

Local Government & Community Development Department



Punjab Cities Program

PC-I Form

For

**Improvement of Sewerage System in Jhang City and Construction of
Waste Water Treatment Plant (WWTP)**

Estimated Cost: Rs 2557.84 million

March 2023

Municipal Committee Jhang

Punjab Cities Program
PC-I Form
Improvement of Sewerage System in Jhang City
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PC-I FORM
for
Improvement of Sewerage System in Jhang City

Project Serial Number

Sector: Local Government & Community Development Department

Sub Sector: Social

1. Name of the project	Punjab Cities Program Improvement of Sewerage System in Jhang City	
2. Location	Jhang city is situated on the left bank of the river Chenab. It is about 40 km far away from Gojra and Toba Tek Singh cities, 76 km from Faisalabad and 86 km from Chiniot. Location Map of the city is attached as Annexure-A	
3. Authorities responsible for		
i- Sponsoring	Government of the Punjab (through World Bank funding)	
ii- Execution	Municipal Committee Jhang	
iii- Operation and Maintenance	Municipal Committee Jhang	
iv- Concerned Provincial Department	Local Government and Community Development Department Punjab (LG & CD Department)	
4a. Plan Provision		
i. If the project is included in medium term/five-year plan, specify actual allocation	Punjab Cities Program (PCP) is a World Bank funded Program with a total cost of 236.00 million USD and comprises of below mentioned components.	
	Total loan from World Bank	200.00 million USD
	Component-1 Infrastructure Development Program for Results (PforR)	180.00 million USD
	Component-2 Technical Assistance	20.00 million USD
	MCs share (20% of PforR component) equivalent to:	36.00 million USD
	Total Program cost	236.00 million USD
	The Project is funded in ADP 2022-23 at Serial No 1769 (TA component only) with current year allocation as Rs 1329.90 million. MC Jhang will get it due share from P4R funding depending upon the formula fixed by World Bank	

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 funded in ADP 2022-23 at Serial No 1769 (TA component only) with current year allocation as Rs 1329.90 million. MC Jhang will get its due share from P4R funding depending upon the formula fixed by World Bank. The Project is being financed by World Bank as Donor along with 20% co-financing from the Program Municipal Committees and is not proposed to be financed out of Block Allocation.
4b- Provision in the current year PSDP/ADP	The Project is funded in ADP 2022-23 at Serial No 1769 (TA component only) with current year allocation as Rs 1329.90 million.
5. Project objectives and its relationship with sector objectives	<p><u>Sector Objectives</u></p> <p>The sector objectives include:</p> <ol style="list-style-type: none"> 1. Provision of efficient and effective municipality services to the masses. 2. Improvement of existing sewerage system in Jhang City. 3. To improve existing environmental conditions by provision of wastewater treatment facilities in Jhang City. <p><u>Objectives of the Project</u></p> <p>The Program aims for improvement of Infrastructure of Municipal Services including Sewerage System to improve municipal service delivery.</p> <p>The Project comprises of the Replacement of old, outlived, damaged or worn-out components in existing infrastructure for; -</p> <ul style="list-style-type: none"> ▪ The existing sewerage system was laid against the Topographic conditions of the city. Hence, as soon the electric shutdown occurs the low-lying areas start overflowing. The resident of the areas is suffering bad environmental conditions and find difficult to move about in the waste water flooding. ▪ To improve the service delivery by laying of trunk sewer according to topographic conditions. It will provide Improvement of service delivery level of the municipal services in the served areas of the city for provision of better basic urban services for improved livability of the citizen. ▪ The new system is proposed to reduce in annual O&M cost of the infrastructure due to reduced repairs in the forthcoming years because of repair or replacement of infrastructure components. ▪ The major areas which are adjacent to main roads are without any proper sewerage having surface drainage system and resultantly,

	<p>overflow occurred on main road and destroy the road infrastructure. The residents as well as the transport are suffering badly. The trunk sewer on these areas are proposed. A disposal station namely “Farooqabad disposal station” is located in the thickly populated area and the outfall drain is passing in public land. The owner of the lands has inhabited their lands and drain has been converted into a pipeline which is not taking full discharge and under these conditions the disposal station cannot be operated at full pumping capacity. As such waste water flooding is taking place in the commanded areas. Municipal Committee has installed number of dewatering sets on different locations. On one side the environments are totally7 deteriorated whereas on the other side huge financial burden is laid on Municipal Committee due to operation of these dewatering sets.</p> <ul style="list-style-type: none"> ▪ On completion of scheme about to main disposal stations i.e., Farooqabad and Khokaran along with 15 dewatering sets will be eliminated and sewage water flow by gravity. It will cause in reduction and prompt addressal of the public complaints regarding municipal service delivery. ▪ The major areas are without sewer along the planned route of trunk sewer which will be benefited with sewerage facility and environmental condition will be improve. ▪ The provide the wastewater treatment facility for reduction of BOD to bring the effluent within permissible limits of the NEQs and the treated water can used for irrigation. ▪ With the improvement of environmental standards, the growth potential and the local economy of the city will be improved. <p>Hence, the objectives of the project are in line with the sector objectives mentioned above and the project forms integral part of the concerned sector.</p>															
<p>6. Description, justification, technical parameters and technology transfer aspects</p>																
<p>i. Present Condition</p>	<p>Details are given at Annexure-B</p>															
<p>ii. Description of the subproject-</p>	<p>Details given in Annexure-C</p>															
<p>iii Detail of civil works, equipment & machinery and other physical facilities</p>	<p>The PC-I provides the below given components.</p> <p>1. Rehabilitation of Existing Sewerage system</p> <p>The rehabilitation of the system will comprise of below given components</p> <table border="1" data-bbox="495 1711 1396 1921"> <thead> <tr> <th>SN</th> <th>Components</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>RCC Sewers (Missing/Replacement)</td> <td></td> </tr> <tr> <td></td> <td>a) 9” I/d</td> <td>1000 Rft</td> </tr> <tr> <td></td> <td>b) 12” I/d</td> <td>500 Rft</td> </tr> <tr> <td></td> <td>c) 15” I/d</td> <td>3700 Rft</td> </tr> </tbody> </table>	SN	Components	Quantity	1	RCC Sewers (Missing/Replacement)			a) 9” I/d	1000 Rft		b) 12” I/d	500 Rft		c) 15” I/d	3700 Rft
SN	Components	Quantity														
1	RCC Sewers (Missing/Replacement)															
	a) 9” I/d	1000 Rft														
	b) 12” I/d	500 Rft														
	c) 15” I/d	3700 Rft														

	d) 24" I/d	60 Rft
	e) 27" I/d	659 Rft
	f) 30" I/d	350 Rft
	g) 33" I/d	300 Rft
	h) 36" I/d	483 Rft
	i) 42" I/d	125 Rft
2	Desilting of RCC Sewer Line	
	a) 18" I/d	16900 Rft
	b) 21" I/d	5400 Rft
	c) 24" I/d	5300 Rft
	d) 27" I/d	4900 Rft
	e) 30" I/d	3600 Rft
	f) 33" I/d	3400 Rft
	g) 36" I/d	4800 Rft
	h) 42" I/d	1500 Rft
3	RPC Manhole covers	1500 Nos
4	Pumping Machinery	
	Centrifugal sullage pumping units	
	6 Cusecs capacity	1 Nos
	5 cusecs capacity	6 Nos
	3 cusecs capacity	3 Nos
5	Disposal Stations	
	Upgradation/rehabilitation of existing disposal station (Civil Works)	3 No
	Transformer set 200 KVA	3 No
2-Comprehensive sewerage system in Zone-1		
The newly proposed system in Zone-1 will comprise of the below given components:		
SN	Components	Quantity
1	RCC sewers	
	a) 9" I/d	12300 Rft
	b) 12" I/d	7600 Rft
	c) 15" I/d	5100 Rft
	d) 18" I/d	4800 Rft
	e) 21" I/d	10,866
	f) 24" I/d	1481 Rft
	g) 30" I/d	4877 Rft
	h) 36" I/d	9398 Rft
	i) 42" I/d	3653 Rft
	j) 48" I/d	12291 Rft
	k) 60" I/d	2133 Rft
2	Disposal Station	
	Screening chamber	1 No
	Collecting tanks	2 Nos

		Pump house	1 No																											
	3	Pumping machinery																												
		No clogging cardon shaft sullage pumping units																												
		15 Cusecs capacity	3 Nos																											
		8 cusecs capacity	2 Nos																											
	4	Drain from disposal works to waste water treatment plant	10549 Rft																											
	5	Transformer 630 KVA	1 No																											
	6	Diesel Generating set 650 KVA	1 No																											
	7	Change over switch	1 No																											
	8	LT Control Panel with 5 MCUs	1 No																											
	3-Waste water Treatment Plant comprising of: <ul style="list-style-type: none"> a) Sullage channel = One No b) Screening Chamber = 1 No c) Anaerobic ponds = 4 Nos d) Facultative ponds = 4 Nos e) Sludge drying beds = 4 No f) Treated water pond = 1 No g) Administration block = 1 No h) Floating plants = 20% of Facultative ponds area i) Effluent water course = One No 																													
iv Indicate governess issues of the sector relevant to the project and strategy to resolve them	<ul style="list-style-type: none"> • Municipal Committee Jhang is facing acute shortage of local field staff. The operation & maintenance of the project after completion can only be assured when the required staff is available with MC. • The operation and maintenance of the municipal services in not up to the mark in the MCs. Capacity building under the Program, through trainings and seminars will be imparted by PMDFC to the officers as well as the field staff. 																													
7- Capital Cost of Project	The summary of the works included in the project is given below; (All costs in million rupees) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Ser #</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Cost (RS.) In Millions</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Part-1A Rehabilitation of existing sewerage system</td> <td style="text-align: right;">61.623</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Part-1B Rehabilitation of existing sewerage system</td> <td style="text-align: right;">186.349</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Part-2 Sewer Network</td> <td style="text-align: right;">989.47</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Part-3 Disposal Station</td> <td style="text-align: right;">227.522</td> </tr> <tr> <td style="text-align: center;">5</td> <td>Part-4 Wastewater treatment plant</td> <td style="text-align: right;">796.565</td> </tr> <tr> <td style="text-align: center;">6</td> <td>E & S cost</td> <td style="text-align: right;">8.00</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total Cost (Rs.)</td> <td style="text-align: right;">2269.53</td> </tr> <tr> <td colspan="2" style="text-align: right;">Add 2% contingencies</td> <td style="text-align: right;">45.391</td> </tr> </tbody> </table>			Ser #	Description	Cost (RS.) In Millions	1	Part-1A Rehabilitation of existing sewerage system	61.623	2	Part-1B Rehabilitation of existing sewerage system	186.349	3	Part-2 Sewer Network	989.47	4	Part-3 Disposal Station	227.522	5	Part-4 Wastewater treatment plant	796.565	6	E & S cost	8.00	Total Cost (Rs.)		2269.53	Add 2% contingencies		45.391
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		Add 5% PST (Less Ser # 1)	101.078
		Add 1% Plantation charges	22.695
		Add 0.25% awareness campaign charges	5.674
		Add 5% escalation	113.476
		Grand Total Cost (Rs. In millions)	2557.84
	The detail of costs has been given in Annexure-D		
i- Indicate date of estimation of the project cost	The project estimates have been framed during the month of March, 2023.		
ii- Basis of determining the estimates be provided.	The cost estimates have been framed on the basis of bill of quantities actually measured at site and unit rates from the Market Rate System (MRS) issued by the Government of Punjab (District Jhang 1 st biannual of year 2023). For items not available in the MRS, the same have been analyzed as per prevailing market rates.		
Provide year wise estimation of physical activities	The physical and financial requirements, year wise are included in the following table:		
	Ser #	Detail of subheads	Year 23-24
	1	Part-1A Rehabilitation of existing sewerage system	100%
	2	Part-1B Rehabilitation of existing disposal stations	100%
	3	Part-2 Sewerage Scheme	80%
	4	Part-3 Disposal Station	80%
	5	Part-4 Wastewater treatment plant	80%
	6	E & S cost	80%
		Total Cost (Rs.)	
		Add 2% contingencies	80%
		Add 5% PST (Less Ser # 1)	80%
		Add 1% Plantation charges	80%
		Add 0.25% awareness campaign charges	80%
		Add 5% escalation	0
			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)				
	Ser #	Detail of subheads	Total	Year 23-24	Year 24-25
	1	Part-1A Rehabilitation of existing sewerage system	61.623	61.623	0
	2	Part-1B Rehabilitation of existing disposal stations	186.349	186.349	0
	3	Part-B Sewerage Scheme	989.47	791.575	197.894
	4	Part-C Disposal Station	227.522	182.018	45.504
	5	Part-D Wastewater Treatment Plant	796.56	637.252	159.313
	6	E & S cost	8.00	6.400	1.600
		Work outlay cost	2269.53	1865.217	404.311
		Add 2% contingencies	45.391	36.312	9.078
		Add 5% PST (Less Ser # 1)	101.078	80.862	20.216
		Add 1% Plantation charges	22.695	18.156	4.539
		Add 0.25% awareness campaign charges	5.674	4.539	1.135
		Add 5% escalation	113.476	0.000	113.476
		Total project Cost	2557.84	2005.087	552.755
	<p>The PC-I has been framed in 4 parts as given in the above-mentioned table because of below mentioned issues:</p> <ol style="list-style-type: none"> 1. The cost of this mega project is very high and one contractor will not be able to execute all items of work in parallel. 2. The time line available for the execution of the project is very narrow as the Punjab Cities Program has been extended up to March, 2025. For completion of the project within this timeline more than one contractor will have to be engaged. 3. The residents of Jhang are suffering from waste water flooding since long and they should be relieved from this panic as soon as possible. Engaging 4 contractors will get the project completed rapidly thus accruing early benefits to the public of Jhang city. 4. Hence 4 parts of the projects will be let out separately and the work will be completed in parallel on all parts 				

<p>8-Annual recurrent cost after completion of the project and source of financing</p>	<p>The annual O&M cost will be around Rs. 50.27 million to run the system on sustainable basis. The source of financing O&M cost will be borne by MC Jhang. O & M details have been attached in Annexure-E. However, the O&M cost of Farooqabad disposal station (Rs 6.5 million per annum) in this zone will be eliminated.</p>
<p>9- Demand & Supply Analysis</p> <p>i- Existing Capacity of services</p>	<p>B. Existing supply level</p> <ul style="list-style-type: none"> ● Municipal Committee Jhang is unable to render satisfactory service to the entire area of the city because of degraded infrastructure wherein major replacements are direly needed but MC could not be able to accomplish them because of low revenue recovery and funding constraints. As a result, major areas are deprived of the required level of the service. This is resulting in low credibility of the municipal services and citizen dissatisfaction. Further, the municipal infrastructure has not been extended keeping in pace with the growth of population which has impacted the service delivery level of MC.
<p>ii- Projected Demand for 10 years</p>	<p>For meeting the needs of population up to year 2050, the proposed sewerage system including Rehabilitation of the existing system, laying of 13.33 km sewer lines, construction of 1 new disposal stations, construction of wastewater treatment plant (WWTP) will address the required municipal infrastructure coping with demand of population up to planning horizon.</p>
<p>iii- Capacity of other similar projects being implemented in public/private sector</p>	<p>No other project of this nature is being implemented in public as well as private sector. However, MC is trying to keep the services in operation with bare minimum repairs/replacements because of funding constraints.</p>
<p>iv- Supply and Demand gaps</p>	<p>The nature of supply and demand gap has been explained in the preceding paras which concludes;</p> <ul style="list-style-type: none"> ● The existing infrastructure has poor efficiency resulting in unsatisfactory service delivery level. ● The O&M cost of the municipal services is very high because of low efficiency of the services infrastructure 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 also registered on daily basis. <p>Hence, there is a large gap between the supply and demand which is to be bridged by improvement in the municipal infrastructure and its management.</p>
<p>v- Designed capacity and output of the project</p>	<p>Investments have been proposed for improvement of the existing infrastructure which will result in the under mentioned outputs;</p> <ul style="list-style-type: none"> ● Three incomplete disposal stations will be completed along with missing links of sewers. ● All the disposal works in the existing system will be rehabilitated and one disposal works will be eliminated.

	<ul style="list-style-type: none"> • The choked, semi choked or damaged sewers will be replaced by new sewer lines. • The new disposal station, drain and wastewater treatment plants in Zone-1 will be constructed. This will address the issue of waste water flooding in Zone-I and disposing of untreated sewage into agricultural field and it will help to meet the requirements of NEQS. • By implementation of proposed project, improved sanitation conditions will be developed leading to improved service delivery by MC. 										
10. Financial Plan Sources of financing <u>Debt</u> a) Indicate the local and foreign debt Loan	<p>The below given loan for the Punjab Cities Program has been funded by World Bank for 16 PCP cities in Punjab.</p> <table border="1"> <tr> <td>Total loan to Government of Pakistan/Punjab</td> <td>200 million USD</td> </tr> <tr> <td>Component-1 for Infrastructure Development</td> <td>180 million USD</td> </tr> <tr> <td>Component-2 for Investment Project Financing For capacity building of MCs & three Govt. organization and program management.</td> <td>20 million USD</td> </tr> <tr> <td>20% share of Municipalities is equivalent to</td> <td>36 million USD</td> </tr> <tr> <td>Total funds available for Infrastructure Development</td> <td>216 million USD</td> </tr> </table> <p>Municipal Committee Jhang is getting its share from this funding and depositing its 20% share of the total funding allocated to the MC. The project will be funded out of this allocation.</p>	Total loan to Government of Pakistan/Punjab	200 million USD	Component-1 for Infrastructure Development	180 million USD	Component-2 for Investment Project Financing For capacity building of MCs & three Govt. organization and program management.	20 million USD	20% share of Municipalities is equivalent to	36 million USD	Total funds available for Infrastructure Development	216 million USD
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b-Equity	<p>A. Loan /Grant to MC</p> <p>The amount of loan converted to grant to Jhang City will be Rs 2064.272 million. The financing of the project will be as given below:</p> <table border="1"> <tr> <td>Grant to MC (Loan from WB)</td> <td>PKR 2046.272 million</td> </tr> <tr> <td>20% Co-finance by MC</td> <td>PKR 511.568 million</td> </tr> <tr> <td>Total available funds (Total cost of PC-I)</td> <td>PKR 2557.84 million</td> </tr> </table> <p>B. Project Cost: PKR 2557.84 million</p> <p>*The loan is from World Bank to Government of Pakistan/Punjab, which will trickle down to Jhang MC as grant.</p>	Grant to MC (Loan from WB)	PKR 2046.272 million	20% Co-finance by MC	PKR 511.568 million	Total available funds (Total cost of PC-I)	PKR 2557.84 million				
Grant to MC (Loan from WB)	PKR 2046.272 million										
20% Co-finance by MC	PKR 511.568 million										
Total available funds (Total cost of PC-I)	PKR 2557.84 million										
c) Grants	No grant is being given by Government of Punjab out of ADP funds. The World Bank loan to Government of Pakistan/Punjab will trickle down as grant to MC from Government of Punjab.										
d) Weighted cost of capital	Nil										
11-Project Benefits and Analysis											
i.Financial: Income to the project with assumption	<ul style="list-style-type: none"> • The project comprises of replacements of components of the existing Municipal Infrastructure to improve the service delivery of MC and construction of new sewerage system in the unserved areas Presently, no user charges have been levied because of unsatisfactory service delivery but with improvement of service delivery, the consumers will be ready to pay user charges. 										

	<ul style="list-style-type: none"> ● It is proposed to levy user charges on the service which will increase the income of the MC. ● However, it is a social sector project and the capital cost of the project is not intended to be recovered. The user charges will be recovered from the consumers for meeting the operation and maintenance charges of the services and to lower down the heavy subsidies being injected by MC to keep the services in operation. 												
ii.Social benefits to the target group	<p>The completion of the project will result in:</p> <ul style="list-style-type: none"> ● Up gradation of the municipal services infrastructure. ● Increase in efficiency of all infrastructure components ● Improved service delivery level ● Enhanced design life of the components. <p>This in turn will result the following social benefits:</p> <ul style="list-style-type: none"> ● Improved hygienic conditions in the city ● Reduction in vector breeding and generated diseases ● Elimination of obnoxious smell ● Reduction in medical expenditures by Public 												
iii.Environmental Impact negative/positive	<p>There will be moderate to significant level negative environment impacts including temporary deterioration in air quality, water pollution, wastewater pollution, change of land use etc. during and after implementation of the project. The Environment and Social Screening Checklists have been developed and attached as Annexure-F. According to World Bank E&S screening and safeguards procedures and Punjab EPA Regulations, this project falls in the projects category where it requires to develop a detailed Environmental and Social Impact Assessment (ESIA) Report and obtain its NOC/Approval from PEPA.</p>												
iv.Quantifiable project outputs	<p>The social benefits to the citizen have been described at Sr. No-11(ii).</p>												
v.Unit cost analysis	<p>The unit Capital cost analysis is produced below;</p> <table border="1"> <tr> <td>Project capital cost of the Project</td> <td>PKR 2,557.84 million</td> </tr> <tr> <td>Population in year 2023</td> <td>289,464 persons</td> </tr> <tr> <td>Unit capital cost per capita</td> <td>Rs. 8836</td> </tr> </table> <p>The Unit O&M cost per annum is given below</p> <table border="1"> <tr> <td>Project O&M cost per annum</td> <td>PKR 50.27 million</td> </tr> <tr> <td>Population in year 2023</td> <td>289,464 persons</td> </tr> <tr> <td>Unit O&M cost per capita per annum</td> <td>Rs. 173</td> </tr> </table>	Project capital cost of the Project	PKR 2,557.84 million	Population in year 2023	289,464 persons	Unit capital cost per capita	Rs. 8836	Project O&M cost per annum	PKR 50.27 million	Population in year 2023	289,464 persons	Unit O&M cost per capita per annum	Rs. 173
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vi. Employment generation direct and indirect)	<p><u>Employment Analysis</u></p> <p>Direct Employment</p> <p>a) <i>Planning and Design of Projects</i></p> <p>The Planning and Design of the project will be entrusted to local consultants who will be appointing staff and experts in different disciplines along with 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.</p> <p>b) <i>Execution of the Project</i></p> <p>a) <i>PMDFC</i></p> <p>PMDFC has the project monitoring and supervisory role and the company has enough experts and staff to complete this assignment. PMDFC has already deployed under mentioned staff for these projects:</p> <ul style="list-style-type: none"> ● 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 <p>b) <i>Consultants</i></p> <p>PMDFC has employed (M/s MM PAKISTAN) as consultants for detailed design and resident supervision of the projects who will deploy their staff for execution of the project.</p> <p>c) <i>Municipality</i></p> <p>Municipal committee 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</p> <p>d) <i>Contractor</i></p> <p>The contractor responsible for execution of the sub project will employ skilled and un-skilled labor on this work.</p> <p>Indirect Employment</p> <p>Indirect employment for production of material such as cement, steel, stone metal, bitumen, bricks etc. will be generated.</p>
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vii. Impacts of delays on project cost and viability	<p>The impact of delay in project implementation will;</p> <ul style="list-style-type: none"> ● 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 July 2023 and to be completed by March 2025 with project implementation period of 21 months.
b) Item wise/year wise schedule in line chart	See Gant Chart attached as Annex-G
13- Management Structure and manpower requirements	
i. Administrative arrangements for the implementation of the project	<p>i. 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.</p> <p>ii. Preparation of cost estimation The cost estimates have been prepared by the Design Consultants by actual measurements at site. The execution of the items of works included in these estimates /PC-I will be certified by these consultants.</p> <p>iii. Execution of the project</p> <ul style="list-style-type: none"> ● The project will be executed by MC Jhang 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 Jhang. ● The Procurement Committee of MC Jhang will do the procurement of works and goods as per PPRA Rules.

<p>ii- The manpower requirements by skills during execution and operation of the project and; The job description, qualification, experience, age and salary of each post</p>	<p>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/Daska.</p> <p>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.</p>																																							
<table border="1"> <thead> <tr> <th data-bbox="495 499 570 569">Sr. No.</th> <th data-bbox="570 499 776 569">Personnel</th> <th data-bbox="776 499 873 569">No.</th> <th data-bbox="873 499 1409 569">Qualification</th> </tr> </thead> <tbody> <tr> <td data-bbox="495 569 570 814">1</td> <td data-bbox="570 569 776 814">Chief Resident Engineer/Team Leader</td> <td data-bbox="776 569 873 814">01</td> <td data-bbox="873 569 1409 814">BSc;/BE in Civil engineering with minimum 20 years' professional experience or MSC; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor in Civil Engineering and minimum 15 years, experience, with 5 years on similar assignments in both cases</td> </tr> <tr> <td data-bbox="495 814 570 961">2</td> <td data-bbox="570 814 776 961">Senior Engineer</td> <td data-bbox="776 814 873 961">01</td> <td data-bbox="873 814 1409 961">BSc/BE Civil engineering with minimum 08 years' relevant design experience or MSc engineering, with 5 years on similar assignments in both cases</td> </tr> <tr> <td data-bbox="495 961 570 1066">3</td> <td data-bbox="570 961 776 1066">Resident Engineer</td> <td data-bbox="776 961 873 1066">01</td> <td data-bbox="873 961 1409 1066">BSc;/BE Civil engineering with minimum 10 years' experience in site supervision and execution for projects of similar nature.</td> </tr> <tr> <td data-bbox="495 1066 570 1213">4</td> <td data-bbox="570 1066 776 1213">Assistant Resident Engineer</td> <td data-bbox="776 1066 873 1213">01</td> <td data-bbox="873 1066 1409 1213">Bachelor Degree in Civil engineering with minimum 8 years' experience in site supervision and execution for projects of similar nature</td> </tr> <tr> <td data-bbox="495 1213 570 1318">5</td> <td data-bbox="570 1213 776 1318">Site Inspectors</td> <td data-bbox="776 1213 873 1318">01</td> <td data-bbox="873 1213 1409 1318">DAE in Civil with minimum 10 years' experience in site supervision for projects of similar nature</td> </tr> <tr> <td data-bbox="495 1318 570 1507">6</td> <td data-bbox="570 1318 776 1507">Quantity Surveyor</td> <td data-bbox="776 1318 873 1507">01</td> <td data-bbox="873 1318 1409 1507">DAE in Civil Technology with minimum 10 years' experience in estimation & costing of projects of similar nature. 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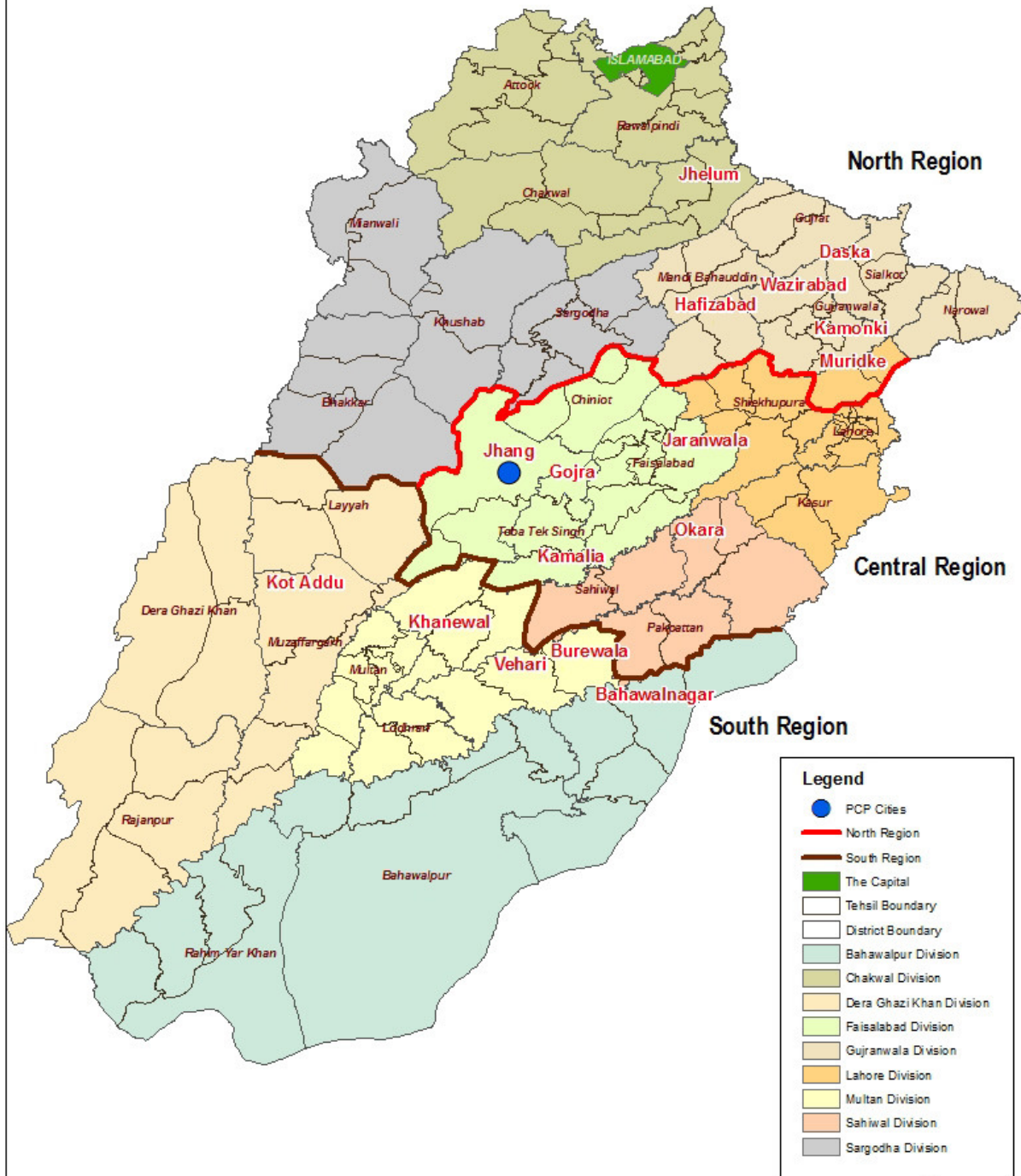
	<table border="1"> <tr> <td data-bbox="495 136 568 241"></td> <td data-bbox="568 136 779 241">/Resettlement Specialist</td> <td data-bbox="779 136 868 241"></td> <td data-bbox="868 136 1408 241">and handling site specific social management plans and grievance management</td> </tr> </table>		/Resettlement Specialist		and handling site specific social management plans and grievance management
	/Resettlement Specialist		and handling site specific social management plans and grievance management		
	<p>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.</p> <p>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;</p> <ul style="list-style-type: none"> • 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	<p>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 and capacity building in MC.</p>				
15-Certificate	<p>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.</p>				

Prepared by	M/s MM Pakistan (Pvt) Ltd	Stamp & Signatures	
Checked by	Municipal Officer (I&S) Municipal Committee Jhang	Stamp & Signatures	
	Chief Officer Municipal Committee Jhang	Stamp & Signatures	
Vetted by	Senior Program Officer (ID) PMDFC	Stamp & Signatures	
Submitted by	Administrator Municipal Committee Jhang	Stamp & Signatures	
Forwarded by	Secretary LG & CD Department	Stamp & Signature	

Annexure -A

Location Map (Punjab Cities Program)

ANNEXURE - A



Local Government & Community Development Department, Government of The Punjab

Annexure -B

Existing Situation

1. General

As per PLGA-2022, Local Governments (LGs) 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 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.

Municipal services infrastructure has been degraded because of improper repairs and non-replacement of the old, outlived and damaged components due to shortage of money and constrained municipal budgets. If these components are not rehabilitated or replaced at this stage, the services may reach a point where major portion of the infrastructure may have to be closed due to maloperation.

2. Degradation of the sewerage infrastructure

The infrastructure of the sewerage system of the city has degraded with passage of time and poor maintenance because of following reasons:

1. Poor financial position of MC Jhang

Due to poor financial resources of local government in the city the satisfactory operation and maintenance of the sewerage system could not be carried out. The condition of all disposal deteriorated due to absence of repairs and replacement of the vital components which led to poor pumping capacity of these disposal stations and ultimate chocking of sewers resulting the waste water flooding in streets and on the roads in te areas covered by these disposal works.

2. Shortage of manpower

Jhang city has over 40 km long sewerage system but only 50 sewer men are deployed for operation and maintenance of the system. Consequently, the sewers were not desilted and cleaned which resulted in silting up of the sewers and chocking in some reaches. The silt up sewers reduced their carrying capacity resulting in surcharging of sewers and overflowing at some places thus creating waste water ponding.

3. Population growth

Census in the year 2017 show population of 493,108 persons with an annual growth rate of 1.86 % which has risen to over 550,000 persons in the year 2022 and is expected to rise to over 603,000 persons in the year 2027.

Population explosion in the city has aggravated the problem further as the system was not upgraded in proportion to the growth of population in the city Municipal Committee (defunct) tried to construct three pumping stations on piece meal basis to pump the sewerage

in the surrounding areas but could not complete them because of limited financial resources. The area commanded by these disposal stations is being flooded with waste water and creating havoc of the inhabitants.

4. Poor condition of disposal stations

The detail of disposal station presently working in the city is given below:

I. Functional Disposal Station

Zone No	Location	Nos of collect tanks	No of pumps	Discharge each (cusecs)	Total discharge (cusecs)	Motor BHP	Functional pumps	S. Carrier or Force main			Ultimate disposal
								Size (feet)	Length (ft)	Condition	
1	Chak Khokhra	2	3	6	18	60	1	2.5x3	600	Good	Broad Irrigation
2	Farooq Abad	1	2	3	6	60	1	do	150	Poor	do
3	Karmaan Wala Town	2	2	5	10	60	1	do	500	Under problem	do
4	Harmal Pura	1	2	10	25	100	2	FM	1200	Damaged	Khairwala Drain
			1	5		60					
	Garayband	2	2	5	10	60	Nil	FM	300	--do--	--do--
5	Lakhi Wala	2	1	4	24	60	3	FM	150	Damaged	--do--
			4	5		60					
6	Chak Noor Shah	2	2	5	10	60	2	FM	150	Damaged	--do--
7	Old Gadianwala	1	1	1.5	1.5	15	Nil	SC	100	--do--	--do--
	Tibba Raigistan	2	2	3	6	30	Nil	FM +SC	350	--do--	Waste Water Pond
8	Islam Nagar	1	1	1.0	1.0	40	1	FM	110	Satisfactory	Sewer line
	Total	15	22		110.5	-	10				

II. Disposal stations under construction

Under mentioned three disposal stations were taken up for construction on the bank of Khairwala Drain by defunct TMA Jhang for draining the northern areas of the city but the works could not be completed even by this time for want of funding. 85% of the civil works have been completed and no pumping machinery has been erected.

- 1) Gadianwala,
- 2) Gogay wala,
- 3) Tibba sultan

The disposal stations are required to be completed to relieve the northern areas from drainage issues.

The present condition of these disposal stations is given below:

I. Functional Disposal Stations

1. Hurmal pura Disposal station

1. One pumping unit requires repairs
2. 2 No Pen Stocks for 42" i/d sewer are damaged and need replacement
3. The delivery mains given below are damaged and need replacement
 - 20' dia = 250 Rft
 - 12" i/d = 250 Rft
 - 2.5" dia = 30 Rft
4. 2 Nos MS screens of the screening chamber need replacement
5. Screening chamber mid wall & slab need repairs
6. Beds of the above-mentioned delivery mains have been damaged
7. 2 Nos Sluice valves and 2 Nos non return valves need replacement
8. The dewatering set of the pump house has been damaged
9. One chain pulley block is required for lifting the machinery
10. Motor control units have been damaged and need replacement
11. The transformer of 630 KVA needs repairs.

2. Lakhi wala Disposal Station

- 1) 2 Nos sullage pumping units of 5.0 cusec capacity are outlived and need replacement.
- 2) MCUs of both pumping units along with poor cables have been damaged and need replacement
- 3) Earthing and foundation of these pumps need replacement.
- 4) Foundation plates of these pumping units are required
- 5) 4 Nos pen stocks of 36" dia have been damaged and need replacement.
- 6) Following suction and delivery pipes have been damaged and need replacement.
 - 12" dia = 950 Rft
 - 2.5" dia = 100 Rft
- 7) 4 Nos screens of screening chambers need replacement
- 8) RCC wall and cover slab of the screening chamber have been damaged
- 9) 48 Nos bends of the delivery mains have been damaged and need replacement.
- 10) 10 Nos sluice valves and 5 Nos non return valves of 12 "i/d have been damaged and need replacement.
- 11) One MCUs has been damaged
- 12) Chain pulley block is not installed for lifting the pumping machinery.
- 13) The dewatering sets in two pump houses have been damaged and need replacement.
- 14) One pumping unit of 5.0 cusec capacity has outlived its life and needs replacement.
- 15) Power feeders and earthing have been damaged
- 16) Base plate of the pumping unit is required
- 17) Foundation needs to be re-laid.

18) Tool kit on the disposal station is missing.

3. Chak Noor Shah Disposal Station

- 1) 2 Nos penstocks have been damaged
- 2) Below given suction and delivery piping has been damaged.
 - 12" dia = 610 Rft
 - 2.5" dia = 30 Rft
- 3) 2 Nos screens of screening chambers need replacement
- 4) RCC wall and cover slab of the screening chamber have been damaged
- 5) 22 Nos bends of 12" & 4" dia, 6 Nos sluice valves of 12" dia and 12 Nos non return valves of 12" dia have been damaged and corroded.
- 6) The dewatering set of pump house is damaged
- 7) Two MCUs requires replacement
- 8) The chain pulley block is missing

4. Islam Nagar disposal Station

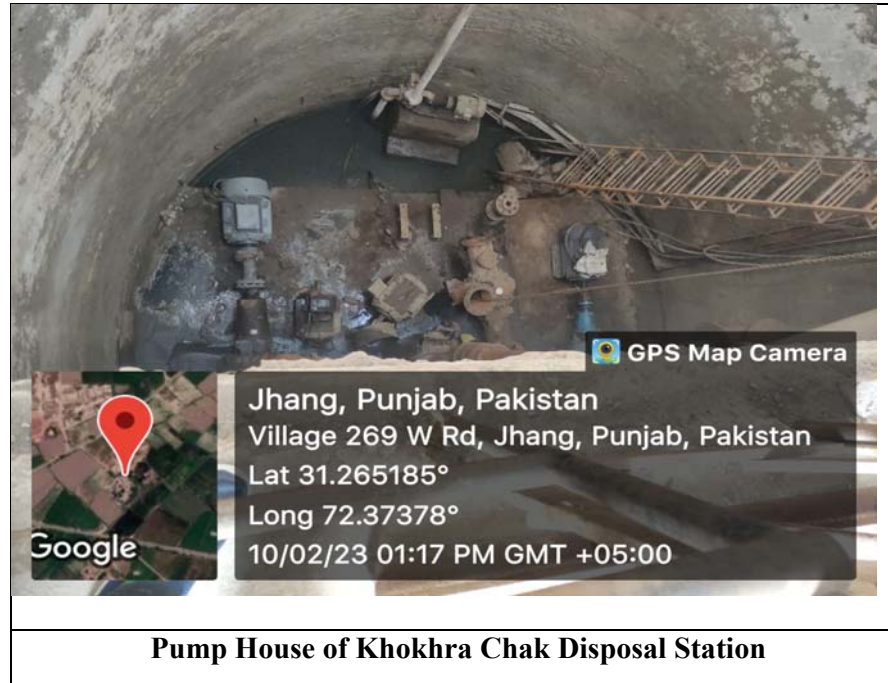
- 1) 1 Nos penstocks have been damaged
- 2) Below given suction and delivery piping has been damaged.
 - 10" dia = 500 Rft
 - 2.5" dia = 40 Rft
- 3) 1 Nos screens of screening chambers need replacement
- 4) RCC wall and cover slab of the screening chamber have been damaged
- 5) 14 Nos bends of 10" & 4" dia, 8 Nos sluice valves of 10" dia and 2 Nos non return valves of 10" dia have been damaged and corroded.
- 6) 2 Nos pumping unit of 3.0 cusecs have outlived their life.
- 7) The dewatering set of pump house is damaged
- 8) Two MCUs requires replacement
- 9) The chain pulley block is missing
- 10) One No tool kit is missing
- 11) Power cables and earthing of the pumping units have been damaged
- 12) Base plates and foundation of the pumping units need replacement.

5. Karmanwala Disposal station

2 Nos submersibles pumping units have outlived their life and need replacement.

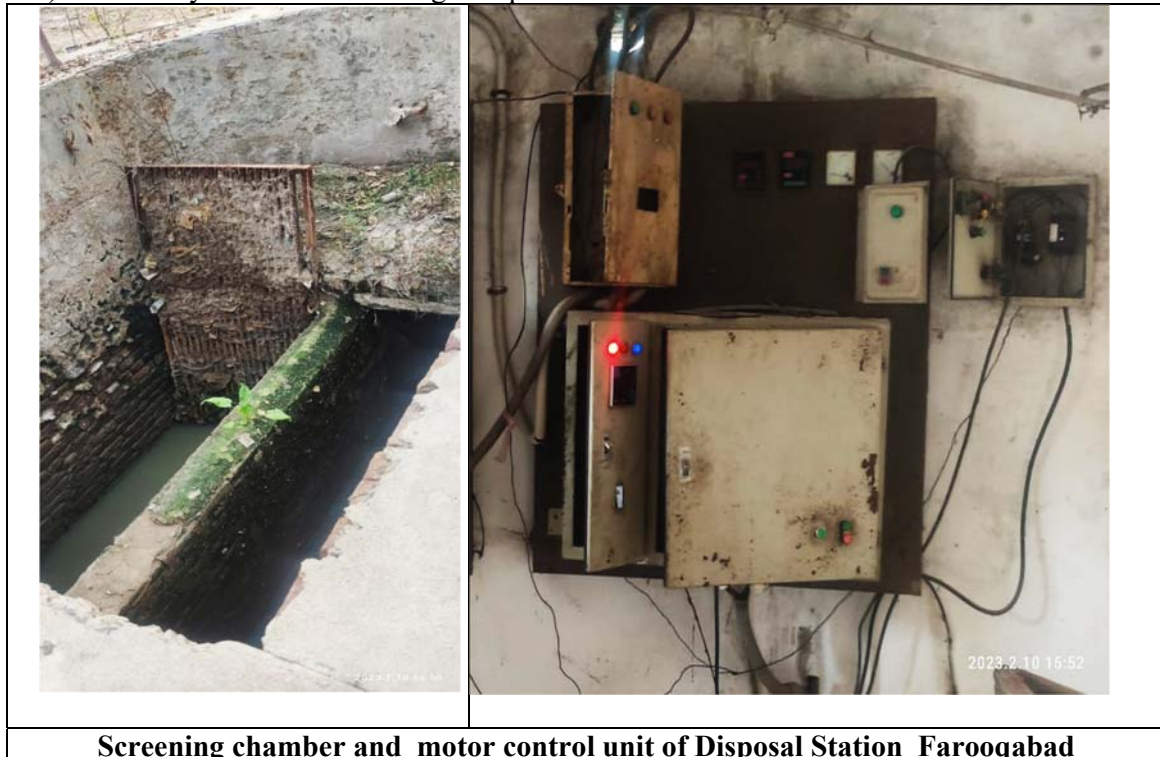
6. Chak Khokhra Disposal Station

- 1) 2 Nos penstocks of 42" dia have been damaged
- 2) Below given suction and delivery piping has been damaged.
 - 6" dia = 800 Rft
 - 2.5" dia = 40 Rft
- 3) 1 Nos screens of screening chambers need replacement
- 4) RCC wall and cover slab of the screening chamber have been damaged
- 5) 12 Nos bends of 12" & 6" dia, 3 Nos sluice valves of 12" dia and 3 Nos non return valves of 12" dia have been damaged and corroded.
- 6) 1 Nos pumping unit of 6.0 cusecs have outlived their life.
- 7) The dewatering set of pump house is damaged
- 8) Two MCUs requires replacement
- 9) The chain pulley block is missing
- 10) One No tool kit is missing
- 11) Power cables and earthing of the pumping units have been damaged
- 12) Base plates and foundation of the pumping units need replacement
- 13) GI railing on the collection tank with 1200Rft length has been rusted and damaged



7. Farooqabad Disposal Station

- 1) One No MS Screen of screening chamber damaged
- 2) Delivery pipe (6" dia) of one pumping unit has been damaged and needs replacement
- 3) The walls of the sullage carrier need raising due to over spilling of water.
- 4) One motor control unit has been damaged and needs replacement.
- 5) 2 Nos penstocks of 24" dia need replacement.
- 6) Boundary wall of 20 feet length requires reconstruction.



8. Garayband Disposal Station

- 1) Pump house flooring damaged
- 2) 2 Nos pumping unit require repairs
- 3) Suction and delivery pipe of 12" dia need replacement
- 4) 2 Nos penstock of 36" dia need replacement

II. Incomplete Disposal Stations

1) Tibba Sultan Disposal Station (Incomplete and Non-Functional)

- 1) Construction of Pump house flooring
- 2) Control room and transformer room plaster, windows and flooring left over.
- 3) Pumping machinery not installed
- 4) Transformer not installed
- 5) Other finishing works still to be done.

2) New Gadiwala Disposal Station (Incomplete and Non-Functional)

- 1) Pump house plaster and struck pointing not done
- 2) Pumping machinery not installed
- 3) Suction and delivery piping not installed
- 4) Screens require fixing.

3) Ghogay wali Disposal Station

- 1) Pump house not constructed
- 2) Machinery not installed
- 3) Control room not complete
- 4) Wash room incomplete
- 5) Transformer not installed
- 6) Suction & delivery piping not installed
- 7) Gate not installed

5. Condition of sewer lines.

Some sewer lines for the incomplete disposal stations are missing and need to be laid for functioning of the three disposal stations.

Disposal station	Dia of sewer pipe	Length
Tibba Sultan	36"	453 Rft
	42"	119 Rft
New Gadian wala	27"	614 Rft
Goghaywali	24"	60 Rft
	30"	350 Rft
	33"	300 Rft

These sewer lines are required to be laid for making the Disposal Stations functional

6. Chocked /semi chocked sewers

Due to poor and inefficient function of sewers, and closure of the disposal station due to extensive load shedding, the velocity in the sewers goes stand still and all the suspended materials including silt and muck get deposited in sewers. This repeated process has resulted in

the surcharging and silting / partially silting of sewers thus reducing their carrying capacity and producing waste water flooding in the below mentioned areas of the city.

Areas flooded with waste water

Following areas of the city are flooded with waste water due to malfunctioning of the sewerage system.

1. Main challeyaan wala	2. Basti Ata wali	3. Mohallah gosia
4. Ghalla mandi	5. Bulaq shah	6. Marzi pura east & west
7. Basti dewan wali	8. Basti sheeni wali	9. Pepsi agency
10. Ghaziabad	11. Mukhtarabad	12. Farooqabad
13. Dhaji road	14. Rail bazar	15. Chambaili market
16. MPA road	17. Burji chowk	18. Yousaf shah road
19. Mohallah yaboo wala	20. Jalaabad	21. Nasirabad
22. Session house road	23. Sultan wala	

The results of the chocked and overflowing sewers are given below as pictorial evidence



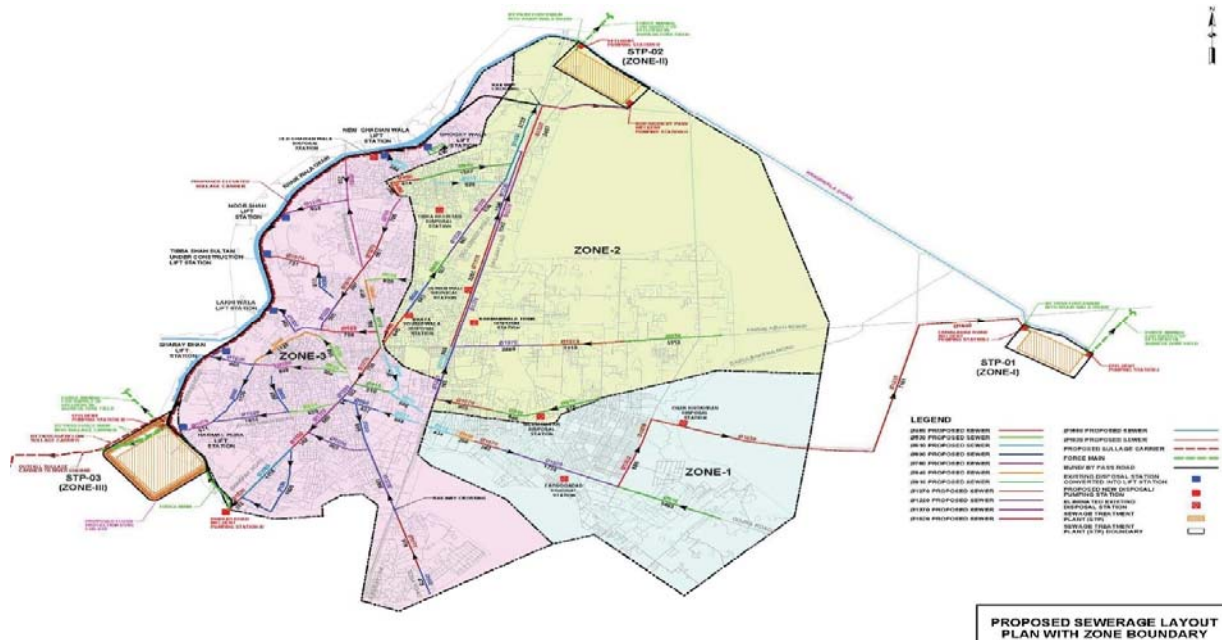
Overflowing sewers and waste water flooding in Farooqabad sewerage system

Annexure -C

Proposal of the subproject

I. Mater Planning of Sewerage system in Jhang City

Master Planning of sewerage system in Jhang City was got carried out PHE Department through NES PAK in the year 2015-16 and the city was divided into three zones as given below;



The work in the Zone-2 as per above given plan has been taken up by PHE Department. There is no chance of initiating the work on Zone-1 & 3 through Provincial Funding due to shattered economy of the country and funding constraints with Punjab Government. The situation of the existing sewerage system in these two zones is very precarious Hence MC Jhang has assigned top priority to the improvement of sewerage system in these zones.

II. Proposal of the project

It has been proposed to bring up the infrastructure of the sewerage system of Jhang city to a level where it can render satisfactory services to the residents of the city. The proposal for doing so will comprise of following components:

1. Rehabilitation of the existing system

The rehabilitation of the existing system will comprise of the following components:

- Replacement of urgently required components of 7 Nos existing Disposal Stations
- Completion and commissioning of 3 Nos incomplete disposal stations.
- Providing and laying of missing RCC sewers for 3 Nos disposal stations and in Zone-I
- Desilting of the chocked sewers.

2. Comprehensive sewerage system in Zone-I

The system will comprise of following components:

- a) Sewerage network
- b) Disposal station
- c) Waste Water Treatment Plant

III. Rehabilitation of the existing system

1. Repairs / replacements in the Existing Disposal Stations

Seven out of existing 8 Nos existing disposal stations will be rehabilitated / improved by urgently required repairs and replacement of the worn out, outlived, dormant, missing and damaged components. The detail of the works / installations included in this PC-I for each of the seven disposal stations is given below:

i. Hural pura Disposal station

- 1) Replacement of damaged delivery mains by HDPE pipe along with bends
 - 20" dia = 250 Rft
 - 12" i/d = 250 Rft
 - 2.5" dia = 30 Rft
- 2) Replacement of 2 Nos MS screens of the screening chamber

ii. Lakhi wala Disposal Station

- 1) Replacement of suction and delivery pipes by HDPE pipes.
 - 12" dia = 950 Rft
 - 2.5" dia = 100 Rft
- 2) Replacement of 4 Nos screens of screening chambers
- 3) Supply and fixing of 48 Nos bends in the delivery mains.

iii. Chak Noor Shah Disposal Station

- 1) Replacement of damaged suction & delivery mains by HDPE pipe.
 - 12" dia = 610 Rft
 - 2.5" dia = 30 Rft
- 2) Replacement of 2 Nos screens of screening chambers
- 3) Replacement of 22 Nos bends of 12" & 4" dia,

iv. Islam Nagar disposal Station

- 1) Replacement of suction and delivery piping by HDPE pipe.
 - 10" dia = 500 Rft
 - 2.5" dia = 40 Rft
- 2) Replacement of 1 Nos screens of screening chamber
- 3) Replacement of 14 Nos bends of 10" & 4" dia,

v. Chak Khokhra Disposal Station

- 1) Replacement of suction & delivery piping by HDPE pipe
 - 6" dia = 800 Rft
 - 2.5" dia = 40 Rft
- 2) Replacement of 1 No screen of screening chamber.

3) Replacement of 12 Nos bends of 12” & 6” dia,

vi. Farooqabad Disposal Station

- 1) Replacement of one No MS Screen of screening chamber.
- 2) Replacement of delivery pipe (6” dia) of one pumping unit.

vii. Garayband Disposal Station

Replacement of suction and delivery pipe of 12” dia by HDPE pipe

2. Replacement of sullage pumping units

S. N.	Disposal station	Discharge (Cusecs)	No of pumping units
1	Lakhi wala	5.0	01
2	Noor Shah	5.0	01
3	Karmanwala	5.0	01
4	Chack Khokhra	6.0	01
5	Islam Nagar	3.0	01

3. Replacement of sewer pipeline (at various locations)

15” i/d = 3700 Rft

4. Completion and functioning of incomplete Disposal Stations

i. Tibba Sultan Disposal Station

- 1) Construction of Pump house flooring
- 2) Completion of incomplete control room and transformer room.
- 3) Supply and installation of 2 Nos sullage pumping units of 5.0 cusecs capacity
- 4) Supply and installation of 200 KVA transformer and 11 KV line.
- 5) Completion of other finishing works of the civil structures.

ii. New Gadiwala Disposal Station

- 1) Completion of pump house.
- 2) Supply and installation of 2 Nos pumping units of 3.0 cusecs capacity
- 3) Supply and installation of suction and delivery piping.
- 4) Fixing of available screens.
- 5) Supply and installation of 200 KVA transformer & 11 KV line

iii. Ghogay wali Disposal Station

- 1) Construction of pump house.
- 2) Supply and installation of 2 Nos sullage pumping units of 5.0 cusec capacity
- 3) Completion of control room
- 4) Completion of incomplete wash room.
- 5) Supply and installation of transformer 200 KVA and 11 KV line.
- 6) Supply and installation of suction & delivery piping.
- 7) Supply and installation of gate.

5. Laying of missing sewer Links

In order to make the incomplete disposal stations functional, following missing links of sewers will be required to be laid:

Disposal station	Dia of sewer pipe	Length
Tibba Sultan	36"	453 Rft
	42"	119 Rft
New Gadian wala	27"	614 Rft
Goghaywali	24"	60 Rft
	30"	350 Rft
	33"	300 Rft
Missing links in Farooqabad & Khokhra Chack system	12"	1500 Rft

6. Desilting of the choked sewers

The total lengths of the sewers in various systems are given below.

SN	Diameter of sewers	Length (Rft)
1	42"	4,990
2	36"	16,239
3	33"	12,729
4	30"	12,069
5	27"	14,554
6	24"	18,163
7	21"	17,924
8	18"	33,889
9	15"	37,124
10	12"	66,604
11	9"	110,757

The detail of sewer length in each drainage area have been given at the end of this chapter. Following lengths of the sewers will be desilted.

S. N.	Diameter	Length
1	27 inches	350 Rft
2	18 inches	9,350 Rft
3	15 inches	7,700 Rft
4	12 inches	23,740 Rft
	Total length	41,140 Rft

After desilting of all the sewers in all drainage areas of the sewerage system it will be assessed that if some of the sewers cannot be desilted then these will be replaced. The subsoil stratification beyond the depth of 2-3 feet in Jhang City is sandy and hence the replacement of the sewers will be very difficult and costly and should be avoided as far as possible. Only those sewers will be replaced wherein there is no other option left.

Finalization of the contract agreements of the previous contractors

Some contractors were working on the sewerage systems and disposal works of the incomplete system described above. Municipal Unit Jhang will finalize the contract agreements of these contractors before initiating the execution of the repairs / replacement works and laying of sewers. The BOQ of the works for the incomplete systems will only be prepared when these contracts have been finalized.

In case of violation of this procedure the authorities of the Municipal Unit Jhang will be responsible.

IV. Sewerage system in Zone-I

Zone-I presently comprises of two drainage zones. The Northern portion is being served by Khokhra Chack disposal station and the southern part is being served by Farooq abad disposal station.

Farooqabad disposal station is located in a very thickly populated area and only limited discharge can be taken in its sullage carrier due to inhabitation along this channel. As such very limited pumping of waste water can be done and as a result of that waste water flooding is taking place in the entire catchment area of this disposal station. Apart from the eastern and southern portion of this zone is totally unserved.

Hence a comprehensive system of sewage collection needs to be launched in this zone. It has therefore been proposed to eliminate the disposal station Farooqabad and construct a new disposal station near Sugar Mills. The system will take some waste water from the catchment of Khokhra Chack disposal station thus reducing the load on that system resulting in elimination of waste water stagnation in that area. Entire eastern and southern portion of the city will be served by this system including Toba Road wherein some portion from zone-III across the railway track will also be tapped to eliminate the waste water ponding in that area.

The waste water will be pumped from the proposed disposal station to a waste water treatment plant proposed to be constructed between Gora and Toba Road near by-pass road through a gravity channel which is already existing and will be rehabilitated.

Waste Stabilization Ponds (WSPs) combined with floating plants in the Facultative ponds will be used for treatment of the waste water. The treated water will meet the National Environmental Quality Standards (NEQS) and will be supplied to the farmers for broad irrigation around the WWTP.

Estimated length (Rft) of existing Sewers in sewerage system Jhang												
Sr.No	Disposal Station	42"	36"	33"	30"	27"	24"	21"	18"	15"	12"	9"
1	Farooq Abad	—	—	—	—	2200	2572	2100	3437	2442	12559	18569
2	Chak Noor shah	—	—	2300	1800	2000	2500	2840	3250	4255	5800	7100
3	Hermal Pura	961	1520	2800	2100	1941	1700	3000	8000	11757	15650	22401
4	Ghray Band	—	2650	—	1750	1500	1250	1800	1000	—	—	—
5	Lakhi Wala	—	2700	1950	930	1300	1210	1500	1930	2200	4500	6500
6	Karman Wala	—	1184	1500	2359	1893	3068	1670	6079	5680	8286	22200
7	Chak Khokhra	1229	3084	1529	900	1270	1444	1385	5065	3781	12009	25187
8	New Gadianwala	—	—	—	230	400	500	550	1150	1000	1500	—
9	Old Gadianwala	—	—	—	—	—	—	—	380	720	1000	—
10	Tiba Sultan	2800	2850	1600	400	1200	1320	1130	1087	1290	2500	5100
11	Ghogay Wala	—	2250	1050	900	850	1200	850	1000	1500	—	—
12	Tiba Regisan	—	—	—	700	—	1400	1100	1510	2500	2800	3700
Total		4990	16239	12729	12069	14554	18163	17924	33889	37124	66604	110757

Annexure -D

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF
INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING
AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB
JHANG CITY**

Ser #	Description	Cost (RS.) In Millions
1	Part-1A Rehabilitation of existing sewerage system	61.623
2	Part-1B Rehabilitation of existing Disposal stations	186.349
3	Part-2 Sewerage Network	989.47
4	Part-3 Disposal Station	227.522
5	Part-4 Wastewater treatment plant	796.565
6	E & S cost	8.00
	Total Cost (Rs.)	2269.53
	Add 2% contingencies	45.391
	Add 5% PST (Less Ser # 1)	101.078
	Add 1% Plantation charges	22.695
	Add 0.25% awareness campaign charges	5.674
	Add 5% escalation	113.476
	Grand Total Cost (Rs. In millions)	2557.84

Rehabilitation of Sewerage System in Jhang City. (MRS 1st Bi-annual Jan 23 to Jun-23)		
Summary of Cost		
Sr No	Description	Cost (Rs.) In Millions
1	Rehabilitation of existing sewerage system	
i	Missing Sewerlines of Disposal Works Tibba Sultan, Gadhian Wala & Basti Ghoghay wali.	19.140
ii	Replacement of Sewer	21.264
iii	Providing & Fixing Of Reinforced Plastic Composite (Rpc) Manhole Covers 24" I/D With Rpc Frame	20.366
iv	Repair of Pump House Disposal Works Gharay Bhan MC Jhang	0.854
	Total	61.623
2	Rehabilitation of existing disposal stations	
i	Remaining work Pump House & Screening Chamber at Disposal Works Tibba Sultan.	9.964
ii	Remaining work Pump House Disposal Works Basti Ghoghay Wali	10.661
iii	Desilting of Existing Sewerage Lines	20.190
iv	Remaining work Pump House at Disposal Works Karma wala Town.	4.392
v	Pumping Machinery of New Gadhian Wala, Tibba Sultan & Goghay Wala, Noor Sha, Lakhi Wala, Chack Khokhra, Karma Wala, Islam Nagar	101.543
vi	Inter connection	24.853
vii	Providing Installation MS Screens Disposal Works MC Jhang	9.070
viii	Step Down Power Transformer 200 KVA	5.677
	Total	186.349

Repair of Pump House Disposal Works Gharay Bhan MC Jhang

1 Providing and laying reinforced cement concrete (i/c pre stressed concrete) , using coarse sand and screened graded and washed aggregate, in required shape and design, i/c forms, moulds, shuttering, lifting, compacting, curing rendering and finishing complete in all respects

i (b) Precast reinforced cement concrete and prestressed reinforced cement concrete in columns, beams, lintels, stair cases, shelves, etc. (3) Type C (nominal mix 1:1.5:3).

Ch.No. 6, Item.No. 6(b)(3)

Plug	1	x	3.143	x	27.00	x	26	x	0.25	x	0.75	=	413.70 Cft.
	1	x	3.143	x	25.50	x	0.5	x		x	4.00	=	160.29
	3	x	6.000	x	3.00	x	2					=	108.00 Cft.
												=	681.99 Cft.

681.99 Cft @ Rs 560.65 P.cft Rs. 231,941/-

2 Fabrication of mild steel reinforcement for cement concrete, I/c cutting, bending, laying in position, making joints and fastenings, I/c cost of binding wire and labour charges for bending of steel reinforcement (also includes removal of rust from bars)

Plug	680.81 Cft	x	4.00	x	0.454	=	1236.35 Kgs
							1236.35 Kgs @ Rs 31946.30 P%.Kgs Rs. 394,968/-

3 White washing old surface two coats. (Ch.No. 11, Item.No. 25(a)(iii))

in side	1	x	3.14	x	26.00	x	12.00	=	980 Sft
Roof	1	x	3.14	x	26.00	x	26.00	=	531 Sft
							<u>Total</u>	=	1511 Sft

1511 Cft @ Rs 730.45 % Sft Rs. 11,036/-

4 Brick on edge flooring, laid in 1:6 cement mortar, over a bed of 3/4" thick cement mortar 1: 6, (Ch.No. 10, Item.No. 9)

	1	x	3.143	x	31.25	x	3.00	=	295 Sft
									295 Sft @ Rs 13274.30 P.% Sft Rs. 39,159/-

5 Cement concrete brick or stone ballast 1- 1/2" to 2" gauge in foundation and plinth.(1:6:12). (Ch.No. 6, Item.No. 3(d))

1	x	3.143	x	31.25	x	3.00	x	0.375	=	110 Cft
										110 Cft @ Rs 22124.40 P.%Cft Rs. 24,337/-

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

(Ch.No. 1, Item.No. 1)

Concrete 1:1.5:3	681.99	x	0.84	=	572.87	=	573 Cft
					573 %Cft @ Rs 6019.75		P.%Cft Rs. 34,485/-

TOTAL. Rs. 735,927

Add 16% PST Rs. 117,748

Carried over to General Abstract of cost

G. Total:- Rs. 853,675/-

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
Municipal Committee
Jhang**

Remaining work Pump House & Screening Chamber at Disposal Works Tibba Sultan.

1	Pacca brick work in ground floor cement, sand mortar ratio 1:3 with extra for circular masonry										
	Above P.L	3.142	x	26.13	x	1.13	x	12.00	=	1113.28 Cft	
	Outside stair	3.142	x	4.00	x	4.00	x	0.63	=	31.67 Cft	
	2nd step	3.142	x	4.00	x	3.17	x	0.63	=	25.10 Cft	
	3rd step	3.142	x	4.00	x	2.33	x	0.63	=	18.45 Cft	
	4th step	3.142	x	4.00	x	1.50	x	0.63	=	11.88 Cft	
	5th step	3.142	x	4.00	x	0.67	x	0.63	=	5.30 Cft	
	Parapet	3.142	x	30.50	x	0.75	x	0.88	=	63.25 Cft	
									Total	= 1268.93 Cft	
	D/d doors	1	x	4.00	x	7.00	x	1.13	=	31.64 Cft	
		2	x	3.00	x	4.00	x	1.13	=	27.12 Cft	
		2	x	1.50	x	2.00	x	1.13	=	6.78 Cft	
		1	x	5.00	x	0.50	x	1.13	=	2.83 Cft	
		2	x	4.00	x	0.50	x	1.13	=	4.52 Cft	
		2	x	2.50	x	0.50	x	1.13	=	2.83 Cft	
									Total	= 75.71 Cft	
	Ch-7 item-5+10	1268.93	-	75.71		1193.22	Cft @ Rs.	37,549.20	% Cft	Rs. 448,045	
2	Pacca brick work in foundation and plinth in:- Ratio 1:5										
	Outside stair	1.00	x	10.00	x	4.00	x	0.63	=	25.20 Cft	
	2nd step	1.00	x	10.00	x	3.17	x	0.63	=	19.97 Cft	
	3rd step	1.00	x	10.00	x	2.33	x	0.63	=	14.68 Cft	
	4th step	1.00	x	10.00	x	1.50	x	0.63	=	9.45 Cft	
	5th step	1.00	x	10.00	x	0.67	x	0.63	=	4.22 Cft	
	Toe Wall	2.00	x	34.00	x	0.75	x	0.88	=	44.88 Cft	
	Toe Wall	2.00	x	20.00	x	0.75	x	0.88	=	26.40 Cft	
									Total	= 144.80 Cft	
	Ch-7 item-4i					144.80	Cft @ Rs.	29,928.60	% Cft	Rs. 43,337	
3	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:- Type C (nominal mix 1: 2: 4)										
	Floor Slab	3.142	x	31.25	x	31.25	x	0.25	x	0.42 = 322.18 Cft.	
	Roof Slab	0.50	3.142	x	27.25	x	27.25	x	0.25	x	0.67 = 195.40 Cft.
	Roof beam			1	x	1.00	x	1.75	x	27.25 = 47.69 Cft.	
	Landing beam			1	x	1.50	x	2.08	x	27.25 = 85.02 Cft.	
	Lintle door			1	x	5.00	x	0.50	x	1.13 = 2.83 Cft.	
	window			2	x	4.00	x	0.50	x	1.13 = 4.52 Cft.	
	C.window			2	x	2.50	x	0.50	x	1.13 = 2.83 Cft.	
	Sun shed door			1	x	5.00	x	0.25	x	1.50 = 1.88 Cft.	
	window			2	x	4.00	x	0.25	x	1.50 = 3.00 Cft.	
	C.window			2	x	2.50	x	0.25	x	1.50 = 1.88 Cft.	
	Stair slab			1	x	47.50	x	0.50	x	4.00 = 95.00 Cft.	
	Stair	45.60	x	0.63	x	0.83	x	0.50	x	4.00 = 47.69 Cft.	
									Total	= 809.89 Cft.	
	Ch-6 item-6					809.89	Cft @ Rs	583.25	P.Cft	Rs. 472,370	
	Rectangular portion	1	x	3.142	x	27.00	x	0.50	x	15.00 = 636.26 Cft.	
	Ch-6 item-6					636.26	Cft @ Rs	583.25	P.Cft	Rs. 371,096	
4	Fabrication of mild steel reinforcement for cement concrete, i/c cutting, bending, laying in position, making joints and fastenings, i/c cost of binding wire and labour charges for bending of steel reinforcement (also includes removal of rust from bars) Deformed bars.										
						1446.15	@	3.06	Kg/Cft	= 4428.99 Kgs	
									Total	= 4428.99 Kgs	
	Ch-6 item-9b					4428.99	Kgs @ Rs.	31,946.30	%Kgs	Rs. 1,414,900	
5	Making and fixing steel grated door with 1/16" thick (1.5mm) sheeting, including angle iron frame 2"x2"x3/8" (50x50x10 mm) and 3/4" (20 mm) square bars 4" (100 mm) center to center, with locking arrangement.										
		1	x	1.00	x	4.00	x	7.00	=	28.00 Sft.	
	Ch-25 item-31					28.00	Sft @ Rs	2464.25	P.Sft	Rs. 68,999	

6	Providing and fixing steel windows with openable glazed panels, using beam section for frame 1½"x1"x5/8"x1/8" (40x25x16x3 mm), Z-section for leaves ¾"x1"x¾"x1/8" embedded over a thin layer of putty duly screwed with leaves, brass fittings, holdfast, duly painted, complete in all respects, including all cost of material and labour, etc. as per approved design and as directed by the Engineer-in-charge:- fixed with wire gauze, 22 SWG glass pane 5 mm thick.										
	Window	1	x	2.00	x	3.00	x	4.00	=	24.00 Sft.	
	C.window	1	x	2.00	x	1.50	x	2.00	=	6.00 Sft.	
	Window	1	x	2.00	x	6.00	x	8.00	=	96.00 Sft.	
									Total	= 126.00 Sft.	
	Ch-25 item-41(b)v			126.00 Sft @ Rs		1170.85		P.Sft	Rs.	147,527	
7	Providing and fixing M.S. flat ½"x1/8" (13mm x 3mm) grill including ¾" x 1/8" (20 mmx3 mm) M.S. flat frame, in windows of approved design, including painting three coats, complete in all respects.										
	Window	1	x	2.00	x	3.00	x	4.00	=	24.00 Sft.	
	C.window	1	x	2.00	x	1.50	x	2.00	=	6.00 Sft.	
	Window	1	x	2.00	x	6.00	x	8.00	=	96.00 Sft.	
									Total	= 126.00 Sft.	
	Ch-25 item-58			126.00 Sft @ Rs		529.05		P.Sft	Rs.	66,660	
8	Single layer of tiles 9"x4½"x1½" (225x113x40 mm) laid over 4"(100 mm) earth and 1" (25 mm) mud plaster without Bhoosa, grouted with cement sand 1:3 on top of RCC roof slab, provided with 34 lbs. per %Sft. or 1.72 Kg/Sq.m bitumen coating sand blinded.										
	Pump House	3.142	x	30.50	x	30.50	x	0.25	=	730.71 Sft	
	Switch Room	1	x	33.00	x	14.00			=	462.00	
	Ch-9 item-5			1192.71	Sft. @ Rs.	11,779.95		% Sft	Rs.	140,501	
9	Khasi parnalas in cement, sand mortar 1:2, 12" (300 mm) outside width finished smooth with a floating coat of neat cement.										
						3.00	x	12.00	=	36.00 Rft.	
	Ch-9 item-14			36.00	Rft. @ Rs.	194.70		P.Rft	Rs.	7,009	
10	Kuras on roof 2'x2'x6" (600 x 600 x 150 mm).										
	Ch-9 item-15			3	No.. @ Rs.	905.25		Each	Rs.	2,716	
11	Bottom Kuras of brick masonry in cement mortar 1:6, 4'x2'x4½" (1200x600x113 mm) over 3" (75 mm) cement concrete 1:4:8.										
	Ch-9 item-16			3	No.. @ Rs.	1900.60		Each	Rs.	5,702	
12	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate) i/c Extra labour for skipping concrete in wells. (1:1½:3) Ratio										
		3.142	x	25.00	x	25.00	x	0.25	x	0.50 = 245.47 Cft.	
	Ch-6 item-5F+17			245.47	Cft @ Rs	45,412.30		%Cft	Rs.	111,473	
13	Cement plaster 3/8" (10 mm) thick under soffit of R.C.C. roof slabs only, upto 20' height.										
	a) 1:2										
	Pump House	1	x	3.142	x	29.00	x	29.00	x	0.25 = 660.61 Sft	
	Switch Room					2.00	x	14.00	x	16.00 = 448.00 Sft	
	Ch-11 item-10			1108.61	Sft. @ Rs	4,323.30		% Sft	Rs.	47,928	
14	Cement plaster 1:5 upto 20' (6.00 mm) height:-										
	b) ½" (13 mm) thick										
	Switch Room			2.00	x	16.00	x	12.00	=	384.00 Sft	
	"			2.00	x	14.00	x	12.00	=	336.00 Sft	
	Transformer Room			2.00	x	16.00	x	12.00	=	384.00 Sft	
	"			2.00	x	14.00	x	12.00	=	336.00 Sft	
	Deductions	Doors		2.00		8.00		10.00		-160.00	
		Windows		2.00		6.00		8.00		-96.00	
	Ch-11 item-11b			1184.00	Sft. @ Rs	4,323.30		% Sft	Rs.	51,188	
15	Cement plaster ½" thick (1:2) ratio.										
	Upto 20'height	inside	1	x	3.142	x	25.00	x	20.00	= 1571.00 Sft	
	<u>Ch-11 item-7</u>					1571.00	Sft. @ Rs	4,073.05	% Sft	Rs.	63,988
	20'-30'height	inside	1	x	3.142	x	25.00	x	10.00	= 785.50 Sft	
	<u>Ch-11 item-7+28</u>					785.50	Sft. @ Rs	4,527.65	% Sft	Rs.	35,565
	30'-40'height	inside	1	x	3.142	x	25.00	x	8.50	= 667.68 Sft	
	<u>Ch-11 item-7+28+28</u>					667.68	Sft. @ Rs	4,982.25	% Sft	Rs.	33,265

16	Cement pointing struck joints, on walls, upto 20' (6.00 m) height:- 1:2 ratio i/c Extra cost of labour and material for red oxide pigment in cement pointing to match with the colour of bricks.												
	Pump House	1	x	3.142	x	27.25	x	9.00	=	770.58	Sft		
	Switch Room			2.00	x	33.00	x	12.00	=	792.00	Sft		
	"			2.00	x	14.00	x	12.00	=	336.00	Sft		
	Ch-11 item-18+31			1898.58	Sft @ Rs			4,598.40	% Sft		Rs.	87,304	
17	White washing 3 coats.												
	Inside	1	x	3.142	x	25.00	x	38.50	=	3024.18	Sft		
	Roof	3.142	x	25.000	x	25.00	x	0.25	=	490.94	Sft		
	Roof			2.000	x	16.00	x	14.00	=	448.00	Sft		
	Switch Room			2.00	x	16.00	x	12.00	=	384.00	Sft		
	"			2.00	x	14.00	x	12.00	=	336.00	Sft		
	Transformer Room			2.00	x	16.00	x	12.00	=	384.00	Sft		
	"			2.00	x	14.00	x	12.00	=	336.00	Sft		
	Deductions			2.00		8.00		10.00		-160.00	Sft		
	Doors					8.00							
	Windows			2.00		6.00		8.00		-96.00	Sft		
										Total	=	5147.11	Sft
	Ch-11 item-25			5147.11	Sft @ Rs.			730.45	% Sft		Rs.	37,597	
18	Painting new surface:- Preparing surface and painting of doors and windows any type (including edges):- 3-coats												
	Door	1	x	2.00	x	4.00	x	7.00	=	56.00	Sft		
	Window	2	x	2.00	x	3.00	x	4.00	=	48.00	Sft		
	C.Window	2	x	2.00	x	1.50	x	2.00	=	12.00	Sft		
	Door	2	x	4.00	x	8.00	x	10.00	=	640.00	Sft		
	Window	2	x	2.00	x	8.00	x	6.00	=	192.00	Sft		
	Main Gate	2	x	1.00	x	6.00	x	12.00	=	144.00	Sft		
										Total	=	1092.00	Sft
	Ch-13 item-5c			1092.00	Sft. @ Rs.			2,301.70	% Sft		Rs.	25,135	
19	Brick on edge flooring, laid in 1:6 cement mortar, over a bed of 3/4" thick cement mortar 1: 6, (Ch.No. 10, Item.No. 9)												
	Pump House	1	x	3.142	x	30.25	x	3.00	=	285.14	Sft		
	Switch Room			2.00	x	33.00	x	3.00	=	198.00			
	"			2.00	x	14.00	x	3.00	=	84.00			
				567.14	Cft @ Rs.			13,274.30	% Cft		Rs.	75,283	
20	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and plinth:- Ratio 1: 6:12.												
		1.00	x	30.25	x	3.00	x	0.38	=	34.49	Sft		
		2.00	x	33.00	x	3.00	x	0.38	=	75.24	Sft		
		2.00	x	14.00	x	3.00	x	0.38	=	31.92	Sft		
	Ch-6 item-3			141.65	Sft. @ Rs			22,124.40	% Sft		Rs.	31,338	
21	Providing and fixing stair railing of 2½" (63 mm) i/d G.I. pipe, welded with 5/8"x5/8" (16x16 mm) square M.S. bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.												
						25.00	+	47.50	=	72.50	Rft.		
	Ch-25 item-39			72.50	Rft. @ Rs.			1840.40	P.Rft		Rs.	133,429	
22	P/hoisting R.S joist size 12x8" of 65 Lbs dully painted.												
		27	x	30	x	0.454	=	367.74	Kg				
				367.74	Kg. @ Rs.			33,395.45	P.% Kg		Rs.	122,808	
23	Providing and installation MS moveable gate 16SWG angle 2" x 2 x 1/4 Size 8'-6" x 9'-6" complete in all respect												
	Ch-25 item-10+11	1	x	4.00	=	4	Nos						
		4	x	600	=	2400	Kg						
				2400.00	Kg. @ Rs.			34,810.15	P.% Kg		Rs.	835,444	
24	Making and fixing steel grated door with 1/16" thick (1.5mm) sheeting, including angle iron frame 2"x2"x3/8" (50x50x10 mm) and ¾" (20 mm) square bars 4" (100 mm) centre to centre, with locking arrangement.												
	C.Window	1	x	1.00	x	12.00	x	6.00	=	72.00	Sft		
										Total	=	72.00	Sft
	Ch-25 item-31			72.00	Sft. @ Rs.			2,464.25	% Sft		Rs.	177,426	
25	Providing, laying, watering and ramming brick or stone ballast 1½" to 2"(40 mm to 50 mm) gauge mixed with 25% sand, for floor foundation, complete in all respects.												
	Flooring	2	x	16.00	x	14.00	x	0.50	=	224.00	Cft		
										Total	=	224.00	Cft
	Ch-10 item-3			224.00	Cft. @ Rs.			10,166.50	% Cft		Rs.	22,773	

26	Providing and laying topping of cement concrete 1:2:4, including surface finishing and dividing in panels:- (i) 3"(75 mm) thick	2	x	16.00	x	14.00	=	448.00 Sft			
								Total =	448.00 Sft		
	Ch-10 item-15	448.00	Sft. @ Rs.	12,550.55	% Sft					Rs.	56,226
27	Providing and fixing marble strip of any shade for dividing the mosaic flooring into panels a) Size 1½" x 3/8" (40 x 10 mm) 20% Floor Quantity										
	Ch-10 item-40	89.60	Rft. @ Rs.	23.75	Rft					Rs.	2,128

SCREENING CHAMBER

28	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:- Type C (nominal mix 1: 2: 4)												
a)	Beam	1	x	10.63	x	0.75	x	0.50	=	3.99 Cft.			
	Slab	3.142	x	10.63	x	0.25	x	0.50	=	44.38 Cft.			
								Total =	48.37 Cft.				
	D/d	3	x	3.142	x	1.83	x	1.83	x	0.25	x	0.50 =	1.32 Cft.
								Net =	47.05 Cft.				
	Ch-6 item-6					48.37 Cft @ Rs		583.25		P.Cft	Rs.	28,209	
b)	Rectangular portion	1	x	2.00	x	9.50	x	0.50	x	11.00	=	104.50 Cft.	
	Sami circular portion	1	x	3.142	x	11.13	x	0.50	x	11.00	=	192.34 Cft.	
	Extra Rcc work disposal work hurmali pura, lakhi wala, Noor Shah	1	x	4	x	16.00	x	0.75	x	20.00	=	962.56 Cft.	
		1	x	9	x	13.00	x	6.50	x	0.50	=	380.25 Cft.	
								Total =	1639.65 Cft.				
	Ch-6 item-6					1639.65 Cft @ Rs		583.25		P.Cft	Rs.	956,324	
29	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												
	Slab+c.wall	1639.65 Cft	@	3.06	Kg	P.Cft		=	5021.61	Kgs			
								Total =	5021.61	Kgs			
	Ch-6 item-10-i					5021.61 Kgs @ Rs.		31,946.30			Rs.	1,604,217	
30	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and plinth:- Ratio 1: 6:12.												
	Rectangular portion	2	x	11.50	x	3.00	x	0.38	=	26.22 Cft.			
	Sami circular portion	1	x	13.63	x	3.00	x	0.38	=	15.54 Cft.			
								Total =	41.76 Cft.				
	Ch-6 item-3d			41.76	Cft @ Rs			22,124.40		% Cft	Rs.	9,239	
31	Fabrication of heavy steel work, with angle, tees, flat iron round iron and sheet iron for making trusses, girders, tanks, etc., including cutting, drilling, re-venting, handling, assembling and fixing, but excluding erection in position.												
	L iron 3"x3"x3/8"	2	x	2.00	x	24.12	@	3.25	Kg/P.Rft	=	313.56 Kgs		
		2	x	3.00	x	3.00	@	3.25	Kg/P.Rft	=	58.50 Kgs		
	2"x2"3/8" flat	2	x	48.74	x	24.12	@	1.16	Kg/P.Rft	=	2727.41 Kgs		
								Total =	3099.47 Kgs				
	Ch-25 item-10+11					3099.47 Kgs @ Rs.		34,810.15		%Kgs	Rs.	1,078,931	
32	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct section and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle, gravel and rock:-												
	0-7' Depth	1	x	16.00	x	6.04	x	7.00	=	676.48 Cft.			
	Ch-3 item-42					676.48 Cft @ Rs		12,836.55		% 0Cft	Rs.	8,684	
	7'-15' Depth	1	x	16.00	x	6.04	x	7.00	=	676.48 Cft.			
	Ch-3 item-42					676.48 Cft @ Rs		18,457.30		% 0Cft	Rs.	12,486	
	Above 15' Depth	1	x	16.00	x	6.04	x	10.27	=	992.49 Cft.			
	Ch-3 item-42					992.49 Cft @ Rs		19,524.75		% 0Cft	Rs.	19,378	
33	Providing and laying crushed stone aggregate of 1/4" to 1" guage under and around the sewer pipe, including leveling, manual compaction, complete in all respects.												
	42"i/d	16	@	6.54	Cft	P.Rft		=	104.64 Cft.				

