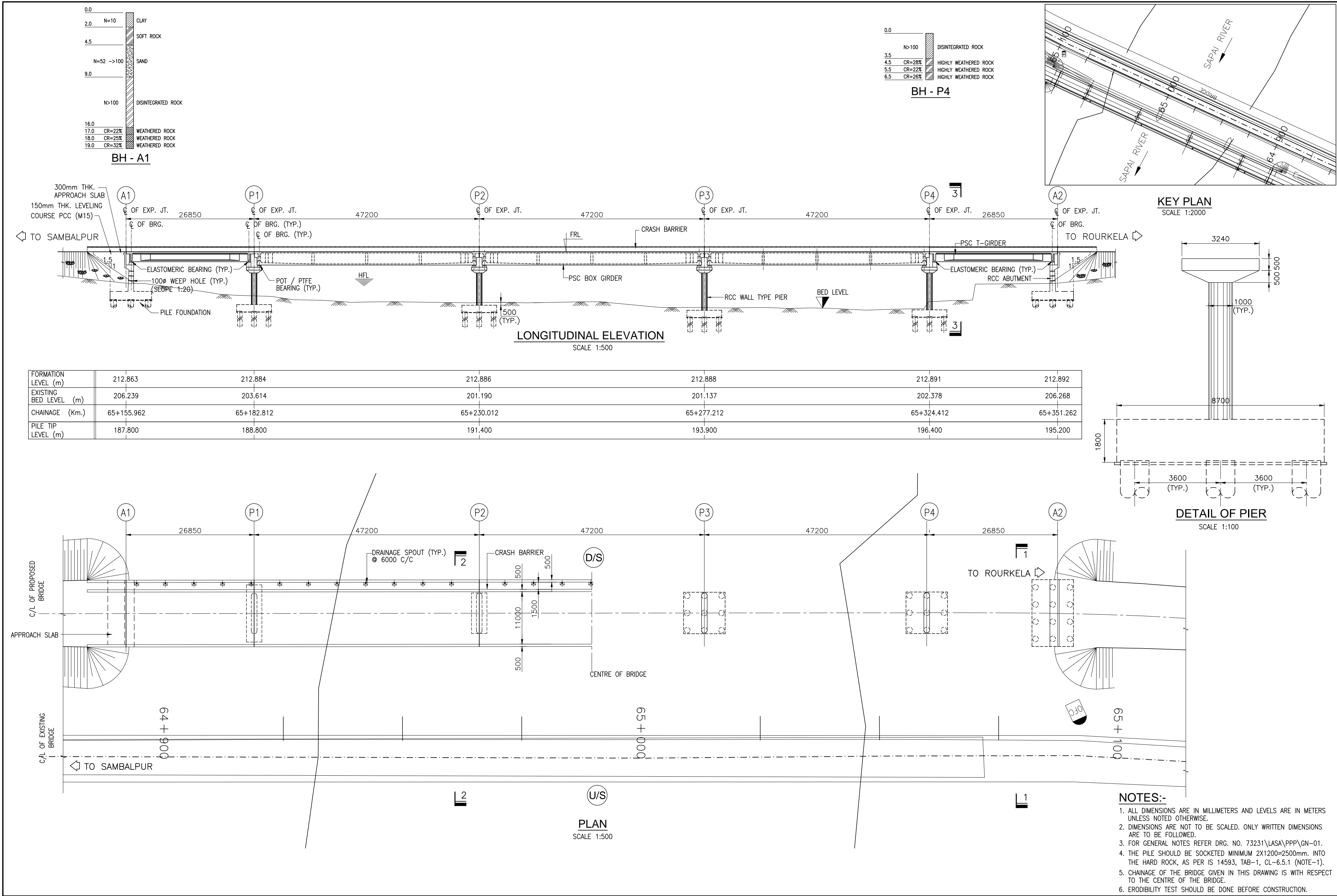


| SL. NO. | DESCRIPTION | VALUES |
|--------------------------|---------------------------|-------------|
| HYDRAULIC DATA | | |
| 1. | DISCHARGE | 8281 cumecs |
| 2. | HFL | 194.415 |
| 3. | VELOCITY | 4.432m/s |
| 4. | SCOUR LEVEL :- | |
| (a) | ABUTMENT (A1 & A2) | 192.000 |
| (b) | PIER (P1 TO P7) | 176.114 |
| GEOTECHNICAL DATA | | |
| 1. | PILE CAPACITY :- | |
| (a) | ABUTMENT | 275 Tons |
| (b) | PIER | 250 Tons |
| STRUCTURAL DATA | | |
| 1. | GRADE OF CONCRETE :- | |
| (a) | SUPERSTRUCTURE :- | |
| (i) | CRASH BARRIER - M40 | |
| (ii) | DECK SLAB - M30 | |
| (iii) | PSC GIRDER - M40 | |
| (iv) | RCC GIRDER - M35 | |
| (b) | SUBSTRUCTURE - M35 | |
| (c) | RETURN WALL - M30 | |
| (d) | FOUNDATION :- | |
| (i) | PILE CAP - M35 | |
| (ii) | PILE - M35 | |
| 2. | GRADE OF STEEL - Fe 500 | |
| 3. | BEARING TYPE :- | |
| (a) | POT. PTFE - PSC SPAN | |
| (b) | ELASTOMERIC - RCC SPAN | |
| 4. | EXPANSION JOINT :- | |
| (a) | STRIP SEAL - PIER | |
| (b) | ASPHALTIC PLUG - ABUTMENT | |

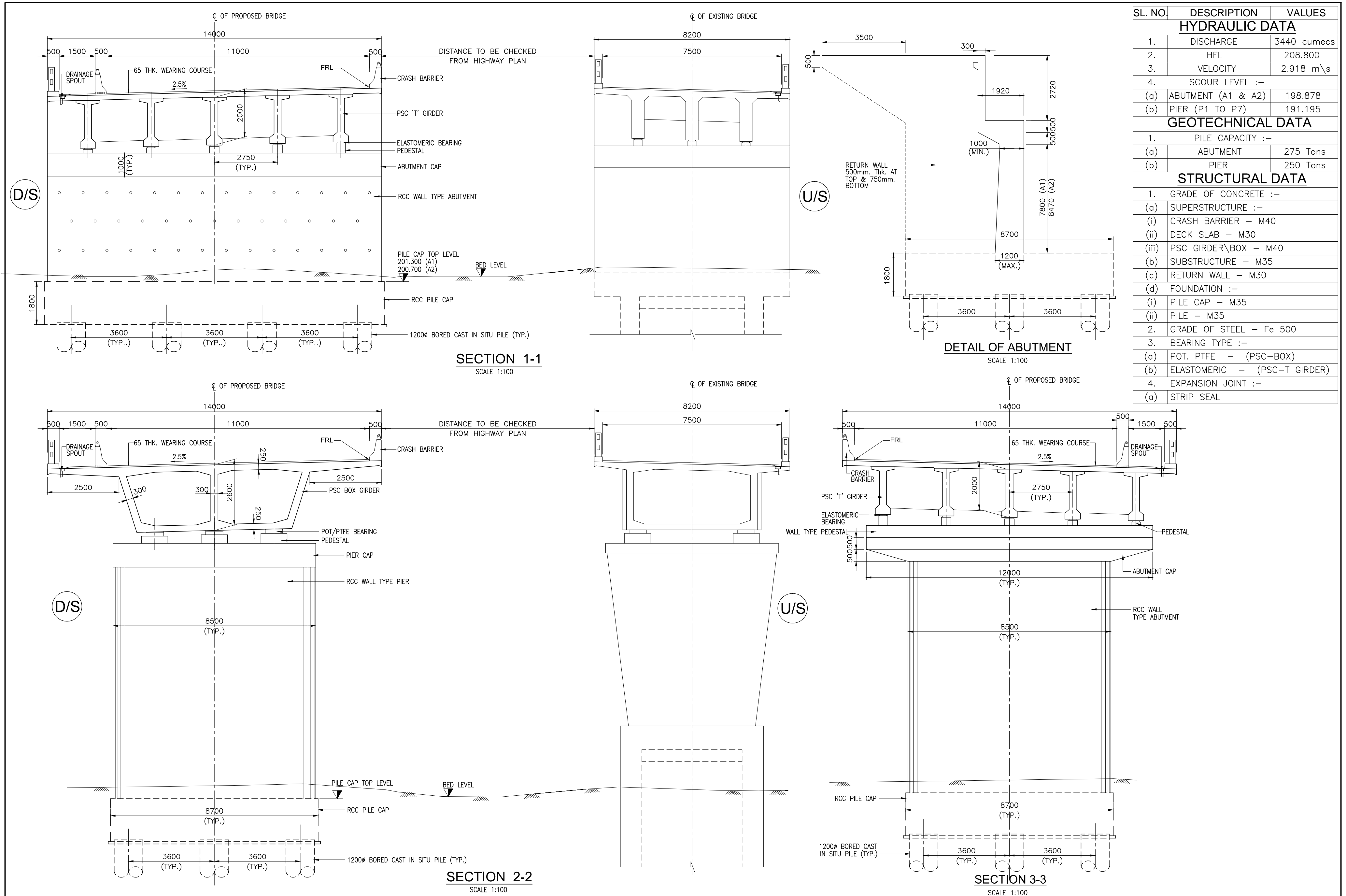
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 1 OF 2 OF THIS DRAWING.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 42/1 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MJBR\GA-01 | (SHEET 2 OF 2) | |

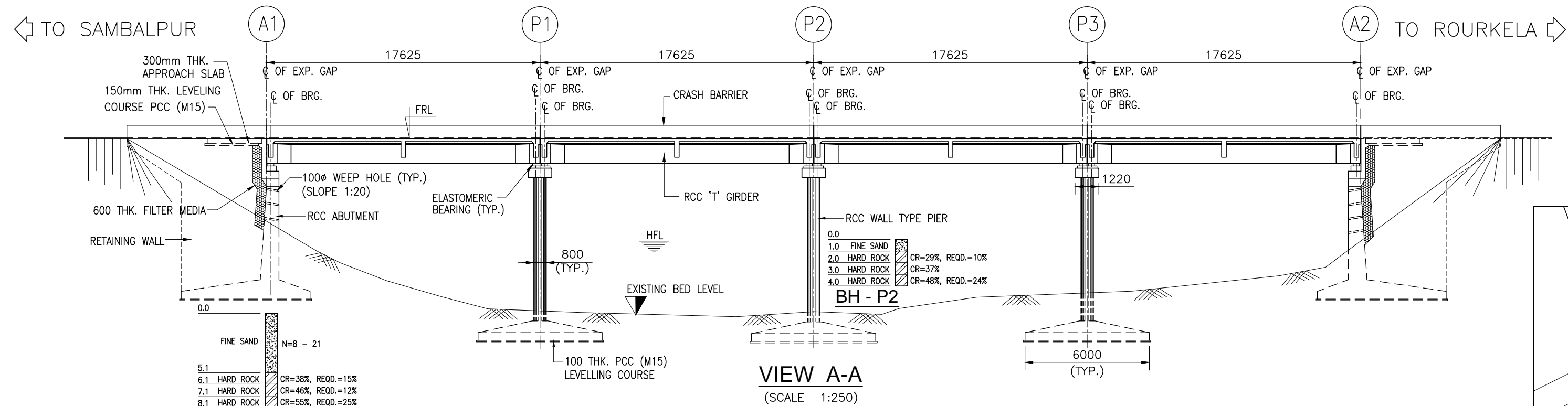


| | | | | | | | | |
|----------|--------------|------|-------------|---------------|---|------------------|--|--|
| | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | Drawn By | Joy | GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 66/1 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MJBRIGA-02 | (SHEET 1 OF 2) |

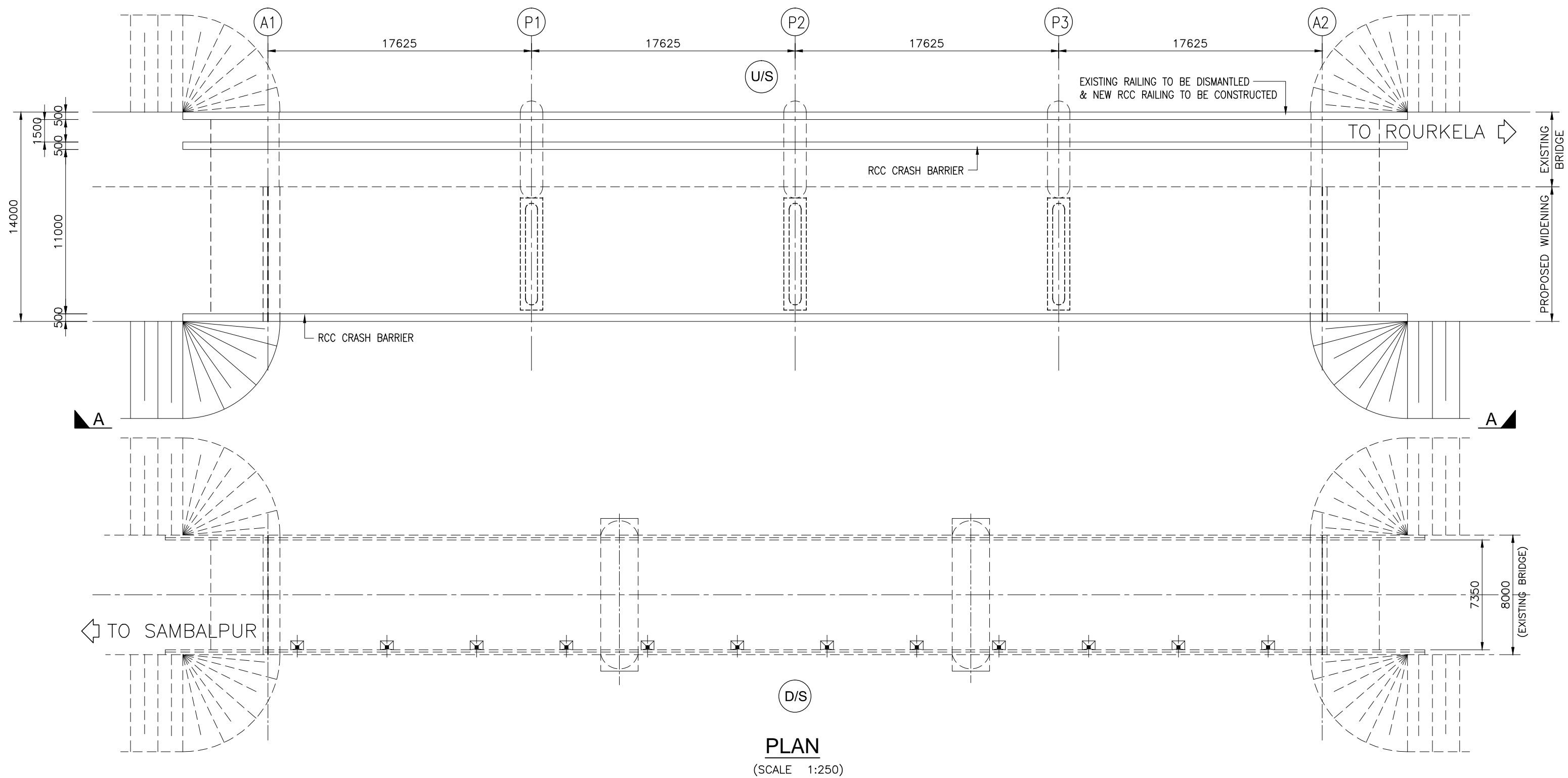
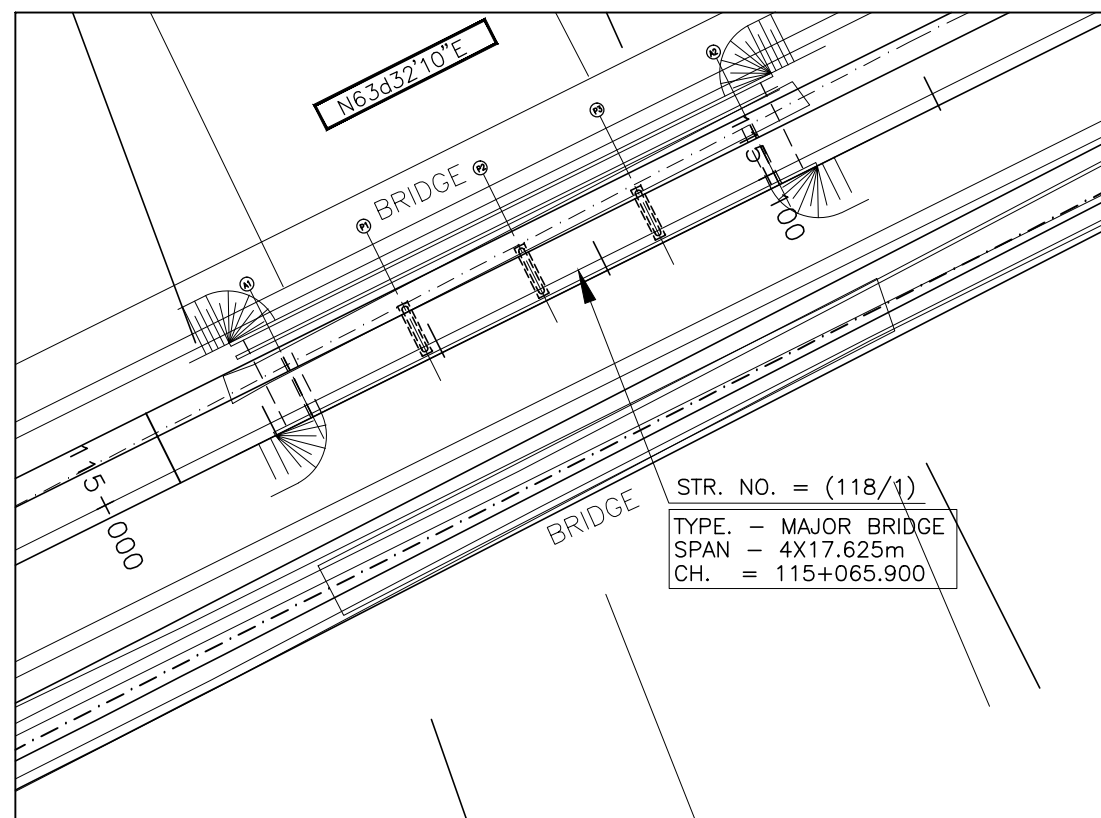


| SL. NO. | DESCRIPTION | VALUES |
|-------------------|------------------------------|-------------|
| HYDRAULIC DATA | | |
| 1. | DISCHARGE | 3440 cumecs |
| 2. | HFL | 208.800 |
| 3. | VELOCITY | 2.918 m\s |
| 4. | SCOUR LEVEL :- | |
| (a) | ABUTMENT (A1 & A2) | 198.878 |
| (b) | PIER (P1 TO P7) | 191.195 |
| GEOTECHNICAL DATA | | |
| 1. | PILE CAPACITY :- | |
| (a) | ABUTMENT | 275 Tons |
| (b) | PIER | 250 Tons |
| STRUCTURAL DATA | | |
| 1. | GRADE OF CONCRETE :- | |
| (a) | SUPERSTRUCTURE :- | |
| (i) | CRASH BARRIER - M40 | |
| (ii) | DECK SLAB - M30 | |
| (iii) | PSC GIRDER\BOX - M40 | |
| (b) | SUBSTRUCTURE - M35 | |
| (c) | RETURN WALL - M30 | |
| (d) | FOUNDATION :- | |
| (i) | PILE CAP - M35 | |
| (ii) | PILE - M35 | |
| 2. | GRADE OF STEEL - Fe 500 | |
| 3. | BEARING TYPE :- | |
| (a) | POT. PTFE - (PSC-BOX) | |
| (b) | ELASTOMERIC - (PSC-T GIRDER) | |
| 4. | EXPANSION JOINT :- | |
| (a) | STRIP SEAL | |



| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|-------------------------|--|---|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 66/1 | Scale : AS SHOWN | CONSULTANTS: Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: GOVERNMENT OF ORISSA WORKS DEPARTMENT Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| | | | | Drawn By | Joy | | | | |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | Drawing Number : 73231\LASA\PPP\SR\MJBR\GA-02 | (SHEET 2 OF 2) | | |
| REVISION | | | | Approved By | Avadesh | | | | |

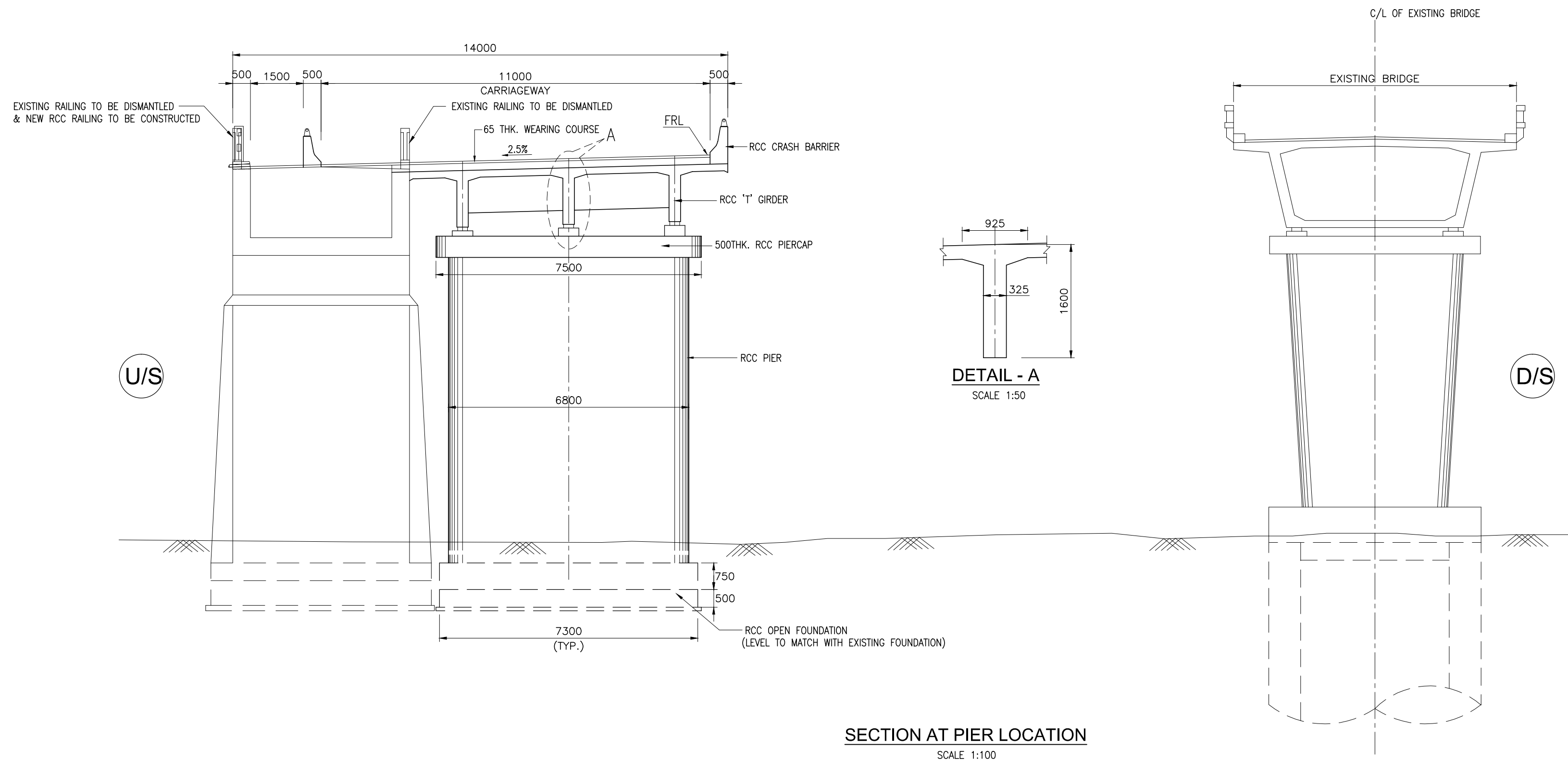


| | | | | | |
|------------------------|-------------|-------------|-------------|-------------|-------------|
| FORMATION LEVEL (m) | 246.184 | 246.177 | 246.171 | 246.164 | 246.158 |
| EXISTING BED LEVEL (m) | 242.182 | 235.088 | 234.996 | 236.216 | 239.888 |
| CHAINAGE (Km.) | 115+312.112 | 115+329.737 | 115+347.362 | 115+364.987 | 115+382.612 |

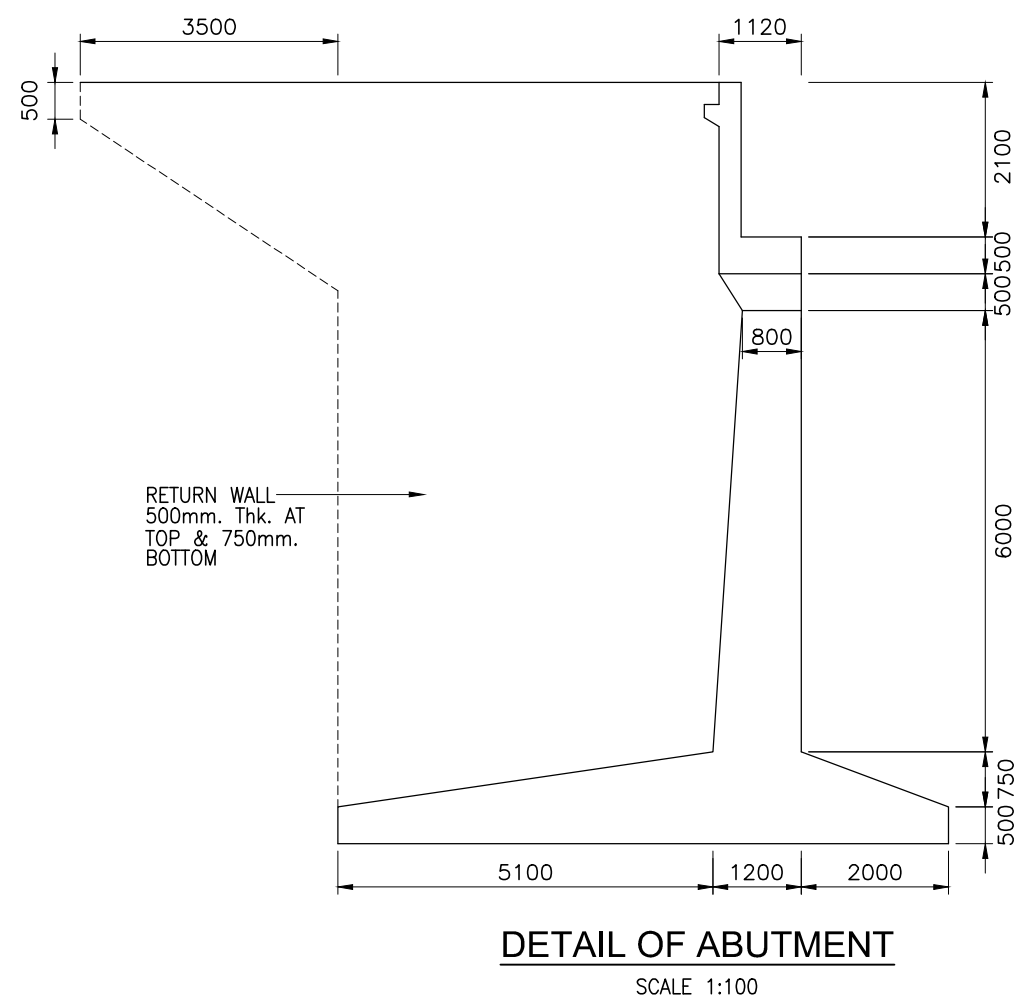


- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
 4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
 5. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 2 OF 2 OF THIS DRAWING.
 6. ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

| | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|-------------------------|---|----------|---|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 116/2 | | Scale : AS SHOWN | <div>CONSULTANTS:</div> <div> Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With</div> <div> LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</div> | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Drawn By | Joy | | | | | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| | | | | Designed By | Sanjay Mandal | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | Drawing Number : | 73231\LASA\PPP\SR\MJBR\GA-03 | (SHEET 1 OF 2) | | | |
| REVISION | | | | Approved By | Avadesh | | | | | | |



SECTION AT PIER LOCATION
SCALE 1:100



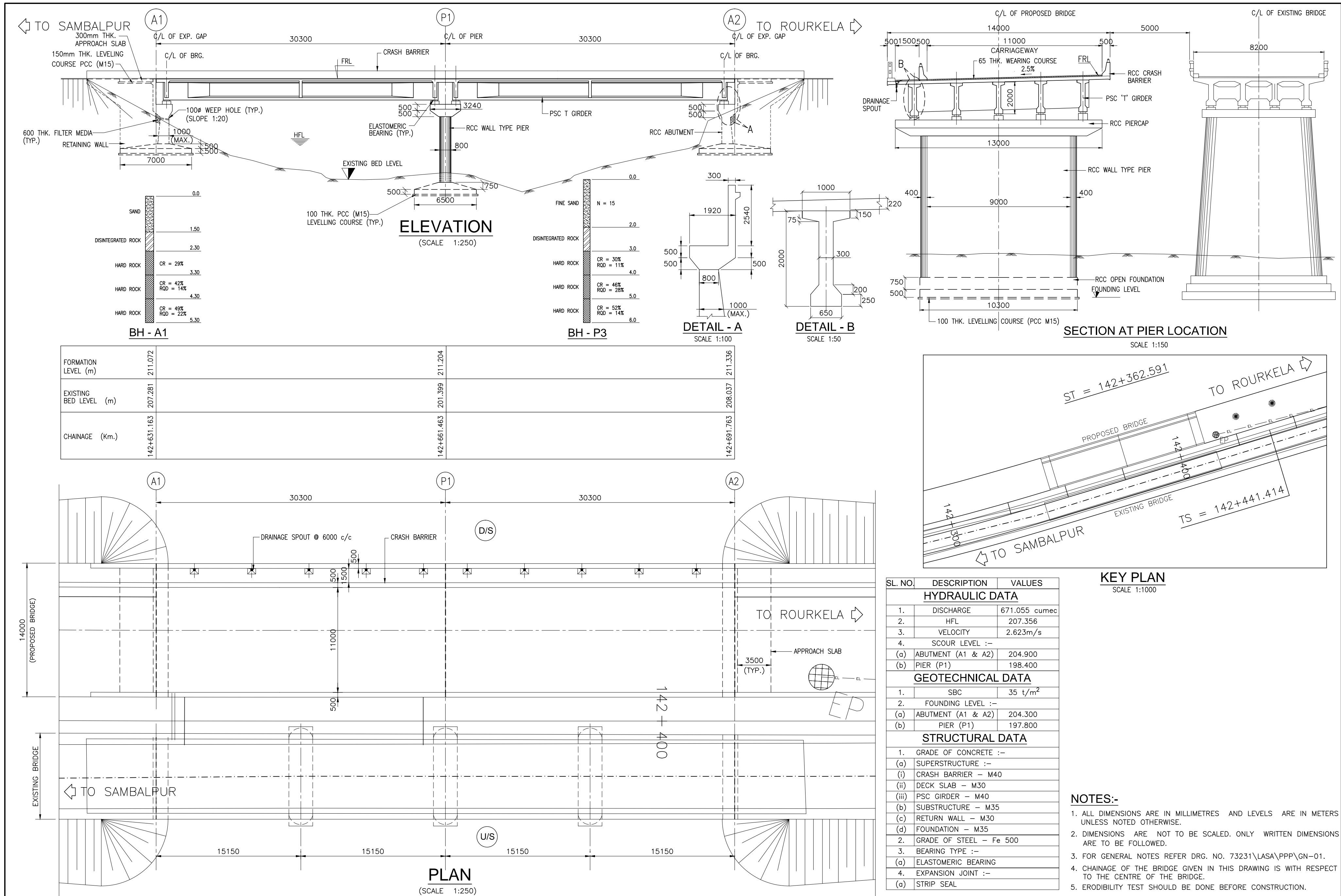
DETAIL OF ABUTMENT
SCALE 1:100

| SL. NO. | DESCRIPTION | VALUES |
|--------------------------|-------------------------|---------------------|
| HYDRAULIC DATA | | |
| 1. | DISCHARGE | 1324 cumecs |
| 2. | HFL | 242.822 |
| 3. | VELOCITY | 2.967m/s |
| 4. | SCOUR LEVEL :- | |
| (a) | ABUTMENT (A1 & A2) | 237.000 |
| (b) | PIER (P1 TO P3) | 234.000 |
| GEOTECHNICAL DATA | | |
| 1. | SBC | 35 t/m ² |
| 2. | FOUNDING LEVEL :- | |
| (a) | ABUTMENT | 236.4 |
| (b) | PIER | 233.2 |
| STRUCTURAL DATA | | |
| 1. | GRADE OF CONCRETE :- | |
| (a) | SUPERSTRUCTURE :- | |
| (i) | CRASH BARRIER - M40 | |
| (ii) | DECK SLAB - M30 | |
| (iii) | RCC GIRDER - M35 | |
| (b) | SUBSTRUCTURE - M35 | |
| (c) | RETURN WALL - M30 | |
| (d) | FOUNDATION - M35 | |
| 2. | GRADE OF STEEL - Fe 500 | |
| 3. | BEARING TYPE :- | |
| (a) | ELASTOMERIC BEARING | |
| 4. | EXPANSION JOINT :- | |
| (a) | ASPHALTIC PLUG | |

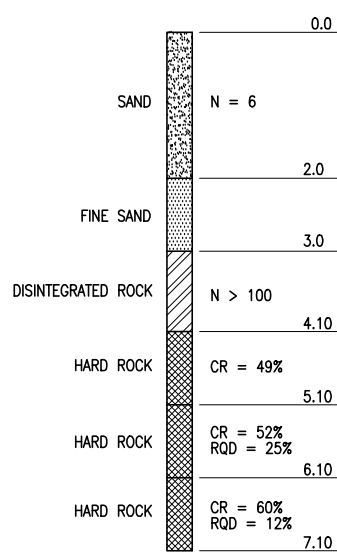
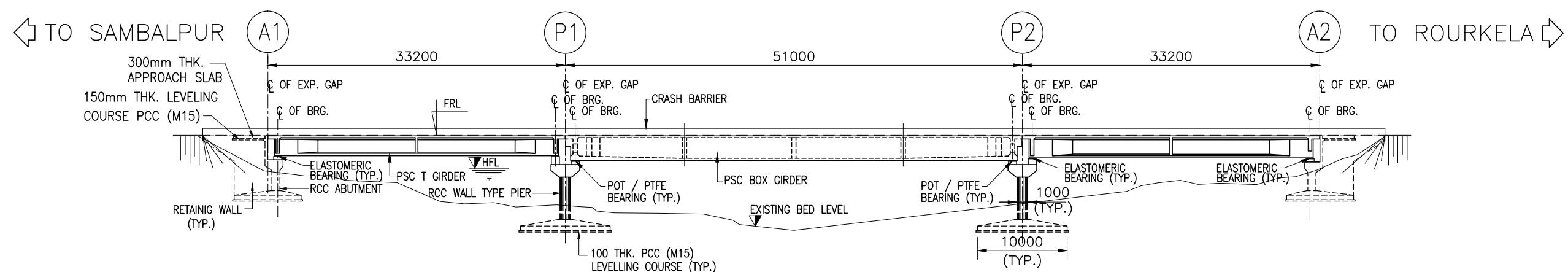
NOTES:-

