

# **Local Government & Community Development Department**



**Punjab Cities Program**

**PC-I Form**

**For**

**Rehabilitation of 36" i/d Damaged Sewer Line Along Stadium Road in  
Daska City**

**Estimated Cost. PKR 80.369 million**

**January 2023**

**Municipal Unit, Daska**

**Punjab Cities Program**  
**PC-I Form**  
**Replacement Of 36" i/d Damaged Sewer Line Along Stadium Road**  
**Upto 42"i/d Out Fall Sewer (At Stadium Chowk)**  
**in Daska City**

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**PC-I FORM**  
for  
**Rehabilitation of 36" I/D Damaged Sewer Line Along Stadum Road  
in Daska City**

Project Serial Number

Sector: Local Government

Sub Sector: Foreign Funded Subproject under Punja Cities Program

<b>1. Name of the project</b>	<b>Rehabilitation of 36" i/d Damaged Sewer Line Along Stadum Road in Daska City.</b>	
<b>2. Location</b>	<p>Daska Town is located at 74°21' East and 32°20' North at a distance of 24 km in the north-east of Gujranwala City, 24 Km from Sialkot at its south-west and 24 KM from Wazirabad at its southeast.</p> <p>The present population of 282,911 and the projected population by the year 2032 is 344,866 at a growth rate of 2% per annum. The city's total area is 16.53 km<sup>2</sup>, in the built-up area is 13.00 km<sup>2</sup></p> <p>Location map is attached at <b>Annexure-A</b></p>	
<b>3. Authorities responsible for</b>		
i- Sponsoring	Government of the Punjab (through World Bank Funding)	
ii- Execution	Municipal Committee, Daska	
iii- Operation and Maintenance	Municipal Committee, Daska	
iv- Concerned Provincial Department	Local Government and Community Development Department, Govt. of the Punjab	
<b>4a. Plan Provision</b>		
i. If the project is included in medium term/five-year plan, specify actual allocation	Punjab Cities Program (PCP) is a World Bank Funded Program with a total cost of 236.00 million USD and comprises of below mentioned components.	
	Total loan from World Bank	200.00 million USD
	Component-1 Infrastructure development (PforR)	180.00 million USD
	Component-2 Technical Assistance	20.00 million USD
	MCs share (20% of PforR component) equivalent to:	36.00 million USD
	<b>Total Program cost</b>	<b>236.00 million USD</b>



	This program is included in the medium term/ five-year plan and has been funded now in ADP 2022-23 - under General Serial No-1769 with allocation of PKR 1329.90 million as foreign component.
ii- If not included in the current plan, what warrants its inclusion and how it is now proposed to be accommodated	The project is being financed with World Bank funding under Punjab Cities Program. 20% cofinancing is being done by MCs out of their own resources
iii If the project is proposed to be financed out of block provision indicate.	The Project is being financed by World Bank as Donor along with 20% co-financing from the Municipal Committee Daska and is not proposed to be financed out of Block Allocation.
<b>4b- Provision in the current year PSDP/ADP</b>	Rs.1329.90 million under ADP 2022-23 General Serial No 1769.
<b>5. Project objectives and its relationship with sector objectives</b>	<p><b><u>Sector Objectives</u></b></p> <p>The sector objectives include:</p> <ol style="list-style-type: none"> <li>1. Provision of efficient and effective municipality services to the masses.</li> <li>2. Community development through improving basic infrastructure.</li> <li>3. Clean and green environment for better living standards.</li> <li>4. Effective use of land through master planning of urban areas.</li> <li>5. Social uplifting and cohesion through provision of public open spaces and play grounds.</li> <li>6. Efficient funeral and burial services.</li> <li>7. Ease in mobility and communication.</li> <li>8. Cost efficient Solid Waste Management through waste to energy initiatives.</li> <li>9. Capacity building of Local Governments.</li> </ol> <p><b><u>Objectives of the Project</u></b></p> <p>The Project aims at replacement of the damaged sewer line along Stadium Road for relieving the general public from waste water flooding in its catchment area.</p> <p>The outfall sewer of 36” dia has settled down and is creating waste water flooding in its catchment area thus damaging the public as well as private properties. The objective of this sunproject is to relieve the inhabitants from</p>



	<p>the frustration of obnoxious smell, refusal of approach to commercial and domestic areas and other issue related with it.</p> <p>Hence, the objectives of the project are in line with the sector objectives mentioned at Sr. No-1 and 7 above and the project forms integral part of the concerned sector.</p>																		
<b>6. Description, justification, technical parameters, and technology transfer aspects</b>																			
i. Present Condition	<p>Presently, 36" dia. Sewer along the stadium road has settled down due to crown failures and bedding failure through a length of 1500 ft. This sewer requires replacement from Iqbal Hospital to 42" dia outfall sewer which ultimately discharges in disposal station near stadium chowk. Waste water from this disposal station is drained in existing Nullah of size 5'x4', toward Bambawala road. The existing 36" dia sewer is not working due to settlement and blockade. The catchment area of this sewer is under waste water flooding.</p>																		
ii. Description of the sub-project-	<p>This PC-I includes following components:</p> <ul style="list-style-type: none"> <li>• Replacement of damaged 36" i/d sewer line with new sewer line of the same size.</li> <li>• Construction of manholes 6.5' diameter with verage depth of 14 feet for 36" i/d under water sewer.</li> <li>• Provision of RCC sullage carrier (3'x3'), from disposal works to existing drain along stadium road.</li> <li>• Construction of RCC sullage carrier box culvert under Stadium Road</li> </ul>																		
iii. Detail of civil works, equipment & machinery, and other physical facilities	<p>The detail of civil work is given below;</p> <table border="1"> <thead> <tr> <th><u>Sr.No.</u></th> <th><u>Detail of works</u></th> <th><u>Quantity (Rft)</u></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Replacement of damaged 36" i/d under water sewer line with new sewer.</td> <td>1448 Rft</td> </tr> <tr> <td>2</td> <td>Construction of manhole chambers 6.5' diameter with average depth of 14 feet for 36" i/d under water sewer.</td> <td>8 No</td> </tr> <tr> <td>3</td> <td>Construction of RCC sullage carrier from disposal works to existing drain along Stadium Road.</td> <td>300 Rft</td> </tr> <tr> <td>4</td> <td>Construction of RCC box culvert for Stadium Road crossing.</td> <td>50 Rft</td> </tr> <tr> <td>5</td> <td>Rehabilitation of Stadium Road</td> <td>1950 Rft</td> </tr> </tbody> </table>	<u>Sr.No.</u>	<u>Detail of works</u>	<u>Quantity (Rft)</u>	1	Replacement of damaged 36" i/d under water sewer line with new sewer.	1448 Rft	2	Construction of manhole chambers 6.5' diameter with average depth of 14 feet for 36" i/d under water sewer.	8 No	3	Construction of RCC sullage carrier from disposal works to existing drain along Stadium Road.	300 Rft	4	Construction of RCC box culvert for Stadium Road crossing.	50 Rft	5	Rehabilitation of Stadium Road	1950 Rft
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<p>iv Indicate governess issues of the sector relevant to the project and strategy to resolve them</p>	<p>Municipal Committee Daska is facing acute shortage of staff. The smooth sailing of the Punjab Cities Program can only be assured when the required staff is available with Unit.</p> <p>The repair and maintenance of the municipal services in not up to the mark in the MC. Trainings will be imparted by PMDFC to the officers as well as the field staff under the Program but practicing the interventions and method/procedures learnt in these trainings is the actual requirement in which MCs are lacking at present. Hence inculcating the mind set for good repair and maintenance is the major requirement for improving the service delivery level.</p>																																													
<p><b>7- Capital Cost of Project</b></p>	<p>The summary of the works included in the project is given below;</p> <table border="1" data-bbox="709 879 1913 1765"> <thead> <tr> <th data-bbox="709 879 810 973">Sr. No.</th> <th data-bbox="810 879 1629 973">Description</th> <th data-bbox="1629 879 1913 973">Cost (million PKR)</th> </tr> </thead> <tbody> <tr> <td data-bbox="709 973 810 1068">1</td> <td data-bbox="810 973 1629 1068">Replacement of damaged 36"i/d under water sewer.</td> <td data-bbox="1629 973 1913 1068">21.963</td> </tr> <tr> <td data-bbox="709 1068 810 1110">2</td> <td data-bbox="810 1068 1629 1110">Construction of manholes</td> <td data-bbox="1629 1068 1913 1110">5.029</td> </tr> <tr> <td data-bbox="709 1110 810 1153">3</td> <td data-bbox="810 1110 1629 1153">Construction of RCC sullage carrier</td> <td data-bbox="1629 1110 1913 1153">4.729</td> </tr> <tr> <td data-bbox="709 1153 810 1248">4</td> <td data-bbox="810 1153 1629 1248">Construction of RCC box culvert under Stadium Road.</td> <td data-bbox="1629 1153 1913 1248">1.268</td> </tr> <tr> <td data-bbox="709 1248 810 1290">5</td> <td data-bbox="810 1248 1629 1290">Rehabilitation of Stadium Road</td> <td data-bbox="1629 1248 1913 1290">33.948</td> </tr> <tr> <td data-bbox="709 1290 810 1333">6</td> <td data-bbox="810 1290 1629 1333">Electrical Works of Stadium Road</td> <td data-bbox="1629 1290 1913 1333">2.093</td> </tr> <tr> <td data-bbox="709 1333 810 1428">7</td> <td data-bbox="810 1333 1629 1428">Desilting of Existing Sullage Carrier/Storm Water Drain</td> <td data-bbox="1629 1333 1913 1428">0.817</td> </tr> <tr> <td data-bbox="709 1428 810 1470">8</td> <td data-bbox="810 1428 1629 1470">Tuff Pavers in Disposal Station</td> <td data-bbox="1629 1428 1913 1470">3.17</td> </tr> <tr> <td data-bbox="709 1470 810 1513">9</td> <td data-bbox="810 1470 1629 1513">Sewer House Connections</td> <td data-bbox="1629 1470 1913 1513">1.572</td> </tr> <tr> <td data-bbox="709 1513 810 1579"></td> <td data-bbox="810 1513 1629 1579" style="text-align: right;"><b>Sub-Total</b></td> <td data-bbox="1629 1513 1913 1579"><b>74.59</b></td> </tr> <tr> <td data-bbox="709 1579 810 1622"></td> <td data-bbox="810 1579 1629 1622" style="text-align: right;">E &amp; S Mitigation and Management Plan</td> <td data-bbox="1629 1579 1913 1622">0.559</td> </tr> <tr> <td data-bbox="709 1622 810 1665"></td> <td data-bbox="810 1622 1629 1665" style="text-align: right;">Contingencies @ 2%</td> <td data-bbox="1629 1622 1913 1665">1.492</td> </tr> <tr> <td data-bbox="709 1665 810 1707"></td> <td data-bbox="810 1665 1629 1707" style="text-align: right;">PRA @ 5%</td> <td data-bbox="1629 1665 1913 1707">3.729</td> </tr> <tr> <td data-bbox="709 1707 810 1765"></td> <td data-bbox="810 1707 1629 1765" style="text-align: right;"><b>Total cost</b></td> <td data-bbox="1629 1707 1913 1765"><b>80.369</b></td> </tr> </tbody> </table>	Sr. No.	Description	Cost (million PKR)	1	Replacement of damaged 36"i/d under water sewer.	21.963	2	Construction of manholes	5.029	3	Construction of RCC sullage carrier	4.729	4	Construction of RCC box culvert under Stadium Road.	1.268	5	Rehabilitation of Stadium Road	33.948	6	Electrical Works of Stadium Road	2.093	7	Desilting of Existing Sullage Carrier/Storm Water Drain	0.817	8	Tuff Pavers in Disposal Station	3.17	9	Sewer House Connections	1.572		<b>Sub-Total</b>	<b>74.59</b>		E & S Mitigation and Management Plan	0.559		Contingencies @ 2%	1.492		PRA @ 5%	3.729		<b>Total cost</b>	<b>80.369</b>
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<p>i- Indicate date of estimation of the project cost</p>	<p>The project estimates have been framed during the month of January, 2023</p>																																													
<p>ii- Basis of determining the estimates be provided.</p>	<p>The cost estimates have been framed on the basis of bill of quantities actually measured at site and unit rates from the Market Rate System (MRS) issued by the Government of Punjab (District Sialkot 2<sup>nd</sup> biannual of year 2022as the rates for the first Biannual of 2023 have not been issued as yet by FD).</p> <p>For items not available in the MRS, the same have been analyzed as per prevailing market rates.</p>																																													



<p>iii- Provide year wise estimation of physical activities</p>	<p>The physical and financial requirements, year-wise are included in the following table:</p> <table border="1" data-bbox="832 365 1793 888"> <thead> <tr> <th>Sr. No</th> <th>Description</th> <th>Year (2023-24)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Replacement of damaged 36"i/d under water sewer line.</td> <td>100%</td> </tr> <tr> <td>2</td> <td>Construction of manholes</td> <td>100%</td> </tr> <tr> <td>3</td> <td>Construction of RCC sullage carrier.</td> <td>100%</td> </tr> <tr> <td>4</td> <td>Construction of RCC box culvert for Stadium Road crossing.</td> <td>100%</td> </tr> <tr> <td>5.</td> <td>Rehabilitation of Stadium Road</td> <td>100%</td> </tr> </tbody> </table>	Sr. No	Description	Year (2023-24)	1	Replacement of damaged 36"i/d under water sewer line.	100%	2	Construction of manholes	100%	3	Construction of RCC sullage carrier.	100%	4	Construction of RCC box culvert for Stadium Road crossing.	100%	5.	Rehabilitation of Stadium Road	100%																																						
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<p>iv- Phasing of capital cost on the basis of each item of work.</p>	<p>The phasing of capital cost of the project is included in the following table: (All figures are in million rupees)</p> <table border="1" data-bbox="733 1165 1891 2201"> <thead> <tr> <th>S. #</th> <th>Description / Items</th> <th>Total (million Rs)</th> <th>Year (2023-24) (million Rs)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Replacement of damaged 36"i/d under water sewer line.</td> <td>21.963</td> <td>21.963</td> </tr> <tr> <td>2</td> <td>Construction of manholes</td> <td>5.029</td> <td>5.029</td> </tr> <tr> <td>3</td> <td>Construction of RCC sullage carrier.</td> <td>4.729</td> <td>4.729</td> </tr> <tr> <td>4</td> <td>Construction of RCC box culvert for Stadium Road crossing.</td> <td>1.268</td> <td>1.268</td> </tr> <tr> <td>5</td> <td>Rehabilitation of Stadium Road</td> <td>33.948</td> <td>33.948</td> </tr> <tr> <td>6</td> <td>Electrical Works of Stadium Road</td> <td>2.093</td> <td>2.093</td> </tr> <tr> <td>7</td> <td>Desilting of Existing Sullage Carrier/ Storm Water Drain</td> <td>0.817</td> <td>0.817</td> </tr> <tr> <td>8</td> <td>Tuff Pavers in Disposal Station</td> <td>3.17</td> <td>3.17</td> </tr> <tr> <td>9</td> <td>Sewer House Connections</td> <td>1.572</td> <td>1.572</td> </tr> <tr> <td></td> <td><b>Total work outlay</b></td> <td><b>74.59</b></td> <td><b>74.59</b></td> </tr> <tr> <td></td> <td>E &amp; S Mitigation and Management Plan</td> <td>0.559</td> <td>0.559</td> </tr> <tr> <td></td> <td>Contingencies &amp; PRA</td> <td>5.221</td> <td>5.221</td> </tr> <tr> <td></td> <td><b>Total project cost</b></td> <td><b>80.369</b></td> <td><b>80.369</b></td> </tr> </tbody> </table>	S. #	Description / Items	Total (million Rs)	Year (2023-24) (million Rs)	1	Replacement of damaged 36"i/d under water sewer line.	21.963	21.963	2	Construction of manholes	5.029	5.029	3	Construction of RCC sullage carrier.	4.729	4.729	4	Construction of RCC box culvert for Stadium Road crossing.	1.268	1.268	5	Rehabilitation of Stadium Road	33.948	33.948	6	Electrical Works of Stadium Road	2.093	2.093	7	Desilting of Existing Sullage Carrier/ Storm Water Drain	0.817	0.817	8	Tuff Pavers in Disposal Station	3.17	3.17	9	Sewer House Connections	1.572	1.572		<b>Total work outlay</b>	<b>74.59</b>	<b>74.59</b>		E & S Mitigation and Management Plan	0.559	0.559		Contingencies & PRA	5.221	5.221		<b>Total project cost</b>	<b>80.369</b>	<b>80.369</b>
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<p><b>8-Annual recurrent cost after completion of the project and source of financing</b></p>	<p>Presently the O&amp;M cost of the existing sewerage system is being borne by MC Daska out of its own sources. The annual O&amp;M cost of the replaced sewer will be also borne by MC Daska. With replacement of the sewer the cost of O&amp;M of this sewer will be reduced.</p>																																																								



<p><b>9- Demand &amp; Supply Analysis</b></p> <p>i- Existing Capacity of services</p>	<p>As informed by Municipal Officer (I &amp; S) MC Daska through letter No. MC/DSK/22/:442 dated 26-8-2022 (copy attached) 36" i/d R.C.C sewer along stadium road was laid during the year 2006-2007 with length of 4000 Rft starting from College Road to Stadium Chowk upto 42" i/d trunk sewer. The spring level at the site of this sewer as determined by small size drilling at two different points i.e. at main Stadium site &amp; Stadium chowk was checked. The bore log data indicates that during the moon soon season, SSWL raised to an average depth of 7.75 ft below ground level whereas the normal water table is at depth of 13.3 to 14.5 ft below GL.</p>										
<p>ii- Projected Demand for 10 years</p>	<p>Keeping in view the above situation, the damaged sewer of 36" i/d from Iqbal Hospital to Stadium Chowk having length of 1500 Rft is required to be replaced with same size along with under water crushed stone bedding to cater for the raised water table to eliminate the chances of settling down again. Each joint will be provided with RCC surround for water tightness of the joints to avoid exfiltration and infiltration to elimininate the inflow of the fine soil particles which is responsible for settlement of the under-water sewers.</p>										
<p>iii- Capacity of other similar projects being implemented in public/private sector</p>	<p>No other project of this nature is being implemented in the public as well as private sector because of funding constraints in the Unit.</p>										
<p>iv- Supply and Demand gaps</p>	<p>These is a large gap between supply and demand as waste water flooding is taking place in the catchment area of this trunk sewer. This gap is required to be bridged at ungent level.</p>										
<p>v-Designed capacity and output of the project</p>	<p>Replacement of existing sewer of 36" i/d along with construction of manholes and sullage carrier with box culvert under the Stadium Road.</p>										
<p>10. Financial Plan Sources of financing <u>Debt</u> a) Indicate the local and foreign debt Loan</p>	<p>Below given loan for the Punjab Cities Program has been funded by World Bank for 16 PCP cities in Punjab.</p> <table border="1" data-bbox="709 2007 1917 2436"> <tr> <td>Total loan to Government of Pakistan/Punjab</td> <td>200 million USD</td> </tr> <tr> <td>Component-1 for Infrastructure Development</td> <td>180 million USD</td> </tr> <tr> <td>Component-2 for Investment Project Financing For capacity building of MCs &amp; three Govt. organizations and program management.</td> <td>20 million USD</td> </tr> <tr> <td>20% share of Municipalities is equivalent to</td> <td>36 million USD</td> </tr> <tr> <td><b>Total funds available for Infrastructure Development</b></td> <td><b>216 million USD</b></td> </tr> </table> <p>This project will be funded under this financing.</p>	Total loan to Government of Pakistan/Punjab	200 million USD	Component-1 for Infrastructure Development	180 million USD	Component-2 for Investment Project Financing For capacity building of MCs & three Govt. organizations and program management.	20 million USD	20% share of Municipalities is equivalent to	36 million USD	<b>Total funds available for Infrastructure Development</b>	<b>216 million USD</b>
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20% share of Municipalities is equivalent to	36 million USD										
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b) Equity	<p><b>A. Loan /Grant to MC</b> The amount of loan converted to grant to Daska City will be <b>PKR 64.295 million</b>. The financing of the project will be as given below:</p> <table border="1" data-bbox="773 451 1876 614"> <tr> <td>Grant to MC from World Bank</td> <td>PKR 64.295 million</td> </tr> <tr> <td>20% Co-finance by M</td> <td>PKR 16.074 million</td> </tr> <tr> <td><b>Total cost of project</b></td> <td><b>PKR 80.369 million</b></td> </tr> </table> <p><b>B. Project Cost: PKR 80.369 million</b></p> <p>*The loan is from World Bank to Government of Pakistan/Punjab, which will trickle down to MC Daska as grant.</p>	Grant to MC from World Bank	PKR 64.295 million	20% Co-finance by M	PKR 16.074 million	<b>Total cost of project</b>	<b>PKR 80.369 million</b>
Grant to MC from World Bank	PKR 64.295 million						
20% Co-finance by M	PKR 16.074 million						
<b>Total cost of project</b>	<b>PKR 80.369 million</b>						
c) Grants	No grant is being given by Government of Punjab out of ADP funds. The World Bank loan to Government of Pakistan / Punjab will trickle down as grant to MC Daska						
d) Weighted cost of capital	Nil						
<b>11-Project benefits and analysis</b>							
i. Financial (including cost-benefit ratio): Income to the project with assumption	<p>The project comprises of replacement of existing sewer of 36" i/d in the city and falls under Social Sector Projects and hence the capital cost is not intended to be recovered.</p> <p>No revenues, public or private, will be directly generated. Hence, a financial analysis is not required as there is no positive cash flow or revenue stream that contributes to the calculation of an internal rate of return or payback period or cost-benefit ratio</p>						
ii. Social benefits to the target group	<p>The completion of the project will result in:</p> <ul style="list-style-type: none"> <li>• Ease of mobility and transportation resulting in greater enablement and access to economic opportunities and services.</li> <li>• Improvement in environment of the catchment area of this sewer</li> <li>• Elimination of damages to the public as well as public properties.</li> <li>• Elimination of public frustration presently produced by waste water flooding.</li> <li>• The functional sewerage system will provide users improved aesthetic, in addition, enable easier access to health and education services</li> <li>• No anticipated change in the livelihoods of people around project sites is expected.</li> <li>• The project will also encourage citizen satisfaction and build trust with the government.</li> </ul>						



iii.Environmental Impact negative/positive	Air emission and greenhouse gas reductions will result from replacement of damaged sewer. During the construction phase, however, issues may arise from the generation of dust, emission of air pollution, noise, and traffic congestion due to traffic lane reduction and redirection. Nonetheless, there will be no permanent adverse impacts on the environment. The Environmental impact of the project is attached at <b>Annexure-E</b> .						
iv.Quantifiable project outputs	The quantifiable project out puts have been given above in Sr. No-9 (V). The social benefits to the citizen have been described at Sr. No-11(ii). The Economic Analysis, of the project have been attached at <b>Annexure-C</b>						
v.Unit cost analysis	<p>The unit cost analysis is produced below;</p> <table border="1" data-bbox="722 765 1841 931"> <tr> <td>Project capital cost</td> <td>PKR 80.369 million</td> </tr> <tr> <td>Population of the city in year 2022</td> <td>282,911 persons</td> </tr> <tr> <td>Unit capital cost per capita</td> <td>284.078 PKR</td> </tr> </table> <p>Unit O&amp;M cost: – The Repair &amp; maintenance cost is already being borne by MC Daska. The project will lower down th cost of O&amp;M of this sewer.</p>	Project capital cost	PKR 80.369 million	Population of the city in year 2022	282,911 persons	Unit capital cost per capita	284.078 PKR
Project capital cost	PKR 80.369 million						
Population of the city in year 2022	282,911 persons						
Unit capital cost per capita	284.078 PKR						
vi. Employment generation (Direct and indirect)	<p><b><u>Employment Analysis</u></b></p> <p><b>Direct Employment</b></p> <p><b>a) Planning and Design of projects</b></p> <p>Increased access to the economy from the improvement of storm water drainage will increase employment in and beyond project sites. It will also create a positive effect on employees in terms of their performance and productivity and, hence, wages. During construction, employment for the local people of the project area will be available. There will be indirect employment resulting from easier and greater access to opportunities across local geographies.</p> <p>The planning and design of the project has been entrusted to local consultants who have appointed staff and experts in road and related disciplines along with their support staff. The consultants have also appointed their staff for resident supervision of the project to verify and certify the items of works to be executed under this PC-I.</p> <p><b>b) Execution of the Project</b></p> <p><b>a) PMDFC</b></p> <p>PMDFC has the project monitoring and supervisory role and the company has enough experts and staff to complete this assignment. PMDFC has already deployed under mentioned staff for these projects:</p> <ul style="list-style-type: none"> <li>• Civil Engineers</li> <li>• Accounts, administration and audit personnel</li> <li>• Urban planners</li> <li>• GIS experts</li> </ul>						



	<ul style="list-style-type: none"> <li>• Support staff like computer operators, vehicle drivers, office boys and guards.</li> <li>• Procurement experts</li> <li>• Communication experts</li> <li>• Environmental and social experts</li> <li>• Contract management experts</li> </ul> <p><b>b) Consultants</b> PMDFC has employed (M/s MM PAKISTAN) as consultants for detailed design and resident supervision of the projects who will deploy their staff for execution of the project.</p> <p><b>c) Municipality</b> Daska MC has regular staff like engineers, sub engineers and other administrative &amp; accounts keeping staff which will be responsible for execution of the project and contract management. No additional staff will be needed for execution of this project</p> <p><b>d) Contractor</b> The contractor responsible for execution of the sub project will employ skilled and unskilled labor on this work.</p> <p><b>Indirect Employment</b> Indirect employment for production of material such as cement, steel, bricks, crushed stone, shuttering etc. will be generated.</p>
vii. Impacts of delays on project cost and viability	<ul style="list-style-type: none"> <li>• Delays in the project will cause the total cost of the project to go up.</li> <li>• Further the damages to the public as well as private properties will multiply several times.</li> </ul>
<b>12-Implementation Schedule</b>	
a) Indicate starting and completion date of the project	The project is anticipated to commence by mid February 2023 and to be completed by the mid of June 2023 with project implementation period of 4 months.
b) Item wise/year wise schedule in line chart	The Gant chart has been attached to <b>Annexure-D</b>
<b>13- Management Structure and manpower requirements</b>	
i. Administrative arrangements for the implementation of the project	<p><b>ii. Planning &amp; design of the project</b> The project has been designed by the consultants employed by PMDFC and will also carry out the resident supervision of the project.</p> <p><b>iii. Preparation of cost estimation</b></p>