	<u>Ch-21 Item-23</u>		104.64 Cft @ Rs	9,324.00	P.Cft	Rs.	9,757
	Providing and laying R.C.C. pipe, moulded with cement concrete 1:1½:3, with spigot socket or collar joint, etc. Including cost of reinforcement, conforming to B.S. 5911:Part I: 1981, Class "L" including carriage of pipe from factory to site of						
34	work, lowering in trenches to correct alignment and grade, jointing, cutting pipes where necessary, finishing and testing, etc., complete.						
	Ch-21 item-3x						
	42"i/d	1 x 16	= 16 Rft @ Rs	4,892.30	P.Rft	Rs.	78,277
35	Rehanding of earth lead upto a single through of kassi phahorah or shovel . Take 80% of item above.						
	Ch-3 item-13a	2345.45 x 80%	1876.36 Cft @ Rs	2772.00	%o Cft	Rs.	5,201
36	Providing and fixing 6" thick R.C.C. manhole cover with tee shaped C.I. frame of 22" I/d (frame weighing 37.324 Kg. or one maund as per Standard Drawing STD/PD No. 6, of 1977, complete in all respect.						
	Ch-21 item-16		2 No. @ Rs	16,069.65	Each	Rs.	32,139
37	Providing and fixing G.I. pipe railing, as per standard drawing.						
	Rectangular portion		1 x 2.00 x 9.50	= 19.00 Rft			
	Sami circular portion		1 x 3.142 x 9.13	= 28.69 Rft			
			2 x 3.142 x 27.00	= 84.83 Rft			
				Total = 132.52 Rft			
	Ch-18 item-14		132.52 Rft @ Rs	1928.35	P.Rft	Rs.	<u>255,546</u>
	<u>ELECTRIFICATION WORK</u>						
38	Supply and erection of PVC pipe for wiring recessed in walls, including inspection boxes, pull boxes, hooks, cutting jharries and repairing surface, etc., complete with all specials. 20 mm i/d						
	Ch-24 item-3ii		250 Rft @ Rs	86.40	P.Rft	Rs.	21,600
39	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 250/440 volts grade cable (BSS-2004), in prelaid PVC pipes/M.S. conduit/G.I. pipe/wooden strip batten/wooden casing and capping/trenches, etc. (rate for cable only):- 3/0.74 mm (3/0.029")						
	Ch-24 item-11i		700 Rft @ Rs	27.10	P.Rft	Rs.	18,970
40	Supply and erection of teak wood board, 4.5 cm (1¾") thick. 20 x 25 cm (8"x10")						
	Ch-24 item-16(iii)		15 No. @ Rs	189.35	Each	Rs.	2,840
41	Supply and erection of switches 5 Amp piano type.						
	Ch-24 item-31ii		35 No. @ Rs	80.75	Each	Rs.	2,826
42	Supply and erection of ceiling rose, bakelite.						
	Ch-24 item-30		15 No. @ Rs	75.10	Each	Rs.	1,127
43	Supply and erection of button holder bakelite large size.						
	Ch-24 item-39i		15 No. @ Rs	61.50	Each	Rs.	923
44	Providing & erection of ceiling fan 56" GFC / Pak / Younis with regulator (superior quality)						
			3 Job @ Rs.	8,500.00	P.Job	Rs.	25,500
45	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
	Concrete 1:1.5:3	245.47 x 0.84	= 206.19	= 206.194	Cft		
	Concrete 1:2:4	3134 x 0.88	= 2758.06	= 2758.06			
		2964		6,019.75	P.%Cft	Rs.	178440.8075
						B Total :-	9,489,775
						Add 5%	474,489
						G Total:-	<u>9,964,264</u>

Sub-Engineer
Municipal Committee
Jhang

Municipal Officer (I&S)
Municipal Committee
Jhang

Rehabilitation of Municipal Services Infrastructure Sewerage System Remaining work Missing Sewer line Disposal Work Gadhiana wala, Disposal work Ghogay wali, Project in Jhang City.

Remaining work Pump House Disposal Works Basti Ghoghay Wali

1	Excavation of well in dray upto 20' (6 m) below ground level and disposal of soil within one chain (30 m) in ordinary soil or sand.													
	5'-Depth	3.142	x	35.00	x	35.00	x	0.25	x	5.00	=	4811.19 Cft.		
	Ch-22 item-1a i					4811.19 Cft @ Rs				8,238.40	% 0Cft		Rs.	39,636 /-
	5'-10' Depth	3.142	x	35.00	x	35.00	x	0.25	x	5.00	=	4811.19 Cft.		
	Ch-22 item-1a ii					4811.19 Cft @ Rs				8,604.30	% 0Cft		Rs.	41,397 /-
2	Dry sinking of well i/c loading and removing excavated material with one chain (30m) in ordinary soil.													
	10'-15' Depth	3.142	x	29.50	x	29.50	x	0.25	x	5.00	=	3417.91 Cft.		
	Ch-22 item-2					3417.91 Cft @ Rs				44,352.00	% 0Cft		Rs.	151,591 /-
	15'-20' Depth	3.142	x	29.50	x	29.50	x	0.25	x	5.00	=	3417.91 Cft.		
	Ch-22 item-2					3417.91 Cft @ Rs				55,440.00	% 0Cft		Rs.	189,489 /-
3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):-													
	iii) above 20' to 30' (6.0 to 9.0 m) depth	3.142	x	29.50	x	29.50	x	0.25	x	5.00	=	3417.91 Cft.		
	Ch-22 item-3					3417.91 Cft @ Rs				184,800.00	% 0Cft		Rs.	631,629 /-
4	Providing and fixing structural steel for cutting edge,													
						1	x	3.142	x	29.50	=	92.69 Rft		
						92.69	@	3.25	Kg/Rft	=	301.24 Kgs			
	Ch-22 item-9					301.24 Kgs @ Rs.				31,041.50	%Kgs		Rs.	93,509 /-
5	Providing, making and laying R.C.C. well curb in position, using coarse sand, including all kinds of form, moulds, curing, shuttering, rendering and finishing the exposed surface, (including screening and washing of aggregate :- Ratio 1 : 1½ : 3													
		3.142	x	27.00	x	2.25	x	3.50	=	668.07 Cft.				
	Ch-22 item-8a					668.07 Cft @ Rs				715.55	P.Cft		Rs.	478,036 /-
6	Pucca brick work other than building (1:3) ratio with extra for circular masonry upto 10' height.													
	1st Step outside	1	x	3.142	x	27.25	x	2.25	x	12.00	=	2311.73 Cft.		
	D/d C.wall	1	x	3.142	x	26.50	x	0.75	x	12.00	=	-749.37 Cft.		
										Net	=	1562.36 Cft.		
	Ch-7 item-7+10					1562.36 Cft. @ Rs				36,349.10	% Cft		Rs.	567,904 /-
	<u>10'-20' height</u>													
	1st Step	1	x	3.142	x	26.88	x	1.88	x	10.00	=	1587.79 Cft.		
	D/d	1	x	3.142	x	26.50	x	0.75	x	10.00	=	-624.47 Cft.		
										Net	=	2212.26 Cft.		
	Ch-7 item-7i+10+8					2212.26 Cft. @ Rs				37,827.50	% Cft		Rs.	836,844 /-
	<u>20'-30' height</u>													
	1st Step	1	x	3.142	x	26.50	x	1.50	x	6.00	=	749.37 Cft.		
	Ch-7 item-7i+10+8+8					749.37 Cft. @ Rs				39,305.90	% Cft		Rs.	294,545 /-
7	Providing and laying vertical damp proof course with cement sand plaster and bitumen coating:- with one coat of bitumen and one coat of polythene sheet 500 gauge: Ratio 1:2 ¾ " thick (20 mm)													
	Rectangular portion													
	1st step		1	x	3.142	x	29.50	x	12.00	=	1112.27 Sft.			
	2nd step		1	x	3.142	x	28.75	x	10.00	=	903.33 Sft.			
	2nd step		1	x	3.142	x	28.00	x	6.00	=	527.86 Sft.			
										Total	=	2543.45 Sft.		
	Ch-6 item-37B-iii					2543.45 Sft @ Rs				7,735.45	% Sft		Rs.	196,747 /-

8	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate) i/c Extra labour for skipping concrete in wells. (1:2:4) Ratio													
	Curb	3.142	x	25.00	x	25.00	x	0.25	x	3.50	=	1718.28	Cft.	
	Under curb			1	x	3.142	x	26.63	x	0.75	=	62.75	Cft.	
	Chamber	3.142	x	25.00	x	25.00	x	0.25	x	1.25	=	613.67	Cft.	
										Total	=	2394.71	Cft.	
	Ch-6 item-5f+17					2394.71	Cft @ Rs			39,832.30	%Cft		Rs. 953,867 /-	
9	Providing and laying damp proof course with cement concrete (1:2:4) with 2 coats of bitumen: 1½" thick (40 mm)													
				1	x	3.142	x	26.13	x	1.13	=	92.77	Sft.	
	Ch-6 item-36bi					92.77	Sft @ Rs			9,724.15	% Sft		Rs. 9,021 /-	
10	Pacca brick work in ground floor cement, sand mortar ratio 1:3 with extra for circular masonry													
	Above P.L	3.142	x	26.13	x	1.13	x	12.00	=	1113.28	Cft			
	Outside stair	3.142	x	4.00	x	4.00	x	0.63	=	31.67	Cft			
	2nd step	3.142	x	4.00	x	3.17	x	0.63	=	25.10	Cft			
	3rd step	3.142	x	4.00	x	2.33	x	0.63	=	18.45	Cft			
	4th step	3.142	x	4.00	x	1.50	x	0.63	=	11.88	Cft			
	5th step	3.142	x	4.00	x	0.67	x	0.63	=	5.30	Cft			
	Parapet	3.142	x	30.50	x	0.75	x	0.88	=	63.25	Cft			
										Total	=	1268.93	Cft	
	D/d doors	1	x	4.00	x	7.00	x	1.13	=	31.64	Cft			
		2	x	3.00	x	4.00	x	1.13	=	27.12	Cft			
		2	x	1.50	x	2.00	x	1.13	=	6.78	Cft			
		1	x	5.00	x	0.50	x	1.13	=	2.83	Cft			
		2	x	4.00	x	0.50	x	1.13	=	4.52	Cft			
		2	x	2.50	x	0.50	x	1.13	=	2.83	Cft			
										Total	=	75.71	Cft	
	Ch-7 item-5+10	1268.93	-	75.71		1193.22	Cft @ Rs.			37,549.20	% Cft		Rs. 448,045 /-	
11	Pacca brick work in foundation and plinth in:- Ratio 1:5													
	Outside stair	1.00	x	10.00	x	4.00	x	0.63	=	25.20	Cft			
	2nd step	1.00	x	10.00	x	3.17	x	0.63	=	19.97	Cft			
	3rd step	1.00	x	10.00	x	2.33	x	0.63	=	14.68	Cft			
	4th step	1.00	x	10.00	x	1.50	x	0.63	=	9.45	Cft			
	5th step	1.00	x	10.00	x	0.67	x	0.63	=	4.22	Cft			
	Toe Wall	2.00	x	34.00	x	0.75	x	0.88	=	44.88	Cft			
	Toe Wall	2.00	x	20.00	x	0.75	x	0.88	=	26.40	Cft			
										Total	=	144.80	Cft	
	Ch-7 item-4i					26.40	Cft @ Rs.			29,928.60	% Cft		Rs. 7,901 /-	
12	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:- Type C (nominal mix 1: 2: 4)													
	Slab	3.142	x	31.25	x	31.25	x	0.25	x	0.50	=	383.54	Cft.	
	Slab land	0.50	3.142	x	27.25	x	27.25	x	0.25	x	0.66	=	192.48	Cft.
	Roof beam			2	x	25.50	x	1.00	x	1.75	=	89.25	Cft.	
	Landing beam			1	x	27.25	x	1.50	x	2.08	=	85.02	Cft.	
	Lintel door			1	x	5.00	x	0.50	x	1.13	=	2.83	Cft.	
	window			2	x	4.00	x	0.50	x	1.13	=	4.52	Cft.	
	C.window			2	x	2.50	x	0.50	x	1.13	=	2.83	Cft.	
	Sunshed door			1	x	5.00	x	0.25	x	1.50	=	1.88	Cft.	
	window			2	x	4.00	x	0.25	x	1.50	=	3.00	Cft.	
	C.window			2	x	2.50	x	0.25	x	1.50	=	1.88	Cft.	
	Stair slab			1	x	47.50	x	0.50	x	4.00	=	95.00	Cft.	
	Stair	45.60	x	0.63	x	0.83	x	0.50	x	4.00	=	47.69	Cft.	
										Total	=	909.91	Cft.	

Ch-6 item-6				909.91 Cft @ Rs	583.25	P.Cft	Rs.	530,703 /-
13	Fabrication of mild steel reinforcement for cement concrete, i/c cutting, bending, laying in position, making joints and fastenings, i/c cost of binding wire and labour charges for bending of steel reinforcement (also includes removal of rust from bars) Deformed bars.							
	668.07	@	3.06	Kg/Cft	=	2046.03	Kgs	
	909.91	@	3.06	Kg/Cft	=	2786.69	Kgs	
				Total	=	4832.73	Kgs	
<u>Ch-6 item-9b</u>				4832.73 Kgs @ Rs.	31,946.30	%Kgs	Rs.	1,543,877 /-
14	Making and fixing steel grated door with 1/16" thick (1.5mm) sheeting, including angle iron frame 2"x2"x3/8" (50x50x10 mm) and 3/4" (20 mm) square bars 4" (100 mm) center to center, with locking arrangement.							
	1	x	1.00	x	4.00	x	7.00	= 28.00 Sft.
Ch-25 item-31				28.00 Sft @ Rs	2464.25	P.Sft	Rs.	68,999 /-
15	Providing and fixing steel windows with openable glazed panels, using beam section for frame 1 1/2"x1"x5/8"x1/8" (40x25x16x3 mm), Z-section for leaves 3/4"x1"x3/4"x1/8" embedded over a thin layer of putty duly screwed with leaves, brass fittings, holdfast, duly painted, complete in all respects, including all cost of material and labour, etc. as per approved design and as directed by the Engineer-in-charge:- fixed with wire gauze, 22 SWG glass pane 5 mm thick.							
Window	1	x	2.00	x	3.00	x	4.00	= 24.00 Sft.
C.window	1	x	2.00	x	1.50	x	2.00	= 6.00 Sft.
	1	x	2.00	x	6.00	x	8.00	= 96.00 Sft.
				Total	=	126.00	Sft.	
Ch-25 item-41(b)v				126.00 Sft @ Rs	1170.85	P.Sft	Rs.	147,527 /-
16	Providing and fixing M.S. flat 1/2"x1/8" (13mm x 3mm) grill including 3/4" x 1/8" (20 mmx3 mm) M.S. flat frame, in windows of approved design, including painting three coats, complete in all respects.							
Window	1	x	2.00	x	3.00	x	4.00	= 24.00 Sft.
C.window	1	x	2.00	x	1.50	x	2.00	= 6.00 Sft.
	1	x	2.00	x	6.00	x	8.00	= 96.00 Sft.
				Total	=	126.00	Sft.	
Ch-25 item-58				126.00 Sft @ Rs	529.05	P.Sft	Rs.	66,660 /-
17	Single layer of tiles 9"x4 1/2"x1 1/2" (225x113x40 mm) laid over 4" (100 mm) earth and 1" (25 mm) mud plaster without Bhoosa, grouted with cement sand 1:3 on top of RCC roof slab, provided with 34 lbs. per %Sft. or 1.72 Kg/Sq.m bitumen coating sand blinded.							
	3.142	x	30.50	x	30.50	x	0.25	= 730.71 Sft
			1	x	33.00	x	14.00	= 462.00
Ch-9 item-5				1,192.71 Sft. @ Rs.	11,779.95	% Sft	Rs.	140,501 /-
18	Khassi parnals in cement, sand mortar 1:2, 12" (300 mm) outside width finished smooth with a floating coat of neat cement.							
					3.00	x	12.00	= 36.00 Rft.
Ch-9 item-14				36.00 Rft. @ Rs.	194.70	P.Rft	Rs.	7,009 /-
19	Khuras on roof 2'x2'x6" (600 x 600 x 150 mm).							
Ch-9 item-15				3 No.. @ Rs.	905.25	Each	Rs.	2,716 /-
20	Bottom Khuras of brick masonry in cement mortar 1:6, 4'x2'x4 1/2" (1200x600x113 mm) over 3" (75 mm) cement concrete 1:4:8.							
Ch-9 item-16				3 No.. @ Rs.	1900.60	Each	Rs.	5,702 /-
21	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate) i/c Extra labour for skipping concrete in wells. (1:1 1/2:3) Ratio							
	3.142	x	25.00	x	25.00	x	0.25	x 0.50 = 245.47 Cft.
Ch-6 item-5c+17				245.47 Cft @ Rs	45,412.30	%Cft	Rs.	111,473 /-
22	Cement plaster 3/8" (10 mm) thick under soffit of R.C.C. roof slabs only, upto 20' height.							
a) 1:2								
Pump House	1	x	3.142	x	29.00	x	29.00	x 0.25 = 660.61 Sft

	Switch Room		2.00	x	14.00	x	16.00	=	448.00 Sft				
	Ch-11 item-10		1108.61	Sft. @	Rs		4,323.30	% Sft		Rs.	47,928 /-		
23	Cement plaster 1:5 upto 20' (6.00 mm) height:- b) ½" (13 mm) thick												
	Switch Room		2.00	x	16.00	x	12.00	=	384.00 Sft				
	"		2.00	x	14.00	x	12.00	=	336.00 Sft				
	Transformer Room		2.00	x	16.00	x	12.00	=	384.00 Sft				
	"		2.00	x	14.00	x	12.00	=	336.00 Sft				
24	Deduction Doors		2.00		8.00		10.00		-160.00				
	Windows		2.00		6.00		8.00		-96.00				
	Ch-11 item-11b		1184.00	Sft. @	Rs		4,323.30	% Sft		Rs.	51,188 /-		
25	Cement plaster ½" thick (1:3) ratio. Upto 20'height inside	1	x	3.142	x	25.00	x	20.00	=	1571.00 Sft			
	<u>Ch-11 item-7</u>						1571.00	Sft. @	Rs	4,073.05	% Sft	Rs.	63,988 /-
	20'-30'height inside	1	x	3.142	x	25.00	x	12.00	=	942.60 Sft			
	<u>Ch-11 item-7+28</u>						942.60	Sft. @	Rs	4,527.65	% Sft	Rs.	42,678 /-
26	30'-40'height inside	1	x	3.142	x	25.00	x	8.50	=	667.68 Sft			
	<u>Ch-11 item-7+28+28</u>						667.68	Sft. @	Rs	4,982.25	% Sft	Rs.	33,265 /-
27	Cement pointing struck joints, on walls, upto 20' (6.00 m) height:- 1:2 ratio i/c Extra cost of labour and material for red oxide pigment in cement pointing to match with the colour of bricks.												
		1	x	3.142	x	27.25	x	12.00	=	1027.43 Sft			
							2.00	x	33.00	x	12.00	=	792.00 Sft
							2.00	x	33.00	x	12.00	=	792.00 Sft
	Ch-11 item-18+31						2611.43	Sft @	Rs	4,598.40	% Sft	Rs.	120,084 /-
28	White washing 3 coats. Inside	1	x	3.142	x	25.00	x	38.50	=	3024.18 Sft			
	Roof	3.142	x	25.000	x	25.00	x	0.25	=	490.94 Sft			
	Roof	2.000	x	16.00	x	14.00	=	448.00 Sft					
	Switch Room	2.00	x	16.00	x	12.00	=	384.00 Sft					
	"	2.00	x	14.00	x	12.00	=	336.00 Sft					
	Transformer Room	2.00	x	16.00	x	12.00	=	384.00 Sft					
	"	2.00	x	14.00	x	12.00	=	336.00 Sft					
29	Deduction Doors		2.00		8.00		10.00		-160.00	Sft			
	Windows		2.00		6.00		8.00		-96.00	Sft			
							Total	=	5147.11 Sft				
	Ch-11 item-25		5147.11	Sft @	Rs.		730.45	% Sft		Rs.	37,597 /-		
30	Painting new surface:- Preparing surface and painting of doors and windows any type (including edges):- 3-coats												
	Door	2	x	2.00	x	4.00	x	7.00	=	112.00 Sft			
	Window	4	x	2.00	x	3.00	x	4.00	=	96.00 Sft			
	C.Window	4	x	2.00	x	1.50	x	2.00	=	24.00 Sft			
	Door	2	x	4.00	x	8.00	x	10.00	=	640.00 Sft			
	Window	2	x	2.00	x	8.00	x	6.00	=	192.00 Sft			
	Main Gate	2	x	1.00	x	6.00	x	12.00	=	144.00 Sft			
							Total	=	1208.00 Sft				
	Ch-13 item-5c		1208.00	Sft. @	Rs.		2,301.70	% Sft		Rs.	27,805 /-		
31	Dry brick on edge paving, sand grouted, including preparation of bed by watering, ramming & bringing the same to proper camber, by ½ "(13 mm) thick mud plaster.												
		1	x	3.142	x	30.25	x	3.00	=	285.14 Sft			
	Switch Room		2.00	x	33.00	x	3.00	=	198.00				
	"		2.00	x	14.00	x	3.00	=	84.00				

	Ch-10 item-6			567.14 Cft @ Rs.		10,239.95 % Cft		Rs.	58,074 /-	
32	Cement concrete brick or stone ballast 1½" to 2" (40 mm to 50 mm) gauge, in foundation and plinth:- Ratio 1: 6:12.									
		1.00	x	30.25	x	3.00	x	0.38	=	34.49 Sft
		2.00	x	33.00	x	3.00	x	0.38	=	75.24 Sft
		2.00	x	14.00	x	3.00	x	0.38	=	31.92 Sft
	Ch-6 item-3 iv			141.65 Sft. @ Rs		22,124.40 % Sft		Rs.	31,338 /-	
33	Providing and fixing stair railing of 2½" (63 mm) i/d G.I. pipe, welded with 5/8"x5/8" (16x16 mm) square M.S. bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.									
		4.00	x	3.14	x	25.75			=	323.63 Rft
	Ch-25 item-39			323.63 Rft. @ Rs.		1840.40 P.Rft		Rs.	595,601 /-	
34	P/hoisting R.S joist size 12x8" of 65 Lbs dully painted.									
	Ch-25 item-10	27	x	30	x	0.454			=	367.74 Kg
				367.74 Kg. @ Rs.		33,395.45 P.% Kg		Rs.	122,808 /-	
35	Providing and installation MS moveable gate 16SWG angle 2" x 2 x 1/4 Size 8 x 6 complete in all respect									
	Ch-25 item-10+11	1	x	4.00	=	4 Nos				
		4	x	600		=	2400 Kg			
				2400.00 Kg. @ Rs.		34,810.15 P.% Kg		Rs.	835,444 /-	
26	Making and fixing steel grated door with 1/16" thick (1.5mm) sheeting, including angle iron frame 2"x2"x3/8"									
	C.Window	1	x	1.00	x	12.00	x	6.00	=	72.00 Sft
								Total	=	72.00 Sft
	Ch-25 item-31			72.00 Sft. @ Rs.		2,464.25 % Sft		Rs.	177,426 /-	
27	Providing, laying, watering and ramming brick or stone ballast 1½" to 2"(40 mm to 50 mm) gauge mixed with 25% sand, for floor foundation, complete in all respects.									
	Flooring	2	x	16.00	x	14.00	x	0.50	=	224.00 Cft
								Total	=	224.00 Cft
	Ch-10 item-3			224.00 Cft. @ Rs.		10,166.50 % Cft		Rs.	22,773 /-	
28	Providing and laying topping of cement concrete 1:2:4, including surface finishing and dividing in panels:- (i) 3"(75 mm) thick									
		2	x	16.00	x	14.00			=	448.00 Sft
								Total	=	448.00 Sft
	Ch-10 item-15			448.00 Sft. @ Rs.		12,550.55 % Sft		Rs.	56,226 /-	
29	Providing and fixing marble strip of any shade for dividing the mosaic flooring into panels a) Size 1½" x 3/8" (40 x 10 mm) 20% Floor Quantity									
	Ch-10 item-40			89.60 Rft. @ Rs.		23.75 Rft		Rs.	2,128 /-	
<u>ELECTRIFICATION WORK</u>										
30	Supply and erection of PVC pipe for wiring recessed in walls, including inspection boxes, pull boxes, hooks, cutting jharries and repairing surface, etc., complete with all specials. 20 mm i/d									
	Ch-24 item-3ii			250 Rft @ Rs		86.40 P.Rft		Rs.	21,600 /-	
31	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 250/440 volts grade cable (BSS-2004), in prelaid PVC pipes/M.S. conduit/G.I. pipe/wooden strip batten/wooden casing and capping/trenches, etc. (rate for cable only):- 3/0.74 mm (3/0.029")									
	Ch-24 item-11i			700 Rft @ Rs		27.10 P.Rft		Rs.	18,970 /-	
32	Supply and erection of teak wood board, 4.5 cm (1¾") thick. 20 x 25 cm (8"x10")									
	Ch-24 item-16(iii)			15 No. @ Rs		189.35 Each		Rs.	2,840 /-	

33 Supply and erection of switches 5 Amp piano type. Ch-24 item-31ii	35 No. @ Rs	80.75	Each	Rs.	2,826 /-
34 Supply and erection of ceiling rose, bakelite. Ch-24 item-30	15 No. @ Rs	75.10	Each	Rs.	1,127 /-
35 Supply and erection of button holder bakelite large size. Ch-24 item-39i	15 No. @ Rs	61.50	Each	Rs.	923 /-
36 Providing & erection of ceiling fan 56" GFC / Pak / Younis with regulator (superior quality) 3 Job @ Rs.	8,500.00	P.Job		Rs.	25,500 /-
Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), 37 surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)					
Concrete 1:1.5:3	245.47 x	0.84	=	206.19	= 206.19375 Cft
Concrete 1:2:4	3305 x	0.88	=	2908.06	= 2908.05985
	3114			6,019.75	P.%Cft
					Rs. 187470.281
	1 No.	@	Rs.	10,152,937	Total:- Rs. 10,152,937 /-
					Rs. 10,152,937 /-
					Add 5% Rs. 507,647 /-
					G. Total Rs. 10,660,584 /-

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
Municipal Committee
Jhang**

Missing Sewerlines of Disposal Works Tibba Sultan, Gadhian Wala & Basti Ghoghay wali.

1	Dismantling and removing of road metalling. (detail attached)								
	<u>Ch-4 It-45</u>			7,089.00 Cft @ Rs	2217.60	%Cft	Rs.	157,206 /-	
2	Dismantling brick or flagged flooring without concrete foundation. (detail attached) 12"/i/d								
	<u>Ch-4 Item-29</u>			1,551.00 Sft @ Rs	942.50	% Sft	Rs.	14,618 /-	
3	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct section and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle, gravel and rock:-								
	(Ch-3 Item-42)								
	(Detail attached)	0-7' Depth (P-54 to 56)		97,612.60 Cft @ Rs	12,836.55	% 0Cft	Rs.	1,253,009 /-	
	(Detail attached)	7-15' Depth (P-54 to 56)		66,056.80 Cft @ Rs	18,457.30	% 0Cft	Rs.	1,219,230 /-	
	(Detail attached)	Above 15' Depth (P-54 to 56)		17,458.74 Cft @ Rs	19,524.75	% 0Cft	Rs.	340,878 /-	
5	Providing and laying crushed stone aggregate of 1/4" to 1" guage under and around the sewer pipe, including leveling, manual compaction, complete in all respects.								
		24"/i/d		55 @ 5.59 Cft	P.Rft =	307.45 Cft.			
		27"/i/d		614 @ 6.54 Cft	P.Rft =	4015.56 Cft.			
		30"/i/d		325 @ 7.54 Cft	P.Rft =	2450.50 Cft.			
		33"/i/d		280 @ 8.61 Cft	P.Rft =	2410.80 Cft.			
		36"/i/d		453 @ 9.72 Cft	P.Rft =	4403.16 Cft.			
		42"/i/d		119 @ 12.16 Cft	P.Rft =	1447.04 Cft.			
					Total =	15034.51 Cft.			
	<u>Ch-21 Item-23</u>			15034.51 %Cft @ Rs	9,324.00	P.Cft	Rs.	1,401,818 /-	
6	Providing and laying R.C.C. pipe sewers, moulded with ditto cement concrete 1:1½:3 conforming to ASTM Specification C-76-79, Class II. Wall B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing, etc., complete.								
	<u>Ch-21 item-3</u>								
	9"/i/d	1000 -	17 x 0 =	1,000 Rft @ Rs	754.65	P.Rft	Rs.	754,650 /-	
	12"/i/d	500 -	8 x 4 =	468 Rft @ Rs	754.65	P.Rft	Rs.	353,176 /-	
	24"/i/d	60 -	1 x 5 =	55 Rft @ Rs	1,799.45	P.Rft	Rs.	98,970 /-	
	27"/i/d	659 -	9 x 5 =	614 Rft @ Rs	2,430.55	P.Rft	Rs.	1,492,358 /-	
	30"/i/d	350 -	5 x 5 =	325 Rft @ Rs	2,939.40	P.Rft	Rs.	955,305 /-	
	33"/i/d	300 -	4 x 5 =	280 Rft @ Rs	3,285.30	P.Rft	Rs.	919,884 /-	
	36"/i/d	483 -	5 x 6 =	453 Rft @ Rs	3,453.60	P.Rft	Rs.	1,564,481 /-	
	42"/i/d	125 -	1 x 6 =	119 Rft @ Rs	4,330.45	P.Rft	Rs.	515,324 /-	
7	Construction of man hole chamber. (analysis attached)								
	9"/i/d	4' Dia	6.0' Depth	17 No. @ Rs.	67,244.55	Each	Rs.	1,143,157 /-	
	12"/i/d	4' Dia	6.0' Depth	8 No. @ Rs.	67,245.00	Each	Rs.	537,960 /-	
	24"/i/d	5' Dia	12.0' Depth	1 No. @ Rs.	147,470.00	Each	Rs.	147,470 /-	
	27"/i/d	5' Dia	11.0' Depth	9 No. @ Rs.	136,663.00	Each	Rs.	1,229,967 /-	
	30"/i/d	5' Dia	11.0' Depth	5 No. @ Rs.	136,319.00	Each	Rs.	681,595 /-	
	33"/i/d	5' Dia	14.5' Depth	4 No. @ Rs.	171,336.00	Each	Rs.	685,344 /-	
	36"/i/d	6' Dia	16.0' Depth	5 No. @ Rs.	225,477.00	Each	Rs.	1,127,385 /-	
	42"/i/d	6' Dia	23.0' Depth	1 No. @ Rs.	333,730.00	Each	Rs.	333,730 /-	
9	Rehandling of earth lead upto a single through of kassi phahorah or shovel								
	Take 80% of item No.3								
		181128	x 80%	=	144903	(---)	=	144903 Cft.	
	<u>Ch-3 item-13a</u>				144,903 Cft @ Rs	2772.00	%o Cft	Rs.	401,670 /-

9 Deduction of old material :-

Dismantled road metalling as Sub-base 80% qty (Input rate 18.003)	5671.2	%Cft	2400	Rs.	-136,109 /-
Dismantled brick or flagged flooring as bricks 80% qty (Input rate 07-001)	16751	%No	5775	Rs.	-96,736 /-

11 Constructing standard gully grating chamber, 2'x2' complete in all respects.

(Anlysis attached)	32 No. @	Rs.	35,380.24	Each	Rs.	1,132,168 /-
					Total:- Rs.	18,228,507 /-
					Add 5% Rs.	911,425 /-
					G Total:- Rs.	19,139,932 /-

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
Municipal Committee
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Remaining work Pump House at Disposal Works Karma wala Town.

1 Pacca brick work in ground floor cement, sand mortar ratio 1:3 with extra for circular masonry								
Above P.L	3.142	x	26.50	x	1.50	x	2.00 = 249.79 Cft	
Above P.L	3.142	x	26.13	x	1.13	x	12.00 = 1113.28 Cft	
Outside stair	3.142	x	4.00	x	4.00	x	0.63 = 31.67 Cft	
2nd step	3.142	x	4.00	x	3.17	x	0.63 = 25.10 Cft	
3rd step	3.142	x	4.00	x	2.33	x	0.63 = 18.45 Cft	
4th step	3.142	x	4.00	x	1.50	x	0.63 = 11.88 Cft	
5th step	3.142	x	4.00	x	0.67	x	0.63 = 5.30 Cft	
Parapet	3.142	x	30.50	x	0.75	x	0.88 = 63.25 Cft	
						Total	= 1268.93 Cft	
D/d doors	1	x	4.00	x	7.00	x	1.13 = 31.64 Cft	
	2	x	3.00	x	4.00	x	1.13 = 27.12 Cft	
	2	x	1.50	x	2.00	x	1.13 = 6.78 Cft	
	1	x	5.00	x	0.50	x	1.13 = 2.83 Cft	
	2	x	4.00	x	0.50	x	1.13 = 4.52 Cft	
	2	x	2.50	x	0.50	x	1.13 = 2.83 Cft	
						Total	= 75.71 Cft	
Ch-7 item-5+10	1268.93	-	75.71	1193.22	Cft @ Rs.	37,549.20	% Cft Rs. 448,045 /-	
2 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:- Type C (nominal mix 1: 2: 4)								
Slab	3.142	x	31.25	x	31.25	x	0.25 x 0.50 = 383.54 Cft.	
Slab land	1.00	3.142	x	27.25	x	27.25	x	0.25 x 0.50 = 291.64 Cft.
Roof beam			2	x	1.00	x	2.08 x 27.25 = 113.36 Cft.	
Landing beam			1	x	1.50	x	1.75 x 27.25 = 71.53 Cft.	
Lintle door			1	x	5.00	x	0.50 x 1.13 = 2.83 Cft.	
window			2	x	4.00	x	0.50 x 1.13 = 4.52 Cft.	
C.window			2	x	2.50	x	0.50 x 1.13 = 2.83 Cft.	
Sun shed door			1	x	5.00	x	0.25 x 1.50 = 1.88 Cft.	
window			2	x	4.00	x	0.25 x 1.50 = 3.00 Cft.	
C.window			2	x	2.50	x	0.25 x 1.50 = 1.88 Cft.	
Stair slab			1	x	47.50	x	0.50 x 4.00 = 95.00 Cft.	
Stair	45.60	x	0.63	x	0.83	x	0.50 x 4.00 = 47.69 Cft.	
						Total	= 1019.69 Cft.	
Ch-6 item-6						1019.69 Cft @ Rs	583.25 P.Cft Rs. 594,732 /-	
Rectangular portion	1	x	3.142	x	27.00	x	0.50 x 15.00 = 636.26 Cft.	
Ch-6 item-6						636.26 Cft @ Rs	583.25 P.Cft Rs. 371,096 /-	
3 Fabrication of mild steel reinforcement for cement concrete, i/c cutting, bending, laying in position, making joints and fastenings, i/c cost of binding wire and labour charges for bending of steel reinforcement (also includes removal of rust from bars) Deformed bars.								
					1019.69 @ 3.75	Kg/Cft	= 3823.82 Kgs	
					636.26 @ 2.42	Kg/Cft	= 1539.74 Kgs	
						Total	= 5363.56 Kgs	
Ch-6 item-9b					5363.56 Kgs @ Rs.	31,946.30	%Kgs Rs. 1,713,459 /-	
4 Making and fixing steel grated door with 1/16" thick (1.5mm) sheeting, including angle iron frame 2"x2"x3/8" (50x50x10 mm) and 3/4" (20 mm) square bars 4" (100 mm) center to center, with locking arrangement.								
	1	x	1.00	x	4.00	x	7.00 = 28.00 Sft.	
Ch-25 item-31					28.00 Sft @ Rs	2464.25	P.Sft Rs. 68,999 /-	

Remaining work Pump House at Disposal Works Karma wala Town.

5	Providing and fixing steel windows with openable glazed panels, using beam section for frame 1½"x1"x5/8"x1/8" (40x25x16x3 mm), Z-section for leaves ¾"x1"x¾"x1/8" embedded over a thin layer of putty duly screwed with leaves, brass fittings, holdfast, duly painted, complete in all respects, including all cost of material and labour, etc. as per approved design and as directed by the Engineer-in-charge:- fixed with wire gauze, 22 SWG glass pane 5 mm thick.												
	Window	1	x	2.00	x	4.00	x	5.00	=	40.00	Sft.		
	C.window	1	x	2.00	x	1.50	x	2.00	=	6.00	Sft.		
									Total	=	46.00	Sft.	
	Ch-25 item-41(b)v			46.00	Sft @ Rs			1170.85	P.Sft		Rs.	53,859 /-	
6	Providing and fixing M.S. flat ½"x1/8" (13mm x 3mm) grill including ¾" x 1/8" (20 mmx3 mm) M.S. flat frame, in windows of approved design, including painting three coats, complete in all respects.												
	Window	1	x	2.00	x	4.00	x	5.00	=	40.00	Sft.		
	C.window	1	x	2.00	x	1.50	x	2.00	=	6.00	Sft.		
									Total	=	46.00	Sft.	
	Ch-25 item-58			46.00	Sft @ Rs			529.05	P.Sft		Rs.	24,336 /-	
7	Single layer of tiles 9"x4½"x1½" (225x113x40 mm) laid over 4"(100 mm) earth and 1" (25 mm) mud plaster without Bhoosa, grouted with cement sand 1:3 on top of RCC roof slab, provided with 34 lbs. per %Sft. or 1.72 Kg/Sq.m bitumen coating sand blinded.												
	Pump House	3.142	x	30.50	x	30.50	x	0.25	=	730.71	Sft		
	Ch-9 item-5			730.71	Sft. @ Rs.			11,779.95	% Sft		Rs.	86,077 /-	
8	Khassi parnalas in cement, sand mortar 1:2, 12" (300 mm) outside width finished smooth with a floating coat of neat cement.												
						1.00	x	12.00	=	12.00	Rft.		
	Ch-9 item-14			12.00	Rft. @ Rs.			194.70	P.Rft		Rs.	2,336 /-	
9	Khuras on roof 2'x2'x6" (600 x 600 x 150 mm).												
	Ch-9 item-15			1	No.. @ Rs.			905.25	Each		Rs.	905 /-	
10	Bottom Khuras of brick masonry in cement mortar 1:6, 4'x2'x4½" (1200x600x113 mm) over 3" (75 mm) cement concrete 1:4:8.												
	Ch-9 item-16			1	No.. @ Rs.			1900.60	Each		Rs.	1,901 /-	
11	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate) i/c Extra labour for skipping concrete in wells. (1:1½:3) Ratio												
		3.142	x	25.00	x	25.00	x	0.25	x	0.33	=	162.01	Cft.
	Ch-6 item-5F+17					162.01	Cft @ Rs		45,412.30	%Cft		Rs.	73,572 /-
12	Cement plaster 3/8" (10 mm) thick under soffit of R.C.C. roof slabs only, upto 20' height. a) 1:2												
	Pump House	1	x	3.142	x	29.00	x	29.00	x	0.25	=	660.61	Sft
	Ch-11 item-10					660.61	Sft. @ Rs		4,323.30	% Sft		Rs.	28,560 /-
13	Cement plaster ½" thick (1:2) ratio. Upto 20'height	inside	1	x	3.142	x	25.00	x	12.00	=	942.60	Sft	
	Ch-11 item-7					942.60	Sft. @ Rs		4,073.05	% Sft		Rs.	38,393 /-
16	Cement pointing struck joints, on walls, upto 20' (6.00 m) height:- 1:2 ratio i/c Extra cost of labour and material for red oxide pigment in cement pointing to match with the colour of bricks.												
	Pump House	1	x	3.142	x	27.25	x	15.00	=	1284.29	Sft		
	Ch-11 item-18+31					1284.29	Sft @ Rs		4,598.40	% Sft		Rs.	59,057 /-
17	White washing 3 coats.												
	Inside	1	x	3.142	x	25.00	x	12.00	=	942.60	Sft		
	Roof	3.142	x	25.000	x	25.00	x	0.25	=	490.94	Sft		
	Deductions			1.00		4.00		7.00		-28.00	Sft		
	Doors												
	Windows			2.00		4.00		5.00		-40.00	Sft		
									Total	=	1365.54	Sft	
	Ch-11 item-25			1365.54	Sft @ Rs.			730.45	% Sft		Rs.	9,975 /-	
18	Painting new surface:- Preparing surface and painting of doors and windows any type (including edges):- 3-coats												
	Door	1	x	2.00	x	4.00	x	7.00	=	56.00	Sft		
	Window	2	x	2.00	x	4.00	x	5.00	=	80.00	Sft		
	C.Window	2	x	2.00	x	1.50	x	2.00	=	12.00	Sft		

Remaining work Pump House at Disposal Works Karma wala Town.

						Total = 148.00 Sft		
Ch-13 item-5c	148.00	Sft. @ Rs.	2,301.70	% Sft	Rs.			3,407 /-
19	Brick on edge flooring, laid in 1:6 cement mortar, over a bed of 3/4" thick cement mortar 1: 6, (Ch.No. 10, Item.No. 9)							
Pump House	1	x	3.142	x	30.25	x	3.00	= 285.14 Sft
			285.14	Cft @ Rs.	13,274.30	% Cft	Rs.	37,850 /-
20	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and plinth:- Ratio 1: 6:12.							
Ch-6 item-3	1.00	x	30.25	x	3.00	x	0.38	= 34.49 Sft
			34.49	Sft. @ Rs	22,124.40	% Sft	Rs.	7,630 /-
21	Providing and fixing stair railing of 2½" (63 mm) i/d G.I. pipe, welded with 5/8"x5/8" (16x16 mm) square M.S. bars 2'- 9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.							
Ch-25 item-39	72.50	Rft. @ Rs.	1840.40	P.Rft	Rs.			133,429 /-
22	P/hoisting R.S joist size 12x8" of 65 Lbs dully painted.							
	27	x	30	x	0.454	=	367.74	Kg
			367.74	Kg. @ Rs.	33,395.45	P.% Kg	Rs.	122,808 /-
24	Making and fixing steel grated door with 1/16" thick (1.5mm) sheeting, including angle iron frame 2"x2"x3/8" (50x50x10 mm) and ¾" (20 mm) square bars 4" (100 mm) centre to centre, with locking arrangement.							
C.Window	1	x	1.00	x	12.00	x	6.00	= 72.00 Sft
							Total = 72.00 Sft	
Ch-25 item-31	72.00	Sft. @ Rs.	2,464.25	% Sft	Rs.			177,426 /-
<u>ELECTRIFICATION WORK</u>								
38	Supply and erection of PVC pipe for wiring recessed in walls, including inspection boxes, pull boxes, hooks, cutting jharries and repairing surface, etc., complete with all specials. 20 mm i/d							
Ch-24 item-3ii	250	Rft @ Rs	86.40	P.Rft	Rs.			21,600 /-
39	Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 250/440 volts grade cable (BSS- 2004), in prelaid PVC pipes/M.S. conduit/G.I. pipe/wooden strip batten/wooden casing and capping/trenches, etc. (rate for cable only):- 3/0.74 mm (3/0.029")							
Ch-24 item-11i	700	Rft @ Rs	27.10	P.Rft	Rs.			18,970 /-
40	Supply and erection of teak wood board, 4.5 cm (1¾") thick. 20 x 25 cm (8"x10")							
Ch-24 item-16(iii)	15	No. @ Rs	189.35	Each	Rs.			2,840 /-
41	Supply and erection of switches 5 Amp piano type.							
Ch-24 item-31ii	35	No. @ Rs	80.75	Each	Rs.			2,826 /-
42	Supply and erection of ceiling rose, bakelite.							
Ch-24 item-30	15	No. @ Rs	75.10	Each	Rs.			1,127 /-
43	Supply and erection of button holder bakelite large size.							
Ch-24 item-39i	15	No. @ Rs	61.50	Each	Rs.			923 /-
44	Providing & erection of ceiling fan 56" GFC / Pak / Younis with regulator (superior quality)							
	3	Job @ Rs.	8,500.00	P.Job	Rs.			25,500 /-
45	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 2)							
Concrete 1:1.5:3	162.01	x	0.84	=	136.09	=	136.088	Cft
Concrete 1:2:4	817	x	0.88	=	718.96	=	718.96	
	855				6,019.75	P.%Cft	Rs.	51471.74

B Total :- 4,183,109 /-
Add 5% 209,155 /-
G Total:- 4,392,264 /-

Remaining work Pump House at Disposal Works Karma wala Town.

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
Municipal Committee
Jhang**

PUMPING MACHINERY

ZONE A		
Sr	Discription of Items	Amount
1	Supply, installation and testing of centrifugal sullage pump capable of discharging 5.00-Cfs against a total head of 40-Ft alongwith 29.80-BHP and Motor/Engine Rating 50HP electric motor ABB/Siemen make or equivilent approved make, complete with all accessories / allied works. (KSB qoutation enclosed). Disposal works Tibba Sultan 2-Set, Ghoghay Wali 2-Set, Lakhiwala 2-Set, Noor Shah 1 Set, Karmalwala Town 2-Set	
	Technical DATA 6-Set @ 6695000	Rs. 40,170,000 /-
	Type	Centrifugal sullage pump
	Discharge	05.00 Cusec
	Head	50-Ft
	BHP	50-HP 960-RPM
	Supply, installation and testing of centrifugal sullage pump capable of discharging 6.00-Cfs against a total head of 50-Ft alongwith 45.80 -BHP electric motor ABB/Siemen make or equivilent approved make, complete with all accessories / allied works. (KSB qoutation enclosed). Disposal works Chak Khokhra 1 set	
	Technical DATA 1-Set @ 7450000	Rs. 7,450,000 /-
	Type	Centrifugal sullage pump
	Discharge	06.00 Cusec
	Head	50-Ft
	BHP	60-HP 960-RPM
2	Supply, installation and testing of centrifugal sullage pump capable of discharging 3.00-Cfs against a total head of 50-Ft alongwith 24.90-BHP electric motor ABB/Siemen make or equivilent approved make, complete with all accessories / allied works. (KSB qoutation enclosed). Disposal works new Gadhian 2 Set, Islam Nagar 2-Set	
	Technical DATA 3-Set @ 6095000	Rs. 18,285,000 /-
	Type	Centrifugal sullage pump
	Discharge	03.00 Cusec
	Head	50-Ft
	BHP	30-HP 960-RPM
	Supply of tool kit comprising of one china spanner set , one china screw wrench of 12" size, one china insulated pliers 8" size and one china screw driver set, one grease gun, one lubricating gun.	3-Set Rs. 126,000 /-
	Islam Nagar - 01, Garay Bhan - 01, Lakhiwala - 01	
3	S/F power wiring of suitable size conduit pipe in best quality PVC sheathed insulated wire from energy meter/transformer to main switch to starter inflexible PVC pipe in suitable diameter with brass end connectors. (required length)	10-Job
	@ 65000	Rs. 650,000 /-
4	S/F power feeder from MCU panel size 4x6 i/c change over, braker 400 AMP, Ampere meter, indicator light to motor with suitable size, 4 core 19/83 cable enclosed in suitable diameter G.I medium quality pipe with flexible PVC pipe alongwith brass end connectors. (required length)	8-Job
	@ 475000	Rs. 3,800,000 /-
5	Earthing of iron clad/aluminum switches, etc. with G.I. wire No. 8 SWG in G.I. pipe 15 mm (1/2") 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.	10-Job
	@ 10199.15	Rs. 101,992 /-
6	P/F CI 12"i/d sluice valve	12-Nos
	@ 493290	Rs. 5,919,480 /-
7	P/F Non return valve valve 12" i/d	6-Nos
	@ 428490	Rs. 2,570,940 /-
	P/F CI 10"i/d sluice valve	2-Nos
	@ 388800	Rs. 777,600 /-

PUMPING MACHINERY

ZONE A			
Sr	Discription of Items	Amount	
8	S/F base plate of 3'x5'x1" of suitable size properly grouted in foundation i/c nuts and bolts complete in all respect. (Analysis Attached)	10-Job	
		@ 104,719.31	Rs 1,047,193 /-
9	RCC (1:2:4) foundation of pump and motor as per manufacture's specification with stain less steel nuts and bolt complete in all respect. (3x6x2'-6") (Analysis Attached)	10-Job	
		@ 70,613.02	Rs 706,130 /-
10	Double channel sewage submersible pump type PEDO 10/50-1 with 1.50 HP electric motor (220v)	6-Nos	
		@ 364,043	Rs. 2,184,255 /-
	Providing /Installing Cost iron Pen Stock 42" i/d British standard 7775 Harmal Pur - 02, Tibba Sultan - 02, Chak Khokhra - 01	5-Nos	
		@ 858,000	Rs 4,290,000 /-
	Providing /Installing Cost iron Pen Stock 36" i/d British standard 7775 Garay Bhan - 02, Lakhiwala - 04, Noor Shah - 02, Ghogay Wala - 02, Karama Wala Town - 02	12-Nos	
		@ 594,000	Rs 7,128,000 /-
11	Providing /Installing Cost iron Pen Stock 30" i/d British standard 7775	6-Nos	
		@ 594,000	Rs 3,564,000 /-
12	Providing /Installing Cost iron Pen Stock 27"x27" British standard 7775	6-Nos	
		@ 462,000	Rs 2,772,000 /-
		Total:-	101,542,590 /-

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
Municipal Committee
Jhang**

INTER CONNECTION

Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and									
1 timbering, dressing to correct section and dimensions according to templates and levels, and removing surface									
water, in all types of soil except shingle, gravel and rock:-									
(Ch-3 It-42)									
C.tank to Pump house	10	x	50.00	x	15.00	x	7.00	=	52500.00 Cft.
Pump house to D.sump	10	x	100.00	x	10.00	x	7.00	=	70000.00 Cft.
								Total	= 122500.00 Cft.
0-7' Depth			122500.00	Cft @ Rs	12,836.55			% OCft	Rs. 1,572,477 /-
S.chamber to exist: C.tank	3	x	50.00	x	15.00	x	7.00	=	15750.00 Cft.
	1	x	3200.00	x	3.00	x	3.00	=	28800.00 Cft.
								Total	= 44550.00 Cft.
7'-15' Depth			44550.00	Cft @ Rs	18,457.30			% OCft	Rs. 822,273 /-
S.chamber to exist: C.tank	10	x	50.00	x	15.00	x	8.00	=	60000.00 Cft.
								Total	= 60000.00 Cft.
Above 15' Depth			60000.00	Cft @ Rs	19,524.75			% OCft	Rs. 1,171,485 /-
2 Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-									
100)working presure pipe, Beta/Dadex/Popular/IIL or equivalent including the cost of specials, intrenches,									
asapproved & directed by the engineer incharge, complete in all respects.									
c) PN-10 (SDR-17)									
Disposal Gharay bhary			250.00						
Disposal Lakhi wala			500.00						
Disposal Tiba Sultan			250.00						
Disposal Chak Noor Shah			300.00						
Disposal Ghogay wala			250.00						
Disposal Karma wala Town			200.00						
(Ch-23 It-20)	315 mm (Suction pipe)		1750.00	Rft @ Rs	3,637.35			P.Rft	Rs. 6,365,363 /-
3 Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-									
100)working presure pipe, Beta/Dadex/Popular/IIL or equivalent including the cost of specials, intrenches,									
asapproved & directed by the engineer incharge, complete in all respects.									
c) PN-10 (SDR-17)									
Disposal new Gadhian wala			250.00						
Disposal Islam Nagar			200.00						
(Ch-23 It-43)	250 mm (Suction pipe)		450.00	Rft @ Rs	1,801.05			P.Rft	Rs. 810,473 /-
4 Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-									
100)working presure pipe, Beta/Dadex/Popular/IIL or equivalent including the cost of specials, intrenches,									
asapproved & directed by the engineer incharge, complete in all respects.									
c) PN-10 (SDR-17)									
Disposal Farooq abad			100.00						
(Ch-23 It-43)	160 mm (Suction pipe)		100.00	Rft @ Rs	744.20			P.Rft	Rs. 74,420 /-
5 Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-									
100)working presure pipe, Beta/Dadex/Popular/IIL or equivalent including the cost of specials, intrenches,									
asapproved & directed by the engineer incharge, complete in all respects.									
c) PN-10 (SDR-17)									
(Ch-23 It-43)									
Hurmali Pur	24"	630 mm	250.00	Rft @ Rs	11,398.00			P.Rft	Rs. 2,849,500 /-
Hurmali Pur	20"	500 mm	250.00	Rft @ Rs	7,190.75			P.Rft	Rs. 1,797,688 /-
Hurmali Pur	12"	315 mm	250.00	Rft @ Rs	2,864.05			P.Rft	Rs. 716,013 /-
Gharay Bhan	12"	315 mm	350.00	Rft @ Rs	2,864.05			P.Rft	Rs. 1,002,418 /-
Lakhi wala	12"	315 mm	500.00	Rft @ Rs	2,864.05			P.Rft	Rs. 1,432,025 /-
Noor Shah	12"	315 mm	400.00	Rft @ Rs	2,864.05			P.Rft	Rs. 1,145,620 /-
Tiba Sultan	12"	315 mm	300.00	Rft @ Rs	2,864.05			P.Rft	Rs. 859,215 /-
Ghogay wali	12"	315 mm	300.00	Rft @ Rs	2,864.05			P.Rft	Rs. 859,215 /-
Karma wala	12"	315 mm	150.00	Rft @ Rs	2,864.05			P.Rft	Rs. 429,608 /-
New Gadhian	10"	250 mm	250.00	Rft @ Rs	1,801.05			P.Rft	Rs. 450,263 /-
Islam Nagar	10"	250 mm	240.00	Rft @ Rs	1,801.05			P.Rft	Rs. 432,252 /-
6 Connection of Section & Delivery pipe.									
			42.00	Job @ Rs	8,944.00		Each		Rs. 375,648 /-
7 Rehandling of earth lead upto a single through of kassi phahorah or shovel .									
Take 80% of item No.1									
Ch-3 item-13a	227050	x	80%	181640.00	Cft @ Rs	2,772.00		% Cft	Rs. 503,506 /-
									Total:- Rs. 23,669,459 /-
									Add 5% as PST Rs. 1,183,473 /-
									G Total:- Rs. 24,852,932 /-

**Sub-Engineer
Municipal Committee
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Replacement of Sewer Lines of Truck Stand, Chiniot Road Park & Nawaz Sharif Park to Girls College Jhang City

1	Dismantling and removing of road metalling. (detail attached)									
	<u>Ch-4 It-45</u>		10,100.64 Cft @ Rs	2217.60	%Cft		Rs.	223,992	/-	
	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct section and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle, gravel and rock:-									
3	(Ch-3 Item-42)									
	(Detail attached)	0-7' Depth (P-54 to 56)	120,190.00 Cft @ Rs	12,836.55	% 0Cft		Rs.	1,542,825	/-	
	(Detail attached)	7'-15' Depth (P-54 to 56)	119,918.00 Cft @ Rs	18,457.30	% 0Cft		Rs.	2,213,363	/-	
	(Detail attached)	Above 15' Depth (P-54 to 56)	53,794.00 Cft @ Rs	19,524.75	% 0Cft		Rs.	1,050,314	/-	
5	Providing and laying crushed stone aggregate of 1/4" to 1" guage under and around the sewer pipe, including leveling, manual compaction, complete in all respects.									
		15"/i/d	3,390	3.42	Cft P.Rft =	11593.80 Cft.				
					Total =	11593.80 Cft.				
	<u>Ch-21 Item-23</u>		11593.80 %Cft @ Rs	9,324.00	P.Cft		Rs.	1,081,006	/-	
	Providing and laying R.C.C. pipe sewers, moulded with ditto cement concrete 1:1½:3 conforming to ASTM Specification C-76-79, Class II. Wall B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing, etc., complete.									
6	Ch-21 item-3									
	15"/i/d	3700 -	62 x 5 =	3,390 Rft @ Rs	1,043.75	P.Rft	Rs.	3,538,313	/-	
7	Construction of man hole chamber. (analysis attached)									
	15"/i/d	5' Dia	8.0' Depth	62 No. @ Rs.	85,718.00	Each	Rs.	5,314,516	/-	
9	Rehandling of earth lead upto a single through of kassi phahorah or shovel									
	Take 80% of item No.3									
		293902 x 80%	=	235122 (---)	=	235122 Cft.				
	Ch-3 item-13a			235,122 Cft @ Rs	2772.00	%o Cft	Rs.	651,757	/-	
7	Restoration of metalled road, on laid service line, including compaction:-									
	a) Carpetted road, with 2" (50 mm) carpet and 10" (250 mm) depth of stone metal for sub-base and base.									
		10101	10101		15675.40		% Cft Rs.	1,583,316	/-	
	Constructing standard gully grating chamber, 4'x4' complete in all respects									
	(Anlysis attached)		25 No. @ Rs.	45,260.66	Each		Rs.	1,131,517	/-	
							Total:- Rs.	18,330,917	/-	
							Add 16 % Rs.	2,932,947	/-	
							G Total:- Rs.	21,263,864	/-	

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
Municipal Committee
Jhang**

Providing Installation MS Screens Disposal Works MC Jhang

Fabrication of heavy steel work, with angle, tees, flat iron round iron and sheet iron for making trusses, girders, tanks, etc., including cutting, drilling, rebitting, handling, assembling and fixing, including erection in position. (5' x 25')

1 Dismantling of MS Screen

Screen size = 5-ft Clear spacing 1" c/c total numbers of flate iron strips of size (2" x 3/8") = 60

Length of the single screen = 25

clear Length of single flate strip = $25 - 3/8 - 3/8 = 24.12$ "

a) M.S. Screen flat iron 2"x3/8" @

$$1447 = \frac{1}{2} \times 60 \times 24.12 = 1447 \text{ Rft}$$

$$1447 \times \frac{2}{12} \times \frac{0.375}{12} \times \frac{490}{2.204} = 1675.76 \text{ Kgs}$$

b) Angle iron 3" x 3" x 3/8"

$$1 \times 2.00 \times 25.00 = 50 \text{ Rft}$$

$$1 \times 2.00 \times 5.00 = 10 \text{ Rft}$$

$$\text{Total} = 60 \text{ Rft}$$

$$60 \times \frac{6}{12} \times \frac{0.375}{12} \times \frac{490}{2.204} = 208.43 \text{ Kgs}$$

$$\text{Total} = 1884.19 \text{ Kgs.}$$

For screening chamber 8-Nos screen are requirec

	1884.19	x	16	=	30147.04		
Ch-25 item-10+11	30147.04					Kgs @ Rs.	Rs. 10,494,230/-
2 Labour for dismantling of MS screen							
3 x	3768.38					Kgs @ Rs.	Rs. 158,272/-
							Total Rs. 10,652,502
D/d old material as per item No.1							
70% of original	1884.19					x 0.7	= 1884.19 Kgs
	10551.46					Kgs @ Rs	= 10551.46 Kgs
						150.00	Rs. 1,582,720/-
						P Kgs	Total Rs. 9,069,782/-

**Sub-Engineer
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Municipal Committee
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**PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE
COVERS 24" I/D WITH RPC FRAME**

Sr. #	Description of items	Quantity		Rate	Unit	Amount	
1	Providing & Fixing of Reinforced Plastic Composite (RPC) Manhole Covers 24" I/D with RPC Frame urban area Jhang	1500.00	No	12931	P No	19,395,750.00	/-
					Total:	19,395,750.00	/-
				Add 5% PST		969,787.50	/-
				Grand Total:		20,365,537.50	/-

Providing & Fixing of Step Down Power Transformer 200 KVA

Sr.	Description of items	Quantity	Rate	Cost (Rs.)
1	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			
	Ch-24, Item-105			
	(vi) 200 KVA (New Gadhian Wala, Tibba Sultan & Goghay Wala)	3.00	1,892,485.15	5,677,455.45
			Total:	5,677,455

**Detail Cost Estimate for Desilting of sewer lines with winching
machinery Municipal Committee Jhang**
**Provision of skilled labour for the De-silting of different dia's of Sewerage Pipe
line**

Note:- Municipal Committee will provide winch machine complete etc

42"	dia sewer line				
Disposal work Tiba Sultan		1 x	1500	=	1500 Rft
				=	1500 Rft
		@	601.4 Prft	=	902160 /-
36"	dia sewer line				
Disposal work Tiba Sultan		1 x	1800	=	1800 Rft
Ghogay wala		1 x	1500	=	1500 Rft
Gharay Bhan		1 x	1500	=	1500 Rft
				=	4800 Rft
		@	555.2 Prft	=	2664864 /-
33"	dia sewer line				
Disposal work Tiba Sultan		1 x	1400	=	1500 Rft
Karma wala Town		1 x	900	=	900 Rft
Ghogay wala		1 x	700	=	700 Rft
				=	3100 Rft
		@	508.9 Prft	=	1577621 /-
30"	dia sewer line				
Disposal work Tiba Sultan		1 x	400	=	400 Rft
Karma wala Town		1 x	1100	=	1100 Rft
Ghogay wala		1 x	900	=	900 Rft
New Gadhian wala		1 x	200	=	200 Rft
Gharay bhan		1 x	1000	=	1000 Rft
				=	3600 Rft
		@	462.7 Prft	=	1665540 /-
27"	dia sewer line				
Disposal work Tiba Sultan		1 x	1200	=	1200 Rft
Karma wala Town		1 x	1500	=	1500 Rft
Ghogay wala					

New Gadhian wala	1 x	600	=	600 Rft	
Gharay bhan	1 x	400	=	400 Rft	
	1 x	1200	=	1200 Rft	
			=	4900 Rft	
	@	416.4	Prft		= 2040262 /-

24" dia sewer line

Disposal work Tiba Sultan	1 x	1000	=	1000 Rft	
Karma wala Town	1 x	1500	=	1500 Rft	
Ghogay wala	1 x	800	=	800 Rft	
New Gadhian wala	1 x	500	=	500 Rft	
Gharay bhan	1 x	600	=	600 Rft	
Tiba Registan	1 x	900	=	900 Rft	
			=	5300 Rft	
	@	370.1	Prft		= 1961622.4 /-

21" dia sewer line

Disposal work Tiba Sultan	1 x	900	=	900 Rft	
Karma wala Town	1 x	1200	=	1200 Rft	
Ghogay wala	1 x	700	=	700 Rft	
New Gadhian wala	1 x	500	=	500 Rft	
Gharay bhan	1 x	1100	=	1100 Rft	
Tiba Registan	1 x	900	=	900 Rft	
			=	5300 Rft	
	@	323.9	Prft		= 1716419.6 /-

18" dia sewer line

Disposal work Tiba Sultan	1 x	1450	=	1450 Rft	
Chak Khokhra	1 x	1660	=	1660 Rft	
Karma wala Town	1 x	1490	=	1490 Rft	
Ghogay wala	1 x	2250	=	2250 Rft	
Chak Noor Shah	1 x	1970	=	1970 Rft	
Hurmali Pur	1 x	1550	=	1550 Rft	

New Gadhian wala		1 x	1350	=	1350 Rft		
					=	11720 Rft	
		@	277.6	Prft			= 3253332.3 /-
15"	dia sewer line						
Disposal work Tiba Sultan		1 x	350	=	350 Rft		
Chak Khokhra		1 x	250	=	250 Rft		
Karma wala Town		1 x	250	=	250 Rft		
Ghogay wala		1 x	550	=	550 Rft		
Hurmal Pur		1 x	1100	=	1100 Rft		
New Gadhian wala		1 x	450	=	450 Rft		
Tiba Registan		1 x	245	=	245 Rft		
					=	3195 Rft	
		@	231.3	Prft			= 739078.26 /-
12"	dia sewer line						
Disposal work Tiba Sultan		1 x	450	=	450 Rft		
Karma wala Town		1 x	230	=	230 Rft		
Chak Noor Shah		1 x	1196	=	1196 Rft		
Hurmal Pur		1 x	1350	=	1350 Rft		
Farooq abad		1 x	1550	=	1550 Rft		
					=	4776 Rft	
		@	185.1	Prft			= 883884.86 /-
							= 17404784 /-
					Add 16% PST		= 2784765.5
							= 20189550 /-
							20.190

**Sub-Engineer
MC Jhang**

**Municipal Officer (I&S)
Municipal Committee
Jhang**

RATE ANALYSIS OF GULLY GRATING CHAMBER

	Size	(2 x 1.5 x 4.00)				
1	Excavation in foundation of building, bridges and other structures, including Dag belling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m) in ordinary soil.					
	Ch-3 item-21b	4 x 3.50 x 4.50 =	63 Cft @ Rs.	11,658.25	%Cft	Rs. 734.47
2	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and plinth:- Ratio 1: 6:12					
	Ch-6 item-3d	4 x 3.50 x 0.50 =	7.00 Cft @ Rs.	22,124.40	%Cft	Rs. 1,548.71
3	Pacca brick work in foundation and plinth in:- Cement, sand mortar:- Ratio 1:5					
		2 x 3.50 x 0.75 x 4.00 =	21.00 Cft			
		2 x 1.50 x 0.75 x 4.00 =	9.00 Cft			
		Total =	30.00 Cft			
	Ch-7 item-4i	30.00 Cft @ Rs.	29,928.60		%Cft	Rs. 8,978.58
4	Cement plaster 1:3 upto 20' (6.00 m) height:- ½" (13 mm) thick					
	Inside	2 x 3.50 x 4.00 =	28.00 Sft			
	Outside	2 x 6.50 x 4.00 =	52.00 Sft			
	Top	2 x 5.00 x 0.75 =	7.50 Sft			
		Total =	87.50 Sft			
	Ch-11 item-8b	87.50 Sft @ Rs.	3,639.10		% Sft	Rs. 3,184.21
5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): Ratio 1: 2: 4					
	Ch-6 item-5f	2 x 1.50 x 0.25 =	0.75 Cft @ Rs.	38,723.50	%Cft	Rs. 290.43
6	Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design 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:- Type C (nominal mix 1: 2: 4).					
	Ch-6 item-6b3	3.50 x 3.00 x 0.33 =	3.47 Cft @ Rs.	583.25	P.Cft	Rs. 2,020.96
7	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.					
		3.47 x 5.00 x 0.45 =	7.88 Kgs			
	Ch-6 item-12b		7.88 Kg @ Rs.	31,556.50	%Kg	Rs. 2,485.67
8	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct section and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle, gravel and rock:-					
	Ch-3 itm 42 i					
	Ch-3 item-42	16 x 2.83 x 4.33 =	196.062 Cft @ Rs.	12,836.55	%oCft	Rs. 2,516.76
8	Supplying and filling sand under & around the pipe.					
		9"i/d	16 @ 2.06 Cft P.Rft =	33.00 Cft.		
	Ch-7 It-30		33.00 Cft @ Rs	2,982.00	%Cft	Rs. 984.06
9	Providing and laying R.C.C. pipe, moulded with cement concrete 1:1½:3, with spigot socket or collar joint, etc.including cost of reinforcement, conforming to B.S. 5911:Part I: 1981, Class "L" including carriage of pipe fromfactory to site of work, lowering in trenches to correct alignment and grade, jointing, cutting pipes where necessary, finishing and testing, etc., complete..					
	Ch-21 item-1					
		9"i/d	16.00 Rft @ Rs	553.85	P.Rft	Rs. 8,861.60
10	Fabrication of heavy steel work, with angle, tees, flat iron round iron and sheet iron for making trusses, girders,tanks, etc., including cutting, drilling, revitting, andling,assembling and fixing, but excluding erection in position.					
	Ch-25 item-10					
		10.00 Kg @ Rs	33,395.45		P.% kg	Rs. 3,340.00

RATE ANALYSIS OF GULLY GRATING CHAMBER

Size (2 x 1.5 x 4.00)

11	Rehandling of earth lead upto a single through of kassi phahorah or shovel .						
	Take 80% of item No.3						
		196 x 80%	=	157 Cft			
	Ch-3 item-1,			157 Cft @ Rs	2772.00	%o Cft	Rs. 434.79
	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime						
37	(unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.						
	(Ch.No. 1, Item.No. 1)						
	Concrete 1:2:4	4 x	0.88	=	3.71	=	3.7092
		3.709			6,019.75	P.%Cft	Rs. 223.285
						Total:-	Rs. 35,380.24
						Say	Rs. 35,380.24

**Sub-Engineer
Municipal Committee
Jhang**

**Municipal Officer (I&S)
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Jhang**

RATE ANALYSIS OF GULLY GRATING CHAMBER

Size (2 x 1.5 x 4.00)

RATE ANALYSIS OF GULLY GRATING CHAMBER

Size (2 x 4 x 4.00)

1	Excavation in foundation of building, bridges and other structures, including Dag belling, Ch-3 item-21b	4 x 6.00 x 4.50 = 108 Cft @ Rs. 11,658.25 %Cft	Rs.	1,259.09
2	Cement concrete brick or stone ballast 1½ " to 2" (40 mm to 50 mm) gauge, in foundation and Ch-6 item-3d	4 x 6.00 x 0.50 = 12.00 Cft @ Rs. 22,124.40 %Cft	Rs.	2,654.93
3	Pacca brick work in foundation and plinth in:- Cement, sand mortar:- Ratio 1:5 2 x 3.50 x 0.75 x 4.00 = 21.00 Cft 2 x 4.00 x 0.75 x 4.00 = 24.00 Cft Total = 45.00 Cft Ch-7 item-4i	45.00 Cft @ Rs. 29,928.60 %Cft	Rs.	13,467.87
4	Cement plaster 1:3 upto 20' (6.00 m) height:- ½" (13 mm) thick Inside 2 x 6.00 x 4.00 = 48.00 Sft Outside 2 x 9.00 x 4.00 = 72.00 Sft Top 2 x 7.50 x 0.75 = 11.25 Sft Total = 131.25 Sft Ch-11 item-8b	131.25 Sft @ Rs. 3,639.10 % Sft	Rs.	4,776.32
5	Cement concrete plain including placing, compacting, finishing and curing complete (including Ch-6 item-5f	2 x 4.00 x 0.25 = 2 Cft @ Rs. 38,723.50 %Cft	Rs.	774.47
6	Providing and laying reinforced cement concrete (including prestressed concrete), using coarse Ch-6 item-6b3	3.50 x 5.50 x 0.33 = 6.35 Cft @ Rs. 583.25 P.Cft	Rs.	3,705.10
7	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying 3.47 x 5.00 x 0.45 = 7.88 Kgs Ch-6 item-12b	7.88 Kg @ Rs. 31,556.50 %Kg	Rs.	2,485.67
8	Earthwork excavation in open cutting for sewers and manholes as shown in drawings including Ch-3 item-42	16 x 2.83 x 4.33 = 196.062 Cft @ Rs. 12,836.55 %Cft	Rs.	2,516.76
8	Supplying and filling sand under & around the pipe. 9"i/d	16 @ 2.06 Cft P.Rft = 33.00 Cft. Ch-7 It-30	Rs.	984.06
9	Providing and laying R.C.C. pipe, moulded with cement concrete 1:1½:3, with spigot socket or 9"i/d	16.00 Rft @ Rs 553.85 P.Rft	Rs.	8,861.60
10	Fabrication of heavy steel work, with angle, tees, flat iron round iron and sheet iron for making Ch-25 item-10	10.00 Kg @ Rs 33,395.45 P.% kg	Rs.	3,340.00
11	Rehandling of earth lead upto a single through of kassi pahorah or shovel 196 x 80% = 157 Cft Ch-3 item-1	157 Cft @ Rs 2772.00 %Cft	Rs.	434.79
37	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime Concrete 1:2:4	8 x 0.88 = 7.35 = 7.3502 7.350	Rs.	442.464
			Total:-	Rs. 45,260.66
			Say	Rs. 45,260.66

**Sub-Engineer
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Jhang**

**Municipal Officer (I&S)
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RATE ANALYSIS FOR MAN HOLE

4' Dia 8' Depth 15 " RCC Pipe

Earth work excavation for sewer and manholes chamber etc: in O/soil.

0-7' Depth	3.142	x	8.25	x	8.25	x	0.25	x	7.00	=	374.24 Cft.		
Ch-3 item-42i											374.24 Cft @ Rs	12836.55 % 0Cft	Rs. 4,804 /-

7'-15 Depth	3.142	x	8.25	x	8.25	x	0.25	x	2.50	=	133.66 Cft.		
Ch-3 item-42i											133.66 Cft @ Rs	18457.30 % 0Cft	Rs. 2,467 /-

Cement concrete plain including placing, compacting, finishing and curing complete (including

	3.142	x	8.25	x	8.25	x	0.25	x	1.00	=	53.46 Cft.		
Ch-6 item-2											53.46 Cft @ Rs	29723.50 %Cft	Rs. 15,891 /-

Cement concrete plain including placing, compacting, finishing and curing complete (including

Bed	3.142	x	7.25	x	7.25	x	0.25	x	0.50	=	20.64 Cft.		
Benching	3.142	x	4.00	x	4.00	x	0.25	x	0.71	=	8.90 Cft.		
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	=	3.80 Cft.		
D/d pipe portion									2	Total =	33.35 Cft.		
4' x	3.142	x	2.50	x	2.50	x	0.25	/	2.00	=	9.82 Cft.		
											Net =	23.53 Cft.	
Ch-6 item-5f											23.53 Cft @ Rs	38723.50 %Cft	Rs. 9,111 /-

Pucca brick work other than building (1:3) ratio with extra for circular masonry.

1st Step	1	x	3.142	x	5.13	x	1.13	x	0.50	=	9.11 Cft.		
2nd Step	1	x	3.142	x	4.75	x	0.75	x	5.00	=	55.97 Cft.		
3rd Step	3.142	x	4.75	+	2.58	x	0.75	x	3.00	=	25.91 Cft.		
					2					Total =	90.98 Cft.		
Ch-7 item-7i + 10											90.98 Cft @ Rs	36349.10 % Cft	Rs. 33,072 /-

RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm

	1 No. @ Rs.	10080.00	Each		Rs. 10,080 /-
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Cement and plaster (1:3) ratio. 1/2" thick (out side)

1st Step	1	x	3.142	x	6.25	x	0.50	=	9.82 Sft		
2nd Step	1	x	3.142	x	5.50	x	5.00	=	86.41 Sft		
3rd Step	3.142	x	5.50	+	3.33	x	3.00	=	41.62 Sft		
					2			Total =	137.84 Sft		
Ch-11 item-8b									137.84 Sft @ Rs	3639.10 % Sft	Rs. 5,016 /-

Extra for making benching etc: complete.