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- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 1 OF 2 OF THIS DRAWING.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|---|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 116/2 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MJBR\GA-03 (SHEET 2 OF 2) | | |

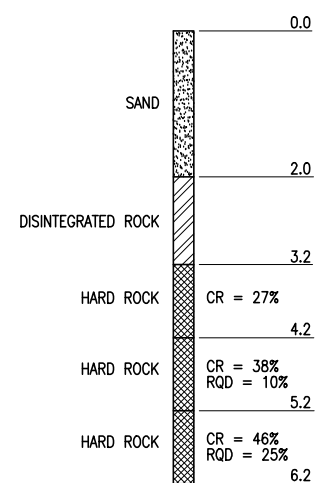


| | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|------------------------|-----------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | MAJOR BRIDGE NO. 143/2 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With | WORKS DEPARTMENT |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | Drawing Number : | 73231\LASA\PPP\SR\MJBRGA-04 | LEA Associates South Asia Pvt. Ltd. | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| | REVISION | | | Approved By | Avadesh | | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | | STATE ROADS IN THE STATE OF ORISSA |



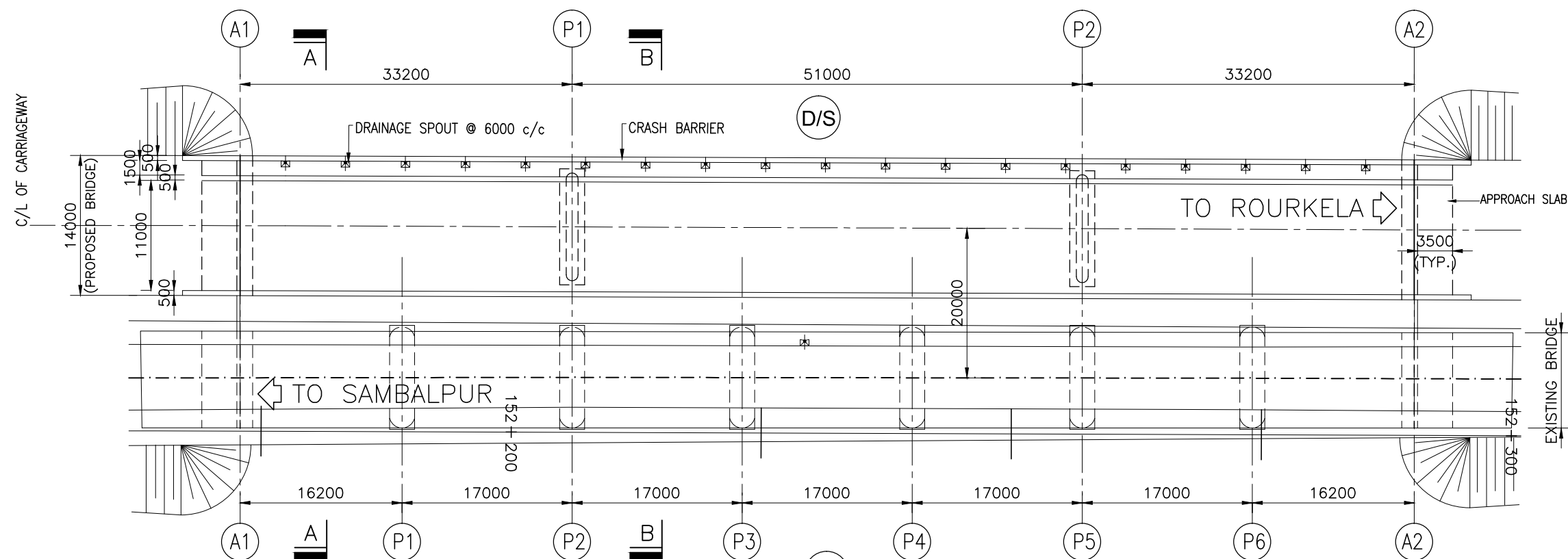
BH - A1

ELEVATION
(SCALE 1:500)

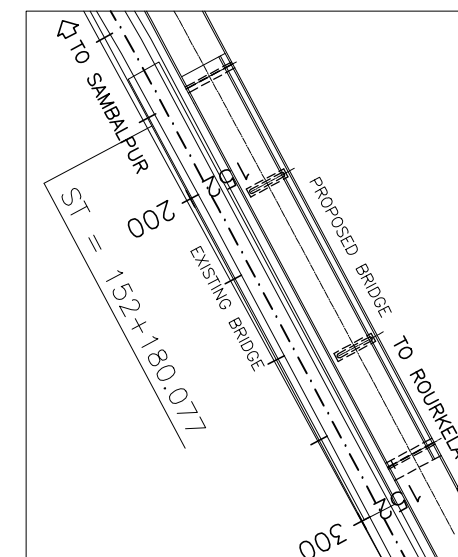


BH - P5

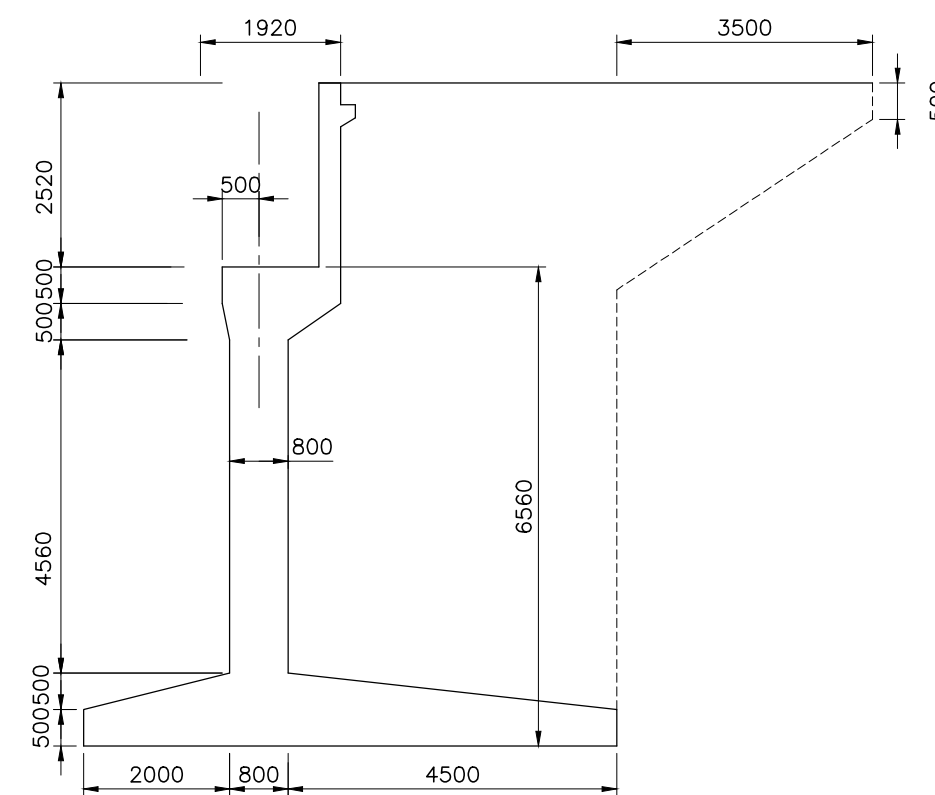
| | | | | |
|------------------------|-------------|-------------|-------------|-------------|
| FORMATION LEVEL (m) | 192.650 | 192.650 | 192.650 | 192.650 |
| EXISTING BED LEVEL (m) | 188.630 | 184.825 | 185.037 | 188.918 |
| CHAINAGE (Km.) | 152+461.385 | 152+494.585 | 152+545.585 | 152+578.785 |



PLAN
(SCALE 1:500)



KEY PLAN
(SCALE 1:2000)

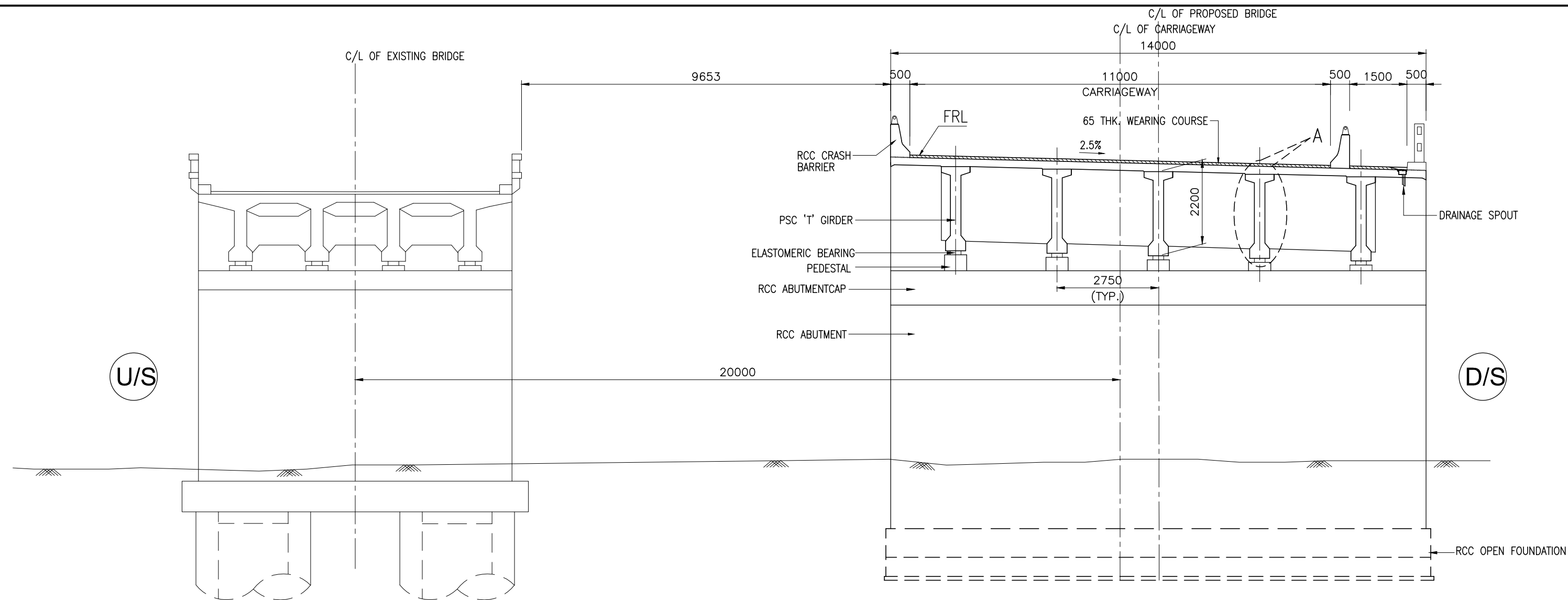


DETAIL OF ABUTMENT
SCALE 1:100

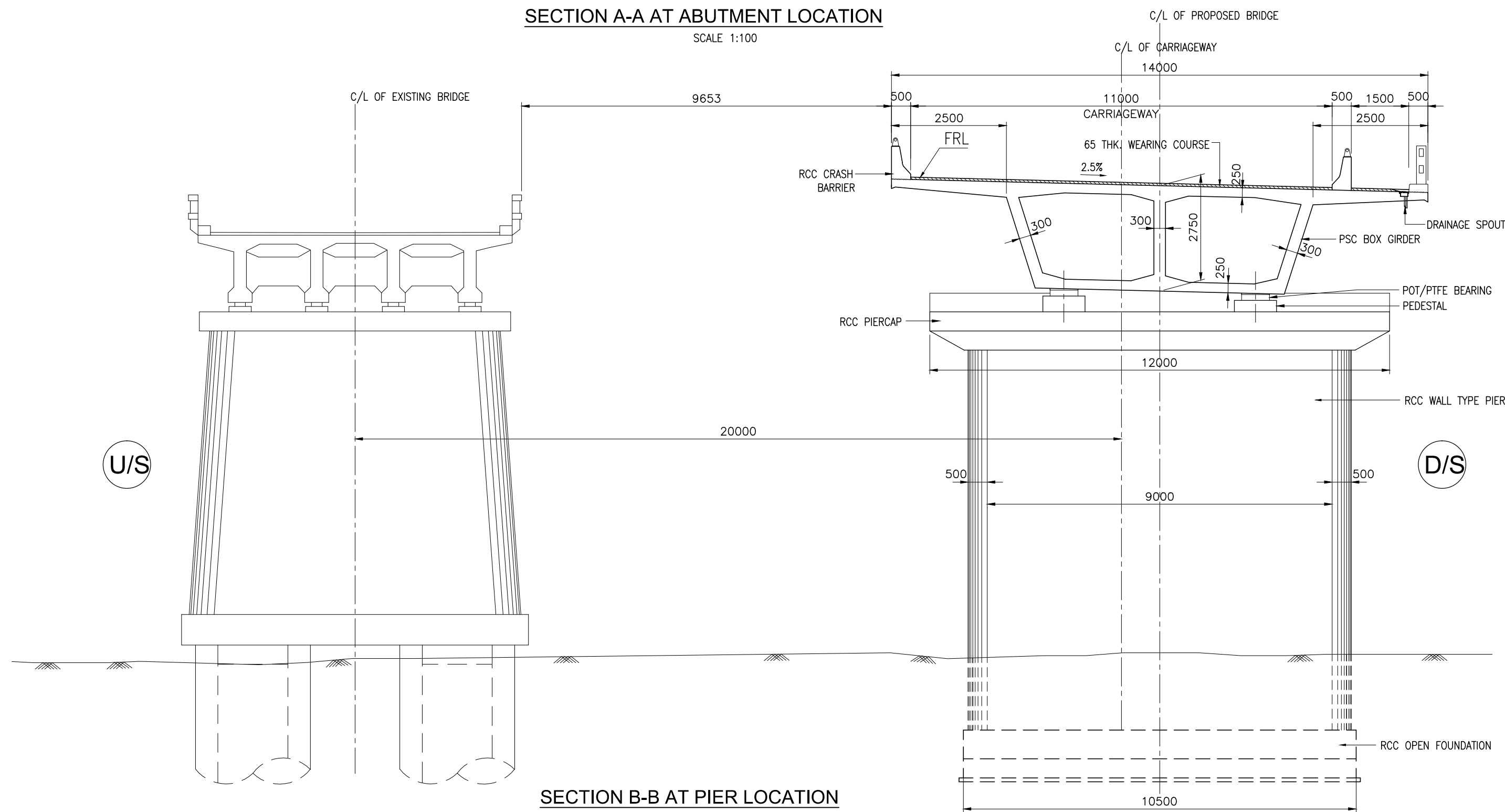
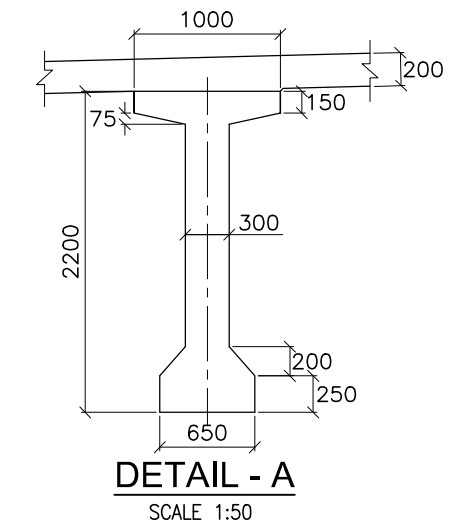
NOTES:-

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4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
5. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 1 OF 2 OF THIS DRAWING.
6. ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 153/2 | AS SHOWN | Pricewaterhouse Coopers Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MJBR\GA-05 | (SHEET 1 OF 2) | |



SECTION A-A AT ABUTMENT LOCATION
SCALE 1:100

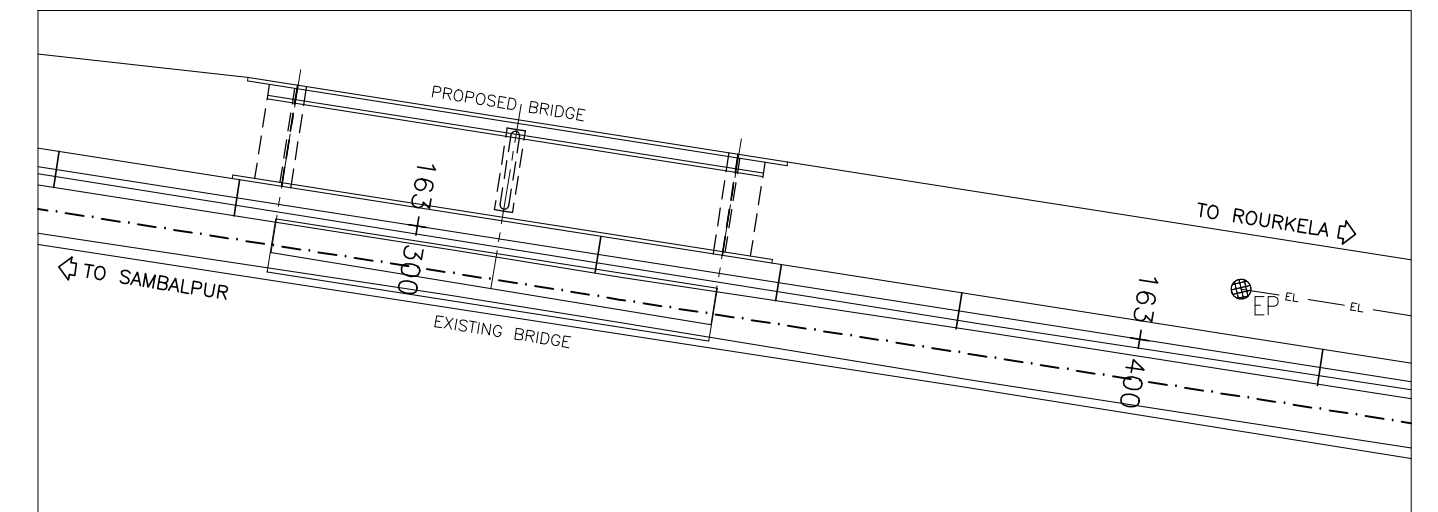
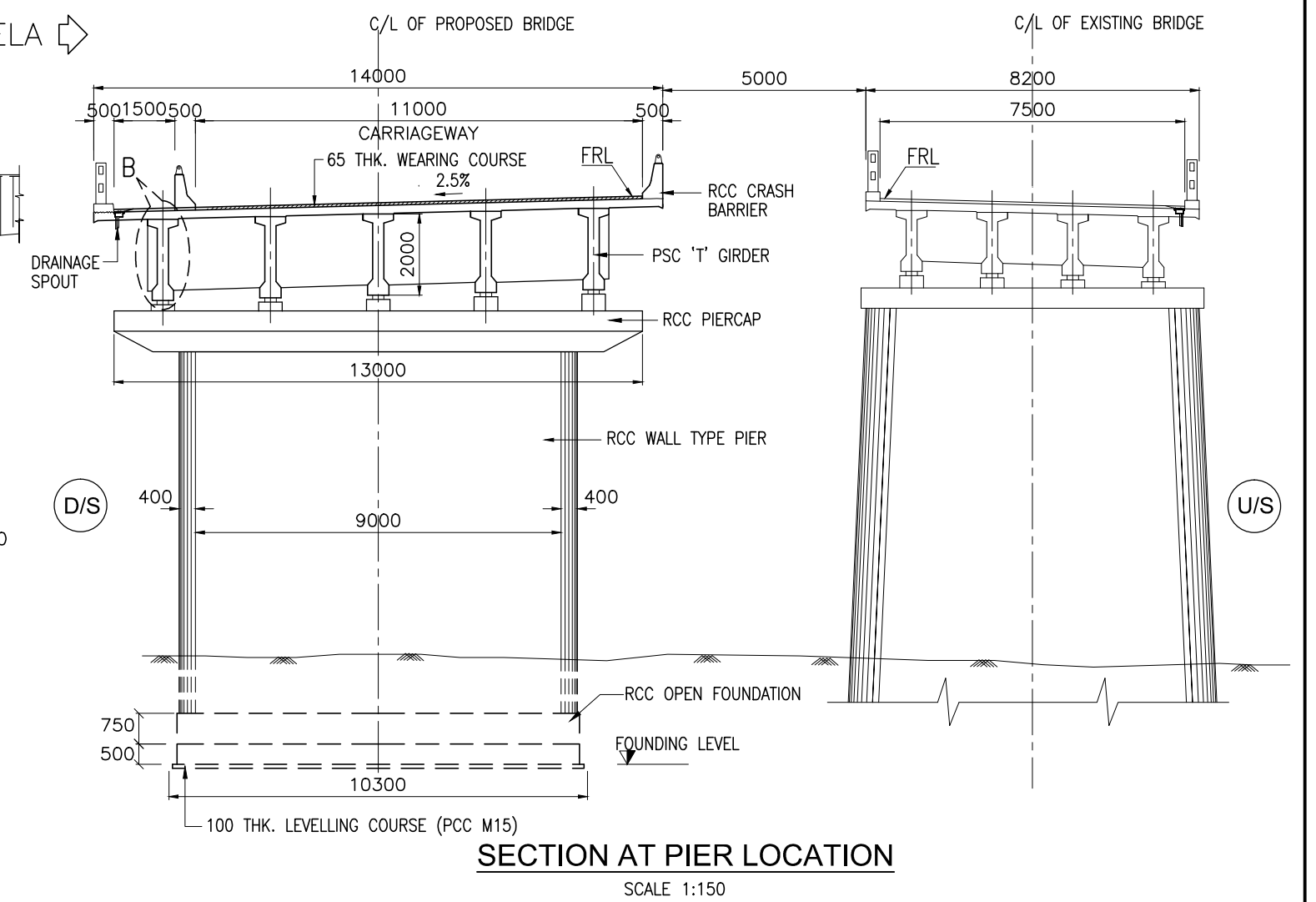


SECTION B-B AT PIER LOCATION
SCALE 1:100

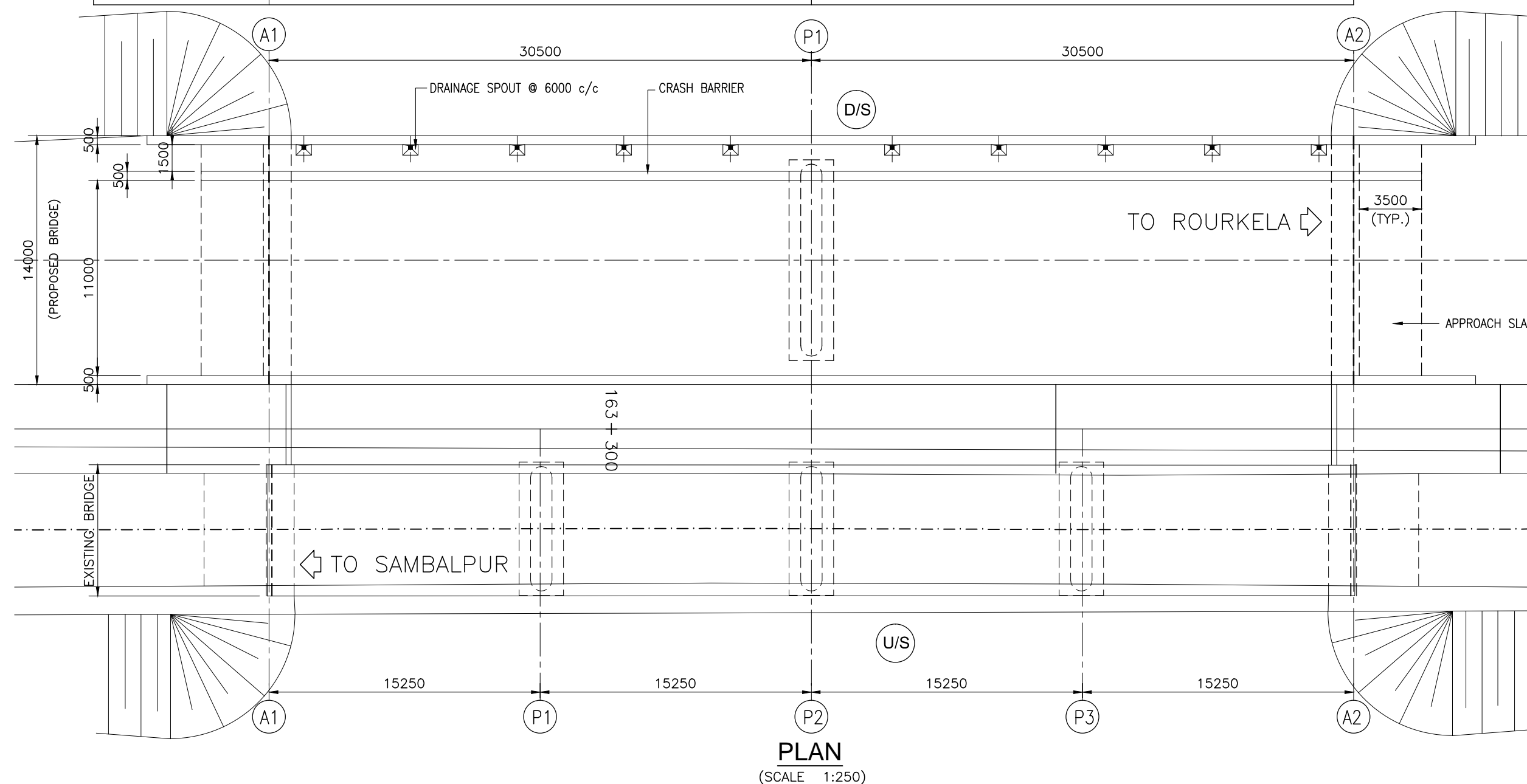
| SL. NO. | DESCRIPTION | VALUES |
|-------------------|---------------------------------|---------------------|
| HYDRAULIC DATA | | |
| 1. | DISCHARGE | 1116 cumecs |
| 2. | HFL | 185.717 |
| 3. | VELOCITY | 2.737m/s |
| 4. | SCOUR LEVEL :- | |
| (a) | ABUTMENT (A1 & A2) | 184.500 |
| (b) | PIER (P1 & P2) | 181.800 |
| GEOTECHNICAL DATA | | |
| 1. | SBC | 35 t/m ² |
| 2. | FOUNDING LEVEL :- | |
| (a) | ABUTMENT | 183.900 |
| (b) | PIER | 181.000 |
| STRUCTURAL DATA | | |
| 1. | GRADE OF CONCRETE :- | |
| (a) | SUPERSTRUCTURE :- | |
| (i) | CRASH BARRIER | — M40 |
| (ii) | DECK SLAB | — M30 |
| (iii) | PSC GIRDER\BOX | — M40 |
| (b) | SUBSTRUCTURE | — M35 |
| (c) | RETURN WALL | — M30 |
| (d) | FOUNDATION | — M35 |
| 2. | GRADE OF STEEL | — Fe 500 |
| 3. | BEARING TYPE :- | |
| (a) | POT-PTFE (PSC BOX-GIRDER SPAN) | |
| (b) | ELASTOMERIC (PSC-T GIRDER SPAN) | |
| 4. | EXPANSION JOINT :- | |
| (a) | STRIP SEAL | |

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
 - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET 2 OF 2 OF THIS DRAWING.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|--|---|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 153/2 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In J/V With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\JBR\GA-05 (SHEET 2 OF 2) | | |



| | | | | | |
|---------------------------|-------------|--|-------------|--|-------------|
| FORMATION LEVEL (m) | 184.362 | | 184.328 | | 184.294 |
| EXISTING BED LEVEL (m) | 178.874 | | 175.362 | | 178.400 |
| CHAINAGE (Km.) | 163+569.496 | | 163+599.996 | | 163+630.496 |





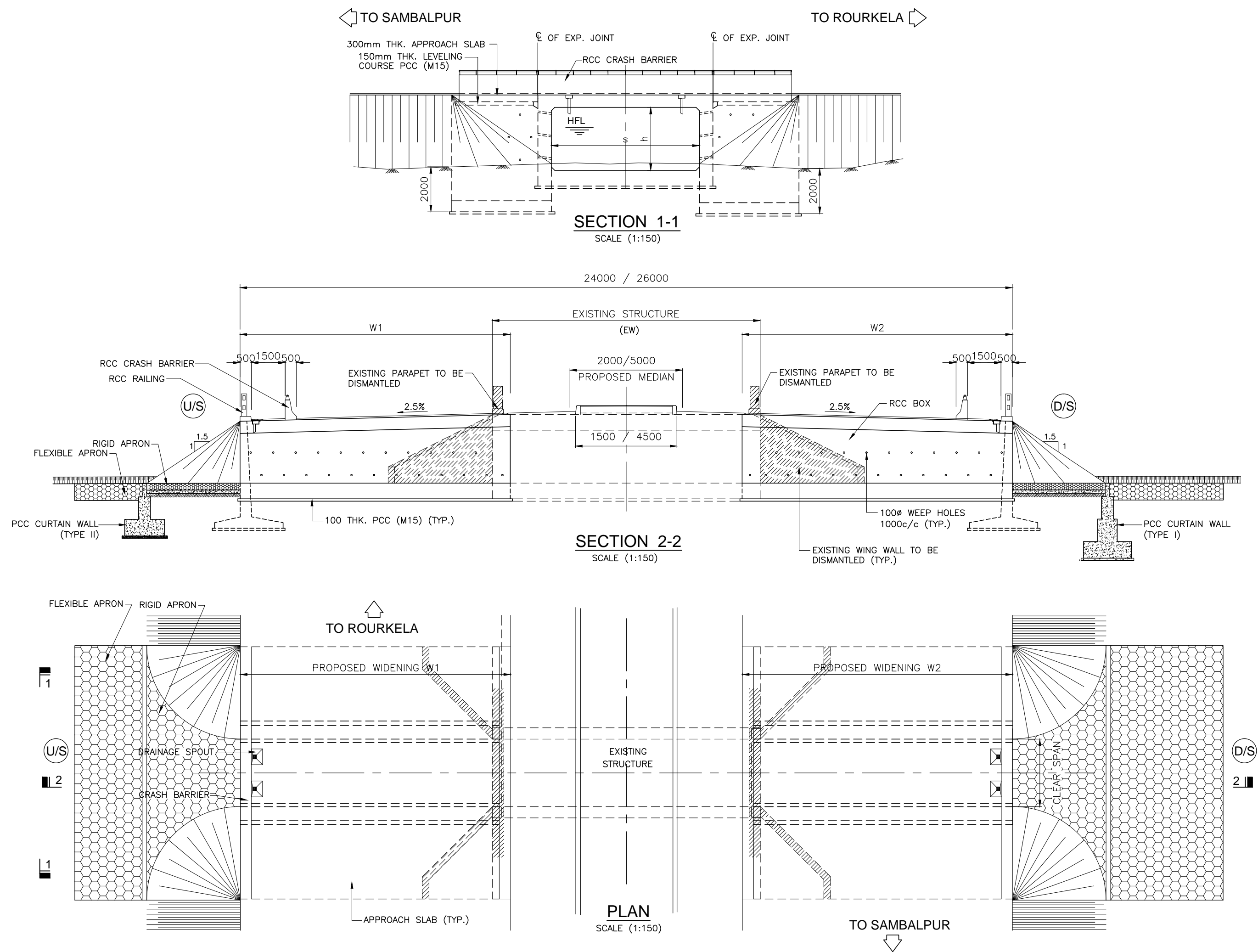
| SL. NO. | DESCRIPTION | VALUES |
|---------------------------------|-------------------------|---------------------|
| <u>HYDRAULIC DATA</u> | | |
| 1. | DISCHARGE | 549 cumecs |
| 2. | HFL | 180.199 |
| 3. | VELOCITY | 2.947m/s |
| 4. | SCOUR LEVEL :- | |
| (a) | ABUTMENT (A1 & A2) | 175.5 |
| (b) | PIER (P1) | 171.5 |
| <u>GEOTECHNICAL DATA</u> | | |
| 1. | SBC | 35 t/m ² |
| 2. | FOUNDING LEVEL :- | |
| (a) | ABUTMENT | 174.9 |
| (b) | PIER | 170.8 |
| <u>STRUCTURAL DATA</u> | | |
| 1. | GRADE OF CONCRETE :- | |
| (a) | SUPERSTRUCTURE :- | |
| (i) | CRASH BARRIER - M40 | |
| (ii) | DECK SLAB - M30 | |
| (iii) | PSC GIRDER - M40 | |
| (b) | SUBSTRUCTURE - M35 | |
| (c) | RETURN WALL - M30 | |
| (d) | FOUNDATION - M35 | |
| 2. | GRADE OF STEEL - Fe 500 | |
| 3. | BEARING TYPE :- | |
| (a) | ELASTOMERIC | |
| 4. | EXPANSION JOINT :- | |
| (a) | STRIP SEAL | |

KEY PLAN
(SCALE 1:1000)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
6. ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

| | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|--|----------|---|--|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MAJOR BRIDGE NO. 164/2 | Scale : AS SHOWN | <div>CONSULTANTS:</div> <div> Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With  LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</div> | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT | |
| | | | | Drawn By | Joy | | | | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA | |
| | | | | Designed By | Sanjay Mandal | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\WJBR\GA-06 | | | | |



SCHEDULE OF MINOR BRIDGES TO BE WIDENED

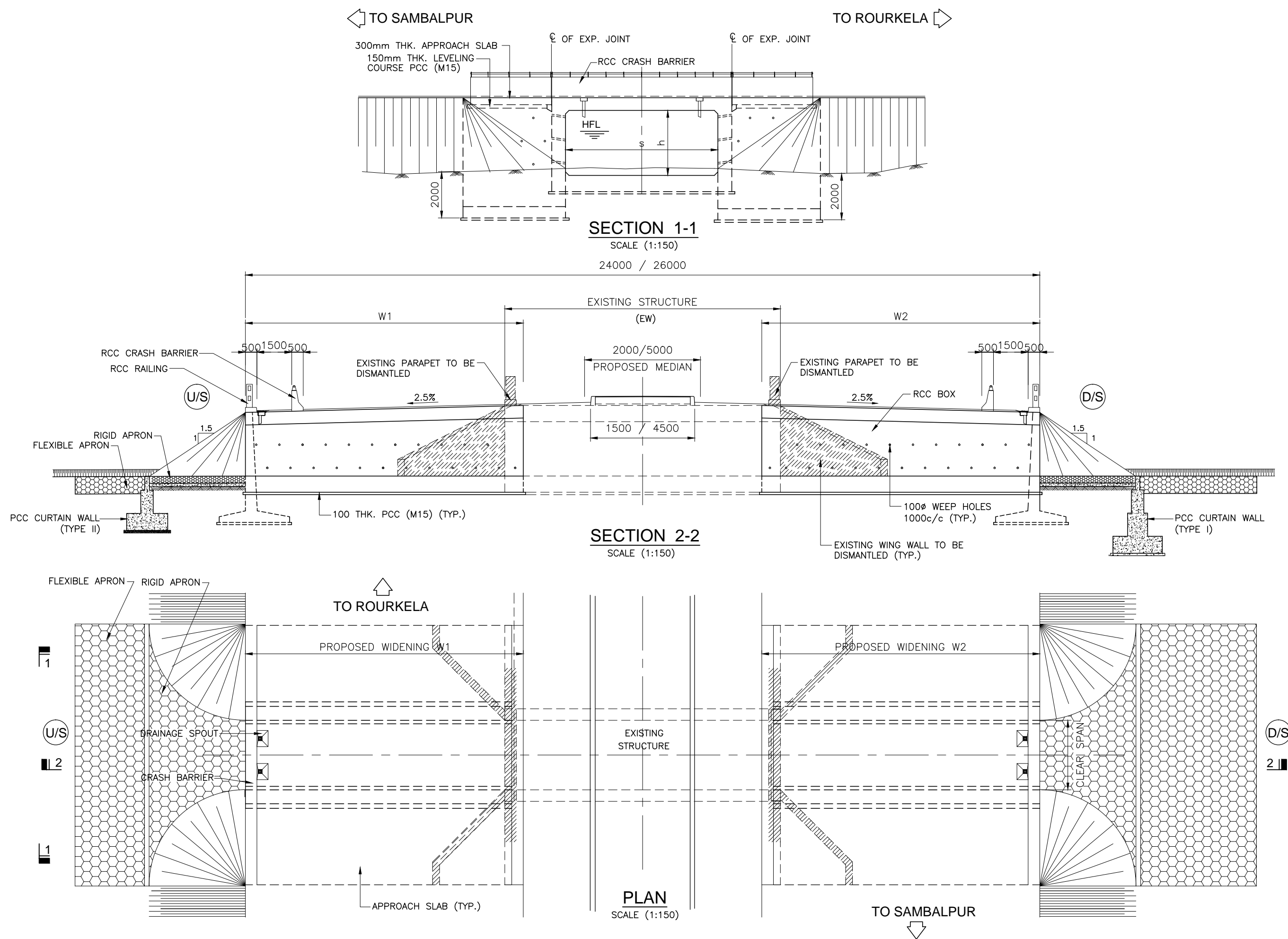
| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | EXISTING STRUCTURE DESCRIPTION | EXISTING SPAN ARRANGEMENT | LENGTH OF PROPOSED WIDENING | | WIDTH AFTER WIDENING (m) | PROPOSED SIZE OF BOX | |
|---------|---------------|-------------------|--------------------------------|---------------------------|-----------------------------|-----------------------|--------------------------|----------------------|-----------|
| | | | | | W1 LEFT SIDE* (m) | W2 RIGHT SIDE* (m) | | s (mm) | h (mm) |
| 1 | 6/1 | 5+473.149 | RCC Box | 1 x 7.50 | 5.830 | 6.586 | 24.000 | 6500 | 2000 |
| 2 | 89/1 | 88+716.424 | Solid Slab | 1 x 7.50 | 13.090 | 1.385 | 26.000 | 6500 | 2000 |
| 3 | 90/1 | 89+017.051 | Solid Slab | 1 x 7.50 | 12.675 | 2.105 | 26.000 | 6500 | 2000 |
| 4 | 117/3 | 116+795.021 | RCC Box | 1 x 8.00 | 1.609 | 13.197 | 26.000 | 7000 | 3500 |
| 5 | 134/2 | 133+740.627 | RCC Box | 1 x 8.00 | 3.060 | 11.340 | 26.000 | 7000 | 3500 |

NOTE: (*) SIDES ARE MARKED WITH RESPECT TO INCREASING CHAINAGE. LEFT & RIGHT SIDE DIMENSIONS ARE TO BE CHECKED AT SITE BEFORE COMMENCEMENT OF WORK.

