Local Government & Community Development Department

Punjab Cities Program
Improvement and Rehabilitation of Roads

in MC Kamoke

PC-I

EstimatedCost PKR 381.46 Million

September 2022

Municipal Committee Kamoke

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Punjab Cities Program

PC-I Form for Improvement of Roads Project in Kamoke City

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PC-I FORM
for
Improvement & Rehabilitation of Roads Project in
Kamoke City

Project Serial Number

Sector : ***Local Government & Community Development Department***
Sub Sector: ***Social***

<table>
<tr><td>1. Name of the project</td><td>Punjab Cities Program
Improvement & Rehabilitation of Roads Project in Kamoke</td></tr>
<tr><td>2.Location</td><td>The city is headquarter of Kamoke Tehsil, which is an administrative subdivision of the district Gujranwala and is subdivided into 8 Union Councils. It is located on the Grand Trunk Road 21 km from Gujranwala at its south Lahore and its North on N-5 which was originally designated as Grand Trunk Road (GT Road) and 46 km from Kamoke is also located at the main Lahore-Rawalpindi section of Pakistan Railway track.
Location Map of the city is attached in Annexure-A</td></tr>
<tr><td colspan="2">3. Authorities responsible for</td></tr>
<tr><td>i- Sponsoring</td><td>Government of the Punjab (through World Bank funding)</td></tr>
<tr><td>ii- Execution</td><td>District Council Unit Kamoke</td></tr>
<tr><td>iii- Operation and Maintenance</td><td>District Council Unit Kamoke</td></tr>
<tr><td>iv-Concerned Provincial Department</td><td>Local Government and Community Development Department Punjab</td></tr>
<tr><td>4a.Plan Provision</td><td></td></tr>
<tr><td>i. If the project is included in medium term/five year plan, specify actual allocation</td><td>Punjab Cities Program (PCP) is a World Bank funded Program with a total cost of USD 236.00 million and comprises of below mentioned components.
<table>
<tr><td>Total loan from World Bank</td><td>USD 200.00 million</td></tr>
<tr><td>Component-1 Infrastructure development (PforR)</td><td>USD 180.00 million USD</td></tr>
<tr><td>Component-2 Technical Assistance</td><td>USD 20.00 million</td></tr>
<tr><td>MCs share (20% of PforR component) equivalent to:</td><td>USD 36.00 million</td></tr>
<tr><td>Total Program cost</td><td>USD 236.00 million</td></tr>
</table></td></tr>
</table>

		Component-2 i-e Technical Assistance component of Program costing USD 20.00 million is meant for management cost of the Program and capacity building of MCs & Government Departments and is included in the medium term/ five-year plan and has been funded now in ADP 2021-22 - under General Serial No-2521 with allocation of PKR 100.00 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		Not applicable
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 Program Units and is not proposed to be financed out of block allocation.
4b- Provision in the current year PSDP/ADP		PKR.100.00 million under ADP 2021-22 General Serial No 2521 for Component-2 of the Program i-e Technical Assistance as described above.
5. Project objectives and its relationship with sector objectives		**Sector Objectives** The sector objectives include: 1. Provision of efficient and effective municipality services to the masses. 2. Community development through improving basic infrastructure. 3. Clean and green environment for better living standards. 4. Effective use of land through master planning of urban areas. 5. Social uplifting and cohesion through provision of public open spaces and play grounds. 6. Ease in mobility and communication. 7. Cost efficient Solid Waste Management through waste to energy initiatives. 8. Capacity building of Local Governments. 9. Efficient Road network to make areas easily accessible **Objectives of the Project** The Project aims at improvement of infrastructure of municipal services such as roads, chowks, cross roads, street lights, parks and parking shed for SWM machinery for improved communication and recreational facilities. Scope of the work for this particular project includes the rehabilitation and improvement of existing chowks and drainage system along with the

		construction of new drainage system where needed. However, the cleaning and de-silting of existing drains and pipes will be arranged by MC Kamoke from their own resources. The Project has the following objectives; 1. Improvement of service delivery level of the municipal services in the sector of communication. 2. Better travelling facilities for the commuters. 3. Reduction in road accidents. 4. Saving in travelling and repair cost of the vehicles. 5. Reduction in annual maintenance charges of chowks and parks. 6. Better lit streets adding to security of people travelling at night. 7. Improvement in environments of the city making them livable. 8. Improvement in local and province economy. 9. Improvement in the economic growth potential of the city. Hence, the objectives of the project are in line with the sector objectives mentioned at Sr. No-1, 2, 3, 5 and 6 above and the project forms integral part of the concerned sector.
6. Description, justification, technical parameters and technology transfer aspects		
i. Present Condition		As per PLGA-12019 Urban Local Governments (ULGs) are basically and wholly responsible for delivery of the municipal services with a service delivery level which should satisfy the consumers and citizen. Unfortunately, the prevalent conditions of the service delivery are not encouraging in the city. The major reason of unsatisfactory service delivery is the lack of proper maintenance of the municipal infrastructure in all sectors causing consumer dissatisfaction at one end and degradation of the infrastructure on the other end apart from very low revenue recovery as the consumers are reluctant to pay because of deteriorated service delivery. The chowks infrastructure has been damaged and degraded because of lack of repairs and upgradation due to shortage of money and constrained municipal budgets. If these chowks are not improved at this stage, then this infrastructure will be further damaged / degraded giving financial loss to the public as well as private sectors and the growth potential of the city will be adversely affected. Damaged chowks will increase the operational expenditure of the vehicles apart from wasting time and giving rise to public frustration and mental agony. The only way to keep the infrastructure in operational and functional condition for better travelling and recreational facilities to the inhabitants

<table>
<tr><td></td><td></td><td>of the city and the surrounding areas, is to improve the chowks and important cross roads</td></tr>
<tr><td>ii. Description of the subproject-</td><td></td><td>The project comprises of improvement of 04 Nos Roads damaged roads with total length of 7.05 Km in the city. Detail of these roads has been given in the table below.</td></tr>
<tr><td>iii Detail of civil works, equipment & machinery and other physical facilities</td><td></td><td>The detail of chowks to be improved, rehabilitated or constructed in the city, is given below
<table>
<tr><td>A</td><td colspan="3">Improvement and construction of roads</td></tr>
<tr><td>S. N.</td><td>Name of road</td><td>From-To</td><td>Detail of works involved</td></tr>
<tr><td>1</td><td>P-1 Mari Road</td><td>From Puly Rajbah to Rajbah Khoot</td><td>• Geometric Improvement and Rehabilitation of Existing Pavement Structure
• Pavement Marking
• Street Lighting
• Improvement of drainage system</td></tr>
<tr><td>2</td><td>P-2 R.U.P Road, i/c Link Road & I.Aziz Road</td><td>From G.T Road to service road of G.T Road via Road and Railway Station</td><td>• Geometric Improvement and Rehabilitation of Existing Pavement Structure
• Pavement Marking
• Street Lighting
• Improvement of drainage system</td></tr>
<tr><td>3</td><td>P-3 Eminabad Road & Godown Road</td><td>From Mohallah Kot Rafique to Railway Underpass Via Lady Park Chowk</td><td>• Geometric Improvement and Rehabilitation of Existing Pavement Structure
• Pavement Marking
• Street Lighting
• Improvement of drainage system</td></tr>
<tr><td>4</td><td>P-4 East Bypass Road & Link Quolin Road</td><td>From Mandiala Phatak to new hajjoke Road via Railway Track along Seepage Drain</td><td>• Geometric Improvement and Rehabilitation of Existing Pavement Structure
• Improvement of drainage system</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>iv Indicate governess issues of the sector relevant to the project and strategy to resolve them</td><td>

- District Council Unit Kamoke 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.
- The Repair and maintenance of the municipal services in not up to the mark in the such Unit. Trainings will be imported 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 Units are lacking at present. Hence inculcating the mind set for good repair and maintenance is the major requirement for improving the service delivery level.

</td></tr>
<tr><td>7- Capital Cost of Project</td><td>The summary of the works included in the project is given below;
<table>
<tr><th>S. No</th><th>Name of Roads</th><th>Cost
(PKR million)</th></tr>
<tr><td>1</td><td>P-1 Mari Road</td><td>128.04</td></tr>
<tr><td>2</td><td>P-2 R.U.P Road, i/c Link Road & I.Aziz Road</td><td>33.98</td></tr>
<tr><td>3</td><td>P-3 Eminabad Road & Godown Road</td><td>39.23</td></tr>
<tr><td>4</td><td>P-4 East Bypass Road & Link Quolin Road</td><td>29.37</td></tr>
<tr><td></td><td>Sub-Total</td><td>230.64</td></tr>
<tr><td>5</td><td>Drainage System</td><td>79.65</td></tr>
<tr><td>6</td><td>Electrical Works</td><td>45.02</td></tr>
<tr><td>7</td><td>Environmental Health & Safety</td><td>1.18</td></tr>
<tr><td></td><td>Total</td><td>356.51</td></tr>
<tr><td></td><td>Contingencies @2%</td><td>7.13</td></tr>
<tr><td></td><td>Punjab Sales Tax @5%</td><td>17.82</td></tr>
<tr><td></td><td>Grand Total</td><td>381.46</td></tr>
<tr><td colspan="3">See Annexure-B for details</td></tr>
</table>
</td></tr>
<tr><td>i- Indicate date of estimation of the project cost</td><td>The project estimates have been framed during the month of May, 2022</td></tr>
<tr><td>ii- Basis of determining the estimates be provided.</td><td>The cost estimates have been framed on the basis of bill of quantities actually required at site and unit rates from the Market Rate System (MRS) issued by the Government of Punjab (District Kamoke 2nd biannual of year 2022).
For items not available in the MRS, the same have been analyzed as per prevailing market rates.</td></tr>
</table>

iii- Provide year wise estimation of physical activities

The physical and financial requirements, year wise are included in the following table:

S. #	Name of Roads	Year 2022-2023
1	P-1 Mari Road	100%
2	P-2 R.U.P Road, i/c Link Road & I.Aziz Road	100%
3	P-3 Eminabad Road & Godown Road	100%
4	P-4 East Bypass Road & Link Quolin Road	100%

iv- Phasing of capital cost on the basis of each item of work.

The phasing of capital cost of the project is included in the following table:

(All figures are in million rupees)

S. #	Items of Road	Total (PKR million)	Year 2022-2023 (100%)
1	P-1 Mari Road	128.04	128.04
2	P-2 R.U.P Road, i/c Link Road & I.Aziz Road	33.98	33.98
3	P-3 Eminabad Road & Godown Road	39.23	39.23
4	P-4 East Bypass Road & Link Quolin Road	29.37	29.37
5	Drainage System	79.65	79.65
6	Electrical Works	45.02	45.02
7	Environmental Health Safety Budget	1.18	1.18
	Total work outlay	**356.51**	**356.51**
8	PST, contingencies	24.95	24.95
	Total project cost (Millions)	**381.46**	**381.46**

8-**Annual recurrent cost after completion of the project and source of financing**

The chowks are already being repaired and maintained by the District Council Unit Kamoke out of its own financial resources. No additional cost will be required after completion of the improvement and upgradation of the chowks, rather the repairs cost will be reduced for the initial years. However, the efficiency of the infrastructure and service delivery level will be improved after completion of the project.

9- **Demand & Supply Analysis**

i- Existing Capacity of services

Existing supply level

- Existing geometry of the chowk is not well enough to sustain the smooth traffic flow. Existing pavement structure of the chowk is deteriorated which needs the rehabilitation to bear the traffic loading and better riding quality.
- Municipal Committee Kamoke is unable to render satisfactory service to the entire area of the city because of degraded infrastructure wherein some rehabilitation and improvement are direly needed but MC could not be able to accomplish them because of low revenue recovery and funding constraints. Very few areas are reasonably

	served but others are deprived of the required level of the service. This is resulting in low credibility of the municipal services and citizen dissatisfaction. Further the infrastructure has not been developed and extended keeping in pace with the growth of population mainly due to migration from rural areas to urban areas. The market prices of the materials and labor have also increased drastically during the last decade which increased the O&M cost of services. This has further degraded the situation and the service delivery level is further deteriorating.
ii- Projected Demand for 10 years	• Traffic is increasing day by day in Kamoke city. Projected traffic of 4 project Roads for 10 year is 93.521 million. Project chowks of MC Kamoke needs to be improved to save the travel time and better riding quality. • The municipal services require radical improvement to enhance the efficiency of the service to increase service delivery to a satisfactory level. For this purpose, the existing infrastructure will have to be improved. • Many shortcomings, problems and bottlenecks have been observed in the existing infrastructure which could not be addressed by MC due to funding constraints and now have been proposed to be addressed by rehabilitation of defective and outlived components of all the municipal services infrastructure.
iii- Capacity of other similar projects being implemented in public/private sector	No other project of this nature is being implemented in public as well as private sector because of funding constrains in the Unit.
iv- Supply and Demand gaps	The nature of supply and demand gap has been explained in the preceding paras which concludes; • Existing condition of the chowks is not good enough to bear the traffic load. It's causing excessive delays, increasing travel time, occurring accidents at intersections and vehicles wear and tear due to the poor condition of pavement surface. Increasing traffic load requires the improvement of existing chowk. • The existing infrastructure has poor efficiency resulting in unsatisfactory service delivery level. • The O&M cost of the infrastructure services is very high because of low efficiency and high market rates while there in a large gap between the O&M expenditure and the revenue recovery. • Large subsidies are being injected by MC to the keep the services in operation • Numerous public complaints are the talk of the day.

<table>
<tr><td></td><td></td><td>
Unsatisfactory municipal delivery is not encouraging the city to become engines of economic growth and hence the GDP of our city is much lower than the peers in the developing world.
Hence there is a large gap between the supply and demand which is to be bridged by improvement in the infrastructure and its management.
</td></tr>
<tr><td>v-Designed capacity and output of the project</td><td></td><td>
1. Table showing Name of roads, From and to reaches, length, ROW, metaled width and type of pavement of each road and total length is given below:
<table>
<tr><th>Sr. No.</th><th>Road Name</th><th>From and To</th><th>Pavement Type</th><th>ROW</th><th>Carriage way Type</th><th>Metaled Width</th><th>Length (km)</th></tr>
<tr><td>1</td><td>P-1 Mari Road</td><td>From Puly Rajbah to Rajbah Khoot</td><td>Asphalt Concrete</td><td>45.25 ft (Varies)</td><td>Single</td><td>18 ft</td><td>2.48</td></tr>
<tr><td>2</td><td>P-2 R.U.P Road, i/c Link Road & I.Aziz Road</td><td>From G.T Road to service road of G.T Road via Road and Railway Station</td><td>Asphalt Concrete</td><td>34 ft (Varies)</td><td>Single</td><td>32 ft (Varies)</td><td>0.97</td></tr>
<tr><td>3</td><td>P-3 Eminabad Road & Godown Road</td><td>From Mohallah Kot Rafique to Railway Underpass Via Lady Park Chowk</td><td>Asphalt Concrete & Tuff Paver</td><td>20 ft (Varies)</td><td>Single</td><td>16 ft (Varies)</td><td>2.37</td></tr>
<tr><td>4</td><td>P-4 East Bypass Road & Link Quolin Road</td><td>From Mandiala Phatak to new hajjoke Road via Railway Track along Seepage Drain</td><td>Tuff Paver</td><td>22 ft (Varies)</td><td>Single</td><td></td><td>1.23</td></tr>
</table>
2. Roads are designed for 10-year life.
3. These roads will carry out the 93.521 million traffic cumulatively for 10 years.
4. Improvement of these chowk will decrease the travel time of commuters which will ultimately improve the economy of city.
</td></tr>
</table>

<table>
<tr><td>10. Financial Plan
Sources of financing
<u>Debt</u>
a) Indicate the local and foreign debt Loan</td><td>Below given loan for the Punjab Cities Program has been funded by World Bank for 16 PCP cities in Punjab.
<table>
<tr><td>Total loan to Government of Pakistan/Punjab</td><td>USD 200 million</td></tr>
<tr><td>Component-1 for Infrastructure Development</td><td>USD 180 million</td></tr>
<tr><td>Component-2 for Investment Project Financing For capacity building of MCs & three Govt. organization and program management.</td><td>USD 20 million</td></tr>
<tr><td>20% share of Municipalities is equivalent to</td><td>USD 36 million</td></tr>
<tr><td>Total funds available for Infrastructure Development</td><td>USD 216 million</td></tr>
<tr><td colspan="2">This project will be funded under this financing.</td></tr>
</table></td></tr>
<tr><td>b) Equity</td><td>A. Loan/grant to MC
The amount of loan converted to grant to Kamoke Unit will be PKR. 305,172,748 (305.17) million. The financing of the project will be as given below:
<table>
<tr><td>Grant to Unit for the year 2022-2023 (80% of cost of PC-I)</td><td>PKR 305.17 million</td></tr>
<tr><td>20% Co-finance by MC (20% of the cost of PC-I)</td><td>PKR 76.29 million</td></tr>
<tr><td>Total available funds</td><td>PKR 381.46 million</td></tr>
</table>
B. Project Cost PKR 381.46 million

*The loan is from World Bank to Government of Pakistan/Punjab which will trickle down to Kamoke Unit as grant.</td></tr>
<tr><td>c) Grants</td><td>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 from Government of Punjab.</td></tr>
<tr><td>d) Weighted cost of capital</td><td>Nil</td></tr>
<tr><td colspan="2">11-Project benefits and analysis</td></tr>
<tr><td>i. Financial:
Income to the project with assumption</td><td>• The project comprises of improvement of chowks and cross roads in the city.
• Kamoke Unit has no plan to levy user charges /toll tax as these are internal infrastructure of city and levying of toll tax is not feasible.
• However, it is an infrastructure sector project but the capital cost of the project is not intended to be recovered. The unit will meet the cost of repair and maintenance out of its own resources. The project economic analysis is given as Annexure-C.</td></tr>
</table>

ii. Social benefits to the target group		The completion of the project will result in: • Up gradation of the infrastructure. • Enhanced life of the chowks. • Reduction in travelling time of the commuters. • Reduction of road accidents. • Reduction in consumption of POL resulting in saving of the foreign exchange. • Reduction in the operation and maintenance cost of the vehicles. • Improvement in the environment of the city; • Minimized public mental tension and frustration • Improved local economy • Improvement of city growth potential
iii. Environmental Impact negative/positive		Construction/Rehabilitation of chowks and their subsequent long-term use led to many changes in the environment. There will be some negative impacts during rehabilitation of the Chowks in the form of noise of the machinery, dismantling of the existing chowks, dust pollution, nuisance caused by higher traffic, risked caused by animal intersecting routes or consequences of any crossing water courses etc. Therefore, it is recommended to develop variant solutions in order to choose the one that would be least harmful to the environment, and then to incorporate them in an Environmental and Social Management Framework. However, the impacts will be temporary and there will be no negative impacts after completion of the project, rather, positive impacts, because of improvement in environments of the city, will be observed and present traffic hazards and jams will be eliminated. Hence overall positive impacts will be experienced due to execution and operation of the sub-projects. To facilitate the selection of an optimal solution and for the inclusion of Safe Operating Procedures for Construction workers/labors; assessment indicators or an Environmental Screening Checklists have been developed which is attached as Annexure E (A) of this PC-1. The checklist focuses on Environmental Issues and social concerns and ensure that all environmental and social dimensions are adequately considered. Based on the remarks of the screening checklist, Environment and Social Management Plans (ESMPs) are prepared and the necessary costs for implementation of ESMPs have been provided in this PC-1.The Environment, Health and Safety SOPs for labor/workers are provided as 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).

v. Unit cost analysis

The unit cost analysis is produced below;

Project capital cost	PKR 381.46 million
Population of the city in year 2023	344,656 persons
Unit capital cost per capita	PKR 1106.80

- Unit R&M cost: – The Repair & maintenance cost is already being borne by Kamoke Unit and there will be no increase in this cost. Due to improvement of the infrastructure R&M cost will reduce for at least 5 years after completion of the project.

vi. Employment generation (direct and indirect)

Employment Analysis

Direct Employment

a) Planning and Design of projects

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 will also appoint their staff for resident supervision of the project to verify and certify the items of works to be executed under this PC-I.

b) Execution of the Project

a) PMDFC

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:

- Civil Engineers
- Accounts, administration and audit personnel
- Urban planners
- GIS experts
- Support staff like computer operators, vehicle drivers, office boys and guards.
- Procurement experts
- Communication experts
- Environmental and social experts
- Contract management experts

b) Consultants

PMDFC has employed consultants for detailed design and resident supervision of the projects who will deploy their staff for execution of the project.

c) Municipality

Kamoke Unit has regular staff like engineers, sub engineers and other administrative & 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 ***d) Contractor*** The contractor responsible for execution of the sub project will employ skilled and un-skilled labor on this work. **Indirect Employment** Indirect employment for production of material such as cement, steel, stone metal, bitumen, bricks etc. will be generated.
vii. Impacts of delays on project cost and viability		The impact of delay in project implementation will; • Result in increased project cost due to escalation in cost of material and labor. • Delay the benefits to the target group • Result in further deterioration of the infrastructure and the service delivery level.
12-Implementation Schedule		
a) Indicate starting and completion date of the project		The project is anticipated to commence by Jan 2023 and to be completed by June 2023 with project implementation period of 06 months.
b) Item wise/year wise schedule in line chart		The Gant chart has been attached at **Annexure-D**
13- Management Structure and manpower requirements		
i. Administrative arrangements for the implementation of the project		**ii. Planning & design of the project** The project has been designed by the consultants employed by PMDFC and will also carry out the resident supervision of the project. **iii. Preparation of cost estimation** The cost estimates have been prepared by the design consultants by actual measurements are required at site. The execution of the items of works included in these estimates /PC-I will be certified by these consultants. **iv. Execution of the project** • The project will be executed by District Council Unit Kamoke and supervised by the Consultants appointed by PMDFC in resident supervision mode. The technical staff & 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 & CDD & World bank and troubleshooting will also be responsibility of PMDFC. • MO (I&S) of the Unit 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.