	3.142	x	4.00	x	4.00	x	0.25	=	12.57 Sft		
Ch-21 item-9									12.57 Sft @ Rs.	3118.30 % Sft	Rs. 392 /-

P/F angle iron steps 1¼"x1¼" x 3/16" size.

	8 No. @ Rs.	610.75	Each		Rs. 4,886 /-
Ch-21 item-13					
					Total:- Rs. 85,718 /-
					Say:- Rs. 85,718 /-

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RATE ANALYSIS FOR MAN HOLE

4' Dia 6' Depth 12 " RCC Pipe

Earth work excavation for sewer and manholes chamber etc: in O/soil.											
0-7' Depth	3.142	x	8.25	x	8.25	x	0.25	x	7.00	=	374.24 Cft.
Ch-3 item-42i								374.24 Cft @ Rs	12836.55	% 0Cft	Rs. 4,804 /-
7'-15 Depth	3.142	x	8.25	x	8.25	x	0.25	x	0.50	=	26.73 Cft.
Ch-3 item-42i								26.73 Cft @ Rs	18457.30	% 0Cft	Rs. 493 /-
Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8											
	3.142	x	8.25	x	8.25	x	0.25	x	1.00	=	53.46 Cft.
Ch-6 item-2								53.46 Cft @ Rs	29723.50	%Cft	Rs. 15,891 /-
Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4											
Bed	3.142	x	7.25	x	7.25	x	0.25	x	0.50	=	20.64 Cft.
Benching	3.142	x	4.00	x	4.00	x	0.25	x	0.58	=	7.33 Cft.
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	=	3.80 Cft.
D/d pipe portion											2 Total = 31.78 Cft.
4' x	3.142	x	2.50	x	2.50	x	0.25	/	2.00	=	9.82 Cft.
											Net = 21.96 Cft.
Ch-6 item-5f								21.96 Cft @ Rs	38723.50	%Cft	Rs. 8,502 /-
Pucca brick work other than building (1:3) ratio with extra for circular masonry.											
1st Step	1	x	3.142	x	5.13	x	1.13	x	-1.50	=	-27.32 Cft.
2nd Step	1	x	3.142	x	4.75	x	0.75	x	5.00	=	55.97 Cft.
3rd Step	3.142	x	4.75	+	2.58	x	0.75	x	3.00	=	25.91 Cft.
											2 Total = 54.56 Cft.
Ch-7 item-7i + 10								54.56 Cft @ Rs	36349.10	% Cft	Rs. 19,831 /-
RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26" dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).											
								1 No. @ Rs.	10080.00	Each	Rs. 10,080 /-
Cement and plaster (1:3) ratio. 1/2" thick (out side)											
1st Step	1	x	3.142	x	6.25	x	-1.50	=	-29.46 Sft		
2nd Step	1	x	3.142	x	5.50	x	5.00	=	86.41 Sft		
3rd Step	3.142	x	5.50	+	3.33	x	3.00	=	41.62 Sft		
											2 Total = 98.56 Sft
Ch-11 item-8b								98.56 Sft @ Rs	3639.10	% Sft	Rs. 3,587 /-
Extra for making benching etc: complete.											
	3.142	x	4.00	x	4.00	x	0.25	=	12.57 Sft		
Ch-21 item-9								12.57 Sft @ Rs.	3118.30	% Sft	Rs. 392 /-
P/F angle iron steps 1 1/4" x 1 1/4" x 3/16" size.											
Ch-21 item-13								6 No. @ Rs.	610.75	Each	Rs. 3,665 /-
											Total:- Rs. 67,245 /-
											Say:- Rs. 67,245 /-

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RATE ANALYSIS FOR MAN HOLE

	5' Dia	12' Depth	24 " RCC Pipe									
1 Earth work excavation for sewer and manholes chamber etc: in O/soil.												
0-7' Depth	3.142	x	9.25	x	9.25	x	0.25	x	7.00	=	470.47 Cft.	
Ch-3 item-42i					470.47 Cft @ Rs		12836.55		% 0Cft		Rs.	6,039 /-
7'-15 Depth	3.142	x	9.25	x	9.25	x	0.25	x	6.50	=	436.86 Cft.	
Ch-3 item-42i					436.86 Cft @ Rs		18457.30		% 0Cft		Rs.	8,063 /-
2 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8												
	3.142	x	9.25	x	9.25	x	0.25	x	1.00	=	67.21 Cft.	
Ch-6 item-2					67.21 Cft @ Rs		29723.50		%Cft		Rs.	19,977 /-
3 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4												
Bed	3.142	x	8.25	x	8.25	x	0.25	x	0.50	=	26.73 Cft.	
Benching	3.142	x	5.00	x	5.00	x	0.25	x	1.08	=	21.27 Cft.	
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	=	3.80 Cft.	
D/d pipe portion					2		Total			=	51.81 Cft.	
5' x	3.142	x	2.50	x	2.50	x	0.25	/	2.00	=	12.27 Cft.	
							Net			=	39.53 Cft.	
Ch-6 item-5f					39.53 Cft @ Rs		38723.50		%Cft		Rs.	15,308 /-
4 Pucca brick work other than building (1:3) ratio with extra for circular masonry.												
1st Step	1	x	3.142	x	6.13	x	1.13	x	4.50	=	97.94 Cft.	
2nd Step	1	x	3.142	x	5.75	x	0.75	x	5.00	=	67.75 Cft.	
3rd Step	3.142	x	5.75	+	2.58	x	0.75	x	3.00	=	29.44 Cft.	
					2		Total			=	195.13 Cft.	
Ch-7 item-7i + 10					195.13 Cft @ Rs		36349.10		% Cft		Rs.	70,929 /-
5 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26" dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).												
					1 No. @ Rs.		10080.00		Each		Rs.	10,080 /-
6 Cement and plaster (1:3) ratio. 1/2" thick (out side)												
1st Step			1	x	3.142	x	7.25	x	4.50	=	102.51 Sft	
2nd Step			1	x	3.142	x	6.50	x	5.00	=	102.12 Sft	
3rd Step			3.142	x	6.50	+	3.33	x	3.00	=	46.33 Sft	
					2		Total			=	250.95 Sft	
Ch-11 item-8b					250.95 Sft @ Rs		3639.10		% Sft		Rs.	9,132 /-
7 Extra for making benching etc: complete.												
	3.142	x	5.00	x	5.00	x	0.25	=	19.64 Sft			
Ch-21 item-9					19.64 Sft @ Rs.		3118.30		% Sft		Rs.	612 /-
8 P/F angle iron steps 1¼"x1¼" x 3/16" size.												
Ch-21 item-13					12 No. @ Rs.		610.75		Each		Rs.	7,329 /-
											Total:- Rs.	147,470 /-
											Say:- Rs.	147,470 /-

**Sub-Engineer
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RATE ANALYSIS FOR MAN HOLE

5' Dia 11' Depth 27 " RCC Pipe

1 Earth work excavation for sewer and manholes chamber etc: in O/soil.										
0-7' Depth	3.142	x	9.25	x	9.25	x	0.25	x	7.00	= 470.47 Cft.
Ch-3 item-42i					470.47 Cft @ Rs		12836.55		% 0Cft	Rs. 6,039 /-
7'-15 Depth	3.142	x	9.25	x	9.25	x	0.25	x	5.50	= 369.65 Cft.
Ch-3 item-42i					369.65 Cft @ Rs		18457.30		% 0Cft	Rs. 6,823 /-
2 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8										
	3.142	x	9.25	x	9.25	x	0.25	x	1.00	= 67.21 Cft.
Ch-6 item-2					67.21 Cft @ Rs		29723.50		%Cft	Rs. 19,977 /-
3 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4										
Bed	3.142	x	8.25	x	8.25	x	0.25	x	0.50	= 26.73 Cft.
Benching	3.142	x	5.00	x	5.00	x	0.25	x	1.21	= 23.73 Cft.
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	= 3.80 Cft.
D/d pipe portion							2	Total		= 54.26 Cft.
5' x	3.142	x	2.79	x	2.79	x	0.25	/	2.00	= 15.29 Cft.
								Net		= 38.97 Cft.
Ch-6 item-5f					38.97 Cft @ Rs		38723.50		%Cft	Rs. 15,092 /-
4 Pucca brick work other than building (1:3) ratio with extra for circular masonry.										
1st Step	1	x	3.142	x	6.13	x	1.13	x	3.50	= 76.18 Cft.
2nd Step	1	x	3.142	x	5.75	x	0.75	x	5.00	= 67.75 Cft.
3rd Step	3.142	x	5.75	+	2.58	x	0.75	x	3.00	= 29.44 Cft.
					2			Total		= 173.37 Cft.
Ch-7 item-7i + 10					173.37 Cft @ Rs		36349.10		% Cft	Rs. 63,018 /-
5 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).										
					1 No. @ Rs.		10080.00		Each	Rs. 10,080 /-
6 Cement and plaster (1:2) ratio. 1/2" thick (out side)										
1st Step	1	x	3.142	x	7.25	x	3.50	=	79.73 Sft	
2nd Step	1	x	3.142	x	6.50	x	5.00	=	102.12 Sft	
3rd Step	3.142	x	6.50	+	3.33	x	3.00	=	46.33 Sft	
					2			Total	= 228.17 Sft	
Ch-11 item-7b					228.17 Sft @ Rs		3639.10		% Sft	Rs. 8,303 /-
7 Extra for making benching etc: complete.										
	3.142	x	5.00	x	5.00	x	0.25	=	19.64 Sft	
Ch-21 item-9					19.64 Sft @ Rs.		3118.30		% Sft	Rs. 612 /-
8 P/F angle iron steps 1¼"x1¼" x 3/16" size.										
Ch-21 item-13					11 No. @ Rs.		610.75		Each	Rs. 6,718 /-
								Total:-	Rs. 136,663 /-	
								Say:-	Rs. 136,663 /-	

**Sub-Engineer
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Jhang**

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RATE ANALYSIS FOR MAN HOLE

5' Dia 11' Depth 30 " RCC Pipe

1 Earth work excavation for sewer and manholes chamber etc: in O/soil.										
0-7' Depth	3.142	x	9.25	x	9.25	x	0.25	x	7.00	= 470.47 Cft.
Ch-3 item-42i					470.47 Cft @ Rs		12836.55		% 0Cft	Rs. 6,039 /-
7'-15 Depth	3.142	x	9.25	x	9.25	x	0.25	x	5.50	= 369.65 Cft.
Ch-3 item-42i					369.65 Cft @ Rs		18457.30		% 0Cft	Rs. 6,823 /-
2 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8										
	3.142	x	9.25	x	9.25	x	0.25	x	1.00	= 67.21 Cft.
Ch-6 item-2					67.21 Cft @ Rs		29723.50		%Cft	Rs. 19,977 /-
3 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4										
Bed	3.142	x	8.25	x	8.25	x	0.25	x	0.50	= 26.73 Cft.
Benching	3.142	x	5.00	x	5.00	x	0.25	x	1.33	= 26.18 Cft.
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	= 3.80 Cft.
D/d pipe portion							2	Total		= 56.71 Cft.
5' x	3.142	x	3.08	x	3.08	x	0.25	/	2.00	= 18.63 Cft.
								Net		= 38.09 Cft.
Ch-6 item-5f					38.09 Cft @ Rs		38723.50		%Cft	Rs. 14,748 /-
4 Pucca brick work other than building (1:3) ratio with extra for circular masonry.										
1st Step	1	x	3.142	x	6.13	x	1.13	x	3.50	= 76.18 Cft.
2nd Step	1	x	3.142	x	5.75	x	0.75	x	5.00	= 67.75 Cft.
3rd Step	3.142	x	5.75	+	2.58	x	0.75	x	3.00	= 29.44 Cft.
					2			Total		= 173.37 Cft.
Ch-7 item-7i + 10					173.37 Cft @ Rs		36349.10		% Cft	Rs. 63,018 /-
5 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).										
					1 No. @ Rs.		10080.00		Each	Rs. 10,080 /-
6 Cement and plaster (1:2) ratio. 1/2" thick (out side)										
1st Step	1	x	3.142	x	7.25	x	3.50	=	79.73 Sft	
2nd Step	1	x	3.142	x	6.50	x	5.00	=	102.12 Sft	
3rd Step	3.142	x	6.50	+	3.33	x	3.00	=	46.33 Sft	
					2			Total		= 228.17 Sft
Ch-11 item-7b					228.17 Sft @ Rs		3639.10		% Sft	Rs. 8,303 /-
7 Extra for making benching etc: complete.										
	3.142	x	5.00	x	5.00	x	0.25	=	19.64 Sft	
Ch-21 item-9					19.64 Sft @ Rs.		3118.30		% Sft	Rs. 612 /-
8 P/F angle iron steps 1¼"x1¼" x 3/16" size.										
Ch-21 item-13					11 No. @ Rs.		610.75		Each	Rs. 6,718 /-
								Total:-		Rs. 136,319 /-
								Say:-		Rs. 136,319 /-

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RATE ANALYSIS FOR MAN HOLE

5' Dia 14.50' Depth 33 " RCC Pipe

1 Earth work excavation for sewer and manholes chamber etc: in O/soil.										
0-7' Depth	3.142	x	9.25	x	9.25	x	0.25	x	7.00	= 470.47 Cft.
Ch-3 item-42i					470.47 Cft @ Rs		12836.55		% 0Cft	Rs. 6,039 /-
7'-15 Depth	3.142	x	9.25	x	9.25	x	0.25	x	7.50	= 504.07 Cft.
Ch-3 item-42i					504.07 Cft @ Rs		18457.30		% 0Cft	Rs. 9,304 /-
2 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8										
	3.142	x	9.25	x	9.25	x	0.25	x	1.00	= 67.21 Cft.
Ch-6 item-2					67.21 Cft @ Rs		29723.50		%Cft	Rs. 19,977 /-
3 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4										
Bed	3.142	x	8.25	x	8.25	x	0.25	x	0.50	= 26.73 Cft.
Benching	3.142	x	5.00	x	5.00	x	0.25	x	1.46	= 28.64 Cft.
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	= 3.80 Cft.
D/d pipe portion							2	Total		= 59.17 Cft.
5' x	3.142	x	3.375	x	3.375	x	0.25	/	2.00	= 22.37 Cft.
								Net		= 36.80 Cft.
Ch-6 item-5f					36.80 Cft @ Rs		38723.50		%Cft	Rs. 14,251 /-
4 Pucca brick work other than building (1:3) ratio with extra for circular masonry.										
1st Step	1	x	3.142	x	6.13	x	1.13	x	7.00	= 152.35 Cft.
2nd Step	1	x	3.142	x	5.75	x	0.75	x	5.00	= 67.75 Cft.
3rd Step	3.142	x	5.75	+	2.58	x	0.75	x	3.00	= 29.44 Cft.
					2			Total		= 249.54 Cft.
Ch-7 item-7i + 10					249.54 Cft @ Rs		36349.10		% Cft	Rs. 90,707 /-
5 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26" dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).										
					1 No. @ Rs.		10080.00		Each	Rs. 10,080 /-
6 Cement and plaster (1:2) ratio. 1/2" thick (out side)										
1st Step	1	x	3.142	x	7.25	x	7.00	=	159.46 Sft	
2nd Step	1	x	3.142	x	6.50	x	5.00	=	102.12 Sft	
3rd Step	3.142	x	6.50	+	3.33	x	3.00	=	46.33 Sft	
					2			Total	= 307.90 Sft	
Ch-11 item-7b					307.90 Sft @ Rs		3639.10		% Sft	Rs. 11,205 /-
7 Extra for making benching etc: complete.										
	3.142	x	5.00	x	5.00	x	0.25	=	19.64 Sft	
Ch-21 item-9					19.64 Sft @ Rs.		3118.30		% Sft	Rs. 612 /-
8 P/F angle iron steps 1¼"x1¼" x 3/16" size.										
Ch-21 item-13					15 No. @ Rs.		610.75		Each	Rs. 9,161 /-
								Total:-	Rs. 171,336 /-	
								Say:-	Rs. 171,336 /-	

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RATE ANALYSIS FOR MAN HOLE

	6' Dia	16' Depth	36 " RCC Pipe							
1 Earth work excavation for sewer and manholes chamber etc: in O/soil.										
0-7' Depth	3.142	x	10.25	x	10.25	x	0.25	x	7.00	= 577.69 Cft.
Ch-3 item-42i					577.69 Cft @ Rs	12836.55	%	0Cft	Rs. 7,415 /-	
7'-15 Depth	3.142	x	10.25	x	10.25	x	0.25	x	8.00	= 660.21 Cft.
Ch-3 item-42i					660.21 Cft @ Rs	18457.30	%	0Cft	Rs. 12,186 /-	
Above 15' Depth	3.142	x	10.25	x	10.25	x	0.25	x	2.50	= 206.32 Cft.
Ch-3 item-42i					206.32 Cft @ Rs	15504.80	%	0Cft	Rs. 3,199 /-	
2 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8										
Ch-6 item-2	3.142	x	10.25	x	10.25	x	0.25	x	1.00	= 82.53 Cft.
					82.53 Cft @ Rs	29723.50	%	Cft	Rs. 24,530 /-	
3 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4										
Bed	3.142	x	9.25	x	9.25	x	0.25	x	0.50	= 33.60 Cft.
Benching	3.142	x	6.00	x	6.00	x	0.25	x	1.58	= 44.77 Cft.
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	= 3.80 Cft.
D/d pipe portion							2	Total	= 82.18 Cft.	
6' x	3.142	x	3.66	x	3.66	x	0.25	/	2.00	= 31.57 Cft.
							Net		= 50.61 Cft.	
Ch-6 item-5f					50.61 Cft @ Rs	38723.50	%	Cft	Rs. 19,598 /-	
4 Pucca brick work other than building (1:3) ratio with extra for circular masonry.										
1st Step	1	x	3.142	x	7.50	x	1.50	x	1.50	= 53.02 Cft.
2nd Step	1	x	3.142	x	7.125	x	1.125	x	7.00	= 176.30 Cft.
3rd Step	1	x	3.142	x	6.75	x	0.75	x	5.00	= 79.53 Cft.
4th Step	3.142	x	6.75	+	2.58	x	0.75	x	3.00	= 32.98 Cft.
					2			Total		= 341.83 Cft.
Ch-7 item-7i + 10					341.83 Cft @ Rs	36349.10	%	Cft	Rs. 124,251 /-	
5 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).										
					1 No. @ Rs.	10080.00	Each	Rs. 10,080 /-		
6 Cement and plaster (1:2) ratio. 1/2" thick (out side)										
1st Step	1	x	3.142	x	8.25	x	1.50	=	38.88	Sft
2nd Step	1	x	3.142	x	7.50	x	7.00	=	164.96	Sft
3rd Step	1	x	3.142	x	7.50	x	5.00	=	117.83	Sft
4th Step	3.142	x	7.50	+	3.33	x	3.00	=	51.04	Sft
					2			Total		= 372.70 Sft
Ch-11 item-7b					372.70 Sft @ Rs	3639.10	%	Sft	Rs. 13,563 /-	
7 Extra for making benching etc: complete.										
Ch-21 item-9	3.142	x	6.00	x	6.00	x	0.25	=	28.28	Sft
					28.28 Sft @ Rs.	3118.30	%	Sft	Rs. 882 /-	
8 P/F angle iron steps 1¼"x1¼" x 3/16" size.										
Ch-21 item-13					16 No. @ Rs.	610.75	Each	Rs. 9,772 /-		
								Total:- Rs. 225,477 /-		
								Say:- Rs. 225,477 /-		

**Sub-Engineer
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RATE ANALYSIS FOR MAN HOLE

6' Dia 23' Depth 42 " RCC Pipe

1 Earth work excavation for sewer and manholes chamber etc: in O/soil.										
0-7' Depth	3.142	x	10.25	x	10.25	x	0.25	x	7.00	= 577.69 Cft.
Ch-3 item-42i					577.69 Cft @ Rs		12836.55		% 0Cft	Rs. 7,415 /-
7'-15 Depth	3.142	x	10.25	x	10.25	x	0.25	x	8.00	= 660.21 Cft.
Ch-3 item-42i					660.21 Cft @ Rs		18457.30		% 0Cft	Rs. 12,186 /-
Above 15' Depth	3.142	x	10.25	x	10.25	x	0.25	x	9.50	= 784.00 Cft.
Ch-3 item-42i					784.00 Cft @ Rs		15504.80		% 0Cft	Rs. 12,156 /-
2 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (i) Ratio 1: 4: 8										
Ch-6 item-2	3.142	x	10.25	x	10.25	x	0.25	x	1.00	= 82.53 Cft.
					82.53 Cft @ Rs		29723.50		%Cft	Rs. 24,530 /-
3 Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate): (f) Ratio 1: 2: 4										
Bed	3.142	x	9.25	x	9.25	x	0.25	x	0.50	= 33.60 Cft.
Benching	3.142	x	6.00	x	6.00	x	0.25	x	1.83	= 51.84 Cft.
Top	3.142	x	2.58	x	0.75	x	0.75	+	0.50	= 3.80 Cft.
D/d pipe portion							2	Total		= 89.25 Cft.
6' x	3.142	x	4.25	x	4.25	x	0.25	/	2.00	= 42.56 Cft.
								Net		= 46.68 Cft.
Ch-6 item-5f					46.68 Cft @ Rs		38723.50		%Cft	Rs. 18,077 /-
4 Pucca brick work other than building (1:3) ratio with extra for circular masonry.										
1st Step	1	x	3.142	x	7.50	x	1.50	x	8.50	= 300.45 Cft.
2nd Step	1	x	3.142	x	7.125	x	1.125	x	7.00	= 176.30 Cft.
3rd Step	1	x	3.142	x	6.75	x	0.75	x	5.00	= 79.53 Cft.
4th Step	3.142	x	6.75	+	2.58	x	0.75	x	3.00	= 32.98 Cft.
					2			Total		= 589.26 Cft.
Ch-7 item-7i + 10					589.26 Cft @ Rs		36349.10		% Cft	Rs. 214,191 /-
5 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).										
					1 No. @ Rs.		10080.00		Each	Rs. 10,080 /-
6 Cement and plaster (1:2) ratio. 1/2" thick (out side)										
1st Step			1	x	3.142	x	8.25	x	8.50	= 220.33 Sft
2nd Step			1	x	3.142	x	7.50	x	7.00	= 164.96 Sft
3rd Step			1	x	3.142	x	7.50	x	5.00	= 117.83 Sft
4th Step			3.142	x	7.50	+	3.33	x	3.00	= 51.04 Sft
					2			Total		= 554.15 Sft
Ch-11 item-7b					554.15 Sft @ Rs		3639.10		% Sft	Rs. 20,166 /-
7 Extra for making benching etc: complete.										
Ch-21 item-9	3.142	x	6.00	x	6.00	x	0.25	=	28.28 Sft	
					28.28 Sft @ Rs.		3118.30		% Sft	Rs. 882 /-
8 P/F angle iron steps 1¼"x1¼" x 3/16" size.										
Ch-21 item-13					23 No. @ Rs.		610.75		Each	Rs. 14,047 /-
								Total:-		Rs. 333,730 /-
								Say:-		Rs. 333,730 /-

**Sub-Engineer
Municipal Committee
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**Municipal Officer (I&S)
Municipal Committee
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RATE ANALYSIS OF NON-SCHEDULE ITEMS

DESCRIPTION

Providing /Installing Cost iron pen Stock 3.5'x3.5' British standard 7775

Unit: Each

Sr. No	DESCRIPTION	QTY	UNIT	UNIT RATE	AMOUNT	
				(Rs)	(Rs)	
1	Cast Iron Pen Stock (size 4'x4') Specification according to British Standard Institution BS:7775	1	No	650,000	650,000	
i.	Gate: Caste Iron maerial thickness 1"x4 side machining weight 320 KG					
ii	Frame/ Guide Rail: Thickness 1" Double height weight is 600 KG					
iii	Pedestal & Staring: Heavy duty cast iron Pedestal & Staring weight in 120 Kgs					
iv	Shaft/Spindle. SS 203, size 60mm Length of shaft 25'					
v	Lining. Brass lining around the gate size 3mm X 50 mm					
vi	Total estimate weight is 1040 Kg					
	Labour, Material & Carriage etc 10% of item No.1					65,000
	Total					715,000
	Add 20% contractor Profit					143,000
		Total	858,000			
		Say Rs	858,000			

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RATE ANALYSIS OF NON-SCHEDULE ITEMS

DESCRIPTION

Providing /Installing Cost iron pen Stock 3x3 British standard 7775

Unit: Each

Sr. No	DESCRIPTION	QTY	UNIT	UNIT RATE	AMOUNT
				(Rs)	(Rs)
1	Cast Iron Pen Stock (size 3'x3') Specification according to British Standard Institution BS:7775	1	No	450,000	450,000
i.	Gate: Caste Iron maerial thickness 1"x4 side machining weight 220 KG				
ii	Frame/ Guide Rail: Thickness 1" Double height weight is 500 KG				
iii	Pedestal & Staring: Heavy duty cast iron Pedestal & Staring weight in 120 Kgs				
iv	Shaft/Spindle. SS 203, size 60mm Length of shaft 25'				
v	Lining. Brass lining around the gate size 3mm X 50 mm				
vi	Total estimate weight is 840 Kg Labour, Material & Carriage etc 10% of item No.1 Total Add 20% contractor Profit				
				Total	594,000
				Say Rs	594,000

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RATE ANALYSIS OF NON-SCHEDULE ITEMS

DESCRIPTION

Providing /Installing Cost iron pen Stock 3x3 British standard 7775

Unit: Each

Sr. No	DESCRIPTION	QTY	UNIT	UNIT RATE	AMOUNT
				(Rs)	(Rs)
1	Cast Iron Pen Stock (size 3'x3') Specification according to British Standard Institution BS:7775	1	No	450,000	450,000
i.	Gate: Caste Iron maerial thickness 1"x4 side machining weight 220 KG				
ii	Frame/ Guide Rail: Thickness 1" Double height weight is 500 KG				
iii	Pedestal & Staring: Heavy duty cast iron Pedestal & Staring weight in 120 Kgs				
iv	Shaft/Spindle. SS 203, size 60mm Length of shaft 25'				
v	Lining. Brass lining around the gate size 3mm X 50 mm				
vi	Total estimate weight is 840 Kg Labour, Material & Carriage etc 10% of item No.1				
	Total				45,000
	Add 20% contractor Profit				99,000
				Total	594,000
				Say Rs	594,000

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PUNJAB CITIES PROGRAM (PCP)

Rehabilitation of Sewerage Jhang

Rate Analysis for Lead

Ser	Description	Unit	Quantity	Rate	Amount (Rs.)
A	<u>Carraige</u>				
	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.				
	Chapter No - 1 / Item no - 1				
	1st Km	100 Cft	1	305.40	305.40
	2nd Km	100 Cft	1	145.65	145.65
	3rd Km	100 Cft	1	114.10	114.10
	4th Km	100 Cft	1	81.20	81.20
	5th Km	100 Cft	1	75.85	75.85
	6th Km	100 Cft	1	74.60	74.60
	7th Km	100 Cft	1	69.60	69.60
	8th Km	100 Cft	1	68.85	68.85
	9th Km	100 Cft	1	64.75	64.75
	10th Km	100 Cft	1	60.75	60.75
	10th Km to 105th Km / $105 - 10 = 95$ Km	100 Cft	95	52.20	4,959.00
Total Cost of 100 Cft					6,019.75

RCC (1:2:4) FOUNDATION OF PUMP AND MOTOR AS PER MANUFACTURE'S SPECIFICATION WITH STAIN LESS STEEL NUTS AND BOLT COMPLETE IN ALL RESPECT. (3X6X3)

1	Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design 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:- Type C (nominal mix 1: 2: 4).								
	Ch-6 item-6b3	3.00	x	6.00	x	2.50	=	45.00 Cft @ Rs. 583.25 P.Cft	Rs. 26,246.25
2	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.								
		36	x	5.50	x		=	89.89 Kgs	
	Ch-6 item-9b							89.89 Kg @ Rs. 31,556.50 %Kg	Rs. 28,366.77
3	Supply and fixing SS steel J bolts 3/4" dia 33" long complete in all respect								
		1	x	4.00			=	4 No.@Rs. 4,000.00 P No	Rs. 16,000.00
								Total:-	Rs. 70,613.02
								Say	Rs. 70,613.02

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S/F BASE PLATE OF 2'X6'X1" OF SUITABLE SIZE PROPERLY GROUTED IN FOUNDATION I/C NUTS AND BOLTS COMPLETE IN ALL RESPECT.

1 Fabrication of heavy steel work, with angle, tees, flat iron round iron and sheet iron for making trusses, girders,tanks, etc., including cutting, drilling, revitting, andling,assembling and fixing, but excluding erection in position.

Ch-25 item-10+11 1 x 3 x 5 x 40.8 x 0.45 = 277.85

MS Base plate 1" thick

277.85 Kg @ Rs 34,810.15 P.% kg Rs. 96,719.31

2 Making hole in 1" thick MS plate

1 x 12.00

= 12.00 P No
12.00 No@ Rs. 400.00 P No

Rs. 4,800.00

3 Making thread with moose as per required

1 x 8.00

= 8.00 P No
8.00 No@ Rs. 400.00 P No

Rs. 3,200.00

Total:- Rs. 104,719.31
Say Rs. 104,719.31

Sub-Engineer
Municipal Committee
Jhang

Municipal Officer (I&S)
Municipal Committee
Jhang

**RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE
COVERS 24" I/D WITH RPC FRAME**

1	Dismantling cement concreet 1:2:4	75	3.14	x	2.58	x	0.75	x	0.5	=	<u>227.85</u>	Cft.				
											227.85 Cft @ Rs	9060.50	%Cft	Rs. 20,644	/-	
2	Pacca Brick Work Cement Sand Mortor 1:3:3 i/c extra for circuler masonary	75	3.14	x	2.58	x	0.75	x	1	=	<u>455.69</u>	Cft.				
											455.69 Cft @ Rs	28248.35	%Cft	Rs. 128,726	/-	
3	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate):															
	(c) Ratio 1:2:4	100	3.14	x	2.58	x	0.75	x	0.5	=	<u>303.80</u>	Cft.				
											303.80 Cft @ Rs	38723.50	%Cft	Rs. 117,640	/-	
4	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum)															
											100 No. @ Rs.	8400.00	Each	Rs. 840,000	/-	
5	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.															
	Concrete 1:1.5:3				303.80	x	0.84	=	255.19	=	255.19	Cft				
					303.80							6,019.75	P.%Cft	Rs. 18287.70		
	Add 20 % Contract profit & OHC													Total:- Rs. 1,125,297	/-	
														Rs. 168,000	/-	
														Total:- Rs. 1,293,297	/-	
														Say Rs. 12,931	/-	
	Rate Per Number															

Rate analysis for desilting of sewerlines with winching machines

Note:- Winch Machine will be provide by MC Jhang (Rate quoted as per input rate 1st Jan to 30 Jun 2023)

Sr No	sewer size in dia	Operator /Driver Peter Enginer per day in Nos	unit rate (Rs)	Amount Rs.(a)	Skilled Health/ Sewer man worker Nos.	Unti Rate (Rs)	Amount Rs. (b)	Number of peter engine 20-HP	POL day unit (8x2x2= 32) lite/ day	Amount Rs(c)	Require mobile oil half L. P.day (d)	Total (Rs) a+b+c+d	Total require for cleaning of 100 Rft pipe day	Amount Rs for cleanign of 100 Rft pipe (e)	Sundreis 10% (f)	G. Total (e+f) for 100 Rft	Add 20% contactor Profit and OHC	Total Amount	Rate per Rft
1	12"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	1 days	14019.6	1401.96	15421.6	3084.312	18505.87	185.06
2	15"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	1.25 days	17524.5	1752.45	19277	3855.39	23132.34	231.32
3	18"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	1.5 days	21029.4	2102.94	23132.3	4626.468	27758.81	277.59
4	21"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	1.75 days	24534.3	2453.43	26987.7	5397.546	32385.28	323.85
5	24"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	2 days	28039.2	2803.92	30843.1	6168.624	37011.74	370.12
6	27"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	2.25 days	31544.1	3154.41	34698.5	6939.702	41638.21	416.38
7	30'	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	2.75 days	38553.9	3855.39	42409.3	8481.858	50891.15	508.91
8	33'	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	3 days	42058.8	4205.88	46264.7	9252.936	55517.62	555.18
9	36'	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	3.25 days	45563.7	4556.37	50120.1	10024.014	60144.08	601.44
10	42"	2	1400	2800	2	1050	2100	2	280.30	8969.6	150	14019.6	3.5 days	49068.6	4906.86	53975.5	10795.092	64770.55	647.71

RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE COVERS
24" I/D WITH RPC FRAME

4 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26" dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	100 No. @	Rs. 8400.00	Each	Rs. 840,000	/-
Add 20 % Contract profit & OHC				Total:- Rs. 840,000	/-
				Rs. 168,000	/-
				Total:- Rs. 1,008,000	/-
			Rate Per Number	Say Rs. 10,080	/-

REMAINING WORK MISSING RCC SEWER LINE LENGTH / EXCAVATION STATEMENT FOR RCC SEWER

Sr. #	Name of Line	12" i/d	24" i/d	27" i/d	30" i/d	33" i/d	36" i/d	42" i/d	Dia	DETAIL OF EXCAVATION (0-7') DEPTH	DETAIL OF EXCAVATION (7'-15') DEPTH	DETAIL OF EXCAVATION (ABOVE 15') DEPTH	
ZONE -A													
1	Gali Chak wali (Missing Portion)			259		-	-	-	27	259 x 4.58 x 7.00 =	8,304	259 x 4.58 x 8.00 = 9,490	- x 4.58 x = -
2	Purani EID Gah Road Dispawal Works Gadhianwala			400		-	-	-	27	400 x 4.58 x 7.00 =	12,824	400 x 4.58 x 5.00 = 9,160	- x 4.58 x = -
3	Eid Gah Road Jhang City (Missing Portion)				350				30	350 x 4.88 x 7.00 =	11,956	350 x 4.88 x 4.00 = 6,832	
4	Disposal Tibba Sultan (Missing Portion)					-	-	125	42	125 x 6.04 x 7.00 =	5,285	125 x 6.04 x 8.00 = 6,040	125 x 6.04 x 9.00 = 6,795
5	Near Sabzi Mandi Chowk (Missing Portion)					-	263	-	36	263 x 5.46 x 7.00 =	10,052	263 x 5.46 x 8.00 = 11,488	263 x 5.46 x 3.00 = 4,308
6	Sabzi Mandi to Protection Band (Missin Portion)					-	220	-	36	220 x 5.46 x 7.00 =	8,408	220 x 5.46 x 8.00 = 9,610	220 x 5.46 x 4.00 = 4,805
7	Near Chungi No. 10 Dingi Basti (Missing Portion)					300	-	-	33	300 x 5.17 x 7.00 =	10,857	300 x 5.17 x 8.00 = 12,408	300 x 5.17 x 1.00 = 1,551
8	Pacca Railway Road Near Barnay wali Chungi (Missing Portion)		60			-	-	-	24	60 x 4.29 x 7.00 =	1,802	60 x 4.29 x 4.00 = 1,030	- x 4.29 x = -
9	Satelitte Town	500								500 x 3.13 x 6.00 =	9,375	-	
10	Satelitte Town	1,000								1,000 x 3.13 x 6.00 =	18,750	-	
Total:-		-	60	659	350	300	483	125			97,613	66,057	17,459

REMAINING WORK MISSING RCC SEWER LINE LENGTH / EXCAVATION STATEMENT FOR RCC

Sr. #	Name of Line	Dismantling of Soling	Dismantling of Road	Sand Filling
ZONE -A				
1	Gali Chak wali (Missing Portion)	x 4.58 = -	259 x 4.58 x 0.88 =	1,044
2	Purani EID Gah Road Disposal Works Gadhianwala	x 4.58 = -	400 x 4.58 x 0.88 =	1,612
3	Eid Gah Road Jhang City (Missing Portion)		350 x 4.88 x 0.88 =	1,503
4	Disposal Tibba Sultan (Missing Portion)	- x 6.04 = -	72 x 6.04 x 0.88 =	383
5	Near Sabzi Mandi Chowk (Missing Portion)	- x 5.46 = -	263 x 5.46 x 0.88 =	1,264
6	Sabzi Mandi to Protection Band (Missin Portion)	x 5.46 = -	220 x 5.46 x 0.88 =	1,057
7	Near Chungi No. 10 Dingi Basti (Missing Portion)	300 x 5.17 = 1,551	x 5.17 x 0.88 = -	-
8	Pacca Railway Road Near Barnay wali Chungi (Missing Portion)	- x 4.29 = -	60 x 4.29 x 0.88 =	227
Satellite Town				
		1,551		7,089
				-

REPLACEMENT OF RCC SEWER LINE LENGTH / EXCAVATION STATEMENT FOR RCC SEWER

Sr. #	Name of Line	15" i/d	24" i/d	27" i/d	30" i/d	33" i/d	36" i/d	42" i/d	Dia	DETAIL OF EXCAVATION (0-7') DEPTH	DETAIL OF EXCAVATION (7'-15') DEPTH	DETAIL OF EXCAVATION (ABOVE 15') DEPTH
ZONE -A												
1	Truck Stand	200							15	200 x 3.42 x 7.00 = 4,788	200 x 3.42 x 8.00 = 5,472	- x 3.42 x = -
2	Chiniot Road Park	500							15	500 x 3.42 x 7.00 = 11,970	500 x 3.42 x 5.00 = 8,550	- x 3.42 x = -
3	Nawaz Shrif Park to Girls College	900							15	900 x 3.42 x 7.00 = 21,546	900 x 3.42 x 4.00 = 12,312	
4	Bhutta Yousaf Wala	600							42	600 x 6.04 x 7.00 = 25,368	600 x 6.04 x 8.00 = 28,992	600 x 6.04 x 9.00 = 32,616
5	Rashid Chowk to Loosa Road	900							36	900 x 5.46 x 7.00 = 34,398	900 x 5.46 x 8.00 = 39,312	900 x 5.46 x 3.00 = 14,742
6	Lari Adda	200							36	200 x 5.46 x 7.00 = 7,644	200 x 5.46 x 8.00 = 8,736	200 x 5.46 x 4.00 = 4,368
7	Hockey & Foot Ball Ground	400							33	400 x 5.17 x 7.00 = 14,476	400 x 5.17 x 8.00 = 16,544	400 x 5.17 x 1.00 = 2,068
8									24	- x 4.29 x 7.00 = -	- x 4.29 x 4.00 = -	- x 4.29 x = -
Total:-		3,700	-	-	-	-	-	-		120,190	119,918	53,794

REPLACEMENT OF RCC SEWER LINE LENGTH / EXCAVATION STATEMENT FOR RCC SEWER

Sr. #	Name of Line	Dismantling of Soling	Dismantling of Road	Sand Filling
ZONE -A				
1	Truck Stand	x 3.42 =	- 200 x 3.42 x 0.88 =	602
2	Chiniot Road Park	x 3.42 =	- 500 x 3.42 x 0.88 =	1,505
3	Nawaz Shrif Park to Girls College		900 x 3.42 x 0.88 =	2,709
4	Bhutta Yousaf Wala	- x 6.04 =	- x 6.04 x 0.88 =	-
5	Rashid Chowk to Loosa Road	- x 5.46 =	- 900 x 5.46 x 0.88 =	4,324
6	Lari Adda	x 5.46 =	- 200 x 5.46 x 0.88 =	961
7	Hockey & Foot Ball Ground	- x 5.17 =	- x 5.17 x 0.88 =	-
8	0	- x 4.29 =	- x 4.29 x 0.88 =	-
				10,101
				-

**DETAILED QUANTITY SEWER
FOR THE SCHEME
PROVIDING AND LAYING BRANCH SEWER IN JHANG**

Part-A

S.No.	Detail of Item/Work	Measurements			Quantity
		L	B	H	
1	2	3	4	5	6
1	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.				
	12" dia	730.00	3.00	1.00	2,190.00
	15" dia	1,700.00	3.50	1.00	5,950.00
	18" dia	2,950.00	4.00	1.00	11,800.00
	Total:-				19,940.00
2	Dimantling of PCC 1:2:4				
	9" dia	5,600.00	2.25	0.33	4,158.00
	12" dia	1,920.00	3.00	0.33	1,900.80
	15" dia	2,500.00	3.50	0.33	2,887.50
	18" dia	2,000.00	4.00	0.33	2,640.00
	Total:-				11,586.30
3	Dismantling brick or flagged flooring without concrete foundation				
	9" dia	3,600.00	2.25	-	8,100.00
	12" dia	920.00	3.00	-	2,760.00
	Total:-				10,860.00
4	Extra for slush or Daldal	13,250.00	5.00	3.00	198,750.00
5	Disjoining R.C.C. pipes inside the trench and dismantling and removing the pipes from the trench and stacking them outside:-				
	06" to 12" (150 to 300 mm) diameter	9,950.00			9,950.00
	13" to 24" (325 to 600 mm) diameter	3,300.00			3,300.00
6	Earth work excavation in open cutting for sewers and manholes as shown in draw - ings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
	0-7' depth				
	9" dia	12,300.00	2.25	5.00	138,375.00
	12" dia	7,600.00	3.00	5.00	114,000.00
	15" dia	5,100.00	3.50	6.00	107,100.00
	18" dia	4,800.00	4.00	7.00	134,400.00
	Total:-				493,875.00
	7-15' depth				
	12" dia	3,800.00	3.00	3.15	35,910.00
	15" dia	2,550.00	3.50	3.15	28,113.75
	18" dia	2,400.00	4.00	6.75	64,800.00
	Total:-				128,823.75
					622,698.75
7	Providing and laying R.C.C. pipe moulded with cement conc 1: 1.5: 3 with spigot or collar joint etc, including cost of reinforcement, conforming to B.S 5911 part-I 1981 class "L" including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing, cutting pipes where necessary, finishing and testing etc. complete.				
	9" dia	12,300.00			12,300.00
8	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
	12" dia	7,600.00			7,600.00
	15" dia	5,100.00			5,100.00
	18" dia	4,800.00			4,800.00

9	(i) Rehandling of earth work.				
	(a) Lead upto a single throw of Kassi, phaorah or shovel.	498,159.00	-	-	498,159.00
	(ii) Compaction of earth work.				
	(a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	498,159.00			498,159.00
	(iii) Ramming of earth work.	498,159.00	-	-	498,159.00
10	Supplying and filling sand under floor; or plugging in wells.				
	9" dia	12,300.00	1.45	-	17,862.84
	12" dia	7,600.00	2.28	-	17,292.01
				Total:-	35,154.85
11	Supplying, laying, granular material crushed stone) 1/2" to 1" gauge under pipe line and up to half diameter of pipe.				
	15" dia	5,100.00	2.96	-	15,092.26
	18" dia	4,800.00	3.77	-	18,082.60
				Total	33,174.86

**DETAILED QUANTITY MANHOLE
FOR THE SCHEME
PROVIDING AND LAYING BRANCH SEWER IN JHANG**

Part-B Manholes

S.No.	Name of Work	Nos.	Qty. of each Chamber	T.Quantity		
1	Earth work excavation in open cutting for sewers and manhole as shown in drawings including shuttering and timbering, dressing to correct section and 0-7'ft. Depth. 9" dia 12" dia 15" dia 18" dia 7'-15'ft. Depth. 15" dia 18" dia					
		256	227	58,168.75		
		136	232	31,481.37		
		78	287	22,534.03		
		59	365	21,343.51		
			Total:-	133,527.66		
		78	227	17,784.55		
		59	279	16,331.71		
			Total:-	34,116.26		
		2	Dry rammed brick or stone ballast 1-1/2" to 2" (40mm to 50mm) gauge. 9" dia 12" dia 15" dia 18" dia	256	16.57	4,245.84
136	16.57			2,248.67		
78	44.18			3,466.77		
59	44.18			2,586.40		
	Total:-			12,547.69		
3	Cement concrete plain including, placing compacting finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6 9" dia 12" dia 15" dia 18" dia Ratio 1:2:4 9" dia 12" dia 15" dia 18" dia			256	16.57	4,245.84
				136	16.57	2,248.67
				78	44.18	3,466.77
				59	44.18	2,586.40
					Total:-	12,547.69
		256	23.15	5,932.19		
		136	23.15	3,141.79		
		78	27.13	2,128.66		
		59	27.13	1,588.10		
			Total	12,790.73		
4	Pucca brick work other than building upto 10' height. Cement sand mortar Ratio 1:3. 9" dia 12" dia 15" dia 18" dia	256	50.75	13,004.69		
		136	50.75	6,887.50		
		78	112.28	8,809.66		
		59	112.28	6,572.49		
			Total	35,274.34		
5	Extra for pucca brick work in stening of wells or any other circular masonry.			35,274.34		
6	Extra for making and finishing benching floor work in manhole chamber 1/8" (3mm) thick cement finish. 9" dia 12" dia 15" dia 18" dia	256	12.56	3,218.50		
		136	12.56	1,704.57		
		78	12.56	985.48		
		59	12.56	735.22		
			Total	6,643.77		
7	Providing and fixing 1/4"x1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels. 9" dia 12" dia 15" dia 18" dia	256	1	256.25		
		136	1	135.71		
		78	4	313.85		
		59	4	234.15		
			Total	939.96		
8	Cement plaster 1:3 up to 20' height 1/2" thick. 9" dia 12" dia 15" dia 18" dia	256	133.65	34,247.81		
		136	133.65	18,138.21		
		78	133.65	10,486.38		
		59	133.65	7,823.41		
			Total	70,695.83		
12	Providing/fixing PRC manhole cover with cover with tee shaped frame 22" l/d (frame atleast 50 kg) as per standard drq. & specifications.	529		528.96		

**Detailed Estimate
FOR THE SCHEME
PROVIDING AND LAYING BRANCH SEWER IN JHANG**

Part-A (Govt. Notified Rates) January 2023 to July 2023

S #	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-4/46	(i) Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.	100 Cft.	19,940.00	2960.50	590,323.70
2	C-4/19c	Dimantling of PCC 1:2:4	100 Cft.	11,586.30	12196.80	1,413,157.84
3	C-4/29	Dismantling brick or flagged flooring without concrete foundation	100 Sft.	10,860.00	942.50	102,355.50
4	C-3/27	Extra for slush or Daldal	1000 Cft	198,750.00	8,870.40	1,762,992.00
5	C-4/31b	Disjoining R.C.C. pipes inside the trench and dismantling and removing the pipes from the trench and stacking them outside:- 06" to 12" (150 to 300 mm) diameter 13" to 24" (325 to 600 mm) diameter	Per Rft Per Rft	9,950.00 3,300.00	36.95 59.15	367,652.50 195,195.00
6	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock (i) 0 ft to 7 ft. Depth (ii) 7 ft to 15 ft. Depth	1000 Cft. 1000 Cft.	627,402.66 162,940.01	12836.55 18457.30	8,053,685.60 3,007,432.61
7	C-21/1	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc complete 9" dia	Rft	12,300.00	553.85	6,812,355.00
8	C-21/3	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc complete 12" dia 15" dia 18" dia	Rft Rft Rft	7,600.00 5,100.00 4,800.00	754.65 1,043.75 1,252.65	5,735,340.00 5,323,125.00 6,012,720.00
9	C-3/13	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phaorah or shovel or shovel.	1000 Cft.	498,159.00	2,772.00	1,380,896.75
	C-3/24a.c	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete. (iii) (c) Ramming of earth work.	1000 Cft. 1000 Cft.	498,159.00 498,159.00	1,663.20 1,663.20	828,538.05 828,538.05
10	N.S	Providing/fixing PRC manhole cover with cover with tee shaped frame 22" l/d (frame atleast 50 kg) as per standard drg. & specifications.	- P.set	528.96	11975.00	6,334,324.85
11	C-21/9	Extra for making and finishing benching floor work in manhole chamber with 1/8" thick cement finish.	100 Sft.	6,643.77	3,118.30	207,172.61
12	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate. (i) P.C.C. 1:3:6 (ii) P.C.C. 1:2:4	100 Cft. 100 Cft.	12,547.69 12,790.73	33,503.50 38,723.50	4,203,914.60 4,953,019.23
13	C-6/5	Restoration of PCC 1:2:4	100 Cft.	11,586.30	38,723.50	4,486,620.88
14	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.	100 Cft.	35,154.85	3906.00	1,373,148.61
15	C-7/7	Pacca brick work other than building upto 10 ft height in 1:3 cement sand mortor.	100 Cft.	35,274.34	33,467.90	11,805,579.78
16	C-7/10	Extra for pacca brick work in steining of wells or any other circular masonry.	100 Cft.	35,274.34	2881.20	1,016,324.19
17	C-11/8	Cement plaster *1/2 thick (1:3) cement				

		sand mortar upto 20' height.	100 Sft.	70,695.83	3,936.10	2,782,658.41
18	C-6/2	Dry rammed bricks or stone ballast 1.5" to 2" gauge.	100 Cft.	12,547.69	9,768.00	1,225,658.15
19	C-26/35	Bailing out water b) by pump	1000 Cft.	691,200.00	902.00	623462.40
20	C-21/13	Providing and fixing 1/4"x1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	- Each	939.96	610.75	574,078.60
21	C-21/23	Supplying, laying, granular material crushed stone) 1/2" to 1" gauge under pipe line and up to half diameter of pipe.	1000 Cft.	33,174.86	9324.00	309322.42
22	N.S	Making connections of sewer line with manhole of existing sewer line complete in all respect.				
		(i) 9" dia to 9" dia	- Job	29.00	3,900.00	113,100.00
		(ii) 9" dia to 12" dia	- Job	17.00	4,700.00	79,900.00
		(iii) 12" dia to 15" dia	- Job	10.00	5,200.00	52,000.00
		(iv) 15" dia to 18" dia	- Job	8.00	5,600.00	44,800.00
		(v) 18" dia to 24" dia	- Job	6.00	7,100.00	42,600.00
23	N.S	Provision for Restoration of Road.	1 Sft	19,940.00	405.00	8,075,700.00
24	N.S	Provision for Shifting of existing services.	L.S	1.00	1,000,000.00	1,000,000.00
				Total:- (B)	Rs.	91,717,692.33
				Say:-	Rs.	91.72
						Million

**DETAILED QUANTITY SEWER
FOR THE SCHEME
PROVIDING AND LAYING TRUNK SEWER IN JHANG**

Part-A

S.No.	Detail of Item/Work	Measurements			Quantity
		L	B	H	
1	2	3	4	5	6
1	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.				
	21" dia	7,216.00	8.00	1.00	57,728.00
	24" dia	615.00	10.00	1.00	6,150.00
	30" dia	4,877.00	12.00	2.00	117,048.00
	36" dia	8,032.00	14.00	2.00	224,896.00
	42" dia	3,653.00	16.00	2.00	116,896.00
	48" dia	2,756.00	18.00	2.00	99,216.00
	60" dia	9,135.00	16.00	1.50	219,240.00
		2,133.00	14.00	1.00	29,862.00
	Total:-				871,036.00
6	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
	0-7' depth				
	21" dia	10,316.00	8.00	7.00	577,696.00
	24" dia	1,481.00	14.00	7.00	145,138.00
	30" dia	4,877.00	14.00	7.00	477,946.00
	36" dia	8,032.00	18.00	7.00	1,012,032.00
	42" dia	3,653.00	18.00	7.00	460,278.00
	48" dia	11,891.00	20.00	7.00	1,664,740.00
	60" dia	2,133.00	22.00	7.00	328,482.00
	Total:-				4,666,312.00
	7-15' depth				
	21" dia	6,568.00	6.00	2.63	103,643.04
		3,596.00	6.00	4.74	102,270.24
		3,920.00	6.00	3.35	78,792.00
	24" dia	1,481.00	12.00	7.30	129,735.60
	30" dia	4,877.00	12.00	8.00	468,192.00
	36" dia	8,032.00	16.00	8.00	1,028,096.00
	42" dia	3,653.00	16.00	8.00	467,584.00
	48" dia	11,891.00	18.00	8.00	1,712,304.00
	60" dia	2,133.00	20.00	8.00	341,280.00
	Total:-				4,431,896.88
	Above 15' depth				
	21" dia	1,115.00	4.00	1.38	6,154.80
	24" dia	500.00	4.00	0.50	1,000.00
	30" dia	800.00	5.00	1.08	4,320.00
	36" dia	4,114.00	6.00	2.42	59,735.28
		1,381.00	6.00	3.58	29,663.88
		3,503.00	6.00	2.17	45,609.06
	42" dia	3,653.00	7.50	6.33	173,426.16
	48" dia	9,135.00	10.00	5.38	491,463.00
		2,756.00	12.00	9.65	319,144.80
	60" dia	2,133.00	14.00	9.67	288,765.54
	Total:-				1,419,282.54
	G.Total:-				10,517,491.42
8	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
	21" dia	10,316.00			10,316.00
	24" dia	1,481.00			1,481.00
	30" dia	4,877.00			4,877.00
	36" dia	8,032.00			8,032.00
9	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
	42" dia	3,653.00			3,653.00
	48" dia	11,891.00			11,891.00
	60" dia	2,133.00			2,133.00

9	(i) Rehandling of earth work.				
	(a) Lead upto a single throw of Kass, phaorah or shovel.	8,413,993.13	-	-	8,413,993.13
	(ii) Compaction of earth work.				
	(a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	8,413,993.13			8,413,993.13
	(iii) Ramming of earth work.	8,413,993.13	-	-	8,413,993.13
11	Supplying, laying, granular material crushed stone) 1/2" to 1" gauge under pipe line and up to half diameter of pipe.				
	21" dia	10,316.00	3.54	1.54	56,238.71
	24" dia	1,481.00	3.83	1.75	9,926.40
	30" dia	4,877.00	4.42	2.17	46,777.26
	36" dia	8,032.00	4.92	2.58	101,955.00
	42" dia	3,653.00	5.92	3.00	64,877.28
	48" dia	11,891.00	6.50	3.42	264,336.93
	60" dia	2,133.00	7.67	4.25	69,530.47
				Total	613,642.04
	Deduction of dia of pipe				
	21" dia	10,316.00	0.5*3.14*2.21*2.21*0.25		19775.87
	24" dia	1,481.00	0.5*3.14*2.50*2.50*0.25		3633.08
	30" dia	4,877.00	0.5*3.14*3.08*3.08*0.25		18159.08
	36" dia	8,032.00	0.5*3.14*3.67*3.67*0.25		42461.52
	42" dia	3,653.00	0.5*3.14*4.25*4.25*0.25		25898.06
	48" dia	11,891.00	0.5*3.14*4.83*4.83*0.25		108881.05
	60" dia	2,133.00	0.5*3.14*6*6*0.25		30139.29
				Total	248947.94
				Net	364694.10
12	Providing and Installing C.I ventilating shaft painted with bituminous paint with foundation bolts as per PHED standard drawing STD/PD No. 4 of 1977, complete in all respect (except concrete foundation block)				
	6" (150 mm) i/d shaft, 24 ft. (7.30 metre) long				2000.00
	9" (225 mm) i/d shaft, 24 ft. (7.30 metre) long				3800.00

**DETAILED QUANTITY MANHOLE
FOR THE SCHEME
PROVIDING AND LAYING TRUNK SEWER IN JHANG**

Part-B Manholes

S.No.	Name of Work	Nos.	Qty. of each Chamber	T.Quantity	
1	Earth work excavation in open cutting for sewers and manhole as shown in drawings including shuttering and timbering, dressing to correct section and				
	0-7ft. Depth.				
	21" dia	57	365	20,896.68	
	24" dia	7	470	3,483.80	
	30" dia	22	470	10,429.36	
	36" dia	32	578	18,559.90	
	42" dia	12	578	7,034.29	
	48" dia	30	578	17,173.17	
	60" dia	5	859	4,073.46	
			Total:-	81,650.66	
		7-15ft. Depth.			
	21" dia	57	279	15,989.80	
	24" dia	7	538	3,981.48	
	30" dia	22	538	11,919.27	
	36" dia	32	660	21,211.32	
	42" dia	12	660	8,039.19	
	48" dia	30	660	19,626.47	
	60" dia	5	982	4,654.68	
			Total:-	85,422.21	
		Above 15ft. Depth.			
	21" dia	57	235	13,481.45	
	24" dia	7	235	1,741.90	
	30" dia	22	289	6,403.13	
	36" dia	32	289	9,279.95	
	42" dia	12	289	3,517.15	
	48" dia	30	495.2	14,719.86	
	60" dia	5	528.2	2,503.53	
		Total:-	38,165.50		
2	Dry rammed brick or stone ballast 1-1/2" to 2" (40mm to 50mm) gauge.				
	18" dia	57	44.18	2,532.26	
	24" dia	7	67.21	497.69	
	30" dia	22	67.21	1,489.91	
	36" dia	32	82.53	2,651.41	
	42" dia	12	82.53	1,004.90	
	48" dia	30	82.53	2,453.31	
	60" dia	5	122.72	581.69	
			Total:-	11,211.17	
	3	Cement concrete plain including, placing compacting finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6			
		18" dia	57	44.18	2,532.26
		24" dia	7	67.21	497.69
		30" dia	22	67.21	1,489.91
		36" dia	32	82.53	2,651.41
		42" dia	12	82.53	1,004.90
48" dia		30	82.53	2,453.31	
60" dia		5	123	581.69	
			Total:-	11,211.17	
		Ratio 1:2:4			
18" dia		57	27.13	1,554.85	
24" dia		7	38.64	286.13	
30" dia		22	38.64	856.58	
36" dia		32	46.30	1,487.53	
42" dia		12	46.30	563.78	
48" dia		30	46.30	1,376.38	
60" dia		5	169.20	802.01	
			Total	6,927.26	

4	Pucca brick work other than building upto 10' height. Cement sand mortar Ratio 1:3.			
	18" dia	57	112.28	6,434.89
	24" dia	7	288.14	2,133.68
	30" dia	22	288.14	6,387.54
	36" dia	32	332.92	10,696.05
	42" dia	12	332.92	4,053.86
	48" dia	30	332.92	9,896.88
	60" dia	5	477.90	2,265.25
			Total	41,868.14
5	Extra for pucca brick work in stening of wells or any other circular masonry.			41,868.14
6	Extra for making and finishing benching floor work in manhole chamber 1/8" (3mm) thick cement finish.			
	18" dia	57	12.56	719.83
	24" dia	7	15.71	116.33
	30" dia	22	15.71	348.26
	36" dia	32	28.27	908.26
	42" dia	12	28.27	344.23
	48" dia	30	28.27	840.40
	60" dia	5	73.11	346.54
			Total	3,623.85

7	C.I. step @ wt. 3kg each in manhole chambers l/c carriage setting the same in work to correct lines and levels.			
	18" dia	57	4	229
	24" dia	7	6	44
	30" dia	22	6	133
	36" dia	32	10	321
	42" dia	12	10	122
	48" dia	30	10	297
	60" dia	5	16	76
			Total	1,223
8	Cement plaster 1:3 up to 20' height 1/2" thick.			
	18" dia	57	133.65	7,659.63
	24" dia	7	645.84	4,782.45
	30" dia	22	645.84	14,317.10
	36" dia	32	749.91	24,093.11
	42" dia	12	749.91	9,131.40
	48" dia	30	749.91	22,292.95
	60" dia	5	722.34	3,423.89
			Total	85,700.53
9	P/F 6" (150mm) thick RCC manhole cover 22".(550mm) dia, with tee shaped C.I frame weighing 37.324Kg. as per standard drawing STD/PD No.6 of 1977 complete in all respects.	166	1.00	166

**T.S ESTIMATE
FOR THE SCHEME
PROVIDING AND LAYING TRUNK SEWER IN JHANG**

Part-A (Govt. Notified Rates) January 2023 to July 2023

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-4/46	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.	100 Cft.	871,036.00	2960.50	25,787,020.78
2	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
		(i) 0 ft to 7 ft. Depth	1000 Cft.	4,747,962.66	12836.55	60,947,460.06
		(ii) 7 ft to 15 ft. Depth	1000 Cft.	4,517,319.09	18457.30	83,377,513.70
		(iii) Above 15 ft. Depth	1000 Cft.	1,457,448.04	19524.75	28,456,308.58
3	C-3/13	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phaorah or shovel.	1000 Cft.	8,413,993.13	2,772.00	23,323,588.96
4	C-3/24a,c	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft.	8,413,993.13	1,663.20	13,994,153.38
		(iii) (c) Ramming of earth work.	1000 Cft.	8,413,993.13	1,663.20	13,994,153.38
5	C-21/3	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
		21" dia	Rft	10,316.00	1,443.75	14,893,725.00
		24" dia	Rft	1,481.00	1,799.45	2,664,985.45
		30" dia	Rft	4,877.00	2,939.40	14,335,453.80
		36" dia	Rft	8,032.00	4,330.45	34,782,174.40
6	C-21/4	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
		42" dia	Rft	3,653.00	5,808.70	21,219,181.10
		48" dia	Rft	11,891.00	7,307.70	86,895,860.70
		60" dia	Rft	2,133.00	11,856.25	25,289,381.25
7	N.S	Providing/fixing PRC manhole cover with cover with tee shaped frame 22" l/d (frame atleast 50 kg) as per standard drg. & specifications.	- P.set	165.66	11975.00	1,983,736.10
8	C-21/9	Extra for making and finishing benching floor work in manhole chamber with 1/8" thick cement finish	100 Sft.	3,623.85	3,118.30	113,002.61
9	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate.				
		(I) P.C.C. 1:3:6	100 Cft.	11,211.17	33,503.50	3,756,132.70
		(II) P.C.C. 1:2:4	100 Cft.	6,927.26	38,723.50	2,682,475.79
10	C-7/7	Pacca brick work other than building upto 10 ft height in 1:3 cement sand mortar.	100 Cft.	41,868.14	33,467.90	14,012,388.26
11	C-7/10	Extra for pacca brick work in steining of wells or any other circular masonry.	100 Cft.	41,868.14	2881.20	1,206,304.94
12	C-11/8	Cement plaster 1/2" thick (1:3) cement sand mortar upto 20' height.	100 Sft.	85,700.53	3,639.10	3,118,727.89
13	C-21/13	Providing and fixing 1 1/4"x1 1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	- Each	1,222.85	610.75	746,852.71
14	C-21/23	Providing and laying crushed stone aggregate of 1/4" to 1" guage under and around the sewer pipe, including leveling, manual compaction, complete in all respects	100 Cft	613,642.04	9324.00	57215983.68
15	C-6/2	Dry rammed bricks or stone ballast 1.5" to 2" gauge.	100 Cft.	11,211.17	9,768.00	1,095,106.61

16	C-21/21	Providing and Installing C.I ventilating shaft painted with bituminous paint with foundation bolts as per PHED standard drawing STD/PD No. 4 of 1977, complete in all respect (except concrete foundation block):-6" (150 mm) i/d shaft				
		iv) 36 ft. (11 metre) long				
		6" (150 mm) i/d shaft, 24 ft. (7.30 metre) long	100 Kg.	2,000.00	25,100.45	502,009.00
		9" (225 mm) i/d shaft, 24 ft. (7.30 metre) long	100 Kg.	3,800.00	24,916.30	946,819.40
			Total:- (A)	Rs.	537,340,500.23	

T.S ESTIMATE
FOR THE SCHEME
PROVIDING AND LAYING TRUNK SEWER IN JHANG

Part-A (Govt. Notified Rates) January 2023 to July 2023

S #	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	N.S	Making connections of sewer line with manhole of existing sewer line complete in all respect. (i) 24" dia to 24" dia (ii) 36" dia to 36" dia	- Job	3.00	97,000.00	291,000.00
			- Job	2.00	125,000.00	250,000.00
2	N.S	Provision for Restoration of Road.	1 Sft	871,036.00	405.00	352,769,580.00
3	N.S	Provision for Shifting of existing services.	L.S	1.00	1,000,000.00	1,000,000.00
4	N.S	Provision for Railway Crossing	L.S	1.00	6,100,000.00	6,100,000.00

Total:- (B)	Rs.	360,410,580.00
Total:- (A+B)	Rs.	897,751,080.23
Say:-	Rs.	897.75
		Million

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT,
SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY**

GENERAL ABSTRACT OF COST

S #	Description	Amount
1	<u>Sub Head-A Civil Works</u>	
a	Construction of Screening Chamber.	Rs. 9,977,007.00
b	Construction of Wet Wells.	Rs. 37,413,152.00
c	Providing and Laying R.C.C Pipe 60" dia screen chamber to wet well	Rs. 2,229,532.00
d	Construction of Pump House.	Rs. 24,668,804.00
e	Supply and Installation of Valves and Delivery Pipes	Rs. 9,244,475.00
f	Construction of Discharge, Chamber.	Rs. 560,208.00
g	Construction of Electrical Sub-Station.	Rs. 6,309,863.00
h	Construction of Other Allied Works.	
	i. Boundary Wall.	Rs. 3,645,446.00
	ii. Main Gate.	Rs. 595,158.00
i	Construction of Operator Room, Store & Office.	Rs. 2,859,473.00
j	Construction of Staff Quarters	Rs. 10,847,835.00
k	Provision for Compensation for Stacking of Earth and Excavation.	Rs. 50,000.00
	<u>Sub Head-B Electrical & Mechanical Works</u>	
l	Providing and Installation of Pumping Machinery	Rs. 85,810,000.00
m	Supply and Installation of 630 KVA Transformer.	Rs. 4,441,450.00
n	Supply and Installation of 650 KVA Diesel Generator	Rs. 22,342,000.00
o	Change over Pannel	Rs. 1,412,000.00
p	Supply & Installation of LT Pannel	Rs. 2,748,200.00
q	External & Internal electrification and cabling work	Rs. 2,367,887.00
Total:-		Rs. 227522490.00
		Say Rs. 227.52
		millions

QUANTITY SHEET
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 1a: Construction of screening Chamber:

Item No.	Ref Sor Item/Page	Description	No	L	B	D	Qty		
1	C-22/1 & C-3/16	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain (30 metre). 0' to 5.0 ft. Depth	2	385.00		5.00	3850.00		
			1	37.67	40.00	5.00	7534.00		
			11384.00						
			5.01' to 10.0 ft. Depth	2	330.00		5.00	3300.00	
				1	35.67	37.50	5.00	6688.13	
			9988.13						
		10.01' to 15 ft. Depth	2	285.00		5.00	2850.00		
			1	33.67	35.35	5.00	5951.17		
		8801.17							
		15.01' to 20.0 ft. Depth	2	245.00		5.00	2450.00		
			1	27.50	31.250	2.00	1718.75		
		4168.75							
		34342.05							
		2	C-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 c) for every 1/4 mile (400m) additional lead or part thereof, beyond one mile (1.6lm) upto 5 mile (8km) 1/4 mile Quantity as per item No. 1 (transportation & retransportation)	2			68684.10	137368.19
3	C3/13b	Rehandling of earth work upto lead of 50'.	1			68684.10	68684.10		
5	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8)	2	216.00		0.33	142.56		
			1	26.67	29.25	0.33	257.43		
399.99									
6	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:2:4	2	206.00		1.0	412.00		
			1	26.17	28.50	1.0	745.85		
			1157.85						
			(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)	2	156.00		0.67	209.04	
				2	20.25	2.50	0.67	67.84	
				4	8.25	1.125	0.75	27.84	
304.72									

Item No.	Ref Sor Item/Page	Description	No	L	B	D	Qty
7	C-6/12	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). (b) deformed bars.			1x 1462.574x2.5		3656.42
8	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	2	34.25	2.625	2.25	404.58
			2	26.50	2.625	2.25	313.03
			2	31.83	2.25	4.25	608.75
			2	26.12	2.25	4.25	499.55
			2	29.58	1.875	4.50	499.16
			2	25.97	1.875	4.50	438.24
			2	28.87	1.50	9.00	779.49
			2	25.58	1.50	9.00	690.66
			2	25.33	1.125	4.75	270.71
			2	25.17	1.125	4.75	269.00
			2	19.125	1.125	19.75	849.87
			1	26.75	1.125	19.75	594.35
							6217.40
		Deduction dia of pipe			3x3.14x6x6/4x2.625		222.55
			4	6	1.125	6	<u>162.00</u>
						Net	5832.85
9	C-7/10	Extre for circular massonery Quantity as per circular massonery in above item					2562.69
		Deduction dia of pipe					222.55
						Net	2340.15
10	C-11/9	Cement plaster 1:4 upto 20' height. b) 1/2" thick.					
		Inner side	2	29.50		24.50	1445.50
			2	24.67		24.50	1208.83
			2	26.75		19.75	1056.63
			4	19.125		19.75	1510.88
		Outer side	2	34.25		2.25	154.13
			2	26.50		2.25	119.25
			2	31.83		4.25	270.56
			2	29.58		4.50	266.22
			2	25.97		4.50	233.73
			2	28.87		9.00	519.66
			2	25.58		9.00	460.44
			2	25.33		4.75	240.64
			2	25.17		4.75	239.12
							7725.56
		Deduction dia of pipe			2x3x3.14x6x6/4		169.56
			4x2	6		6	288.00
						Net	7268.00
11	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	18				18.00
12	C-13/9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft. Quantity as per cement plaster outer surface. RCC Slab					2023.98
			2	34.25		1.0	68.50
			2	26.75		1.0	53.50
							2145.98

Item No.	Ref Sor Item/Page	Description	No	L	B	D	Qty
13		P/F 6" (150mm) thick RCC manhole cover 22", (550mm) dia, with tee shaped C.I frame weighing 37.324Kg. as per standard drawing STD/PD No.6 of 1977 complete in all respects.	2				2.00
14	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	2 2	92.00 24.67	9.00	0.92 0.95	169.28 46.87 216.15
15	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.	2 2	30.58 24.67			61.16 <u>49.34</u> 110.50
18	N.S	Penstock size 72"x72" Supply Installation and commissioning of Penstock size 6'x6' comprises of following parts:- (i) Stainless Steel "U" guide channel length 12ft thickness 16 SWG channel size 3". (ii) Gate frame shall be cast iron steel using 1.5" thick plate supported with 1.5" x 1" around the plate and across the plate. (iii) Gate frame equipped with rubber channel and rubber mate to control water flow / speege. (iv) Lifting & lowering and lifted through gear head motor spindle length 30' spindle 2.50" dia mounted over the slab and shall be operated auto / manually	4				4.00
19	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position.	2	1550			3100.00
20	C25/ I 11	Erection in position iron trasses, staging of water tank etc. qty as above					3100.00

COST ESTIMATE
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 1a: Construction of screening Chamber:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-22/1 & C-3/16	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain (30 metre).	1000 Cft.	11384.00	8238.40	93785.95
		0' to 5.0 ft. Depth	1000 Cft.	9988.13	8604.30	85940.82
		5.01' to 10.0 ft. Depth	1000 Cft.	8801.17	9679.80	85193.59
		10.01' to 15 ft. Depth	1000 Cft.	4168.75	11110.20	46315.65
		15.01' to 20.0 ft. Depth				
2	C-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) Quantity as per item No. 1 (transportation & retransportation) upto to 1 mile. (1.6 km)	1000 Cft.	137368.19	4803.95	659909.92
3	C3/13b	Rehandling of earth work upto lead of 50'.	1000 Cft.	68684.10	3880.80	266549.24
5	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8)	100 Cft.	399.99	29723.50	118891.67
6	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete.				
		(a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:2:4	P.Cft	1157.85	473.85	548644.85
		(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)	1 Cft	304.72	583.25	177728.67
7	C-6/12	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). (b) deformed bars. 60 grade	100 Kg	3656.42	31946.30	1168089.50
8	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	100 Cft	5832.85	33467.90	1952132.20
9	C-7/10	Extre for circular massonery Quantity as per circular massonery in above item	100 Cft	2340.15	2881.20	67424.29
10	C-11/1-8	Cement plaster 1:3 upto 20' height. b) 1/2" thick.	100 Sft	7268.00	3639.10	264489.79

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
11	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 No	18.00	610.75	10993.50
12	C-13/1-9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100 Sft	2145.98	2264.55	48596.79
13	C-21/16	P/F 6" (150mm) thick RCC manhole cover 22", (550mm) dia, with tee shaped C.I frame weighing 37.324Kg. as per standard drawing STD/PD No.6 of 1977 complete in all respects.	1 No	2.00	16069.65	32139.30
14	C-6/1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	100 Cft	216.15	38723.50	83702.01
15	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.	Per Rft	110.50	1840.40	203364.20
18	N.S	Penstock size 72"x72" Supply Installation and commissioning of Penstock size 6'x6' comprises of following parts:- (i) Stainless Steel "U" guide channel length 12ft thickness 16 SWG channel size 3". (ii) Gate frame shall be cast iron steel using 1.5" thick plate supported with 1.5" x 1" around the plate and across the plate. (iii) Gate frame equipped with rubber channel and rubber mate to control water flow / speege. (iv) Lifting & lowering and lifted through gear head motor spindle length 30' spindle 2.75" dia mounted over the slab and shall be operated auto / manually	1 Job	4.00	746000.00	2984000.00
19	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position.	100 Kg	3100.00	33395.45	1035258.95
20	C25/11	Erection in position iron trasses, staging of water tank etc.	100 Kg	3100.00	1414.70	43855.70

Total:- (Rs.) 9977006.58

Say:- (Rs.) 9977007.00

QUANTITY SHEET

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING
AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY**

Sub Head # 2b Construction of Wet Wells:

S #	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation of well in dry upto 20' (6 meter) below ground level, and disposal of soil within one chain (30 meter). a) in ordinary soil or sand:- 0' to 5.0 ft. Depth	1	125.00	100	5.00	62500.00
	5.01' to 10.0 ft. Depth	1	120.00	95	5.00	57000.00
	10.01' to 15 ft. Depth	1	115.00	90	5.00	51750.00
	15.01' to 20.0 ft. Depth	1	110.00	85	5.00	46750.00
	20.01' to 25.0 ft Depth	1	105.00	80	5.00	42000.00
	25.01' to 30.0 ft. Depth	1	100.00	75	4.84	36300.00
						296300.00
2	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300) c) for every 1/4 mile (400m) additional lead or part thereof, beyond one mile (1.6lm) upto 5 mile (8km) 1/4 mile Quantity as per item No. 1 (transportation & retransportation)	2	296300.00			592600.00
3	Rehandling of earth work upto lead of 50'.					296300.00
4	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8)	2	3.14x41.5x41.5x0.25		0.25	675.98
	Ratio (1:3:6)	2	3.14x35x35x0.25		2+0	1923.25
5	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (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:- (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- (ii) Type B (nominal mix 1:2.4)	2	3.14x41x41x0.25		2.25	5938.13
	Wall	2	3.14x36.50	1.5	12.50	4297.88
		2	3.14x36.25	1.25	10.00	2845.63
		2	3.14x36	1	10.00	2260.80
		2	3.14x35.75	0.75	4.50	757.72
						10162.02
	Deduction of pipe	2	3.14x6x6x0.25		1.50	84.78
					Net	10077.24
6	Extra labour for laying concrete plain or reinforced. (a) Above 30' upto 40' height.					10236.01

7	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. (b) deformed bars. Raft Wall								
				@ 3.5 kg P/Cft					20783.46
				@ 4 kg P/Cft					40648.09
									61431.55
8	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	2	3.14x41x41x0.25		2.25				5938.13
		2	3.14x38		10				2386.40
		2	3.14x37.50		10				2355.00
		2	3.14x37		10.0				2323.60
		2	3.14x36.50		4.5				1031.49
					Total				14034.62
	Deduction of pipe	2x3	3.14x6x6x0.25						169.56
					Net				13865.06
9	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.	2	3.14	35.375					222.16
10	Providing and fixing 1 1/4"x1 1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	60							60.00
11	Construction joint perfectly water tight by providing 15" wide G.I 18 SWG water stopper of approved quality and specification at specified places.	2x6	3.14x35.75						1347.06
									1347.06
12	Providing and installation of C.I flanged tail peaces in concret structure 16" dia 3' long havy.	6	180						1080.00

COST ESTIMATE

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 2b Construction of Wet Wells:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-22/1 & C-3/16	Excavation of well in dry upto 20' (6 meter) below ground level, and disposal of soil within one chain (30 meter). a) in ordinary soil or sand:-				
		0' to 5.0 ft. Depth	1000 Cft	62500.00	8238.40	514900.00
		5.01' to 10.0 ft. Depth	1000 Cft	57000.00	8604.30	490445.10
		10.01' to 15 ft. Depth	1000 Cft	51750.00	9679.80	500929.65
		15.01' to 20.0 ft. Depth	1000 Cft	46750.00	11110.20	519401.85
		20.01' to 25.0 ft Depth	1000 Cft	42000.00	12708.60	533761.20
		25.01' to 30.0 ft. Depth	1000 Cft	36300.00	14706.60	533849.58
2	C-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) c) for every 1/4 mile (400m) additional lead or part thereof, beyond one mile (1.6km) 1 kilo meter.	1000 Cft	592600.00	4803.95	2846820.77
3	C3/13b	Rehandling of earth work upto lead of 50'.	1000 Cft	296300.00	3880.80	1149881.04
4	C-6/I-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate).				
		Ratio (1:4:8)	100 Cft	675.98	29723.50	200925.84
		Ratio (1:3:6)	100 Cft	1923.25	33503.50	644356.06
5	C-6/I-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete				
		(a) (i) Reinforced ceemnt 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 1:2:4	1 Cft	10077.24	473.85	4775100.77
		(a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:-				
		(ii) Type B (nominal mix 1:2.4)	1 Cft	5938.13	583.25	3463415.78
6	C-6/16	Extra labour for laying concrete plain or reinforced. (a) Above 30' upto 40' height.	100 Cft	10236.01	4435.20	453987.40
7	C-6/12	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). (b) deformed bars. 60 grade	100 Kg	61431.55	31946.30	19625106.86
8	C-13/9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100 Sft	13865.06	2264.25	313939.68
9	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.	1 Rft	222.16	1840.40	408854.06
10	C-21-13	Providing and fixing 1/4"x1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 No.	60.00	610.75	36645.00
11	C-6/30	Construction joint perfectly water tight by providing 15" wide G.I 18 SWG water stopper of approved quality and specification at specified places.	1 Rft	1347.06	205.60	276955.54
12	C-23/29	Providing and installation of C.I flanged tail peaces in concrent structure 16" dia 3' long havy. (C.I Special BSS Class-B)	1 Kg	1080.00	114.70	123876.00

Total:- (Rs.) 37413152.18
Say:-(Rs.) 37413152.00

QUANTITY FOR SEWER
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING
AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 3c: Providing and Laying R.C.C. Pipe 60" dia:

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
1		3	4	5	6	7
1	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.					
	0-7' depth					
	60"	1	72.00	20.00	7.00	10080.00
	9"	1	315.00	2.75	6.00	5197.50
						15277.50
	7-15' depth					
	60"	1	72.00	16.00	8.00	9216.00
						9216.00
	Above 15' depth.					
	60"	1	72.00	10.00	5.00	3600.00
						3600.00
2	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
	60" i/d.		72	-	-	72.00
3	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
	9" i/d.	1	315			315.00
4	(i) Rehandling of earth work.					
	(a) Lead upto a single throw of Kassi, phaorah or shovel.		28093.50	-	-	28093.50
	(ii) Compaction of earth work.					
	(a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.		28093.50	-	-	28093.50
	(iii) (c) Ramming of earth work.		28093.50	-	-	28093.50
5	Providing and laying crushed stone aggregate of 1/4" to 1" guage under and around the sewer pipe, including leveling, manual compaction, complete in all respects					
	60" i/d.	1	72.00	7.67	4.25	2347.02
	Deduction	1	72.00	0.5*3.14*6*6*0.25		1017.36
						1329.66
6	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.		315.00	1.48		466.20

QUANTITY FOR MANHOLE

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING
AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY**

Sub Head # 3c: Providing and Laying R.C.C. Pipe 60" dia:

S #	Name of Work	Nos.	Qty. of each Chamber	T.Quantity	
1	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock. 0-7ft. Depth.	9" dia	7	225.00	1575.00
2	Dry rammed brick or stone ballast 1-1/2" to 2" (40mm to 50mm) gauge.	9" dia	7	16.50	115.50
3	Cement concrete plain including, placing compacting finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6	9" dia	7	16.58	116.06
	Ratio 1:2:4	9" dia	7	18.58	130.06
4	Pucca brick work other than building upto 10' height Cement sand mortar Ratio 1:3.	9" dia	7	48.53	339.71
5	Extra for pucca brick work in stening of wells or any other circular masonry.				339.71
6	Extra for making and finishing benching floor work in manhole chamber 1/8" (3mm) thick cement finish.	9" dia	7	12.56	87.92
7	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.		7	2.00	14.00
8	Cement plaster 1:3 up to 20' height 1/2" thick.	9" dia	7	67.52	472.64
9	Providing/fixing PRC manhole cover with cover with tee shaped frame 22" l/d (frame atleast 50 kg) as per standard drg. & specifications.		7	1.00	7.00

COST ESTIMATE
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 3c: Providing and Laying R.C.C. Pipe 60" dia:

S. No.	Ref. CSR P/Item	Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
1	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
		(i) 0 ft to 7 ft. Depth	1000 Cft	16852.50	12836.55	216327.96
		(ii) 7 ft. to 15ft. Depth	1000 Cft	9216.00	18457.30	170102.48
		(iii) Above 15ft. Depth.	1000 Cft	3600.00	19524.75	70289.10
2	C-21/4	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete. 60" i/d.	1 Rft.	72	11856.25	853650.00
3	C-21/1	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete. 9" i/d.	1 Rft.	315	553.85	174462.75
4	C-3/13a	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phaorah or shovel.	1000 Cft	28093.5	2772.00	77875.18
	C-3/24(a)	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft	28093.5	1663.20	46725.11
	C-3/24(c)	(iii) (c) Ramming of earth work.	1000 Cft	28093.5	1663.20	46725.11
5	N.S	Providing/fixing PRC manhole cover with cover with tee shaped frame 22" I/d (frame atleast 50 kg) as per standard drg. & specifications.	1 set.	7	11975.00	83825.00
6	C-21/9	Extra for making and finishing benching floor work in manhole chamber with 1/8" thick cement finish.	100 Sft	87.92	3118.30	2741.61
7	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate. (I) P.C.C. 1:3:6 (II) P.C.C. 1:2:4	100 Cft 100 Cft	116.06 130.06	33503.50 38723.50	38884.16 50363.78
8	C-7/7i	Pacca brick work other than building upto 10 ft height in 1:3 cement sand mortar.	100 Cft	339.71	33467.90	113693.80
9	C-7/10	Extra for pacca brick work in steining of wells or any other circular masonry.	100 Cft	339.71	2881.20	9787.72
10	C-11/8b	Cement plaster 1/2" thick (1:3) cement sand mortar upto 20' height.	100 Sft	472.64	3639.10	17199.84
11	C-6/2	Dry rammed bricks or stone ballest 1.5" to 2" gauge.	100 Cft	115.5	9768.00	11282.04
12	C-21/23	Providing and laying crushed stone aggregate of 1/4" to 1" guage under and around the sewer pipe, including leveling, manual compaction, complete in all respects.	100 Cft	2347.02	9324.00	218836.14
	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.	100 Cft	466.2	3906.00	18209.77
13						
14	C-21/13	Providing and fixing 1/4"x1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 Each	14	610.75	8550.50

Total:- (Rs.) 2229532.07
Say:- (Rs.) 2229532.00

QUANTITY SHEET
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 4d: Construction of Pump House:

Item No.	Ref Sor Item/Page	Description	No	L	B	D	Qty
1	C-22/1 & C-3/16	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain (30 metre).					
		Excavation already taken with wet wells					
2	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8)	1	78.00	30.50	0.25	594.75
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete.					
		(a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:2:4	1	27.50	30.00	1.25	1031.25
		(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)	2	24.50	1.25	15.00	918.75
			2	69.50	1.25	15.00	2606.25
			2	24.00	1.00	15.00	720.00
			2	69.50	1.00	15.00	2085.00
			2	23.50	0.75	8.00	282.00
			2	69.50	0.75	8.00	834.00
		Column	18	0.75	1.00	38.00	513.00
		Beam	3x8	25.00	1.00	1.50	900.00
		Roof	1	71.50	25.00	0.67	1197.63
		Lintles	2	11.00	0.75	0.75	12.38
			8	7.00	0.75	0.50	21.00
		Stair	1	70.00	3.00	0.45	94.50
		Top roof	1	71.50	25.00	0.45	804.38
			6	25.00	0.75	1.50	168.75
		Parapit	2	71.50	0.33	1.00	47.19
			2	25.00	0.33	1.00	16.50
							11221.32
		Deduction opening	6	6.00	6.00	0.67	144.72
							11076.60
4	C-6/12	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). (b) deformed bars.					
					1x 12107.85x4		48431.38
5	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	2	71.50	0.750	12.50	1340.63
			2	22.00	0.750	12.50	412.50
							1753.13
		Deduction of opening					
		Gate	2	10	0.75	10	150.00
		Windows	8	6	0.75	5	180.00
							<u>330.00</u>
							1423.13

6	C-11/9	Cement plaster 1:4 upto 20' height. b) 1/2" thick. Inner side	2	69.50		12.00	1668.00
			2	22.00		12.00	528.00
							2196.00
		Deduction of opening					
		Gate	2	10		10	200.00
		Windows	8	6		5	240.00
						Total	440.00
						Net	1756.00
7	C-13/1-9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	2	71.50		35.0	5005.00
			2	22.50		35.0	1575.00
							6580.00
8	C-9/20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.- (a) 4" dia cast iron down pipe.	4	15.00			60.00
9	C-9/21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	4	2.00			8.00
10	C-9/22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	4	2.00			8.00
11	C-10/37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	2	69.50		0.5	69.50
			2	22.00		0.5	22.00
							91.50
12	C-10/22(a)	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	1	69.50	22.00		1529.00
13	C-7/32	First class brick tiles lead by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	1	69.50	22.00		1529.00
14	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panesl approximate size (3'x3').	14	22.00			308.00
			5	69.50			347.50
							655.50
15	C-11/18	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:3	2	71.50		12.5	1787.50
			2	24.00		12.5	600.00
							2387.50
16	C-11/38	Extra labour for white washing colour washing, priming coat and distempering, etc. from 20' ft. height and above, requiring scaffolding, for every additional 10 ft. height, or part thereof.	2	69.50		12.0	1668.00
			2	22.00		12.0	528.00
							2196.00
17	C-9/15	Khuras on roof 2'x2'x6"	4				4.00

18	C-13/5	Preparing surface and painting of doors & windows, guard bar gates etc. i) Priming coat	2	10.00		10.0	200.00
			8	6.00		5.0	240.00
			8	7.00		6.0	336.00
							776.00
		ii) Each subsequent coat of paint (two coats).		Qty as above			776.00
19	C-25/32	Making and fixing grating in opening, including fixing at site with flat iron 2"x3/8" and 3/4" square bars, at 4" centre to centre.	6	7.00		7.0	294.00
20	C-9/5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	1	69.50		22.0	1529.00
21	C-11/22	Priming coat of chalk under distemper.	2	69.50		12.0	1668.00
			2	22.00		12.0	528.00
							2196.00
22	C-11/23(a)	Distemping. (iii) 3 coats.	2	69.50		12.0	1668.00
			2	22.00		12.0	528.00
							2196.00
23	C-13/32	Prepare surface and painting with water proof coloured cement finish like duracem, buxeem or other finished with similar specifications on walls etc. (a) New surface (b) 1st Coat (c) 2nd and subsequent coat	2	71.50		12.5	1787.50
			2	23.50		12.5	587.50
24	C-25/41	P/F steel windows with openable glazed pannels, using mild steel box sections 1-1/2"x1-1/2"x18 SWG glass pannels, M.S channel 1/2"x1/2"x1/16" duly screwed with leaves, & filled with rubber felt in between glass & M.S channel brass fittings, holdfast, duly (a) Fixed with wire gauze, 24 SWG & glass pane 5 mm thick.	8	6.00		5.0	240.00
25	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	2	10.00		10.0	200.00

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL
PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY**

Sub Head # 4d: Construction of Pump House:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount
1	C-22/1 & C-3/16	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain (30 metre).				
2	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8)	100	594.75	29723.50	176780.52
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- (3) Type C (nominal mix 1:2:4) (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.	1031.25	473.85	488658
			Cft.	11076.60	528.40	5852873
4	C-6/12	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). (b) deformed bars. 60 grade	100	48431.38	31946.30	15472034
5	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	100	1423.13	33467.90	476290
6	C-11/1-8	Cement plaster 1:3 upto 20' height. b) 1/2" thick.	100	1756.00	3639.10	63903
7	C-13/1-9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100	6580	2264.55	149007
8	C-9/20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.- (a) 4" dia cast iron down pipe.	Rft.	60	379.40	22764
9	C-9/21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	No.	8	985.15	7881
10	C-9/22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	No.	8	514.15	4113
11	C-10/37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	100	91.50	23268.60	21291

12	C-10/22(a)	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	100	1529	21681.35	331507.84
13	C-7/32	First class brick tiles laid by laying tiles in stretcher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	100	1529	17984.05	274976
14	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate size (3'x3').	P/Rft.	655.50	5.95	3900
15	C-11/18	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:3	100	2388	3565.45	85125
16	C-11/38	Extra labour for white washing colour washing, priming coat and distempering, etc. from 20' ft. height and above, requiring scaffolding, for every additional 10 ft. height, or part thereof.	100	2196	40.65	893
17	C-9/15	Khuras on roof 2'x2'x6"	Each.	4.00	905.25	3621
18	C-13/5	Preparing surface and painting of doors & windows, guard bar gates etc. i) Priming coat ii) Each subsequent coat of paint (two coats).	100 100	776 776	1460.05 1683.30	11330 13062
19	C-25/32	Making and fixing grating in opening, including fixing at site with flat iron 2"x3/8" and 3/4" square bars, at 4" centre to centre.	P/Sft.	294.00	984.05	289311
20	C-9/5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100	1529	11779.95	180115
21	C-11/22	Priming coat of chalk under distemper.	100	2196	296.95	6521
22	C-11/23(a)	Distempering. (iii) 3 coats.	100	2196	1446.35	31761.85
23	C-13/32	Prepare surface and painting with water proof coloured cement finish like duracem, buxem or other finished with similar specifications on walls etc. (a) New surface (b) 1st Coat (c) 2nd and subsequent coat	100 100	1788 588	897.85 722.15	16049.07 4242.63
24	C-25/41	P/F steel windows with openable glazed panels, using mild steel box sections 1-1/2"x1-1/2"x18 SWG glass panels, M.S channel 1/2"x1/2"x1/16" duly screwed with leaves, & filled with rubber felt in between glass & M.S channel brass fittings, holdfast, duly (a) Fixed with wire gauze, 24 SWG & glass pane 5 mm thick.	Sft.	240.00	1170.85	281004.00
25	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	Sft.	200	1998.95	399790.00

Total:- 24668804.37
Say:- 24668804.00

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING
AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY**

Sub Head # 5e: Supply and Installation of Valves and Delivery Pipes:

S.No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
	<u>Pipes for Suction and Delivery steel pipe M/S</u>				
1	P/fixing M.S Flanged Pipe 1/4" thick including cost of painting two coat of epoxy paint internal and external surface (mix. Piece length will 15') including net bolt + rubber sheet.	Rft	126	16,257.00	2,048,382.00
	16" dia	Rft	84	12,477.00	1,048,068.00
2	P/F C.I Flanged Flexible/dressing coupling of complete.	No.	6	65,000.00	390,000.00
	16" dia	No.	4	42,000.00	168,000.00
3	Providing and fixing C.I Sluice valve BSS Class-B with stainless steel seat and spindle.	No.	2	141,818.70	283,637.40
	16" dia	No.	4	96,507.70	386,030.80
4	Providing and fixing non return valve C.I Body having full flow with stainless steel body seat / ring & synthatic imported rubber sheet on other side and imported stain less steel shaft pin openable type complete.	No.	6	125,000.00	750,000.00
	16" dia	No.	4	56,000.00	224,000.00
5	P/fixing C.I flanged bend 90° BSS Class-B working pressure including two coat painting included nut bolt and rubber sheet. C-23/ 16" dia (9x105 = 945) 12" dia (6x68 = 408) Total (1353)	P/Kg	1353	114.70	155,189.10
6	HDPE-8	Rft	470	3,764.20	1,769,174.00
	16" dia	Rft	290	2,334.95	677,135.50
7	HDPE flanged stub PN-16	Each	17	22,585.20	383,948.40
	16" dia	Each	8	14,009.70	112,077.60
8	Bend PN-16	Each	17	37,642.00	639,914.00
	16" dia	Each	8	23,349.50	186,796.00
9	P/F M.S dead plate 1/2" including nut bolt and rubber sheet.	No.	2	11,061.00	22,122.00
	16" dia				

Total:-(Rs.) 9,244,474.80

Say:-(Rs.) 9,244,475.00

DETAILED ESTIMATE
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

RATE ANALYSIS FOR SUPPLYING, LAYING, CUTTING, JOINTING, TESTING AND DISINFECTING M.S PIPE WITH FLANGED JOINTS COATED WITH BITUMEN 16" DIA AND 1/4" THICK.

S. No.	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	N.S	Providing of M.S pipe 16" dia, 1/4" thick (Avg. 19.73 kg/Rft.).	1 Rft.	10	10200	102000.00
2	N.S	Providing of M.S Flange 16" dia, 3/4" thick i/c welding with pipe.	1 Each.	2	11061	22122.00
3	N.S	Nut Bolts 5/8"x3" special quality i/c gaskets.	1 Each	24	72	1728.00
4	N.S	Rubber Sheet join / gasket	1 Each	2	312	624.00
5	N.S	Carriage of flanged pipe to site	1 Rft.	10	100	1000.00
6	N.S	Two coat of epoxy paint on outer side complete $1/3" .142 (16.25/12)^2 \times 10$ $4 = 42.51 \text{ Sft} \times 2 = 85.03$	1 Sft.	85.03	81.15	6900.18
7	N.S	Laying and jointing/welding of pipe at site complete in all respects.	1 Rft.	10	110	1100.00
Total:-					Rs.	135474.18
Add 20% Contractor's Profit + overhead charges.					Rs.	27094.84
Grand Total:-					Rs.	162569.02
Rate per Rft. = 162569.02/10 = Rs. 16256.90					Say:-	Rs. 16257.00

DETAILED ESTIMATE
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

RATE ANALYSIS FOR SUPPLYING, LAYING, CUTTING, JOINTING, TESTING AND DISINFECTING M.S PIPE WITH FLANGED JOINTS COATED WITH BITUMEN 12" DIA AND 1/4" THICK.

S. No.	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	N.S	Providing of M.S pipe 12" dia, 1/4" thick (Avg. 14.87 kg/Rft.).	1 Rft.	10	7692	76920.00
2	N.S	Providing of M.S Flange 12" dia, 3/4" thick i/c welding with pipe.	1 Each.	2	8793	17586.00
3	N.S	Nut Bolts 5/8"x3" special quality i/c gaskets.	1 Each	24	72	1728.00
4	N.S	Rubber Sheet join / gasket	1 Each	2	292	584.00
5	N.S	Carriage of flanged pipe to site	1 Rft.	10	100	1000.00
6	N.S	Two coat of epoxy paint on outer side complete $\frac{1}{3} \times 142 \left(\frac{12.25}{12} \right)^2 \times 10$ $\frac{4}{4} = 32.02 \text{ Sft} \times 2 = 64.05$	1 Sft.	64.05	81.15	5197.66
7	N.S	Laying and jointing/welding of pipe at site complete in all respects.	1 Rft.	10	96	960.00
Total:-					Rs.	103975.66
Add 20% Contractor's Profit + overhead charges.					Rs.	20795.13
Grand Total:-					Rs.	124770.79
Rate per Rft. = 124770.79/10 = Rs. 12477.08					Say:-	Rs. 12477.08
						12477.00

QUANTITY SHEET

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 6F: Construction of Discharge, Chamber:

Item No.	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation in open cutting for storm water channel drains sullage carrier open area 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 100 ft. (30 m) lead:- 0' to 5.0 ft. Depth	1	11.00	11.00	2.00	242.00
2	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	1	11.00	11.00	0.25	30.25
3	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Rafts/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- (3) Type C (nominal mix 1:2:4)	1	11	11.00	0.67	81.07
	(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:- Column	4	1	1.00	6.00	24.00
	Sump wall	4	7.5	0.67	8.00	160.80
	Roof	1	8	8.00	0.42	26.88
						211.68
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.			292.75x3		878.25
6	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	5				5.00
7	Construction joint perfectly water tight by providing 12" wide G.I 18 SWG water stopper of approved quality and specification at specified places.	2	7.50			15.00
8	Providing and installation of C.I flanged tail peaces in concret structure 16" dia 2' long heavy.	6	105			630.00
9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	4	8.00		8.67	277.44
						277.44
10	P/F 6" (150mm) thick RCC manhole cover 22", (550mm) dia, with tee shaped C.I frame weighing 37.324Kg. as per standard drawing STD/PD No.6 of 1977 complete in all respects.	1				1.00

COST ESTIMATE

**PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS
SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY**

Sub Head # 6F: Construction of Discharge, Chamber:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/7	Excavation in open cutting for storm water channel drains sullage carrier open area 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 100 ft. (30 m) lead:- 0' to 5.0 ft. Depth	1000 Cft	242.00	9852.50	2384.31
2	C-6/l-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8)	100 Cft	30.25	29723.50	8991.36
3	C-6/l-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Rafts/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- (3) Type C (nominal mix 1:2:4)	1 Cft	81.07	473.85	38415.02
5		(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)	1 Cft	211.68	583.25	123462.36
4	C-6/12)	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). (b) deformed bars. 60 grade	100 Kg	878.25	31946.30	280568.38
6	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 each	5.00	610.75	3053.75
7	C-6/30	Construction joint perfectly water tight by providing 12" wide G.I 18 SWG water stopper of approved quality and specification at specified places.	1 Rft	15.00	411.20	6168.00
8	C-23/29	Providing and installation of C.I flanged tail peaces in concret structure 20" dia 3' long havy. (C.I Special BSS Class-B)	1 Kg	630	118.75	74812.50
9	C-13/1-9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100 Sft	277.44	2264.55	6282.77
10	C-21/16	P/F 6" (150mm) thick RCC manhole cover 22", (550mm) dia, with tee shaped C.I frame weighing 37.324Kg. as per standard drawing STD/PD No.6 of 1977 complete in all respects.	1 No	1.00	16069.65	16069.65

Total:- (Rs.) 560208.09

Say:- (Rs.) 560208.00

QUANTITY SHEET
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING
AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB HANG CITY

Sub Head # 7G: Construction of Electrical Sub-Station:

Item No.	Description	No	Measurements			Quantity				
			L	B	D					
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	1	150.25	2.875	2.25	971.93				
		8	9.00	3.000	3.00	648.00				
		1	9.50	1.500	2.50	35.63				
		3	7.00	4.500	1.25	118.13				
							1773.68			
2	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8) Under Floor	1	155.25	2.875	0.50	223.17				
		1	22.00	15.000	0.33	108.90				
		2	16.50	15.000	0.33	163.35				
							495.42			
		Ratio (1:3:6)	Under step	3	7.00	4.500	0.250	23.63		
				1	6.00	9.500	0.250	14.25		
				8	9.00	3.000	0.500	108.00		
							145.88			
		Ratio (1:2:4)	Under Floor	1	22.00	15.000	0.125	41.25		
				2	16.50	15.000	0.125	61.88		
									103.13	
		3	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (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)	8	9.00	3.00	1.50	324.00		
8	1.00			1.00	18.00	144.00				
8	8.00			6.50	0.75	312.00				
1	62.00			22.50	0.50	697.50				
							1153.50			
2	57.25			1.75	0.50	100.19				
							Net:- 1053.31			
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 (b) deformed bars.				1377.31	5.50	2.204	3437.03		
				5	Extra for dressing or chamfering bricks for:- (a) All other purpose Elevation	2	2.25	5.00	0.75	16.88
						2	1.50	5.00	0.75	11.25
		2	4.50			5.00	0.75	33.75		
		2	93.25			2.50	0.75	349.69		
1	16.50	2.00	0.75			24.75				
					436.31					
					436.31x1350/100					
					5890.22					

6	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.:- (a) 4" dia cast iron down pipe.	2	17.00			34.00
7	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	2				2.00
8	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	2				2.00
9	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating: (b) With two coats of bitumen (ii) 2" thick	1 4	150.25 15.00	0.75 0.75		112.69 <u>45.00</u> 157.69
10	P/L vertical damp proof course with cement sand plaster and bitumen coating. (b) with two coats of bitumen (i) Ratio 1:4 (b) 3/4" thick	10 2	15.00 22.00	3.00 3.00		450.00 <u>132.00</u> 582.00
11	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5) Under ramp Step	1 1 1 4 1 1 1 3 3 3	150.25 150.25 150.25 150.25 9.50 9.50 9.50 7.00 7.00 7.00	1.875 1.50 1.125 1.875 1.50 1.125 0.75 1.50 3.25 2.50	0.50 0.50 0.50 5.75 0.50 0.50 3.50 4.25 0.50 0.50	140.86 112.69 84.52 6479.53 7.13 5.34 24.94 133.88 34.13 <u>26.25</u> 7049.25
12	Pucca brick work in ground floor:- (i) Cement sand mortar (1:4) Deduction (Area of door & window)	1 1	150.25 514.00	0.75 0.75	17.50	1972.03 385.50 1586.53
13	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick Door Jambs Deduction	1 1 2 1	58.00 15.00 18.00 38.00		0.50 0.50 0.75 0.50	29.00 7.50 <u>27.00</u> 63.50 19.00 Net:- 44.50
14	First class brick tiles elad by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	1	25.00	2.00	2.00	100.00
15	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaie flooring into panesl approximate siae (3'x3').	1	265.00			265.00
16	Cement plaster 1:4 upto 20' height. b) 1/2" thick. (Internal) Ceiling	2 4 2 1	58.00 15.00 10.00 514.00		15.00 15.00 15.00 0.50	1740.00 900.00 300.00 257.00

						3197.00
	Deduction	1	524.00		0.50	262.00
		8	8.00		6.50	416.00
		2	93.00		3.50	<u>651.00</u>
						1329.00
					Net	1868.00
17	Cement pointing struck joints on walls, upto 20' height:					
	b) ratio 1:2	2.0	58.00		17.50	2030.00
		0.5	514.00			257.00
		2.0	21.00		17.50	735.00
						3022.00
18	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)".					
	i) Priming coat (Door)	2	180.00			360.00
	(Window)	2	286.00	2.00		286.00
						646.00
	ii) Each subsequent coat of paint (two coats).					1292.00
19	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.					
		1	58.00	20.25		1174.50
		2	6.500	1.50		19.50
					Net	1155.00
20	Priming coat of chalk under distemper. Quantity as per internal cement plaster					3197.00
21	Distemping. (iii) 2 coats.					3197.00
22	Supplying filling sand under floor. Total Area of floor = 1164		870.00		0.33	287.10
23	Filling, watering & ramming earth under floor. (i) With surplus earth from foundation etc. Total Area of floor = 1164 under ramp		815.00 9.50	6.00	4.50 3.00	3667.50 <u>171.00</u>
						3838.50
24	1-1/2" thick mosaic flooring consisting of 1/2" mosaie topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish					
	(a) Using grey cement	1	870.00			870.00
25	P/F steel windows with openable glazed pannels, using Beam section for frame 1-1/2"x1" x5/8"-x1/8" Z section for leaves 3/4" x1"x3/4"x1/8", T section shashes 1"x1"x1/8" glass panes, Wooden screed for glazing etc.					
	(a) fixed with wire gause, 24 SWG & glass pane 5 mm thick.	22	2.00		8.00	352.00
26	Making and fixing steel grated door with 1/16" inches thick sheeting surrounding by angle iron 1"x1"x1/8" including angle iron frame 2"x2"x3/16" and flat iron 2"x1/8" with looking arrangement completed in all respect as shown in the drawings and speciefc					
		2	6.00		7.00	84.00
		1	8.00		8.00	<u>64.00</u>
						148.00

COST ESTIMATE

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 7G: Construction of Electrical Sub-Station:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	1000 Cft	1773.68	9889.75	17541.25
2	C-6/I-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:4:8) Ratio (1:3:6) Ratio (1:2:4)	100 Cft 100 Cft 100 Cft	495.42 145.88 103.13	29723.50 33503.50 38723.50	147256.72 48873.23 39933.61
3	C-6/I-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (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) (3) Type C (nominal mix 1:2:4) (in raft)	1 Cft 1 Cft	1053.31 324.00	583.25 473.85	614344.52 153527.40
4	C-6/12	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). (b) deformed bars. 60 grade	100 Kg	3437.03	31946.300	1098004.59
5	C-7/1-15	Extra for dressing or chamfering bricks for:- (a) All other purpose	100 No.	5890.22	2406.10	141724.55
6	C-9/1-20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.- (a) 4" dia cast iron down pipe.	1 Rft	34.00	379.40	12899.60
7	C-9/1-21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	1 Each	2.00	985.15	1970.30
8	C-9/1-22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	1 Each	2.00	514.15	1028.30
9	C-6/36	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating: (b) With two coats of bitumen (ii) 2" thick	100 Sft	157.69	10839.80	17093.01
10	C-6/38	P/L vertical damp proof course with cement sand plaster and bitumen coating. (b) with two coats of bitumen (i) Ratio 1:4 (b) 3/4" thick	100 Sft	582.00	6805.95	39610.63
11	C-7/4-i	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	100 Cft	7049.25	29928.60	2109741.84
12	C-7/I-5	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	100 Cft	1586.53	32331.00	512941.42

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
13	C-10/37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement	100 Sft	44.50	23268.60	10354.53
14	C-7/I-32	First class brick tiles clad by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	100 Sft	100.00	17984.05	17984.05
15	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaie flooring into panes! approximate siae (3'x3').	1 Rft	265.00	5.95	1576.75
16	C-11/9(b)	Cement plaster 1:4 upto 20' height. b) 1/2" thick. (Internal)	100 Sft	1329.00	3464.15	46038.55
17	C-11/1-18(b)	Cement pointing struck joints on walls, upto 20' height: Ratio 1:2	100 Sft	3022.00	3776.40	114122.81
18	C-13/1-5	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". ii) Each subsequent coat of paint (two coats).	100 Sft 100 Sft	646.00 1292.00	1460.05 1683.30	9431.92 21748.24
19	C-9/I-5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100 Sft	1155.00	11779.95	136058.42
20	C-11/I-22	Priming coat of chalk under distemper.	100 Sft	3197.00	296.95	9493.49
21	C-11/I-23	Distemping. (iii) 3 coats.	100 Sft	3197.00	1446.35	46239.81
22	C-7/I-30	Supplying filling sand under floor. Total Area of floor = 1164	100 Cft	287.10	2982.00	8561.32
23	C-3/15	Filling, watering & ramming earth under floor. (i) With surplus earth from foundation etc.	1000 Cft	3838.50	5559.85	21341.48
24	C-10/37	1-1/2" thick mosaie flooring consisting of 1/2" mosaie topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	100 Sft	870.00	23268.60	202436.82
25	C-25/41	P/F steel windows with openable glazed pannels, using Beam section for frame 1-1/2"x1" x5/8"-x1/8" Z section for leaves 3/4" x1"x3/4"x1/8", T section shashes 1"x1"x1/8" glass panes, Wooden screed for glazing etc. (a) fixed with wire gause, 22 SWG & glass pane 5 mm thick.	1 Sft	352.00	1170.85	412139.20
26	C-25/30	Making and fixing steel grated door with 1/16" inches thick sheeting surrounding by angle iron 1"x1"x1/8" including angle iron frame 2"x2"x3/16" and flat iron 2"x1/8" with looking arrangement completed in all respect as shown in the drawings and specified	1 Sft	148.00	1998.95	295844.60

Total:- (Rs.) 6309862.95

Say:- (Rs.) 6309863.00

QUANTITY SHEET

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 8H-I: Construction of Boundary Wall Around Pumping Station:

For 100 Rft

Item No.	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refiling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil. 0' to 5.0 ft. Depth	1	100	2.50	2.25	562.5
2	Cement concrete brick or stone ballast 1.5" to 2" guage in foundation plinth . Ratio (1:4:8)	1	100	2.50	0.375	93.75
3	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortor. for column	1	100	1.50	0.50	75.00
		1	100	1.125	0.50	56.25
		1	100	0.75	6.00	450
		10	1.13	0.38	5	<u>21.09</u>
						602.34
4	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 1.5" thick	1	100.00	0.75		75.00
		10	1.13	0.375		<u>4.22</u>
						79.22
5	Pacca brick work other than building upto 10 ft height in 1:4 cement sand mortor.	1	100	0.75	5.00	375.00
6	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:3	1	100		5	500.00
7	Cement plaster 1:4 upto 20' (6.00mm) height (b) 1" thick	1	100		5	500.00
8	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). On top of wall and columns. Ratio (1:2:4)	1	100	0.75	0.17	12.75
9	Providing & fixing fencing 2' height consisting upon three row of steel boarded wire and angle iron 2" x2"x1/4" post at 5' center to center grouted in PCC 1:2:4 top of wall.	1	100			100.00

COST ESTIMATE

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 8H-I Construction of Boundary Wall Around Pumping Station:

For 100 Rft

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refiling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil. 0' to 5.0 ft. Depth	1000 Cft	562.50	9889.75	5562.98
2	C-7/7	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortar.	100 Cft	93.75	31130.90	29185.22
3	C-7/4-a	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar 1:5	100 Cft	602.34	29928.60	180273.05
4	C-6/36	P/L damp proof course with cement concrete (1½") using cement sand and shingle including bitumen coating with 2 coats of bitumen	100 Sft	79.22	10839.80	8587.15
5	C-7/1-5	Pacca brick work other than building upto 10 ft height in 1:4 cement sand mortar.	100 Cft	375.00	33265.80	124746.75
6	C-11/18	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:3	100 Sft	500.00	3565.45	17827.25
7	C-11/9	Cement plaster 1:4 upto 20' (6.00mm) height (b) 1/2" thick	100 Sft	500.00	3464.15	17320.75
8	C-6/1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). On top of wall and columns. Ratio (1:2:4)	100 Cft	12.75	38723.50	4937.25
9	C-25/49	Providing & fixing fencing 2' height consiting upon three row of steel boarded wire and angle iron 2" x2"x1/4" post at 5' center to center grouted in PCC 1:2:4 top of wall.	100 Rft.	100.00	25814.80	25814.80

Total:- (Rs.) 414255.21

Rate per Rft				4142.55
Cost of Boundry wall	Rft	880.00		3645445.80
			Say:- (Rs.)	3645446.00

QUANTITY SHEET

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 8H-II: Construction of Main Gate:

Item No.	Description	No	Measurements			Quantity	
			L	B	D		
1	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refiling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil.						
	0' to 5.0 ft. Depth	2	3.00	3.00	2.50	45.00	
2	Cement concrete brick or stone ballast 1-1/2" to 2" (40mm to 50 mm guage in foundation and plinth Ratio (1:4:8)	2	3.00	3.00	0.25	4.50	
3	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortor.	4	3.00	0.75	1.25	11.25	
		4	1.50	0.75	1.25	5.63	
		4	3.00	0.38	5.00	22.50	
		4	2.25	0.38	5.00	<u>16.88</u>	
						56.25	
4	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 2" thick	4	3.00	0.38		4.50	
		4	2.25	0.38		<u>3.38</u>	
						7.88	
5	Pucca brick work in ground floor:- (i) Cement sand mortar 1:4	4	3.00	0.38	7.00	31.50	
		4	2.25	0.38	7.00	<u>23.63</u>	
						55.13	
6	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	4	3.00		7.00	84.00	
		4	2.25		7.00	63.00	
						147.00	
7	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Type C (nominal mix 1:2: 4)	2	3.00	3.00	0.67	12.06	
		2x4	8	1.88	1.125	0.17	2.88
			2	0.75	0.75	14.75	<u>16.59</u>
						31.53	
8	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). (b) deformed bars. # 6	10	3.25	32.50	1.5/2.204	22.12	
		14	3.25	45.50	1.5/2.204	30.97	
		8	13.75	110.00	1.5/2.204	74.86	
		# 2	26	3.17	0.17/2.204	<u>6.36</u>	
						134.31	
9	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1	16	6		96.00	
10	Preparing surface and painting guard bars , gates of iron bars priming coat	2	16	6		192	
	each subsequent coat	2	16	6		192	



COST ESTIMATE

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 8H-II: Construction of Main Gate:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil. 0' to 5.0 ft. Depth	1000 Cft	45.00	9889.75	445.04
2	C-6/3	Cement concrete brick or stone ballast 1-1/2" to 2" (40mm to 50 mm guage in foundation and plinth Ratio (1:4:8)	100 Cft	4.50	25717.20	1157.27
3	C-7/7	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortar.	100 Cft	56.25	31130.90	17511.13
4	C-6/36	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 2" thick	100 Sft	7.88	10839.80	853.63
5	C-7/7	Pucca brick work in ground floor:- (i) Cement sand mortar 1:4	100 Cft	55.13	33265.80	18337.77
6	C-11/18	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	100 Sft	147.00	3776.40	5551.31
7	C6-6-a-ii	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Type C (nominal mix 1:2: 4)	1 Cft	31.53	473.85	14940.56
8	C-6/12	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 (b) deformed bars. 60 grade	100 Kg	134.31	31946.30	42905.94
9	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1 Sft	96.00	1998.95	191899.20
10	C-13/5	Preparing surface and painting guard bars , gates of iron bars priming coat each subsequent coat (Two Coats)	100 Sft 100 Sft	192.00 192.00	927.05 1144.40	1779.94 2197.25

Total:- (Rs.) 297579.04

No. of Gate 2

595158.09

Say:- (Rs.) 595158.00

QUANTITY SHEET

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 9-I Construction of Operator Room, Store, Office & Security Room:

Item No.	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	1	178.5	3.00	2.25	1204.88
2	Cement concrete brick or stone ballast 1 1/2" to 2" gauge in foundation and plinth. Ratio (1:6:12)	1	178.50	3.00	0.38	200.81
3	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (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)	1 1 1 2 1 2	34.00 21.75 7.50 5.00 3.50 2.50	21.75 0.75 0.75 0.75 0.75 0.75	0.42 0.75 0.75 0.50 0.50 0.50	310.59 12.23 4.22 3.75 1.31 1.88 333.98
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). (b) deformed bars.			333.98 x 5.5 /2.204		833.44
5	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.- (a) 4" dia cast iron down pipe.	2	11.00			22.00
6	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	2				2.00
7	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	2				2.00
8	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating: (b) With two coats of bitumen (ii) 1.5" thick	1	178.50	0.75		133.88
9	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	1 1 1 1 1 1 1	178.50 178.50 178.50 178.50 178.50 178.50 178.50	1.88 1.50 1.50 1.13 1.13 0.75 0.75	0.50 0.50 0.50 0.50 0.50 8.50 8.50	167.34 133.88 133.88 100.41 100.41 1137.94 1137.94 2911.78

10	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	1	153.25	0.75	11.00	1264.31	
		2	1.13	0.75	7.00	11.81	
		1	25.25	0.75	3.25	61.55	
		1	106.00	0.75	1.13	<u>89.44</u>	
						1427.11	
11	Providing and laying sand under floor	1	14.00	12.00	0.33	55.44	
		1	14.00	7.00	0.33	32.34	
		1	7.00	12.00	0.33	27.72	
		1	13.00	12.00	0.33	51.48	
		2	6.25	5.00	0.33	20.63	
		1	19.00	6.00	0.33	<u>37.62</u>	
				225.23			
12	Dry reamed brick or stone ballast 1.5" to 2"	1	14.00	12.00	0.33	55.44	
		1	14.00	7.00	0.33	32.34	
		1	7.00	12.00	0.33	27.72	
		1	13.00	12.00	0.33	51.48	
		2	6.25	5.00	0.33	20.63	
		1	19.00	6.00	0.33	<u>37.62</u>	
				225.23			
13	PCC 1:2:4	1	14.00	12.00	0.17	28.56	
		1	14.00	7.00	0.17	16.66	
		1	7.00	12.00	0.17	14.28	
		1	13.00	12.00	0.17	26.52	
		2	6.25	5.00	0.17	10.63	
		1	19.00	6.00	0.17	<u>19.38</u>	
				116.03			
14	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish.						
		(a) Using grey cement	1	14.00	12.00		168.00
			1	14.00	7.00		98.00
			1	7.00	12.00		84.00
			1	13.00	12.00		156.00
			2	6.25	5.00		62.50
			1	19.00	6.00		114.00
					682.50		
15	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing:						
		(a) Using grey cement					
		(ii) 1/2" thick	4	14.00	0.50		28.00
			4	12.00	0.50		24.00
			2	7.00	0.50		7.00
			2	13.00	0.50		13.00
			4	5.00	5.00		100.00
	4	6.25	5.00		125.00		
					297.00		
16	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate size (3'x3').					300.00	
17	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	4	14.00		11.00	616.00	
		4	12.00		11.00	528.00	
		2	7.00		11.00	154.00	
		2	13.00		11.00	286.00	
		4	5.00		11.00	220.00	
		4	6.25		11.00	275.00	
		1	25.00		4.00	<u>100.00</u>	
				2179.00			

18	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	1	33.25		12.25	407.31
		1	15.50		12.25	189.88
		1	21.25		12.25	260.31
		1	14.50		12.25	<u>177.63</u>
						1035.13
19	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	1	32.50	19.75		641.88
20	Khuras on roof 2'x2'x6"	2				2.00
21	P/F steel windows with openable glazed pannels, using Beam section for frame 1-1/2"x1" x5/8"-x1/8" Z section for leaves 3/4" x1"x3/4"x1/8", T section shashes 1"x1"x1/8" glass panes, Wooden screed for glazing etc. (a) fixed with wire gauze, 24 SWG & glass pane 5 mm thick.	2	6.00	4.00		48.00
		2	2.00	2.00		8.00
		1	4.00	6.00		<u>24.00</u>
						80.00
22	Providing and fixing 1 1/2" thick hollow flush door and window with commercial ply 3 ply on both faces deodar wood shutter frame 1 1/4" thick and partial wood braces at about 3" apart and deodar wood lipping 1 1/2" X3/8" fixed with MS chowkhat including chromium plated fittings etc. complete in all respects with out sliding bolt or lock	1	3.50	7.00		24.50
		2	5.00	7.00		70.00
		2	2.50	7.00		<u>35.00</u>
						129.50
23	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". i) Priming coat	1	3.50	7.00	Sides 2.00	49.00
		2	5.00	7.00	2.00	140.00
		2	2.50	7.00	2.00	70.00
		2	6.00	4.00	2.00	96.00
		2	2.00	2.00	2.00	16.00
		1	4.00	6.00	2.00	<u>48.00</u>
						419.00
	ii) Each subsequent coat of paint (two coats).					419.00
24	Priming coat of chalk under distemper.	4	14.00		11.00	616.00
		4	12.00		11.00	528.00
		2	7.00		11.00	154.00
		2	13.00		11.00	286.00
		4	5.00		11.00	220.00
		4	6.25		11.00	275.00
		1	25.00		4.00	<u>100.00</u>
						2179.00
25	Distemping. (iii) 3 coats.					2179.00
PLUMBING AND SANITARY FITTINGS						
1	P/F brass stop cock / bib cock. 1/2 " dia	3				3.00
2	P/F Floor trap of cast iron including concrete chamber around and C.I grating. 4" x 3"	2				2.00
3	P/F G.I pipe line. 3/4" dia	1	75.00			75.00
	1/2" dia	1	50.00			50.00

4	P/F plastic made low down cistern including bracket set etc complete. white	2			2.00
5	P/F chromium plated shower rose. 1/2" dia	1			1.00
6	P/F chromium plated or brass oxidised swan neck cock.	1			1.00
7	P/F angle iron brackets for sinks.	4			4.00
8	P/F chromium plated stop cock.	2			2.00
9	P/F cast iron man hole cover. 18" dia	1			1.00
10	P/F PVC Pipe. 4" dia	1	10.00		10.00
	3" dia	1	20.00		20.00
11	P/F 1/2" dia connection check nut copper.	4			4.00
12	Providing and fixing wash hand basin 22"x16" with pedestal	2			2.00
16	P/F WC	2			2.00
	ELECTRIFICATION				
1	Supply and erection of PVC pipe for recessed wiring including bends and specials etc. in wall or trenches 20mm dia	1	300.00		300.00
2	Supply and erection of single core PVC insulated copper conductor cables in prelaid PVC pipes 3/0.029 "	1	1200.00		1200.00
	7/0.029 "	1	300.00		300.00
3	Supply and erection of M.S sheet box of 16 16SWG 10 cm deep 8"X10"	1			1.00
	7"X4"	2			2.00
	4"X4"	5			5.00
4	Supply and erection of Iron /Aluminium clad 500 V main switch with kitkat fuses on angle iron board with 3 mm thick 15/20 amp	1			1.00
5	Supply and erection of Iron /Aluminium clad branch distribution board 250 volts on angle frame of suitable size with 3 mm sheet covering 3 way 15 amp per way	1			1.00
6	Supply and erection of 3/8 dia M.S fan hook	4			4.00
7	Supply and erection of bracket of M.S channel 75X40X6 mm section 2' long for 2 lights	2			2.00
8	Supply and erection of ceiling rose bakelite	8			8.00
9	Supply and erection of switches 5 amp piano type	25			25.00
10	Supply and erection of house service pipe	3			3.00
11	Supply and erection of 48" DIA fan (ASIA ,ROYAL) with regulators and canopy complete in all respects	4			4.00
12	Supply and erection of energy meter including meter testing fee single phase130amp 250 volts	1			1.00

COST ESTIMATE

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 9-I Construction of Operator Room, Store, Office & Security Room:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	1000 Cft	1204.88	9889.75	11915.91
2	C-6/1-3	Cement concrete brick or stone ballast 1 1/2" to 2" gauge in foundation and plinth. Ratio (1:4:8)	100 Cft	200.81	25717.20	51643.35
3	C-6/6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (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)	1 Cft	333.98	583.25	194794.20
4	C-6/12	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). (b) deformed bars.	100 Kg	833.44	31946.30	266252.04
5	C-9/20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.:- (a) 4" dia cast iron down pipe.	1 Rft	22.00	379.40	8346.80
6	C-9/21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	1 each	2.00	985.15	1970.30
7	C-9/22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	1 each	2.00	514.15	1028.30
8	C-6/36	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating: (b) With two coats of bitumen (ii) 2" thick	100 Sft	133.88	10839.80	14511.78
9	C-7/4	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	100 Cft	2911.78	29928.60	871455.36
10	C-7/5	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	100 Cft	1427.11	32331.00	461398.73
11	C-7/30	Providing and laying sand under floor	100 Cft	225.23	2982.00	6716.21
12	C-6/2	Dry reamed brick or stone ballast 1.5" to 2"	100 Cft	225.23	9768.00	21999.98
13	C-10/22	1-1/2" thick mosaic flooring consisting of 1/2" mosaie topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish. (a) Using grey cement	100 Sft	682.50	21681.35	147975.21
14	C-10/37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	100 Sft	297.00	23268.60	69107.74

15	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate size (3'x3').	1 Rft	300.00	5.95	1785.00
16	C-11/9(b)	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	100 Sft	2179.00	3464.15	75483.83
17	C-11/18(b)	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:3	100 Sft	1035.13	3565.45	36906.86
18	C-9/I-5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100 sft	641.88	11779.95	75612.55
19	C-9/15	Khuras on roof 2'x2'x6"	1 Each	2.00	905.25	1810.50
20	C-25/41	P/F steel windows with openable glazed pannels, using Beam section for frame 1-1/2"x1" x5/8"-x1/8" Z section for leaves 3/4" x1"x3/4"x1/8", T section shashes 1"x1"x1/8" glass panes, Wooden screed for glazing etc. (a) fixed with wire gauge, 24 SWG & glass pane 5 mm thick.	1 sft	80.00	1170.85	93668.00
21	C-12/50	Providing and fixing 1 1/2" thick hollow flush door and window with commercial ply 3 ply on both faces deodar wood shutter frame 1 1/4" thick and partial wood braces at about 3" apart and deodar wood lipping 1 1/2" X3/8" fixed with MS chowkhat including chromium plated fittings etc. complete in all respects with out sliding bolt or lock M.S Agnle iron 1 1/2"x1.5"x1/4" welded with M.S Flate 2"x1/4"	1 Sft	129.50	1464.35	189633.33
22	C-13/5	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". i) Priming coat ii) Each subsequent coat of paint (3 coats).	100 Sft 100 Sft	419.00 419.00	1460.05 1683.30	6117.61 7053.03
23	C-11/22	Priming coat of chalk under distemper.	100 Sft	2179.00	296.95	6470.54
24	C-11/23	Distemping. (iii) 3 coats.	100 Sft	2179.00	1446.35	31515.97
PLUMBING AND SANITARY FITTINGS						
1	C 19/45a	P/F brass stop cock / bib cock. 1/2 " dia	1 Each	3.00	591.40	1774.20
2	C 19/34ii	P/F Floor trap of cast iron including concrete chamber around and C.I grating. 4" x 3"	1 Each	2.00	790.20	1580.40
3	C 23/23,iii	P/F G.I pipe line BSS 1387-1967 heavy quality 3/4" dia 1/2" dia	1 Rft 1 Rft	75.00 50.00	279.15 217.85	20936.25 10892.50
4	C 19/13,i	P/F plastic made low down cistern including bracket set etc complete.	1 Each	2.00	3061.65	6123.30
5	C 19/29	P/F chromium plated shower rose. 1/2" dia	1 Each	1.00	685.60	685.60
6	C 19/32,i	P/F chromium plated or brass oxidised swan neck cock.	1 Each	1.00	565.60	565.60
7	C-19/R6	P/F angle iron brackets for sinks.	1 Each	4.00	366.00	1464.00
8	C 19/25	P/F chromium plated stop cock.	1 Each	2.00	1141.60	2283.20
9	C19/39	P/F cast iron man hole cover. 18" dia	1 Each	1.00	1532.40	1532.40
10	C 23/27	P/F PVC Pipe BSS Class-B 4" dia 3" dia	1 Rft 1 Rft	10.00 20.00	402.70 268.40	4027.00 5368.00

11	C 19/7	P/F 1/2" dia connection check nut copper.	1 Each	4.00	366.95	1467.80
12	C-19/6	Providing and fixing wash hand basin 22"x16" with pedestal	1 Each	2.00	6160.50	12321.00
13	C-19/4	P/F white glazed earthen ware water closet	1 Each	2.00	2461.85	4923.70
ELECTRIFICATION						
1	C 24/3	Supply and erection of PVC pipe for recessed wiring including bends and specials etc. in wall or trenches 20 mm dia	1 Rft	300.00	86.40	25920.00
2	C 24/10	Supply and erection of single core PVC insulated copper conductor cables in prelaidd PVC pipes 3/0.029 " 7/0.029 "	1 Rft 1 Rft	1200.00 300.00	27.85 44.05	33420.00 13215.00
3	C 24/14	Supply and erection of M.S sheet box of 16 16SWG 10 cm deep 8"X10" 7"X4" 4"X4"	1 Each 1 Each 1 Each	1.00 2.00 5.00	762.80 409.95 296.00	762.80 819.90 1480.00
4	C 24/18	Supply and erection of Iron /Aluminium clad 500 V main switch with kitkat fuses on angle iron board with 3 mm thick 15/20 amp	1 Each	1.00	3125.20	3125.20
5	C 24/20	Supply and erection of Iron /Aluminium clad branch distribution board 250 volts on angle frame of suitable size with 3 mm sheet covering 3 way 15 amp per way	1 Each	1.00	1442.05	1442.05
6	C 24/49	Supply and erection of 3/8 dia M.S fan hook	1 Each	4.00	75.00	300.00
7	C 24/51	Supply and erection of bracket of M.S channel 75X40X6 mm section 2' long for 2 lights	1 Each	2.00	1094.90	2189.80
8	C 24/30	Supply and erection of ceiling rose bakelite	1 Each	8.00	75.10	600.80
9	C 24/31	Supply and erection of switches 5 amp piano type	1 Each	25.00	80.75	2018.75
10	C 24/55	Supply and erection of house service pipe	1 Rft	3.00	660.05	1980.15
11	N/S	Supply and erection of 54" DIA fan with regulators and canopy complete in all respects	1 Each	4.00	9200.00	36800.00
12	C 24/77	Supply and erection of energy meter including meter testing fee single phase 30 amp 250 volts	1 Each	1.00	4280.40	4280.40

Total:- (Rs.) 2859472.94

Say:- (Rs.) 2859473.00

QUANTITY SHEET
PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND
RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 10-J: Constructon of Staff Quarter:

Item No.	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	1	197.75	3.00	2.25	1334.81
		1	38.87	2.25	2.25	196.78
						1531.59
2	Cement concrete brick or stone ballast 1 1/2" to 2" gauge in foundation and plinth. Ratio (1:6:12)	1	197.75	3.00	0.38	222.47
		1	38.87	2.25	0.37	32.36
						254.83
3	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (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)	1	26.25	24.50	0.42	270.11
		1	11.87	6.50	0.33	25.46
		2	4.50	0.75	0.50	3.38
		1	4.00	0.75	0.50	1.50
		1	5.00	0.75	0.50	1.88
		2	3.50	0.75	0.50	2.63
		3	5.00	0.75	0.50	5.63
		2	3.00	0.75	0.50	2.25
		1	6.00	0.75	0.50	2.25
		1	17.00	2.00	0.17	5.78
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. (b) deformed bars.		320.85 x 5.5 /2.204			800.67
5	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.:- (a) 4" dia cast iron down pipe.	2	11.00			22.00
6	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	2				2.00
7	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	2				2.00
8	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating: (b) With two coats of bitumen (i) 1.5" thick	1	197.00	0.75		147.75
		1	38.00	0.75		28.50
						176.25
9	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	1	197.75	1.88	0.50	185.39
		1	197.37	1.50	0.50	148.03
		1	38.50	1.50	0.50	28.88
		1	197.38	1.13	0.50	111.03
		1	38.50	1.13	0.50	21.66
		1	197.00	0.75	5.50	812.63
		1	38.50	0.75	5.50	158.81
					1466.41	

10	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	1	197.00	0.75	11.00	1625.25
		1	38.00	0.75	7.00	<u>199.50</u>
						1824.75
11	Providing and laying sand under floor	2	11.00	12.00	0.33	87.12
		1	12.00	15.00	0.33	59.40
		1	7.00	12.00	0.33	27.72
		2	5.00	5.50	0.33	18.15
		1	24.75	9.75	0.33	79.63
		1	14.75	6.00	0.33	<u>29.21</u>
						301.23
12	Dry reamed brick or stone ballast 1.5" to 2"	2	11.00	12.00	0.33	87.12
		1	12.00	15.00	0.33	59.40
		1	7.00	12.00	0.33	27.72
		2	5.00	5.50	0.33	18.15
		1	24.75	9.75	0.33	79.63
		1	14.75	6.00	0.33	<u>29.21</u>
						301.23
13	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	2	11.00	12.00		264.00
		1	12.00	15.00		180.00
		1	7.00	12.00		84.00
		2	5.00	5.50		55.00
		1	24.75	9.75		241.31
		1	14.75	6.00		<u>88.50</u>
						912.81
14	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	4	11.00	0.50		22.00
		4	12.00	0.50		24.00
		2	12.00	0.50		12.00
		2	15.00	0.50		15.00
		2	12.00	0.50		12.00
		2	7.00	0.50		7.00
		2	24.75	0.50		24.75
		2	10.25	0.50		<u>10.25</u>
15	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate size (3'x3').					300.00
16	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	2	27.00		11.00	594.00
		4	23.00		11.00	1012.00
		2	19.00		11.00	418.00
		4	9.25		11.00	407.00
		1	40.00		7.00	<u>280.00</u>
					2711.00	
17	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2					2711.00
18	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	1	24.75	22.75		563.06
		1	10.37	5.00		<u>51.85</u>
						614.91

19	Khuras on roof 2'x2'x6"	2				2.00
20	P/F steel windows with openable glazed pannels, using milad steel box sections 1-1/2"1-1/2"x18 SWG glass panes, M.S channel 1/2"x1/2"x1/16" duly serenwd with leaves, & filled with rubber feld in between glass & M.S channel brass fitting, holdfast, duly painted	4	6.00	4.00		96.00
		2	2.00	2.00		<u>8.00</u>
						104.00
21	(a) fixed with wire gause, 24 SWG & glass pane 5 mm thick.					104.00
22	Providing and fixing 1 1/2" thick hollow flush door and window with commercial ply 3 ply on both faces deodar wood shutter frame 1 1/4" thick and partal wood braces at about 3" apart and deodar wood lipping 1 1/2" X3/8" fixed with MS chowkhat including chromium plated fittings etc. complete in all respects with out sliding bolt or lock	2	3.50	7.00		49.00
		1	5.00	7.00		35.00
		1	3.00	7.00		21.00
		2	2.50	7.00		<u>35.00</u>
						140.00
23	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". i) Priming coat	2	3.50	7.00	Sides 2.00	98.00
		1	5.00	7.00	2.00	70.00
		1	3.00	7.00	2.00	42.00
		2	2.50	7.00	2.00	70.00
		4	6.00	4.00	2.00	192.00
		2	2.00	2.00	2.00	<u>16.00</u>
						488.00
	ii) Each subsequent coat of paint (two coats).					488.00
24	Priming coat of chalk under distemper.	2	27.00		11.00	594.00
		4	23.00		11.00	1012.00
		2	19.00		11.00	418.00
		4	9.25		11.00	407.00
		1	40.00		7.00	<u>280.00</u>
						2711.00
25	Distemping. (iii) 3 coats.					2711.00
PLUMBING AND SANITARY FITTINGS						
1	P/F brass stop cock / bib cock. 1/2 " dia	5				5.00
2	P/F Floor trap of cast iron including concrete chamber alround and C.I grating. 4" x 3"	3				3.00
3	P/F G.I pipe line. 3/4" dia	1	75.00			75.00
	1/2" dia	1	100.00			100.00
4	P/F plastic made low down cistern including bracket set etc complete. white	1				1.00
5	P/F chromium plated shower rose. 1/2" dia	1				1.00
6	P/F chromium plated or brass oxidised swan neck cock.	1				1.00
7	P/F angle iron brackets for sinks.	2				2.00
8	P/F stainless stlle sink with drain board including bracket set waste pipe and waste couplnc	1				1.00

9	P/F chromium plated stop cock.	2			2.00
10	P/F cast iron man hole cover. 18" dia	1			1.00
11	P/F PVC Pipe. 4" dia	1	10.00		10.00
	3" dia	1	20.00		20.00
12	P/F 1/2" dia connection check nut copper.	4			4.00
13	Providing and fixing wash hand basin	1			1.00
14	Providing and fixing piller cock 1/2"	1			1.00
15	P/F white glazed earthen ware water closet	1			1.00
	ELECTRIFICATION				
1	Supply and erection of PVC pipe for recessed wiring including bends and specials etc. in wall or trenches (i)20mm dia	1	150.00		150.00
2	Supply and erection of single core PVC insulated copper conductor cables in prelaid PVC pipes 3/0.029 "	1	1200.00		1200.00
	7/0.029 "	1	300.00		300.00
3	Supply and erection of M.S sheet box of 16 16SWG 10 cm deep 8"X10"	1			1.00
	7"X4"	2			2.00
	4"X4"	5			5.00
4	Supply and erection of Iron /Aluminium clad 500 V main switch with kitkat fuses on angle iron board with 3 mm thick 15/20 amp	1			1.00
5	Supply and erection of Iron /Aluminium clad branch distribution board 250 volts on angle frame of suitable size with 3 mm sheet covering 3 way 15 amp per way	1			1.00
6	Supply and erection of 3/8 dia M.S fan hook	4			4.00
7	Supply and erection of bracket of M.S channel 75X40X6 mm section 2' long for 2 lights	2			2.00
8	Supply and erection of ceiling rose bakelite	8			8.00
9	Supply and erection of switches 5 amp piano type	25			25.00
10	Supply and erection of house service pipe	3			3.00
11	Supply and erection of 48" DIA fan (ASIA ,ROYAL) with regulators and canopy complete in all respects	4			4.00
12	Supply and erection of energy meter including meter testing fee single phase130amp 250 volts	1			1.00

COST ESTIMATE

PUNJAB CITIES PROGRAM DETAILED DESIGN OF INFRASTRUCTURE SUB-PROJECT, SECTORAL PLANNING AND RESIDENTS SUPERVISION IN 16 CITIES OF PUNJAB JHANG CITY

Sub Head # 10-J: Construction of Staff Quarter:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	1000 Cft	1531.59	9889.75	15147.06
2	C-6/1-3	Cement concrete brick or stone ballast 1 1/2" to 2" gauge in foundation and plinth. Ratio (1:4:8)	100 Cft	254.83	25717.20	65534.63
3	C-6/1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete.				
		(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)	1 Cft	320.85	583.25	187137.89
4	C-6/12)	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). (b) deformed bars. 60 grade	100 Kg	800.67	31946.30	255784.44
5	C-9/1-20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.:- (a) 4" dia cast iron down pipe.	1 Rft	22.00	379.40	8346.80
6	C-9/1-21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	1 Each	2.00	985.15	1970.30
7	C-9/1-22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting.	1 Each	2.00	514.15	1028.30
8	C-6/36	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating: (b) With two coats of bitumen (i) 2" thick	100 Sft	176.25	10839.80	19105.15
9	C-7/1-4	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	100 Cft	1466.41	29928.60	438876.92
10	C-7/1-5	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	100 Cft	1824.75	32331.00	589959.92
11	C-7/1-30	Providing and laying sand under floor	100 Cft	301.23	2982.00	8982.62
12	C-6/2	Dry reamed brick or stone ballast 1.5" to 2"	100 Cft	301.23	9768.00	29423.96
13	C-10/22	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish				
		(a) Using grey cement	100 Sft	912.81	21681.35	197910.07
14	C-10/1-37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	100 Sft	127.00	23268.60	29551.12

15	C-10/1-39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate size (3'x3').	1 Rft	300.00	5.95	1785.00
16	C-11/1-9(b)	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	100 Sft	2711.00	3464.15	93913.11
17	C-11/1-18(b)	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	100 Sft	2711.00	3776.40	102378.20
18	C-9/1-5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100 Sft	614.91	11779.95	72436.39
19	C-9/1-15	Khuras on roof 2'x2'x6"	1 Each	2.00	905.25	1810.50
20	C-25/41	P/F steel windows with openable glazed pannels, using milad steel box sections 1-1/2"x1-1/2"x18 SWG glass panes, M.S channel 1/2"x1/2"x1/16" duly serenwd with leaves, & filled with rubber feld in between glass & M.S channel brass fitting, holdfast, duly painted (a) fixed with wire gauze, 24 SWG & glass pane 5 mm thick.	1 Sft	104.00	1170.85	121768.40
21	C-12/50	Providing and fixing 1 1/2" thick hollow flush door and window with commercial ply 3 ply on both faces deodar wood shutter frame 1 1/4" thick and partal wood braces at about 3" apart and deodar wood lipping 1 1/2" X3/8" fixed with MS chowkhat including chromium plated fittings etc. complete in all respects with out sliding bolt or lock. M.S Angle iron 1 1/2"x1.5"x1/4" welded with M.S Flate 2"x1/4"	1 Sft	140.00	1464.35	205009.00
23	C-13/1-5	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". i) Priming coat ii) Each subsequent coat of paint (2 coats).	100 Sft 100 Sft	488.00 488.00	1460.05 1683.30	7125.04 8214.50
24	C-11/1-22	Priming coat of chalk under distemper.	100 Sft	2711.00	296.95	8050.31
25	1-11/1-23	Distemping. (iii) 3 coats.	100 Sft	2711.00	1446.35	39210.55
PLUMBING AND SANITARY FITTINGS						
1	C 19/45a	P/F brass stop cock / bib cock. 1/2 " dia	1 each	5.00	591.40	2957.00
2	C 19/34ii	P/F Floor trap of cast iron including concrete chamber alround and C.I grating. 4" x 3"	1 each	3.00	790.20	2370.60
3	C 23/23	P/F G.I pipe line BSS 1387-1967 heavy quality 3/4" dia 1/2" dia	1 Rft 1 Rft	75.00 100.00	279.15 217.85	20936.25 21785.00
4	C 19/13	P/F plastic made low down cistern including bracket set etc complete.	1 each	1.00	3161.65	3161.65
5	C 19/29	P/F chromium plated shower rose. 1/2" dia	1 each	1.00	685.60	685.60
6	C 19/32	P/F chromium plated or brass oxidised swan neck cock.	1 each	1.00	565.60	565.60
7	C 19/R6	P/F angle iron brackets for sinks.	1 each	2.00	366.00	732.00
8	C 19/08	P/F stainless stlle sink with drain board including bracket set waste pipe and waste couplnc	1 each	1.00	7747.55	7747.55
9	C 19/25	P/F chromium plated stop cock.	1 each	2.00	1141.60	2283.20

10	C19/39	P/F cast iron man hole cover. 18" dia	1 each	1.00	1532.40	1532.40
11	C-23/27	P/F PVC Pipe. 4" dia 3" dia	1 Rft 1 Rft	10.00 20.00	402.70 268.40	4027.00 5368.00
12	C 19/R7	P/F 1/2" dia connection check nut copper.	1 each	4.00	366.95	1467.80
13	C-19/6	Providing and fixing wash hand basin 22"x16" with pedestal.	1 each	1.00	6160.50	6160.50
14	C-19/24	Providing and fixing pillar cock 1/2"	1 each	1.00	1861.60	1861.60
15	C-19/4	P/F white glazed earthen ware water closet	1 each	1.00	2461.85	2461.85
ELECTRIFICATION						
1	C 24/3	Supply and erection of PVC pipe for recessed wiring including bends and specials etc. in wall or trenches 20mm dia	1 Rft	150.00	86.40	12960.00
2	C 24/10	Supply and erection of single core PVC insulated copper conductor cables in prelaidd PVC pipes 3/0.029 " 7/0.029 "	1 Rft 1 Rft	1200.00 300.00	27.85 44.05	33420.00 13215.00
3	C 24/14	Supply and erection of M.S sheet box of 16 16SWG 10 cm deep 8"X10" 7"X4" 4"X4"	1 each 1 each 1 each	1.00 2.00 5.00	762.80 409.95 296.00	762.80 819.90 1480.00
4	C 24/18	Supply and erection of Iron /Aluminium clad 500 V main switch with kitkat fuses on angle iron board with 3 mm thick 15/20 amp	1 each	1.00	3125.20	3125.20
5	C 24/20	Supply and erection of Iron /Aluminium clad branch distribution board 250 volts on angle frame of suitable size with 3 mm sheet covering 3 way 15 amp per way	1 each	1.00	1442.05	1442.05
6	C 24/49	Supply and erection of 3/8 dia M.S fan hook	1 each	4.00	75.00	300.00
7	C 24/51	Supply and erection of bracket of M.S channel 75X40X6 mm section 2' long for 2 lights	1 each	2.00	1094.90	2189.80
8	C 24/30	Supply and erection of ceiling rose bakelite	1 each	8.00	75.10	600.80
9	C 24/31	Supply and erection of switches 5 amp piano type	1 each	25.00	80.75	2018.75
10	C 24/55	Supply and erection of house service pipe	1 Rft	3.00	660.05	1980.15
11	N/S	Supply and erection of 48" DIA fan with regulators and canopy complete in all respects	1 each	4.00	9200.00	36800.00
12	C 24/77	Supply and erection of energy meter including meter testing fee single phase130amp 250 volts	1 each	1.00	4280.40	4280.40

Total:- (Rs.) 2711958.65

For 4 quarters

10847834.60

Say:- (Rs.) 10847835.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

SUMMARY OF COST

Bill No.	Description	Amount (Rs.)
1.1	ANAEROBIC, FACULTATIVE AND SCREENING BED	
	MRS ITEMS	66,948,106.50
	NON MRS ITEMS	476,120,000.00
	TOTAL (ANAEROBIC, FACULTATIVE AND SCREENING BED)	543,068,106.50
1.2	INLET/OUTLET CHANNELS & COLLECTION/ DISTRIBUTION CHAMBERS AND OUTFALL STRUCTURE & SLUDGE TRATMENT FACILITY	
	MRS ITEMS	145,000,455.90
	NON MRS ITEMS	1,300,000.00
	TOTAL (INLET/OUTLET CHANNELS & COLLECTION/ DISTRIBUTION CHAMBERS AND OUTFALL STRUCTURE)	146,300,455.90
1.3	OFFICE/ LABORATORY BUILDING, TRACK & ROADS	
	MRS ITEMS	2,163,769.69
	NON MRS ITEMS	825,900.00
	TOTAL (OFFICE/ LABORATORY BUILDING)	2,989,669.69
1.4	STAFF BUILDING	
	MRS ITEMS	1,771,522.12
	NON MRS ITEMS	1,338,700.00
	TOTAL (STAFF BUILDING)	3,110,222.12
1.5	AREA LIGHTING WORKS OF WWTP SITE, GATES & GUARD POSTS ETC	
	NON MRS ITEMS	12,593,300.00
	TOTAL (AREA LIGHTING WORKS OF WWTP SITE)	12,593,300.00
1.6	PROVISIONAL SUM	
	TOTAL (PROVISIONAL SUM)	1,000,000.00
1.7	ENNVIRONMENTAL MANAGEMENT PLAN (EMP) IMPLEMENTATION	7,652,094.00
	BUFFER ZONE (TH. PLANTATION) AROUND BOUNDARY	5,521,000.00
	TOTAL (ENNVIRONMENTAL MANAGEMENT PLAN (EMP) IMPLEMENTATION)	14,173,094.00
	AFTER INTRODUCTION OF FLOATING PLANTS IN FPs INCLUDING O/M	26,080,493
	TOTAL COST	748,315,341.20
	IN MILLIONS FOR 10 MGD PKR	748.32
	O/M COST FOR 10 MGD MILLION PKR	5.4
	TOTAL IN MILLION PKR	753.72

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL ND. 1.1: ANAEROBIC & FACULTATIVE PONDS SCREENING BED
MRS ITEMS

Sr. No.	Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)	
					in Figure	in words		
1	3/47	Jungle clearance and removing within 100ft. (30m). a) light b) thick	1000 Sft. 1000 Sft.	1,200.00 380.00	211.2 422.4		253,440.00 160,512.00	
2	3/52	Earthwork in excavation of drains, irrigation channels through excavator / drag lines in all kind of soil and conditions(dry, slush,daldal and under water) including its disposal and preparation of working pad for operation of machinery. (Rates includes 100 ft lead)	1000Cft	2,000.00	2698		5,396,000.00	
3	3/20	b) Dressing of earthwork (done by machinery and left undressed) to designed section.	100Sft.	6,000.00	202.15		1,212,900.00	
4	3/25	Compaction of earthwork with power road roller, including ploughing, mixing, moisturing earth to optimum moisture content in layers, etc, complete:- 1i) 90% maximum modified AASHO dry density. (Qunatity of compaction includes embankments and in bed of ponds from excavated earth within site. (Contractor will stack the excavated earth from site at suitable places and then will use il for embankments. Quantity or excavated material may increase or decrease)	1000Cft	1,358.00	984.5		1,336,951.00	
5	18/19	Providing and laying dry brick pavement /soling 1n streets or roads, etc. sand grouted, laid in proper camber, including preparation, watering, compaction of bed to proper camber. and sand cushion.	100Cft	1,200.00	24745.2		29,694,240.00	
TOTAL								38,054,043.00

WSP-JHANG-10 MGD

BILL OF QUANTITIES

BILL NO. 1.1: ANAEROBIC, FACULTATIVE PONDS SCREENING BED

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)	
					in Figure	in words		
6	26/42	Providing and fixing barbed wire fencing, with 4 horizontal and two cross wires, with R.C.C. 1:2:4 posts, 5.5'x6"x9" (1.68mx150mmx225 mm) at 8 ft.(2.45 m) centre to centre, reinforced with 4 No. 3/8" (10 mm) dia vertical bars and 1/8" (3 mm) dia stirrups 12" (300 mm) centre to centre, complete in all respects.						
7	25/30	ii) in cement concrete 1:4:8 base of size 12"x12"x21" (300x300x525 mm). Making and fixing steel grated doors, complete with locking arrangement, angle iron frame 2"x2"x3/8" 50x50x10 mm) and 3/4" (20 mm) square bars 4" (100 mm) centre to centre.	100Rft.	40.00	45,603.55		1,824,142.00	
8	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) (This is provisional quantity and will be paid as per actual lead chart to be approved by the Engineer)	Per Sft	85.00	1618.15		137,542.75	
		a) upto 1/4 mile (400 m).	1000 Cft.	4,500.00	350.00		1,575,000.00	
		b) for every 330 ft. (100 m) additional lead or part thereof, beyond 1/4 mile (400 m) upto one mile. (1.6 Km.) (for 1200m)	1000 Cft.	340.00	40.6		13,804.00	
		c) for every 1/4 mile (400 m) additional lead or part thereof, beyond one mile (1.6 Km.) upto 5 mile (8 Km).	1000 Cft.	015.00	246.65		3,699.75	
		d) for every 1/2 mile (800 m) additional lead or part thereof , beyond 5 miles (8 Km).	1000 Cft,	380.00	228.6		86,868.00	
TOTAL								3,641,056.50

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.1: ANAEROBIC, FACULTATIVE PONDS SCREENING BED

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)	
					in Figure	in words		
9	3/7	INTERCONNECTION STRUCTURES Earthwork excavation in open cutting upto 1.5m 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 timbenng the trenches. dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed wilhin 15m lead:-						
10	3/8	i) ordinary Earthwork excavation in open cutting 1.5m to 3m depth for storm water channels, drains, sullage drains, in open areas, roads, streets. lanes, incJuding under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches. baMfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	24.00	7,554.25		181,302.00	
11	6/5	i) ordinary Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate).	1000 Cfl	1.00	8,254.10		8,254.10	
		(h) Ralio 1: 3: 6	100 Cft	32.00	24937.2		797,990.40	
TOTAL								987,546.50

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.1: ANAEROBIC, FACULTATIVE PONDS SCREENING BED

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
12	6/6	<p>Providing and laying reinforced cement concrete (including prestressed concrete), using coarse sand and screened graded and washed aggregate, in required shape and design, including form s, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.): -</p> <p>(a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid insitu or precast laid in position, or prestressed members cast insitu, complete in all respects.</p> <p>(1) Type A (nominal mix 1:1:2)</p>	Per Cft	7,000.00	579.05		4,053,350.00
		<p>(a)(ii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc other structural members other than those mentioned in 5(a) (i) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-</p> <p>(1) Type A (nominal mix 1: 1: 2)</p>	Per Cft	6,000.00	587.4		3,524,400.00
13	6/9	<p>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 the bars):-</p> <p>c) Deformed Bars</p>	100 Kg	550	26387.15		14,512,932.50
TOTAL							22,090,682.50

WSP-JHANG-10 MGD

BILL OF QUANTITIES

BILL NO. 1.1: ANAEROBIC, FACULTATIVE PONDS SCREENING BED

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
					in Figure	in words	
14	6/30	Providing embedding 10" (250 mm) wide 1/4." (6 mm) thick rubber water stopper in expansion joints of R.C.C. roof slab complete in all respects	Per Rft.	3150	252.3		794,745.00
15	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	100 Cft	180.00	35.35		6,363.00
16	21/5	Lead From nearest quarry (230km) Providing and laying R.C.C. pipe sewers, moulded Cth cement concrete 1 1/ 3 mnmformng to ASTM. Specification C 76-79. Class IV, Wall B, including carriage of pipes from factory to site of work, lowering in trenches o correct alignment and grade, jointing with rubber ring. cutting pipes where necessary, lesling, etc. complete: - ix) 910 mm (36") i/d	Rft	300.00	4578.9		1,373,670.00
Total Amount MRS Items							2,174,778.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.1: ANAEROBIC, FACULTATIVE PONDS SCREENING BED
NON MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
				in Figure	In words	
1	Providing, laying to designed section and compacting (to at least 90% of the maximum modified Proctor dry density) good earth as Embankments (source to be approved by the Engineer) complete in all respects (both in bed & slope). (Item rate include lead from any source within district up to WWTP)	Cft	5,000	12		60,000.00
2	Providing, laying to designed section and compacting (to at least 90% of the maximum modified Proctor dry density) clay as liner (source to be approved by the Engineer), complete in all respects., Liner material should be compacted in layers not exceeding 6" (150mm). Liner material should be compacted slightly wet of optimum. Scarify the top of already compacted liner layer to a minimum depth of 1.0 inch before placing the next layer. Clods more than 5.0 mm size must be present in Inner material, these must be pulverized before placing (both in bed & slope) The material suitable to be used for compacted soil liner shall meet the following specifications: Vertical in-situ hydraulic conductivity in compacted state < 1 x 10 ⁻⁷ cm/sec Fines (particles passing 0.075 mm sieve) a 30 % Plasticity index = 8-30 % Gravels (particles passing 75 mm sieve and retaining 4 75 mm sieve) < 20 % Maximum particle size < 10 mm (Item rate include lead from any source within district up to WWTP)	Cft	5,000.00	12		60,000.00
TOTAL						120,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.1: ANAEROBIC, FACULTATIVE PONDS SCREENING BED
NON MRS ITEMS

Sr. No	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
				in Figure	in words	
3	Providing and installation of HDPE Geomembrane liner 1.5mm (60mil) thick at site according to the approved drawings, specifications and instruction of the engineer The charges of wastage, overlap and testing etc. shall include in the rate.	Sft	2,800,000	170		476,000,000
Total Amount Non MRS Items						476,000,000

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.2: INLET/OUTLET CHANNELS & COLLECTION/ DISTRIBUTION CHAMBERS AND OUTFALL STRUCTURE & SLUDGE TREATMENT FACILITY
MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
1	3/52	Earthwork in excavation of drains, irrigation channels through excavator / drag lines in all kind of soil and conditions(dry, slush,daldal and under water) including its disposal and preparation of working pad for operation of machinery. (Rates includes 100 ft lead)	1000Cft	750.00	2698		2,023,500.00
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	110.00	2872		315,920.00
3	3/13	Rehandling of earthwork. a) Lead upto a single throw of Kassi, phaorah or shovel.	1000Cft	24.00	2,112.00		50,688.00
4	3/24	Compaction of earthwork (soft, ordinary or hard soil):- d) Ramming earthwork behind retaining walls.	1000Cft	20.00	1,689.60		33,792.00
5	6/5	Cement conciete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate) (h) Ratio 1: 3 6	100 Cft	110.00	24937.2		2,743,092.00
6	6/6	(a) (i) Reinforced cement concrete in roof slab, beams,columns lintels, girders and other structural members laid insitu or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1 1:2)	Per Cft	5,000.00	579.05		2,895,250.00
TOTAL							8,062,242.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.2: INLET/OUTLET CHANNELS & COLLECTION/ DISTRIBUTION CHAMBERS AND OUTFALL STRUCTURE & SLUDGE TRATMENT FACILITY
MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Ouanity	Rate \Rs)		Amount (Rs)	
					in Flgure	in words		
7	6/6	(a)(ii) Reinforced cemenl concrete in slab of rafts / stnp foundation. base slab of column and retaining walls; etc other structural members other than those mentioned in 5(a) (i) above not requirin9 form work (i.e. horizenlal shulteringl r umplete n all respects:- (1) Type A (nominal mix 1* 1: 2)	Per Cft	4,500.00	587.4		2,643,300.00	
8	6/9	Fabrication of mild steel reinforcement for cement concrete including culling, bending, laying in position, making joints and faslenings, including cosl of Dinding were and labour charges for binding of steal reinforcement (also includes removal of rust)						
9	1/1	(c) Deformed bars (Grade-60) Carriage of 100 Cft. (2.83 cum) 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 Kg	5,000.00	26387.15		131,935,750.00	
10	6/.30	Lead From nearest quarry {230km) Providing embedding 10" (250 mm) wide 1/4 " (6 mm) thick rubber water stopper in expansion joints of R. C C. roof slab complete in all respects.	100Cft	1,567.00	35.35		55,393.45	
11	18/14	Provldlng and Fixing G.I. pipe railing, as per standard drawing	Per Rft of 3 rows of	1,456.00	252.3		367,348.80	
				25.00	1544.4		38,610.00	
TOTAL								135,040,402.25

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.2: INLET/OUTLET CHANNELS & COLLECTION/ DISTRIBUTION CHAMBERS AND OUTFALL STRUCTURE & SLUDGE TREATMENT FACILITY