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTER OF THE BRIDGE.

| | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|-------------------------|--|----------|--|
| | | | | Date | March 2010 | Drawing Title : TYPICAL GENERAL ARRANGEMENT OF EXISTING MINOR BRIDGE WITH RCC BOX TO BE WIDENED BOTH SIDE WITH RCC BOX | Scale : AS SHOWN | CONSULTANTS: Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Drawn By | Vivek | | | | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| | | | | Designed By | Sanjay Mandal | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | Drawing Number : 73231\LASA\PPP\SR\MNBR\GA-01 | | | | |
| REVISION | | | | Approved By | Avadesh | | | | | |



SCHEDULE OF MINOR BRIDGES TO BE WIDENED

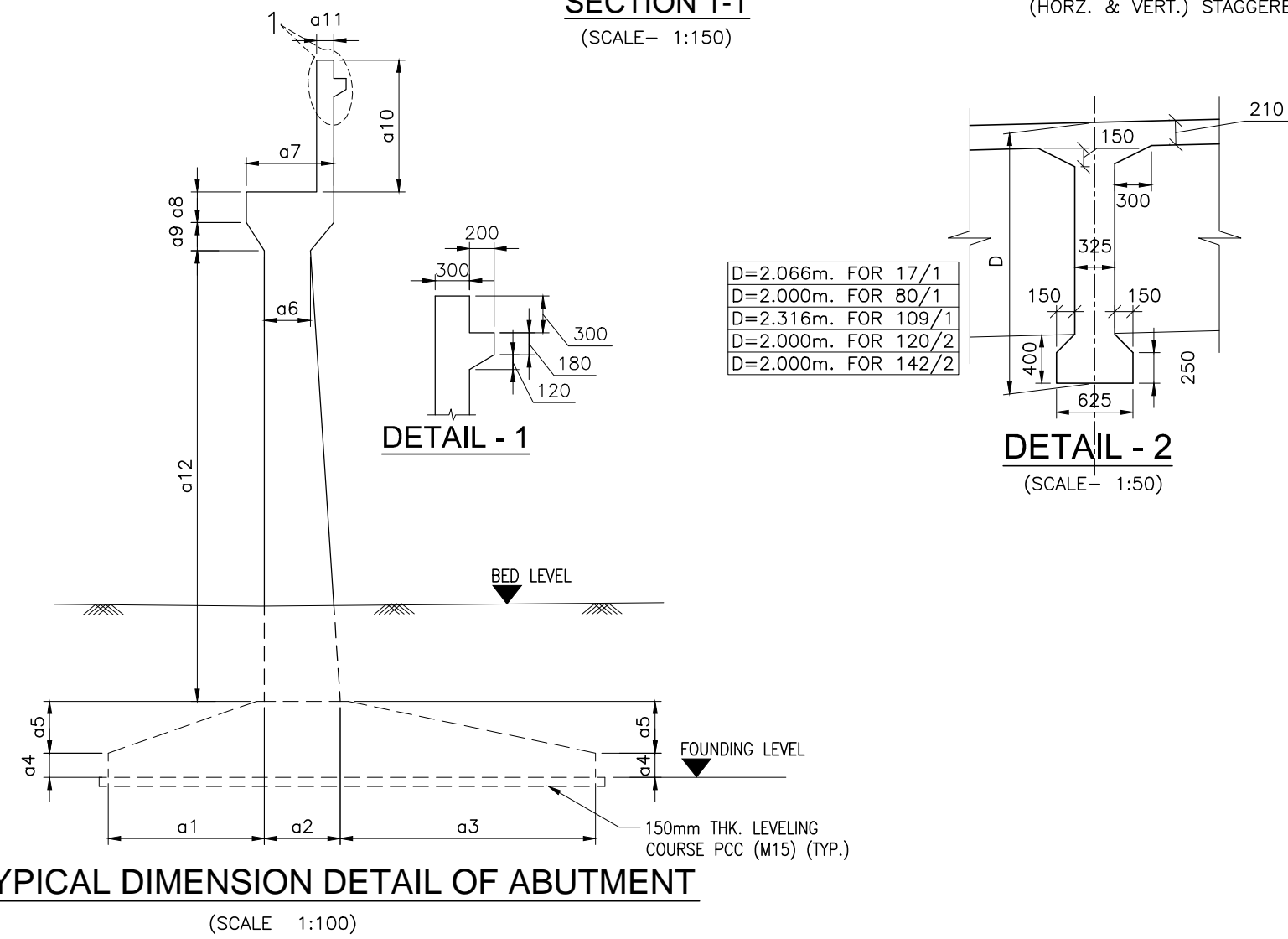
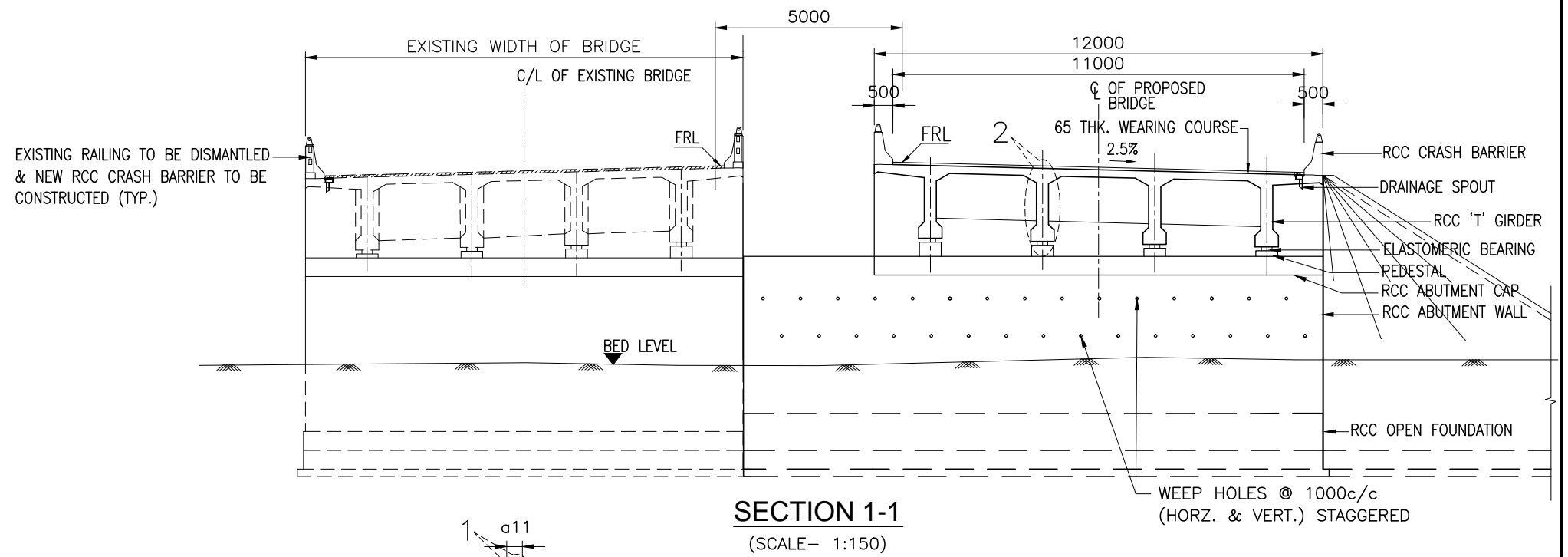
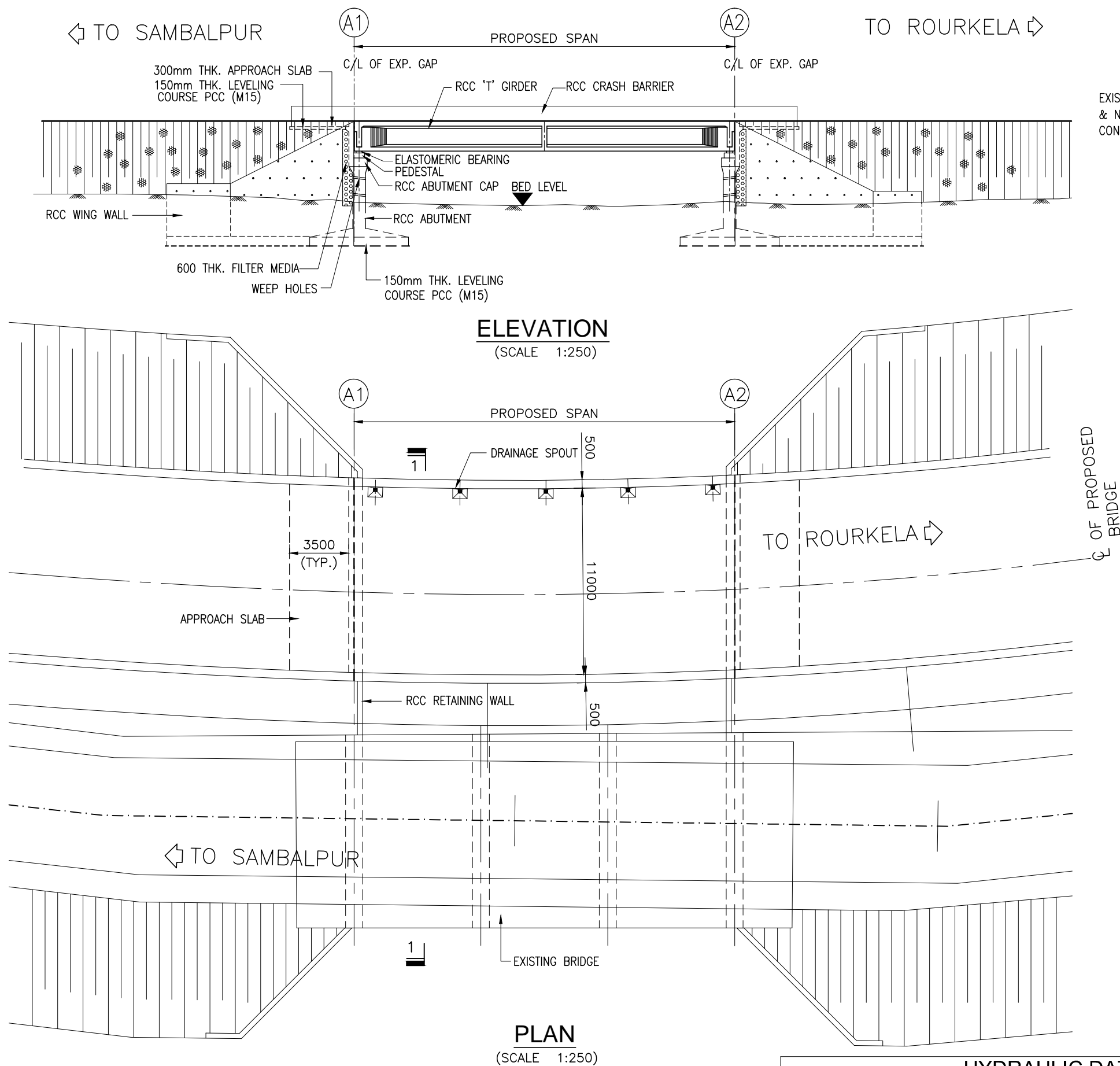
| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | EXISTING STRUCTURE DESCRIPTION | EXISTING SPAN ARRANGEMENT | LENGTH OF PROPOSED WIDENING | | WIDTH AFTER WIDENING (m) | PROPOSED SIZE OF BOX | |
|---------|---------------|-------------------|--|---------------------------|-----------------------------|-----------------------|--------------------------|----------------------|-----------|
| | | | | | W1 LEFT SIDE* (m) | W2 RIGHT SIDE* (m) | | s (mm) | h (mm) |
| 1 | 8/1 | 7+047.775 | RCC Slab with SM Abutment on open foundation | 1 x 7.70 | 6.162 | 5.501 | 23.000 | 6500 | 2500 |
| 2 | 21/4 | 20+944.126 | RCC Slab with SM Abutment on open foundation | 1 x 7.20 | 4.330 | 7.905 | 24.000 | 6200 | 4800 |
| 3 | 43/1 | 42+211.737 | RCC Slab with SM Abutment on open foundation | 1 x 6.90 | 13.420 | 1.622 | 26.000 | 6100 | 3600 |
| 4 | 137/1 | 136+740.627 | RCC Slab with SM Abutment on open foundation | 1 x 8.00 | 1.379 | 15.544 | 28.466 | 7000 | 2500 |
| 5 | 143/1 | 141+226.244 | RCC Slab with SM Abutment on open foundation | 1 x 7.20 | 13.083 | 1.607 | 26.000 | 6200 | 2000 |
| 6 | 144/1 | 142+086.470 | RCC Slab with SM Abutment on open foundation | 1 x 7.00 | 6.187 | 5.800 | 24.000 | 6000 | 2500 |
| 7 | 153/1 | 152+150.858 | RCC Slab with SM Abutment on open foundation | 1 x 7.20 | 1.301 | 13.021 | 26.000 | 6200 | 5000 |

NOTE: (*) SIDES ARE MARKED WITH RESPECT TO INCREASING CHAINAGE. LEFT & RIGHT SIDE DIMENSIONS ARE TO BE CHECKED AT SITE BEFORE COMMENCEMENT OF WORK.

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
- CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTER OF THE BRIDGE.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Vivek | TYPICAL GENERAL ARRANGEMENT OF EXISTING MINOR BRIDGE WITH RCC SOLID SLAB & STONE MASONRY SUBSTRUCTURE TO BE WIDENED BOTH SIDE WITH RCC BOX | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-02 | | |



| HYDRAULIC DATA | | | | | | | GEOTECHNICAL DATA | | |
|----------------|----------|---------|--------------------|---------|----------------|-----------------|-------------------------|-------------------|--------------------|
| SL. NO. | STR. NO. | FRL | DISCHARGE (CUMECs) | HFL (M) | VELOCITY (M/S) | SCOUR LEVEL (M) | SBC (T/M ²) | LOW BED LEVEL (M) | FOUNDING LEVEL (M) |
| 1 | 17/1 | 177.153 | 149.678 | 175.643 | 2.794 | 170.117 | 35 | 171.653 | 168.053 |
| 2 | 78/1 | 233.106 | 300.172 | 228.950 | 2.518 | 219.821 | 25 | 222.529 | 219.029 |
| 3 | 107/2 | 273.869 | 47.793 | 269.691 | 2.346 | 267.291 | 30 | 268.578 | 264.578 |
| 4 | 119/1 | 247.676 | 121.649 | 245.295 | 1.882 | 240.287 | 35 | 242.370 | 237.770 |
| 5 | 141/1 | 217.559 | 86.985 | 218.450 | 1.064 | 214.283 | 15 | 214.947 | 210.447 |

| STRUCTURAL DATA | |
|-----------------|-------------------------|
| 1. | GRADE OF CONCRETE :- |
| (a) | SUPERSTRUCTURE :- |
| (i) | CRASH BARRIER - M40 |
| (ii) | DECK SLAB - M30 |
| (iii) | GIRDER - M35 |
| (b) | SUBSTRUCTURE - M25 |
| (c) | WING WALL - M30 |
| (d) | FOUNDATION - M25 |
| 2. | GRADE OF STEEL - Fe 500 |
| 3. | BEARING TYPE :- |
| (a) | ELASTOMERIC BEARING |
| 4. | EXPANSION JOINT :- |
| (a) | ASPHALTIC PLUG |

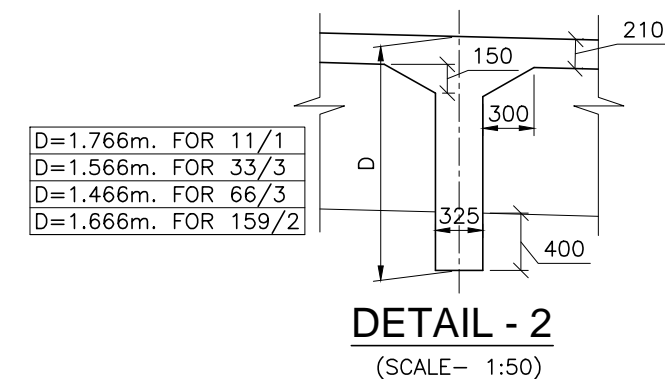
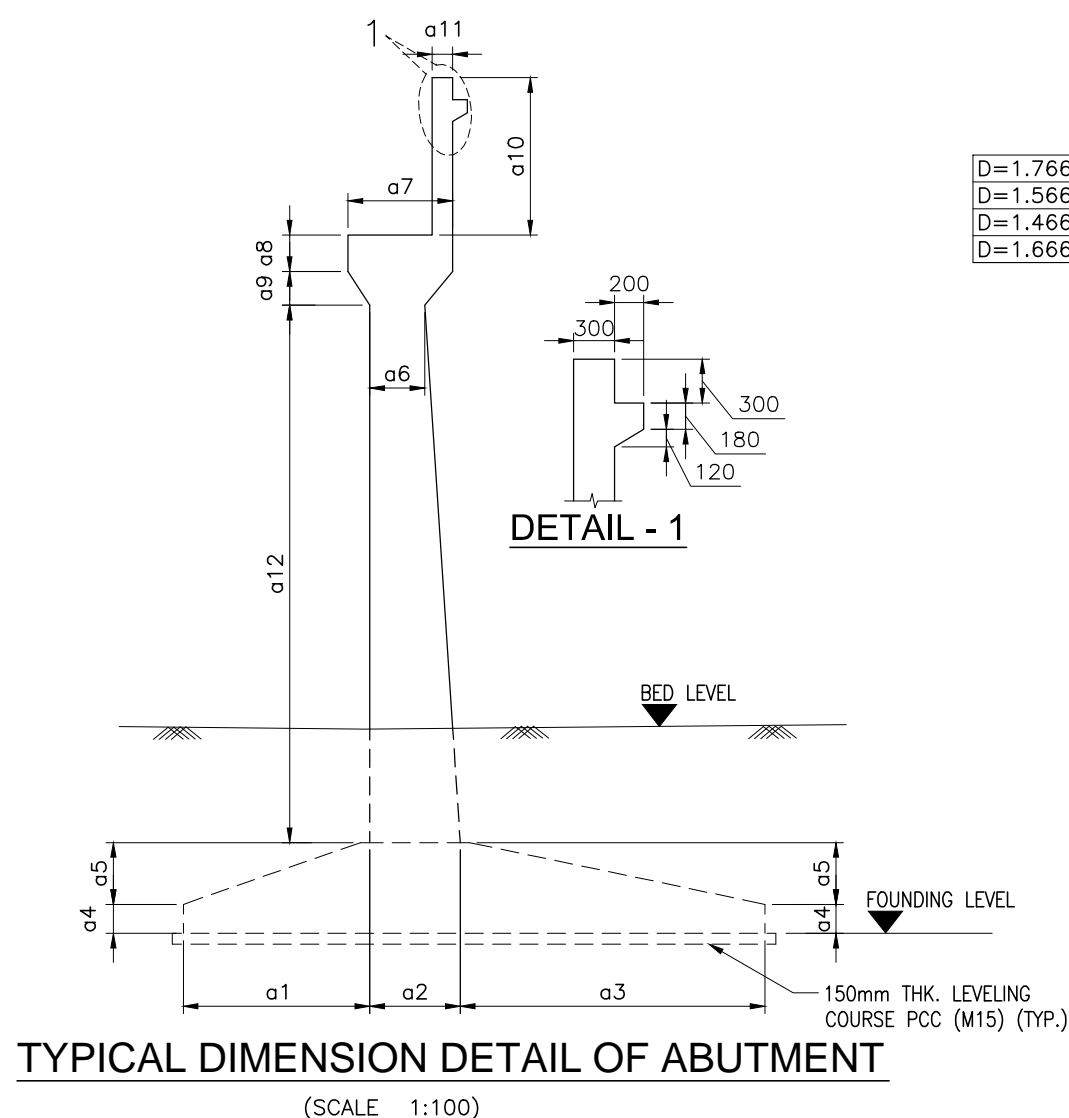
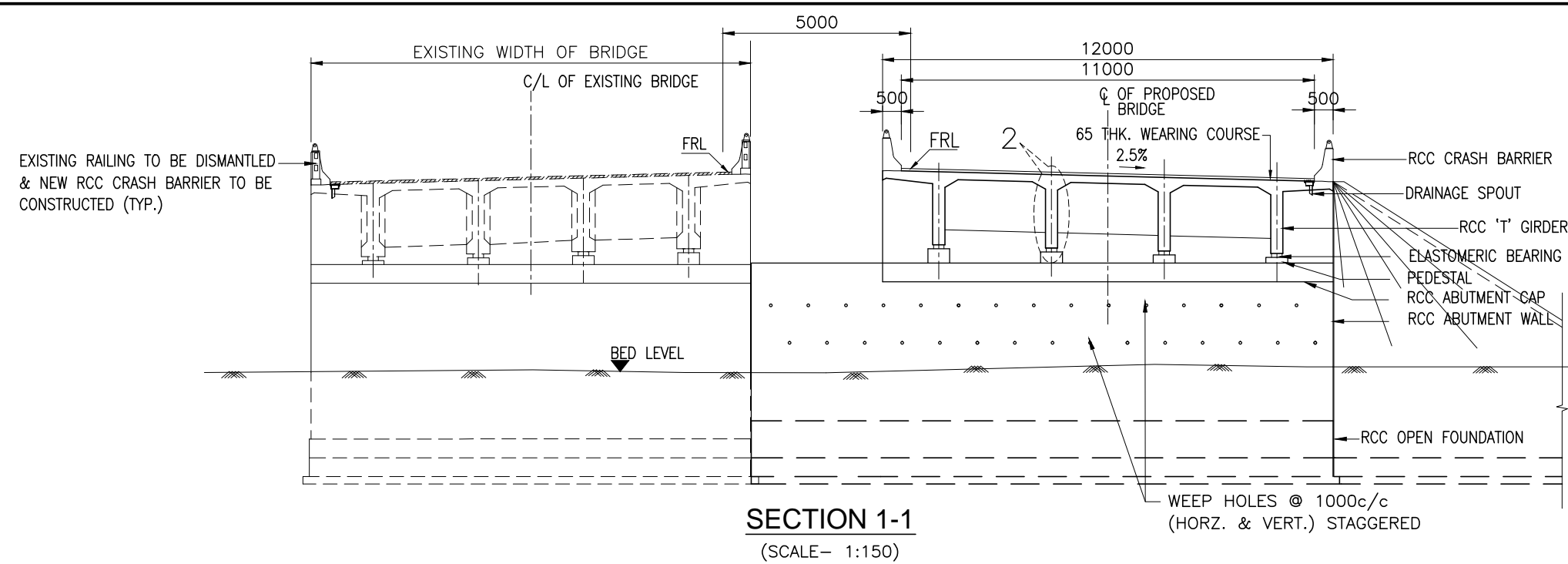
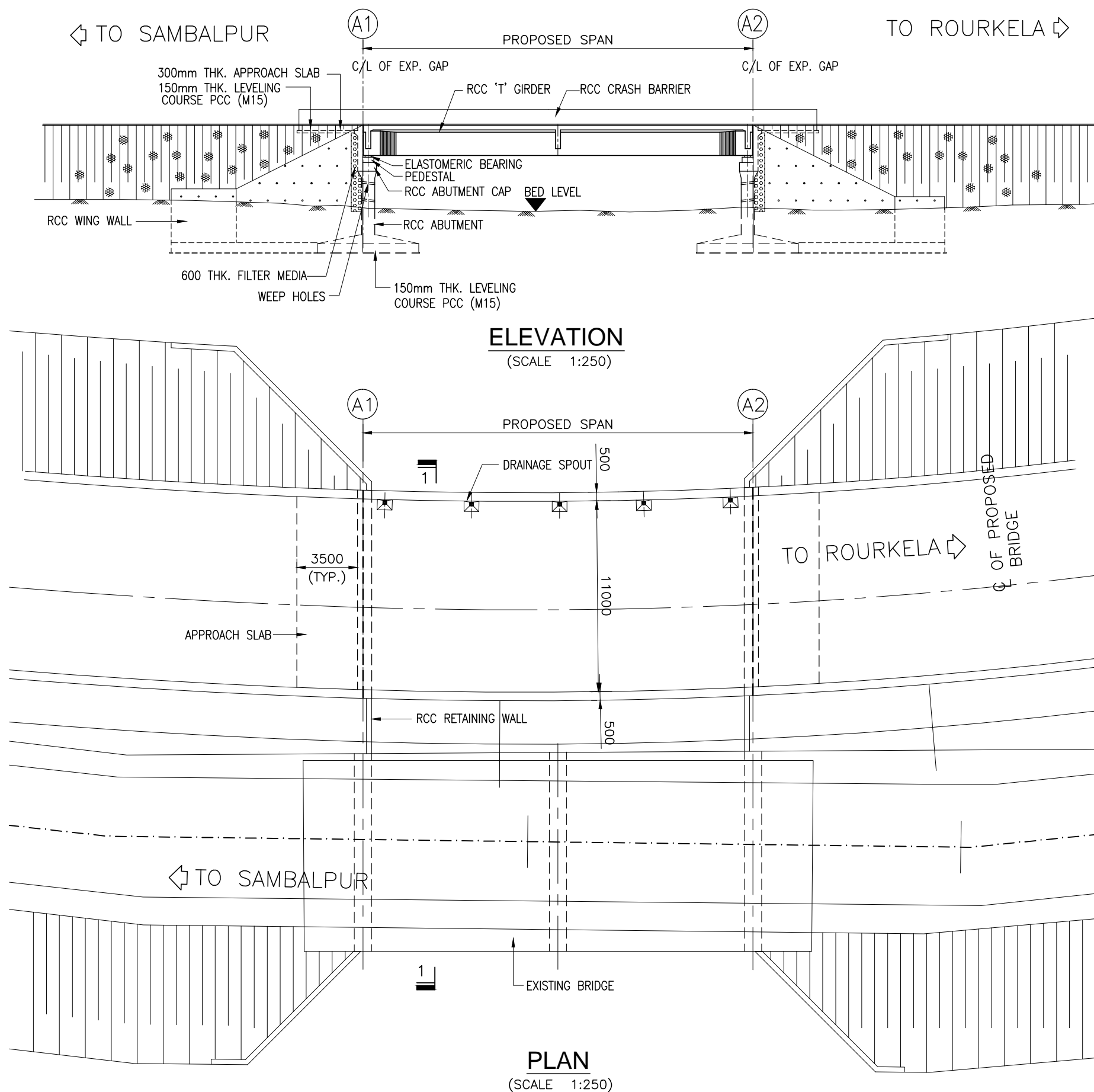
SCHEDULE OF MINOR BRIDGES TO BE WIDENED

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | EXISTING STRUCTURE DESCRIPTION | PROPOSED STRUCTURE DESCRIPTION | EXISTING SPAN ARRANGEMENT | PROPOSED SPAN ARRANGEMENT | DIMENSIONS FOR ABUTMENT | | | | | | | | | | | |
|---------|---------------|-------------------|--------------------------------|--------------------------------|---------------------------|---------------------------|-------------------------|------|------|-----|------|-----|------|-----|-----|------|-----|------|
| | | | | | | | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 | A12 |
| 1 | 17/1 | 16+029.626 | RCC Solid Slab & Arch | RCC 'T' Girder with RCC Slab | 3 x 6.56 | 1 x 20.0 | 3000 | 1200 | 6000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 4550 |
| 2 | 78/1 | 77+388.354 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 3 x 6.45 | 1 x 19.35 | 3650 | 1400 | 7250 | 500 | 1000 | 800 | 1120 | 500 | 500 | 2300 | 300 | 9450 |
| 3 | 107/2 | 106+612.607 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 3 x 7.50 | 1 x 22.5 | 3000 | 1200 | 6000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 4750 |
| 4 | 119/1 | 118+106.010 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 3 x 6.45 | 1 x 19.35 | 3000 | 1200 | 6000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 5350 |
| 5 | 141/1 | 140+271.767 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 3 x 6.45 | 1 x 19.35 | 2400 | 800 | 5000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 2550 |

NOTES:-

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- FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
- CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
- ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | TYPICAL GENERAL ARRANGEMENT OF MINOR BRIDGE (NEW STRUCTURE WITH RCC 'T' GIRDER SUPERSTRUCTURE AND RETENSION OF OLD STRUCTURE) | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-03 | (SHEET 1 OF 2) | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |



| HYDRAULIC DATA | | | | | | | GEOTECHNICAL DATA | | |
|----------------|----------|---------|--------------------|---------|----------------|-----------------|-------------------------|-------------------|--------------------|
| SL. NO. | STR. NO. | FRL | DISCHARGE (CUMecs) | HFL (M) | VELOCITY (M/S) | SCOUR LEVEL (M) | SBC (T/M ²) | LOW BED LEVEL (M) | FOUNDING LEVEL (M) |
| 1 | 11/1 | 159.588 | 128.964 | 155.625 | 2.616 | 149.682 | 30 | 152.554 | 149.054 |
| 2 | 32/2 | 190.524 | 217.502 | 186.523 | 2.882 | 177.738 | 30 | 181.423 | 176.323 |
| 3 | 64/5 | 211.334 | 139.734 | 208.064 | 2.847 | 200.990 | 30 | 204.164 | 199.664 |
| 4 | 157/3 | 189.563 | 179.181 | 188.370 | 2.441 | 181.151 | 35 | 185.589 | 181.089 |

| STRUCTURAL DATA | |
|-----------------|-------------------------|
| 1. | GRADE OF CONCRETE :- |
| (a) | SUPERSTRUCTURE :- |
| (i) | CRASH BARRIER - M40 |
| (ii) | DECK SLAB - M30 |
| (iii) | GIRDER - M35 |
| (b) | SUBSTRUCTURE - M25 |
| (c) | WING WALL - M30 |
| (d) | FOUNDATION - M25 |
| 2. | GRADE OF STEEL - Fe 500 |
| 3. | BEARING TYPE :- |
| (a) | ELASTOMERIC BEARING |
| 4. | EXPANSION JOINT :- |
| (a) | ASPHALTIC PLUG |

