

## ADDENDUM-2

"Package No. WP-1: Improvement of Sylhet-Charkhai-Sheola Highway into 4-Lane Highway from Sylhet (Kadamtali) - Golapganj - Sheola Bridge - Sheola Landport (Ch. 00+000 to 42+985 km) (Length: 42.985 km)"

Sl. No.	Bidding Document Reference & Query No. of Pre-bid Meeting Minutes	As in Bidding Document	As Amended																														
1.	<b>Volume - 1/5</b> Part 3; Section IX (Particular Conditions of Contract, Sub-Clause 14.2, Page# 134)	<b>Total Advance Payment</b> <b>10% (Ten Percent)</b> including VAT & AIT of the Accepted Contract Amount (of Phase-I: Construction Phase) payable in the currencies and proportions in which the Accepted Contract Amount (of Phase-I) is payable.	<b>Total Advance Payment</b> <b>15% (Fifteen Percent)</b> including VAT & AIT of the Accepted Contract Amount (of Phase-I: Construction Phase) payable in the currencies and proportions in which the Accepted Contract Amount (of Phase-I) is payable.																														
2.	<b>Volume - 1/5</b> Part 3; Section IX (Particular Conditions of Contract, Sub-Clause 14.2.3, Page# 134)	<b>Repayment of Advance Payment</b> (a) minimum amount of certified interim payments to commence repayment of the Advance Payment, as a percentage of the Accepted Contract Amount payable in that currency less Provisional Sums <b>30% (Thirty Percent)</b> . (b) percentage deductions for the repayment of the Advance Payment <b>20% (Twenty Percent)</b> . <i>Provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.</i>	<b>Repayment of Advance Payment</b> (a) minimum amount of certified interim payments to commence repayment of the Advance Payment, as a percentage of the Accepted Contract Amount payable in that currency less Provisional Sums <b>30% (Thirty Percent)</b> . (b) percentage deductions for the repayment of the Advance Payment <b>25% (Twenty-Five Percent)</b> . <i>Provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.</i>																														
3.	<b>Volume - 2/5</b> Section IV - Bidding Forms (Bill of Quantities, BOQ Items, Page# 96), Lot-3 <b>Query No. 15</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Specification Ref. No.</th> <th style="width: 10%;">Pay Item No.</th> <th style="width: 40%;">Item Description</th> <th style="width: 10%;">Unit</th> <th style="width: 10%;">Quantity</th> </tr> </thead> <tbody> <tr> <td>Div-5,Cl.5.7</td> <td>05.07.08 (f)</td> <td>Supply of Bolts, Nuts, Washer etc. accessories (single span single carriageway) as per Drawing</td> <td>Lot</td> <td>2.00</td> </tr> <tr> <td>Div-5,Cl.5.7</td> <td>05.07.08 (f)</td> <td>Provision for pre-shipment inspection, inland transportation, port charges, insurance etc.</td> <td>LS</td> <td>1.00</td> </tr> </tbody> </table>	Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Div-5,Cl.5.7	05.07.08 (f)	Supply of Bolts, Nuts, Washer etc. accessories (single span single carriageway) as per Drawing	Lot	2.00	Div-5,Cl.5.7	05.07.08 (f)	Provision for pre-shipment inspection, inland transportation, port charges, insurance etc.	LS	1.00	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Specification Ref. No.</th> <th style="width: 10%;">Pay Item No.</th> <th style="width: 40%;">Item Description</th> <th style="width: 10%;">Unit</th> <th style="width: 10%;">Quantity</th> </tr> </thead> <tbody> <tr> <td>Div-5,Cl.5.7</td> <td>05.07.08 (e)</td> <td>Supply of Bolts, Nuts, Washer etc. accessories (single span single carriageway) as per Drawing</td> <td>Lot</td> <td>2.00</td> </tr> <tr> <td>Div-5,Cl.5.7</td> <td>05.07.08 (f)</td> <td>Provision for pre-shipment inspection, inland transportation, port charges, insurance etc.</td> <td>LS</td> <td>1.00</td> </tr> </tbody> </table> <p>Please see the Amended BOQ Page (1 Page) (<b>Attachment-1</b>).</p>	Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Div-5,Cl.5.7	05.07.08 (e)	Supply of Bolts, Nuts, Washer etc. accessories (single span single carriageway) as per Drawing	Lot	2.00	Div-5,Cl.5.7	05.07.08 (f)	Provision for pre-shipment inspection, inland transportation, port charges, insurance etc.	LS	1.00
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4.	<b>Volume - 3/5</b> Section VII (Work's Requirements, Particular	<b>5.3.12.2 Payment</b> The payment for pre stressed concrete girder shall include the following:	<b>5.3.12.2 Payment</b> The payment for pre stressed concrete girder shall include the following:																														



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	Specifications, Clause# 5.3.12.2, Page# 147 of 245) <u>Query No. 16</u>	a) Concrete for pre stressed concrete girders (PSC) which shall be of Class 40; .....	a) Concrete for pre stressed concrete girders (PSC) shall be of class according to "General Note-1, in the Drawing for the concrete class of different beams/girders. .....																														
5.	<b>Volume - 3/5</b> Section VII (Work's Requirements, Particular Specifications, Clause# 5.9.3.10.5, Page# 155 of 245)	<b>5.9.3.10.5 Payment</b> The payment shall be the supply of all materials, fixing in positions..... of work for this purpose. The Pay Items shall be: <table border="1"> <tr> <td>5/9/1</td> <td>Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ</td> <td>Lump Sum</td> </tr> </table>	5/9/1	Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ	Lump Sum	<b>5.9.3.10.5 Payment</b> The payment shall be the supply of all materials, fixing in positions..... of work for this purpose. The Pay Items shall be: <table border="1"> <tr> <td>5/9/1</td> <td>Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ</td> <td>Number</td> </tr> </table>	5/9/1	Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ	Number																								
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7.	<b>Volume - 3/5</b> Section VII (Work's Requirements, Particular Specifications, Clause# 5.13.8, Page# 172 of 245) <u>Query No. 28</u>	<b>5.13.8 Payment</b> Payment for earth fill shall constitute full compensation for furnishing all materials including..... and all other things necessary for the completion of the structures. The Pay Items shall be <table border="1"> <tr> <td>05/13/01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>Lump Sum</td> </tr> </table>	05/13/01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Lump Sum	<b>5.13.8 Payment</b> Payment for earth fill shall constitute full compensation for furnishing all materials including..... and all other things necessary for the completion of the structures. The Pay Items shall be <table border="1"> <tr> <td>05/13/01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>Number</td> </tr> </table>	05/13/01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Number																								
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8.	<u>Volume - 2/5</u> Section IV - Bidding Forms (Bill of Quantities), BOQ Item <u>Query No. 28</u>	Lot-1 (Page# 37) <table border="1" data-bbox="573 293 1301 376"> <tr> <td>Div-5,Cl.5.13</td> <td>05.13.01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>LS</td> <td>12.00</td> </tr> </table> Lot-2 (Page# 66) <table border="1" data-bbox="573 424 1301 507"> <tr> <td>Div-5,Cl.5.13</td> <td>05.13.01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>LS</td> <td>20.00</td> </tr> </table> Lot-3 (Page# 97) <table border="1" data-bbox="573 555 1301 638"> <tr> <td>Div-5,Cl.5.13</td> <td>05.13.01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>LS</td> <td>2.00</td> </tr> </table>	Div-5,Cl.5.13	05.13.01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	LS	12.00	Div-5,Cl.5.13	05.13.01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	LS	20.00	Div-5,Cl.5.13	05.13.01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	LS	2.00	Lot-1 (Page# 37) <table border="1" data-bbox="1341 293 2069 376"> <tr> <td>Div-5,Cl.5.13</td> <td>05.13.01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>Nos.</td> <td>12.00</td> </tr> </table> Lot-2 (Page# 66) <table border="1" data-bbox="1341 424 2069 507"> <tr> <td>Div-5,Cl.5.13</td> <td>05.13.01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>Nos.</td> <td>20.00</td> </tr> </table> Lot-3 (Page# 97) <table border="1" data-bbox="1341 555 2069 638"> <tr> <td>Div-5,Cl.5.13</td> <td>05.13.01</td> <td>Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches</td> <td>Nos.</td> <td>2.00</td> </tr> </table> Please see the Amended BOQ Pages (3 Pages) ( <b>Attachment-3</b> ).	Div-5,Cl.5.13	05.13.01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Nos.	12.00	Div-5,Cl.5.13	05.13.01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Nos.	20.00	Div-5,Cl.5.13	05.13.01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Nos.	2.00
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9.	<u>Volume - 5/5</u> Drawings <u>Query No. 43</u>	-	Please see the Amended Drawings (Sheola Bridge Corrected Drawings: 7 Pages) ( <b>Attachment-4</b> ).																														
10.	<u>Volume - 5/5</u> Drawings; SCS-Lot-1 (HW); Page 52 & <u>Volume - 3/5</u> Part 2; Section VII (Work's Requirements, Particular Specifications, Page# 85 of 245) <u>Query No. 51</u>	-	Please see the Amended Drawings (Subbase CBR Modified Drawings: For Lot-1, Lot-2 & Lot-3: 9 Pages each) ( <b>Attachment-5</b> ).																														
11.	<u>Volume - 5/5</u> Drawings; No. C4-D306-01, 02, C4-D5396-01 and C4-D5396-02 <u>Query No. 70</u>	-	Please see the Amended Drawings (U-Girder Drawings: For Lot-1, Lot-2 & Lot-3: 4 Pages total) ( <b>Attachment-6</b> ).																														
12.	<u>Volume - 5/5</u> Drawings; No. SCS-HW-GD-C1-61 <u>Query No. 73</u>	-	Please see the Amended Drawings (Drainage Blanket Thickness Modified Drawings: For Lot-1, Lot-2 & Lot-3: 1 Page each) ( <b>Attachment-7</b> ).																														



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13.	<b>Volume - 2/5</b> Section IV - Bidding Forms (Bill of Quantities, Page 39, 68 & 99) Query Nos. 115 & 143	-	Please see the New Drawings (Concrete Slope Protection Drawings: For Lot-1, Lot-2 & Lot-3: 1 Page each) ( <b>Attachment-8</b> ).																				
14.	<b>Volume - 5/5</b> Highway Drawings (General): Drawing No. SCS-HW-GD-C1-06, SCS-HW-GD-C1-18 and SCS-HW-GD-C1-19 Query No. 117	-	Please see the Amended Drawings (Guardrail Modification Drawings: For Lot-1, Lot-2 & Lot-3: 4 Pages each) ( <b>Attachment-9</b> ).																				
15.	<b>Volume - 5/5</b> Drawings; No. SCS-HW-SD-C1-06 Query No. 123	-	Please see the Amended Schedule (Drainage Schedule Update: 1 Page) ( <b>Attachment-10</b> ).																				
16.	<b>Volume - 2/5</b> Section IV - Bidding Forms (Bill of Quantities, Page# 39 & 68), Lot-1 & Lot-3 Query No. 124	<p>Lot-1 (Page# 39)</p> <table border="1"> <tr> <td>Div-6,Cl.6.3</td> <td>6 3/1</td> <td>Manhole Complete as per drawing</td> <td>Nos.</td> <td>1,758.00</td> </tr> </table> <p>Lot-3 (Page# 68)</p> <table border="1"> <tr> <td>Div-6,Cl.6.3</td> <td>6 3/1</td> <td>Manhole Complete as per drawing</td> <td>Nos.</td> <td>740.00</td> </tr> </table>	Div-6,Cl.6.3	6 3/1	Manhole Complete as per drawing	Nos.	1,758.00	Div-6,Cl.6.3	6 3/1	Manhole Complete as per drawing	Nos.	740.00	<p>Lot-1 (Page# 39)</p> <table border="1"> <tr> <td>Div-6,Cl.6.3</td> <td>6 3/1</td> <td>Manhole Complete as per drawing</td> <td>Nos.</td> <td>224.00</td> </tr> </table> <p>Lot-3 (Page# 68)</p> <table border="1"> <tr> <td>Div-6,Cl.6.3</td> <td>6 3/1</td> <td>Manhole Complete as per drawing</td> <td>Nos.</td> <td>78.00</td> </tr> </table> <p>Please see the Amended BOQ Pages (2 Pages) (<b>Attachment-11</b>).</p>	Div-6,Cl.6.3	6 3/1	Manhole Complete as per drawing	Nos.	224.00	Div-6,Cl.6.3	6 3/1	Manhole Complete as per drawing	Nos.	78.00
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17.	<b>Volume - 3/5</b> Part 2; Section VII (Work's Requirements, Particular Specifications, Page# 12 of 245)	<p><b>1.1.1 General</b></p> <p>On the date of commencement of the Contract, the Contractor shall become the agent of the Employer in carrying out the statutory requirements of maintaining public and vehicular access along the road right of way forming the site of the Works, for which possession of site has been granted, as provided in the relevant legislation of the Government of Bangladesh.</p>	<p><b>1.1.1 General</b></p> <p>On the date of commencement of the Contract, the Contractor shall become the agent of the Employer in carrying out the statutory requirements of maintaining public and vehicular access along the road right of way forming the site of the Works, for which possession of site has been granted, as provided in the relevant legislation of the Government of Bangladesh.</p>																				



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		<p>During handing of the project road, the existing road shall be inspected jointly as soon as is reasonably possible after the date of commencement as agreed by the Engineer. The findings of the joint inspection shall be documented. Thereafter, the Contractor shall proceed with the required maintenance with due expedition and without delay.</p> <p>List of repairing work from the joint inspection shall be made for necessary maintenance which will be carried out as per clause 3.1 of Technical Specifications (General) and as per instruction of the Engineer. The contractor shall perform all maintenance work to the satisfaction of the Engineer within six weeks from the date of notification by the Engineer for repair.</p> <p>Contractor's failure to carry out such maintenance work within the stated time period shall not be measured, all the remaining maintenance work shall be measured under clause 1.1 and payment will be made under pay item 1/1/1.</p> <p>The Contractor shall maintain the roads for the full length of the site of the Works from the date of commencement to the date of issuance of the Taking over Certificate for the whole of the Works. The Contractor shall conduct his operations so as to minimize obstruction and inconvenience to the public and he shall have under construction no greater length or amount of Work than he can properly manage with due regard to the rights of the public. Unless provided otherwise in these Specifications, all traffic shall be permitted to pass through the sections of the Works which have been completed and opened to traffic in accordance with the Contract.</p> <p>Areas of roadway designated in the Contractor's working plans for the use of public traffic shall not be obstructed or used in any way by the Contractor or his suppliers or sub - contractors. Materials</p>	<p>The Contractor shall maintain the roads for the full length of the site of the Works from the date of commencement to the date of issuance of the Taking over Certificate for the whole of the Works. The Contractor shall conduct his operations so as to minimize obstruction and inconvenience to the public and he shall have under construction no greater length or amount of Work than he can properly manage with due regard to the rights of the public. Unless provided otherwise in these Specifications, all traffic shall be permitted to pass through the sections of the Works which have been completed and opened to traffic in accordance with the Contract.</p> <p>Areas of roadway designated in the Contractor's working plans for the use of public traffic shall not be obstructed or used in any way by the Contractor or his suppliers or sub - contractors. Materials dumped or Contractor's equipment parked on any public roadway area shall be promptly removed by the Contractor.</p> <p>The Contractor will carry out all kinds of maintenance works mentioned under clause 1.1 (Maintenance and protection of Traffic) during the construction phase and payment will be made under pay item 1/1/1a.</p> <p>However, special circumstance may arise in site during construction phase which may require special maintenance of existing road. The Engineer shall take decision regarding execution of Special maintenance of existing road under provisional sum and payment will be made under pay item 1/1/1b. In any case, that decision shall not relieve the contractor from his/her responsibility and obligations mentioned regarding maintenance and protection of Traffic under clause 1.1.</p>



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		dumped or Contractor's equipment parked on any public roadway area shall be promptly removed by the Contractor.	
18.	<u>Volume - 3/5</u> Part 2; Section VII (Work's Requirements, Particular Specifications, Page# 17-18 of 245)	<p><b>1.1.14 Measurement</b></p> <p>Measurement for protection of traffic and traffic management including traffic sign, detour, project sign board, maintain existing formation (by repairing pothole, depression, edge breaking, etc.), access to adjacent property and intersecting road, assistance to public, night, weekend &amp; holiday traffic control, Barriers, maintain of traffic control devices, waterway traffic, developing construction phase traffic management plan during construction shall be in km-month for the section to be maintained by the Contractor.</p> <p>Measurement for road maintenance including special maintenance when the road surface is badly damaged shall be in Provisional Sum. Contractor and the Engineer will prepare the estimate jointly following Division 3 of the Technical Specification (General) Items as and when required to maintain the road up to satisfactory condition within the site for which the Contractor has been given possession.</p> <p>However, for any month that, in the opinion of the Engineer, traffic control or road maintenance is inadequately provided on a length of road due to the Contractor's negligence, then no payment will be made for that section.</p>	<p><b>1.1.14 Measurement</b></p> <p>Measurement for protection of traffic and traffic management including traffic sign, detour, construction of temporary road for diversions, project sign board, maintain existing formation (by repairing pothole, depression, edge breaking, crack sealing, etc.), access to adjacent property and intersecting road, assistance to public, night, weekend &amp; holiday traffic control, Barriers, maintain of traffic control devices, waterway traffic, developing construction phase traffic management plan during construction shall be in km-month for the section to be maintained by the Contractor.</p> <p>However, for any month that, in the opinion of the Engineer, traffic control or road maintenance is inadequately provided on a length of road due to the Contractor's negligence, then no payment will be made for that section.</p> <p>The Engineer shall take decision regarding execution of Special maintenance of the existing road and that work will be measured for payment under pay item 1/1/1b "Provisional sum".</p>
19.	<u>Volume - 3/5</u> Part 2; Section VII (Work's Requirements, Particular Specifications, Page# 18 of 245)	<p><b>1.1.15 Payment</b></p> <p>Payment for Maintenance and Protection of Traffic shall cover the works mentioned in the above sub-clauses unless otherwise mentioned including construction of Temporary road or diversions, detours, safety barriers, signaling at night, sign and signals, watchman furnishing all labour, equipment, materials, services and incidentals thereto until the issue of</p>	<p><b>1.1.15 Payment</b></p> <p>Payment for Maintenance and Protection of Traffic shall cover the works mentioned in the above sub-clauses unless otherwise mentioned including construction of Temporary road or diversions, detours, safety barriers, signaling at night, sign and signals, watchman furnishing all labor, equipment, materials, services and incidentals thereto until the issue of</p>



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		Taking Over Certificate for the Construction Phase Works. The Pay Item shall be: <table border="1" data-bbox="577 331 1308 603"> <thead> <tr> <th>Pay Item No.</th> <th>Description</th> <th>Unit Measurement</th> </tr> </thead> <tbody> <tr> <td>1/1/1a</td> <td>Protection of Traffic &amp; Traffic Management during construction phase</td> <td>Km-month</td> </tr> <tr> <td>1/1/1b</td> <td>Maintenance of existing road during construction phase</td> <td>Provisional Sum</td> </tr> </tbody> </table>	Pay Item No.	Description	Unit Measurement	1/1/1a	Protection of Traffic & Traffic Management during construction phase	Km-month	1/1/1b	Maintenance of existing road during construction phase	Provisional Sum	Taking Over Certificate for the Construction Phase Works. The Pay Items shall be: <table border="1" data-bbox="1344 331 2074 603"> <thead> <tr> <th>Pay Item No.</th> <th>Description</th> <th>Unit Measurement</th> </tr> </thead> <tbody> <tr> <td>1/1/1a</td> <td>Maintenance and Protection of Traffic &amp; Traffic Management during construction phase</td> <td>Km-month</td> </tr> <tr> <td>1/1/1b</td> <td>Maintenance of existing road (special maintenance) during construction phase</td> <td>Provisional Sum</td> </tr> </tbody> </table>	Pay Item No.	Description	Unit Measurement	1/1/1a	Maintenance and Protection of Traffic & Traffic Management during construction phase	Km-month	1/1/1b	Maintenance of existing road (special maintenance) during construction phase	Provisional Sum
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20.	<b>Volume - 1/5</b> Part I; Section II (ITB 14.1 of BDS, Page# 40)	Routine Maintenance Works of Phase-II shall not be less than X% of Phase-I Bid Price, where X = 1.5, 1.9 & 0.85 for Lot-1, Lot-2 & Lot-3 respectively. If the quoted Routine Maintenance bid price of Phase-II is less than X%, then for evaluation purpose X% shall be considered. If it is more than X%, then the same will be considered for evaluation and award.	Routine Maintenance Works of Phase-II shall not be less than X% of Phase-I Bid Price, where X = 1.5, 1.9 & 0.85 for Lot-1, Lot-2 & Lot-3 respectively. If the quoted Routine Maintenance bid price of Phase-II is less than X%, then for evaluation purpose X% shall be considered. If it is more than X%, then the same will be considered for evaluation and award.  Pay Item No. 1/1/1a (i.e. Maintenance and Protection of Traffic & Traffic Management during construction phase) of Phase-I shall not be less than X% of Phase-I Bid Price, where X = 0.35, 0.45 & 0.3 for Lot-1, Lot-2 & Lot-3 respectively. If the quoted price of Pay Item No. 1/1/1a of Phase-I is less than X%, then for evaluation purpose X% shall be considered. If it is more than X%, then the same will be considered for evaluation and award.																		
21.	<b>Volume - 1/5</b> Part I; Section III – Evaluation and Qualification Criteria (Page# 56)	<b>Sustainable Procurement</b> <i>Not Applicable</i> Note: Routine Maintenance Works of Phase-II shall not be less than X% of Phase-I Bid Price, where X = 1.5, 1.9 & 0.85 for Lot-1, Lot-2 & Lot-3 respectively. If the quoted Routine Maintenance bid price of Phase-II is less than X%, then for evaluation purpose X% shall be considered. If it is more than X%, then the same will be considered for evaluation and award.	<b>Sustainable Procurement</b> <i>Not Applicable</i> Note: Routine Maintenance Works of Phase-II shall not be less than X% of Phase-I Bid Price, where X = 1.5, 1.9 & 0.85 for Lot-1, Lot-2 & Lot-3 respectively. If the quoted Routine Maintenance bid price of Phase-II is less than X%, then for evaluation purpose X% shall be considered. If it is more than X%, then the same will be considered for evaluation and award.																		



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22.	<b>Volume - 2/5</b> Section IV - Bidding Forms (Bill of Quantities, Page# 24, 53 & 82), Lot-1, Lot-2 & Lot-3 Based on Sl. Nos. 12-14	<p>Lot-1 (Page# 24)</p> <table border="1" data-bbox="607 584 1319 722"> <thead> <tr> <th>Specification Ref. No.</th> <th>Pay Item No.</th> <th>Item Description</th> <th>Unit</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>Div-1,CL1.1</td> <td>1/1/1a</td> <td>Protection of Traffic &amp; Traffic Management during construction phase</td> <td>Km-Month</td> <td>644.40</td> </tr> <tr> <td>Div-1,CL1.1</td> <td>1/1/1b</td> <td>Maintenance of existing road during construction phase</td> <td>PS</td> <td>1.00</td> </tr> </tbody> </table> <p>Lot-2 (Page# 53)</p> <table border="1" data-bbox="607 772 1319 911"> <thead> <tr> <th>Specification Ref. 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## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref No	Pay Item No	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,Cl.5.7	05/07/08 (e)	Supply of Bolts, Nuts, Washer etc. accessories (single span single carriageway) as per Drawing	Lot	2.00			
Div-5,Cl.5.7	05/07/08 (f)	Provision for pre-shipment inspection, inland transportation, port charges, insurance etc.	LS	1.00			
Div-5,Cl.5.7	05/07/08 (g)	Provision for detail design vetting and/or redesign from independent authority	LS	1.00			
Div-5,Cl.5.7	05/07/08 (h)	Provision for Load Testing after erection	LS	1.00			
Div-5,Cl.5.8	<b>5/8/1</b>	<b>Expansion Joint</b>					
Div-5,Cl.5.8	5/8/1a	Expansion Joint Complete as Detailed on in the drawing D80	Linear Meter	81.00			
Div-5,Cl.5.8	5/8/1c	Expansion Joint Complete as Detailed on in the drawing D160	Linear Meter	81.00			
Div-5,Cl.5.9	5/9/1	Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ	LS	2.00			
<b>Div-5,Cl.5.9</b>	<b>5/9/2</b>	<b>Drainage Pipe</b>					
Div-5,Cl.5.9	05/09/02a	150 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per drawing.	Nos.	332.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,Cl.5.7	5/7/8	<b>Steel Structure</b>					
Div-5,Cl.5.7	05/07/08 (i)	Supplying, fabricating, assembling & erection steel stair including railing of Pedestrian Bridge	Tonne	232.00			
Div-5,Cl.5.7	05/07/08 (j)	Supplying, fabricating, assembling & erection steel deck including railing of Pedestrian Bridge	Tonne	372.00			
Div-5,Cl.5.7	05/07/08 (k)	Supplying, fabricating, assembling & erection steel column including bracing of Pedestrian Bridge	Tonne	232.00			
	5/8/1	<b>Expansion Joint</b>					
Div-5,Cl.5.8	5/8/1a	Expansion Joint Complete as Detailed on in the drawing D80	Linear Meter	268.45			
Div-5,Cl.5.8	5/8/1c	Expansion Joint Complete as Detailed on in the drawing D160	Linear Meter	145.00			
Div-5,Cl.5.9	5/9/1	Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ	Nos.	4.00			
<b>Div-5,Cl.5.9</b>	<b>5/9/2</b>	<b>Drainage Pipe</b>					
Div-5,Cl.5.9	05/09/02a	150 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per drawing.	Nos.	867.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,C1.5.7	5/7/1	Supply and erect including cutting, welding, fabrication of MS railing, and fixing to position and all type of materials, equipment, labour and others as necessary and complete as per drawing and direction of the Engineer.	Linear Meter	1,095.00			
Div-5,C1.5.7	5/7/8	<b>Steel Structure</b>					
Div-5,C1.5.7	05/07/08 (i)	Supplying, fabricating, assembling & erection steel stair including railing of Pedestrian Bridge	Tonne	58.00			
Div-5,C1.5.7	05/07/08 (j)	Supplying, fabricating, assembling & erection steel deck including railing of Pedestrian Bridge	Tonne	93.00			
Div-5,C1.5.7	05/07/08 (k)	Supplying, fabricating, assembling & erection steel column including bracing of Pedestrian Bridge	Tonne	58.00			
Div-5,C1.5.8	5/8/1	<b>Expansion Joint</b>					
Div-5,C1.5.8	5/8/1a	Expansion Joint Complete as Detailed on in the drawing D80	Linear Meter	163.00			
Div-5,C1.5.8	5/8/1c	Expansion Joint Complete as Detailed on in the drawing D160	Linear Meter	140.00			
Div-5,C1.5.9	5/9/1	Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ	Nos.	4.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,Cl.5.7	05/07/08 (e)	Supply of Bolts, Nuts, Washer etc. accessories (single span single carriageway) as per Drawing	Lot	2.00			
Div-5,Cl.5.7	05/07/08 (f)	Provision for pre-shipment inspection, inland transportation, port charges, insurance etc.	LS	1.00			
Div-5,Cl.5.7	05/07/08 (g)	Provision for detail design vetting and/or redesign from independent authority	LS	1.00			
Div-5,Cl.5.7	05/07/08 (h)	Provision for Load Testing after erection	LS	1.00			
Div-5,Cl.5.8	<b>5/8/1</b>	<b>Expansion Joint</b>					
Div-5,Cl.5.8	5/8/1a	Expansion Joint Complete as Detailed on in the drawing D80	Linear Meter	81.00			
Div-5,Cl.5.8	5/8/1c	Expansion Joint Complete as Detailed on in the drawing D160	Linear Meter	81.00			
Div-5,Cl.5.9	5/9/1	Provision and fixing of drainage to structure(s) as detailed on the drawings and defined in the BOQ	Nos.	2.00			
<b>Div-5,Cl.5.9</b>	<b>5/9/2</b>	<b>Drainage Pipe</b>					
Div-5,Cl.5.9	05/09/02a	150 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per drawing.	Nos.	332.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,Cl.5.9	05/09/02b	200 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per flyover detail drawing.	Linear Meter	4,609.00			
Div-5,Cl.5.9	05/09/02c	Catch Pit	Nos.	41.00			
Div-5,Cl.5.9	05/09/03a	Provide Weep holes in abutment and wing walls	Nos.	788.00			
Div-5,Cl.5.9	05/09/03b	Filling granular materials behind abutments	Cum	817.00			
Div-5,Cl.5.11	05/11/01b	Supply and Installation of Elastomeric bearings above 400 x 400 mm size	Nos.	490.00			
Div-5,Cl.5.13	05/13/01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Nos.	12.00			
Div-5,Cl.5.13	05/13/02	Providing & laying Reinforced Earth with fixing geo-textile as per drawing	Cum	138,839.00			
Div-5,Cl.5.13	05/13/03	Providing & laying Precast RCC Wall Panels including rebar and all completed	Sqm	18,383.00			
Div-5,Cl.5.14	05/14/01	Manufacture, Supply and placing different sizes of CC blocks including Geo-textile in culvert apron as per drawing and specification.	Sqm	4,940.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,Cl.5.9	5/9/2	<b>Drainage Pipe</b>					
Div-5,Cl.5.9	05/09/02a	150 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per drawing.	Nos.	128.00			
Div-5,Cl.5.9	05/09/02b	200 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per flyover detail drawing.	Linear Meter	2,010.00			
Div-5,Cl.5.9	05/09/02c	Catch Pit	Nos.	25.00			
Div-5,Cl.5.9	05/09/03a	Provide Weep holes in abutment and wing walls	Nos.	1,008.00			
Div-5,Cl.5.9	05/09/03b	Filling granular materials behind abutments	Cum	385.00			
Div-5,Cl.5.11	05/11/01a	Supply and Installation of Elastomeric bearings upto 400 x 400 mm size	Nos.	248.00			
Div-5,Cl.5.11	05/11/01b	Supply and Installation of Elastomeric bearings above 400 x 400 mm size	Nos.	126.00			
Div-5,Cl.5.13	05/13/01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Nos.	20.00			
Div-5,Cl.5.13	05/13/02	Providing & laying Reinforced Earth with fixing geo-textile as per drawing	Cum	204,635.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-5, Bill No. 5: Structures

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-5,Cl.5.9	05/09/02b	200 mm dia. UPVC downpipe (wall thickness 4.5 mm) complete as per flyover detail drawing.	Linear Meter	3,614.00			
Div-5,Cl.5.9	05/09/02c	Catch Pit	Nos.	24.00			
Div-5,Cl.5.9	05/09/03a	Provide Weep holes in abutment and wing walls	Nos.	446.00			
Div-5,Cl.5.9	05/09/03b	Filling granular materials behind abutments	Cum	513.00			
Div-5,Cl.5.11	05/11/01a	Supply and Installation of Elastomeric bearings upto 400 x 400 mm size	Nos.	54.00			
Div-5,Cl.5.11	05/11/01b	Supply and Installation of Elastomeric bearings above 400 x 400 mm size	Nos.	96.00			
Div-5,Cl.5.12	5/12/1(g)	Supply and Installation of pot Bearings 9000 KN	Nos.	16.00			
Div-5,Cl.5.13	05/13/01	Investigation, Design and Certification of Design of Reinforced Earth Wall Approaches	Nos.	2.00			
Div-5,Cl.5.13	05/13/02	Providing & laying Reinforced Earth with fixing geo-textile as per drawing	Cum	73,728.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-6, Bill No. 6: Incidentals

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-6,Cl.6.1	6/1/1	<b>Protective Woks</b>					
Div-6,Cl.6.1	6/1/1	Concrete slope protection along horizontal curve 100mm thickness with shrinkage reinforcement	Sqm	29,535.00			
Div-6,Cl.6.1	<b>06/01/02</b>	<b>Concrete Embankment Slope Protection</b>					
Div-6,Cl.6.1	06/01/02a	Single layer cement concrete block over geotextile at slope surface	Sqm	7,916.00			
Div-6,Cl.6.1	06/01/02b	Protection Key at toe with cement concrete block over geotextile	Cum	2,215.00			
Div-6,Cl.6.1	06/01/02c	Protection Key at shoulder with cement concrete block over geotextile	Linear Meter	5,907.00			
Div-6,Cl.6.2	06/02/01c	Reinforced Concrete Culvert Pipes-600 mm dia	Linear Meter	200.00			
Div-6,Cl.6.2	06/02/01d	Reinforced Concrete Culvert Pipes-900 mm dia	Linear Meter	100.00			
Div-6,Cl.6.3	6/3/1	Manhole Complete as per drawing	Nos.	224.00			
Div-6,Cl.6.3	<b>06/03/05</b>	<b>Storm Drainage Work</b>					
Div-6,Cl.6.3	06/03/05a	Gully Pit with steel gratings all complete as per drawing (Superelevation Drainage)	Nos.	197.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-6, Bill No. 6: Incidentals

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-6,Cl.6.1	6/1/1	Concrete slope protection along horizontal curve 100mm thickness with shrinkage reinforcement	Sqm	11,150.00			
Div-6,Cl.6.1	<b>06/01/02</b>	<b>Concrete Embankment Slope Protection</b>					
Div-6,Cl.6.1	06/01/02a	Single layer cement concrete block over geotextile at slope surface	Sqm	3,013.00			
Div-6,Cl.6.1	06/01/02b	Protection Key at toe with cement concrete block over geotextile	Cum	836.00			
Div-6,Cl.6.1	06/01/02c	Protection Key at shoulder with cement concrete block over geotextile	Linear Meter	2,230.00			
Div-6,Cl.6.2	06/02/01c	Reinforced Concrete Culvert Pipes-600 mm dia	Linear Meter	100.00			
Div-6,Cl.6.2	06/02/01d	Reinforced Concrete Culvert Pipes-900 mm dia	Linear Meter	50.00			
Div-6,Cl.6.3	6/3/1	Manhole Complete as per drawing	Nos.	78.00			
Div-6,Cl.6.3	<b>06/03/05</b>	<b>Storm Drainage Work</b>					
Div-6,Cl.6.3	06/03/05a	Gully Pit with steel gratings all complete as per drawing (Superelevation Drainage)	Nos.	74.00			
Div-6,Cl.6.3	06/03/05b	U-shape covered surface drain complete as per drawing (Superelevation Drainage)	Linear Meter	2,230.00			



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

**Division-1, Bill No. 1: General & Site Facilities**

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-1,Cl.1.1	1/1/1a	Maintenance and Protection of Traffic & Traffic Management during construction phase*	Km-Month	644.40			
Div-1,Cl.1.1	1/1/1b	Maintenance of existing road (special maintenance) during construction phase	PS	1.00	40,000,000.00	Taka Four Crore.	40,000,000.00
<b>Div-1,Cl.1.2</b>	<b>1/2/1</b>	<b>Engineer's Office and other Facilities</b>					
Div-1,Cl.1.2	1/2/1a	Provide Employer's & Engineer's Permanent Office Building	Sqm	300.00			
Div-1,Cl.1.2	1/2/1b	Provide Engineer's Semi-permanent Office Building	Sqm	300.00			
Div-1,Cl.1.2	1/2/1c	Provide Engineer's Semi-Permanent Residential Accommodation.	Sqm	450.00			
Div-1,Cl.1.2	1/2/1d	Provide Semi-permanent Field Laboratory Building	Sqm	200.00			
Div-1,Cl.1.2	1/2/1e	Provide Inspection Hut (30 Square Metre)	Nos.	1.00			
<b>Div-1,Cl.1.2</b>	<b>1/2/2</b>	<b>Maintenance and Service Buildings</b>					
Div-1,Cl.1.2	1/2/2a	Maintain and Service Engineer's Permanent Office	Month	48.00			
Div-1,Cl.1.2	1/2/2b	Maintain and Service Semi-Permanent Engineer's Field Office	Month	48.00			
Div-1,Cl.1.2	1/2/2c	Maintain and Service Semi-Permanent Engineer's Residential Accommodation.	Month	48.00			
Div-1,Cl.1.2	1/2/2d	Maintain and Service Semi-Permanent Engineer's Laboratory	Month	48.00			

\*Note: Pay Item No. 1/1/1a (i.e. Maintenance and Protection of Traffic & Traffic Management during construction phase) of Phase-I shall not be less than 0.35% of Phase-I Bid Price. If the quoted price of Pay Item No. 1/1/1a of Phase-I is less than 0.35%, then for evaluation purpose 0.35% shall be considered. If it is more than 0.35%, then the same will be considered for evaluation and award.



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

Division-1, Bill No. 1: General & Site Facilities

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-1,Cl.1.1	1/1/1a	Maintenance and Protection of Traffic & Traffic Management during construction phase*	Km-Month	648.00			
Div-1,Cl.1.1	1/1/1b	Maintenance of existing road (special maintenance) during construction phase	PS	1.00	40,000,000.00	Taka Four Crore.	40,000,000.00
<b>Div-1,Cl.1.2</b>	<b>1/2/1</b>	<b>Engineer's Office and other Facilities</b>					
Div-1,Cl.1.2	1/2/1b	Provide Engineer's Semi-permanent Office Building	Sqm	300.00			
Div-1,Cl.1.2	1/2/1c	Provide Engineer's Semi-Permanent Residential Accommodation.	Sqm	450.00			
Div-1,Cl.1.2	1/2/1d	Provide Engineer's Semi-permanent Field Laboratory Building	Sqm	200.00			
Div-1,Cl.1.2	1/2/1e	Provide Inspection Hut (30 Square Metre)	Nos.	2.00			
<b>Div-1,Cl.1.2</b>	<b>1/2/2</b>	<b>Maintenance and Service Buildings</b>					
Div-1,Cl.1.2	1/2/2b	Maintain and Service Semi-Permanent Engineer's Field Office	Month	48.00			
Div-1,Cl.1.2	1/2/2c	Maintain and Service Semi-Permanent Engineer's Residential Accommodation.	Month	48.00			
Div-1,Cl.1.2	1/2/2d	Maintain and Service Semi-Permanent Engineer's Laboratory	Month	48.00			
Div-1,Cl.1.2	1/2/2e	Maintain and Service Inspection Hut	Hut-Month	96.00			

\*Note: Pay Item No. 1/1/1a (i.e. Maintenance and Protection of Traffic & Traffic Management during construction phase) of Phase-I shall not be less than 0.45% of Phase-I Bid Price. If the quoted price of Pay Item No. 1/1/1a of Phase-I is less than 0.45%, then for evaluation purpose 0.45% shall be considered. If it is more than 0.45%, then the same will be considered for evaluation and award.



## SYLHET-CHARKHAI-SHEOLA HIGHWAY IMPROVEMENT PROJECT

**Division-1, Bill No. 1: General & Site Facilities**

Specification Ref. No.	Pay Item No.	Item Description	Unit	Quantity	Unit Rate (BDT)		Amount (BDT)
					In Figures	In Words	
Div-1,Cl.1.1	1/1/1a	Maintenance and Protection of Traffic & Traffic Management during construction phase*	Km-Month	219.06			
Div-1,Cl.1.1	1/1/1b	Maintenance of existing road (special maintenance) during construction phase	PS	1.00	20,000,000.00	Taka Two Crore.	20,000,000.00
<b>Div-1,Cl.1.2</b>	<b>1/2/1</b>	<b>Engineer's Office and other Facilities</b>					
Div-1,Cl.1.2	1/2/1b	Provide Engineer's Semi-permanent Office Building	Sqm	300.00			
Div-1,Cl.1.2	1/2/1c	Provide Engineer's Semi-Permanent Residential Accommodation.	Sqm	450.00			
Div-1,Cl.1.2	1/2/1d	Provide Engineer's Semi-permanent Field Laboratory Building	Sqm	200.00			
Div-1,Cl.1.2	1/2/1e	Provide Inspection Hut (30 Square Metre)	Nos.	1.00			
<b>Div-1,Cl.1.2</b>	<b>1/2/2</b>	<b>Maintenance and Service Buildings</b>					
Div-1,Cl.1.2	1/2/2b	Maintain and Service Semi-Permanent Engineer's Field Office	Month	48.00			
Div-1,Cl.1.2	1/2/2c	Maintain and Service Semi-Permanent Engineer's Residential Accommodation.	Month	48.00			
Div-1,Cl.1.2	1/2/2d	Maintain and Service Semi-Permanent Engineer's Laboratory	Month	48.00			
Div-1,Cl.1.2	1/2/2e	Maintain and Service Inspection Hut	Hut-Month	48.00			
<p><i>*Note: Pay Item No. 1/1/1a (i.e. Maintenance and Protection of Traffic &amp; Traffic Management during construction phase) of Phase-I shall not be less than 0.30% of Phase-I Bid Price. If the quoted price of Pay Item No. 1/1/1a of Phase-I is less than 0.30%, then for evaluation purpose 0.30% shall be considered. If it is more than 0.30%, then the same will be considered for evaluation and award.</i></p>							



LIST OF STRUCTURES

ATTACHMENT-4

STR ID	CHAINAGE	EXISTING STRUCTURE			PROPOSED STRUCTURE				DRAWING REFERENCE
		TYPE	SIZE	LENGTH / WIDTH	TYPE	SIZE	LENGTH / WIDTH	REMARK	
027	37+364	BC	1-4.6X3.0	-	BC	1-5X3.0	-	REPLACE BY BC UPTO FULL ROAD WIDTH	A-301, A-302, B-N1-01, B-N1-02, B-N1-03, B-N1-04, B-N1-05
UP-01	38+089	-	-	-	UP	1-8X5.0	-	NEW UNDERPASS	A-301, A-302, EW-501, EW-502, EW-503
BR-02	38+141	PC BR	5-(33+33+86.4+33+33)	218.4	STEEL TRUSS & PC BOX	4X65.000+115.000+4X65.000	635	BRIDGE	A-301, A-302, A-303, A-304, A-305, A-306, C1-BR02-01, C1-BR02-02, C2-BR02-01, C2-BR02-02, C2-BR02-03, C2-BR02-04, C2-BR02-05, C2-BR02-06, C2-BR02-07, C4-EW115-00, C4-EW115-01, C4-EW115-02, C4-EW115-03, C4-EW115-04, C4-EW115-05, C4-EW115-06, C4-EW115-07, C4-EW115-08, C4-EW115-09, C4-EW115-10, C4-EW115-11, C4-EW115-12, C4-EW115-13, C4-EW115-14, C4-EW115-15, C4-EW115-16, C4-EW115-17, C4-EW115-18, C4-EW115-19, C4-EW115-20, C4-EW115-21, C4-EW115-22, C4-EW115-23, C4-EW115-24, C4-EW115-25, C4-EW115-26, C4-EW115-27, C4-EW115-28, C4-EW115-29, C4-EW115-30, C4-EW115-31, C4-EW115-32, C4-EW115-33, C4-EW115-34, C4-EW115-35, C4-EW115-36, C4-EW115-37, C4-EW115-38, C4-EW115-39, C4-EW115-40, C4-EW115-41, C4-EW115-42, C4-EW115-43, C4-EW115-44, C4-EW115-45, C4-EW115-46, C4-EW115-47, C4-EW115-48, C4-EW115-49, C4-EW115-50, C4-EW115-51, C4-EW115-52, C4-EW115-53, C4-EW115-54, C4-EW115-55, C4-EW115-56, C4-EW115-57, C4-EW115-58, C4-EW115-59, C4-EW115-60, C4-EW115-61, C4-EW115-62, C4-EW115-63, C4-EW115-64, C4-EW115-65, C4-EW115-66, C4-EW115-67, C4-EW115-68, C4-EW115-69, C4-EW115-70, C4-EW115-71, C4-EW115-74, C4-EW115-75, C4-EW115-76, C4-EW115-77, C4-EW115-78, C4-EW115-79, C4-EW115-80, C4-EW115-81, C4-EW115-82, C4-655-01, C4-655-02, C4-655-03, C4-655-04, C4-655-05, C4-655-06, C4-655-07, C4-655-08, C4-655-09, C4-655-10, C4-655-11, C4-655-12, C5-655-01, C5-655-02, C5-655-03, C6-EW115-01, C6-EW115-02, C6-115-01, C6-115-02, C6-115-03, C6-115-04, C6-115-05, C6-115-06, C6-115-07, C6-655-01, C6-655-02, C6-655-03, C6-655-04, C7-001, C7-002, C7-100  DELETED DRAWING NO. C6-115-01, C6-115-02, C6-115-03, C6-115-04, C6-115-05, C6-115-07 ADDED DRAWING NO. C6-EW115-01, C6-EW115-02
UP-02	38+848	-	-	-	UP	1-8.0X5.0	-	NEW UNDERPASS	A-301, A-302, EW-501, EW-502, EW-503
028	38+905	BC	1-4.6X3.0	-	BC	1-5.0X3.0	-	NEW ROAD ALIGNMENT	A-301, A-302, B-N1-01, B-N1-02, B-N1-03, B-N1-04, B-N1-05
029	39+386	BC	1-3.0X3.0	-	BC	1-3.0X3.5	-	REPLACE BY BC UPTO FULL ROAD WIDTH	A-301, A-302, B-N1-01, B-N1-02, B-N1-03, B-N1-04, B-N1-05
030	40+358	BC	2-6.0X5.5	-	BC	2-6.0X6.0	-	REPLACE BY BC UPTO FULL ROAD WIDTH	A-301, A-302, B-N2-01, B-N2-02, B-N2-03, B-N2-04, B-N2-05
031	41+679	BC	4-6.0X5.0	-	BC	4-6.0X6.0	-	REPLACE BY BC UPTO FULL ROAD WIDTH	B-N4-01, B-N4-02, B-N4-01, B-N4-02, B-N2-03, B-N2-04, B-N2-05
BR-03	42+588	RC BR	3-(17+17+17)	51	RC BR	3X18.29	54.87	NEW TYPE-A BRIDGE	A-301, A-302, C1-BR03-01, C1-BR03-02, C2-BR03-01, C3-A180-01, C3-A180-02, C4-180-01, C4-A180-02, C5-A501-01, C5-A501-02, C5-A501-03, C6-A180-01, C6-A180-02, C6-A180-03, C7-001, C7-002, C7-003, C7-100, C7-180-01

STRUCTURE TYPE ABBREVIATION :

PC BR = PRESTRESSED CONCRETE BRIDGE  
RC BR = REINFORCED CONCRETE BRIDGE  
RCD BR = RCC DECK SLAB BRIDGE  
OVP = OVERPASS  
FLY = FLYOVER

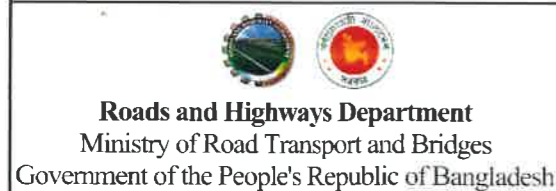
BC = BOX CULVERT  
UP = UNDERPASS  
SBC = SLAB CULVERT  
SRC = STEEL GIRDER AND RCC DECK BRIDGE  
AM = ARCH MASONRY

BRIDGE TYPE ABBREVIATION :

TYPE - A = BRIDGE WITH 2 TRAFFIC LANES & SMVT LANE ON ONE SIDE.  
TYPE - B = BRIDGE WITH 4 TRAFFIC LANES & SMVT LANE ON BOTH SIDE.  
TYPE - E = BRIDGE WITH 4 TRAFFIC LANES & SMVT LANE ON ONE SIDE.  
TYPE - C = DEDICATED SMVT LANES BRIDGE.  
TYPE - D1 = FLYOVER WITH 4 TRAFFIC LANES ONLY.