- The procurement of works and goods will be done by Procurement Committee of Kamoke Unit as per PPRA Rules.

v. Verification of quantities included in PC-Is and Resident Supervision of the works by consultants

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.

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

a) PMDFC experts and staff

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 Units, three regional offices have been established by PMDFC at Gujranwala, Faisalabad and Multan/Khanewal.

b) Resident Supervision Consultants

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.

S #	Personnel	Nos	Qualification
1	Chief Resident Engineer/Team Leader	01	BSc;/BE in Civil engineering from HEC approved University with minimum 20 years' professional experience and 5 years' experience on similar assignment 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 on urban planning, designing and construction supervision assignment.
2	Assistant Resident Engineer	01	Bachelor Degree in Civil engineering with minimum 8 years' experience in site supervision and execution for projects of similar nature
3	Site Inspectors	01	DAE in Civil with minimum 10 years' experience in site supervision for projects of similar nature

c) Contractor's Technical staff, skilled & non skilled labor

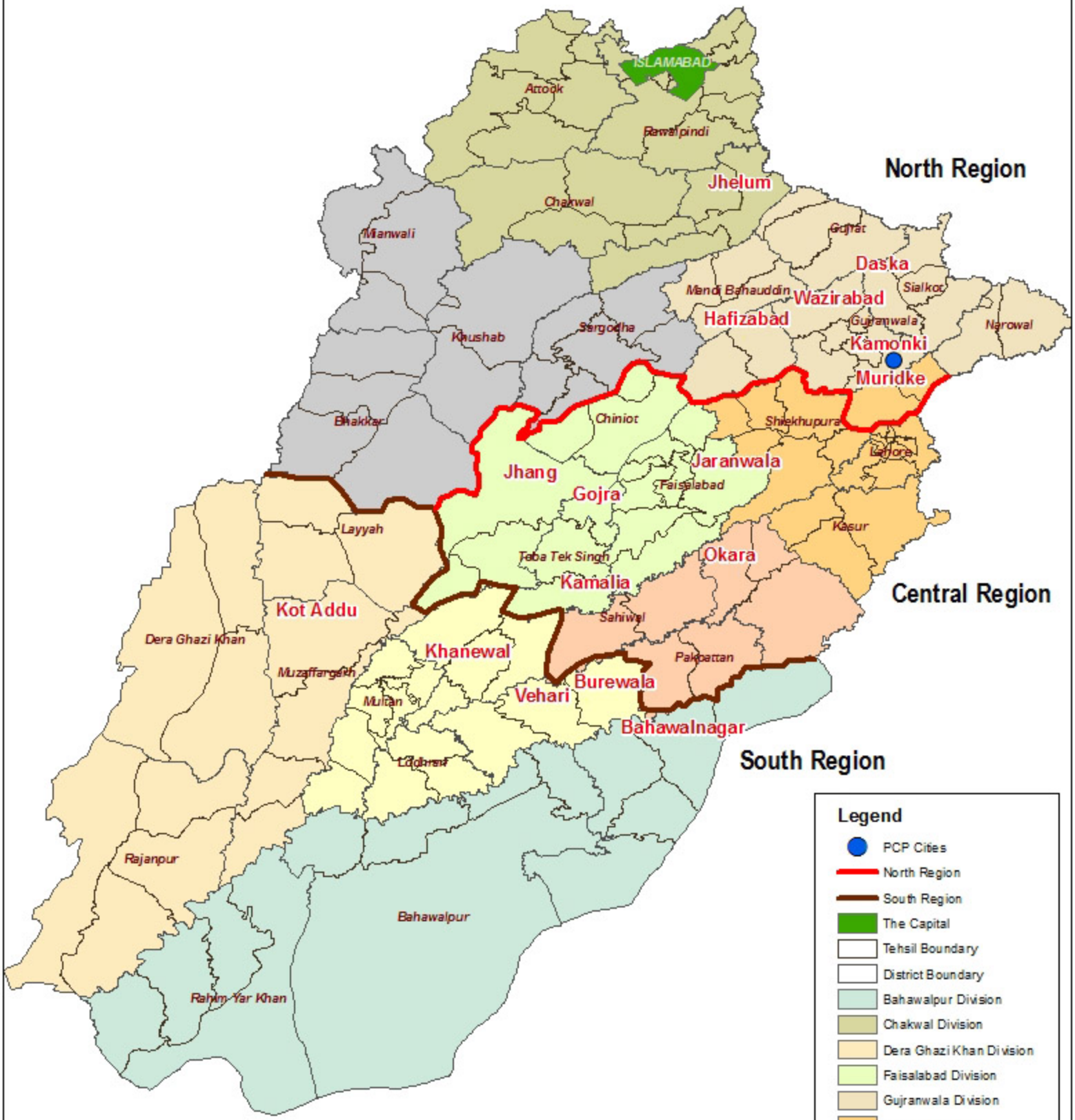
		The contractors will employ the supervisory technical staff and skilled & non skilled labor for execution of works. The works will be supervised by experienced Engineers and sub engineers and the number of slots for engineers and skilled and non-skilled will depend upon the type and quantity of work and its period of completion. **d) Repair & maintenance of the project** 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; • Fill up the presently vacant slots • Recruit additional staff as per need of the infrastructure after obtaining the sanctions from the competent authorities.
14-Additional projects /decisions required to optimize the investment being undertaken		**1) Shortage & frequent transfers of Provincially appointed staff** 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 in MC. **2) Repair & Maintenance (R&M) staff** The R&M staff is also deficient and this is adversely affecting the service delivery level. Number of slots are vacant but MC is not allowed to recruit the persons to fill these slots due to ban on recruitments. Further the sanctioned strength of the field staff is much lesser than the actual requirement because with the increase in population and extension of services, additionally required staff has not been sanctioned by the competent authorities. Both of the above issues need to be addressed for optimal utilization of the investments and giving targeted benefits to the resident population of these cities.
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.

Prepared by	JERS Consultancy (Pvt) Ltd	Signatures	
Checked by	Municipal Officer (Infrastructure) Municipal Committee Kamoke	Signatures	
	Chief Officer Municipal Committee Kamoke	Signatures	
	Administrator Municipal Committee Kamoke	Signatures	
Vetted by	Senior Program Officer PMDFC	Signatures	
Forwarded by	Secretary LG&CD	Signatures	

Annexure-A

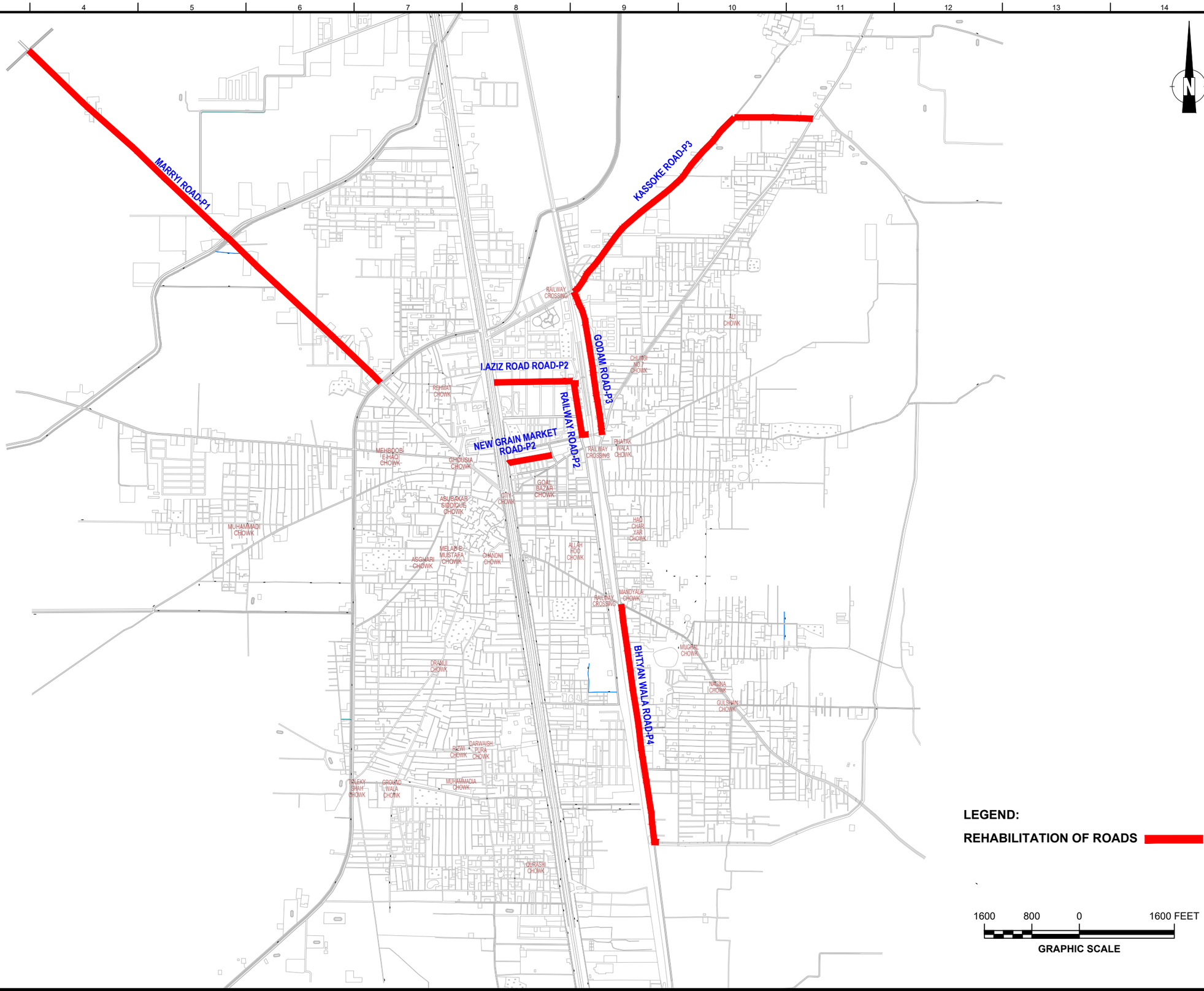
Location Map
(Punjab Cities Program)

ANNEXURE - A



HELP BUILD PMDFC HEALTHY CITIES

Local Government & Community Development Department, Governmnet of The Punjab



LEGEND:

REHABILITATION OF ROADS

1600 800 0 1600 FEET

GRAPHIC SCALE

CLIENT:

HELP BUILD PMDFC HEALTHY CITIES

PUNJAB MUNICIPAL DEVELOPMENT FUND COMPANY (PMDFC)

CONSULTANTS:

JERS CONSULTANCY (PVT) LTD

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PROJECT:

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB.

DRAWING TITLE:

PROJECT KEY PLAN OF ROADS (KAMOKE)

SHEET INDEX

REV.	DATE	DESCRIPTION
-	-	-

DRAWN BY: Adeel
CHECKED BY: Umer
APPROVED BY: Sadat Waleed
DATE: October,2022

DRAWING NO: **TS-01**
SCALE: UNIT=FEET 1"=1600'
SHEET: -
JOB NO: 488-01

Annexure-B

Cost Estimate

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

ROADS WORKS

MC KAMOKE

DETAILED COST ESTIMATE

SUMMARY

Sr. No.	Description	Amount (Rs.)
1	ROAD WORKS	230,643,088
2	STORMWATER DRAINAGE SYSTEM	79,657,356
3	ELECTRICAL WORKS	45,028,877
4	ENVIRONMENTAL MITIGATION COST	1,180,900
	Total Amount (Rs.)	**356,510,220**
	Contingencies @ 2%	7,130,204
	PRA Charges @ 5%	17,825,511
	Total Amount. Rs.	**381,465,936**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

INFRASTRUCTURE WORK

MC KAMOKE

DETAILED COST ESTIMATE

SUMMARY

Sr. No.	Description	Amount (Rs.)
1	**ROAD WORKS**	
1.1	MARRI ROAD P-1	128,049,169
1.2	I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2	33,985,868
1.3	GODAM ROAD P-3	39,230,253
1.4	BHATYAN WALA ROAD P-4	29,377,797
	1) Total Amount. Rs.	**230,643,088**
2	**STORMWATER DRAINAGE SYSTEM**	
2.1	MARRI ROAD DRAINAGE SYSTEM (P-1)	30,161,828
2.2	I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)	19,228,312
2.3	GODAM ROAD DRAINAGE SYSTEM (P-3)	26,036,262
2.4	BHATYAN WALA ROAD DRAINAGE SYSTEM P-4	998,219
2.5	CANAL BRIDGE	3,232,734
	2) Total Amount. Rs.	**79,657,356**
3	**ELECTRICAL WORKS**	
3.1	ROAD P-01	15,277,392
3.2	ROAD P-02	15,498,843
3.3	ROAD P-03	14,252,641
	3) Total Amount. Rs.	**45,028,877**
4	**ENVIRONMENTAL MITIGATION COST**	**1,180,900**
	Total Amount (Rs.) "1+2+3+4"	**356,510,220**
	Say Millions	**356.510**

MAIN ROAD WORKS

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

MARRI ROAD P-1

ROADS NETWORK

Sr. No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Dismantling				
1	4/45	Dismantling and removing road metalling.	100Cft	163.84	2,038.10	333,922
		Compaction of Existing Road Surface				
2	N.S	Ploughing and Compaction of Existing road surface upto 6" depth i/c dressing, leveling, supplying and spreading of stone screening (Khaka) and compaction to achieve to 100% maximum ASSHO dry density complete in all respects.	100Cft	49.15	5,792.16	284,685
		Cutting				
3	3/7	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary	1000Cft	139.15	9,055.25	1,260,038
		Compaction of Earthwork				
4	3/25	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete: i) 95% to 100% maximum modified AASHO dry density.	1000Cft	69.58	1,783.25	124,079

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB
DETAILED COST ESTIMATE
MARRI ROAD P-1
ROADS NETWORK

Sr. No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Sub Base Course				
5	18/3/a/ (i) + 1/1	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)	100Cft	587.17	20,886.30	12,263,809
		Water Bound Macadam				
6	18/4/a + 1/1	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 querry to site, actual compacted depth shall be considered for payment)	100Cft	1,202.03	27,686.16	33,279,589
		Prime Coat				
7	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 metre.	100Sft	1,723.04	2,309.00	3,978,499
8	18/7	Providing and laying bituminous tack coat, using 10 lbs. of bitumen per 100 Sft (0.49 Kg of bitumen per sq.m.)	100Sft	1,723.04	1,055.15	1,818,066

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB
DETAILED COST ESTIMATE
MARRI ROAD P-1
ROADS NETWORK

Sr. No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Carpeting				
		ABC				
9	18/10/a + 1/1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iii) 4% Bitumen	Per inch thickness per 100Sft.	1,723.04	15,593.14	26,867,604
		AWC				
10	18/10/a + 1/1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen	Per inch thickness per 100Sft.	1,723.04	16,569.34	28,549,636
		Paint For Traffic Lanes				
11	13/36	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	Rft	21,360.00	56.35	1,203,636
		Kerb Stone				
12	6/52/b	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.				
		b) With Painting				
		(i) 14" high	P.Rft	500.00	518.90	259,450
		Tuff Paver				
13	10/41	Providing and laying Tuff pavers, having 7000 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	Sft	65,152.00	192.80	12,561,306
		Road Edging				
14	18/5	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.	Rft	16,288	58.65	955,291

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

MARRI ROAD P-1

ROADS NETWORK

Sr. No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		P.C.C				
15	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(f) Ratio 1: 2: 4	100Cft	27.15	38,271.80	1,039,079
16	1/1 Rate Analysis	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.	Cft	2,389.20	111.18	265,625
		Cat Eyes				
17	18/28	Providing & fixing Cat Eyes of size 4"x4"x3/4" duly casted with specified material having plastic strip containing mini retro-reflective glass beads of color white /red/ yellow having specifid reflections, quality & shape i/c the cost of self built in12mm dia x120mm long steel zinc plate dnail, fixing to road with epoxy/ hammering with separate nail complete.				
		b) Aluminium Alloy				
		(A) Dual-Directional				
		(ii) 43x2=86 Glass beads a side	Each	2,036.00	693.90	1,412,780
18	18/25/a	Providing, fabrication and fixing pole mounted Direction Board/ road delineator of any shape and size, with specified Sheet and thickness, supported with G.I Channel, (excluding the cost of vertical post and painting) etc complete in all respect.				
		(a) G.I Sheet 14 SWG				
		CIRCULAR/TRIANGULAR				
		3 ft size	P. Sft	90.00	950.25	85,523
19	18/27/b	Providing, fabrication and fixing Vertical Post comprising of medium quality G.I Pipe of specified diameter, including the cost of clamping arrangements, top cover,hold fasts embeded in PCC 1:2:4 etc, complete in all respect				
		(b) 3 inch diameter	Rft	165.00	1,260.85	208,040

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

MARRI ROAD P-1

ROADS NETWORK

Sr. No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
20	13/42/a	Lettering and printing of signage /direction boards/ road delineators of any colour by machine i/c cost of Digital Lettering, Lamination & pasting etc complete in all respect.				
		a) High Intensity Prismatic (HIP) Tape	P. Sft	90.00	1,114.60	100,314
		Transportation of earth (5Km)				
21	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)				
		a) upto ¼ mile (400 m).	1000Cft	155.53	4,341.40	675,235
		b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)	1000Cft	155.53	483.00	75,123
		c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).	1000Cft	155.53	2,879.38	447,841
		Total Amount Rs.				**128,049,169**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

MARRI ROAD P-1

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Dismantling						
1	Dismantling and removing road metalling.						
	RD 2+000 to 3+500	1	1,500	16.00	0.17	4,000	Cft
	RD 3+500 to 8+144	1	4,644	16.00	0.17	12,384	Cft
					Total	16,384	Cft
					Total.	**163.84**	**%Cft**
2	Ploughing and Compaction of Existing road surface upto 6" depth i/c dressing, leveling, supplying and spreading of stone screening (Khaka) and compaction to achieve to 100% maximum ASSHO dry density complete in all respects.						
	RD 2+000 to 3+500	1	1,500	16.00	0.50	12,000	Cft
	RD 3+500 to 8+144	1	4,644	16.00	0.50	37,152	Cft
					Total	49,152	Cft
					Total.	**49.15**	**%Cft**
3	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary						
	RD 0+000 to 2+000	1	2,000	45.00	1.00	90,000	Cft
	RD 2+000 to 3+500	2	1,500	4.00	1.00	12,000	Cft
	RD 3+500 to 8+144	2	4,644	4.00	1.00	37,152	Cft
					Total	139,152	Cft
					Total.	**139.15**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

MARRI ROAD P-1

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Compaction of Earthwork						
4	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete: i) 95% to 100% maximum modified AASHO dry density.						
	RD 0+000 to 2+000	1	2,000	45.00	0.50	45,000	Cft
	RD 2+000 to 3+500	2	1,500	4.00	0.50	6,000	Cft
	RD 3+500 to 8+144	2	4,644	4.00	0.50	18,576	Cft
					Total	69,576	Cft
					Total.	**69.58**	**%oCft**
	Sub Base Course						
5	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	For Road						
	RD 0+000 to 2+000	1	2,000	37.00	0.50	37,000	Cft
	For Tuff paver						
	RD 0+000 to 2+000	2	2,000	4.00	0.33	5,333	Cft
	RD 2+000 to 3+500	2	1,500	4.00	0.33	4,000	Cft
	RD 3+500 to 8+144	2	4,644	4.00	0.33	12,384	Cft
					Total	58,717	Cft
					Total.	**587.17**	**%Cft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

MARRI ROAD P-1

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Water Bound Macadam						
6	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 querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	RD 0+000 to 2+000	1	2,000	37.00	0.67	49,333	Cft
	RD 2+000 to 3+500	1	1,500	16.00	0.50	12,000	Cft
	RD 3+500 to 8+144	1	4,644	16.00	0.50	37,152	Cft
	For Tuff Paver						
	RD 0+000 to 2+000	2	2,000	4.00	0.33	5,333	
	RD 2+000 to 3+500	2	1,500	4.00	0.33	4,000	Cft
	RD 3+500 to 8+144	2	4,644	4.00	0.33	12,384	Cft
					Total	120,203	Cft
					Total.	**1,202.03**	**%Cft**
	Prime Coat						
7	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 metre.						
	RD 0+000 to 2+000	1	2,000	37.00		74,000	Sft
	RD 2+000 to 3+500	1	1,500	16.00		24,000	Sft
	RD 3+500 to 8+144	1	4,644	16.00		74,304	Sft
					Total	172,304	Sft
					Total.	**1,723.04**	**%Sft**
8	Providing and laying bituminous tack coat, using 10 lbs. of bitumen per 100 Sft (0.49 Kg of bitumen per sq.m.)						
	RD 0+000 to 2+000	1	2,000	37.00		74,000	Sft
	RD 2+000 to 3+500	1	1,500	16.00		24,000	Sft
	RD 3+500 to 8+144	1	4,644	16.00		74,304	Sft
					Total	172,304	Sft
					Total.	**1,723.04**	**%Sft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

MARRI ROAD P-1

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Carpeting						
	ABC						
9	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iii) 4% Bitumen						
	RD 0+000 to 2+000	1	2,000	37.00		74,000	Sft
	RD 2+000 to 3+500	1	1,500	16.00		24,000	Sft
	RD 3+500 to 8+144	1	4,644	16.00		74,304	Sft
					Total	172,304	Sft
					Total.	**1,723.04**	**%Sft**
	AWC						
10	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen						
	RD 0+000 to 2+000	1	2,000	37.00		74,000	Sft
	RD 2+000 to 3+500	1	1,500	16.00		24,000	Sft
	RD 3+500 to 8+144	1	4,644	16.00		74,304	Sft
					Total	172,304	Sft
					Total.	**1,723.04**	**%Sft**
	Paint For Traffic Lanes						
11	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.						
	RD 0+000 to 2+000	3	2,000			6,000	Rft
	RD 2+000 to 3+500	2.5	1,500			3,750	Rft
	RD 3+500 to 8+144	2.5	4,644			11,610	Rft
					Total.	**21,360**	**Rft**
	Kerb Stone						
12	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.						
	b) With Painting						
	(i) 14" high	1	500			500	Rft
					Total.	**500**	**Rft**