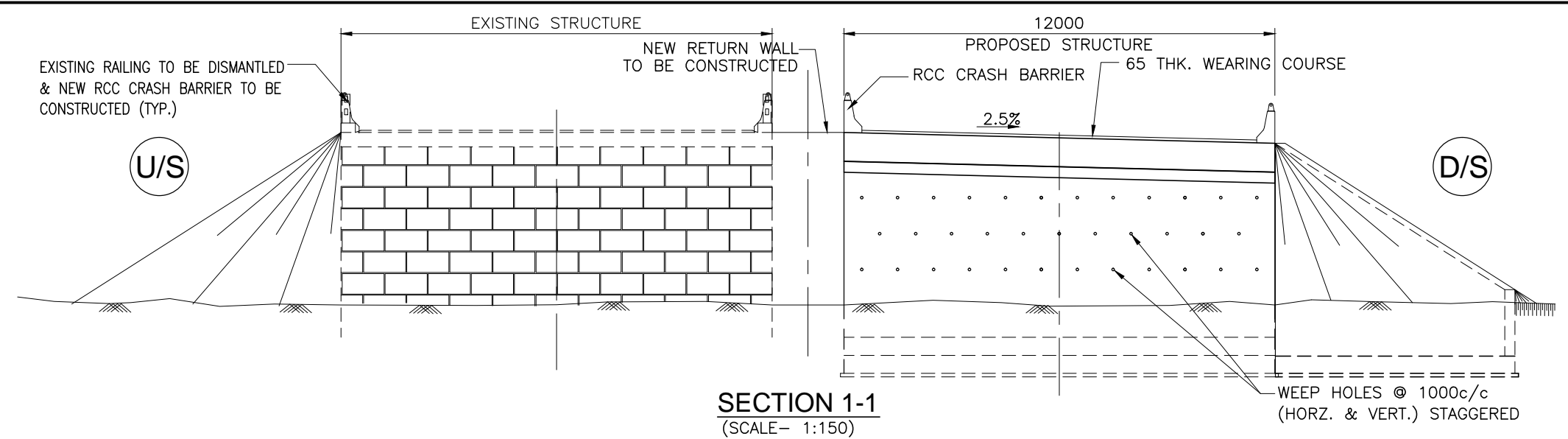
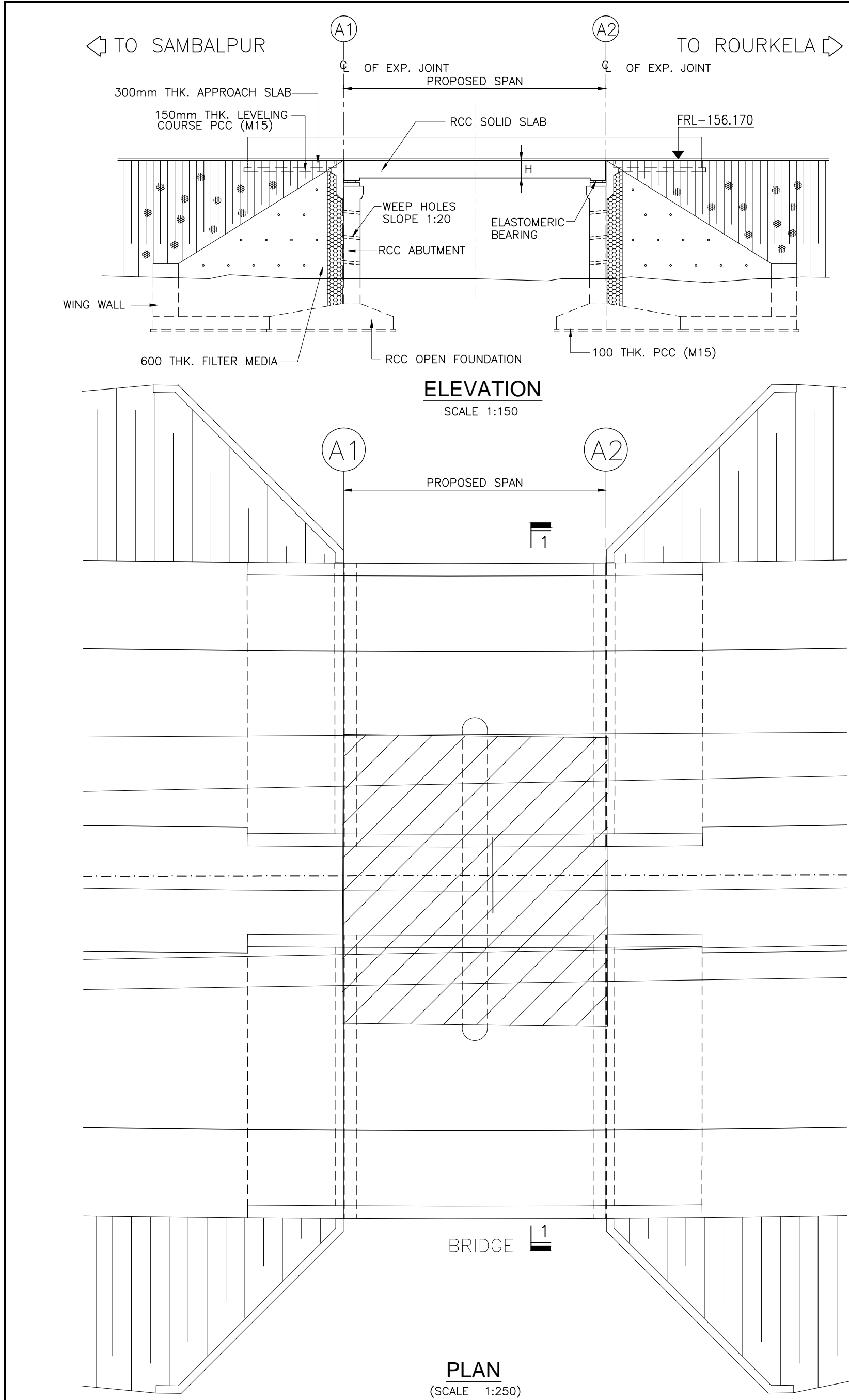
SCHEDULE OF MINOR BRIDGES TO BE WIDENED

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | EXISTING STRUCTURE DESCRIPTION | PROPOSED STRUCTURE DESCRIPTION | EXISTING SPAN ARRANGEMENT | PROPOSED SPAN ARRANGEMENT | DIMENSIONS FOR ABUTMENT | | | | | | | | | | | |
|---------|---------------|-------------------|--------------------------------|--------------------------------|---------------------------|---------------------------|-------------------------|------|------|-----|------|-----|------|-----|-----|------|-----|------|
| | | | | | | | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 | A12 |
| 1 | 11/1 11/1 | 10+670.330 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 2 x 8.55 | 1 x 17.1 | 2750 | 1200 | 6000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 5950 |
| 2 | 33/1 32/2 | 31+822.090 | RCC 'T' Girder with RCC Slab | RCC 'T' Girder with RCC Slab | 2 x 7.70 | 1 x 15.4 | 3650 | 1400 | 7250 | 500 | 1000 | 800 | 1120 | 500 | 500 | 2300 | 300 | 9650 |
| 3 | 66/3 64/5 | 63+922.006 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 2 x 6.90 | 1 x 13.80 | 2750 | 1200 | 6000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 5950 |
| 4 | 159/2 157/3 | 156+557.416 | RCC Solid Slab | RCC 'T' Girder with RCC Slab | 2 x 8.40 | 1 x 16.8 | 2400 | 800 | 5000 | 500 | 750 | 800 | 1120 | 500 | 500 | 2300 | 300 | 4320 |

NOTES:-

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- FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
- CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
- ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | TYPICAL GENERAL ARRANGEMENT OF MINOR BRIDGE (NEW STRUCTURE WITH RCC 'T' GIRDER SUPERSTRUCTURE AND RETENSION OF OLD STRUCTURE) | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-03 | (SHEET 2 OF 2) | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |



SCHEDULE OF MINOR BRIDGES TO BE WIDENED

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | EXISTING STRUCTURE DESCRIPTION | EXISTING SPAN ARRANGEMENT | PROPOSED SPAN ARRANGEMENT | LENGTH OF PROPOSED WIDENING | | WIDTH AFTER WIDENING (m) | H (mm.) |
|---------|---------------|-------------------|--|---------------------------|---------------------------|-----------------------------|--------------------|--------------------------|---------|
| | | | | | | W1 LEFT SIDE* (m) | W2 RIGHT SIDE* (m) | | |
| 1 | 35/1 | 34+293.639 | RCC Slab with SM Abutment on open foundation | 2 x 5.2 | 1 x 10.4 | 6.792 | 7.740 | 26.000 | 950 |
| 2 | 73/1 | 72+410.542 | RCC Slab with SM Abutment on open foundation | 1 x 8.30 | 1 x 8.30 | — | 12.0+MEDIAN | 26.000 | 820 |
| 3 | 97/1 | 96+018.193 | RCC Slab with SM Abutment on open foundation | 1 x 11.70 | 1 x 9.25 | 12.0+MEDIAN | — | 26.000 | 900 |
| 4 | 105/1 | 103+748.472 | RCC Slab with SM Abutment on open foundation | 1 x 10.5 | 1 x 10.5 | 12.0+MEDIAN | — | 26.000 | 950 |

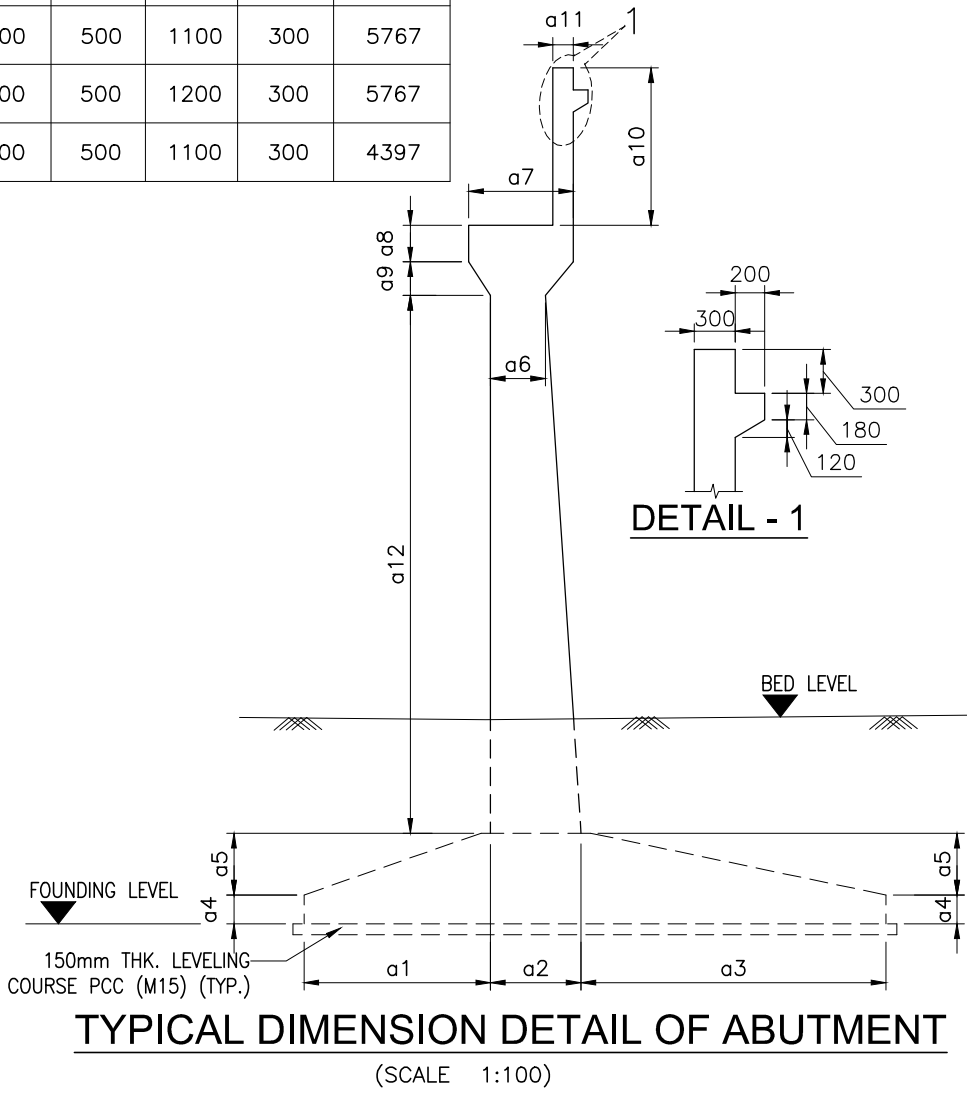
NOTE: (*) SIDES ARE MARKED WITH RESPECT TO INCREASING CHAINAGE. LEFT & RIGHT SIDE DIMENSIONS ARE TO BE CHECKED AT SITE BEFORE COMMENCEMENT OF WORK.

SCHEDULE FOR ABUTMENTS

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | FRL (ABUT) | DIMENSIONS FOR ABUTMENT | | | | | | | | | | | |
|---------|---------------|-------------------|------------|-------------------------|------|------|-----|-----|-----|------|-----|-----|------|-----|------|
| | | | | a1 | a2 | a3 | a4 | a5 | a6 | a7 | a8 | a9 | a10 | a11 | a12 |
| 1 | 35/1 | 34+298.031 | 190.303 | 2000 | 800 | 4750 | 500 | 750 | 800 | 1120 | 500 | 500 | 1100 | 300 | 6155 |
| 2 | 73/1 | 72+198.933 | 235.029 | 2000 | 800 | 4250 | 500 | 750 | 800 | 1120 | 500 | 500 | 1100 | 300 | 5767 |
| 3 | 97/1 | 95+736.584 | 269.969 | 3000 | 1200 | 4250 | 500 | 750 | 800 | 1120 | 500 | 500 | 1200 | 300 | 5767 |
| 4 | 105/1 | 103+748.472 | 275.136 | 2000 | 800 | 3000 | 500 | 750 | 800 | 1120 | 500 | 500 | 1100 | 300 | 4397 |

| HYDRAULIC DATA | | | | | | GEOTECHNICAL DATA | | |
|----------------|----------|--------------------|---------|----------------|-----------------|-------------------------|-------------------|--------------------|
| SL. NO. | STR. NO. | DISCHARGE (CUMecs) | HFL (M) | VELOCITY (M/S) | SCOUR LEVEL (M) | SBC (T/M ²) | LOW BED LEVEL (M) | FOUNDING LEVEL (M) |
| 1 | 35/1 | 54.912 | 187.540 | 2.428 | 182.736 | 29 | 185.733 | 180.733 |
| 2 | 73/1 | 19.541 | 231.853 | 1.782 | 229.222 | 25 | 230.347 | 225.847 |
| 3 | 97/1 | 46.919 | 268.500 | 1.767 | 264.699 | 25 | 265.854 | 261.354 |
| 4 | 105/1 | 12.175 | 271.383 | 1.063 | 269.649 | 35 | 270.324 | 267.324 |

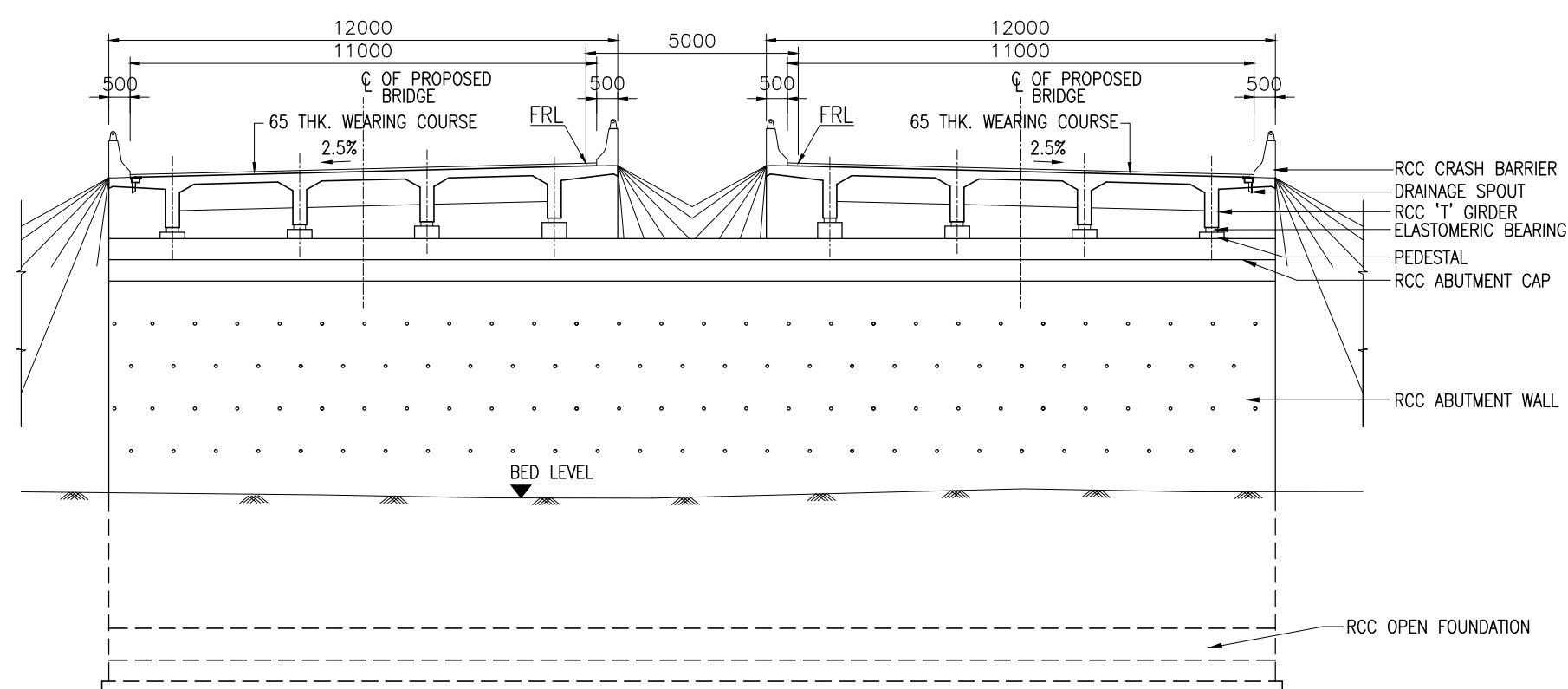
| STRUCTURAL DATA | |
|-----------------|-------------------------|
| 1. | GRADE OF CONCRETE :- |
| (a) | SUPERSTRUCTURE :- |
| (i) | CRASH BARRIER - M40 |
| (ii) | DECK SLAB - M30 |
| (iii) | RCC SOLID SLAB - M35 |
| (b) | SUBSTRUCTURE - M25 |
| (c) | WING WALL - M30 |
| (d) | FOUNDATION - M25 |
| 2. | GRADE OF STEEL - Fe 500 |
| 3. | BEARING TYPE :- |
| (a) | ELASTOMERIC BEARING |
| 4. | EXPANSION JOINT :- |
| (a) | ASPHALTIC PLUG |



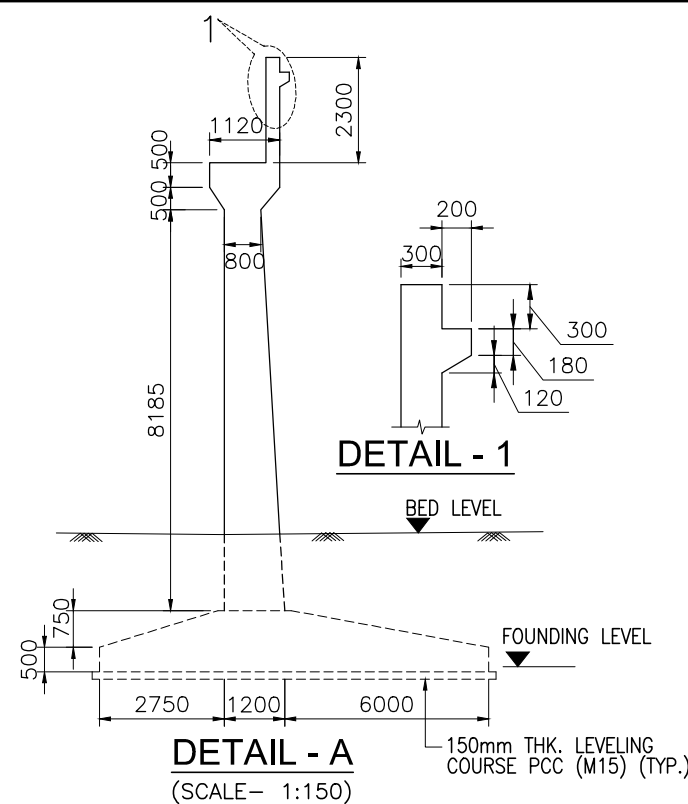
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
- CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
- ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

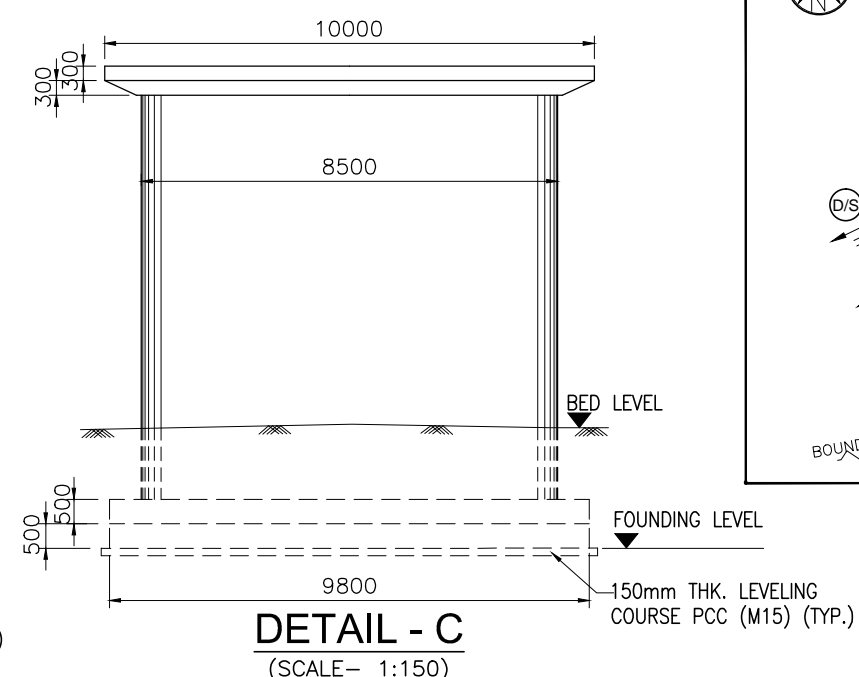
| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|-------------------------|--|---|
| | | | | Date | March 2010 | Drawing Title : TYPICAL GENERAL ARRANGEMENT OF MINOR BRIDGE (NEW STRUCTURE WITH RCC SLAB SUPERSTRUCTURE AND RETENSION OF OLD STRUCTURE) | Scale : AS SHOWN | CONSULTANTS: Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Drawn By | Joy | | | | |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | Drawing Number : 73231\LASA\PPP\SR\MNBR\GA-05 | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | | | | |



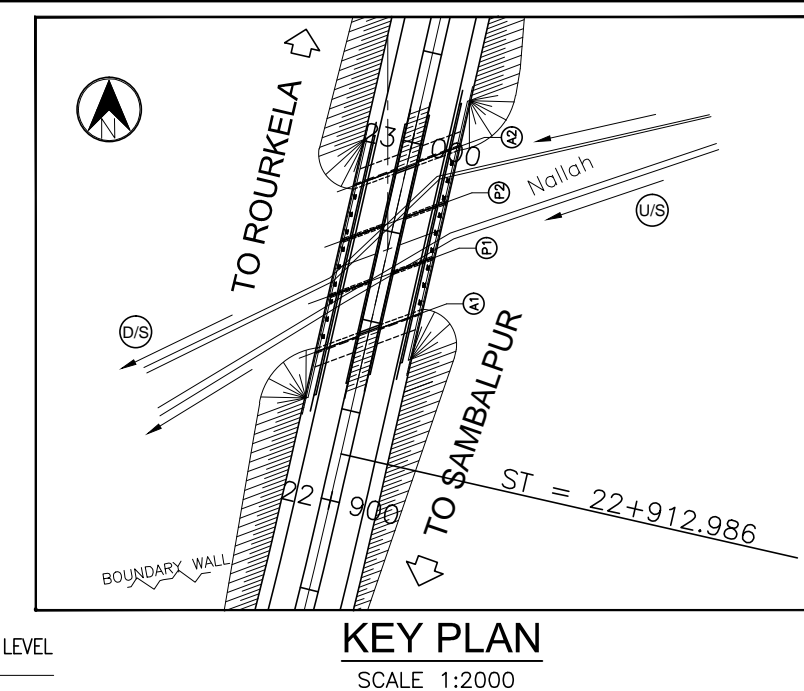
SECTION 1-1
(SCALE- 1:150)



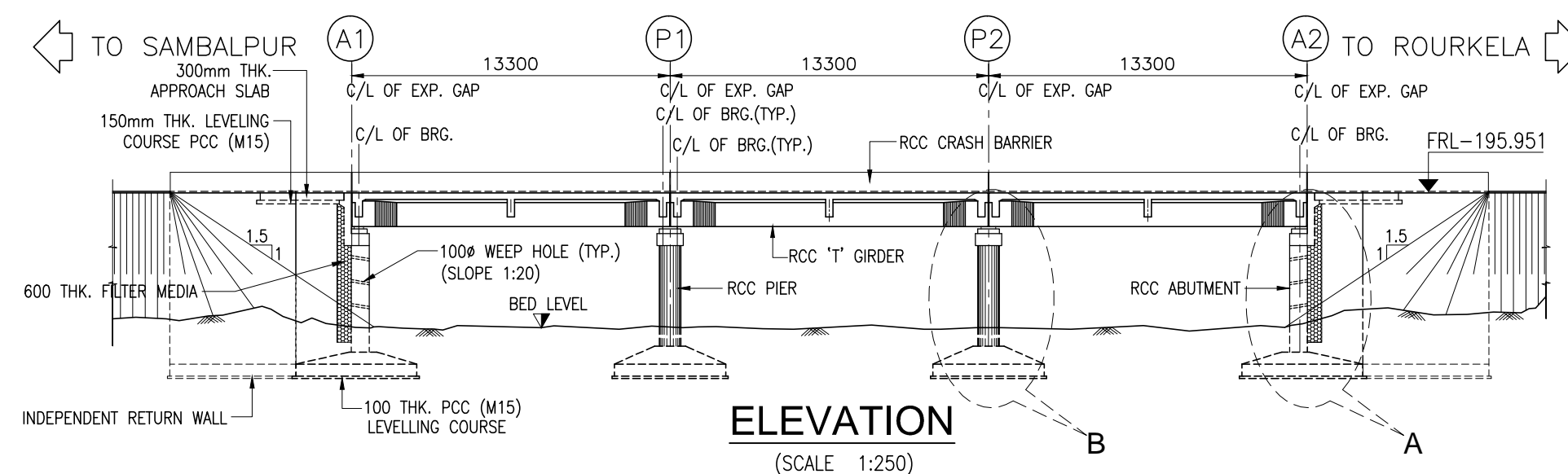
DETAIL - A
(SCALE- 1:150)



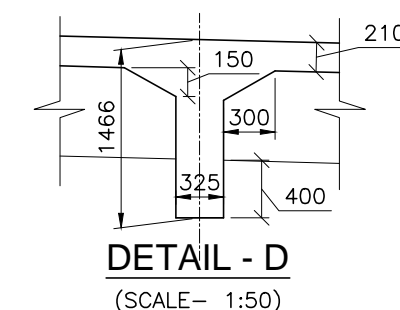
DETAIL - C
(SCALE- 1:150)



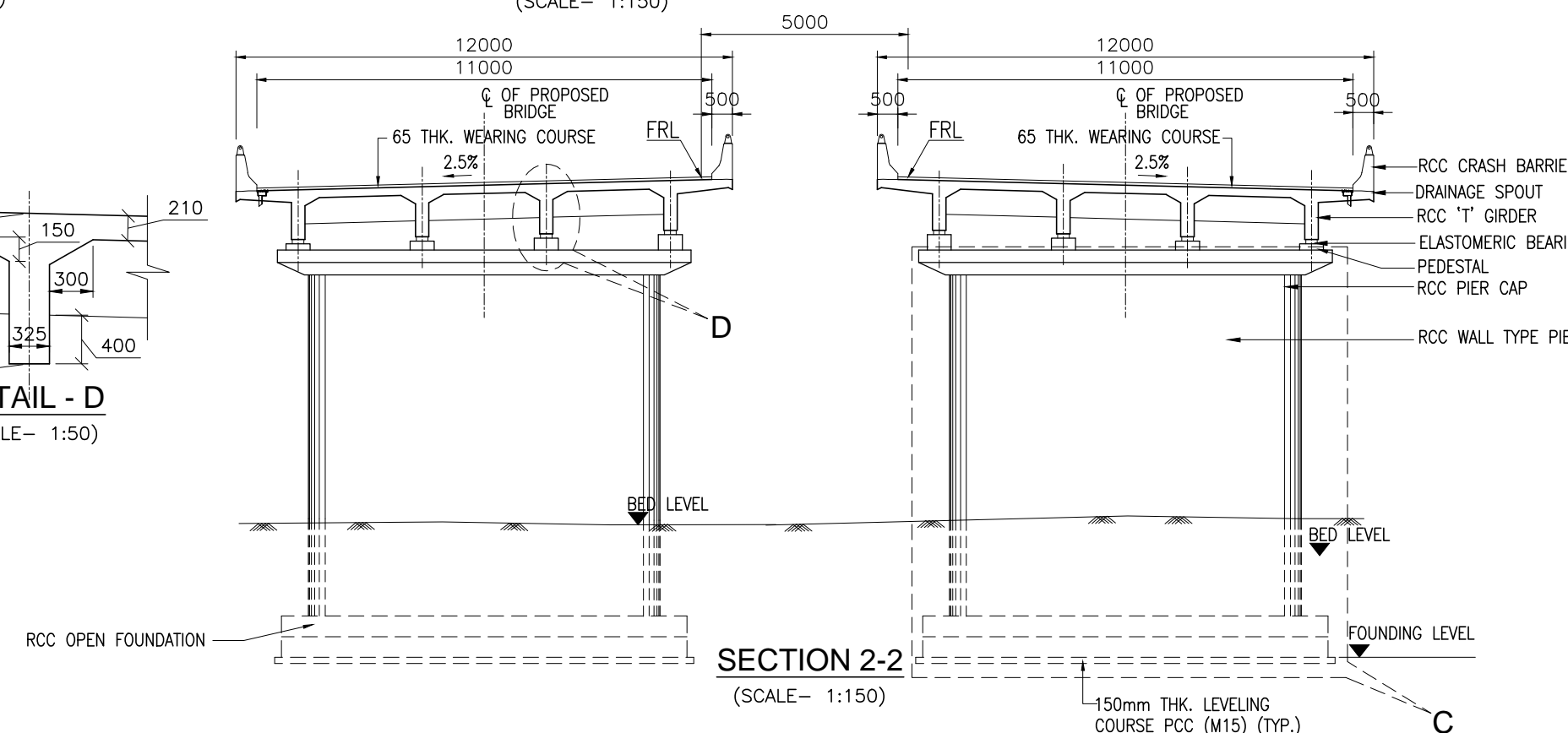
KEY PLAN
SCALE 1:2000



ELEVATION
(SCALE 1:250)

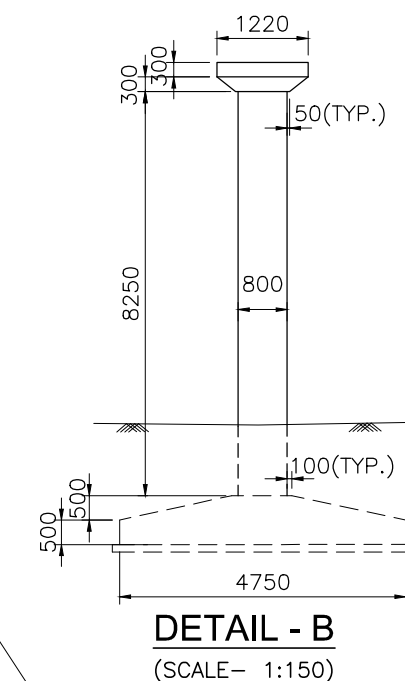


DETAIL - D
(SCALE- 1:50)



SECTION 2-2
(SCALE- 1:150)

| HYDRAULIC DATA | | | | | | GEOTECHNICAL DATA | | |
|----------------|----------|--------------------|---------|----------------|----------------------------------|-------------------------|-------------------|--------------------|
| SL. NO. | STR. NO. | DISCHARGE (CUMECs) | HFL (M) | VELOCITY (M/S) | SCOUR LEVEL (M) | SBC (T/M ²) | LOW BED LEVEL (M) | FOUNDING LEVEL (M) |
| 1 | 24/1 | 223.094 | 191.184 | 2.920 | 186.684 (ABUT) 183.991 (PIER) | 25 | 188.431 | 183.431 |



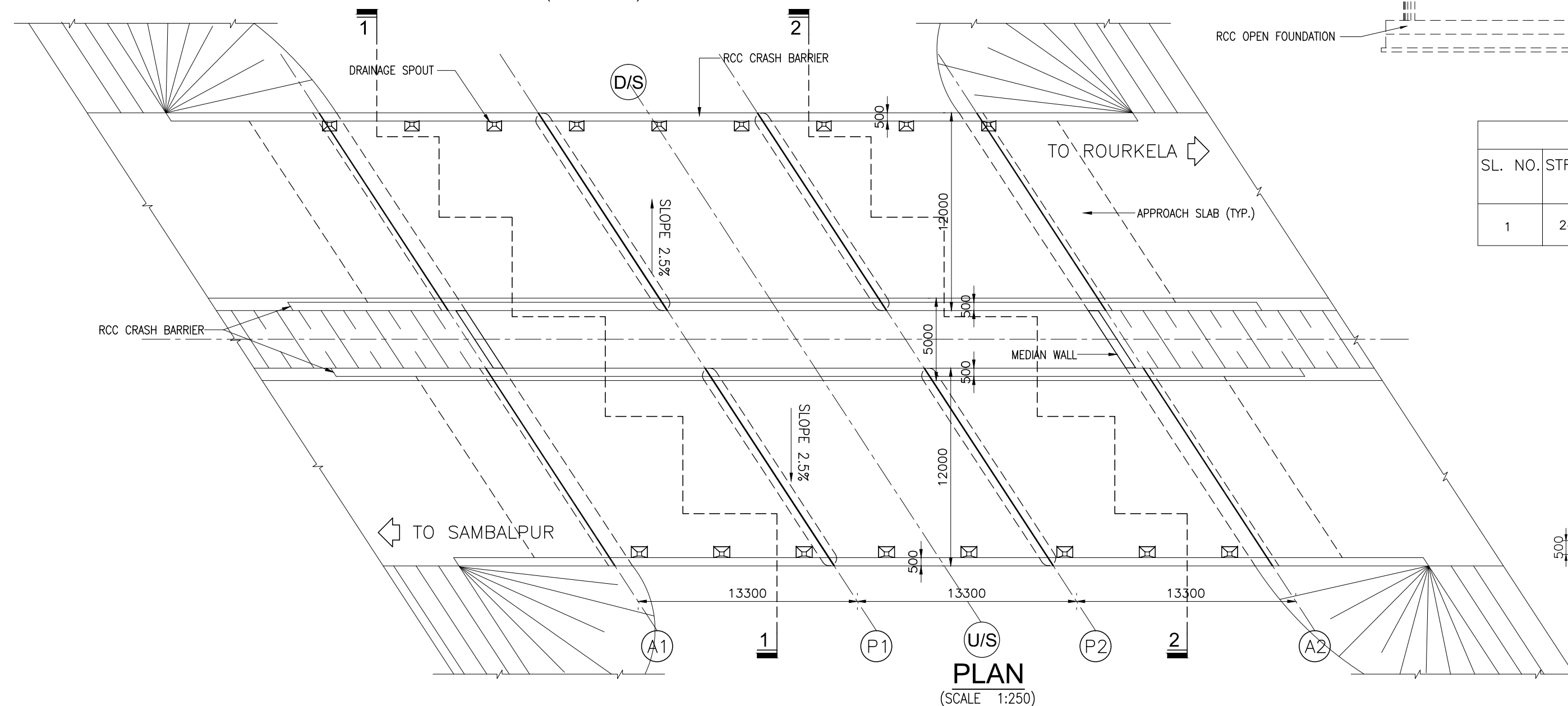
DETAIL - B
(SCALE- 1:150)