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
12	16/27	Providing and laying stone pitching/filling, dry hand packed, as filling behind retaining walls or In pitching and aprons.	100 Cft	41.00	3642		149,322.00
13	16/13	Providing and weaving G.I. wire netting for wire crates, with G.I. wire of approved size (including sling and partition to make crate):- b) 4" (100 mm) mesh	100 Cft	41.00	5382.25		220,672.25
44	16/3	'ii) 8 SWG wire (for Stone gabion) b) Supply and filling jute bags 1.25 (0.35 ccum) Cft. capacity, with sand or earth, sewing and laying in position, under water (Provisional Quantity). (Excavated material from plant site will be used to fill the bags)	Per Bag	2000.00	72.1		144,200.00
15	21/6	Lowering of sub-soil water Able, by installation of tubewells along sewer line and pumping out water. for excavation in open cutting below sub-soil water level, concreting. curing, laying and jointing pipes. Filling haunches, etc. till the completion of sewer line, Including disposal of pumped out water:- (for construction of toe wall at outfall slructure)	Rft	40.00	7197.55		287,902.00
16	3/17	Transponation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300 m) (This is provisional quantity and will be paid as per actual lead chart to be approved by the Engineer a) upto / mile (4 00 m).	1000 Cft.	299.00	3,664.60		1,095,715.40
Total Amount MRS Items							1,897,811.65

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.2: INLET/OUTLET CHANNELS & COLLECTION/ DISTRIBUTION CHAMBERS AND OUTFALL STRUCTURE& SLUDGE TREATMENT FACILITY
NON MRS ITEMS

Sr. No	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
				in Figure	in words	
1	Providing and fixing manual and gear operated C.I penstock gate 8.S.S 7775 of various size with CI shutter and CI frame channel with interior brass channel on bottom and two sides through which gate travels i/c non-magnetic SS spindle with square thread CI head stock and wheel etc complete in all respect as per drawing and/or directed by the engineer incharge.					
	Penstock Gate for 36" Dia Clear Opening	Each	2.00	200000		400,000.00
	Penstock Gate Size 10' x 4' Clear Opening	Each	1.00	300000		300,000.00
	Penstock Gate Size 15' x 3' Clear Opening	Each	1.00	300000		300,000.00
	Penstock Gate Size 10' x 8' Clear Opening	Each	1.00	300000		300,000.00
Total Amount Non MRS Items						1,300,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
A) Civil Works							
1	3/21	Excavation in foundation of building, bridges and other structures. including dagbelhng, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain (30 m) and lift upto 5 ft. (1.5 m).					
2	26/43	(b) in ordinary soil Spraying anti-termite liquid mixed with water in theof ratio of 1:40	1000 Cft. 100 Sft of Each Spray	5.20 41	10,018.80 1000		52,097.76 41,000.00
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (f) Nominal mix Ratio 1: 2: 4 (h) Nominal mix Ratio 1: 3: 6	100 Cft. 100 Cft.	0.51 1.50	28683.6 24937.2		14,628.64 37,405.80
4	7/4	Pacca brick work in foundation and plinth i) Cement, sand mortar Ratio 1 : 3	100 Cft.	6.20	30190.6		187,181.72
5	6/35 (b)	Providing and laying damp proof course of cement concrete 1:2:4 (cement, sand, shingle), including bitumen coating. (b) with 2 coals of bitumen: i) 1½" thick {40 mm}	100 Sft.	1.75	6684.4		11,697.70
TOTAL							344,011.62

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)	
					in Figure	in words		
6	6/35	Providing and laying vertical damp proof course with cement sand plaster and bitumen coating:- (a) with one coat of bitumen and one coat of polythene sheet 500 gauge: ii) Ratio 1:3 b) ¾" thick (20 mm)	100 Sft.	1.33	8,639.45		11,490.47	
7	7/5	Pacca brick work in ground floor.- i) cement, sand mortar Ratio 1:3	100 Cft.	8.90	33,895.10		301,666.39	
8	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: 1/ 3)	Per Cft	450.00	612.3		275,535.00	
TOTAL								588,691.86

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
9	6/9	(a)(ii-)Reinforced cement concrete in slab of rafts I strip foundation, base slab of column and retaining walls; etc and other structural members other than those mentioned in 5(a) (i) above not requiring form work e. horizontal shuttering) complete in all respects:- (2) Type B (nominal mix 1: 1½: 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)-	Per Cft	250	612.3		153,075.00
10	1/1	(c) Deformed bars (Grade-60) 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 kg	11.00	31,786.30		349,649.30
11	11/9	Lead From nearest quarry (230km) Cement plaster 1:4 upto 20' (6.00 m) height:- a) 3/8" (10 mm) thick	100 Cft	9.10	57.2		520.52
12	11/10	Cement plaster 3/8" (10 mm) thick under soffit of R.C.C. roof slabs only, upto 20' height. c) 1 :4	100 Sft.	25	3,034.95		75,873.75
			100 Sft.	8	3,609.75		28,878.00
TOTAL							607,996.57

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
					in Figure	in words	
13	3/15	Filling, watering and ramming earth under floors:- (i) with surplus earth horn foundation, etc (1i) with new earth excavated from out side, lead	1000 Cft	1.00	5,090.45		5,090.45
			1000 Cft.	0.35	10,959.65		3,835.88
14	3/16	Extra for every 50 ft. (15 m) additional lead or part thereof:- i) for earth work soft, ordinary, hard and very hard (up to 1000 ft)	1000 Cft	4.00	97.4		389.60
15	7/30	Supplying and filling sand under noor; or plugging in wells. (Provisional as Sleet Fill)	100 Cft.	3.00	2,943.30		8,829.90
16	6/2	Dry rammed brick or stone ballast, 1½" to 2" (40 mm to 50 mm) gauge.	100 Cft	1	8,891.50		8,891.50
17	10/25	Laying floor of approved coloured glazed tiles ¼ "(6 mm) thick, laid in white cement and pigment on a bed of ¾" (20mm) thick cement mortar 1:2.	100 Sfl.	1	292.75		292.75
18	10/35	Tile skirting laid in 1.2 cement mortar, over ¼"(20 (b) mosaic tiles	100 Sfl	0.80	22,873.55		18,298.84
19	10/38	Coloured glazed tile dado (6"x6"¼") (6mm) thick in pigment over 1-2 cement, sand mortar ¾"(20mm) thick, including finishing.	100 Sft.	1.00	20,965.90		20,965.90
TOTAL							66,594.82

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
20	9/5	Single layer of tiles 225 x 113 x 40 mm laid over 100mm earth and 25mm mud plaster without bhoosa grouted with cement sand 1:3 on top of RCC roof slab provided with 1.72kg/sq.m bitumen coating sand blinded.	100 Sft.	12.00	11,343.40		136,120.80
21	26/37	Supplying and laying polythene sheet over D.P.C under floors and on roofs, etc. (I) 300 gauge (0.003" thick)	Per Sft.	1230.00	5.9		7,257.00
22	9/15	Khuras on roof 2'x2'x6" (600 x 600 x 150 mm)	Each	1.00	855		855.00
23	9/16	Bottom Khuras of brick masonry in cement mortar 1:6, 4'x2"x4½" (1200x600x113 mm) over 3" (75 mm) cement concrete 1:4:8.	Each	1.00	1,744.00		1,744.00
24	10/6	Dry brick on edge paving, sand grouted, including preparation of bed by watering, ramming & bringing the same to proper camber, by ½ " (13 mm) thick mud plaster.	100 Sft.	0.50	9,918.40		4,959.20
25	10/7	Grouting 4½" (113 mm) dry brick work with cement mortar ratio 1: 5	100 Sft	0.50	2,649.75		1,324.88
26	12/51	Providing and fixing panelled door of M.S. sheet, with forged door leaves of M.S. sheet 22 SWG fitted in hollow frame chowkat 3"x4½" (75 mmx113 mm) made of M.S. sheet 18 SWG filled with plain cement concrete 1:3:6 etc. complete with all fittings and hammer painting, including carriage to site and fixing in position.	Per Sft.	25.00	502.2		12,555.00
TOTAL							164,815.88

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
27	12/18	Providing and fixing sliding bolt to doors:- iii) brass sliding bolt, 10" (250 mm) long	Each	4	78.45		313.80
28	13/5 (C i+ii)	Painting new surface'- c) Preparing surface and painting of doors and windows any type (including edges):- i)priming coat ii)each subsequent coat of paint. (2 coats)	100 Sft.	1.00	2,002.00		2,002.00
29	25/52	Providing and fitting all types of glazed aluminium windows of anodised bronze colour partly fixed and partly sliding using delux sections of approved manufacturer having frame size of 100 x 20 mm (4"x¾") and leaf frame sections of 50 x 20 mm (2"x¾"), all of 1.6mm thickness including 5 mm thick imported tinted glass with rubber gasket using pproved standard latches. hardware etc , as approved by the Engineer in-charge.	Per Sft.	80.00	1,348.40		107,872.00
30	12/54	Providing and fixing M.S. flat ½"x1/8" (13mm x 3mm) grill including ¾" x 1/8" (20 mmx3 mm) M.S. flat f rame, in windows of approved design, including painting three coats, complete in all respects.	Per Sft.	80.00	289.05		23,124.00
31	11/22	Priming coat of chalk under distemper.	100 Sft.	20.00	266.35		5,327.00
32	11/23	Distempeiling (a) new surface ii) two coats	100 Sft.	20.00	1,017.10		20,342.00
TOTAL							158,980.80

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)	
					in Figure	in words		
33	11/18	Cement pointing struck joints, on walls, upto 20' (6.00 m) hieght:- (external wall) a) ratio 1:2	100 Sft	10.00	3,518.35		35,183.50	
		PLUMBING WORKS						
34	19/6	Providing and fitting glazed earthen ware wash hand basin 56x40cm, including bracket set, waste pipe and	Each	1.00	4,723.25		4,723.25	
35	19/7	Providing and fixing stainless steel sink with drain board, size 120x60 cm (48"x24") including bracket set, waste pipe and waste coupling.	Each	1.00	6,405.30		6,405.30	
36	19/29	Providing and fixing chromium plated shower rose:- ii) 2x15 cm (¾"x6")	Each	1.00	1,195.00		1,195.00	
37	19/29	Providing and fixing, chromium plated mixing	Each	1.00	2,228.75		2,228.75	
38	23/22	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipe line in trenches, with socket joints, using G.I pipes of B.S.S. 1387-1967complete in all respects with specials and valves:- ii) Medium Quality						
		b) ¾" i/d (20 mm) 2.65mm thick	Per Rft.	15.00	275.35		4,130.25	
		c) 1" i/d (25 mm) 3.25mm thick	Per Rft.	15.00	765.05		11,475.75	
39	19/3	Providing and fitting glazed earthen ware water closet, squatter type, combined with foot rest. ii) coloured	Each	1.00	19,987.90		19,987.90	
TOTAL								85,329.70

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate \Rs)		Amount (Rs)
					in Figure	in words	
40	19/12	Providing and fitting plastic made low down flushing cistern 13.63 lilers (3 gallons) capacity, including bracket set. copper connection etc., complete. ii) coloured	Each	1.00	4,629.35		4,629.35
41	19/19	Providing and fixing looking glass 55x40 cm size and 5mm thick, first quality	Each	1.00	549.30		549.30
42	19/22	Providing and filling i) Plastic Soap Dish ii) Plastic toilet paper holder iii) Plastic tDwel rail iv) Pla stic shelf 60X13cm with bracket and railing	Each Each Each Each	1.00 1.00 1.00 1.00	1,200.00 900 1,400.00 900		1,200.00 900.00 1,400.00 900.00
43	19/27	Providing and fixing chromium plated bib cock i) 2 cm (3/4")	Each	3.00	1,015.00		3,045.00
44	19/34	Providing and rixing floor trap of cast iron. Including concrete chamber all round, and C.I grating: ii) 10x7.5 cm (4"x3")	Each	1.00	627.95		627.95
45	19/36	Providing and fitting gully trap, including Cement concrete, cost of PVC grating 15x15cm and masonry chamber 30x30cm.	Each	1.00	1,096.85		1,096.85
TOTAL							14,348.45

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS

MRS ITEMS

Sr. No.	MRS 2nd Bi-Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
					in Figure	in words	
1.0		B) Electrical Works <u>WIRING AND ACCESSORIES</u>					
1.1	10(a-ii)/24, 3(iii)/24, 14(i)/24, 32(ii)/24	Wiring of light or fan point from switch to the point with 7/0.74 mm mm (3/0.029") PVC insulated single core cables in PVC pipes concealed in walls, columns and slabs including accessories, PVC box, 10 Amp. gang switch 1 or 2 way as required, one for each light or fan and installed as in specifications,	Rft				
			Each	8.00	2000		16,000.00
1.2	10(a-iii)/24, 3(iii)/24	Circuit wiring from MCBs board to gang switches board with 3x7/0.74 mm (7/0.029") PVC insulated single core cables in appropriate size PVC conduit.	Each	4.00	10000		40,000.00
1.3	10(a-iii)/24, 3(ii)/24	The same as item No, 1.1 but from one light point to another light point.	Each	9.00	3000		27,000.00
1.4	10(a-iv)/24, 14(ii)/24, 36(i)/24, 3(iii)/24	5 Amp 2/3 pin universal flush mounting switch socket unit away from switch board and wired with 3x7/0.91mm (7/0.036") single core cable from nearest circuit available in PVC concealed conduits or trunking including all conduit accessories as required complete in all respect.	Each	2.00	4000		8,000.00
1.5	10(a-iii)/24, 3(iii)/24	The same as item No.1.4 but bring from one socket to another socket with 3x7/0.74 mm (7/0.026") single core cable	Each	2.00	3000		6,000.00
1.6	10(a-v)/24, 3(iii)/24, 36(ii)/24, 14(ii)/24	The same as item No. 1.4 but wiring of 15/20A, 3-pin flush mounting switch socket unit wired with 3x7/1.12mm (7/0.044") single core cable wires starting from D.B	Each	3	12000		36,000.00
Sub Total B-Electrical Works							133,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure		
A) Civil Works						
1	Providing and fixing M.S. sheet hollow pressed frame of doors, windows, C. windows, etc. (chowkat only) of 16 SWG welded with M.S. flat 6"x 1 1/4 " x 1/8" (150 mmx30mmx3mm) M.S. holdfast 9"x1"x1/8" (225mmx25mmx3mm) welded/screwed 4" (101 mm) long iron hinges, including filling chowkat with cement sand mortar 1:2:4 and embedding holdfast in cement concrete 1:2:4, complete in all respects:					
	a) single rebate	Per Sft	79.00	2000		158,000.00
	b) double rebate	Per Sft.	16.00	2000		32,000.00
2	Providing, fixing, jointing and testing Polypropylene Random (PPR) pipes or approved equivalent pressure pipe for cold & hot water as per DIN 8077-8078.PN-20 for pipes and DIN 16962,PN-25 for liftings (polyfusion welded joints) inside building including fittings and specials (sockets, tees, elbows, bends, crosses, reducers, adaptor, plugs and union etc.) supported on walls or suspended from roof slab or run in chases including pipe hangers, supports, cutting and making good the chases and holes, complete in all respects.					
	b) 3/4" i/d (25 mm)	Per Rft.	65.00	800		52,000.00
	c) 1" i/d (32 mm)	Per	13	1000		13,000.00
3	Providing, fixing, cutting, jointing and testing uPVC sewerage, Drainage 8 vent piping conforming to ISO 3633:1991 including uPVC Drainage fittings with solvent cement jointing include cost of clamping to walls and ceiling, dangers, supports, cutting through walls and providing sleeves through concrete slabs for pipelines and pipe fittings of the following diameter complete in all respect.					
	a)160mm (6")	Per Rft.	15.00	2000		30,000.00
TOTAL						285,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BI LL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs)
				in Figure	in Words	
	b) 110mm (4")	Per Rft	9	2000		18,000.00
	c) 82mm (3 ")	Per Rft	10	1500		15,000.00
4	Providing and fixing P Trap 110 mm for uPVC pipe complete in all respects	Each	1	1000		1,000.00
5	Providing and fixing "Y" for uPVC (SWV) pipe complete in all respects.					
	a) 110mm (4 ")	Each	1	1500		1,500.00
	b) 82mm (3")	Each	3	1200		3,600.00
6	Providing and fixing Bend for uPVC (SWV) pipe complete in all respects					
	a) 110mm (4")	Each	2	1500		3,000.00
	c) 82mm (3")	Each	4	1200		4,800.00
Sub Total A- Civil Works						46,900.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
NON-MRS ITEMS

S.No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs)
				in Figure	in Words	
	B) Electrical Worke Supply transportation at site storage, installation testing and commissioning of the following items o/ work (unless specifically stated otherwise) including all material, labour, tools and accessories etc. required for proper completion of each item as per specification and drawings and/or as directed by the Engineer.					
1.0	<u>POWER CABLE</u>					
1.1	Copper conductor PVC/PVC 600/1000V cables including sockets and connections at both ends wilfi Cu/Brass glands, lugs ets alongwith all accessories. The cable shall be drawn in cable trench or clipped on the wall or pulled in cable tray/PVC pipes or as required or as shown on drawings. (Imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to (manufacturing)	Rft.	90.00	500		45,000.00
a)	4 core 16 mm°					
1.2	PVC insulated 450/750 Voll grade (Green - Yellow) unarmoured copper cable laid direct in ground, pulled in PVC pipe already laid, on surface of wall or cable trays etc. sockets and connections at both ends with Cu/Brass, glands, lugs ets alongwith all accessories all accessories as required or as 6hown on drawings (Imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to manufactluring) as earth continuity conductor (ECC/CPC).	Rft.	90	300		27,000.00
a)	1 core 16 mm*					
TOTAL						72,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in figure	in Words	
2.0	<u>LIGHT FITTINGS AND FANS</u>					
2.1	FolloTng LED Luminaries of suitable wattage make Philips, GE, Pierlite or approved equivalent suitable for the project Contractor to submit lighting design calculation to adequacy of the wattage and should adjust the number LEDs/wattage as per project lighting requirements. The fitting approved by the Engineer.					
(a)	Light Fixlure Type LED Batten Ceiling/surface mounted, 18W complete in all respect with allied accessories make Philips, or approved equivalent. The fitting shall be approved by the	Each	8.00	2000		16,000.00
2.2	Wall bracket Light Fixture Type LED 6W energy saving lamp with holder and comple in all respect with allied accessories make GE, Pierlite or approved equivalent. The fitting shall be the Engineer.	Each	8	2000		16,000.00
2.3	20W LED Water tight light fixture IP 65 complete in all respect allied accessories or approved equivalent. The fitting shall be by the Engineer.	Eacri	6.00	2000		12,000.00
2	Light Fixture Type LED surface mounted down lighler, 6W all respect with allied acc ssories make Philips, GE, Pierlite approved equivaient. The fitting shall be approved by the Engineer.	Each	1.00	3000		3,000.00
2.5	56" ceiling fan sweep (Climax, Pak, Millat) make or approved equivalent	Each	2.00	12000		24,000.00
TOTAL						71,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs)
				in Figure	in Words	
3	Wall Bracket fan 20" sweep make (Royal, Pak, GFC or equivalent) capacitor type, copper winding complete with all accessories etc.	Each	1.00	15000		15,000.00
2.7	Exhaust fan 12" sweep make (Royal, Pak, Millat or equivalent) capacitor type, copper winding complete with and all accessories etc.	Each	1.00	12000		12,000.00
3.0	<u>uPVC PIPE</u>					
3.1	PVC pipe conduit with accessories suitable for laying cables.					
a)	100 mm dia (Class-B)	Rft.	60.00	400		24,000.00
4.0	<u>DISTRIBUTION BOARDS</u>					
	D.Bs with TP incoming adjustable moulded case circuit SP miniature outgoing circuit breakers. Panel box SWG 16 coated RAL colour 7032, IP class 44 and with all alongwith all installation and operational accessories specification or as shown on the drawings.					
4.1	<u>D B- OFFICE BUILDING MATERIAL</u> 01 No, 32 Amps (Adj.) MCCB TP, RC=25kA, Icu=100%Ics 06 No. outgoing 10A, MCB, SP, RC=10kA, Icu=100%Ics 03 Nos. outgoing 20A, MCB, SP, RC=10kA, Icu=100%Ics 03 Nos. Spare 10/20A. MCB, SP, RC=10kA. Icu=100%Ics	Each	1.00	100000		100,000.00
TOTAL						151,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO 1.3 OFFICE/ LABORATORY BUILDING, TRACK & ROADS
NON-MRS ITEMS

St. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure	'in Words	
5.0	02 Nos Space for 0/20s. MSA Indication lights push buttons, digital ammeter with selector digital voltmeter with selector switch, Panel box SWG 16 coated RAL colour 7032, IP class 54 and with alt accessories					
5.1	<u>EARTHING AND BONDING</u> Earth point comprising of 10 fl 5/8" dia (16 mm dia) copper M. S rods driven in ground. All earthing rods shall be completed with	No.	2	100000		200,000.00
Sub Total b-Electrical Works						
Total Amount Non MRS Items (A+B)						200,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

MRS ITEMS

sr No	MRS 2nd Bi-Annual 2022 Cha p#/Item#	Oescription	Unit	Quantity	Rate (Rs)		Amount (Rs)	
					in Figure	iN WOrdS		
1	3/21	A) Civil Works Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around slructure with excavated earth, water ing and ramming lead upto one cha>n (30 m) and lift upto 5 ft. (1 fi nJ) (b) in ordinary soil	1000 C ft.	1.00	11,949.45		11,949.45	
2	26/42	Spraying anti-termite liquid mixed with water in the ratio cf 1.40	100 Sft.of each spray	15.00	9.25		138.75	
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (f) Nominal mix Ratio 1:2:4 (h) Nominal mix Ralio 1: 3. 6	100 Cft 100 Cft.	1 2	38,178.90 32,848.50		38,178.90 65,697.00	
4	7/4	Pacca brick work in foundation and plinth i) Cement, sand mortar Ratio 1 : 3	100 Cft.	3.00	31,711.30		95,133.90	
5	6/33(h)	Providing and laying damp proof course of cement concrele 1:2 4 (cement, sand, shingle), including bitumen coating (b) with 2 coals of Bitumen i) 1 1/4"thick (40 nJna)	100 S ft.	1.00	12,197.30		12,197.30	
TOTAL								223,295.30

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

MRS ITEMS

S No.	MRS 2nd Bi - Annual2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount {Rs}
					in Figure	in words	
6	6/35	Providing and laying vertical damp proof course with cement sand plaster and bitumen coating'- (a) with one coat of bitumen and one coat of polythene sheet 500 gauge ii) Ratio 1:3 b) 3/4" thick (20 min)	100 Sft	1	12,197.30		12,197.30
7	7/5	Pacca brick work in ground floor. - i) cement, sand mortar Ratio 1.3	100 Cft	4	33,895.10		135,580.40
8	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, finishing 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 slabs, 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. 1 1/2 : 3)	Per Cft	250	556.5		139,125.00
TOTAL							286,902.70

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

MRS ITEMS

SR. No.	MRS 2nd Bi - Annual2022	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)	
					In Figure	in words		
9	6/9	(a)(ii) Reinforced cement concrete in slab of rafts strip foundation, base slab of column and retaining walls; etc and other structural members other than those mentioned in 5(a) (i) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (2) Type B (nominal mix 1: 1 1/2: 3) Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, lapping 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):-	Per Cft	2.00	556.5		1,113.00	
10	1/1	(c) Detormed bars (Grade-60) Carriage of 100 Cft. (2.83 cu. m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surXhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (230km)	100 kg	9.00	14,720.35		132,483.15	
11	11/9	Cement plaster 1:4 upto 20' (6.00 m) height - a) 3/8" (10 mm) thick	100 Cft	8.00	35.35		282.80	
12	11/10	Cement plaster 3/8" (10 mm) thick under soffit of R. C.C. roof slabs only. upto 20' heighl. c) 1:4	100 Sft.	15.00	3,034.95		45,524.25	
			100 Sft.	5.00	3,609.75		18,048.75	
TOTAL								197,451.95

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

MRS ITEMS

SR No.	MRS 2nd BI - Annual2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
					in Figure	in words	
13	3/15	Filling, watering and ramming earth under floors:- (i) with surplus earth from foundation. etc. (ii) with new earth excavated from out side. lead one chain (30m)	J000	0.94	5,090.45		4,785.02
14	3/16	Extra for every 50 ft. (15 m) additional lead or part thereof :- i) for earth work soft, ordinary, hard and very (up to 1000 ft)	1000	1.00	10,959.65		10,959.65
			1000	30.00	97.4		2,922.00
15	7/30	Supplying and filling sand under floor; or wells. (Provisional as Slect Fill)	100 Cft.	12.00	2,943.30		35,319.60
16	6/2	Dry rammed brick or stone ballast, 1 1/2" to 2" (40 to 50 mm) gauge.	100 Cft.	2.00	8,891.50		17,783.00
17	10/25	Laying floor of approved coloured glazed tiles (6mm) thick, laid in white cement and pigment on a bed of 3/4" (20 mm) thick cement mortar 1:2.	100 Sft.	5.00	292.75		1,463.75
18	10/35	Tile skirting laid in 1:2 cement mortar, over 3/4" (20 mm) thick cement mortar. 1.2 including washing and filling joints complete:- (b) mosaic tiles	100 Sft.	0.8	22,873.55		18,298.84
19	10/38	Coloured glazed tile dado (6"x6" 1/4") (6mm) thick, including finishing. pigment over 1:2 cement. sand mortar 3/4"(20mm)	100 Sft.	1.00	20,965.90		20,965.90
TOTAL							112,497.76

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

MRS ITEMS

Sr. No.	MRS 2nd BI - Annual2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
					In Figure	In words	
20	9/5	Single layer of tiles 225 x 113 x 40 mm laid over 100mm earth and 25mm mud plaster without bhoosa grouped with cement sand 1:3 on top of RCC roof slab provided with 1.72kg/sq.m bitumen coating sand blinded.	100 Sft.	6.00	11,343.40		68,060.40
21	26/37	Supplying and laying polythene sheet over D.P.C under floors and on roofs, etc. (i) 300 gauge (0.003" thick)	Per Sft.	600.00	5.9		3,540.00
22	9/15	Khuras an roof 2'x2'x6" (600 x 600 x 150 mm)	Each	1.00	855		855.00
23	9/16	Bottom Khuras of brick masonry in cement mortar 1:6, 4'x2'x4 " (1200x600x13 mm) over 3" {75 mm)	Each				1,744.00
24	12/15	cement concrete 1 4:8. Providing and fixing M.S. sheet hollow pressed frame of doors, windows. C. windows, etc. (chowkat only) of mmx30mmx3mm) M.S. holdfast 9"x1"x1/8' (225mmx25mmx3mm) welded/screwed 4" (100 mm) long iron hinges, concrete 1:2 4, complete in all respects:	Per Sft	80	375.05		30,004.00
		a) single rebate	Per Sft.	15	429.05		6,435.75
TOTAL							110,639.15

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING MRS ITEMS

S No	MRS 2nd BI - Annual2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)	
					in Figure	in words		
26	10/6	Dry brick on edge paying, sand grouted, including preparation of bed by watering, ramming & bringing the same to proper camber, by 1/2" (13 mm) thick mud plaster.	100 Sft.	2.00	9,918.40		19,836.80	
27	10/7	Grouting 4 1/2" (113 mm) dry brick work with cement mortar ratio 1: 5	100 SII.	2.00	2,649.75		5,299.50	
28	12/18	Providing and fixing sliding bolt to doors:- iii) brass sliding boll, 10" (250 mm) long	Each	400	78.45		31,380.00	
29	13/5 (C i+ii)	Painting new surface - c) Preparing surface and painting of doors and windows any type (including edges).-	100 Sft	2.00				
		i) priming coat.	100 Sft.	23.00	1,292.00		29,716.00	
		ii) each subsequent coat of paint. (2 coats)	100 Sft.	23.00	711.4		16,362.20	
TOTAL								102,594.50

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING MRS ITEMS

S No	MRS 2nd BI - Annual2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)	
					in Figure	in words		
30	25/53	Providing and fixing all types of glazed aluminium windows of anodized champagne colour partly fixed and partly sliding using deluxe section of approved manufacturer having frame of size 100mm x 30mm using frame at bottom at top and side leaf leaf fix at + + sections of 60mm x 23mm at top & bottom and size 45mm x 25mm at center and size 45mm x 25mm at sides, Jali leaf frame size 43mm x 13mm i/c fine quality aluminum jali, 5mm thick imported tinted glass with rubber gasket using approved standard latches wheel stopper.	Per Sft	86.00	1,348.40		115,962.40	
31	12/54	Providing and fixing M S flat 1/2" x 1/8" (13mm x 3mm) grill including 3/4" x 1/8" (20 mm x 3 mm) M S flat frame, in windows of approved design, including painting three coats, complete in all respects	Per Sft	80	289.05		23,124.00	
32	11/22	Priming coat of chalk under distemper	100 Sft	22.65	266.35		6,032.83	
33	11/23	Distemping (a) new surface ii) two coats	100 S ft	22.65	1,017.10		23,037.32	
34	11/018	Cement pointing s truck joints, on walls, upto 20' (6 00 fri) Jiehg (exten ical wall) a) ratio 1.2	100 SII	22.2	3,518.35		78,107.37	
TOTAL								246,263.91

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING MRS ITEMS

Sr. No	MRS 2nd B - Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)
					In Figure	in words	
35	19/6	PLUMBING WORKS Providing and fitting glazed earthen ware wash hand basin 56x40cm , including bracket eel, waste pipe and waste coupling, etc.	Each	1.00	4,723.25		4,723.25
36	19/7	ii) coloured, with pedestal Providing and fixing stainless steel sink with drain board, size 120x60 cm (48"x24") including bracket set. waste pipe and waste coupling.	Each	1.00	4,723.25		4,723.25
37	19/28	Providing and fixing chromium plated shower rose:-	Each	1.00	1,195.00		1,195.00
38	1 /29	ii) 2x15 cm (1/4"x6") Providing and fixing. chromium plated mixing valve,	Each	3.00	2,228.75		6,686.25
39	23/22	for wash hand basin, sink or shower. Providing, laying, cutting, jointing, testing and disinfecting G.I. pipe line in trenches, with joints, using G.I pipes of B.S.S. 1387- in all respects with specials and valves:-	Per Rft.	26.4	275.35		7,269.24
		ii) Medium Quality (Provisional) b) 1/4" i/d (20 mm) 2.65mm thick c) 1" i/d (25 mm) 3.25mm thick	Per Rft	20.00	765.05		15,301.00
40	19/3	Providing and filling glazed earthen ware ciosel, squatter type, combined with foot rest. i) coloured	Each	1.00	19,987.90		19,987.90
TOTAL							59,885.89

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING MRS ITEMS

sr. No.	MRS 2nd BI Annual 2022 Chap#/Item#	Description	Unit	Quantity	Rate (Rs)		Amount (Rs)	
					in Figure	In words		
41	19/12	Providing and fitting plastic maoe low down flushing cistern 1363 liters (3 gallons) capacity, including bracket set, copper connection etc., complete.						
42	19/19	ii) Coloured Providing and fixing looking glass 55x40 cm size and Smm lhick, first quality	Each	1.00	4,629.35		4,629.35	
43	19/22	Providing and fitting i) Plastic Soap Dish ii) Plastic toilet paper holder ii) Plastic towel rail iv) Plastic shelf 60X13cm with bracket and Failin9	Each Each Each Each	1.00 1.00 1.00 1.00	1,200.00 900 1,400.00 900		1,200.00 900.00 1,400.00 900.00	
44	19/26	Providing and fixing chromium plated bib cock i) 2 cm (3/4")	Each	4.00	1,015.00		4,060.00	
45	19/33	Providing and fixing floor trap of cast iron, including concrete chamber all round, and C.I grating: ii) 10x7.5 cm (4"x3")						
46	19/35	Providing and fitting 10 cm (4") gully trap, including cement concrete, cost of PVC grating 15x15 cm (6"x6") and masonry chamber 30x30 cm (12"x12")	Each	2.00	627.95		1,255.90	
TOTAL								2,193.70
TOTAL								17,088.25

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

MRS ITEMS

Sr. No.	MRP 2nd BI-Annual 2022 Chap#/Item#	Description	Unit	Quantité	Rate {Rs}		Amount (Rs)
					in Figure	In words	
1.0		B) Electrical Works <u>WIRING AND ACCESSORIES</u>					
1.1	10(a-ii)/24, 3(iii)/24, 14(i)/24, 32(ii)/24	Wiring of light or fan point from switch to light point with 7/0 74 mm mm (3/0 029") PVC insulated single core cables in PVC pipes concealed in walls, columns and slabs including accessories, PVC box, 10 Amp. gang switch 1 or 2 way as required, one for each light or fan and installed as in specifications.	Each	12.00	5000		60,000.00
1.2	10(a-iii)/24, 3(iii)/24	Circuit wiring from MCBs board to gang switches board with 3x7/0.74 mm (7/0.029") PVC insulated single core cables in appropriate size PVC conduit.	Each	4.00	4500		18,000.00
1.3	10(a-ii)/24. 3(iii)/24	The same as item No. 1.1 but from one light point to another light point.	Each	12.00	3000		36,000.00
1.4	10(a-iv)/2R. 14(ii)/24, 36(i)/24, 3(iii)/24	5 Amp 2/3 pin universal flush mounting switch socket unit away from switch board and wired with 3x7/0.91mm (7/0 036") single core cable from nearest circuit available in PVC concealed conduits or trunking including all conduit accessories as required complete in all respect.	Each	2.00	2000		4,000.00
1.5	10(a-iii)/24, 3(iii)/24	The same as item No.1.4 but wiring from one socket to another socket with 3x7/0.74 mm (7/0.029") single core cable	Each	2.00	2000		4,000.00
1.6	10(a-v)/24, 3(iii)/24, 36(ii)/24, 14(ii)/24	The same as item No. 1.4 but wiring of 15/20A, 3-pin flush mounting switch socket unit wired with 3x7/1.12mm (7/0.044") single core cable wires starting from D.B.	Each	3.00	2000		6,000.00
Sub Total B-Electrical Works							
Total Amount MRS Items (A*B)							128,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING

NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount
				in Figure	In Words	
	A) Civil Worka					
1	Providing. fixing, jointing and testing Polypropylene Random pipes or approved equivalent pressure pipe for cold & hot per DIN 8077-8078,PN-20 for pipes and DIN 16962,PN-25 for (polyfusion welded joints) inside building including fittings and (sockets, tees, elbows, bends, crosses, seducers, adaptor, union etc.) supported on walls or suspended from roof slab or chases including pipe hangers. supports. cutting and making good chases and holes, complete in all respects.					
	b)1/2" i/d (25 mm)	Per Rft.	66.00	1000		66,000.00
	c) 1" i/d (32 mm)	Per Rft.	20.00	1000		20,000.00
2	Providing, fixing, cutting, jointing and testing uPVC sewerage, Drainage & vent piping conforming to ISO 3633:1991 including Drain age fittings with solvent cement jointing include cost of to walls and ceilin g, hangers, supports, cutting through walls providing sleeves through concrete slabs for pipelines and pipe of the following diameter complete in all respect.					
	a) 110mm (4")	Per Rft.	15.00	500		7,500.00
	b) 82mm (3")	Per Rft.	40.00	800		32,000.00
3	Providing and fixing P-Trap 110 mm for uPVC pipe complete in at respects.	Each	4.00	1000		4,000.00
4	Providing and fixtn g "Y" for uPVC (SWV) pipe complete in all respects					
	a) 110mm (4")	Each	1.00	800		800.00
	b) 82mm (3")	Each	2.00	700		1,400.00
TOTAL						131,700.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING
NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure	in Words	
	Provid ng and faxing Bend for uPVC (SWV) pipe complete in all respects. a) 110mm (4")	Each	2	10000		20,000.00
5	b) 82mm (3")	Each	4	10000		40,000.00
Sub Total A- Civil Works						60,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

**BILL NO. 1.4 STAFF BUILDING
NON-MRS ITEMS**

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount {Rs.}
				In Figure	in Words	
	B) Electrical Works Supply, transportation at site, storage, installation, commissioning of the following items of work (unless otherwise) Including all material, labour, tools and required for proper completion of each item as per drawings and/or as directed by the Engineer.					
1.0	<u>POWER CABLE</u>					
1.1	Copper conductor PVC/PVC 600/1000V cables including connections at both ends with Cu/Brass glands, lugs ets accessories. The cable shall be drawn in cable trench or wall or pulled in cable tray/PVC pipes or as required or as drawings. (Imported copper shall be used. Verified evidence for source of copper & PVC shall be furnished					
a)	manufacturing) 4 core 16 mm ²	Rft.	80.00	1000		80,000.00
1.2	PVC insulated 450/750 Volt grade (Green - Yellow) copper cable laid direct in ground, pulled in PVC pipe already surface of wall or cable trays etc. sockets and ends with Cu/Brass, glands, lugs ets alongwith all accessories as required or as shown on drawings shall be used. Verified documentary evidence for source of PVC shall be furnished prior to manufacturing) as earth					
a)	conductor (ECC/CPC) 1 core 16 mm ²	Rft.	80.00	500		40,000.00
TOTAL						120,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

**BILL NO. 1.4 STAFF BUILDING
NON-MRS ITEMS**

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure	in Words	
10	<u>LIGHT FITTINGS AND FANS</u>					
2.1	Following LED Luminaries of suitable wattage make Philips, GE, Pierlite or approved equivalent suitable for the project Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements. The fitting shall be approved by the Engineer.					
(a)	Light Fixture Type LED Batten Ceiling/surface mounted, 18W complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	Each	5.00	1000		5,000.00
(b)	Light Fixture Type LED Batten Ceiling/surface mounted, 10W mirror in toilets complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent The fitting shall be approved by the Engineer.	Each	1.00	1000		1,000.00
2.2	Wall bracket Light Fixture Type LED 6W energy saving lamp with holder and complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	Each	300	1000		300,000.00
2.3	20W LED Water tight light fixture IP 65 complete in all respect with all allied accessories or approved equivalent. The fitting shall be by the Engineer.	Each	5.00	1000		5,000.00
TOTAL						311,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING
NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
2.4	Light Fixture Type LED surface mounted down lighter, 6W complete in all respect with alliad accessories make Philips. GE, Pierlite or approved equivalent The fitting shall be approved by the Engineer.	Each	2.00	2000		4,000.00
2.5	56" ceiling fan sweep (Climax, Pak. Millat) make or approved equivalent.	Each	2.00	10000		20,000.00
2.6	Wall Bracket fan 20" sweep make (Royal. Pak, GFC or approved equivalent) capacitor type, copper winding complale with all required accessories etc.	Each	2.00	5000		10,000.00
3.0	<u>uPVC PIPE</u>					
3.1	PVC pipe conduit with accessories suitable for laying single/multi-core cables					
a)	100 mm dia (Class-B)	Rft.	80.00	400		32,000.00
4.0	<u>DISTRIBUTION BOARDS</u> D.Bs with TP incoming adjustable moulded case circuit breaker and SP miniature outgoing circuit breakers, Panel box SWG 16 powder coated RAL colour 7032, IP class 44 and with all accessories alongwith all installation and operational accessories as per specification or as shown on the drawings.	Each	1.00	50000		50,000.00
TOTAL						116,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.4 STAFF BUILDING NON-MRS ITEMS

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure	in Words	
4.1	<u>D B- Staff Building</u> MATERIAL - 01 No. 25 Amps (Adj), MCCB TP, FC=25kA, Icu=100%Ics 06 No. outgoing 10A. MCB, SP, RC=10kA, Icu= 100% Ics 03 Nos.outgoing 20A, MCB, SP, RC=10kA, Icu=100%Ics 03 Nos. Space 10/20A. MCB. SP. RC=10hA, Icu=100%Ics - 02 Nos. Space for 10/20A, MCB Indication lights, push Buttons, digital ammeter with selector switch, digital voltmeter with selector switch. Panel box SWG 16 powder coated RAL colour 7052, IN' class 4 4 and with all accessories.	Each	1.00	300000		300,000.00
5.0	<u>EARTHING AND BONDING</u> 5.1 Earth point comprising of 10 ft. 5/8 ' dia. (16 mm dia) copper M.S. rods driven in ground. The earthing rods shall be completed with fixing clamps etc.	No	2.00	150000		300,000.00
Sub Total B-Electrical Works						600,000.00
Total Amount Non MRS Items (A+B)						

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.5: AREA LIGHTING WORKS OF WWTP SITE, GATES & GUARD POSTS ETC

NON MRS ITEMS

Sr. No.	Description	Unit	Quantity		Rate (Rs.)		Amount (Rs.)
			In Figure	In Worde	In Figure	In Worde	
	Supply, transportation at site, storage, installation, testing and commissioning of the following items of work (unless specifically stated otherwise) including all material, labour, tools and accessories etc, required for proper completion of each item as per specification and drawings and/or as directed by the Engineer.						
1	<u>Road / Street Lighting Poles and Foundations</u>						
	(a) 12 m high single arm conical octagonal (hot dip) galvanized steel pole with extension arm luminaire arrangement, base plate, 2Amp., (RC-10KA) circuit breaker, terminal blocks including end caps, base connection plates & end stopper etc. as shown on drawing.	Each	42.00	8000			336,000.00
	(b) Road Lighting Pole Foundation (Bitumen Coating)	Each	42.00	7000			294,000.00
	<u>LED Road Light Fixtures</u>						
2	a) Road Lighting LED Luminaries 120 Watt make Philips, GE, or approved equivalent, fully in compliance with the specified requirements suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements.	No.	42	5000			210,000.00
TOTAL							840,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

**BILL NO. 1.5: AREA LIGHTING WORKS OF WWTP SITE, GATES & GUARD POSTS ETC
NON MRS ITEMS**

Sr. No.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				In Figure	in Words	
3	Conduits / Pipes					
	PVC pipe/conduit with accessories suitable for laying multi- on road crossings.					
a)	100 mm Class-B (Pole to pole)	Rft.	30,011.00	300		9,003,300.00
b)	100 mm Class-D (Road crossing)	Rft.	500.00	500		250,000.00
4	Power Cables					
a)	4-core 25 mm ^o PVC insulated & PVC overall sheathed 600/1000 Volt grade unarmoured copper cable from main power (Imported copper shall be used. Verified documentary source of copper & PVC shall be furnished prior to manufacturing)	Rft.	600.00	1200		720,000.00
b)	4-core 50 mm* PVC insulated and PVC overall sheathed 600/1000 Volt grade unarmoured copper cable from main power (Imported copper shall be used. Verified source of copper & PVC shall be furnished prior to manufacturing)	Rft.	300.00	1600		480,000.00
c)	Single core 16 mm* PVC insulated and PVC overall 600/750 Volt grade copper cable from pole to pole as CPC. shall be used. Verified documentary evidence for source PVC shall be furnished prior to manufacturing)	Rft.	1,250.00	600		750,000.00
d)	Single core 25 mm* PVC insulated and PVC overall sheathed 600/750 Volt grade copper cable from pole to pole as CPC. shall be used. Verified documentary evidence for source of PVC shall be furnished prior to manufacturing)	Rft.	200.00	650		130,000.00
TOTAL						11,333,300.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.5: AREA LIGHTING WORKS OF WWTP SITE, GATES & GUARD POSTS ETC
NON MRS ITEMS

Sr. No	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure	in Words	
e)	3 Nos 1 core 2.5 mm (Red+Black+ Green) Cu. PVC 450/750 Volt grade copper cable including connections at ends. The cables shall be drawn from junction box to the light fitting through hollow of the pole (for street light pole). (imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to manufacturing) 40 Rft. cable is required for each pole and the unit is taken as No. 5	No.	42.00	1000		42,000.00
a)	<u>Lighting Control Panels</u> Road lighting control panel (LCP) with angle iron frame clad 16 SGW. sheet steel enclosure having high quality powder coated paint. The LCP shall be complete with incoming and outgoing MCCBs, Cu busbars, magnetic contactors, photo-electric switches, meters, indication lights, 16 SWG sheet steel construction with IP 43 protection class, door. locking arrangement etc. and all other accessories as required for quality work. LCP Description - 1 No, incoming 63Amp.(adjust.) TP, MCCB. 25 kA, Icu=100%Ics 4 Nos outgoing 16 Amp.(Adj.) TP MCCBs, 18 kA, Icu=100%Ics 2 - No. spare 16 Amp. (Adj.) TP MCCBs, 18 kA, Icu=100%Ics - 4 Nos. 26 Amp. magnetic contactor, AC-3 - 2 No. spare 26 Amp. magnetic contactor, AC-3 - 3 Nos. photo-electric switches a) 1 No, ammeters 0-40 Amp., with selector switch (04 position)	Each	1.00	50000		50,000.00
TOTAL						92,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.5: AREA LIGHTING WORKS OF WWTP SITE, GATES & GUARD POSTS ETC
NON MRS ITEMS

Sr. MO.	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs.)
				in Figure	in Words	
	b) 09 Nos. indication lights c) 1 No. voltmeter with fuse and 7 position selector switch. d) 3 Ph, N & Earth copper busbars e) Internal wiring 8 line-up terminals etc. § Ora ss cable glands/accessories g) 3 Nos. Auto-Manual-OFF (3 position switches for operation in auto (with photocell) and normal (manual mode- photocell override) h) Panel steel grid painted alongwith locking arrangement i) IP -44/54 panel shall be weather proof, dust proof with studded and shade arrangement on top.					
6	<u>Earthing Rod</u>					
a)	Earth point comprising of 10 ft. 5/8" dia. (16 mm dia) copper coated M.S. rods driven in ground near each lighting control panel and civil works as per drawings The earthing rods shall be completed with fixing clamps etc.	No.	6.00	20000		120,000.00
7	<u>TRANSFORMER</u>					
	11/0.415 kV Pole Mounted Transformer complete with all accessories as per WAPDA specifications and practice required for proper completion of each item as per specification of WAPDA/DISCO.					
a)	25 kVA	JOD	1	300000		300,000.00
Total Amount Non MRS Items						420,000.00

WSP-JHANG-10 MGD BILL OF QUANTITIES

BILL NO. 1.6: PROVISIONAL SUM

Sr. No.	Description	UnR	Quantity	Rate per Unit (PKR)	Total Amount (PKR)
1	Providing, testing, commissioning and training of wastewater sampling and testing equipment for measuring wastewater pollution parameters like temperature, pH, BOD, COD, TSS, TDS, VSS, Oil & Grease, Turbidity and Alkalinity including all relevant instruments, meters and glasswares complete in all respects as per satisfaction of the Engineer. (PS Item)	PS			1000000
Total Amount					1,000,000

WSP-JHANG-10 MGD BILL OF QUANTITIES

Bill No. 1.7: ENVIRONMENTAL MANAGEMENT PLAN (EMP) IMPLEMENTATION

Sr. NO.		Unit	Quantity	Rate per Unit (PKR)	Total Amount (PKR)
1	General Mitigation Measures		-	-	
a	Water Bowsers for Water S12rinkling	P.S	-	-	520,000
b	<u>PPEs for Contractor Staff:</u>				0
b.i	Dust masks	P.S	-	-	162,880
b.ii	Safety Shoes	P.S	-	-	256,000
b.iii	Safety Helmet	P.S	-	-	140,200
b.iv	Safety Goggles	P.S	-	-	94,500
b.v	Safety Jackets	P.S	-	-	122,850
b.vi	Gloves	P.S	-	-	905,000
b.vii	First Aid Box	P.S	-	-	7,560
b.viii	Ear Plugs	P.S	-	-	558400
2	Traffic Management				0
	Provsion of Safety Signborads, safely cones, warning tapes etc	P.S	-	-	189,000
3	Health and Safety Plan Implementation				0
a	Medical screening for workers	P.S	-	-	264,600
b	Material Storage, handling and use	P.S	-	-	80,640
c	Handling/ transportation of hazardous material	P.S	-	-	604800
d	Handling of solid waste	P.S	-	-	604,800
e	Special measures for Covid Management	P.S	-	-	504,000
f	Fire extinguishers in case of fire i) DCP fire extinguisher	P.S	-	-	33,264
	ii)C02 fire extinguisher	P.S	-	-	75,600
	iii) Fire alarm	P.S	-	-	25,200
4	Environmental Monitoring Personnel	P.S	-	-	786240
5	Environmental Laboratory Monitoring Costs	P.S	-	-	1,086,560
6	Capacity Development & Trainlmg Programme	P.S	-	-	630,000
Total Amount					7,652,094

WSP-JHANG-10 MGD BILL OF QUANTITIES

Bill No. 18: AFTER INTRODUCTION OF FLOATING PLANTS IN FPS

Sr. NO.		Unit	Quantity	Rate per Unit (PKR)	Total Amount (PKR)	
a	Total area of Ponds is 2457324 sft	sqft	-	-	25,580,493	
b	After Introduction of Floating Plants using only 1% of the area is 24573 sft		24,573	1041		
c	Operation & Maintenance					500,000
Total Amount					26,080,493	

**DETAILED QUANTITY SEWER
FOR THE SCHEME**

Drain

Part-A

S.No.	Detail of Item/Work	Measurements			Quantity
		L	B	H	
1	2	3	4	5	6
1	Borrowpit excavation undressed lead upto 100 ft (30 metre).	10,549.00			10,549.00
2	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)				
3	Earthwork 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 AASHTO dry	10,549.00	15.75	5.70	1,136,443.77
4	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	10,549.00	(20+11.5)/2	5.70	947036.475
5	Cement plaster 1:6 upto 20' (6.00 mm) height:- ½" (13 mm) thick	10,549.00			
6	Cement concrete plain including placing compacting, finishing and curing complete (including screening and washing of stone aggregate): Ratio 1: 2: 4	10,549.00	11.89	0.42	52,679.60
		21,098.00	1.00	0.42	8,861.16
7	Construction of Culvert				61,540.76
	Main Road Culvert	1	65.00		65.00
	Lateral Road	1	60.00		60.00

**DETAILED QUANTITY SEWER
FOR THE SCHEME
Drain**

S #	Ref. CSR	Description	Unit	Quantity	Rate	Amount
1	C-3/4a	Borrowpit excavation undressed lead upto 100 ft (30 metre).	1000 Cft	10,549.00	7,761.60	81,877.12
2	C-3/17b	Transportation of earth all types when the total distance including the lead covered in the item of work, is more 1000 ft. (300 m)	1000 Cft.	1,136,443.77	36.85	41,877.95
3	C-3/5	Earthwork 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 AASHTO dry	1000 Cft	947,036.48	9,963.35	9,435,655.86
4	C-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	1000 Cft	49,052.85	9,852.50	483,293.20
5	C-11/12b	Cement plaster 1:6 upto 20' (6.00 mm) height:- ½" (13 mm) thick	100 Cft.	125,427.61	3,234.25	4,056,642.48
6	C-6/5f	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio 1: 2: 4	100 Cft	61,540.76	38,723.50	23,830,734.73
7		Construction of Culvert Main Road Culvert Lateral Road	P Rft P Rft	65.00 60.00	49550.00 28,310.00	3,220,750.00 1,698,600.00
					Rs.	42,849,431.34
Say:-					Rs.	42.85
						Million

HYDRAULIC STATEMENT TRUNK SEWER JHANG

Zone	NODE	Length of Line (in ft)	Area (acre)			Population (No's) @ 85 person/acre	Consumption in gallon @ 40 GPCD	Avg. Sew. Flow (in cusec)	Peak Factor	Peak Flow (in cusec)	Infiltration @ 5% of average flow (in cusec)	Storm Allow 50% of peak flow (in cusec)	Design Flow (in cusec)	Proposed Dia (inches)	Velocity ft/sec	Capacity of proposed dia (inch)	Grade of Sewer ft/ft	Road Levels		Invert Elevation		Elev difference	
			online	Previous	TOTAL													u/s MH	d/s MH	u/s MH	d/s MH	u/s MH	d/s MH
																		ft	ft	ft	ft	ft	ft
Zone 1	A-B	4,264	558.57		558.57	47,478	1,899,138.00	2.99	3.16	9.47	0.14971	4.73	14.35	36.00	2.50	17.66	0.00070	515.12	510.23	497.83	494.85	17.29	15.38
	B1-B	6,568	163.38		163.38	13,887	555,492.00	0.88	3.88	3.40	0.04379	1.70	5.14	21.00	2.50	6.01	0.00140	511.92	510.23	504.92	495.72	7.00	14.51
	B-C	1,481	16.17	722	738.12	62,740	2,509,608.00	3.96	3.02	11.94	0.19783	5.97	18.11	36.00	2.60	18.37	0.00076	510.23	509.60	494.47	493.36	15.76	16.24
	C1-C	1,481	197.23	10	207.46	17,634	705,364.00	1.11	3.73	4.14	0.05560	2.07	6.27	24.00	2.50	7.85	0.00120	510.31	509.60	496.55	494.77	13.76	14.83
	C-D	9,385	387.00	946	1332.58	113,269	4,530,772.00	7.14	2.74	19.55	0.35716	9.77	29.68	48.00	2.65	31.40	0.00048	509.60	506.53	492.36	487.85	17.24	18.68
	D6-D4	4,877	411.00		411.00	34,935	1,397,400.00	2.20	3.33	7.33	0.11016	3.66	11.10	30.00	2.50	12.27	0.00089	506.64	506.96	498.64	494.30	8.00	12.66
	D5-D4	3,596	177.00		177.00	15,045	601,800.00	0.95	3.83	3.63	0.04744	1.81	5.49	21.00	2.50	6.01	0.00143	506.97	506.96	499.97	494.83	7.00	12.13
	D4-D2	3,653	89.60	588	677.60	57,596	2,303,840.00	3.63	3.06	11.12	0.18161	5.56	16.86	36.00	2.50	17.66	0.00070	506.96	505.12	493.58	491.02	13.38	14.10
	D3-D2	3,920	187.00		187.00	15,895	635,800.00	1.00	3.79	3.80	0.05012	1.90	5.75	21.00	2.50	6.01	0.0014	507.38	505.12	500.38	494.77	7.00	10.35
	D2-D1	3,653	198.50	865	1063.10	90,364	3,614,540.00	5.70	2.84	16.19	0.28493	8.09	24.57	42.00	2.65	25.48	0.00064	505.12	509.20	490.52	488.19	14.60	21.01
	D1-D	2,906	374.65	1,063	1437.75	122,209	4,888,350.00	7.71	2.70	20.82	0.38535	10.41	31.62	48.00	2.65	33.28	0.00053	509.20	506.53	487.69	486.13	21.51	20.40
	D-Disposal	1,933	71.98	2,770	2842.31	241,596	9,663,854.00	15.24	2.41	36.76	0.76180	18.38	55.91	60.00	3.00	58.88	0.00024	506.53	504.52	485.13	484.67	21.40	19.85

The Municipal Officer (I&S)

Municipal Committee

Jhang

For Sewage Disposal Station at Khokhara Chowk, Jhang

Quotation

NON CLOGGING CENTRIFUGAL PUMP

Your Reference No.	Telecom
Date	17-02-23
Item Number	

Our Reference No.	LEA- 15989		
Quantity	01	Date	12-02-21

We thank you for your above enquiry/order and are pleased to submit our offer/order confirmation subject to our general conditions for Sales and Supply of equipment contained in form 07 FT-04 attached.

TECHNICAL PART

Pump Data

Pump Type	Sewatec	250-401
Liquid handled	Sewage	
Flow rate		6 Cusec
Pump total head		50 Ft
Speed	960	rpm
Specific Gravity	1.05	
Viscosity / PH Value		
Pump Input	45.80	BHP
Motor/ Engine Rating	60	HP
NPSH Required		
Impeller diameter / Type		
Suction Flange I.D.	10	inch
Delivery Flange I.D.	10	inch
Flange Standard		BS Table 10 D
Shaft Seal	--	
Coupling Type	3 BN	

COMMERCIAL PART

Price Basis

Ex.	Ex-Customer Site
Delivery Time	12-14 weeks after confirm order
Validity	30 Days
Terms of Payment	100% Advance

Scope of Supply

Item Description	Scope	Qty	Total Value Rs.
Sewatec-250-401	y	1	Included
F.I.P	y	1	Included
Fabricated Frame	y	1	Included
Coupling	y	1	Included
Motor Rating 60. HP	y	1	Included
Starter Type MCU -60HP	y	1	Included
Mechanical Installation Within Pump House Without Civil work	y	1	Included

Driver

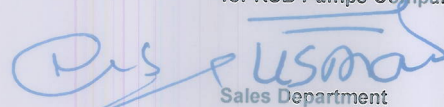
Make/Type	Siemens/ABB	Rated Speed	960
Protection	IP-55	Rated Output	Motor Rating 60. HP
Insulation Class	F	Voltage	400 + 5%
Ambient Temp.	40 °C	Phase	3
Enclosure		Cycle/Sec	50

Total Price per Set including 18% GST	Rs.	7,450,000
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Material GG-25

Part	Material	Part	Material
Pump Casing	Cast Iron	Shaft	C. Steel
Impeller	Stainless Steel	Suction Cover	Cast Iron
Discharge Cover	Cast Iron	Seal Ring	Cast Iron
S.P Sleeve	Cast Iron	F.I. Piece	Cast Iron
S.B Gland	Cast Iron	Throat bush	Cast Iron
Mechanical Seal		Type	

for KSB Pumps Company Limited


Sales Department

Disclaimer: Working out the prices of above mentioned engineered products should be acknowledged as KSB's prerogative. This quotation will have no bearing on previously quoted prices anywhere or on prices to be quoted in future to any prospective client. After expiry of quotation's validity, KSB reserves the right to change prices as a result of market forces / manufacturing variable. Procuring agency is requested to comply with all PPRA Rules as it is its responsibility.

KSB PUMPS COMPANY LIMITED

Registered Office: 16/2 Sir Aga Khan Road, Lahore, Pakistan · UAN: +92-42-111-572-786 · Tel: +92-42-36304173-4
Fax: +92-42-36366192, 36368878, 36375180 · Email: info@ksb.com.pk · www.ksb.com.pk

Works: Hazara Road, Hassanabdal, Pakistan Tel: +92-57-2520236 Fax: +92-57-2520237 E-mail: admin.hasanabdal@ksb.com.pk

The Municipal Officer (I&S)
Municipal Committee
Jhang

Quotation

NON CLOGGING CENTRIFUGAL PUMP

Your Reference No.	Telecom
Date	17-02-23
Item Number	

Quotation /Order Confirmation No.		LEA- 15989-A	
Quantity	01	Date	17-02-23

We thank you for your above enquiry/order and are pleased to submit our offer/order confirmation subject to our general conditions for Sales and Supply of equipment contained in form 07 FT-04 attached.

TECHNICAL PART

Pump Data		
Pump Type	KWPK	200-400
Liquid handled	Sewage	
Flow rate		3.00 CUSEC
Pump total head		50 Ft
Speed	960	rpm
Specific Gravity	1.05	
Viscosity / PH Value		
Pump Input	24.90	BHP
Motor/ Engine Rating	30	HP
NPSH Required		
Impeller diameter / Type		
Suction Flange I.D.	8	inch
Delivery Flange I.D.	8	inch
Flange Standard		BS Table 10 D
Shaft Seal		
Coupling Type	2BN	

Driver

Make/Type	Siemens / ABB / KSB	Rated Speed	960
Protection	IP-55	Rated Output	Motor Rating 30. HP
Insulation Class	F	Voltage	400 ± 5%
Ambient Temp.	40 °C	Phase	3
Enclosure		Cycle/Sec	50

Material GG-25

Part	Material	Part	Material
Pump Casing	Cast Iron	Shaft	C. Steel
Impeller	Stainless Steel	Suction Cover	Cast Iron
Discharge Cover	Cast Iron	Seal Ring	Cast Iron
S.P Sleeve	Cast Iron	F.I. Piece	Cast Iron
S.B Gland	Cast Iron	Throat bush	Cast Iron
Mechanical Seal		Type	

Disclaimer: Working out the prices of above mentioned engineered products should be acknowledged as KSB's prerogative. This quotation will have no bearing on previously quoted prices anywhere or on prices to be quoted in future to any prospective client. After expiry of quotation 's validity ,KSB reserves the right to change prices as as a result of market forces /manufacturing variable
Procuring agency is requested to comply with all PPRA Rules as it is its responsibility

COMMERCIAL PART

Price Basis


Ex.	Ex-Customer Site
Delivery Time	10-12 weeks after confirm order
Validity	30 Days
Terms of Payment	100% Advance

Scope of Supply

Item Description	Scope	Qty	Total Value Rs.
KWP-200-400	y	1	Included
F.I.P	y	1	Included
Fabricated Frame	y	1	Included
Coupling	y	1	Included
Motor Rating 30. HP	y	1	Included
Cast Iron Sluice Valve & Reflux Valve 8"	y	1+1	Included
Starter Type MCU -30HP	y	1	Included
Mechanical Installation	y	1	Included

Total budgetary Price per Set including 17% GST	Rs.	6,095,000
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for KSB Pumps Company Limited



USMAN
Sales Department

KSB PUMPS COMPANY LIMITED

Registered Office: 16/2 Sir Aga Khan Road, Lahore, Pakistan · UAN: +92-42-111-572-786 · Tel: +92-42-36304173-4
Fax: +92-42-36366192, 36368878, 36375180 · Email: info@ksb.com.pk · www.ksb.com.pk

Works: Hazara Road, Hassanabdal, Pakistan Tel: +92-57-2520236 Fax: +92-57-2520237 E-mail: admin.hasanabdal@ksb.com.pk

The Municipal Officer (I&S)
Municipal Committee
Jhang

Quotation

NON CLOGGING CENTRIFUGAL PUMP

Your Reference No.	Telecom
Date	16-02-23
Item Number	

Quotation /Order Confirmation No.		LEA- 15681-RR1	
Quantity	01	Date	16-02-23

We thank you for your above enquiry/order and are pleased to submit our offer/order confirmation subject to our general conditions for Sales and Supply of equipment contained in form 07 FT-04 attached.

TECHNICAL PART

Pump Data

Pump Type	KWPK	200-400
Liquid handled	Sewage	
Flow rate	5.00 CU/SEC	
Pump total head	40 Ft	
Speed	960	rpm
Specific Gravity	1.05	
Viscosity / PH Value		
Pump Input	29.80	BHP
Motor/ Engine Rating	50	HP
NPSH Required		
Impeller diameter / Type		
Suction Flange I.D.	8	inch
Delivery Flange I.D.	8	inch
Flange Standard	BS Table 10 D	
Shaft Seal	---	
Coupling Type	3BN	

Driver

Make/Type	Siemens / ABB /KSB	Rated Speed	960
Protection	IP-55	Rated Output	Motor Rating 50. HP
Insulation Class	F	Voltage	400 + 5%
Ambient Temp.	40 °C	Phase	3
Enclosure		Cycle/Sec	50

Material GG-25

Part	Material	Part	Material
Pump Casing	Cast Iron	Shaft	C. Steel
Impeller	Stainless Steel	Suction Cover	Cast Iron
Discharge Cover	Cast Iron	Seal Ring	Cast Iron
S.P Sleeve	Cast Iron	F.I. Piece	Cast Iron
S.B Gland	Cast Iron	Throat bush	Cast Iron
Mechanical Seal		Type	

Disclaimer: Working out the prices of above mentioned engineered products should be acknowledged as KSB's prerogative. This quotation will have no bearing on previously quoted prices anywhere or on prices to be quoted in future to any prospective client. After expiry of quotation's validity, KSB reserves the right to change prices as a result of market forces /manufacturing variable. Procuring agency is requested to comply with all PPRA Rules as it is its responsibility.

COMMERCIAL PART

Price Basis

Ex.	Ex-Customer Site
Delivery Time	10-12 weeks after confirm order
Validity	30 Days
Terms of Payment	100% Advance

Scope of Supply

Item Description	Scope	Qty	Total Value Rs.
KWP-200-400	y	1	Included
F.I.P	y	1	Included
Fabricated Frame	y	1	Included
Coupling	y	1	Included
Motor Rating 50. HP	y	1	Included
Cast Iron Sluice Valve & Reflux Valve 8"	y	1+1	Included
Starter Type MCU -50HP	y	1	Included
Mechanical Installation	y	1	Included

Total budgetary Price per Set including 17% GST	Rs.	6,695,000
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for KSB Pumps Company Limited



Sales Department

Annexure -E

Operation and Maintenance Cost

1 Cost of Man Power (A)

Sr. No.	Personnel	No. of Persons	Salary Per	Total Per
			Month(RS)	Annum (Rs.)
1	Disposal Station Operator	4	25,000	1,200,000
2	SewerMan	10	15,000	1,800,000
3	Security Guard	2	20,000	480,000
4	Electrician	1	25,000	300,000
5	Plumber	1	25,000	300,000
6	Annual Maintenance Cost/Spare Parts		3% of Pump cost	3,286,695.42
Sub-Total			Rs.	7,366,695.42
			Rs. Million	7.37

2 Cost of Generators O&M (B)

Annual Generator Cost						
Sr. No	Generator Power (KVA)	Consumption (liter per Hour)	Avg Working Hour daily	Avg. Daily Consumption (litre)	Fuel cost per litre	Annual Cost
1	650	97	4	388.00	235	1,094,160
Generator cost (Rs. In Millions)						1.09

3 Other costs (C)

No of Pumps	Q (cusecs)	H (ft)	HP	KW	Working Hr	Kw-hr	unit rate (Rs/Kw-hr)	Daily Cost (Rs)	Annual Cost (Millions Rs.)
Pumps installed at Disposal Stations									
4	5	75	68.55	51.1	8	409.10	35	57,274	20,904,845
2	10	75	137.10	102.3	8	818.19	35	57,274	20,904,845
Electricity cost (Rs. In Millions)									41.81

Total O & M Cost (A+B+C)		
Sr. No	Item	Cost (Rs. Millions)
1	Cost of Man Power (A)	7.37
2	Cost of Generators O&M (B)	1.09
3	Other costs (C)	41.81
Total		50.27

Annexure -F

CHECKLIST

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		✓	No legally protected area lies within 100 meters jurisdiction of sub-project.
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub-project		✓	No surface water body (river, canal, stream, lake, wetland) exists within 200 meters of the proposed sub-project
Estuarine		✓	Not observed in sub-project area
Special area for protecting biodiversity		✓	No Wild life park or other biodiversity areas observed during site E & S investigations
Buffer zone of protected area		✓	No buffer zone for fauna and flora exists surrounding the sub-project area
Mangroves Forest		✓	No mangrove forest in the sub-project area.
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Sub-project area is predominantly sand dunes area located outside the Jhang city. Sub-project is located in an open land and it is not in use for entitled agriculture. Anyhow, in patches crops grown by the non-entitled farmers (confirmed after consultation with farmers and revenue department) were observed for which ARAP will be developed and crop compensation will be provided as per WB policies
Socially sensitive /important areas/communities/ people?			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed sub-project		✓	No PCR observed in this area's 100 meters vicinity where sub-project interventions are proposed so have no direct/indirect significant environmental & social impacts
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project		✓	No sensitive receptor observed in the 100 meters of the sub-project interventions so have no direct/indirect significant environmental & social impacts on sensitive receptors during construction phase.
Any graveyard of local community (Muslims or Christians)		✓	Not observed in sub-project area

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 ³ of the society and women or children)?			No Negative impact are envisaged on vulnerable groups
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	Existing infrastructure or public amenities are not required to be dismantled or may be temporarily affected by any mean as this area is away from the urban population
B. Potential Environmental Impacts Will the sub-project cause...			
Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	No habitats, biodiversity and protected area are observed in the area which may be disturbed
Cutting of trees?	✓		Cutting of trees involved during construction phase. Dry grasses and Shesham, Keeker species exist at the end of area in patches) Number of trees are 13 Tree Management Plan will be prepared and made part of EIA ⁴
Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No disturbance to habitats/biodiversity of environmentally sensitive or protected areas is envisaged as no such area is found at the proposed project site.
Generation of wastewater during construction or operation?	✓		During construction, wastewater will be generated from contractor's camp etc., The generated wastewater will require proper disposal and mitigation measures will be provided in the ESMMP of EIA During operational phase, significant adverse impacts on environment and surrounding settlements of the sub-project area will occur i.e. odor and breeding site for the mosquitos. Accordingly, mitigation measures will be proposed in the ESMMP of the EIA. The municipal wastewater will be drained into the Wastewater Treatment Plant (WTP) through a sewerage conveyance system. The treated wastewater will essentially comply the the PEQSS.

³ Due to caste, creed, religion or gender e.g. transgender

⁴ Provision of 100m buffer zone in the form of raised walls and plantation is proposed

			WTP will be exclusively designed for the municipal wastewater and wastewater from all the localities will be discharged into the WTP. There will be no chance of mixing industrial wastewater and storm water with the municipal wastewater before treatment.
Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?	✓		Wastewater will be generated during construction phase by contractor camp and construction activities. Wastewater from contractor camp will require proper treatment and management before disposal to the sewerage system or natural drain. At operational phase, due to leakage and clogging of the sewerage system, and overflow at WTP may result in seepage and pondage. This might result contamination of groundwater. Mitigation measures will be provided in the ESMMP of EIA and these will be made part of the sewerage system and WTP designs. For example, provision of appropriate material sheet beneath the ponds will be placed to mitigate seepage of wastewater to the groundwater. Wastewater after treatment and PEQS compliance will be released into the nearby man made or natural water body.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impact foreseen, as the sub-project is located away from the surface water bodies. No other significant adverse impacts on alteration of surface water hydrology of waterways and increase in sediment of streams/rivers during construction phase.
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.	✓		Un-skilled local labor will be preferred to be hired from the nearby human settlements. For construction of labor camp, PMDFC SOPs will be followed and mitigation measures will be provided in the ESSMP of EIA Report Chemical storage facilities will be regularly monitor.
Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping/pumping involved in the scope of proposed project activities. However, for labor camp management, provisions for water availability will be made in the ESMMP of EIA
Serious contamination of soil due to construction works?		✓	Construction materials will be stored properly. Mitigation will be provided in the ESMMP of EIA.
Aggravation of solid waste problems in the area?		✓	No aggravation of solid waste problems in the area is anticipated.

			The waste construction material will be collected and disposed at designated place on daily basis. For solid waste of labor camp, mitigation measures shall be provided in the ESMMP of EIA Report
Generation of hazardous waste?	✓		Hazardous waste generated during construction activities in terms of oils, rubber lining, sealants will be managed with precautions and mitigation measures will be provided in the ESMMP of EIA. An Environmental Quality Testing laboratory will be managed by the MC Jhang at site to ensure effective monitoring of treated wastewater to ensure that treated wastewater is in compliance with the PEQs and WHO Guidelines to be reused for the agricultural activities.
Increased air pollution due to sub-project construction and operation?	✓		The sub-project construction and operational phases will result in air pollution. Air pollution control measures during construction and operational phases will be included in the design of the sub-project and these will be described in detail in EIA and ESMMP.
Noise and vibration due to sub-project construction or operation?	✓		Noise and vibration will be generated during construction and operational phases. Mitigations will be included in the design of the sub-project. EIA and ESMMP will cover noise and vibration aspects, impacts and mitigations in detail.
Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?	✓		In the proposed wastewater treatment technology, waste stabilization ponds will be used and further bio-remediation (floating wetlands) will be introduced in which minimal chances of mosquito breeding are anticipated. During construction and operational phases breeding habitats of mosquitoes and rodent might be created. Accordingly, mitigations will be developed and made part of the design, EIA and ESMMP.
Use of chemicals during construction?	✓		Multiple chemicals will be used during construction and operational phases. Chemical management system for the safe use of chemicals will be made part of the EIA and ESMMP.
C: Potential Social Impacts Will the Sub-Project cause...			
Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to		✓	No impairment/damage to any PCR envisioned as per scope of construction activities. However, during construction of sewerage system and WTP chance find may happen.

Physical Cultural Resources (PCRs)?			Chance Find Procedure will be applied during the project construction phase.
Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)	✓		No Displacement or involuntary resettlement of people or economic displacement expected due to the sub- project intervention. Anyhow, at current there are some crops (Wheat & fodder crops) at some patches of the land for which ARAP will be developed to pay the crop compensation as per the World Bank policy.
Disproportionate impacts on the poor, women and children and or other vulnerable groups 5(mentioned above)?		✓	There will be no impact on the poor women, children and or other vulnerable groups.
Temporary impediments in movements of people/transport and animals?	✓		There would be hindrance in the mobility of people during construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic and providing a temporary access route. The Contractor in this context will ensure good housekeeping.
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)?		✓	Not to be envisaged during construction phase. Local unskilled labor will be preferred by the Contractor.
Social conflicts if workers from other areas are hired.	✓		Contractor will hire local workers for unskilled construction activities Training/awareness raising sessions will be conducted for labor to avoid social conflicts
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Contractor will follow EHS SOPs which will be made part of bid documents to avoid physical hazards and risks related to OHS
Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		There would be some safety issues during material transportation, during construction phase. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors

⁵ Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line.

Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues during construction and operational phases due to storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors and MC during WTP operations
Any impact on sensitive receptors (mentioned above)		✓	No impact on sensitive receptors is observed as explained above.
Any impact of negative nature on already existing infrastructure including public amenities	✓		No public infrastructure was found at site proposed for construction of WWTP so no such impact is envisaged. Anyhow, at current there are some crops (Wheat & fodder-crops) at the some patches of the land for which ARAP will be developed to pay the crop compensation as per the World Bank policy.

Prepared By:	Endorsed By:	Reviewed By:
Name: Muhammad Imran	Name: Faraz Ahwaz	Name: Muhammad Asif Gillani
Designation: Environment Specialist	Designation: Municipal Officer Planning (MOI)	Designation: Deputy Program Officer ESM
Organization: MM Pakistan	Organization: MC Jhang	Organization: PMDFC
Signature:	Signature	Signature:
Date: 23-02-2023	Date: 23-02-2023	Date: 23-02-2023

Pictures of Field Visit



WWTP Proposed Site at Toba Bypass road Near Jhok Abbas Shreef



Public Consultation with Squatters at Basti Sheran Wali 0.5km away from site purposed for WWTP





Public Consultation at Basti nabood for WWTP

**INVOLUNTARY RESETTLEMENT SCREENING
CHECKLIST**

Name of City/MC/LG: Jhang

Sub-Project Sector: Sewerage

Sub-Project Title: Construction of Waste Water Treatment Plant at Toba Bypass Road ,Jhang (WWTP1)

Sub- Project Categorization: E-1 & S-2

Date of Screening: 23-02-2023

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No		✓		No, this project required no Land Acquisition as proposed site for construction of WWTP is State owned land which will be transferred to the MC Jhang -procedure is already initiated by the DC Jhang.
If yes, then describe the type of land being acquired from the categories below:		✓		No, this project required no Land Acquisition.
Has any AED been conducted at the proposed location by the government ¹ ? Yes/No		✓		Not observed in subproject area and also confirmed by MC Staff and during public consultation with the nearby communities.
Land (Quantify and describe types of land being acquired in "remarks column".		✓		97 Acres of land is required for WWTP and land is already owned by Government.
Government and LG owned land free of occupation (agriculture or settlement)	✓			It is Government owned land Which is free of any occupation.
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)	✓			Government owned land present for sub-project intervention and free of occupation (agriculture or settlement) at present.
Private land		✓		
Residential		✓		
Commercial		✓		
Agricultural		✓		
Communal		✓		
Others (specify in "remarks").		✓		

Name of owner/owners and type of ownership document if available.	✓			Land is owned by Government.
If land is being acquired, describe any structures constructed on it		✓		
Land-based assets:		✓		No land-based assets present on this land other than trees.
Residential structures		✓		
Commercial structures (specify in "remarks")		✓		
Community structures (specify in "remarks")		✓		
Agriculture structures (specify in "remarks")		✓		
Public utilities (specify in "remarks")		✓		
Others (specify in "remarks")		✓		
If agricultural land is being acquired, specify the following:		✓		
Agriculture related impacts		✓		
Crops and vegetables (specify types and cropping area in "remarks").		✓		
Trees (specify number and types in "remarks").	✓			20 mature & younger trees. Trees and types are sheesham and Keekar)
Others (specify in "remarks").		✓		
Affected Persons (APs)		✓		No APs
Will any people be displaced from the land when acquired? Yes/No		✓		No displacement will occur
Number of APs		✓		
Males		✓		
Females		✓		
Titled landowners		✓		Land is owned by Government
Tenants and sharecroppers		✓		
Leaseholders		✓		
Agriculture wage laborers		✓		
Encroachers and squatters (specify in remarks column)		✓		Not observed when first E&S Survey was conducted on 23-02-2023.
Vulnerable APs (e.g., women headed households, minors and aged, orphans, disabled)		✓		Not observed when first E&S Survey was conducted on 23-02-2023

persons, and those below the poverty line). Specify the number and vulnerability in "remarks".				
Others (specify in "remarks")		✓		

Prepared By:

Name: Ihsan UI Haq Farooqi

Designation: Social Safeguards Specialist

Organization: MM Pakistan

Signature:

Date: 23-02-2023

Endorsed By:

Name: Muhammad Aslam

Designation: Municipal Officer Planning (MOP)

Organization: MC Jhang

Signature

Date: 23-02-2023

Reviewed By:

Name: Muhammad Asif Gillani

Designation: Deputy Program Officer ESM

Organization: PMDFC

Signature:

Date: 23-02-2023

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)⁶ 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 document⁷ 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:	Ahwaz Faraz MOI (I&S) Muhammad Aslam- MOP						
Name of MC:	Jhang						
Sub-Project Sector:	Sewerage						
Sub-Project Title:	Construction of New Disposal Station Near Chah Pindian Wala, Jhang						
Sub- Project Categorization:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">E-1✓</td> <td style="width: 50%;">S-1</td> </tr> <tr> <td>E-2</td> <td>S-2✓</td> </tr> <tr> <td>E-3</td> <td>S-3</td> </tr> </table>	E-1✓	S-1	E-2	S-2✓	E-3	S-3
E-1✓	S-1						
E-2	S-2✓						
E-3	S-3						
Date of Screening:	23-02-2023						
Anticipated Project Activities	<ul style="list-style-type: none"> ➤ Construction of Civil works for the new disposal station. ➤ Construction of collection chamber. ➤ Installation of inflow and outflow pipes. ➤ Construction of embanked facultative sewage disposal ponds. ➤ Transport and installation of pumping machinery. 						
Estimated Cost of Subprojects	2557.84 Million						
Completion Time/Duration	24 Months						
Est. Cost of ESMMP of ESIA	PKR08 million						
Estimated Labor for Subproject	15-20						

⁶ 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.