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Tuff Paver						
13	Providing and laying Tuff pavers, having 7000 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)						
	RD 0+000 to 2+000	2	2,000	4.00		16,000	Sft
	RD 2+000 to 3+500	2	1,500	4.00		12,000	Sft
	RD 3+500 to 8+144	2	4,644	4.00		37,152	Sft
					Total.	**65,152**	**%Sft**
	Road Edging						
14	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.						
	RD 0+000 to 2+000	2	2,000			4,000	Rft
	RD 2+000 to 3+500	2	1,500			3,000	Rft
	RD 3+500 to 8+144	2	4,644			9,288	Rft
					Total.	**16,288**	**Rft**
	P.C.C						
15	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):						
	(f) Ratio 1: 2: 4						
	RD 0+000 to 2+000	2	2,000	0.33	0.50	667	Cft
	RD 2+000 to 3+500	2	1,500	0.33	0.50	500	Cft
	RD 3+500 to 8+144	2	4,644	0.33	0.50	1,548	Cft
					Total	2,715	Cft
					Total.	**27.15**	**%Cft**
	Cat Eyes						
16	Providing & fixing Cat Eyes of size 4"x4"x3/4" duly casted with specified material having plastic strip containing mini retro-reflective glass beads of color white /red/ yellow having specifid reflections, quality & shape i/c the cost of self built in12mm dia x120mm long steel zinc plate dnail, fixing to road with epoxy/ hammering with separate nail complete.						
	b) Aluminium Alloy						
	(A) Dual-Directional						
	(ii) 43x2=86 Glass beads a side	2036				**2,036**	**Each**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

MARRI ROAD P-1

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Transportation of earth (5Km)						
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)						
	a) upto ¼ mile (400 m).						
	b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)						
	c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).						
	Total Cutting Qty.					139.15	%oCft
	Total Dismantling Qty.					16.38	%oCft
					Total	**155.53**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Dismantling				
1	4/19/c	c) Dismantling cement concrete 1:2:4 plain	100Cft	61.80	11,209.45	692,744
		Cutting				
2	3/7	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary	1000Cft	40.64	9,055.25	368,005
		Compaction of Earthwork				
3	3/25	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete: i) 95% to 100% maximum modified AASHO dry density.	1000Cft	25.83	1,783.25	46,061
		Sub Base Course				
4	18/3/a/ (i) + 1/1	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)	100Cft	172.08	20,886.30	3,594,115

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Water Bound Macadam				
5	18/4/a + 1/1	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 querry to site, actual compacted depth shall be considered for payment)	100Cft	313.23	27,686.16	8,672,134
		Prime coat				
6	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 metre.	100Sft	814.76	2,309.00	1,881,281
		Carpeting				
		AWC				
7	18/10/a + 1/1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen	Per inch thickness per 100Sft.	814.76	16,569.34	13,500,035
		Paint For Traffic Lanes				
8	13/36	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	Rft	8,618.50	56.35	485,652
		Tuff Paver				
9	10/41	Providing and laying Tuff pavers, having 7000 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	Sft	14,606	192.80	2,816,037

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DETAILED COST ESTIMATE

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Road Edging				
10	18/5	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.	Rft	6,376.00	58.65	373,952
		P.C.C				
11	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(f) Ratio 1: 2: 4	100Cft	10.63	38,271.80	406,829
12	1/1 Rate Analysis	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.	Cft	935.44	111.18	104,000
		Cat Eyes				
13	18/28	Providing & fixing Cat Eyes of size 4"x4"x3/4" duly casted with specified material having plastic strip containing mini retro-reflective glass beads of color white /red/ yellow having specifid reflections, quality & shape i/c the cost of self built in12mm dia x120mm long steel zinc plate dnail, fixing to road with epoxy/ hammering with separate nail complete.				
		b) Aluminium Alloy				
		(A) Dual-Directional				
		(ii) 43x2=86 Glass beads a side	Each	797.00	693.90	553,038
14	18/25/a	Providing, fabrication and fixing pole mounted Direction Board/ road delineator of any shape and size, with specified Sheet and thickness, supported with G.I Channel, (excluding the cost of vertical post and painting) etc complete in all respect.				
		(a) G.I Sheet 14 SWG				
		CIRCULAR/TRIANGULAR				
		3 ft size	P. Sft	30.00	950.25	28,508

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
15	18/27/b	Providing, fabrication and fixing Vertical Post comprising of medium quality G.I Pipe of specified diameter, including the cost of clamping arrangements, top cover,hold fasts embeded in PCC 1:2:4 etc, complete in all respect				
		(b) 3 inch diameter	Rft	55.00	1,260.85	69,347
16	13/42/a	Lettering and printing of signage /direction boards/ road delineators of any colour by machine i/c cost of Digital Lettering, Lamination & pasting etc complete in all respect.				
		a) High Intensity Prismatic (HIP) Tape	P. Sft	30.00	1,114.60	33,438
		Transportation of earth (5Km)				
17	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)				
		a) upto ¼ mile (400 m).	1000Cft	46.82	4,341.40	203,264
		b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)	1000Cft	46.82	483.00	22,614
		c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).	1000Cft	46.82	2,879.38	134,812
		Total Amount Rs.				**33,985,868**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Dismantling						
1	c) Dismantling cement concrete 1:2:4 plain						
	RAILWAY ROAD RD 1+297 to 2+224	1	927	20.00	0.33	6,180	Cft
					Total	6,180	Cft
					Total.	**61.80**	**%Cft**
	Cutting						
2	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary						
	I.AZIZ ROAD RD 0+000 to 1+297	1	1,297	34.00	0.75	33,074	Cft
	RAILWAY ROAD RD 1+297 to 2+224	1	927	4.00	1.00	3,708	Cft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	1	964	4.00	1.00	3,856	Cft
					Total	40,638	Cft
					Total.	**40.64**	**%oCft**
	Compaction of Earthwork						
3	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete: i) 95% to 100% maximum modified AASHO dry density.						
	I.AZIZ ROAD RD 0+000 to 1+297	1	1,297	34.00	0.50	22,049	Cft
	RAILWAY ROAD RD 1+297 to 2+224	1	927	4.00	0.50	1,854	Cft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	1	964	4.00	0.50	1,928	Cft
					Total	25,831	Cft
					Total.	**25.83**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
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I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Sub Base Course						
4	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	I.AZIZ ROAD RD 0+000 to 1+297	1	1,297	34.00	0.33	14,699	Cft
	RAILWAY ROAD RD 1+297 to 2+224	1	927	4.00	0.33	1,236	Cft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	1	964	4.00	0.33	1,272	Cft
					Total	17,208	Cft
					Total.	**172.08**	**%Cft**
	Water Bound Macadam						
5	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 querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	I.AZIZ ROAD RD 0+000 to 1+297	1	1,297	34.00	0.33	14,699	Cft
	RAILWAY ROAD RD 1+297 to 2+224	1	927	26.00	0.33	8,034	Cft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	1	964	27.00	0.33	8,589	Cft
					Total	31,323	Cft
					Total.	**313.23**	**%Cft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Prime coat						
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 metre.						
	I.AZIZ ROAD RD 0+000 to 1+297	1	1,297	30.00		38,910	Sft
	RAILWAY ROAD RD 1+297 to 2+224	1	927	22.00		20,394	Sft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	1	964	23.00		22,172	Sft
					Total.	81,476	Sft
					Total.	**814.76**	**%Sft**
	Carpeting						
	AWC						
7	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen						
	I.AZIZ ROAD RD 0+000 to 1+297	1	1,297	30.00		38,910	Sft
	RAILWAY ROAD RD 1+297 to 2+224	1	927	22.00		20,394	Sft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	1	964	23.00		22,172	Sft
					Total.	81,476	Sft
					Total.	**814.76**	**%Sft**
	Paint For Traffic Lanes						
8	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.						
	I.AZIZ ROAD RD 0+000 to 1+297	3	1,297			3,891.00	Rft
	RAILWAY ROAD RD 1+297 to 2+224	2.5	927			2,317.50	Rft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	2.5	964			2,410.00	Rft
					Total.	**8,619**	**Rft**
	Tuff Paver						
9	Providing and laying Tuff pavers, having 7000 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)						
	I.AZIZ ROAD RD 0+000 to 1+297	2	1,297	2.00		5,188	Sft
	RAILWAY ROAD RD 1+297 to 2+224	2	927	3.00		5,562	Sft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	2	964	2.00		3,856	Sft
					Total.	**14,606**	**Sft**

PUNJAB CITIES PROGRAM (PCP)
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I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD P-2

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Road Edging						
10	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.						
	I.AZIZ ROAD RD 0+000 to 1+297	2	1,297			2,594	Rft
	RAILWAY ROAD RD 1+297 to 2+224	2	927			1,854	Rft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	2	964			1,928	Rft
					Total.	**6,376**	**Rft**
	P.C.C						
11	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):						
	(f) Ratio 1: 2: 4						
	I.AZIZ ROAD RD 0+000 to 1+297	2	1,297	0.33	0.50	432	Cft
	RAILWAY ROAD RD 1+297 to 2+224	2	927	0.33	0.50	309	Cft
	NEW GRAIN MARKET ROAD RD 2+224 to 3+188	2	964	0.33	0.50	321	Cft
					Total	1,063	Cft
					Total.	**10.63**	**%Cft**
	Cat Eyes						
12	Providing & fixing Cat Eyes of size 4"x4"x3/4" duly casted with specified material having plastic strip containing mini retro-reflective glass beads of color white /red/ yellow having specifid reflections, quality & shape i/c the cost of self built in12mm dia x120mm long steel zinc plate dnail, fixing to road with epoxy/ hammering with separate nail complete.						
	b) Aluminium Alloy						
	(A) Dual-Directional						
	(ii) 43x2=86 Glass beads a side	797				**797**	**Each**
	Transportation of earth (5Km)						
13	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)						
	a) upto ¼ mile (400 m).						
	b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)						
	c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).						
	Total Cutting Qty.					40.64	%oCft
	Total Dismantling Qty.					6.18	%oCft
					Total	**46.82**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

GODAM ROAD P-3

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Cutting				
1	3/7	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary	1000Cft	46.76	9,055.25	423,423
		Compaction of Earthwork				
2	3/25	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete: i) 95% to 100% maximum modified AASHO dry density.	1000Cft	23.38	1,783.25	41,692
		Sub Base Course				
3	18/3/a/ (i) + 1/1	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)	100Cft	155.87	20,886.30	3,255,548

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DETAILED COST ESTIMATE

GODAM ROAD P-3

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Water Bound Macadam				
4	18/4/a + 1/1	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 querry to site, actual compacted depth shall be considered for payment)	100Cft	291.87	27,686.16	8,080,758
		Prime coat				
5	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 metre.	100Sft	464.00	2,309.00	1,071,376
		Carpeting				
		AWC				
6	18/10/a	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen	Per inch thickness per 100Sft.	464.00	16,569.34	7,688,174
		Paint For Traffic Lanes				
7	13/36	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	Rft	20,038.00	56.35	1,129,141

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DETAILED COST ESTIMATE

GODAM ROAD P-3

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Kerb Stone				
8	6/52/b	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.				
		b) With Painting				
		(i) 14" high	P.Rft	200.00	518.90	103,780
		Tuff Paver				
9	10/41	Providing and laying Tuff pavers, having 7000 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	Sft	66,760.00	192.80	12,871,328
		Road Edging				
10	18/5	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.	Rft	16,030	58.65	940,160
		P.C.C				
11	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(f) Ratio 1: 2: 4	100Cft	49.27	38,271.80	1,885,652
12	1/1 Rate Analysis	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.	Cft	4,335.76	111.18	482,039

PUNJAB CITIES PROGRAM (PCP)
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DETAILED COST ESTIMATE

GODAM ROAD P-3

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Cat Eyes				
13	18/28	Providing & fixing Cat Eyes of size 4"x4"x3/4" duly casted with specified material having plastic strip containing mini retro-reflective glass beads of color white /red/ yellow having specifid reflections, quality & shape i/c the cost of self built in12mm dia x120mm long steel zinc plate dnail, fixing to road with epoxy/ hammering with separate nail complete.				
		b) Aluminium Alloy				
		(A) Dual-Directional				
		(ii) 43x2=86 Glass beads a side	Each	725.00	693.90	503,078
14	18/25/a	Providing, fabrication and fixing pole mounted Direction Board/ road delineator of any shape and size, with specified Sheet and thickness, supported with G.I Channel, (excluding the cost of vertical post and painting) etc complete in all respect.				
		(a) G.I Sheet 14 SWG				
		CIRCULAR/TRIANGULAR				
		3 ft size	P. Sft	90.00	950.25	85,523
15	18/27/b	Providing, fabrication and fixing Vertical Post comprising of medium quality G.I Pipe of specified diameter, including the cost of clamping arrangements, top cover,hold fasts embeded in PCC 1:2:4 etc, complete in all respect				
		(b) 3 inch diameter	Rft	165.00	1,260.85	208,040
16	13/42/a	Lettering and printing of signage /direction boards/ road delineators of any colour by machine i/c cost of Digital Lettering, Lamination & pasting etc complete in all respect.				
		a) High Intensity Prismatic (HIP) Tape	P. Sft	90.00	1,114.60	100,314

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DETAILED COST ESTIMATE

GODAM ROAD P-3

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Transportation of earth (5Km)				
17	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)				
		a) upto ¼ mile (400 m).	1000Cft	46.76	4,341.40	203,004
		b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)	1000Cft	46.76	483.00	22,585
		c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).	1000Cft	46.76	2,879.38	134,640
		Total Amount Rs.				**39,230,253**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

GODAM ROAD P-3

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Cutting						
1	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary						
	Godam Road RD 0+000 to 1+600	2	1,600	5.00	1.00	16,000	Cft
	Godam Road RD 1+600 to 2+450	2	850	5.00	1.00	8,500	Cft
	Kassoke Road RD 2+450 to 3+700	2	1,250	2.00	1.00	5,000	Cft
	Kassoke Road RD 3+700 to 5+000	2	1,300	2.00	1.00	5,200	Cft
	Kassoke Road RD 5+000 to 6+600	2	1,600	2.00	1.00	6,400	Cft
	Kassoke Road RD 6+600 to 8+015	2	1,415	2.00	1.00	5,660	Cft
					Total	46,760	Cft
					Total.	**46.76**	**%oCft**
	Compaction of Earthwork						
2	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete: i) 95% to 100% maximum modified AASHO dry density.						
	Godam Road RD 0+000 to 1+600	2	1,600	5.00	0.50	8,000	Cft
	Godam Road RD 1+600 to 2+450	2	850	5.00	0.50	4,250	Cft
	Kassoke Road RD 2+450 to 3+700	2	1,250	2.00	0.50	2,500	Cft
	Kassoke Road RD 3+700 to 5+000	2	1,300	2.00	0.50	2,600	Cft
	Kassoke Road RD 5+000 to 6+600	2	1,600	2.00	0.50	3,200	Cft
	Kassoke Road RD 6+600 to 8+015	2	1,415	2.00	0.50	2,830	Cft
					Total	23,380	Cft
					Total.	**23.38**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

GODAM ROAD P-3

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Sub Base Course						
3	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	Godam Road RD 0+000 to 1+600	2	1,600	5.00	0.33	5,333	Cft
	Godam Road RD 1+600 to 2+450	2	850	5.00	0.33	2,833	Cft
	Kassoke Road RD 2+450 to 3+700	2	1,250	2.00	0.33	1,667	Cft
	Kassoke Road RD 3+700 to 5+000	2	1,300	2.00	0.33	1,733	Cft
	Kassoke Road RD 5+000 to 6+600	2	1,600	2.00	0.33	2,133	Cft
	Kassoke Road RD 6+600 to 8+015	2	1,415	2.00	0.33	1,887	Cft
					Total	15,587	Cft
					Total.	**155.87**	**%Cft**
	Water Bound Macadam						
4	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 querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	Godam Road RD 0+000 to 1+600	2	1,600	5.00	0.33	5,333	Cft
	Godam Road RD 1+600 to 2+450	2	850	5.00	0.33	2,833	Cft
	Kassoke Road RD 2+450 to 3+700	1	1,250	20.00	0.33	8,333	Cft
	Kassoke Road RD 3+700 to 5+000	1	1,300	20.00	0.33	8,667	Cft
	Kassoke Road RD 5+000 to 6+600	2	1,600	2.00	0.33	2,133	Cft
	Kassoke Road RD 6+600 to 8+015	2	1,415	2.00	0.33	1,887	Cft
					Total	29,187	Cft
					Total.	**291.87**	**%Cft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB
GODAM ROAD P-3
CALCULATION OF QUANTITES
ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Prime coat						
5	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 metre.						
	Godam Road RD 0+000 to 1+600	1	1,600	16.00		25,600	Sft
	Kassoke Road RD 3+700 to 5+000	1	1,300	16.00		20,800	Sft
					Total.	**464.00**	**%Sft**
	Carpeting						
	AWC						
6	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen						
	Godam Road RD 0+000 to 1+600	1	1,600	16.00		25,600	Sft
	Kassoke Road RD 3+700 to 5+000	1	1,300	16.00		20,800	Sft
					Total	46,400	Sft
					Total.	**464.00**	**%Sft**
	Paint For Traffic Lanes						
7	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.						
	Godam Road RD 0+000 to 1+600	2.5	1,600			4,000	Rft
	Godam Road RD 1+600 to 2+450	2.5	850			2,125	Rft
	Kassoke Road RD 2+450 to 3+700	2.5	1,250			3,125	Rft
	Kassoke Road RD 3+700 to 5+000	2.5	1,300			3,250	Rft
	Kassoke Road RD 5+000 to 6+600	2.5	1,600			4,000	Rft
	Kassoke Road RD 6+600 to 8+015	2.5	1,415			3,538	Rft
					Total.	**20,038**	**Rft**
	Kerb Stone						
8	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.						
	b) With Painting						
	(i) 14" high	1	200			200	Rft
					Total.	**200**	**Rft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

GODAM ROAD P-3

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Tuff Paver						
9	Providing and laying Tuff pavers, having 7000 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)						
	Godam Road RD 0+000 to 1+600	2	1,600	5.00		16,000	Sft
	Godam Road RD 1+600 to 2+450	2	850	5.00		8,500	Sft
	Kassoke Road RD 2+450 to 3+700	1	1,250	20.00		25,000	Sft
	Kassoke Road RD 3+700 to 5+000	2	1,300	2.00		5,200	Sft
	Kassoke Road RD 5+000 to 6+600	2	1,600	2.00		6,400	Sft
	Kassoke Road RD 6+600 to 8+015	2	1,415	2.00		5,660	Sft
					Total.	**66,760**	**Sft**
	Road Edging						
10	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.						
	Godam Road RD 0+000 to 1+600	2	1,600			3,200	Rft
	Godam Road RD 1+600 to 2+450	2	850			1,700	Rft
	Kassoke Road RD 2+450 to 3+700	2	1,250			2,500	Rft
	Kassoke Road RD 3+700 to 5+000	2	1,300			2,600	Rft
	Kassoke Road RD 5+000 to 6+600	2	1,600			3,200	Rft
	Kassoke Road RD 6+600 to 8+015	2	1,415			2,830	Rft
					Total.	**16,030**	**Rft**
	P.C.C						
11	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):						
	(f) Ratio 1: 2: 4						
	Godam Road RD 0+000 to 1+600	4	1,600	0.33	0.50	1,067	Cft
	Godam Road RD 1+600 to 2+450	4	850	0.33	0.50	567	Cft
	Kassoke Road RD 2+450 to 3+700	2	1,250	0.33	0.50	417	Cft
	Kassoke Road RD 3+700 to 5+000	4	1,300	0.33	0.50	867	Cft
	Kassoke Road RD 5+000 to 6+600	4	1,600	0.33	0.50	1,067	Cft
	Kassoke Road RD 6+600 to 8+015	4	1,415	0.33	0.50	943	Cft
					Total	4,927	Cft
					Total.	**49.27**	**%Cft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

GODAM ROAD P-3

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Cat Eyes						
12	Providing & fixing Cat Eyes of size 4"x4"x3/4" duly casted with specified material having plastic strip containing mini retro-reflective glass beads of color white /red/ yellow having specifid reflections, quality & shape i/c the cost of self built in12mm dia x120mm long steel zinc plate dnail, fixing to road with epoxy/ hammering with separate nail complete.						
	b) Aluminium Alloy						
	(A) Dual-Directional						
	(ii) 43x2=86 Glass beads a side	725				**725**	**Each**
	Transportation of earth (5Km)						
13	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)						
	a) upto ¼ mile (400 m).						
	b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)						
	c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).						
	Total Cutting Qty.					46.76	%oCft
					Total	**46.76**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

BHATYAN WALA ROAD P-4

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Compaction of Existing Road Surface				
1	N.S	Ploughing and Compaction of Existing road surface upto 6" depth i/c dressing, leveling, supplying and spreading of stone screening (Khaka) and compaction to achieve to 100% maximum ASSHO dry density complete in all respects.	100Cft	115.52	5,792.16	669,110
		Cutting				
2	3/7	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary	1000Cft	26.86	9,055.25	243,224
		Sub Base Course				
3	18/3/a/ (i) + 1/1	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)	100Cft	89.55	20,886.30	1,870,368

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

BHATYAN WALA ROAD P-4

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		Water Bound Macadam				
4	18/4/a + 1/1	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 querry to site, actual compacted depth shall be considered for payment)	100Cft	296.56	27,686.16	8,210,606
		Kerb Stone				
5	6/52/b	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.				
		b) With Painting				
		(i) 14" high	P.Rft	200.00	518.90	103,780
		Tuff Paver				
6	10/41	Providing and laying Tuff pavers, having 7000 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	Sft	88,968.00	192.80	17,153,030
		Road Edging				
7	18/5	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.	Rft	8,088	58.65	474,361
8	18/25/a	Providing, fabrication and fixing pole mounted Direction Board/ road delineator of any shape and size, with specified Sheet and thickness, supported with G.I Channel, (excluding the cost of vertical post and painting) etc complete in all respect.				
		(a) G.I Sheet 14 SWG				