STRUCTURAL DATA



| | |
|-------|-------------------------|
| 1. | GRADE OF CONCRETE :- |
| (a) | SUPERSTRUCTURE :- |
| (i) | CRASH BARRIER - M40 |
| (ii) | DECK SLAB - M30 |
| (iii) | GIRDER - M35 |
| (b) | SUBSTRUCTURE - M25 |
| (c) | RETURN WALL - M30 |
| (d) | FOUNDATION - M25 |
| 2. | GRADE OF STEEL - Fe 500 |
| 3. | BEARING TYPE :- |
| (a) | ELASTOMERIC BEARING |
| 4. | EXPANSION JOINT :- |
| (a) | ASPHALTIC PLUG |

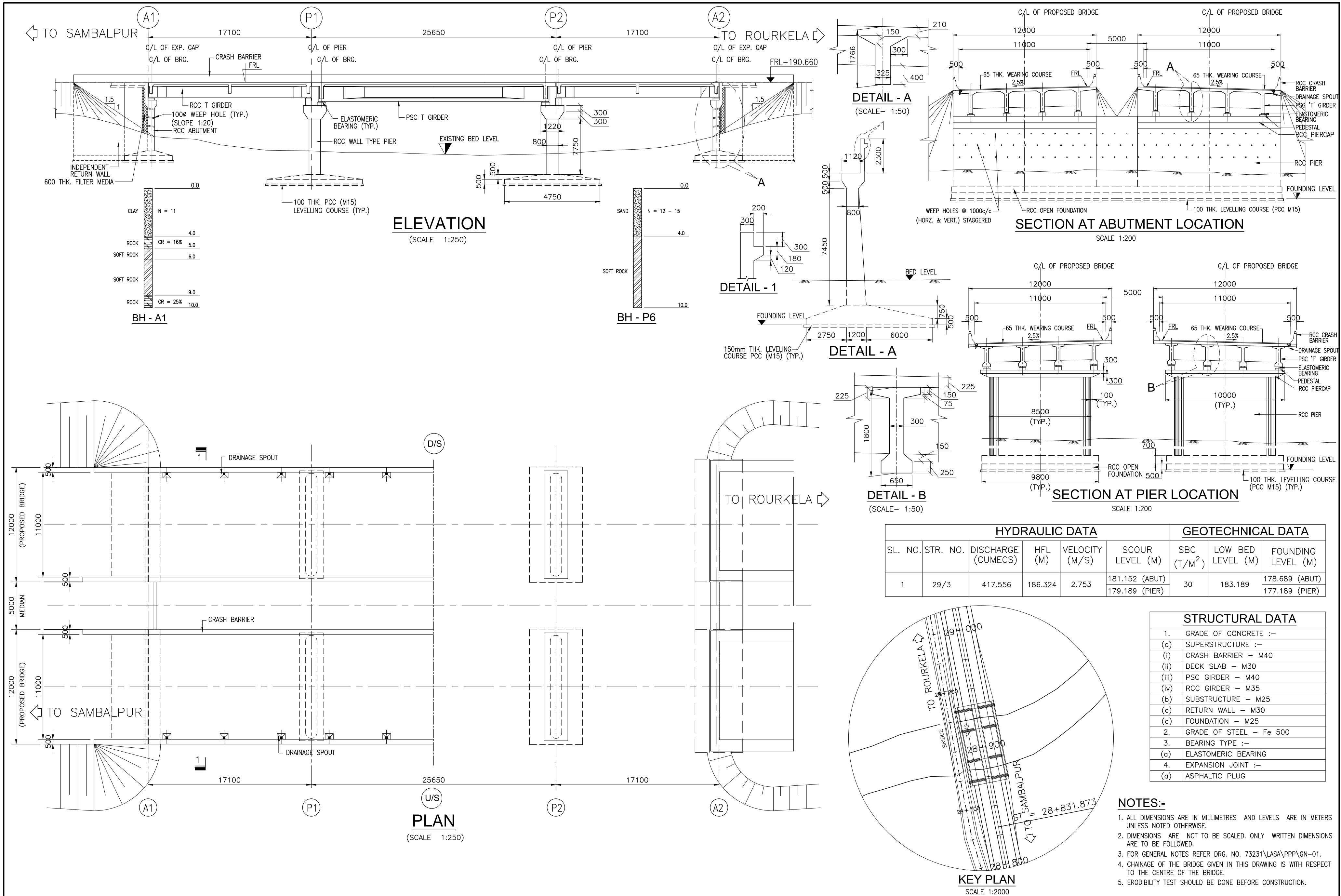
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
- CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
- ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

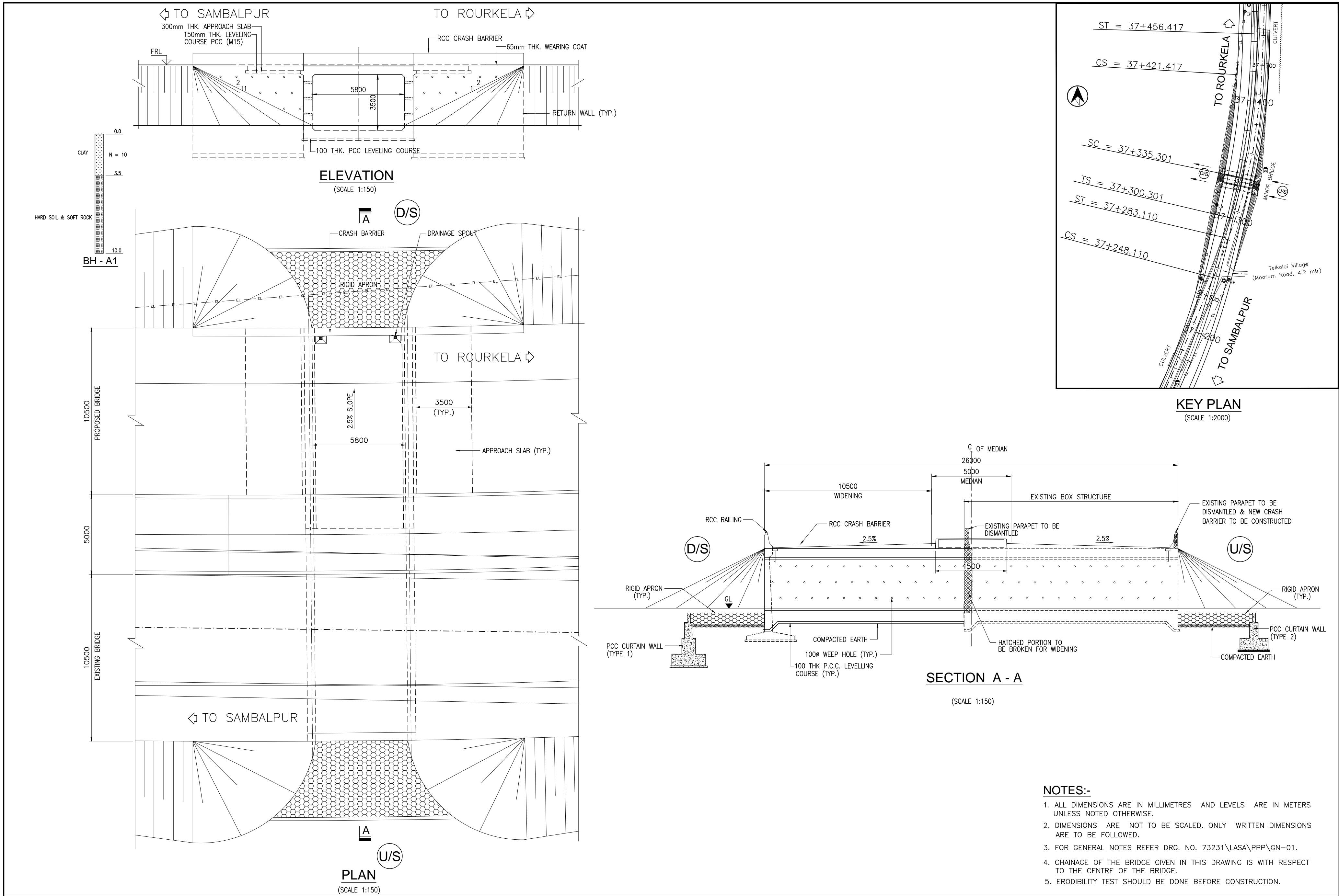


PLAN
(SCALE 1:250)

| | | | | | | | | |
|----------|--------------|------|-------------|---------------|---|-------------------------|--|--|
| | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 24/1 AT CH. 23+002.564 | Scale : AS SHOWN | CONSULTANTS:  Pricewaterhouse Coopers Pvt. Ltd. Building B, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With  LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | Drawn By | Vivek | | | | |
| | | | Designed By | Sanjay mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-O6 | |

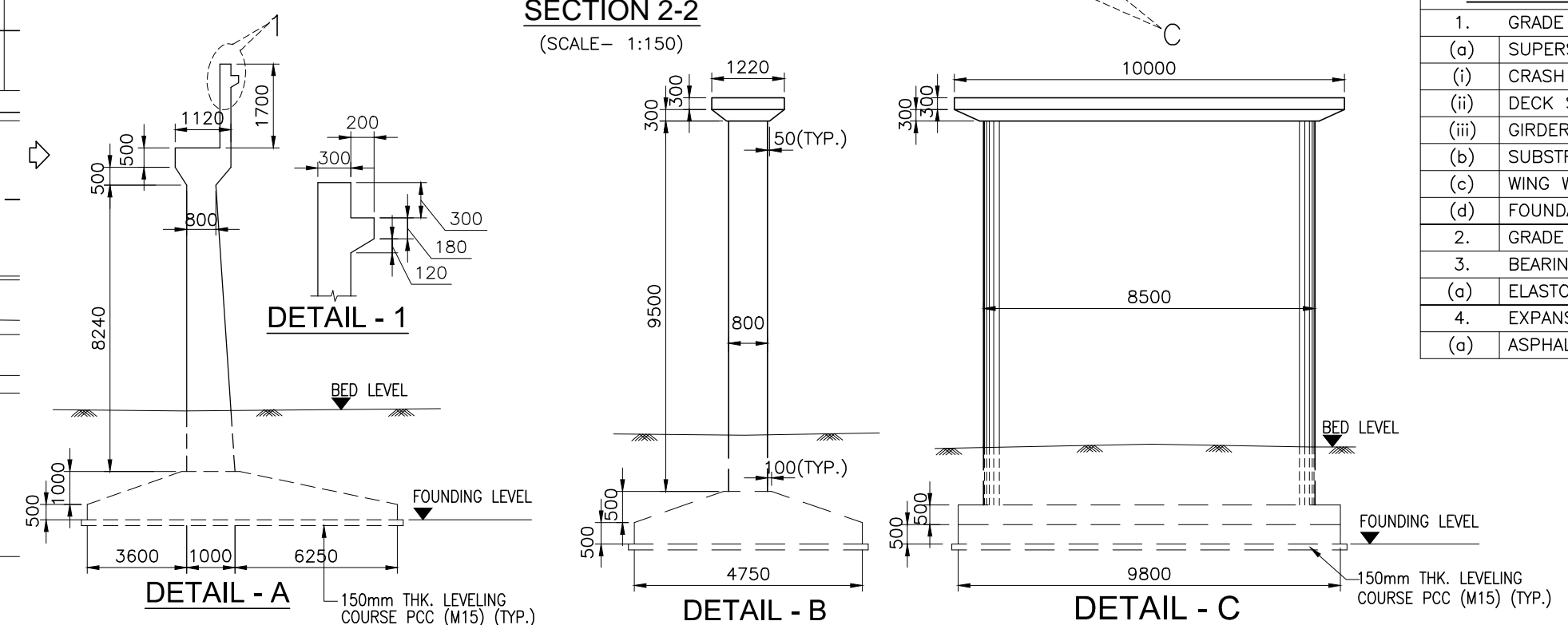
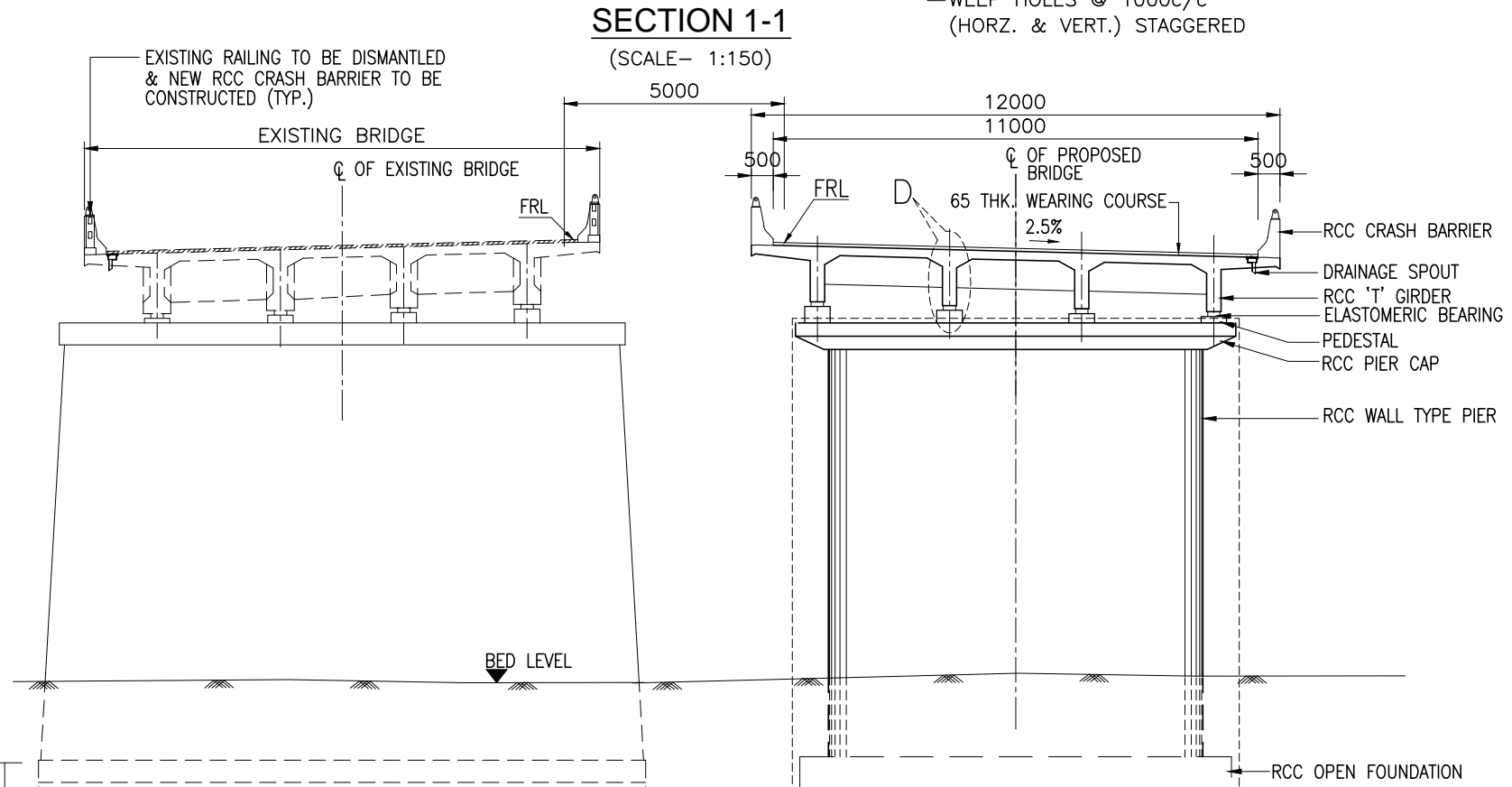
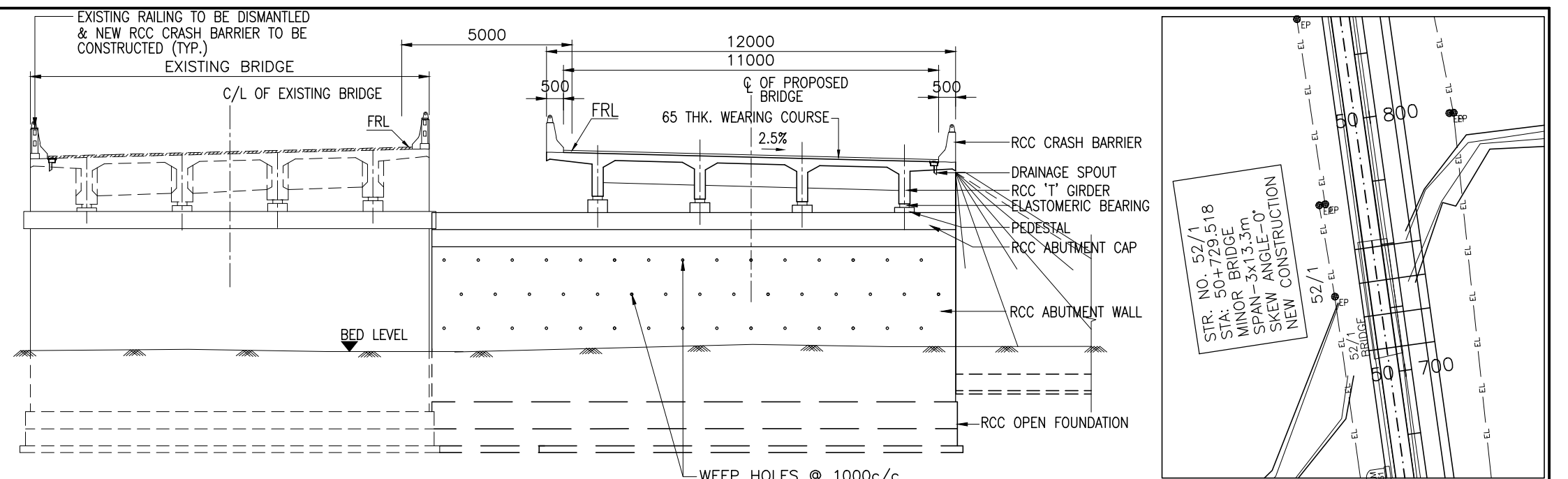


| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|------------------------|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | MINOR BRIDGE No. 29/3 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | WORKS DEPARTMENT |
| | | | | Checked By | J.P.Das | AT CH. 28+901.491 | | In JV With | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| Mkd. | Descriptions | Date | By | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-07 | LEA Associates South Asia Pvt. Ltd. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | | | | | | |





- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
 4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
 5. ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

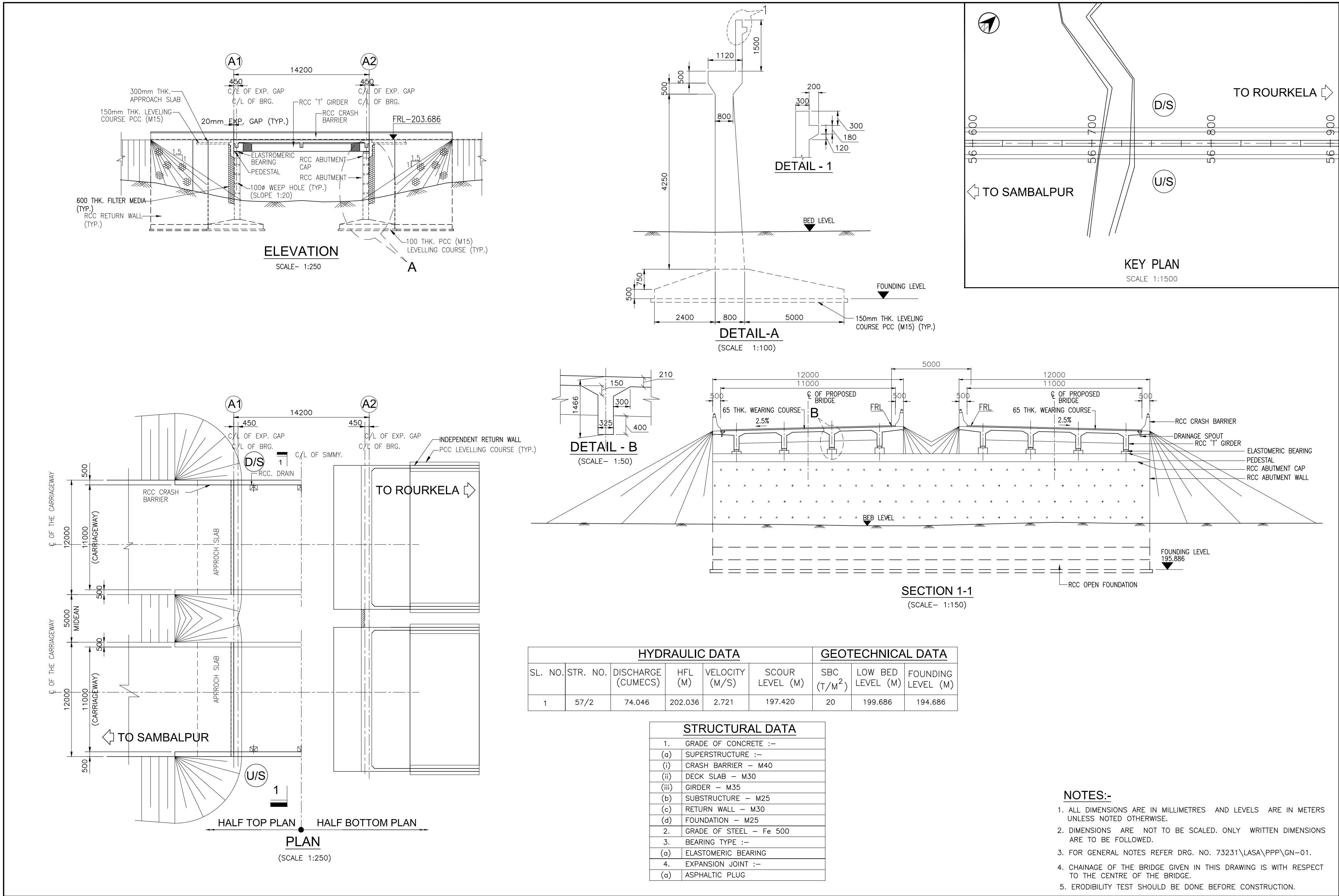
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|----------|--------------|------|----|-------------|---------------|--|-------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 38/2 AT CH. 37+329.357 | Scale : AS SHOWN | CONSULTANTS: Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Drawn By | Vivek | | | | |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | Drawing Number : 73231\LASA\PPP\SR\MNBR\GA-08 | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | | | | |



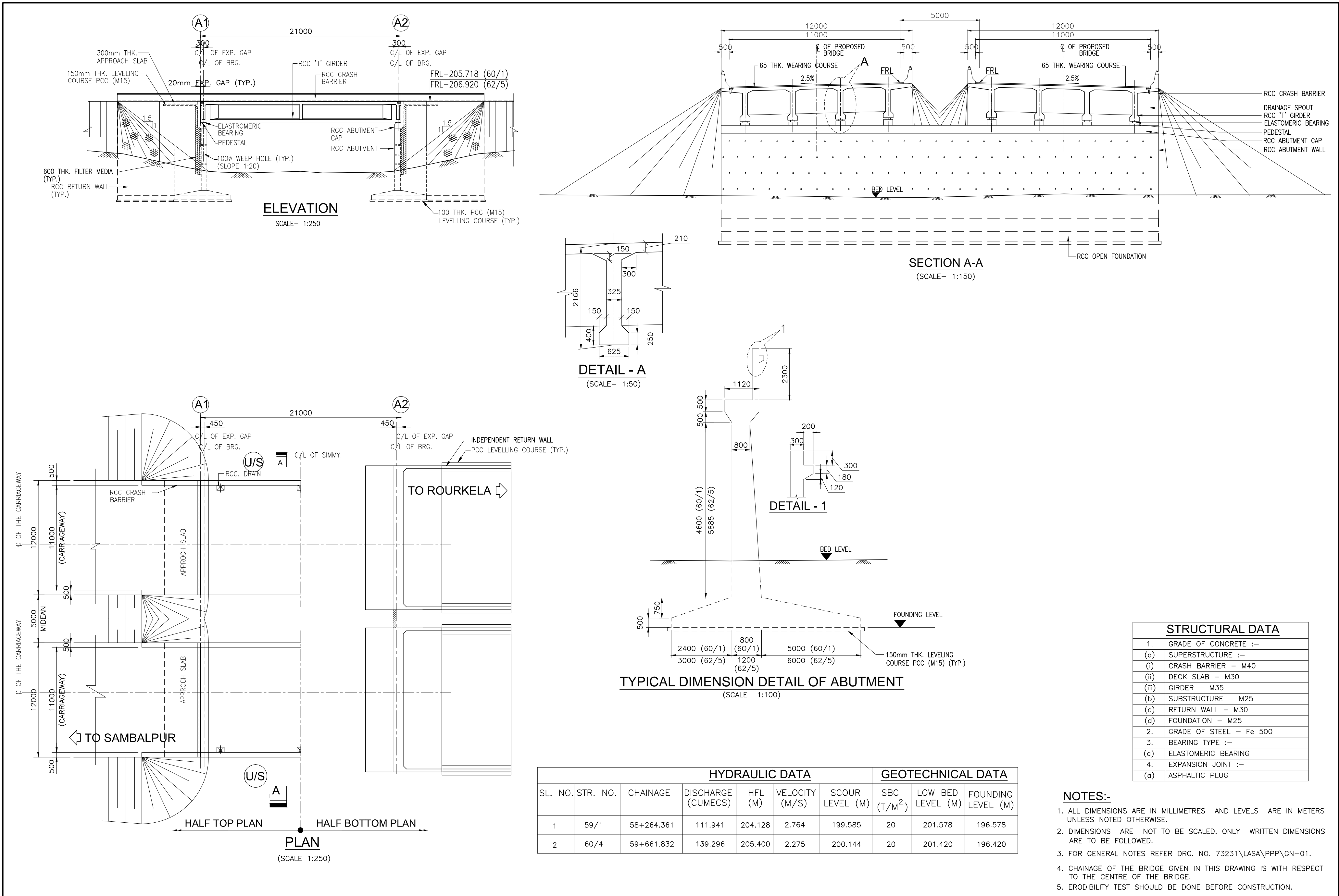
| STRUCTURAL DATA | |
|-----------------|-------------------------|
| 1. | GRADE OF CONCRETE :- |
| (a) | SUPERSTRUCTURE :- |
| (i) | CRASH BARRIER - M40 |
| (ii) | DECK SLAB - M30 |
| (iii) | GIRDER - M35 |
| (c) | SUBSTRUCTURE - M25 |
| (c) | WING WALL - M30 |
| (d) | FOUNDATION - M25 |
| 2. | GRADE OF STEEL - Fe 500 |
| 3. | BEARING TYPE :- |
| (a) | ELASTOMERIC BEARING |
| 4. | EXPANSION JOINT :- |
| (a) | ASPHALTIC PLUG |

| HYDRAULIC DATA | | | | | | GEOTECHNICAL DATA | | |
|----------------|----------|--------------------|---------|----------------|----------------------------------|-------------------------|-------------------|----------------------------------|
| SL. NO. | STR. NO. | DISCHARGE (CUMECs) | HFL (M) | VELOCITY (M/S) | SCOUR LEVEL (M) | SBC (T/M ²) | LOW BED LEVEL (M) | FOUNDING LEVEL (M) |
| 1 | 51/2 | 171.335 | 212.355 | 2.761 | 208.560 (ABUT) 206.378 (PIER) | 20 | 210.210 | 204.100 (ABUT) 203.100 (PIER) |

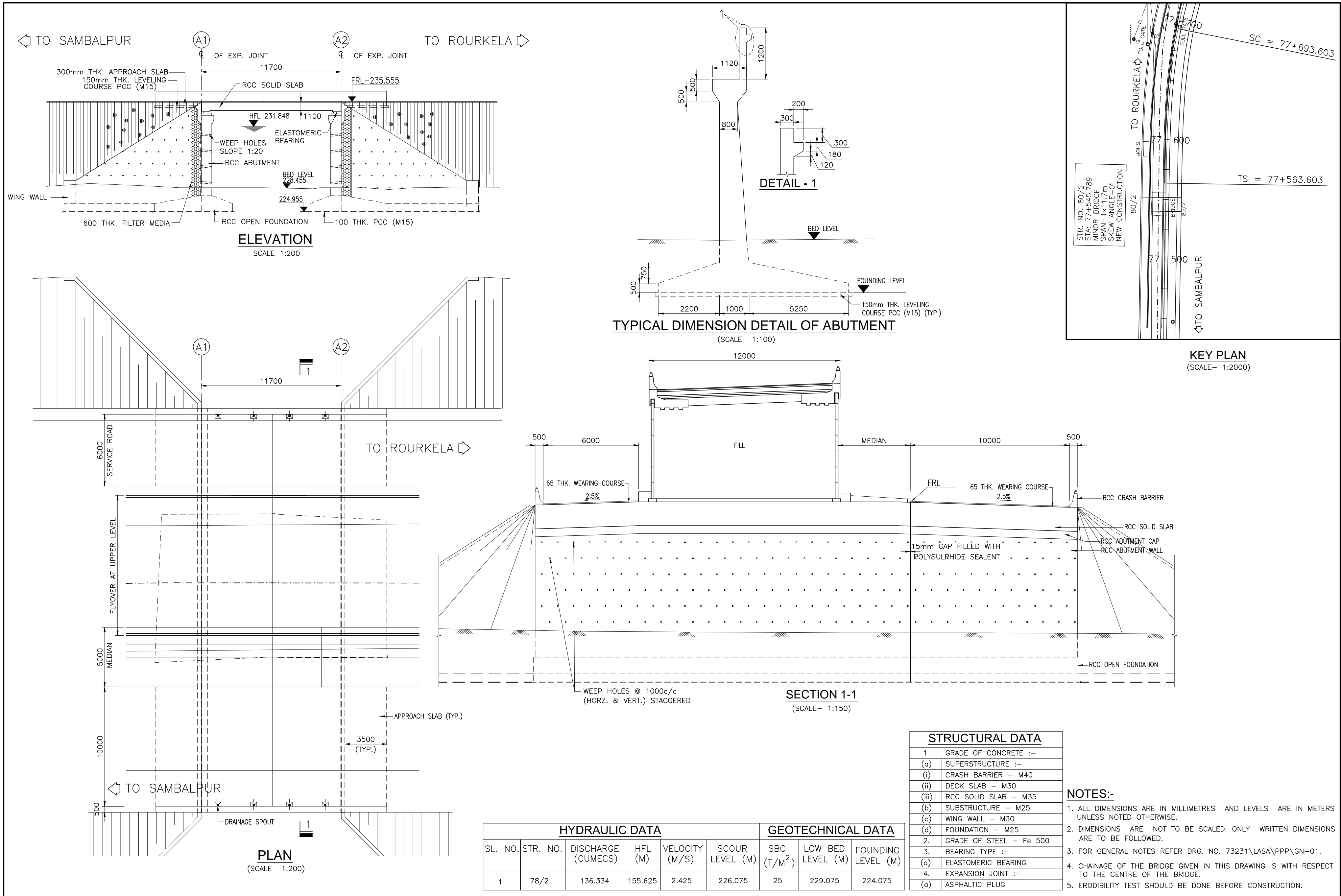
| | | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|-------------------------|--|--|--|--|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 51/2 AT CH. 50+725.126 | | Scale : AS SHOWN | <div>CONSULTANTS:</div> <div> Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With  LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</div> | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT | |
| | | | | Drawn By | Joy | | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA | | |
| | | | | Designed By | Sanjay Mandal | | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-09 | | | | | |