⁷ It is meant as PC-I and/or engineering estimates of sub-project

CHECKLIST

Screening Questions	Yes	No	Remarks
A. Project Siting			
Is the Sub-Project area adjacent to or within any of the following?			
Environmentally sensitive areas?		✓	No legally protected area lies within 100 meters jurisdiction of sub-project.
Legally protected Area		✓	No surface water body (river, canal, stream, lake, wetland) exists within 200 meters of the proposed sub-project
Any surface water body (river, canal, stream, lake, wetland) within 250 meters of the proposed sub project		✓	Not observed in sub-project area
Estuarine		✓	No Wild life park or other biodiversity areas observed during site E & S investigations
Special area for protecting biodiversity		✓	No buffer zone for fauna and flora exists surrounding the sub-project area
Buffer zone of protected area		✓	No mangrove forest in the sub-project area.
Mangroves Forest		✓	Not observed
Man-made forest /game reserve, orchid /crops or any other area of environmental importance		✓	Not observed
cially sensitive /important areas/communities/ people?			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject	✓		1 Mosque and 01 Shrine observed within 200-meter area of the sub-project There would be hindrance in the mobility of people during construction phase. However, this will be a temporary impact and would be managed by mitigation measure provided in the ESMMP of EIA. No other significant adverse impacts on sensitive receptors are foreseen. Peer Rehmat Shah 's Shrine and 21/22 nd Jan, their festival is celebrated by the local community and contractor will be communicated to avoid construction working that period of time.
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		One Muslim graveyard and a shrine is observed in the vicinity

Any graveyard of local community (Muslims or Christians)	✓		01 Muslim graveyard observed within 200 meter of sub-project area. However, MC Jhang with ensure that no sewerage lines will be constructed within 100 m range of the graveyard
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 ⁸ of the society and women or children)?	✓		Local community of Chah Pindianwala was consulted and according to their socio economic profile, they are living below the poverty line. Social Development Plan for the betterment of their conditions will be developed
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No public amenities are required to be dismantled. Current site of proposed disposal station was being used by the Shakar Ganj Sugar Mill to dispose off their industrial effluent. Public consultation with the Sugar Mill was conducted and findings will be provided in the EIA Report
B. Potential Environmental Impacts Will the sub-project cause...			
Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	No such impact is envisaged
Cutting of trees?		✓	Tree cutting will not be involved
Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No such impact is anticipated
Generation of wastewater during construction or operation?	✓		Wastewater generation during construction will be limited. Anyhow, mitigation measures will be provided in the ESMMP of EIA Report During operational phase, it's a collection point for sewerage water and then wastewater will be disposed to WWTP for treatment.
Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?	✓		Spillage and seepage during construction and operational phases may occur. Mitigations measures will be incorporated in the operation phase and described in detail in EIA and ESMMP.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impact foreseen, as construction activities are minor and within the boundary.

⁸ Due to caste, creed, religion or gender e.g. transgender

Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.	✓		Un-skilled local labor will be preferred to be hired from the nearby human settlements. For construction of labor camp, PMDFC SOPs will be followed and mitigation measures will be provided in the ESSMP of EIA Report Chemical storage facilities will be regularly monitor.
Over pumping of ground water, leading to salinization and ground subsidence?	✓		No over pumping/pumping involved in the scope of proposed project activities. However, for labor camp management, provisions for water availability will be made in the ESMMP of EIA
Serious contamination of soil due to construction works.		✓	Land is already a disposal site for sugar mill effluent so legacy of soil contamination will be investigated at the design stage before construction of disposal station structure and design parameters will take to avoid any contamination. Construction materials should be stored properly, no leakage or leachate is expected.
Aggravation of solid waste problems in the area?	✓		No aggravation of solid waste problems in the area is anticipated. The waste construction material will be collected and disposed at designated place on daily basis. For solid waste of labor camp, mitigation measures shall be provided in the ESMMP od EIA Report
Generation of hazardous waste?	✓		Hazardous waste material is expected to be generated during construction phase and mitigation measures to hazardous waste handling will be provided in the ESMMP of EIA
Increased air pollution due to sub-project construction and operation?	✓		The subproject interventions are on small scale and construction activities are within the boundary that will not significantly increase air pollution. During operational phase, smell problem may increase for which budder zone of 100m is proposed in which tree plantation will be ensured to absorb the odor However, mitigation plan for construction and operational phases will be developed and made part of ESMMP of EIA
Noise and vibration due to sub-project construction or operation?	✓		Noise and vibration will be generated during excavation and pipe laying activities but the level is expected to be low. However, the noise will be monitored on

			regularly during construction by the contractor
Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?	✓		During construction and operational phases due to mismanagement accidental pondage may result in the creation of temporary breeding habitats for diseases. Mitigation measures will be included in the design, EIA and ESMMP.
✓ 15. Use of chemicals during construction?	✓		Chemicals will be used during construction such as rubber lining and sealants. Better chemical use and storage practices will be used during construction phase mitigation measures will be provided in the ESMMP of EIA
C: Potential Social Impacts Will the sub-project cause...			
Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	No such impact is anticipated
Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	No such impact envisaged
Disproportionate impacts on the poor, women and children and or other vulnerable groups ⁹ (mentioned above)?	✓		Due to the breeding of mosquitoes in the storage pond there is a possibility that the prevalence of related disease burden might increase among women and children in the vicinity of the sub-project. Accordingly, mitigations will be proposed in the design, EIA and ESMMP.
Temporary impediments in movements of people/transport and animals?	✓		Mitigation measures will be provided in the ESMMP of EIA
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).		✓	No such impact is envisaged

⁹ Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

Social conflicts if workers from other areas are hired.		✓	Contractor will hire local worker for construction activities Anyhow, labor management plan will be developed and made part of EIA ESMMP
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation.	✓		There would be safety issues during the construction and operational phases of the sub-project. For example, collection of hazardous gasses in the wastewater storage chambers and these might become fatal during cleaning of chambers. ESH SOPs have been included in the PC-1, these need to be followed by contractor and operator of the sub-project.
Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		There would be some safety issues during martial transportation, road compaction during construction phase. The ESH SOPs have been included in the PC-I that have to be followed by the contractors.
Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues during the construction phase due to the storage of fuel and other chemicals and transport. The ESH SOPs will be included in the bid documents to be followed by the contractors
Any impact on sensitive receptors (mentioned above)	✓		For graveyard, it is proposed to layout the sewerage line at-least 100m away from the boundary while a shrine is observed and it will be considered to avoid construction activities during their religious Urs

Prepared By:	Endorsed By:	Reviewed By:
Name: Muhammad Imran	Name: Faraz Ahwaz	Name: Muhammad Asif Gillani
Designation: Environment Specialist	Designation: Municipal Officer Planning (MOI)	Designation: Deputy Program Officer ESM
Organization: MM Pakistan	Organization: MC Jhang	Organization: PMDFC
Signature:	Signature	Signature:
Date: 23-02-2023	Date: 23-02-2023	Date: 23-02-2023

Pictures of Field Visit



Public Consultation at site 500ft away from proposed site for Construction of Sewerage Disposal Station at Chah Pindianwala¹⁰, Jhang

¹⁰ Under Five Marla Scheme of Government, these lands were allotted by the Government to the landless peoples in 1970

INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST

Name of City/MC/LG: Jhang

Sub-Project Sector: Park

Sub-Project Title: Construction of New Disposal Station near Chah Pindian Wala, Jhang

Sub- Project Categorization: E-2 & S-2

Date of Screening: 23-02-2023

SECTION 1	Yes	No	Expect ed	Remarks
Does the project require land acquisition? Yes/No		✓		Open field area and land owned by Government so no land will be acquired for this sub project. For transfer of land to MC Jhang, process has been initiated by the DC Jhang and will be completed in a few days.
If yes, then describe the type of land being acquired from the categories below:		✓		
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not observed in sub-project area and also confirmed by MC Staff and from the local communities during public consultation
Land (Quantify and describe types of land being acquired in "remarks column".		✓		
Government and LG owned land free of occupation (agriculture or settlement)		✓		Land owned by Government so no land acquired for this sub-project for construction of disposal station.
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		Govt land and free of occupation is available which is proposed for the construction of disposal station.
Private land		✓		Not required
Residential		✓		Not required
Commercial		✓		Not required
Agricultural		✓		Not required
Communal		✓		Not required
Others (specify in "remarks").		✓		Not required
Name of owner/owners and type of ownership document if available.		✓		Not required
If land is being acquired, describe any structures constructed on it		✓		Not required
Land-based assets:		✓		Not applicable
Residential structures		✓		Not applicable
Commercial structures (specify in "remarks")		✓		Not applicable
Community structures (specify in "remarks")		✓		Not applicable

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

Prepared By:

Name: Ihsan UI Haq Farooqi
Designation: Social Safeguards Specialist
Organization: MM Pakistan
Signature

Date: 23-02-2023

Endorsed By:

Name: Muhammad Aslam
Designation: Municipal Officer Planning (MOP)
Organization: MC Jhang
Signature

Date: 23-02-2023

Reviewed By:

Name: Muhammad Asif Gillani
Designation: Deputy Program Officer ESM
Organization: PMDFC
Signature:

Date: 23-02-2023

Environmental & Social Screening Checklist

<p>Instructions: Environmental and Social Focal Persons (ESFPs)¹¹ 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 document¹² 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.</p>										
Name of ESFP:	Ahwaz Faraz MOI (I&S) Muhammad Aslam- MOP									
Name of MC:	Jhang									
Sub-Project Sector:	Sewerage									
Sub-Project Title:	Laying of Trunk sewer and Branch sewers (9- 60 inch) Zone 1, Jhang City									
Sub- Project Categorization:	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">✓</td> <td style="text-align: center;">E-1</td> <td style="text-align: center;">S-1</td> </tr> <tr> <td style="text-align: center;">E-2</td> <td style="text-align: center;">S-2✓</td> <td></td> </tr> <tr> <td style="text-align: center;">E-3</td> <td style="text-align: center;">S-3</td> <td></td> </tr> </table>	✓	E-1	S-1	E-2	S-2✓		E-3	S-3	
✓	E-1	S-1								
E-2	S-2✓									
E-3	S-3									
Date of Screening:	23-02-2023									
Anticipated Project Activities	<ul style="list-style-type: none"> ➤ Marking of the Alignment: The centerline of the sewer will be marked with a theodolite and invert tap. It would be marked either by reference line or with the help of sight rail. The position of the manhole will also be marked. ➤ After marking the centerline of the sewer, the excavation up to 07 feet deep and 5 feet wide trench will be done. The excavation would be carried out either by manual labor or by machines like power shovels, track excavators etc. ➤ Timbering of the Trench: When the depth of excavation is more than 2 m, timber bracing or sheet piling will be provided on both sides of the trench so that it may not collapse. The extent of timbering required will depend upon the type of soil and the depth of excavation. 									

¹¹ 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.

¹² It is meant as PC-I and/or engineering estimates of sub-project

	<ul style="list-style-type: none"> ➤ Preparation of Sub-grade: For soft soil, the bed of the sewer will be prepared by plain concrete (1:3:6). The thickness of concrete would vary from 15 to 20 cm. The bedding layer will not require in case of hard soil. ➤ Laying and Joining of Pipes: Laying of (18 to 60 inches) High Density Poly Ethylene (HDPE) pipes. After joining, both sides of the pipe will be finished with concrete. ➤ Testing of Straightness of Alignment and Obstruction. ➤ Back Filling: Lastly, the trenches will be filled up with the excavated earth in layers about 15 cm thick. Each layer will be properly watered and rammed
Estimated Cost of Subprojects	2557.84 Million
Completion Time/Duration	02 yrs

CHECKLIST

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		✓	No legally protected area lies within 200 meters jurisdiction of Sub-Project.
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub project		✓	No water body observed within 200 meters in the Sub-Project area
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Mostly are urban area around these lines but at some places green fields are present on both sides
Socially sensitive /important areas/communities/ people?			

Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject	✓		03 Mosque, one shrine observed within 100 meters of the Sub-Project interventions but have no direct/indirect significant environmental & social impacts. There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. No other significant adverse impacts on sensitive receptors are foreseen
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		2 school, 2 collages, and 01 madrassa exist within 100 m of the subproject interventions There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. No other significant adverse impacts on sensitive receptors are foreseen
Any graveyard of local community (Muslims or Christians)	✓		One Graveyard exist within 100 m of the subproject interventions along Gojra Road. but have no direct/indirect significant environmental & social impacts
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated segments ¹³ of the society and women or children)?		✓	No negative impact observed on vulnerable groups (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities) Sub-Project area
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	Public amenities exist along the Road but away from project line area so not required any type of dismantling.
B. Potential Environmental Impacts Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	No significant adverse impacts on environment.
2. Cutting of trees?		✓	No Cutting of trees involved during construction phase

¹³ Due to caste, creed, religion or gender e.g. transgender

3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No significant adverse impacts on environment.
4. Generation of wastewater during construction or operation?		✓	Construction activities on minor level so waste water generation activities on lower level
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	No such impact anticipated as no wastewater will be generated during construction activities.
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/ivers or due to increased soil erosion at construction site?		✓	No such impact foreseen, as work activities are limited level and away from the surface water bodies so no other significant adverse impacts on sensitive receptors are foreseen during construction Phase.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No construction labor camps envisaged and a rental house is used as a labor camp. Due to limited scope of work under Sub-Project and un-skilled local labor will be engaged for the construction activities. Chemical storage activities monitor regularly.
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping/pumping involved in scope of construction activities.
9. Serious contamination of soil due to construction works?		✓	Construction materials should be storage properly, no leakage or leaching Process involve so contamination of soil not observed
10. Aggravation of solid waste problems in the area?		✓	No aggravation of solid waste problems in the area is anticipated. The waste construction material will be collected and disposed at designated place on daily basis
11. Generation of hazardous waste?		✓	Bitumen containing solid waste will be generated during dismantling of existing road at some point during laying of sewerage line that will be disposed properly at designated place.
12. Increased air pollution due to sub-project construction and operation?		✓	The subproject interventions are on small scale that will not significantly increase air pollution
13. Noise and vibration due to sub-project construction or operation?	✓		Noise and vibration will be generated during excavation and pipe laying activities but the level is expected to be low. However, the noise will be monitored on regularly during construction by the contractor

14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	No Temporary breeding habitats creates during Construction activities for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid
15. Use of chemicals during construction?		✓	No chemicals will be used during construction activities
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)?		✓	No impairment/damage to any PCR envisioned as per scope of construction activities
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not observed in sub project area
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups 14(mentioned above)?		✓	There will be no Impact on the poor women, children and or other vulnerable groups
4. Temporary impediments in movements of people/transport and animals?	✓		There would be hindrance in the mobility of people during construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. The Contractor in this context will ensure housekeeping.
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)?		✓	Due to Limited Scope of work activities, Local unskilled labor will be preferred by the Contractor
6. Social conflicts if workers from other areas are hired.	✓		Contractor will Hire local worker for unskilled construction activities
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Contractor will follow EHS SOPs to avoid physical hazards which are part of PC-I.

¹⁴ Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		There would be some safety issues during martial transportation, during construction phase. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues in Construction phase, During storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
10. Any impact on sensitive receptors (mentioned above)		✓	Not observed in sub project area
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in sub project area

Prepared By: Name: Muhammad Imran Designation: Environment Specialist Organization: MM Pakistan Signature: Date: 23-02-2023	Endorsed By: Name: Faraz Ahwaz Designation: Municipal Officer Planning (MOI) Organization: MC Jhang Signature: Date: 23-02-2023	Reviewed By: Name: Muhammad Asif Gillani Designation: Deputy Program Officer ESM Organization: PMDFC Signature: Date: 23-02-2023
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Pictures of Field Visit



ROW for Sewerage Line near chack khokhran disposal station, jhang



Jamia Dru sahaba near chack khokhran disposal station, jhang



Public Consultation near chack khokhran disposal station, jhang



PEN School near gulshan fatima colony, jhang



Govt Vocational institute near Gulshan Fatima Colony, Jhang



Jamia Masjid Al-Rahmet



ROW for pipe line along Gojra Road Jhang



ROW for Sewerage pipe line along Gojra Road Jhang



Rai Hospital at Gojra Road, jhang



Faisal Magiana Hospitan near Jamia Chowk
ihang



American Lycetuff School Near District Jail,
Jhang



Jamia Masjid Anwaa e Madina Near Setilite
Town, jhang



Public Consultation at Lala Zaar Colony,
Jhang



Public Consultation at Sadeeqabad Colony,
Jhang



Public Consultation along Gojra Road, Jhang



Departmental Consultation PHD Department,
Jhang



Departmental Consultation Agriculture
Department, Jhang



Departmental Consultation Sub Engineer MC,
Jhang

**INVOLUNTARY RESETTLEMENT SCREENING
CHECKLIST**

Name of City/MC/LG: Jhang

Sub-Project Sector: Sewerage

Sub-Project Title: Laying of Trunk and sub main RCC sewers (18- 60 inch) Zone 1, Jhang City

Sub- Project Categorization: E-1 & S-2

Date of Screening: 23-02-2023

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No		✓		Already Road exists and pipe line laying along the road. land owned by District Govt so no land acquired for this sub project
If yes, then describe the type of land being acquired from the categories below:		✓		No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government ¹ ? Yes/No		✓		Not observed in sub project area and confirm by MC Staff also
Land (Quantify and describe types of land being acquired in "remarks column".		✓		No Land acquired for this sub project
Government and LG owned land free of occupation (agriculture or settlement)		✓		Already land owned by District Govt so no land acquired for this sub project
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		No Land acquired for this sub project
Private land		✓		No Land acquired for this sub project
Residential		✓		No Land acquired for this sub project
Commercial		✓		No Land acquired for this sub project
Agricultural		✓		No Land acquired for this sub project
Communal		✓		No Land acquired for this sub project
Others (specify in "remarks").		✓		Already land owned by District Govt so no land acquired for this sub project
Name of owner/owners and type of ownership document if available.		✓		Already land owned by District Govt t so no land acquired for this sub project
If land is being acquired, describe any structures constructed on it		✓		No Land acquired for this sub project
Land-based assets:		✓		No Land acquired for this sub project
Residential structures		✓		No Land acquired for this sub project
Commercial structures (specify in "remarks")		✓		No Land acquired for this sub project
Community structures (specify in "remarks")		✓		No Land acquired for this sub project

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

Prepared By:

Name: Ihsan UI Haq Farooqi

Designation: Social Safeguards Specialist

Organization: MM Pakistan

Signature:

Date: 23-02-2023

Endorsed By:

Name: Muhammad Aslam

Designation: Municipal Officer Planning (MOP)

Organization: MC Jhang

Signature

Date: 23-02-2023

Reviewed By:

Name: Muhammad Asif Gillani

Designation: Deputy Program Officer ESM

Organization: PMDFC

Signature:

Date: 23-02-2023

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)¹⁵ 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 document¹⁶ 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:	Ahwaz Faraz MOI (I&S) Muhammad Aslam- MOP
Name of MC:	Jhang
Sub-Project Sector:	Sewerage
Sub-Project Title:	Construction of Manholes (10) Zone 1- Jhang City
Sub- Project Categorization:	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input checked="" type="checkbox"/> E-1 E-2 E-3 </div> <div style="text-align: center;"> S-2✓ S-3 </div> <div style="text-align: center;"> S-1 </div> </div>
Date of Screening:	23-02-2023
Anticipated Project Activities	<ul style="list-style-type: none"> ➤ Diversion of existing line from manhole construction point. ➤ Supply of construction material (bricks, cement sand etc.) and machinery (concrete mixture) at site. ➤ Construction of manholes. ➤ Restoration of diversion.
Estimated Cost of Subprojects	2557.84 Million PKR
Completion Time/Duration	02 YEARS

¹⁵ 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.

¹⁶ It is meant as PC-I and/or engineering estimates of sub-project

CHECKLIST

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 in sub project area
Any surface water body (river, canal, stream, lake, wetland) within 250 meters of the proposed sub project		✓	No surface water body (river, canal, stream, lake, wetland) within 250 meters of the proposed sub project
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Open field area exists under 200 meters at some point of this intervention.
Socially sensitive /important areas/communities/ people?			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject			1 Mosque, observed within 100 meters of the Sub-Project interventions but have no direct/indirect significant environmental & social impacts.
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		2 school and 01 madrassa exist within 100 m of the subproject interventions There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. No other significant adverse impacts on sensitive receptors are foreseen
Any graveyard of local community (Muslims or Christians)		✓	Not observed in sub project area
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban		✓	No negative impact observed on vulnerable groups (e.g., high incidence of marginalized populations, rural-urban migrants, illegal

migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated segments ¹⁷ of the society and women or children)?			settlements, squatters, ethnic minorities, people with disabilities) Sub-Project area
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No infrastructure will be dismantled due to construction activities.
B. Potential Environmental Impacts Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity environmentally sensitive or protected areas?		✓	Not observed in sub project area
2. Cutting of trees?		✓	No Cutting of trees involved during construction phase
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?			No significant adverse impacts on environment.
4. Generation of wastewater during construction or operation?		✓	No wastewater generation during construction and operation envisaged
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	Construction activities on minor level so waste water generation activities on lower level
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impact foreseen as work activities are limited level and within the boundary and away from water bodies so surface water hydrology of waterways have no impact during construction activities.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No construction labor camps envisaged due to limited scope of work under Sub-Project and un-skilled local labor will be engaged for the construction activities.
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping/pumping involved in scope of construction activities.
9. Serious contamination of soil due to construction works.		✓	Construction materials should be storage properly, no leakage or leaching Process involve so contamination of soil not observed

¹⁷ Due to caste, creed, religion or gender e.g. transgender

10. Aggravation of solid waste problems in the area?		✓	No aggravation of solid waste problems in the area is anticipated. The waste construction material will be collected and disposed at designated place on daily basis
11. Generation of hazardous waste?		✓	No hazardous waste material generated during project activities
12. Increased air pollution due to sub-project construction and operation?		✓	The subproject interventions are on small scale that will not significantly increase air pollution
13. Noise and vibration due to sub-project construction or operation?	✓		Noise and vibration will be generated during excavation and pipe laying activities but the level is expected to be low. However, the noise will be monitored on regularly during construction by the contractor
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	Not observed in sub project area
15. Use of chemicals during construction?		✓	No chemicals will be used during construction activities.
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)?		✓	No impairment/damage to any PCR envisioned as per scope of construction activities
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not observed in sub project area
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups 18(mentioned above)?		✓	There will be no Impact on the poor women, children and or other vulnerable groups
4. Temporary impediments in movements of people/transport and animals?		✓	There would be negligible hindrances in the mobility of people during the construction phase. Housekeeping will be ensured by the Contractor in this context.

¹⁸ 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)?		✓	Not observed in sub project area
6. Social conflicts if workers from other areas are hired?		✓	Contractor will Hire local worker for unskilled construction activities
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	There would be some safety issues during martial transportation, and other construction activities.
8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?	✓		There would be some safety issues during martial transportation, construction activities during construction phase. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues in Construction phase, During storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
10. Any impact on sensitive receptors (mentioned above)		✓	Not observed in sub project area
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in sub project area

Prepared By:	Endorsed By:	Reviewed By:
Name: Muhammad Imran	Name: Muhammad Faraz Ahwaz	Name: Muhammad Asif Gillani
Designation: Environment Specialist	Designation: Municipal Officer Infrastructure (MO1)	Designation: Deputy Program Officer ESM
Organization: MM Pakistan	Organization: MC Jhang	Organization: PMDFC
Signature:	Signature	Signature:
Date: 23-02-2023	Date: 23-02-2023	Date: 23-02-2023

**INVOLUNTARY RESETTLEMENT SCREENING
CHECKLIST**

Name of City/MC/LG: Jhang

Sub-Project Sector: Sewerage

Sub-Project Title: Construction of Manholes (10) Zone 1- Jhang City

Sub- Project Categorization: E-1 & S-2

Date of Screening: 23-02-2023

SECTION 1	Yes	No	Exp ecte d	Remarks
Does the project require land acquisition? Yes/No		✓		New Manhole Proposed at some points of Sewerage Line that laying along the road and land is already owned by Govt. So no land acquired for this sub project
If yes, then describe the type of land being acquired from the categories below:		✓		No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not observed in sub project area and confirm by MC Staff also
Land (Quantify and describe types of land being acquired in "remarks column".		✓		No Land acquired for this sub project
Government and LG owned land free of occupation (agriculture or settlement)		✓		Land is already owned by Govt. So no land acquired for this sub project
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		No Land acquired for this sub project
Private land		✓		No Land acquired for this sub project
Residential		✓		No Land acquired for this sub project
Commercial		✓		No Land acquired for this sub project
Agricultural		✓		No Land acquired for this sub project
Communal		✓		No Land acquired for this sub project
Others (specify in "remarks").		✓		land is already owned by Govt. So, no land acquired for this sub project
Name of owner/owners and type of ownership document if available.		✓		land is already owned by Govt. So, no land acquired for this sub project

If land is being acquired, describe any structures constructed on it		✓		No Land acquired for this sub project
Land-based assets:		✓		No Land acquired for this sub project
Residential structures		✓		No Land acquired for this sub project
Commercial structures (specify in "remarks")		✓		No Land acquired for this sub project
Community structures (specify in "remarks")		✓		No Land acquired for this sub project
Agriculture structures (specify in "remarks")		✓		
Public utilities (specify in "remarks")		✓		New Manhole Proposed at some points of Sewerage Line that laying along the road and land is already owned by Govt. So, no land acquired for this sub project. Ramps are away from ROW.
Others (specify in "remarks")		✓		No Land acquired for this sub project
If agricultural land is being acquired, specify the following:		✓		No Land acquired for this sub project
Agriculture related impacts		✓		No Land acquired for this sub project
Crops and vegetables (specify types and cropping area in "remarks").		✓		No Land acquired for this sub project
Trees (specify number and types in "remarks").		✓		No Land acquired for this sub project
Others (specify in "remarks").		✓		No Land acquired for this sub project
Affected Persons (APs)		✓		No Persons Affected during this Project
Will any people be displaced from the land when acquired? Yes/No		✓		No Land acquired for this sub project
Number of Aps		✓		No Persons Affected during this Project
Males		✓		No Persons Affected during this Project
Females		✓		No Persons Affected during this Project
Titled landowners		✓		No Land acquired for this sub project
Tenants and sharecroppers		✓		No Land acquired for this sub project
Leaseholders		✓		No Land acquired for this sub project
Agriculture wage laborers		✓		Not involved in this project

Encroachers and squatters (specify in remarks column)		✓	No Land acquired for this sub project
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty line). Specify the number and vulnerability in "remarks".		✓	No Land acquired for this sub project no one effected during this this intervention
Others (specify in "remarks")		✓	Not involved in this project

Prepared By:	Endorsed By:	Reviewed By:
Name: Ihsan UI Haq Farooqi	Name: Muhammad Aslam	Name: Muhammad Asif Gillani
Designation: Social Safeguards Specialist	Designation: Municipal Officer Planning (MOP)	Designation: Deputy Program Officer ESM
Organization: MM Pakistan	Organization: MC Jhang	Organization: PMDFC
Signature:	Signature	Signature:
Date: 23-02-2023	Date: 23-02-2023	Date: 23-02-2023

Annexure -G

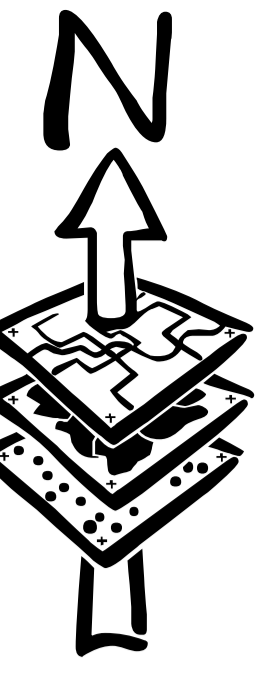
Improvement of Sewerage system in Jhang City and Construction of WWTP

Implementation Plan for the project

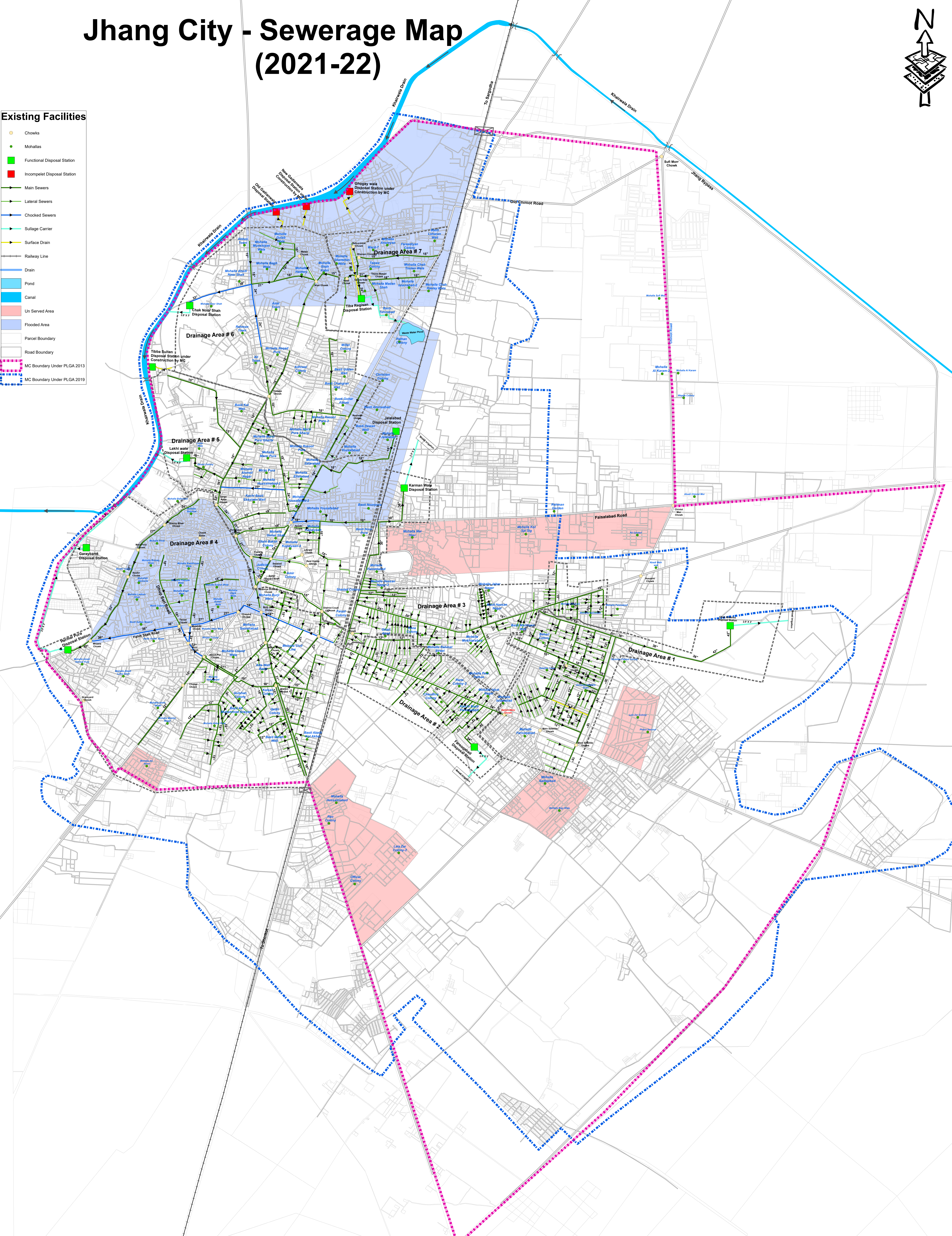
Sr No	Activity	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	
1	Rehabilitation of Existing Sewerage system	█	█	█	█	█	█															
2	Laying of Trunk sewer		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			
3	Laying of Branch sewer			█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█		
4	Construction of Disposal Station	█	█	█	█	█	█	█	█	█	█	█	█									
5	Rehabilitation of Drain												█	█	█	█	█	█	█			
6	Construction Waste Water Treatment Plant	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

Annexure -H

Jhang City - Sewerage Map (2021-22)

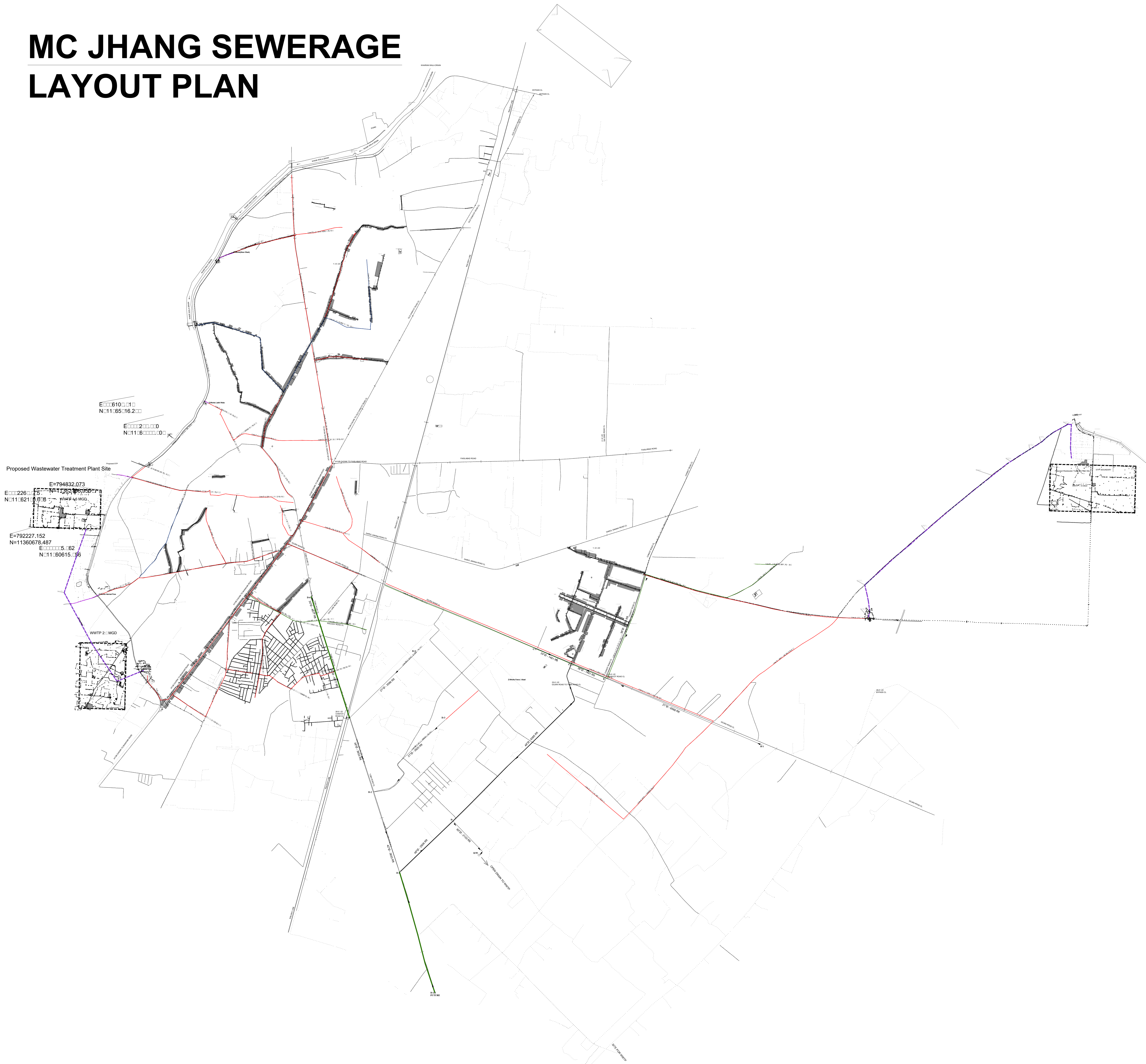


- Existing Facilities**
- Chowks
 - Mohallas
 - Functional Disposal Station
 - Incomplete Disposal Station
 - Main Sewers
 - Lateral Sewers
 - Choked Sewers
 - Sullage Carrier
 - Surface Drain
 - Railway Line
 - Drain
 - Pond
 - Canal
 - Un Served Area
 - Flooded Area
 - Parcel Boundary
 - Road Boundary
 - - - MC Boundary Under PLGA 2013
 - - - MC Boundary Under PLGA 2019

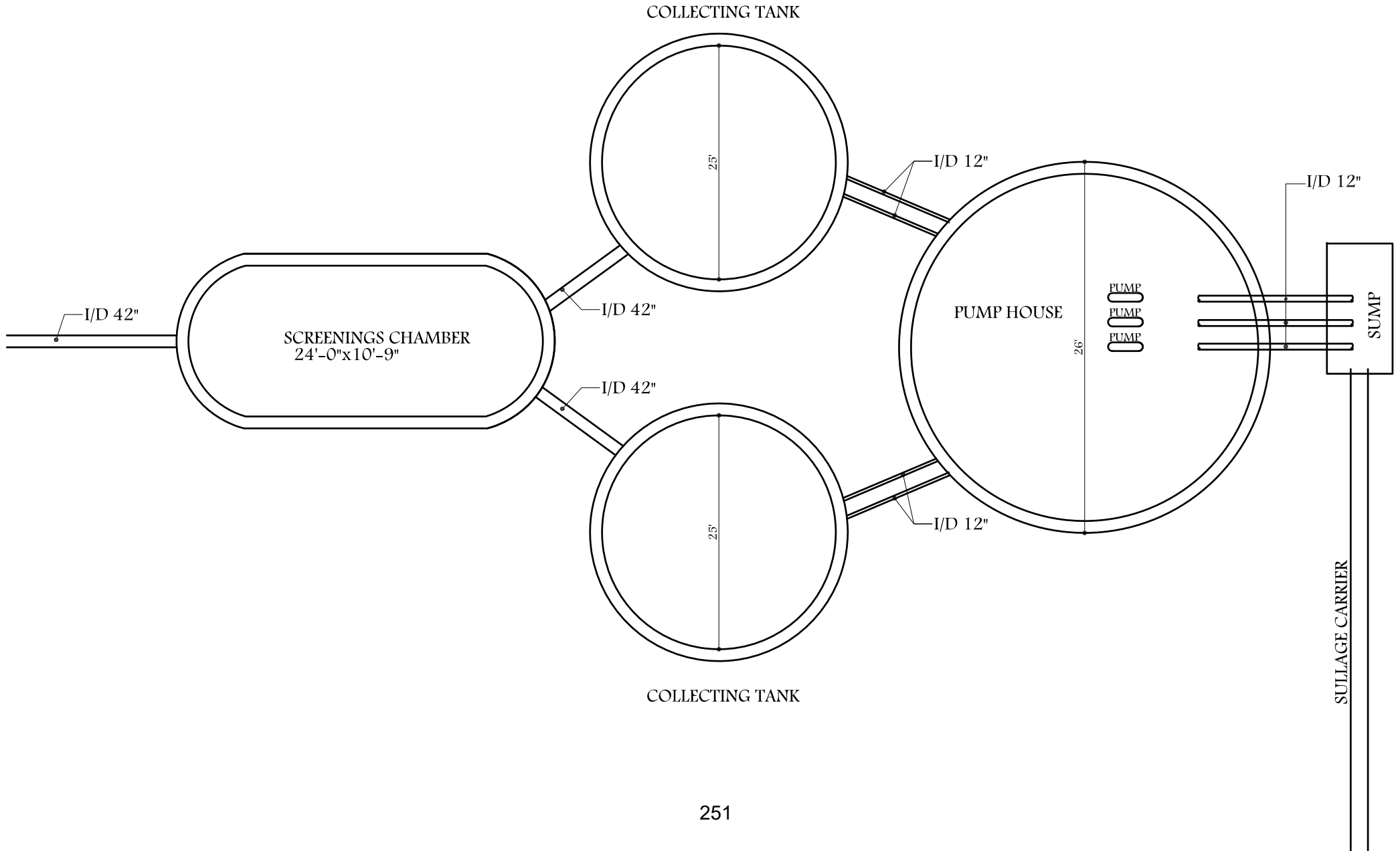


Sewerage Coverage Area in Acres		
Coverage	Area(2020-21)	Area(2021-22)
Unservd Area	797	912
Flooded Area	1862	1862

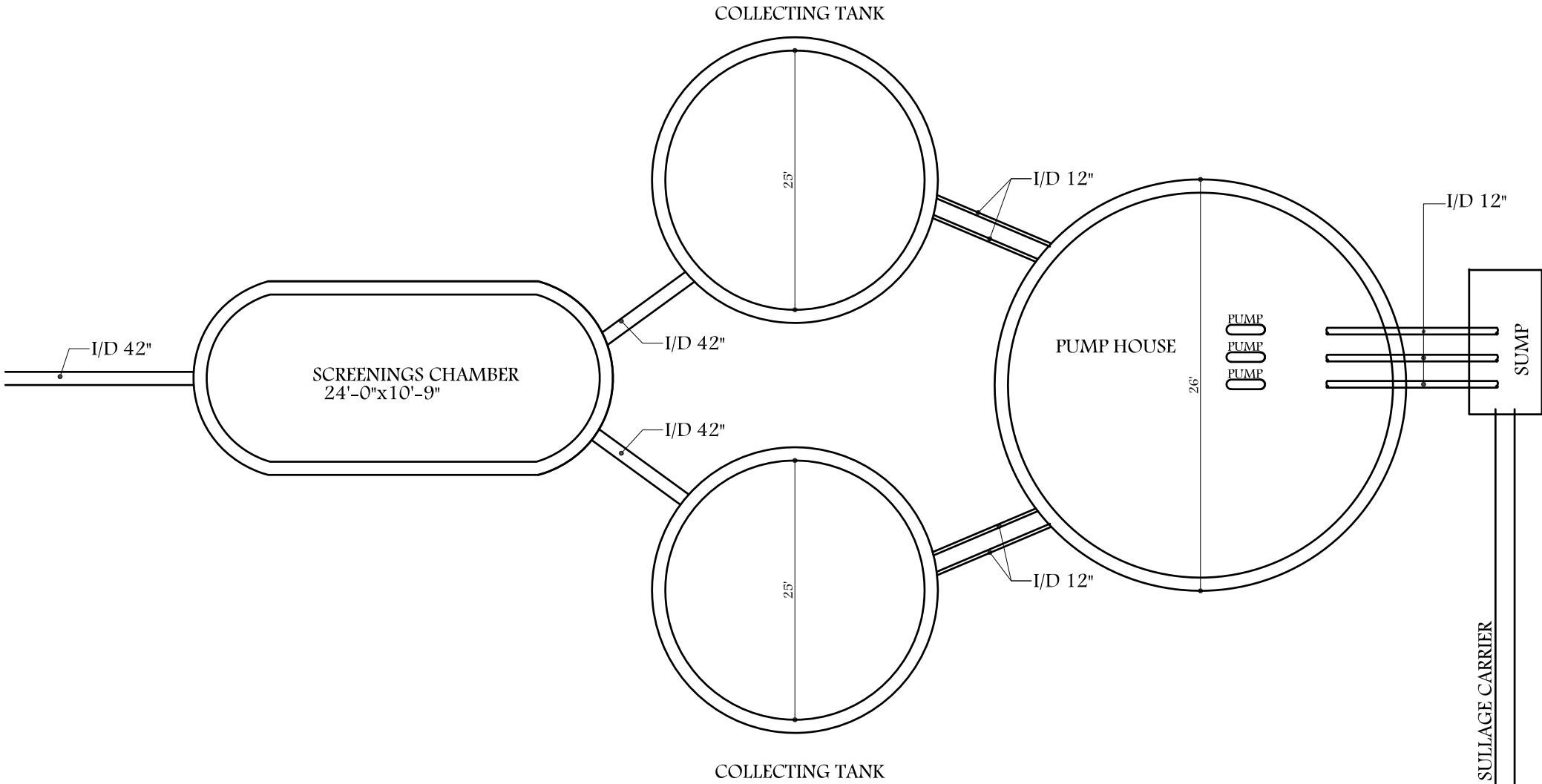
MC JHANG SEWERAGE LAYOUT PLAN



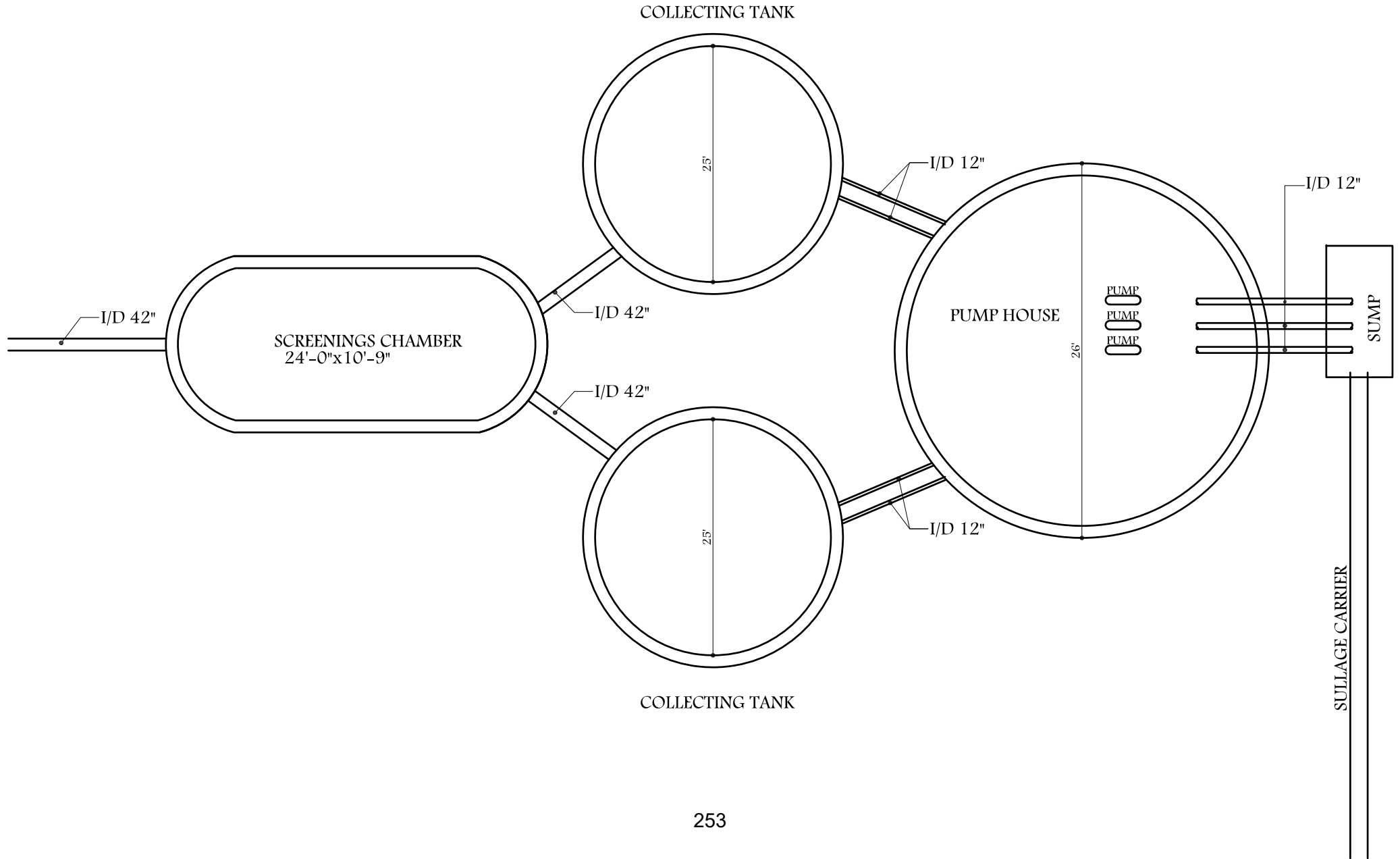
EXISTING DISPOSAL WORK GHARYBHAN

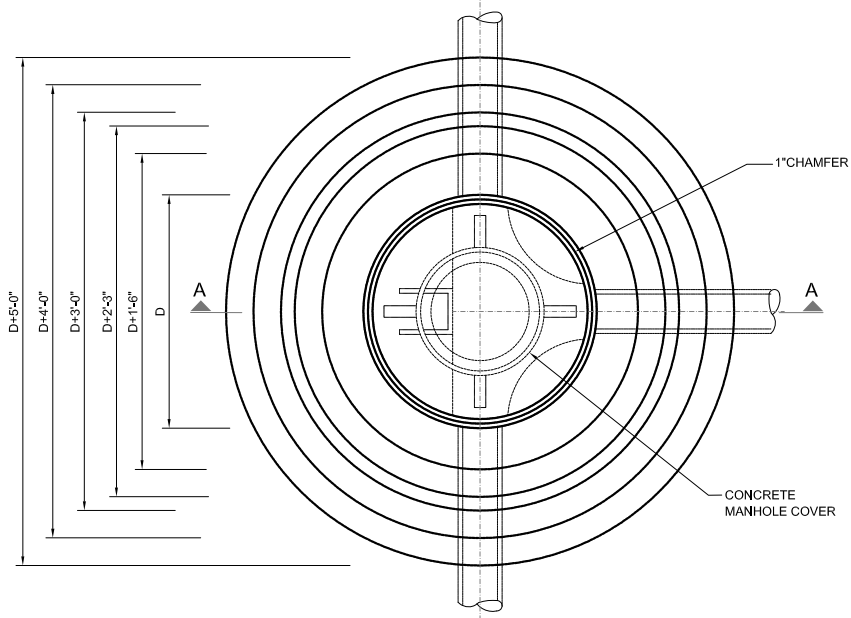


EXISTING DISPOSAL WORK GHOGHAY WALI



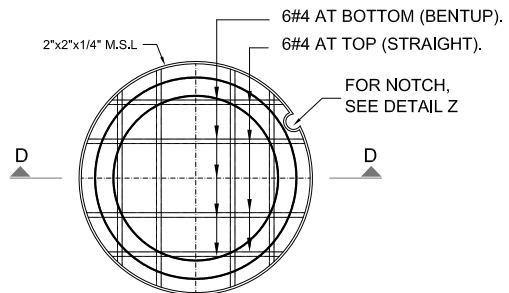
EXISTING DISPOSAL WORK TIBA SULTAN



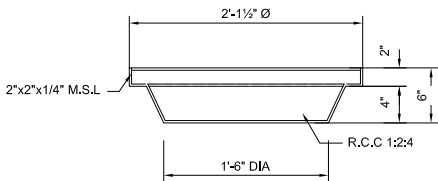


TYPICAL SEWER MANHOLE PLAN (TYPE B)
(FOR DEPTH > 7.Ft.)

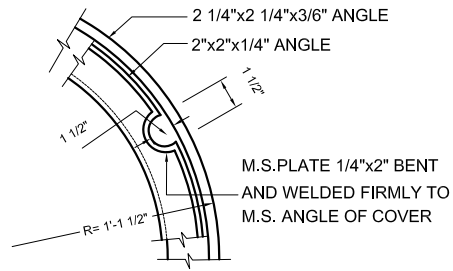
TABLE -1			
SEHEDULE OF MANHOLE			
SR. NO.	PIPE DIA. (inch)	(D)	(H)
1	9 TO 21	4'-0"	3'-6"
2	24 TO 30	5'-0"	4'-0"
3	36 TO 42	6'-6"	4'-3"
4	48 TO 54	7'-6"	4'-6"



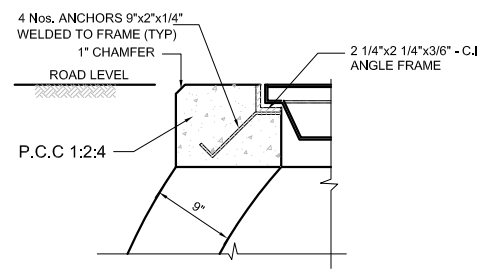
DETAIL D
MANHOLE COVER PLAN



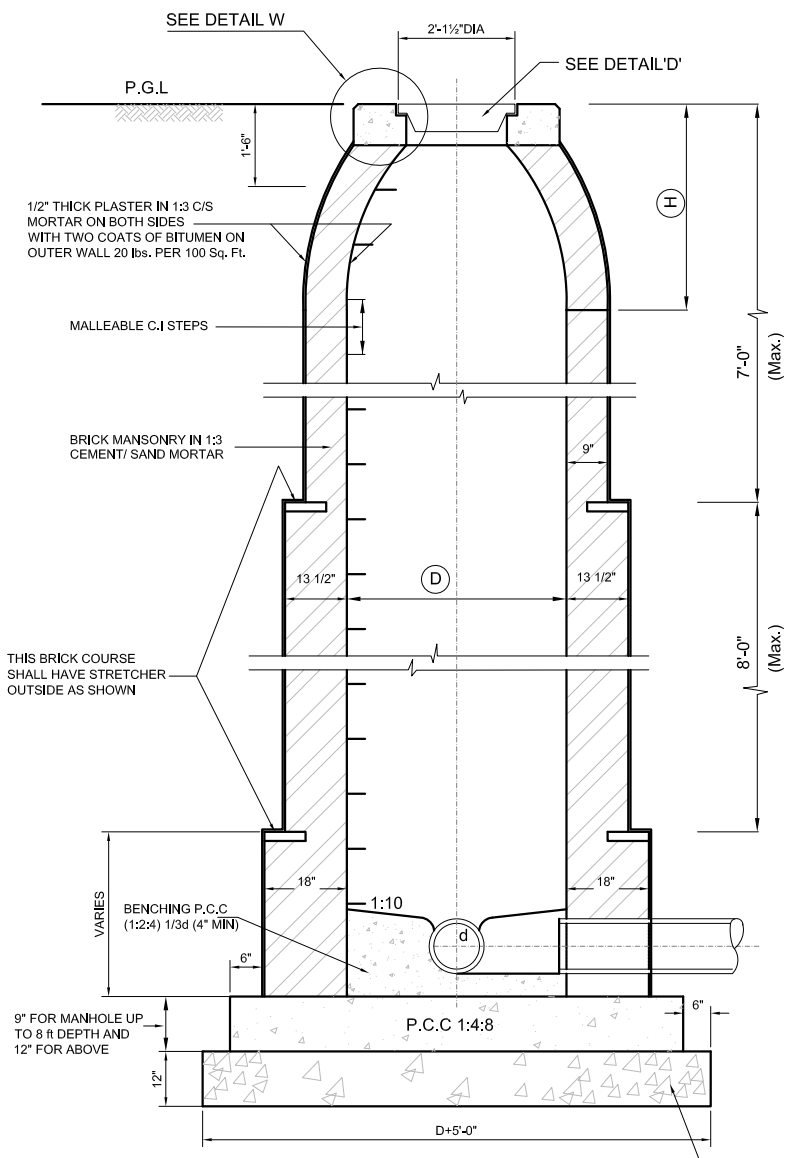
SECTION D-D



DETAIL-Z



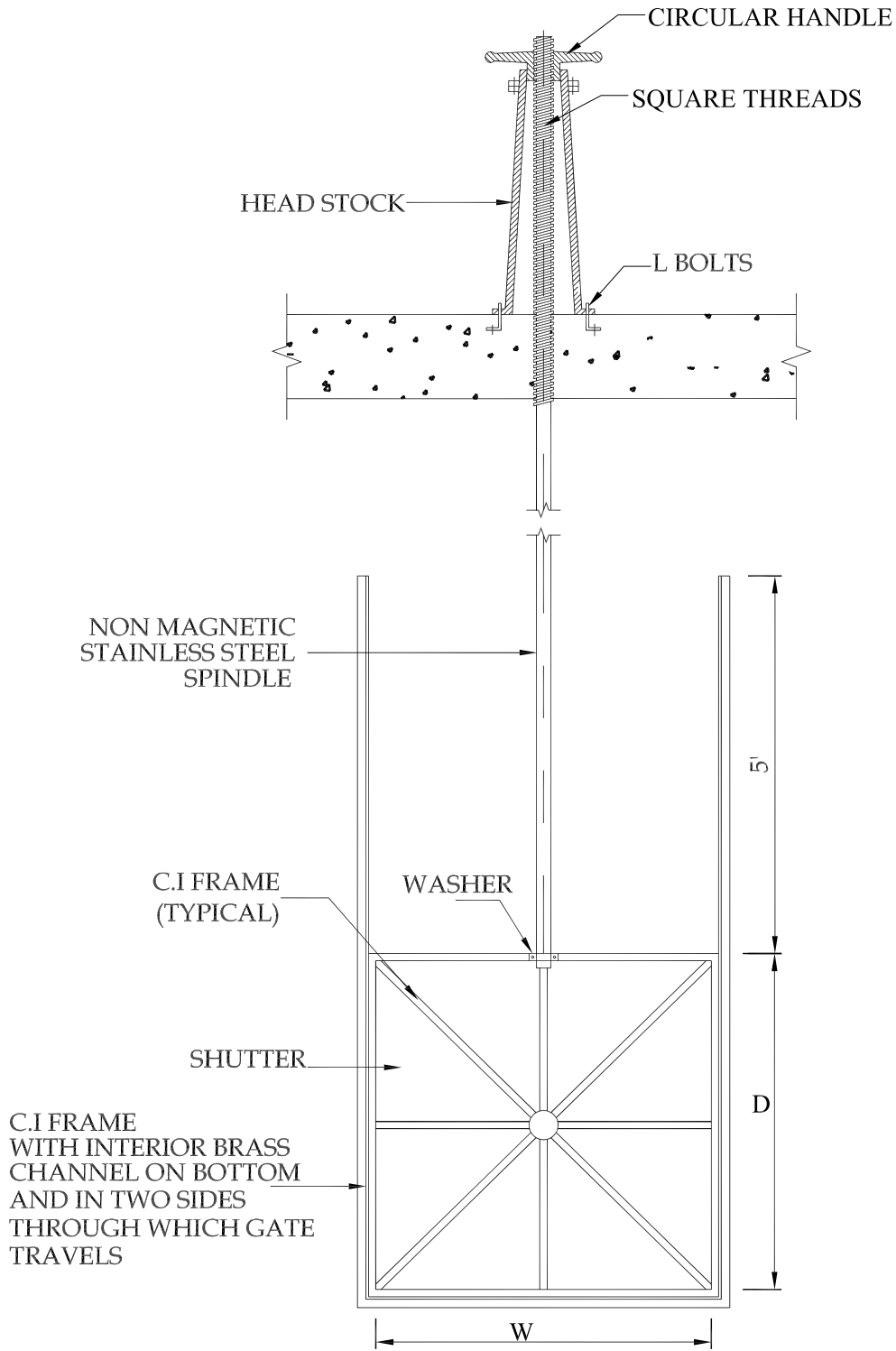
DETAIL-W



SECTION A-A

BRICK BALLAST FOR SEWERS UP TO 24\"/>

Constaintants MUNICIPAL COMMITTEE / CORPORATION	Project	M&R PROJECT UNDER PCP
	Title	MANHOLE



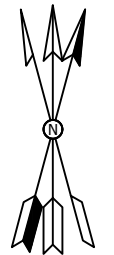
PEN STOCK

Shutter size = D x W (Variable)

NOTE:

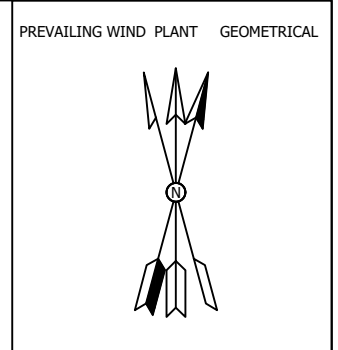
SHOP DRAWING FOR PENSTOCK IS TO BE PROVIDED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER.

Consultants	Project	M&R Project Under PCP
MUNICIPAL COMMITTEE / CORPORATION	Title	PEN STOCK



Consultant CENTRAL DESIGN CELL 2nd Floor, CTI Building, 27-Empress Road, Lahore 042-36292525-7 042-36292528 cdc.mmp@mmpakistan.com http://www.mmpakistan.com	Client GOVERNMENT OF PUNJAB Punjab Municipal Development Fund Company (PMDFC)	Funding Agency WORLD BANK	Title ZONE 1 DS DISPOSAL PLAN	Drawn MM Pakistan(Pvt) Ltd
		Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-3) 256		Approved PMDFC
		Drawing No. _____		Scale AS SHOWN
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1100'



1100'




825'

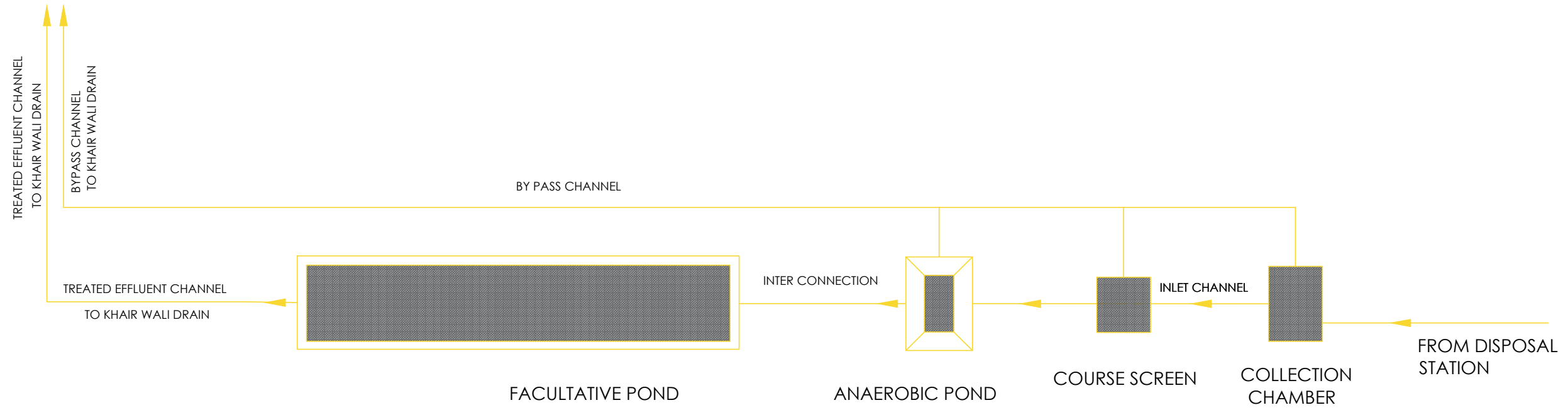
2667'-6"




1567'-6"

1925'

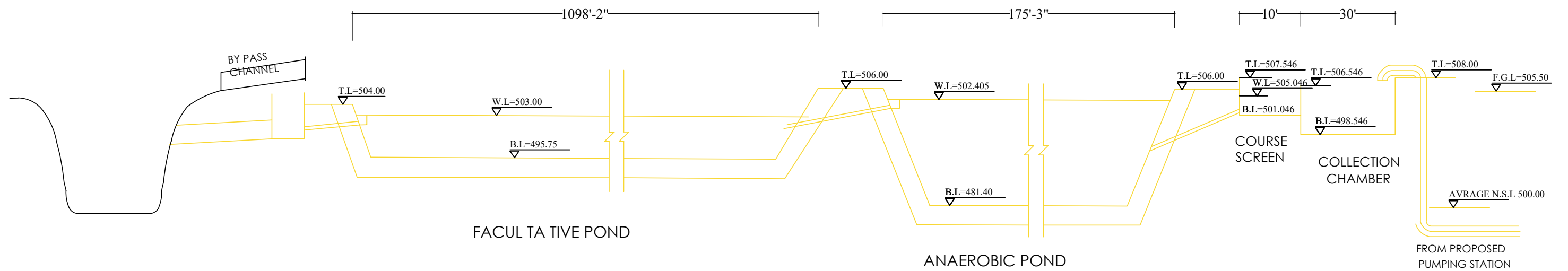
PLOT AREA 4227437.50sft.

Consultant  CENTRAL DESIGN CELL 2nd Floor, CTI Building, 27-Emress Road, Lahore 042-36292525-7 042-36292528 cdc.mmp@mmpakistan.com http://www.mmpakistan.com	Client  GOVERNMENT OF PUNJAB  Punjab Municipal Development Fund Company (PMDFC)	Funding Agency WORLD BANK	Title ZONE 1 DS DISPOSAL PLAN	Drawn MM Pakistan(Pvt) Ltd
		Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-3) 257		Approved PMDFC
		Drawing No. -----		Scale AS SHOWN
			Rev No. 	



Consultant  CENTRAL DESIGN CELL 2nd Floor, CTI Building, 27-Empress Road, Lahore 042-36292528 cdc.mmp@mmpakistan.com http://www.mmpakistan.com	Client  GOVERNMENT OF PUNJAB  Punjab Municipal Development Fund Company (PMDFC)	Funding Agency WORLD BANK Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-□)	Rev.	Date	Description	Title □ONE 1 DS DISPOSAL LINE DIAGRAM Drawing No. MMP-10□5PO□-JHG-SEW-DS-002	Drawn	MM Pakistan(Pvt) Ltd
			0	□0-12-2022			Approved	PMDFC
							Scale	AS SHOWN
							Rev No:	

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WASTE WATER TREATMENT PLANT
HYDRAULIC PROFILE

Consultant



CENTRAL DESIGN CELL
2nd Floor, CTI Building,
27-Emress Road, Lahore
042-36292528
cdc.mmp@mmpakistan.com
http://www.mmpakistan.com

Client



GOVERNMENT OF PUNJAB



Punjab Municipal Development
Fund Company
(PMDFC)

Funding Agency

WORLD BANK

Project

Punjab Cities Program (PCP)
Detailed Design of Infrastructure
Sub-Projects, Sectoral Planning & Resident
Supervision in 16 Cities of Punjab(Package-1)

Rev.	Date	Description
0	10-12-2022	

Title

ONE 1 DS DISPOSAL
HYDROULIC PROFILE

Drawing No.

MMP-1005PO0-JHG-SEW-DS-000

Drawn

MM Pakistan(Pvt) Ltd

Approved

PMDFC

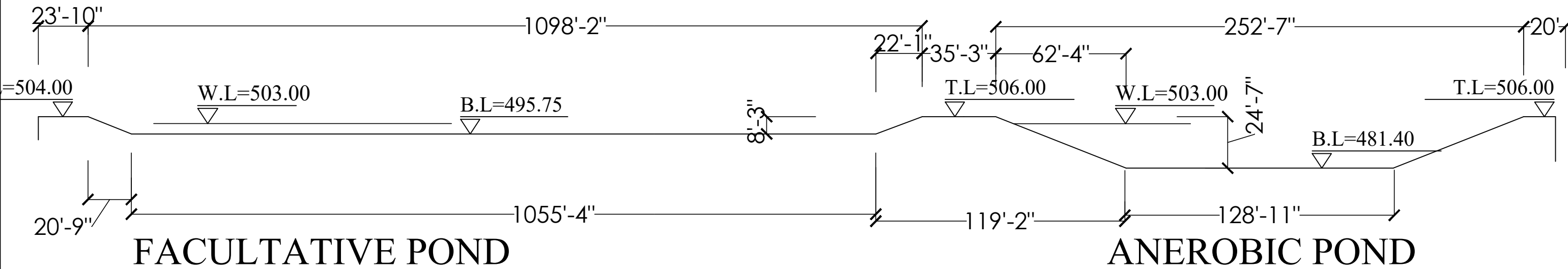
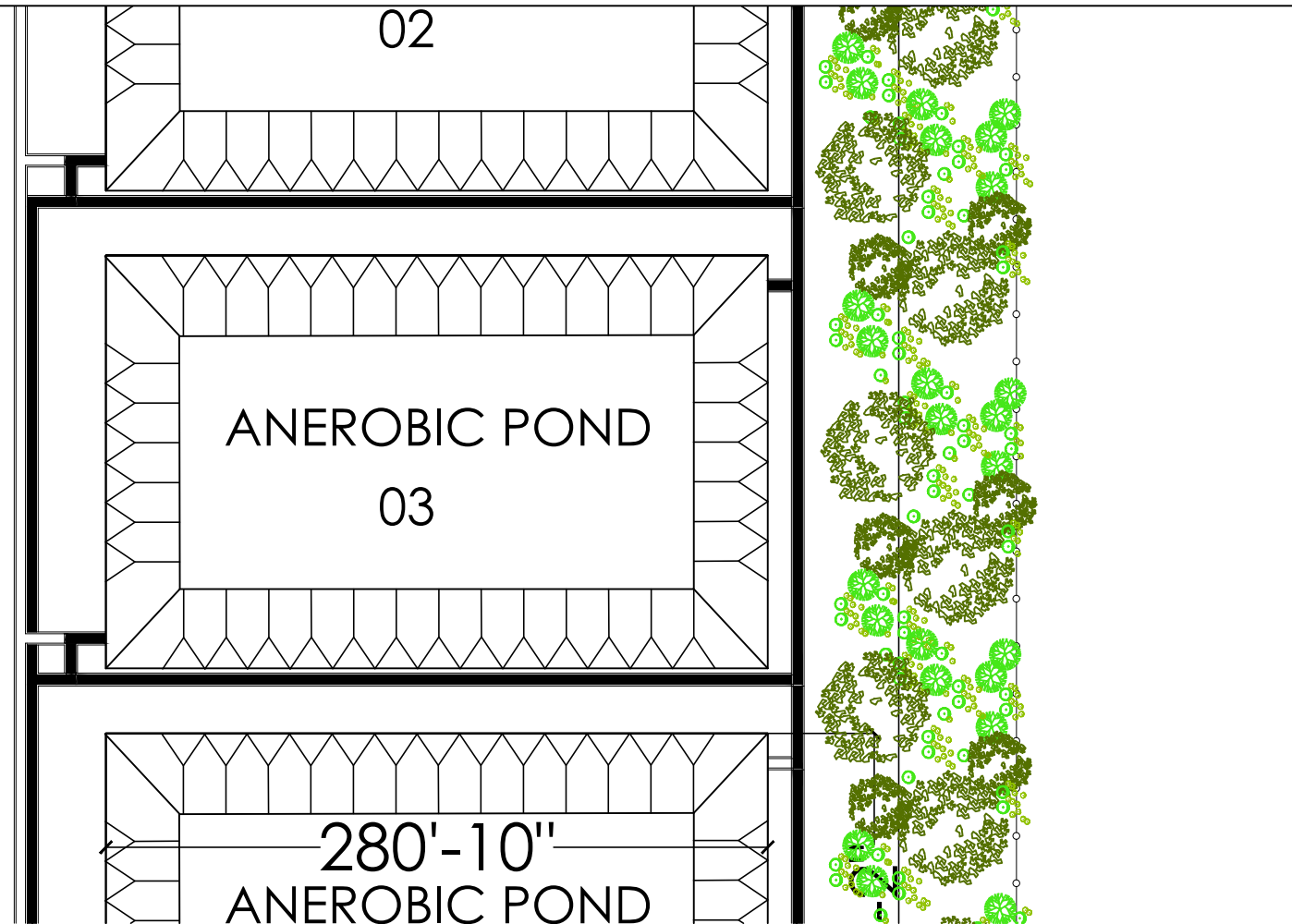
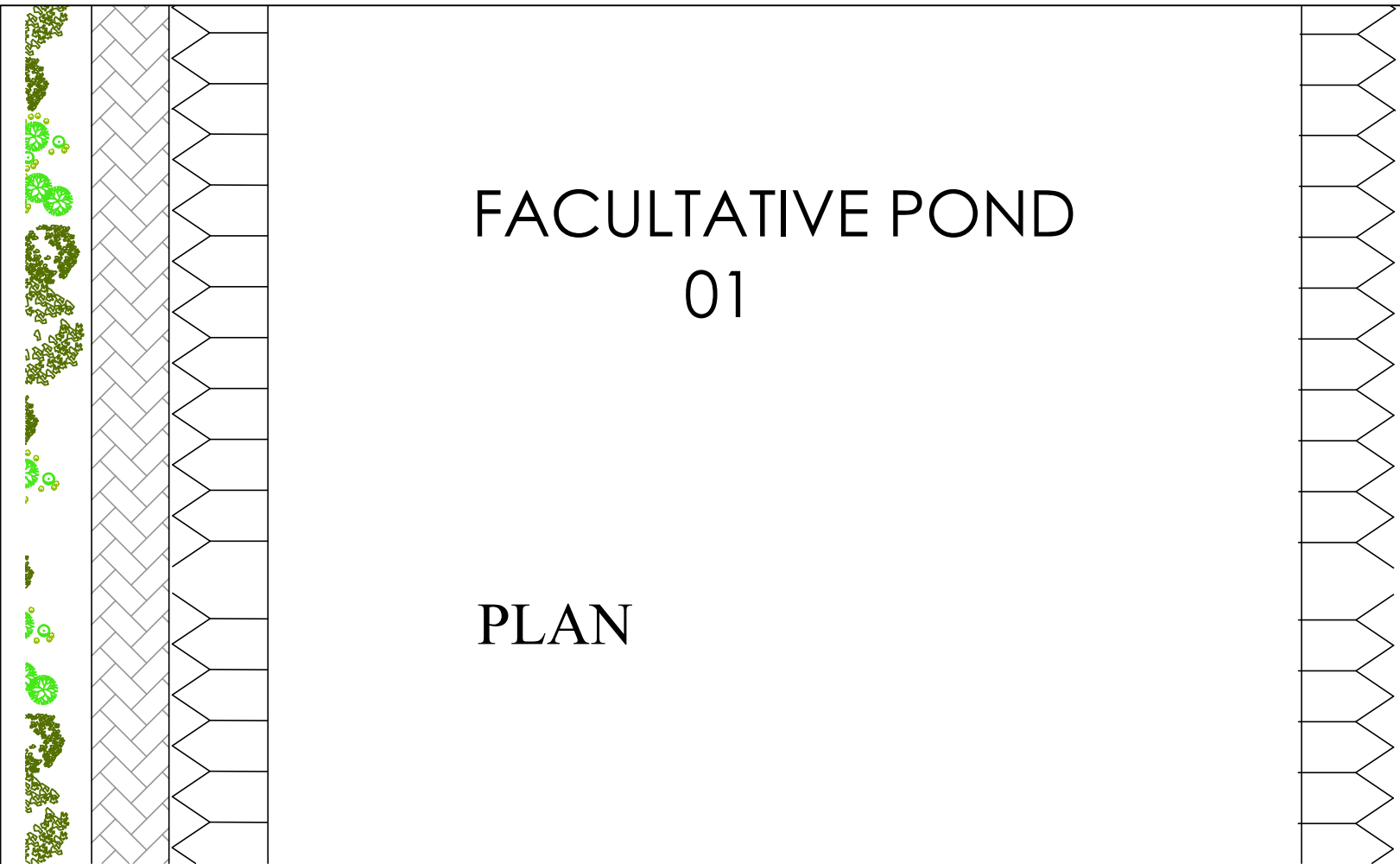
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AS SHOWN

Rev No:

FACULTATIVE POND 01

PLAN

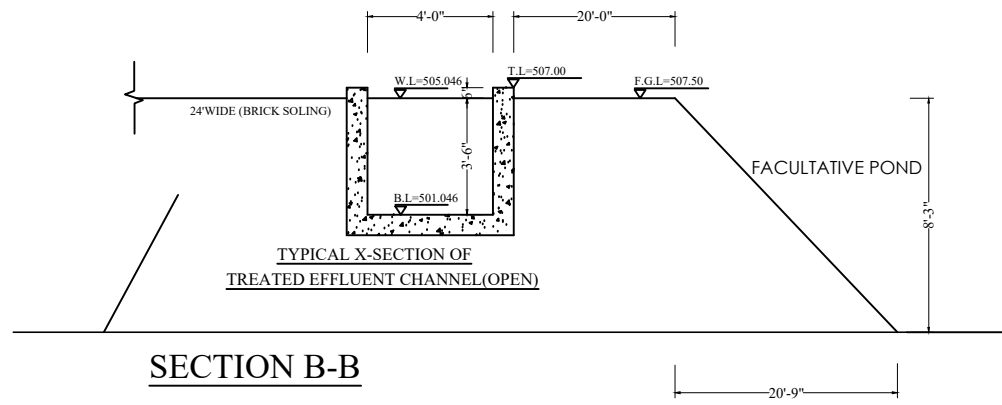
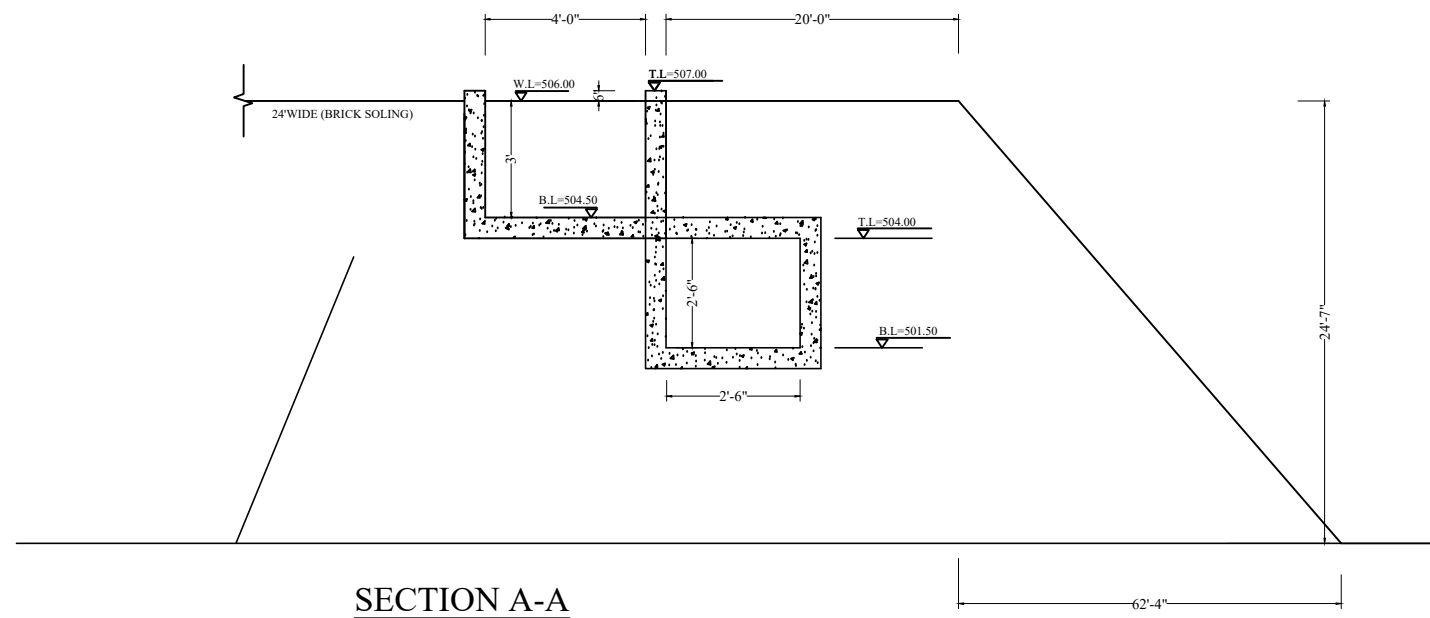
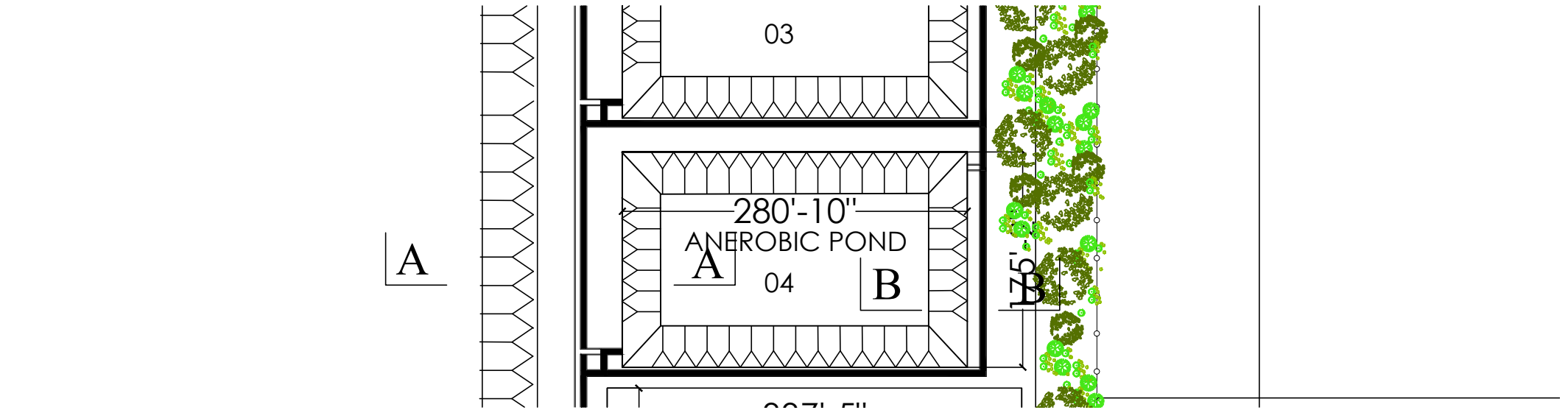
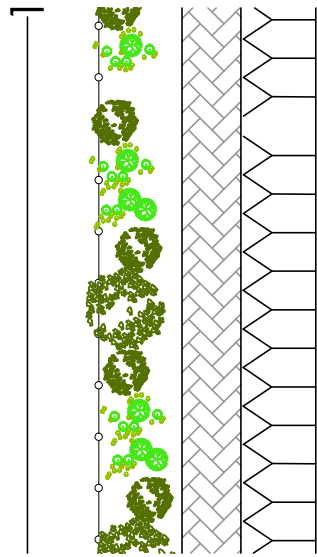