PUNJAB CITIES PROGRAM (PCP)
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DETAILED COST ESTIMATE

BHATYAN WALA ROAD P-4

ROADS NETWORK

Sr. No	2nd BI-Annual 2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
		CIRCULAR/TRIANGULAR				
		3 ft size	P. Sft	102.00	950.25	96,926
9	18/27/b	Providing, fabrication and fixing Vertical Post comprising of medium quality G.I Pipe of specified diameter, including the cost of clamping arrangements, top cover,hold fasts embeded in PCC 1:2:4 etc, complete in all respect				
		(b) 3 inch diameter	Rft	187.00	1,260.85	235,779
10	13/42/a	Lettering and printing of signage /direction boards/ road delineators of any colour by machine i/c cost of Digital Lettering, Lamination & pasting etc complete in all respect.				
		a) High Intensity Prismatic (HIP) Tape	P. Sft	102.00	1,114.60	113,689
		Transportation of earth (5Km)				
17	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)				
		a) upto ¼ mile (400 m).	1000Cft	26.86	4,341.40	116,610
		b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)	1000Cft	26.86	483.00	12,973
		c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).	1000Cft	26.86	2,879.38	77,340
		Total Amount Rs.				**29,377,797**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

BHATYAN WALA ROAD P-4

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Compaction of Existing Road Surface						
1	Ploughing and Compaction of Existing road surface upto 6" depth i/c dressing, leveling, supplying and spreading of stone screening (Khaka) and compaction to achieve to 100% maximum ASSHO dry density complete in all respects.						
	RD 0+000 to 2+600	1	2,600	15.00	0.50	19,500	Cft
	RD 2+600 to 4+044	1	1,444	16.00	0.50	11,552	Cft
					Total.	**115.52**	**%Cft**
	Cutting						
2	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water from trenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) ordinary						
	RD 0+000 to 2+600	2	2,600	3.50	1.00	18,200	Cft
	RD 2+600 to 4+044	2	1,444	3.00	1.00	8,664	Cft
					Total	26,864	Cft
					Total.	**26.86**	**%oCft**

PUNJAB CITIES PROGRAM (PCP)
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BHATYAN WALA ROAD P-4

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Sub Base Course						
3	Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	RD 0+000 to 2+600	2	2,600	3.50	0.33	6,067	Cft
	RD 2+600 to 4+044	2	1,444	3.00	0.33	2,888	Cft
					Total	8,955	Cft
					Total.	**89.55**	**%Cft**
	Water Bound Macadam						
4	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 querry to site, actual compacted depth shall be considered for payment)						
	Crushed stone aggregate from approved quarry						
	RD 0+000 to 2+600	1	2,600	22.00	0.33	19,067	Cft
	RD 2+600 to 4+044	1	1,444	22.00	0.33	10,589	Cft
					Total	29,656	Cft
					Total.	**296.56**	**%Cft**

PUNJAB CITIES PROGRAM (PCP)
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BHATYAN WALA ROAD P-4

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Kerb Stone						
5	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.						
	b) With Painting						
	(i) 14" high	1	200			200	Rft
					Total.	**200**	**Rft**
	Tuff Paver						
6	Providing and laying Tuff pavers, having 7000 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)						
	RD 0+000 to 2+600	1	2,600	22.00		57,200	Sft
	RD 2+600 to 4+044	1	1,444	22.00		31,768	Sft
					Total.	**88,968**	**Sft**
	Road Edging						
7	Providing and laying road edging of 3" (75 mm) wide and 9" (225 mm) deep brick on end, complete in all respects.						
	RD 0+000 to 2+600	2	2,600			5,200	Rft
	RD 2+600 to 4+044	2	1,444			2,888	Rft
					Total.	**8,088**	**Rft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

BHATYAN WALA ROAD P-4

CALCULATION OF QUANTITES

ROADS NET WORK

Sr. No	Description	No.	Length	Width	Height	Qty.	Unit.
	Transportation of earth (5Km)						
13	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)						
	a) upto ¼ mile (400 m).						
	b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)						
	c) for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).						
	Total Cutting Qty.					26.86	%oCft
					Total	**26.86**	**%oCft**

DRAINAGE SYSTEM

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

MARRI ROAD DRAINAGE SYSTEM (P-1)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		Excavation				
1	3/7/i	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.	1000Cft	74.25	9,055.25	672,343
		P.C.C				
2	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(i) Ratio 1: 4: 8	100Cft	57.11	29,079.80	1,660,747
		(f) Ratio 1: 2: 4	100Cft	175.46	38,271.80	6,715,170
		Brick Work				
3	7/7/i	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3	100Cft	256.50	35,372.90	9,073,149
		Plaster				
4	11/8/b	Cement plaster 1:3 upto 20' (6.00 m) height:-				
		b) ½" (13 mm) thick	100Sft	350.50	3,468.30	1,215,639
		Concrete Work				
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.):-				

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DETAILED COST ESTIMATE

MARRI ROAD DRAINAGE SYSTEM (P-1)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		(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)	Cft	5,010.76	556.05	2,786,234
6	1/1 Rate Analysis	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.	Cft	25,262.27	111.18	2,808,596
		Steel Work.				
7	6/12/c	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):-				
		Deformed bars (Grade-60)	100kg	125.27	31,808.25	3,984,590
		Kerb Stone				
8	6/52/b	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.				
		b) With Painting				
		(i) 14" high	P.Rft	2,400.00	518.90	1,245,360
		Total Amount (Rs)				**30,161,828**

PUNJAB CITIES PROGRAM (PCP)
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CALCULATION OF QUANTITES

MARRI ROAD DRAINAGE SYSTEM (P-1)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Excavation						
1	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.						
	Proposed Drain 2.00ft wide drain	1	4,800	4.75	3.25	74,100	Cft
	Extension of culvert	1	10	4.25	3.50	149	Cft
					Total	**74.25**	**%oCft**
2	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):						
	(i) Ratio 1: 4: 8						
	Proposed Drain 2.00ft wide drain	1	4,800	4.75	0.25	5,700	Cft
	Extension of culvert	1	10	4.25	0.25	11	Cft
					Total	**57.11**	**%Cft**
	(f) Ratio 1: 2: 4						
	Proposed Drain base slab	1	4,800	4.75	0.50	11,400	Cft
	Benching	1	4,800	2.00	0.25	2,400	Cft
	Benching for Existing Drain	1	2,200	2.00	0.25	1,100	Cft
	Coping						
	Proposed Drain 2.00ft wide drain	2	4,800	0.75	0.25	1,800	Cft
	Existing Drain	2	2,200	0.75	0.25	825	Cft
	Extension of culvert	1	10	4.25	0.50	21	Cft
					Total	17,546	Cft
					Total	**175.46**	**%Cft**
3	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3						
	Proposed Drain 2.00ft wide drain						
	Step-1	1	4,800	0.75	2.50	9,000	Cft
	Step-2	1	4,800	1.13	2.50	13,500	Cft
	Existing Drain	1	2,200	1.13	0.75	1,856	Cft

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CALCULATION OF QUANTITES

MARRI ROAD DRAINAGE SYSTEM (P-1)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
		1	2,200	0.75	0.75	1,238	Cft
	Extension of culvert	2	10	1.13	2.50	56	Cft
					Total	25,650	Cft
					Total	**256.50**	**%Cft**
4	Cement plaster 1:3 upto 20' (6.00 m) height:-						
	b) ½" (13 mm) thick						
	Proposed Drain 2.00ft wide drain	2	4,800		2.50	24,000	Sft
	Existing Drain	2	2,200		2.50	11,000	Sft
		2	10		2.50	50	Sft
					Total	35,050	Sft
					Total	**350.50**	**%Sft**
	Concrete Work						
5	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) (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)						
	Proposed Drain 2.00ft wide drain	0.4	4,800	3.88	0.67	4,985	Cft
	Extension of culvert	1	10	3.88	0.67	26	Cft
					Total	**5,011**	**Cft**
	Steel Work.						
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):-						
	Deformed bars (Grade-60)		2.50 Kg/Cft			12,527	Kg
					Total	**125.27**	**Kg**

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CALCULATION OF QUANTITES

MARRI ROAD DRAINAGE SYSTEM (P-1)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Kerb Stone						
7	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.						
	b) With Painting						
	(i) 14" high	0.5	4,800			2,400	Rft
					Total	**2,400**	**Rft**

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DETAILED COST ESTIMATE

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		Excavation				
1	3/7/i	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.	1000Cft	50.47	9,055.25	457,046
		P.C.C				
2	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(i) Ratio 1: 4: 8	100Cft	37.83	29,079.80	1,100,089
		(f) Ratio 1: 2: 4	100Cft	102.35	38,271.80	3,917,119
		Brick Work				
3	7/7/i	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3	100Cft	166.88	35,372.90	5,902,853
		Plaster				
4	11/8/b	Cement plaster 1:3 upto 20' (6.00 m) height:-				
		b) ½" (13 mm) thick	100Sft	178.00	3,468.30	617,357
		Concrete Work				
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.):-				
		(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)	Cft	3,220.02	556.05	1,790,492

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
6	1/1 Rate Analysis	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.	Cft	15,425.57	111.18	1,714,976
		Steel Work.				
7	6/12/c	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):-				
		Deformed bars (Grade-60)	100kg	80.50	31,808.25	2,560,580
		Kerb Stone				
8	6/52/b	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.				
		b) With Painting				
		(i) 14" high	P.Rft	1,780.00	518.90	923,642
		Gully Grating Chamber				
9	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.	Each	4.00	17,162.50	68,650
		uPvc Pipe				
10	19/47	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized Polyvinyl Chloride) Nikasi/ waste pipe make of Dadex /Popular/Beta or equivalent, plain /socket ended conforming to code EN-1329 of specified SDR (Standard Dimension Ratio) including the cost of specials and Solvents complete in all respect as approved and directed by the Engineer Incharge.				
		(vii) 8"(200 mm)	Rft	80.00	451.30	36,104

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DETAILED COST ESTIMATE

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		Type-1 Drain				
		P.C.C				
11	6/3	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to				
		(d) Ratio 1: 6:12	100Cft	0.84	21,060.85	17,770
12	20/6	Constructing Punjab Standard Drains. of cement concrete 1:2 ½ :5, with cement concrete bedding ratio 1:6:12, complete, laid to lines, grades, slopes and shapes, rendering exposed surface of concrete with 1:1 cement, sand mortar, ¼" (6 mm) thick, as per Engineer's drawing (excluding excavation):-				
		a)Type I	Rft	300.00	186.70	56,010
13	20/1/b	Tega formed of pacca bricks on end, laid in and over cement sand mortar projecting to a height of not more than 6" (150 mm) top of drain along the property side where required, laid to lines, grades, slopes and shape according to the Engineer's drawing:-				
		B) 4½" thick (113 mm)				
		i) ratio 1:3	100Rft	3.00	10,473.45	31,420
14	20/3	Pacca brick on edge, laid in reimbursement, in cement, sand mortar, on sides of drains and on other works where required. All joints to be completely filled and struck flush:-				
		a) ratio 1:3	100Sft	2.25	15,201.70	34,204
		Total Amount (Rs)				**19,228,312**

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CALCULATION OF QUANTITES

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Excavation						
1	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.						
	Proposed Drain 1.50ft wide drain	1	3,560	4.25	3.25	49,173	Cft
	Pipe Laying	4	20	2.50	3.50	700	Cft
	Type - 1 Drain	1	300	2.00	1.00	600	Cft
					Total	**50.47**	**%oCft**
2	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):						
	(i) Ratio 1: 4: 8						
	Proposed Drain 1.50ft wide drain	1	3,560	4.25	0.25	3,783	Cft
					Total	**37.83**	**%Cft**
	(f) Ratio 1: 2: 4						
	Proposed Drain base slab	1	3,560	4.25	0.50	7,565	Cft
	Benching	1	3,560	1.50	0.25	1,335	Cft
	Coping						
	Proposed Drain 1.50ft wide drain	2	3,560	0.75	0.25	1,335	Cft
					Total	10,235	Cft
					Total	**102.35**	**%Cft**
3	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3						
	Proposed Drain 1.50ft wide drain						
	Step-1	1	3,560	0.75	2.50	6,675	Cft
	Step-2	1	3,560	1.13	2.50	10,013	Cft
					Total	16,688	Cft
					Total	**166.88**	**%Cft**
4	Cement plaster 1:3 upto 20' (6.00 m) height:-						
	b) ½" (13 mm) thick						
	Proposed Drain 1.50ft wide drain	2	3,560		2.50	17,800	Sft
					Total	**178.00**	**%Sft**

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CALCULATION OF QUANTITES

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Concrete Work						
5	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) (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)	0.4	3,560	3.38	0.67	3,220	Cft
					Total	**3,220**	**Cft**
	Steel Work.						
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):-						
	Deformed bars (Grade-60)		2.50 Kg/Cft			8,050	Kg
					Total	**80.50**	**Kg**
	Kerb Stone						
7	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.						
	b) With Painting						
	(i) 14" high	0.5	3,560			1,780	Rft
					Total	**1,780**	**Rft**

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CALCULATION OF QUANTITES

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Gully Grating Chamber						
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.	4				**4.00**	**Nos.**
	uPvc Pipe						
9	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized Polyvinyl Chloride) Nikasi/ waste pipe make of Dadex /Popular/Beta or equivalent, plain /socket ended conforming to code EN-1329 of specified SDR (Standard Dimension Ratio) including the cost of specials and Solvents complete in all respect as approved and directed by the Engineer Incharge.						
	(vii) 8"(200 mm)	4	20.00			**80**	**Rft**
	Type-1 Drain						
	P.C.C						
10	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to						
	(d) Ratio 1: 6:12	1	300	1.13	0.25	84	Cft
					Total	**0.84**	**%Cft**
	Type-1 Drain						
11	Constructing Punjab Standard Drains. of cement concrete 1:2 ½ :5, with cement concrete bedding ratio 1:6:12, complete, laid to lines, grades, slopes and shapes, rendering exposed surface of concrete with 1:1 cement, sand mortar, ¼" (6 mm) thick, as per Engineer's drawing (excluding excavation):-						
	a)Type I	1	300			**300**	**Rft**
12	Tega formed of pacca bricks on end, laid in and over cement sand mortar projecting to a height of not more than 6" (150 mm) top of drain along the property side where required, laid to lines, grades, slopes and shape according to the Engineer's drawing:-						
	B) 4½" thick (113 mm)						
	i) ratio 1:3	1	300			300	Rft
					Total	**3.00**	**%Rft**

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CALCULATION OF QUANTITES

I.AZIZ ROAD, RAILWAY ROAD AND EXCHANGE ROAD DRAINAGE SYSTEM (P-2)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
13	Pacca brick on edge, laid in reimbursement, in cement, sand mortar, on sides of drains and on other works where required. All joints to be completely filled and struck flush:-						
	a) ratio 1:3	1	300	0.75		225	Sft
					Total	**2.25**	**%Sft**

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DETAILED COST ESTIMATE

GODAM ROAD DRAINAGE SYSTEM (P-3)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		Excavation				
1	3/7/i	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.	1000Cft	68.71	9,055.25	622,186
		P.C.C				
2	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(i) Ratio 1: 4: 8	100Cft	51.72	29,079.80	1,504,007
		(f) Ratio 1: 2: 4	100Cft	140.31	38,271.80	5,369,916
		Brick Work				
3	7/7/i	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3	100Cft	222.66	35,372.90	7,875,997
		Plaster				
4	11/8/b	Cement plaster 1:3 upto 20' (6.00 m) height:-				
		b) ½" (13 mm) thick	100Sft	237.50	3,468.30	823,721
		Concrete Work				
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.):-				

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DETAILED COST ESTIMATE

GODAM ROAD DRAINAGE SYSTEM (P-3)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		(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)	Cft	4,430.38	556.05	2,463,510
6	1/1 Rate Analysis	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.	Cft	21,147.51	111.18	2,351,128
		Steel Work.				
7	6/12/c	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):-				
		Deformed bars (Grade-60)	100kg	110.76	31,808.25	3,523,062
		Kerb Stone				
8	6/52/b	Providing and fixing precast Edge Kerb Stone (4" to 6" thick), of 3500 PSI Compressive Strength, embeded in PCC 1:2:4 over lean concrete 1:4:8 etc. complete in all respect.				
		b) With Painting				
		(i) 14" high	P.Rft	2,375.00	518.90	1,232,388
		Gully Grating Chamber				
9	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.	Each	5.00	17,162.50	85,813

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GODAM ROAD DRAINAGE SYSTEM (P-3)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		uPvc Pipe				
10	19/47	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized Polyvinyl Chloride) Nikasi/ waste pipe make of Dadex /Popular/Beta or equivalent, plain /socket ended conforming to code EN-1329 of specified SDR (Standard Dimension Ratio) including the cost of specials and Solvents complete in all respect as approved and directed by the Engineer Incharge.				
		(vii) 8"(200 mm)	Rft	100.00	451.30	45,130
		Drain Type - 1				
		P.C.C				
11	6/3	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to				
		(d) Ratio 1: 6:12	100Cft	0.84	21,060.85	17,770
12	20/6	Constructing Punjab Standard Drains. of cement concrete 1:2 ½ :5, with cement concrete bedding ratio 1:6:12, complete, laid to lines, grades, slopes and shapes, rendering exposed surface of concrete with 1:1 cement, sand mortar, ¼" (6 mm) thick, as per Engineer's drawing (excluding excavation):-				
		a)Type I	Rft	300.00	186.70	56,010
13	20/1/b	Tega formed of pacca bricks on end, laid in and over cement sand mortar projecting to a height of not more than 6" (150 mm) top of drain along the property side where required, laid to lines, grades, slopes and shape according to the Engineer's drawing:-				
		B) 4½" thick (113 mm)				
		i) ratio 1:3	100Rft	3.00	10,473.45	31,420
14	20/3	Pacca brick on edge, laid in reimbursement, in cement, sand mortar, on sides of drains and on other works where required. All joints to be completely filled and struck flush:-				
		a) ratio 1:3	100Sft	2.25	15,201.70	34,204
		Total Amount (Rs)				**26,036,262**

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DETAILED COST ESTIMATE

BHATYAN WALA ROAD DRAINAGE SYSTEM (P-4)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		Excavation				
1	3/7/i	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.	1000Cft	0.87	9,055.25	7,860
		P.C.C				
2	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):				
		(i) Ratio 1: 4: 8	100Cft	0.67	29,079.80	19,483
		(f) Ratio 1: 2: 4	100Cft	0.30	38,271.80	11,482
		Concrete Work				
3	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:-				
		(3) Type C (nominal mix 1: 2: 4)	Cft	151.80	456.85	69,348

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DETAILED COST ESTIMATE

BHATYAN WALA ROAD DRAINAGE SYSTEM (P-4)

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		(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)	Cft	419.80	556.05	233,427
4	1/1 Rate Analysis	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.	Cft	592.90	111.18	65,917
		Steel Work.				
5	6/12/c	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):-				
		Deformed bars (Grade-60)	100kg	17.15	31,808.25	545,439
		Water Stopper				
6	6/31	Providing embeding 10" (250 mm) wide ¼" (6 mm) thick rubber water stopper in expansion joints of R.C.C. roof slab complete in all respects.	Rft	160.00	282.90	45,264
		Total Amount (Rs)				**998,219**

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CALCULATION OF QUANTITES

BHATYAN WALA ROAD DRAINAGE SYSTEM (P-4)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Excavation						
1	Earthwork excavation in open cutting upto 5'-0" (1.5 m) depth for storm water channels, drains, sullage drains in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed level and dimensions, trimming, removal of surface water fromtrenches, back filling and surplus excavated material disposed of and dressed within 50 ft. (15 m) lead:- i) in ordinary soil.						
	Culvert 1.50ft wide	4	20	3.34	3.25	868	Cft
					Total	868	Cft
					Total	**0.87**	**%oCft**
	P.C.C						
2	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):						
	(i) Ratio 1: 4: 8						
	Culvert 1.50ft wide	4	20	3.34	0.25	67	Cft
					Total	67	Cft
					Total	**0.67**	**%Cft**
	(f) Ratio 1: 2: 4						
	Culvert 1.50ft wide	4	20.00	1.50	0.25	30	Cft
					Total	30	Cft
					Total	**0.30**	**%Cft**
	Concrete Work						
3	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.):-						

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CALCULATION OF QUANTITES

BHATYAN WALA ROAD DRAINAGE SYSTEM (P-4)

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	(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:-						
	(3) Type C (nominal mix 1: 2: 4)						
	Culvert 1.50ft wide	4	20	2.83	0.67	151.80	Cft
					Total	**151.80**	**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:-						
	(3) Type C (nominal mix 1: 2: 4)						
	Walls						
	Culvert 1.50ft wide	8	20	0.67	2.50	268	Cft
	Top Slab						
	Culvert 1.50ft wide	4	20	2.83	0.67	152	Cft
					Total	**420**	**Cft**
	Steel Work.						
4	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):-						
	Deformed bars (Grade-60)		3 Kg/Cft			1,715	Kg
					Total	**17.15**	**Kg**
	Water Stopper						
5	Providing embeding 10" (250 mm) wide ¼" (6 mm) thick rubber water stopper in expansion joints of R.C.C. roof slab complete in all respects.	1	160.00			**160**	**Rft**

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DETAILED COST ESTIMATE

CANAL BRIDGE

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
		Excavation				
1	3/21/i	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)				
		b) By Excavator				
		ii) Ordinary soil	1000Cft	1.26	8,062.80	10,135
		P.C.C				
2	6/5	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and plinth:-				
		(b) Ratio 1: 4: 8	100Cft	3.71	25,065.80	92,994
		Brick Work				
3	7/7/i	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3	100Cft	15.93	35,372.90	563,424
		Pointing				
4	11/18/a	Cement pointing struck joints, on walls, upto 20' (6.00 m) hiehgt:-				
		a) ratio 1:2	100Sft	6.64	3,575.35	23,749
		Concrete Work				
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.):-				
		(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:-				
		(2) Type B (nominal mix 1: 1½: 3)	Cft	219.24	612.05	134,186

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DETAILED COST ESTIMATE

CANAL BRIDGE

Sr No	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
6	1/1 Rate Analysis	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.	Cft	535.76	111.18	59,564
		Steel Work.				
7	6/12/c	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):-				
		Deformed bars (Grade-60)	100kg	10.96	31,808.25	348,682
8	N.S	Making arrangements of canal diversion with sand filled bags inclusive of removal of slush/garbage/silt from flowing canal as per instruction of Engineer Incharge.	Provisional Sum	1.00	2,000,000	2,000,000
		Total Amount (Rs)				**3,232,734**

PUNJAB CITIES PROGRAM (PCP)
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CALCULATION OF QUANTITES

CANAL BRIDGE

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Excavation						
1	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)						
	b) By Excavator						
	ii) Ordinary soil						
	Bridge	2	12.00	8.67	5.00	1,040	Cft
		1	5.00	8.67	5.00	217	Cft
					Total	**1.26**	**%oCft**
2	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and plinth:-						
	(b) Ratio 1: 4: 8						
	Bridge	2	12.00	8.67	1.00	208	Cft
		1	5.00	8.67	1.00	43	Cft
	Flooring	2	12.00	10.00	0.50	120	Cft
					Total	**3.71**	**%Cft**
	Brick Work						
3	Pacca brick work other than building upto 10ft. (3 m) Cement, sand mortar:- Ratio 1:3						
	Abutment						
	Step-14	2	12.00	1.500	4.00	144	Cft
	Step-13	2	12.00	2.625	0.50	32	Cft
	Step-12	2	12.00	3.000	0.50	36	Cft
	Step-11	2	12.00	3.375	0.50	41	Cft
	Step-10	2	12.00	3.750	0.50	45	Cft
	Step-9	2	12.00	4.125	0.50	50	Cft
	Step-8	2	12.00	4.500	0.50	54	Cft
	Step-7	2	12.00	4.875	1.00	117	Cft
	Step-6	2	12.00	5.250	1.00	126	Cft
	Step-5	2	12.00	5.625	1.00	135	Cft
	Step-4	2	12.00	6.000	1.00	144	Cft
	Step-3	2	12.00	6.375	1.00	153	Cft
	Step-2	2	12.00	6.750	1.00	162	Cft
	Step-1	2	12.00	7.500	1.00	180	Cft
	Pier						
	Step-10	1	5.00	1.500	8.00	60	Cft
	Step-9	1	5.00	2.625	1.00	13	Cft
	Step-8	1	5.00	3.000	1.00	15	Cft
	Step-7	1	5.00	3.375	1.00	17	Cft

PUNJAB CITIES PROGRAM (PCP)
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CALCULATION OF QUANTITES

CANAL BRIDGE

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Step-6	1	5.00	3.750	0.50	9	Cft
	Step-5	1	5.00	4.125	0.50	10	Cft
	Step-4	1	5.00	4.500	0.50	11	Cft
	Step-3	1	5.00	4.875	0.50	12	Cft
	Step-2	1	5.00	5.250	0.50	13	Cft
	Step-1	1	5.00	5.625	0.50	14	Cft
					Total	1,593	Cft
					Total	**15.93**	**%Cft**
4	Cement pointing struck joints, on walls, upto 20' (6.00 m) hiehgt:-						
	a) ratio 1:2						
	Abutment						
	Step-14	2	13.50		4.00	108	Sft
	Step-13	2	14.63		0.50	15	Sft
	Step-12	2	15.00		0.50	15	Sft
	Step-11	2	15.38		0.50	15	Sft
	Step-10	2	15.75		0.50	16	Sft
	Step-9	2	16.13		0.50	16	Sft
	Step-8	2	16.50		0.50	17	Sft
	Step-7	2	16.88		1.00	34	Sft
	Step-6	2	17.25		1.00	35	Sft
	Step-5	2	17.63		1.00	35	Sft
	Step-4	2	18.00		1.00	36	Sft
	Step-3	2	18.38		1.00	37	Sft
	Step-2	2	18.75		1.00	38	Sft
	Step-1	2	19.50		1.00	39	Sft
	Pier						
	Step-10	2	6.50		8.00	104	Sft
	Step-9	2	7.63		1.00	15	Sft
	Step-8	2	8.00		1.00	16	Sft
	Step-7	2	8.38		1.00	17	Sft
	Step-6	2	8.75		0.50	9	Sft
	Step-5	2	9.13		0.50	9	Sft
	Step-4	2	9.50		0.50	10	Sft
	Step-3	2	9.88		0.50	10	Sft
	Step-2	2	10.25		0.50	10	Sft
	Step-1	2	10.63		0.50	11	Sft
					Total	664	Sft
					Total	**6.64**	**%Sft**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

CALCULATION OF QUANTITES

CANAL BRIDGE

Sr. No.	Description	No.	Length	Width	Height	Qty.	Unit.
	Concrete Work						
5	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) (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:-						
	(2) Type B (nominal mix 1: 1½: 3)						
	Deck Slab	1	12.00	12.00	1.00	144	Cft
	Bed Plate	2	12.00	1.50	0.75	27	Cft
	Parapet Wall	2	12.00	0.67	3.00	48	Cft
					Total	**219**	**Cft**
	Steel Work.						
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):-						
	Deformed bars (Grade-60)		5 Kg/Cft			1,096	Kg
					Total	**10.96**	**Kg**

ELECTRICAL WORKS

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

ROADS AND CHOWKS WORKS

MC KAMOKE

DETAILED COST ESTIMATE

SUMMARY

Sr. No.	Description	Amount (Rs.)
3	**ELECTRICAL WORKS**	
3.1	ROAD P-01	15,277,392
3.2	ROAD P-02	15,498,843
3.2	ROAD P-03	14,252,641
	Total Amount Rs.	**45,028,877**
	Say Millions	**45.029**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-1)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
		Scheduled Items (A)				
		Excavation				
1	3/21	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)				
		a) By Manual				
		ii) in ordinary soil.	%oCft	12.11	10,712.60	129,730
		RCC Foundation for Poles				
2	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:-				
		(3) Type C (nominal mix 1: 2: 4)	Cft	864.00	456.85	394,718
3	1/1 Rate Analysis	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.	Cft	760.32	111.18	84,530
		Steel Work				
4	6/12/c	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-40)	100Kg	21.60	31,418.50	678,640

PUNJAB CITIES PROGRAM (PCP)
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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-1)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
		G.I Pipe				
5	23/23	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I. pipes of B.S.S. 1387-1967 complete in all respects, with specials and valves.				
		iii) Heavy Quality				
		h) 3" i/d (75 mm) 4.85mm thick	Rft	200.00	1,389.50	277,900
6	24/6	Supply and erection PVC pipe for recessed wiring (main and sub-main) purpose, including bends, specials, etc. in floor, wall or trenches:-				
		i) 50 mm i/d	Rft	4,500.00	188.45	848,025
7	24/12	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaid G.I. pipe / M.S. conduits / PVC pipe / G.I. wire/trenches, etc (rate for cable only):-				
		ii) 6 mm sq (7/0.044")	Rft	720.00	118.20	85,104
8	24/13/c	Supply and erection of copper conductor cables for service connection, in prelaid pipe/G.I. wire / trenches, etc. (rate for cable only):-				
		b) PVC insulated, PVC sheathed 3 core, 660/1100 volt cable:-				
		iii) 7/0.74 mm (7/0.029")	Rft	1,440.00	105.65	152,136
		c) PVC insulated, PVC sheathed 4 core, 660/1100 volt non armoured cable:-				
		vi) 10 mm (7/0.052")	Rft	4,500.00	524.50	2,360,250
		vii) 16 mm (7/0.064")	Rft	100.00	643.55	64,355
9	24/68	Supplying,installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel ,tappered from 225 mm at bottom to 100 mm at top,with 1500 mmx60 mm dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet,with built in junction box with shutter, i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer Incharge.				
		a) Single Arm				
		(i) 10 mtr height	Each	36.00	106,327.30	3,827,783

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-1)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
10	24/69/c	Supplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips/Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled/Cree/Nichia/Osram make or equivalent), programmable LED driver (Harvard/TCI/Lumotech/Philips/VOSSLOH Schwabe/Lightech make or equivalent), minimum 10kV surge protection rating 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	Each	36.00	53,307.60	1,919,074
11	24/86/a	Suppling, Installation and comissioning of MCB (Miniature Circuit Breaker) of specified rating made of LEGRAND FRANCE/ GE U.S.A / SCHNEIDER GERMANY /SIEMEN GERMAN/ TERASAKI JAPAN/ ABB SWITZERLAND in prelaid DBs and Panels i/c the cost of screwes, necessary wire complete in all respect as approved and directed by the Engineer Incharge.				
		Single Pole				
		(i) 1-4 Amp (6KA,10KA)	Each	144.00	484.30	69,739
12	24/77	Supply and erection of electric energy meter, including meter testing fee, etc.				
		b) three phase, 4 wires:				
		ii) 3x50 Amp, 400 volts	Each	1.00	14,693.25	14,693

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-1)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
13	24/105/iii	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating,11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge				
		(iv) 50 KVA	Each	1.00	428,226.55	428,227
14	24/70	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (½") dia, recessed or on surface of wall and floor, complete with 1.5 metre long G.I. pipe, 50 mm (2") dia with reducing socket 4 to 5 metre below ground level, and 2 metre away from building plinth.	Job	39.00	9,635.35	375,779
		Sub Total Scheduled Items: (A)				**11,710,682**
Non Schedule		**Part-B**				
15		Fabrication, Supply, testing and commissioning 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 megnatic 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-3 Phase	No.	1.00	266,710	266,710
16	N.S	Shifting of 19 Nos. Wapda Electric Poles (As per GEPCO DN)	Each			2,850,000
17	N.S	Electric Connection Charges	Each	1.00	450,000	450,000
		Total Cost (Part B)			**Rs.**	**3,566,710**
		Grand Total (Part A + Part B)			**Rs.**	**15,277,392**

PUNJAB CITIES PROGRAM (PCP)
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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-1)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	Scheduled Items (A)						
	Excavation						
1	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)						
	a) By Manual						
	ii) in ordinary soil.						
	For pipe 50mm dia from TR to LCP and LCP to poles	1	4,500	1.00	2.50	11,250	Cft
	Light Poles	36	2.00	2.00	6.00	864	Cft
					Total	12,114	Cft
					Total	**12.11**	**%oCft**
	RCC Foundation for Poles						
2	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:-						
	(3) Type C (nominal mix 1: 2: 4)						
	Light Poles	36	2.00	2.00	6.00	864	Cft
					Total	**864.00**	**Cft**
	Steel Work						
3	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-40)		2.50Kg/Cft			**2,160**	**Kg**
					Total	**21.60**	**Kg**

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-1)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
4	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I. pipes of B.S.S. 1387-1967 complete in all respects, with specials and valves.						
	iii) Heavy Quality						
	h) 3" i/d (75 mm) 4.85mm thick	1	200.00			**200**	**Rft**
5	Supply and erection PVC pipe for recessed wiring (main and sub-main) purpose, including bends, specials, etc. in floor, wall or trenches:-						
	i) 50 mm i/d						
	From LCP to Pole and pole to pole (Up + Down)	36	125.00			**4,500**	**Rft**
6	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaid G.I. pipe / M.S. conduits / PVC pipe / G.I. wire/trenches, etc (rate for cable only):-						
	ii) 6 mm sq (7/0.044")						
	For two nos. Earthing lead	36	20.00			**720**	**Rft**
7	Supply and erection of copper conductor cables for service connection, in prelaid pipe/G.I. wire / trenches, etc. (rate for cable only):-						
	b) PVC insulated, PVC sheathed 3 core, 660/1100 volt cable:-						
	iii) 7/0.74 mm (7/0.029")	36	40.00			**1,440**	**Rft**
	c) PVC insulated, PVC sheathed 4 core, 660/1100 volt non armoured cable:-						
	vi) 10 mm (7/0.052")	36	125.00			**4,500**	**Rft**
	vii) 16 mm (7/0.064")	1	100.00			**100**	**Rft**
8	Supplying,installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel ,tappered from 225 mm at bottom to 100 mm at top,with 1500 mmx60 mm dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet,with built in junction box with shutter, i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer Incharge.						
	a) Single Arm						

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-1)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	(i) 10 mtr height	36				**36**	**Nos**
9	Supplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips/Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled/Cree/Nichia/Osram make or equivalent), programmable LED driver (Harvard/TCI/Lumotech/Philips/VOSSLOH Schwabe/Lightech make or equivalent), minimum 10kV surge protection rating 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	36				**36**	**Nos**
10	Suppling, Installation and comissioning of MCB (Miniature Circuit Breaker) of specified rating made of LEGRAND FRANCE/ GE U.S.A / SCHNEIDER GERMANY /SIEMEN GERMAN/ TERASAKI JAPAN/ ABB SWITZERLAND in prelaid DBs and Panels i/c the cost of screwes, necessary wire complete in all respect as approved and directed by the Engineer Incharge.						
	Single Pole						
	(i) 1-4 Amp (6KA,10KA)	144				**144**	**Nos**
11	Supply and erection of electric energy meter, including meter testing fee, etc.						
	b) three phase, 4 wires:						
	ii) 3x50 Amp, 400 volts	1				**1.00**	**Nos**

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-1)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
12	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating,11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge						
	(iv) 50 KVA	1				**1.00**	**Nos.**
13	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (½") dia, recessed or on surface of wall and floor, complete with 1.5 metre long G.I. pipe, 50 mm (2") dia with reducing socket 4 to 5 metre below ground level, and 2 metre away from building plinth.	39				**39.00**	**No.**
14	Fabrication, Supply, testing and commissioning 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 megnatic 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.						
	LCP-3 Phase	1				**1.00**	**Nos.**
15	Shifting of 19 Nos. Wapda Electric Poles (As per GEPCO DN)	19				**19.00**	**Each**
16	Electric Connection Charges	1				**1.00**	**Each**

PUNJAB CITIES PROGRAM (PCP)
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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-2)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
		Scheduled Items (A)				
		Excavation				
1	3/21	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)				
		a) By Manual				
		ii) in ordinary soil.	%oCft	10.77	10,712.60	115,375
		RCC Foundation for Poles				
2	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:-				
		(3) Type C (nominal mix 1: 2: 4)	Cft	768.00	456.85	350,861
3	1/1 Rate Analysis	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.	Cft	675.84	111.18	75,138
		Steel Work				
4	6/12/c	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-40)	100Kg	19.20	31,418.50	603,235

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-2)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
		G.I Pipe				
5	23/23	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I. pipes of B.S.S. 1387-1967 complete in all respects, with specials and valves.				
		iii) Heavy Quality				
		h) 3" i/d (75 mm) 4.85mm thick	Rft	200.00	1,389.50	277,900
6	24/6	Supply and erection PVC pipe for recessed wiring (main and sub-main) purpose, including bends, specials, etc. in floor, wall or trenches:-				
		i) 50 mm i/d	Rft	4,000.00	188.45	753,800
7	24/12	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaid G.I. pipe/M.S. conduits/PVC pipe/G.I. wire/trenches, etc (rate for cable only):-				
		ii) 6 mm sq (7/0.044")	Rft	640.00	118.20	75,648
8	24/13/c	Supply and erection of copper conductor cables for service connection, in prelaid pipe /G.I. wire / trenches, etc. (rate for cable only):-				
		b) PVC insulated, PVC sheathed 3 core, 660/1100 volt cable:-				
		iii) 7/0.74 mm (7/0.029")	Rft	1,280.00	105.65	135,232
		c) PVC insulated, PVC sheathed 4 core, 660/1100 volt non armoured cable:-				
		vi) 10 mm (7/0.052")	Rft	4,000.00	524.50	2,098,000
		vii) 16 mm (7/0.064")	Rft	100.00	643.55	64,355
9	24/68	Supplying,installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel ,tappered from 225 mm at bottom to 100 mm at top,with 1500 mmx60 mm dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet,with built in junction box with shutter,i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer Incharge.				
		a) Single Arm				
		(i) 10 mtr height	Each	32.00	106,327.30	3,402,474

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-2)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
10	24/69/c	upplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips/Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled/Cree/Nichia/Osram make or equivalent), programmable LED driver (Harvard/TCI /Lumotech/Philips/VOSSLOH Schwabe/Lightech make or equivalent), minimum 10kV surge protection rating 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	Each	32.00	53,307.60	1,705,843
11	24/86/a	Suppling, Installation and comissioning of MCB (Miniature Circuit Breaker) of specified rating made of LEGRAND FRANCE/ GE U.S.A / SCHNEIDER GERMANY /SIEMEN GERMAN/ TERASAKI JAPAN/ ABB SWITZERLAND in prelaid DBs and Panels i/c the cost of screwes, necessary wire complete in all respect as approved and directed by the Engineer Incharge.				
		Single Pole				
		(i) 1-4 Amp (6KA,10KA)	Each	128.00	484.30	61,990
12	24/77	Supply and erection of electric energy meter, including meter testing fee, etc.				
		b) three phase, 4 wires:				
		ii) 3x50 Amp, 400 volts	Each	1.00	14,693.25	14,693

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-2)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
13	24/105/iii	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating,11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge				
		(iii) 25 KVA	Each	1.00	329,622.55	329,623

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-2)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
14	24/70	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (½") dia, recessed or on surface of wall and floor, complete with 1.5 metre long G.I. pipe, 50 mm (2") dia with reducing socket 4 to 5 metre below ground level, and 2 metre away from building plinth.	Job	33.00	9,635.35	317,967
		Sub Total Scheduled Items: (A)				**10,382,133**
Non Schedule		**Part-B**				
15		Fabrication, Supply, testing and commissioning 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 megnatic 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-3 Phase	No.	1.00	266,710	266,710
16	N.S	Shifting of 30 Nos. Wapda Electric Poles (As per GEPCO DN)	Each			4,500,000
17	N.S	Electric Connection Charges	Each	1.00	350,000	350,000
		Total Cost (Part B)			**Rs.**	**5,116,710**
		Grand Total (Part A + Part B)			**Rs.**	**15,498,843**

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-2)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	Scheduled Items (A)						
	Excavation						
1	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)						
	a) By Manual						
	ii) in ordinary soil.						
	For pipe 50mm dia from TR to LCP and LCP to poles	1	4,000	1.00	2.50	10,000	Cft
	Light Poles	32	2.00	2.00	6.00	768	Cft
					Total	10,768	Cft
					Total	**10.77**	**%oCft**
	RCC Foundation for Poles						
2	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:-						
	(3) Type C (nominal mix 1: 2: 4)						
	Light Poles	32	2.00	2.00	6.00	768	Cft
					Total	**768.00**	**Cft**
	Steel Work						
3	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-40)		2.50Kg/Cft			**1,920**	**Kg**
					Total	**19.20**	**Kg**

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-2)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	G.I Pipe						
4	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I. pipes of B.S.S. 1387-1967 complete in all respects, with specials and valves.						
	iii) Heavy Quality						
	h) 3" i/d (75 mm) 4.85mm thick	1	200.00			**200**	**Rft**
5	Supply and erection PVC pipe for recessed wiring (main and sub-main) purpose, including bends, specials, etc. in floor, wall or trenches:-						
	i) 50 mm i/d						
	From LCP to Pole and pole to pole (Up + Down)	32	125.00			**4,000**	**Rft**
6	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaid G.I. pipe/M.S. conduits/PVC pipe/G.I. wire/trenches, etc (rate for cable only):-						
	ii) 6 mm sq (7/0.044")						
	For two nos. Earthing lead	32	20.00			**640**	**Rft**
7	Supply and erection of copper conductor cables for service connection, in prelaid pipe /G.I. wire / trenches, etc. (rate for cable only):-						
	b) PVC insulated, PVC sheathed 3 core, 660/1100 volt cable:-						
	iii) 7/0.74 mm (7/0.029")	32	40.00			**1,280**	**Rft**
	c) PVC insulated, PVC sheathed 4 core, 660/1100 volt non armoured cable:-						
	vi) 10 mm (7/0.052")	32	125.00			**4,000**	**Rft**
	vii) 16 mm (7/0.064")	1	100.00			**100**	**Rft**
8	Supplying,installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel ,tappered from 225 mm at bottom to 100 mm at top,with 1500 mmx60 mm dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet,with built in junction box with shutter,i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer Incharge.						
	a) Single Arm						

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-2)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	(i) 10 mtr height	32				**32**	**Nos**
9	upplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips/Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled/Cree/Nichia/Osram make or equivalent), programmable LED driver (Harvard/TCI /Lumotech/Philips/VOSSLOH Schwabe/Lightech make or equivalent), minimum 10kV surge protection rating 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	32				**32**	**Nos**
10	Suppling, Installation and comissioning of MCB (Miniature Circuit Breaker) of specified rating made of LEGRAND FRANCE/ GE U.S.A / SCHNEIDER GERMANY /SIEMEN GERMAN/ TERASAKI JAPAN/ ABB SWITZERLAND in prelaid DBs and Panels i/c the cost of screwes, necessary wire complete in all respect as approved and directed by the Engineer Incharge.						
	Single Pole						
	(i) 1-4 Amp (6KA,10KA)	128				**128**	**Nos**
11	Supply and erection of electric energy meter, including meter testing fee, etc.						
	b) three phase, 4 wires:						
	ii) 3x50 Amp, 400 volts	1				**1.00**	**Nos**

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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-2)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
12	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating,11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge						
	(iii) 25 KVA	1				**1.00**	**Nos.**
13	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (½") dia, recessed or on surface of wall and floor, complete with 1.5 metre long G.I. pipe, 50 mm (2") dia with reducing socket 4 to 5 metre below ground level, and 2 metre away from building plinth.	33				**33.00**	**No.**
14	Fabrication, Supply, testing and commissioning 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 megnatic 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.						
	LCP-3 Phase	1				**1.00**	**Nos.**
15	Shifting of 30 Nos. Wapda Electric Poles (As per GEPCO DN)	30				**30.00**	**Each**
16	Electric Connection Charges	1				**1.00**	**Each**

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-3)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
		Scheduled Items (A)				
		Excavation				
1	3/21	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)				
		a) By Manual				
		ii) in ordinary soil.	%oCft	9.09	10,712.60	97,378
		RCC Foundation for Poles				
2	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:-				
		(3) Type C (nominal mix 1: 2: 4)	Cft	648.00	456.85	296,039
3	1/1 Rate Analysis	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.	Cft	570.24	111.18	63,398
		Steel Work				
4	6/12/c	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-40)	100Kg	16.20	31,418.50	508,980

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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-3)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
		G.I Pipe				
5	23/23	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I. pipes of B.S.S. 1387-1967 complete in all respects, with specials and valves.				
		iii) Heavy Quality				
		h) 3" i/d (75 mm) 4.85mm thick	Rft	200.00	1,389.50	277,900
6	24/6	Supply and erection PVC pipe for recessed wiring (main and sub-main) purpose, including bends, specials, etc. in floor, wall or trenches:-				
		i) 50 mm i/d	Rft	3,375.00	188.45	636,019
7	24/12	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaid G.I. pipe / M.S. conduits / PVC pipe / G.I. wire / trenches, etc (rate for cable only):-				
		ii) 6 mm sq (7/0.044")	Rft	540.00	118.20	63,828
8	24/13/c	Supply and erection of copper conductor cables for service connection, in prelaid pipe /G.I. wire / trenches, etc. (rate for cable only):-				
		b) PVC insulated, PVC sheathed 3 core, 660/1100 volt cable:-				
		iii) 7/0.74 mm (7/0.029")	Rft	1,080.00	105.65	114,102
		c) PVC insulated, PVC sheathed 4 core, 660/1100 volt non armoured cable:-				
		vi) 10 mm (7/0.052")	Rft	3,375.00	524.50	1,770,188
		vii) 16 mm (7/0.064")	Rft	100.00	643.55	64,355
9	24/68	Supplying,installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel ,tappered from 225 mm at bottom to 100 mm at top,with 1500 mmx60 mm dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet,with built in junction box with shutter, i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer Incharge.				
		a) Single Arm				
		(i) 10 mtr height	Each	27.00	106,327.30	2,870,837

PUNJAB CITIES PROGRAM (PCP)
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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-3)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
10	24/69/c	Supplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips /Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled /Cree/ Nichia/ Osram make or equivalent), programmable LED driver (Harvard/ TCI/ Lumotech /Philips/ VOSSLOH Schwabe /Lightech make or equivalent), minimum 10kV surge protection rating 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	Each	27.00	53,307.60	1,439,305
11	24/86/a	Suppling, Installation and comissioning of MCB (Miniature Circuit Breaker) of specified rating made of LEGRAND FRANCE/ GE U.S.A / SCHNEIDER GERMANY /SIEMEN GERMAN/ TERASAKI JAPAN/ ABB SWITZERLAND in prelaid DBs and Panels i/c the cost of screwes, necessary wire complete in all respect as approved and directed by the Engineer Incharge.				
		Single Pole				
		(i) 1-4 Amp (6KA,10KA)	Each	108.00	484.30	52,304
12	24/77	Supply and erection of electric energy meter, including meter testing fee, etc.				
		b) three phase, 4 wires:				
		ii) 3x50 Amp, 400 volts	Each	1.00	14,693.25	14,693

PUNJAB CITIES PROGRAM (PCP)
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DETAILED COST ESTIMATE

ELECTRICAL WORKS (P-3)

Sr. No.	MRS 2nd, 2022	Description	Unit.	Quantity	Rate (Rs.)	Amount (Rs.)
13	24/105/iii	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating, 11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge				
		(iv) 50 KVA	Each	1.00	428,226.55	428,227
14	24/70	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (½") dia, recessed or on surface of wall and floor, complete with 1.5 metre long G.I. pipe, 50 mm (2") dia with reducing socket 4 to 5 metre below ground level, and 2 metre away from building plinth.	Job	27.00	9,635.35	260,154
		Sub Total Scheduled Items: (A)				**8,957,706**
Non Schedule		**Part-B**				
15		Fabrication, Supply, testing and commissioning 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 megnatic 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-3 Phase	No.	1.00	344,935	344,935
16	N.S	Shifting of 30 Nos. Wapda Electric Poles (As per GEPCO DN)	Each			4,500,000
17	N.S	Electric Connection Charges	Each	1.00	450,000	450,000
		Total Cost (Part B)			**Rs.**	**5,294,935**
		Grand Total (Part A + Part B)			**Rs.**	**14,252,641**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-3)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	Scheduled Items (A)						
	Excavation						
1	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m)						
	a) By Manual						
	ii) in ordinary soil.						
	For pipe 50mm dia from TR to LCP and LCP to poles	1	3,375	1.00	2.50	8,438	Cft
	Light Poles	27	2.00	2.00	6.00	648	Cft
					Total	9,086	Cft
					Total	**9.09**	**%oCft**
	RCC Foundation for Poles						
2	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:-						
	(3) Type C (nominal mix 1: 2: 4)						
	Light Poles	27	2.00	2.00	6.00	648	Cft
					Total	**648**	**Cft**
	Steel Work						
3	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-40)		2.50Kg/Cft			**1,620**	**Kg**
					Total	**16.20**	**Kg**

PUNJAB CITIES PROGRAM (PCP)
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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-3)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
	G.I Pipe						
4	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I. pipes of B.S.S. 1387-1967 complete in all respects, with specials and valves.						
	iii) Heavy Quality						
	h) 3" i/d (75 mm) 4.85mm thick	1	200.00			**200**	**Rft**
5	Supply and erection PVC pipe for recessed wiring (main and sub-main) purpose, including bends, specials, etc. in floor, wall or trenches:-						
	i) 50 mm i/d						
	From LCP to Pole and pole to pole (Up + Down)	27	125.00			**3,375**	**Rft**
6	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaid G.I. pipe / M.S. conduits / PVC pipe / G.I. wire / trenches, etc (rate for cable only):-						
	ii) 6 mm sq (7/0.044")						
	For two nos. Earthing lead	27	20.00			**540**	**Rft**
7	Supply and erection of copper conductor cables for service connection, in prelaid pipe /G.I. wire / trenches, etc. (rate for cable only):-						
	b) PVC insulated, PVC sheathed 3 core, 660/1100 volt cable:-						
	iii) 7/0.74 mm (7/0.029")	27	40.00			**1,080**	**Rft**
	c) PVC insulated, PVC sheathed 4 core, 660/1100 volt non armoured cable:-						
	vi) 10 mm (7/0.052")	27	125.00			**3,375**	**Rft**
	vii) 16 mm (7/0.064")	1	100.00			**100**	**Rft**
8	Supplying,installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel ,tappered from 225 mm at bottom to 100 mm at top,with 1500 mmx60 mm dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet,with built in junction box with shutter, i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer Incharge.						
	a) Single Arm						
	(i) 10 mtr height	27				**27**	**Nos**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-3)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
9	Supplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips /Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled /Cree/ Nichia/ Osram make or equivalent), programmable LED driver (Harvard/ TCI/ Lumotech /Philips/ VOSSLOH Schwabe /Lightech make or equivalent), minimum 10kV surge protection rating 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	27				**27**	**Nos**
10	Suppling, Installation and comissioning of MCB (Miniature Circuit Breaker) of specified rating made of LEGRAND FRANCE/ GE U.S.A / SCHNEIDER GERMANY /SIEMEN GERMAN/ TERASAKI JAPAN/ ABB SWITZERLAND in prelaid DBs and Panels i/c the cost of screwes, necessary wire complete in all respect as approved and directed by the Engineer Incharge.						
	Single Pole						
	(i) 1-4 Amp (6KA,10KA)	108				**108**	**Nos**
11	Supply and erection of electric energy meter, including meter testing fee, etc.						
	b) three phase, 4 wires:						
	ii) 3x50 Amp, 400 volts	1				**1**	**Nos**

PUNJAB CITIES PROGRAM (PCP)
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CALCULATION OF QUANTITES

ELECTRICAL WORKS (P-3)

Sr. No.	Description	Nos	Length	Width	Height	Qty.	Unit
12	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating, 11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge						
	(iv) 50 KVA	1				**1.00**	**Nos.**
13	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (½") dia, recessed or on surface of wall and floor, complete with 1.5 metre long G.I. pipe, 50 mm (2") dia with reducing socket 4 to 5 metre below ground level, and 2 metre away from building plinth.	27				**27.00**	**No.**
14	Fabrication, Supply, testing and commissioning 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 megnatic 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.						
	LCP-3 Phase	1				**1.00**	**Nos.**
15	Shifting of 30 Nos. Wapda Electric Poles (As per GEPCO DN)	30				**30.00**	**Each**
16	Electric Connection Charges	1				**1.00**	**Each**

ENVIRONMENTAL MITIGATION COST

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

DETAILED COST ESTIMATE

ENVIRONMENTAL MITIGATION COST

Sr No	Description	Unit	Quantity	Unit Rate (Rs.)	Amount Rs.
	Labor Safety				
1	Face Masks (3 PLY)	Nos	20.00	700.00	14,000
2	Safety Gum Shoes	Nos	20.00	1,350.00	27,000
3	Hand Gloves	Nos	20.00	245.00	4,900
4	First Aid Box (Including essential Medicine)	Nos	4.00	5,000.00	20,000
5	Safety Hard Helmets MSA	Nos	20.00	2,000.00	40,000
6	Safety Goggles	Nos	20.00	550.00	11,000
7	Reflective Safety Vests	Nos	20.00	550.00	11,000
8	Infrared Thermometer (Benetech GM-2200 OR equivalent)	Nos	1.00	45,000.00	45,000
				Sub Total	**172,900**
	Working Site Safety				
1	Reflective Safety Signs Boards	Nos	8.00	10,000.00	80,000
2	Reflective Safety PVC Cones (18 inch)	Nos	20.00	1,200.00	24,000
3	Road Guiding Portable Delineators with Chain	Nos	20.00	1,500.00	30,000
4	Reflective Safety Barricading Tape	Nos	20.00	1,500.00	30,000
5	Emergency Portable Light	Nos	1.00	5,000.00	5,000
6	Solid Waste Collection Drums	Nos	1.00	5,000.00	5,000
7	Fire Extinguishers DCP	Nos	2.00	7,000.00	14,000
				Sub Total	**188,000**
	Others				
1	Pole Hanging Waste Bins	Nos.	2.00	10,000	20,000
2	Water Sprinkling (Dust Abatement)	L.S	1.00	100,000	100,000
3	Environmental Analytical Assessments (Ambient Air Quality Testing, Noise Testing, Vehicular Emissions Testing/Generators, Surface Water & Ground Water Testing)	L.S	1.00	250,000	250,000
4	Hiring of Environmentalist (03 Months Budget)	L.S	1.00	250,000	250,000
5	Labor Campsite Management	L.S	1.00	200,000	200,000
				Sub Total	**820,000**
	Total Amount (Rs)				**1,180,900**

RATE ANALYSIS

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

EARTH WORK LEAD CHART

Rate Analysis Road- 1

Sr. No.	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Lead	Unit.	Qty	Rate (Rs)	Amount (Rs)
1	3/5/i	Earthowrk in ordinary soil for embankments lead upto 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.	1	1000Cft	1	9,552.55	9,552.55
2	3/17a.b.c	**Carriage**					
		upto ¼ mile (400 m).	1	1000 Cft	1	4,341.40	4,341.40
		for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.)	12	1000 Cft	1	40.25	483.00
		for every ¼ mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).	8.5	1000 Cft	1	338.75	2,879.38
		for every ½ mile (800 m) additional lead or part thereof, beyond 5 miles (8 Km).	0	1000 Cft	1	320.70	-
		Total Amount 1,000 (Rs.).					**17,256.33**
		Total Amount Per Cft					**17.26**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road- 2

Description

Providing and 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. (Pit run or bed run gravel from sargodha querry to site, actual compacted depth shall be considered for payment)

Crush Stone **185 KM**

Sr. No.	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Lead (Km)	Qty	Rate (Rs)	Amount (Rs)
1		**Material**					
	18-3 a(i)	Pit run or bed run gravel.	100 Cft	1	1	7,545.00	7,545.00
2		**Carriage**					
		1st KM	100 Cft	1	1.2	299.80	359.76
		2nd KM	100 Cft	1	1.2	145.45	174.54
		3rd KM	100 Cft	1	1.2	117.00	140.40
		4th KM	100 Cft	1	1.2	85.40	102.48
	1/1	5th KM	100 Cft	1	1.2	80.25	96.30
		6th KM	100 Cft	1	1.2	79.10	94.92
		7th KM	100 Cft	1	1.2	74.30	89.16
		8th KM	100 Cft	1	1.2	73.60	88.32
		9th KM	100 Cft	1	1.2	69.60	83.52
		10th KM	100 Cft	1	1.2	65.75	78.90
		From 11 km to 200 km	100 Cft	175.00	1.2	57.30	12,033.00
		Total.					**20,886.30**
		Total Amount per 100 Cft					**20,886.30**
		Total Cost for Per Cft					**208.86**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 3

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 querry to site, actual compacted depth shall be considered for payment)

185 KM

Sr. No.	2nd BI-Annual-2022 (July to Dec) Gujranwala	Description	Unit	Lead (Km)	Qty	Rate (Rs)	Amount (Rs.)
1	18/4(a)	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 querry to site, actual compacted depth shall be considered for payment)	100 Cft		1	14,122.50	14,122.50
2		Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the contratcor.					
	1/1	1st KM	100 Cft	1	1.22	299.80	365.76
		2nd KM	100 Cft	1	1.22	145.45	177.45
		3rd KM	100 Cft	1	1.22	117.00	142.74
		4th KM	100 Cft	1	1.22	85.40	104.19
		5th KM	100 Cft	1	1.22	80.25	97.91
		6th KM	100 Cft	1	1.22	79.10	96.50
		7th KM	100 Cft	1	1.22	74.30	90.65
		8th KM	100 Cft	1	1.22	73.60	89.79
		9th KM	100 Cft	1	1.22	69.60	84.91
		10th KM	100 Cft	1	1.22	65.75	80.22
		From 11 km to 200 km	100 Cft	175	1.22	57.30	12,233.55
		Total.					**27,686.16**
		Total Amount per 100 Cft					**27,686.16**
		Total Cost for Per Cft					**276.86**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 4

Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick)
(iii) 4% Bitumen

							185 Km
Sr. No.	**2nd BI-Annual-2022 (July to Dec) Gujranwala**	**Description**	**Unit**	**Lead (Km)**	**Qty**	**Rate (Rs)**	**Amount (Rs.)**
1	18/10/a	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iii) 4% Bitumen	Per inch thickness per 100Sft.		1.00	14,211.20	14,211.20
2	1/1	Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the contratcor.					
		1st KM	100 Cft	1	0.1243	299.80	37.27
		2nd KM	100 Cft	1	0.1243	145.45	18.08
		3rd KM	100 Cft	1	0.1243	117.00	14.54
		4th KM	100 Cft	1	0.1243	85.40	10.62
		5th KM	100 Cft	1	0.1243	80.25	9.98
		6th KM	100 Cft	1	0.1243	79.10	9.83
		7th KM	100 Cft	1	0.1243	74.30	9.24
		8th KM	100 Cft	1	0.1243	73.60	9.15
		9th KM	100 Cft	1	0.1243	69.60	8.65
		10th KM	100 Cft	1	0.1243	65.75	8.17
		From 11 km to 200 km	100 Cft	175	0.1243	57.30	1,246.42
		Total.					**15,593.14**
		Total Amount per 100 Sft					**15,593.14**
		Total Cost for Per Sft					**155.93**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 5

Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick)
(iii) 4.50% Bitumen

							185 Km
Sr. No.	**2nd BI-Annual-2022 (July to Dec) Gujranwala**	**Description**	**Unit**	**Lead (Km)**	**Qty**	**Rate (Rs)**	**Amount (Rs.)**
1	18/10/a	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iii) 4.50% Bitumen	Per inch thickness per 100Sft.		1.00	15,187.40	15,187.40
2	1/1	Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the contratcor.					
		1st KM	100 Cft	1	0.1243	299.80	37.27
		2nd KM	100 Cft	1	0.1243	145.45	18.08
		3rd KM	100 Cft	1	0.1243	117.00	14.54
		4th KM	100 Cft	1	0.1243	85.40	10.62
		5th KM	100 Cft	1	0.1243	80.25	9.98
		6th KM	100 Cft	1	0.1243	79.10	9.83
		7th KM	100 Cft	1	0.1243	74.30	9.24
		8th KM	100 Cft	1	0.1243	73.60	9.15
		9th KM	100 Cft	1	0.1243	69.60	8.65
		10th KM	100 Cft	1	0.1243	65.75	8.17
		From 11 km to 200 km	100 Cft	175	0.1243	57.30	1,246.42
		Total.					**16,569.34**
		Total Amount per 100 Sft					**16,569.34**
		Total Cost for Per Sft					**165.69**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 6

Ploughing and Compaction of Existing road surface upto 6" depth i/c dressing, leveling, supplying and spreading of stone screening (Khaka) and compaction to achieve to 100% maximum ASSHO dry density complete in all respects.

MRS 2nd Bi-Annual July 2022 to Dec 2022

Taking = 100CFT		**Unit rate =Per 100 CFT**			
Sr. No.	**Details**	**Qty**	**Unit**	**Rate (Rs)**	**Amount (Rs)**
A	**Material**				
1	Ploughing with tractor up to 6" depth for 100 Cft (Input Rate EQ-18)	1	P.Hour	1,608.00	1,608.00
2	Cost of Stone Screening (Khaka) at quarry for 100 Cft = (Input Rate 18.005)	17	%CFT	4,665.00	793.05
3	Labour charges for spreading of Khaka dressing and levelling etc skilled 2 No's for 1.5 Hours (Input Rate lb-024)		P.Day	1,300.00	487.50
4	Compaction of existing road surface with 12 to roller and watering etc. for 100Cft (Input Rate EQ-05)	0.75	P.Hour	3,660.00	2,745.00
				Total	**5,633.55**
				Add 20% Contractor Profit on Item No.2	158.61
				Composite Rate Per 100Cft	**5,792.16**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 7

Description

Providing and fixing RPC Manhole Cover Manufactured with 100% Reinforced Plastic Composite Material, 650 mm dia with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (Complete)(Certified under ISO 9001-2015)

Manhole Cover **Unit.** **Each**

Sr. No.	Ref Input Rate	Detail	Unit Rate (British System) per Each			
			Qty		Rate Per Unit	Amount (Rs.)
	Page No111					
1	A	RPC Manhole Cover	1.00	No	7000 No	7,000
		Carriage				700
					Total	7,700.00
		LABOUR				
2	LB-024	Skilled Cooly	0.50	Nos.	1,300.00 per day	650.00
					Total.	**650.00**
		Sundries 10 %				65.00
					Total Rs.	**715.00**
					Total (1+2)	**8,415.00**
		Contractor's Profit 20 %				1,683.00
		Total				**10,098**
		ITEM RATES				
		Composite rate Set			Rs.	**10,098**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 8

Description

Fabrication, Supply, testing and commissioning 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 megnatic 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.

LCP **Unit.** **Each**

Sr. No.	Ref Input Rate	Detail	Unit Rate (British System) per Each						
					Qty		Rate Per Unit		Amount (Rs.)
1	MR	LCP			1.00	No	202,053	No.	202,053.15
2									
								Total	**202,053.15**
		Contractor's Profit	20	%					40,411
		Total							**242,464**
		ITEM RATES							
		Composite rate Set						Rs.	**242,464**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 9

Description

Fabrication, Supply, testing and commissioning 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 megnatic 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.

LCP **Unit.** **Each**

Sr. No.	Ref Input Rate	Detail	Unit Rate (British System) per Each						
					Qty		Rate Per Unit		Amount (Rs.)
1	MR	LCP			1.00	No	261,314	No.	261,314.24
2									
								Total	**261,314.24**
		Contractor's Profit	20	%					52,262.85
		Total							**313,577**
		ITEM RATES							
		Composite rate Set						Rs.	**313,577**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 10

Description

Fabrication, Supply, testing and commissioning 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 megnatic 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.

LCP **Unit.** **Each**

Sr. No.	Ref Input Rate	Detail	Unit Rate (British System) per Each			
			Qty		Rate Per Unit	Amount (Rs.)
1	MR	LCP	1.00	No	283,890	283,890
2						
					Total	**283,890**
		Contractor's Profit	20	%		56,778
		Total				**340,668**
		ITEM RATES				
		Composite rate Set			Rs.	**340,668**

PUNJAB CITIES PROGRAM (PCP)
DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECTS AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB

Rate Analysis Road - 11

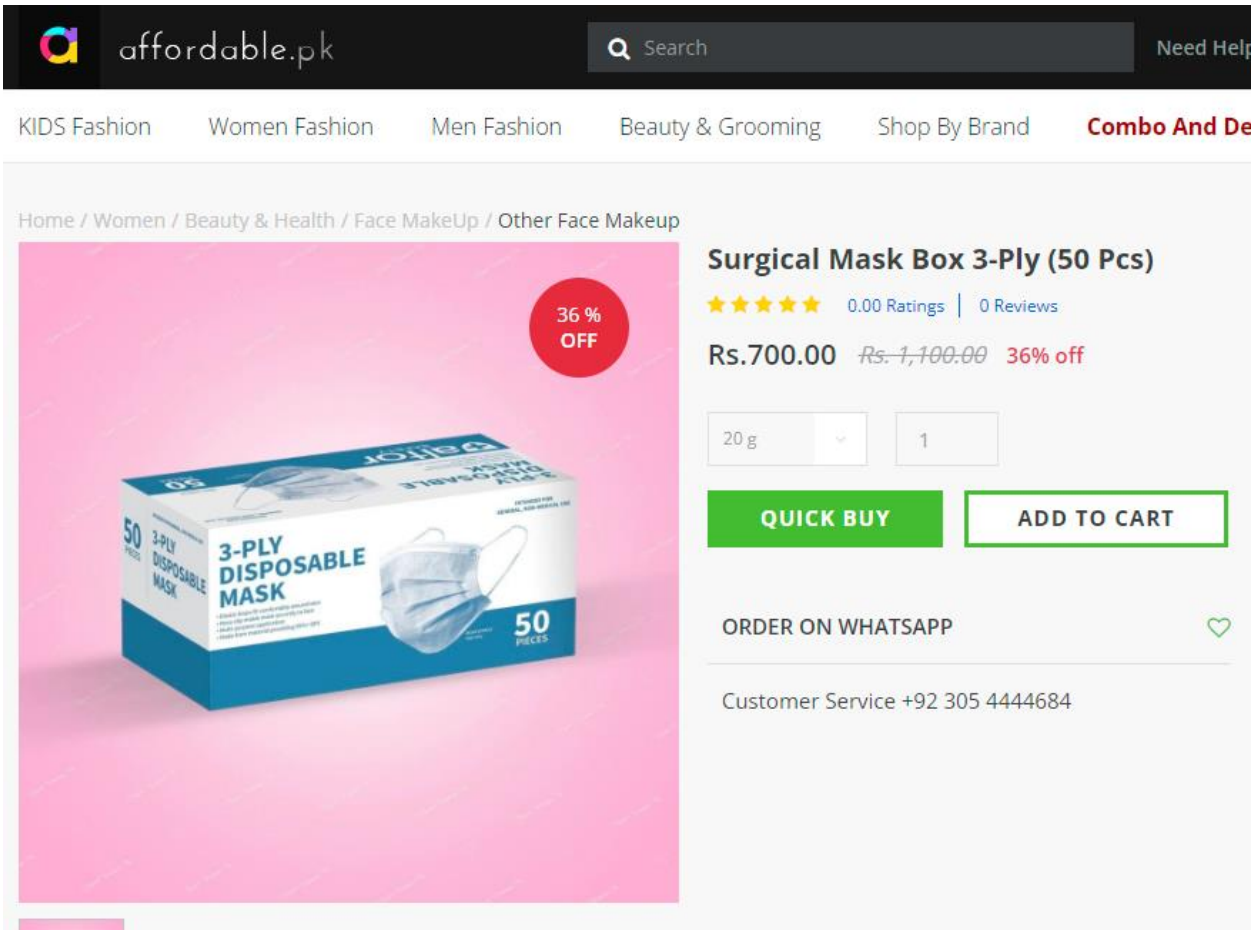
Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.

			100 Cft		**2.83**	**Cu.m**
						185 Km

Sr. No.	**2nd BI-Annual-2022 (July to Dec) Gujranwala**	**Description**	**Unit**	**Lead (Km)**	**Rate (Rs)**	**Amount (Rs.)**
1	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.				
		1st KM	100 Cft	1	299.80	299.80
		2nd KM	100 Cft	1	145.45	145.45
		3rd KM	100 Cft	1	117.00	117.00
		4th KM	100 Cft	1	85.40	85.40
		5th KM	100 Cft	1	80.25	80.25
		6th KM	100 Cft	1	79.10	79.10
		7th KM	100 Cft	1	74.30	74.30
		8th KM	100 Cft	1	73.60	73.60
		9th KM	100 Cft	1	69.60	69.60
		10th KM	100 Cft	1	65.75	65.75
		11th KM to 200 KM	100 Cft	175	57.30	10,027.50
		201 KM to 250 KM				
		251 KM & Susequent Kms				
		Total KM		**185**		
		Total Amount per 100 Cft				**11,117.75**
		Total Cost for Per Cft				**111.18**

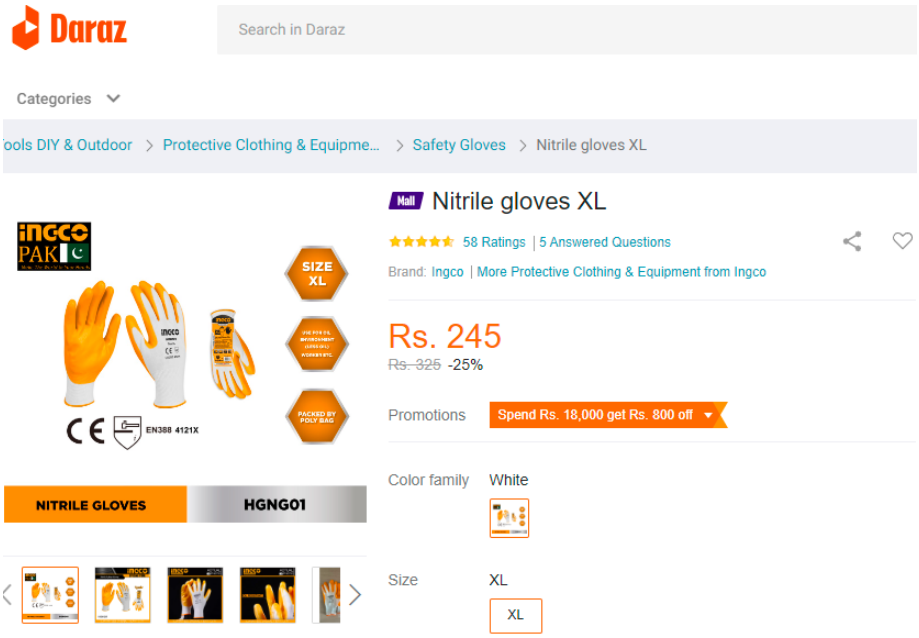
Cost for PPEs from different Sources

1. **Face Masks (3PLY)**

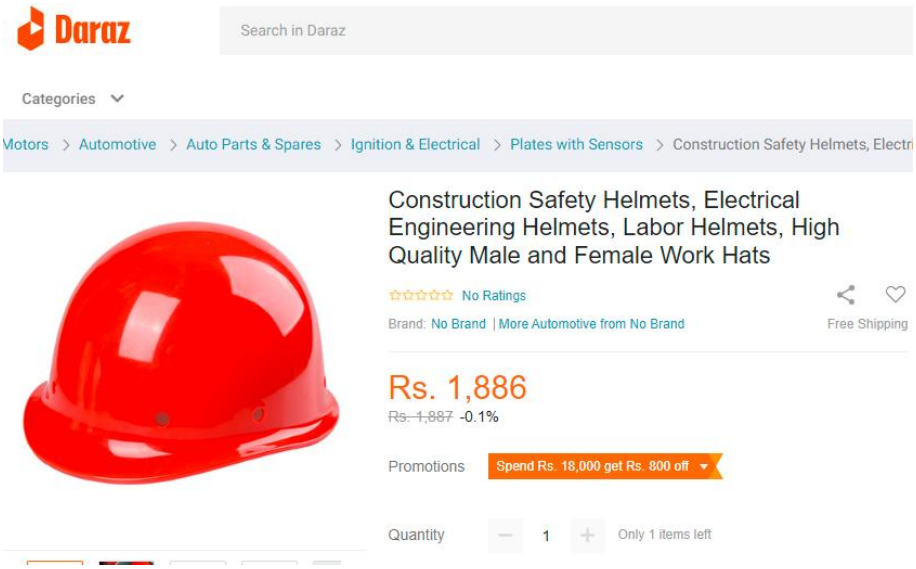


2. **Safety Gum Shoes**

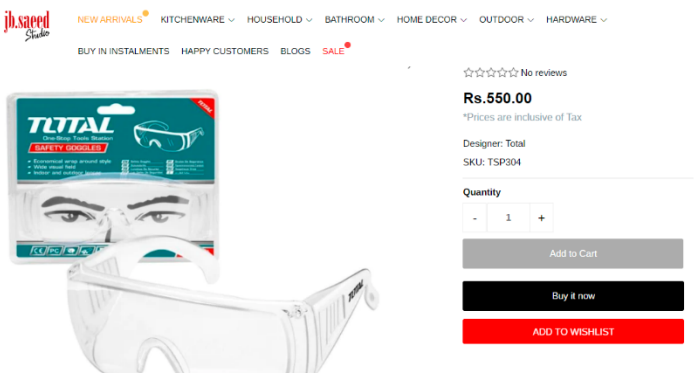
3. Hand Gloves



4. Safety Hard helmets



5. Safety Goggles



Product Specification:

- Conforms to ANSI Z87.1 and CE EN166
- Full-view full-slice structure prevents UV and withstands impact
- Fit to wearing the corrective glasses, also can be used as visitors glasses
- Can defend against splash particles in the round
- Packed by double blister

6. Reflective Safety Vest

PRESCOTT PSBV101 LARGE REFLECTION VEST

PRODUCT VIEWS: 658
- STOCK AVAILABILITY: In Stock
- MODEL: BEHR-2587

PRESCOTT

Rs540/-

1 ADD TO CART INQUIRY

ADD TO WISH LIST COMPARE THIS PRODUCT

Based on 1 reviews. Write a review

7. Infrared Thermometer

BENETECH GM-2200 INFRARED THERMOMETER

PRODUCT VIEWS: 904
- STOCK AVAILABILITY: In Stock
- MODEL: CPCB-10216

BENETECH

Rs40,000/-

1 ADD TO CART INQUIRY

ADD TO WISH LIST COMPARE THIS PRODUCT

Based on 1 reviews. Write a review

8. Fire Extinguishers

DCP FIRE EXTINGUISHERS, FIRE EXTINGUISHERS, FIRE FIG...
DCP Fire Extinguisher 12 Kg China
Rs4,200.00

DCP FIRE EXTINGUISHERS, FIRE EXTINGUISHERS, FIRE FIG...
DCP Fire Extinguisher 6 kg NAFFCO
Rs6,500.00

DCP FIRE EXTINGUISHERS, FIRE EXTINGUISHERS, FIRE FIG
6 KG DCP Fire Extinguisher Bavaria ...
Rs6,800.00

9. PVC Cones and Delineators

ROAD SAFETY PVC TRAFFIC CONES

PKR 950.00

10.Delineators with Chain

ROAD GUIDING PORTABLE DELINEATORS

PKR 1200.00

SAFETY TRAFFIC CHAIN

PKR 3700.00

Annexure-C

Project Economic Analysis

FINANCIAL ANALYSIS ROAD NETWORK

TABLE - 9.1

AVERAGE OPERATING SPEEDS

Km/Hr

WITHOUT PROJECT CONDITION

Years	Cars/Jeeps	Hiace Wagon/ Pickup	Coaster/ Mini Buses	Buses	Trucks 2-AXLE	Trucks 3-AXLE & 4-AXLE	Trucks 5-AXLE & 6-AXLE
Base Year(2022)	25	20	20	15	15	15	15
2029	20	15	15	10	10	10	10
2037	15	10	10	10	10	10	10

WITH PROJECT CONDITION

Years	Cars/Jeeps	Hiace Wagon/ Pickup	Coaster/ Mini Buses	Buses	Trucks 2-AXLE	Trucks 3-AXLE & 4-AXLE	Trucks 5-AXLE & 6-AXLE
Base Year(2022)	40	40	40	40	40	40	40
2029	35	35	35	35	35	35	35
2037	30	30	30	30	30	30	30

TABLE - 9.3
VEHICLE OPERATING COSTS
FOR POOR ROAD CONDITIONS
WITHOUT PROJECT

Rs/Km

SPEEDS	MOTOR CYCLE	RICKSHAW	CAR	WAGON	MINI-BUS	BUS	TRUCK 2-AXLE	TRUCK 3-AXLE & 4-AXLE	TRUCK 5-AXLE & 6-AXLE
10	4.94	6.86	56.39	57.04	68.24	97.79	103.44	109.08	114.72
15	4.21	5.89	47.21	47.89	57.70	82.34	86.88	92.52	98.16
20	3.80	5.35	42.43	43.08	52.15	74.07	75.86	81.50	87.14
25	3.53	5.00	39.47	40.32	48.67	68.87	67.55	73.19	78.83
30	3.35	4.76	37.48	38.27	46.28	65.37	61.01	66.65	72.29
35	3.23	4.60	36.09	36.79	44.55	63.00	55.82	61.46	67.10
40	3.16	4.51	35.10	35.70	43.28	61.46	51.79	57.43	63.07
45	3.12	4.47	34.42	34.89	42.35	60.58	48.80	54.44	60.08
50	3.12	4.47	33.99	34.31	41.69	60.28	46.78	52.42	58.07
55	3.16	4.53	33.76	33.91	41.26	60.48	45.70	51.34	56.98
60	3.22	4.64	33.71	33.68	41.03	61.14	45.52	51.16	56.80
65	3.30	4.77	33.82	33.58	40.98	62.24	46.22	51.86	57.50
70	3.42	4.95	34.09	33.62	41.09	63.76	47.80	53.44	59.08
75	3.56	5.18	34.49	33.77	41.36	65.68	50.23	55.87	61.51
80	3.73	5.42	35.02	34.04	41.76	67.99	53.51	59.15	64.79
85	3.93	5.73	35.68	34.41	42.31	70.68	57.63	63.28	68.92

TABLE- 9.4
FOR GOOD ROAD CONDITIONS
WITH PROJECT

Rs/Km

SPEEDS	MOTOR CYCLE	RICKSHAW	CAR	WAGON	MINI-BUS	BUS	TRUCK 2-AXLE	TRUCK 3-AXLE & 4-AXLE	TRUCK 5-AXLE & 6-AXLE
10	3.71	5.12	35.59	34.99	41.42	61.63	65.14	69.34	73.54
15	3.08	4.29	28.49	28.17	33.56	50.94	54.02	58.23	62.43
20	2.73	3.83	24.80	24.60	29.44	45.22	46.71	50.92	55.12
25	2.50	3.53	22.53	22.35	26.84	41.60	41.22	45.42	49.62
30	2.35	3.33	21.00	20.80	25.05	39.13	36.87	41.08	45.28
35	2.25	3.19	19.92	19.67	23.75	37.40	33.40	37.60	41.80
40	2.19	3.11	19.16	18.83	22.77	36.21	30.65	34.85	39.06
45	2.15	3.07	18.62	18.20	22.05	35.43	28.55	32.76	36.96
50	2.15	3.08	18.26	17.73	21.51	35.01	27.06	31.26	35.46
55	2.17	3.12	18.06	17.39	21.13	34.89	26.13	30.33	34.54
60	2.21	3.19	17.99	17.17	20.88	35.05	25.76	29.96	34.16
65	2.28	3.30	18.04	17.06	20.76	35.48	25.92	30.12	34.32
70	2.37	3.44	18.19	17.03	20.74	36.14	26.61	30.81	35.01
75	2.49	3.61	18.45	17.09	20.83	37.04	27.82	32.02	36.22
80	2.62	3.81	18.80	17.23	21.01	38.17	29.54	33.74	37.94
85	2.77	4.04	19.24	17.44	21.29	39.52	31.77	35.98	40.18
90	2.95	4.31	19.77	17.73	21.65	41.08	31.77	35.98	40.18

TABLE - 9.5
VALUE OF TRAVEL TIME

DESCRIPTION	MOTORCYCLE	CAR	WAGON	COASTER/ FLYING COACH	TRUCK	BUS
TRAVEL TIME VALUE OF PASSENGERS/OCCUPANTS						
Average Income of Passenger (Rs./Month)	40,000	60,000	30,000	22,000	35,000	30,000
Average Income of Passenger (Rs./Annum)	480,000	720,000	360,000	264,000	420,000	360,000
Working Hours /Annum	2424	2424	2424	2424	2424	2424
Rate of passenger Rs./Hour	198	297	149	109	173	149
No. of Occupants	2.00	5.00	16.00	29.00	2.00	45.00
Travel Time Value of occupants---in financial terms (Rs./Hour)	396.04	1485.15	2376.24	3158.42	346.53	6683.17
Travel Time Value of occupants---in economic terms (Rs./Hour) 25%	**99.01**	**371.29**	**594.06**	**789.60**	**86.63**	**1670.79**

NOTE:- 'The value of travel time in a number of studies have been estimated at 25% to 33% of the wage rate due to lack of information on the split of work and non-work travel among passengers and the 'proportion of non-wage earners among passengers.

TABLE - 9.6

Kamoke (7.41km)

ANNUAL VEHICLE OPERATING COST

WITHOUT PROJECT

(Million Rs.)

Years	Voc/Km (Rs.)	Traffic Volume ADT	Distance Annual Km	Total Cost Million Rs.
Motor Cycles\Rickshaw				
Base Year(2022)	4.26	1955	2,705	22.55
2029	4.57	3324	2,705	41.12
2037	5.05	5982	2,705	81.72
Cars				
Base Year(2022)	39.47	299	2,705	31.92
2029	42.43	508	2,705	58.33
2037	47.21	915	2,705	116.82
Wagons				
Base Year(2022)	43.08	335	2,705	39.03
2029	47.89	570	2,705	73.76
2037	57.04	1025	2,705	158.14
Bus				
Base Year(2022)	82.34	15	2,705	3.38
2029	97.79	26	2,705	6.82
2037	97.79	46	2,705	12.28
T.Trolly + Trucks 2-AXLE				
Base Year(2022)	86.88	30	2,705	7.05
2029	103.44	51	2,705	14.27
2037	103.44	92	2,705	25.68
Trucks 3-AXLE & 4-AXLE				
Base Year(2022)	92.52	7	2,705	1.75
2029	109.08	12	2,705	3.51
2037	109.08	21	2,705	6.32
Trucks 5-AXLE & 6-AXLE				
Base Year(2022)	98.16	0	2,705	-
2029	114.72	0	2,705	-
2037	114.72	0	2,705	-
TOTAL				
Base Year(2022)				**105.68**
2029				**197.81**
2037				**400.95**

Note :"VOC" means Vehicle Operating Cost

TABLE - 9.7
Kamoke (7.41km)
ANNUAL VEHICLE OPERATING COST
WITH PROJECT

(Million Rs.)

Years	Voc/Km (Rs.)	Traffic Volume ADT	Distance Annual Km	Total Cost Million Rs.
Motor Cycles\Rickshaw				
Base Year(2022)	2.65	1955	2,705	14.01
2029	2.72	3324	2,705	24.45
2037	2.84	5982	2,705	45.99
Cars				
Base Year(2022)	19.16	299	2,705	15.49
2029	19.92	508	2,705	27.39
2037	21.00	915	2,705	51.97
Wagons				
Base Year(2022)	18.83	335	2,705	17.06
2029	19.67	570	2,705	30.30
2037	20.80	1025	2,705	57.67
Bus				
Base Year(2022)	36.21	15	2,705	1.49
2029	37.40	26	2,705	2.61
2037	39.13	46	2,705	4.91
T.Trolly + Trucks 2-Axle				
Base Year(2022)	22.77	30	2,705	1.85
2029	23.75	51	2,705	3.28
2037	25.05	92	2,705	6.22
Trucks 3-AXLE & 4-AXLE				
Base Year(2022)	34.85	7	2,705	0.66
2029	37.60	12	2,705	1.21
2037	41.08	21	2,705	2.38
Trucks 5-AXLE & 6-AXLE				
Base Year(2022)	39.06	7	2,705	0.74
2029	41.80	12	2,705	1.35
2037	45.28	21	2,705	2.62
TOTAL				
Base Year(2022)				**51.29**
2029				**90.59**
2037				**171.76**

Note :"VOC" means Vehicle Operating Cost

TABLE - 9.8
Kamoke (7.41km)

(Million Rs.)

YEARS	VEHICLE OPERATING COSTS		SAVINGS
	WITHOUT PROJECT	WITH PROJECT	
Base Year(2022)	105.68	51.29	54.39
2029	197.81	90.59	107.22
2037	400.95	171.76	229.19
		TOTAL	**390.80**

TABLE - 9.9

Kamoke (7.41km)

ANNUAL VALUE OF TRAVEL TIME COST

WITHOUT PROJECT

(Million Rs.)

Years	VOT Rs/km	Traffic Volume ADT	Distance Annual (Km)	Total Cost Million Rs.
Motor Cycles\Rickshaw				
Base Year(2022)	3.96	1955	2,705	20.94
2029	4.95	3324	2,705	44.50
2037	6.60	5982	2,705	106.80
Cars				
Base Year(2022)	14.85	299	2,705	12.01
2029	18.56	508	2,705	25.52
2037	24.75	915	2,705	61.25
Wagons				
Base Year(2022)	29.70	335	2,705	26.91
2029	39.60	570	2,705	61.00
2037	59.41	1025	2,705	164.71
Bus				
Base Year(2022)	39.48	15	2,705	1.62
2029	52.64	26	2,705	3.67
2037	78.96	46	2,705	9.91
T.Trolly + Trucks 2-Axle				
Base Year(2022)	5.78	30	2,705	0.47
2029	8.66	51	2,705	1.20
2037	8.66	92	2,705	2.15
Trucks 3-AXLE & 4-AXLE				
Base Year(2022)	5.78	7	2,705	0.11
2029	8.66	12	2,705	0.28
2037	8.66	21	2,705	0.50
Trucks 5-AXLE & 6-AXLE				
Base Year(2022)	5.78	7	2,705	0.11
2029	8.66	12	2,705	0.28
2037	8.66	21	2,705	0.50
TOTAL				
Base Year(2022)				**62**
2029				**136**
2037				**346**

Note :"VOT" means value of Travel Cost

TABLE - 9.10
Kamoke (7.41km)
ANNUAL VALUE OF TRAVEL TIME COST
WITH PROJECT

(Million Rs.)

Years	VOT Rs/km	Traffic Volume ADT	Distance Annual (Km)	Total Cost Million Rs.
Motor Cycles\Rickshaw				
Base Year(2022)	2.65	1955	2,705	14.01
2029	2.72	3324	2,705	24.45
2037	2.84	5982	2,705	45.99
Cars				
Base Year(2022)	19.16	299	2,705	15.49
2029	19.92	508	2,705	27.39
2037	21.00	915	2,705	51.97
Wagons				
Base Year(2022)	18.83	335	2,705	17.06
2029	19.67	570	2,705	30.30
2037	20.80	1025	2,705	57.67
Bus				
Base Year(2022)	36.21	15	2,705	1.49
2029	37.40	26	2,705	2.61
2037	39.13	46	2,705	4.91
T.Trolly + Trucks 2-Axle				
Base Year(2022)	22.77	30	2,705	1.85
2029	23.75	51	2,705	3.28
2037	25.05	92	2,705	6.22
Trucks 3-AXLE & 4-AXLE				
Base Year(2022)	34.85	7	2,705	0.66
2029	37.60	12	2,705	1.21
2037	41.08	21	2,705	2.38
Trucks 5-AXLE & 6-AXLE				
Base Year(2022)	39.06	7	2,705	0.74
2029	41.80	12	2,705	1.35
2037	45.28	21	2,705	2.62
TOTAL				
Base Year(2022)				**51.29**
2029				**90.59**
2037				**171.76**

TABLE - 9.11
Kamoke (7.41km)

(Million Rs.)

YEARS	ANNUAL VALUE OF TRAVEL TIME COST (VOTT)		SAVINGS
	WITHOUT PROJECT	WITH PROJECT	
Base Year(2022)	62.17	51.29	10.88
2029	136.45	90.59	45.86
2037	345.82	171.76	174.06
		TOTAL	**230.80**

TABLE - 9.12

Kamoke (7.41km)

TOTAL PROJECT BENEFITS

(Million Rs.)

YEARS	SAVINGS		TOTAL SAVINGS
	VOC	VOTT	
Base Year(2022)	54.39	10.88	65.27
2029	107.22	45.86	153.09
2037	229.19	174.06	403.25
		TOTAL	**622**

TABLE - 9.13
Kamoke (7.41km)
Calculation of Economic Internal Rate of Return

Million Rs.

Years	PROJECT ECONOMIC COSTS			Project Economic Benefits	**Net Benefits Pattern at Economic Prices**			
	Investment	O & M	Total Costs		**(a)**	**(b)**	**(c)**	**(d)**
1	356.51	0.00	356.51	0.00	-356.51	-356.51	-392.16	-392.16
2		0.00	0.00	65.27	65.27	58.74	65.27	58.74
3		0.00	0.00	69.83	69.83	62.85	69.83	62.85
4		0.00	0.00	74.72	74.72	67.25	74.72	67.25
5		0.00	0.00	79.95	79.95	71.96	79.95	71.96
6		0.00	0.00	85.55	85.55	77.00	85.55	77.00
7		0.00	0.00	91.54	91.54	82.38	91.54	82.38
8		0.00	0.00	97.95	97.95	88.15	97.95	88.15
9		0.00	0.00	104.80	104.80	94.32	104.80	94.32
10		0.00	0.00	112.14	112.14	100.93	112.14	100.93
Total :	356.51	0.00	356.51	781.75	425.24	347.07	389.59	311.42

DISCOUNT RATES	**PRESENT WORTH OF COST**		**Present Worth of Benfefit**	**NET PRESENT WORTH**			
10 %	324.10	324.10	348.58	111.63	68.05	79.22	35.64
12 %	318.31	318.31	314.24	74.49	35.21	42.66	3.38
18 %	302.13	302.13	235.52	-7.72	-37.16	-37.94	-67.38
20 %	297.09	297.09	215.44	-27.79	-54.72	-57.50	-84.43
ECONOMIC INTERNAL RATE OF RETURN 12% DR				17.30	14.57	14.83	12.23
BENEFIT COST / RATIO AT 12 % D.R			0.99				

* A factor of 0.9 has been used for Capital Cost and O&M Cost in the Economics Terms.
(a) Base Case assuming 10 Years period of analysis.
(b) Benefits decreased by 10 %
(c) Cost over-run by 10 %
(d) Benefit reduction and cost over-run both occuring simultaneously.

Annexure-D

Gant Chart

TENTATIVE PROJECT IMPLEMENTATION SCHEDULE FOR IMPROVEMENT & REHABILITATION OF ROADS IN KAMOKE CITY

YEAR (2022-2023)

Road Name	Jan-23				Feb-23				Mar-23				Apr-23				May-23				Jun-23			
P1-Mari Road																								
P2-East Bypass Road & Link Quolin Road																								
P3-Eminabad Road & Godown Road																								
P4-Bhatiyan wala Road																								

Annexure-E

P-1

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)[1] 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[2] 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.

Name of ESFP: Mr. Asif Farzand.

Name of MC: Kamoke

Sub-Project Sector: Roads.

Sub-Project Title: Rehabilitation of road from Pully Rajbah to Rajbah khoot Mari Road.

Sub- Project Categorization:

E-1	S-1
E-2	S-2
(E-3)	(S-3)

Date of Screening: 27-12-21.

Anticipated Project Activities

Preparation of Sub-grade
Preparation of grade.
Preparation of Sub-base & base.

Estimated Cost of Subprojects

Tentative Completion Time/Duration 02-3 months.

Estimated Labor for Subproject 20-30 persons.

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[1] 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.

[2] It is meant as PC-I and/or engineering estimates of sub-project

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Sub-Project area adjacent to or within any of the following:			
Environmentally sensitive areas?			
Legally protected Area			Not observed
Any surface water body (river, canal, stream, lake, wetland) within 250 meter of the proposed sub project[3]		✓	"
Estuarine		✓	"
Special area for protecting biodiversity		✓	"
Buffer zone of protected area		✓	"
Mangroves Forest		✓	"
Man-made forest /game reserve, orchid /crops or any other area of environmental importance		✓	"
Socially sensitive /important areas/communities/ people?			
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[4]		✓	"
Sensitive receptors (Schools, colleges, hospitals and clinics) within 100 meter of the proposed sub project[5]		✓	"
Any graveyard of local community (Muslims or Christians)		✓	"
Any demographic or socio-economic aspects of the sub-project 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 segments[6] of the society and women or children)?		✓	"
Already existing infrastructure [7](including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	"
B. Potential Environmental Impacts Will the Sub-Project cause…			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	Not anticipated.
2. Cutting of trees?		✓	No tree cutting involve
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	Not observed.

[3] Ibid.

[4] According to Environmental Assessment Guidelines adopted by Punjab EPA

[5] Ibid.

[6] due to caste, creed, religion or gender e.g. transgender

[7] Sewerage /Drainage system, Water supply lines, tube-wells, WAPDA/Telephone transmission lines/electric poles, Railway tracks, Gas pipelines, Roads, Shops/Plazas, Banks, Industry, Disposal stations etc.

4. Generation of wastewater during construction or operation?		✓	〃
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of waste water?		✓	〃
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 surface water found.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		✓	Not anticipated.
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No. overpumping involved
9. Serious contamination of soil due to construction works?		✓	Not anticipated
10. Aggravation of solid waste problems in the area?		✓	〃
11. Generation of hazardous waste?		✓	〃
12. Increased air pollution due to sub-project construction and operation?		✓	Dust pollution would be suppress by water spraying.
13. Noise and vibration due to sub-project construction or operation?		✓	have negligible impact
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	Not anticipated
15. Use of chemicals during construction?		✓	〃
C: Potential Social Impacts Will the Sub-Project cause…			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	Not anticipated
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	No involuntary resettlement involved.
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups [8](mentioned above)?		✓	Not anticipated
4. Temporary impediments in movements of people/transport and animals?		✓	Alternate routes are available.

[8] Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

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)?		✓	local labor will be hire during construction
6. Social conflicts if workers from other areas are hired?		✓	"
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	PPEs would be used.
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?		✓	Safety sinage will be use.
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?		✓	Not anticipated
10. Any impact on sensitive receptors (mentioned above)		✓	"
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	"

Prepared By:

Name:

Signature:

Date:

Municipal Officer (I&S)
Municipal Committee
Kamoke

Endorsed By: DPO - ESSs -

Name: Tehmina Kiran

Signature:

Date: 27/12/2022

P-2.

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)[1] 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[2] 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.

Name of ESFP: Asif Farzand.

Name of MC: Kamoke

Sub-Project Sector: Road

Sub-Project Title: Reh of road from G.T Road (in Service Road of G.T road via Tower Road) in Railway Station.

Sub- Project Categorization:

E-1	S-1
E-2	S-2
(E-3)	(S-3)

Date of Screening: 27-12-21

Anticipated Project Activities

Preparation of Sub grade & grade
Preparation of Sub-base & base
Finishing work.

Estimated Cost of Subprojects

Tentative Completion Time/Duration 02-03 months

Estimated Labor for Subproject 15-20 persons.

---

[1] 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.

[2] It is meant as PC-I and/or engineering estimates of sub-project

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Sub-Project area adjacent to or within any of the following:			
Environmentally sensitive areas?			
Legally protected Area		✓	
Any surface water body (river, canal, stream, lake, wetland) within 250 meter of the proposed sub project[3]		✓	
Estuarine		✓	
Special area for protecting biodiversity		✓	
Buffer zone of protected area		✓	
Mangroves Forest		✓	
Man-made forest /game reserve, orchid /crops or any other area of environmental importance		✓	
Socially sensitive /important areas/communities/ people?			
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[4]		✓	
Sensitive receptors (Schools, colleges, hospitals and clinics) within 100 meter of the proposed sub project[5]		✓	
Any graveyard of local community (Muslims or Christians)		✓	
Any demographic or socio-economic aspects of the sub-project 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 segments[6] of the society and women or children)?		✓	
Already existing infrastructure [7](including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	
B. Potential Environmental Impacts Will the Sub-Project cause…			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	
2. Cutting of trees?		✓	
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	

[3] Ibid.

[4] According to Environmental Assessment Guidelines adopted by Punjab EPA

[5] Ibid.

[6] due to caste, creed, religion or gender e.g. transgender

[7] Sewerage /Drainage system, Water supply lines, tube-wells, WAPDA/Telephone transmission lines/electric poles, Railway tracks, Gas pipelines, Roads, Shops/Plazas, Banks, Industry, Disposal stations etc

4. Generation of wastewater during construction or operation?		✓	
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of waste water?		✓	
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		✓	
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	
9. Serious contamination of soil due to construction works?		✓	
10. Aggravation of solid waste problems in the area?		✓	
11. Generation of hazardous waste?		✓	
12. Increased air pollution due to sub-project construction and operation?		✓	
13. Noise and vibration due to sub-project construction or operation?		✓	
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	
15. Use of chemicals during construction?		✓	
C: Potential Social Impacts Will the Sub-Project cause…			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups [8](mentioned above)?		✓	
4. Temporary impediments in movements of people/transport and animals?		✓	

[8] Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

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)?		✓	
6. Social conflicts if workers from other areas are hired?		✓	
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	
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?		✓	
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?		✓	
10. Any impact on sensitive receptors (mentioned above)		✓	
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	

Prepared By:

Name:

Signature:

Date:

Municipal Officer (I&S)
Municipal Committee
Kamoke

Endorsed By: DPO-ESS.

Name: Tehmina Ikram

Signature:

Date: 27-12-21.

P-3

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)[1] 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.

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It is to be attached with the main document[2] 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.

Name of ESFP: Asif Farzand

Name of MC: Kamoke

Sub-Project Sector: Roads

Sub-Project Title: Widening & improvement of road from Eiman Abad Road & Shadow Road from Mohallah Koi Rafique to Railway Under pass via Lady Park chowk

Sub- Project Categorization:

E-1	S-1
E-2	S-2
(E-3)	(S-3)

Date of Screening: 27-12-2022.

Anticipated Project Activities

Preparation of Sub-grade.
Preparation of Grade.
Preparation of base & Sub-base
finishing work.

Estimated Cost of Subprojects

Tentative Completion Time/Duration 03 months.

Estimated Labor for Subproject 20-30 persons.

---

[1] 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.

[2] It is meant as PC-I and/or engineering estimates of sub-project

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Sub-Project area adjacent to or within any of the following:			
Environmentally sensitive areas?			
Legally protected Area		-	Not observed
Any surface water body (river, canal, stream, lake, wetland) within 250 meter of the proposed sub project[3]		/	"
Estuarine		/	"
Special area for protecting biodiversity		/	"
Buffer zone of protected area		/	"
Mangroves Forest		/	"
Man-made forest /game reserve, orchid /crops or any other area of environmental importance		/	"
Socially sensitive /important areas/communities/ people?			
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[4]		/	"
Sensitive receptors (Schools, colleges, hospitals and clinics) within 100 meter of the proposed sub project[5]		/	
Any graveyard of local community (Muslims or Christians)		/	
Any demographic or socio-economic aspects of the sub-project 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 segments[6] of the society and women or children)?		/	
Already existing infrastructure [7](including public amenities) which may be required to dismantle or may be affected temporarily by any means?		/	No infrastructure to be impacted
B. Potential Environmental Impacts Will the Sub-Project cause…			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		/	Not anticipated
2. Cutting of trees?		/	"
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		/	"

[3] Ibid.

[4] According to Environmental Assessment Guidelines adopted by Punjab EPA

[5] Ibid.

[6] due to caste, creed, religion or gender e.g. transgender

[7] Sewerage /Drainage system, Water supply lines, tube-wells, WAPDA/Telephone transmission lines/electric poles, Railway tracks, Gas pipelines, Roads, Shops/Plazas, Banks, Industry, Disposal stations etc.

4. Generation of wastewater during construction or operation?		✓	"
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of waste water?		✓	"
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 Surface water body found
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		✓	Not anticipated
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No overpumping involved.
9. Serious contamination of soil due to construction works?		✓	Not anticipated.
10. Aggravation of solid waste problems in the area?		✓	"
11. Generation of hazardous waste?		✓	"
12. Increased air pollution due to sub-project construction and operation?		✓	Dust pollution may mitigate By Water sprinkling.
13. Noise and vibration due to sub-project construction or operation?		✓	May have negligible impact.
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	Not anticipated
15. Use of chemicals during construction?		✓	"
C: Potential Social Impacts Will the Sub-Project cause…			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	"
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	No involuntary resettlement involved.
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups [8](mentioned above)?		✓	Not anticipated.
4. Temporary impediments in movements of people/transport and animals?		✓	Alternate routes are available

[8] Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

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)?		/	Contractor will hire local labor.
6. Social conflicts if workers from other areas are hired?		/	〃
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		/	PPEs will be used by labor
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?		/	Safety Sinage will be provided.
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?		/	Not anticipated
10. Any impact on sensitive receptors (mentioned above)		/	〃
11. Any impact of negative nature on already existing infrastructure including public amenities		/	〃

Prepared By:

Name:

Signature:

Date:

Municipal Officer (I&S)
Municipal Committee
Kamoke

Endorsed By: DPO-ESSs

Name: Tehmina Korai

Signature:

Date: 27-12-2022.

P/4.

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)[1] 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[2] 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.

Name of ESFP: Asif Farzand,

Name of MC: Kamoke.

Sub-Project Sector: Road.

Sub-Project Title: East Bypass Road & Link Qutbian Road, from Mandiala Phatak to new Cheffokke Road via Railway Track along Seepage drain

Sub- Project Categorization:

E-1	S-1
E-2	S-2
(E-3)	(S-3)

Date of Screening: 27-12-2022

Anticipated Project Activities

Preparation of Sub-grade
Preparation of grade
Preparation of Sub base & base
finishing works

Estimated Cost of Subprojects

Tentative Completion Time/Duration 02-3 months

Estimated Labor for Subproject 20-30 approx.

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[1] 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.

[2] It is meant as PC-I and/or engineering estimates of sub-project

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Sub-Project area adjacent to or within any of the following:			
Environmentally sensitive areas?			
Legally protected Area		✓	Not observed
Any surface water body (river, canal, stream, lake, wetland) within 250 meter of the proposed sub project[3]		✓	〃
Estuarine		✓	〃
Special area for protecting biodiversity		✓	〃
Buffer zone of protected area		✓	〃
Mangroves Forest		✓	〃
Man-made forest /game reserve, orchid /crops or any other area of environmental importance		✓	〃
Socially sensitive /important areas/communities/ people?			
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[4]		✓	〃
Sensitive receptors (Schools, colleges, hospitals and clinics) within 100 meter of the proposed sub project[5]		✓	
Any graveyard of local community (Muslims or Christians)		✓	
Any demographic or socio-economic aspects of the sub-project 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 segments[6] of the society and women or children)?		✓	
Already existing infrastructure [7](including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No infrastructure to be impacted.
B. Potential Environmental Impacts Will the Sub-Project cause…			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	Not anticipated
2. Cutting of trees?		✓	〃
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	〃

[3] Ibid.

[4] According to Environmental Assessment Guidelines adopted by Punjab EPA

[5] Ibid.

[6] due to caste, creed, religion or gender e.g. transgender

[7] Sewerage /Drainage system, Water supply lines, tube-wells, WAPDA/Telephone transmission lines/electric poles, Railway tracks, Gas pipelines, Roads, Shops/Plazas, Banks, Industry, Disposal stations etc.

4. Generation of wastewater during construction or operation?		✓	"
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of waste water?		✓	"
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	"
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		✓	"
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	"
9. Serious contamination of soil due to construction works?		✓	"
10. Aggravation of solid waste problems in the area?		✓	waste will be remove on daily basis
11. Generation of hazardous waste?		✓	Not anticipated
12. Increased air pollution due to sub-project construction and operation?		✓	water Sprinkling regularly.
13. Noise and vibration due to sub-project construction or operation?		✓	PPEs will be used
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	Not anticipated
15. Use of chemicals during construction?		✓	"
C: Potential Social Impacts Will the Sub-Project cause…			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?			"
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	No involuntary resettlement involved
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups [8](mentioned above)?		✓	Not anticipated
4. Temporary impediments in movements of people/transport and animals?		✓	Alternate routes are available.

[8] Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

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)?		✓	local labor will be here
6. Social conflicts if workers from other areas are hired?		✓	"
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	PPEs will be used.
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?		✓	Safety Sinage will be used
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?		✓	Not anticipated
10. Any impact on sensitive receptors (mentioned above)		✓	"
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	"

Prepared By:

Name:

Signature:

Date:

Municipal Officer (I&S)
Municipal Committee
Kamoke

Endorsed By: DPO-ESS

Name: Tehmina Karam

Signature:

Date: 27-12-2021

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	Camp sites for construction workers are the important locations that have significant impacts such as health and safety hazards on labor/workers 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.	The Contractor shall: Locate the construction camps at areas which are acceptable from environmental, cultural or social point of view. Consider the location of construction camps away from communities in order to avoid social conflict with the surrounding communities. 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. 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
Construction Camp Facilities	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will generate social issues and impacts on health and environment.	Contractor shall provide the following facilities in the campsites: Adequate ventilation facilities Safe and reliable drinking water supply for personal hygiene (washing or bathing) Adequate housing for all workers Safe and reliable drinking water supply. Water supply from tube wells that meets the Punjab Environment Quality Standards Hygienic sanitary facilities, hand washing facilities and sewerage system. The toilets and domestic waste water will be collected

Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
		through a common sewerage. 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. 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. 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. 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.
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	The Contractor shall: Ensure proper collection and disposal of solid wastes within the construction camps 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. 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

Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
		contamination. 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. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.
Fuel supplies for cooking purposes	Illegal sourcing of fuel wood by construction workers will impact the natural flora and fauna	The Contractor shall: Provide fuel to the construction camps for their domestic purpose, in order to discourage them to use fuel wood or other biomass. Make available alternative fuels like natural gas or kerosene on ration to the workforce to prevent them using biomass for cooking. 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.
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.	The Contractor shall: Provide adequate health care facilities within construction sites. Provide first aid box facility at the construction site round the clock. Maintain stock of medicines in the first aid facility in camp sites facility and appoint fulltime designated first aider or nurse. Provide ambulance facility for the laborers during emergency to be transported to nearest hospitals and telephone/mobile facility to call for Emergency Services 1122. Initial health screening of the laborers coming from outside areas Train all construction workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work Provide HIV awareness programming, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis Provide adequate drainage facilities throughout camps to ensure that disease vectors habitats (stagnant water bodies, puddles) do not form. Regular mosquito repellant sprays in monsoon. Carryout short training sessions on best hygiene practices to

Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
		be mandatorily participated by all workers. Place display boards at strategic locations within the camps containing messages on best hygienic practices Place display boards of contact information of nearest dispensary/health clinic/hospital
Safety	In adequate safety facilities to the construction camps may create security problems and fire hazards	The Contractor shall: Provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry in to the camp area. Maintain register to keep track on a head count of persons present in the camp at any given time. 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. Provide appropriate type of firefighting equipment suitable for the construction camps Display emergency contact numbers clearly and prominently at strategic places in camps. Communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractor.
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.	The Contractor shall: 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. Dismantle camps in phases as the work decreases (do not wait for completion of the entire work. Give prior notice to the laborers before demolishing their camps/units Maintain the noise levels within the national standards during demolition activities Different contractors should be hired to demolish different structures to promote recycling or reuse of demolished material. Reuse the demolition debris to a maximum extent. Dispose remaining debris at the designated waste disposal site by MCs/ESFPs. Handover the construction camps with all built facilities as it is if agreement between both parties (contactor and land-owner) has been made so.

Activity/ Impact Source	EHS Concerns/issues	Mitigation Measures/ Management Guidelines
		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). Not make false promises to the laborers for future employment in O&M of the project.

Table 2: Cultural and Religious Issues

Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities	Disturbance in performance of religious activities	The Contractor shall: Provide separate prayer facilities (men and women) to the construction workers. Show appropriate and non-biased behavior with all construction workers irrespective of their religious or cultural affinities Allow the workers to participate in praying during construction time 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 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

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

Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
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,	The Contractor shall: 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

Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
	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.	hazards in the work areas, Provide Personal Protection Equipment (PPEs)1 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. Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job Appoint an environment, health and safety manager to look after the health and safety of the workers 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
	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)2 and Pakistani Labor Laws and policies respectively .

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

2 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	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 Document and report occupational accidents, diseases, and incidents. 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. Identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures. Provide awareness to the construction drivers to strictly follow the driving rules Provide adequate lighting in the construction area and along the roads
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.	The Contractor shall: Train all construction workers in basic sanitation and health care issues (e.g., how to avoid COVID-193, malaria and transmission of sexually transmitted infections (STI) HIV/AIDS. 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

3 .SOPs issued by the GoPunjab during COVID-19 Pandemic will be implemented

Activity/ Impact Source	Impacts	Mitigation Measures/ Management Guidelines
		hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. 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. 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.

Table 4: Summary of Recommended Personal Protective Equipment According to Hazard[4]

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 (ear plugs 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-gas 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.

4 Source: IFC Environmental, Health, and Safety (EHS) Guidelines