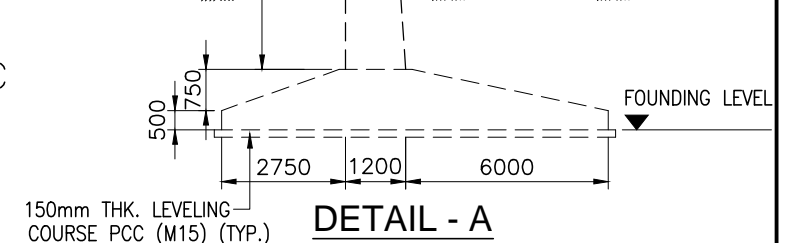
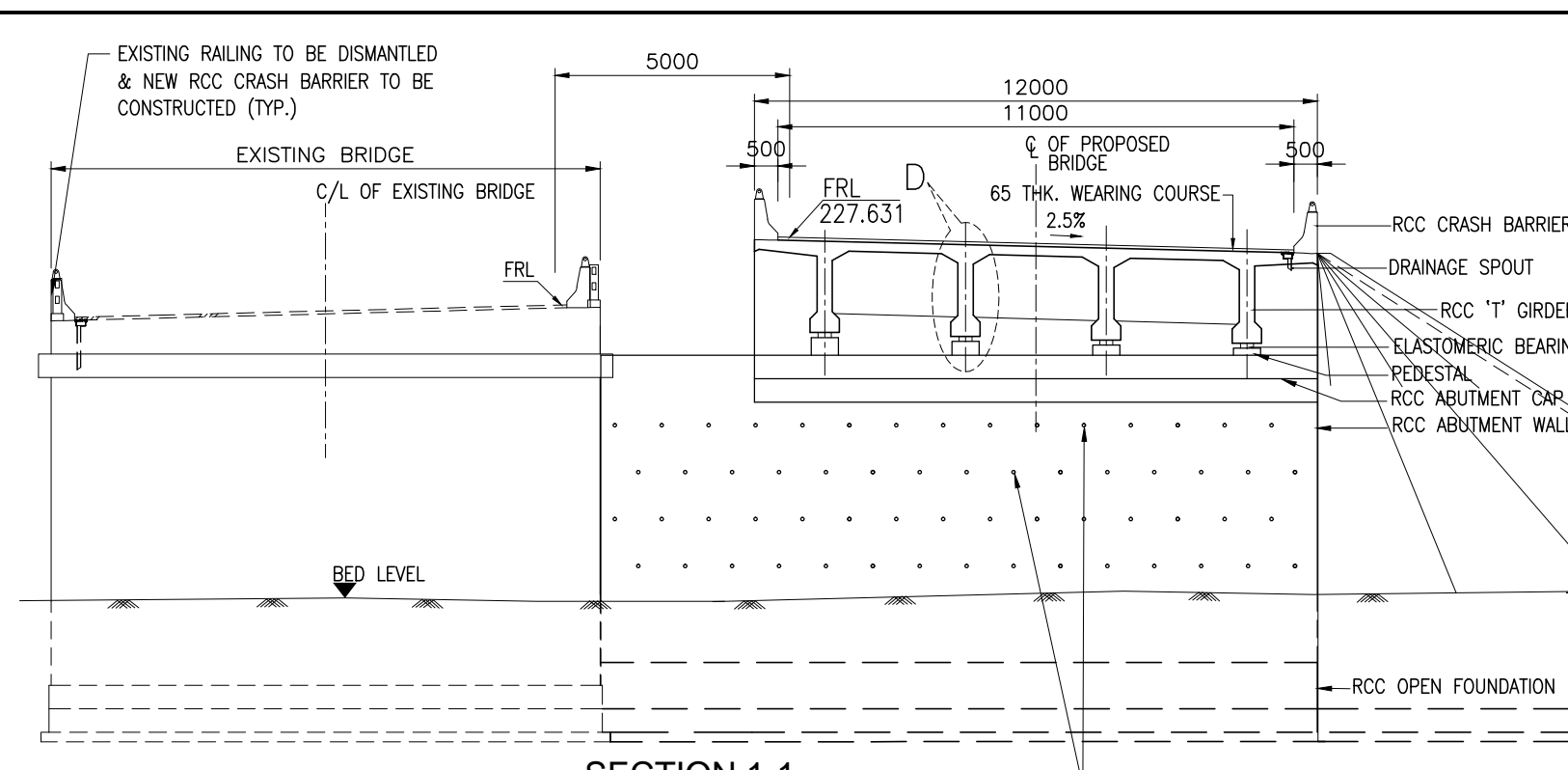
| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Shyam | GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 57/2 AT CH: 56+720.762 | AS SHOWN | <p>Pricewaterhouse Coopers Pvt. Ltd.</p> <p>Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001</p> <p>In JV With</p> <p>LEA Associates South Asia Pvt. Ltd.</p> <p>B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</p> | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-10 | | |



| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Shyam | GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 59/1 & 60/4 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-11 | | |



| | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|------------------------|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | MINOR BRIDGE NO. 78/2 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | WORKS DEPARTMENT |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | AT CH. 77+827.634 | | In JV With | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| | REVISION | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-12 | LEA Associates South Asia Pvt. Ltd. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | STATE ROADS IN THE STATE OF ORISSA |





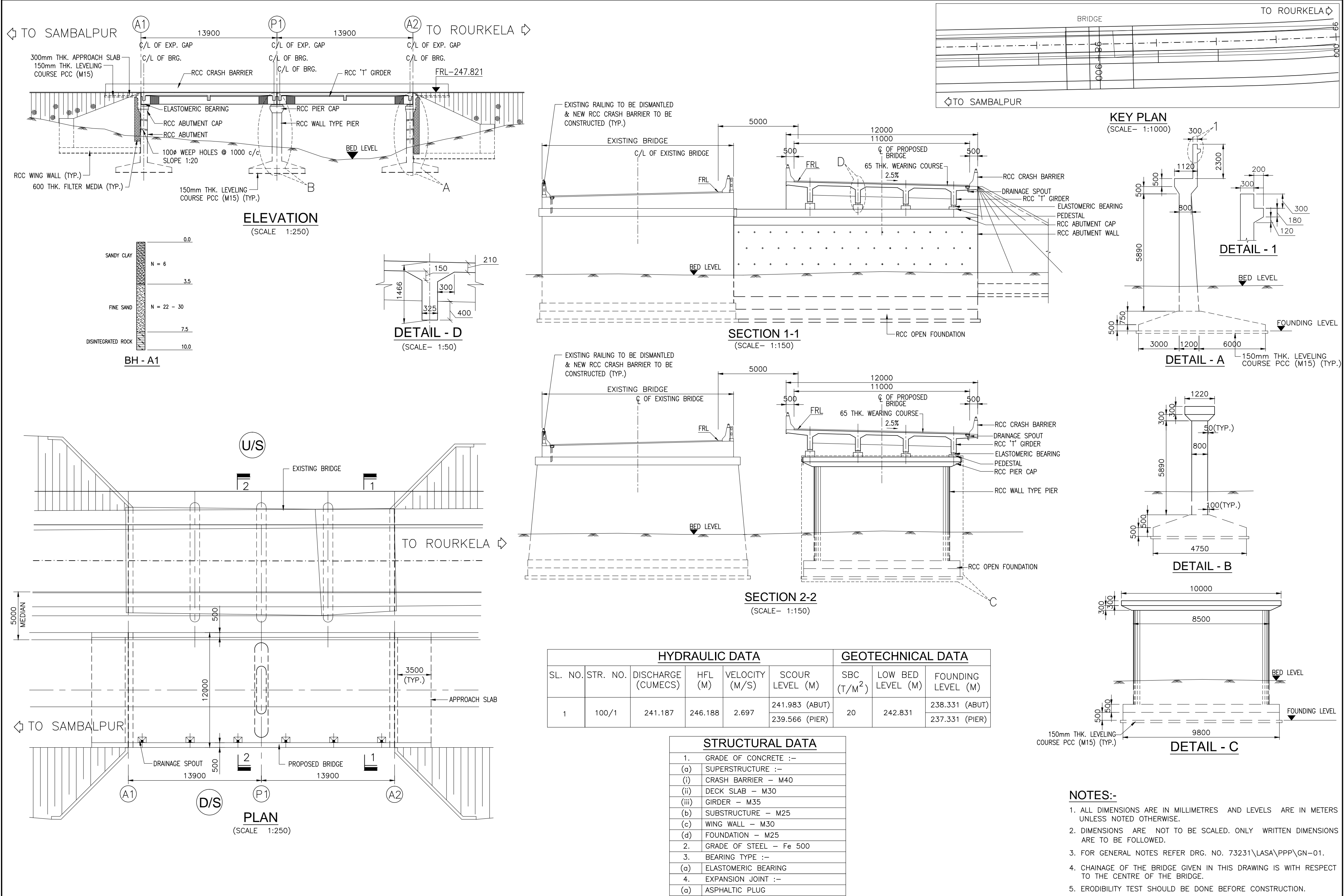
| <u>STRUCTURAL DATA</u> | |
|------------------------|-------------------------|
| 1. | GRADE OF CONCRETE :- |
| (a) | SUPERSTRUCTURE :- |
| (i) | CRASH BARRIER - M40 |
| (ii) | DECK SLAB - M30 |
| (iii) | GIRDER - M35 |
| (b) | SUBSTRUCTURE - M25 |
| (c) | WING WALL - M30 |
| (d) | FOUNDATION - M25 |
| 2. | GRADE OF STEEL - Fe 500 |
| 3. | BEARING TYPE :- |
| (a) | ELASTOMERIC BEARING |
| 4. | EXPANSION JOINT :- |
| (a) | ASPHALTIC PLUG |

NOTES:-

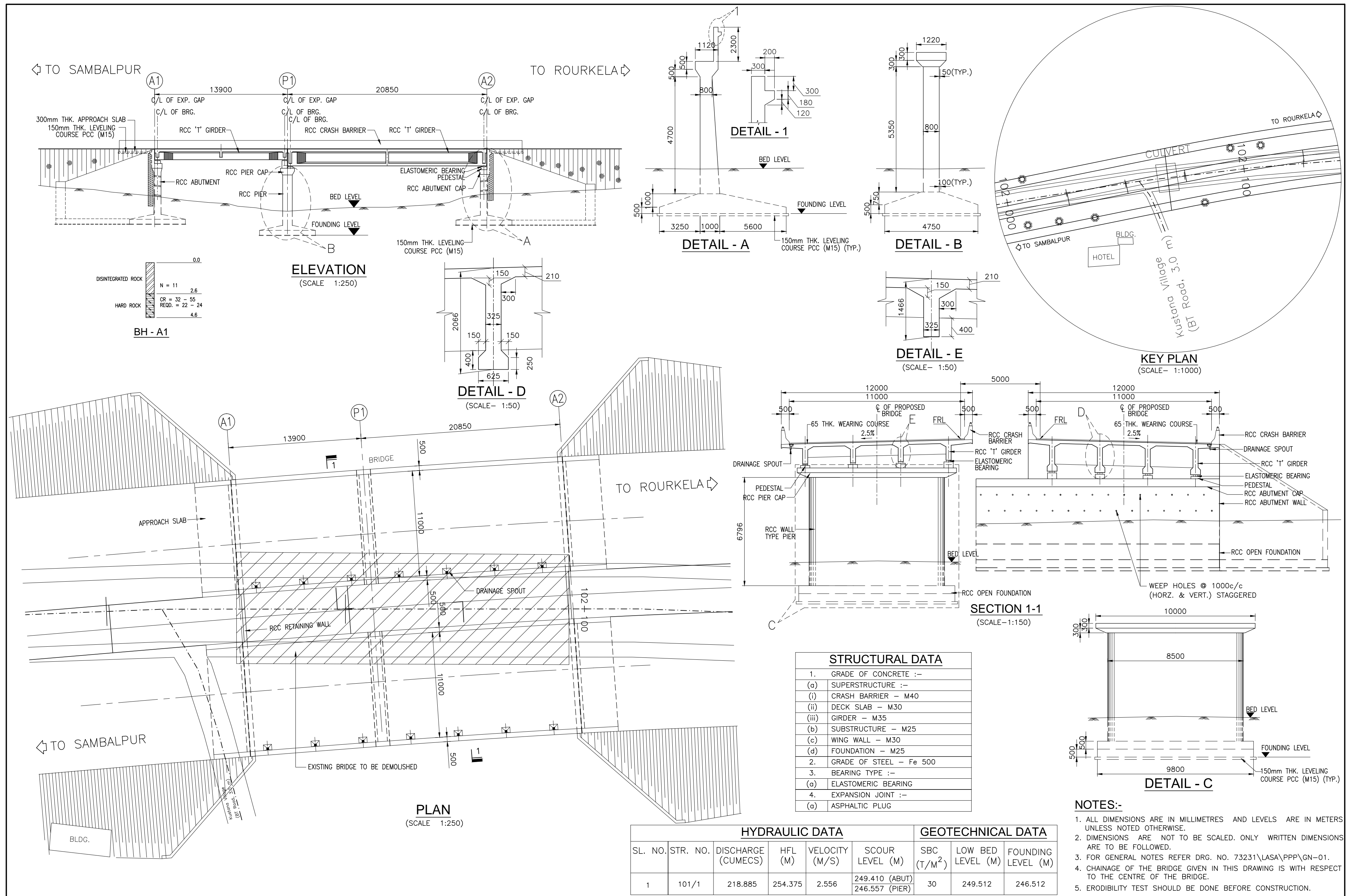
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
5. ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

| HYDRAULIC DATA | | | | | | GEOTECHNICAL DATA | | |
|----------------|----------|------------------------|------------|-------------------|----------------------------------|----------------------------|----------------------|-----------------------|
| SL. NO. | STR. NO. | DISCHARGE (CUMEC/S) | HFL (M) | VELOCITY (M/S) | SCOUR LEVEL (M) | SBC (T/M ²) | LOW BED LEVEL (M) | FOUNDING LEVEL (M) |
| 1 | 85/1 | 350.694 | 223.750 | 2.729 | 219.724 (ABUT) 219.724 (PIER) | 30 | 220.524 | 217.524 |

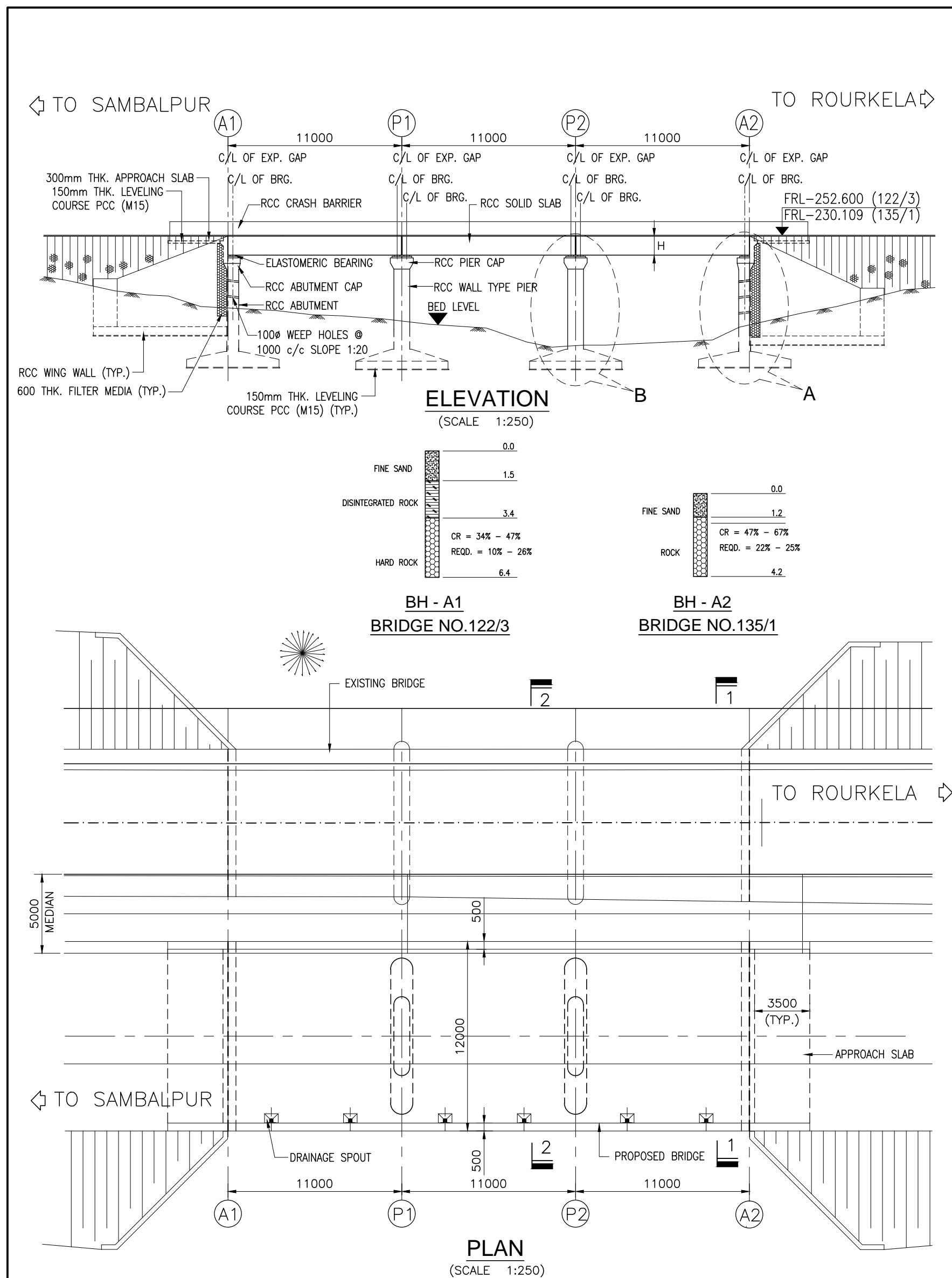
| | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|------------------------------|-------------------------|--|--|--|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 85/1 AT CH. 84+011.251 | | Scale : AS SHOWN | CONSULTANTS:  Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With  LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Client: GOVERNMENT OF ORISSA WORKS DEPARTMENT | |
| | | | | Drawn By | Joy | | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA | |
| | | | | Designed By | Sanjay Mandal | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-13 | | | | |



| | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|------------------------|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | MINOR BRIDGE NO. 100/1 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | WORKS DEPARTMENT |
| | | | | Checked By | J.P.Das | AT CH. 99+184.769 | | In JV With | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| Mkd. | Descriptions | Date | By | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-14 | LEA Associates South Asia Pvt. Ltd. | TRANSACTION ADVISOR FOR SELECTED |
| | REVISION | | | | | | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | STATE ROADS IN THE STATE OF ORISSA |



| | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|------------------------|------------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | MINOR BRIDGE NO. 101/1 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | WORKS DEPARTMENT |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | AT CH. 100+451.594 | | In JV With | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-15 | LEA Associates South Asia Pvt. Ltd. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | STATE ROADS IN THE STATE OF ORISSA |
| | REVISION | | | | | | | | |

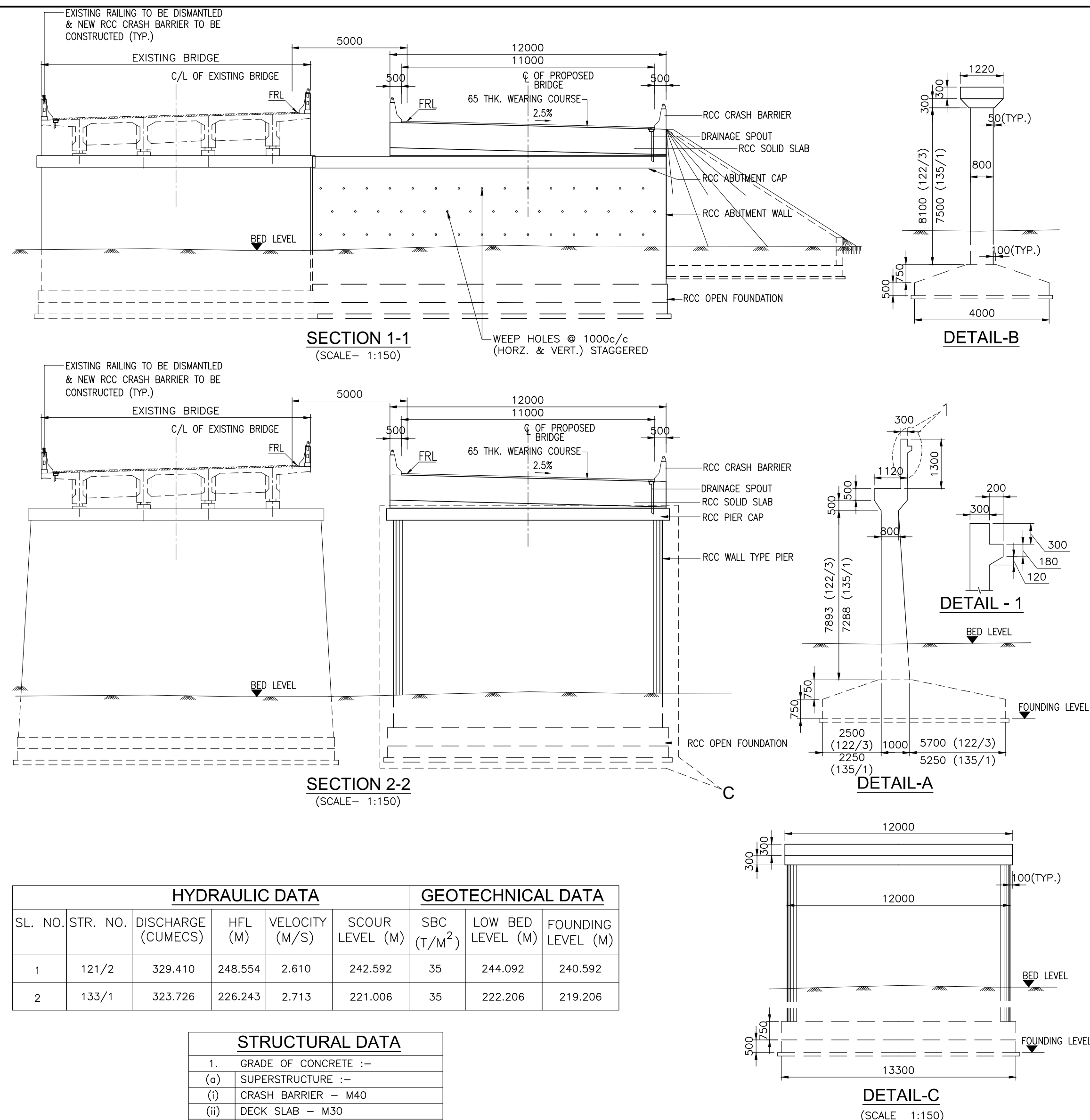


SCHEDULE OF MINOR BRIDGES TO BE WIDENED

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | EXISTING STRUCTURE DESCRIPTION | EXISTING SPAN ARRANGEMENT | WIDTH OF PROPOSED BRIDGE | | H (mm.) |
|---------|---------------|-------------------|---|---------------------------|--------------------------|-----------------|---------|
| | | | | | LEFT SIDE* (m) | RIGHT SIDE* (m) | |
| 1 | 121/2 | 120+323.524 | RCC 'T' Girder & RCC Slab with SM Abutment, Pier on open foundation | 3 x 11.0 | 12.0 | - | 1000 |
| 2 | 133/1 | 132+825.377 | RCC 'T' Girder & RCC Slab with SM Abutment, Pier on open foundation | 3 x 11.0 | - | 12.0 | 1000 |

NOTE: (*) SIDES ARE MARKED WITH RESPECT TO INCREASING CHAINAGE. LEFT & RIGHT SIDE DIMENSIONS ARE TO BE CHECKED AT SITE BEFORE COMMENCEMENT OF WORK.

| | | | | | | | | | | | |
|----------|--|--------------|------|-------------|---------------|--|------------------------------|-------------------------|---|----------|---|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Pricewaterhouse Coopers Pvt. Ltd. | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF MINOR BRIDGE NO. 122/3 & 135/1 | AS SHOWN | Pricewaterhouse Coopers | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| | | | | Designed By | Sanjay Mandal | | | | | | |
| Mkd. | | Descriptions | Date | By | Checked By | | | | | | |
| | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\MNBR\GA-16 | | | | |
| REVISION | | | | | | | | | | | |



NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
- CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.
- ERODIBILITY TEST SHOULD BE DONE BEFORE CONSTRUCTION.

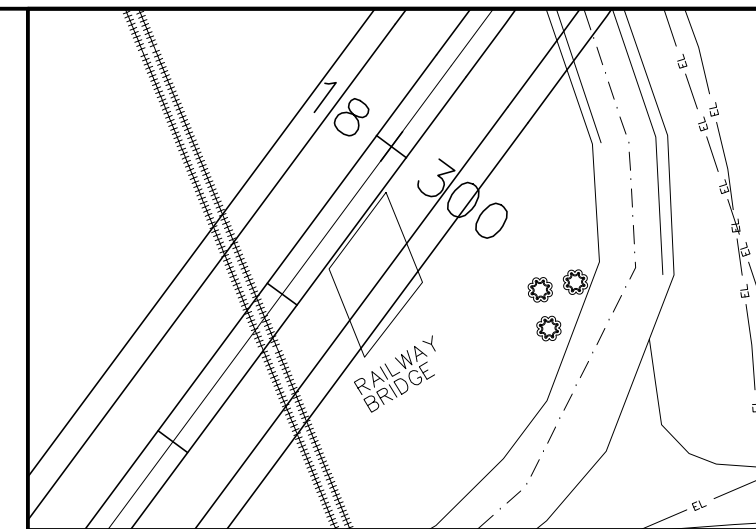




Diagram illustrating the cross-section of the proposed bridge deck and approach. Key dimensions and components are labeled:

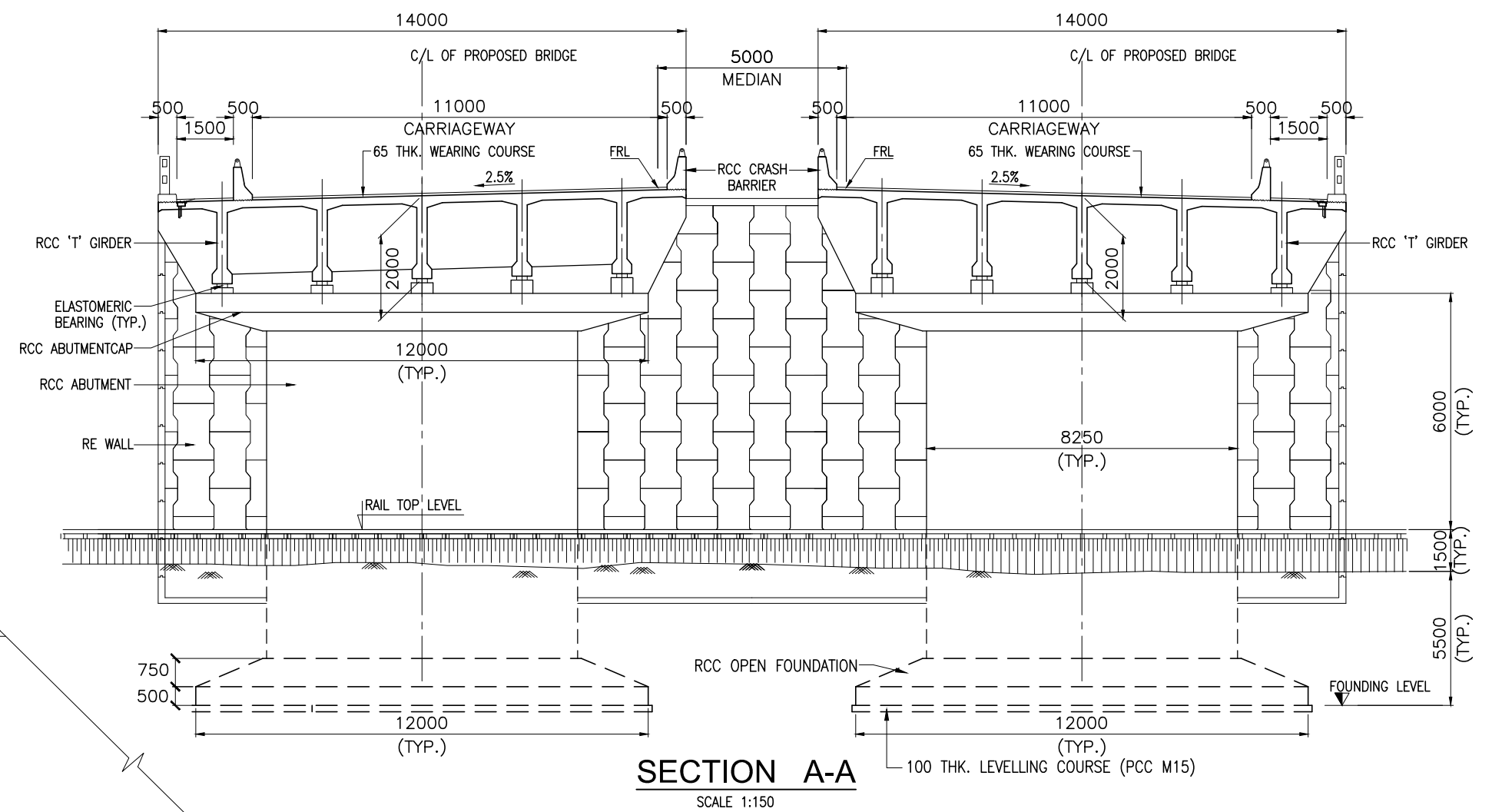
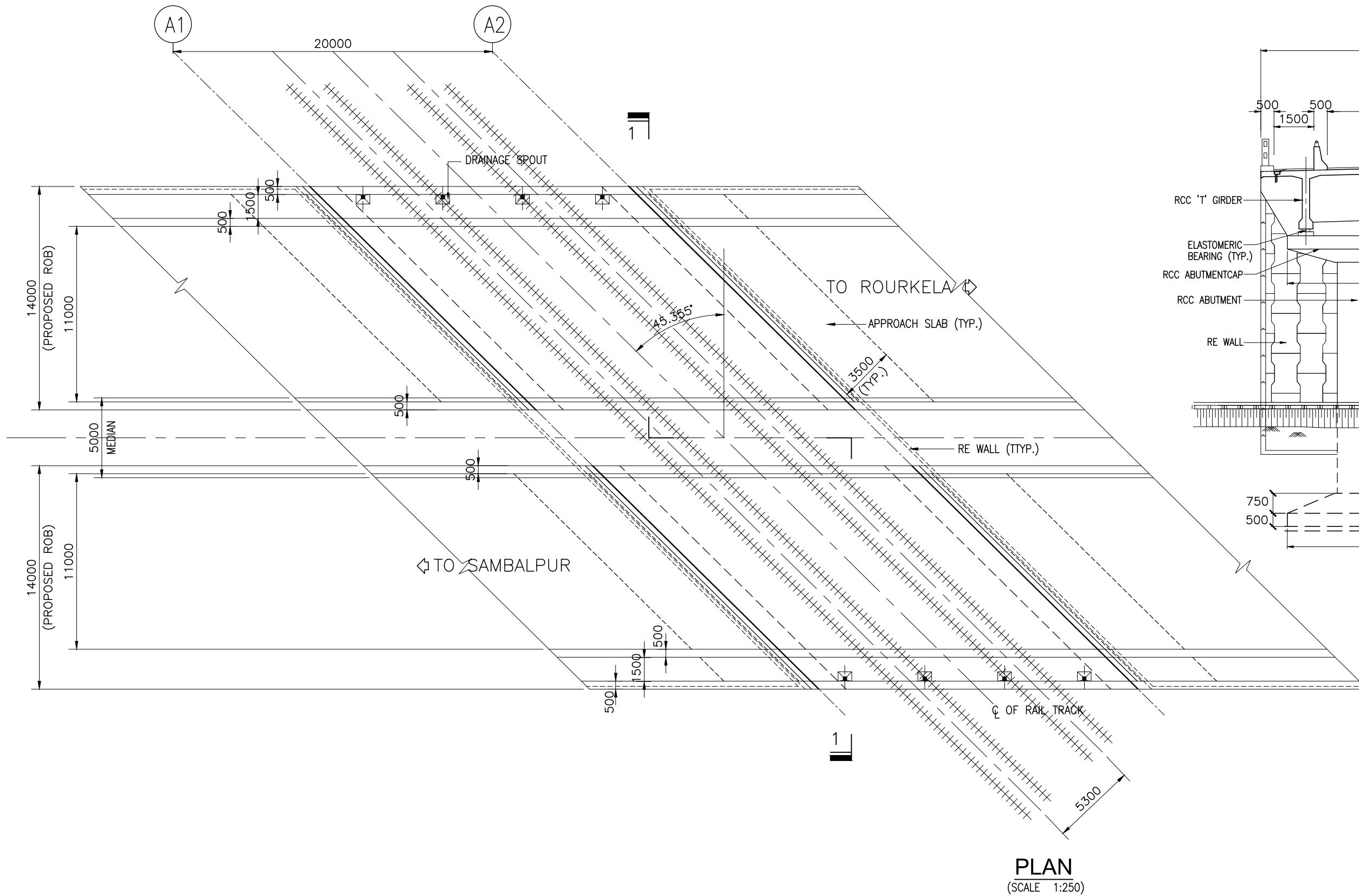
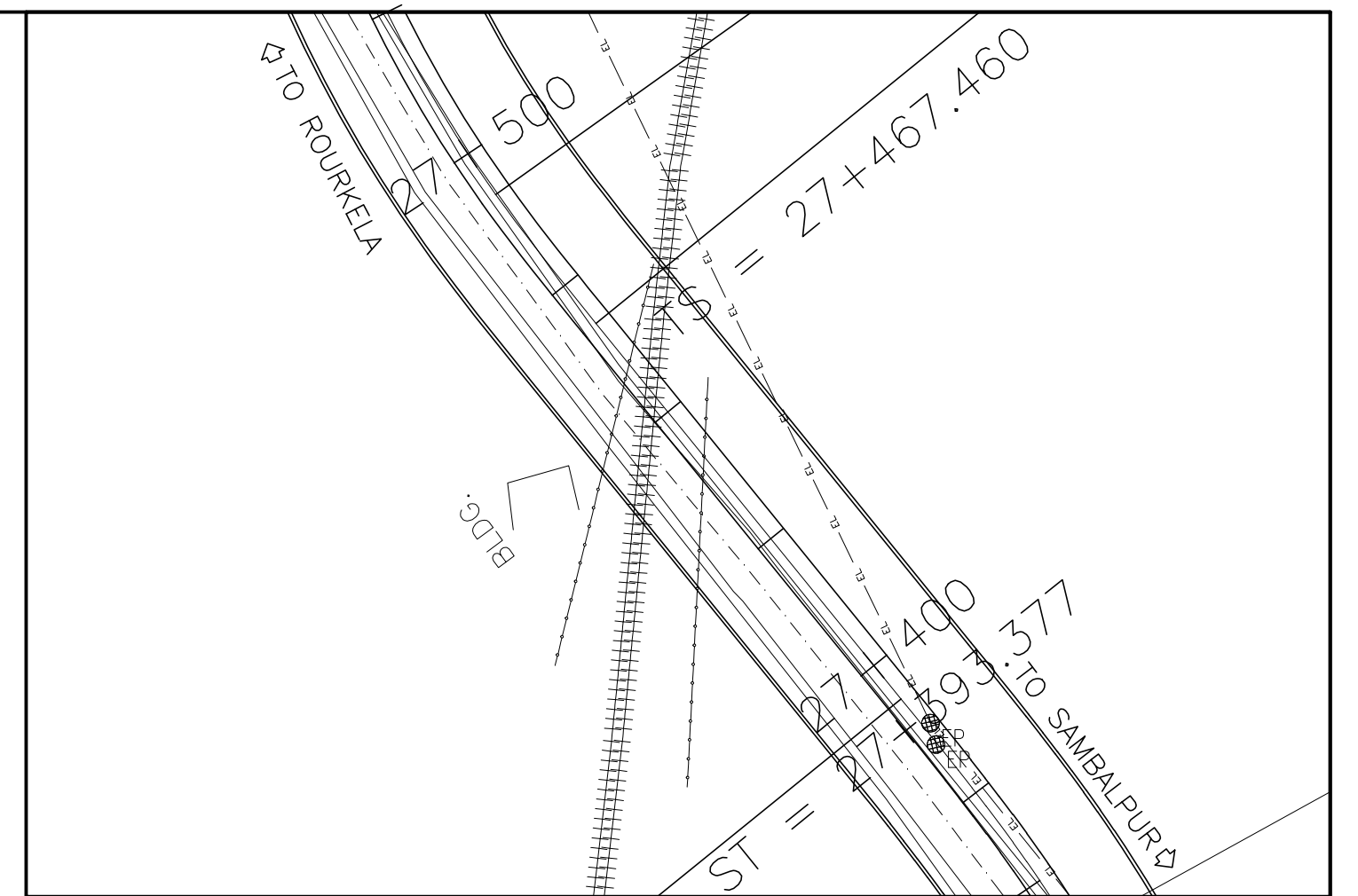
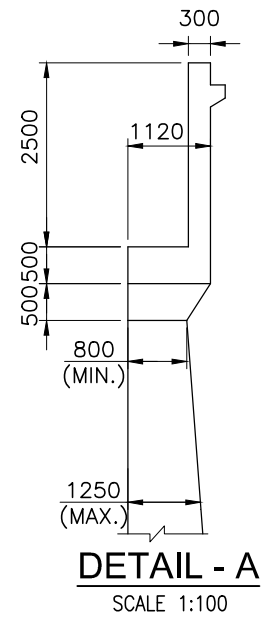
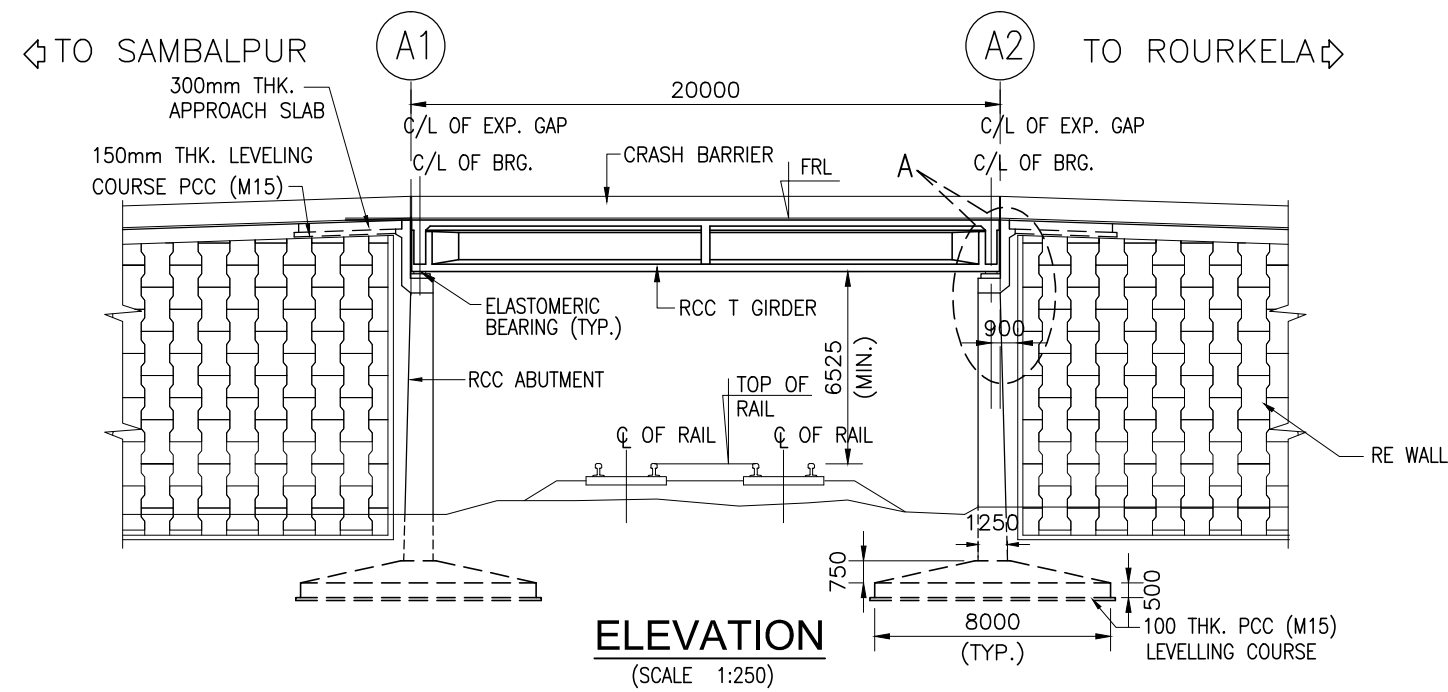
- 5000 MEDIAN
- 11000 C/L OF PROPOSED BRIDGE
- 14000
- 500
- 1500
- 500
- 500
- 6525 (MINIMUM)
- 65 THK. WEARING COURSE
- 2.5%
- 100 THK. LEVELLING COURSE (PCC M15)
- RAIL TOP LEVEL
- EXISTING RUB
- FRL

PLAN
(SCALE 1:250)

NOTES:-



1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.

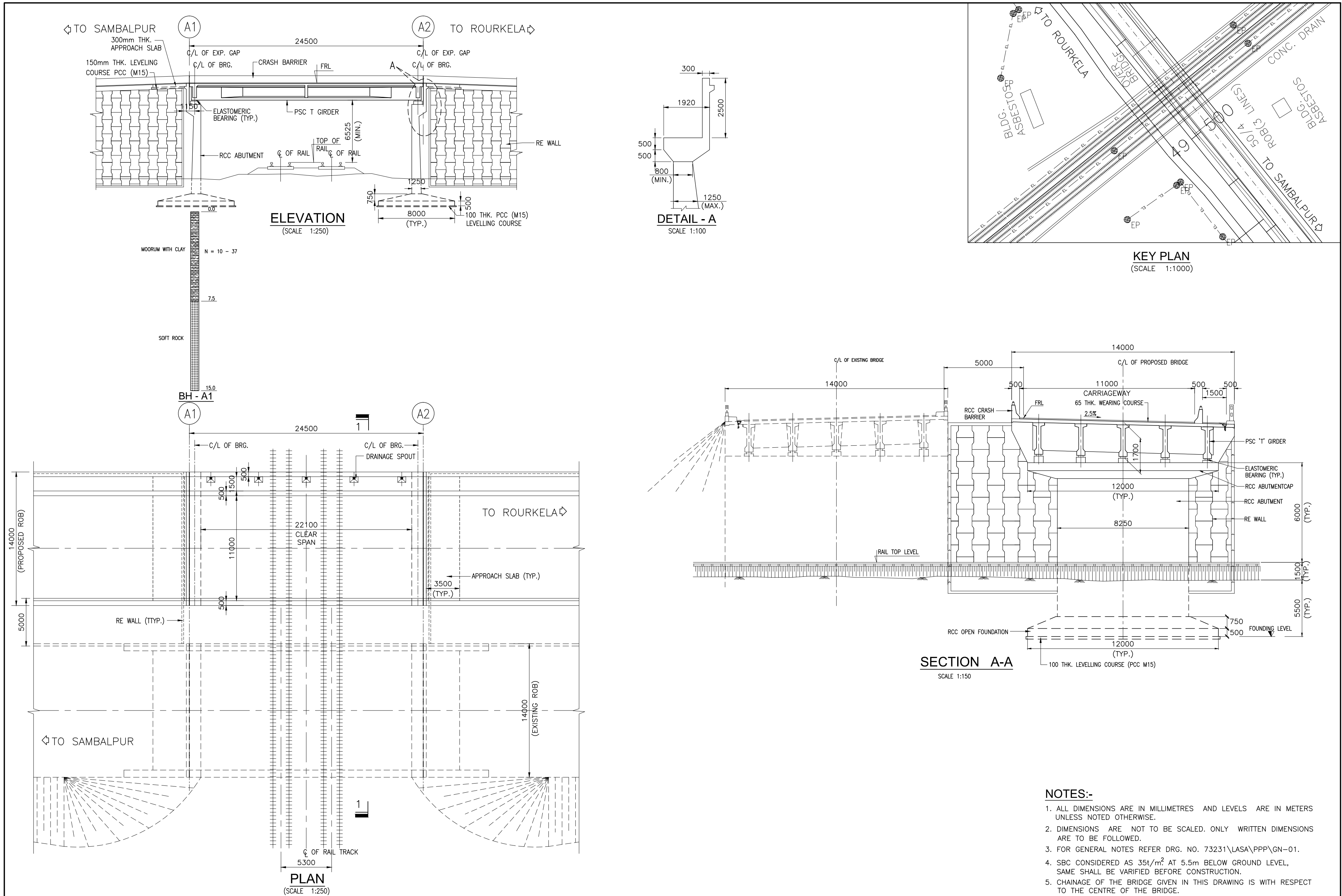
| | | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---|-----------------------------|-------------------------|--|--|--|--|
| | | | | Date | March 2010 | Drawing Title : GENERAL ARRANGEMENT OF ROB - 1 AT CHAINAGE 18+270.350 | | Scale : AS SHOWN | <div>CONSULTANTS:</div> <div> Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With  LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</div> | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT | |
| | | | | Drawn By | Joy | | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA | | |
| | | | | Designed By | Sanjay Mandal | | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\ROB\GA-01 | | | | | |



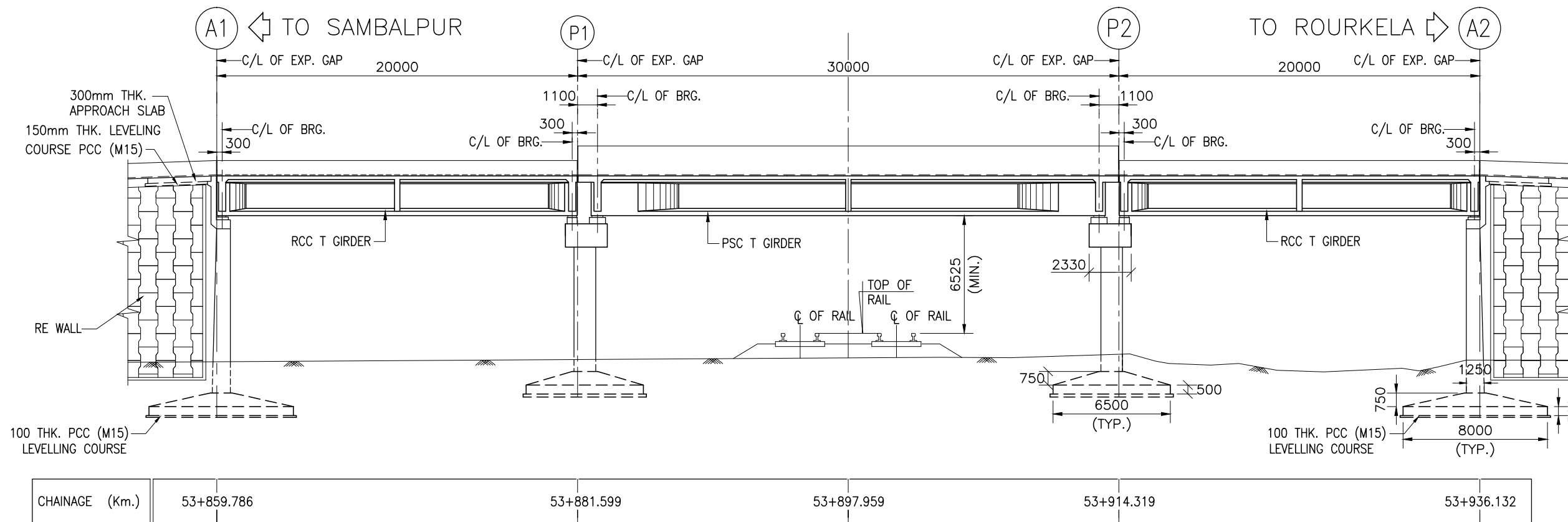
NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. SBC CONSIDERED AS 35t/m² AT 5.5m BELOW GROUND LEVEL, SAME SHALL BE VARIFIED BEFORE CONSTRUCTION.
5. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.

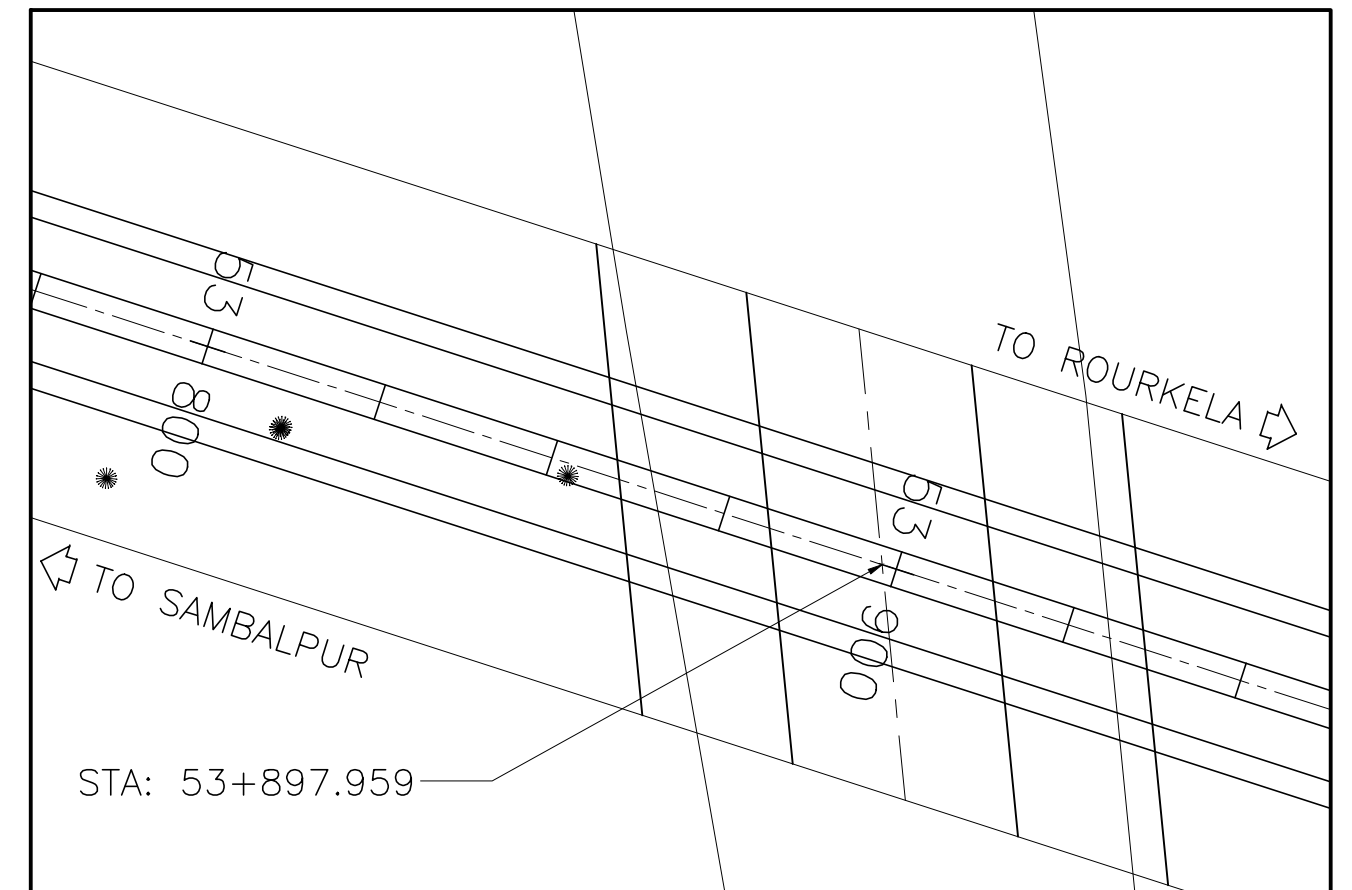
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|----------|--------------|------|----|-------------|---------------|--|--|----------|---|---|--|--|
| | | | | Date | March 2010 | Drawing Title : | | Scale : | CONSULTANTS: | | Client: | |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF ROB - 2 AT CHAINAGE 27+449.672 | | AS SHOWN |  | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With | GOVERNMENT OF ORISSA WORKS DEPARTMENT | |
| | | | | Designed By | Sanjay Mandal | | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | Drawing Number : | |
| REVISION | | | | | Approved By | Avadesh | | |  | LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | | |



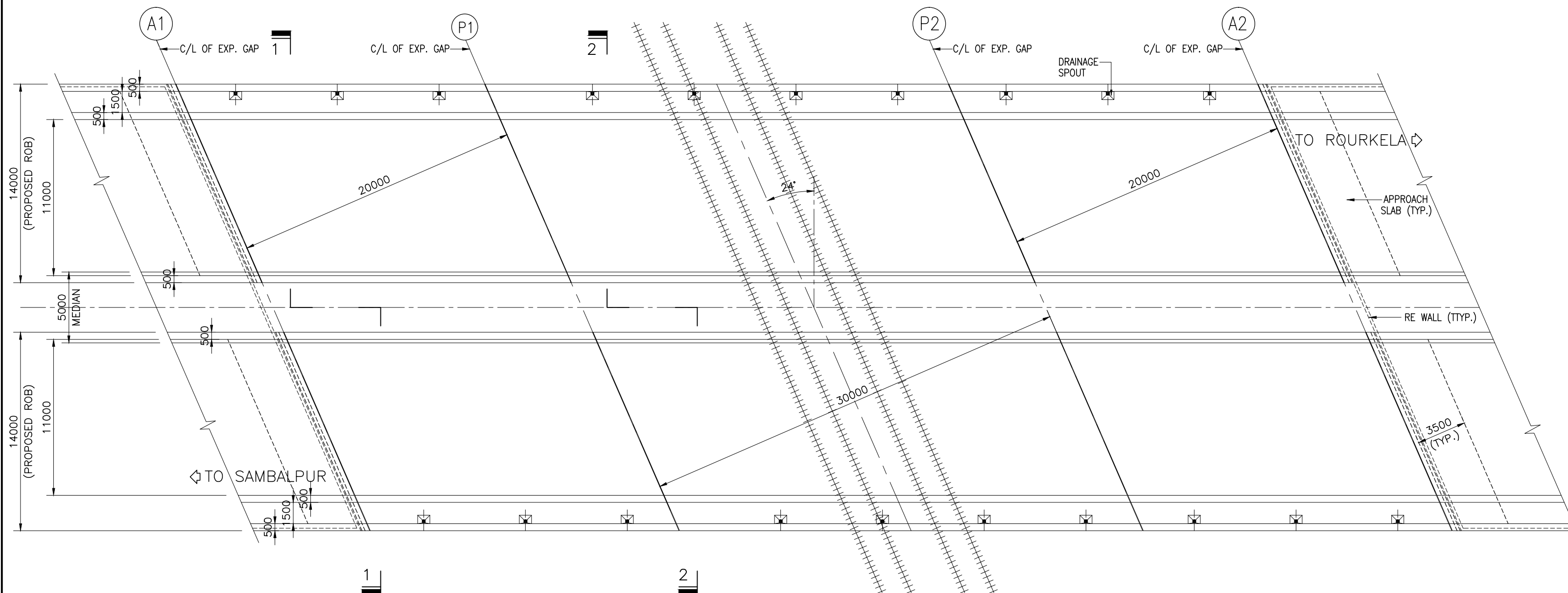
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|------|--------------|------|----|-------------|---------------|--------------------------------|-----------------------------|--|---|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Joy | GENERAL ARRANGEMENT OF ROB - 3 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | AT CHAINAGE 49+517.278 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | WORKS DEPARTMENT |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | In JV With | Project: |
| | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\ROB\GA-03 | LEA Associates South Asia Pvt. Ltd. | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| | | | | | | | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | | STATE ROADS IN THE STATE OF ORISSA |



ELEVATION
(SCALE 1:250)



KEY PLAN
(SCALE 1:1000)

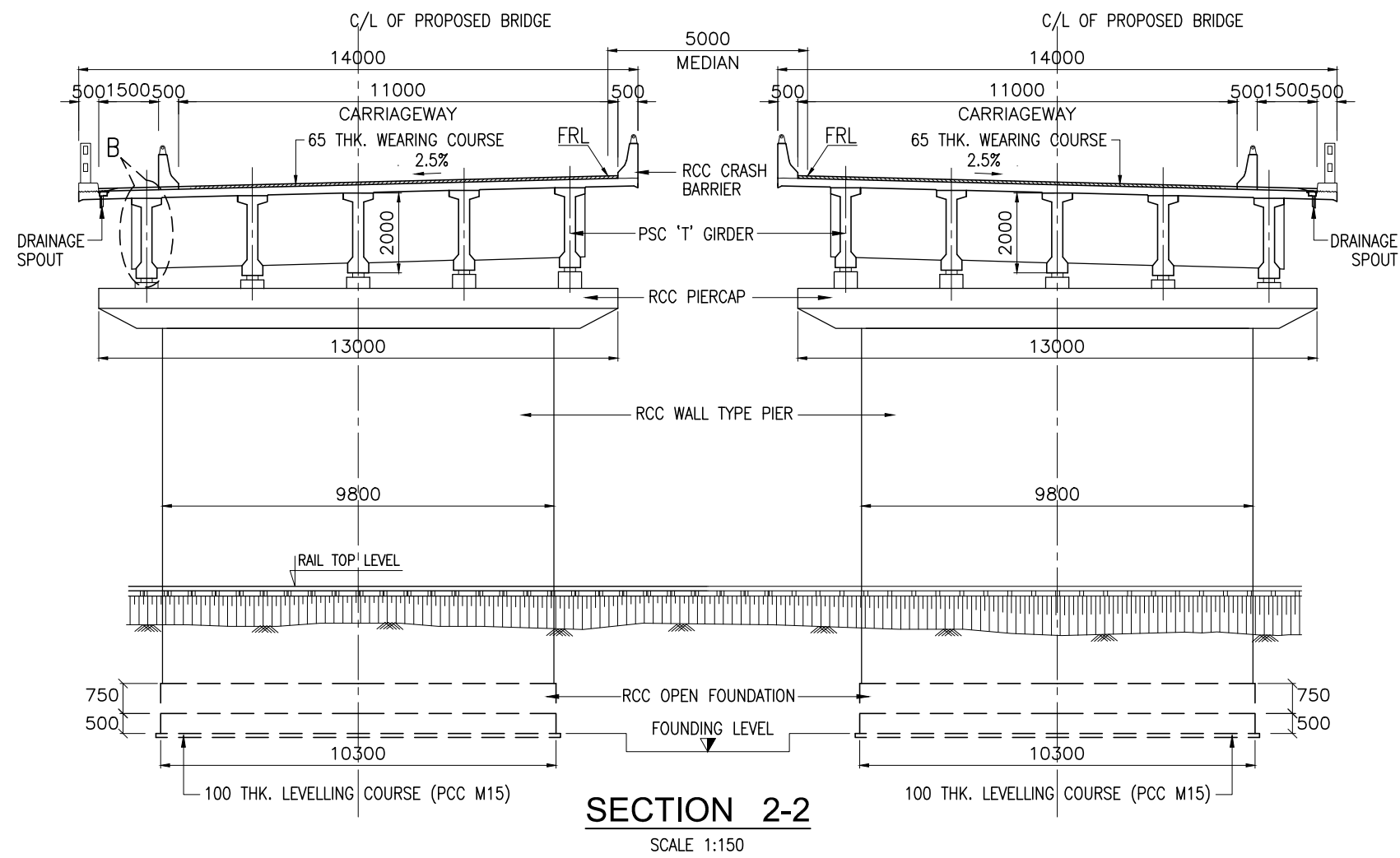
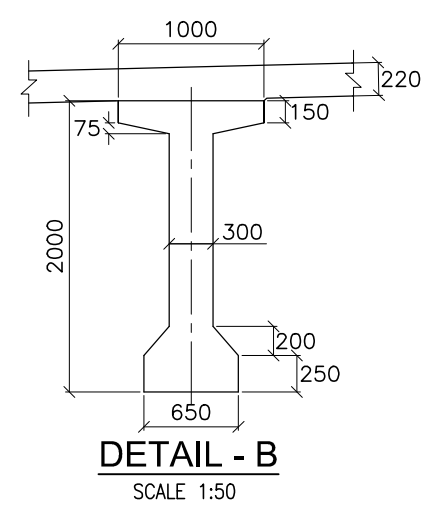
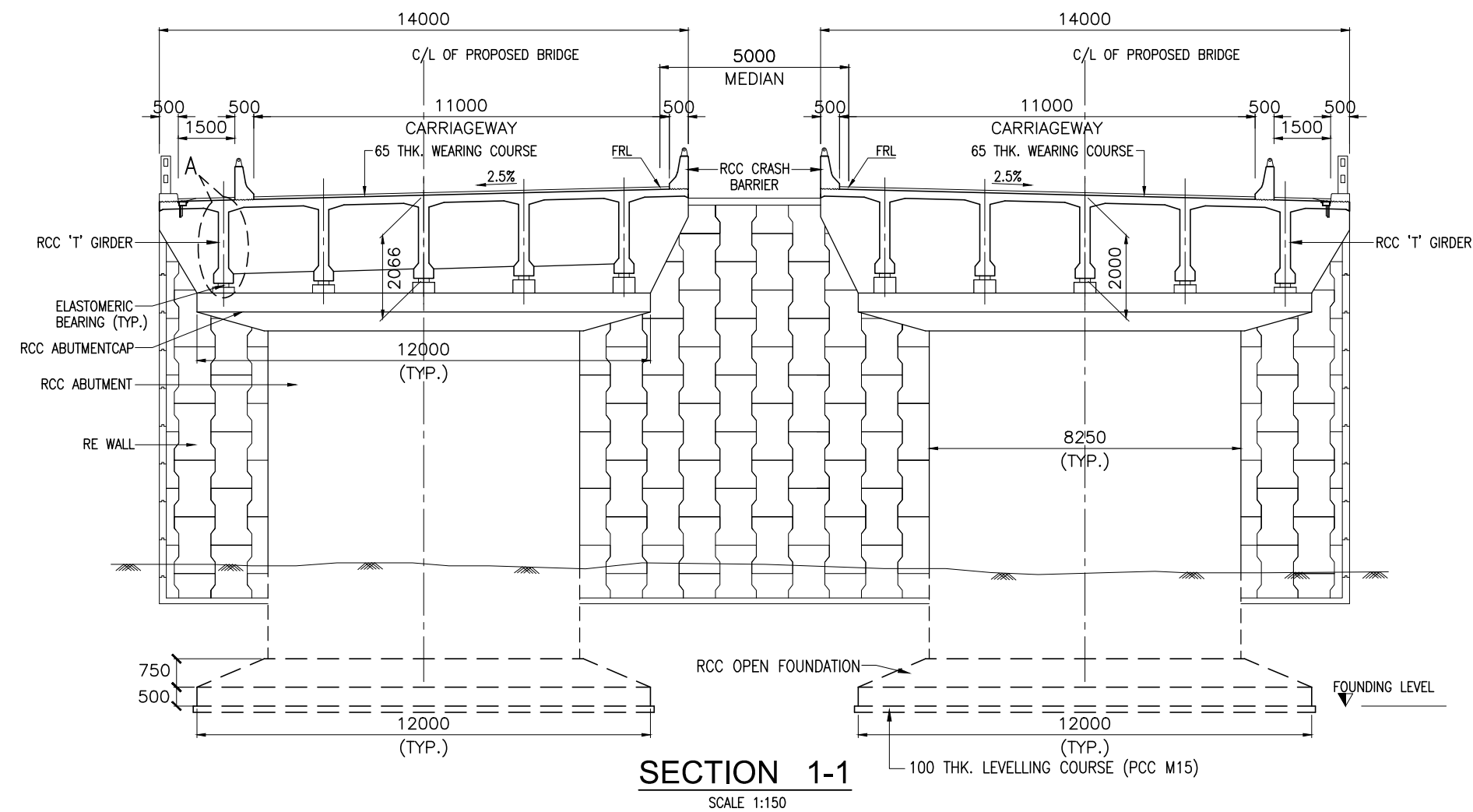
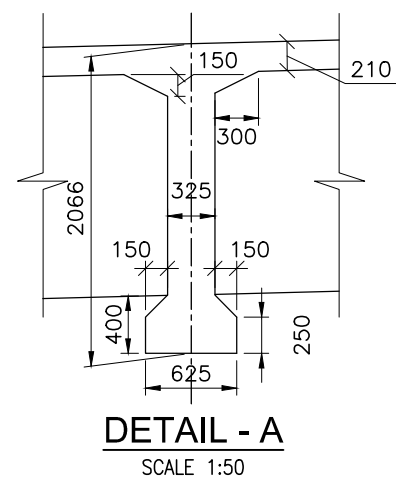


PLAN
(SCALE 1:250)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR GENERAL NOTES REFER DRG. NO. 73231\LASA\PPP\GN-01.
4. SBC CONSIDERED AS 35t/m² AT 5.5m BELOW GROUND LEVEL, SAME SHALL BE VARIFIED BEFORE CONSTRUCTION.
5. CHAINAGE OF THE BRIDGE GIVEN IN THIS DRAWING IS WITH RESPECT TO THE CENTRE OF THE BRIDGE.

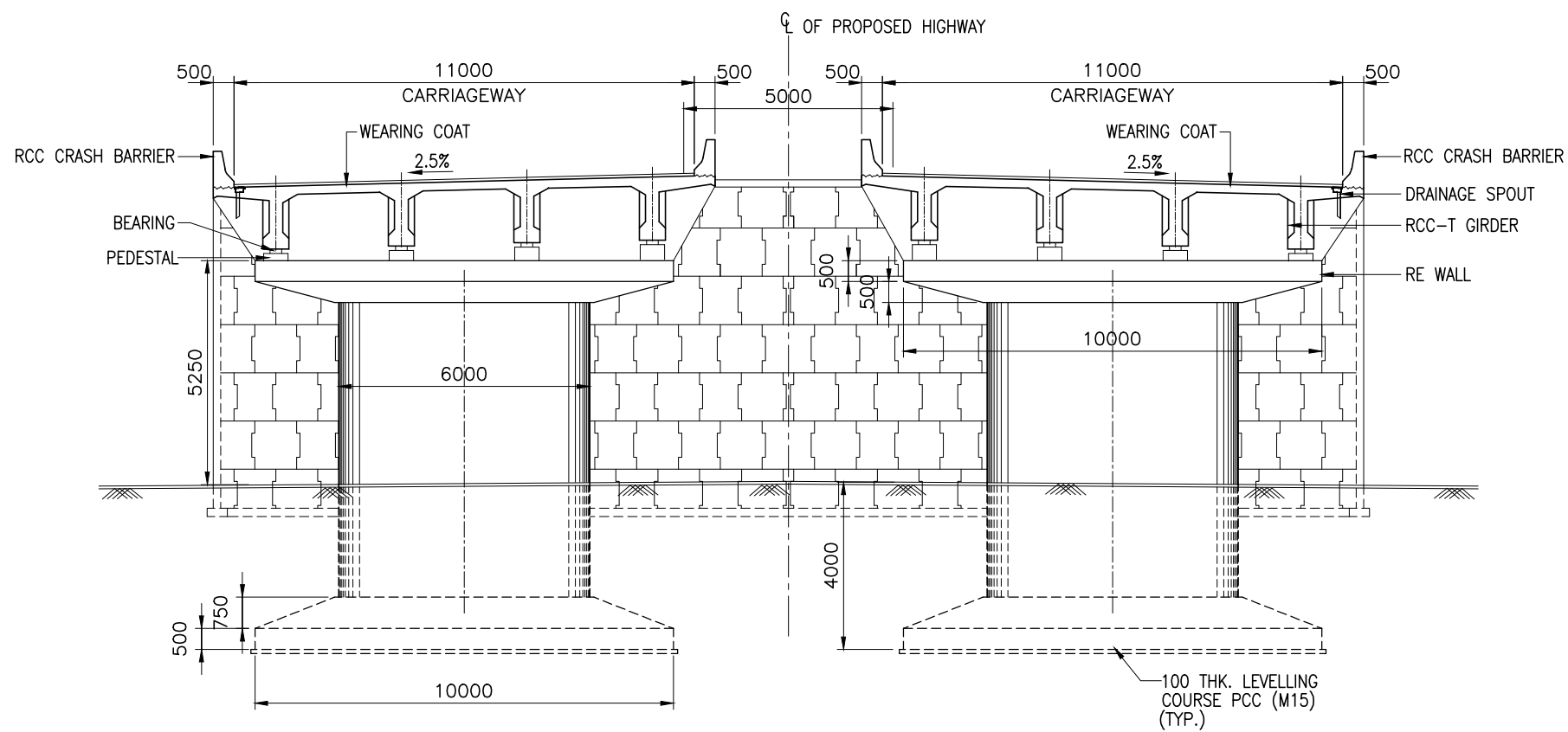
| | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|--------------------------------|-----------------------------|--|---|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Vivek | GENERAL ARRANGEMENT OF ROB - 4 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | AT CHAINAGE 53+897.959 | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | WORKS DEPARTMENT |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | In JV With | Project: |
| | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\ROB\GA-04 | LEA Associates South Asia Pvt. Ltd. | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| | | | | | | | (SHEET 1 OF 2) | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | | STATE ROADS IN THE STATE OF ORISSA |



NOTES:-

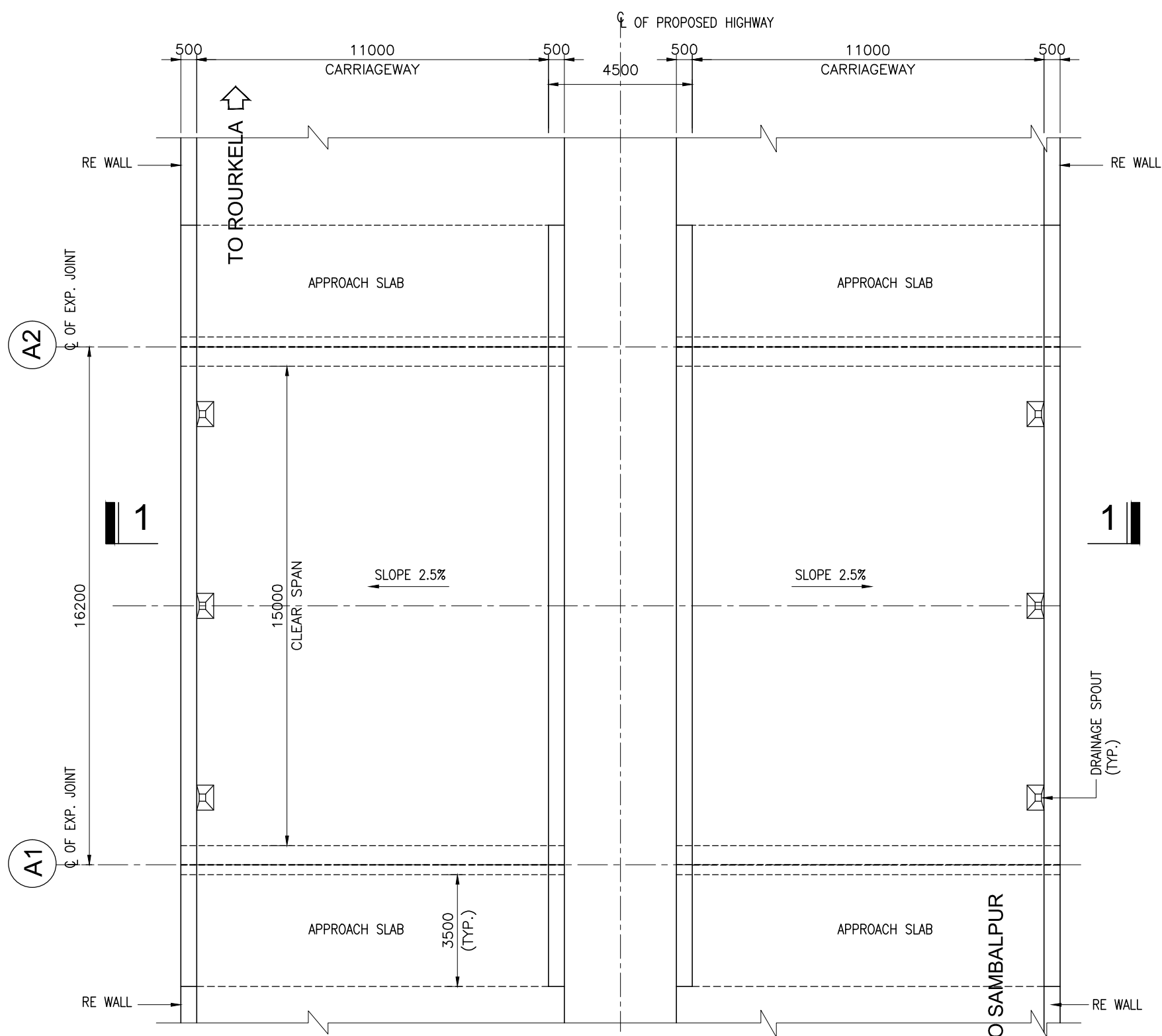
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|-----------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Vivek | GENERAL ARRANGEMENT OF ROB - 4 AT CHAINAGE 53+897.959 | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\ROB\GA-04 | (SHEET 2 OF 2) | |



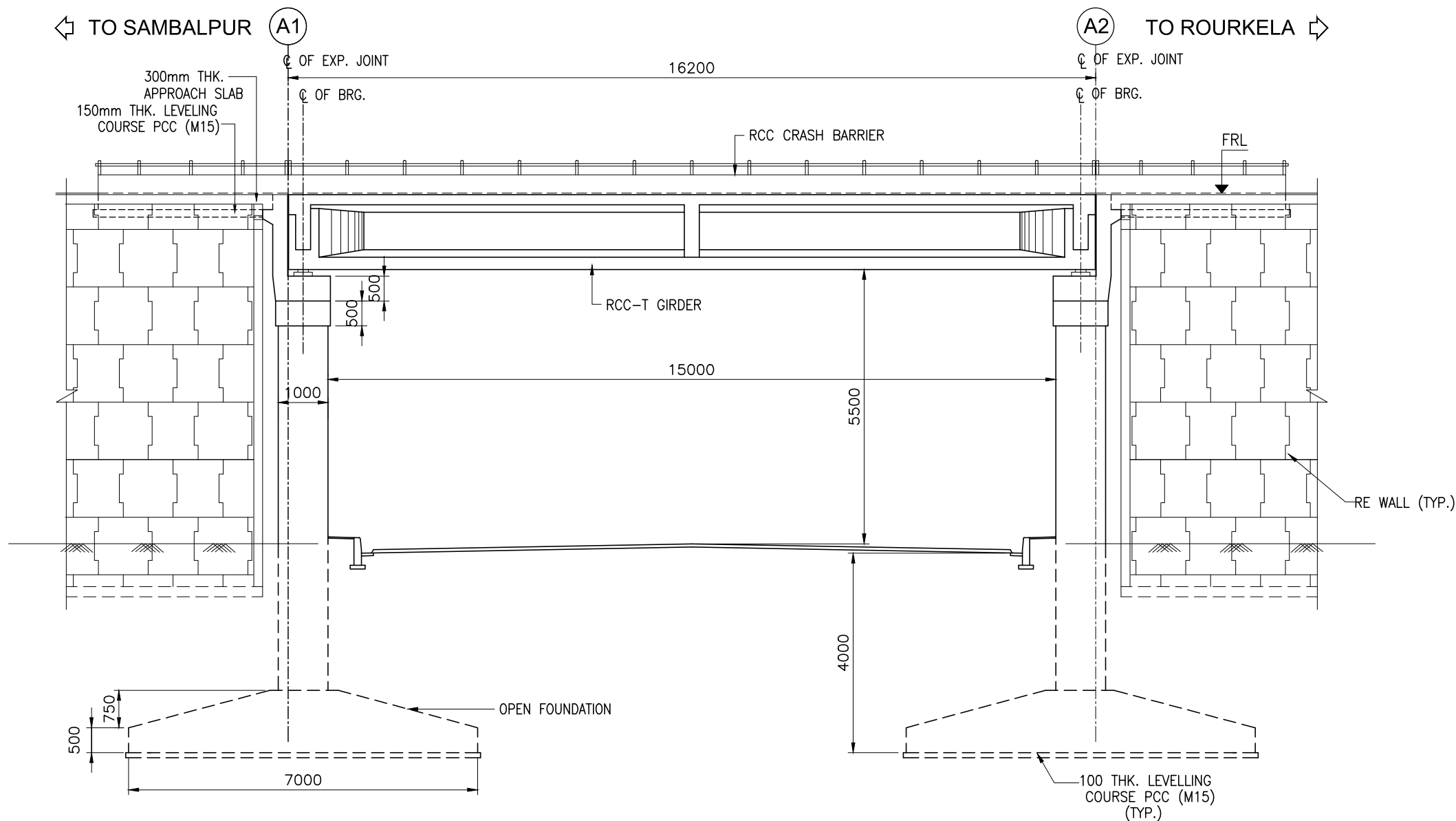
SECTION 1 - 1

(SCALE 1:150)



TOP PLAN

(SCALE 1:150)



ELEVATION

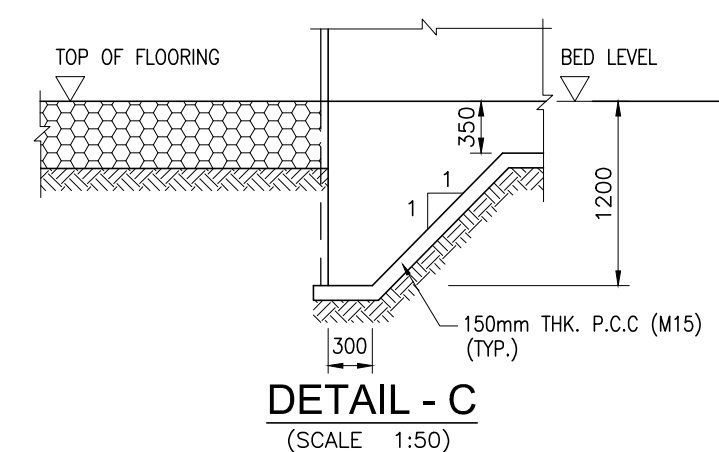
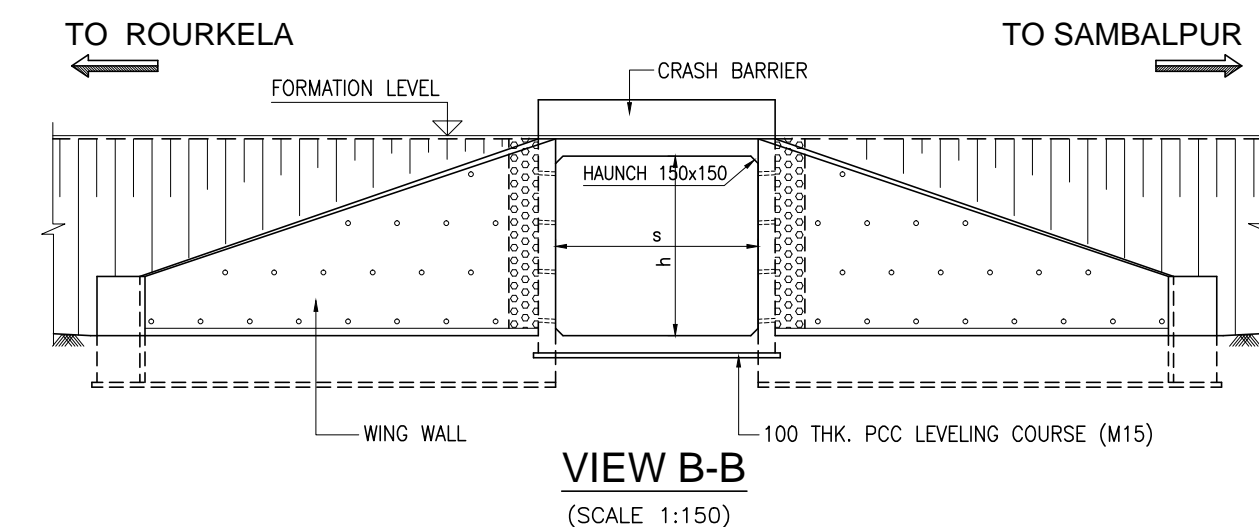
(SCALE 1:100)

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE (Km) | FORMATION LEVEL (m) | EXISTING GROUND LEVEL (m) | PROPOSED SPAN ARRANGEMENT (m) | TOTAL WIDTH OF STRUCTURE (m) |
|---------|---------------|------------------------|---------------------|---------------------------|-------------------------------|------------------------------|
| 1 | VUP/01 | 27+545.210 | 213.384 | 203.987 | 1 x 15.0 | 27.5 |
| 2 | VUP/02 | 39+094.546 | 209.514 | 200.558 | 1 x 15.0 | 38.2 |
| 3 | VUP/03 | 81+800.000 | 247.673 | 239.916 | 1 x 15.0 | 27.2 |
| 4 | VUP/04 | 89+750.000 | 261.069 | 253.205 | 1 x 15.0 | 24.231 |

NOTES :-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THE FOUNDATION SHALL BE AT A DEPTH OF MINIMUM 2.0m BELOW EXISTING GROUND LEVEL AT THE LOCATION, SUBJECT TO THE AVAILABILITY OF REQUIRED BEARING CAPACITY.



| | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|---------------------------------|----------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Vivek | TYPICAL GENERAL ARRANGEMENT FOR | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. | GOVERNMENT OF ORISSA |
| | | | | Designed By | Sanjay Mandal | VEHICULAR UNDERPASS | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With | WORKS DEPARTMENT |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | LEA Associates South Asia Pvt. Ltd. | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND |
| | REVISION | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\UP\GA-01 | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | TRANSACTION ADVISOR FOR SELECTED |
| | | | | | | | | | STATE ROADS IN THE STATE OF ORISSA |

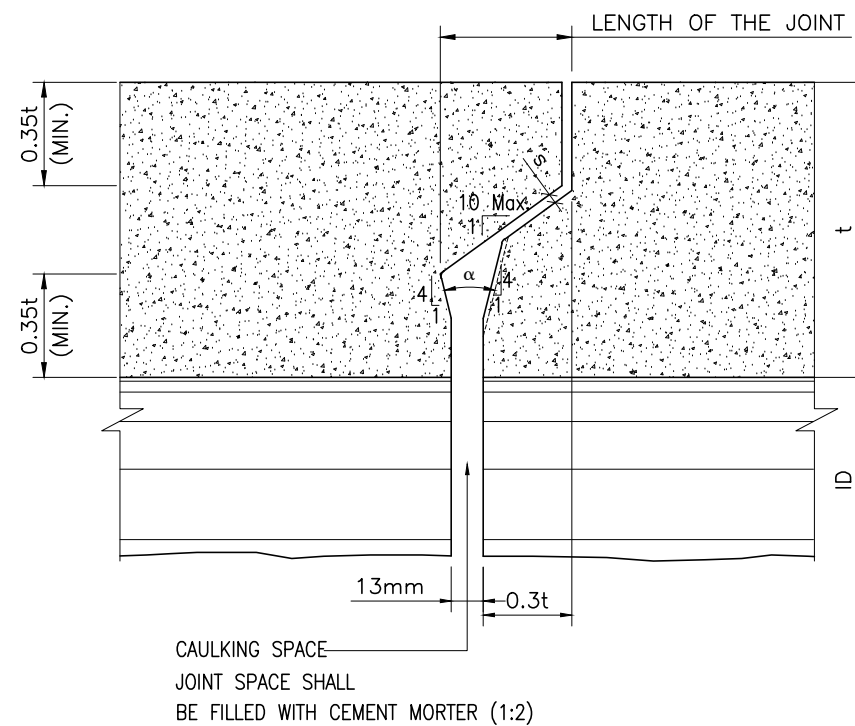
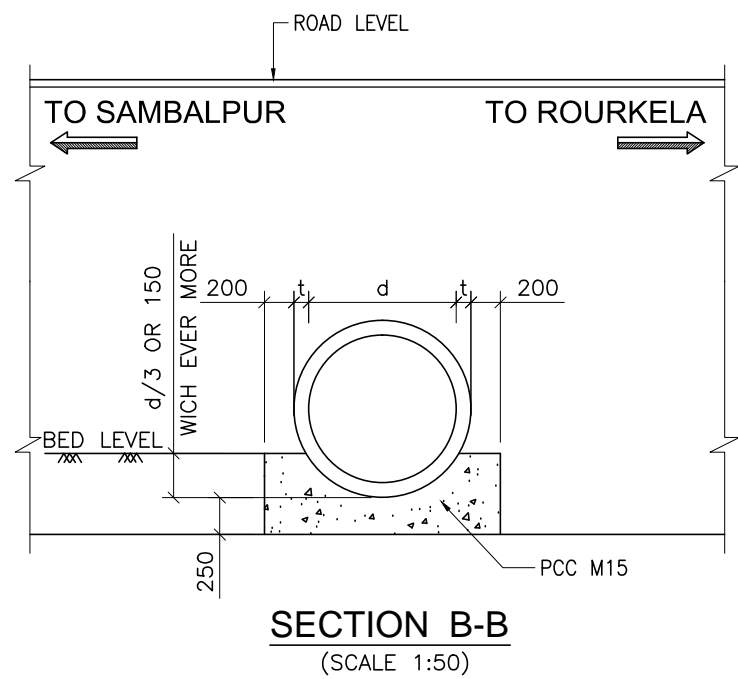
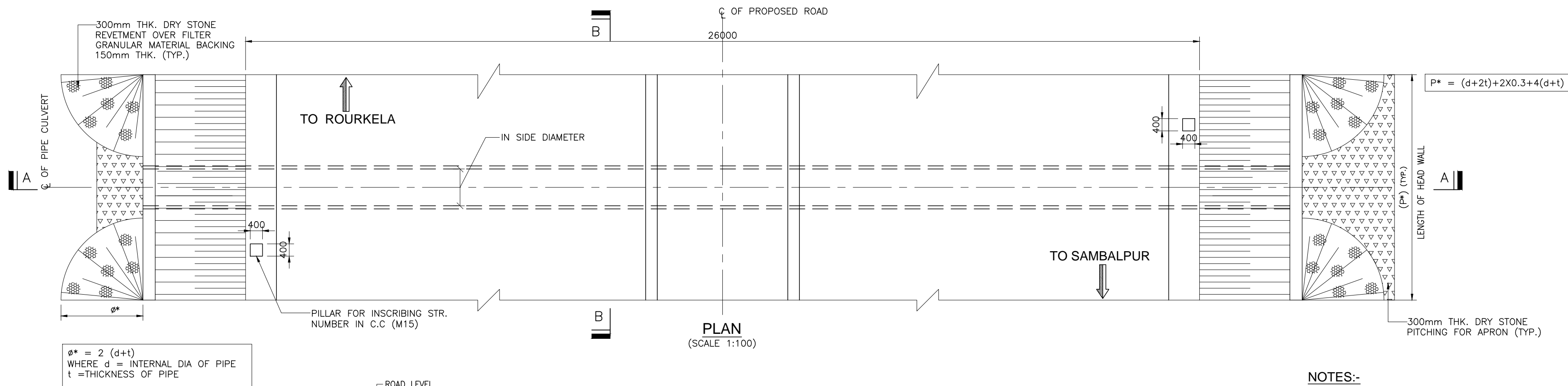
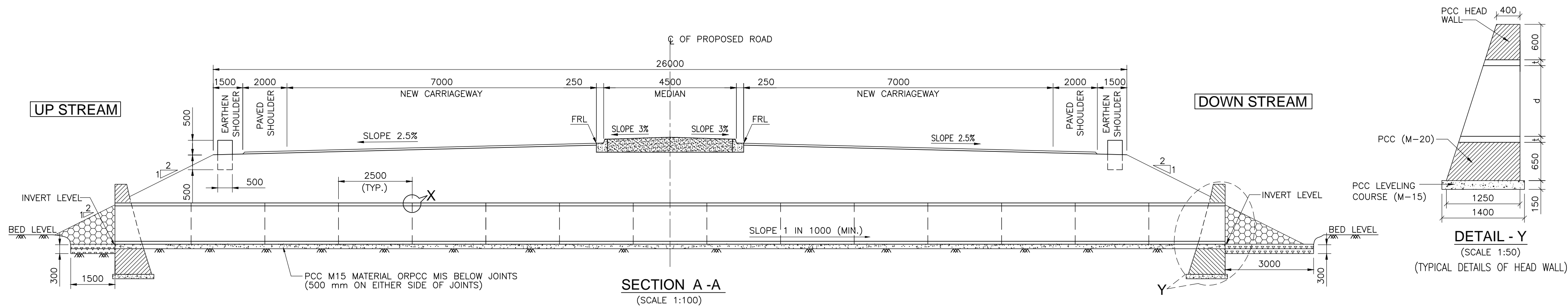


| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | STRUCTURE TYPE | STRUCTURE DESCRIPTION | TOTAL WIDTH (m) | PROPOSED SIZE OF BOX | |
|---------|---------------|-------------------|----------------|-----------------------|-----------------|----------------------|--------|
| | | | | | | s (mm) | h (mm) |
| 1 | 27/1 | 26+000.00 | RCC Box | REPTILE UNDERPASS | 26.000 | 3000 | 3000 |
| 2 | 47/2 | 46+970.285 | RCC Box | REPTILE UNDERPASS | 26.000 | 3000 | 3000 |
| 3 | 58/1 | 57+150.000 | RCC Box | REPTILE UNDERPASS | 26.000 | 3000 | 3000 |
| 4 | 97/2 | 96+441.053 | RCC Box | ELEPHANT UNDERPASS | 26.000 | 10000 | 6000 |
| 5 | 108/1 | 107+171.995 | RCC Box | REPTILE UNDERPASS | 26.000 | 3000 | 3000 |

1. ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT HIGHWAY PLAN AND PROFILE DRAWING.
3. RAFT SHALL BE PLACED OVER A FIRM STRATA TO THE SATISFACTION OF ENGINEER. LOOSE OR SOFT PATCHES SHALL BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL. BACK FILL BELOW RAFT SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED TO 95% MODIFIED PROCTOR DENSITY IN LAYERS USING TAMPER HAMMER, REFERRING CLAUSE 305 OF MORTH SPECIFICATION.
4. U/S END SHALL BE CONFIRMED AT SITE BEFORE CONSTRUCTION.
5. THE TYPE OF WING WALL SHALL BE FINALIZED BASED ON THE ACTUAL HEIGHT OF FILLING.
6. FOR CAMBER/SUPERELEVATION AND CROSS SECTION OF HIGHWAY AT SPECIFIC CULVERT LOCATIONS RELEVANT HIGHWAY DRAWING SHALL BE REFERRED.

GENERAL NOTES _____ 73231\LASA\PPP\SR\GN-01
MISCELLANEOUS DETAILS _____ 73231\LASA\PPP\SR\MISC-01 TO 05

| | | | | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|---------------------------------|----------------------------|-------------------------|---|--|---|--|
| | | | | Date | March 2010 | Drawing Title : | | Scale : AS SHOWN | <div>CONSULTANTS:</div> <div> Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon—122001 In JV With</div> <div> LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044.</div> | Client: | GOVERNMENT OF ORISSA WORKS DEPARTMENT | |
| | | | | Drawn By | Vivek | TYPICAL GENERAL ARRANGEMENT FOR | | | | ELEPHANT UNDERPASS & REPTILE UNDERPASS | | |
| | | | | Designed By | Sanjay Mandal | | | | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | | | | |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\UP\GA-02 | | | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA | |



t - THICKNESS OF PIPE.
s - 0.002 OF INTERNAL DIA. OR 2 mm. Min.
ID - INTERNAL DIAMETER.
α - INCLUDED ANGLE NOT MORE THAN 25°

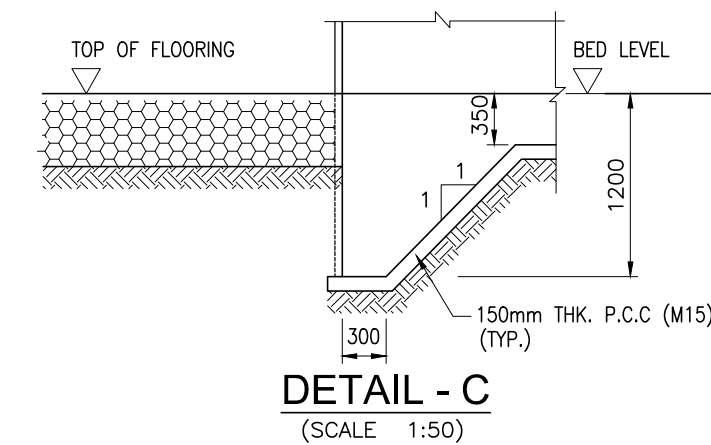
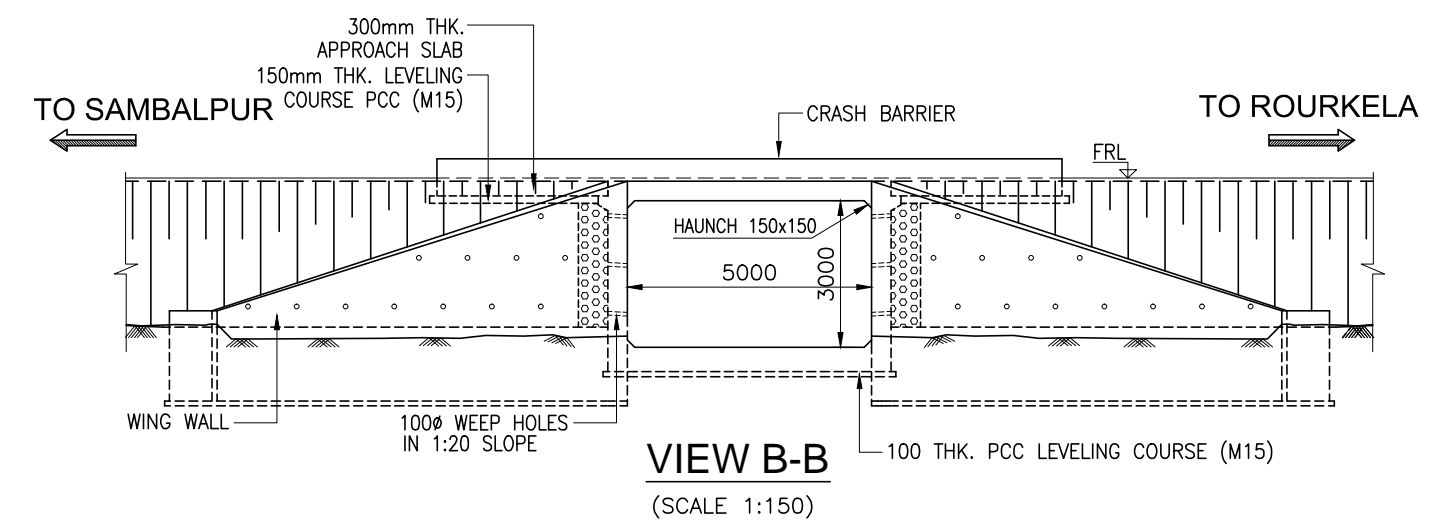
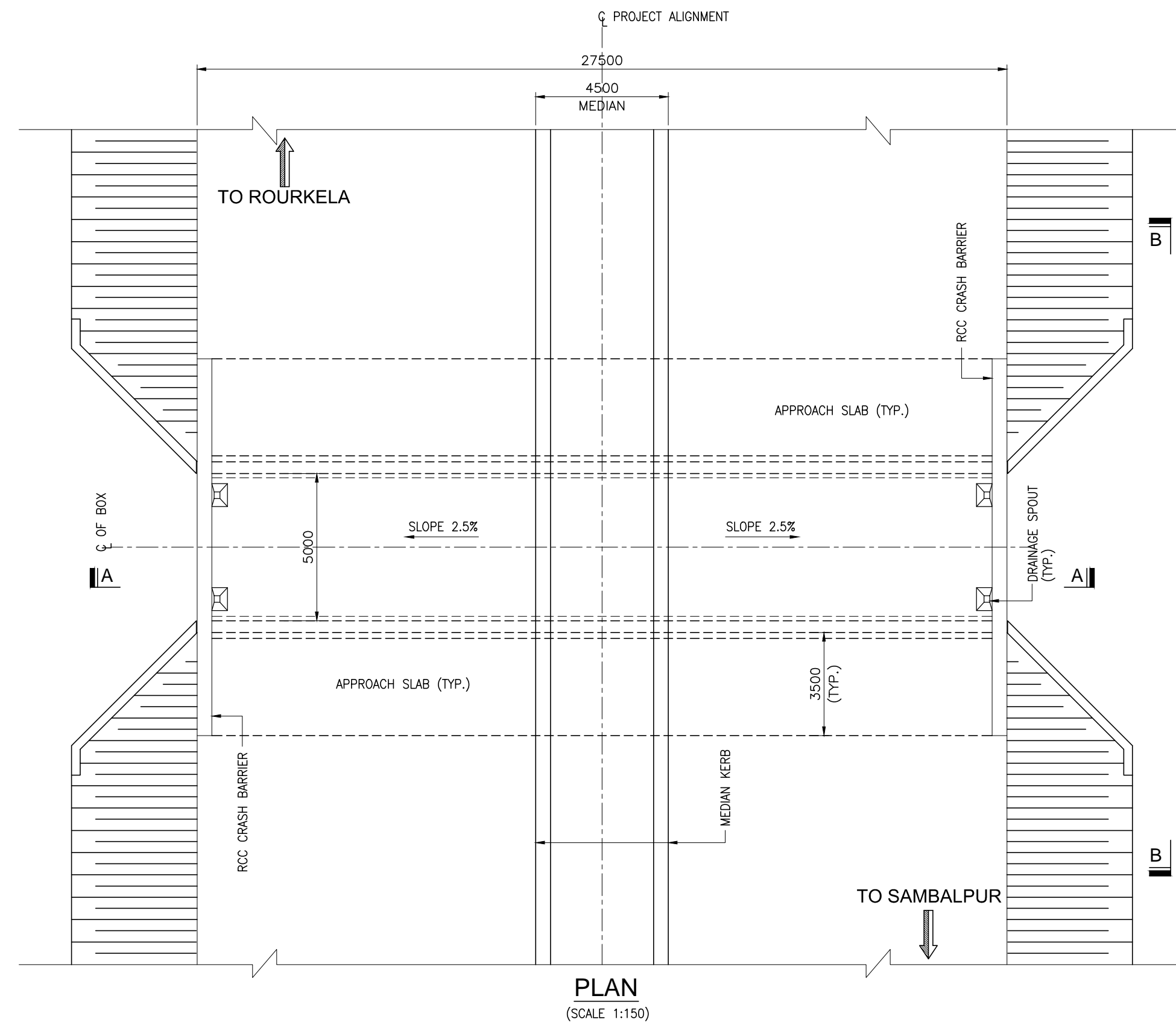
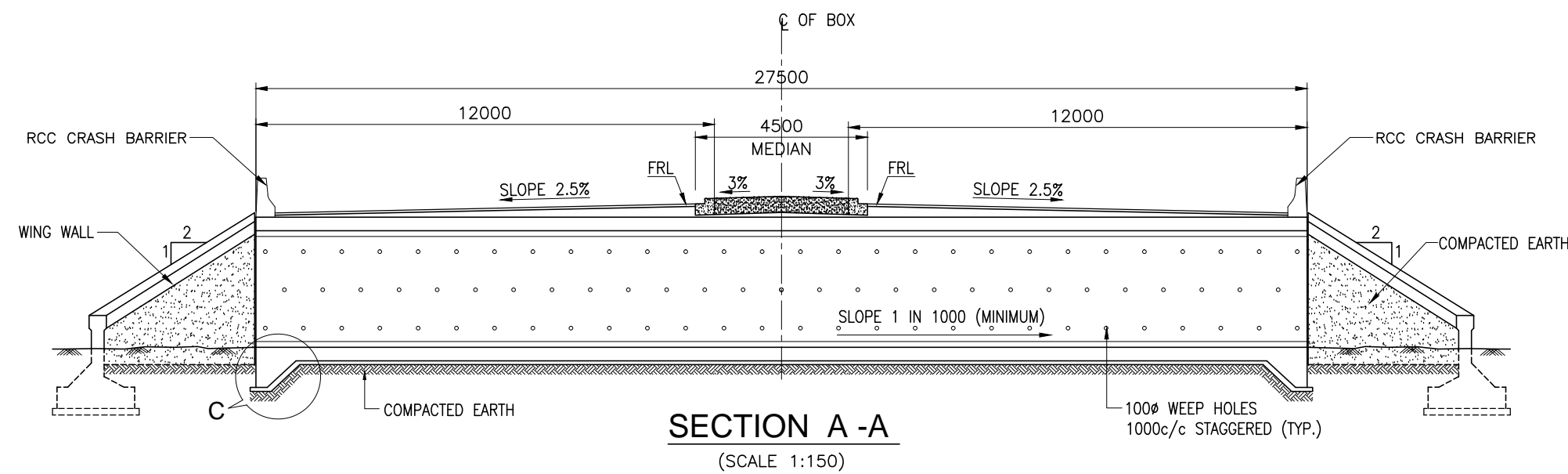
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS MENTIONED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS. FRL & CAMBER / SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DWG. DISCREPANCY, IF ANY, IS TO BE IMMEDIATELY BROUGHT TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- WIDTH OF MEDIAN SHALL BE CHECKED AS PER ROAD CROSS SECTION AT THAT PARTICULAR STRUCTURE LOCATION.
- ALL PIPES SHALL BE OF CLASS NP4 FOR NEW CONSTRUCTION.
- LONGITUDINAL SLOPE OF WIDENED PIPE SHALL BE 1 : 1000 (MIN.)
- LENGTH, LOCATION, ORIENTATION & INVERT LEVEL OF PIPE CULVERT SHALL BE ADJUSTED TO SUIT SITE CONDITION AND AS APPROVED BY THE ENGINEER.
- TRENCHES SHALL BE BACKFILLED IMMEDIATELY AFTER THE PIPES HAVE BEEN LAID AND THE JOINTING MATERIAL HAS HARDENED.
- PIPE SHALL BE JOINTED BY FLUSH JOINT METHOD AS PER THE DETAILS GIVEN IN SECTION 2906 OF MORT&H SPECIFICATIONS OF ROAD & BRIDGE WORKS.
- SKIN REINFORCEMENT @ 2.5kg/m² IN BOTH HOR. & VERTICAL DIRECTION IS TO BE PROVIDED FOR PCC HEAD WALL.
- * RELEVANT HIGHWAY PLAN AND PROFILE DWG. SHALL BE REFERRED.

SCHEDULE FOR REPTILE UNDERPASS

| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE | STRUCTURE TYPE | STRUCTURE DESCRIPTION | TOTAL WIDTH (m) | DIAMETER OF PIPE |
|---------|---------------|-------------------|----------------|-----------------------|-----------------|------------------|
| 1 | 61/2 | 60+750.000 | HPC | REPTILE UNDERPASS | 26.000 | 1 X 1200mm Ø |

| | | | | | | | | | | | |
|------|--------------|------|----|-------------|---------------|------------------|----------------------------|--------------|--|----------|---|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Pricewaterhouse Coopers Pvt. Ltd. | Client: | GOVERNMENT OF ORISSA |
| | | | | Drawn By | Vivek | | | | Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 | | WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | In JV With | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | LEA Associates South Asia Pvt. Ltd. | Project: | PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| | REVISION | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\UP\GA-03 | | B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | | |



| SL. NO. | STRUCTURE NO. | PROPOSED CHAINAGE (Km) | FORMATION LEVEL (m) | EXISTING GROUND LEVEL (m) | PROPOSED SPAN ARRANGEMENT (m) | TOTAL WIDTH OF STRUCTURE (m) |
|---------|---------------|------------------------|---------------------|---------------------------|-------------------------------|------------------------------|
| 1 | PUP/01 | 11+075.000 | 164.353 | 160.329 | 1 x 5.0 | 27.2 |
| 2 | PUP/02 | 62+875.000 | 216.696 | 212.334 | 1 x 5.0 | 27.2 |
| 3 | PUP/03 | 71+000.000 | 239.789 | 235.506 | 1 x 5.0 | 27.2 |
| 4 | PUP/04 | 73+200.000 | 245.747 | 241.273 | 1 x 5.0 | 27.2 |
| 5 | PUP/05 | 97+650.000 | 258.589 | 254.048 | 1 x 5.0 | 27.2 |
| 6 | PUP/06 | 102+800.000 | 294.403 | 290.255 | 1 x 5.0 | 27.2 |
| 7 | PUP/07 | 105+902.703 | 286.512 | 281.943 | 1 x 5.0 | 30.142 |
| 8 | PUP/08 | 109+525.000 | 262.884 | 258.493 | 1 x 5.0 | 27.2 |
| 9 | PUP/09 | 112+300.000 | 259.141 | 254.984 | 1 x 5.0 | 24.2 |
| 10 | PUP/10 | 135+600.000 | 243.398 | 239.238 | 1 x 5.0 | 27.2 |
| 11 | PUP/11 | 151+500.000 | 196.328 | 191.732 | 1 x 5.0 | 27.2 |
| 12 | PUP/12 | 156+900.000 | 211.823 | 207.312 | 1 x 5.0 | 27.2 |

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT HIGHWAY PLAN AND PROFILE DRAWING.

| | | | | | | | | | |
|----------|--------------|------|----|-------------|---------------|--|-----------------------------|--|--|
| | | | | Date | March 2010 | Drawing Title : | Scale : | CONSULTANTS: | Client: |
| | | | | Drawn By | Vivek | TYPICAL GENERAL ARRANGEMENT OF PEDESTRIAN UNDERPASS | AS SHOWN | Pricewaterhouse Coopers Pvt. Ltd. Building 8, 7th & 8th Floor, Tower B, DLF Cyber City, Gurgaon-122001 In JV With LEA Associates South Asia Pvt. Ltd. B-1/E-27, Mohan Co-operative Industrial Estate, Mathura Road, New Delhi-110044. | GOVERNMENT OF ORISSA WORKS DEPARTMENT |
| | | | | Designed By | Sanjay Mandal | | | | |
| Mkd. | Descriptions | Date | By | Checked By | J.P.Das | | | | Project: PPP TECHNO-ECONOMIC FEASIBILITY STUDY AND TRANSACTION ADVISOR FOR SELECTED STATE ROADS IN THE STATE OF ORISSA |
| REVISION | | | | Approved By | Avadesh | Drawing Number : | 73231\LASA\PPP\SR\PUP\GA-01 | | |