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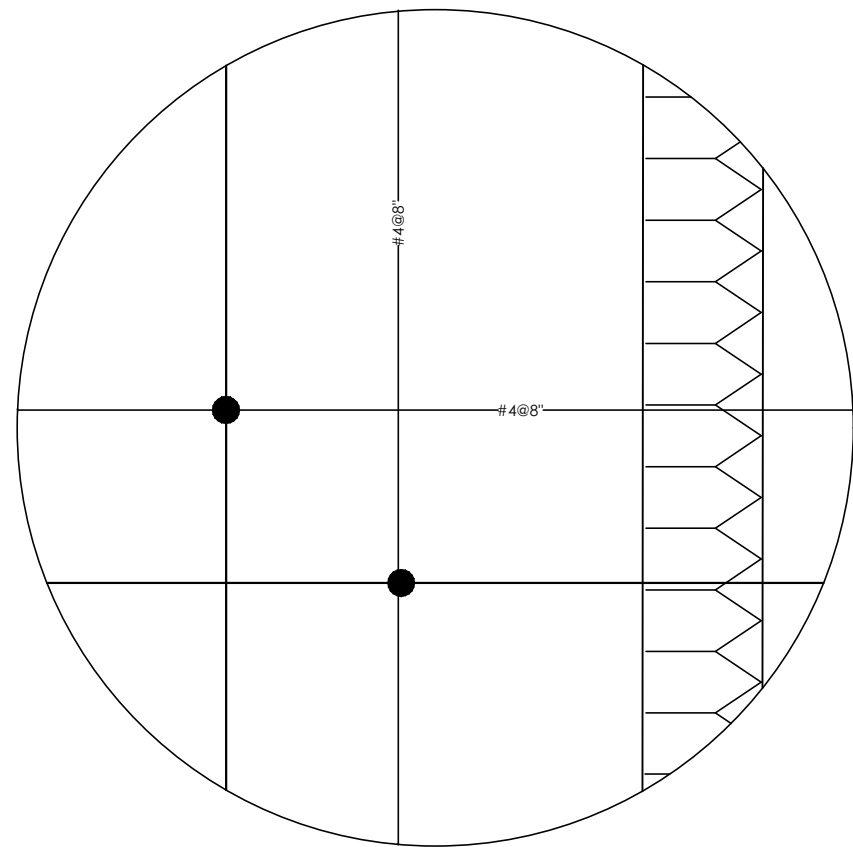
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		Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-)	260	Approved PMDFC		Scale AS SHOWN

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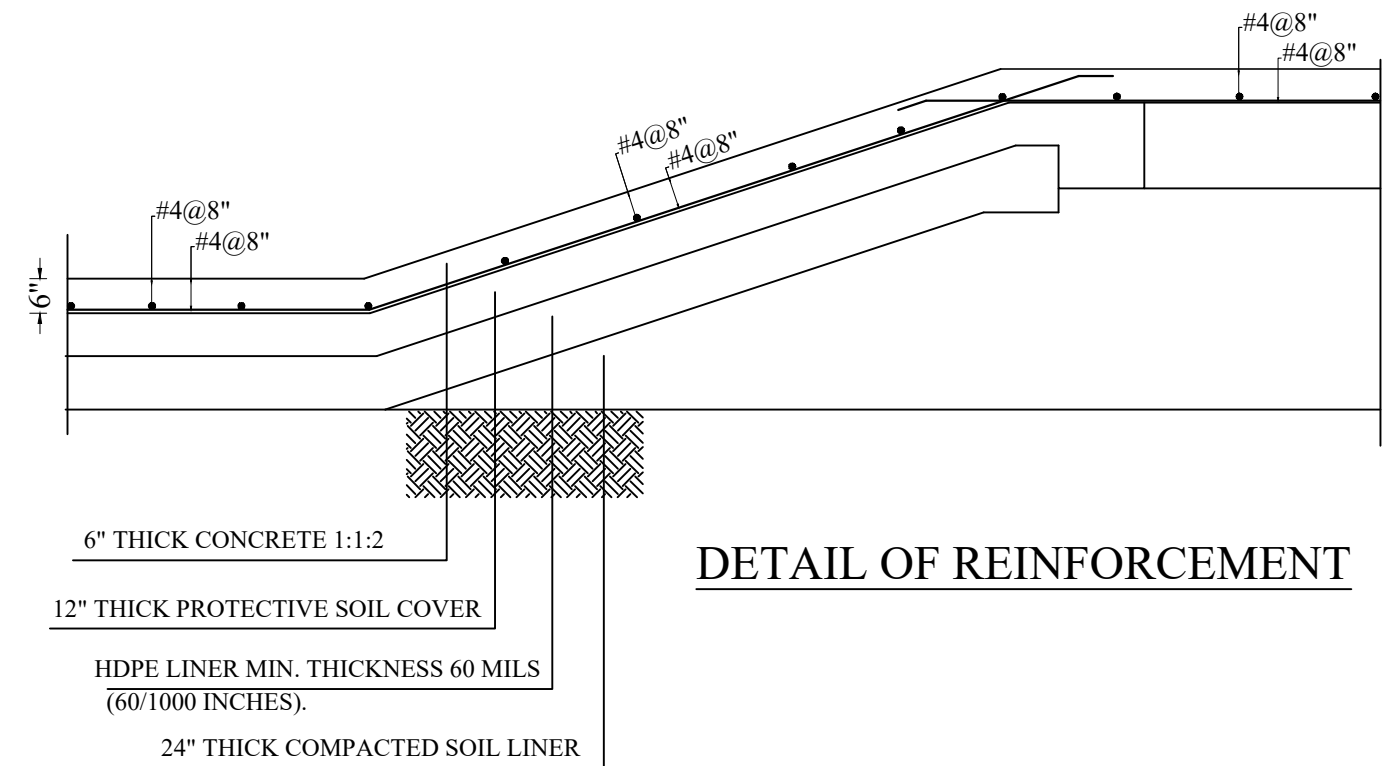
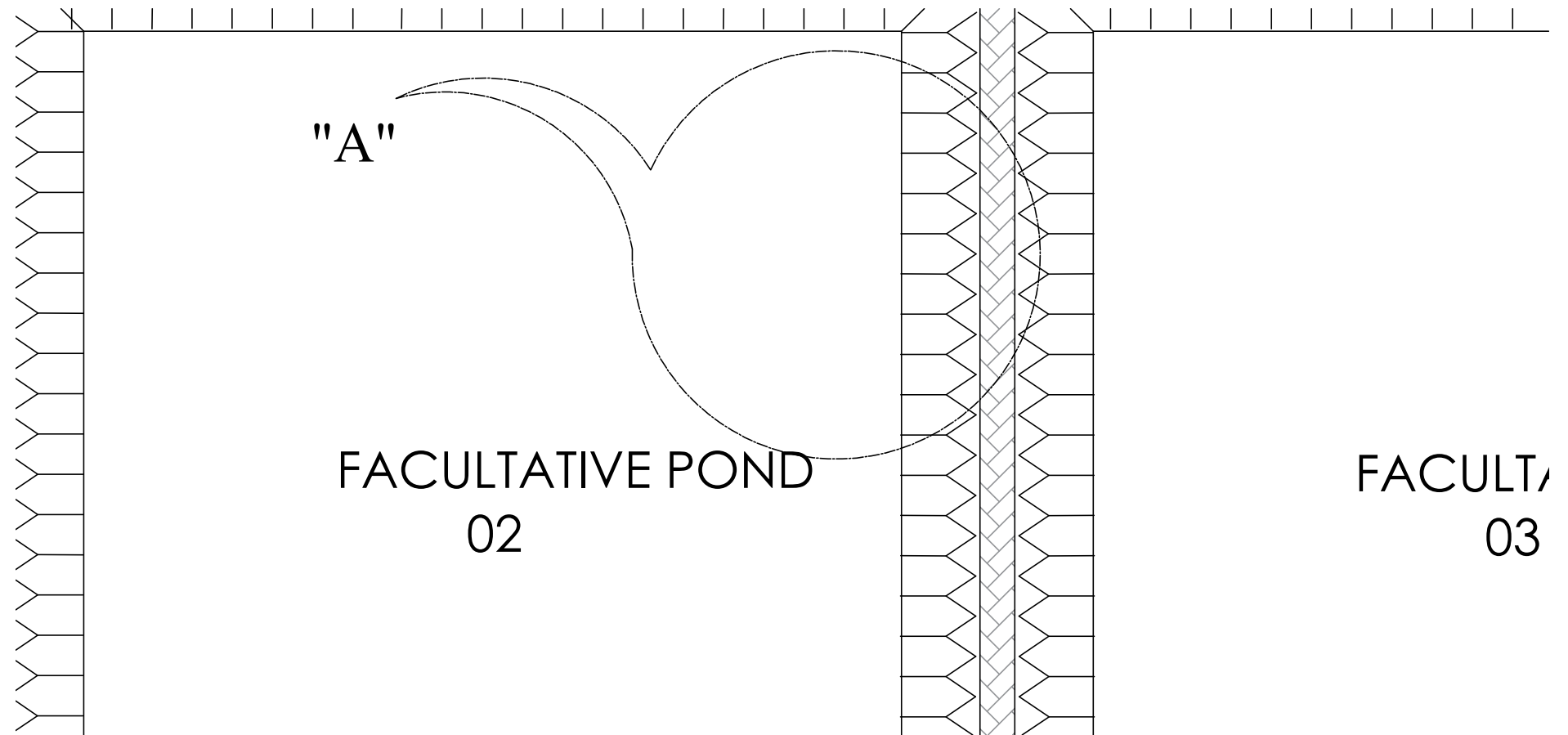
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		Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-1)	Approved PMDFC					
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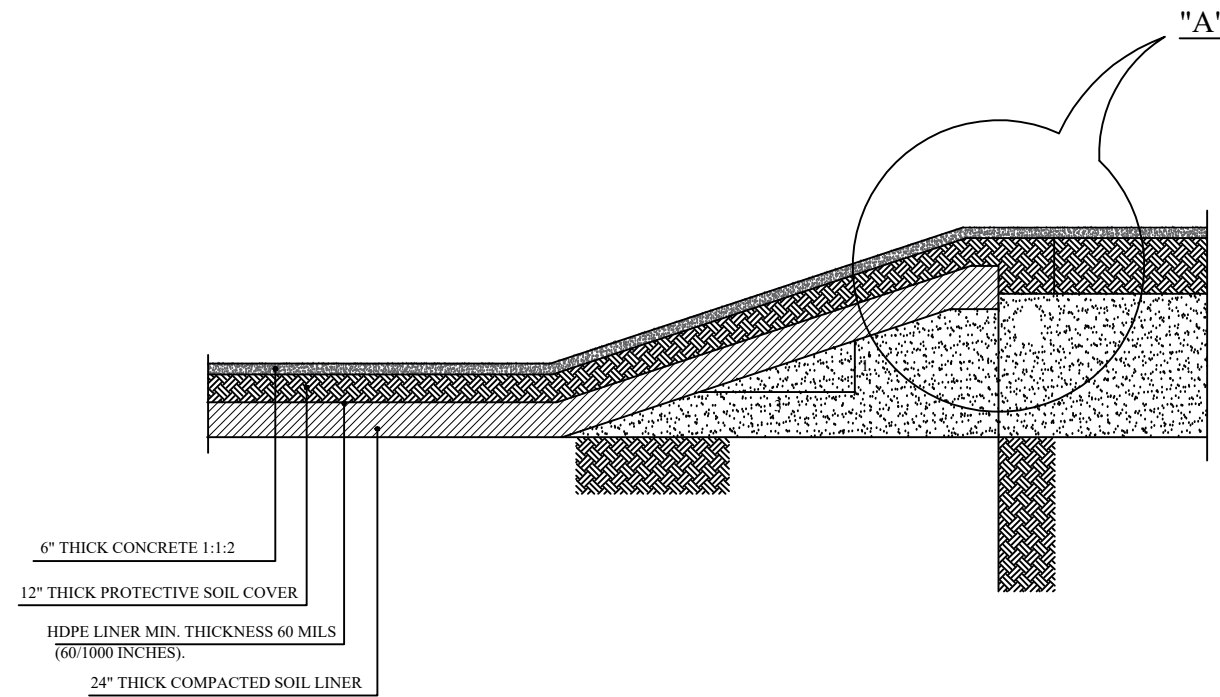


DETAIL-A

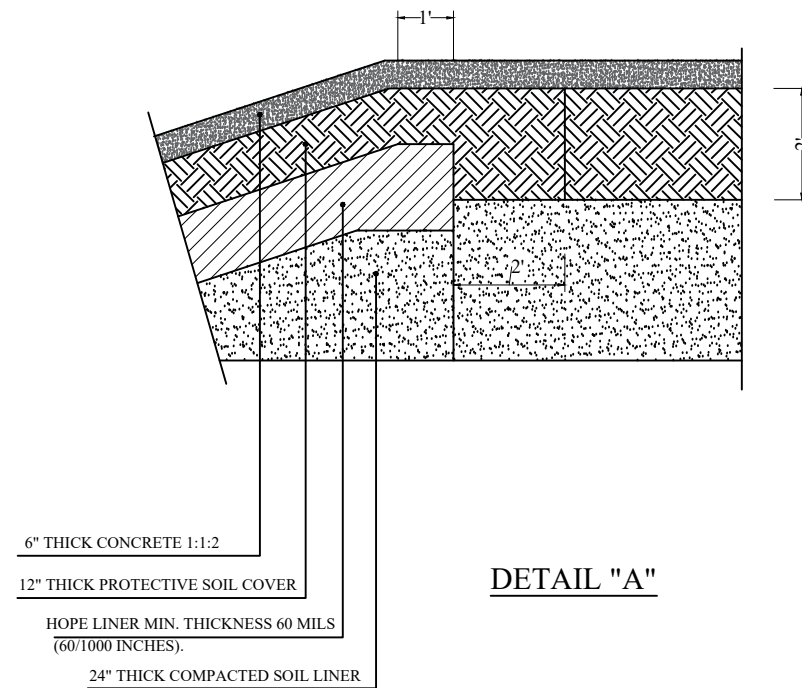


DETAIL OF REINFORCEMENT

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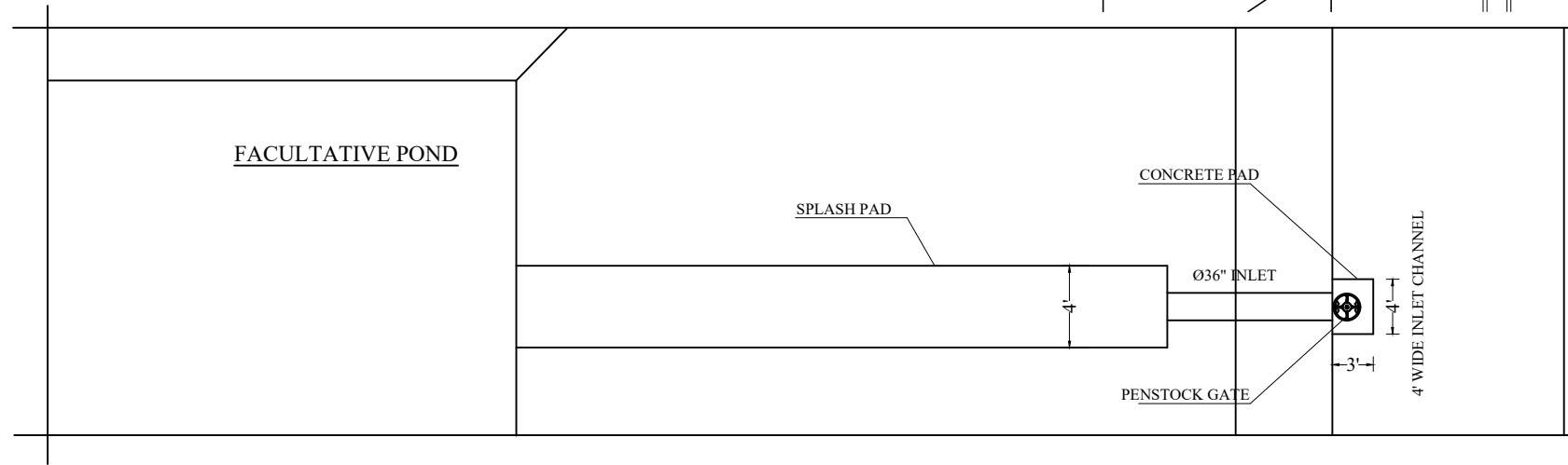
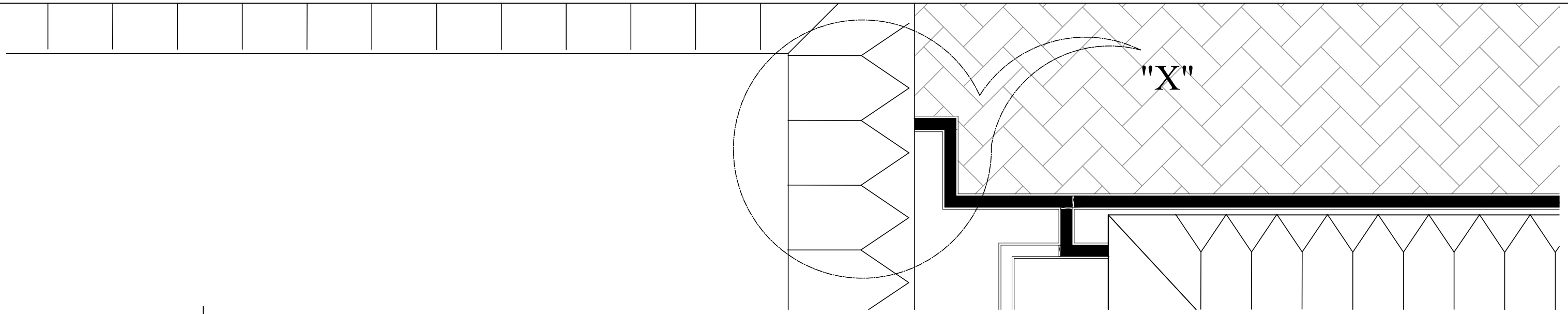
DETAIL OF COMPOSITE LINER



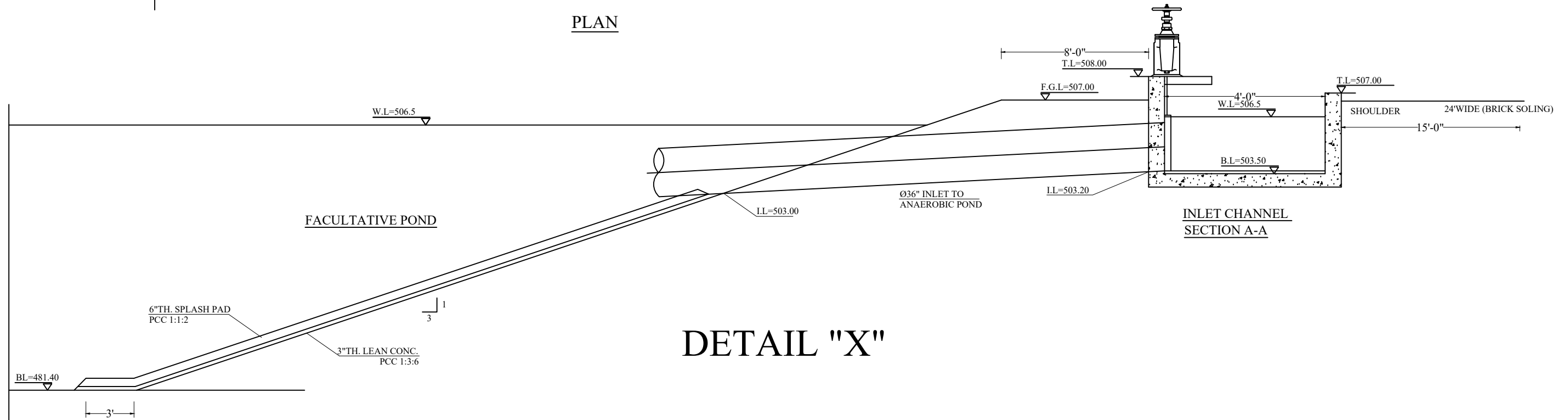
DETAIL "A"

1. ALL DIMENSIONS AND LEVELS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2. FOR LAYOUT PLAN AND X-SECTIONS, SEE DRAWING Nos. P
3. READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
4. COMPACTED SOIL LINER WITH A MINIMUM THICKNESS OF 24" SHALL BE PLACED AT THE BOTTOM AND ON SIDE SLOPES OF THE PONDS.
5. THE COMPACTED SOIL LINER SHALL BE PLACED IN LAYERS WITH MAXIMUM COMPACTED LAYER THICKNESS OF 150 mm & COMPACTED TO AT LEAST 90 % OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY AT 2 TO 3% OF WET OPTIMUM MOISTURE CONTENT.
6. SHALL MEET THE FOLLOWING SPECIFICATIONS:
 - I) VERTICAL IN-SITU HYDRAULIC CONDUCTIVITY IN COMPACTED STATE :s 1 X 10⁻⁷ CM/SEC
 - II) FINES (PARTICLES PASSING 0.075mm SIEVE) ::: 30%,
 - III) PLASTICITY INDEX = 8 • 20%.
 - IV) GRAVELS (PARTICLES PASSING 75MM SIEVE AND RETAINING 4.75mm SIEVE) S 20%.
 - V) MAXIMUM PARTICLE SIZE :s 10mm.
7. HIGH DENSITY POLYETHYLENE, (HDPE) LINER HAVING MINIMUM THICKNESS OF 60 MILS (60/1000 INCHES) SHALL BE PLACED OVER THE COMPACTED SOIL LINER.
8. HDPE LINER MUST COVER THE ENTIRE AREA OF EARTH MATERIAL THAT WOULD BE IN CONTACT WITH THE TREATED OR STORED EFFLUENT.
9. 12" PROTECTIVE SOIL COVER OF FINE GRAINED SOILS CLASSIFIED AS ASTM CLASS CL (LEAN CLAY). FREE OF ANY OBJECTIONABLE MATERIAL SHALL BE USED.
10. THE PROTECTIVE SOIL COVER SHALL BE COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY AT 2 TO 3% OF WET OF OPTIMUM MOISTURE CONTENT.
11. THE DETAILS OF ANCHOR TRENCH (DETAIL A) ARE INDICATIVE AND WILL BE FINALIZED BASED ON THE METHODOLOGY SUBMITTED BY THE CONTRACTOR.
12. THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRES THE HIGHEST LEVEL OF SUPERVISION I.e. LEVEL-1 SUPERVISION FOR CLAY LINED WASTE STABILIZATION PONDS, THEREFORE ALL THE EARTH WORK OPERATIONS MUST BE CONTINUOUSLY SUPERVISED AND TESTED AS PER TECHNICAL SPECIFICATION BY AN EXPERIENCED/ SPECIALIZED ENGINEER IN SIMILAR WORKS.
13. MATERIAL CLASSIFIED AS A-2-4/A-3/A-4 AS PER AASHTO SOIL CLASSIFICATION CAN BE USED FOR EMBANKMENT FILL.
14. THE EMBANKMENT FILL MUST BE PLACED AND COMPACTED IN LAYERS APPROPRIATE TO THE TYPE & SIZE OF COMPACTION EQUIPMENT TO AT LEAST 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY.
15. A 2 ft THICK CAPPING LAYER OF (i.e. PROTECTIVE SOIL COVER) CLAYEY SOIL SHOULD BE PLACED OVER EMBANKMENT FILL TO PROTECT IT FROM INGRESS OF WATER DUE TO SURFACE WATER/ DRAINAGE.
16. THE CONTRACTOR SHOULD SUBMIT HIS METHOD STATEMENT PRIOR TO PLACEMENT OF CLAY LINER, HDPE LINER, PROTECTIVE SOIL COVER, EMBANKMENT FILL & CAPPING LAYER BEFORE EXECUTION OF WORK FOR THE APPROVAL OF THE ENGINEER.

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		WORLD BANK	0	0-12-2022				
		Project					Scale	AS SHOWN
		Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-□)				Drawing No.		Rev No:
					263	MMP-10□5PO□-JHG-SEW-DS-00□		



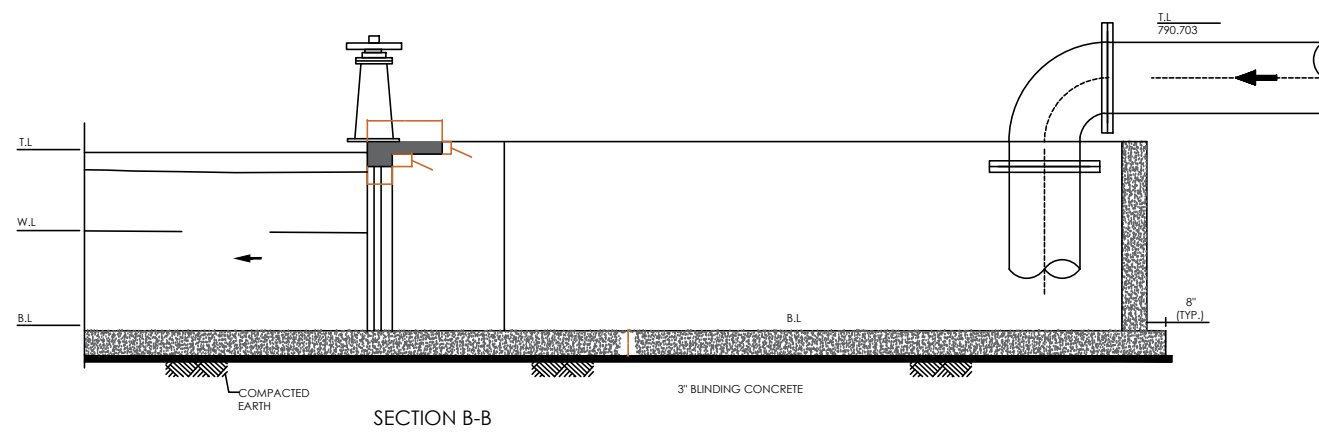
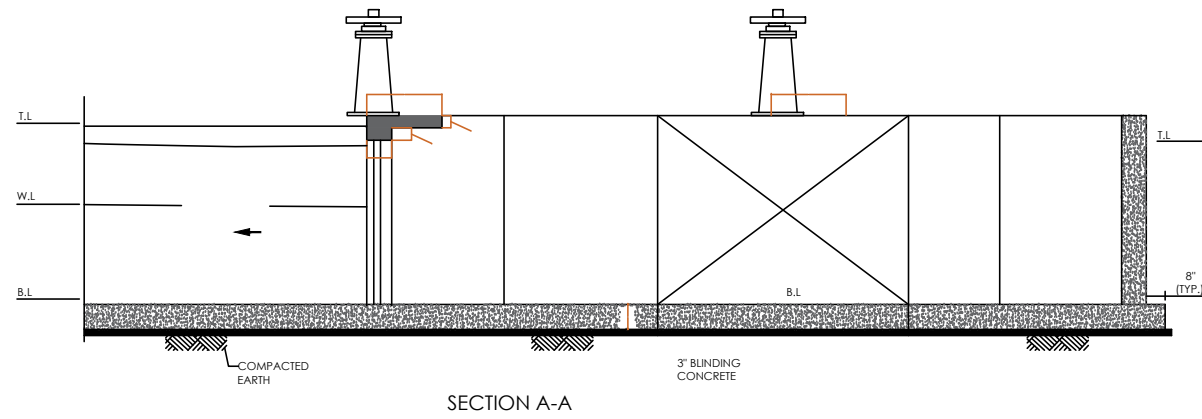
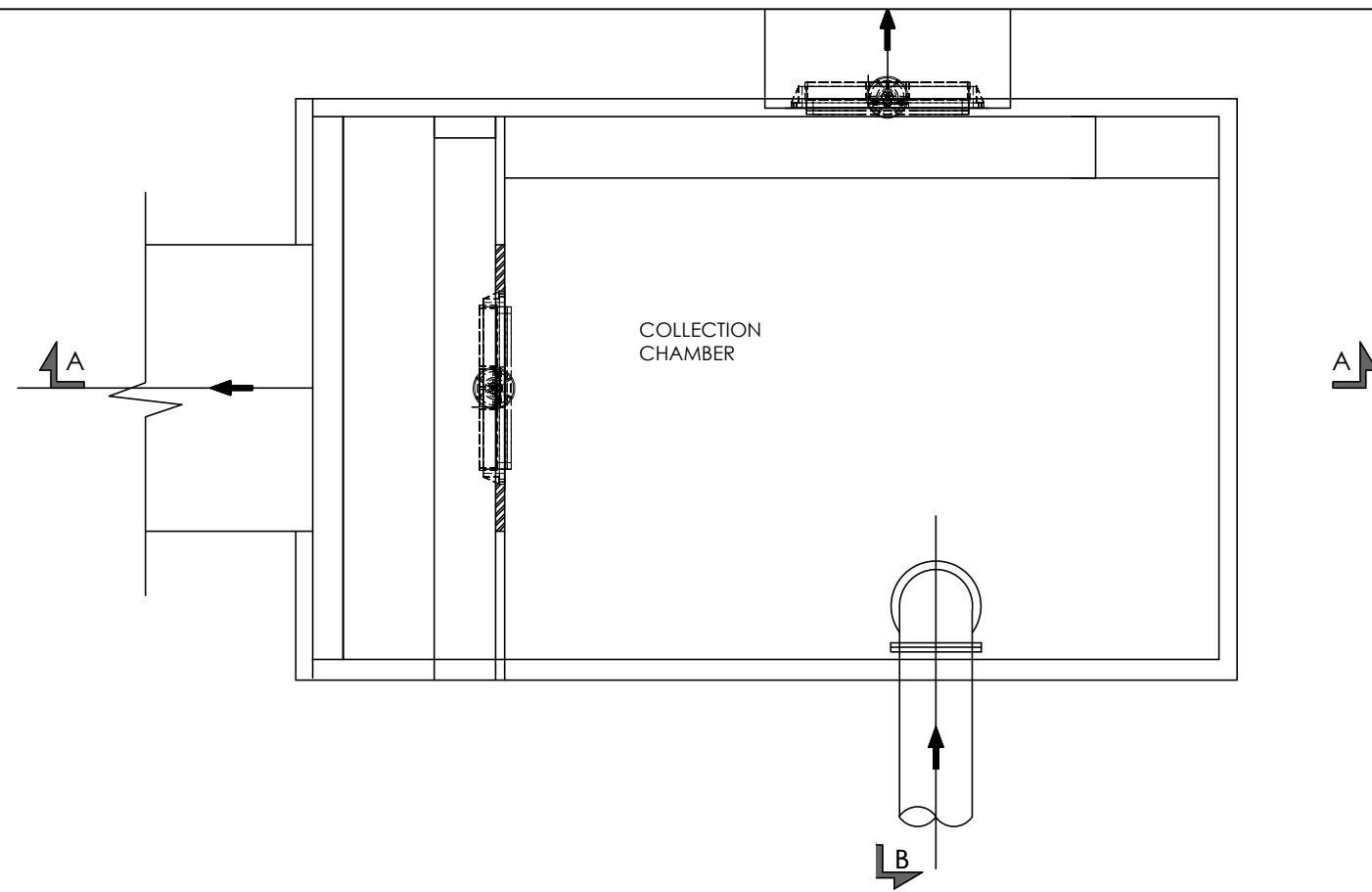
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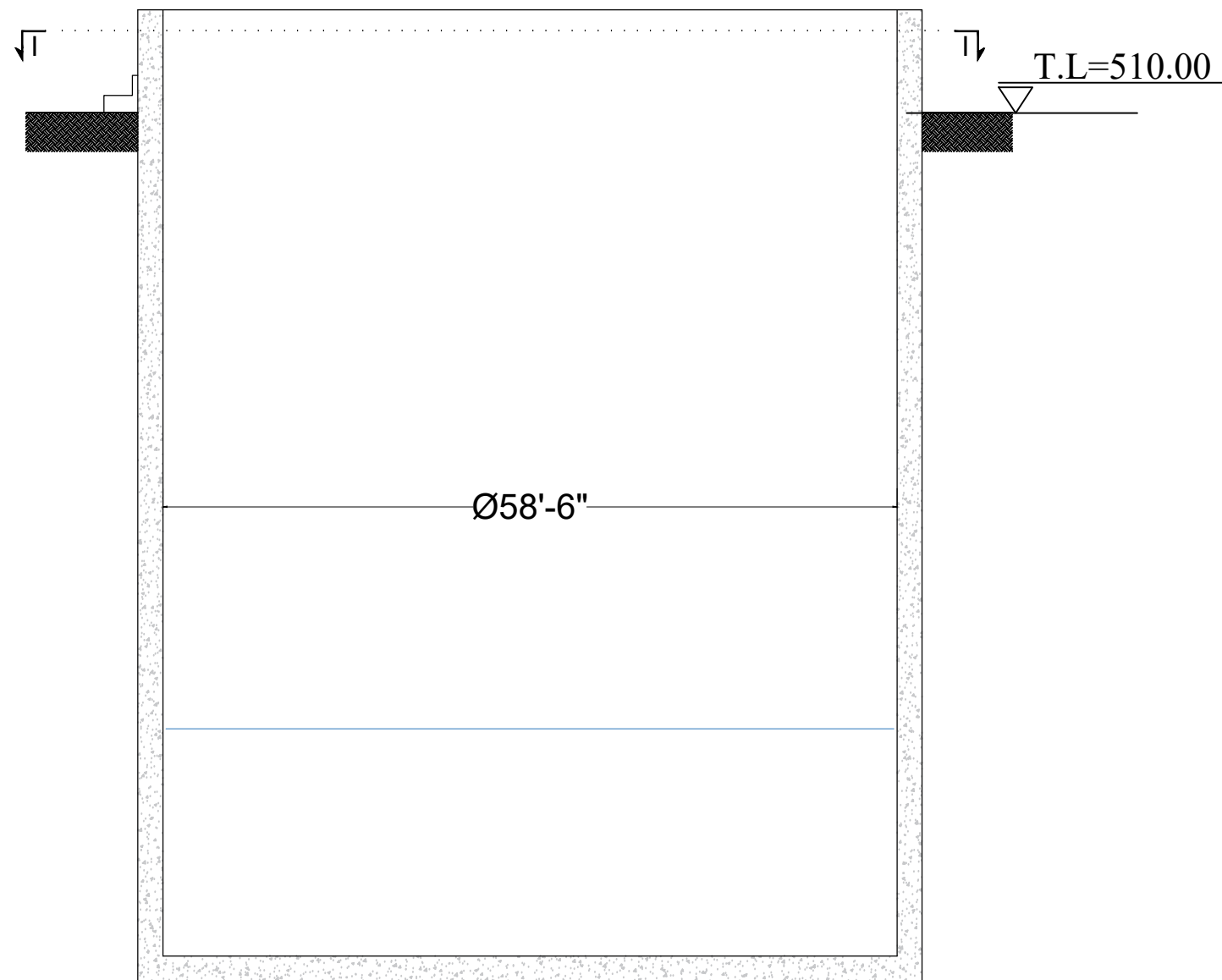
DETAIL "X"

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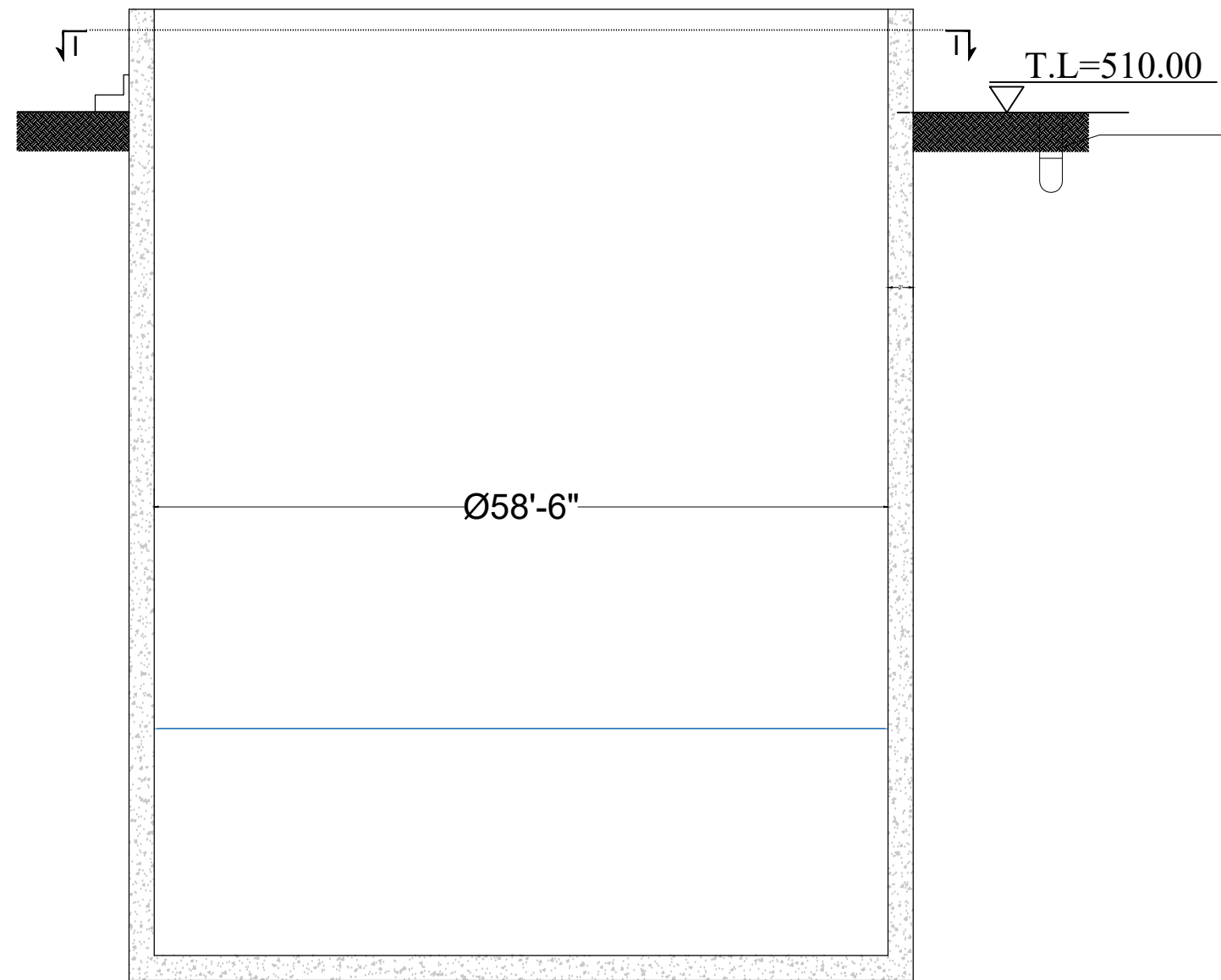
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		Project	Rev. 0	Date 0-12-2022			Approved PMDFC
						Drawing No. MMP-10-5PO-JHG-SEW-DS-00	Scale AS SHOWN
						Rev No:	



SECTION AT A-A



SECTION AT B-B

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Project

Punjab Cities Program (PCP)
Detailed Design of Infrastructure
Sub-Projects, Sectoral Planning & Resident
Supervision in 16 Cities of Punjab(Package-5)

Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N

Title

**10 MGD WASTE STABILIZATION POND
FOR ZONE-1 JHANG
DETAIL FOR CLEAR WATER TANK
CONCRETE LINE (PRELIMINARY DESIGN)**

Drawing No.

MMP-1076PO5-KWL-SEW-LA-005

Designed

A.U

Drawn

T.M

Checked

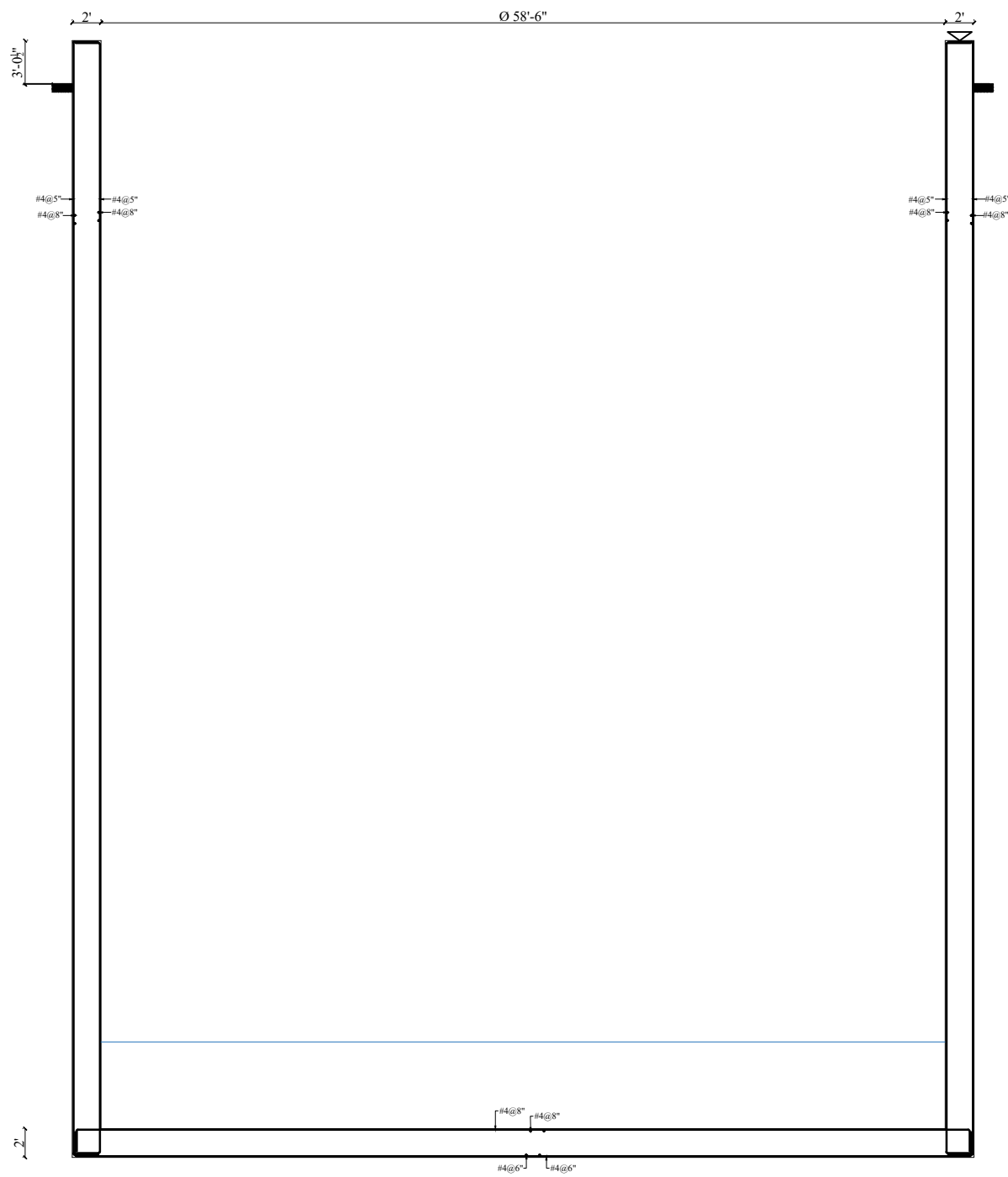
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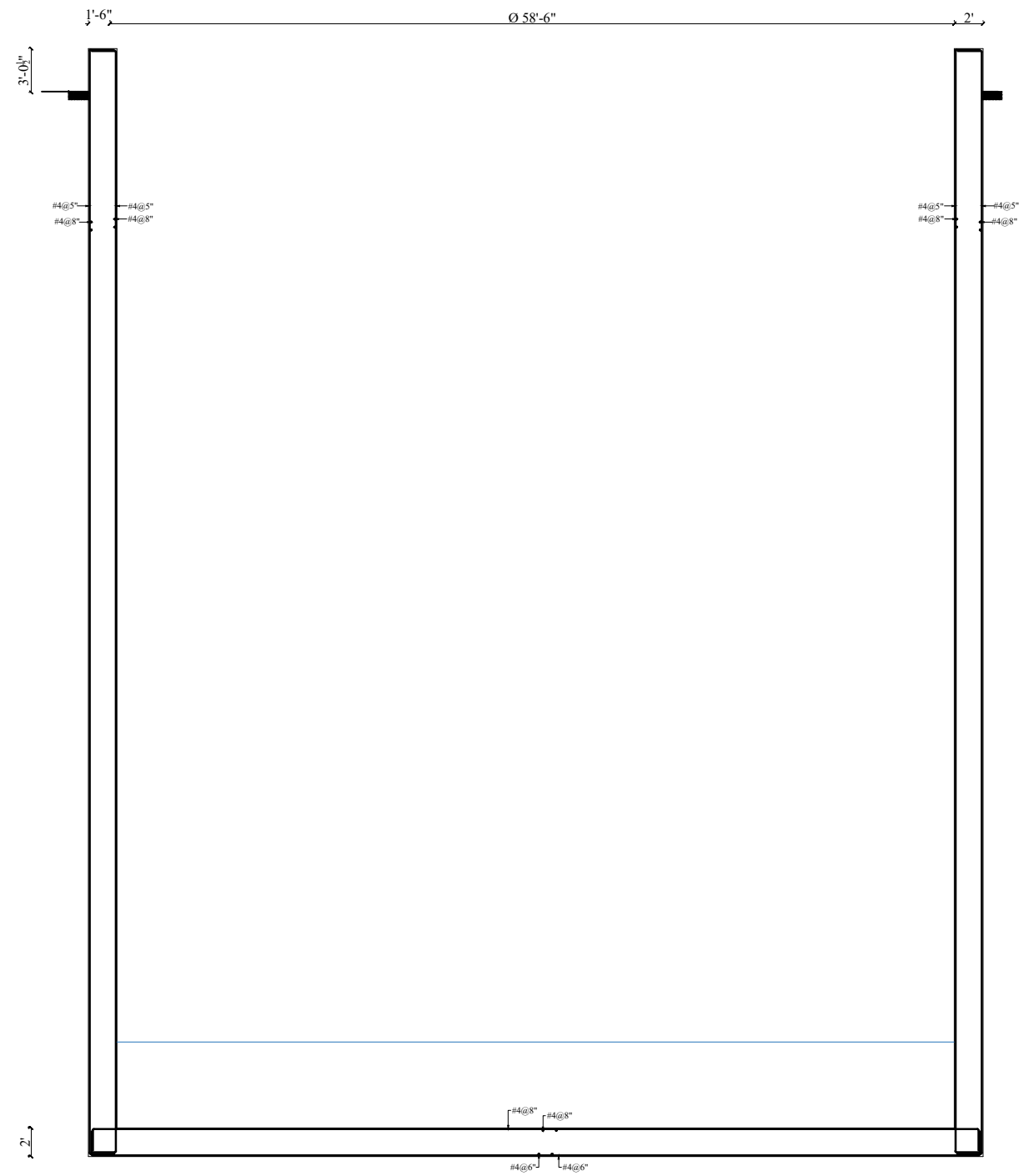
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Scale

Rev No:

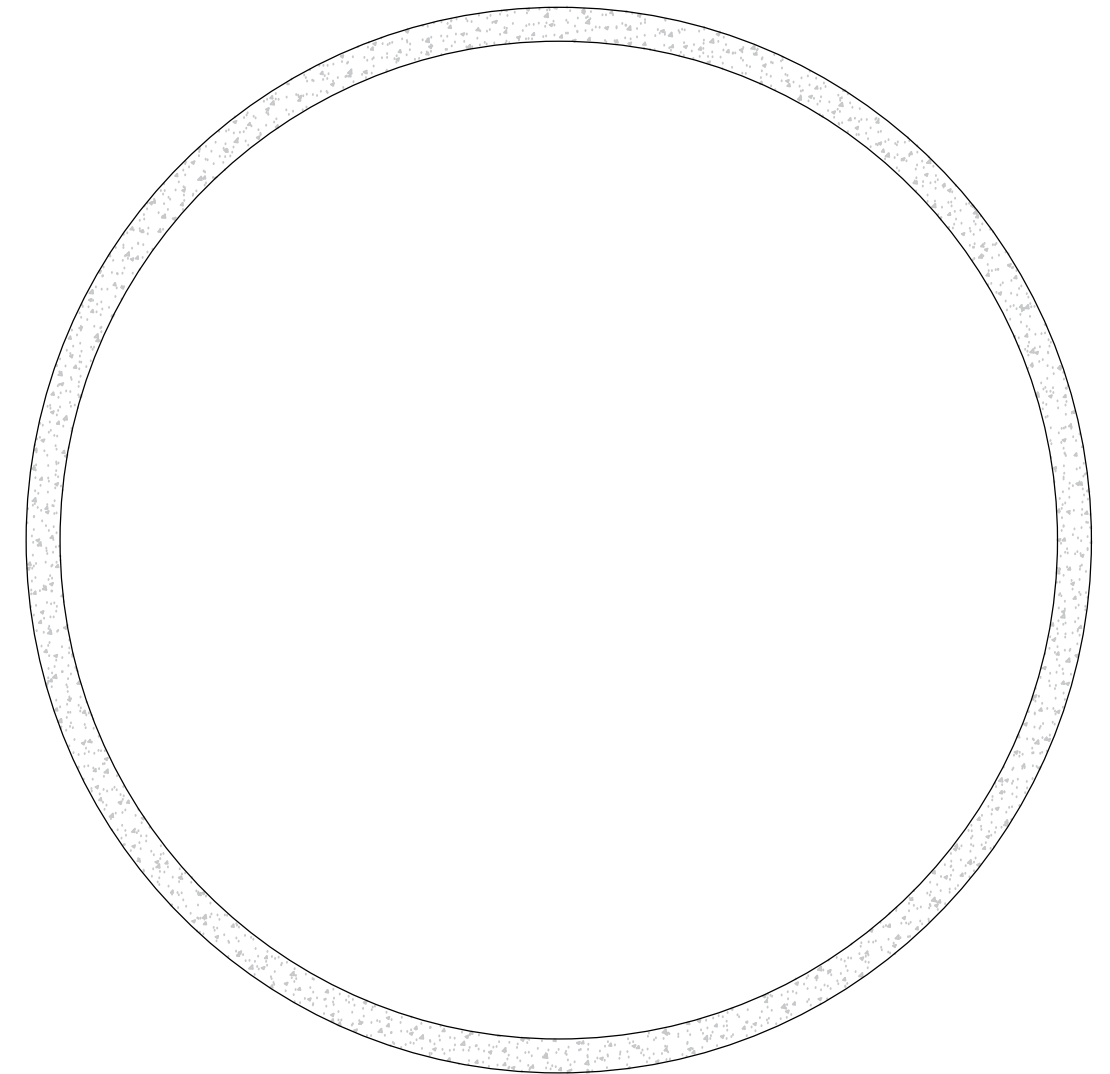
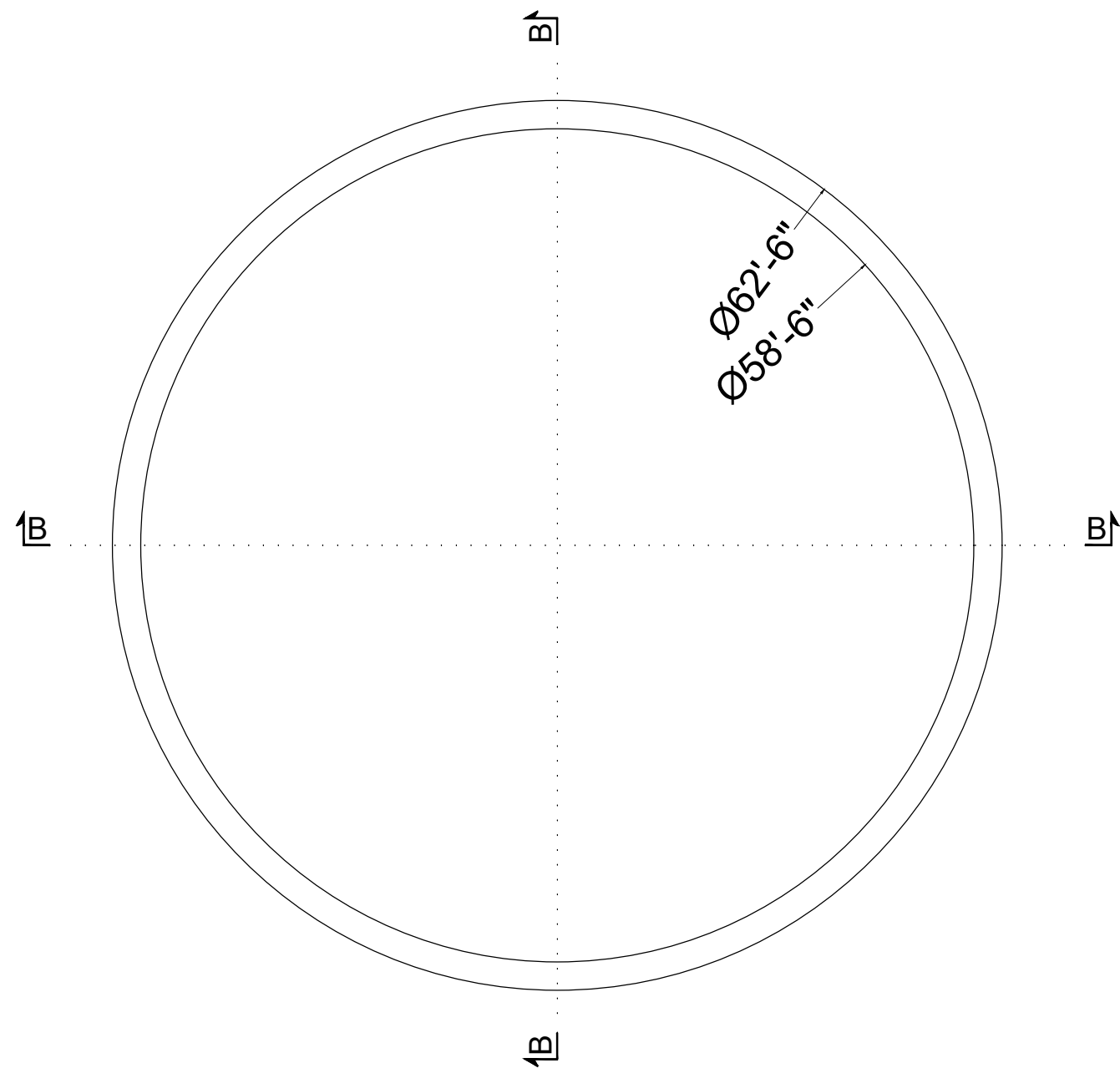


SECTION AT A-A






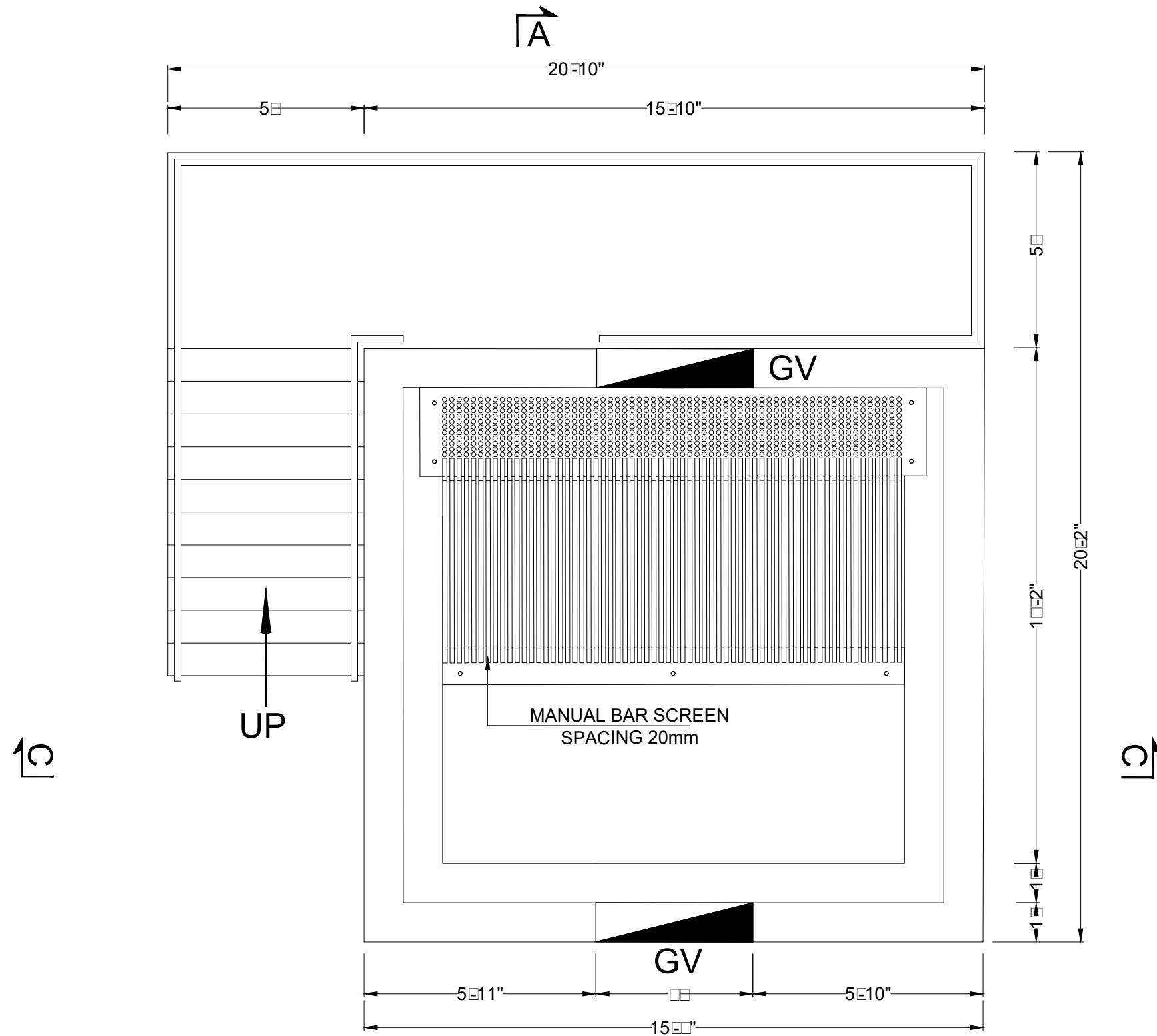
SECTION AT B-B

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			0	16-12-2022		M.A	P.H.N		Drawn	T.M
								Checked	M.A	
								Approved	P.H.N	
								Scale		
								Drawing No.	MMP-10-6PO5-KWL-SEW-LA-005	
								Rev No:		






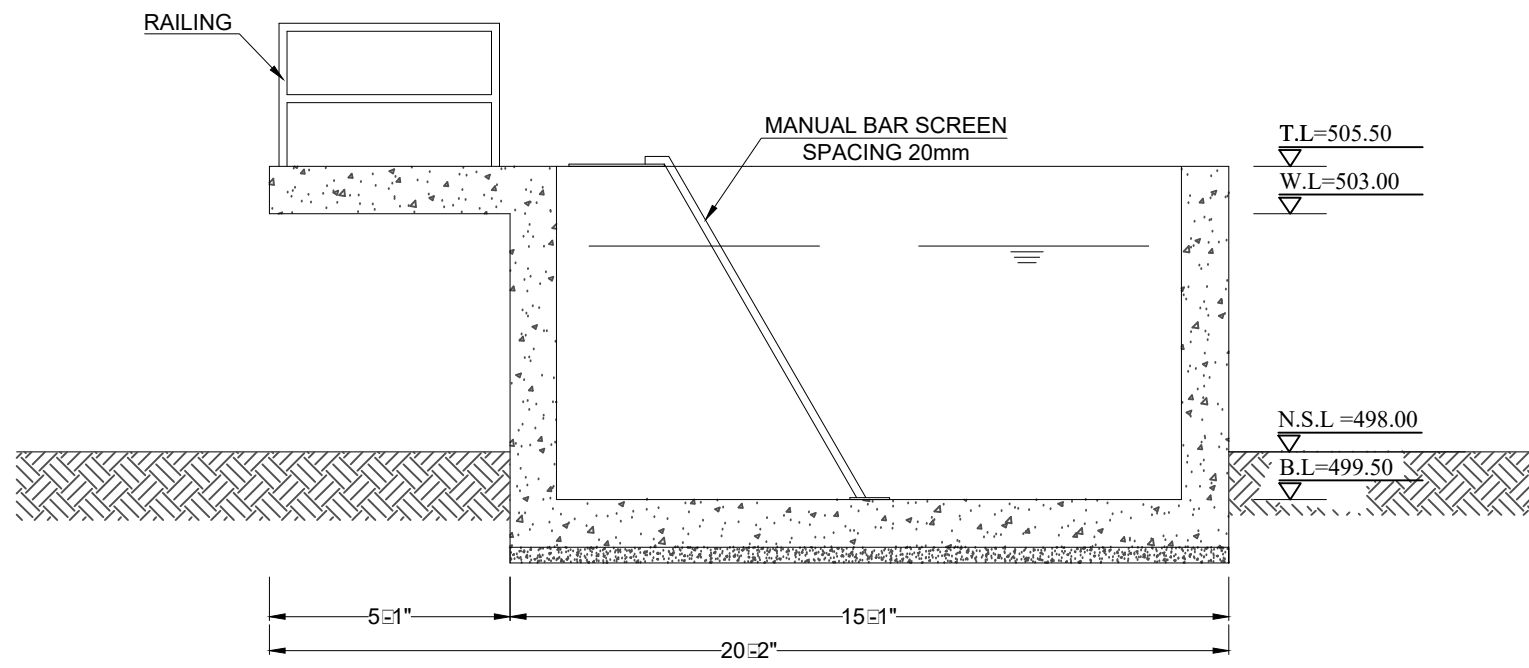
PLAN OF CLEAR WATER TANK

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			Rev. 1	Date 16-12-2022	Description	Checked M.A	Approved P.H.N		Drawn T.M	
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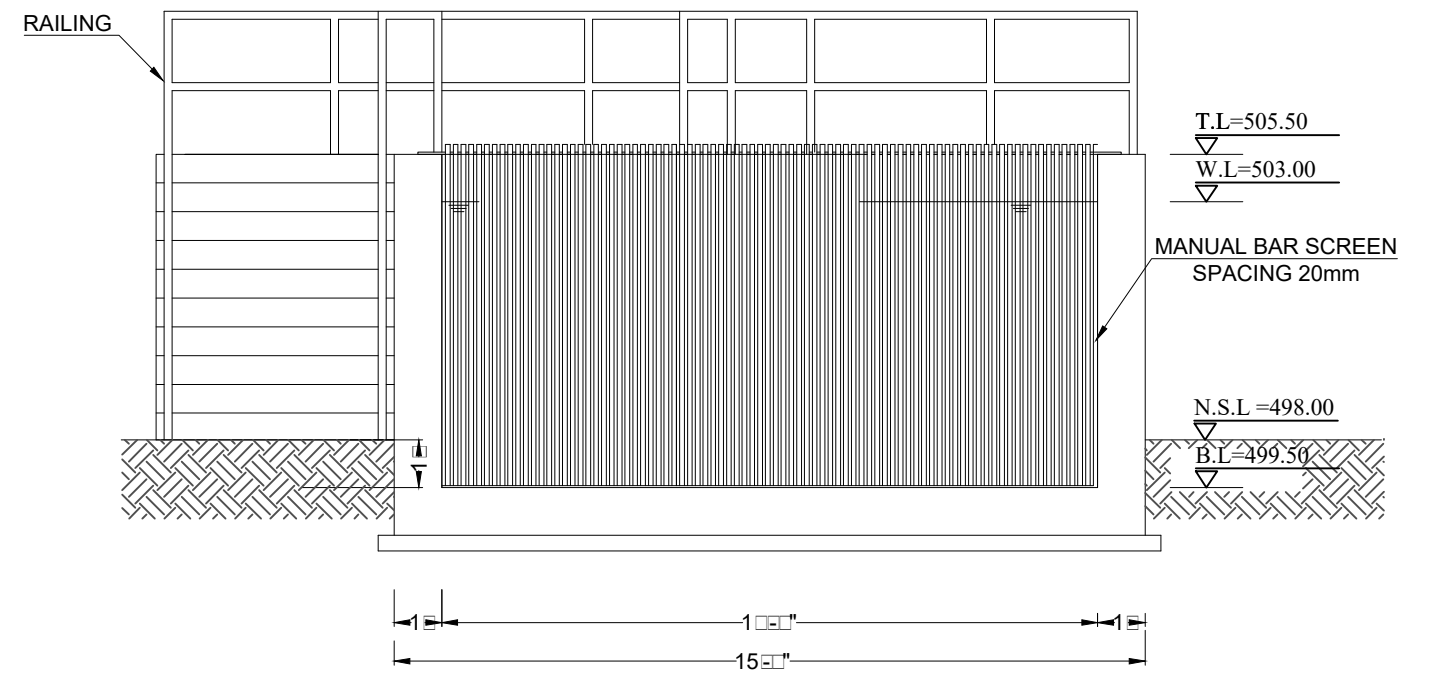


PLAN OF SCREEN CHAMBER

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			269	Drawing No. MMP-10-6PO5-KWL-SEW-LA-005	Rev No:			



SECTION AT A-A



SECTION AT C-C

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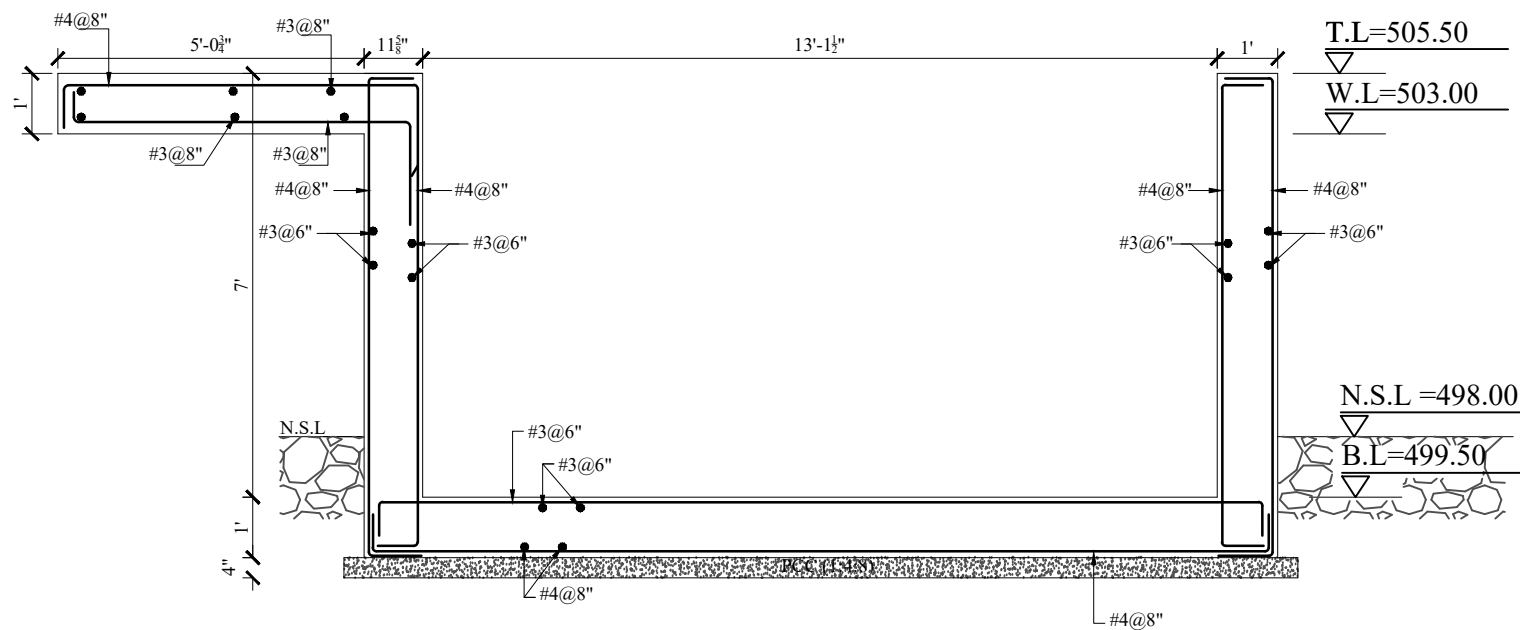
WORLD BANK

Project

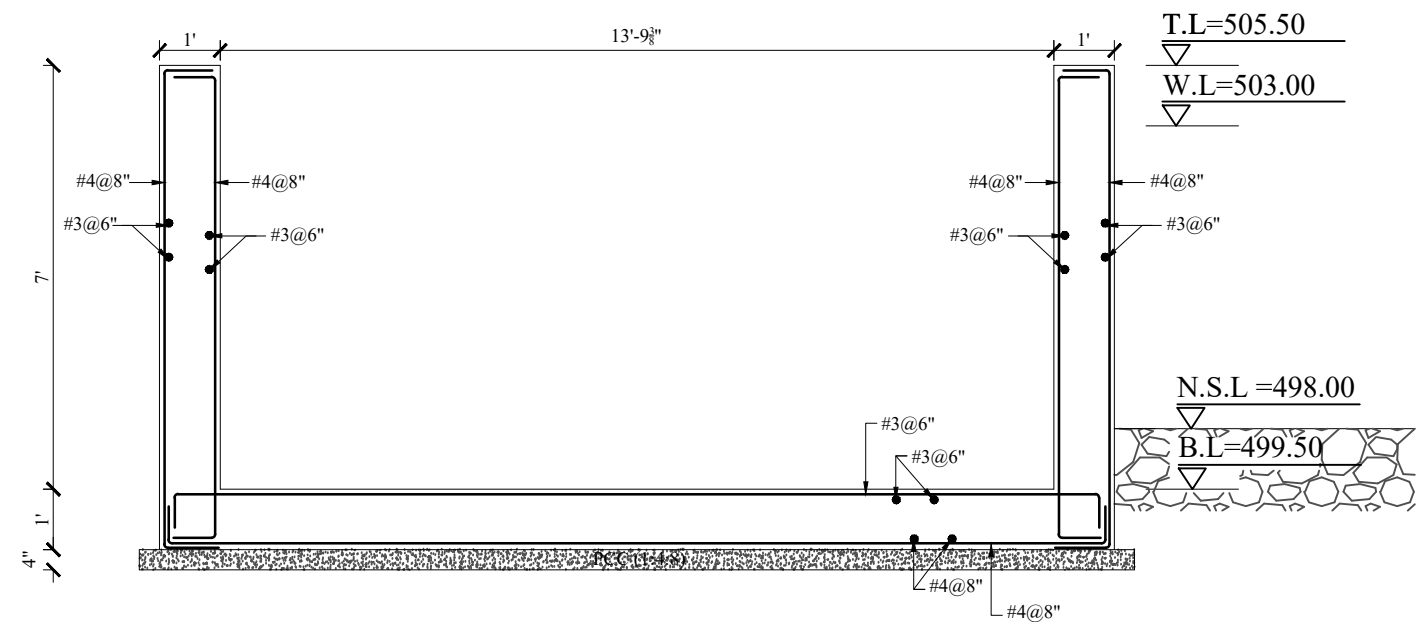
Punjab Cities Program (PCP)
Detailed Design of Infrastructure
Sub-Projects, Sectoral Planning & Resident
Supervision in 16 Cities of Punjab(Package-5)

Rev.	Date	Description	Checked	Approved
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Title	Designed	A.U
10 MGD WASTE STABILIZATION POND FOR ZONE-1 JHANG COURSE SCREEN CONCRETE LINE (PRELIMINARY DESIGN)	Drawn	T.M
	Checked	M.A
	Approved	P.H.N
	Scale	
	Rev No:	
Drawing No.	MMP-10-6PO5-KWL-SEW-LA-005	

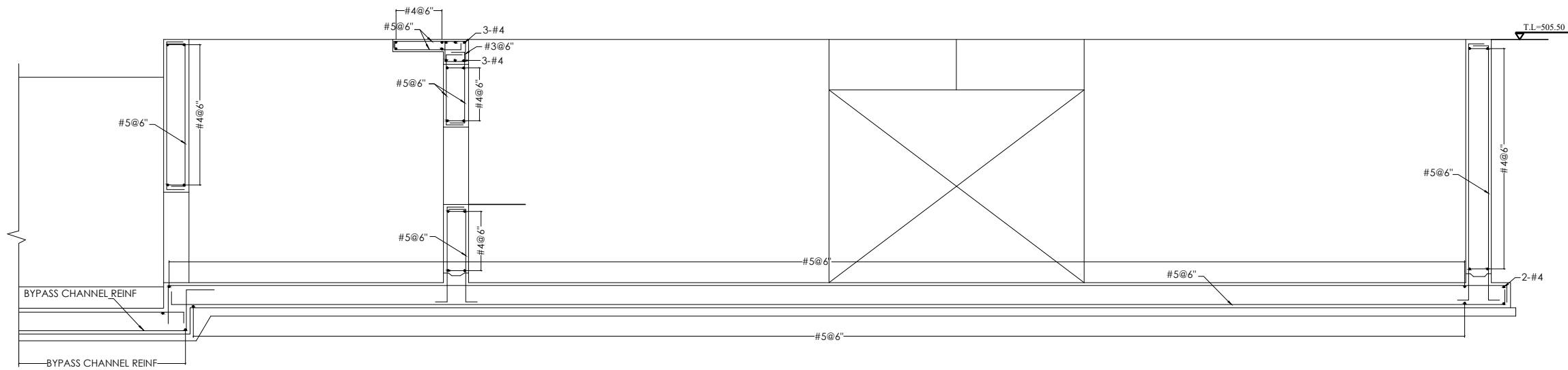


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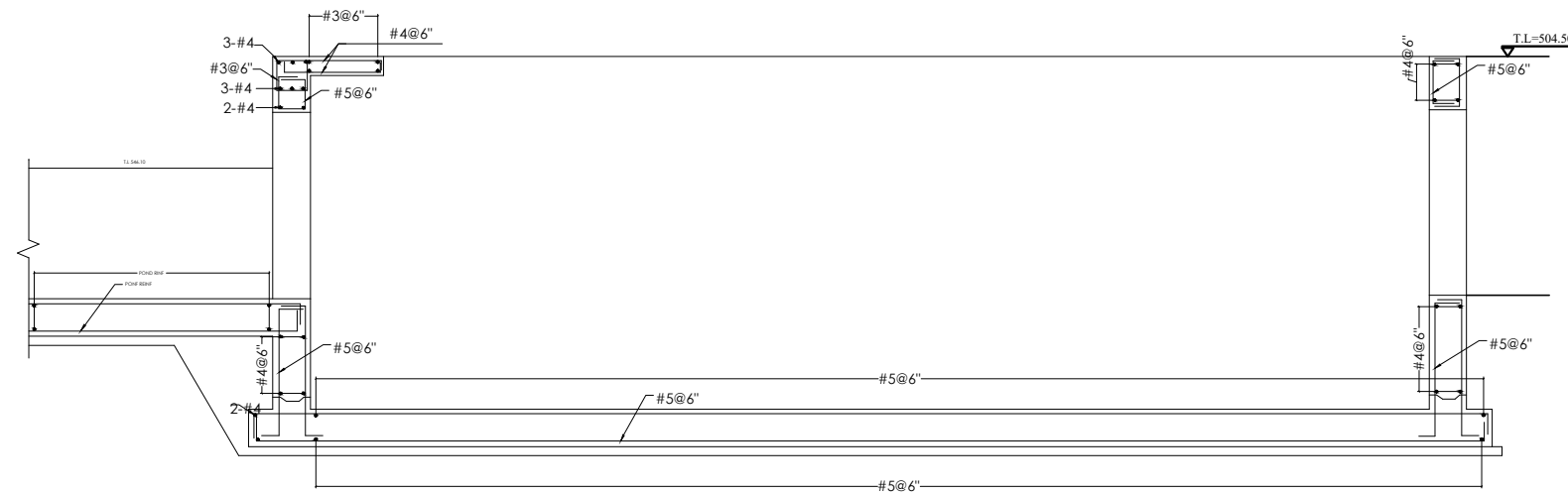


SECTION AT C-C

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			0	16-12-2022		M.A	P.H.N		Drawn	T.M
Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-5)								Checked	M.A	
								Approved	P.H.N	
								Scale		
								Rev No:		
								Drawing No.	MMP-10-6PO5-KWL-SEW-LA-005	



COLLECTION CHAMBER DETAILS
(REINFORCEMENT)



COLLECTION CHAMBER DETAILS
(REINFORCEMENT)

NOTES:

1. FOR GENERAL NOTES REFER DRAWING
2. ALL DIMENSIONS ARE IN FEET AND INCHES.
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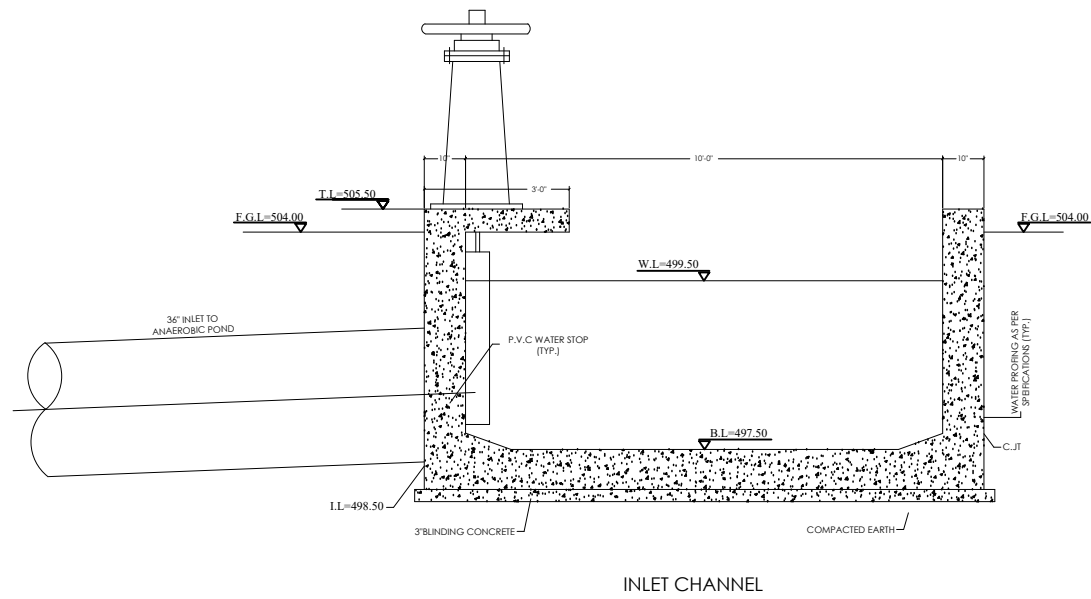
Project

Punjab Cities Program (PCP)
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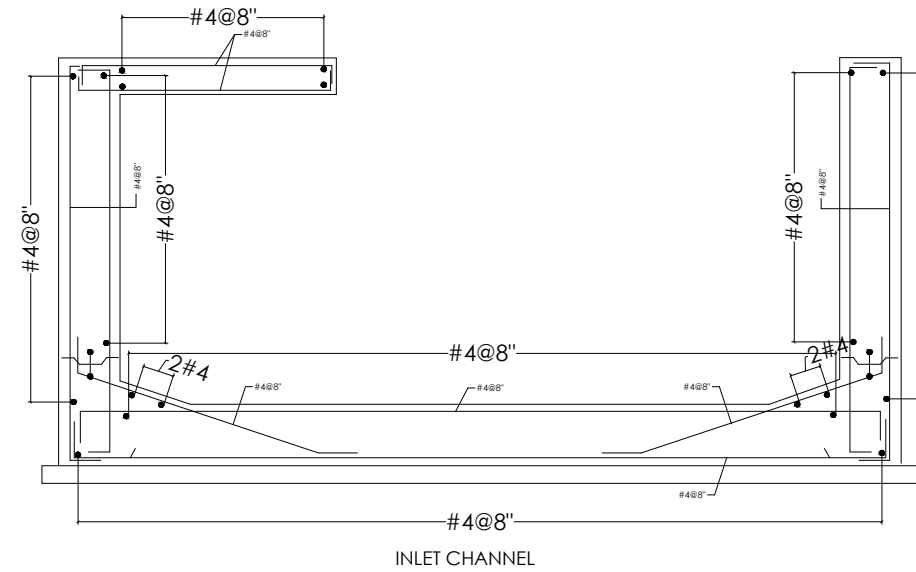
Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N

Title	
6 MGD WASTE STABILIZATION POND FOR ZONE-3B JHANG	
COLLECTION CHAMBER REINFORCEMENT (PRELIMINARY DESIGN)	
Drawing No.	MMP-100-JHANG-SEW-PR-012

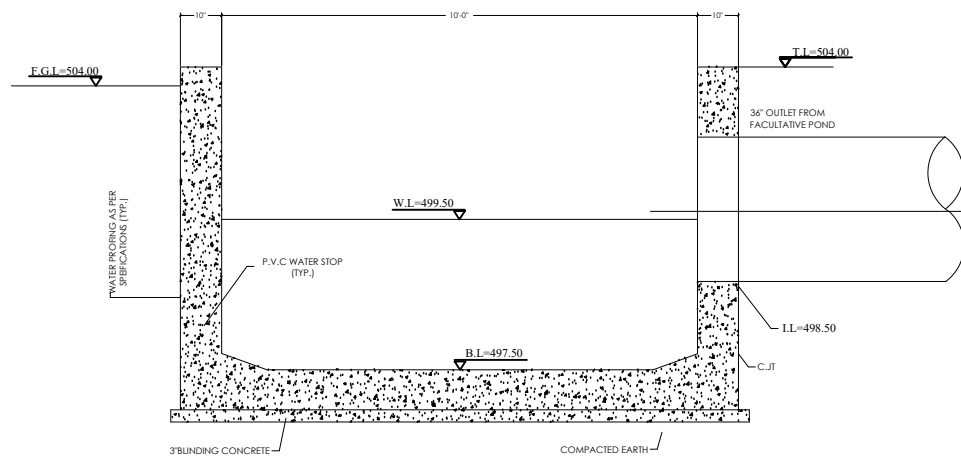
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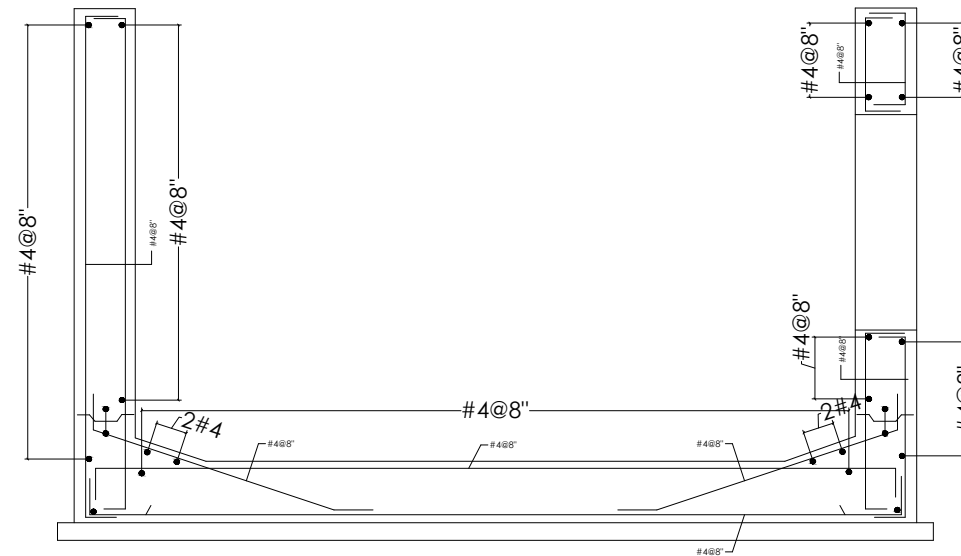
INLET CHANNEL



INLET CHANNEL



TYPICAL X-SECTION OF TREATED EFFLUENT CHANNEL (OPEN)



TYPICAL X-SECTION OF TREATED EFFLUENT CHANNEL (OPEN)

- NOTES:
1. FOR GENERAL NOTES REFER DRAWING
 2. ALL DIMENSIONS ARE IN FEET AND INCHES.
 3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS.