NOT FOR CONSTRUCTION



CONSULTANT :  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

PROJECT:	TITLE	NAME	REVISION:	ROAD NAME: SYLHET - CHARKHAI - SHEOLA HIGHWAY
Consultancy Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	DESIGN BY: SK	Rev. No.	REVIEWED & UPDATED BY: MD.SHAHRIAR KABIR BHUIYAN	DWG TITLE: LIST OF STRUCTURES
	CHECK BY: ZNH		CHECKED & SUBMITTED BY: MD.ABDUL HOQUE	
	DRAWN BY: JM			
	TEAM LEADER: RV			
	SUBMITTED BY: RV			
CONTRACT NO: LOT-3				DWG. No: A-101 (MODIFIED)

DRAWING INDEX		
SI	DRAWING DESCRIPTION	DRAWING NUMBER
	*** LIST OF STRUCTURES	
1	LIST OF STRUCTURES-01	A-101
	*** DRAWING INDEX	# 02 DI
1	DRAWING INDEX-01	A-201
2	DRAWING INDEX-02	A-202
	*** GENERAL NOTE	
1	GENERAL NOTE-1	A-301
2	GENERAL NOTE-2	A-302
3	GENERAL NOTES FOR STEEL TRUSS	A-303
4	GENERAL NOTES FOR STEEL TRUSS	A-304
5	GENERAL NOTES FOR STEEL TRUSS	A-305
6	GENERAL NOTES FOR STEEL TRUSS	A-306
	*** GENERAL ARRANGEMENT DRAWINGS & BRIDGE LOCATION MAP	
1	BRIDGE LOCATION PLAN OF (65.000x4)m+115.000m+(65.000x4)m=635m PC TYPE-B BRIDGE AT CH: 38+141	C1-BR02-01
2	GENERAL ARRANGEMENT OF (65.000x4)m+115.000m+(65.000x4)m=635m PC TYPE-B BRIDGE AT CH: 38+141	C1-BR02-02
3	BRIDGE LOCATION PLAN (3x18.290)m=54.87m RC BRIDGE AT CH: 42+588	C1-BR03-01
4	GENERAL ARRANGEMENT OF (3x18.290)m=54.87m RC TYPE-A BRIDGE AT CH: 42+588	C1-BR03-02
	*** BORE LOG DRAWINGS	
1	BORELOG DETAILS (SHEET-01)	C2-BR02-01
2	BORELOG DETAILS (SHEET-02)	C2-BR02-02
3	BORELOG DETAILS (SHEET-03)	C2-BR02-03
4	BORELOG DETAILS (SHEET-04)	C2-BR02-04
5	BORELOG DETAILS (SHEET-05)	C2-BR02-05
6	BORELOG DETAILS (SHEET-06)	C2-BR02-06
7	BORELOG DETAILS (SHEET-07)	C2-BR02-07
8	BORELOG DETAILS (SHEET-01)	C2-BR03-01
	*** DECK	
1	DECK CONCRETE OUTLINE FOR 18.290m SPAN TYPE-A BRIDGE	C3-A180-01
2	REINFORCEMENT DETAIL OF DECK 18.290m SPAN TYPE-A BRIDGE	C3-A180-02
	*** GIRDER	
1	CONCRETE OUTLINE OF 18.24m SPAN RCC GIRDER	C4-180-01
2	REINFORCEMENT DETAILS OF 18.24m RCC GIRDER	C4-A180-02
3	ELEVATION & SECTION OF 65m BOX GIRDER FOR SHEOLA BRIDGE	C4-655-01
4	ELEVATION & SECTION OF 65m BOX GIRDER FOR SHEOLA BRIDGE	C4-655-02
5	CROSS SECTION 1-1 OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-03
6	CROSS SECTION 2-2 OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-04
7	CROSS SECTION 3-3 OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-05
8	CROSS SECTION 4-4 OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-06
9	TENDON OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-07
10	TENDON OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-08
11	TENDON STRESSING SEQUENCE OF 65m PC BOX GIRDER FOR SHEOLA BRIDGE	C4-655-09
12	REINFORCEMENT DETAILS OF 65m SPAN BOX GIRDER FOR SHEOLA BRIDGE	C4-655-10
13	REINFORCEMENT DETAILS OF 65m SPAN BOX GIRDER FOR SHEOLA BRIDGE	C4-655-11
14	REINFORCEMENT DETAILS OF 65m SPAN BOX GIRDER FOR SHEOLA BRIDGE	C4-655-12

DRAWING INDEX		
SI	DRAWING DESCRIPTION	DRAWING NUMBER
15	PLAN & ELEVATION OF 115m TRUSS	C4-EW115-00
16	ELEVATION SECTION	C4-EW115-01
17	STRUCTURAL DESIGN	C4-EW115-02
18	BOX SECTION TOP CHORD	C4-EW115-03
19	TRUSS TOP HORIZONTAL MEMBERS	C4-EW115-04
20	TRUSS TOP HORIZONTAL MEMBER SX1	C4-EW115-05
21	TRUSS TOP HORIZONTAL MEMBER SX2	C4-EW115-06
22	TRUSS TOP HORIZONTAL MEMBER SX3	C4-EW115-07
23	TRUSS TOP HORIZONTAL MEMBER SX4	C4-EW115-08
24	TRUSS BOTTOM HORIZONTAL MEMBERS	C4-EW115-09
25	TRUSS BOTTOM HORIZONTAL MEMBER XX1	C4-EW115-10
26	TRUSS BOTTOM HORIZONTAL MEMBER XX2	C4-EW115-11
27	TRUSS BOTTOM HORIZONTAL MEMBER XX3	C4-EW115-12
28	TRUSS BOTTOM HORIZONTAL MEMBER XX4	C4-EW115-13
29	TRUSS DIAGONAL MEMBERS	C4-EW115-14
30	TRUSS DIAGONAL MEMBER F1	C4-EW115-15
31	TRUSS DIAGONAL MEMBER F2-1	C4-EW115-16
32	TRUSS DIAGONAL MEMBER F2-2	C4-EW115-17
33	TRUSS DIAGONAL MEMBER F3-1	C4-EW115-18
34	TRUSS DIAGONAL MEMBER F3-2	C4-EW115-19
35	TRUSS DIAGONAL MEMBER F4-1	C4-EW115-20
36	TRUSS DIAGONAL MEMBER F4-2	C4-EW115-21
37	TRUSS DIAGONAL MEMBER F4-3	C4-EW115-22
38	TRUSS DIAGONAL MEMBER F4-4	C4-EW115-23
39	TRUSS TOP NODE A11 AND A1'	C4-EW115-24
40	TRUSS TOP NODE A3 AND A3'	C4-EW115-25
41	TRUSS TOP NODE A5 AND A5'	C4-EW115-26
42	TRUSS TOP NODE A7 AND A7'	C4-EW115-27
43	TRUSS TOP NODE A9 AND A9'	C4-EW115-28
44	TRUSS BOTTOM NODE E0	C4-EW115-29
45	TRUSS BOTTOM NODE E2	C4-EW115-30
46	TRUSS BOTTOM NODE E4	C4-EW115-31
47	TRUSS BOTTOM NODE E6	C4-EW115-32
48	TRUSS BOTTOM NODE E8	C4-EW115-33
49	TRUSS BOTTOM NODE E10	C4-EW115-34
50	TOP LATERAL BRACING 1	C4-EW115-35
51	TOP BRACING DIAGONAL MEMBERS	C4-EW115-36
52	TOP BRACING DIAGONAL MEMBER	C4-EW115-37
53	TOP BRACING CONNECTION DETAIL ASP2	C4-EW115-38
54	TOP BRACING CONNECTION DETAIL ASP3	C4-EW115-39
55	TOP BRACING CONNECTION DETAIL ASP4	C4-EW115-40
56	TOP BRACING CONNECTION DETAIL ASP5	C4-EW115-41
57	TOP BRACING CONNECTION DETAIL ASP6	C4-EW115-42
58	TOP BRACING CONNECTION DETAIL ASP7	C4-EW115-43
59	TOP BRACING CONNECTION DETAIL ASP8	C4-EW115-44
60	BOTTOM LATERAL BRACING	C4-EW115-45
61	BOTTOM LATERAL BRACING XJ1	C4-EW115-46

DRAWING INDEX		
SI	DRAWING DESCRIPTION	DRAWING NUMBER
62	BOTTOM LATERAL BRACING XJ2	C4-EW115-47
63	BOTTOM LATERAL BRACING XJ3	C4-EW115-48
64	BOTTOM LATERAL BRACING XJ4	C4-EW115-49
65	CONNECTION DETAIL XP1	C4-EW115-50
66	CONNECTION DETAIL XP2	C4-EW115-51
67	CONNECTION DETAIL XP3	C4-EW115-52
68	CONNECTION DETAIL XP4	C4-EW115-53
69	BOTTOM LATERAL BRACING (E0-E2)	C4-EW115-54
70	BOTTOM LATERAL BRACING (E2-E4,E2'-E4')	C4-EW115-55
71	BOTTOM LATERAL BRACING (E6-E8,E6'-E8')	C4-EW115-56
72	BOTTOM LATERAL BRACING (E8-E10,E8'-E10')	C4-EW115-57
73	MID CROSS BEAM 1	C4-EW115-58
74	MID CROSS BEAM 2	C4-EW115-59
75	END CROSS BEAM	C4-EW115-60
76	LONGITUDINAL BEAM 1	C4-EW115-61
77	LONGITUDINAL BEAM 2	C4-EW115-62
78	PORTAL FRAME	C4-EW115-63
79	PORTAL FRAME ERECTION	C4-EW115-64
80	HANDRAIL	C4-EW115-65
81	LG1 OF HANDRAIL	C4-EW115-66
82	LG2 OF HANDRAIL	C4-EW115-67
83	LG3 OF HANDRAIL	C4-EW115-68
84	LG4 OF HANDRAIL	C4-EW115-69
85	CONCRETE DECK LAYOUT	C4-EW115-70
86	RCC DETAIL OF ROADWAY	C4-EW115-71
87	EXPANSION & CONTRACTION	C4-EW115-74
88	SUPPORT ARRANGEMENT BEARING	C4-EW115-75
89	BEARING INSTALLATION	C4-EW115-76
90	BEARINGPAD 1	C4-EW115-77
91	BEARINGPAD 2	C4-EW115-78
92	FIXED SPHERICAL BEARING	C4-EW115-79
93	TRANSVERSE MOVABLE SPHERICAL BEARING	C4-EW115-80
94	LONGITUDINAL MOVABLE SPHERICAL BEARING	C4-EW115-81
95	BI-DIRECTIONAL MOVABLE SPHERICAL BEARING	C4-EW115-82
	*** ABUTMENT	
1	CONCRETE OUTLINE OF 5m HEIGHT ABUTMENT FOR TYPE-A BRIDGE	C5-A501-01
2	REINFORCEMENT DETAILS OF 5m HEIGHT ABUTMENT FOR TYPE-A BRIDGE	C5-A501-02
3	REINFORCEMENT DETAILS OF 5m HEIGHT ABUTMENT FOR TYPE-A BRIDGE	C5-A501-03
4	CONCRETE OUTLINE OF 7.0m HEIGHT ABUTMENT FOR SHEOLA BRIDGE	C5-655-01
5	REINFORCEMENT DETAIL OF 7.0m HEIGHT ABUTMENT FOR SHEOLA BRIDGE	C5-655-02
6	REINFORCEMENT DETAIL OF 7.0m HEIGHT ABUTMENT FOR SHEOLA BRIDGE	C5-655-03
	*** PIER	
1	CONCRETE OUTLINE OF PIER FOR 115m & 65m SPAN BRIDGE	C6-EW115-01, ADDED
2	REINFORCEMENT DETAILS OF PIER FOR 115m & 65 SPAN BRIDGE	C6-EW115-02, ADDED
1	CONCRETE OUTLINE OF PIER FOR 115m & 65m SPAN BRIDGE	<del>C6-115-01; DELETED</del>
2	CONCRETE OUTLINE OF PIER FOR 115m & 65m SPAN BRIDGE	<del>C6-115-02; DELETED</del>

NOT FOR CONSTRUCTION

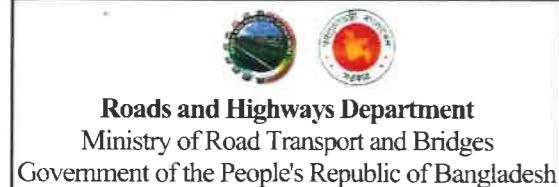
<p><b>Roads and Highways Department</b> Ministry of Road Transport and Bridges Government of the People's Republic of Bangladesh</p>	<p>CONSULTANT:</p> <p><b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh</p>	PROJECT:	TITLE	NAME	REVISION:	ROAD NAME: SYLHET - CHARKHAI - SHEOLA HIGHWAY	
		Consultancy Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	DESIGN BY: SK	SK	Rev. No.	REVIEWED & UPDATED BY:	DWG TITLE:
			CHECK BY: ZNH	ZNH		MD.SHAHRIAR KABIR BHUIYAN	DRAWING INDEX-01
			DRAWN BY: JM	JM		CHECKED & SUBMITTED BY:	
	TEAM LEADER: RV	RV		MD.ABDUL HOQUE			
		SUBMITTED BY: RV				DWG. No: <b>A-201 (MODIFIED)</b>	

**DRAWING INDEX**

SI	DRAWING DESCRIPTION	DRAWING NUMBER
3	REINFORCEMENT DETAILS OF PIER FOR 115m & 65 SPAN BRIDGE	C6-115-03, DELETED
4	REINFORCEMENT DETAILS OF PIER FOR 115m & 65m SPAN BRIDGE	C6-115-04, DELETED
5	REINFORCEMENT SCHEDULE OF PIER FOR 115m & 65m SPAN BRIDGE	C6-115-05, DELETED
6	REINFORCEMENT DETAILS OF PILE FOR 115m & 65M SPAN BRIDGE	C6-115-06
7	BEARING DETAILS FOR 115m & 65m SPAN	C6-115-07, DELETED
8	CONCRETE OUTLINE OF PIER FOR 65m SPAN	C6-655-01
9	REINFORCEMENT DETAILS OF PIER FOR 65m SPAN	C6-655-02
10	BEARING DETAILS FOR 65m SPAN	C6-655-03
11	REINFORCEMENT DETAILS OF PILE FOR 65M SPAN BRIDGE	C6-655-04
12	PIER CONCRETE OUTLINE FOR RC GIRDER TYPE-A BRIDGE	C6-A180-01
13	PIER REINFORCEMENT OUTLINE FOR RC GIRDER TYPE-A BRIDGE	C6-A180-02
14	PIER REINFORCEMENT OUTLINE FOR RC GIRDER TYPE-A BRIDGE	C6-A180-03
*** MISCELLANEOUS		
1	DECK RAIL AND POST DETAIL	C7-001
2	SLOPE PROTECTION DETAIL FOR ROAD EMBANKMENT SUBJECTED TO EROSION & BRIDGE APPROACH	C7-002
3	DETAIL OF DEBONDED CONTINUOUS DECK SLAB	C7-003
4	LIGHT POLE DETAIL	C7-100
5	BEARING & EXPANSION JOINT DETAILS FOR 18.290m SPAN RC GIRDER	C7-180-01
*** UNDERPASS		
1	CONCRETE OUTLINE OF 1-VENT UNDERPASS (1-8.0X5.0)	EW-501
2	CONCRETE OUTLINE OF 1-VENT UNDERPASS (1-8.0X5.0)	EW-502
3	CONCRETE OUTLINE OF 1-VENT UNDERPASS (1-8.0X5.0)	EW-503
*** CULVERT		
1	CONCRETE OUTLINE OF 1 VENT BOX CULVERT (SHEET 1)	B-N1-01
2	CONCRETE OUTLINE OF 1 VENT BOX CULVERT (SHEET 2)	B-N1-02
3	REINFORCEMENT DETAILS OF 1 VENT BOX CULVERT (SHEET 1)	B-N1-03
4	REINFORCEMENT DETAILS OF 1 VENT BOX CULVERT (SHEET 2)	B-N1-04
5	REINFORCEMENT DETAILS OF 1 VENT BOX CULVERT (SHEET 3)	B-N1-05
6	CONCRETE OUTLINE OF 2 VENT BOX CULVERT (SHEET 1)	B-N2-01
7	CONCRETE OUTLINE OF 2 VENT BOX CULVERT (SHEET 2)	B-N2-02
8	REINFORCEMENT DETAILS OF MULTI VENT BOX CULVERT (SHEET 1)	B-N2-03
9	REINFORCEMENT DETAILS OF MULTI VENT BOX CULVERT (SHEET 2)	B-N2-04
10	REINFORCEMENT DETAILS OF MULTI VENT BOX CULVERT (SHEET 3)	B-N2-05
11	CONCRETE OUTLINE OF 4 OR MORE VENT BOX CULVERT (SHEET 1)	B-N4-01
12	CONCRETE OUTLINE OF 4 OR MORE VENT BOX CULVERT (SHEET 2)	B-N4-02



**NOT FOR CONSTRUCTION**

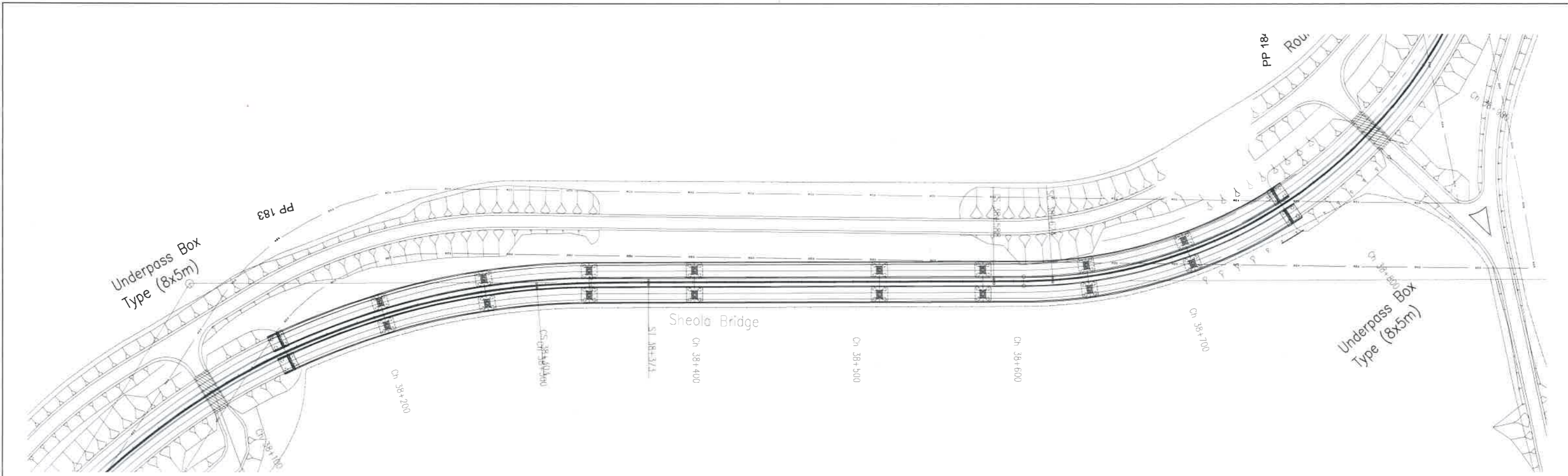


**CONSULTANT:**  

**BCL ASSOCIATES LIMITED**  
 Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
 Bir Uttam A K Khandaker Sarak,  
 Dhaka-1212, Bangladesh

PROJECT:	TITLE	NAME	REVISION:
<b>Consultancy Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project</b>	DESIGN BY:	SK	Rev. No.
	CHECK BY:	ZNH	REVIEWED & UPDATED BY:
	DRAWN BY:	JM	MD SHAHRIAR KABIR BHUIYAN
	TEAM LEADER:	RV	CHECKED & SUBMITTED BY:
	SUBMITTED BY:	RV	MD.ABDUL HOQUE <i>mahoq</i>

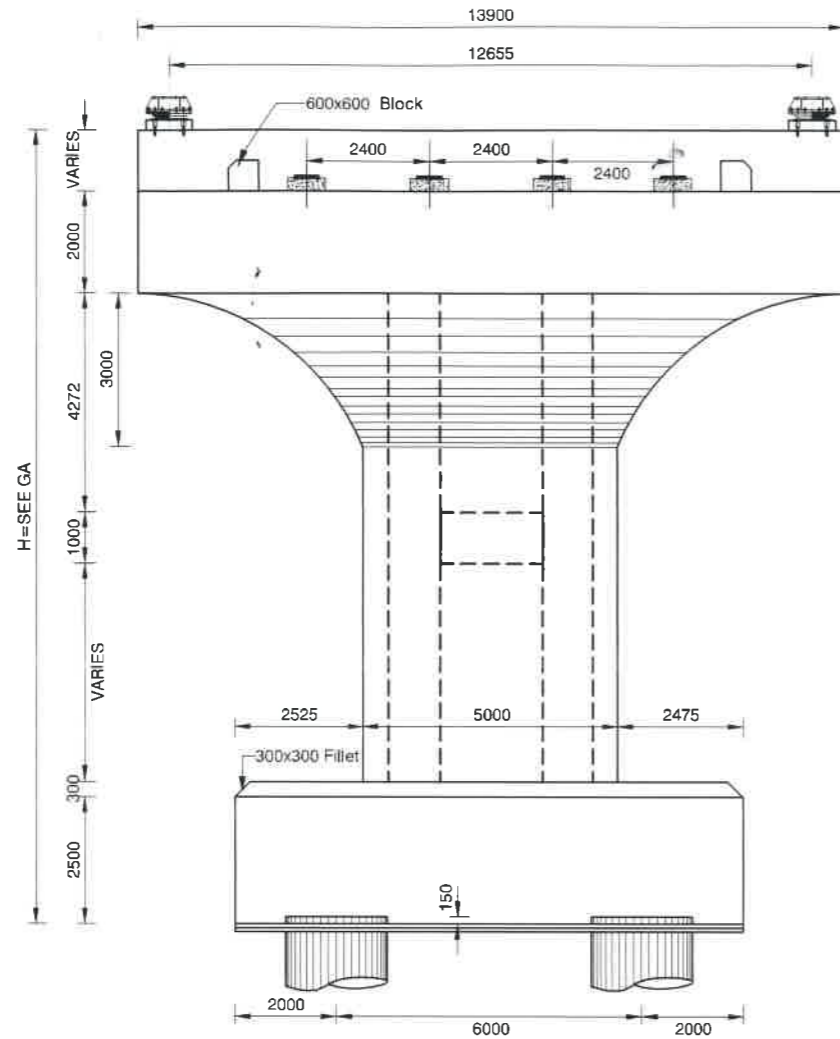
ROAD NAME:	SYLHET - CHARKHAI - SHEOLA HIGHWAY
DWG TITLE:	DRAWING INDEX-02
DWG. No.:	A-202 (MODIFIED)



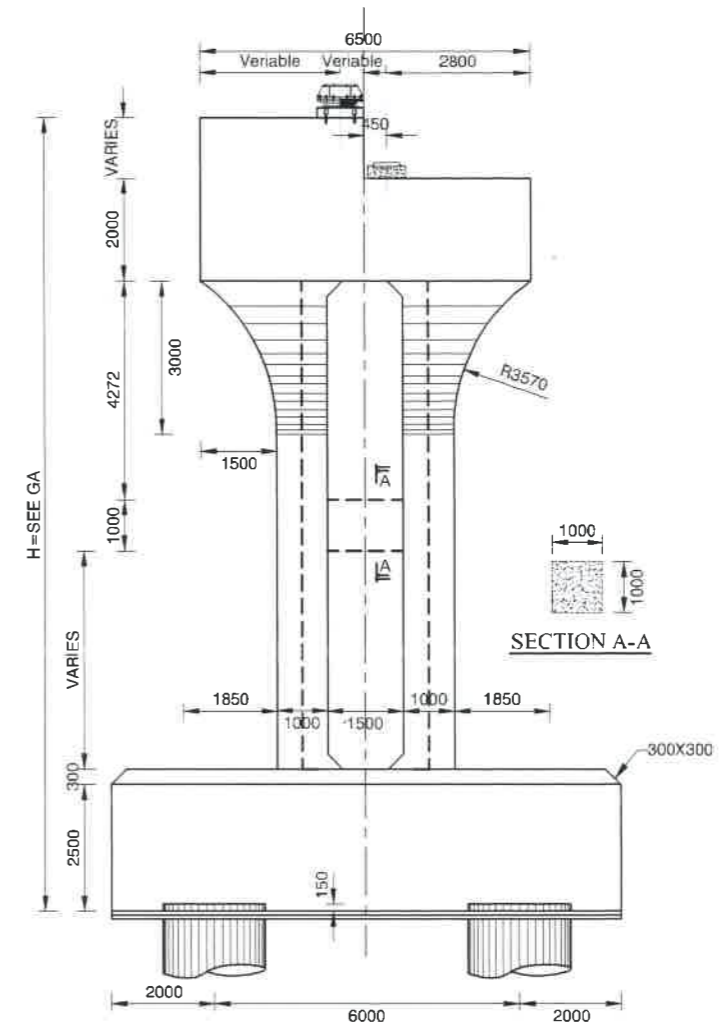
NOT FOR CONSTRUCTION

		<b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor) 1 Mohakhali, G.P. Bir Ullam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>PROJECT</b> Consultancy Services for Updating Design and Safeguard Documents for Sylhet-Charkhal Sheola Highway Improvement Project	<b>TITLE</b> LOCATION MAP OF BRIDGE AT CHAINAGE 36+141	<b>REVISION:</b> Rev. No. REVIEWED & UPDATED BY MD SHAHAR KAMR HUSSAIN CHECKED & SUBMITTED BY MD ARJUN HOQUE	<b>ROAD NAME:</b> SYLHET - CHARKHAL - SHEOLA HIGHWAY <b>CHAINAGE:</b> (65 00x4)m   115 000m   (65 00x4)m   635 000 <b>SCALE:</b> 1:1000 (MODIFIED)
		<b>DESIGN BY:</b> M.G. <b>CHECK BY:</b> P.H. <b>TRAINING BY:</b> A.M. <b>TEAM LEADER:</b> M.F. <b>SUBMITTED BY:</b> M.F.	<b>DATE:</b>	<b>DATE:</b>		
		<b>CONTRACT NO.:</b>	<b>DATE:</b>	<b>DATE:</b>		
		<b>CONTRACT NO.:</b>	<b>DATE:</b>	<b>DATE:</b>		

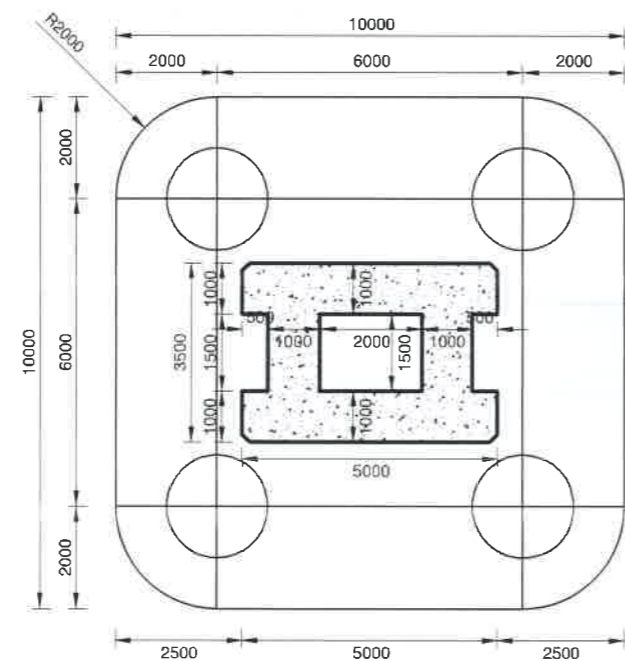




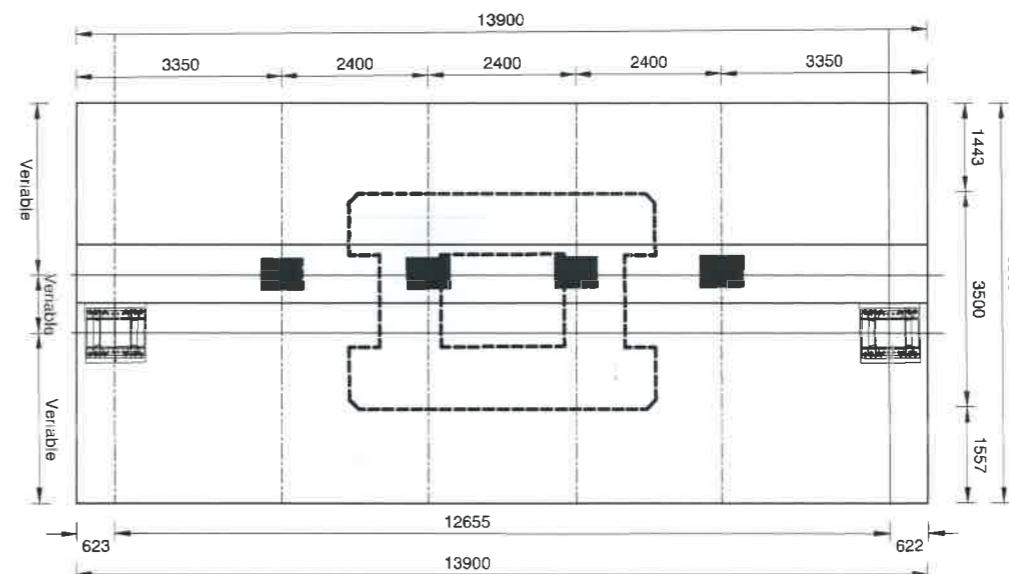
FRONT ELEVATION



SIDE ELEVATION FOR P4 & P5



PILE LAYOUT PLAN OF PIER



TOP PLAN OF PIER CAP



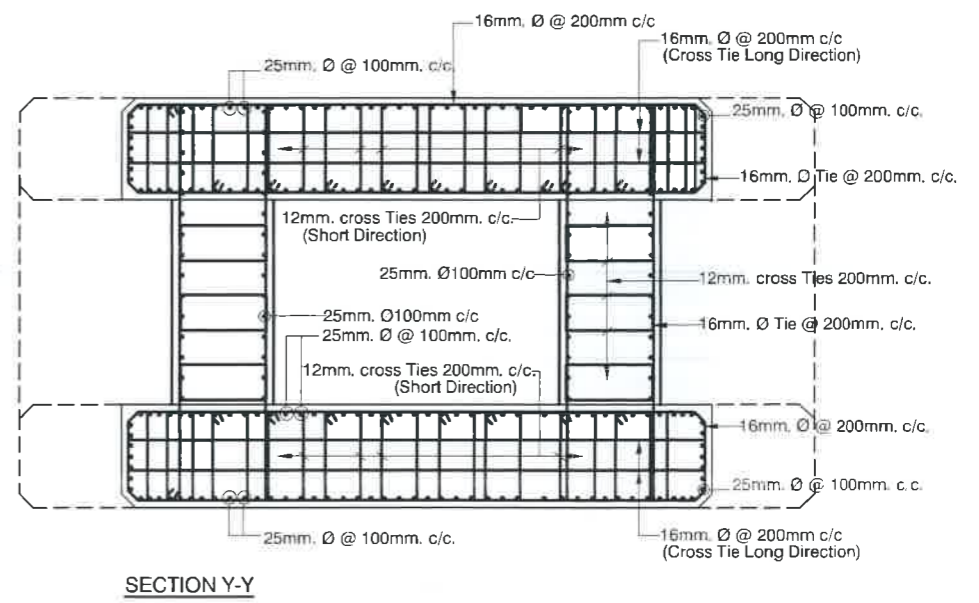
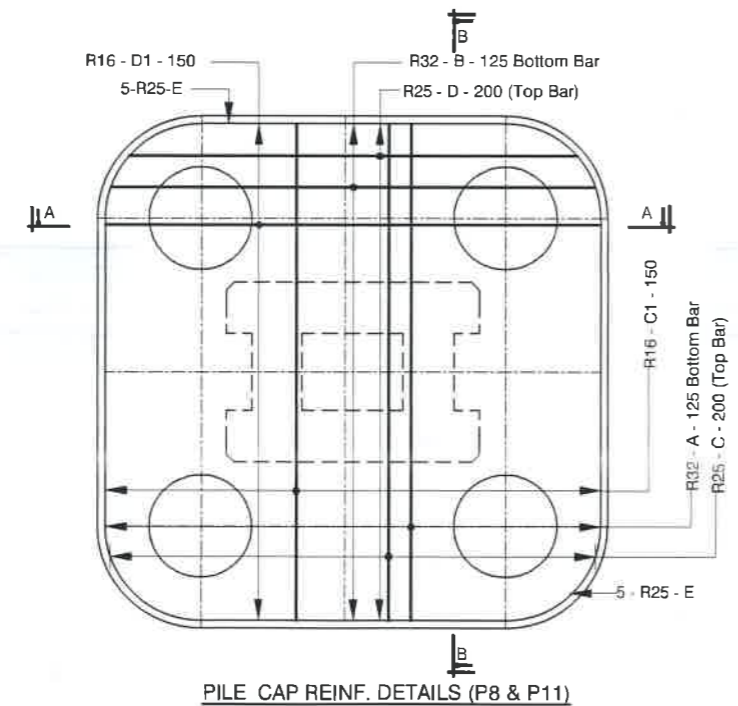
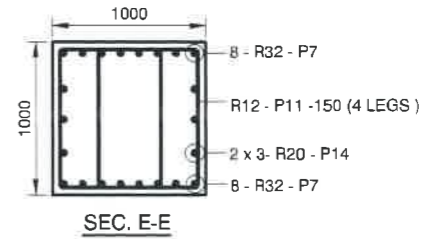
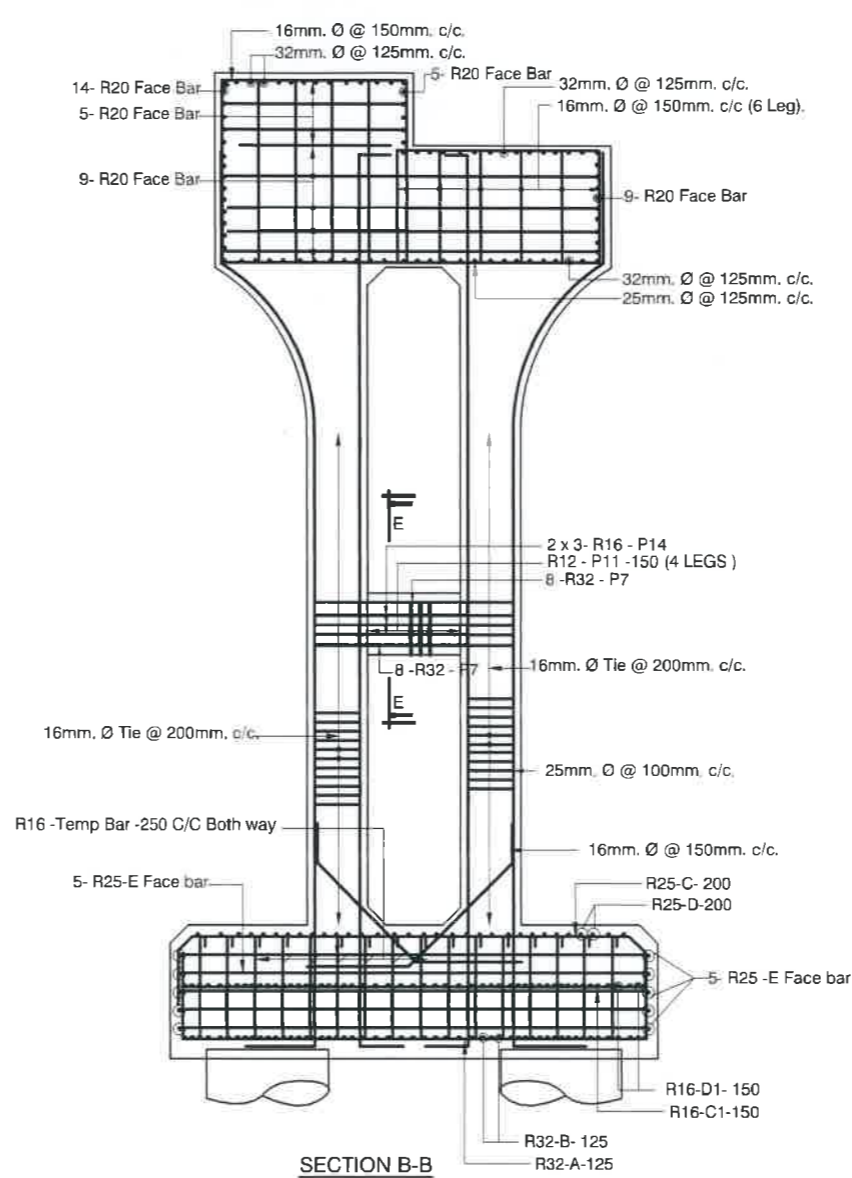
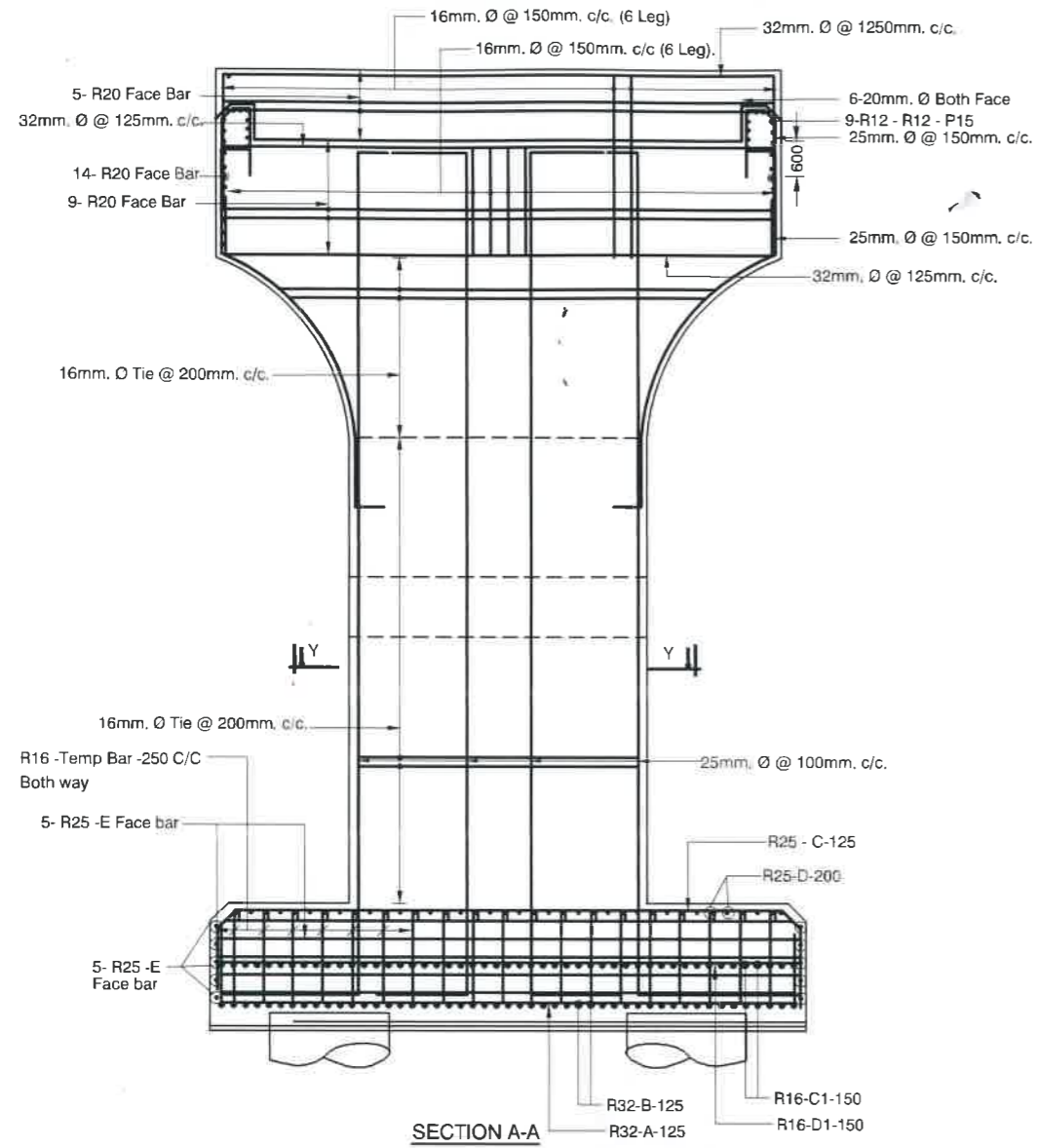
NOT FOR CONSTRUCTION

**Roads and Highways Department**  
Ministry of Road Transport and Bridges  
Government of the People's Republic of Bangladesh

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

PROJECT:	TITLE	NAME	REVISION:
Consultancy Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	DESIGN BY:	FU	Rev. No.
	CHECK BY:	FU	REVIEWED & UPDATED BY:
	DRAWN BY:	MJM	MD.SHAHRIAR KABIR BHUIYAN
	TEAM LEADER:	RV	CHECKED & SUBMITTED BY:
	SUBMITTED BY:	RV	MD.ABDUL HOQUE <i>mahoque</i>

ROAD NAME: SYLHET - CHARKHAI - SHEOLA HIGHWAY  
DWG TITLE: CONCRETE OUTLINE OF PIER FOR 115m & 65m SPAN  
CONTRACT NO: LOT-3  
DWG. No: C6-FW115-01 (MODIFIED)



**NOT FOR CONSTRUCTION**

**Roads and Highways Department**  
Ministry of Road Transport and Bridges  
Government of the People's Republic of Bangladesh

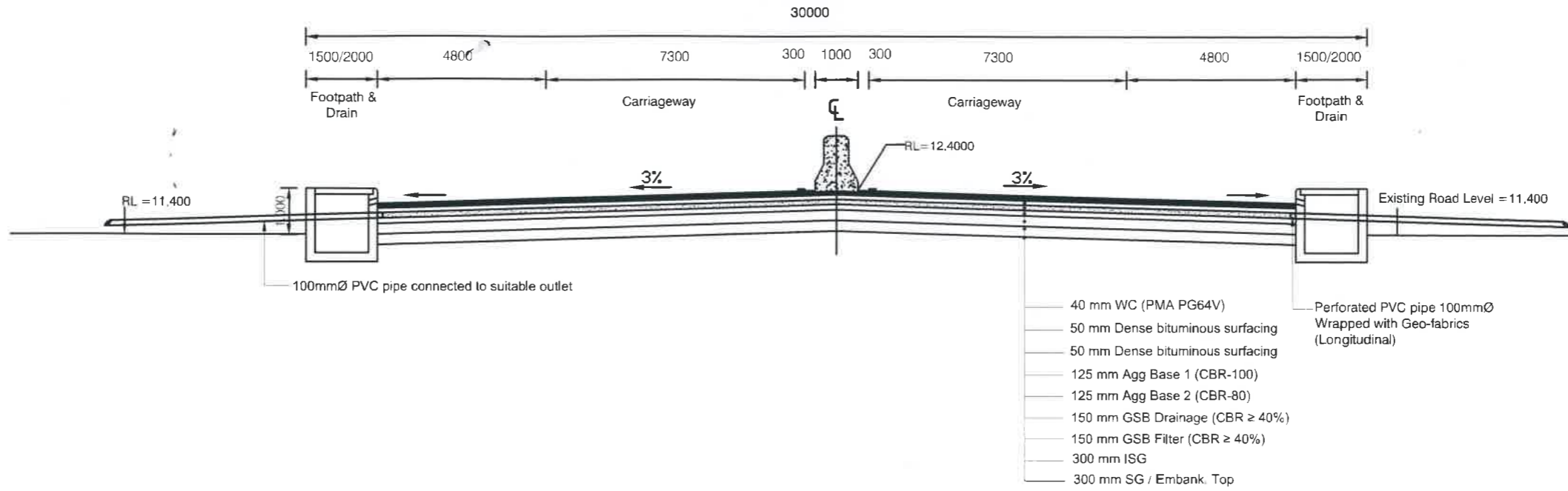
**CONSULTANT:**  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

**PROJECT:**  
Consultancy Services for Updating  
Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway  
Improvement Project

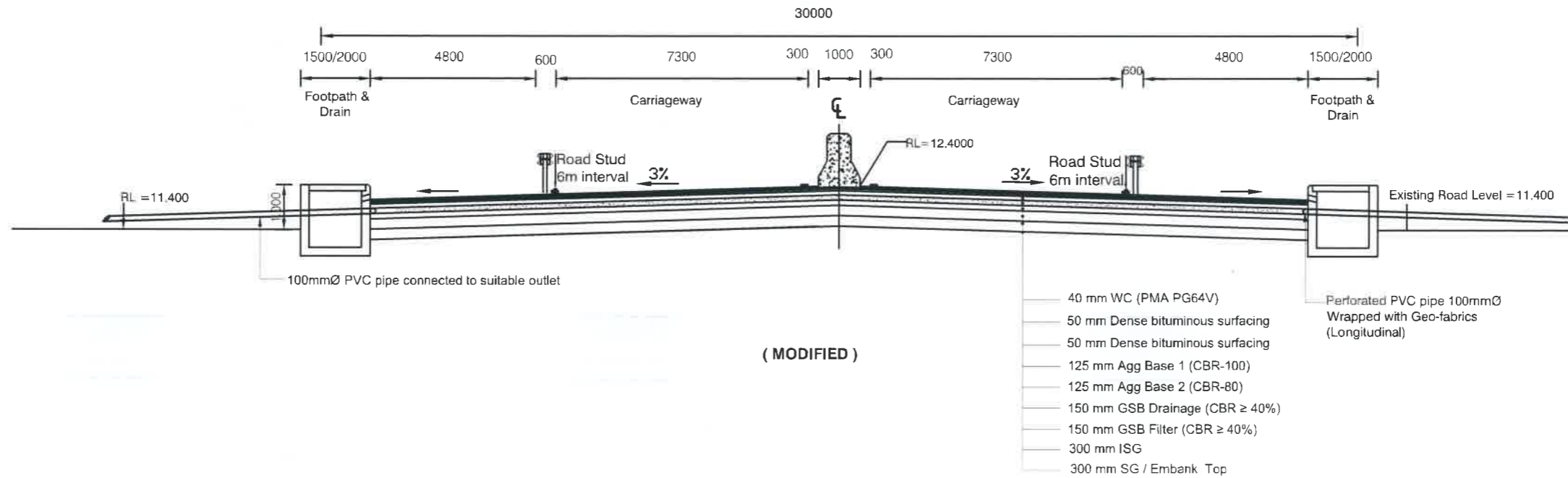
TITLE	NAME	REVISION:
DESIGN BY:	FU	Rev. No.
CHECK BY:	FU	REVIEWED & UPDATED BY:
DRAWN BY:	MJM	MD SHAHRIAR KABIR BHUIYAN
TEAM LEADER:	RV	CHECKED & SUBMITTED BY:
SUBMITTED BY:	RV	MD.ABDUL HOQUE <i>matuq</i>

**ROAD NAME:** SYLHET - CHARKHAI - SHEOLA HIGHWAY  
**DWG TITLE:** REINFORCEMENT DETAILS OF PIER  
FOR 115m & 65m SPAN  
**DWG No.:** C6-FW115-02 (MODIFIED)

TYPICAL ROAD CROSS SECTION FOR CITY AREA  
(Ch.1+000~ CH.6+400)



TYPICAL ROAD CROSS SECTION FOR CITY AREA  
(Ch.1+000~ CH.6+400)

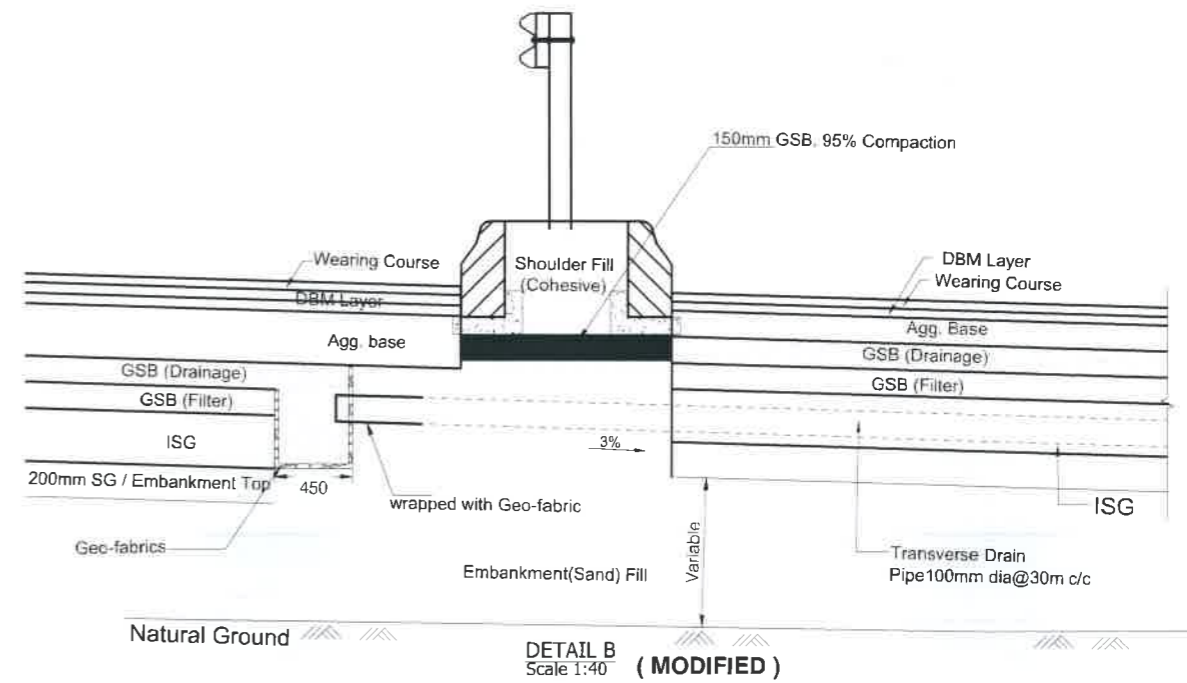
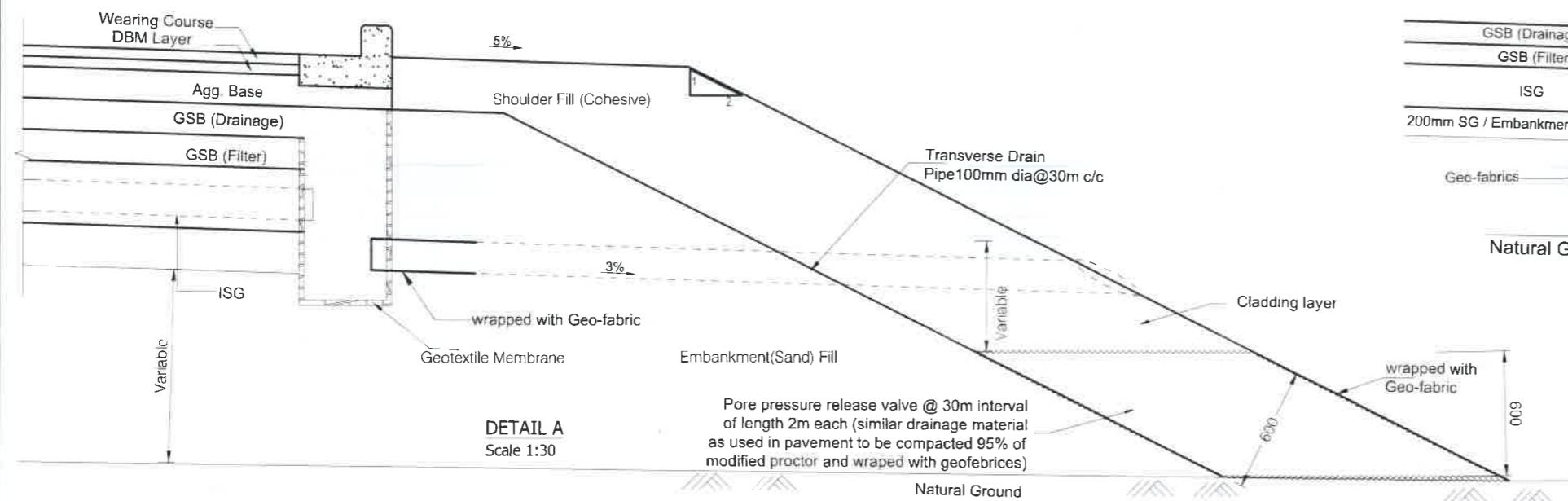
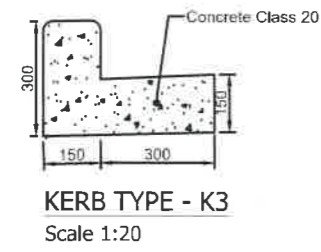
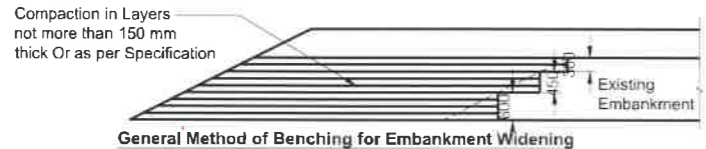
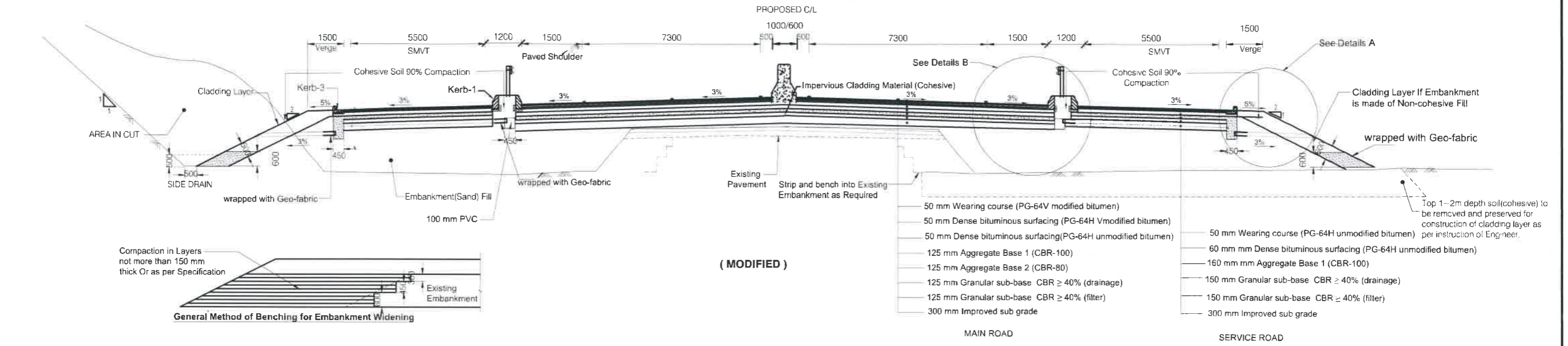


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**NOT FOR CONSTRUCTION**

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b>	<b>NAME</b>	DRAWING TITLE <b>GENERAL DRAWING</b> <b>TYPICAL ROAD CROSS SECTION FOR CITY</b> <b>AREA (CH. 1+000-CH.6+400)</b>	REV	DATE	DESCRIPTION	APPROVAL	
		DESIGN BY:	MMI		SCALE: NOT TO SCALE	DRAWING NO. SCS-HW-GD-C1 - 40			
		DRAWN BY:	BAK						
		CHECKED & SUBMITTED BY:							
		TEAM LEADER:	MAH						

TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR RURAL AREA  
SYLHET-SUTARKANDI



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

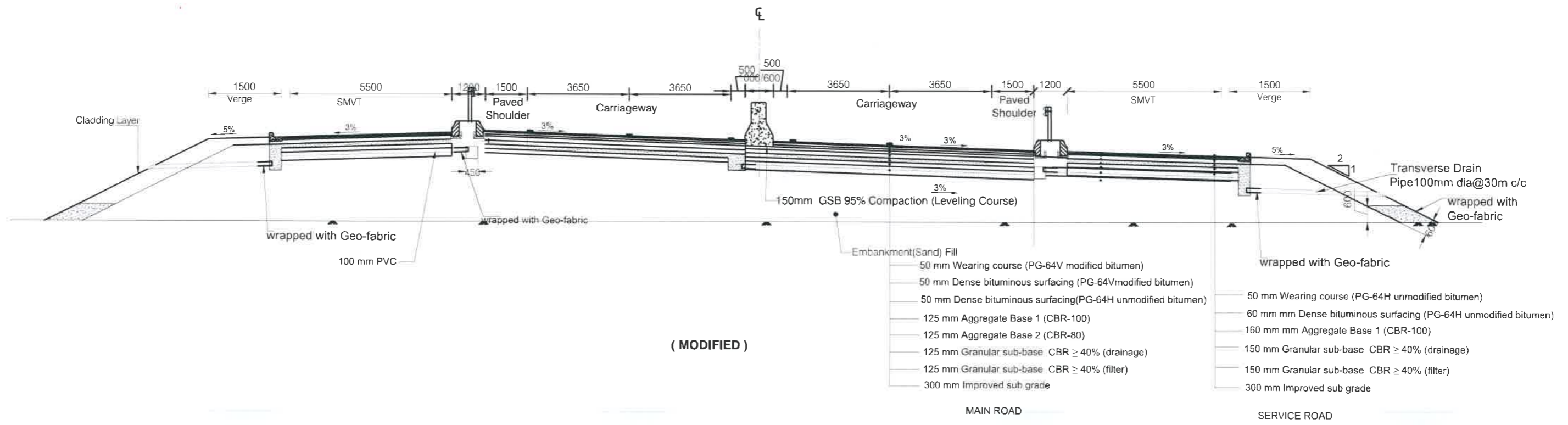
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**PAVEMENT DRAWINGS  
TYPICAL FLEXIBLE PAVEMENT CROSS  
SECTION FOR RURAL AREA  
(CH.18+900-CH.37+700)**

SCALE:  
NOT TO SCALE

DRAWING NO. SCS-HW-GD-C1 - 41

REV	DATE	DESCRIPTION	APPROVAL

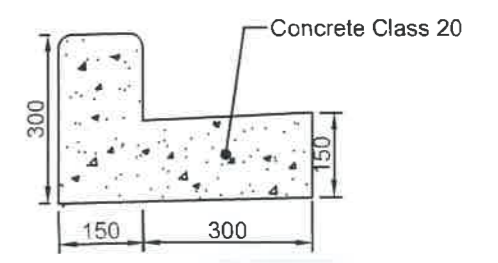
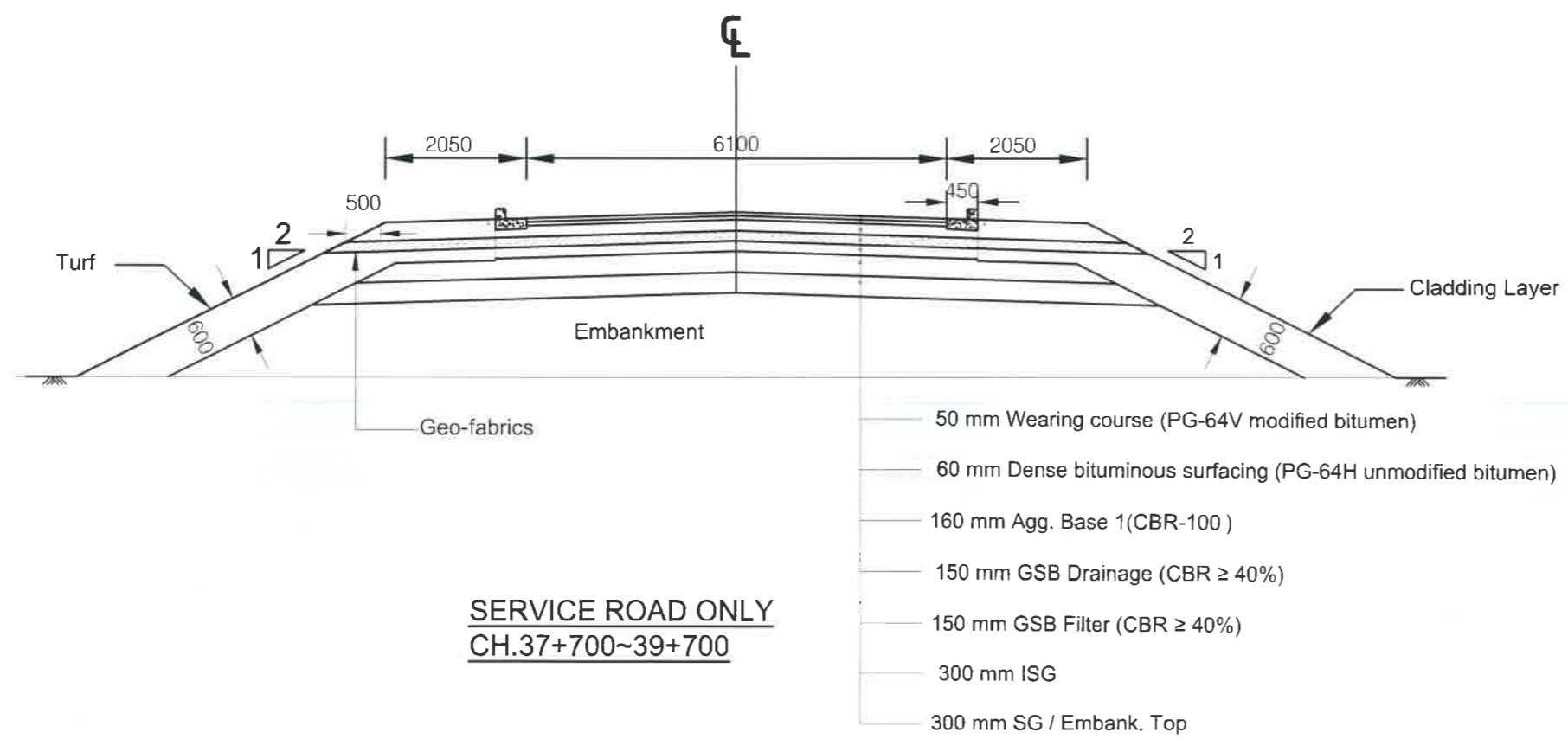
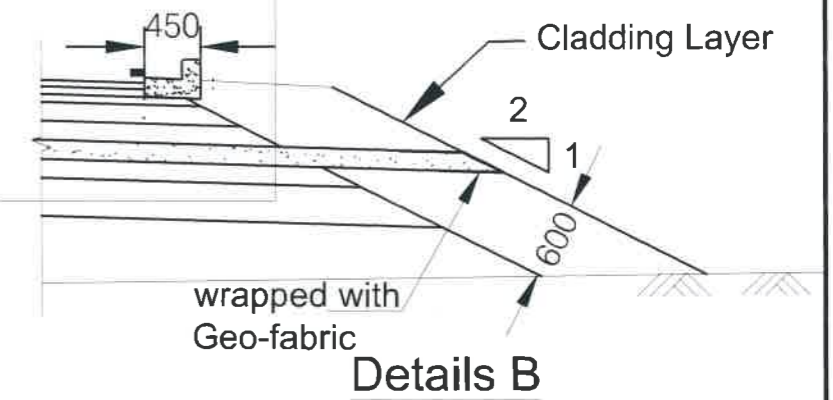
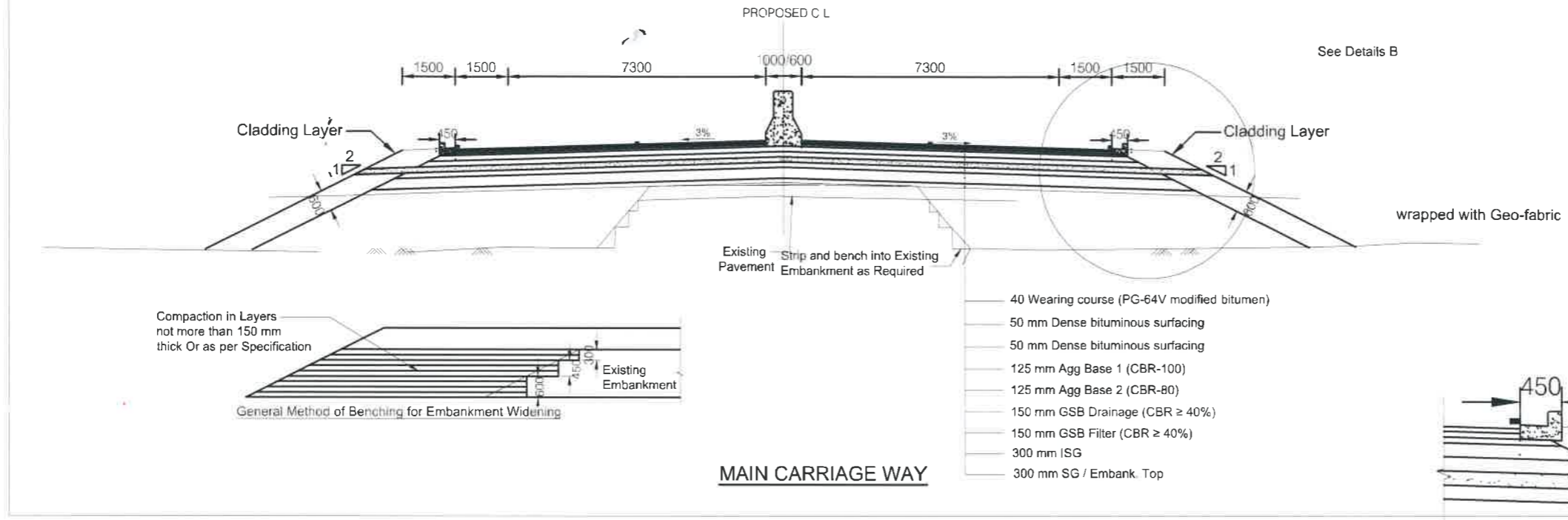
TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR SUPERELEVATED AREA  
 SYLHET-SUTARKANDI  
 (Ch.6+400~ CH.18+900)



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b>	<b>NAME</b>	DRAWING TITLE <b>PAVEMENT DRAWINGS                  TYPICAL FLEXIBLE PAVEMENT CROSS                  SECTION SUPERELEVATED AREA</b>	REV	DATE	DESCRIPTION	APPROVAL	
		DESIGN BY:	MMI		DRAWING NO. SCS-HW-GD-C1 - 42				
		DRAWN BY:	BAK		SCALE: NOT TO SCALE				
		CHECKED & SUBMITTED BY:							

TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR 4 LANE ROAD  
SYLHET-SUTARKANDI(CH.18+900~ CH.37+700)



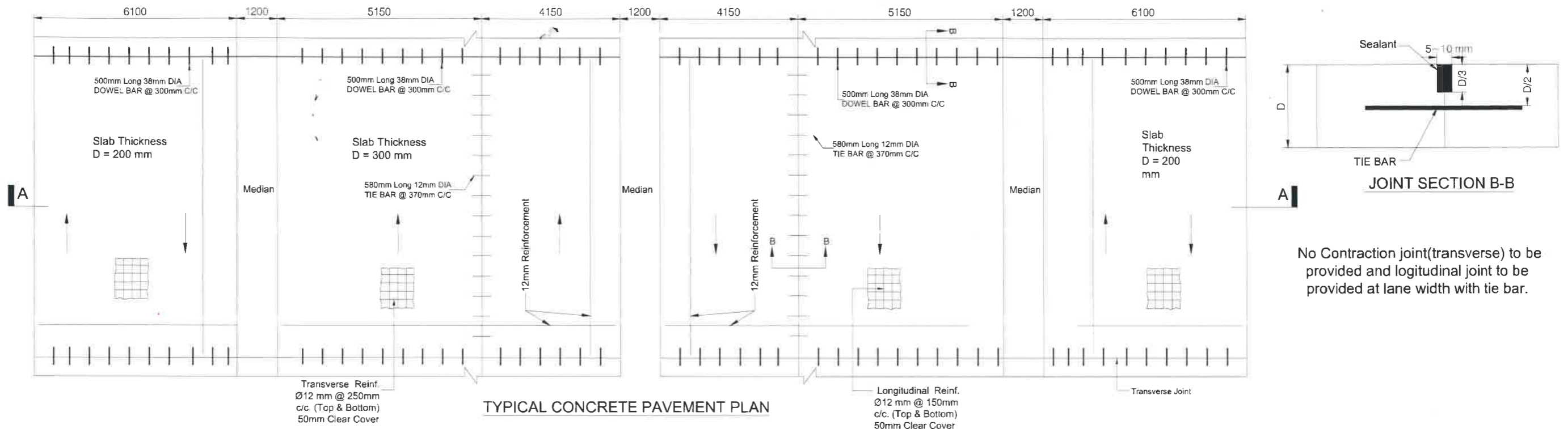
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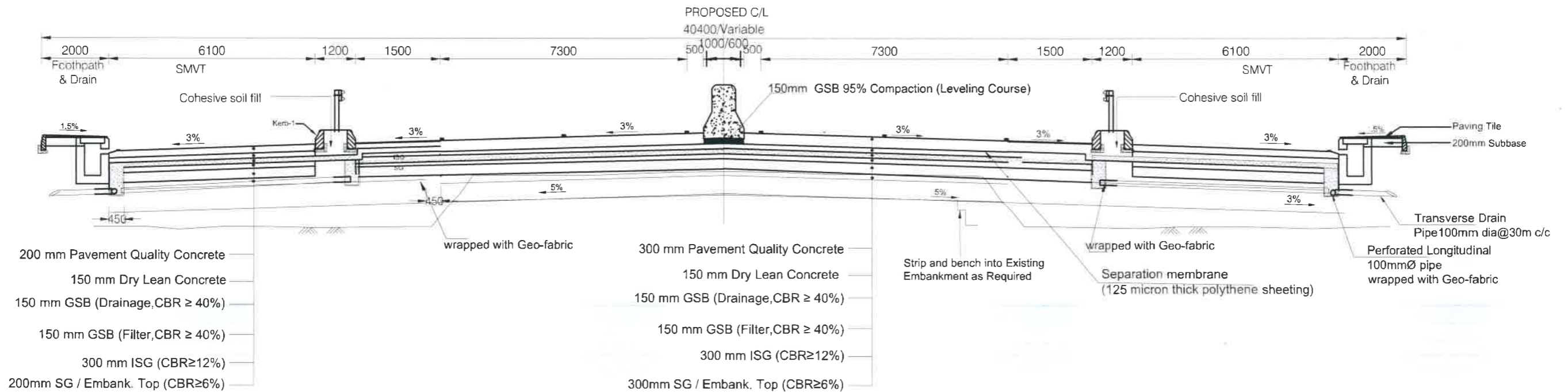
NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT: <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE DESIGN BY: MMI	NAME BAK	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL ROAD CROSS SECTION                  FOR BRIDGE 4 LANE ROAD                  (CH.18+900~CH.37+700)</b>	REV DATE DESCRIPTION APPROVAL
		CHECKED & SUBMITTED BY: TEAM LEADER: MAH	SCALE: NOT TO SCALE		DRAWING NO: SCS-HW-GD-C1 - 43

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
 SYLHET-SUTARKANDI  
 Continuous Reinforced Concrete Pavement (CRCP)



TYPICAL CONCRETE PAVEMENT PLAN



TYPICAL CONCRETE PAVEMENT SECTION: A-A

( MODIFIED )

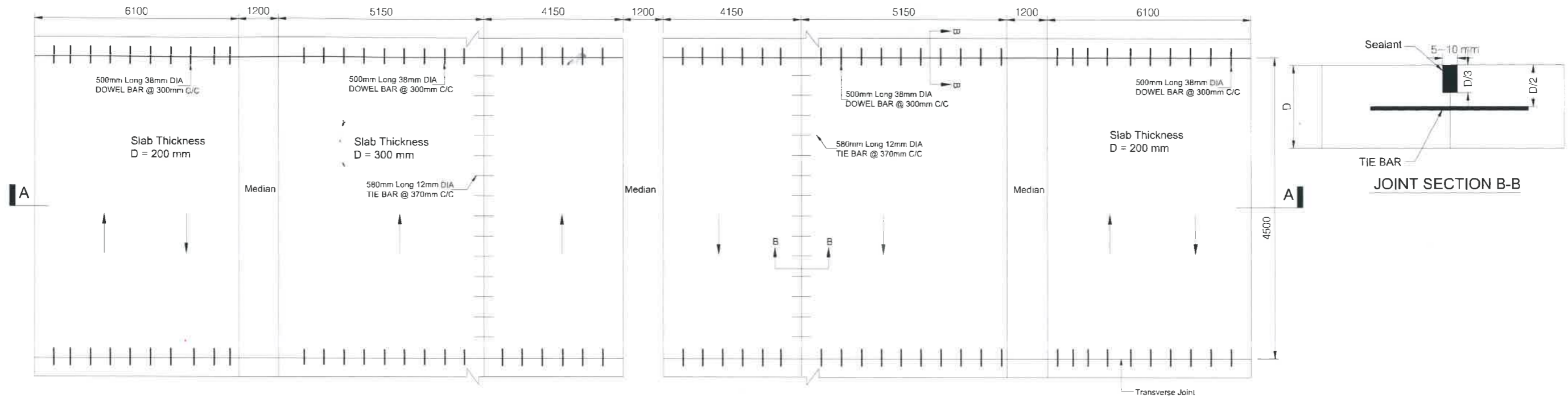


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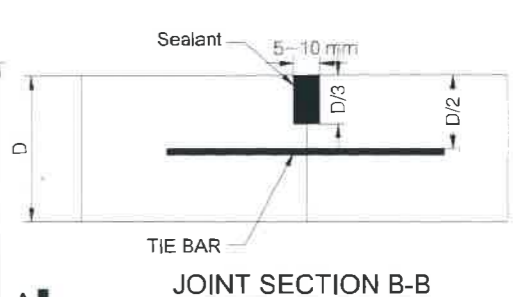
Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE NAME	DRAWING TITLE		REV	DATE	DESCRIPTION	APPROVAL
		DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH	<b>PAVEMENT DRAWINGS</b> <b>TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA (CRCP)</b>		SCALE: NOT TO SCALE	DRAWING NO: SCS-HW-GD-C1 - 44		

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI

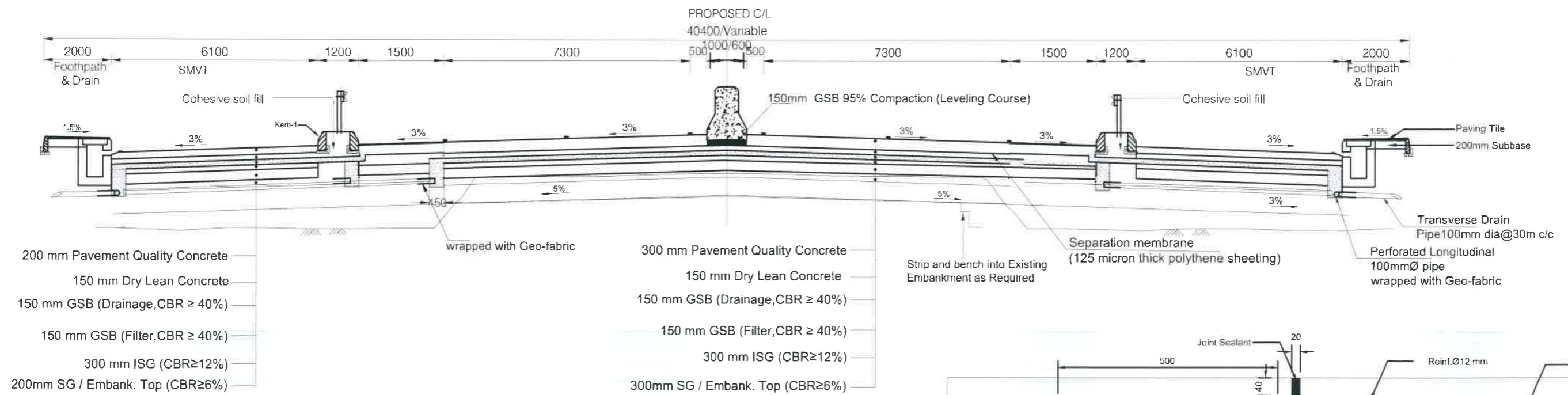
Jointed Plain Concrete Pavement (JPCP)



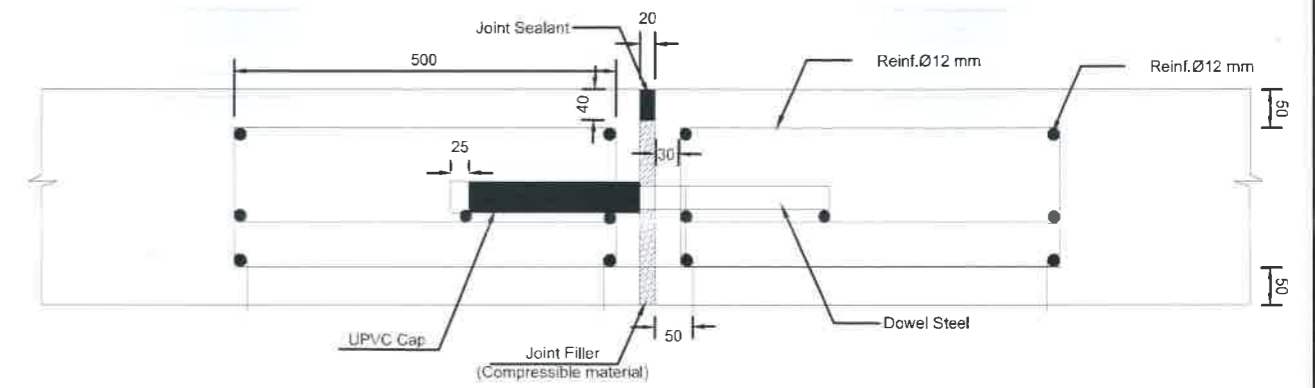
TYPICAL CONCRETE PAVEMENT PLAN



JOINT SECTION B-B




TYPICAL CONCRETE PAVEMENT SECTION: A-A  
( MODIFIED )



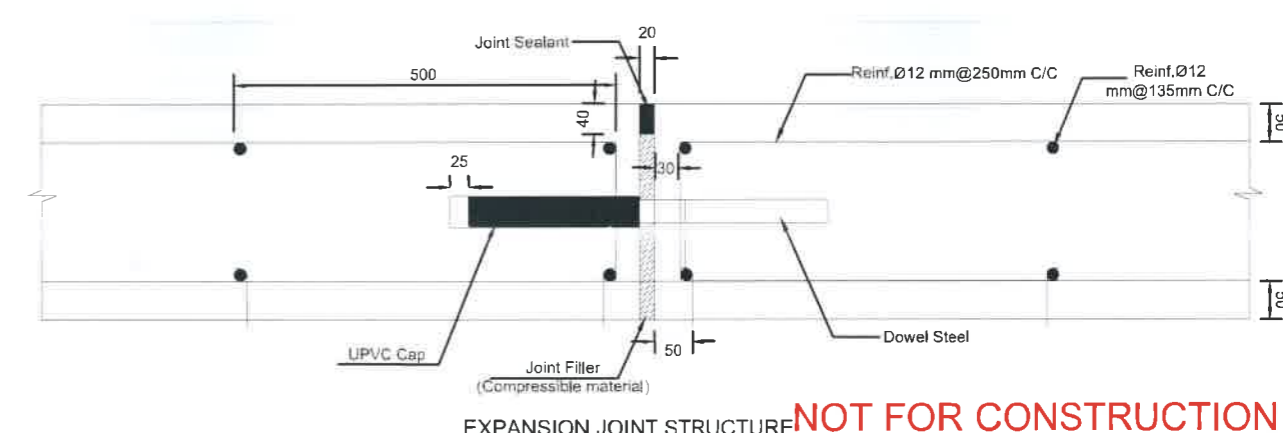
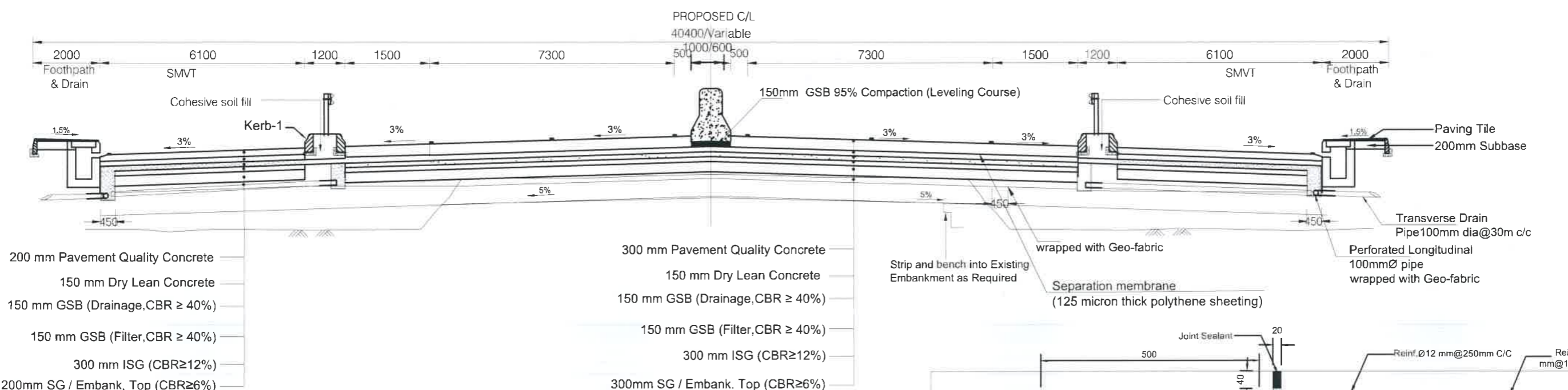
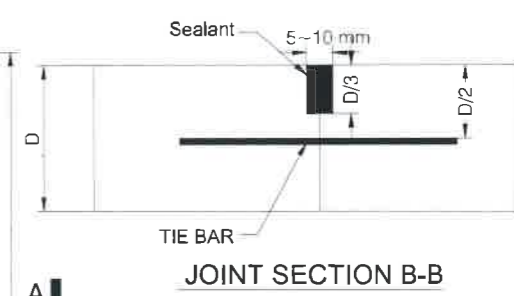
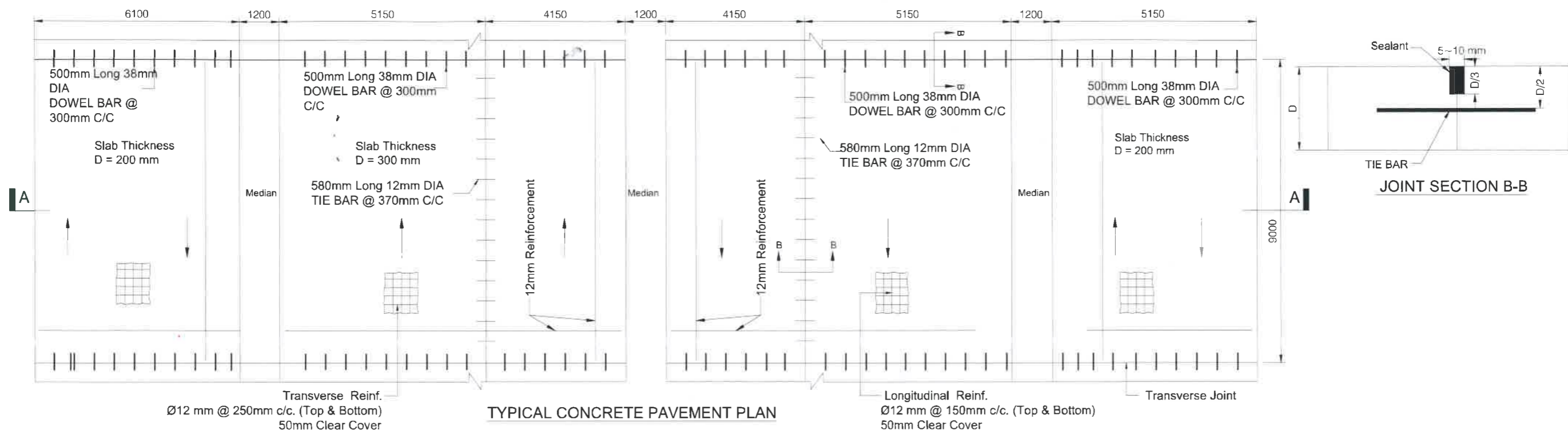
EXPANSION JOINT STRUCTURE NOT FOR CONSTRUCTION



Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE DESIGN BY: MMI <i>[Signature]</i> DRAWN BY: BAK <i>[Signature]</i> CHECKED & SUBMITTED BY: TEAM LEADER: MAH <i>[Signature]</i>	NAME DRAWING TITLE <b>PAVEMENT DRAWINGS                  TYPICAL CONCRETE PAVEMENT CROSS                  SECTION FOR MARKET/URBAN AREA (JPCP)</b>	REV DATE DESCRIPTION APPROVAL
		SCALE: NOT TO SCALE	DRAWING NO. SCS-HW-GD-C1 - 45	

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI

Jointed Reinforced Concrete Pavement (JRCP)



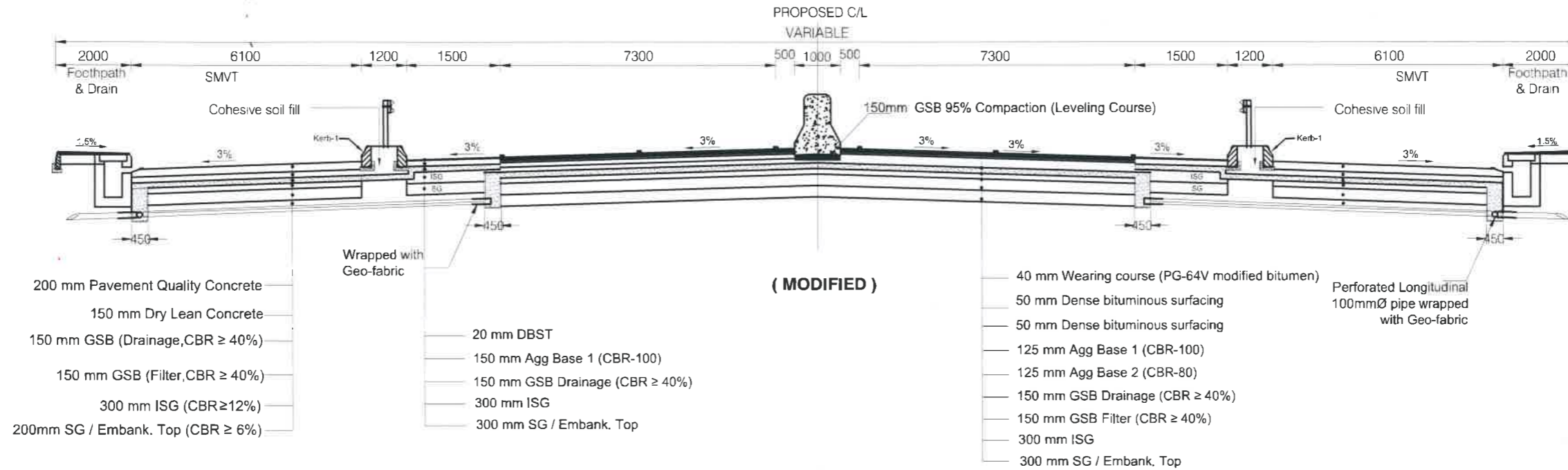
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TYPICAL CONCRETE PAVEMENT SECTION: A-A  
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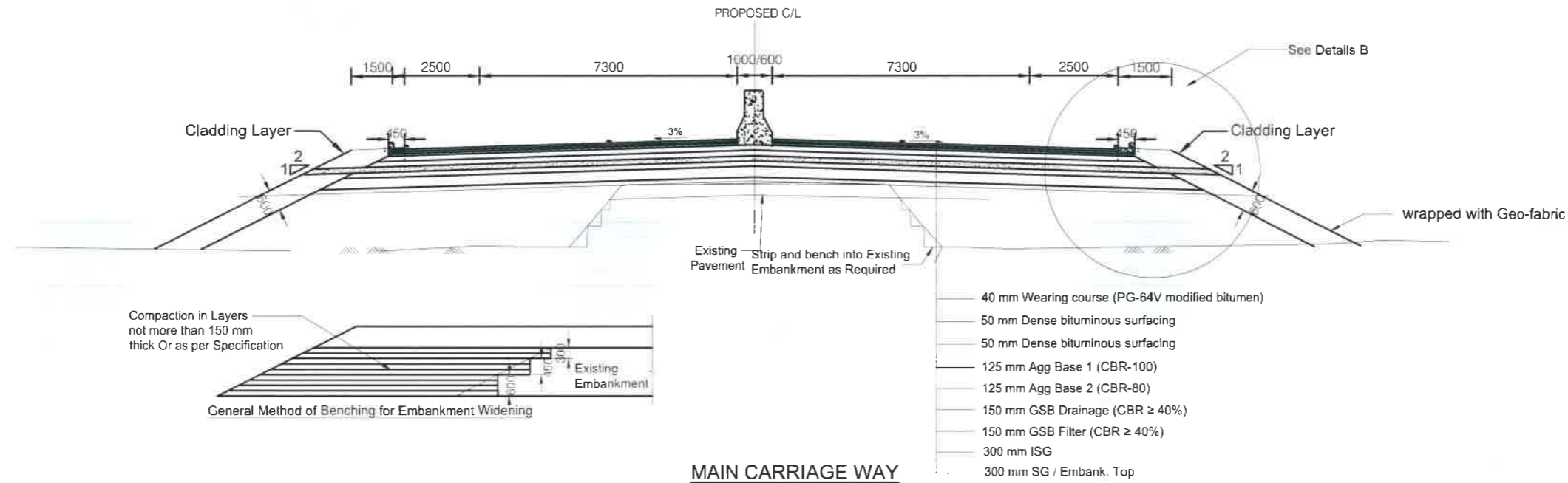
EXPANSION JOINT STRUCTURE NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b> DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL CONCRETE PAVEMENT CROSS                  SECTION FOR MARKET/URBAN AREA (JRCP)</b>	REV DATE DESCRIPTION APPROVAL	
		SCALE: NOT TO SCALE	DRAWING NO: SCS-HW-GD-C1 - 46		

TYPICAL CONCRETE & ASPHALT PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI



TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR 4 LANE ROAD  
SYLHET-SUTARKANDI (CH.37+700~ CH.42+957)



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

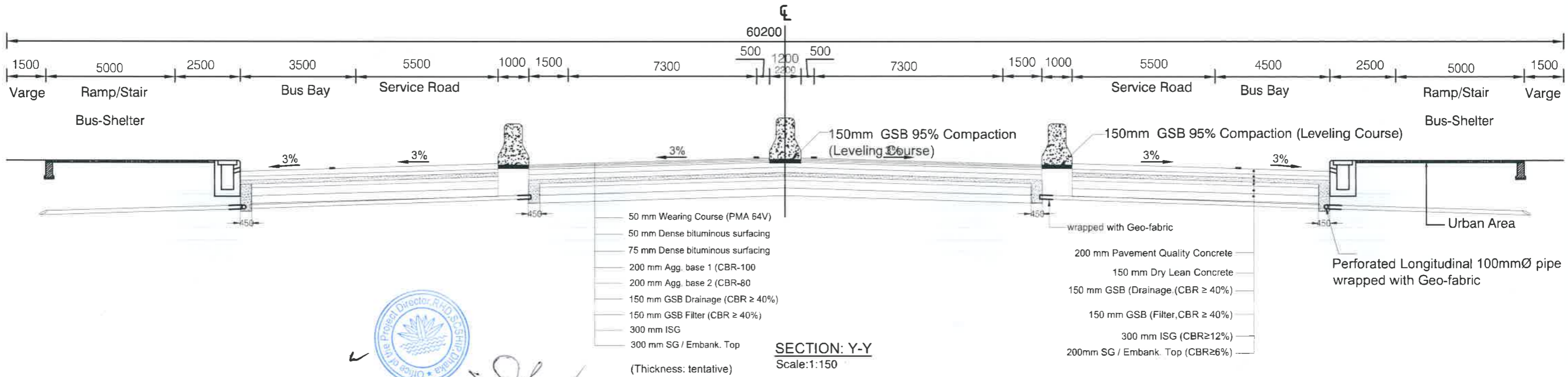
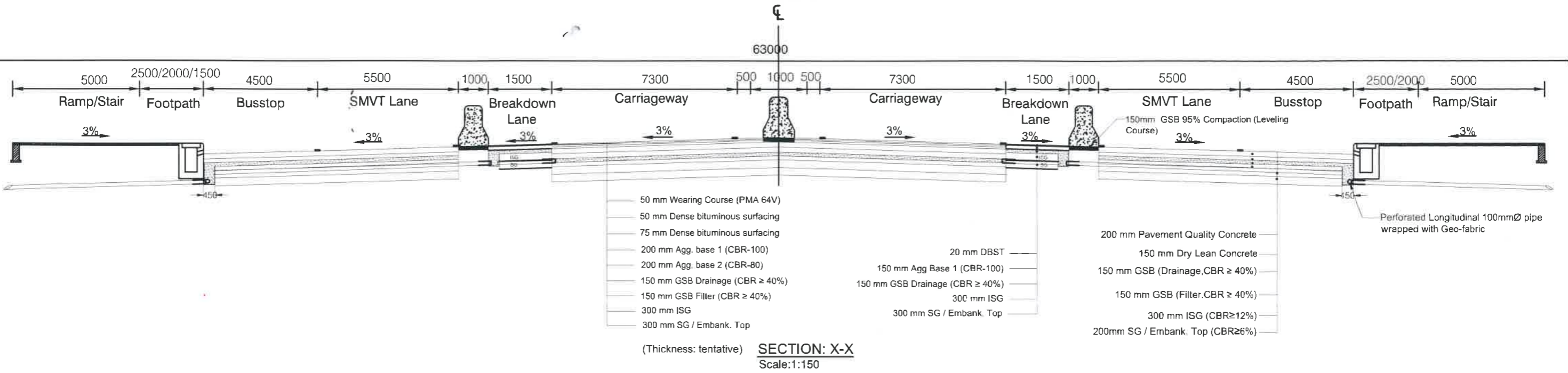
CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI <i>[Signature]</i>
DRAWN BY:	BAK <i>[Signature]</i>
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH <i>[Signature]</i>

DRAWING TITLE:  
**PAVEMENT DRAWINGS  
TYPICAL CONCRETE PAVEMENT CROSS  
SECTION FOR MARKET/ URBAN AREA**  
SCALE:  
NOT TO SCALE  
DRAWING NO. SCS-HW-GD-C1 -47


REV	DATE	DESCRIPTION	APPROVAL

TYPICAL FLEXIBLE PAVEMENT & CONCRETE PAVEMENT CROSS SECTION TO BE ADOPTED FOR BUS STOP AREA

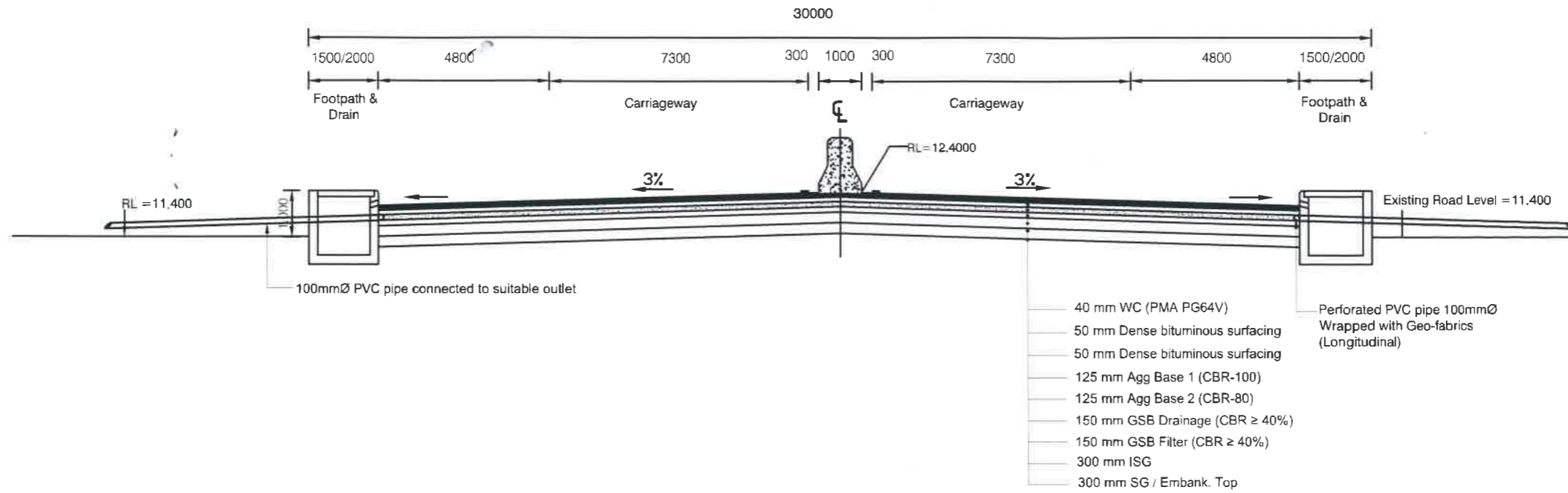


Office of the Project Director, RND, Sylhet  
Sylhet-Charkhai-Sheola Highway Improvement Project

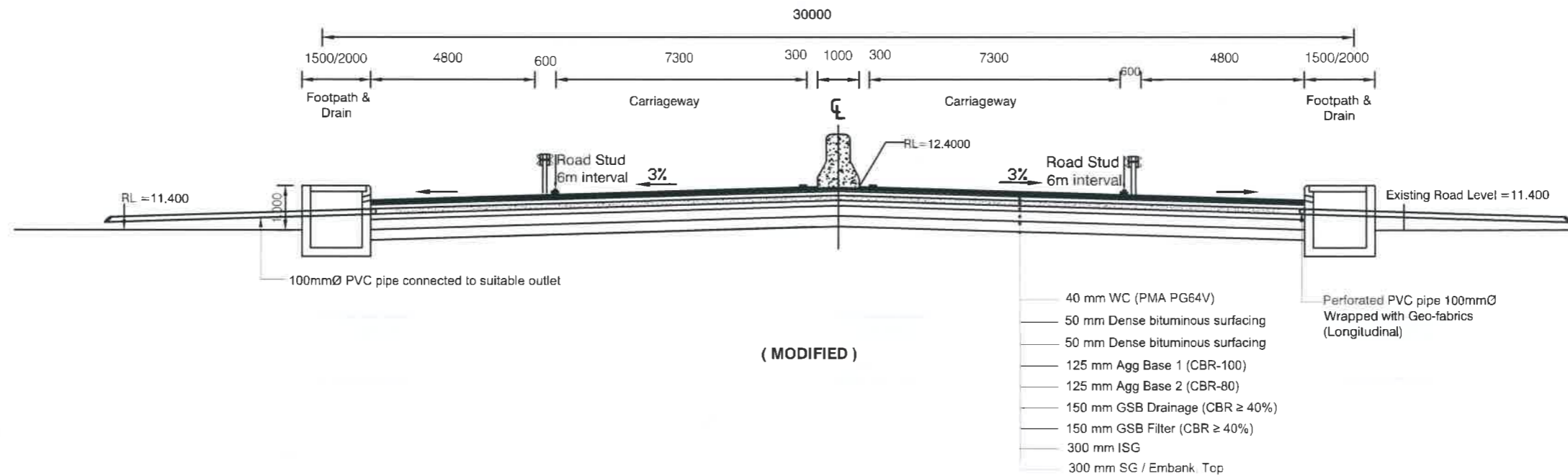
NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE	NAME	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL CONCRETE PAVEMENT CROSS                  SECTION FOR BUSBAY</b>	REV	DATE	DESCRIPTION	APPROVAL
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		CHECKED & SUBMITTED BY:						
		TEAM LEADER:	MAH	SCALE: NOT TO SCALE	DRAWING NO. SCS-HW-GD-C1 - 48			

TYPICAL ROAD CROSS SECTION FOR CITY AREA  
(Ch.1+000~ CH.6+400)




TYPICAL ROAD CROSS SECTION FOR CITY AREA  
(Ch.1+000~ CH.6+400)



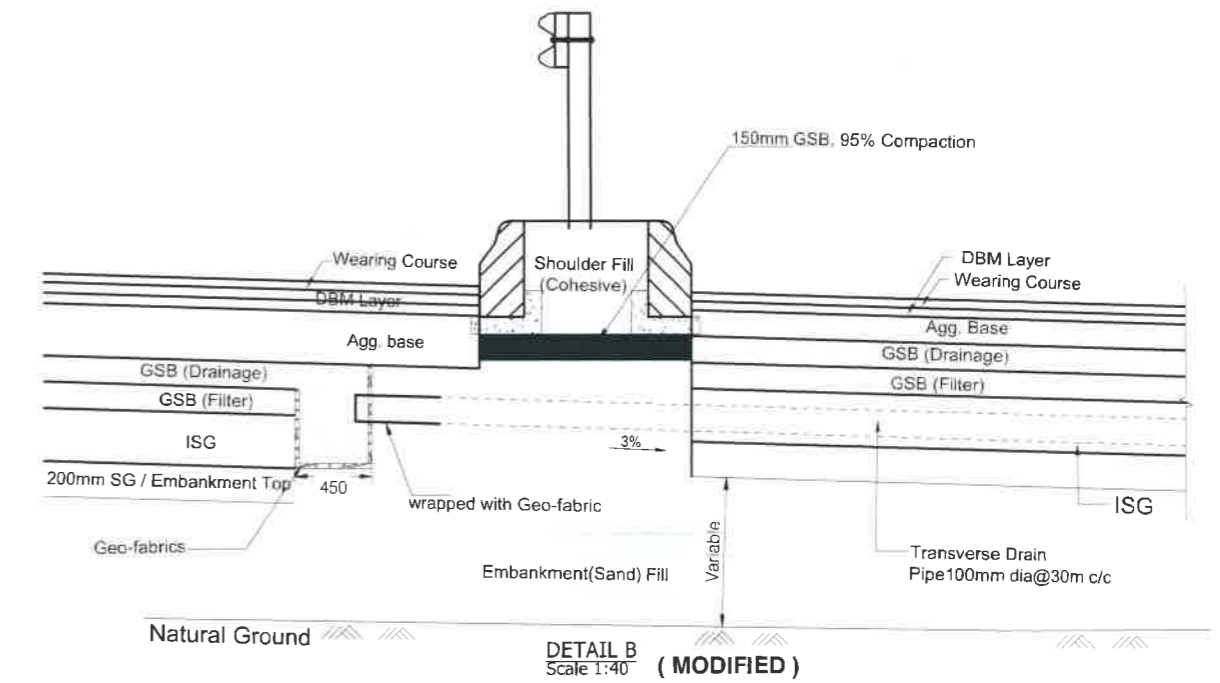
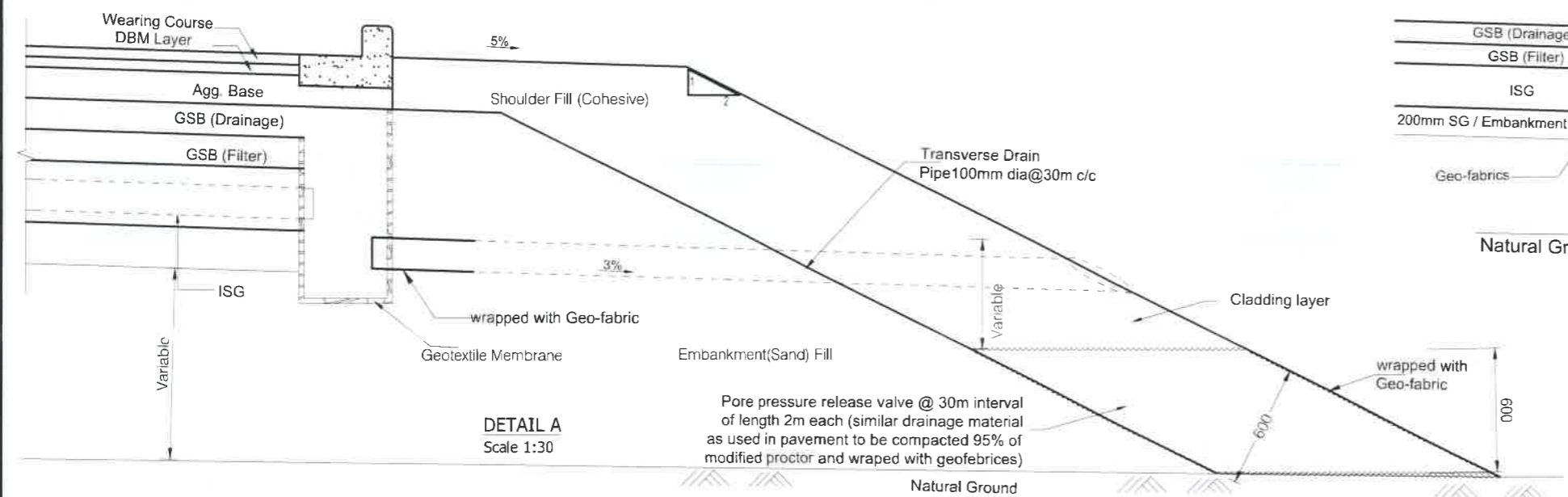
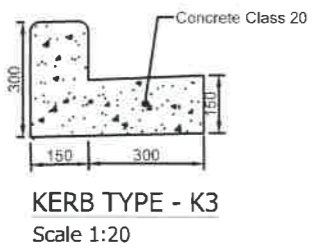
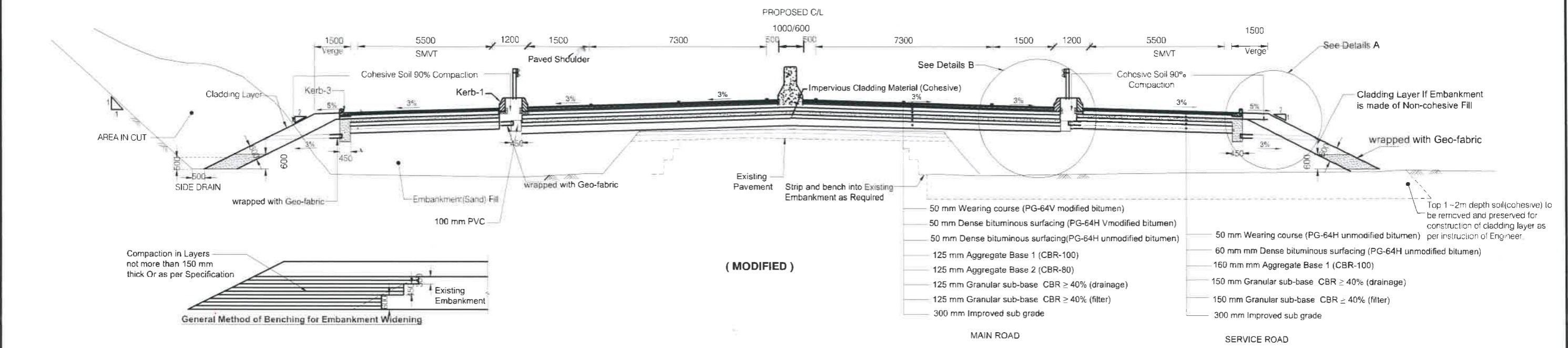
( MODIFIED )



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b>	<b>NAME</b>	DRAWING TITLE: <b>GENERAL DRAWING                  TYPICAL ROAD CROSS SECTION FOR CITY                  AREA (CH. 1+000~CH.6+400)</b>	REV	DATE	DESCRIPTION	APPROVAL	
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		CHECKED & SUBMITTED BY:							
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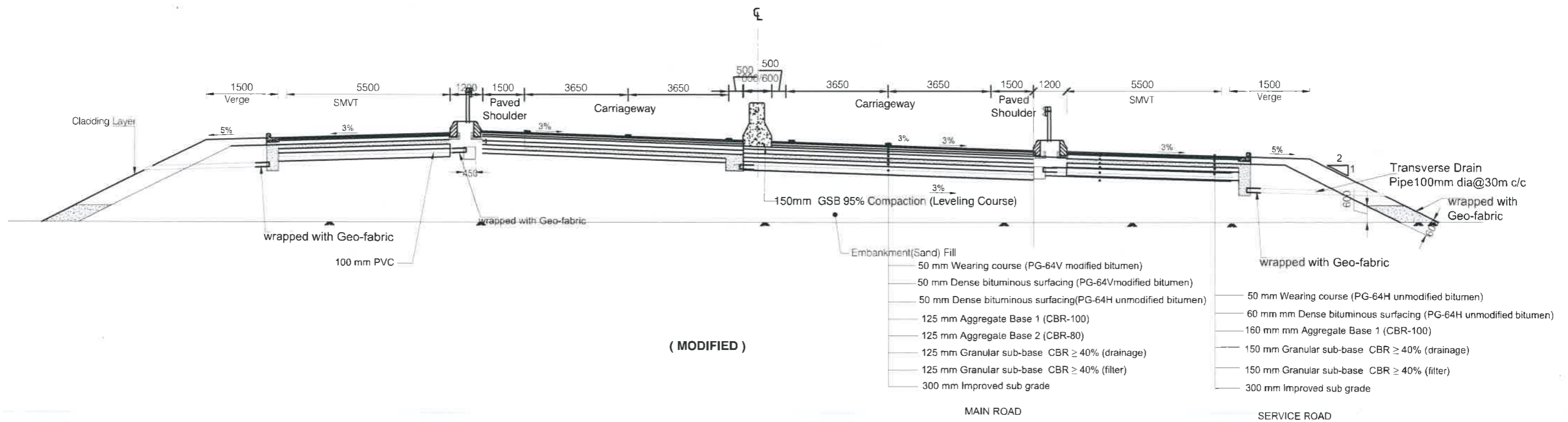
TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR RURAL AREA  
SYLHET-SUTARKANDI



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT: <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE NAME	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL FLEXIBLE PAVEMENT CROSS                  SECTION FOR RURAL AREA                  (CH.18+900-CH.37+700)</b>	REV	DATE	DESCRIPTION	APPROVAL
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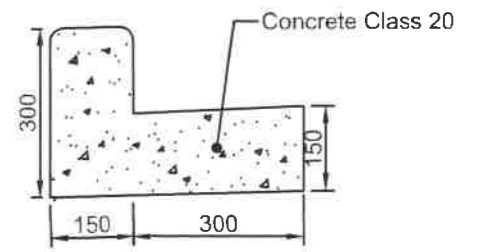
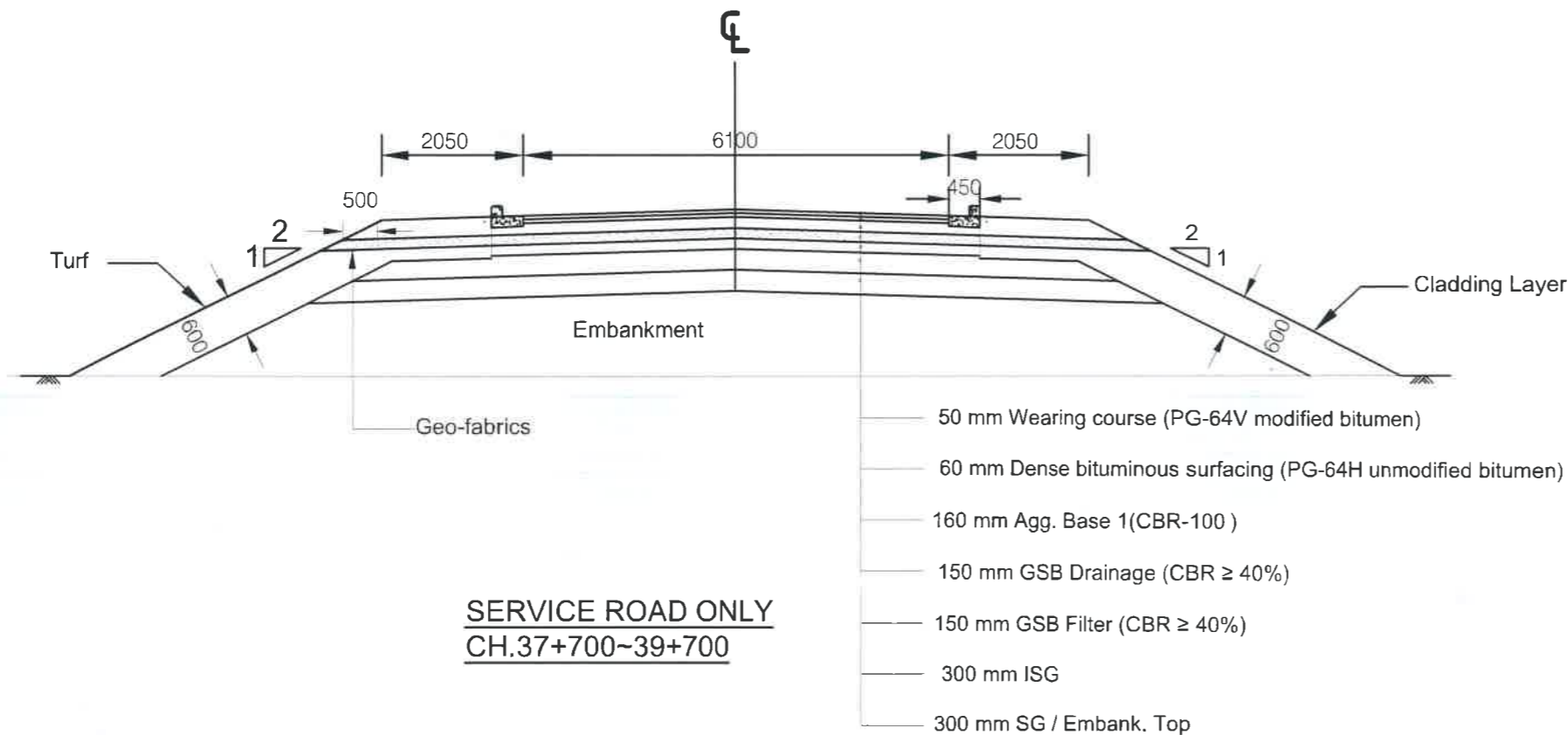
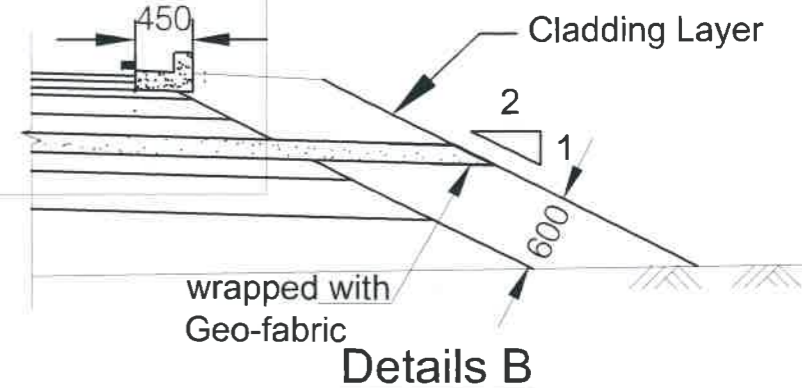
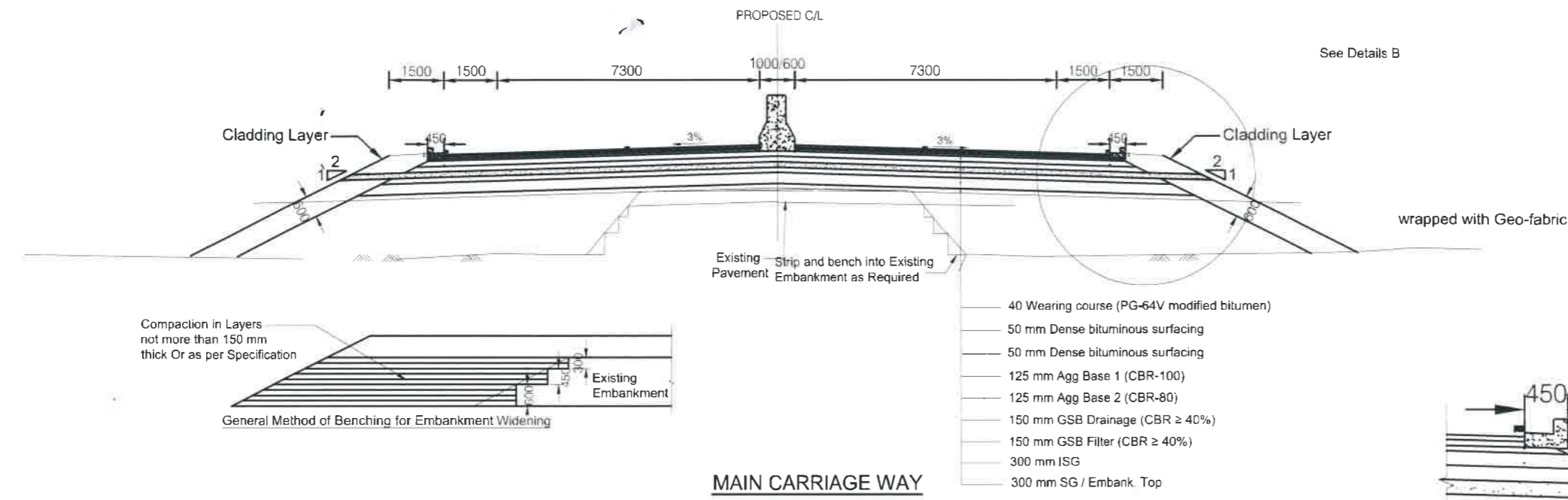
TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR SUPERELEVATED AREA  
 SYLHET-SUTARKANDI  
 (Ch.6+400~ CH.18+900)



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhal-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b>	<b>NAME</b>	DRAWING TITLE		REV	DATE	DESCRIPTION	APPROVAL	
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		CHECKED & SUBMITTED BY:								
TEAM LEADER:	MAH									

TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR 4 LANE ROAD  
 SYLHET-SUTARKANDI(CH.18+900- CH.37+700)



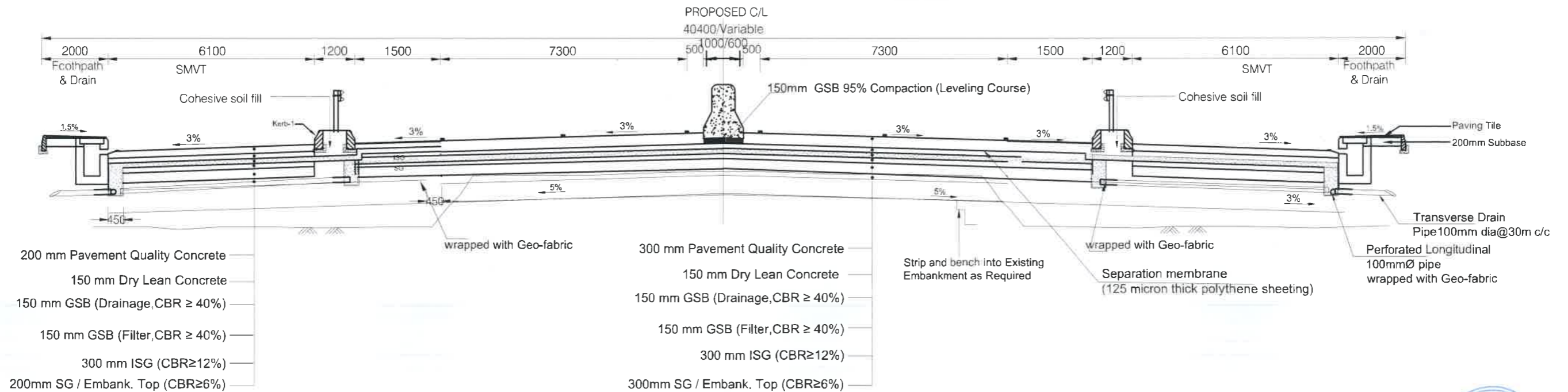
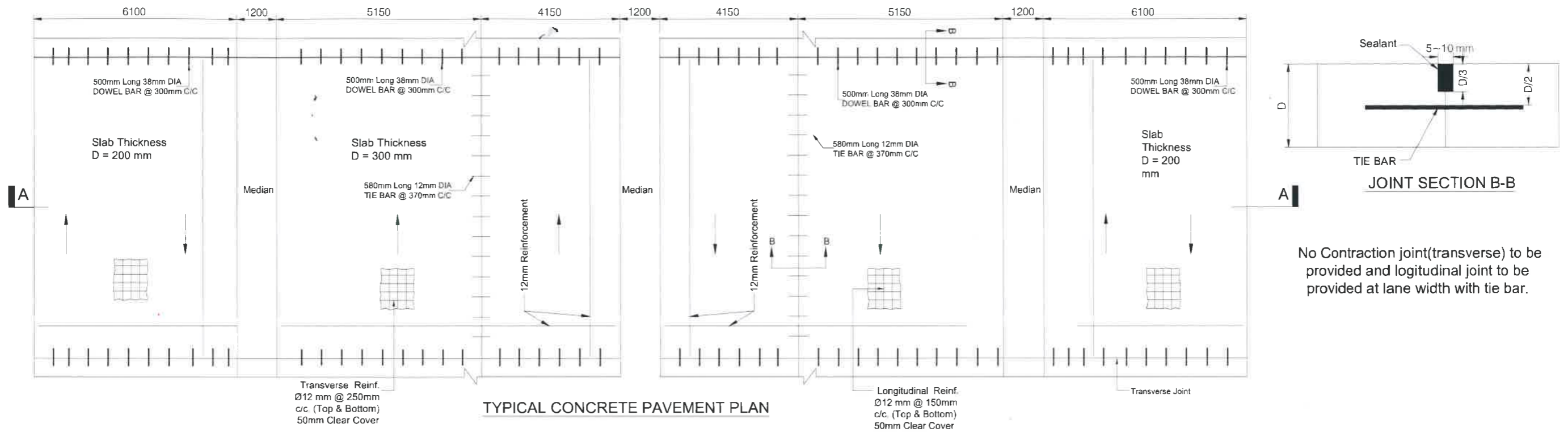
**KERB TYPE - K3**  
 Scale 1:20



**NOT FOR CONSTRUCTION**

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<table border="1"> <tr> <th>TITLE</th> <th>NAME</th> </tr> <tr> <td>DESIGN BY:</td> <td>MMI <i>[Signature]</i></td> </tr> <tr> <td>DRAWN BY:</td> <td>BAK <i>[Signature]</i></td> </tr> <tr> <td colspan="2">CHECKED &amp; SUBMITTED BY:</td> </tr> <tr> <td>TEAM LEADER:</td> <td>MAH <i>[Signature]</i></td> </tr> </table>	TITLE	NAME	DESIGN BY:	MMI <i>[Signature]</i>	DRAWN BY:	BAK <i>[Signature]</i>	CHECKED & SUBMITTED BY:		TEAM LEADER:	MAH <i>[Signature]</i>	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL ROAD CROSS SECTION                  FOR BRIDGE 4 LANE ROAD                  (CH.18+900-CH.37+700)</b>	<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	APPROVAL				
	TITLE	NAME																				
DESIGN BY:	MMI <i>[Signature]</i>																					
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CHECKED & SUBMITTED BY:																						
TEAM LEADER:	MAH <i>[Signature]</i>																					
REV	DATE	DESCRIPTION	APPROVAL																			
SCALE: NOT TO SCALE		SCS-HW-GD-C2 - 43																				

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
 SYLHET-SUTARKANDI  
 Continuous Reinforced Concrete Pavement (CRCP)



**NOT FOR CONSTRUCTION**

Government of the People's Republic of Bangladesh  
 Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
 Consulting Services for Updating Design and Safeguard Documents for  
 Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
 **BCL ASSOCIATES LIMITED**  
 Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
 Bir Uttam A K Khandaker Sarak,  
 Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

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 SECTION FOR MARKET / URBAN AREA (CRCP)**

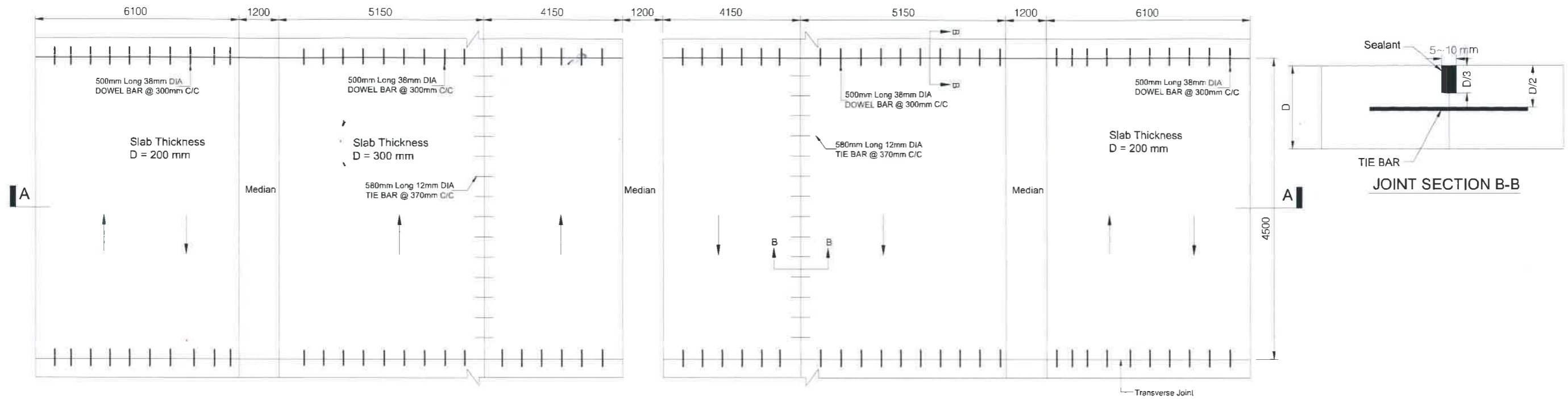
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SCS-HW-GD-C2 - 44

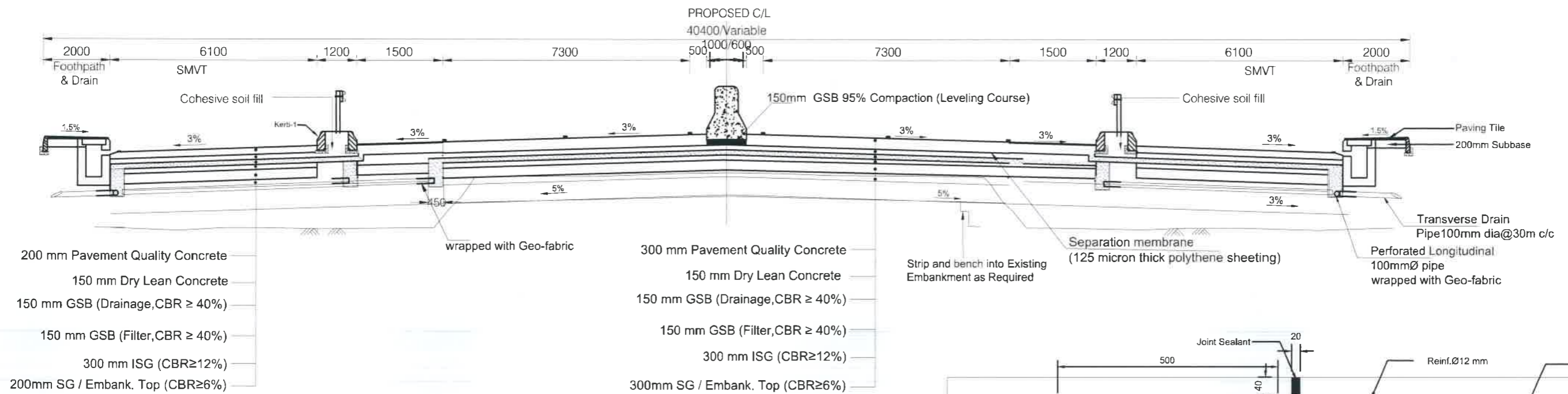
REV	DATE	DESCRIPTION	APPROVAL

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI

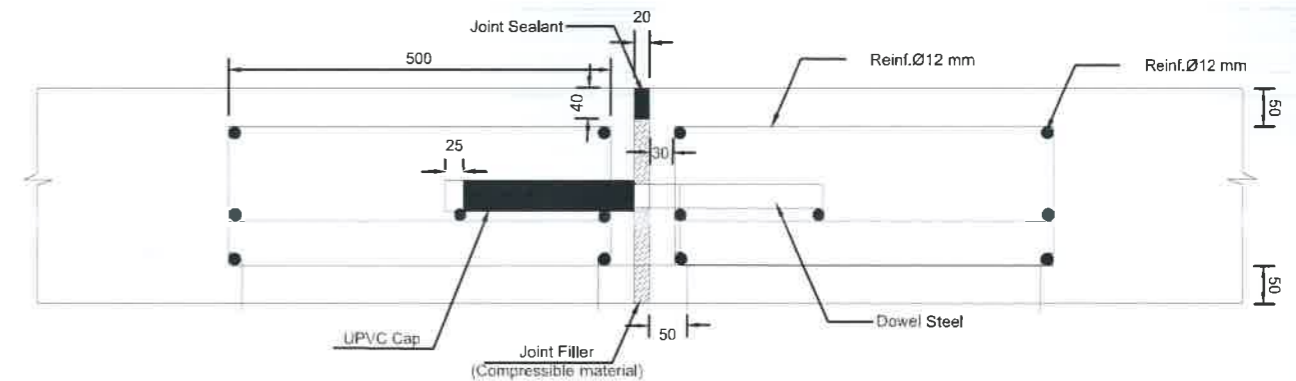
Jointed Plain Concrete Pavement (JPCP)



TYPICAL CONCRETE PAVEMENT PLAN



TYPICAL CONCRETE PAVEMENT SECTION: A-A  
( MODIFIED )



EXPANSION JOINT STRUCTURE NOT FOR CONSTRUCTION



Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE  
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TYPICAL CONCRETE PAVEMENT CROSS  
SECTION FOR MARKET/URBAN AREA (JPCP)**

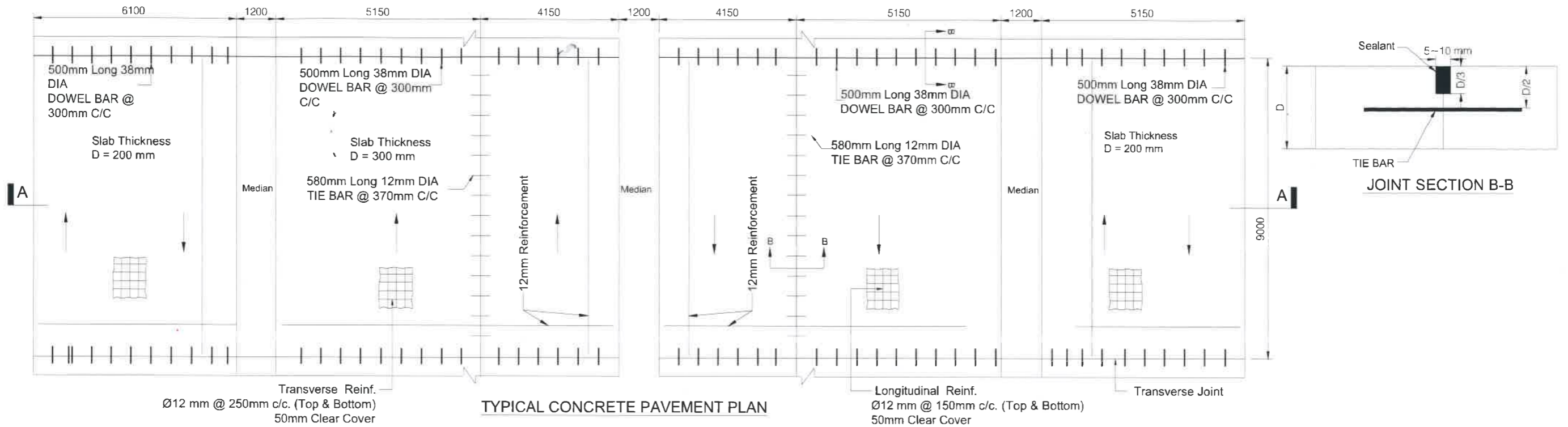
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SCS-HW-GD-C2 - 45

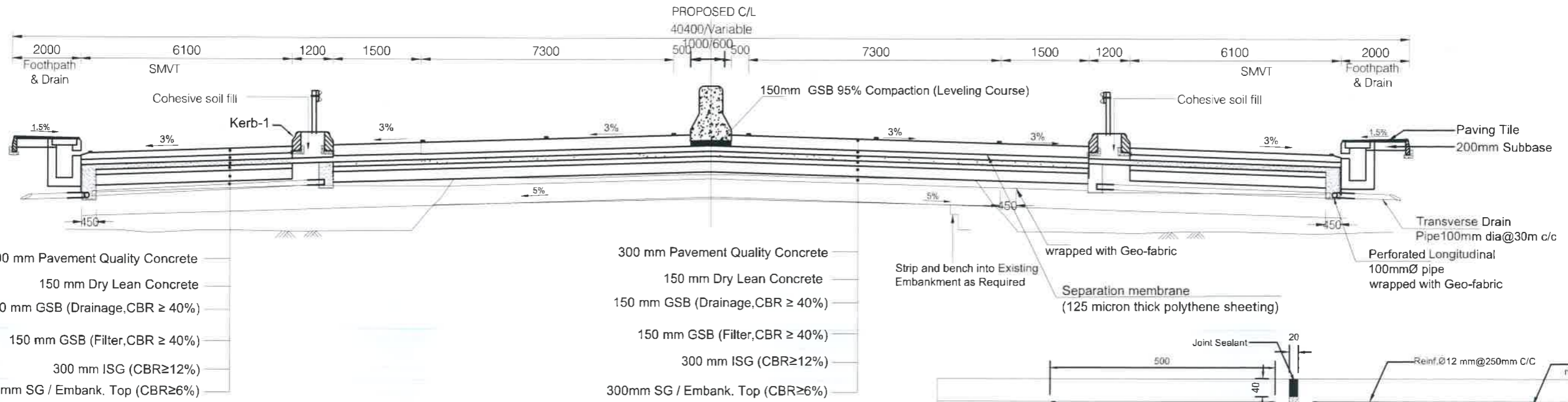
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TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI

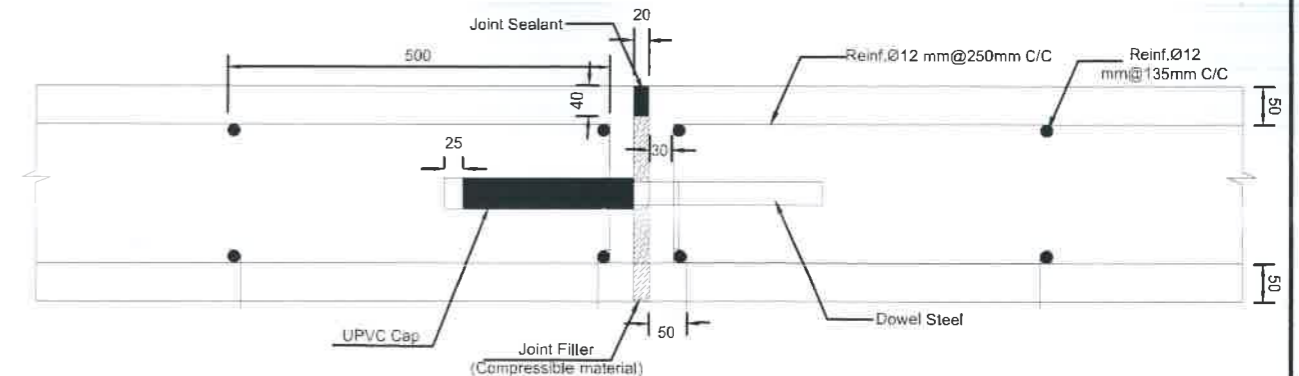
Jointed Reinforced Concrete Pavement (JRCP)



TYPICAL CONCRETE PAVEMENT PLAN



TYPICAL CONCRETE PAVEMENT SECTION: A-A  
(MODIFIED)



EXPANSION JOINT STRUCTURE NOT FOR CONSTRUCTION

*[Signature]*

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

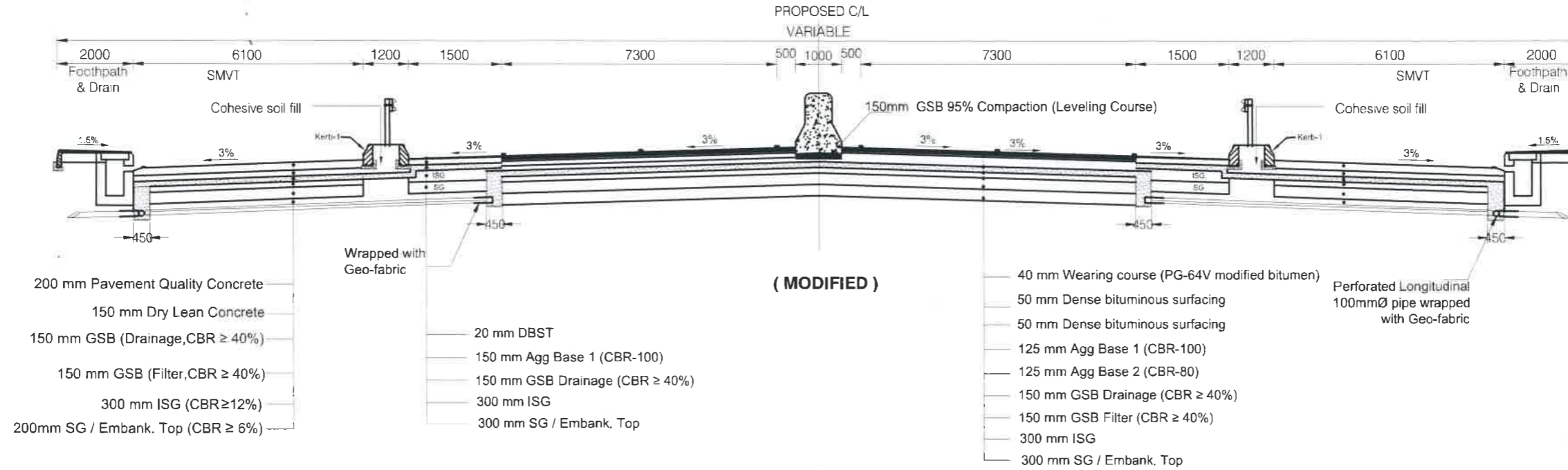
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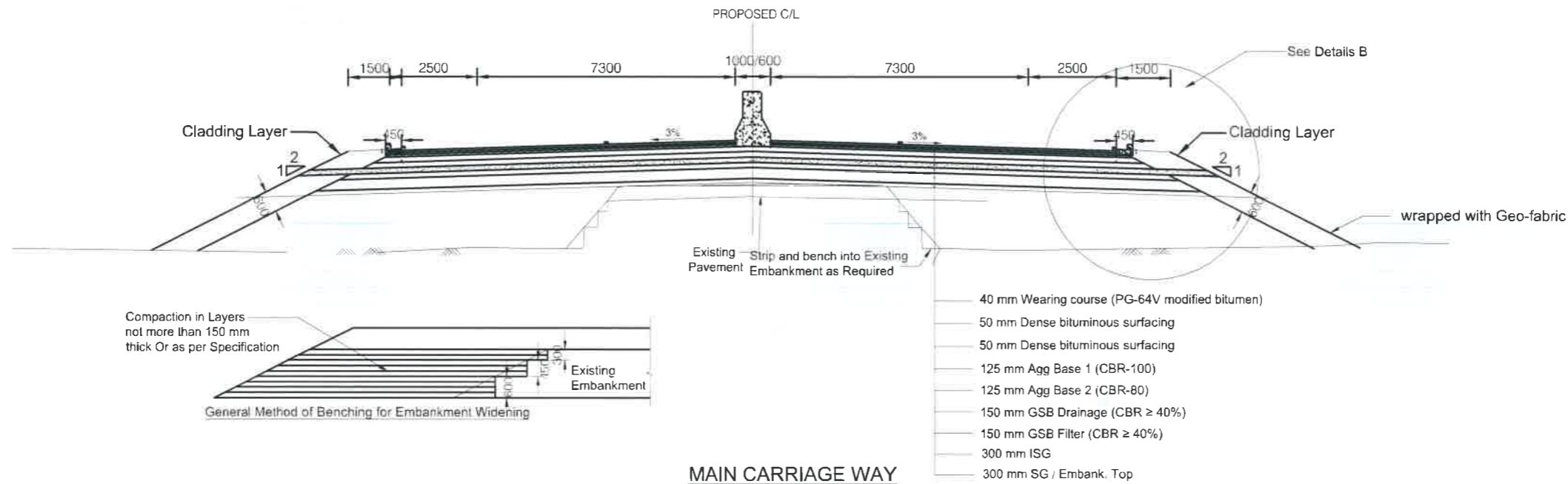
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REV	DATE	DESCRIPTION	APPROVAL

TYPICAL CONCRETE & ASPHALT PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI



TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR 4 LANE ROAD  
SYLHET-SUTARKANDI (CH.37+700~ CH.42+957)



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhal-Sheola Highway Improvement Project

CONSULTANT:



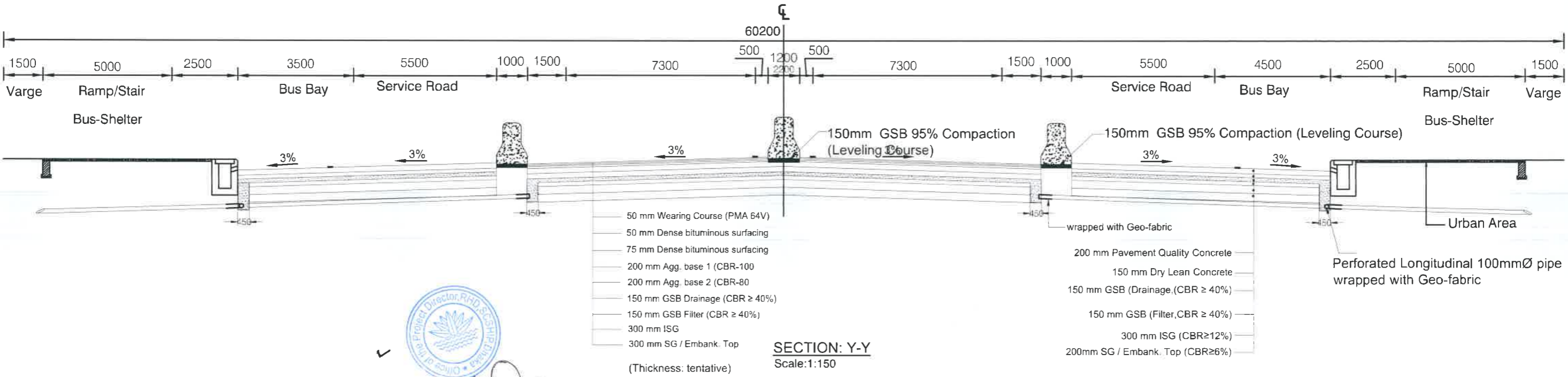
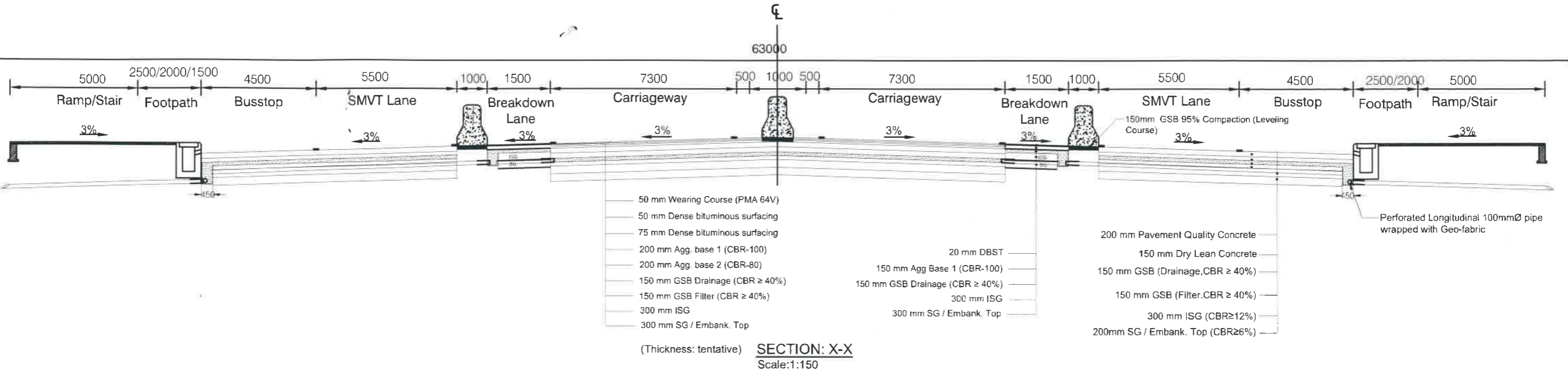
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE	
<b>PAVEMENT DRAWINGS TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET/ URBAN AREA</b>	
SCALE: NOT TO SCALE	SCS-HW-GD-C2 - 47

REV	DATE	DESCRIPTION	APPROVAL

TYPICAL FLEXIBLE PAVEMENT & CONCRETE PAVEMENT CROSS SECTION TO BE ADOPTED FOR BUS STOP AREA



**NOT FOR CONSTRUCTION**

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

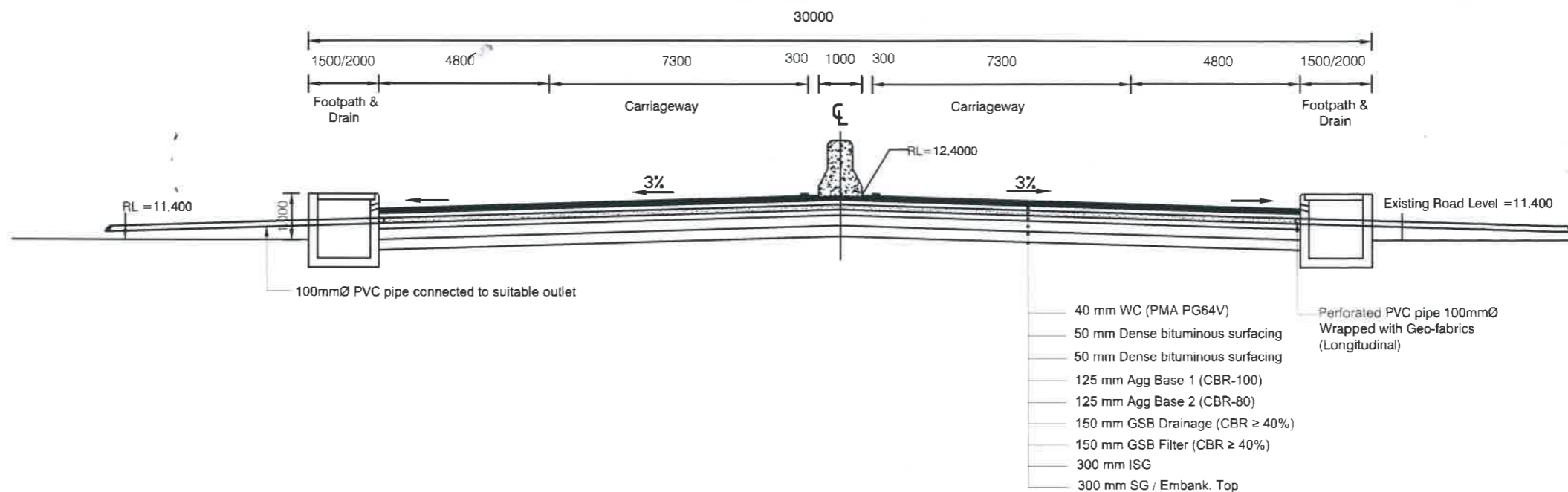
CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

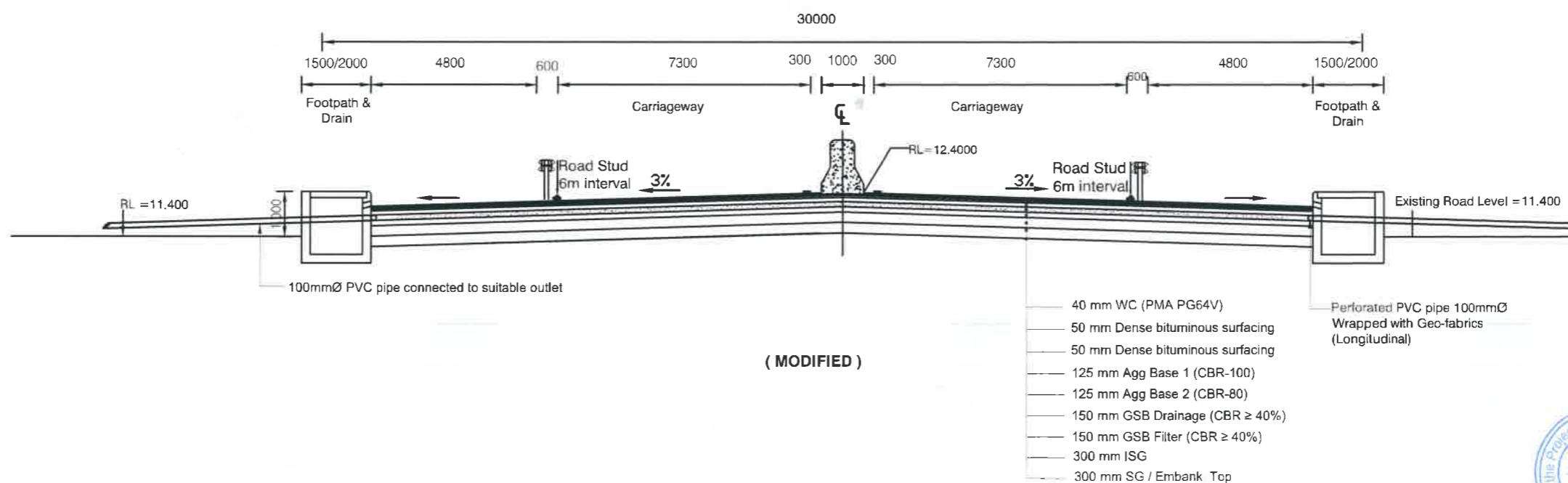
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SCALE:	SCS-HW-GD-C2 -48

REV	DATE	DESCRIPTION	APPROVAL

TYPICAL ROAD CROSS SECTION FOR CITY AREA  
(Ch.1+000~ CH.6+400)



TYPICAL ROAD CROSS SECTION FOR CITY AREA  
(Ch.1+000~ CH.6+400)




( MODIFIED )



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

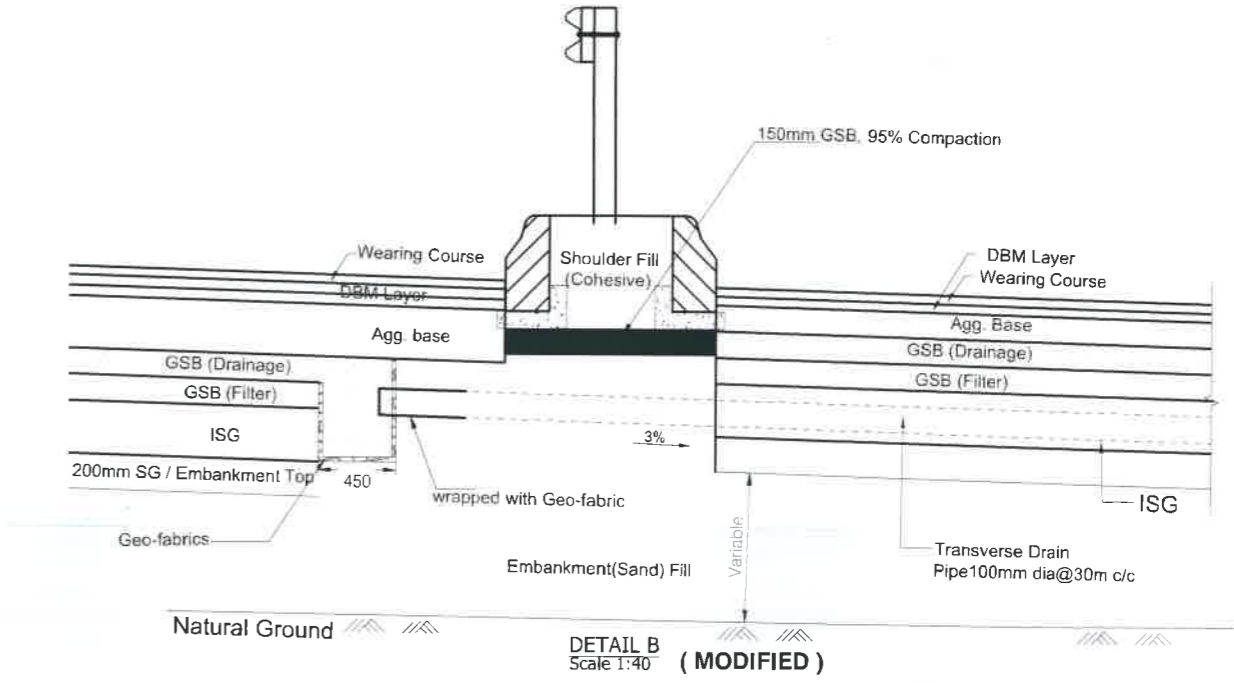
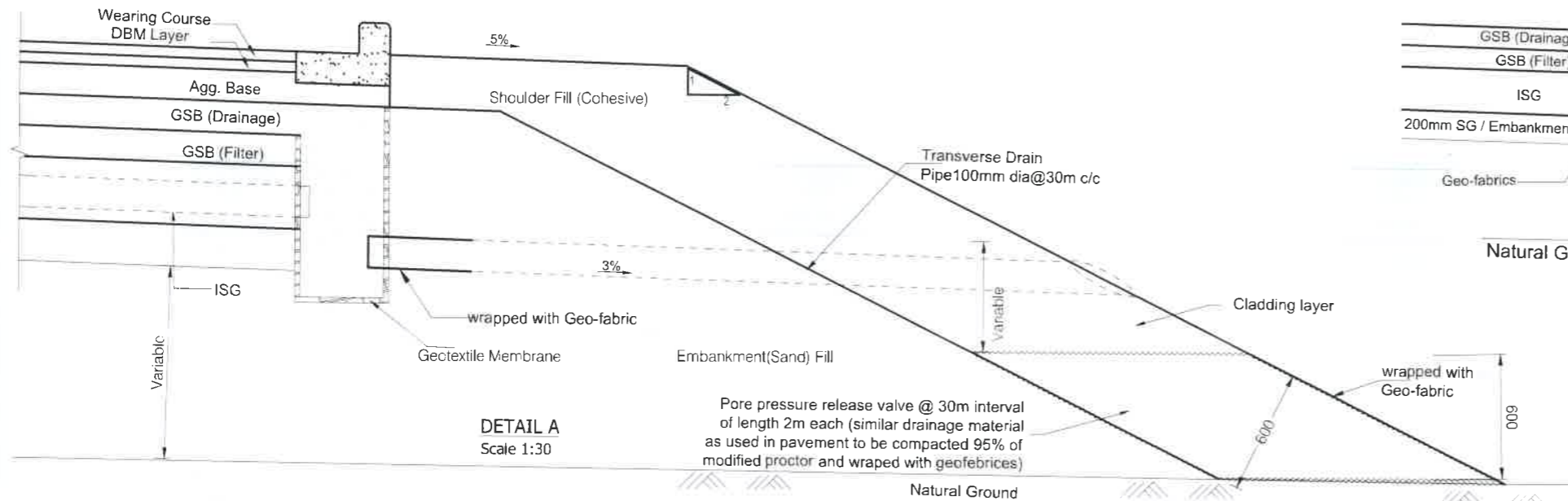
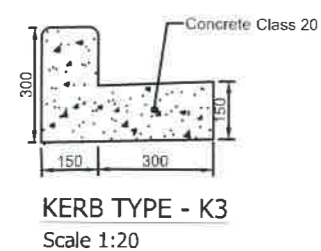
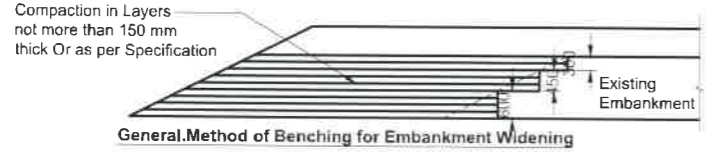
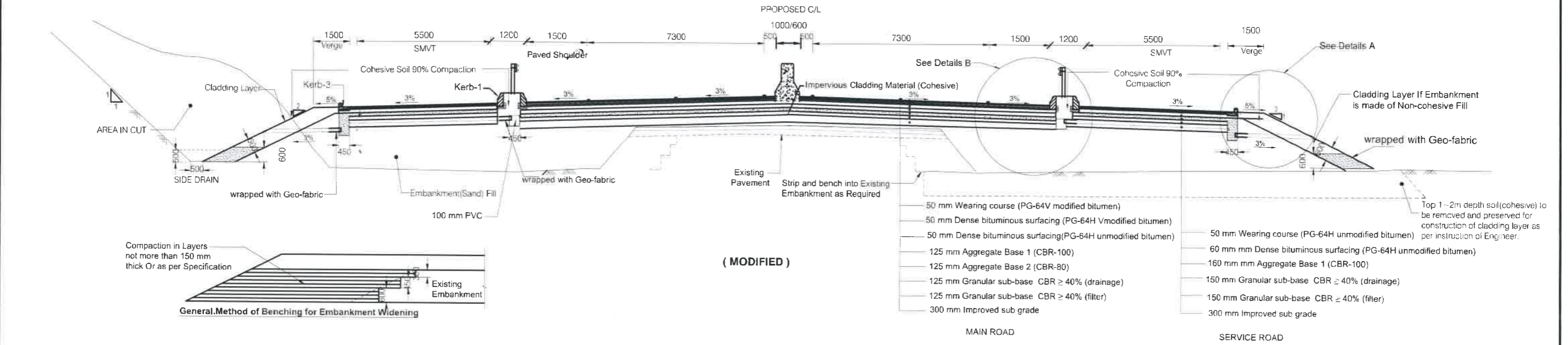
CONSULTANT:  
 **BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
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Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE:	
<b>GENERAL DRAWING TYPICAL ROAD CROSS SECTION FOR CITY AREA (CH. 1+000~CH.6+400)</b>	
SCALE:	SCS-HW-GD-C3 -40

REV	DATE	DESCRIPTION	APPROVAL

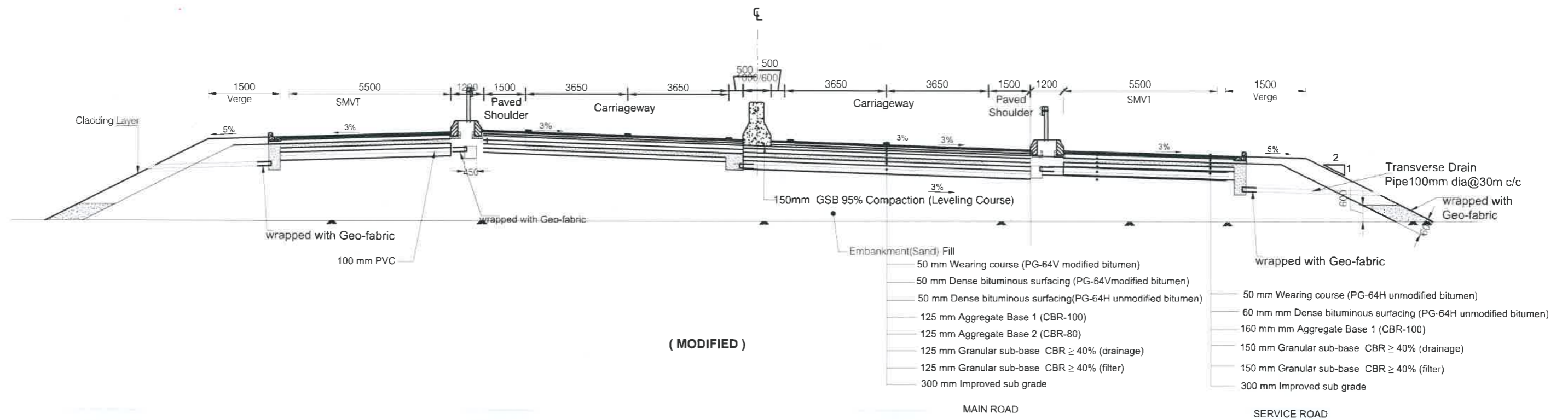
TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR RURAL AREA  
SYLHET-SUTARKANDI




NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT: <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE NAME	DRAWING TITLE <b>PAVEMENT DRAWINGS                  TYPICAL FLEXIBLE PAVEMENT CROSS                  SECTION FOR RURAL AREA                  (CH.18+900-CH.37+700)</b>	REV	DATE	DESCRIPTION	APPROVAL
		DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH		SCALE: NOT TO SCALE	SCS-HW-GD-C3 - 41		

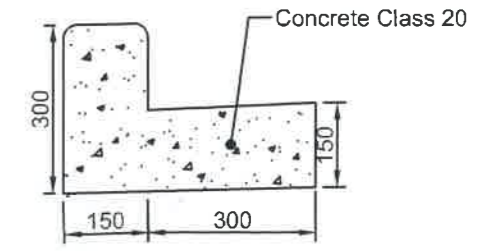
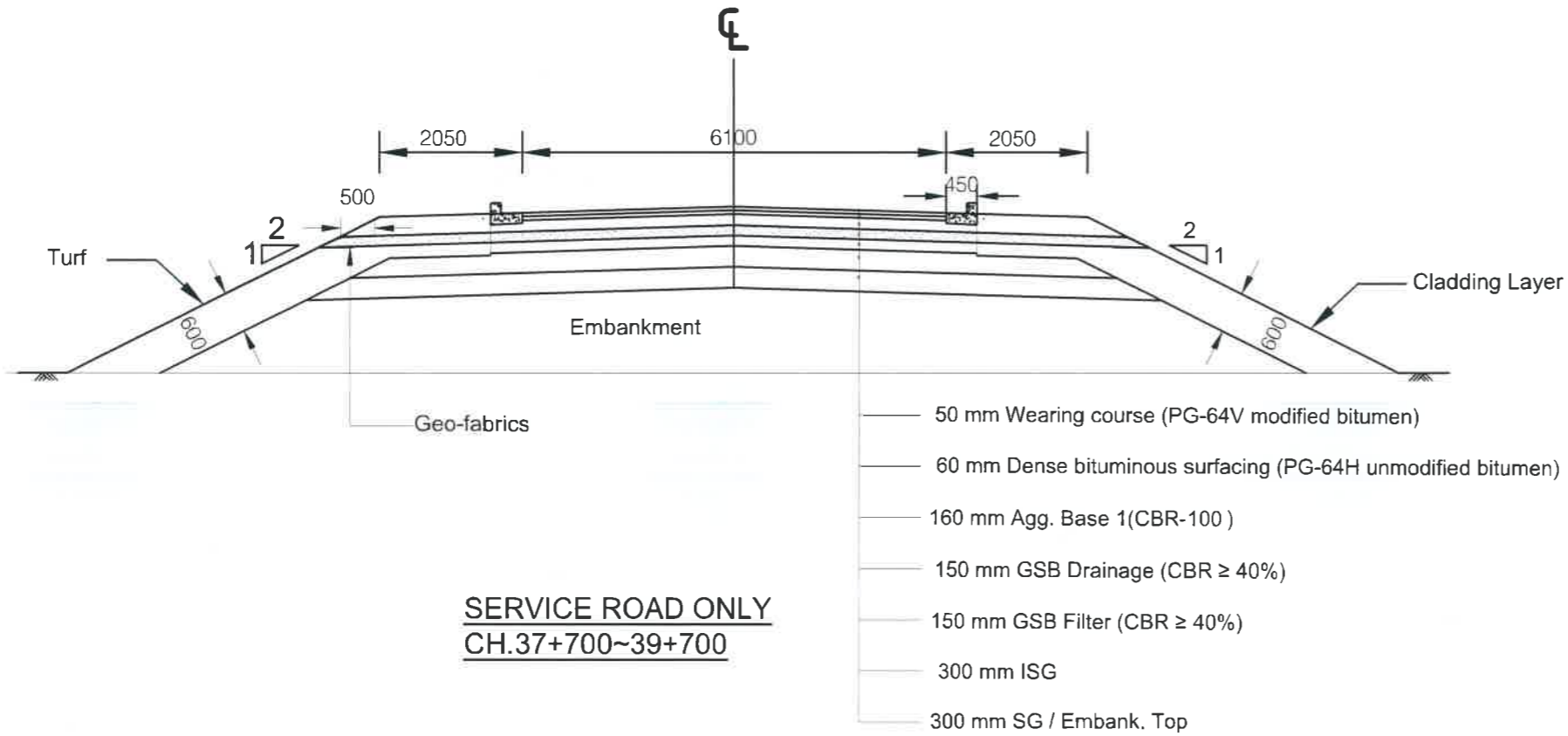
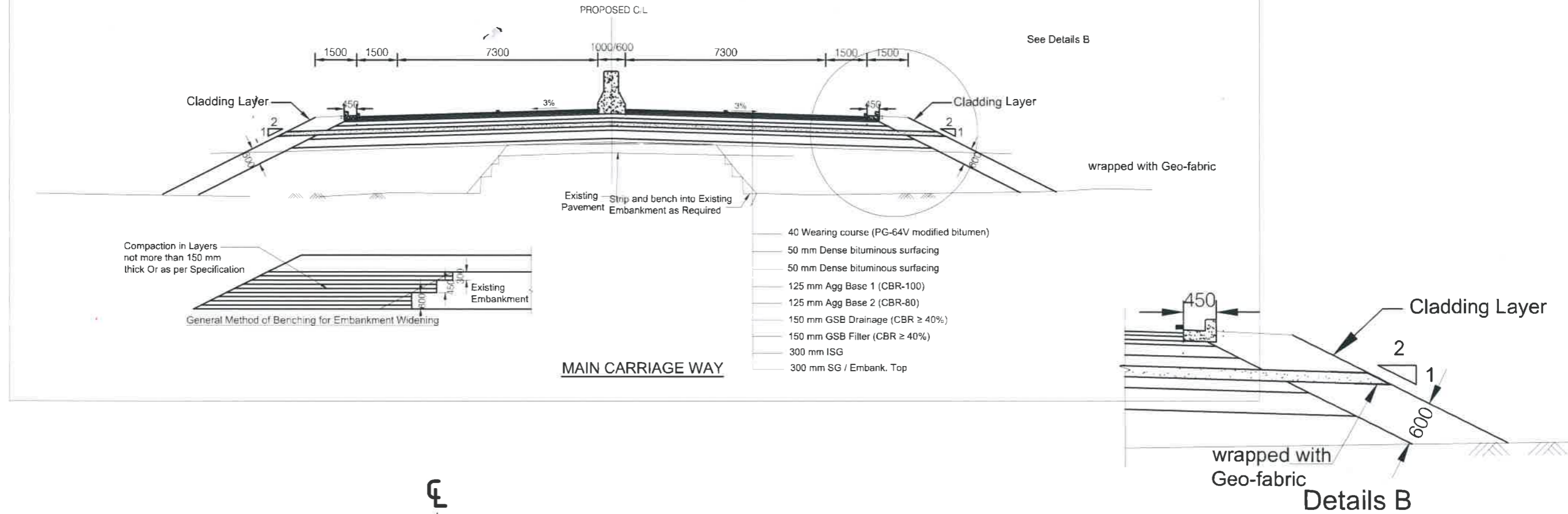
TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR SUPERELEVATED AREA  
 SYLHET-SUTARKANDI  
 (Ch.6+400~ CH.18+900)



**NOT FOR CONSTRUCTION**

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE NAME	DRAWING TITLE		REV	DATE	DESCRIPTION	APPROVAL
		DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH	<b>PAVEMENT DRAWINGS</b> <b>TYPICAL FLEXIBLE PAVEMENT CROSS SECTION SUPERELEVATED AREA</b>		SCALE: NOT TO SCALE	SCS-HW-GD-C3 - 42		

TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR 4 LANE ROAD  
SYLHET-SUTARKANDI(CH.18+900~ CH.37+700)

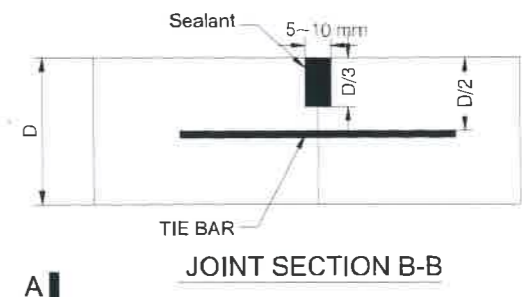
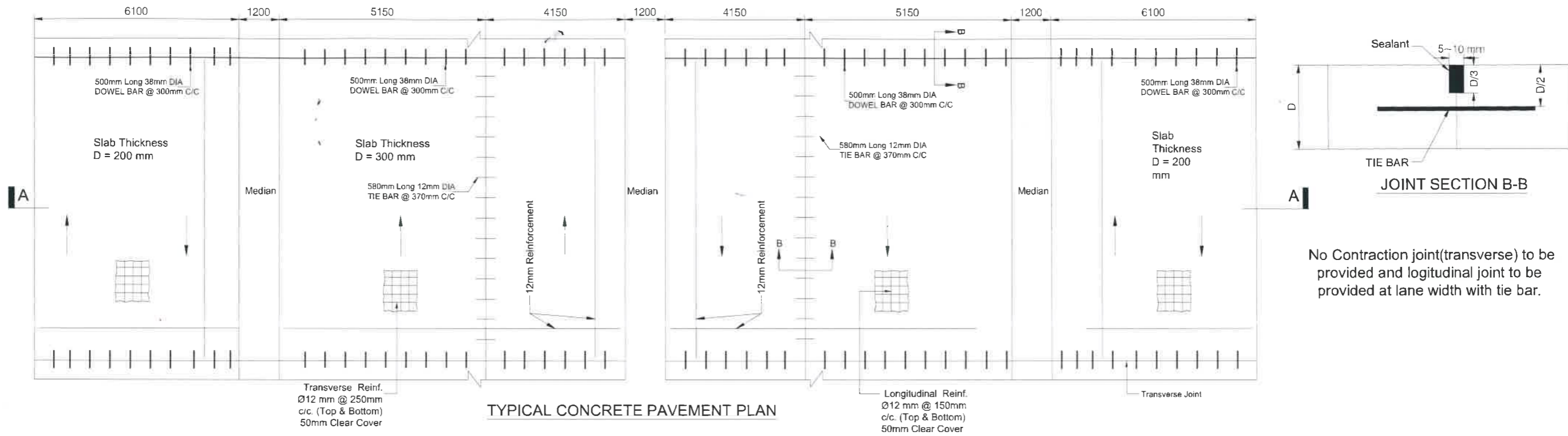


NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE NAME	DRAWING TITLE <b>PAVEMENT DRAWINGS                  TYPICAL ROAD CROSS SECTION                  FOR BRIDGE 4 LANE ROAD                  (CH.18+900~CH.37+700)</b>	R/V	DATE	DESCRIPTION	APPROVAL
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		TEAM LEADER: MAH					

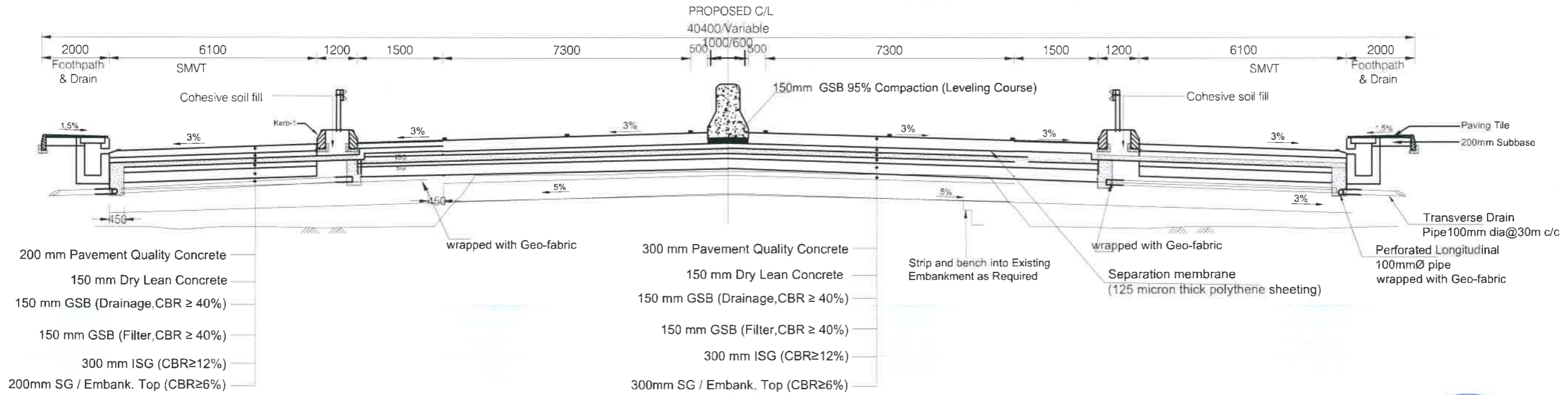
TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA

SYLHET-SUTARKANDI  
Continous Reinforced Concrete Pavement (CRCP)



No Contraction joint(transverse) to be provided and logitudinal joint to be provided at lane width with tie bar.

TYPICAL CONCRETE PAVEMENT PLAN



TYPICAL CONCRETE PAVEMENT SECTION: A-A

( MODIFIED )

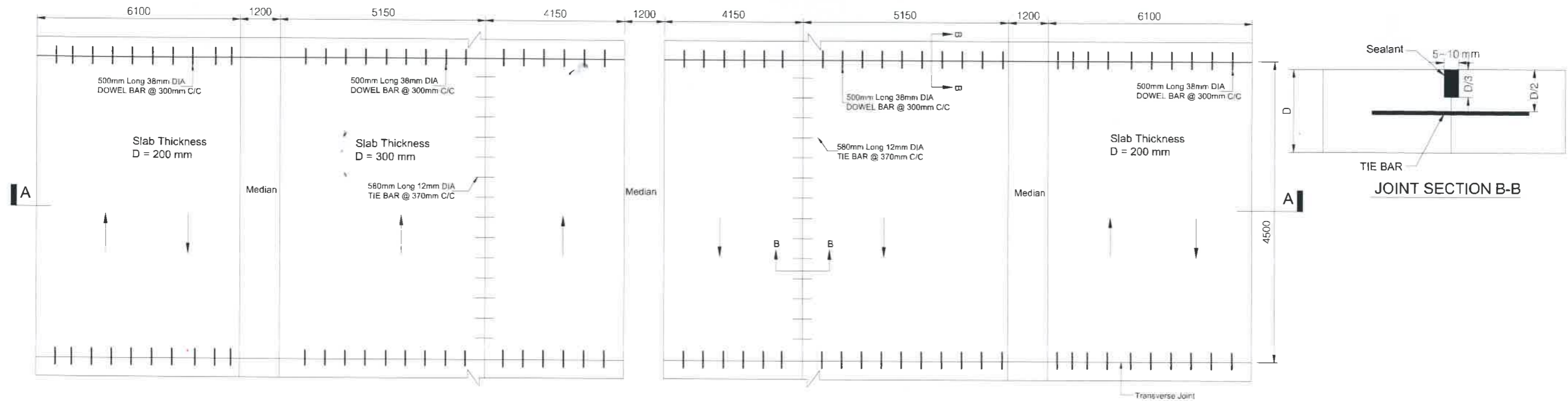


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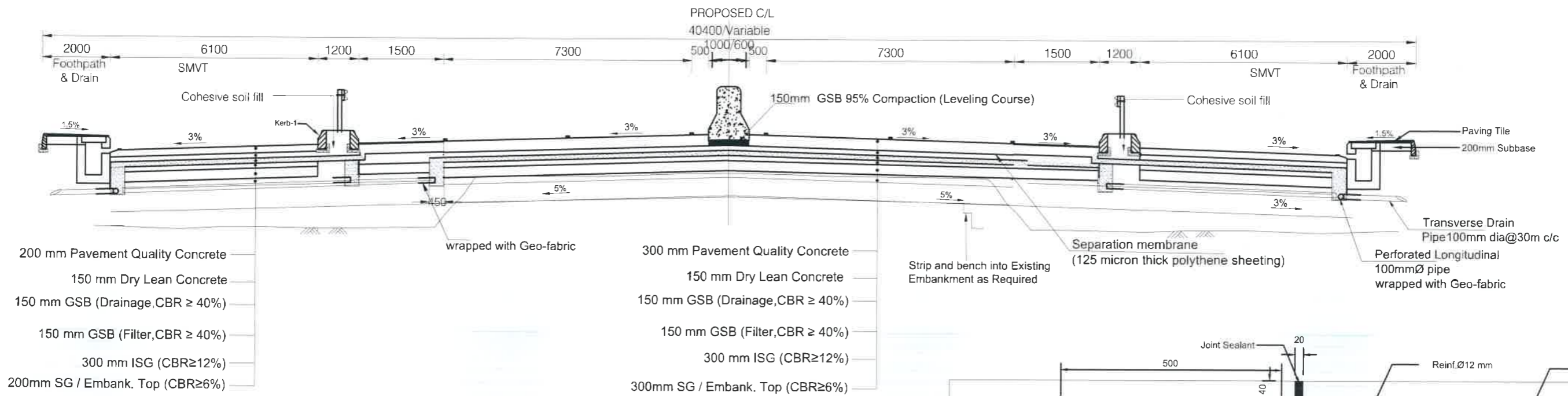
Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE: NAME DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL CONCRETE PAVEMENT CROSS                  SECTION FOR MARKET / URBAN AREA (CRCP)</b>	REV: DATE: DESCRIPTION: APPROVAL:
		SCALE: NOT TO SCALE	SCS-HW-GD-C3 - 44	

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI

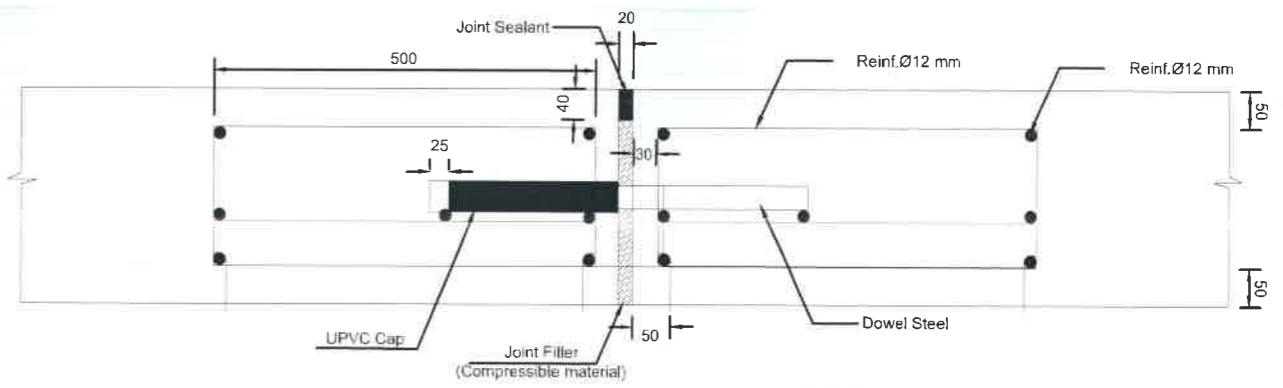
Jointed Plain Concrete Pavement (JPCP)



TYPICAL CONCRETE PAVEMENT PLAN



TYPICAL CONCRETE PAVEMENT SECTION: A-A  
(MODIFIED)



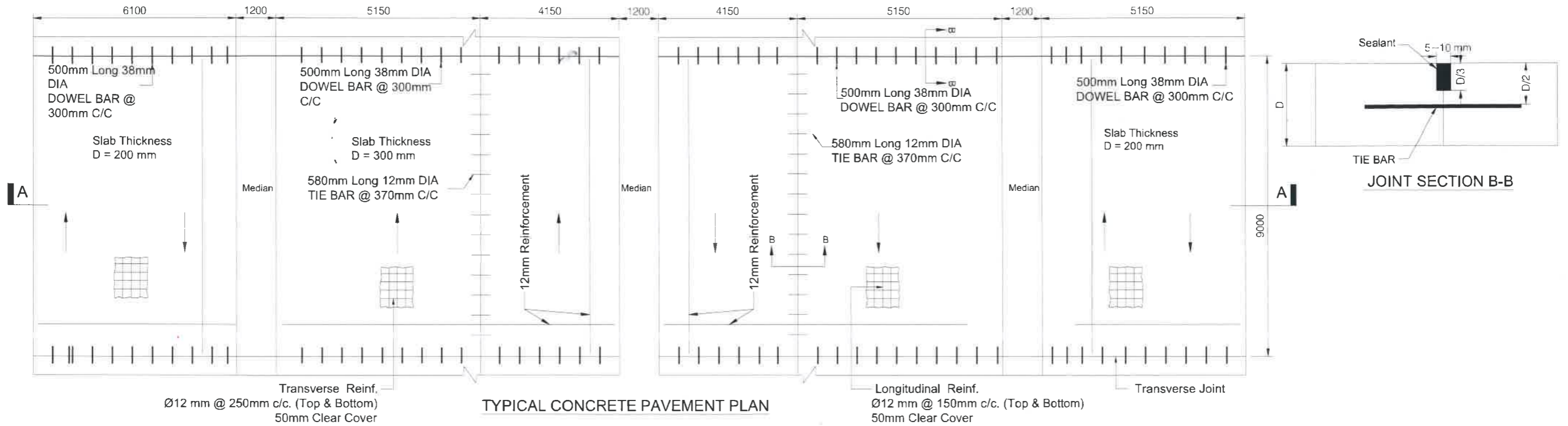
EXPANSION JOINT STRUCTURE NOT FOR CONSTRUCTION



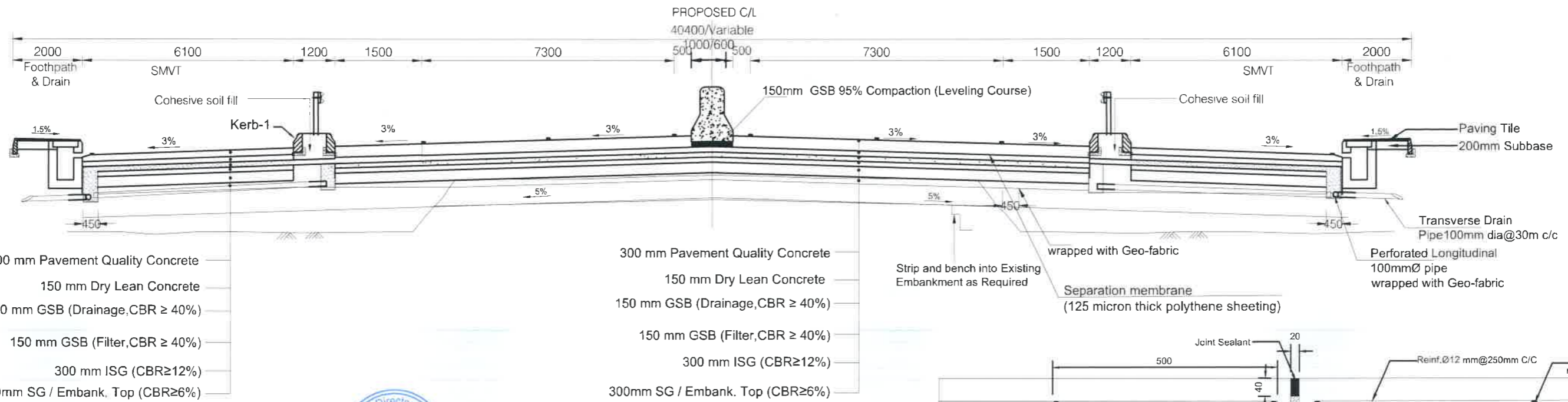
Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT: <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<table border="1"> <thead> <tr> <th>TITLE</th> <th>NAME</th> </tr> </thead> <tbody> <tr> <td>DESIGN BY:</td> <td>MMI</td> </tr> <tr> <td>DRAWN BY:</td> <td>BAK</td> </tr> <tr> <td>CHECKED &amp; SUBMITTED BY:</td> <td></td> </tr> <tr> <td>TEAM LEADER:</td> <td>MAH</td> </tr> </tbody> </table>	TITLE	NAME	DESIGN BY:	MMI	DRAWN BY:	BAK	CHECKED & SUBMITTED BY:		TEAM LEADER:	MAH	DRAWING TITLE: <b>PAVEMENT DRAWINGS                  TYPICAL CONCRETE PAVEMENT CROSS                  SECTION FOR MARKET/URBAN AREA (JPCP)</b>	<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	APPROVAL				
	TITLE	NAME																				
	DESIGN BY:	MMI																				
	DRAWN BY:	BAK																				
	CHECKED & SUBMITTED BY:																					
TEAM LEADER:	MAH																					
REV	DATE	DESCRIPTION	APPROVAL																			
SCALE: NOT TO SCALE	SCS-HW-GD-C3 - 45																					

TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI

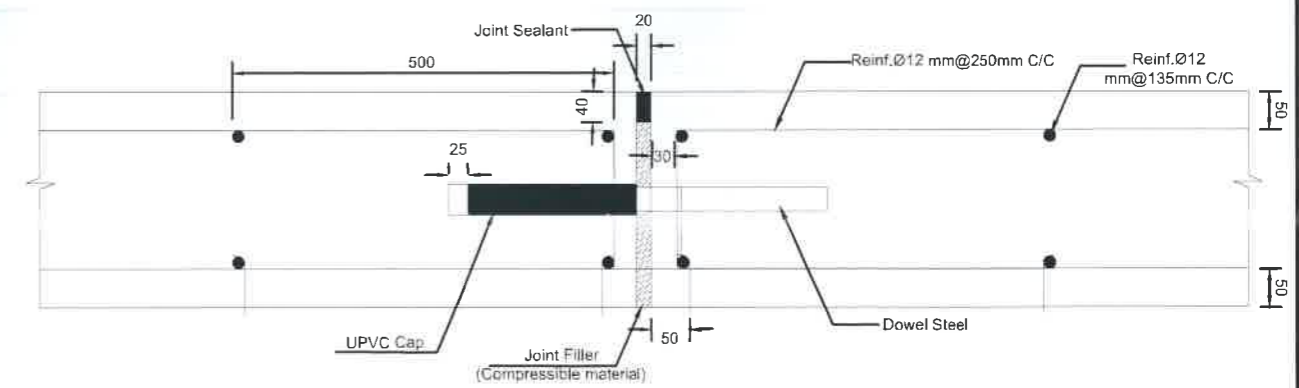
Jointed Reinforced Concrete Pavement (JRCP)



TYPICAL CONCRETE PAVEMENT PLAN



TYPICAL CONCRETE PAVEMENT SECTION: A-A  
( MODIFIED )



EXPANSION JOINT STRUCTURE NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

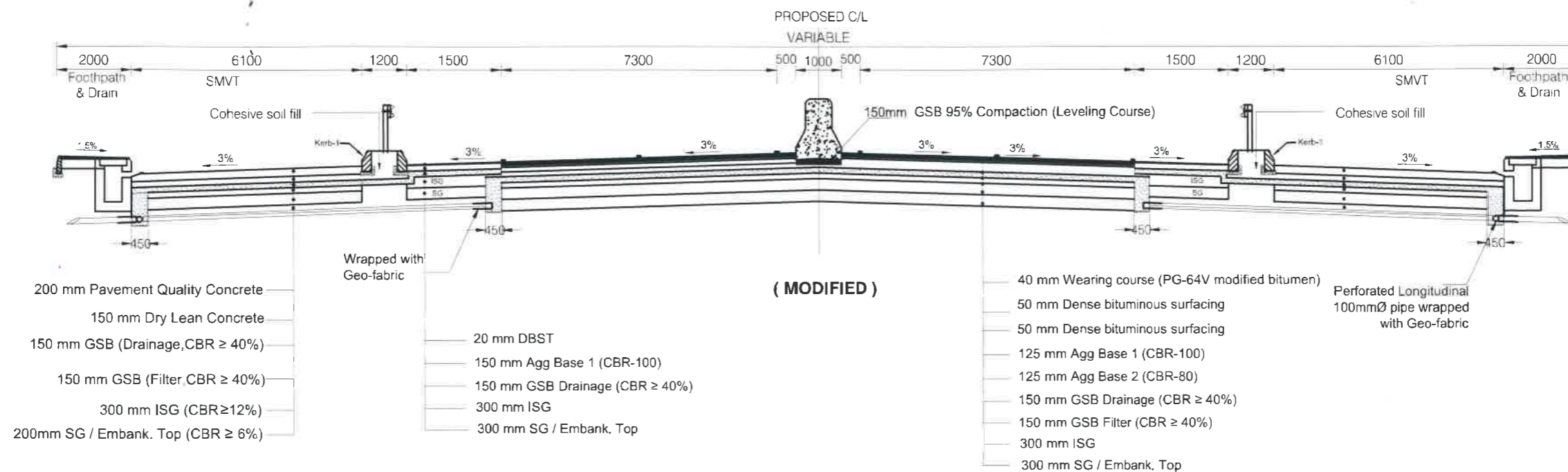
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**PAVEMENT DRAWINGS  
TYPICAL CONCRETE PAVEMENT CROSS  
SECTION FOR MARKET/URBAN AREA (JRCP)**

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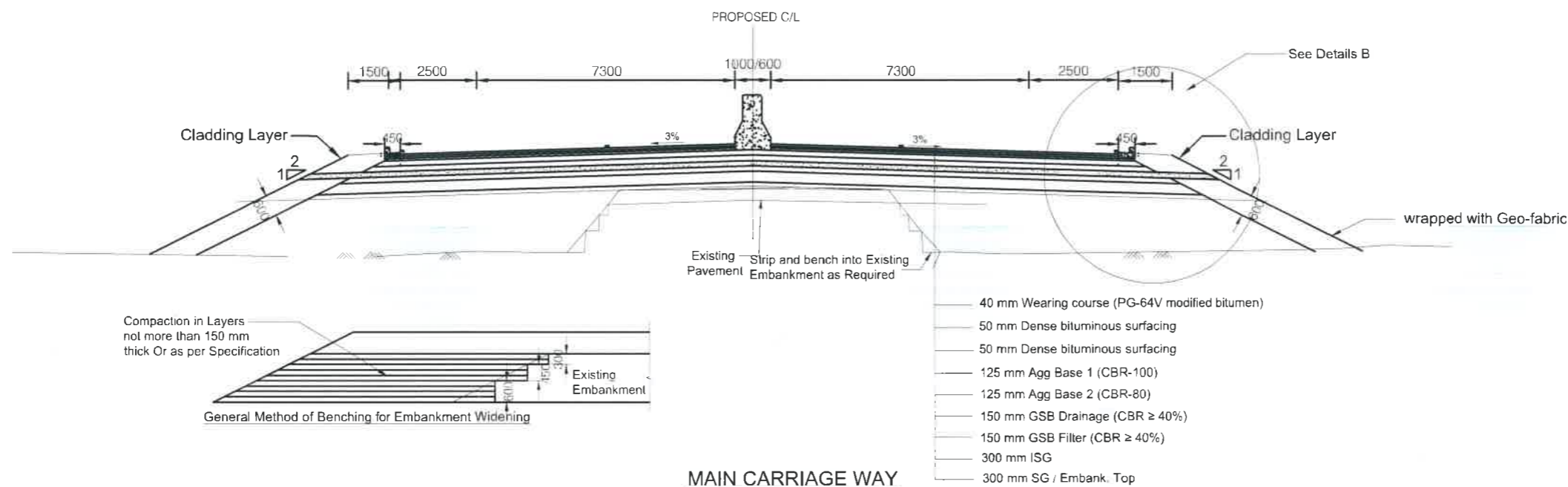
SCS-HW-GD-C3 -46

REV	DATE	DESCRIPTION	APPROVAL

TYPICAL CONCRETE & ASPHALT PAVEMENT CROSS SECTION FOR MARKET / URBAN AREA  
SYLHET-SUTARKANDI



TYPICAL FLEXIBLE PAVEMENT CROSS SECTION TO BE ADOPTED FOR 4 LANE ROAD  
SYLHET-SUTARKANDI (CH.37+700~ CH.42+957)



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

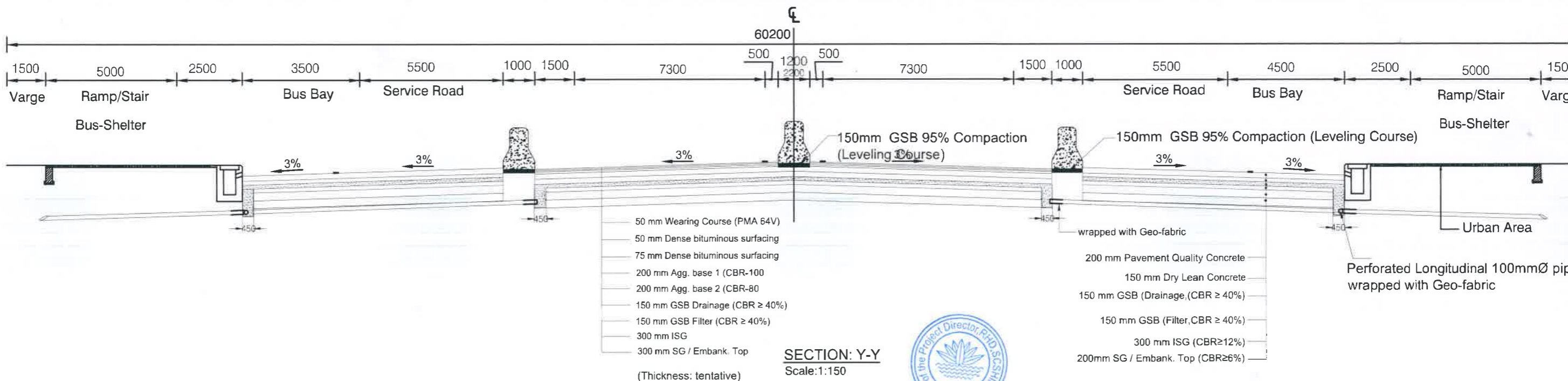
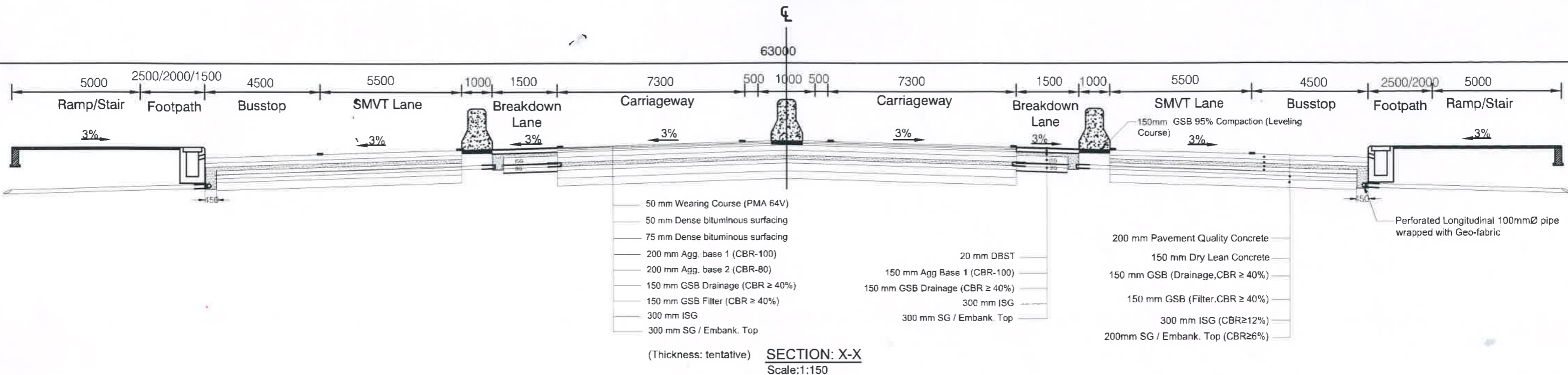
CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE	
PAVEMENT DRAWINGS TYPICAL CONCRETE PAVEMENT CROSS SECTION FOR MARKET/ URBAN AREA	
SCALE: NOT TO SCALE	SCS-HW-GD-C3 - 47

REV	DATE	DESCRIPTION	APPROVAL

TYPICAL FLEXIBLE PAVEMENT & CONCRETE PAVEMENT CROSS SECTION TO BE ADOPTED FOR BUS STOP AREA



NOT FOR CONSTRUCTION

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

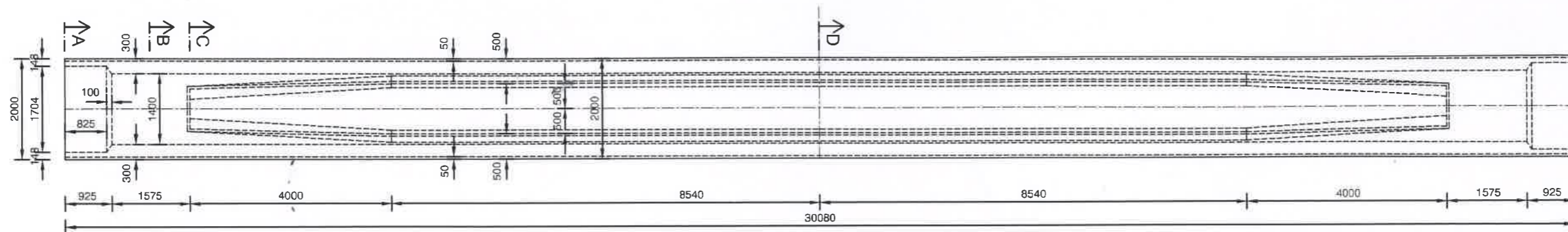
TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE:  
**PAVEMENT DRAWINGS  
TYPICAL CONCRETE PAVEMENT CROSS  
SECTION FOR BUSBAY**

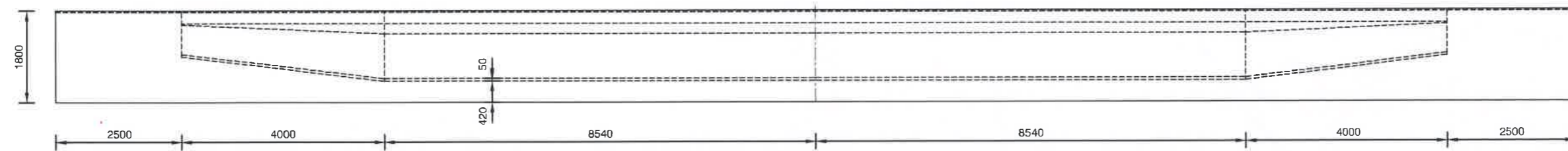
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SCS-HW-GD-C3 - 48

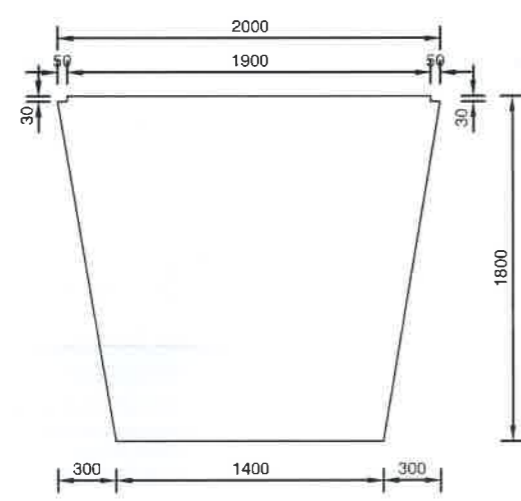
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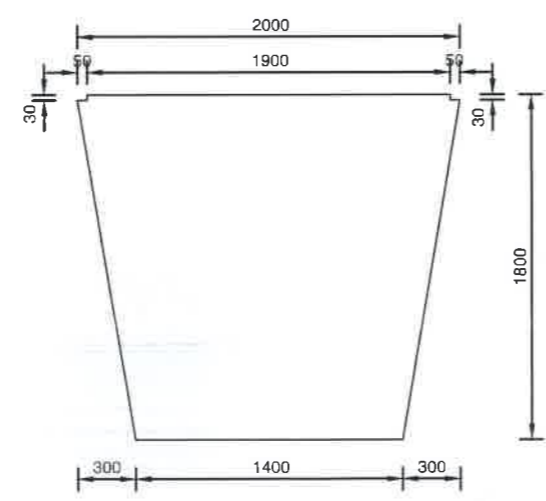
PLAN OF U-GIRDER  
SCALE - 1:100



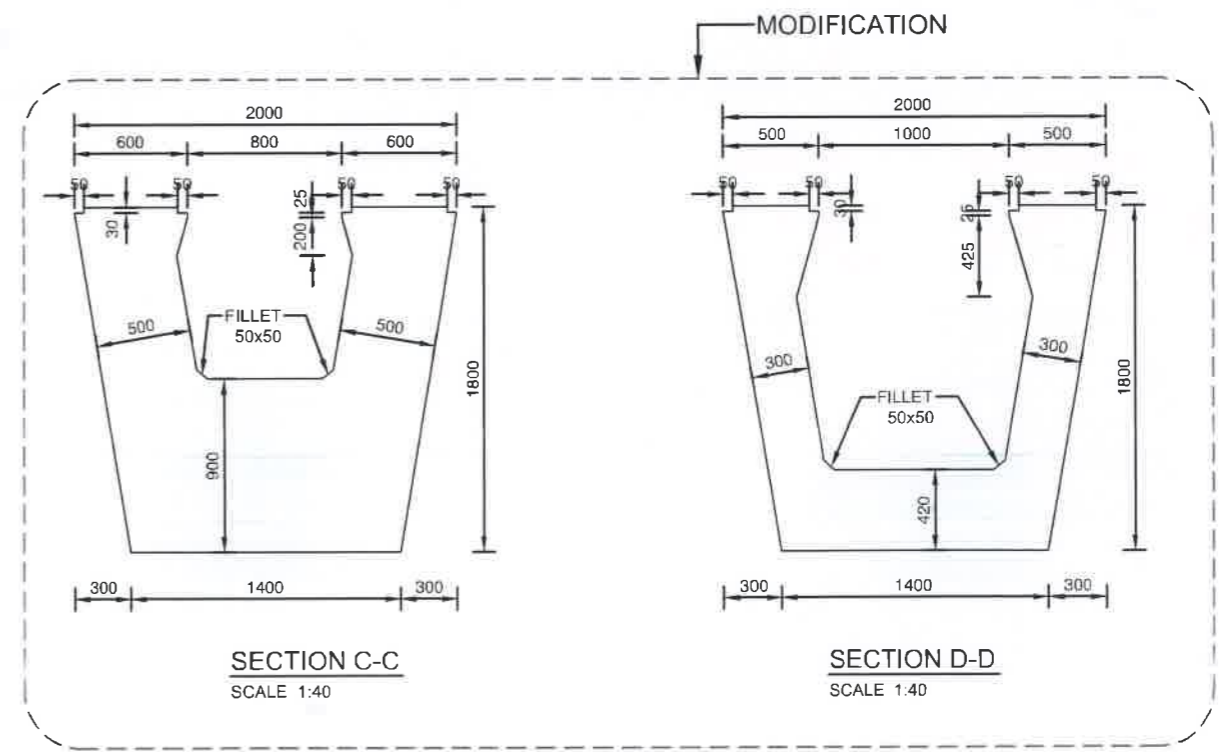
LONGITUDINAL SECTION OF U-GIRDER  
SCALE - 1:100



SECTION A-A  
SCALE 1:40



SECTION B-B  
SCALE 1:40



SECTION C-C  
SCALE 1:40

SECTION D-D  
SCALE 1:40



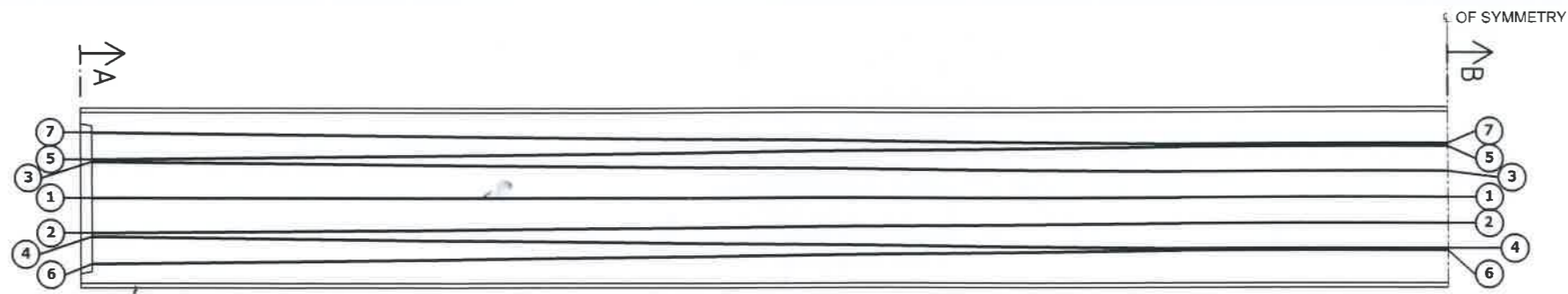
NOT FOR CONSTRUCTION

**Roads and Highways Department**  
Ministry of Road Transport and Bridges  
Government of the People's Republic of Bangladesh

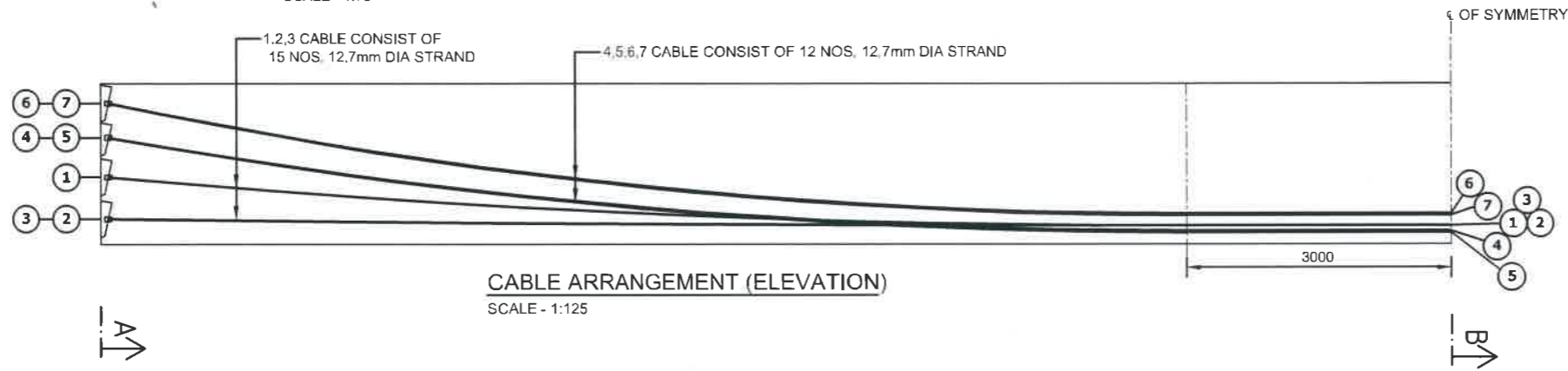
CONSULTANT :  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

PROJECT:	TITLE	NAME	REVISION:
Consultancy Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	DESIGN BY:	FU	Rev. No.
	CHECK BY:	FU	REVIEWED & UPDATED BY:
	DRAWN BY:	MJM	MD SHAHRIAR KABIR BHUIYAN
	TEAM LEADER:	MHK	CHECKED & SUBMITTED BY:
	SUBMITTED BY:	MHK	MD.ABDUL HOQUE <i>mahoy</i>

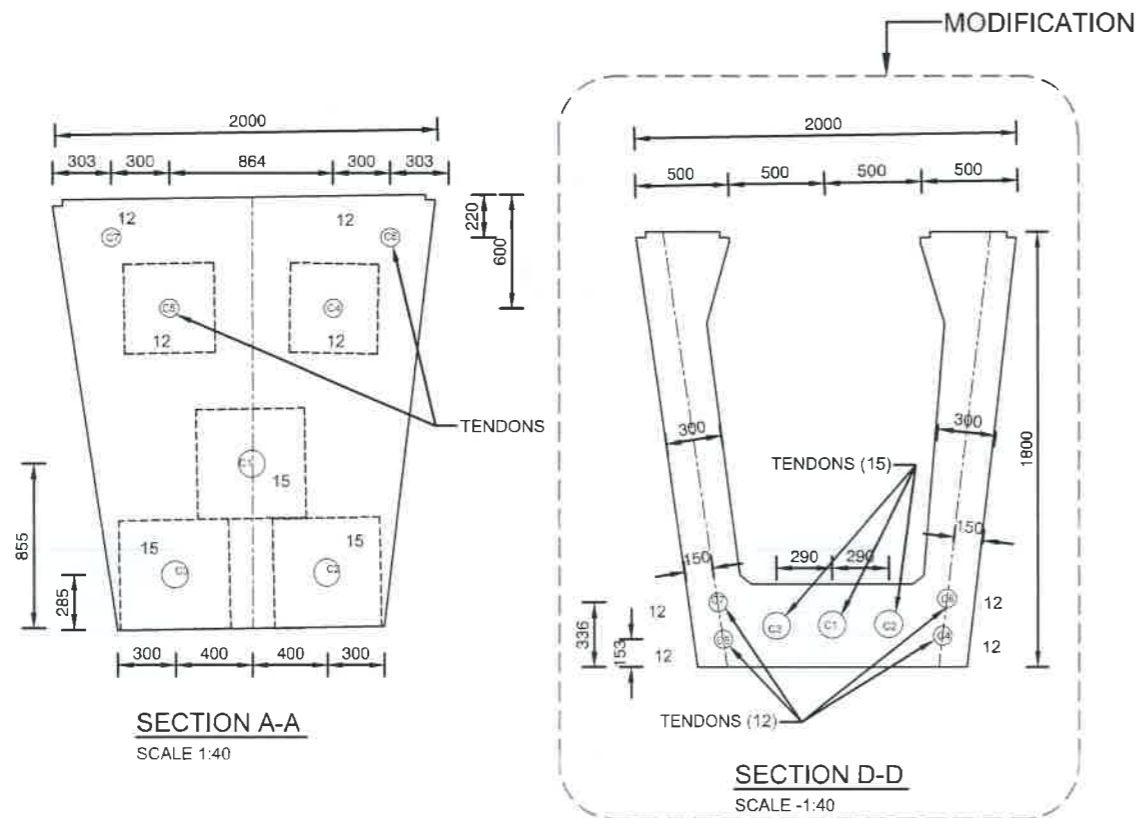
ROAD NAME: SYLHET - CHARKHAI - SHEOLA HIGHWAY  
DWG TITLE:  
PLAN & SECTION OF 30.480m U-GIRDER  
DWG. No: C4-D306-01 (MODIFIED)



CABLE ARRANGEMENT (PLAN)  
SCALE - 1:75



CABLE ARRANGEMENT (ELEVATION)  
SCALE - 1:125



CABLE PROFILE

CABLE NO	DISTANCE (mm) FROM MID SPAN OF GIRDER									
	14040	12463	10886	9309	7731	6154	4577	3000	0	
1	661	420	440	357	296	206	219	210	210	
2	273	256	242	230	222	215	211	210	210	
3	273	256	242	230	222	215	211	210	210	
4	1017	786	582	434	311	223	171	153	153	
5	1013	749	592	421	296	206	153	135	153	
6	1363	1092	863	676	531	428	366	346	346	
7	1360	1034	852	662	515	411	348	327	346	

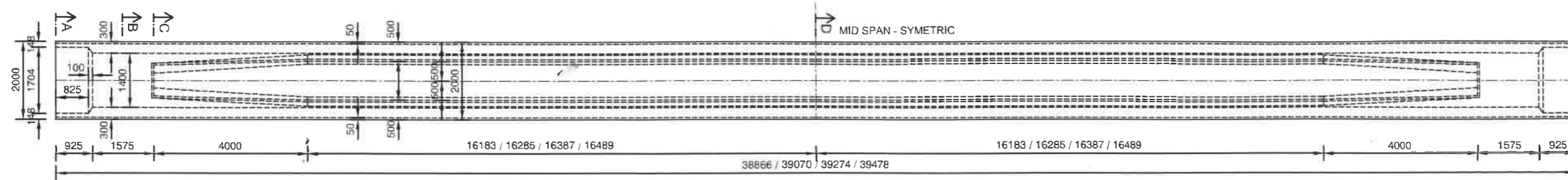
GENERAL PRESTRESSING NOTES FOR POST-TENSIONING TENDONS:

- TRANSFER PRESTRESSING FORCE TO CONCRETE SHELL BE CONTINUED UNTIL IT HAS ACHIEVED A TRANSFER CUBE STRENGTH 50 MPa
- TENDONS CONSIST OF NO. 12 & NO. 15 OF 12.7mm (As=98.7mm<sup>2</sup>) NOMINAL DIAMETER STRANDS. ALL STRANDS ARE TO BE 7-WIRE STRANDS WITH THE STRENGTH 1860MPa
- PRESTRESS FORCE =  $0.75 \times 1860 \times 98.7 \times 10^{-6} = 137kN$  FOR EACH STRAND
- TOTAL NUMBER OF STRANDS =  $12 \times 4 + 3 \times 15 = 93No.$
- TOTAL LENGTH OF STRANDS =  $93 \times 38 = 3.534m$

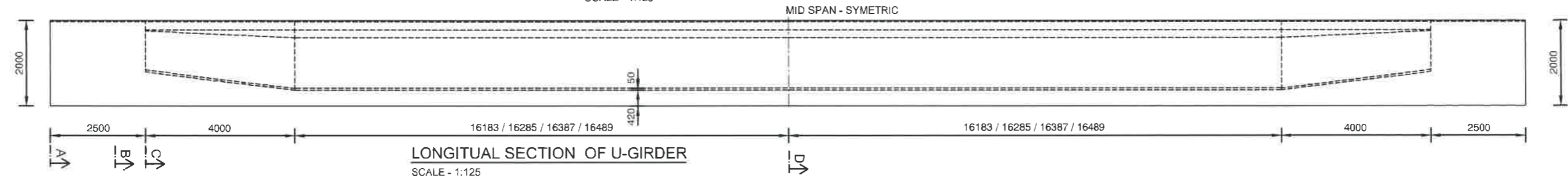
- MULTI-STRANDS STRESSING SEQUENCES (C4&C5 → C6&C7 → C2&C3 → C1)
- FIRST STRESSING TENDON C4 & C5
  - SECOND STRESSING TENDON C6 & C7
  - THIRD STRESSING TENDONS C2 & C3
  - FOURTH STRESSING TENDONS C1.



NOT FOR CONSTRUCTION

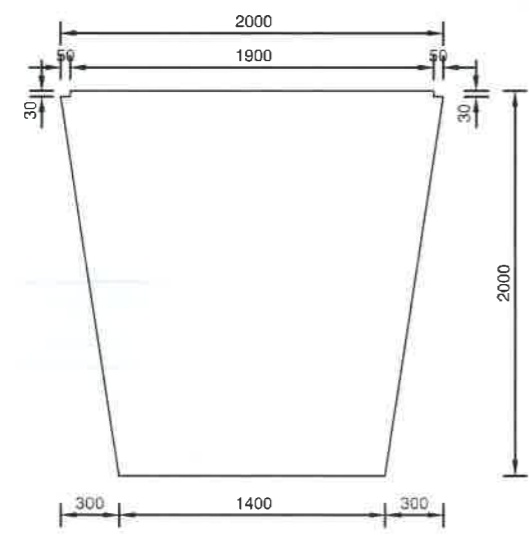


PLAN OF U-GIRDER  
SCALE - 1:125

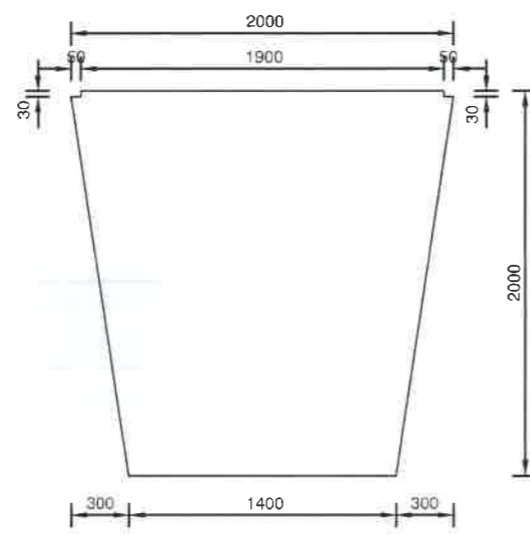


LONGITUDINAL SECTION OF U-GIRDER  
SCALE - 1:125

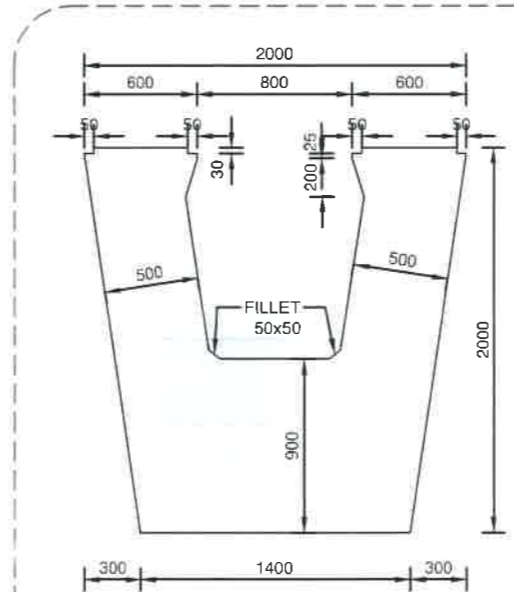
GIRDER LENGTH			
GIRDER NO.	LENGTH	L1	L2
GR-1	39478	13239	13239
GR-2	39274	13137	13137
GR-3	39070	13035	13035
GR-4	38866	12933	12933



SECTION A-A  
SCALE 1:40

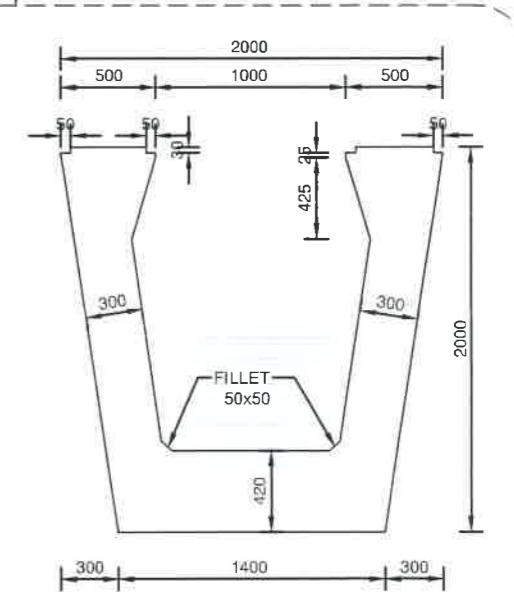


SECTION B-B  
SCALE 1:40



SECTION C-C  
SCALE 1:40

MODIFICATION



SECTION D-D  
SCALE 1:40

*[Signature]*

NOT FOR CONSTRUCTION

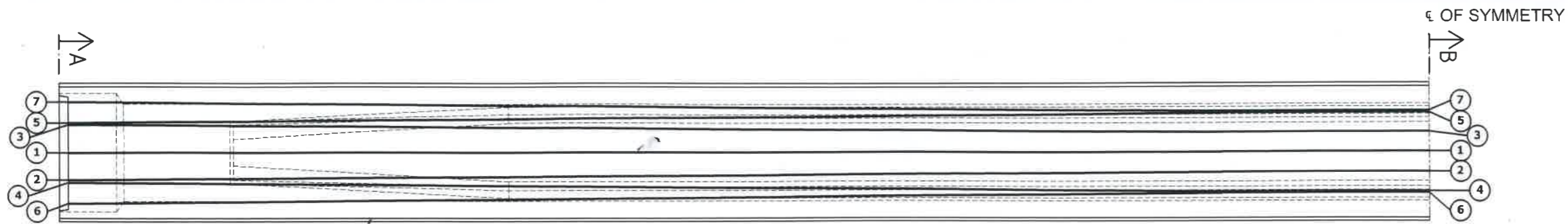
**Roads and Highways Department**  
Ministry of Road Transport and Bridges  
Government of the People's Republic of Bangladesh

CONSULTANT :  
  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

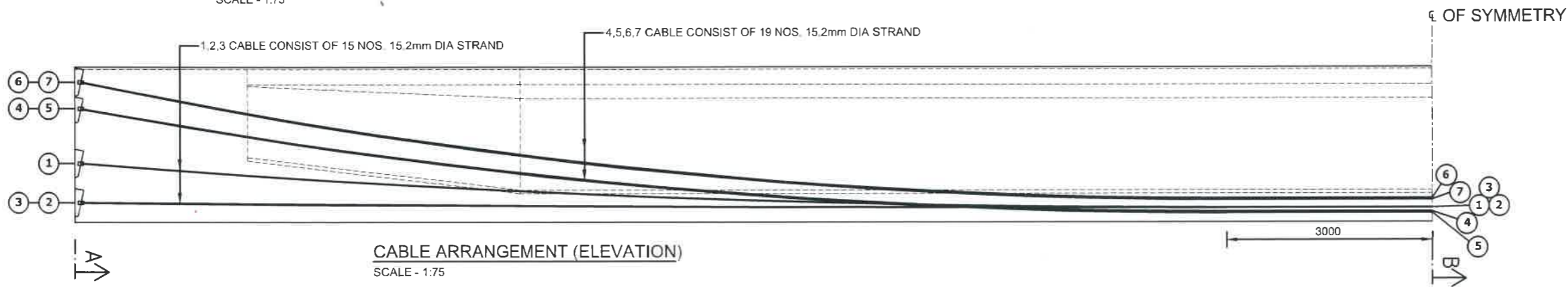
PROJECT:  
Consultancy Services for Updating  
Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway  
Improvement Project

TITLE	NAME	REVISION:
DESIGN BY:	FU	Rev. No.
CHECK BY:	FU	MD. SHAHRIAR KABIR BHUIYAN
DRAWN BY:	MJM	CHECKED & SUBMITTED BY :
TEAM LEADER:	MHK	MD. ABDUL HOQUE <i>[Signature]</i>
SUBMITTED BY:	MHK	

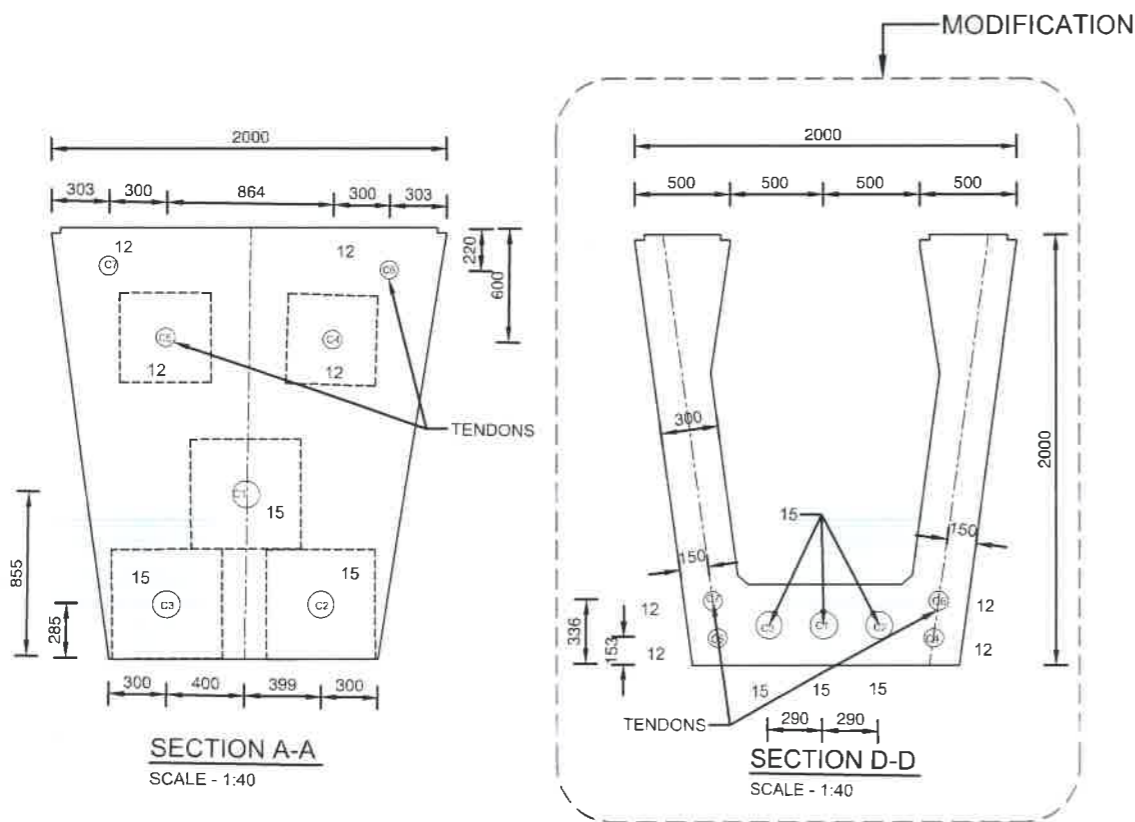
ROAD NAME: SYLHET - CHARKHAI - SHEOLA HIGHWAY  
DWG TITLE:  
PLAN & SECTION OF 39.630m U-GIRDER  
DWG. No: C4-D5396-01 (MODIFIED)



**CABLE ARRANGEMENT (PLAN)**  
SCALE - 1:75



**CABLE ARRANGEMENT (ELEVATION)**  
SCALE - 1:75



**CABLE PROFILE**

DISTANCE (mm) FROM MID SPAN OF GIRDER	18000	16120	14130	12540	10950	9360	7770	6180	4590	3000	0
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CABLE NO 1	683	584	496	420	356	303	262	233	216	210	210
CABLE NO 2	266	254	244	235	227	221	216	213	211	210	210
CABLE NO 3	266	254	244	235	227	221	216	213	211	210	210
CABLE NO 4	1248	1017	814	638	490	368	274	207	167	153	153
CABLE NO 5	1248	1017	814	638	490	368	274	207	167	153	153
CABLE NO 6	1476	1267	1088	891	724	571	482	406	361	346	346
CABLE NO 7	1476	1267	1088	891	724	571	482	406	361	346	346

**GENERAL PRESTRESSING NOTES FOR POST-TENSIONING TENDONS:**

- TRANSFER PRESTRESSING FORCE TO CONCRETE SHELL BE CONTINUED UNTIL IT HAS ACHIEVED A TRANSFER CUBE STRENGTH 50 MPa
- TENDONS CONSIST OF NO. 12 & NO. 15 OF 15.2mm (As=140mm<sup>2</sup>) NOMINAL DIAMETER STRANDS. ALL STRANDS ARE TO BE SEVEN-WIRE STRANDS WITH THE STRENGTH 1860MPa
- PRESTRESS FORCE = 0.75 x 1860e3 x 140e-6 = 195kN
- TOTAL NUMBER OF STRANDS = 12 x 4 + 3 x 15 = 93No.
- TOTAL LENGTH OF STRANDS = 93 x 47 = 4,371m

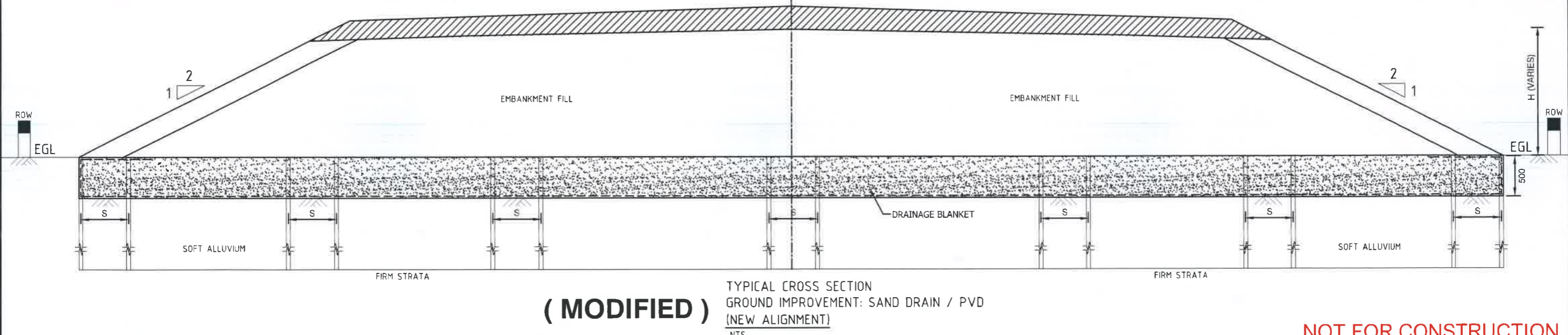
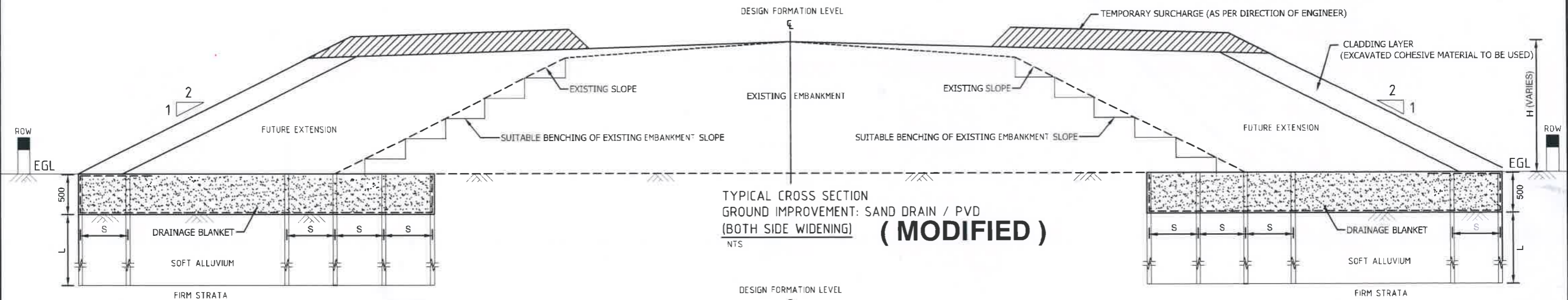
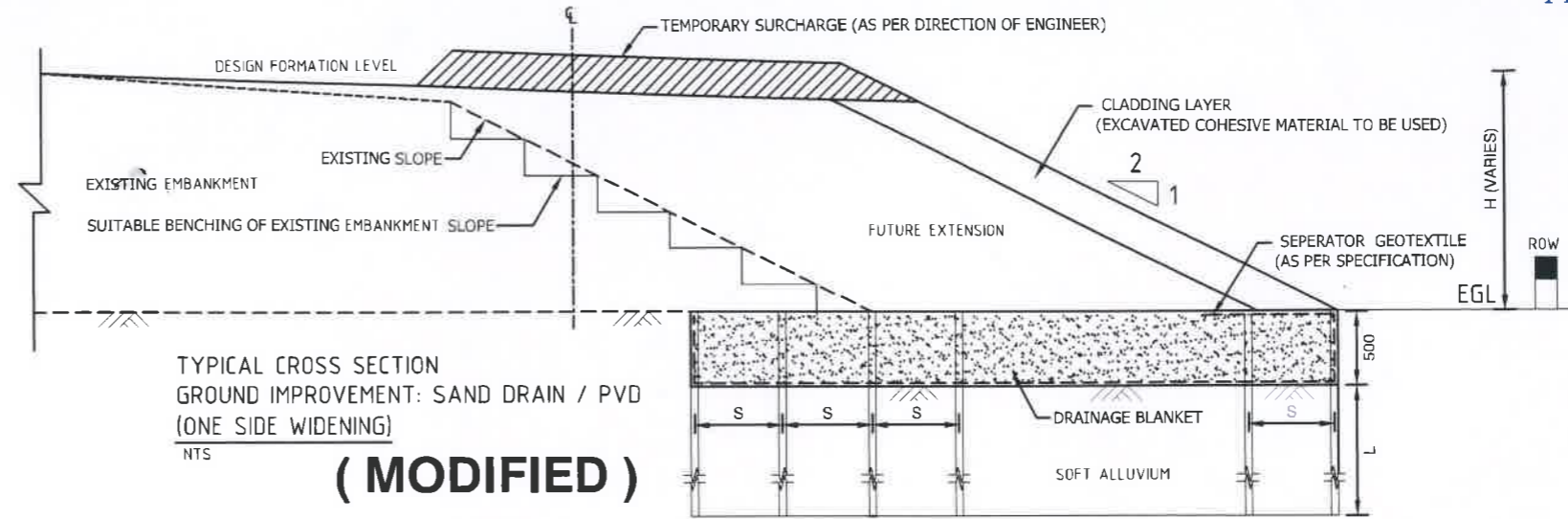
- MULTI-STRANDS STRESSING SEQUENCES (C4&C5 → C6&C7 → C2&C3 → C1)
- FIRST STRESSING TENDON C4 & C5
  - SECOND STRESSING TENDON C6 & C7
  - THIRD STRESSING TENDONS C2 & C3
  - FOURTH STRESSING TENDONS C1.





**NOT FOR CONSTRUCTION**

**NOTES:**

1. THESE DRAWINGS SHALL BE REFERRED IN CONJUNCTION WITH HIGHWAY DRAWINGS AS APPLICABLE.
2. STABILITY OF TEMPORARY SLOPES PREPARED TO EXCAVATE THE SOFT SOIL FROM THE EMBANKMENT BASE SHALL BE RESPONSIBILITY OF THE CONTRACTOR.
3. UPON CLEARING & GRUBBING OF THE EXISTING EMBANKMENT SLOPES, WHERE APPLICABLE, A SUITABLE CUT BE SHALL BE FORMED OVER THE EXISTING SLOPES IN ORDER TO DEVELOP PROPER BOND WITH NEW EARTH WORK.
4. COHESIVE REPLACEMENT MATERIAL SHALL BE USED AS CLADDING LAYER.
5. CONTRACTOR SHALL TAKE FEW TEST PITS AS PER ENGINEER'S INSTRUCTION ALONG THE PROPOSED WIDENING / NEW ALIGNMENT TO CONFIRM ON DEPTH OF GROUND IMPROVEMENT.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS WITH DETAIL CONSTRUCTION SEQUENCE AND MONITORING PLAN (APPROVED BY ENGINEER) PRIOR TO CONSTRUCTION OF EMBANKMENT.

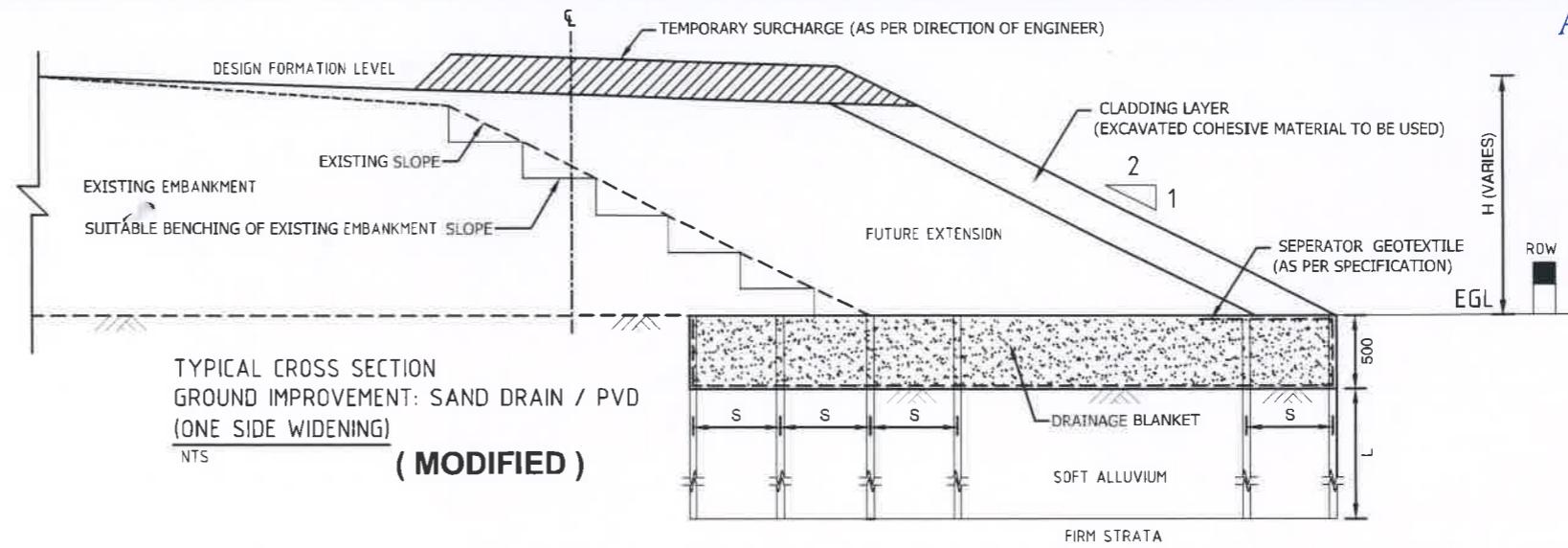


**NOT FOR CONSTRUCTION**

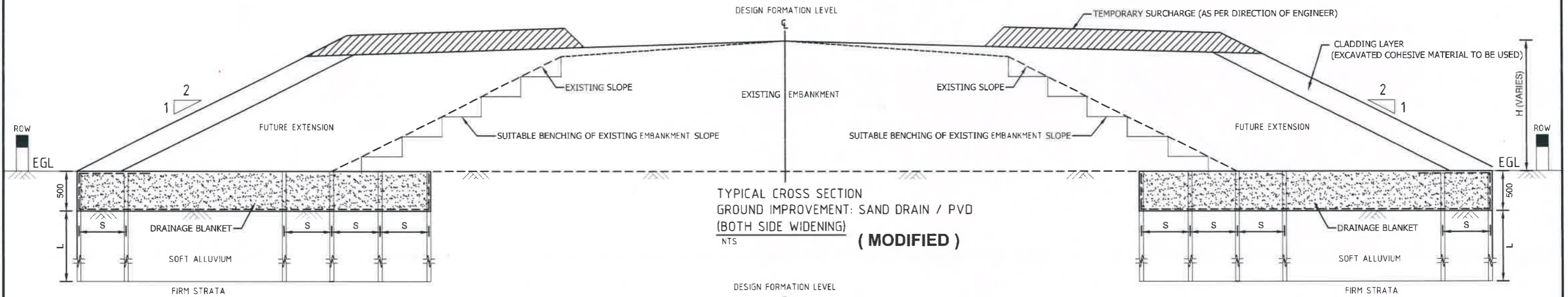
	Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b>	<b>NAME</b>	DRAWING TITLE: <b>GENERAL DRAWING                  EMBANKMENT CONSTRUCTION WITH SAND                  PILE OR PVD</b>	REV DATE DESCRIPTION APPROVAL
			DESIGN BY:	MMI		
			DRAWN BY:	BAK		
			CHECKED & SUBMITTED BY:			
TEAM LEADER:	MAH	SCALE: NOT TO SCALE	DRAWING NO SCS-HW-GD-C1 - 62			

**NOTES:**

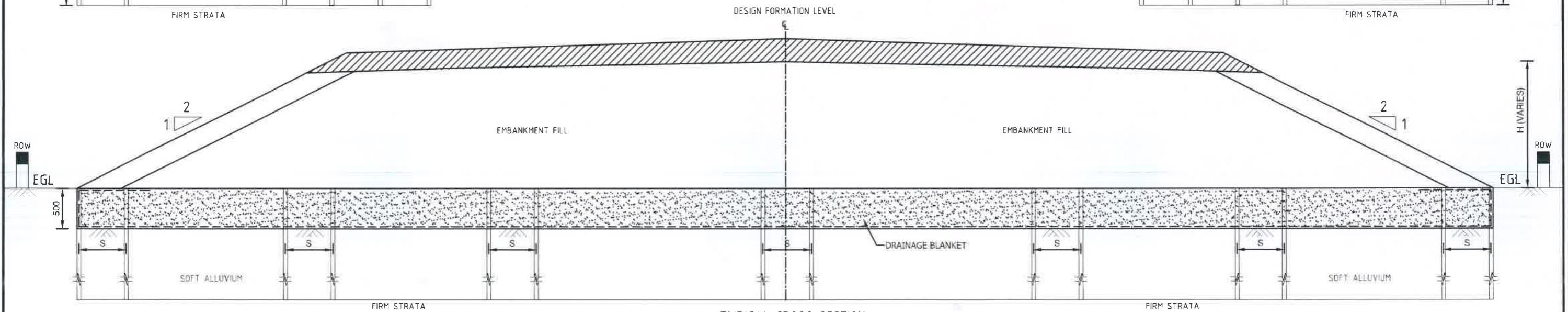
1. THESE DRAWINGS SHALL BE REFERRED IN CONJUNCTION WITH HIGHWAY DRAWINGS AS APPLICABLE
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TYPICAL CROSS SECTION  
GROUND IMPROVEMENT: SAND DRAIN / PVD  
(ONE SIDE WIDENING)  
NTS  
**(MODIFIED)**



TYPICAL CROSS SECTION  
GROUND IMPROVEMENT: SAND DRAIN / PVD  
(BOTH SIDE WIDENING)  
NTS  
**(MODIFIED)**



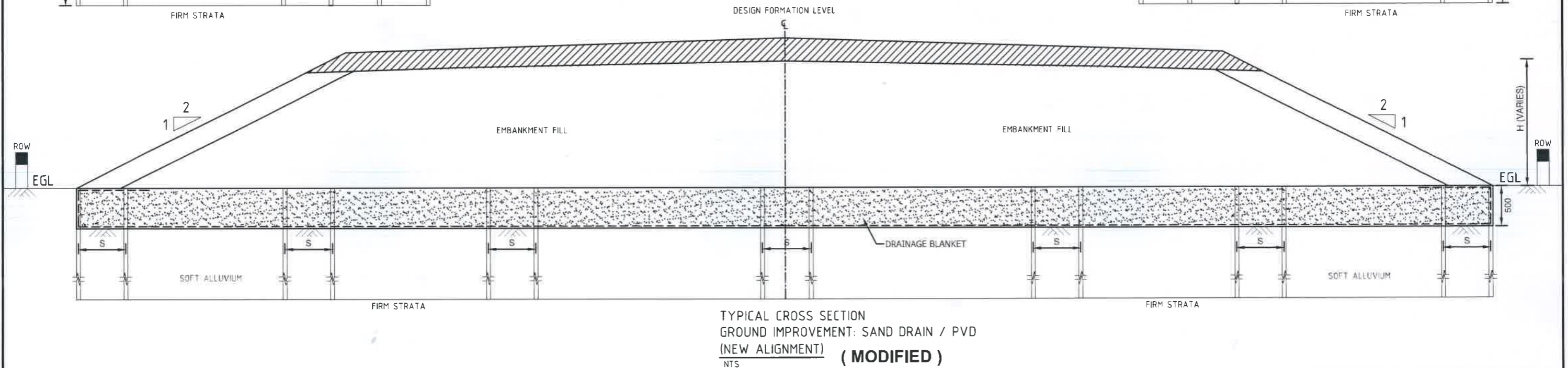
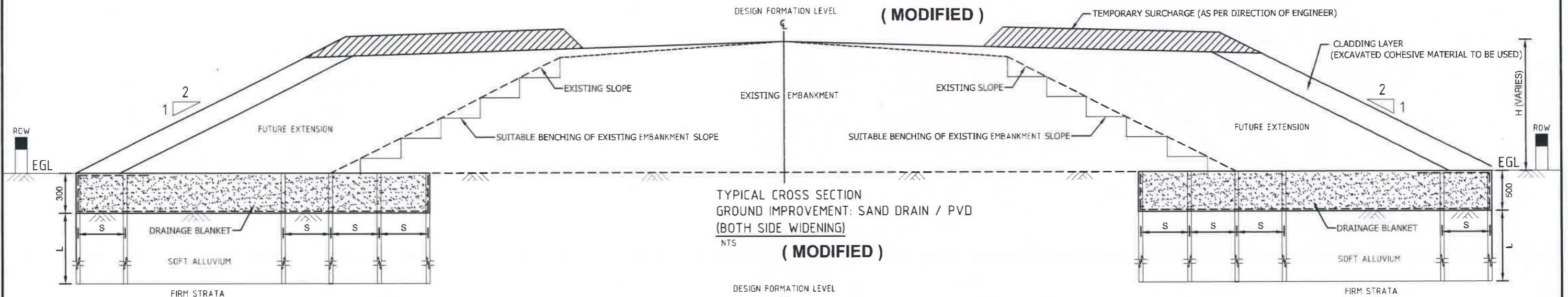
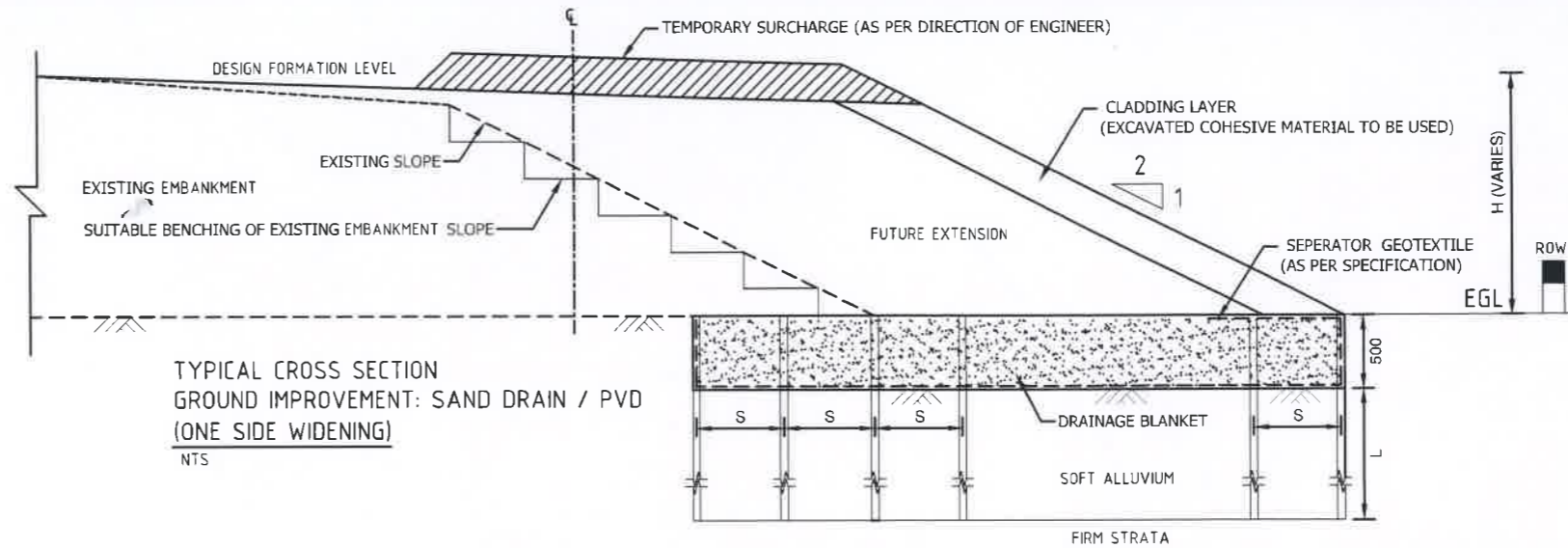
TYPICAL CROSS SECTION  
GROUND IMPROVEMENT: SAND DRAIN / PVD  
(NEW ALIGNMENT)  
NTS  
**(MODIFIED)**

**NOT FOR CONSTRUCTION**

	Government of the People's Republic of Bangladesh	<b>CONSULTANT:</b>  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b>	<b>NAME</b>	DRAWING TITLE: <b>GENERAL DRAWING                  EMBANKMENT CONSTRUCTION WITH SAND                  PILE OR PVD</b>	REV	DATE	DESCRIPTION	APPROVAL
	Ministry of Road Transport and Bridges		DESIGN BY: MMI						
	<b>Roads and Highways Department</b>		DRAWN BY: BAK						
	Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhat-Sheola Highway Improvement Project		CHECKED & SUBMITTED BY:						
			TEAM LEADER: MAH		SCALE: NOT TO SCALE	DRAWING NO SCS-HW-GD-C2-62			

NOTES:

1. THESE DRAWINGS SHALL BE REFERRED IN CONJUNCTION WITH HIGHWAY DRAWINGS AS APPLICABLE.
2. STABILITY OF TEMPORARY SLOPES PREPARED TO EXCAVATE THE SOFT SOIL FROM THE EMBANKMENT BASE SHALL BE RESPONSIBILITY OF THE CONTRACTOR.
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NOT FOR CONSTRUCTION



Government of the People's Republic of Bangladesh  
 Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
 Consulting Services for Updating Design and Safeguard Documents for  
 Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:

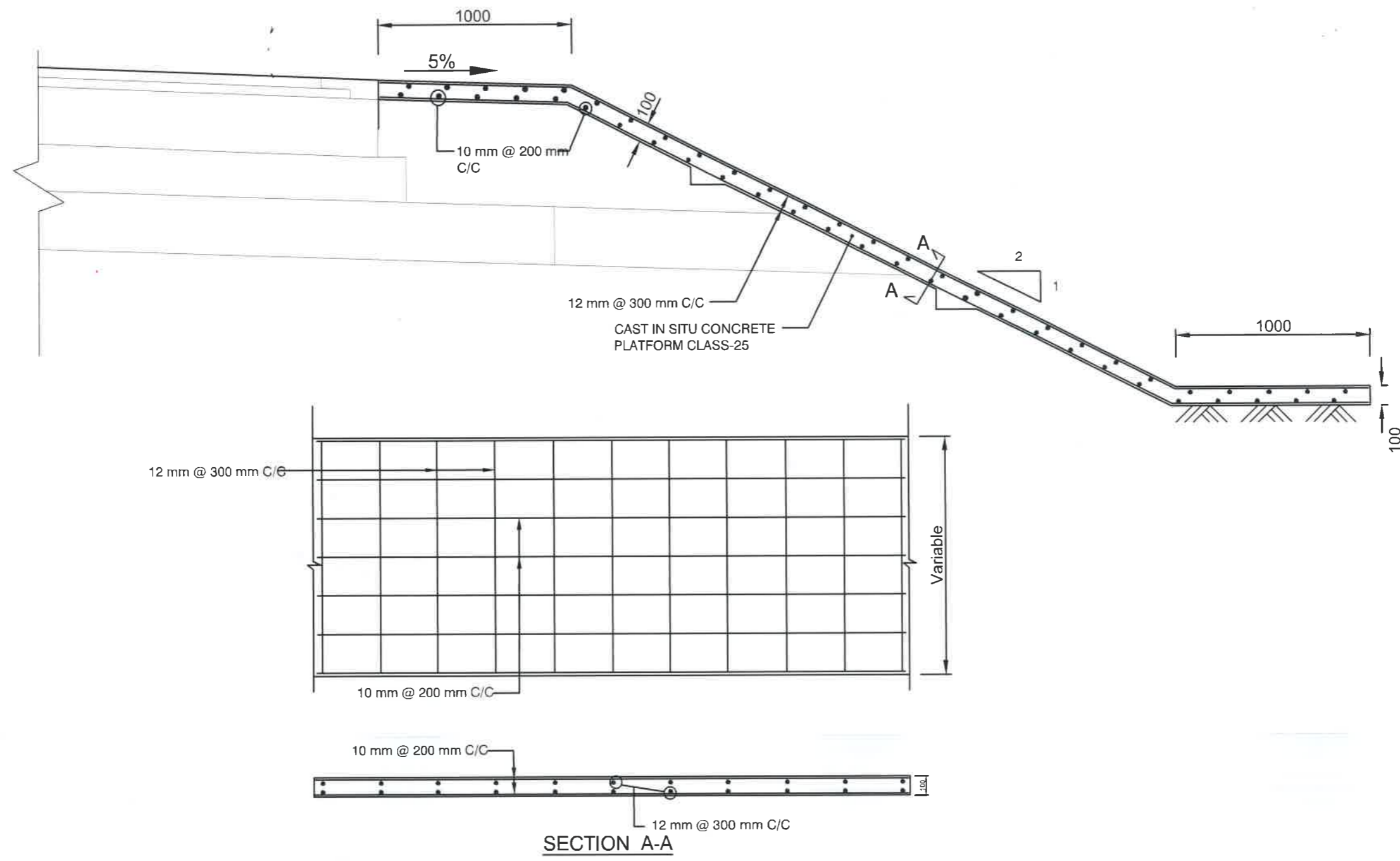


**BCL ASSOCIATES LIMITED**  
 Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
 Bir Uttam A K Khandaker Sarak,  
 Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE:	
<b>GENERAL DRAWING EMBANKMENT CONSTRUCTION WITH SAND PILE OR PVD</b>	
SCALE: NOT TO SCALE	DRAWING NO:SCS-HW-GD-C3-62

REV	DATE	DESCRIPTION	APPROVAL



SECTION A-A

NOT FOR CONSTRUCTION



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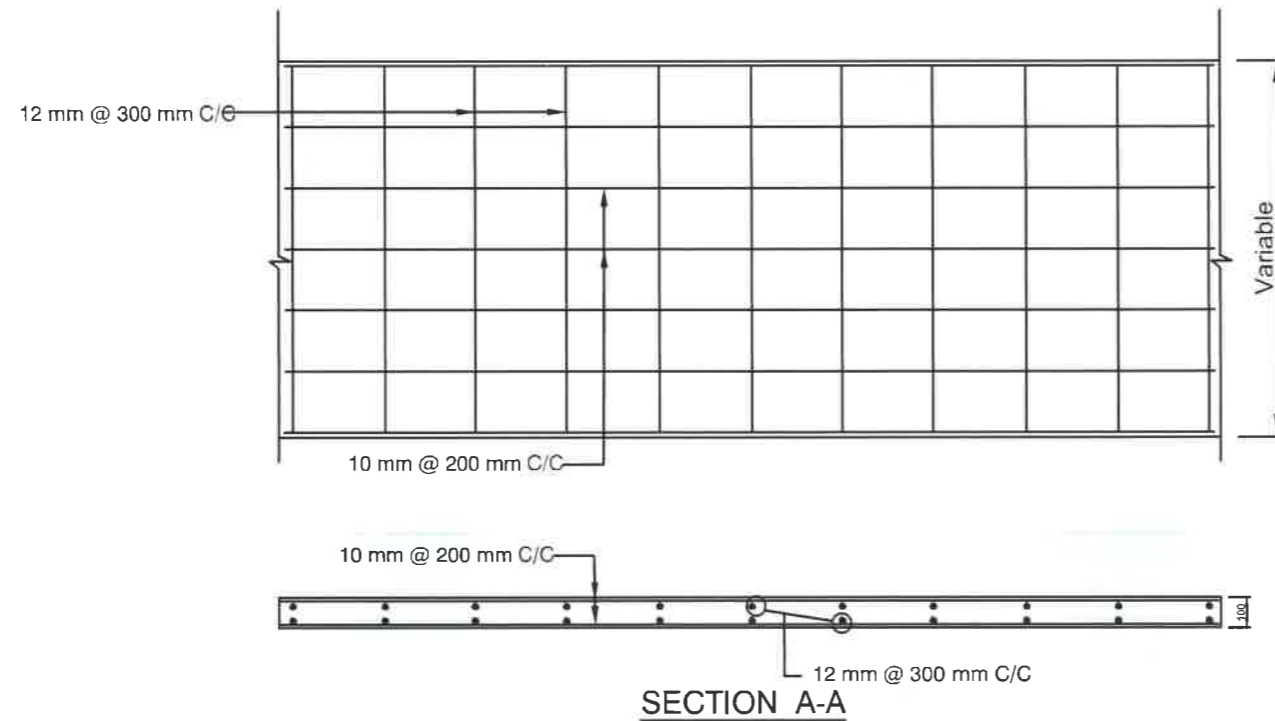
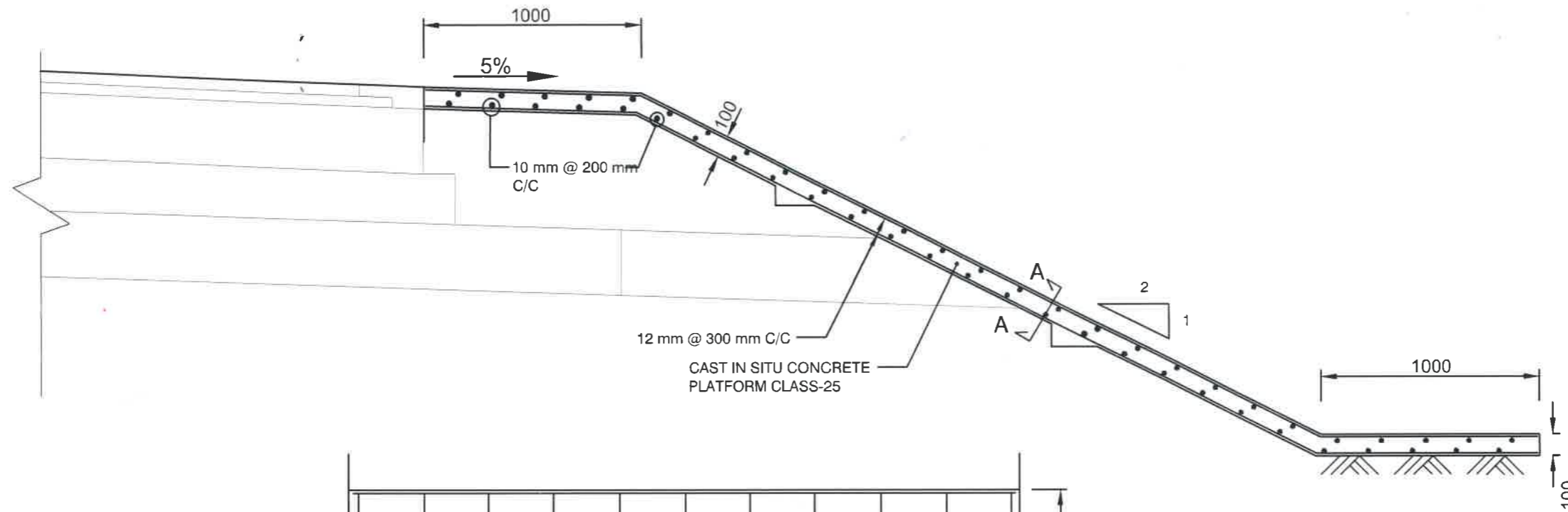
Government of the People's Republic of Bangladesh  
 Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
 Consulting Services for Updating Design and Safeguard Documents for  
 Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:



**BCL ASSOCIATES LIMITED**  
 Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
 Bir Uttam A K Khandaker Sarak,  
 Dhaka-1212, Bangladesh

TITLE	NAME	DRAWING TITLE	REV	DATE	DESCRIPTION	APPROVAL
DESIGN BY:	MMI <i>[Signature]</i>		GENERAL DRAWING CONCRETE SLOPE PROTECTION			
DRAWN BY:	BAK <i>[Signature]</i>					
CHECKED & SUBMITTED BY:						
TEAM LEADER:	MAH <i>[Signature]</i>	SCALE: NOT TO SCALE	DRAWING NO. SCS-HW-GD-C1 - 56A			



NOT FOR CONSTRUCTION



Government of the People's Republic of Bangladesh  
 Ministry of Road Transport and Bridges  
**Roads and Highways Department**

Consulting Services for Updating Design and Safeguard Documents for  
 Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:

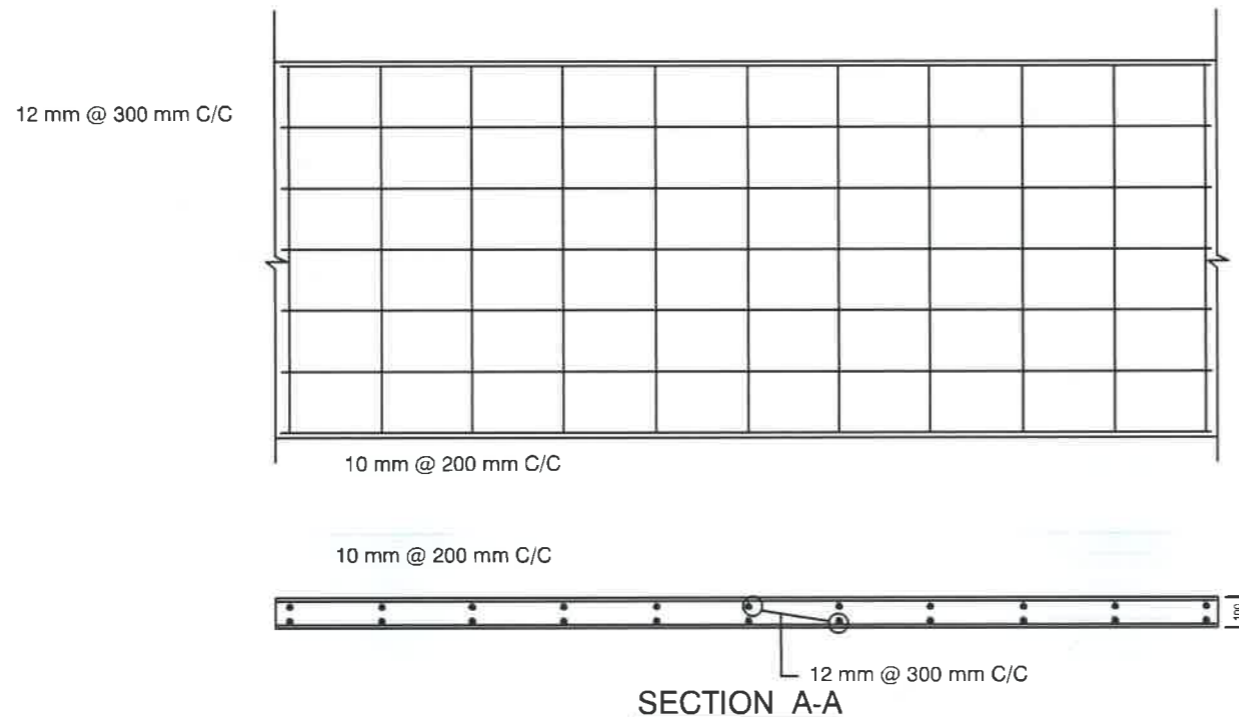
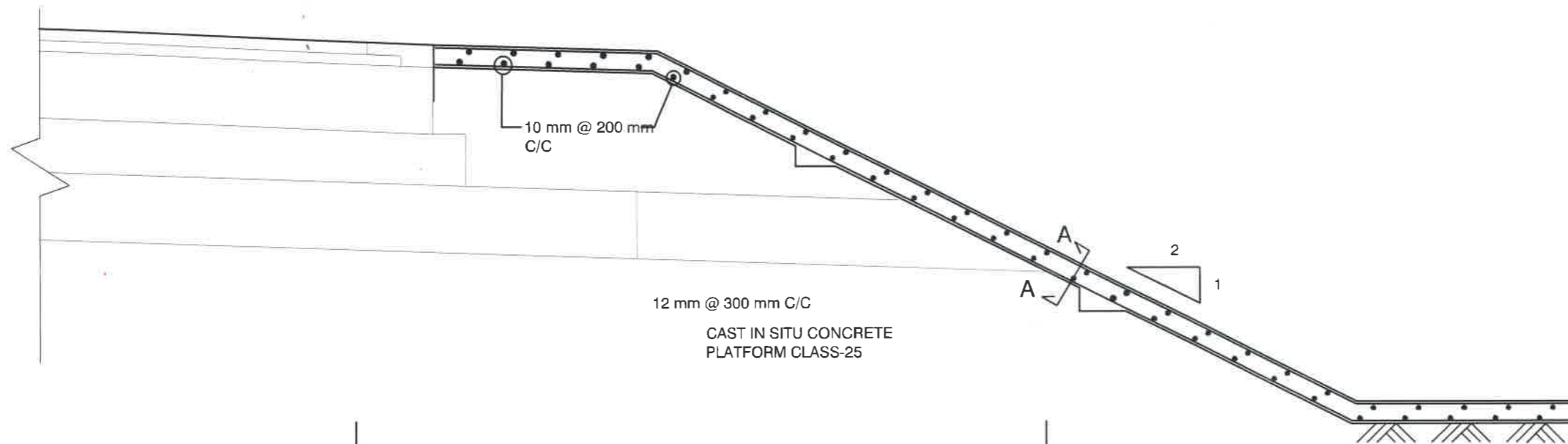


**BCL ASSOCIATES LIMITED**  
 Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
 Bir Uttam A K Khandaker Sarak,  
 Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE	
<b>GENERAL DRAWING CONCRETE SLOPE PROTECTION</b>	
SCALE: NOT TO SCALE	DRAWING NO:SCS-HW-GD-C2 - 56A

REV	DATE	DESCRIPTION	APPROVAL

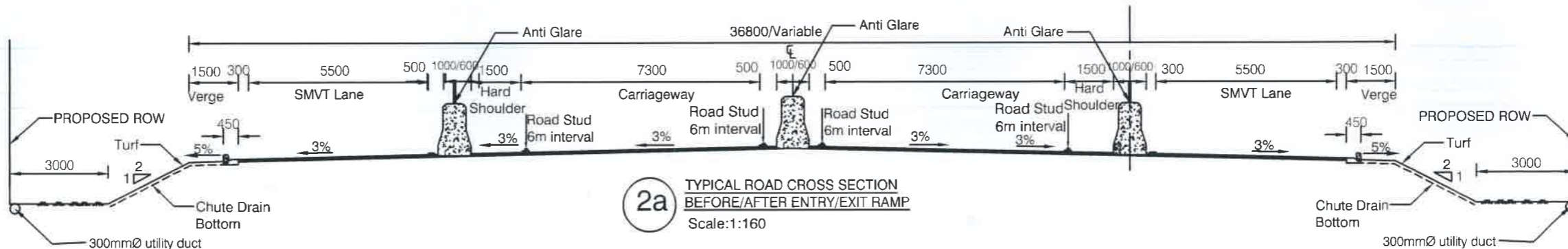
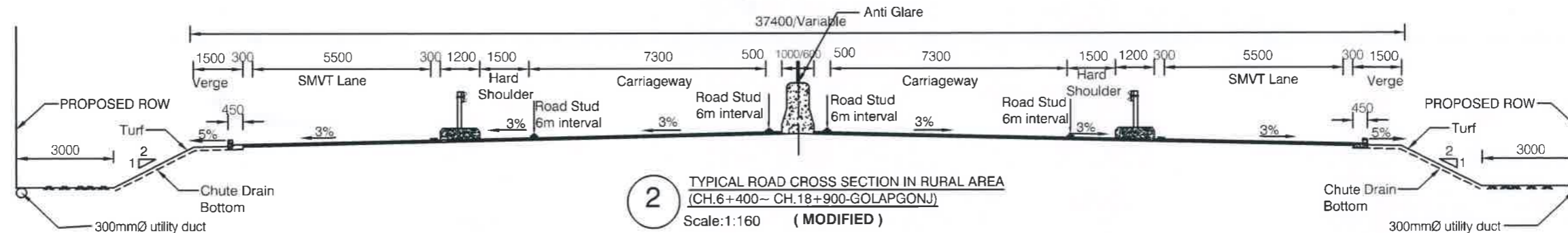
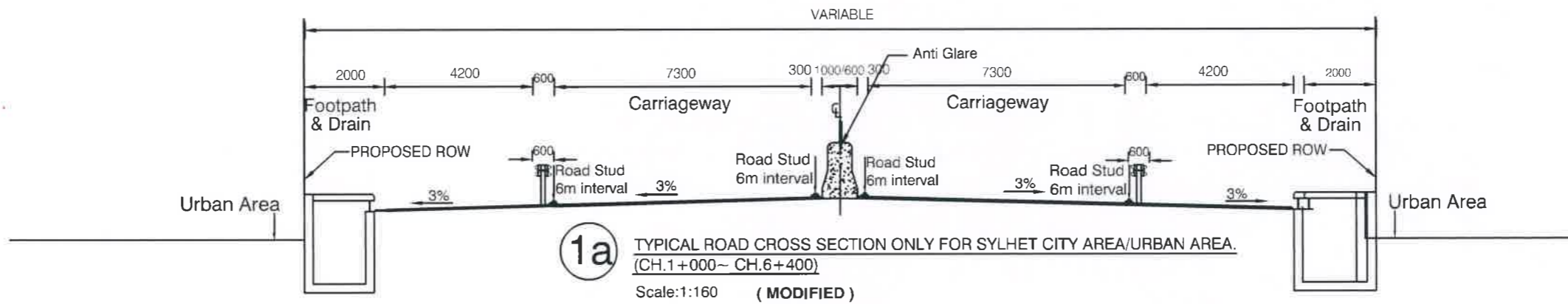
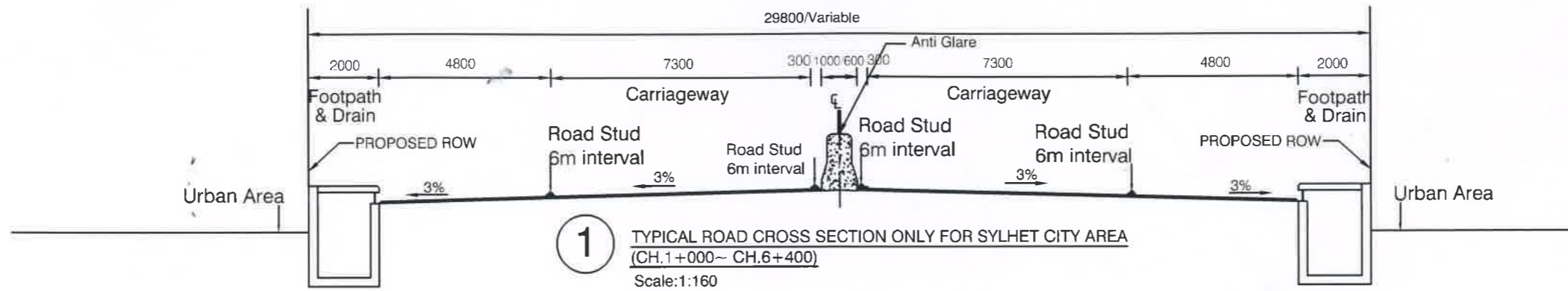


NOT FOR CONSTRUCTION

	Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b>	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">TITLE</th> <th style="text-align: left;">NAME</th> </tr> <tr> <td>DESIGN BY:</td> <td>MMI <i>[Signature]</i></td> </tr> <tr> <td>DRAWN BY:</td> <td>BAK <i>[Signature]</i></td> </tr> <tr> <td colspan="2">CHECKED &amp; SUBMITTED BY:</td> </tr> <tr> <td>TEAM LEADER:</td> <td>MAH <i>[Signature]</i></td> </tr> </table>	TITLE	NAME	DESIGN BY:	MMI <i>[Signature]</i>	DRAWN BY:	BAK <i>[Signature]</i>	CHECKED & SUBMITTED BY:		TEAM LEADER:	MAH <i>[Signature]</i>	DRAWING TITLE <b>GENERAL DRAWING                  CONCRETE SLOPE PROTECTION</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	APPROVAL				
	TITLE	NAME																					
	DESIGN BY:	MMI <i>[Signature]</i>																					
	DRAWN BY:	BAK <i>[Signature]</i>																					
CHECKED & SUBMITTED BY:																							
TEAM LEADER:	MAH <i>[Signature]</i>																						
REV	DATE	DESCRIPTION	APPROVAL																				
Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project		SCALE: NOT TO SCALE		DRAWING NO: SCS-HW-GD-C3 - 56A																			

# TYPICAL ROAD CROSS SECTION

Attachment-9 (Lot-1)



NOTES :  
1. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

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Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**

Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:

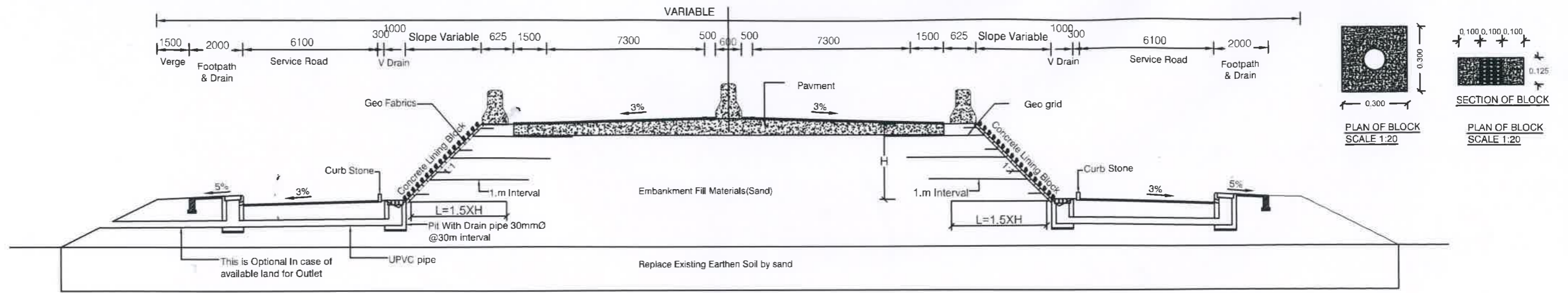


**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

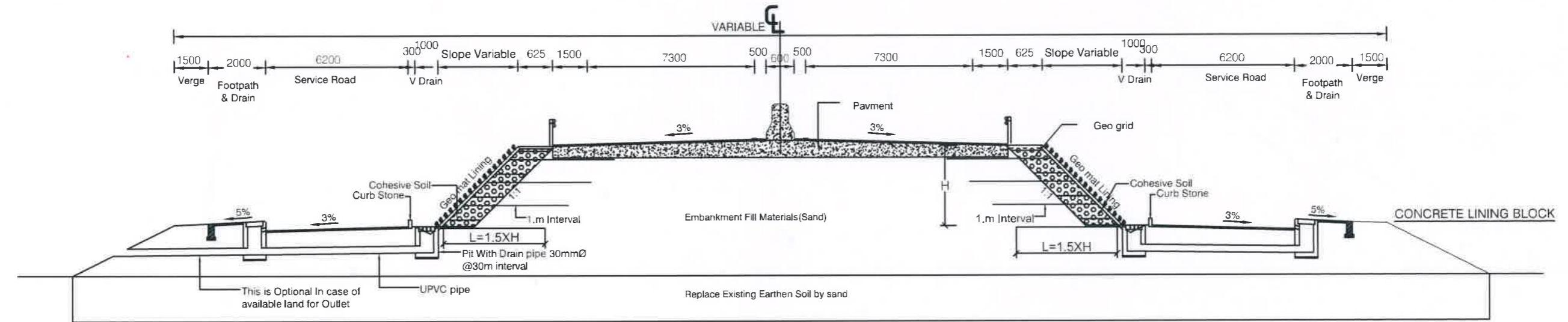
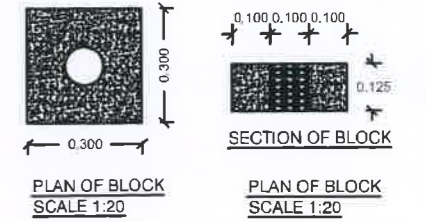
TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE	
<b>GENERAL DRAWING TYPICAL CROSS SECTION (SHEET 01 OF 03)</b>	
SCALE: AS SHOWN	DRAWING NO SCS-HW-GD-C1 - 06

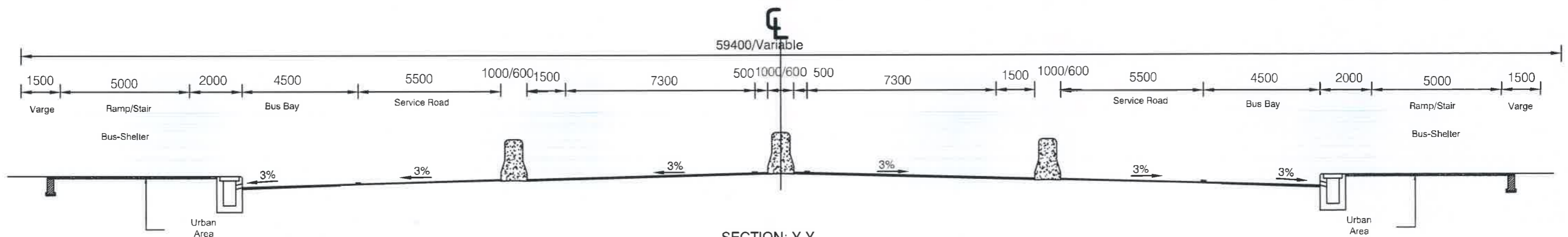
REV	DATE	DESCRIPTION	APPROVAL



SECTION: X-X(OPTION -1)  
Scale: 1:200



SECTION: X-X(OPTION -2) (MODIFIED)  
Scale: 1:200



SECTION: Y-Y  
Scale: 1:160

- NOTES:
1. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
  2. MINIMUM TENSILE STRENGTH OF GEO-GRID SHALL BE 100KN/M@ 5% STRAIN.
  3. ULTIMATE TENSILE STRENGTH SHALL BE AT LEAST 1.25 TIMES OF TENSILE STRENGTH AT 5% STRAIN.
  4. UP TO 2M OF SOFT / LOOSE SOIL TO BE REMOVED WITH COMPACTED SAND BELOW THE EMBANKMENT FILL UNDERLAIN BY NON-WOVEN GEOTEXTILE AS A SEPERATOR
  5. FOR SOFT / LOOSE SOIL BEYOND 2M DEPTH NECESSARY GROUND IMPROVEMENT TECHNIQUE TO BE ADOPTED TO IMPROVE SOIL CONDITION

NOT FOR CONSTRUCTION



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Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:

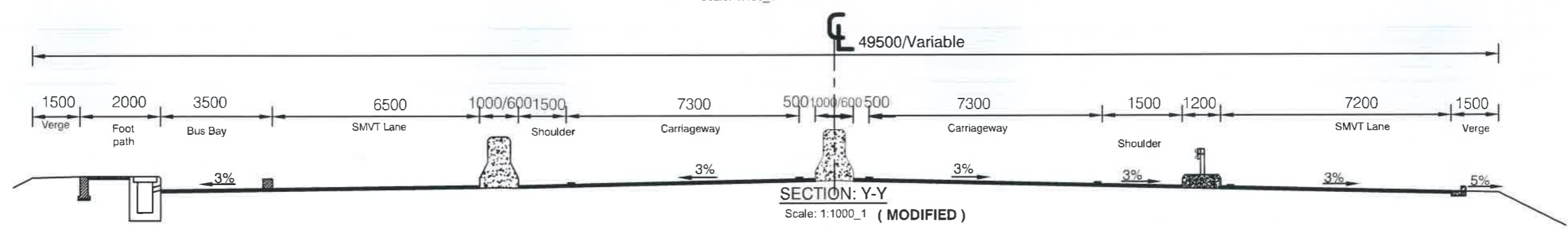
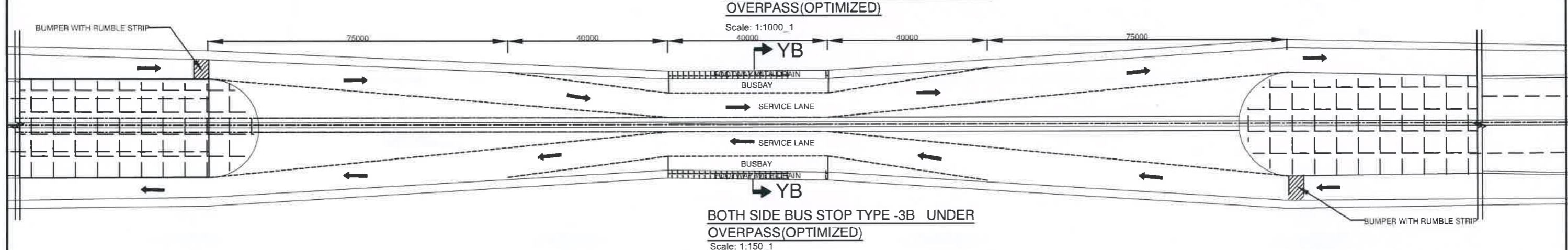
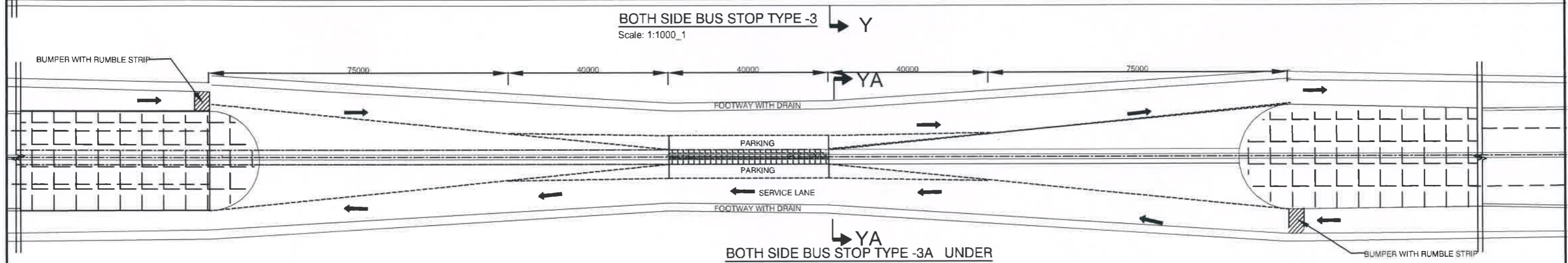
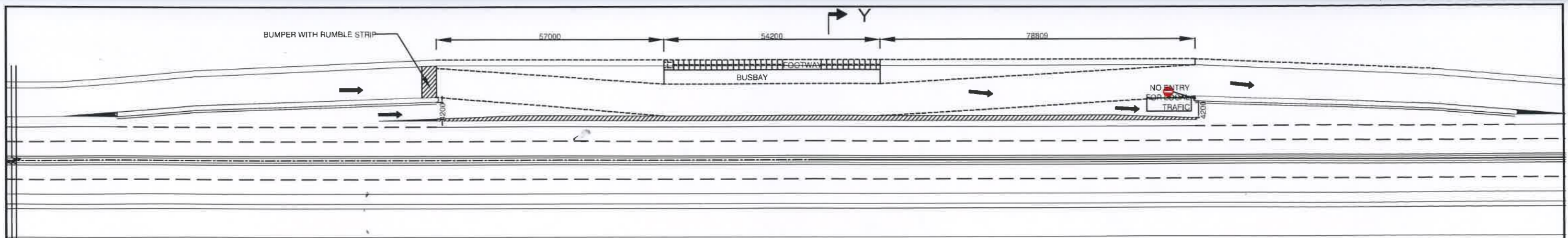


**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE:	
<b>GENERAL DRAWING BUSBAY TYPE-2 SECTION</b>	
SCALE: AS SHOWN	DRAWING NO SCS-HW-GD-C1 - 23

REV	DATE	DESCRIPTION	APPROVAL



NOTES :  
1. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

**NOT FOR CONSTRUCTION**



*[Handwritten signature]*

Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

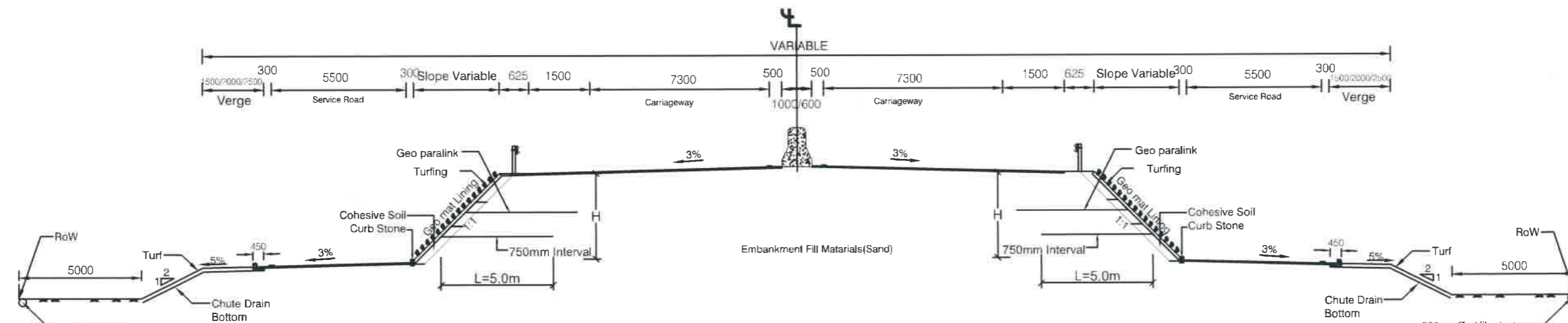
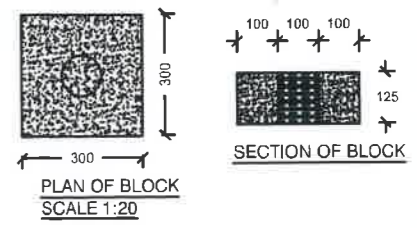
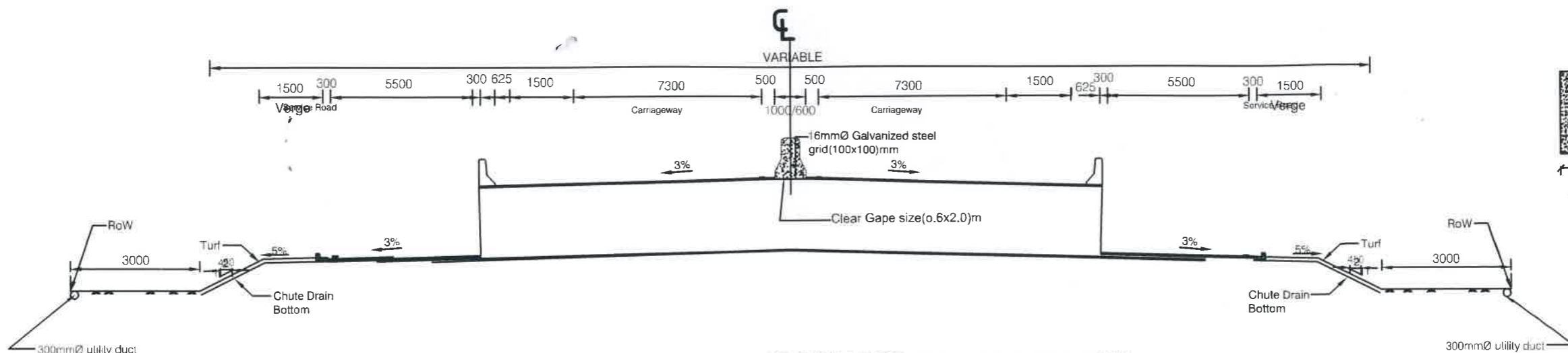
TITLE	NAME
DESIGN BY:	MMI <i>[Signature]</i>
DRAWN BY:	BAK <i>[Signature]</i>
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH <i>[Signature]</i>

DRAWING TITLE:  
**GENERAL DRAWING  
BUSBAY TYPE-2 ONE SIDE**

SCALE:  
AS SHOWN

DRAWING NO SCS-HW-GD-C1 - 25

REV	DATE	DESCRIPTION	APPROVAL



- NOTES :
1. ALL DIMENSION ARE IN MILLIMETER UNLESS ,OTHERWISE SPECIFIED.
  2. MINIMUM TENSILE STRENGTH OF GEO-GRID SHALL BE 100KN/M@ 5% STRAIN.
  3. ULTIMATE TENSILE STRENGTH SHALL BE AT LEAST 1.25 TIMES OF TENSILE STRENGTH AT 5% STRAIN.

( MODIFIED )

NOT FOR CONSTRUCTION



Government of the People's Republic of Bangladesh  
 Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
 Consulting Services for Updating Design and Safeguard Documents for  
 Sylhet-Charkhai-Sheola Highway Improvement Project

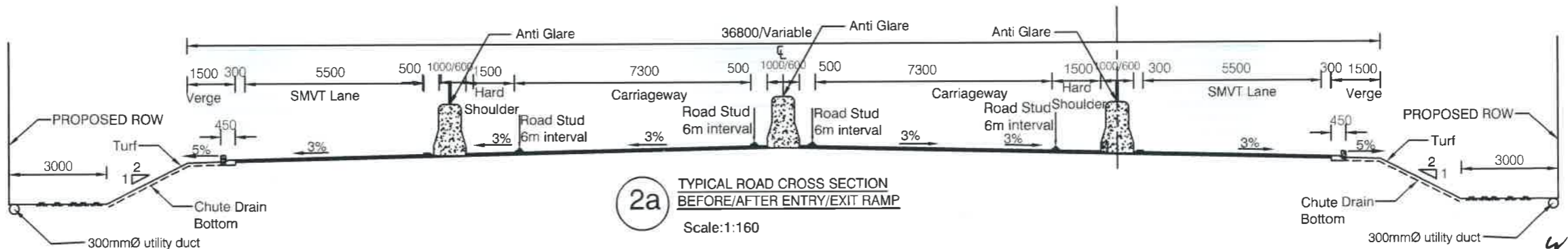
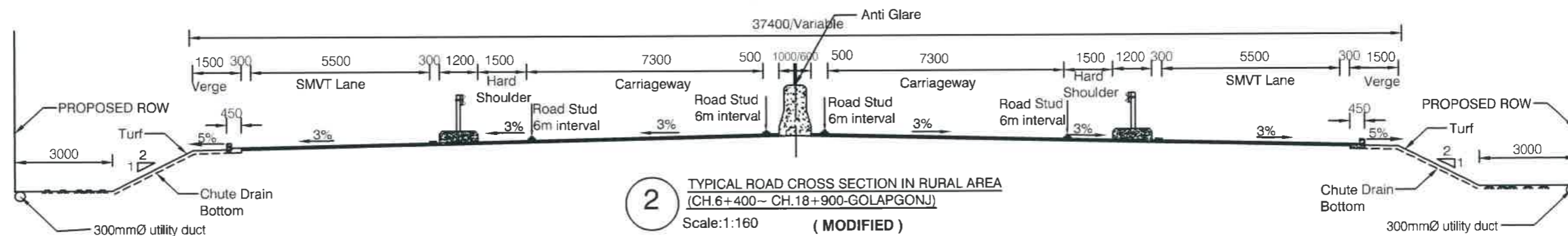
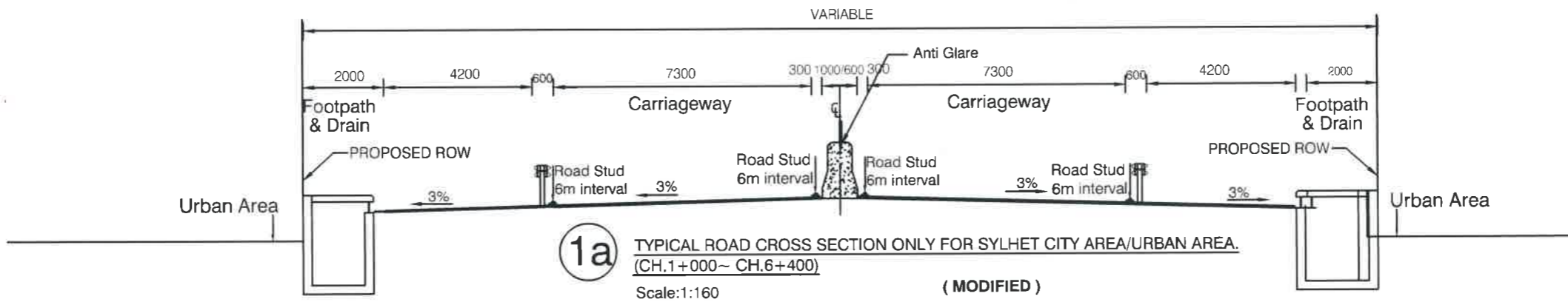
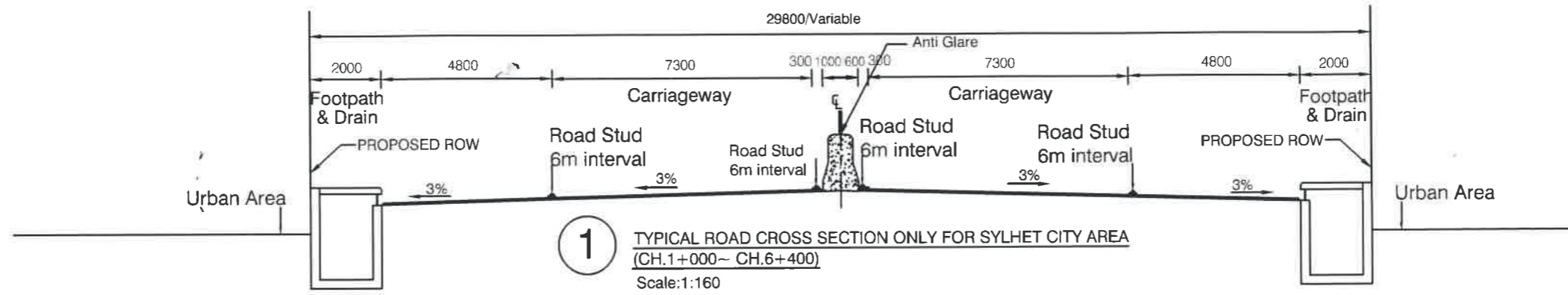
CONSULTANT:  
 **BCL ASSOCIATES LIMITED**  
 Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
 Bir Uttam A K Khandaker Sarak,  
 Dhaka-1212. Bangladesh

TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE	
<b>GENERAL DRAWING PEDESTRIAN UNDERPASS (SHEET 02 OF 02)</b>	
SCALE: AS SHOWN	DRAWING NO SCS-HW-GD-C1 - 28

REV	DATE	DESCRIPTION	APPROVAL


# TYPICAL ROAD CROSS SECTION

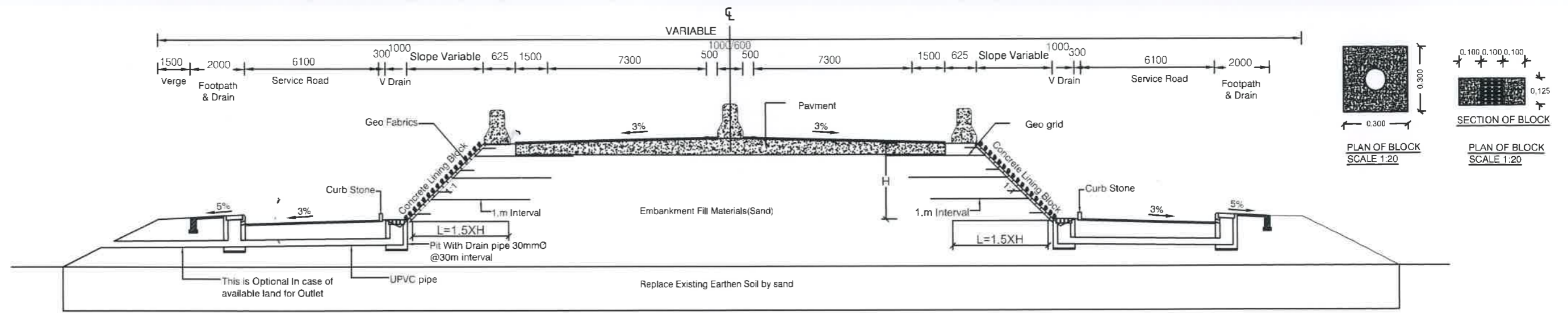


NOTES :  
1. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

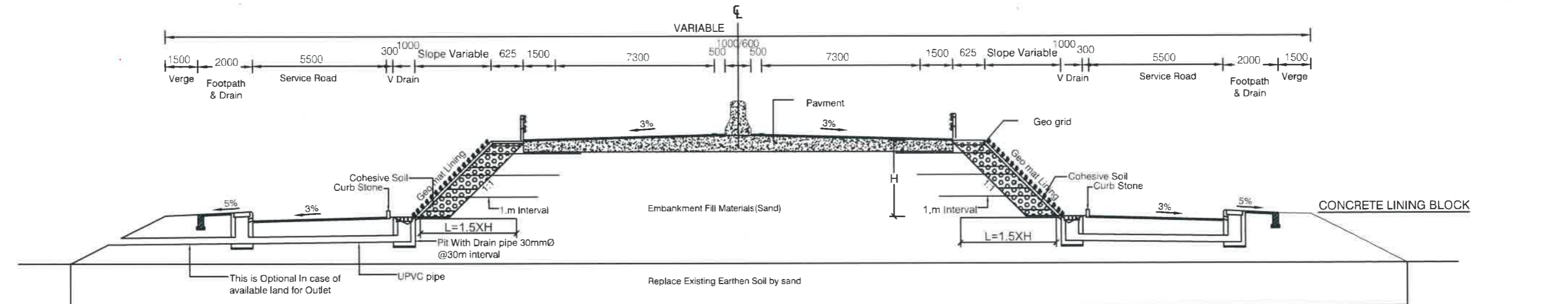
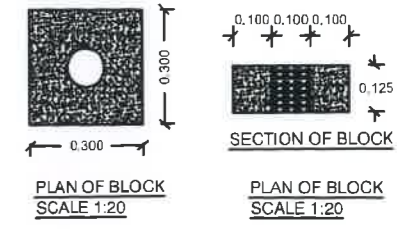
NOT FOR CONSTRUCTION



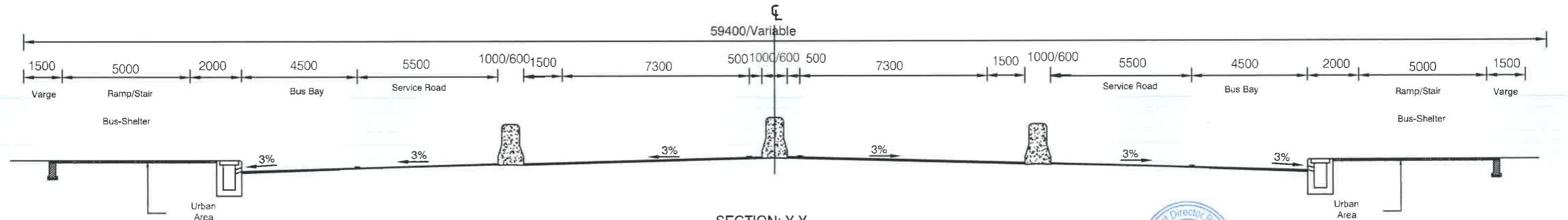
Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhal-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE	NAME	DRAWING TITLE:  <b>GENERAL DRAWING TYPICAL CROSS SECTION</b>	REV	DATE	DESCRIPTION	APPROVAL
		DESIGN BY:	MMI		CHECKED & SUBMITTED BY:	MAH	SCALE: AS SHOWN	DRAWING NO:SCS-HW-GD-C2 - 06
		DRAWN BY:	BAK					
		TEAM LEADER:	MAH					



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SECTION: X-X(OPTION -2)  
Scale: 1:200




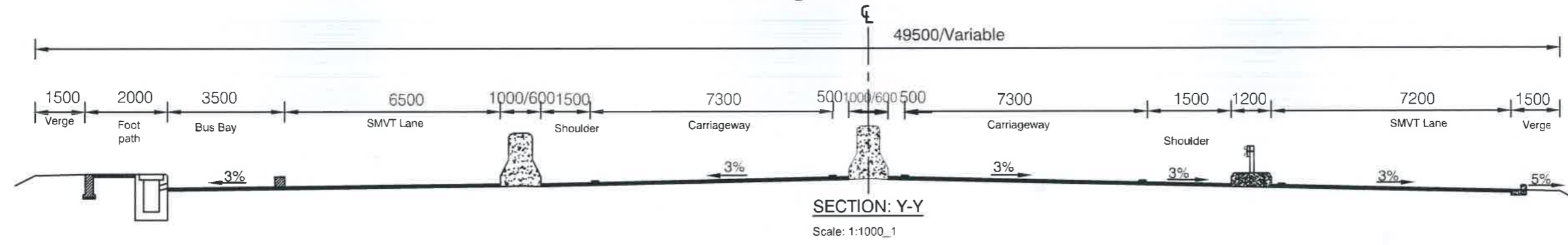
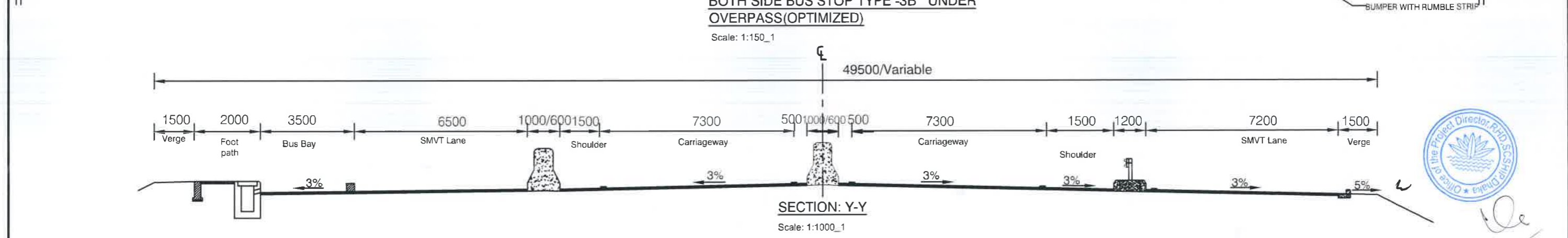
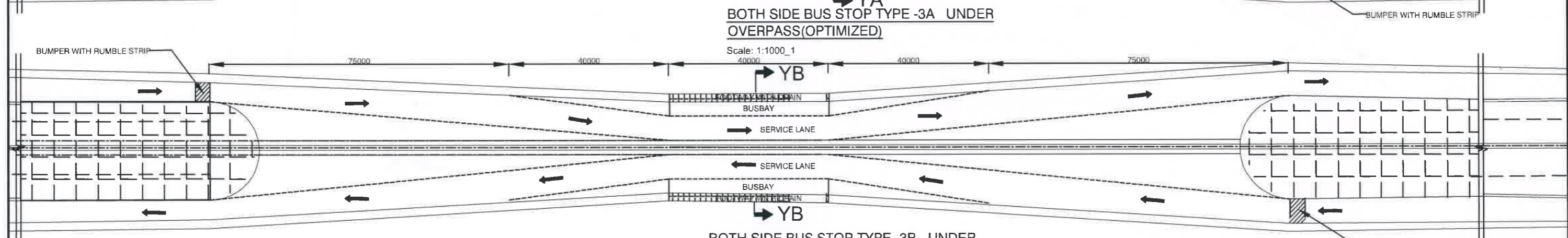
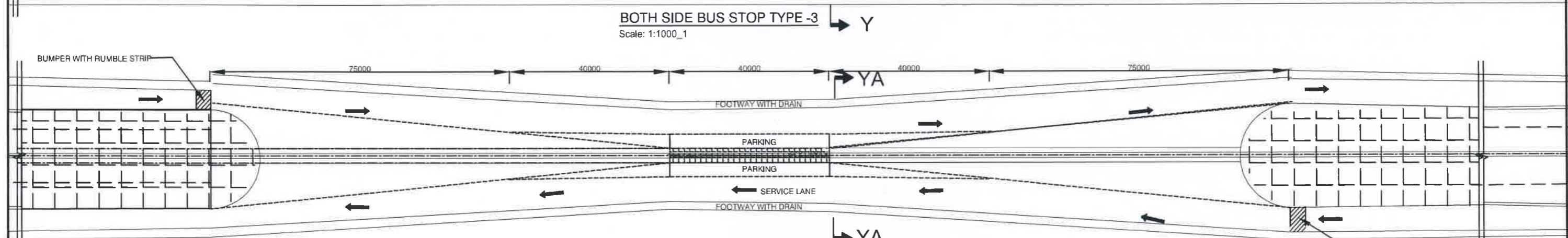
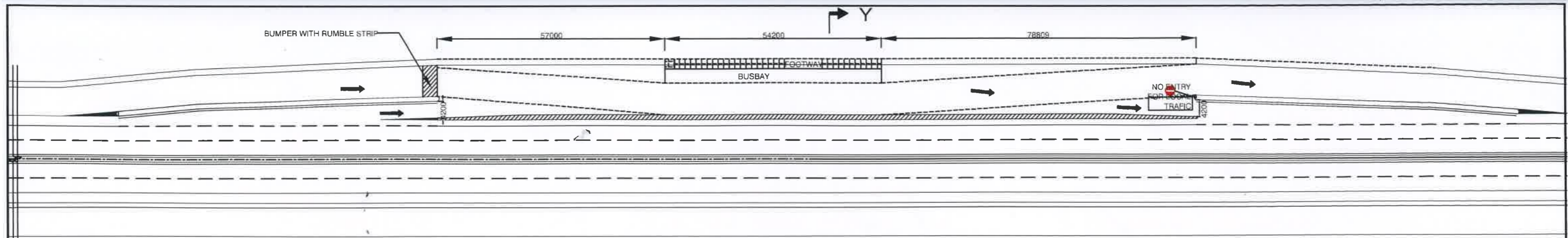
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Scale: 1:160

- NOTES:
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  2. MINIMUM TENSILE STRENGTH OF GEO-GRID SHALL BE 100KN/M@ 5% STRAIN.
  3. ULTIMATE TENSILE STRENGTH SHALL BE AT LEAST 1.25 TIMES OF TENSILE STRENGTH AT 5% STRAIN.
  4. UP TO 2M OF SOFT / LOOSE SOIL TO BE REMOVED WITH COMPACTED SAND BELOW THE EMBANKMENT FILL UNDERLAIN BY NON-WOVEN GEOTEXTILE AS A SEPERATOR
  5. FOR SOFT / LOOSE SOIL BEYOND 2M DEPTH NECESSARY GROUND IMPROVEMENT TECHNIQUE TO BE ADOPTED TO IMPROVE SOIL CONDITION



NOT FOR CONSTRUCTION

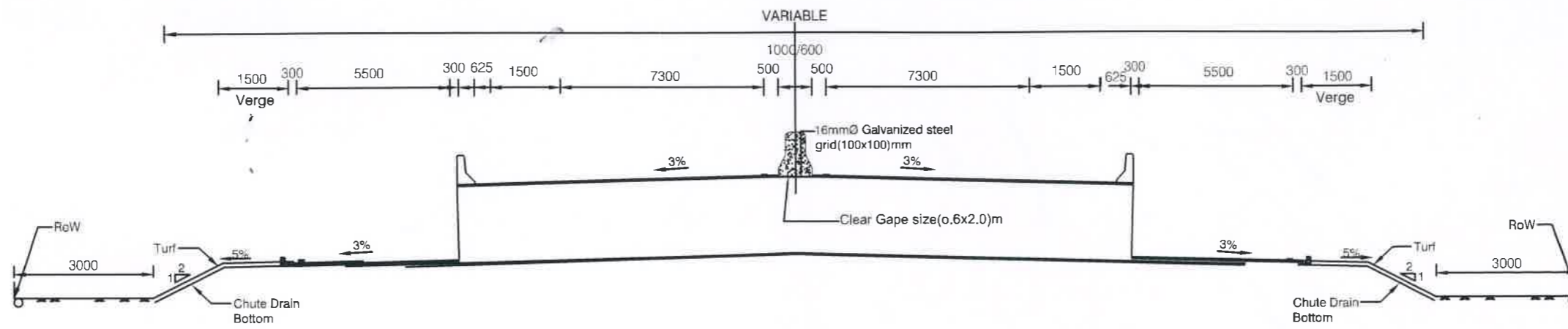
Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	TITLE	NAME	DRAWING TITLE: <b>GENERAL DRAWING          BUSBAY TYPE-2 SECTION</b> SCALE: AS SHOWN DRAWING NO:SCS-HW-GD-C2 - 23	REV	DATE	DESCRIPTION	APPROVAL
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		DRAWN BY:	BAK					
		CHECKED & SUBMITTED BY:						
		TEAM LEADER:	MAH					



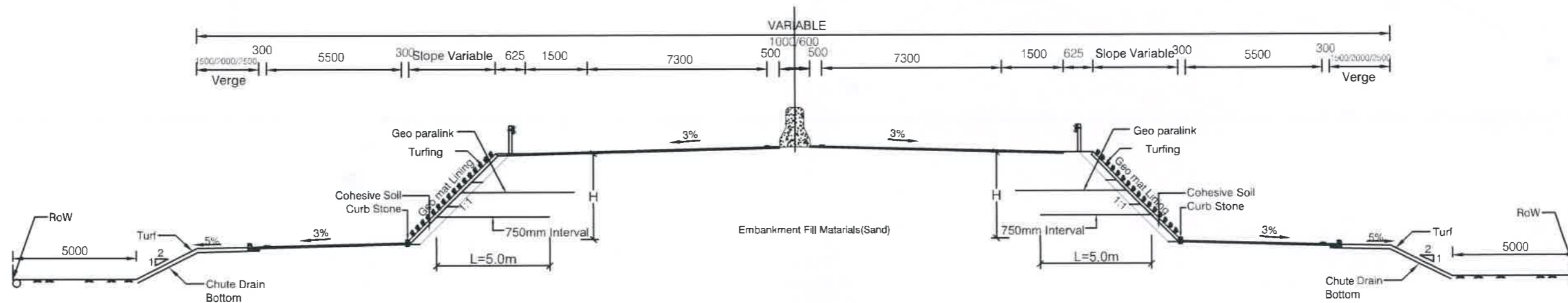
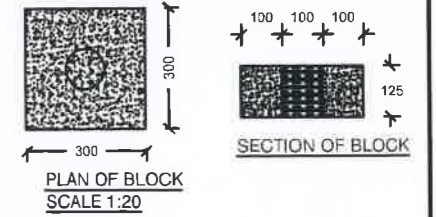
NOTES :  
1. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

**NOT FOR CONSTRUCTION**

Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT: <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b> DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH	NAME NAME NAME NAME	DRAWING TITLE: <b>GENERAL DRAWING          BUSBAY TYPE-2 ONE SIDE</b>	REV DATE DESCRIPTION APPROVAL
		SCALE: AS SHOWN	DRAWING NO:SCS- HW-GD-C2 - 25		



SECTION: X-X' (FOR UPTO 3M EMBANKMENT HEIGHT)  
Scale: 1:200



SECTION: X-X' (FOR UPTO 3M HEIGHT EMBANKMENT)  
Scale: 1:200

( MODIFIED )

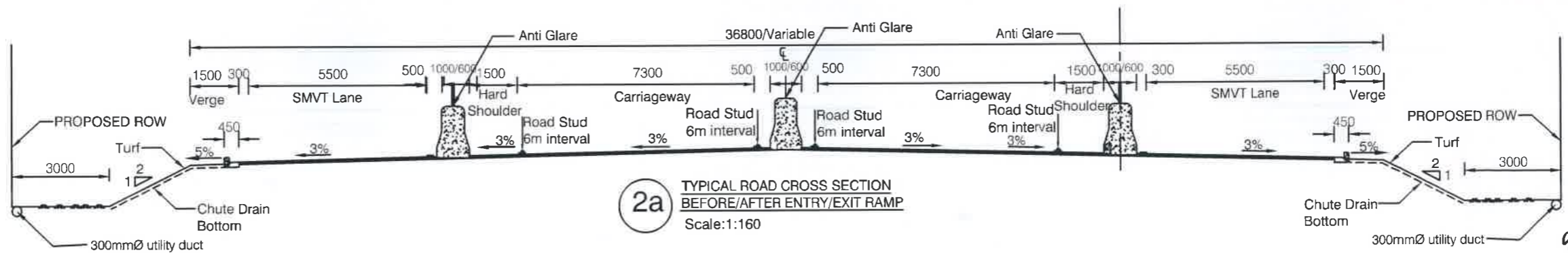
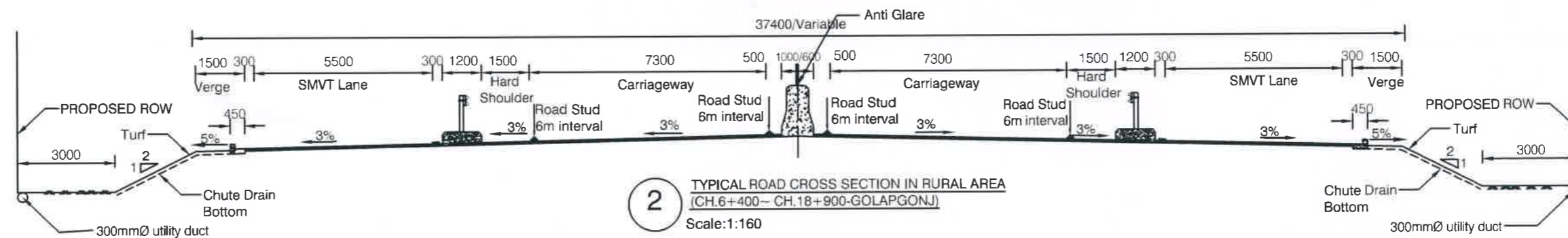
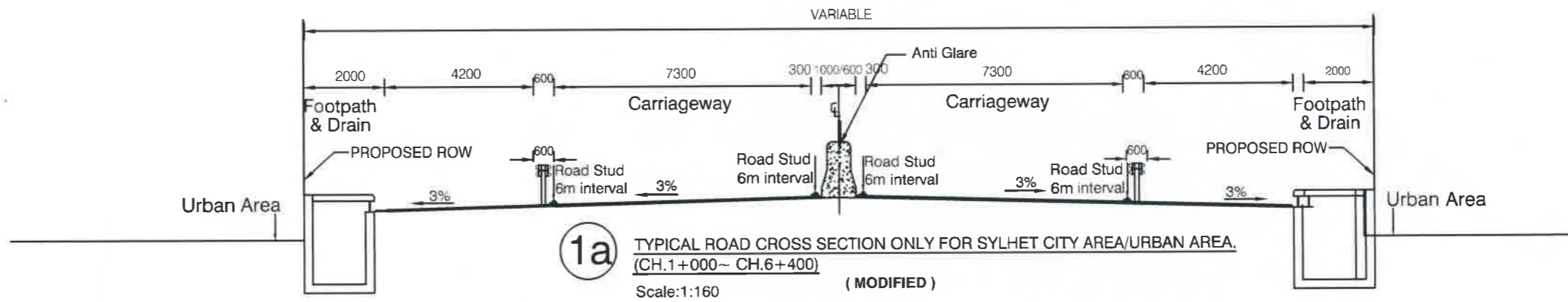
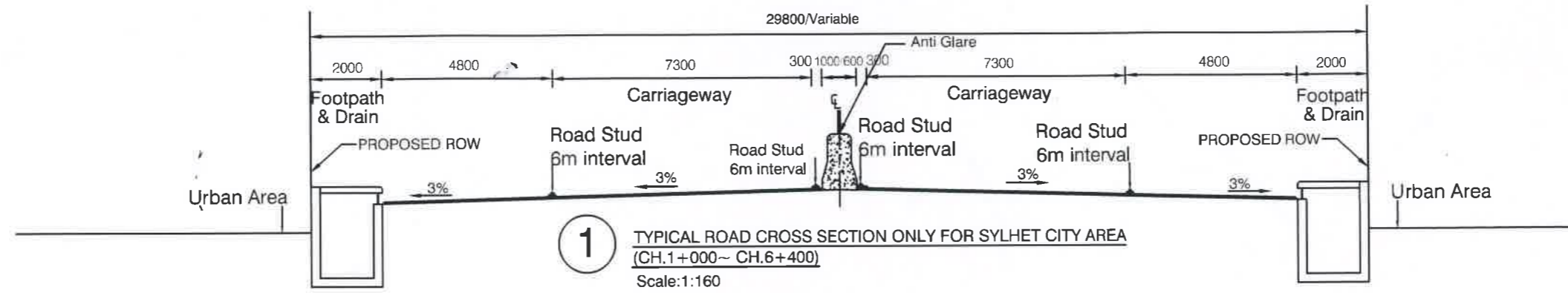
- NOTES:
1. ALL DIMENSION ARE IN MILLIMETER UNLESS ,OTHERWISE SPECIFIED.
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		DESIGN BY:	MMI		CHECKED & SUBMITTED BY:	SCALE: AS SHOWN	DRAWING NO:SCS-HW-GD-C2 - 28	
		DRAWN BY:	BAK					
		TEAM LEADER:	MAH					

# TYPICAL ROAD CROSS SECTION



NOTES :  
1. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

**NOT FOR CONSTRUCTION**



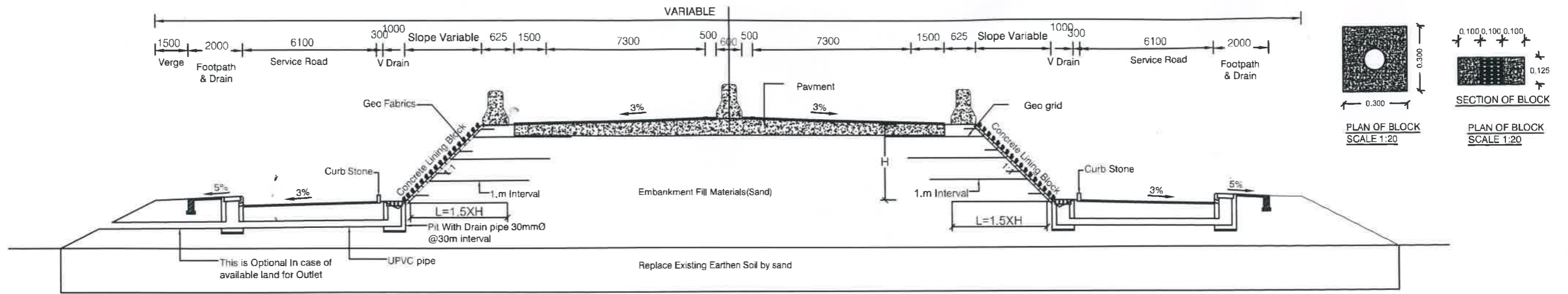
Government of the People's Republic of Bangladesh  
Ministry of Road Transport and Bridges  
**Roads and Highways Department**  
Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhal-Sheola Highway Improvement Project

CONSULTANT:  
**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

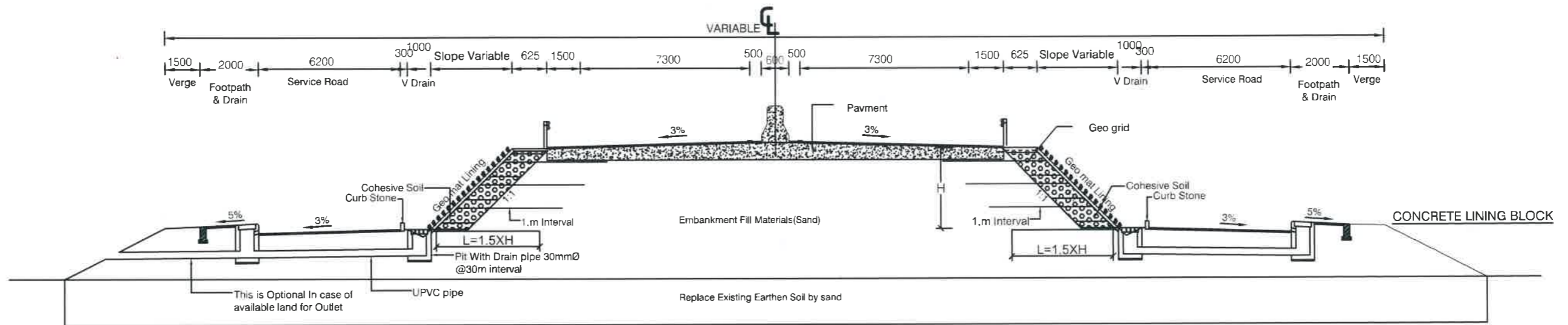
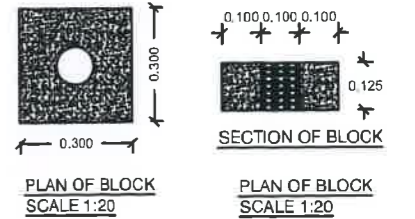
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DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

DRAWING TITLE  
**GENERAL DRAWING  
TYPICAL CROSS SECTION**  
SCALE: AS SHOWN  
DRAWING NO:SCS-HW-GD-C3 - 06

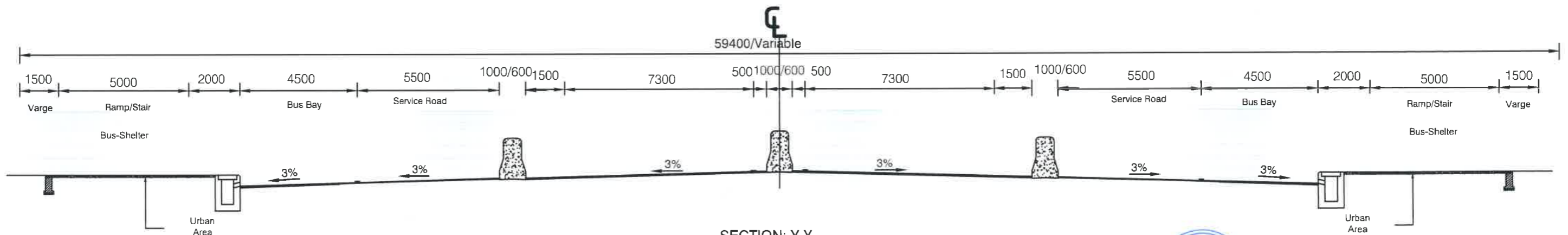
REV	DATE	DESCRIPTION	APPROVAL



SECTION: X-X(OPTION -1)  
Scale: 1:200



SECTION: X-X(OPTION -2)  
Scale: 1:200 (MODIFIED)



SECTION: Y-Y  
Scale: 1:160

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Consulting Services for Updating Design and Safeguard Documents for  
Sylhet-Charkhai-Sheola Highway Improvement Project

CONSULTANT:

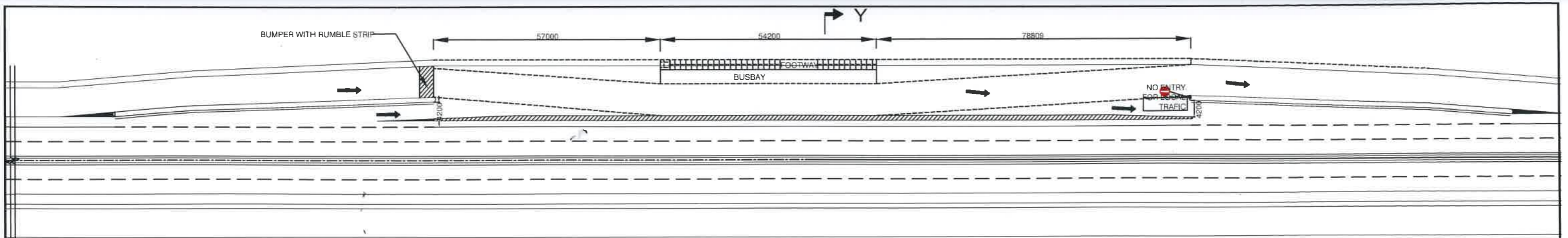


**BCL ASSOCIATES LIMITED**  
Noorani Tower (2nd Floor), 1 Mohakhali C/A,  
Bir Uttam A K Khandaker Sarak,  
Dhaka-1212, Bangladesh

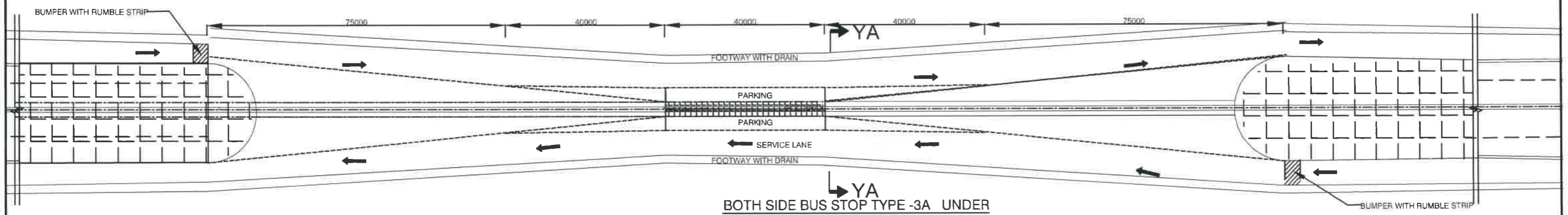
TITLE	NAME
DESIGN BY:	MMI
DRAWN BY:	BAK
CHECKED & SUBMITTED BY:	
TEAM LEADER:	MAH

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SCALE: AS SHOWN	DRAWING NO:SCS-HW-GD-C3 - 23

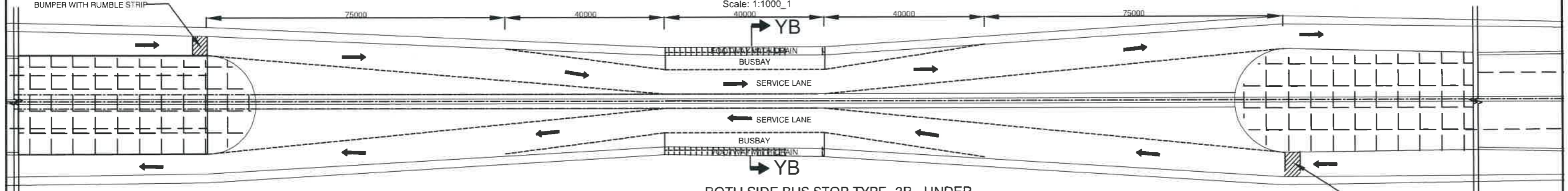
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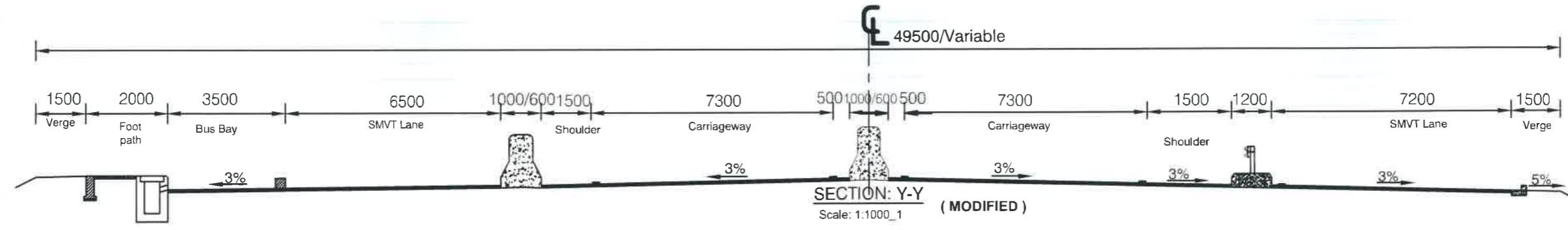
**BOTH SIDE BUS STOP TYPE -3**  
Scale: 1:1000\_1



**BOTH SIDE BUS STOP TYPE -3A UNDER OVERPASS(OPTIMIZED)**  
Scale: 1:1000\_1



**BOTH SIDE BUS STOP TYPE -3B UNDER OVERPASS(OPTIMIZED)**  
Scale: 1:150\_1




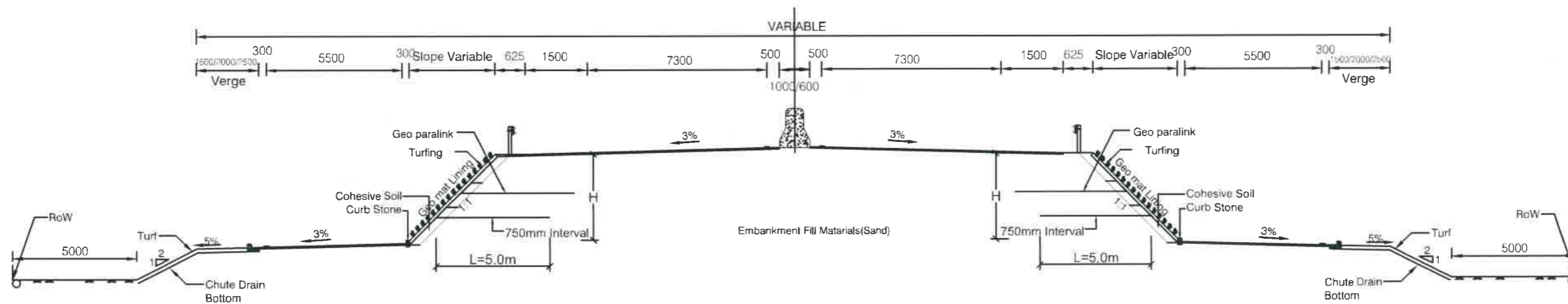
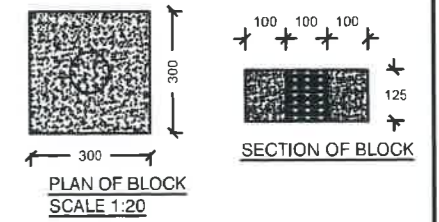
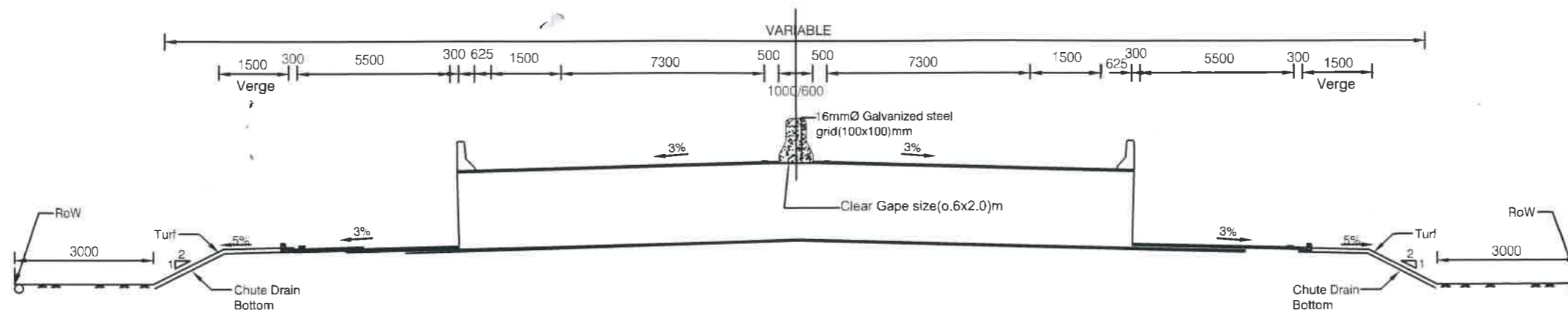
**SECTION: Y-Y (MODIFIED)**  
Scale: 1:1000\_1



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Government of the People's Republic of Bangladesh Ministry of Road Transport and Bridges <b>Roads and Highways Department</b> Consulting Services for Updating Design and Safeguard Documents for Sylhet-Charkhai-Sheola Highway Improvement Project	CONSULTANT:  <b>BCL ASSOCIATES LIMITED</b> Noorani Tower (2nd Floor), 1 Mohakhali C/A, Bir Uttam A K Khandaker Sarak, Dhaka-1212, Bangladesh	<b>TITLE</b> DESIGN BY: MMI DRAWN BY: BAK CHECKED & SUBMITTED BY: TEAM LEADER: MAH	<b>NAME</b> NAME NAME NAME	DRAWING TITLE: <b>GENERAL DRAWING          BUSBAY TYPE-2 ONE SIDE</b>	REV DATE DESCRIPTION APPROVAL
		SCALE: AS SHOWN		DRAWING NO: SCS-HW-GD-C3 - 25	



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		DESIGN BY:	MMI		SCALE: AS SHOWN			
		DRAWN BY:	BAK	DRAWING NO:SCS-HW-GD-C3 - 28				
		CHECKED & SUBMITTED BY:						
		TEAM LEADER:	MAH					

**SCHEDULE DRAINAGE TYPES****Road Section Drainage**

MODIFIED

SL NO.	Town/Market/Urban Area				Drainage Type	Remarks
	Start (Km)	End (Km)	Side (R/L)	Length(m)		
0	1+000	0	Both	-	Type 4	City Area
1	1+070	6+350	Both	5,280	Type 1	Bus Stop
2	6+350	7+050	Both	700	Type 2	Bus Stop
3	7+050	7+675	Both	625	Type 1	Bus Stop
4	9+600	10+360	Both	760	Type 1 & Type 6	Bus Stop
5	16+030	17+200	Both	1,170	Type 1 & Type 6	Bus Stop

**Superelevation Drainage**

0	1+260	2+020	Middle	760	Type 3	
1	4+410	5+080	Middle	670	Type 3	
2	8+250	9+380	Middle	1,130	Type 3	
3	11+980	12+200	Middle	220	Type 3	
4	12+800	14+220	Middle	1,420	Type 3	
5	15+060	15+520	Middle	460	Type 3	
6	15+600	16+400	Middle	800	Type 3	
7	17+680	18+700	Middle	1,020	Type 3	

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Dhaka-1212, Bangladesh

TITLE	NAME	DRAWING TITLE	REV	DATE	DESCRIPTION	APPROVAL
DESIGN BY:	MMI		<b>SCHEDULE DRAWING SCHEDULES OF DRAINAGE TYPES</b>			
DRAWN BY:	BAK					
CHECKED & SUBMITTED BY:						
TEAM LEADER:	MAH	SCALE: NOT TO SCALE			DRAWING NO:SCS-HW-SD-C1-06	