	<p>The cost estimates have been prepared by the design consultants by actual measurements at site. The execution of the items of works included in these estimates /PC-I will be certified by these consultants.</p> <p><b>iv. Execution of the project</b></p> <ul style="list-style-type: none"> <li>• The project will be executed by MC Daska and supervised by the Consultants appointed by PMDFC in resident supervision mode. The technical staff &amp; experts in PMDFC will oversee, co-ordinate and collaborate in the project planning, design and implementation through their experts in head office located in Lahore and regional offices. The reporting of progress to LG &amp; CDD &amp; World bank and troubleshooting will also be responsibility of PMDFC.</li> <li>• MO (I&amp;S) of MC Daska has been designated as Project Manager /Engineer in Charge of the project. The supervision of the works will also be carried out by these municipal officers along with their support engineering staff. All supervisory staff is available with MC.</li> <li>• The Procurement Committee of MC Daska will do the procurement of works as per PPRA Rules.</li> </ul> <p><b>v. Verification of quantities included in PC-Is and Resident Supervision of the works by consultants</b></p> <p>The works will be supervised by Supervision Consultants in resident supervision mode by assuring the quantity and quality of works. The consultants will verify the items of work and their quantities contained in the PC-Is and cost estimates initially and then the quantities and quality of works included in the contractor claims at the stage of payments. Payments will be made by the Unit after these contractor claims have been entered in the measurement books by the Project Manager/Engineer in Charge and pre audited as per LG Works Rules.</p>
<p>ii- The manpower requirements by skills during execution and operation of the project and; The job description, qualification, experience, age and salary of each post</p>	<p><b>a) PMDFC experts and staff</b></p> <p>For rendering assistance in implementation of infrastructure projects in 16 MCs, PMDFC has the experts and staff in the required fields. In order to facilitate the Program MCs, three regional offices have been established by PMDFC at Gujranwala, Faisalabad and Multan.</p> <p><b>b) Resident Supervision Consultants</b></p> <p>The project will be supervised by consultants. The tentative staff to be employed/deployed by the consultants for the certification of quantities of works and resident supervision of the project is given below.</p>



S #	Personnel	No.	Qualification
1	Chief Resident Engineer/Team Leader	01	BSc;/BE in Civil engineering with minimum 20 years' professional experience or MSC; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor in Civil Engineering and minimum 15 years, experience, with 5 years on similar assignments in both cases
2	Senior Engineer	01	BSc/BE Civil engineering with minimum 08 years' relevant design experience or MSc engineering, with 5 years on similar assignments in both cases
4	Assistant Resident Engineer	01	Bachelor Degree in Civil engineering with minimum 8 years' experience in site supervision and execution for projects of similar nature
5	Site Inspectors	01	DAE in Civil with minimum 10 years' experience in site supervision for projects of similar nature
6	Environmental Expert	01	16 years of education in Environmental Sciences/Environmental Engineering from a HEC recognized university; Demonstrated experience of 05 years dealing with environment and social management and implementation preferably in WB funded projects; have sound knowledge of local laws/policies on environmental management, Environmental policies and procedures of WB and their compliance in field including monitoring and supervision of site-specific ESMMPs and EHS practices during projects execution and implementation.
7	Social Safeguard/Resettlement Specialist	01	16 years of education in Sociology or Anthropology from a HEC recognized university; Demonstrated experience of at-least 05 years in dealing with social management and implementation, preferably in WB funded projects; have sound knowledge of local laws/policies and WB resettlement, social safeguards and gender policies and compliance of social safeguards and resettlement and abbreviated resettlement plans in infrastructure development projects.



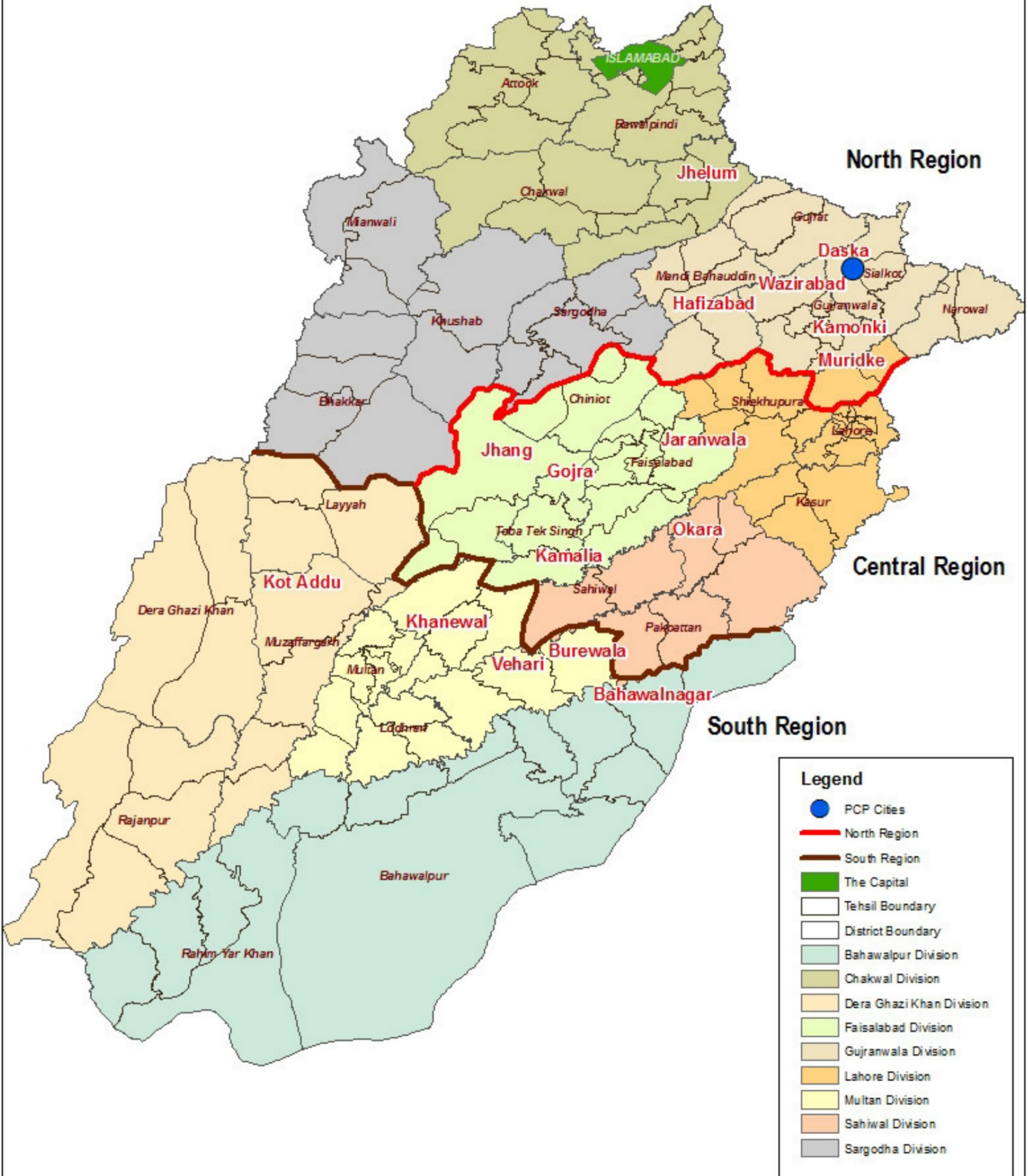
	<p><b>c) Contractor's Technical staff, skilled &amp; non skilled labor</b> The contractors will employ the supervisory technical staff and skilled &amp; non skilled labor for execution of works. The works will be supervised by experienced Engineers and sub engineers and the number of slots for engineers and skilled and non-skilled will depend upon the type and quantity of work and its period of completion.</p> <p><b>d) Repair &amp; maintenance of the project</b> MC has its own regular staff which has been deployed for Repair and maintenance of the municipal services infrastructure. However, it has been observed that the existing staff is not adequate to repair and maintain the services in a manner which can give good service delivery. Hence it is proposed to;</p> <ul style="list-style-type: none"> <li>• Fill up the presently vacant slots</li> <li>• Recruit additional staff as per need of the infrastructure after obtaining the sanctions from the competent authorities.</li> </ul>
14-Additional projects /decisions required to optimize the investment being undertaken	<p><b>Shortage &amp; frequent transfers of Provincially appointed staff</b> MC is facing shortage in provincially appointed and locally appointed cadres. This will seriously affect the pace of progress of the program and the implementation of the infrastructure projects may be delayed. Provincial Government should fill-up the vacant staff immediately for optimizing the investments and capacity building in MC.</p>
15-Certificate	Certified that the project proposal has been prepared on the basis of guidelines provided by the Planning Commission for the preparation of PC-I for social sectors projects.

<b>Prepared by</b>	M/s MM Pakistan (Pvt) Ltd	Stamp & Signatures	
<b>Checked by</b>	Municipal Officer (I&S) Municipal Committee Daska	Stamp & Signatures	
	Chief Officer Municipal Committee Daska	Stamp & Signatures	
<b>Vetted by</b>	Senior Program Officer (ID) PMDFC	Stamp & Signatures	
<b>Forwarded by</b>	Administrator Municipal Committee Daska	Stamp & Signatures	



# Location Map (Punjab Cities Program)

## ANNEXURE - A



0 45 90 180 Kilometers



Local Government & Community Development Department, Government of The Punjab





# **Cost Estimate**



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADIUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

**DESIGN CALCULATIONS FOR SULLAGE CARRIER FROM DISPOSAL WORKS TO EXISTING NULLAH ALONG STADIUM ROAD**

**Capacity of Disposal station as per PHED Design**

Discharge through 42" i/d Existing sewer laid at 1/1000 slope entered in disposal works .

Area of 42" i/d sewer pipe. A	=	3.143	x	3.50	x	3.50	x	0.25	=	9.63	Sft
Vetted parameter of 42" i/d sewer.P	=	3.143	x	3.50					=	11.00	ft.
Hydraulic radius R =A / P	=	9.625	/	11.00					=	0.875	ft.
Slope of Existing sewer	=	1.000	/	1000.00					=	0.00100	
Velocity available at 1/1000 Slope	=	1.486	x	( 0.875 ) <sup>2/3</sup>	x	0.0010	<sup>1/2</sup>		=	3.582	ft./sec.
				0.012							
Discharge at 3.307 ft./sec.=AxV	=	9.63	x	3.582					=	34.48	Cusec
									<b>Say</b>	<b>= 35.00</b>	<b>Cusec</b>
Velocity available at 1/1000 Slope	=	1.486	x	( 0.875 ) <sup>2/3</sup>	x	0.0010	<sup>1/2</sup>		=	3.307	ft./sec.
				0.013							
Discharge at 3.307 ft./sec.=AxV	=	9.63	x	3.307					=	31.83	Cusec
									<b>Say</b>	<b>= 35.00</b>	<b>Cusec</b>

**DESIGN OF SULLAGE CARRIER FOR D/W**

Total Discharge at Disposal station									=	35.00	Cusec
Total Length of Sullage Carrier	=								=	350	Rft
Upper Ground level at left bank of 2-4/L left bank	=	785.53	-	1.5					=	784.03	
Lower G.level at discharge point Existing nullah	=	784.31	-	1.5					=	782.81	
Difference									=	1.22	ft.
Slop available	=	350	/	1.220	=	287	=	286.885	=	1/287	
Proposed Section	A	=	3.0	x	2.000				=	6.00	Sft (Area)
Wetted parameter of section	P	=	3.0	+	2.000	+	2.000		=	7.00	ft.
Hydraulic Radius	R	=		/	6.00	/	7.00		=	0.86	
Roughness Co efficient of RCC Surface									=	0.0130	
Velocity available	=	1.486	/	0.0130	x	R <sup>2/3</sup>	x	S <sup>1/2</sup>			
	=	114.308			x	0.902	x	0.05904	=	6.09	ft.Sec.
Carrying Capacity of Proposed section.					=	6.00	x	6.09	=	36.54	Cusec
									<b>Say</b>	<b>= 37.00</b>	<b>Cusec</b>

Hence sullage carring having size 3.00' x 2.0' working section in addition to 1' free board is proposed to be constructed. The sullage carrier section 3.00' x3.00' is proposed.



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

**GENERAL ABSTRACT OF COST**

S No.	Sub Heads	Description of items	Cost (PKR)
1	SUB HEAD NO.1	Replacement of damaged 36"i/d Sewer line with new 36" i/d Under water Sewer line.	21,963,302.00
2	SUB HEAD NO.2	Construction of Man hole Chambers 6.5' DIA 14.14' Average depth for 36" i/d under water Sewer.	5,029,352.00
3	SUB HEAD NO.3	Construction of RCC Sullage Carrier from Disposal works to existing drain along stadium road.	4,728,532.00
4	SUB HEAD NO.4	Construction of RCC Sullage Box Culvert for Stadium road crossing.	1,267,764.99
5	SUB HEAD NO.5	Construction of Stadium Road	33,948,121.79
6	SUB HEAD NO.6	Electrical Works of Stadium Road	2,093,153.00
7	SUB HEAD NO.7	Desilting of Existing Sullage Carrier/Storm Water Drain	817,164.00
8	SUB HEAD NO.8	Tuff Pavers in Disposal Station	3,169,834.47
9	SUB HEAD NO.9	Sewer House Connections	1,571,290.42
		<b>Total Cost of Sub head No.1 to 8</b>	<b>74,588,515</b>
		E & S Mitigation and Management Plan	559,000.00
		Add 2% contingency.	1,491,770.29
		Add 5% PRA charges.	3,729,425.73
		<b>TOTAL</b>	<b>80,368,710.70</b>
		<b>In Million</b>	<b>80.369</b>
	<b>Note</b>		
	The rate of standardized items in this estimate are as per MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT and rates of non MRS Items have been based on prevalent market rates.		



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

SUB HEAD NO.1		Replacement of damaged 36" i/d Sewer line with new 36" i/d Under water Sewer line.									
Total length including man holes.	36 "i/d	=	1500.0 ft	=	No.of MH	=	8 No	Cunet Depth at lower M.H	=	12.81 ft	
No. & dia of M.H chamber for	36 "i/d	=	Sewer	=	8 No	Dia	=	6.5 ft	Cunet Depth at Upper M.H	=	12.85 ft
Total length of sewer pipe.	36 "i/d	=	1500 ft (-)		8 x	6.5 ft	=	1448.0 ft	Cunet Depth at Upper M.H	=	12.09 ft
Total depth of sewer pipe.	36 "i/d	=	15.2 ft					Average depth	=	12.58 ft	
Depth of sewer pipe in dry condition.	36 "i/d	=	15.17 ft (-)		7.67 ft		=	7.5000 ft	Wall thickness	=	0.33 ft
Depth of sewer pipe in wet condition.	36 "i/d	=	15.17 ft (-)		7.50 ft		=	7.666 ft	RCC block+Crush	=	2.25 ft
								Total depth of cutting	=	15.17 ft	
								Average Depth above SSWL	=	7.50 ft	
								Average depth below SSWL.	=	7.67 ft	

**MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT**

S No	MRS, Reference		Description of Items	Quantity	Unit	Rate	Amount
	Ch	It:No					
1	4	45	Dismantling and removing road metaling. Length = 1500 - 8 No x 12.50 ft = 1400 Rft Quantity = 1400.00 x 5.500 x 0.83 = 6391.0 Cft = 6391.00 Total = 6391.00 Cft 100 2,238.70 Rs. 143075				
2	3	42	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct section and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle, gravel and rock:- (i) 0 to 7.0 ft Depth = 7.50 ft. Pipe length = 1500.0 - 8 No x 12.50 ft = 1400 Rft Quantity x 1400 x 5.500 x 7.50 = 57750 Cft = 57750.00 Total = 57750.00 Cft 1000 12,926.85 Rs. 746526				
3	3	43	Earthwork excavation of trenches in open cutting for sewers and manhole chambers, etc. below sub-soil water level to correct section and dimensions according to templates and levels, including shoring, timbering and shuttering of M.S.sheets on both sides of the trenches: (i) i) 0 ft. to 4.0 ft. (0 to 1.20 m) depth below SSWL. = 4.00 ft. Pipe length = 1500 - 8 No x 12.50 ft = 1400 Rft Quantity x 1400.00 x 5.500 x 4.00 = 30800 Cft = 30800.00 Total = 30800.00 Cft 1000 19,011.55 Rs. 585556 (ii) ii) 4.01 ft. to 8.0 ft.(1.22 to 2.4 m) depth below SSWL. = 3.67 ft. Pipe length = 1500 - 8 No x 12.50 ft = 1400 Rft Quantity = 1400.00 x 5.500 x 3.67 = 28226 Cft = 28226.00 Total = 28226.00 Cft 1000 24,590.85 Rs. 694101				
4	21	6	Lowering of sub-soil water table, by installation of tube wells along sewer line and pumping out water, for excavation in open cutting below sub-soil water level, concreting, curing, laying and jointing pipes, filling haunches, etc. till the completion of sewer line, including disposal of pumped out water:- 7) 0-7 ft. (0 to 2170 mm) below SSWL = 7.67 ft. Pipe length = 1500 - 8 No x 12.50 ft = 1400 Rft Total = 1400 Rft = 1400.00 Rft 1 5,288.20 Rs. 7403480				
5	21	23	Providing and laying crushed stone aggregate of 1/4" to 1" gauge under and around the sewer pipe, including leveling, manual compaction, complete in all respects. Pipe length = 1500 - 8 No x 12.50 ft = 1400 Rft RCC blocks = 1400 / 8.000 - 1.000 = 174 No Block length x 174 - 1.833 x = 172.2 Rft = Length of Crush 1400.0 - 172.167 = 1227.8 Rft (i) Crush bajri for pipe bedding. Qty.of crush x 1227.8 x 5.500 x 3.833 = 25886.82 Cft = Crush bajri under blocks Qty.of crush x 172.2 x 5.500 x 0.750 = 710.19 Cft = Total = 26597.0 Cft				



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

SUB HEAD NO.1		Replacement of damaged 36" i/d Sewer line with new 36" i/d Under water Sewer line.									
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No. & dia of M.H chamber for	36 "i/d	=	Sewer	=	8 No	Dia	=	6.5 ft	Cunet Depth at Upper M.H	=	12.85 ft
Total length of sewer pipe.	36 "i/d	=	1500 ft (-)	=	8 x	6.5 ft	=	1448.0 ft	Cunet Depth at Upper M.H	=	12.09 ft
Total depth of sewer pipe.	36 "i/d	=	15.2 ft					Average depth	=	12.58 ft	
Depth of sewer pipe in dry condition.	36 "i/d	=	15.17 ft (-)	=	7.67 ft	=	7.5000 ft	Wall thickness	=	0.33 ft	
Depth of sewer pipe in wet condition.	36 "i/d	=	15.17 ft (-)	=	7.50 ft	=	7.666 ft	RCC block+Crush	=	2.25 ft	
								Total depth of cutting	=	15.17 ft	
								Average Depth above SSWL	=	7.50 ft	
								Average depth below SSWL.	=	7.67 ft	

**MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT**

S No	MRS, Reference Ch	It:No	Description of Items	Quantity	Unit	Rate	Amount	
6	6	6.a.iii	<p>Deductions of 1/2 od pipe</p> $3.143 \times 1227.8 \times \frac{3.667^2}{4} \times 0.500 = -6485.10 \text{ Cft} =$ <p>Net Total = 20112 Cft =</p> <p>Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-</p> <p>(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc. and footing beams, other structural members other than those mentioned in 6(a) (i)&amp;(ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-</p> <p>RCC blocks Type B (nominal mix 1: 1½: 3)</p> <p>No,s of blocks = 1400.0 / 8.000 - 1.000 = 174.0 No,s</p> <p>Length of blocks = 174.000 x 1.833 = 318.942 Rft</p> <p>174.000 = 5.000 x 1.833 x 3.08333 = 4917.023 Cft</p> <p>Deductions of 1/2 od pipe</p> $174.000 \times 3.143 \times \frac{3.666^2}{4} \times 1.833 = -1684 \text{ Cft}$ <p>4.000 x 2.000</p> <p>Deductions of 1/2 slurry cavity around pipe</p> $174.000 \times 3.143 \times \frac{3.910 \times 0.25 \times 1}{2.000} = -267 \text{ Cft}$ <p>Net Total = 2965.79 Cft =</p>	20111.90	Cft	100	9,350.40 Rs.	1880543
6	6	(ii)	<p>(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:-</p> <p>(2) Type B (nominal mix 1: 1½: 3)</p> <p>No,s of blocks = 1400.0 / 8.000 - 1.000 = 174.0 No,s</p> <p>Length of collars = 174.0 x 1.000 = 174.0 Rft</p> <p>Top Collar on 1/2 od pipe</p> $174.000 \times 3.143 \times \frac{4.333 \times 0.667}{2.000} = 789.8 \text{ Cft}$ <p>Net Total = 789.84 Cft =</p>	2965.79	Cft	1	528.35 Rs.	1566974
7	Non MRS		<p>Providing laying cement sand Slurry ratio 1:1:1 well compacted through vibrator between Rcc sewer pipe and Rcc block to blind the joint of both pipe up to half of pipe. Rate also includes the Providing ,mixing Concrete admixture Sika Rapid in the cement for rapid setting with labour @ 1 litter per bag of cement tobe used. Complete in all respect to the Engineer Incharge .(Analysis attached)</p>	789.84	Cft	1	638.50 Rs.	504315



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

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**MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT**

S No	MRS, Reference Ch	It:No	Description of Items	Quantity	Unit	Rate	Amount
8	21	1-iii)	Pan concrete to be poured in the cavity of RCC block up to half of sewer pipe 36" i/d No,s of blocks = 1400.0 / 8.000 - 1.000 = 174.0 No,s Length of collars = 174.0 x 1.830 = 318.4 Rft 318.420 x 3.143 x 3.916 x 0.250 = 489.9 Cft x 2.000 Net Total = 489.87 Cft = 489.87 Cft	489.87	Cft	1	637.00 Rs. 312045
9	3	13-a	Providing and laying R.C.C. pipe sewers, moulded with cement concrete 1:1½:3 conforming to ASTM Specification C-76-79, Class III, Wall B, including carriage of pipes from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing, etc. complete:- ix) 910 mm (36") i/d Pipe length = 1500 ft - 8 No x 6.50 ft = 1448.00 Rft Rehandling of earthwork: b) Upton a lead of 50 ft. (15 m). Qty as per item No. 2 (i) = 57750 Cft Qty as per item No. 3 (i) = 30800 Cft Qty as per item No. 3 (ii) = 28226 Cft Total = 116776 Cft Deductions As per sand filling Item No. 10 (i) = 31152 Cft As per Crushed stone bedding It.No. 5 (i) = 20112 Cft As per RCC blocks it.No 6 (i) 6 (i) = 2966 Cft As per RCC top collars it.No 6 (ii) 6 (ii) = 790 Cft Pipe volume 3.143 x 1227.83 x ( 3.667 )² x 0.250 = 12970 Cft Total deductions = 67990 Cft Balance quantity. = 116776 (-) 67990 = 48786 Cft a) Lead up to a single throw of Kassi, nhaarah or shovel = 50% = 24393 Cft b) Upton a lead of 50 ft. (15 m). = 50% = 24393 Cft	1448.00	Rft	1	4,341.45 Rs. 6286420
10	7	30	Supplying and filling sand under floor; or plugging in wells. (i) Sand filling at trench top 1 x 1500.00 - 8.000 x 10.50 = 1416 Rft = 1 x 1416.00 x 5.500 x 4.00 = 31152 Cft = Total = 31152 Cft =	31152.00	Cft	100	2,986.40 Rs. 930323
11	3	24.c	Compaction of earthwork c) Ramming earthwork (all types of soil). Qty as per item No. = 9 = 48786 Cft =	48786.47	Cft	1000	1,679.05 Rs. 81915
12			Making connection of 36" i/d RCC Sewer with man hole chambers by dismantling of brick masonry ,RCC core wall at desired depth and its restoration in original condition. Complete in all respect to the entire satisfaction of the Engineer in Charge. At upper & lower ends = 36" i/d = 2 Job =	2.00	Job	1	8,000.00 Rs. 16000



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.											
SUB HEAD NO.1		Replacement of damaged 36" i/d Sewer line with new 36" i/d Under water Sewer line.									
Total length including man holes.	36 "i/d	=	1500.0 ft	=	No.of MH	=	8 No	Cunet Depth at lower M.H	=	12.81 ft	
No. & dia of M.H chamber for	36 "i/d	=	Sewer	=	8 No	Dia	=	6.5 ft	Cunet Depth at Upper M.H	=	12.85 ft
Total length of sewer pipe.	36 "i/d	=	1500 ft (-)		8 x	6.5 ft	=	1448.0 ft	Cunet Depth at Upper M.H	=	12.09 ft
Total depth of sewer pipe.	36 "i/d	=	15.2 ft					Average depth	=	12.58 ft	
Depth of sewer pipe in dry condition.	36 "i/d	=	15.17 ft (-)		7.67 ft		=	7.5000 ft	Wall thickness	=	0.33 ft
Depth of sewer pipe in wet condition.	36 "i/d	=	15.17 ft (-)		7.50 ft		=	7.666 ft	RCC block+Crush	=	2.25 ft
								Total depth of cutting	=	15.17 ft	
								Average Depth above SSWL	=	7.50 ft	
								Average depth below SSWL.	=	7.67 ft	
<b>MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT</b>											
S No	MRS, Reference Ch	It:No	Description of Items				Quantity	Unit	Rate	Amount	
13	3	13-a	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Lead table attached) Lead up to 170 K.m from Karana quarry Sargodha District . As per Item No. 6 (i) 2965.79 x 0.84 = 2491.26 Cft = As per Item No. 6 (ii) 789.84 x 0.84 = 663.47 Cft = Quantity of total bajri. = 3154.73 Cft =				3154.73	Cft	100	11,004.40	Rs. 347159
14	3	17-a.b.c	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft.(300 m) Lead up to 3 mile a) up to ¼ mile(400 m)= 1 x 4584.6 = 4584.60 b) for every 330 ft.(100 m) additional lead or part thereof, beyond ¼ mile (400m) up to one mile(1.6 Km) 12 x 29.30 = 351.60 for every ¼ mile(400 m) additional lead or part thereof, beyond one mile(1.6 Km) up to 5 mile(8 Km). 8 x 324.50 = 2596.00 Total = 7532.20 Quantity of deductions of item No. 9 = 67990 Cft = Take 80% = 67990 x 0.80 = 54391.63 Cft =				54391.63	Cft	1000	7,532.20	Rs. 409689
15	Material input Rate	158 6.003	Deduct cost of old material (Stone ballast) Quantity as per item No. 1 = 6391 Cft Quantity take 80% after deducting the dust stone used as blinding layer. 0% = 6391 x 80 / 100 = 5113 Cft Deduct wastage@15% = 5113 x 15 / 100 = 767 Cft Input material rate as per item No.06.003 Net Total = 4346 Cft Total Cost of RCC Sewer = 36 "i/d = 1448 Rft =				4345.88	Cft	100	2,500.00	Rs. 108647
									<b>Total:-</b>	<b>Rs</b>	<b>22,071,949</b>
									<b>Total:-</b>	<b>Rs</b>	<b>21,963,302</b>
<b>Carried over to the General Abstract of Cost</b>											



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.							
SUB HEAD NO.2		Construction of Man hole Chambers 6.5' DIA 14.14' Average depth for 36" i/d under water Sewer.				8 No	
<b>Design Parameter</b>				From RD.00 to RD.1500 upward	=	M.H .1	to M.H .8
Inside dia of man hole	=	6.50	ft.	Masonry depth	Average Cunet depth	=	12.58 ft.
Size of man hole cover	=	1.83333	ft.		PCC benching below cunet	=	0.58 ft.
Depth of excavation	=	14.75	ft.		Thickness of RCC base slab	=	1.00 ft.
Wall thickness up to 8ft depth	=	0.75	to 1.875 = 1.50		Crushed stone Thickness	=	1.00 ft.
Dome depth	=	0.75	ft. = 4.50		<b>Total depth of excavation.</b>	=	<b>15.17 ft.</b>
Thickness of PCC man hole cover	=	0.75	ft. = 0.50		<b>Total depth of excavation.</b>	=	<b>15.25 ft.</b>
Wall thickness out side the core wall	=	0.75	ft. = 6.75		Depth excavation above SSWL	=	7.50 ft.
Wall thickness in side core wall.	=	0.75	ft. = 6.75		Depth excavation below SSWL	=	7.75 ft.
Core wall thickness .	=	0.50	ft. = 6.75		Depth of dewatering(Lowering of SSWL)	=	7.75 ft.
Dia of excavation	=	12.500	ft. = 15.25		Sewer line size	=	36.00 inch

**MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT**

S No	MRS		Description of Items	Quantity	Rate	Unit	Cost (Rs.)
	Ch	It-No					
<b>Carried over to the General Abstract of Cost.</b>							
1	4	45	<b>New Man hole under water</b> Dismantling and removing road metaling. Quantity x 1 x 3.143 x 12.50 x 12.50 x 0.25 x 0.83 = 102.307 Cft = 102.31 Cft		2,238.70	100	2,290.00
2	3	42.i.ii.iii	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct section and dimension according to templates and levels, and removing surface water, in all types of soil except shingle, gravel and rock:- Excavation in dry condition (i) i) 0 ft. to 7.0 ft. (0 to 2.10 m) depth = 7.5 Ft. Depth Quantity 1 x 3.143 x 12.50 x 12.50 x 0.25 x 7.50 = 920.759 Cft Total = 920.759 Cft = 920.76 Cft		12,926.85	1000	11,903.00
3	3	43.i.ii	Earthwork excavation of trenches in open cutting for sewers and manhole chambers, etc. below sub-soil water level to correct section and dimensions according to templates and levels, including shoring, timbering and shuttering of M.S.sheets on both sides of the trenches: (i) i) 0 ft. to 4.0 ft. (0 to 1.20 m) depth below SSWL. = 4.0 Ft.Depth Quantity 1 x 3.143 x 12.50 x 12.50 x 0.25 x 4.00 = 491.071 Cft Total = 491.071 Cft = 491.07 Cft (ii) ii) 4.01 ft. to 8.0 ft.(1.22 to 2.4 m) depth below SSWL. = 3.75 Ft.Depth Quantity 1 x 3.143 x 12.50 x 12.50 x 0.25 x 3.75 = 460.379 Cft Total = 460.379 Cft = 460.38 Cft		19,011.55	1000	9,336.00
4	21	6	Lowering of sub-soil water table, by installation of tube wells along sewer line and pumping out water, for excavation in open cutting below sub-soil water level, concreting, curing, laying and jointing pipes, filling haunches, etc. till the completion of sewer line, including disposal of pumped out water:- 8) 0-8 ft. (0 to 2480 mm) below SSWL = 12.5 Ft.Depth Length 1 x 12.500 = 12.5 Cft Total = 12.5 Cft = 12.50 Cft		5,288.20	1	66,103.00
5	21	23	Providing and laying crushed stone aggregate of 1/4" to 1" gauge under and around the sewer pipe, including leveling, manual compaction, complete in all respects. Quantity 1 x 3.143 x 12.50 x 12.50 x 0.25 x 1.00 = 122.768 Cft = 122.77 Cft		9,350.40	100	11,479.00
6	6	6	Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design, including forms, moulds, sh uttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-( (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)&(ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (2) Type B (nominal mix 1: 1½: 3) Base Slab 1 x 3.143 x 11.500 x 11.500 x 0.25 x 1.00 = 103.911 Cft Core wall 1 x 3.143 x 8.500 x 0.500 x x 6.75 = 90.1607 Cft Total = 194.071 Cft = 194.07 Cft		528.35	1	102,538.00
7	6	6	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (a) Plain bars (b) Deformed bars (Grade-40) Steel bars 1 x 194.07 x 6.000 x 0.454 = 528.651 Kg Total = 528.651 Kg = 528.65 Kg		31,979.30	100	169,059.00



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.								
SUB HEAD NO.2		Construction of Man hole Chambers 6.5' DIA 14.14' Average depth for 36" i/d under water Sewer.				8 No		
<b>Design Parameter</b>				From RD.00 to RD.1500 upward	=	M.H .1	to M.H .8	
Inside dia of man hole	=	6.50	ft.	Masonry depth	Average Cunet depth	=	12.58 ft.	
Size of man hole cover	=	1.83333	ft.		PCC benching below cunet	=	0.58 ft.	
Depth of excavation	=	14.75	ft.		Thickness of RCC base slab	=	1.00 ft.	
Wall thickness up to 8ft depth	=	0.75	to 1.875 = 1.50		Crushed stone Thickness	=	1.00 ft.	
Dome depth	=	0.75	ft. = 4.50		Total depth of excavation.	=	15.17 ft.	
Thickness of PCC man hole cover	=	0.75	ft. = 0.50		Total depth of excavation.	=	15.25 ft.	
Wall thickness out side the core wall	=	0.75	ft. = 6.75		Depth excavation above SSWL	=	7.50 ft.	
Wall thickness in side core wall.	=	0.75	ft. = 6.75		Depth excavation below SSWL	=	7.75 ft.	
Core wall thickness .	=	0.50	ft. = 6.75		Depth of dewatering(Lowering of SSWL)	=	7.75 ft.	
Dia of excavation	=	12.500	ft. = 15.25		Sewer line size	=	36.00 inch	
<b>MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT</b>								
S No	MRS		Description of Items	Quantity	Rate	Unit	Cost (Rs.)	
	Ch	It-No						
8	7	7	Pacca brick work other than building up to 10ft. (3 m) height. i) cement, sand mortar:- Ratio 1:3 (Ch: 7 It. 7) 1st.step Out side C.wall 1 x 3.143 x 9.750 x 0.75 x 6.75 = 155.129 Cft Inside C.wall 1 x 3.143 x 7.250 x 0.75 x 6.75 = 115.353 Cft 2rd .step 1 x 3.143 x 8.375 x 1.875 x 0.50 = 24.6763 Cft 3rd.step 1 x 3.143 x 8.000 x 1.500 x 0.50 = 18.8571 Cft 4th.step 1 x 3.143 x 7.625 x 1.125 x 0.50 = 13.4799 Cft Dome 1 x 3.143 x 7.250 + 2.583 x 0.75 x 4.50 = 52.1518 Cft 2.000 Total = 379.647 Cft D/d pipe 2 x 3.143 x 3.6667 x 3.667 x 0.25 x 1.500 = 31.6905 Cft Net Total = 347.96 Cft	= 347.96	Cft	36,080.05	100	125,543.00
9	7	8	Add extra labour on item No. 7, for every 10ft.(3 m) additional height, or part thereof. 10-20 Height Hight above = 10 ft. Dome 1 x 3.143 x( 4.431 + 2.583 )x 0.75 x 2.75 = 22.7325 Cft 2.000 Total = 22.7325 Cft	= 22.73	Cft	1,502.15	100	341.00
10	7	10	Extra for pacca brick work in steining of wells or any other circular masonry. Quantity as per item No 8.00 Total = 347.96 Cft	= 347.96	Cft	3,094.80	100	10,769.00
11	6	5.f	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 1/2:3 (i) (f) Ratio 1: 1/2:3 Benching 1 x 3.143 x 6.500 x 6.500 x 0.25 x 3.58 = 118.954 Cft Total = 118.954 Cft D/d 1/2 pipe 1 x 0.786 x 3.00 x 3.00 x 0.50 x 6.500 = 22.9821 Cft Above 1/2 pipe 1.0000 x 3.00 x 1.500 x 6.500 = 29.25 Cft Net Total = 66.72 Cft	= 66.72	Cft	44,460.60	100	29,665.00
12	21	9	(ii) (f) Ratio 1: 2: 4 Around cover 1 x 3.143 x 2.583 x 0.750 x 0.50 = 3.04464 Cft Extra for making and finishing benching floor work in manhole chamber, with 1/8" (3 mm) thick cement finish . benching top 1 x 3.143 x 6.500 x 6.500 x 0.25 x 0.00 = 33.1964 Sft Pipe shape portion 1 x 3.143 x 6.500 x 3.000 x 0.50 x 0.00 = 30.6429 Sft Rectag.sides 1 x 2.000 x 6.500 x 1.500 x 0.00 x 0.00 = 19.50 Sft Total = 83.3393 Sft D/d Top 1 x 1.000 x 6.500 x 3.00 x = 19.50 Sft Net Total = 63.84 Sft	= 3.04	Cft	38,880.60	100	1,184.00
13	21	13	Providing and fixing 1½"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels . Step Nos 1 x 13.17 - 3.58 = 9.58 / 1 - 2.0 = 8.0 No	= 8.00	No	614.75	1	4,918.00
14	11	7-b	Cement plaster 1:2 up to 20' (6.00 m) height:- b) ½" (13 mm) thick ) Out side the man hole 1st.step 1 x 3.143 x 10.50 x 6.75 = 222.75 Sft 1st.step top 1 x 3.143 x 10.875 x 0.375 = 12.82 Sft 2nd.step 1 x 3.143 x 10.25 x 0.50 = 16.11 Sft 2nd.step top 1 x 3.143 x 10.625 x 0.375 = 12.52 Sft 3rd.step 1 x 3.143 x 9.50 x 0.50 = 14.93 Sft					



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.									
SUB HEAD NO.2		Construction of Man hole Chambers 6.5' DIA 14.14' Average depth for 36" i/d under water Sewer.						8 No	
<b>Design Parameter</b>				From RD.00 to RD.1500 upward		=	M.H .1	to	M.H .8
Inside dia of man hole	=	6.50	ft.	Masonry depth	Average Cunet depth	=	12.58	ft.	
Size of man hole cover	=	1.83333	ft.		PCC benching below cunet	=	0.58	ft.	
Depth of excavation	=	14.75	ft.		Thickness of RCC base slab	=	1.00	ft.	
Wall thickness up to 8ft depth	=	0.75	to 1.875	= 1.50	Crushed stone Thickness	=	1.00	ft.	
Dome depth	=	0.75	ft.	= 4.50	Total depth of excavation.	=	15.17	ft.	
Thickness of PCC man hole cover	=	0.75	ft.	= 0.50	Total depth of excavation.	=	15.25	ft.	
Wall thickness out side the core wall	=	0.75	ft.	= 6.75	Depth excavation above SSWL	=	7.50	ft.	
Wall thickness in side core wall.	=	0.75	ft.	= 6.75	Depth excavation below SSWL	=	7.75	ft.	
Core wall thickness .	=	0.50	ft.	= 6.75	Depth of dewatering(Lowering of SSWL)	=	7.75	ft.	
Dia of excavation	=	12.500	ft.	= 15.25	Sewer line size	=	36.00	inch	
<b>MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT</b>									
S No	MRS		Description of Items	Quantity	Rate	Unit	Cost	(Rs.)	
	Ch	It-No							
15	13	9-b	3rd.step top 1 x 3.143 x 9.875 x 0.375 = 11.64 Sft						
			4rth.step 1 x 3.143 x 8.75 x 0.50 = 13.75 Sft						
16	11	18.a	4rth.step top 1 x 3.143 x 9.125 x 0.375 = 10.75 Sft						
			(Dome) 1 x 3.143 x( 8.000 + 3.333 )x 4.50 = 80.14 Sft						
17	21	16	2 Total = 395.41 Sft						
			D/d pipe area 1 x 3.143 x 3.667 x 3.667 x 0.25 x 2.00 = 21.13 Sft						
18	1	1	Net Total = 374.28 Sft = 374.28 Sft					15,447.00	
			Bitumen coating to plastered or cement concrete surface:-ii) 14 lbs. per 100 Sft. (6.35 Kg per Sq.m). Out side man hole chamber. Quantity as per item No 14.00 = 374.28 Sft						
19	3	13.a	Total = 374.28 Sft = 374.28 Sft					5,312.00	
			Cement pointing struck joints, on walls, upto 20' (6.00 m) height:-a) ratio 1:2 In side the man hole Straight portion = 1.00 x 3.143 x 6.50 x 4.667 = 95.33 Sft (Dome) 1 x 3.143 x( 6.500 + 1.833 )x 4.50 = 58.93 Sft 2 Total = 154.26 Sft = 154.26 Sft						
20	7	30	Providing and fixing 6" thick R.C.C. manhole cover with tee shaped C.I. frame of 22" I/d (frame weighing 37.324 Kg. or one mound as per Standard Drawing STD/PD No. 6, of 1977, complete in all respect. 1 x 1.0 = 1.0 No = 1.00 No					16,087.00	
			Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead upto 170 Km from Karana quarry Sargodha District Sargodha.						
21	3	17 a.b.c	PCC 1: 1.5:3 quty. as per item No. 11 (i) = 66.72 x 84.0 / 100 = 56.046 Cft						
			PCC 1:2.4 quty. as per item No. 11 (ii) = 3.04 x 88.0 / 100 = 2.679 Cft						
22	3	17 a.b.c	RCC 1:1.5:3 quty. as per item No. 6 (i) = 194.07 x 84.0 / 100 = 163.020 Cft						
			Net Total = 221.746 Cft = 221.75 Cft						
23	3	13.a	Rehandling of earthwork: a) Lead up to a single throw of Kassi, phaorah or shovel a) Lead up to a single throw of Kassi, phaorah or shovel						
			Around base slab 1 x 3.143 x 12.50 - 11.50 x 1.00 = 3.143 Cft						
24	7	30	Around 1st step 1 x 3.143 x 12.50 - 10.50 x 6.75 = 42.429 Cft						
			Around 2nd step 1 x 3.143 x 12.50 - -10.25 x 0.50 = 35.750 Cft						
25	3	17 a.b.c	Around 3rd step 1 x 3.143 x 12.50 - 9.50 x 0.50 = 4.714 Cft						
			Around 4rth step 1 x 3.143 x 12.50 - 8.75 x 0.50 = 5.893 Cft						
26	7	30	Around dome 1 x 3.143 x 12.50 - 8.00 + 3.33 x 0.50 = 10.738 Cft						
			2.00 Total = 102.67 Cft = 102.67 Cft						
27	3	17 a.b.c	Supplying and filling sand under floor; or plugging in wells. (Dome) 1 x 3.143 x( 8.000 + 3.333 )x 4.00 = 71.24 Cft = 71.24 Cft					2,127.00	
			2						



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.								
SUB HEAD NO.2		Construction of Man hole Chambers 6.5' DIA 14.14' Average depth for 36" i/d under water Sewer.				8 No		
<b>Design Parameter</b>				From RD.00 to RD.1500 upward	=	M.H .1	to M.H .8	
Inside dia of man hole	=	6.50	ft.	Masonry depth	Average Cunet depth	=	12.58 ft.	
Size of man hole cover	=	1.83333	ft.		PCC benching below cunet	=	0.58 ft.	
Depth of excavation	=	14.75	ft.		Thickness of RCC base slab	=	1.00 ft.	
Wall thickness up to 8ft depth	=	0.75	to 1.875 = 1.50		Crushed stone Thickness	=	1.00 ft.	
Dome depth	=	0.75	ft. = 4.50		Total depth of excavation.	=	15.17 ft.	
Thickness of PCC man hole cover	=	0.75	ft. = 0.50		Total depth of excavation.	=	15.25 ft.	
Wall thickness out side the core wall	=	0.75	ft. = 6.75		Depth excavation above SSWL	=	7.50 ft.	
Wall thickness in side core wall.	=	0.75	ft. = 6.75		Depth excavation below SSWL	=	7.75 ft.	
Core wall thickness .	=	0.50	ft. = 6.75		Depth of dewatering(Lowering of SSWL)	=	7.75 ft.	
Dia of excavation	=	12.500	ft. = 15.25		Sewer line size	=	36.00 inch	
<b>MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT</b>								
S No	MRS		Description of Items	Quantity	Rate	Unit	Cost (Rs.)	
	Ch	It-No						
22	21	12.a	a) up to ¼ mile (400 m). = 1.00 x 4,585 = 4584.60 Rs.					
			b)for every 330 ft.(100 m)additional lead or part thereof, beyond ¼ mile(400 m)up to one mile.(1.6 Km.) = 12.00 x 29.30 = 351.60 Rs.					
			c. for every ¼ mile (400 m) additional lead or part thereof, beyond one mile(1.6 Km)up to 5 mile(8 Km). = 8.00 x 324.50 = 2596.00 Rs.					
			Total = 7532.20 Rs.					
			Quantity as per item No 2 = 920.76 Cft					
			Quantity as per item No 3 (i) = 491.07 Cft					
			Deduct quantity rehandled as item No. 3 (ii) = 460.38 Cft					
			Total = 1943.45 Cft					
			Deduct quantity of sand as item No. 20 = 71.24 Cft					
			Balance quantity . = 389.14 Cft					
			Take 80% quantity to be transported. 0.80 = 311.31 = 311.31 Cft	311.31	Cft	7,532.20	1000	2,345.00
			Restoration of metaled road, on laid service line, including compaction:-					
			a) Carpeted road, with 2" (50 mm) carpet and 10" (250 mm) depth of stone metal for sub-base and base.					
			Quantity x 1 x 3.143 x 12.50 x 12.50 x 0.25 x = 122.768 Sft	122.77	Sft	0.00	100	0.00
				<b>Total Amount (Rs.)</b>		<b>= 630,408.00</b>		
23	Material input Rate 158	6.003	Deduct cost of old material (Stone ballast) =					
			Quantity as per item No. = 1 = 102.31 Cft					
			Quantity take 80% after deducting the dust stone used as blinding layer. Quantity as per item No.					
			Quantity = 102.31 x 80 / 100 = 81.85 Cft					
			Deduct wastage@ 15% = 81.85 x 15.00 / 100.00 = 12.28 Cft					
			input material rate as per item No.06.003 =					
			Net Total = 69.57 Cft	69.57	Cft	2,500.00	100	1,739.00
<b>Cost Per Manhole</b>							<b>628,669.00</b>	
<b>Total Cost of 8 Nos of Man Holes</b>							<b>5,029,352</b>	



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

**Sub Head No.3**

**Construction of RCC Sullage Carrier from Disposal works to existing drain along stadium road.**

**MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT**

**Sullage carrier length = 300 ft. Size = 3 ft x 3 ft x Wall Thickness = 0.50**

Sr No.	Ch	It-No	Description of Item	Quantity	Rate	Unit	Cost (Rs.)
1	4	20	Dismantling cement concrete reinforced, separating reinforcement from concrete, cleaning and straightening the same. Existing Sullage Carrier Top & Bottom Slab = 2 x 300 x 4 x 0.5 = 1200 Cft Existing Sullage Carrier Walls = 2 x 300 x 0.5 x 3 = 900 Cft Existing Sullage Carrier 20% of Top Slab In Stadium = 1 x 52 x 4 x 0.5 = 104 Cft Total = 2204.0 Cft =	2204.0 Cft	20,148.50	100	444,072.94
2	3	21.a.ii	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead up to one chain (30 m) and lift up to 5 ft. (1.5 m) a) By Manual ii) in ordinary soil. = Total Length = ft. Excavation of foundation = 1 x 300.0 x 6.000 x 4.833 = 8699.4 Cft =	8699.40 Cft	11777.05	1000	102,453.27
3	6	5.f	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8 = 1 x 300.0 x 6.000 x 0.250 = 450.0 Cft Total = 450.0 Cft =	450.00 Cft	29880.60	100	134,463.00
4	6	6	Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.): (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc. and footing beams, other structural members other than those mentioned in 6(a) (i)&(ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- i) (2) Type B (nominal mix 1: 1½: 3) Base Slab 0 x 1 x 300.0 x 5.000 x 0.500 = 750.00 Cft Filets at base slab 0.50 x 2 x 300.0 x 0.333 x 0.333 = 33.27 Cft Total = 783.3 Cft = (a)(ii) Reinforced cement concrete in retaining/ Shear walls laid in situ or precast laid in position, or prestressed members cast in situ (Form work on both sides) , complete in all respects: ii) (2) Type B (nominal mix 1: 1½: 3) (i) Upto 9" thick (Avg) Walls 1.0 x 2 x 300 x 0.500 x 3.00 = 900.00 Cft Total = 900.0 Cft = (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- iii) (3) Type C (nominal mix 1: 2: 4) Top Slab . x 1 x 300.0 x 4.00 x 0.500 = 600.00 Cft Filets at top slab 0.50 x 2 x 300.0 x 0.333 x 0.333 = 33.27 Cft Total = 633.27 Cft Deduct grating 300 / 25 = 12 x 3.00 x 3.000 x 0.500 = -54.00 Cft Existing Sullage Carrier 20% of Top Slab In Stadium 1 x 52.0 x 4.000 x 0.500 = 104.00 Cft Total = 683.3 Cft =	783.27 Cft	528.35	1	413,839.00
5			Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60) Quantity as per item No. 4 i) = 783 x 6.75 / 2.204 2398.84 Kg Quantity as per item No. 4 iii) = 900 x 6.75 / 2.204 2756.35 Kg Quantity as per item No. 4 iii) = 683 x 6.75 / 2.204 2092.58 Kg Total = 7247.8 Kg =	7247.78 Kg	31979.30	100	2,317,788.00



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.															
Sub Head No.3				Construction of RCC Sullage Carrier from Disposal works to existing drain along stadium road.											
MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT															
		Sullage carrier length = 300		ft.		Size = 3 ft		x 3 ft		x		Wall Thickness = 0.50			
Sr No.	Ch	It-No	Description of Item								Quantity	Rate	Unit	Cost (Rs.)	
6			Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Carriage for Bajri quarry Sargodha (Sikhan Wali) to site of work (Analysis Attached) 200 Km Lead up to 200 Km from Karana quarry District Sargodha. Pcc 1:4:8 item No. 3 6 = 450 x 84.00 / 100.00 378.00 Cft Pcc 1:1.5:3 item No. 4 i) = 783 x 84.00 / 100.00 657.94 Cft Pcc 1:1.5:3 item No. 4 ii) = 900 x 84.00 / 100.00 756.00 Cft Pcc 1:2.4 item No. 4 iii) = 683 x 88.00 / 100.00 601.27 Cft Total = 2393.22 Cft								2393.22	Cft	11004.40	100	263,359.00
7	6	31	Providing embedding 10" (250 mm) wide ¼" (6 mm) thick rubber water stopper in expansion joints of R.C.C. roof slab complete in all respects. Longitudinal length = 1 x 300 x 2 = 600.00 Rft Horizontal length = 300.00 / 50 x 9.500 = 57.00 Rft Total = 657.00 Rft								657.00	Rft	311.85	1	204,885.00
8	25	10	Fabrication of heavy steel work, with angle, tees, flat iron round iron and sheet iron for making trusses, girders, tanks, etc., including cutting, drilling, rebitting, handling, assembling and fixing, but excluding erection in position. <b>M.S Grating 3 x 3 ft. Weight analysis attached =</b> Weight of gratings = 59.738 Kg Weight of gratings 300 / 33.00 = 9 x 59.738 = 537.64 Kg Total = 537.64 Kg								537.64	Kg	33489.65	100	180,055.00
9	25	11	Erection and fitting in position iron trusses, staging of water tanks, etc. <b>M.S Grating 5 x 3 ft. Weight analysis attached =</b> Weight of gratings 300 / 33.00 = 9 x 59.738 = 537.64 Kg Total = 537.64 Kg								537.64	Kg	1449.35	100	7,792.00
10	3	13.1+24.c	Rehandling of earthwork a) Lead up to a single throw of Kassi, phaorah or shovel: Compaction of earthwork(soft, ordinary or hard soil):-c)Ramming earthwork (all types of soil). 1 step 2.0 x 300.00 x 0.50 x 0.500 = 150.00 Cft 2547.60 2nd step 2.0 x 300.00 x 1.00 x 3.000 = 1800.00 Cft 1679.05 Total = 1950.00 Cft								1950.00	Cft	4226.65	1000	8,242.00
11	3	17-a.b.c	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft.(300 m) Lead up to 3 mile a) up to ¼ mile(400 m) = 1 x 4,584.60 = 4584.60 b) for every 330 ft.(100 m) additional lead or part thereof, beyond ¼ mile (400m) up to one mile(1.6 Km) = 12 x 29.3 = 351.60 for every ¼ mile(400 m) additional lead or part thereof, beyond one mile(1.6 Km) up to 5 mile(8 Km). = 8 x 324.5 = 2596.00 Total Rs. = 7532.20 Quantity of item No. 1 and 2 = 10903.40 Cft. Deduct qty: as per rehandling item No. = 1950.00 Cft. Balance = 8953.40 Cft. Take 80% = 7162.72 Cft.								7162.72	Cft.	7532.20	1000	53,951.00
12			Deduct cost of old Steel # 4 = 2204 x 3.75 / 2.204 3750.00 Kg = 3750.00 Kg								3750.00	Kg	115.07	1	(431,529.00)
											<b>Total</b>		4,728,532		
Rate per Rft = 4728532.00 / 300.00 = 15761.77											<b>Say</b>		4,728,532		
<b>Carried over to the general abstract of cost</b>															



**ROUGH COST ESTIMATE FOR THE IMPROVEMENT OF EXISTING SEWERAGE SYSTEM BY PROVIDING , LAYING AND REPLACEMENT OF OUT LIVED LINES AND IMPROVEMENT & EXTENSION OF DISPOSAL STATION CAPACITY AT OKARA CITY DISTRICT OKARA.**

<b>Sub Head No.4</b>	<b>Construction of RCC Sullage Box Culvert for Stadium road crossing.</b>
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**MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT**

<b>Culvert length</b>	<b>=</b>	<b>50 ft</b>	<b>Size of Culvert</b>	<b>=</b>	<b>3 ft</b>	<b>x</b>	<b>3 ft</b>	<b>x</b>	<b>Wall Thickness</b>	<b>=</b>	<b>0.67</b>
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Sr No.	MRS		Description of Item	Quantity	Rate	Unit	Cost (Rs:)
	Ch	It-No					
1	4	45	Dismantling and removing road metaling. Length = 50 ft Quantity = 1 x 50.0 x 6.333 x 0.830 = 262.8 Cft	262.83 Cft	2238.70	100	5,884.05
2	4	20	Dismantling cement concrete reinforced, separating reinforcement from concrete, cleaning and straightening the same. Existing Sullage Culvert Top & Bottom Slab = 2 x 50 x 4 x 0.5 = 200 Cft Existing Sullage Culvert Walls = 2 x 50 x 0.5 x 3 = 150 Cft Total = 150.0 Cft	150.0 Cft	20,148.50	100	30,222.75
3	3	21.a.ii	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead up to one chain (30 m) and lift up to 5 ft. (1.5 m) a) By Manual ii) in ordinary soil. = Total Length = 50 ft Excavation of foundation = 1 x 50.0 x 6.333 x 4.833 = 1530.5 Cft	1530.45 Cft	11777.05	1000	18,024.19
4	6	5.f	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8 = 1 x 50.0 x 6.333 x 0.333 = 105.5 Cft Under Side slabs on both side of Culvert. 1.00 x 2 x 50.0 x 5.50 x 0.500 = 275.00 Cft Total = 380.5 Cft	380.45 Cft	29880.60	100	113,681.00
5	6	6	Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.): i) (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc. and footing beams, other structural members other than those mentioned in 6(a) (i)&(ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (2) Type B (nominal mix 1: 1½: 3) Base Slab of Culvert 0 x 1 x 50.0 x 5.333 x 0.667 = 177.78 Cft Filets at base slab 0.50 x 2 x 50.0 x 0.500 x 0.500 = 12.50 Cft Total = 190.3 Cft	190.28 Cft	528.35	1	100,533.00
			ii) (a)(ii) Reinforced cement concrete in retaining/ Shear walls laid in situ or precast laid in position, or prestressed members cast in situ (Form work on both sides) , complete in all respects: (2) Type B (nominal mix 1: 1½: 3) (ii) More Than 9" thick (Avg) Walls of Culvert 1.0 x 2 x 50.000 x 0.667 x 3.00 = 200.00 Cft Total = 200.0 Cft	200.00 Cft	700.30	1	140,060.00
			iii) (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (3) Type C (nominal mix 1: 2: 4) Top Slab of Culvert = 1 x 50.0 x 4.33 x 0.667 = 144.44 Cft Filets at top slab 0.50 x 2 x 50.0 x 0.500 x 0.500 = 12.50 Cft Total = 156.94 Cft	156.94 Cft	583.80	1	91,624.00
6	6	12c	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60) Quantity as per item No. 5 i) = 190 x 8.00 / 2.204 = 690.66 Kg Quantity as per item No. 5 iii) = 190 x 8.00 / 2.204 = 690.66 Kg Quantity as per item No. 5 iii) = 157 x 6.75 / 2.204 = 480.66 Kg Total = 1861.99 Kg	1861.99 Kg	31979.30	100	595,450.00



ROUGH COST ESTIMATE FOR THE IMPROVEMENT OF EXISTING SEWERAGE SYSTEM BY PROVIDING , LAYING AND REPLACEMENT OF OUT LIVED LINES AND IMPROVEMENT & EXTENSION OF DISPOSAL STATION CAPACITY AT OKARA CITY DISTRICT OKARA.																
Sub Head No.4				Construction of RCC Sullage Box Culvert for Stadium road crossing.												
MRS, 1st BI-ANNUAL-2023 (01.01.2023 to 30.06.2023) DISTRICT SIALKOT																
Culvert length		=	50 ft	Size of Culvert	=	3 ft	x	3 ft	x		Wall Thickness	=	0.67			
Sr No.	MRS Ch	It-No	Description of Item								Quantity	Rate	Unit	Cost (Rs:)		
7	1	1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Carriage for Bajri quarry sargodha (Sikhan Wali) to site of work (Analysis Attached) Lead up to 200 Km from Karana quarry District Sargodha. Pcc 1:4:8 item No. 4 i) = 380 x 94.77 / 100.00 = 360.55 Cft Pcc 1:1.5:3 item No. 5 i) = 190 x 84 / 100.00 = 159.83 Cft Pcc 1:1.5:3 item No. 5 ii) = 200 x 84.00 / 100.00 = 168.00 Cft Pcc 1:2.4 item No. 5 iii) = 157 x 88.00 / 100.00 = 138.11 Cft Total = 826.50 Cft								826.50	Cft	11004.40	100	90,951.00	
8	6	31	Providing embedding 10" (250 mm) wide ¼" (6 mm) thick rubber water stopper in expansion joints of R.C.C. roof slab complete in all respects. Longitudinal length = 1 x 50 x 2.00 = 100.00 Rft Horizontal length = 50.00 / 2 x 9.667 = 241.67 Rft Total = 341.67 Rft								341.67	Rft	311.85	1	106,549.00	
9	3	13.1+24.c	Rehandling of earthwork a) Lead up to a single throw of Kassi, phaorah or shovel: Compaction of earthwork(soft, ordinary or hard soil):-c)Ramming earthwork (all types of soil). 1 step 2.0 x 50.00 x 0.50 x 0.667 = 33.33 Cft 2nd step 2.0 x 50.00 x 1.00 x 3.000 = 300.00 Cft Total = 333.33 Cft								333.33	Cft	4226.65	1000	1,409.00	
10	3	17-a.b.c	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft.(300 m) Lead up to 3 mile a)up to ¼ mile(400 m) = 1 x 4,584.60 = 4584.60 b)for every 330 ft.(100 m)additional lead or part thereof, beyond ¼ mile (400m)up to one mile(1.6 Km) = 12 x 29.3 = 351.60 for every ¼ mile(400 m)additional lead or part thereof, beyond one mile(1.6 Km)up to 5 mile(8 Km). = 8 x 324.5 = 2596.00 Total Rs. = 7532.20 Quantity of deductions of item No. 3 = 1530.45 Cft. Deduct qty:as per rehandling item No. 9 = -333.33 Cft. Balance = 1197.12 Cft. Take 80% = 957.693333 Cft.								957.69	Cft.	7532.20	1000	7,214.00	
11	21	12.a	Restoration of metaled road, on laid service line, including compaction:- a) Carpeted road, with 2" (50 mm) carpet and 10" (250 mm) depth of stone metal for sub-base and base. Quantity = 1 x 50 x 6.33 = 316.67 Sft								316.67	Sft	0.00	100	-	
12			<b>Material Deduct cost of old material</b> input Rate Quantity as per item No. 1 = 262.83 Cft Quantity take 80% after deducting the dust stone used as binding layer. Quantity as per item No. (Stone ballast) Quantity = 262.83 x 80 / 100 = 210.27 Cft Deduct wastage@15% = 210.27 x 15 / 100 = 31.54 0.00 Input material rate as per item No.06.003 Net Total = 178.73 Cft = 178.73 Cft 2,500.00 100 (4,468.00)													
13			Deduct cost of old Steel # 4 = 150 x 3.75 / 2.204 = 255.22 Kg = 255.22 Kg 115.07 1 (29,369.00)													
											<b>Net Total</b>		<b>1,267,764.99</b>			
Rate per Rft = 1267764.99 / 50.00 = 25355.30											<b>Say</b>		<b>1,267,765</b>			
<b>Carried over to the general abstract of cost</b>																



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT**

SIALKOT

**Sub Head No.4**

**Rehabilitation of Stadium road.**

**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

Sr No.	MRS		Description of Item	Quantity	Rate	Unit	Cost (Rs.)	
	Ch	It-No						
1	4	46	Dismantling and removing road pavement, etc., including screening and stacking of byproducts up to one chain lead (30 meter).  Stadium Road = 1 x 1200.0 x 24.000 x 0.330 = 9504.0 Cft =	9504	Cft	2988.70	100	284,046.05
2	3	5-i	Earthwork in ordinary soil for embankments lead up to 100 ft. (30 m), including ploughing and mixing with blade grade or disc harrow or other suitable equipment, and compaction by mechanical means at optimum moisture content and dressing to designed section, complete in all respects:- i) 95% to 100% maximum modified AASHTO dry density. Stadium Road = 1 x 300.0 x 24.00 x 3.00 = 21600.0 Cft Stadium Road = 1 x 450.0 x 24.00 x 0.50 = 5400.0 Cft Stadium Chowk = 1 x 60.0 x 32.00 x 0.50 = 960.0 Cft Total = 27960.0 Cft =	27960	Cft	10046.45	1000	280,898.74
3	3	21	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead up to one chain (30 m) and lift up to 5 ft. (1.5 m). Stadium Road Shoulders = 2 x 1200.0 x 9.00 x 1.00 = 21600.0 Cft Stadium Road Rehab = 2 x 750.0 x 9.00 x 1.00 = 13500.0 Total = 35100.0 Cft =	35100	Cft	11777.05	1000	413,374.00
4	3	13	Rehandling of earthwork: a) Lead up to a single throw of Kassi, phaorah or shovel Stadium Road Shoulders = 2 x 1200.0 x 9.00 x 1.00 = 21600.0 Cft Stadium Road Rehab = 2 x 750.0 x 9.00 x 1.00 = 13500.0 Cft Total = 35100.0 Cft =	35100	Cft	3917.75	1000	137,513.00
5	18	5	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.  Stadium Road Rehab = 2 x 1200.0 = 2400.0 Rft Stadium Road Rehab = 2 x 750.0 = 1500.0 Rft 3900.0 Rft =	3900	Rft	60.60	1	236,340.00
6	18	3a-i	Laying sub-base course of stone product of approved quality and grade including, placing, mixing, spreading and compaction of sub base material to required depth, camber and grade to achieve 98% maximum dry density determined according to AASHTO T-180 method-D, including carriage of all material to site of work complete in all respect as per specifications and as directed by the engineer incharge. Stadium Road New = 1 x 750.0 x 24.000 x 0.500 = 9000.0 Cft Stadium Chowk = 1 x 60.0 x 32.000 x 0.500 = 960.0 Cft Stadium Road Rehab = 2 x 750.0 x 9.000 x 0.330 = 4455.0 Cft Stadium Road Shoulders = 2 x 1200.0 x 9.000 x 0.330 = 7128.0 Cft Total = 21543.0 Cft =	21543	Cft	20051.65	100	4,319,727.00



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT**

SAILKOT

Sub Head No.4

**Rehabilitation of Stadium road.**

**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

Sr No.	MRS		Description of Item	Quantity	Rate	Unit	Cost (Rs.)
	Ch	It-No					
7	18	4a	Providing and laying base course of crushed stone (Water Bound Macadam) of approved quality and grade including, placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHTO dry density, including carriage of all material to site of work complete in all respect as per specifications and as directed by the engineer incharge. (Crushed stone aggregate from sargodha quarry to site, actual compacted depth shall be considered for payment)  Stadium Road Rehab = 1 x 750.0 x 24.000 x 0.500 = 9000.0 Cft Stadium Chowk = 1 x 60.0 x 32.000 x 0.500 = 960.0 Cft Stadium Road Shoulders = 2 x 750.0 x 9.000 x 0.330 = 4455.0 Cft Stadium Road Shoulders = 2 x 1200.0 x 9.000 x 0.330 = 7128.0 Cft  Total = 21543.0 Cft = 21543 Cft		25344.70	100	5,460,009.00
8	18	6	Providing and laying bituminous priming coat, using 10 lbs. kerosene oil and 10 lbs. binder per 100 Sft. or 0.5 Kg kerosene and 0.5 Kg binder per square  Stadium Road Rehab = 1 x 750.0 x 24.000 = 18000.0 Sft Stadium Chowk = 1 x 60.0 x 32.000 = 1920.0 Sft Stadium Road Rehab = 1 x 1200.0 x 24.000 = 28800.0 Sft  Total = 48720.0 Sft = 48720 Sft		1989.10	100	969,090.00
9	18	10a	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (ABC-2 inch thick) (iii) 4% Bitumen Stadium Road Rehab = 1 x 750.0 x 24.000 = 18000.0 Sft Stadium Chowk = 1 x 60.0 x 32.000 = 1920.0 Sft Stadium Road Rehab = 1 x 1200.0 x 24.000 = 28800.0 Sft  Total = 48720.0 Sft = 48720 Sft		14406.64	100	7,018,915.00
10	18	10a	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (AWC-2 inch thick) (iii) 4.5% Bitumen Stadium Road Rehab = 1 x 750.0 x 24.000 = 18000.0 Sft Stadium Chowk = 1 x 60.0 x 32.000 = 1920.0 Sft Stadium Road Rehab = 1 x 1200.0 x 24.000 = 28800.0 Sft  Total = 48720.0 Sft = 48720 Sft		15347.14	100	7,477,127.00
11	13	35	Painting Traffic Lane Marking of specified width (1.5mm thick), with Thermoplastic (TP) Paint including Glass Beads, complete in all respect, as approved and directed by Engineer incharge. ii) 6" wide Stadium Road Rehab = 3 x 1200.0 = 3000.0 Rft Stadium Road Rehab = 3 x 750.0 = 1875.0 Rft  4875.0 Rft = 4875 Rft		59.35	1	289,331.00
12	10	41	Providing and laying inter pavers, having 1000 PSI, crushing strength of approved manufacturer, over 2" to 3" sand cushion i/c grouting with sand in joints i/c finishing to require slope. complete in all respect. (50% Grey / 50% Coloured) c) 80-mm thick				



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADIUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT**

**Sub Head No.4      Rehabilitation of Stadium road.**

**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

Sr No.	MRS		Description of Item	Quantity	Rate	Unit	Cost (Rs.)
	Ch	It-No					
13	3	17-a.b.c	Stadium Road Rehab = 2 x 750.0 x 9.000 = 13500.0 Sft	35100	Sft	199.15	1
			Stadium Road Rehab = 2 x 1200.0 x 9.000 = 21600.0 Sft				
			Total = 35100.00 Sft				
			Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft.(300 m) Lead up to 3 mile				
			a) up to ¼ mile(400 m) = 1 x 4584.6 = 4584.60				
			b) for every 330 ft.(100 m) additional lead or part thereof, beyond ¼ mile (400m) up to one mile(1.6 Km) = 12 x 29.3 = 351.60				
			for every ¼ mile(400 m) additional lead or part thereof, beyond one mile(1.6 Km) up to 5 mile(8 Km). = 8 x 324.5 = 2596.00				
			Total Rs. = 7532.20				
			Take 80% = 9504.00 0 = 9504 0	9504	0	7532.20	1000
<b>Total Cost</b>							<b>33,948,122</b>



**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADIUM ROAD  
UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

**Sub Head No.4**

**Electrical Works of Stadium road.**

**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sialkot**

Sr No.	MRS		Description of Item	Quantity		Rate	Unit	Cost (Rs.)		
	Ch	It-No								
1	24	13	Supply and erection of copper conductor cables for service connection, in prelaid pipe/G.I. wire / trenches, etc. (rate for cable only):-							
			a) PVC insulated, PVC sheathed twin core, 250/440 volts.							
			v) 7/1.12 mm (7/0.044")	= 2250.0	Rft	2250.00	Rft	174.00	1	391,500.00
			vi) 7/1.63 mm (7/0.064")	= 1200.0	Rft	1200.00	Rft	331.90	1	398,280.00
2	24	68	Supply and erection of bracket of M.S. channel 75x40x6 mm (3"x1½"x¼") section:-							
			ii) 1.200 = 1 x 60 x 32 x 0.5 = 960 Cft			20.00	Nos	2425.85	1	48,517.00
3	24	69	Supplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 65, Philips/Osram/Thorn with corrosion resistant die casted aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection i/c the cost of all accessories/components required for proper operation, fully flexible for future upgradation and easy replacements for maintenance purposes, bucket elevator charges as approved and directed by the Engineer Incharge.							
			c) 120 Lm/Watt (vi) 120 Watt with 14400 Lumens			20.00	Nos	56211.80	1	1,124,236.00
4	24	77	Supply and erection of electric energy meter, including meter testing fee, etc.							
			b) three phase, 4 wires: ii) 3x50 Amp, 400 volts			1.00	Nos	15879.60	1	15,880.00
5	24	161	Supply, Installation, Testing & Commissioning of complete grounding system: ii) 6 mm <sup>2</sup> CU bare conductor							
						200.00	Rft	73.70	1	14,740.00
6	Non	MRS	Fabrication, Supply of following Light control panels (LCP), floor standing weather proof, IP 65 Rated of appropriate size, made of MS Sheet 16 SWG with hinged door, handle, catcher, 2 coats of antirust and powder coated paint of approved colour, AC3 magnetic contactor, photocell for automatic operation of lights, CBs, Hand/Off/Auto switch, push button and all necessary accessories complete in all respects. LCP shall be manufactured as per specifications, single line diagram complete in all respect up to the satisfaction of Engineer incharge.							
			(a) LCP			1.00	Nos	80000.00	1	80,000.00
			(b) Same as above but three phase DB as per SLD			1.00	Nos	20000.00	1	20,000.00
<b>Total Cost</b>								<b>2,093,153</b>		



ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.																		
SUB HEAD- 7			Desilting of Existing Drains and Sullage Carrier in Daska City District Sial Kot.															
Sr.No	MRS Ref		Item Description	Quantity		Unit	Rate	Amount										
	Ch.No	lte.No																
1	3	52	Earthwork in excavation of drains, irrigation channels through excavator / drag lines in all kind of soil and conditions(dry, wet slush,daldal and under water) including its disposal and preparation of working pad for operation of machinery. (Rates includes 100 ft lead).															
			Storm Water Drain	1	3,937	x	4.00	x	2.50	=	39,372.00	39,372.00	Cft	1000.00	4,180.00	Rs	164,575	
			A2-A5	1	546	x	3.00	x	2.00	=	3,276.00	3276.00	Cft	1000.00	4,180.00	Rs	13,694	
2	3	27	Extra for slush or Daldal including dewatering.															
			Storm Water Drain	1	3,937	x	4.00	x	2.50	=	39,372.00	39,372.00	Cft	1000.00	8,954.90	Rs	352,572	
			A2-A5	1	546	x	3.00	x	2.00	=	3,276.00	3276.00	Cft	1000.00	8,954.90	Rs	29,336	
3	3	17	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300 m) lead up to 2.0 miles															
			a.	a) up to ¼ mile (400 m).	=	1.000	x	4,584.60	=	4584.60	=							
			b.	b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) up to one mile. (1.6 Km.)	=	12.000	x	29.3	=	351.60	=							
			c.	c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) up to 5 mile (8 Km).	=	8.000	x	324.5	=	2596.00	=							
									Total	=	7532.20							
			Take 80% of quantity of item No.	=	42648.00	x	0.80	=	34118.40	=	34118.40	Cft	1000.00	7532.20	Rs	256,987		
													<b>TOTAL</b>	Rs	<b>817,164</b>			
<b>Carried over to the Summary</b>													<b>Say</b>	Rs	<b>817,164</b>			







**ROUGH COST ESTIMATE FOR THE REPLACEMENT OF 36" I/D DAMAGED SEWER LINE ALONG STADUM ROAD UPTO 42" I/D OUT FALL SEWER (AT STADIUM CHOWK) DASKA CITY DISTRICT SIALKOT.**

**Sub Head No.8**

**Sewerage House Connections**

**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sialkot**

Sr No.	MRS		Description of Item	Quantity	Rate	Unit	Cost (Rs.)	
	Ch	It-No						
1	4	46	Dismantling and removing road pavement, etc., including screening and stacking of byproducts up to one chain lead (30 meter).  Stadium Road = 25 x 21.0 x 1.330 x 4.500 = 3142.1 Cft =	3142.13	Cft	2988.70	100	93,908.69
2	6	5.f	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):  (i) Ratio 1: 4: 8 = 25 x 21.0 x 1.330 x 0.250 = 174.6 Cft  Total = 174.6 Cft =	174.56	Cft	29880.60	100	52,160.00
3	21	3-i	Providing and laying R.C.C. pipe sewers, moulded with cement concrete 1:1½:3 conforming to ASTM Specification C-76-20, Class II. Wall B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing, etc., complete.  i) 310 mm (12") i/d = 25 x 21.0 = 525.0 Cft  Total = 525.0 Cft =	525.00	Rft	756.60	1	397,215.00
4	3	5-i	Earthwork in ordinary soil for embankments lead up to 100 ft. (30 m), including ploughing and mixing with blade grade or disc harrow or other suitable equipment, and compaction by mechanical means at optimum moisture content and dressing to designed section, complete in all respects:-  i) 95% to 100% maximum modified AASHO dry density.  Stadium Road = 25 x 21.0 x 1.330 x 4.250 = 2967.6 Cft  Deduction Sewer Pipe = 25 x 21.0 x π (1.25)² / 4 = -645.8 Cft  Total = 2321.8 Cft =	2321.81	Cft	10046.45	100	233,259.73
5	21	8	Constructing standard gully grating chamber, 3'x2½' (900x750 mm), with chinaware trap as per PHED Drawing STD/PD No. 3 of 1977, complete in all respects.  Stadium Road = 2250 / 50.0 = 45.0  Total = 45.0 =	45.00	Each	17661.05	1	794,747.00
<b>Total Cost</b>							<b>1,571,290</b>	



**RATE ANALYSIS FOR HORIZONTAL M.S GRATING ON TOP OF RCC SLAB OF SULLAGE CARRIER ON PILE FOUNDATION FOR SEWAGE WATER DISPOSAL FROM 2/4-I, LBDC OKARA**

Size of grating base frame =	3' x 3.00'	Size of grating top frame =	3' x 1.00' 2No
Size of L-iron (Outer frame) =	2.0" x 2.0" x 0.25"	Size of L-iron (Inner top frame) =	2.0" x 2.0" x 0.25"
M.S Square bars @ 2" c/c at single side =	0.5" x 0.5" x	M.S Square bars @ hold fasts =	4 No
M.S Tee 2"x2"x1/4" =	2.00" x 2.00" x 0.25"		

**MRS, 2nd BI-ANNUAL-2022 (01.07.2022 to 31.12.2022) DISTRICT OKARA**

Sr.No	Item Description	Quantity	Unit	Rate	Amount in PAK RS.
1	<p><b>Ch:25, Item No.10</b> Fabrication of heavy steel work, with angle, tees, flat iron round iron and heat iron for making trusses, girders, tanks, etc., including cutting, drilling, rebitting, handling, assembling and fixing, but excluding erection in position L-Iron 2"x2"x.25"</p> <p>Base frame sides = 2 x 3.0 (-) 0.1667 = 5.67 ft. Base frame sides = 2 x 3.0 (-) 0.1667 = 5.67 ft. Base frame Hold = 4 x 5.00 (/) 12 = 1.67 ft. Top frame sides. = 2 x 2 x 2.92 (-) 0.1667 = 5.50 ft. Top frame sides. = 2 x 2 x 1.46 (-) 0.1667 = 2.58 ft. <b>Total length of M.S L-Iron 2"x2"x1/4"</b> = <b>21.08 ft.</b></p> <p>Central T-Iron 1.5"x1.5"x1/4" @Top frame with sq.holes = 2 x 3.00 (-) 0.083 = 5.83 ft. @2" c/c</p> <p>Weight of L-Iron 2"x2"x1/4" = 21.08 x 3.75 x 0.25 x 490.00 = <b>30.516 Kg</b> <math>\frac{12}{12} \times \frac{12}{12} = 2.204</math></p> <p>Weight of M.S Tee 2"x2"x1/4" = 5.83 x 3.75 x 0.25 x 490.00 = <b>8.443 Kg</b> <math>\frac{12}{12} \times \frac{12}{12} = 2.204</math></p> <p>M.S Bars @ 2" c/c = 2.92 x 12.0 (/) 2.0" = 18.00 No.s</p> <p>Total length of M.S bars 0.5"x0.5" = 1.00 x 18.0 x 2.92 = 52.50 ft.</p> <p>M.S Bars @ x-of hold fasts = 1.00 x 4.00 x 0.33" = 1.33 No.s</p> <p>Total length of bars = 53.83 ft.</p> <p><b>Weight of M.S Square bars</b> = 53.83 x 0.50 x 0.50 x 490.00 = <b>20.778 Kg</b> <math>\frac{12.0}{12.0} \times \frac{12.00}{12.00} \times 2.20</math></p> <p>Total length of M.S hinges 0.75"x0.75" = 2.00 x 3.0 x 0.33" = 2.00 ft. Weight of M.S hinges 0.75"x0.75" = 2.00 x 0.75 x 0.75 x 490.00 = 1.737 Kg <math>\frac{12.0}{12.0} \times \frac{12.0}{12.0} \times 2.20</math></p> <p align="right">Total = 59.738 Kg</p>				
2	<p><b>Ch:25, Item No.11</b> Erection and fitting in position iron trusses, staging of water tanks, etc. Quantity as per item No. = 1 = 59.74 Kg.</p>	59.738 Kg	100	33,489.65	Rs. 20,006
				<b>Total</b>	<b>Rs. 20,872</b>
				<b>Say</b>	<b>Rs. 20,872</b>



**ROUGH COST ESTIMATE FOR WATER SUPPLY SCHEME WAZIRABAD TEHSIL WAZIRABAD**  
**DISTRICT GUJRANWALA.**

**ANALYSIS RATE INJECTING CEMENT SAND PAN CONCRETE RATIO 1:1:1**

1 Cement in put material rate on website							
<b>Wet</b>				=	100.00	Cft	
<b>Dry</b>				=	125.00	Cft	
<b>Cement</b>	154	/	3	x	1	/	1.25 = 41.066667 Bag
	41.06667	Bag		@ Rs.	1020	Per	Bag Rs: 41888
2 Graded Pea Gravel 3/8" - 1/8" for Tube well Boring (at site)Page.57 item Noi. 23.439							
	154	/	3.0	x	1.0	=	51.33 Cft
	51.33	Cft		@ Rs.	68	=	Cft. Cft Rs: 3490
3 Coarse sand (Chenab) (at site) (MRS-2nd B1-Annual 2020) Page.1 item No.06.005							
	154	/	3.0	x	1.0	=	51.33 Cft
	51.33	Cft		@ Rs.	32.50	=	Cft. Cft Rs: 1668
4 Labour for pouring the Slurry into cavity of RCC block around the RCC sewer pipe joint up to half of pipe .Complete in all respect to the entire satisfaction of the Engineer in charge.							
	100	Cft		@ Rs.	60	Per	Cft Rs: 6000
						<b>Total</b>	<b>Rs. 53046</b>
5 Add 10% Contractor profit and 10% Over head charges.							
					53046 Cft	@ Rs.	20% Rs: 10609
						<b>Total</b>	<b>Rs. 63655</b>
Rate Per Cft.	=	63655 /	100	=			Rs. 637
						<b>Say</b>	<b>Rs. 637</b>



**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

**CARRIAGE OF ALL MATERIAL LIKE STONE AGGREGATE OR TIMER ETC BY TRUCK**

**Karana quarry at District Sargodha = 201 km**

Sr.No	Description	Lead	Rate	Unit	Amount Rs		
1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.						
	1st Km	1	K M	306.7	1	K M	306.7
	2nd Km	1	K M	146.25	1	K M	146.25
	3rd Km	1	K M	114.5	1	K M	114.5
	4th Km	1	K M	81.45	1	K M	81.45
	5th Km	1	K M	76	1	K M	76
	6th Km	1	K M	74.75	1	K M	74.75
	7th Km	1	K M	69.8	1	K M	69.8
	8th Km	1	K M	69	1	K M	69
	9th Km	1	K M	64.9	1	K M	64.9
	10th Km	1	K M	60.8	1	K M	60.8
	11th Km to 200 Km	190	K M	52.3	1	K M	9937
	201 Kms to 250 Kms	1	K M	3.25	1	K M	3.25
	<b>201 km for per 100 cft</b>						<b>11004.4</b>
<b>TOTAL</b>					<b>Rs</b>	<b>11004.40</b>	



**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

**CARRIAGE OF ALL MATERIAL LIKE STONE AGGREGATE OR TIMER ETC BY TRUCK**

**Karana quarry at District Sargodha = 201 km**

Sr.No	Description	Lead	Rate	Unit	Amount Rs	
1	Laying <b>sub-base course</b> of stone product of approved quality and grade including, placing, mixing, spreading and compaction of sub base material to required depth, camber and grade to achieve 98% maximum dry density determined according to AASHTO T-180 method-D, including carriage of all material to site of work complete in all respect as per specifications and as directed by the engineer incharge.					
	ii) Crushed stone aggregate.		9,047.25	100 Cft	9,047.25	
2	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.					
	1st Km	1	K M	306.7	1 K M	306.7
	2nd Km	1	K M	146.25	1 K M	146.25
	3rd Km	1	K M	114.5	1 K M	114.5
	4th Km	1	K M	81.45	1 K M	81.45
	5th Km	1	K M	76	1 K M	76
	6th Km	1	K M	74.75	1 K M	74.75
	7th Km	1	K M	69.8	1 K M	69.8
	8th Km	1	K M	69	1 K M	69
	9th Km	1	K M	64.9	1 K M	64.9
	10th Km	1	K M	60.8	1 K M	60.8
	11th Km to 200 Km	190	K M	52.3	1 K M	9937
	201 Kms to 250 Kms	1	K M	3.25	1 K M	3.25
	<b>201 km for per 100 cft</b>					<b>20,051.65</b>
<b>TOTAL</b>					<b>Rs</b>	<b>20051.65</b>



**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

**CARRIAGE OF ALL MATERIAL LIKE STONE AGGREGATE OR TIMER ETC BY TRUCK**

**Karana quarry at District Sargodha = 201 km**

Sr.No	Description	Lead	Rate	Unit	Amount Rs		
1	Providing and laying <b>base course</b> of crushed stone (Water Bound Macadam) of approved quality and grade including, placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHTO dry density, including carriage of all material to site of work complete in all respect as per specifications and as directed by the engineer incharge. (Crushed stone aggregate from sargodha quarry to site, actual compacted depth shall be considered for payment)						
	ii) Crushed stone aggregate.		14,340.30	100 Cft	14,340.30		
2	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.						
	1st Km	1	K M	306.7	1	K M	306.7
	2nd Km	1	K M	146.25	1	K M	146.25
	3rd Km	1	K M	114.5	1	K M	114.5
	4th Km	1	K M	81.45	1	K M	81.45
	5th Km	1	K M	76	1	K M	76
	6th Km	1	K M	74.75	1	K M	74.75
	7th Km	1	K M	69.8	1	K M	69.8
	8th Km	1	K M	69	1	K M	69
	9th Km	1	K M	64.9	1	K M	64.9
	10th Km	1	K M	60.8	1	K M	60.8
	11th Km to 200 Km	190	K M	52.3	1	K M	9937
	201 Kms to 250 Kms	1	K M	3.25	1	K M	3.25
	<b>201 km for per 100 cft</b>						<b>25,344.70</b>
<b>TOTAL</b>					<b>Rs</b>	<b>25344.70</b>	



**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

**1st January 2022 TO 30st June, 2022**

**CARRIAGE OF ALL MATERIAL LIKE STONE AGGREGATE OR TIMER ETC BY TRUCK**

**Asphalt Base Course**

Sr. No	Description	No.	Rate	Amount (Rs.)	Unit	References
1	a) Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density (iv) 4% Bitumen	2	6,631.15	13,262.30	per inch thickness per 100Sft	Ch-18/ Item-10(iv)
	<b>Sub Total</b>			<b>13,262.30</b>	100 Sft	
2	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.					Ch-1/ Item-1
	1st Km	1	305.40	305.40		
	2nd Km	1	145.65	145.65		
	3rd Km	1	114.10	114.10		
	4th Km	1	81.20	81.20		
	5th Km	1	75.85	75.85		
	6th Km	1	74.60	74.60		
	7th Km	1	69.60	69.60		
	8th Km	1	68.85	68.85		
	9th Km	1	64.75	64.75		
	10th Km	1	60.75	60.75		
	11th Kms to 200Kms	190	52.20	9,918.00		
	201 Kms to 250 Kms	1	3.25	3.25		
	251 Kms to 255 Kms	0	2.00	-		
	<b>Sub Total for 201 Km Lead</b>			<b>10,982.00</b>	%Cft	
	1 x 1x1=1 use 70% crush=0.70 cft Loose factor 24%=0.868Cft	0.868	10,982.00	<b>9,532.38</b>		
	<b>Sub Total B</b>			<b>1,144.34</b>	%Sft	
	<b>Total (A + B)</b>			<b>14,406.64</b>	100 Sft	



**MRS-1st BI-Annual-2023 (01-01-23 to 30-06-23) District Sailkot**

**1st January 2022 TO 30st June, 2022**

**CARRIAGE OF ALL MATERIAL LIKE STONE AGGREGATE OR TIMER ETC BY TRUCK**

**Asphalt Wearing Course**

Sr. No	Description	No.	Rate	Amount (Rs.)	Unit	References
1	a) Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density (iv) 4.5% Bitumen	2	7,101.40	14,202.80	per inch thickness per 100Sft	Ch-18/ Item-10(iv)
	<b>Sub Total</b>			<b>14,202.80</b>	100 Sft	
2	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.					Ch-1/ Item-1
	1st Km	1	305.40	305.40		
	2nd Km	1	145.65	145.65		
	3rd Km	1	114.10	114.10		
	4th Km	1	81.20	81.20		
	5th Km	1	75.85	75.85		
	6th Km	1	74.60	74.60		
	7th Km	1	69.60	69.60		
	8th Km	1	68.85	68.85		
	9th Km	1	64.75	64.75		
	10th Km	1	60.75	60.75		
	11th Kms to 200Kms	190	52.20	9,918.00		
	201 Kms to 250 Kms	1	3.25	3.25		
	251 Kms to 255 Kms	0	2.00	-		
	<b>Sub Total for 255 Km Lead</b>			<b>10,982.00</b>	%Cft	
	1 x 1x1=1 use 70% crush=0.70 cft Loose factor 24%=0.868Cft	0.868	10,982.00	<b>9,532.38</b>		
	<b>Sub Total B</b>			<b>1,144.34</b>	%Sft	
	<b>Total (A + B)</b>			<b>15,347.14</b>	100 Sft	



## Depth Statement of 36" i/d sewer line to be replaced along Stadium Road Daska From Rd.00 to Rd 2500 to Rd.4000

S.#		Reduced distance(RD)		Length	area served			Population		Discharge @ 50 GPCD			Storm water @50%		Proposed size	Slope		Area of pipe	Vetted parameter	Hydraulic radius
					On line	Other	Total	Density/acre	Population	Take 80%	Peak factor	Peak discharge	Take 50%of peak flow	Total discharge						
1	Stadium Chowk to stadium gate	RD. 0.0	RD. 310.0	310.0	152.90	679.99	832.89	100	83289	6.170	2	12.34	6.170	18.509	36	1 /	1400	7.07	9.43	0.75
1	Stadium gate to near Iqbal Hospital	RD. 310.0	RD. 1500.0	1190.0	152.90	679.99	832.89	100	83289	6.170	2	12.34	6.170	18.509	36	1 /	1400	7.07	9.43	0.75



## Depth Statement of 36" i/d sewer line to be replaced along Stadium Road Daska From Rd.00 to Rd 2500 to Rd.4000

Velocity	Carrying Capacity=area velocity	Fall in line	Ground Level		Invert Level		Avera Depth up to cunet		Average depth up to cunet	SSWL Level		Depth of cutting above SSWL			Depth of cutting below SSWL					
			Lower G.L	Upper G.L	Lower I.L	Upper I.L	Lower I.L	Upper I.L		Lower end	Upper end	Lower end	Upper end	Average depth above SSWL	Lower end	Upper end	Average depth above SSWL	Wall thickness	Bedding	Total depth of cutting
					770.09															
2.73	19.32	0.22	783.40	783.66	770.59	770.81	12.81	12.85	12.829	776.07	776.07	7.33	7.59	7.460	5.48	5.26	5.369	0.333	2.25	7.953
2.73	19.32	0.85	783.66	783.75	770.81	771.66	12.85	12.09	12.469	776.07	776.07	7.59	7.68	7.635	5.26	4.41	4.834	0.333	2.25	7.417



## Economic and Financial Analysis

### Project benefits and analysis

#### i) Financial

The construction of a storm water drainage system, or a part of it, will not generate any direct revenue to the state. A financial analysis, therefore, is not required. The capital cost of the project is not expected to be recovered. There is no land acquisition or resettlement requirement as the project areas are owned by MC Daska. The unit costs related to O&M will decrease after replacement of sewer and will be borne by the public sector.

#### ii) Economic

Given the scale, area, and locality of the project, the number of people set to benefit from the completion of the project are estimated to be 282,911. The project involves the provision of a public good, so hypothetically, the entire population can potentially benefit from it.

The major economic benefits from the project include:

- a) Travel time or delay reductions
- b) Vehicle cost savings
- c) Accident reductions
- d) Induced travel, including new trips and changes in mode, route, and time of travel
- e) Connectivity to further infrastructure, consequently connecting further markets and opportunities
- f) Building capacity and skills that contribute to the efficiency and sustainability of the sewerage or drainage sector
- g) Greater street operability in all weather conditions
- h) Increased household income and appreciation in value of land adjacent to project roads, resulting in higher aggregate economic output

For a project of greater scale, it is possible to quantify some of these benefits such as vehicle operating costs with necessary data inputs such as traffic, road geometry, pavement structure, condition, and vehicle operating cost parameters. In addition, if there is project revenue, some benefits can be estimated as percentages of total revenue that make evidence-based economic sense and sound interpretation. Given the context and size of this project, however, said analysis is not recommended at this stage.

#### iii) Social benefits with indicators

No major anticipated change in the livelihoods of people around project sites is expected. The increase in mobility occurring as a result of the project will enable access to greater economic opportunities by women and men alike. It will also encourage citizen satisfaction and trust with the government.

The following table describes some potential benefits and indicators from the successful completion of the project.



<b>Benefit Category</b>	<b>Benefits</b>	<b>Indicator</b>
Water quality	Prevent or reduce pollutant discharges	Load of total suspended solids reduced
	Prevent or reduce hydro modification	Volume of runoff reduced
Water supply	Augment water supply	Volume captured and infiltrated into groundwater basins
	Reduce water demands	Volume captured those results in reduced demand on other sources
Flood management	Prevent or reduce localized flooding	Peak flow reduction for design storm
	Prevent or reduce regional flooding	Size of area with flood mitigation
Community	Provide recreational opportunities	Size of space created or enhanced or enabled
	Provide educational opportunities	Number of outreach materials provided, events conducted, or participants.
	Increase property values	Increase in the value of property
	Improve aesthetics	Size of public space created
	Improve community involvement	Number of volunteer hours

**iv) Employment generation (direct and indirect)**

Increased access to the economy from greater mobility on the streets will increase employment in and beyond project sites. It will also create a positive effect on employees in terms of their performance and productivity and, hence, wages. During construction, employment for the local people of the project area will be available. There will be indirect employment resulting from easier and greater access to opportunities across local geographies.

**v) Environmental impact and clean development mechanism assessment**

Air emission and greenhouse gas reductions will result from the improvement of project roads. During the construction phase, however, issues may arise from the generation of dust, emission of air pollution, noise, and traffic congestion due to traffic lane reduction and redirection. Nonetheless, there will be no permanent adverse impacts to the environment.



The following table summarizes further benefits to the environment from the execution of the project.

<b>Benefit Category</b>	<b>Benefits</b>	<b>Indicator</b>
Climate change adaptation and resilience	Support water supply reliability	Additional volume of water available for supply
	Address increased precipitation volumes and intensities	Rate of peak flow reduced for the identified design storm
	Provide infrastructure redundancy	Volume of new redundant capacity
	Provide infrastructure longevity	Months or years of expected additional component life
Environmental	Protect or restore habitat	Size of area of wetland, riparian zone, or habitat
	Support biodiversity	Number of additional habitat acres for sensitive species
	Improve instream flow rates	Rate of instream flowrate improved
	Improve instream flow temperatures	Water temperature (°F or °C) improved or percent canopy cover increased
	Reduce urban heat island effects	Reduced air surface temperatures
	Reduce greenhouse gas emissions and air pollutants	Mass of greenhouse gas emissions sequestered or reduced



**Replacement of 36" i/d Damaged Sewer Line along Stadium Road Upto 42"i/d Out Fall Sewer  
(At Stadium Chowk) in Daska City**

S.N.	Activity	Mar-23	Apr-23	May-23	Jun-23	
1	Replacement of 36" dia under water sewer line	[Blue bar spanning from start of Mar-23 to end of May-23]				
2	Construction on manholes		[Blue bar spanning from start of Apr-23 to end of May-23]			
3	Construction of sullage carrier			[Blue bar spanning from start of May-23 to end of May-23]		
4	Construction of box culvery for stadium road crossing			[Blue bar spanning from start of May-23 to end of May-23]		



## Environmental & Social Screening Checklist

Based on the following Environmental and Social Screening Checklist E & S Categorization of subproject has been carried out. It is concluded that this subproject will have non-significant negative environmental impacts so it is categorized as Environmental **Category E-3** therefore no further process will be required. However, the subproject will require construction labor/workers for the execution therefore Environment, Health and Safety SOPs given in Annex - E will be followed by the contractor.

Moreover, the subproject has no negative social impacts and is not involved in displacement/resettlement of any nature, therefore it is categorized as Social **Category S3** and No further process will be required. The cost for the implementation of the Environment, Health and Safety SOPs will be made part of the bidding document and contractors term of reference for the subproject.

<b>Instructions:</b>	
Environmental and Social Focal Persons (ESFPs) <sup>1</sup> nominated by the MCs for PCP environmental and social management, will use this checklist in field for environmental and social screening and categorization of each and every sub-project proposed to be executed under the Program.	
Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in of this Checklist	
It is to be attached with the main document <sup>2</sup> of sub-projects at planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM	
This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used	
(iii) The purpose of this E&S Screening Checklists is to identify potential “Negative” impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the “remarks” section to discuss any anticipated mitigation measures.	
<b>Name of ESFP:</b>	Mr. Uzair MO (I)
<b>Name of MC:</b>	Daska
<b>Sub-Project Sector:</b>	Sewerage
<b>Sub-Project Title:</b>	Rehabilitation of 36" i/d Damaged Sewer Line Along Stadium Road in Daska City
<b>Sub- Project Categorization:</b>	E3, S3
<b>Date of Screening:</b>	15-02-2023
<b>Anticipated Project Activities</b>	<ul style="list-style-type: none"> <li>➤ Replacement of damaged Sewer line with new under water Sewer line</li> <li>➤ Construction of Man hole Chambers under water sewer</li> <li>➤ Construction of RCC Sullage Carrier</li> <li>➤ Construction of RCC Sullage Box Culvert for Stadium road crossing</li> <li>➤ Rehabilitation of Stadium road</li> <li>➤ Electrical Works of Stadium Road</li> <li>➤ Desilting of Existing Sullage Carrier/Storm Water Drain</li> <li>➤ Tuff Pavers in Disposal Station</li> <li>➤ Sewer House Connections</li> </ul>
<b>Estimated Cost of PC-I</b>	80.369 Million PKR
<b>Estimated Cost of E&amp;S Mitigation</b>	559,000/-PKR
<b>Completion Time/Duration</b>	4 months
<b>Estimated Labor for Subproject</b>	10-15 Max

<sup>1</sup> In all MCs, ESFPs are notified by Local government; MO (I&S) are focal persons for environmental sector and MO(P) are focal persons for social sectors.

<sup>2</sup> It is meant as PC-I and/or engineering estimates of sub-project



### CHECKLIST

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b>			
<b>Is the Sub-Project area adjacent to or within any of the following?</b>			
<b>Environmentally sensitive areas?</b>			
Legally protected Area		✓	Not observed in sub project area
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub project		✓	Not observed in sub project area
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance			Not observed in sub project area
<b>Socially sensitive /important areas/communities/ people?</b>			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject		✓	No PCRs observed
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		11 hospitals, Nadra registration center, 3 clinics, 1 school, 2 colleges are there but out of the range of project site and no impact is envisaged
Any graveyard of local community (Muslims or Christians)		✓	Not observed in sub project area
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated		✓	Not observed



segments <sup>3</sup> of the society and women or children)?			
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	Not observed
<b>B. Potential Environmental Impacts</b> Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	Not observed
2. Cutting of trees?		✓	Not observed
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	Not observed

4. Generation of wastewater during construction or operation?		✓	No such impact is envisaged
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	Domestic wastewater will be produced during construction but the waste will be collected in septic tanks.
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impact foreseen, as work activities are away from the surface water bodies so no other significant adverse impacts on Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers during construction Phase.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No construction labor camps envisaged and unskilled local labor will be engaged locally for the construction activities.
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping/pumping involved in scope of construction activities.
9. Serious contamination of soil due to construction works.		✓	Construction materials should be stored properly, no leakage or leaching Process involve so contamination of soil not observed
10. Aggravation of solid waste problems in the area?		✓	Municipal Solid waste and mud excavated from the existing drains to be disposed at proper disposal sites.
11. Generation of hazardous waste?			No hazardous waste will be generated.

<sup>3</sup> Due to caste, creed, religion or gender e.g. transgender



12. Increased air pollution due to sub-project construction and operation?	✓		Increased air pollution due to smoke and dust generated by the movement of vehicles and construction machinery at project site is expected. The mitigation measures include control on speed limit of project vehicles and use of construction machinery in good working condition and regular sprinkling of water at dust prone roads/site.
13. Noise and vibration due to sub-project construction or operation?	✓		The noise pollution during construction phase because of project vehicles and construction machinery is expected. The mitigation includes use of vehicles and machinery in good running condition. The working hours shall be restricted during daytime only.
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	The stagnant water in construction areas may create temporary breeding habitat for mosquitoes and resulting in dengue issue. Proper management and tidy conditions will avoid the creation of breeding habitats. Ensure mosquitoes spray at site on regular basis.
15. Use of chemicals during construction?		✓	The use of chemicals in construction Phase are not expected.
<b>C: Potential Social Impacts</b> Will the Sub-Project cause...			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	Not Applicable
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not Applicable
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups 4(mentioned above)?		✓	There will be no Impact on the poor women, children and or other vulnerable groups
4. Temporary impediments in movements of people/transport and animals?	✓		The movement of people may put some impediments during dismantling of existing drain and construction of new drains. Traffic management Training will be provided to drivers.
5. Large population influx during sub-project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	The proposed intervention of construction of storm water drains requires 15 working staff at a time and thus largescale population influx is not foreseen The contractor to establish

<sup>4</sup> Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line



			construction camp at appropriate place at open place sufficiently away from the populated area
6. Social conflicts if workers from other areas are hired.		✓	Contractor will hire local worker for unskilled construction activities
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	Binding of supervision consultants is compulsory. SOP's for H&S must be followed by the contractor.
8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?		✓	There would be some safety issue during martial transportation, during construction phase. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.		✓	There would be safety issues in Construction phase, During storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
10. Any impact on sensitive receptors (mentioned above)		✓	No impact on sensitive receptors foreseen
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not applicable



### Pictures of Field Visit







**Prepared By:**

**Name:** M. Hannan Yousaf

**Signature:**

**Date:** 15-02-2023

**Endorsed By:**

**Name:** Mr. Uzair MO (I)

**Signature:**

**Date:**

**Reviewed By:**

**Name:** Tehmina Kiran

**Signature:**

**Date:**



## INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST

**Name of City/MC/LG:** Daska

**Sub-Project Sector:** Sewerage

**Sub-Project Title:** Rehabilitation of 36" i/d Damaged Sewer Line along Stadium Road in Daska City

**Sub- Project Categorization:** E3, S3

**Date of Screening:** 15-02-2023

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No		✓		Not applicable
If yes, then describe the type of land being acquired from the categories below:		✓		Not applicable
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not applicable
Land (Quantify and describe types of land being acquired in "remarks column".		✓		Not applicable
Government and LG owned land free of occupation (agriculture or settlement)		✓		Not applicable
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		Not applicable
Private land		✓		Not applicable
Residential		✓		Not applicable
Commercial		✓		Not applicable
Agricultural		✓		Not applicable
Communal		✓		Not applicable
Others (specify in "remarks").		✓		Not applicable
Name of owner/owners and type of ownership document if available.		✓		Not applicable
If land is being acquired, describe any structures constructed on it		✓		Not applicable
Land-based assets:		✓		Not applicable
Residential structures		✓		Not applicable
Commercial structures (specify in "remarks")		✓		Not applicable
Community structures (specify in "remarks")		✓		Not applicable
Agriculture structures (specify in "remarks")		✓		Not applicable



Public utilities (specify in "remarks")		✓		Not applicable
Others (specify in "remarks")		✓		Not applicable
If agricultural land is being acquired, specify the following:		✓		Not applicable
Agriculture related impacts		✓		Not applicable
Crops and vegetables (specify types and cropping area in "remarks").		✓		Not applicable
Trees (specify number and types in "remarks").		✓		Not applicable
Others (specify in "remarks").		✓		Not applicable
Affected Persons (APs)		✓		Not applicable
Will any people be displaced from the land when acquired? Yes/No		✓		Not applicable
Number of APs		✓		Not applicable
Males		✓		Not applicable
Females		✓		Not applicable
Titled landowners		✓		Not applicable
Tenants and sharecroppers		✓		Not applicable
Leaseholders		✓		Not applicable
Agriculture wage laborers		✓		Not applicable
Encroachers and squatters (specify in remarks column)		✓		Not applicable
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty line). Specify the number and vulnerability in "remarks".		✓		Not applicable
Others (specify in "remarks")		✓		Not applicable

<b>Prepared By:</b>	<b>Endorsed By:</b>	<b>Endorsed By:</b>
<b>Name: Nasir Altaf</b>	<b>Name: Ms. Mariam Sadiqa (MOP)</b>	<b>Name: Tehmina Kiran</b>
<b>Signature:</b>	<b>Signature:</b>	<b>Signature:</b>
<b>Date: 15-02-2023</b>	<b>Date:</b>	<b>Date:</b>



Item	Quantity	Tentative Cost /Item (Rs)*	Total Cost
<b>Labor Safety</b>			
Face Masks (3 PLY)	40 Packs	500/-	20,000/-
Safety Gum Shoes	35	1,000/-	35,000/-
Hand Gloves	35	1,000/-	35,000/-
*First Aid Box (Including essential Medicine)	04	5,000/-	20,000/-
*Safety Hard Helmets MSA	35	2000/-	70,000/-
Safety Goggles	35	500/-	17,500/-
*Reflective Safety Vests	35	500/-	17,500/-
*Infrared Thermometer (Benetech GM-2200 OR equivalent)	01	45,000	45,000/-
<b>Sub-Total</b>			<b>260,000/-</b>
<b>Working Site Safety</b>			
*Reflective Safety Signs Boards	10	10,000/-	100,000/-
*Reflective Safety PVC Cones (18 inch)	20	1,200/-	24,000/-
*Road Guiding Portable Delineators with Chain	20	2,500/-	50,000/-
*Reflective Safety Barricading Tape	50	1500/-	75,000/-
*Emergency Portable Light	03	5000/-	15,000/-
Solid Waste Collection Drums	02	5000/-	10,000/-
*Fire Extinguishers DCP AFO Balls eq.	05	5000/-	25,000/-
<b>Sub-Total</b>			<b>299,000/-</b>
<b>Grand Total</b>			<b>559,000/-</b>



Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Responsibility
		Low	Medium	High				
<b>Construction Phase</b>								
Dismantling, Excavation, and filling operations	<b>a) Environmental Issues:</b> <ul style="list-style-type: none"> <li>Dust which may affect visibility</li> <li>Noise from machineries/ equipment</li> <li>Soil erosion</li> <li>Contamination of surface water</li> <li>Vibration (Shock waves can be produced due to heavy machinery working)</li> <li>Solid waste/ pipe cuttings/ sludge may be generated due these activities</li> <li>Safety hazards to labor and nearby resident population.</li> <li>Worse House Keeping</li> </ul>				<ul style="list-style-type: none"> <li>Solid /Sludge waste will be properly disposed off at designated place of MC.</li> <li>Updated and tuned machinery will be used to control noise.</li> <li>Water sprinkling will be carried out at consecutive intervals as per instruction</li> <li>Avoiding construction activities during nights.</li> <li>Removal of excess matter/ debris/sludge from the site immediately. Sewer-lines will be de-silted before excavating existing sewer-line to be replaced.</li> <li>Provide PPEs</li> <li>Provide appropriate signage near the construction activities to sensitize the</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>Daily site visit during construction phase</li> <li>Fortnightly/ Weekly</li> <li>Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>ESFPs</li> <li>DPO</li> <li>ESSs</li> <li>SPO</li> <li>ID/PD</li> </ul>



	<p><b>b) Social Issues:</b></p> <ul style="list-style-type: none"> <li>• Solid waste may cause disturbance in mobility</li> <li>• Temporary blockage of road may restrict mobility</li> <li>• Conflict with public and public complaints</li> <li>• Economic losses</li> <li>• Livelihood's loss.</li> <li>• loss of shopkeepers</li> <li>• Temporary loss of structures and private property</li> <li>• Economic loss of permanent and mobile vendors due to obstruction of passage</li> <li>• Presence of Physical Cultural Resources (PCRs) of Archeological importance</li> </ul>			<p>community and minimize accidents.</p> <ul style="list-style-type: none"> <li>o Public must be informed about project major activities, duration of scheme, time and schedule, anticipated impacts and their proposed Mitigation Measures. The contact Nos. of focal person of Grievance Redress Committee will be displayed at different locations and residents will also be informed about it.</li> <li>o Construction work will be done only on 4-5 feet length of street, rest of the streets will not be affected. In this way the business of the shops keepers will not be affected. Sewer lines where about 10 days will require to work make a schedule to work in portions so that the alternate road may be used safely. Contractor will make sure that labor must not damage the property and</li> </ul>			
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				<p>structures of the residents. In case of damage compensation will be provided as per entitlements.</p> <ul style="list-style-type: none"> <li>o If there will be any PCR found during excavation; Contractor will follow guidelines (Annex-VIII) of chance find procedure.</li> </ul>			
Civil work, Laying of sewer lines/ network	<p><b>Environmental Issues:</b></p> <ul style="list-style-type: none"> <li>o Sludge wastes</li> <li>o Noise and vibration disturbances to residents and businesses</li> <li>o Road side visibility can be reduced and dusty environment leads to respiratory diseases.</li> <li>o Safety issues</li> <li>o Health problems or immediate risk may take place</li> <li>o Spillage of fuel and oil</li> <li>o Traffic jams and congestion may take place and cause inconvenience to</li> </ul>			<ul style="list-style-type: none"> <li>• Immediately transport the accumulated construction waste to a site identified by the implementing MC</li> <li>• Broken Pipes will be disposed off as per directions of MO-I</li> <li>• Removal of excess materials</li> <li>• Cleaning of sites upon completion of schemes.</li> <li>• Establish schedule and others specific restrictions</li> <li>• Limit work to day light hours as possible</li> <li>• Use of less noise generating equipment</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>



	<p>the people where the construction of interchanges will take place.</p> <ul style="list-style-type: none"> <li>o Worse House Keeping</li> </ul> <p><b>Social Issues:</b></p> <ul style="list-style-type: none"> <li>o Reduced pedestrian access to residences and businesses</li> <li>o Temporary Sewer system interruption Conflicts.</li> <li>o Dissatisfaction for the project</li> <li>o Scattered construction material may obstruct mobility.</li> </ul>			<ul style="list-style-type: none"> <li>• Regular water sprinkling with the help of water bowsers</li> <li>• Cordon off construction area</li> <li>• Contractor will ensure provision of appropriate housing, water supply, and sanitation facilities to construction labor.</li> <li>• PPEs will be provided to workers</li> <li>• Availability of safe drinking water and food for the workers.</li> <li>• Availability of alternate sewer lines.</li> </ul>			
Construction material storage, handling and use	<p><b>Environmental Issues:</b></p> <ul style="list-style-type: none"> <li>o Water may also be contaminated due to the any oil spillages from machinery.</li> <li>o Health risk to workers and local inhabitants.</li> </ul> <p><b>Social Issues:</b></p> <ul style="list-style-type: none"> <li>o Land acquisition for storage of</li> </ul>			<ul style="list-style-type: none"> <li>• Material will be appropriately secured to ensure safe passage between the destinations during transportation</li> <li>• Loads/heaps will have appropriate cover to prevent spillage and contractor should be responsible for any clean up resulting from any failure.</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>



	<ul style="list-style-type: none"> <li>o construction material</li> <li>o Accidents/Injuries expected if neglected</li> <li>o Blockage of passage for pedestrians</li> <li>o Haphazard arrangement of construction material</li> </ul>			<ul style="list-style-type: none"> <li>• Materials will not be loaded to a higher level than the side and tail boards and shall be covered with a good quality tarpaulin;</li> <li>• If land acquired for storage of machinery &amp; materials on temporarily basis: Contractor is liable to compensate the land owner according to agreement/negotiations/voluntarily</li> <li>• Contractor will lay/utilize construction materials as per work requirement from his store.</li> <li>• Contractor will use night vision reflective signboards/ reflective tapes to cordon off the area during construction/demolition activities.</li> </ul>			
Labor Camp (if established by Contractor)	Health impacts due to absence of housing and sanitation facilities in labor camp.			<ul style="list-style-type: none"> <li>• Contractor will ensure provision of appropriate housing, water supply, and</li> </ul>	Visual/Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> </ul>



				<p>sanitation facilities to construction labor.</p> <ul style="list-style-type: none"> <li>• Good housekeeping will be ensured inside campsite</li> <li>• Labor will be provided with quality food.</li> <li>• Better heating &amp; cooling facilities will be provided by the Contractor as per season accordingly.</li> <li>• Better accommodation will be ensured by the Contractor.</li> <li>• Its better to accommodate labor in Containers Camps/houses with all amenities.</li> </ul>		<ul style="list-style-type: none"> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• SPO ID/PD</li> </ul>
Vehicle Movements	<ul style="list-style-type: none"> <li>o Traffic congestion</li> <li>o Conflicts</li> </ul>			<ul style="list-style-type: none"> <li>o Alternative routes will be provided.</li> <li>o Sign boards and posters will also be displayed at project site and adjacent areas as well. Inform the residents about timing, schedule and construction work duration.</li> <li>o Work will be done in portions so that the alternate road may be used safely and</li> </ul>	Visual/Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO ID/PD</li> </ul>



				<p>vehicles movement will not be disturbed.</p> <ul style="list-style-type: none"> <li>o Contractor will submit Traffic Management Plan and approve from ESFPs before the execution of work.</li> </ul>			
Safety Issues	Open Manholes without covers			<p>Manhole will not be open more than 24 hrs during this period barriers will be provided and reflective tapes will be used. Public will be informed timely.</p>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>
Public access	Problems for pedestrians. Normal mode of transport may be disturbed during Sub-project execution.			<ul style="list-style-type: none"> <li>• Alternate access route will be made sure.</li> <li>• Construction will start from middle of the street. Wooden blocks/ramps will be provided at door step of each house.</li> <li>• Cordon off excavated area.</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>
Drinking water contamination	<ul style="list-style-type: none"> <li>o Health issues.</li> <li>o Public Conflicts with labor.</li> </ul>			<ul style="list-style-type: none"> <li>• Control of sewerage water with Sucker machines to avoid drinking water contamination. Call plumbers for immediate repair.</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>



				<ul style="list-style-type: none"> <li>• Contact Nos. of MC help line will be displayed at project site and public may contact on these Nos. in case of any emergency.</li> <li>• Minor leakage control with tapes.</li> <li>• Disposal of broken sewerage pipes along with sludge in environment friendly way.</li> </ul>		<ul style="list-style-type: none"> <li>• Once during the construction phase</li> </ul>	
Occupational Health & Safety	<ul style="list-style-type: none"> <li>o Injuries to workers/LTI</li> </ul>			<ul style="list-style-type: none"> <li>• Contractor will follow HSE SOPs for all activities on the site.</li> <li>• Workers will be trained and guided to follow SOPs and will be provided with necessary PPEs (Safety Helmets, Safety Shoes, Gloves, Chemical Masks etc.) wherever required.</li> <li>• First aid will be provided immediately to save the life of affectes.</li> <li>• Careful monitoring will also be carried out.</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly <ul style="list-style-type: none"> <li>• nce during the construction phase</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>
Damage to Public Infrastructure/ utilities	<ul style="list-style-type: none"> <li>o Accidents/Incidents/Injuries</li> <li>o Structural loss</li> </ul>			<ul style="list-style-type: none"> <li>• Contractor will ensure no damage to public utilities or structures.</li> </ul>	Visual/ Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> </ul>



	o Social Conflicts				<ul style="list-style-type: none"> <li>• Contractor will provide compensation for the damages to entitles accordingly.</li> </ul>		<ul style="list-style-type: none"> <li>• construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• SPO ID/PD</li> </ul>
Sexual Harassment & Labor Influx	o Social Conflicts				<ul style="list-style-type: none"> <li>• Contractor will give behavioral training to the workforce.</li> <li>• Contractor will hire local labor for un-skilled works.</li> </ul>	<ul style="list-style-type: none"> <li>• Visual/ Pictures/Reported/ Complains by public during visit</li> </ul>	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO ID/PD</li> </ul>
CoViD-19 SOPs implementation	o Spread of Corona among the labor				<ul style="list-style-type: none"> <li>• Contractor will provide face masks to the labor on daily basis to reduce Corona impact.</li> <li>• Contractor will follow CoViD-19 guidelines during construction works (Annex-III)</li> </ul>	<ul style="list-style-type: none"> <li>• Visual/ Pictures</li> </ul>	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO ID/PD</li> </ul>
<b>Decommissioning Phase</b>								



Restoration of Road	<ul style="list-style-type: none"> <li>o Accidents/Injuries due to haphazard refilling of trenches.</li> </ul>			<ul style="list-style-type: none"> <li>• Contractor will do compaction of refilled material into trenches after replacing sewer-lines.</li> </ul>	Visual/Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>
<b>Operational Phase</b>							
Seepage/Spill water	<p><b>Environmental issues:</b></p> <ul style="list-style-type: none"> <li>o Increase moisture content in soil which affects the structures / foundation of buildings in nearby areas.</li> <li>Contaminate the water</li> </ul> <p><b>Social issues:</b> No significant impacts will arise</p>			<ul style="list-style-type: none"> <li>• Ensure proper technical design to minimize, the seepage and chances of possible failure of the structure.</li> <li>• Ensure proper design, construction and operation of the structure and system to minimize seepage and appropriate implementation techniques. In case of failure of nearby building structures, foundation, monetary compensation shall be provided.</li> </ul>	Visual/Pictures	<ul style="list-style-type: none"> <li>• Daily site visit during construction phase</li> <li>• Fortnightly/ Weekly</li> <li>• Once during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>• ESFPs</li> <li>• DPO</li> <li>• ESSs</li> <li>• SPO</li> <li>• ID/PD</li> </ul>



## Annex- A

### PUNJAB CITIES PROGRAM

#### ENVIRONMENT, HEALTH AND SAFETY SOPs FOR LABOR/WORKERS

Labor /workers play key role in the infrastructure development and construction activities. The objective of preparation of the EHS SOPs for Labor/Workers is to address environment, health and safety issues related to the proposed sub-project implementation. These SOPs will provide guidelines to be followed by the contractors for effective management of EHS issues related to labor/workers/daily wagers (including women). These SOPs will be annexed in the general conditions of all the contracts carried out under the PCP. These SOPs are designed for Punjab Cities Program and will be applicable to all types of labor/workers/daily wagers (including women), hired for the construction activities under PCP. Following are the anticipated Environment, Health and Safety issues and their recommended mitigation measures.

**Table 1: Construction Camp Management**

Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
Siting and Location of construction camps	<p>Camp sites for construction workers are the important locations that have significant impacts such as health and safety hazards on labor/workers</p> <p>Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.</p>	<p>The Contractor shall:</p> <p>Locate the construction camps at areas, which are acceptable from environmental, cultural, or social point of view.</p> <p>Consider the location of construction camps away from communities in order to avoid social conflict with the surrounding communities.</p> <p>Submit to the relevant MC for approval of a detailed layout plan for the development of the construction camp showing the relative locations of all temporary buildings and facilities that are to be constructed together with the location of site roads, fuel storage areas (for use in power supply generators), solid waste management and dumping locations, and drainage facilities, prior to the development of the construction camps.</p> <p>Local authorities responsible for health, religious and security shall be duly informed on the set up of camp facilities so as to maintain effective surveillance over public health, social and security matters</p>
Construction Camp Facilities	<p>Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will generate social issues and impacts on health and environment.</p>	<p>Contractor shall provide the following facilities in the campsites:</p> <p>Adequate ventilation facilities</p> <p>Safe and reliable drinking water supply for personal hygiene (washing or bathing)</p> <p>Adequate housing for all workers</p> <p>Safe and reliable drinking water supply. Water supply from tube wells that meets the Punjab Environment Quality Standards</p> <p>Hygienic sanitary facilities, hand washing facilities and sewerage system.</p>



		The toilets and domestic wastewater will be collected through a common sewerage.
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Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
		<p>Provide separate latrines and bathing places for males and females with total isolation by wall or by location. Female toilets should be clearly marked in language or signage clearly understood by the persons using them to avoid miscommunication. The minimum number of toilet facilities required is one toilet for every ten persons.</p> <p>Storm water drainage facilities. Both sides of roads are to be provided with shallow v drains to drain off storm water to a silt retention pond, which shall be sized to provide a minimum of 20 minutes retention of storm water flow from the whole site. Channel all discharge from the silt retention pond to natural drainage via a grassed swale at least 20 meters in length with suitable longitudinal gradient.</p> <p>Paved internal roads. Ensure with grass/vegetation coverage to be made of the use of top soil that there is no dust generation from the loose/exposed sandy surface. Pave the internal roads of at least haring-bond bricks to suppress dusts and to work against possible muddy surface during monsoon.</p> <p>Provide child crèches for women working on the construction site. The crèche should have facilities for dormitory, kitchen, indoor/outdoor play area. Schools should be attached to these crèches so that children are not deprived of education whose mothers are construction workers. Provide in-house community/common entertainment facilities. Dependence of local entertainment outlets by construction camps to be discouraged/prohibited to the extent possible.</p>
Disposal of Labor Camp waste	Management of wastes is crucial to minimize impacts on the environment as well as on the health of the workers/labor	<p>The Contractor shall:</p> <p>Ensure proper collection and disposal of solid wastes within the construction camps</p> <p>Insist waste separation by source; organic wastes in one pot and inorganic wastes in another pot at household level. Store inorganic wastes in a safe place within the household and clear organic wastes on daily basis to waste collector. Establish waste collection, transportation, and disposal systems at their own.</p> <p>Dispose organic wastes in a designated safe place on daily basis. At the end of the day, cover the organic wastes with a thin layer of sand so that flies, mosquitoes, dogs, cats, rats, are not attracted. One may dig a large hole to put organic wastes in it; take care to protect groundwater from contamination by leachate formed due to decomposition. Cover the bed of the pit with impervious layer of materials (clayey, thin concrete) to protect groundwater from</p>



Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
		<p>Contamination.</p> <p>Locate the garbage pit/waste disposal site min 500 m away from the residence so that peoples are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places. Encompass the waste dumping place by fencing and tree plantation to prevent children to enter and play with.</p> <p>All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.</p>
Fuel supplies for cooking purposes	Illegal sourcing of fuel wood by construction workers will impact the natural flora and fauna	<p>The Contractor shall:</p> <p>Provide fuel to the construction camps for their domestic purpose, in order to discourage them to use fuel wood or other biomass.</p> <p>Make available alternative fuels like natural gas or kerosene on ration to the workforce to prevent them using biomass for cooking.</p> <p>Conduct awareness campaigns to educate workers on preserving the protecting of biodiversity in the project area, and relevant government regulations and punishments on wildlife protection.</p>
Health and Hygiene	There will be a potential for diseases to be transmitted including COVID-19, malaria, exacerbated by inadequate health and safety practices. There will be an increased risk of work crews spreading sexually transmitted infections and HIV/AIDS.	<p>The Contractor shall:</p> <p>Provide adequate health care facilities within construction sites.</p> <p>Provide first aid box facility at the construction site round the clock. Maintain stock of medicines in the first aid facility in campsites facility and appoint fulltime designated first aider or nurse.</p> <p>Provide ambulance facility for the laborers during emergency to be transported to nearest hospitals and telephone/mobile facility to call for Emergency Services 1122.</p> <p>Initial health screening of the laborers coming from outside areas</p> <p>Train all construction workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work</p> <p>Provide HIV awareness programming, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis</p> <p>Provide adequate drainage facilities throughout camps to ensure that disease vectors habitats (stagnant water bodies, puddles) do not form.</p> <p>Regular mosquito repellent sprays in monsoon.</p>



		<p>Carryout short training sessions on best hygiene practices to be mandatorily participated by all workers.</p> <p>Place display boards at strategic locations within the camps containing messages on best hygienic practices</p> <p>Place display boards of contact information of nearest dispensary/health clinic/hospital</p>
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Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
Safety	In adequate safety facilities to the construction camps may create security problems and fire hazards	<p>The Contractor shall:</p> <p>Provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry in to the camp area.</p> <p>Maintain register to keep track on a head count of persons present in the camp at any given time.</p> <p>Encourage use of flame proof material for the construction of labor housing/site office. Ensure that these houses/rooms are of sound construction and capable of withstanding storms/cyclones.</p> <p>Provide appropriate type of firefighting equipment suitable for the construction camps</p> <p>Display emergency contact numbers clearly and prominently at strategic places in camps.</p> <p>Communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractor.</p>
Food Safety	There is potential for exposure to poisonous substances by ingestion	Suitable arrangements are to be made for provision of clean eating areas where workers are not exposed to the hazardous or noxious substances



Site Restoration	Restoration of the construction camps to original condition requires demolition of construction camps.	<p>The Contractor shall:</p> <p>Dismantle and remove from the site all facilities established within the construction camp including the perimeter fence and lockable gates at the completion of the construction work.</p> <p>Dismantle camps in phases as the work decreases (do not wait for completion of the entire work).</p> <p>Give prior notice to the laborers before demolishing their camps/units</p> <p>Maintain the noise levels within the national standards during demolition activities</p> <p>Different contractors should be hired to demolish different structures to promote recycling or reuse of demolished material.</p> <p>Reuse the demolition debris to a maximum extent. Dispose remaining debris at the designated waste disposal site by MCs/ESFPs.</p> <p>Handover the construction camps with all built facilities as it is if agreement between both parties (contractor and landowner) has been made so. Restore the site to its original condition or to an agreed condition with the landowner defined prior to the commencement of the works (in writing).</p> <p>Not make false promises to the laborers for future employment in O&amp;M of the project.</p>
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Table 2: Cultural and Religious Issues

Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities	Disturbance in performance of religious activities	<p>The Contractor shall:</p> <p>Provide separate prayer facilities (men and women) to the construction workers.</p> <p>Show appropriate and non-biased behavior with all construction workers irrespective of their religious or cultural affinities</p> <p>Allow the workers to participate in praying during construction time</p> <p>Inform the local authorities responsible for health, religious and security duly informed before commencement of civil works so as to maintain effective surveillance over public health, social and security matters</p> <p>In case of working during COVID-19 pandemic, SOPs for prayers in Mosque issued by the Government of Punjab, will be applicable and it will be responsibility of contractor to sensitize the labor/workers about it</p>

Table 3: Workers/Labor Health and Safety at Construction Site

Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
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Construction Activities	Construction works may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths. The population in the proximity of the construction site and the construction workers will be exposed to a number of (i) biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, waste water, vector transmitted diseases etc), (ii) risk factors resulting from human behavior (e.g. STD, HIV etc) and (iii) road accidents from construction traffic.	<p>The Contractor shall:</p> <p>Implement suitable safety standards for all workers and site visitors which should not be less than those laid down on the international standards (e.g. International Labor Office guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety Guidelines') and contractor's own national standards or statutory regulations, in addition to complying with the national acts and rules of the Government of Pakistan Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular construction activity and specific classes of hazards in the work areas,</p> <p>Provide Personal Protection Equipment (PPEs)<sup>1</sup> for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty ones and replacing them with the damaged ones.</p> <p>Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job</p> <p>Appoint an environment, health and safety manager to look after the health and safety of the workers</p> <p>Inform the local authorities responsible for health, religious and security before commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters</p>
Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
	Child and pregnant labor	The Contractor shall: not hire children of less than 14 years of age and pregnant women or women who delivered a child within 8 preceding weeks, in accordance with the Employment of Children Act (2015) <sup>2</sup> and Pakistani Labor Laws and policies respectively.



Table 4 presents general examples of occupational hazards and types of PPE available for different purposes.

The ECA 2015 defines a child as a person who has not completed his/her 14th year of age. The ECA states that no child shall be employed or permitted to work in any of the occupations set forth in the ECA (such as transport sector, railways, construction, and ports) or in any workshop wherein any of the processes defined in the Act is carried out

Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
Accidents	Lack of first aid facilities and health care facilities in the immediate vicinity will aggravate the health conditions of the victims	<p>Provide health care facilities and first aid facilities are readily available. Appropriately equipped first-aid stations should be easily accessible throughout the place of work</p> <p>Document and report occupational accidents, diseases, and incidents.</p> <p>Prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice.</p> <p>Identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures.</p> <p>Provide awareness to the construction drivers to strictly follow the driving rules</p> <p>Provide adequate lighting in the construction area and along the roads</p>
Water and sanitation facilities at the construction sites	Lack of Water sanitation facilities at construction sites cause inconvenience to the construction workers and affect their personal hygiene.	The contractor shall provide separate portable toilets and hand washing facilities at the construction sites, if about 25 people are working the whole day for a month. Location of portable facilities should be at least six m away from storm drain system and surface waters. These portable toilets should be cleaned once a day and all the sewerage should be pumped from the collection tank once a day and should be brought to the common septic tank for further treatment. Contractor should provide bottled drinking water facilities to the construction workers at all the construction sites.
Other issues	Potential risks on health and hygiene of construction workers and general public	The Contractor shall follow the following management measures to reduce health risks to the construction workers and nearby community: Drainage Management Air Quality Management Noise and Vibration Management Road Transport and Road Traffic Management



Trainings	Lack of awareness and basic knowledge in health care among the construction workforce, make them susceptible to potential diseases.	<p>The Contractor shall:</p> <p>Train all construction workers in basic sanitation and health care issues (e.g., how to avoid COVID-19, malaria and transmission of sexually transmitted infections (STI) HIV/AIDS.</p> <p>Train all construction workers in general health and safety matters, and on the specific hazards of their work Training should consist of basic hazard awareness, site specific</p>
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.SOPs issued by the Go Punjab during COVID-19 Pandemic will be implemented

Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
		<p>Hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate.</p> <p>Commence the COVID-19, malaria, HIV/AIDS and STI education campaign before the start of the construction phase and complement it with by a strong condom marketing, increased access to condoms in the area as well as to voluntary counseling and testing.</p> <p>Implement COVID-19, malaria, HIV/AIDS and STI education campaign targeting all workers hired, international and national, female and male, skilled, semi- and unskilled occupations, at the time of recruitment and thereafter pursued throughout the construction phase on ongoing and regular basis. This should be complemented by easy access to condoms at the workplace as well as to voluntary counseling and testing.</p>

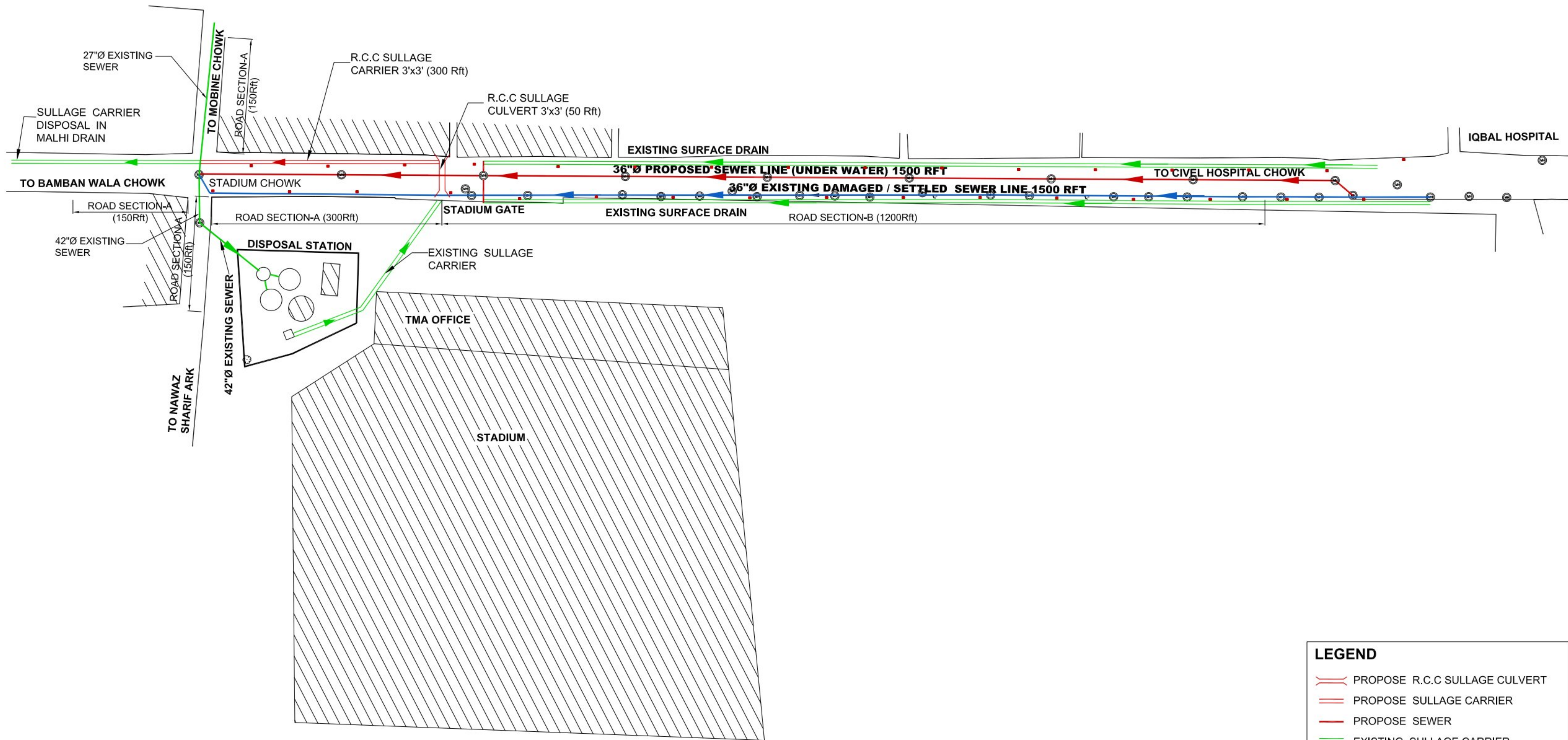


**Table 4: Summary of Recommended Personal Protective Equipment According to Hazard<sup>5</sup>**

Objective	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety Glasses with side-shields, protective shades, etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords.	Plastic Helmets with top and side impact protection.
Hearing protection	Noise, ultra-sound.	Hearing protectors (earplugs or ear muffs).
Foot protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and chemicals.
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi tags personal monitors, if available.
	Oxygen deficiency	Portable or supplied air (fixed lines). On-site rescue equipment.
Body/leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits, aprons etc. of appropriate materials.

<sup>5</sup> Source: IFC Environmental, Health, and Safety (EHS) Guidelines

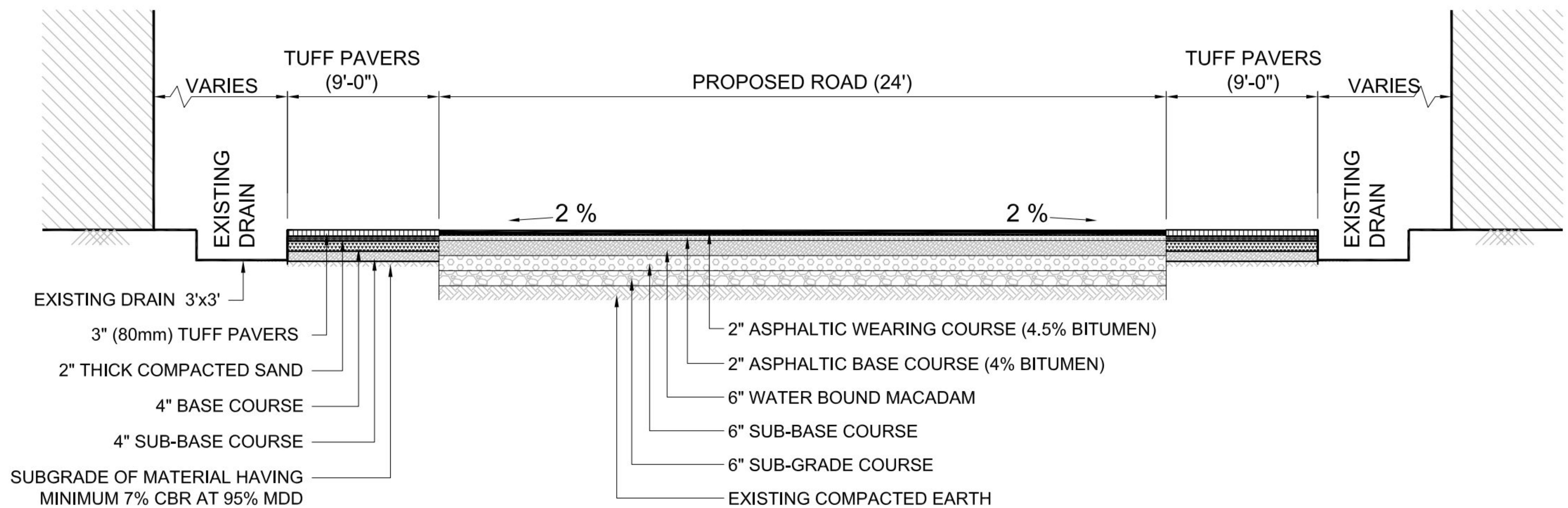




**LEGEND**

	PROPOSE R.C.C SULLAGE CULVERT
	PROPOSE SULLAGE CARRIER
	PROPOSE SEWER
	EXISTING SULLAGE CARRIER
	EXISTING SEWER
	EXISTING SETTLED SEWER
	EXISTING DISPOSAL STATION LINE
	EXISTING MANHOLE
	PROPOSE GULLY GRATING CHAMBER

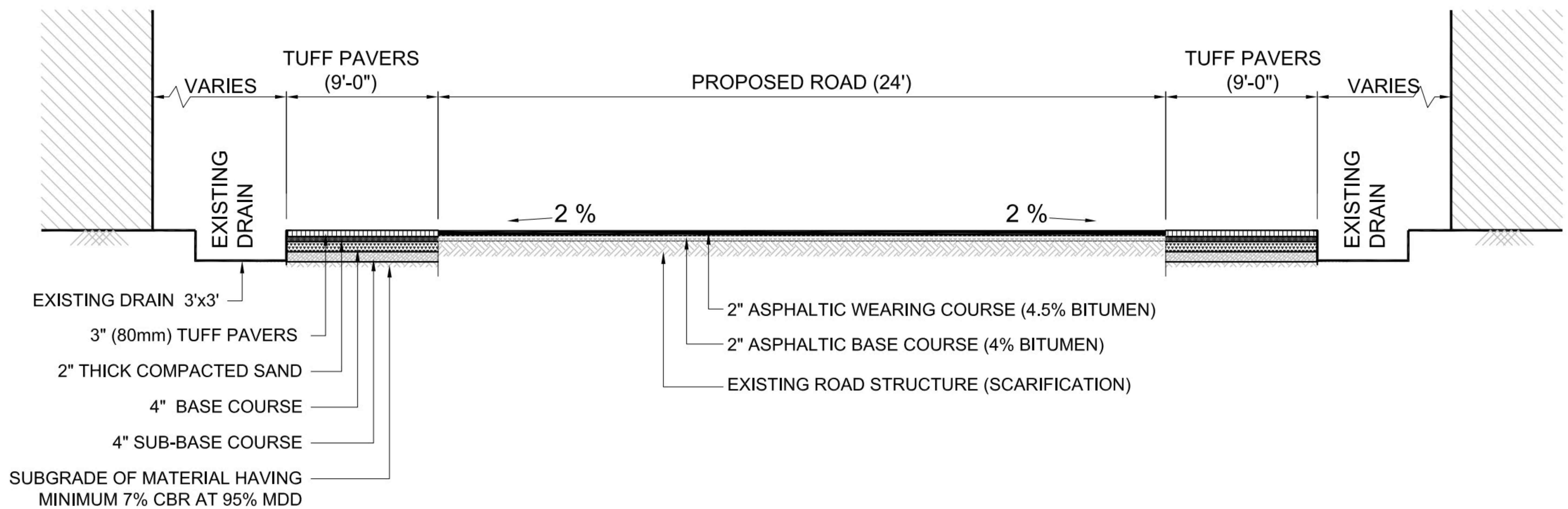




# STADIUM ROAD

## SECTION-A

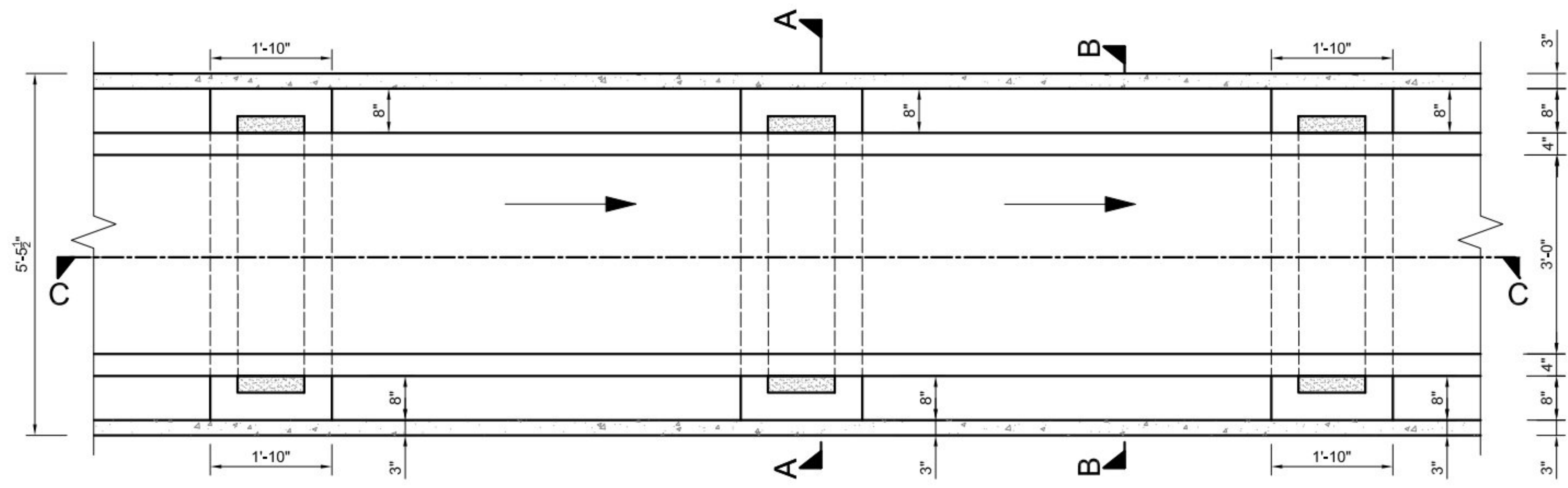




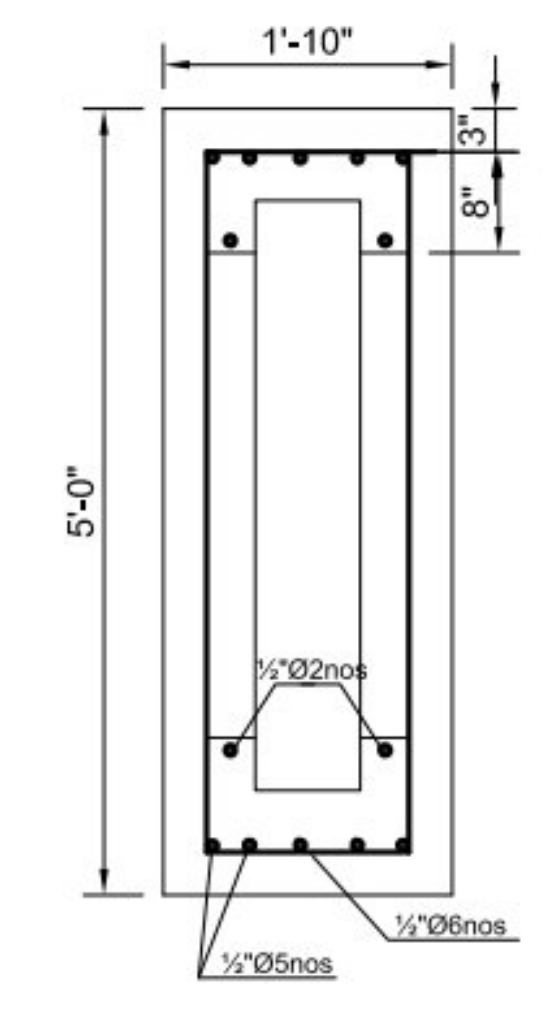
## STADIUM ROAD

### SECTION-B

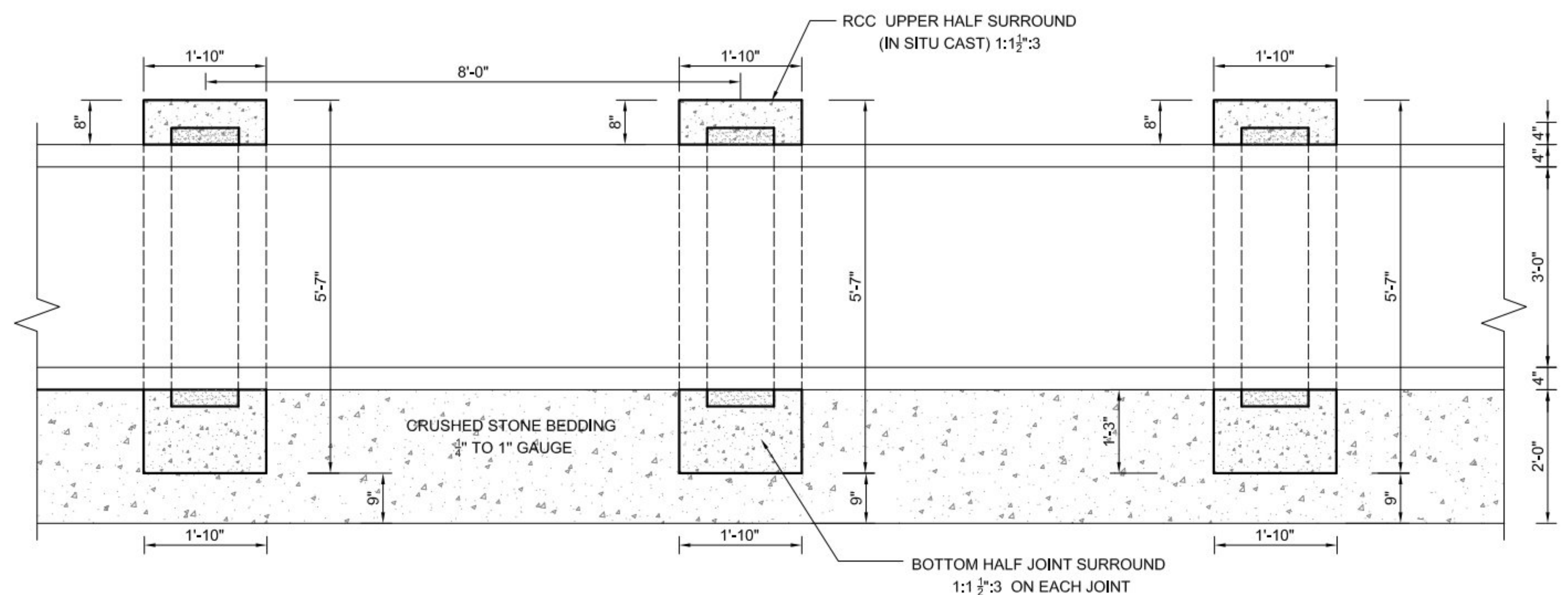




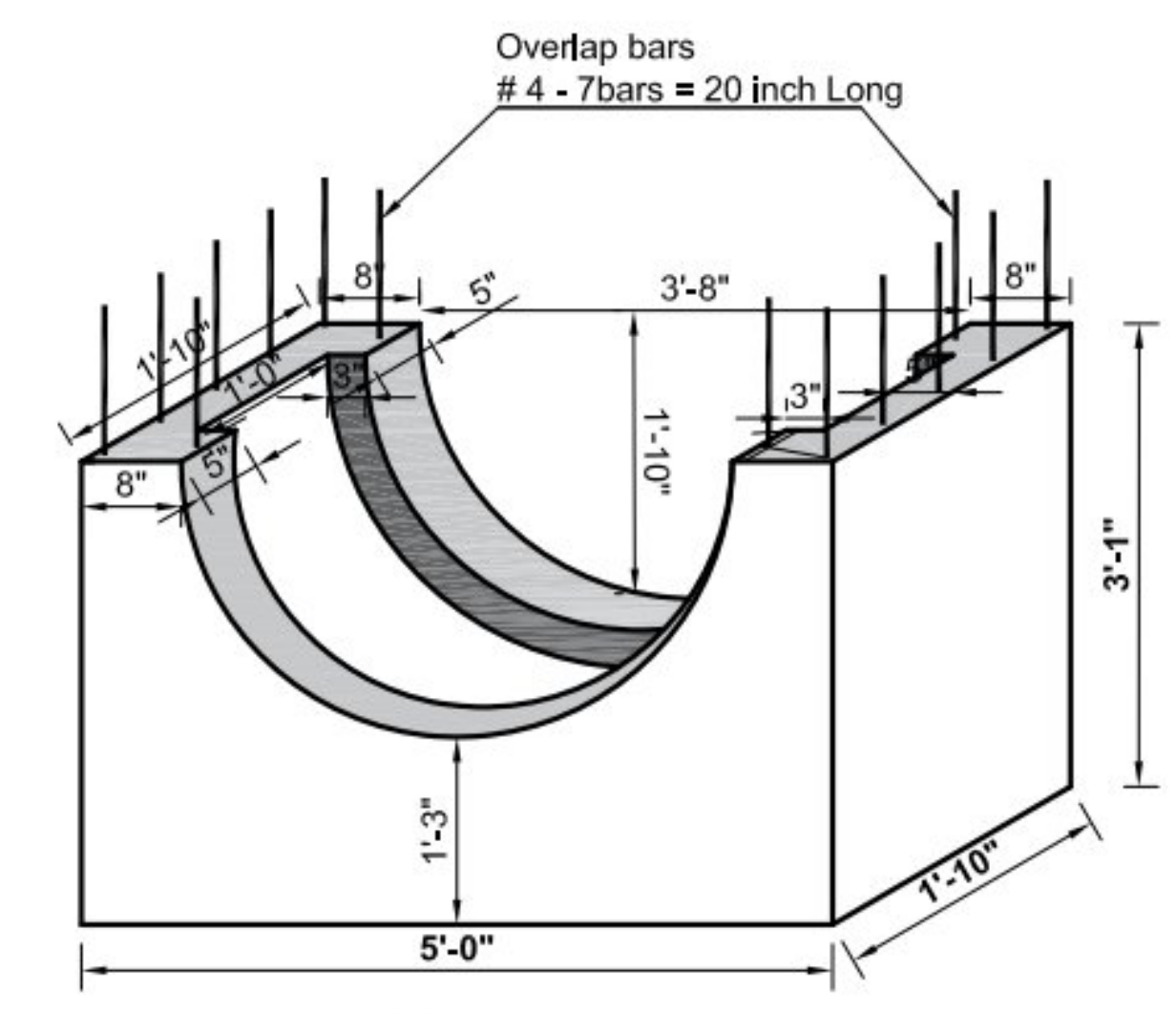
**PLAN OF 36" I/D RCC SEWER UNDER SSWL**



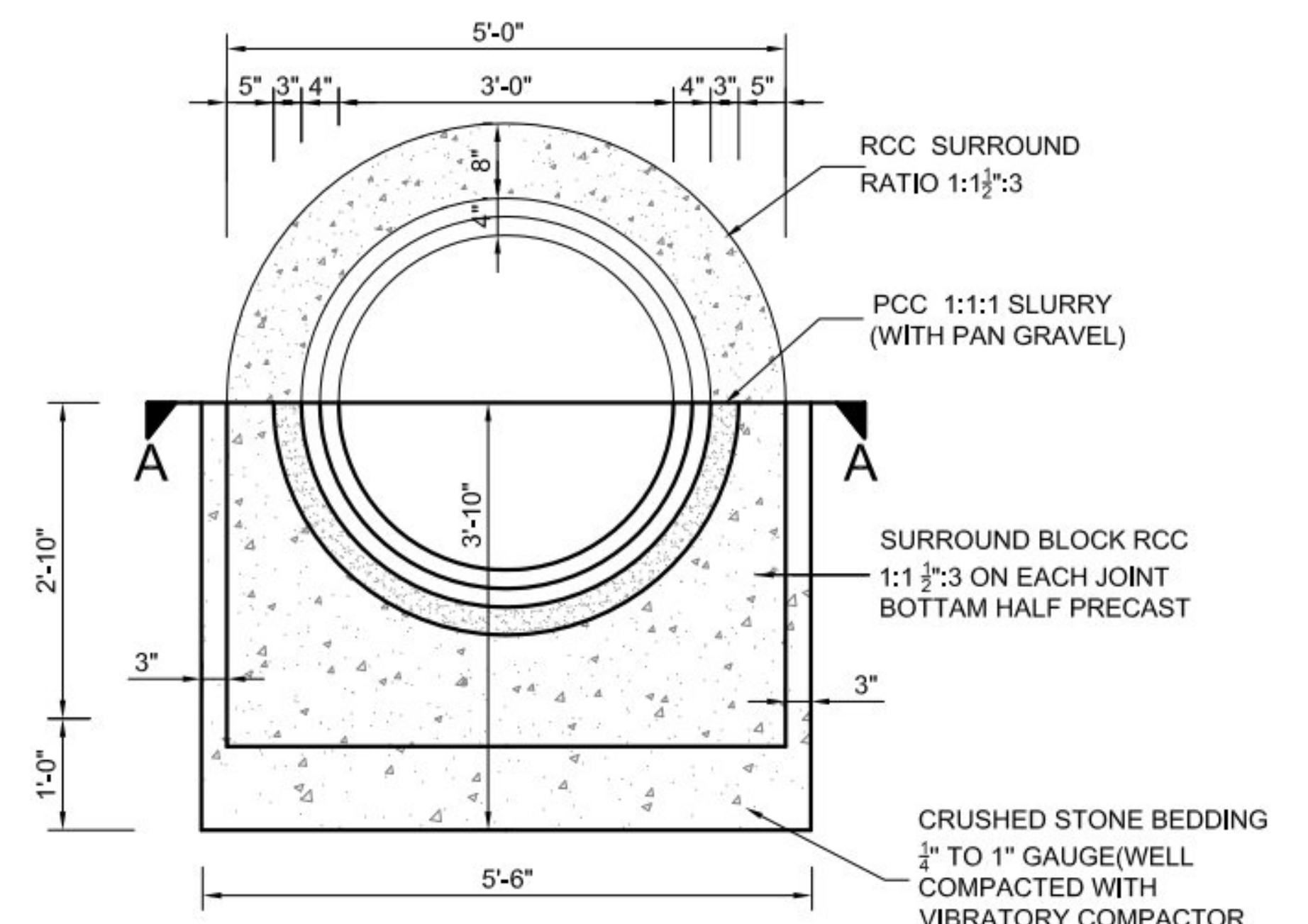
**PLAN OF REINFORCEMENT OF R.C.C. PRECAST BLOCK**



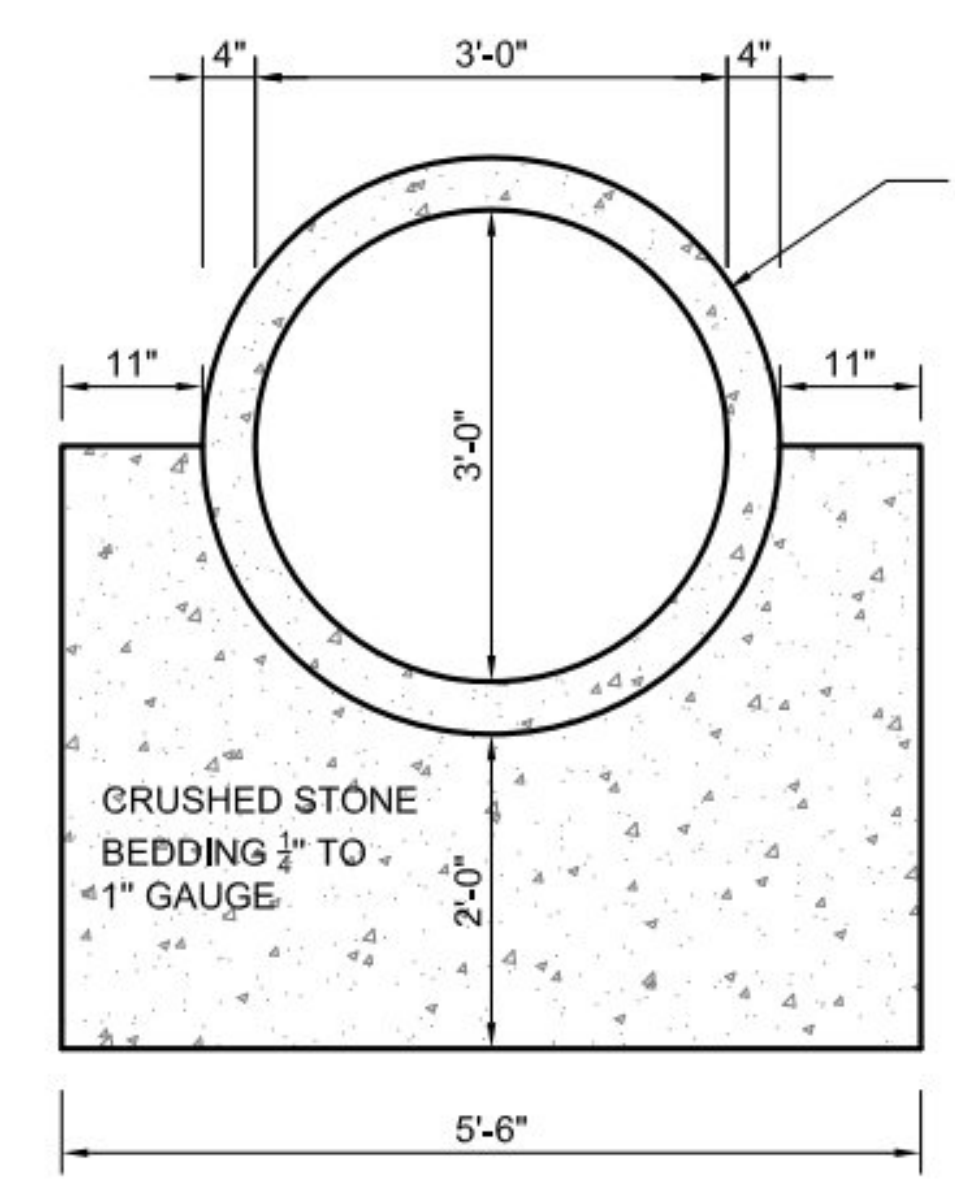
**X-SECTION AT C.C.**



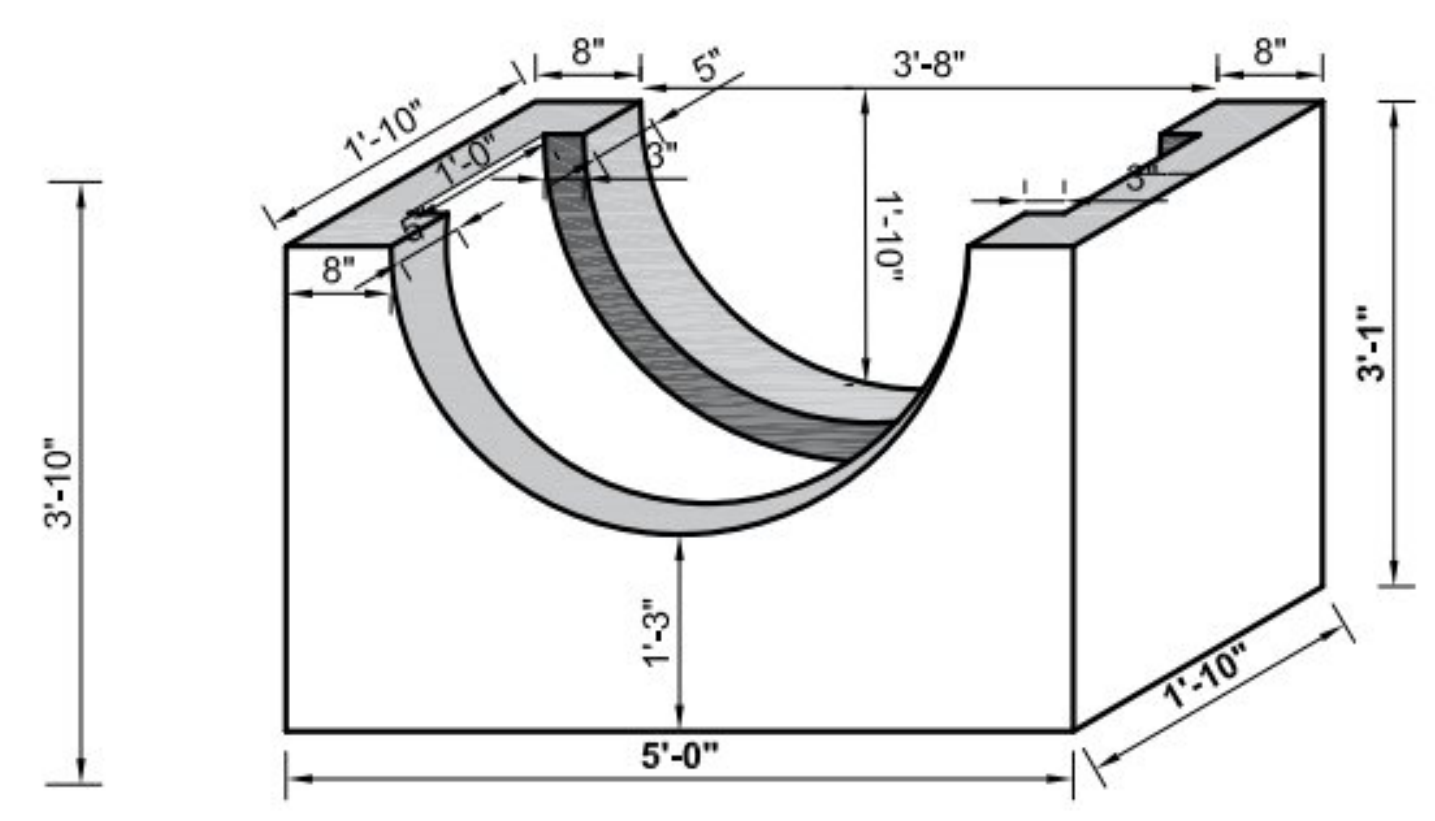
**RCC (1:1 1/2:3) PRECAST BLOCK FOR 36"Ø RCC SEWER UNDER WATER**



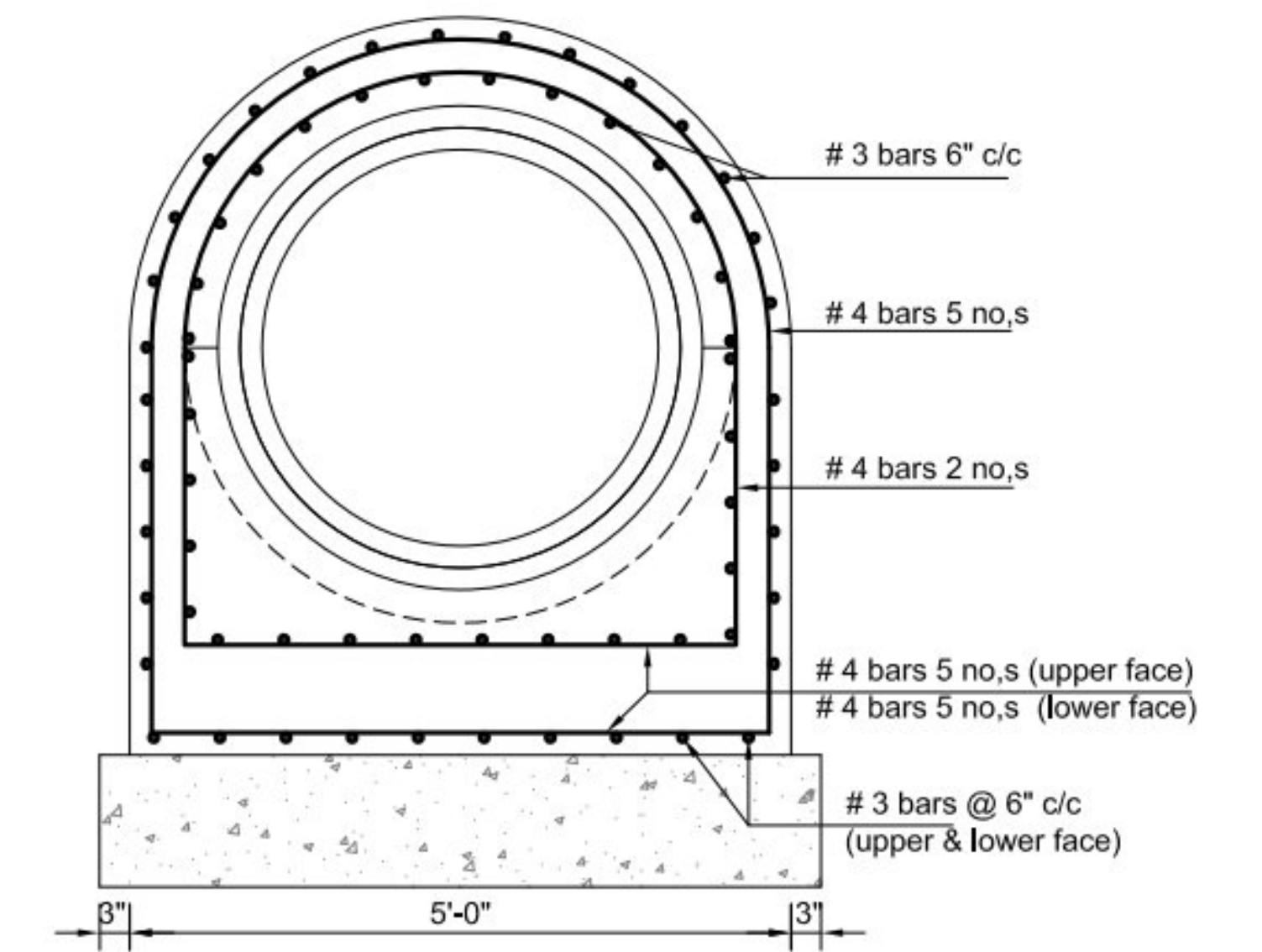
**X-SECTION AT A.A**



**X-SECTION AT B.B**

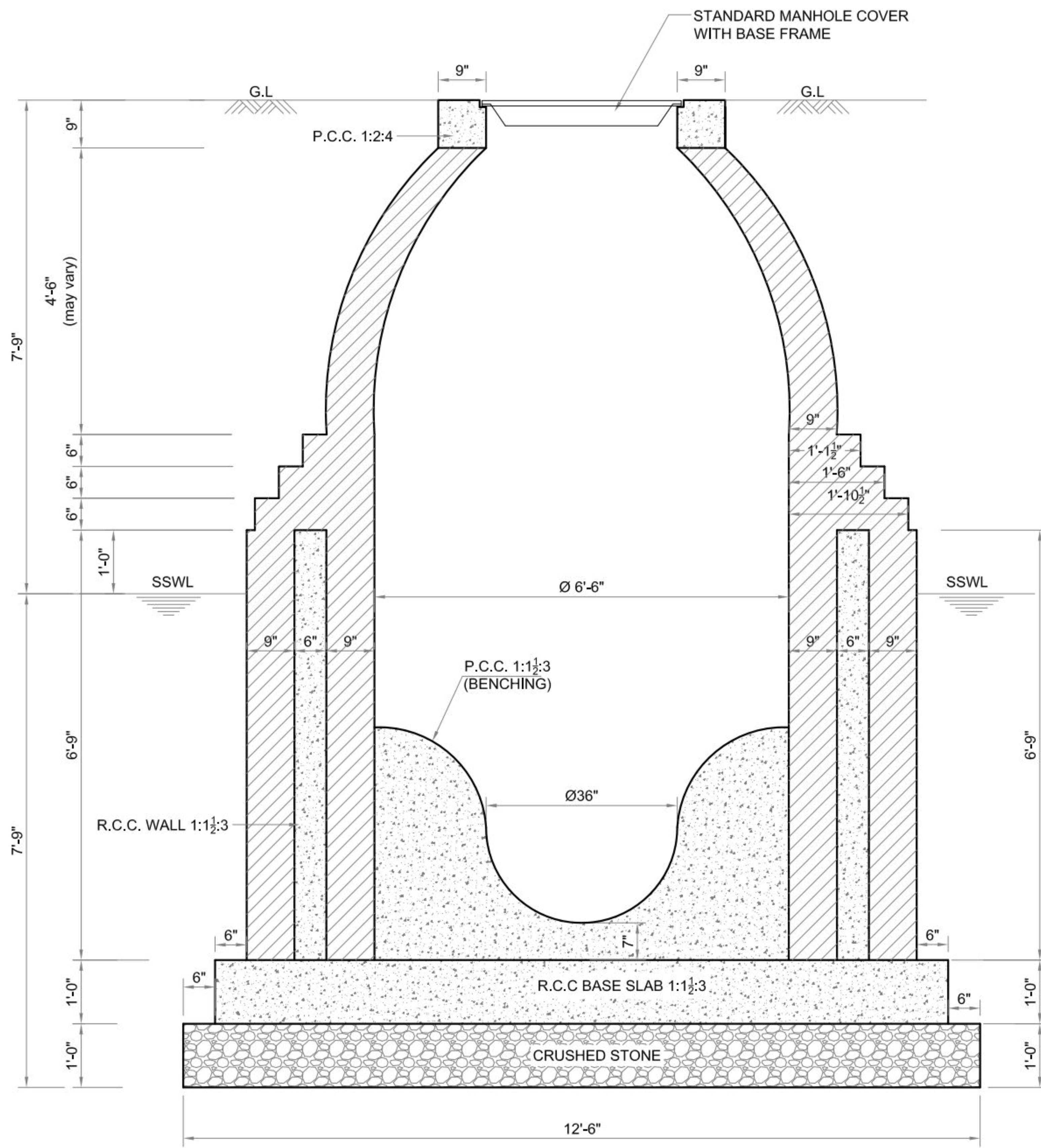


**RCC (1:1 1/2:3) PRECAST BLOCK FOR 36"Ø RCC SEWER UNDER WATER**

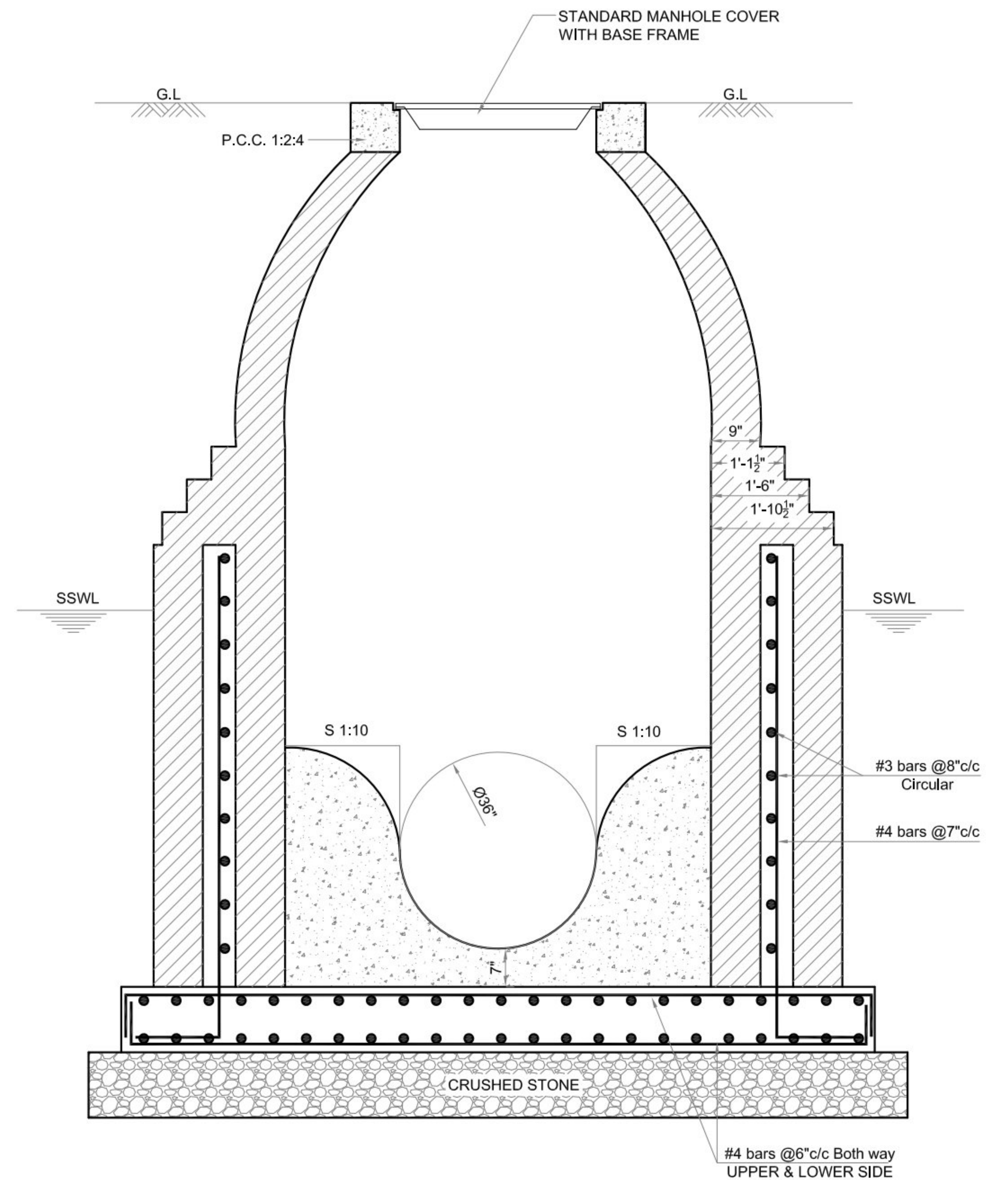


**X-SECTION AT A.A Reinforcement Detail A-A**



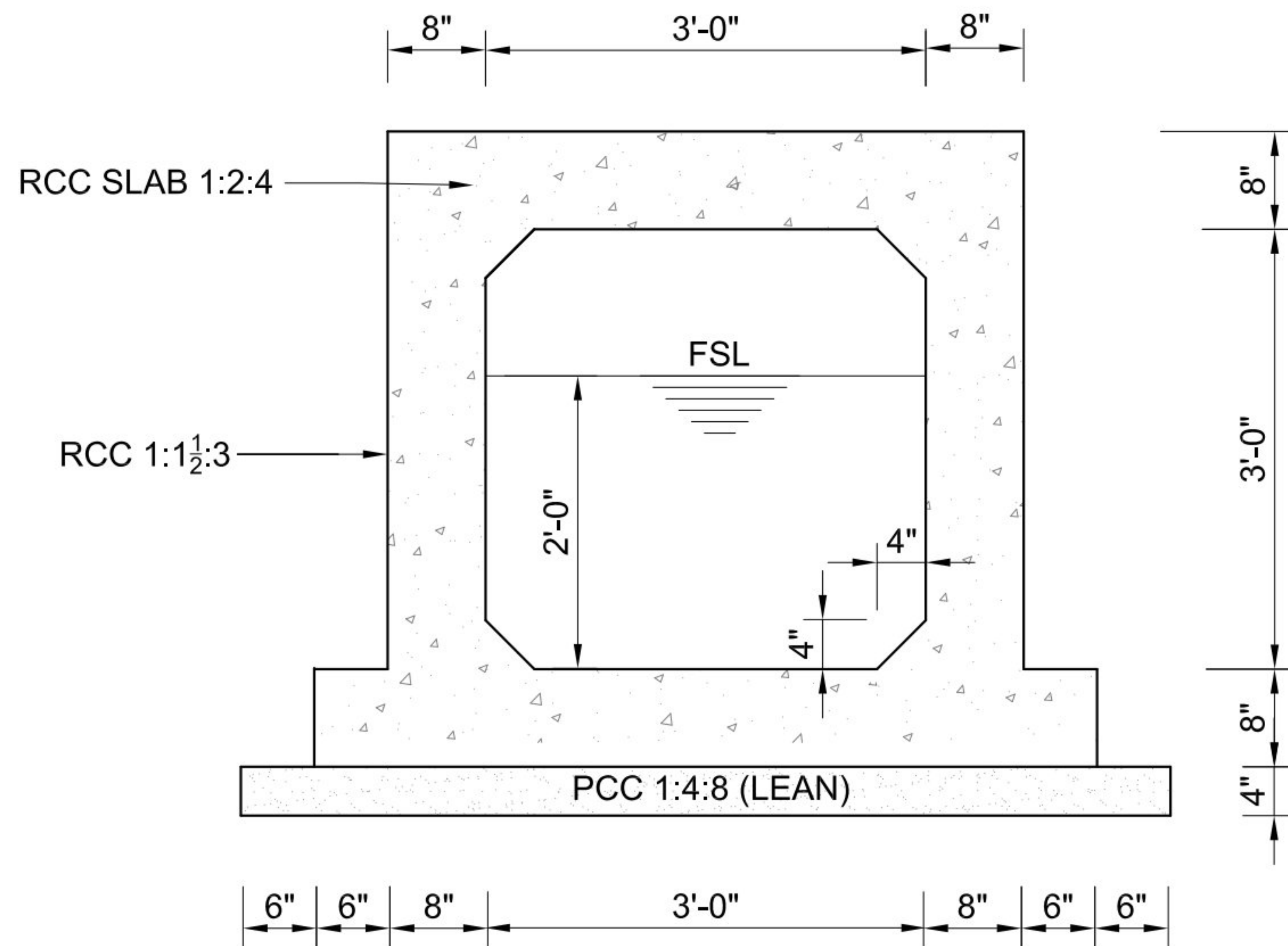


**X-SECTION OF MANHOLE 6'-6" i/d  
UNDER S.S.W.L**

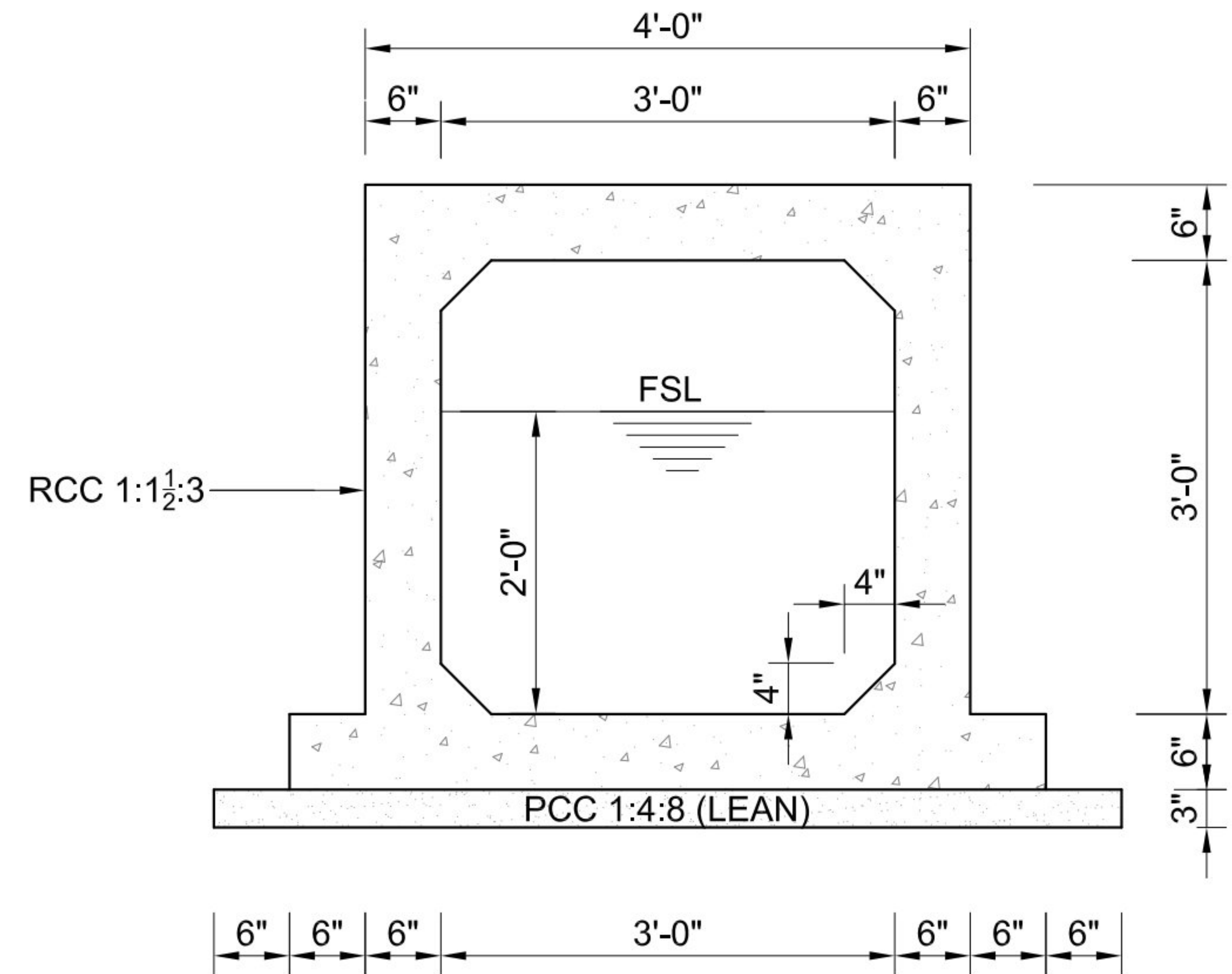


**X-SECTION OF MANHOLE REINFORCEMENT**





**X-SECTION OF RCC ON SULLAGE CARRIER CULVERT**



**X-SECTION OF RCC SULLAGE CARRIER**