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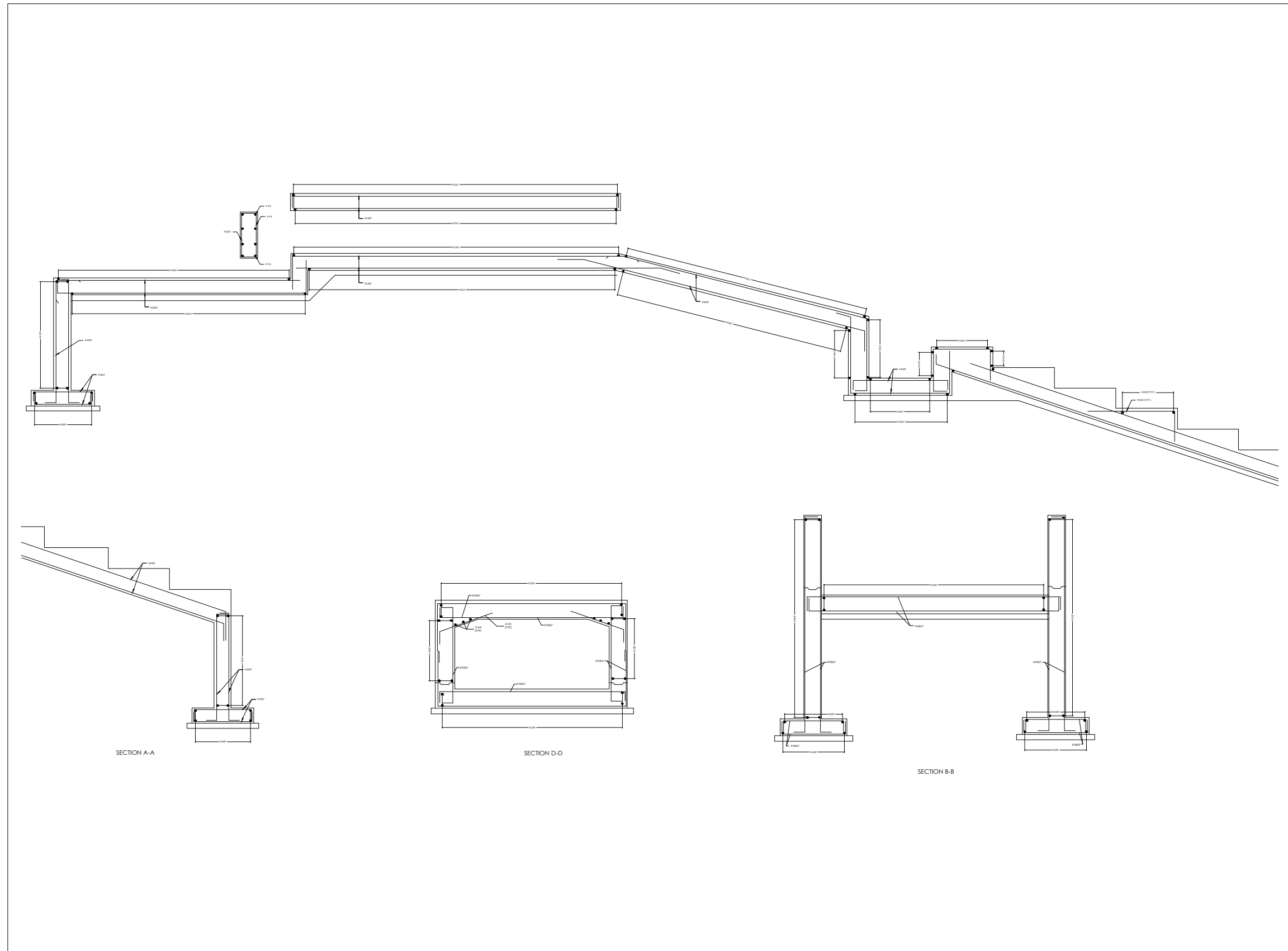
Project




Punjab Cities Program (PCP)
Detailed Design of Infrastructure
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Supervision in 16 Cities of Punjab(Package-5)

Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N

Title	
6 MGD WASTE STABILIZATION POND FOR ZONE-3B JHANG	
INLET CHANNEL & CLEAR WATER CHANNEL - CONCRETE OUTLINE & REINFORCEMENT (PRELIMINARY DESIGN)	
Drawing No.	MMP-100-JHANG-SEW-PR-01□

Designed	A.U
Drawn	T.M
Checked	M.A
Approved	P.H.N
Scale	
Rev No:	



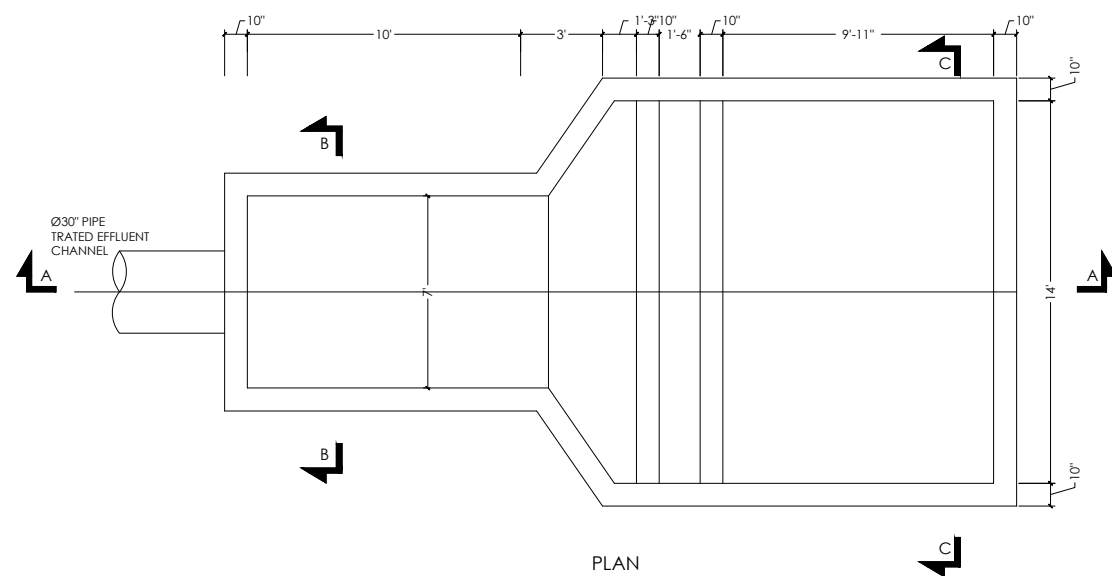
<p>Consultant</p>  <p>MMP</p> <p>CENTRAL DESIGN CELL 2nd Floor, CTI Building, 27-Empress Road, Lahore 042-36292528-7 042-36292528 cdc.mmp@mmpakistan.com http://www.mmpakistan.com</p>	<p>Client</p>  <p>GOVERNMENT OF PUNJAB</p>  <p>Punjab Municipal Development Fund Company (PMDFC)</p>
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<p>Funding Agency</p> <p>WORLD BANK</p>	<p>Project</p> <p>Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-5)</p>
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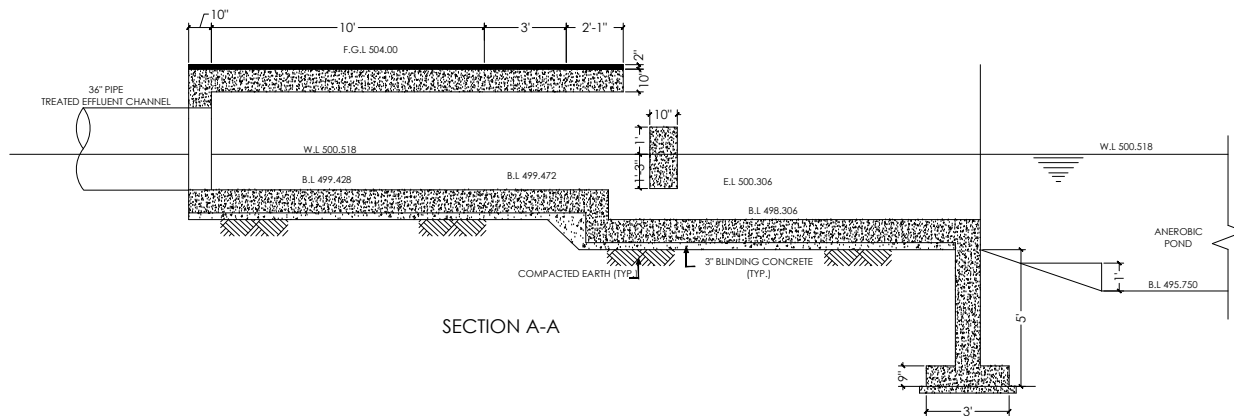
Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N

<p>Title</p> <p>6 MGD WASTE STABILIZATION POND FOR ZONE-3B JHANG</p>	<p>INTER CONNECTION DETAILS BETWEEN ANEROBIC POND & FACULTATIVE POND - REINFORCEMENT (PRELIMINARY DESIGN)</p>
<p>Drawing No.</p> <p>MMP-100-JHANG-SEW-PR-015</p>	<p>Rev No:</p>

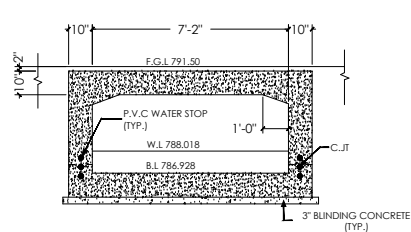
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Drawn	T.M
Checked	M.A
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Rev No:	



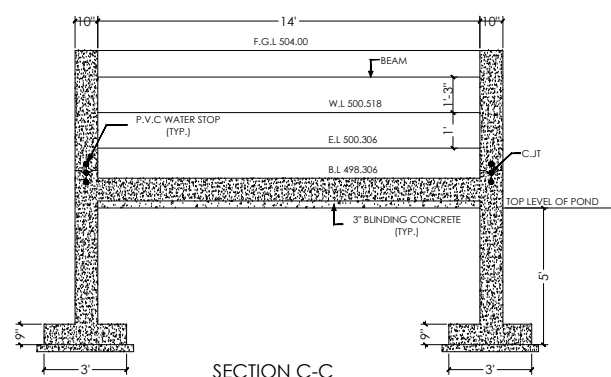
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

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2. ALL DIMENSIONS ARE IN FEET AND INCHES.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS.

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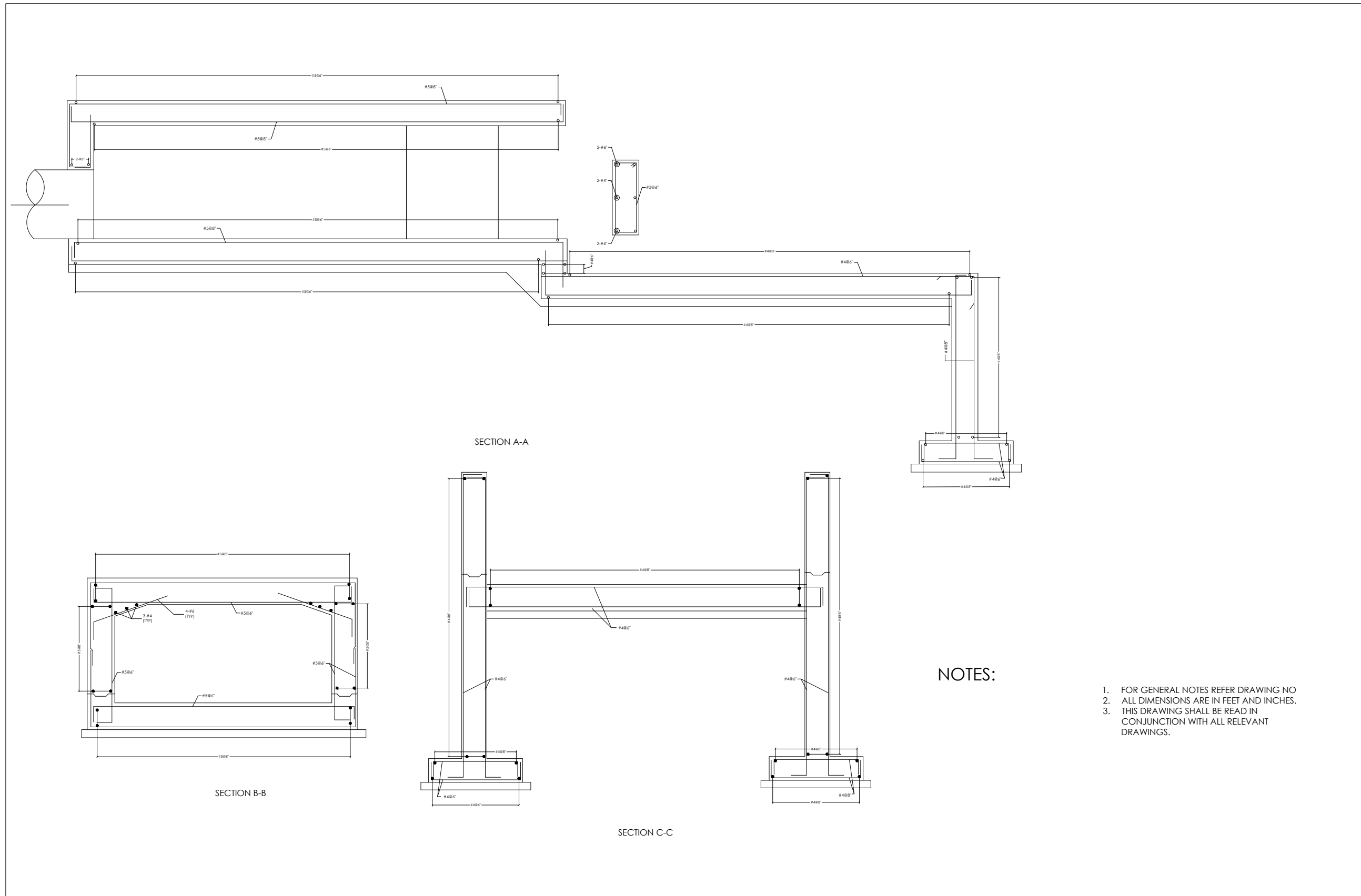
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Sub-Projects, Sectoral Planning & Resident
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Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N




Title	
6 MGD WASTE STABILIZATION POND FOR ZONE-3B JHANG	
OUTLET STRUCTURE DETAILS FROM FACULTATIVE POND - CONCRETE OUTLINE (PRELIMINARY DESIGN)	
Drawing No.	MMP-100-JHANG-SEW-PR-016

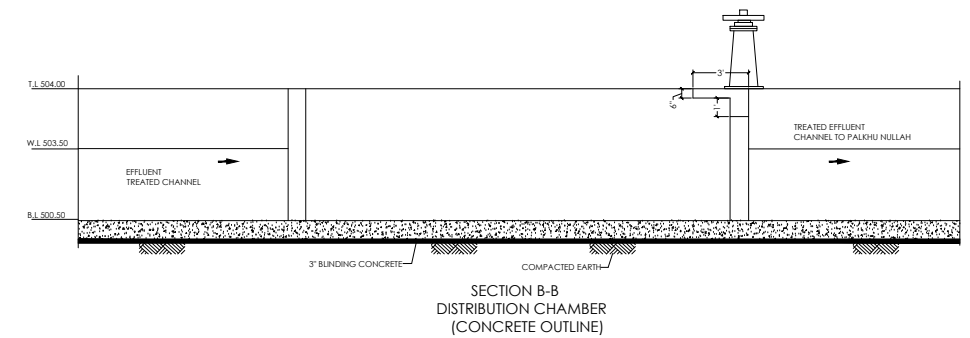
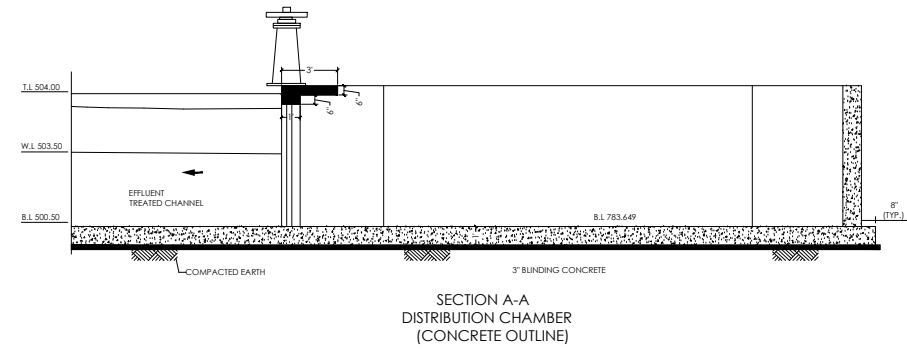
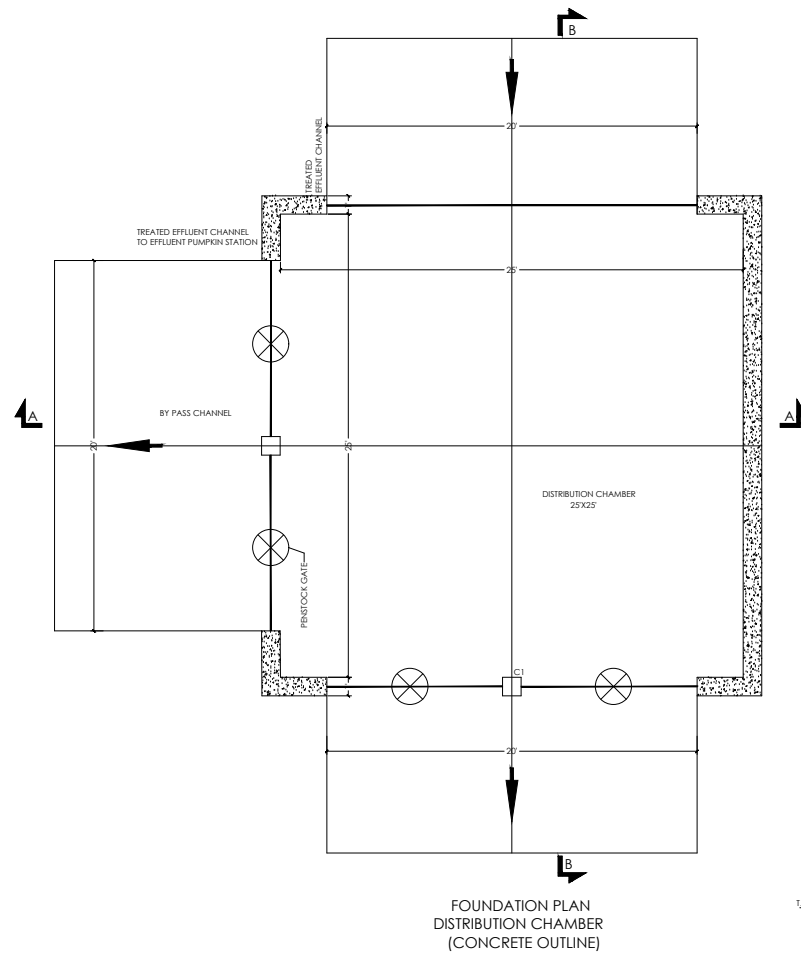
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Drawn	T.M
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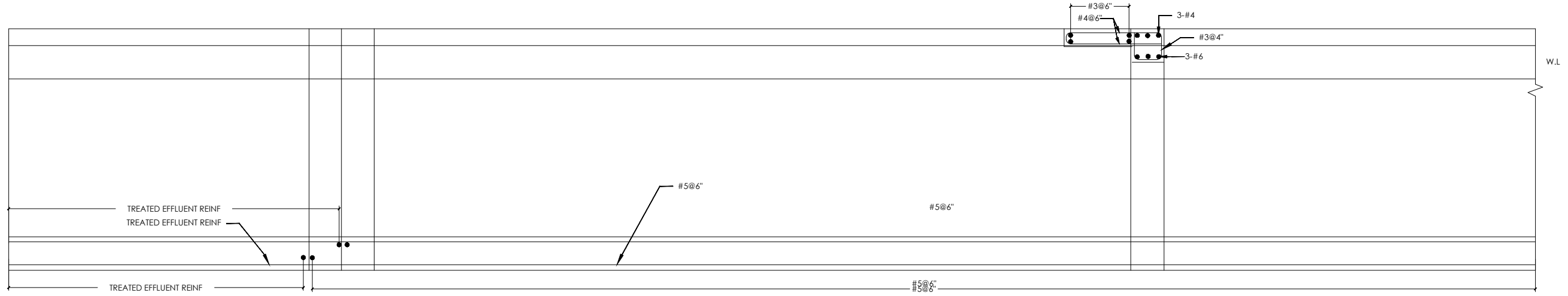
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			Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-5)					Drawing No. MMP-100-JHANG-SEW-PR-01

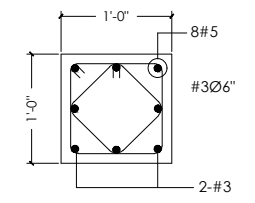


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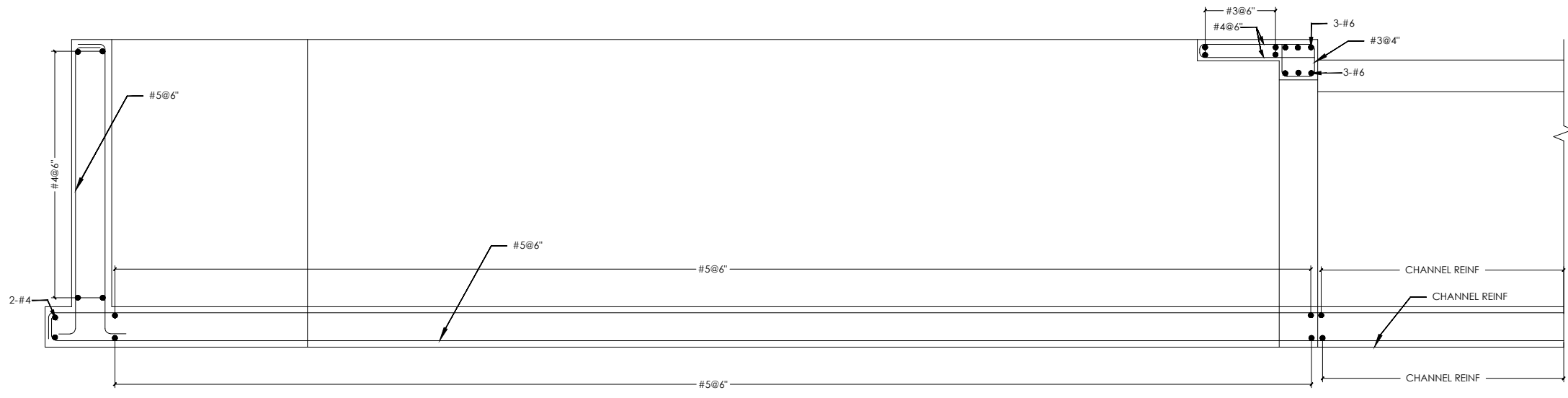
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Drawing No. MMP-100-JHANG-SEW-PR-01								Rev No:	



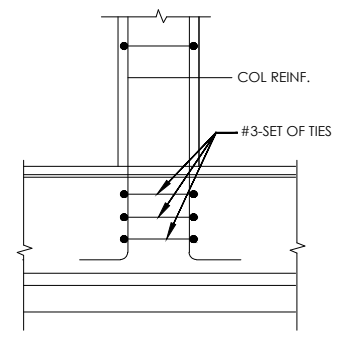
SECTION A-A
DISTRIBUTION CHAMBER
(REINFORCEMENT)



COLUMN C1



SECTION B-B
DISTRIBUTION CHAMBER
(REINFORCEMENT)

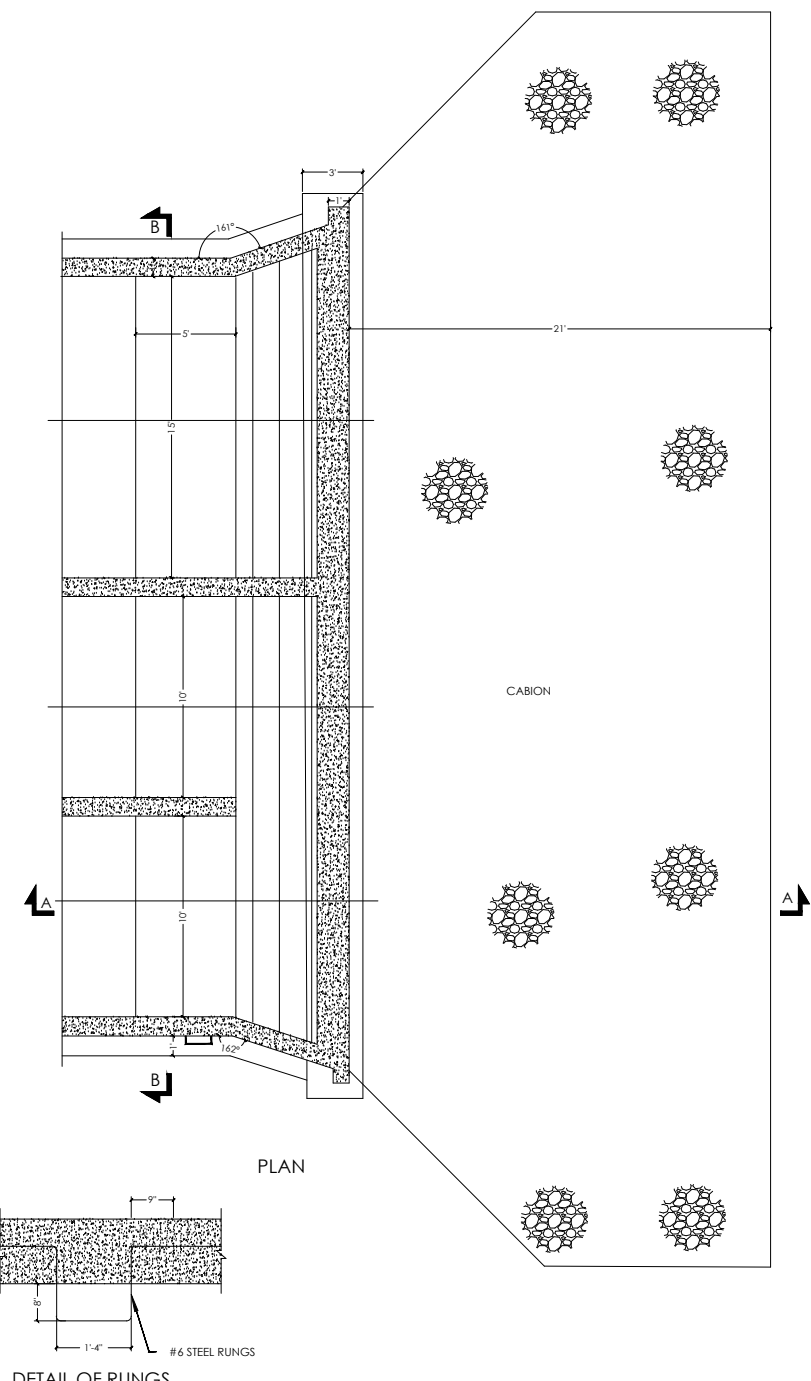
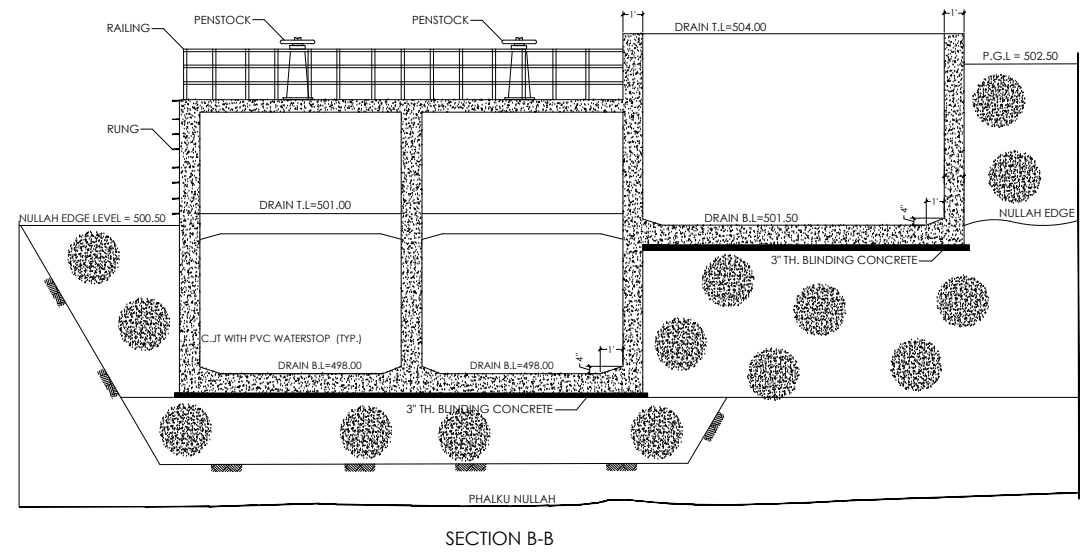
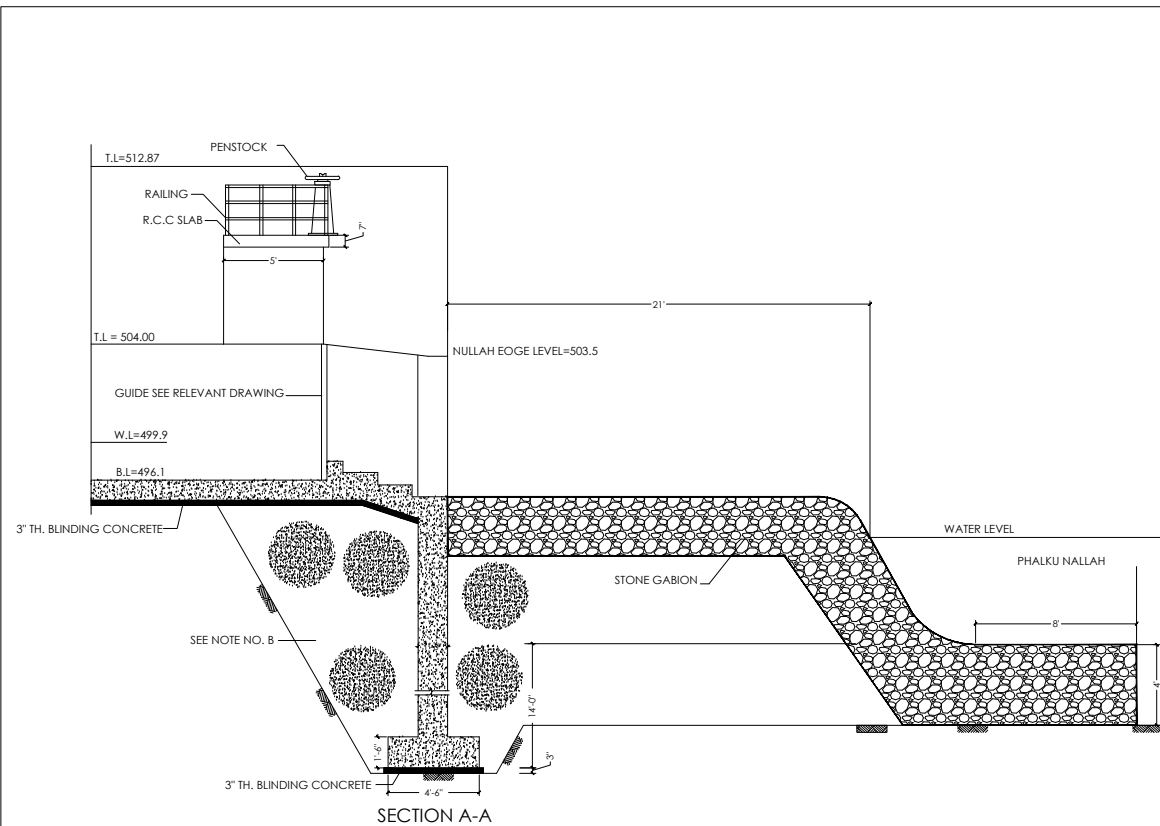


FOOTING DETAIL OF C1

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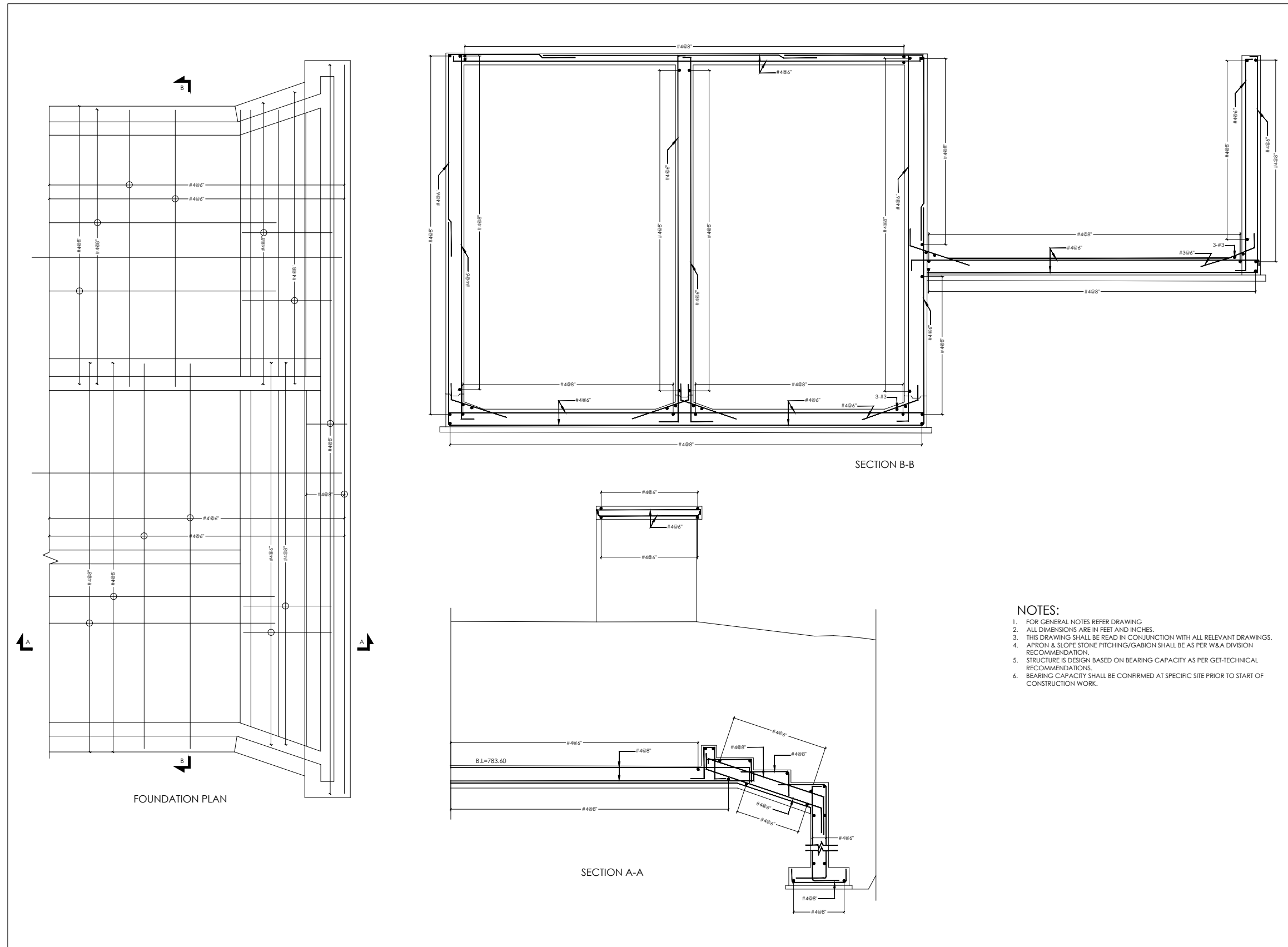
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			0	16-12-2022					M.A	P.H.N
6 MGD WASTE STABILIZATION POND FOR ZONE-3B JHANG DISTRIBUTION CHAMBER - REINFORCEMENT (PRELIMINARY DESIGN)								Checked	M.A	
								Approved	P.H.N	
Drawing No.								MMP-100-JHANG-SEW-PR-01□	Rev No:	

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 - STRUCTURE IS DESIGN BASED ON BEARING CAPACITY AS PER GET-TECHNICAL RECOMMENDATIONS.
 - BEARING CAPACITY SHALL BE CONFIRMED AT SPECIFIC SITE PRIOR TO START OF CONSTRUCTION WORK.
 - OUTFALL STEP HEIGHT AND WIDTH SHALL BE AS PER EPHE DRAWING NO. 3976/11/C/2/J122.
 - BACKFILL SHALL BE DONE SIMULTANEOUSLY ON BOTH SIDES OF TOE WALL WHICH SHALL BE CARRIED OUT AFTER ACHIEVING THE 75% CONCRETE STRENGTH FOR EVERY 10 FEET HEIGHT.

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			Project	Rev.		Date	Checked		Approved
Drawing No. MMP-100-JHANG-SEW-PR-020								Rev No:	



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 4. APRON & SLOPE STONE PITCHING/GABION SHALL BE AS PER W&A DIVISION RECOMMENDATION.
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 6. BEARING CAPACITY SHALL BE CONFIRMED AT SPECIFIC SITE PRIOR TO START OF CONSTRUCTION WORK.

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 HEALTHY CITIES

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 Detailed Design of Infrastructure
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Rev.	Date	Description	Checked	Approved
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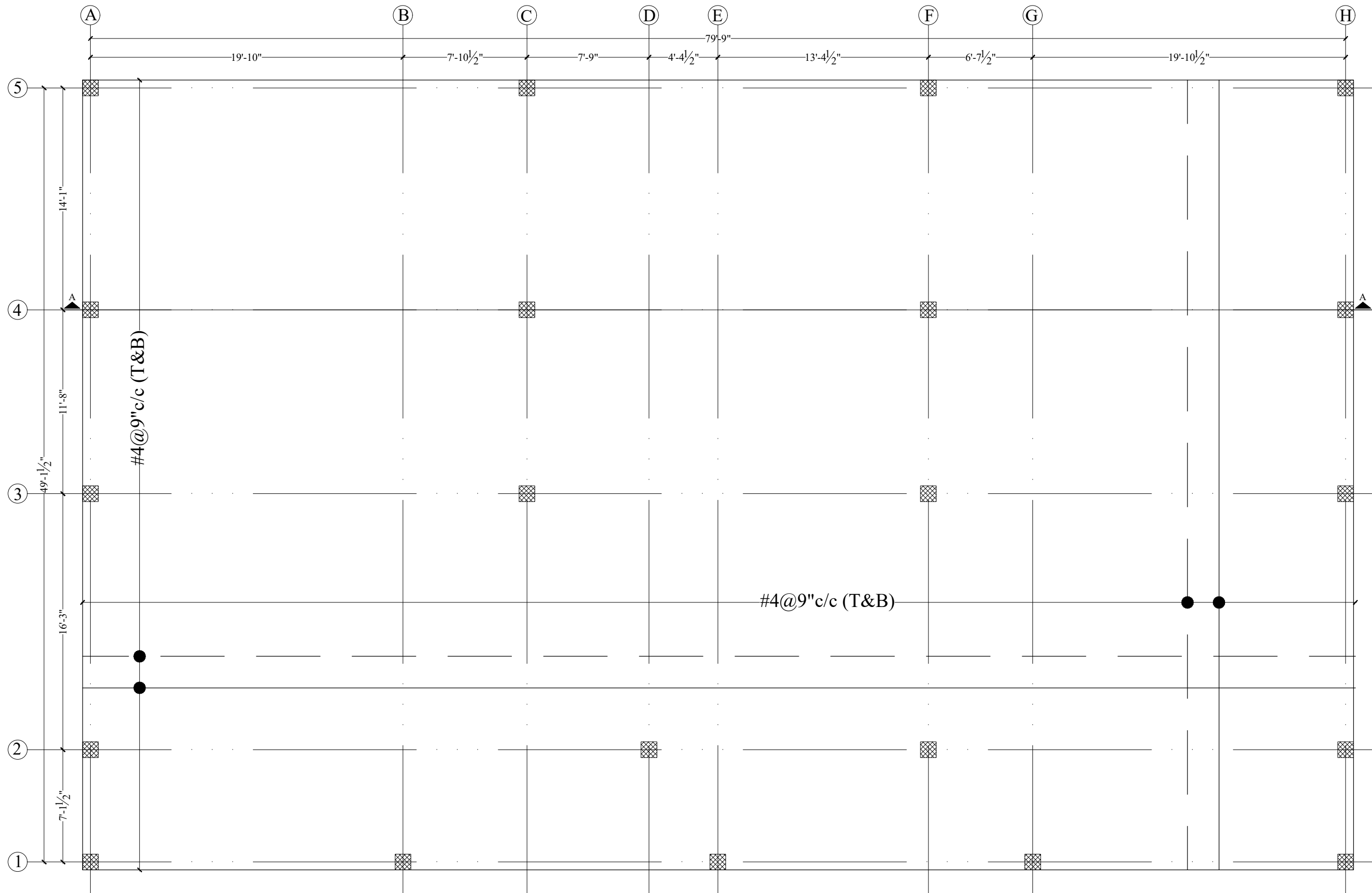
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**6 MGD WASTE STABILIZATION POND
 FOR ZONE-3B JHANG**

**OUTFALL STRUCTURAL PAN & SECTIONS -
 REINFORCEMENT (PRELIMINARY DESIGN)**

Drawing No. **MMP-100-JHANG-SEW-PR-021**

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Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N

Title

10 MGD WASTE STABILIZATION POND
FOR ZONE-1 JHANG
DETAIL FOR ADMIN BUILDING
FOUNDATION LAYOUT PLAN
(PRELIMINARY DESIGN)

Drawing No.

Designed

A.U

Drawn

T.M

Checked

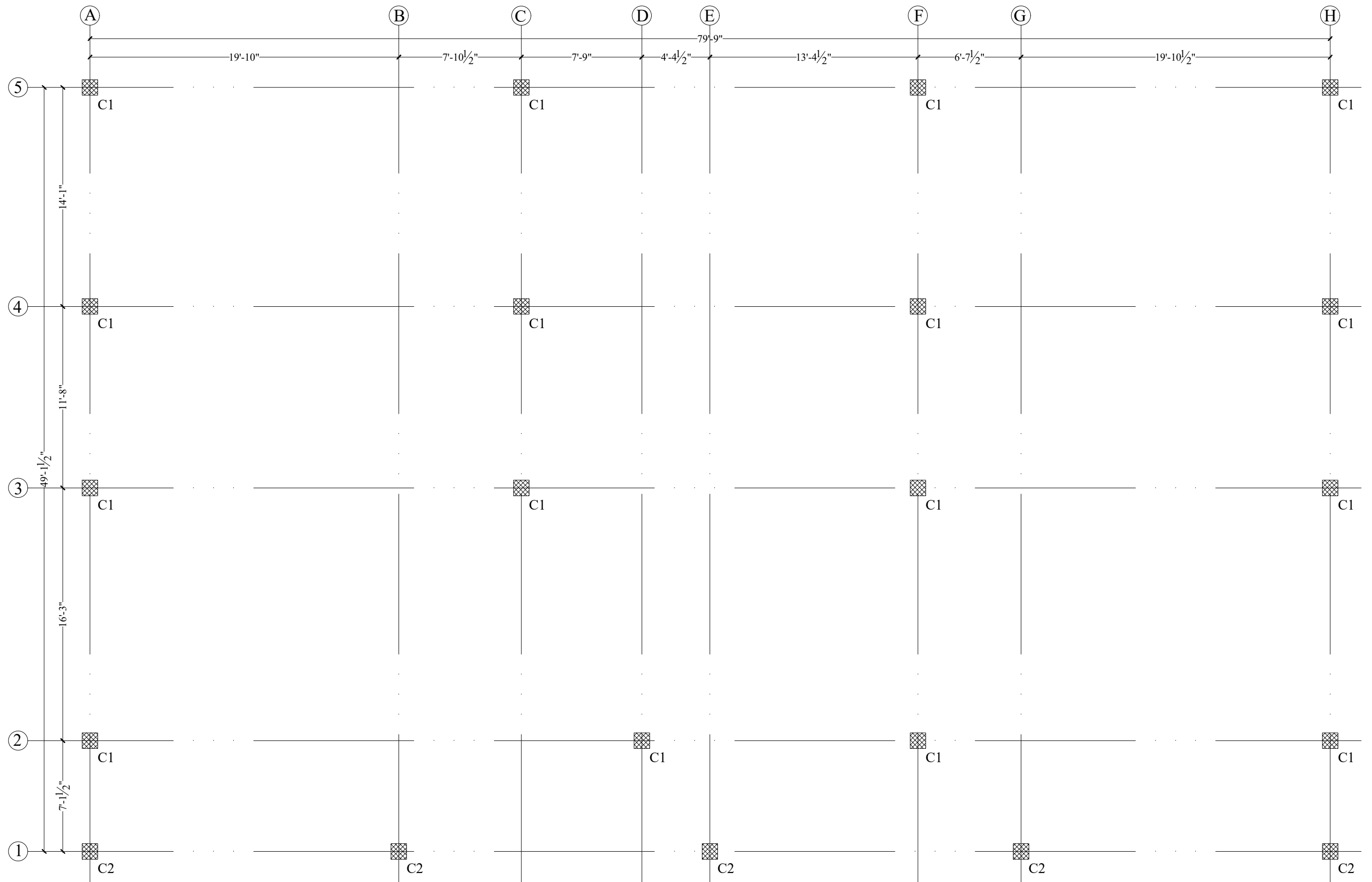
M.A

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Scale

Rev No:




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 Detailed Design of Infrastructure Sub-Projects,
 Sectoral Planning & Resident Supervision in 16
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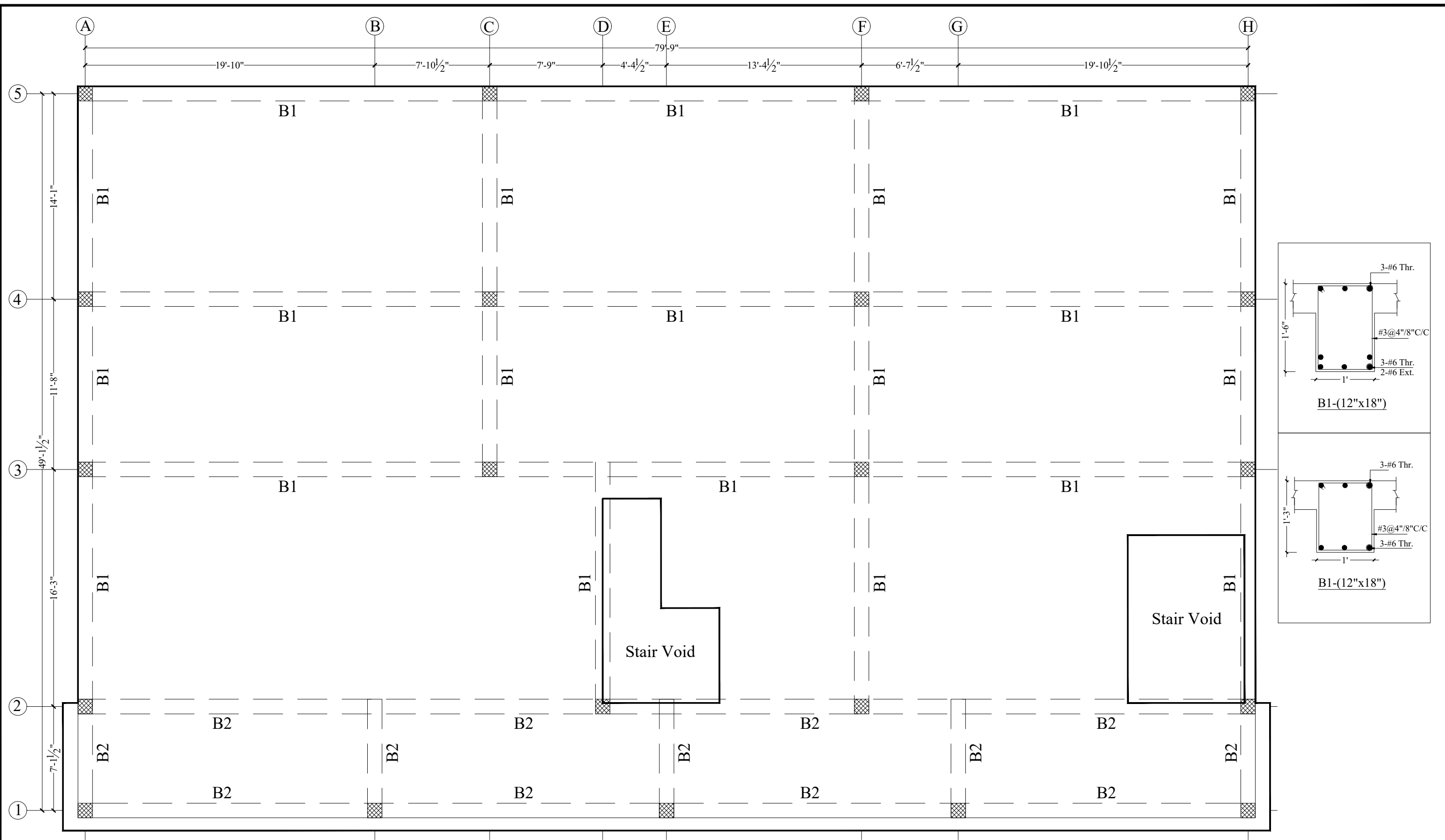
Rev.	Date	Description	Checked	Approved
0	16-12-2022		M.A	P.H.N

Title

**10 MGD WASTE STABILIZATION POND
 FOR ZONE-1 JHANG
 DETAIL FOR ADMIN BUILDING COLUMN
 LAYOUT PLAN**

Drawing No.

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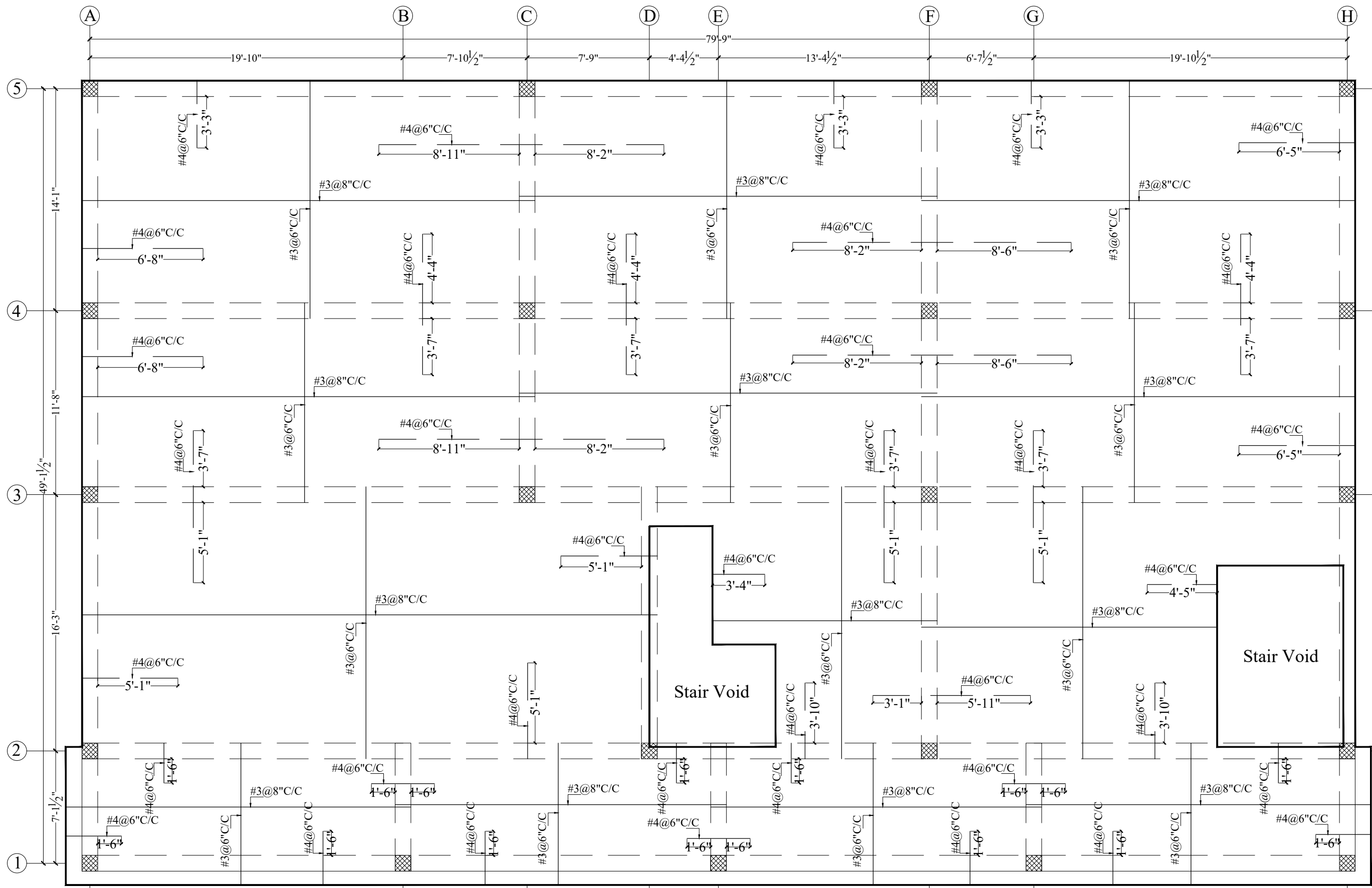
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Rev.	Date	Description	Checked	Approved	Title
0	16-12-2022		M.A	P.H.N	10 MGD WASTE STABILIZATION POND FOR ZONE-1 JHANG DETAIL FOR ADMIN BUILDING FIRST FLOOR BEAM LAYOUT PLAN

Drawing No.



Rev No:

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Rev No:	



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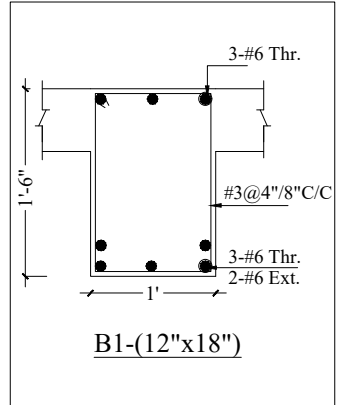
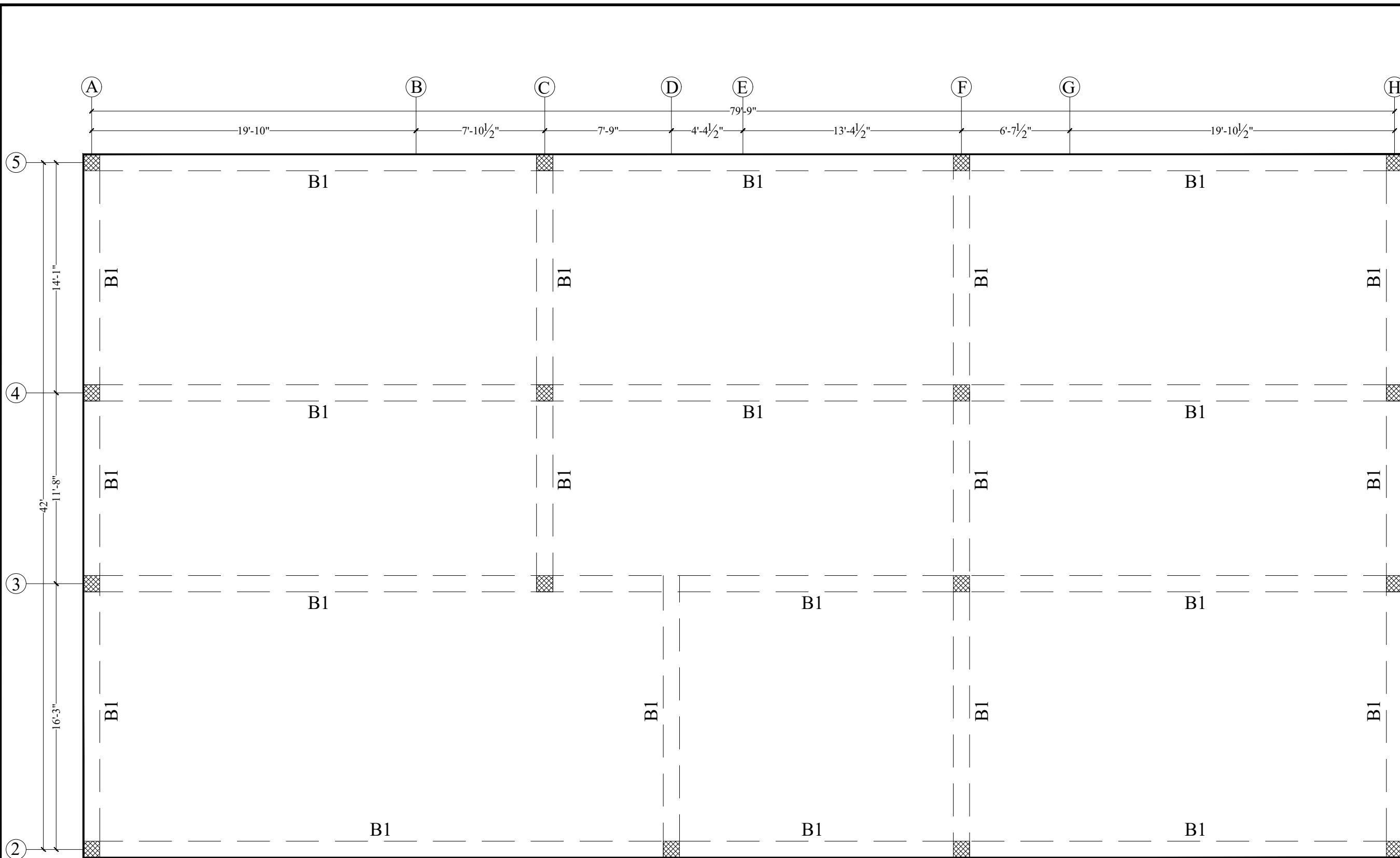
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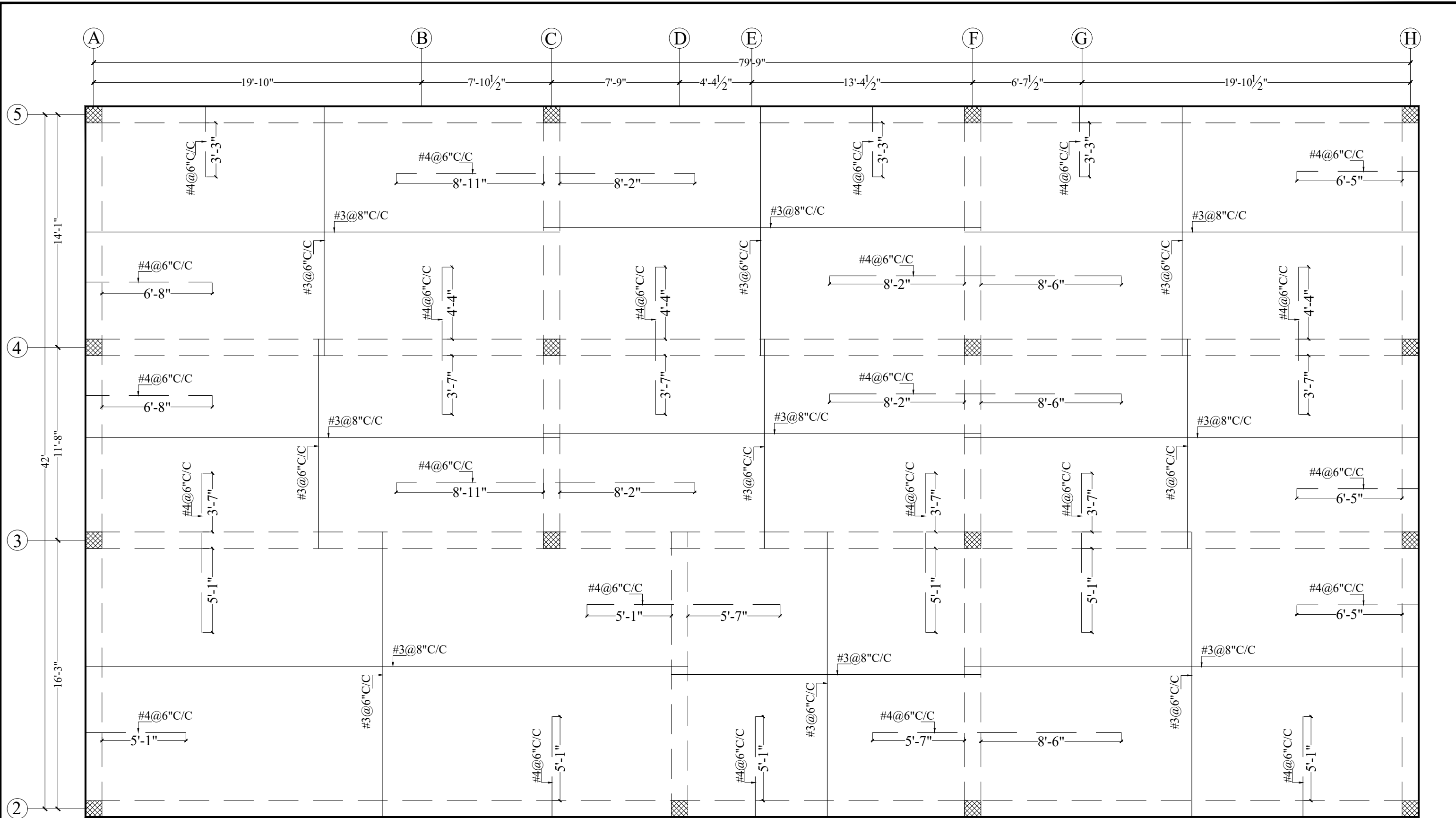
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Rev.	Date	Description	Checked	Approved	Title
0	16-12-2022		M.A	P.H.N	10 MGD WASTE STABILIZATION POND FOR ZONE-1 JHANG DETAIL FOR ADMIN BUILDING FIRST FLOOR REINFORCEMENT PLAN

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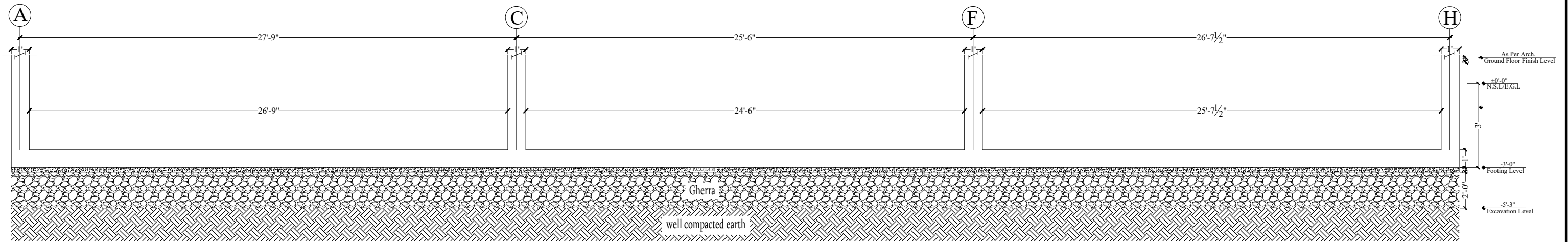
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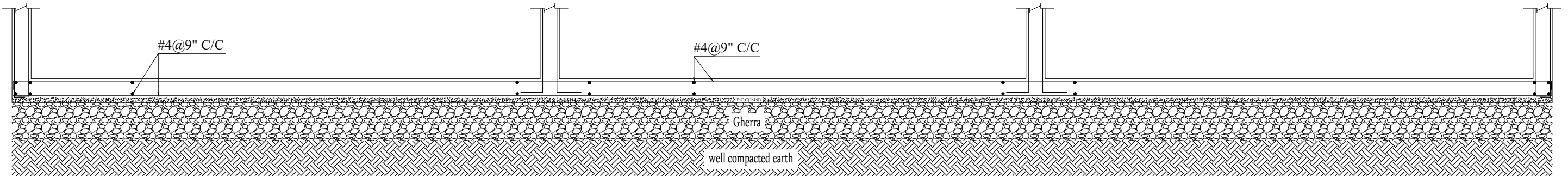
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SECTION A-A

* As Per Geotech Report/Consultant



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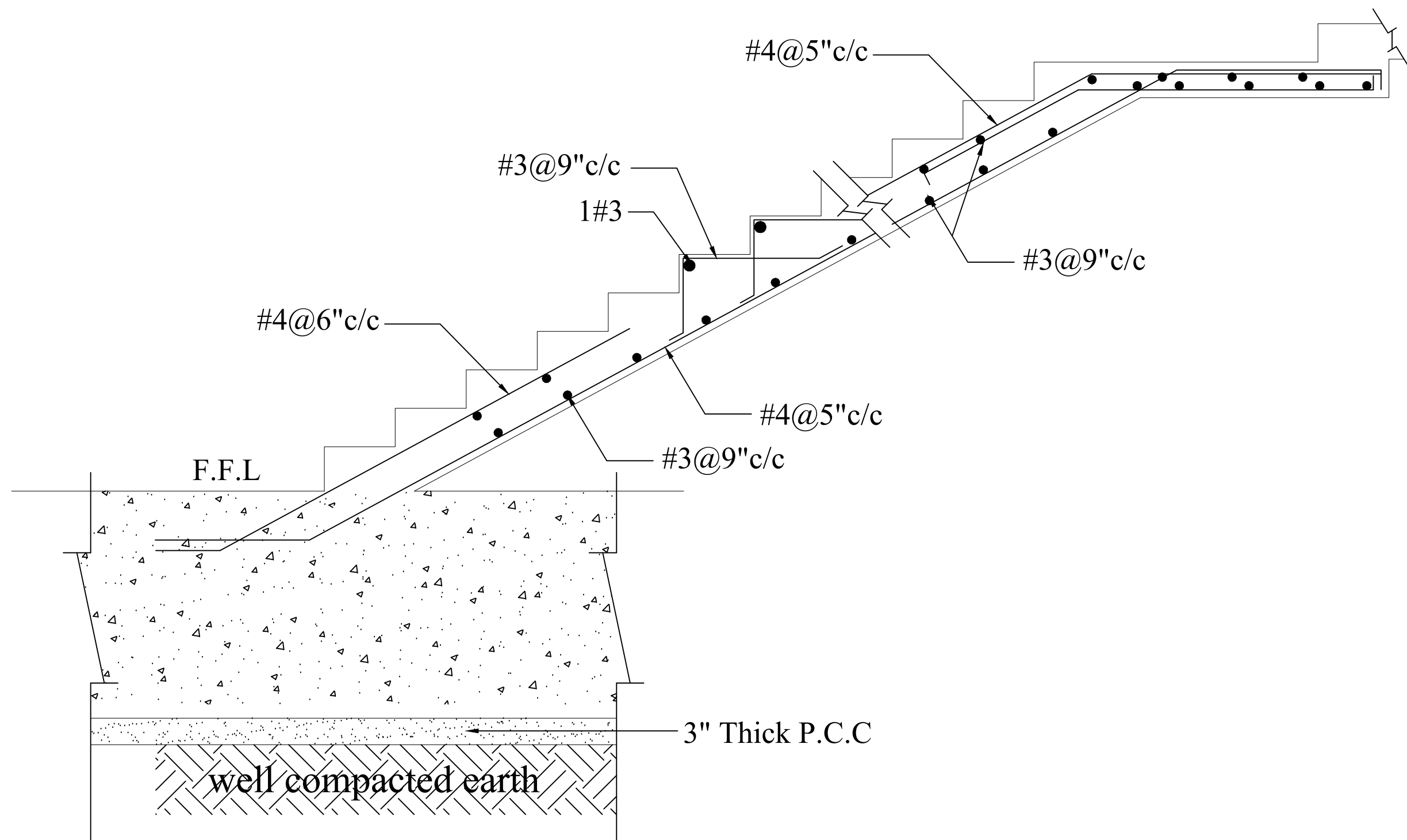
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Rev.	Date	Description	Checked	Approved
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Title	Designed	Drawn	Checked	Approved
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Drawing No.	Rev No:			

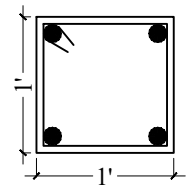
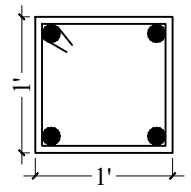
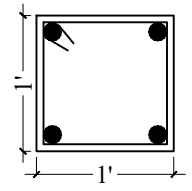


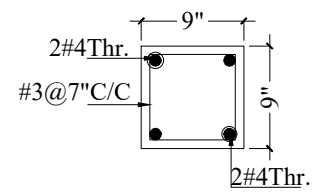
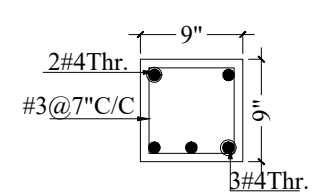
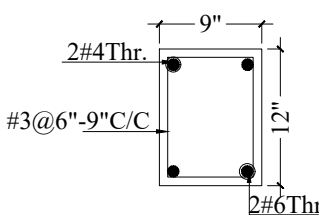
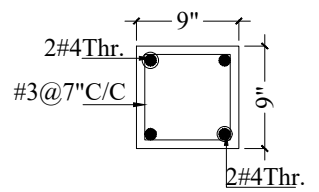
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SCHEDULE OF COLUMNS

C/NO	GROUND FLOOR	FIRST FLOOR
C1	 <p>SIZE 12"x12" STEEL 4-#6 SPACING AT MID #3@8"C/C SPACING AT JOINT #3@4"C/C</p>	 <p>SIZE 12"x12" STEEL 4-#6 SPACING AT MID #3@8"C/C SPACING AT JOINT #3@4"C/C</p>
C2	 <p>SIZE 12"x12" STEEL 4-#6 SPACING AT MID #3@8"C/C SPACING AT JOINT #3@4"C/C</p>	/

TYPICAL LINTEL REINFORCEMENT DETAIL 9" THICK WALL			
UP TO 4' LINTEL	UP TO 8' LINTEL	UP TO 12' LINTEL	EXTERIOR WALL LINTEL
			
<p>NOTE: EXTERIOR WALL LINTEL SHOULD BE PROVIDED ON EXTERIOR WALL PARAMETER AT LINTEL LEVEL</p>			

Consultant  CENTRAL DESIGN CELL 2nd Floor, CIT Building, 27-Empress Road, Lahore 042-36292528 042-36292528 cdc.mmp@mmpakistan.com http://www.mmpakistan.com	Client  GOVERNMENT OF PUNJAB  Punjab Municipal Development Fund Company (PMDFC)	Funding Agency WORLD BANK Project Punjab Cities Program (PCP) Detailed Design of Infrastructure Sub-Projects, Sectoral Planning & Resident Supervision in 16 Cities of Punjab(Package-5)	Rev. 0 Date 16-12-2022 Description Checked M.A Approved P.H.N	Title 10 MGD WASTE STABILIZATION POND FOR ZONE-1 JHANG DETAIL FOR ADMIN BUILDING COLUMN SECTIONAL DETAILS Drawing No.	Designed A.U Drawn T.M Checked M.A Approved P.H.N Scale
			Rev. 1 Date Description Checked Approved		Rev No: