Rehabilitation of Damaged Water Supply and Drainage Schemes of District Jamshoro, Sindh

ENVIRONMENTAL AND SOCIAL SCREENING REPORT (ESSR)

SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)

PLANNING & DEVELOPMENT DEPARTMENT (P&DD) COMPONENT

GOVERNMENT OF SINDH

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Final Report

May, 2024

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DOCUMENT ISSUE AND REVISION RECORD

This document and its contents have been prepared and intended solely for the information and use of the Government of Sindh, Project Implementation Unit (PIU) concerning the **SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)**

Document Information

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Note: The template of ESSR & E&S Checklist for one District i.e., Larkana is approved by the World Bank. As per the directions of WB on dated 12th April, 2023, the document is reviewed by the E&S team of PIU and submitted to WB team for record and post review purpose.

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1 PROJECT BACKGROUND

The Federal Government of Pakistan requested the global community and development partners for assistance to respond to the flood disaster following the Flood 2022 emergency. Subsequently, the World Bank (WB) task team visited the province and had a series of meetings with the provincial Govt. During the discussions held with the WB Mission, a two-pronged strategy was agreed i.e.,

- Restoration/Rehabilitation of Rural (Farm to Market) Roads in affected districts, talukas and UCs.
- Restoration of water supply, drainage and sanitation schemes in affected districts, Talukas and Union Councils.
- Provision of immediate financial assistance, cash for work is proposed to rehabilitate small community structures like rural roads, watersheds, watercourse (s) to carry irrigation water to Farm(s), Rehabilitation of village streets and restoration of village sanitation work including removal of stagnant water in villages. The exact number to be arrived at after assessment.
- Expansion of the Emergency Rescue Service (Sindh Emergency Rescue Services-1122) to 13 districts i.e., Jamshoro, Dadu, Sajawal, Badin, Qambar Shehdadkot, Shikarpur, Jacobabad, Thatta, Ghotki, Naushehro Feroz/Matiari, Umerkot, Sanghar and Shikarpur. Establishment of Satellite Rescue Station at Motorway and National Highways (N-5 & N-55) The Provincial Government has already launched Sindh Emergency Rescue 1122 in Six Districts HQs – Karachi, Hyderabad, Jacobabad, Shaheed Benazirabad, Sukkur, and Larkana.

1.1 Project Components

The proposed Sindh Flood Emergency Rehabilitation Project – SFERP falls into four main components.

- Component--1 Infrastructure Rehabilitation:
- Component--2 Livelihoods Restoration
- Component--3 Institutional Strengthening for Resilience and Technical Assistance
- Component--4 Project Management and Operational Cost

1.2 The Proposed Sub-Project

The proposed project under Flood 2022 Emergency Response is a sub-component that will support the rehabilitation and reconstruction of the flood-affected water supply and drainage schemes to improve health & hygiene of local communities by providing safe drinking water with uninterrupted supply. The location map of subproject is given in **Figure 1** and the details of the subproject sites are given below;

1.1 Sub-Project Description

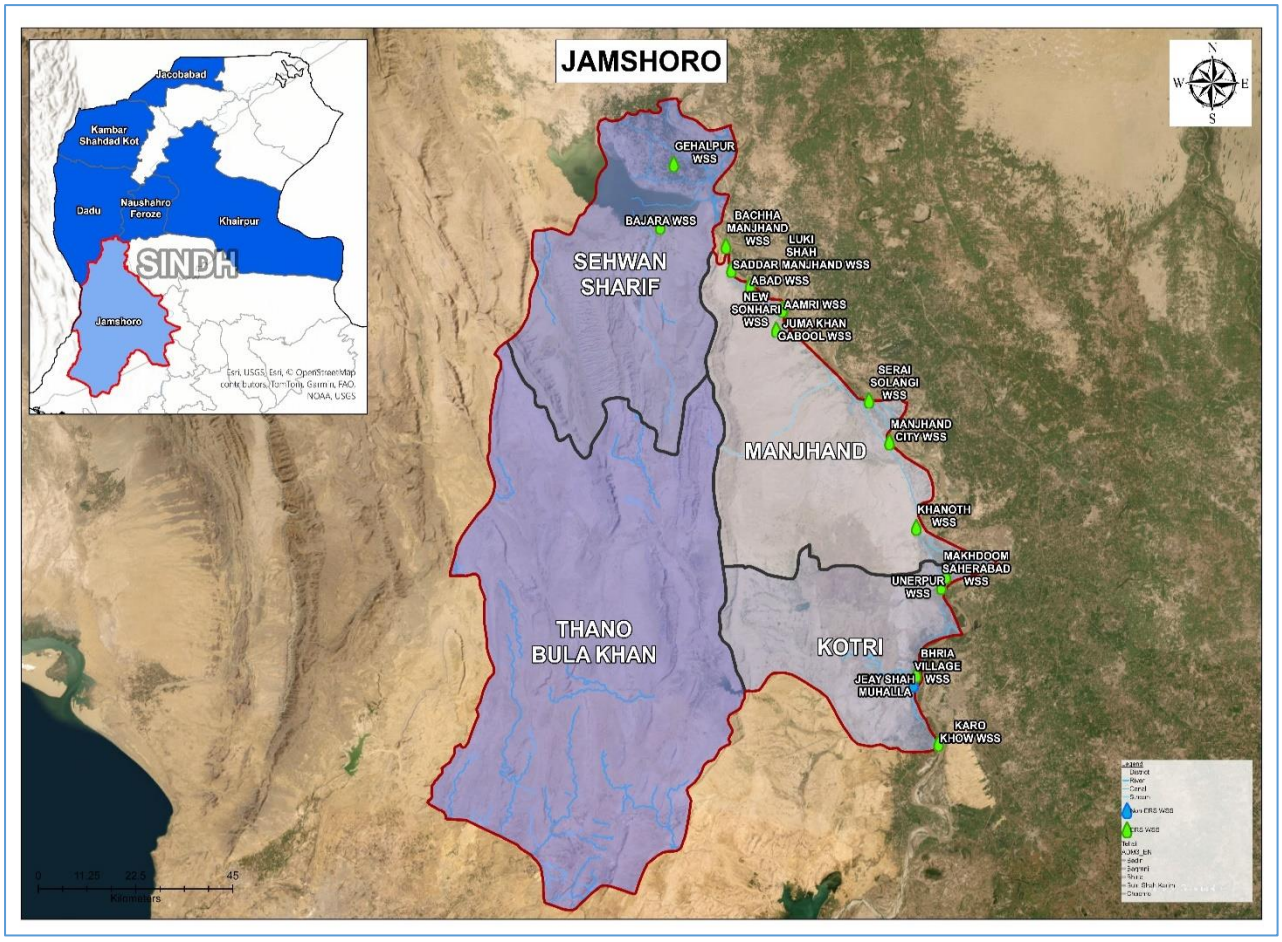
In District Jamshoro, there are a total of 16 schemes, comprising 01 drainage schemes and 15 water supply schemes.

Project description	The sub-component "rehabilitation of water supply and drainage schemes" will rehabilitate the selected and prioritized water supply infrastructure that has been destroyed or damaged by the floods. The primary objective of this project is to evaluate the condition of water supply and drainage schemes, which includes assessing filtration techniques, piping, water quality, efficiency and adequacy of equipment, population coverage, and technology employed. This assessment will encompass a comprehensive study of network elements such as pumps, tanks, pipe materials, as well as parameters

	like diameters, flow rates, and the overall functionality of water supply and drainage systems constructed. The subproject schemes are located in Jamshoro District of Sindh, Pakistan. The main aim of the said project is to rehabilitate existing sources of water supply and drainage facilities for the flood effected people in District Jamshoro.
Environmental and Social Settings	The subproject land is owned by the Government. The proposed activities are the rehabilitation and restoration of damage water supply schemes and drainage facilities. These schemes are the properties of the Government body. There are no major environmental and social impacts of the project activities to the vicinity of the subproject areas. There are no water bodies within the sub-project sites. The subproject rehabilitation activities will not affect any flora, fauna and natural habitat of the area. There are few trees in the vicinity of the proposed subproject areas which will not be disturbed during the rehabilitation works. The environmental and social impacts will be kept at minimum by ensuring the mitigation measures and continuous monitoring. All measures will be planned, organized and implemented which are vital for health and safety of the workers. Instrumental Environmental Testing will be conducted on key parameters like air quality, water quality and noise level determination. Local flora is important to provide shelters for the birds, offer fruits and/or timber/fire wood, protect soil erosion and overall keep the environment very friendly to human living. As such cutting/chopping of flora will not be anticipated. Plantation has been proposed after the completion of the proposed subproject to enhance the aesthetic beauty of the project vicinity. No sub-projects related socioeconomic issues have been recorded during the baseline surveys of the sub-projects. Community and project beneficiaries are very much enthusiastic about the early rehabilitation and completion of the sub-projects. Settlements, including built-up areas such as homes, shops, mosques, graveyards, healthcare facilities and schools are located around sub-project schemes. Community is settled in villages which are actual project beneficiaries. No natural water spring is found in the proposed sub-project area. The site wise detailed of environmental and social setting of the proposed area are presented in the section 1.1.2.

Project Activities/ Scope of Work	Proposed Rehabilitation of Damaged Infrastructures of Water Supply Schemes (WSS) - Rehabilitation of Tube wells - Rehabilitation of Pumping Machinery i.e., Submersible Pumps, Centrifugal Pumps, - Rehabilitation of Solar System - Rehabilitation of Storage Tanks - Rehabilitation of Low Surface Reservoirs (LSRs) - Rehabilitation of Distribution Network i.e., Pipe network - Rehabilitation of Pumping Stations/Buildings - Rehabilitation and improvement of Electric and mechanical works transmission - provision and installation of disinfection system i.e., hypo-chlorinator equipment Rehabilitation of Damaged Infrastructures of Drainage Schemes - Rehabilitation of Street drains - Rehabilitation of Pumping Machinery i.e., sludge Pumps, Motors - Installation of Solar System for alternative power supply - Rehabilitation of Screening Chambers - Rehabilitation of Collecting Tanks - Rehabilitation of Drainage Pumping Station Building - Rehabilitation and enhancement of existing Electric system with automation Work Rehabilitation of Rising Main network to dispose of the drainage
Proposed Date of Commencement of Work:	The Rehabilitation of water supplies and drainage activities will be started in June 2024 after completion of pre-requisite requirements.

Figure 1: Study Area Map of District Jamshoro Water Supply Schemes



1.2 Scheme Wise E&S Setting

No.	Schemes	Source and Status	Coordinates	Site Description
A	**Water Supply Schemes Taluka Kotri**			
1	Jeay Shah Muhalla - WSS	Tube Well Non ERS	428921.00 m E 2814312.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via Jamshoro Road ad Cadet College Pitaro Road with a link road irrigation office road when moving towards Jamshoro- Amri. The number of household and population is 172 & 1200 respectively. The area is surrounded by the human settlement with commercial activities. There is a Shrine/Dargha named "Jeay Shah Rukkan" at the distance of 366m in the direction of west. There are some educational facilities i.e., GBH school at a distance of 166m in the direction of south. There is a canal in West side with the distance of 155m from proposed project site .

No.	Schemes	Source and Status	Coordinates	Site Description
2	Bahria Village-WSS	Tube Well Non ERS	428280.00 m E 2812192.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via Jamshoro railway station road when moving towards Jamshoro. The number of household and population is 185 & 1300 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There is Sindh University Water Treatment Plant at a distance of 129m on East Side. There are some educational facilities i.e., GBP school at a distance of 458m in the direction of west. There is Karachi Canal in East side with the distance of 232m from proposed project site .
3	Karo Khow - WSS	Tube Well Non ERS	433470.00 m E 2798962.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N5 on the right side via Karo Khow road when moving towards Jamshoro. The number of household and population is 307 & 2150 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There is Sindh University Water Treatment Plant at a distance of 129m on East Side. There are some educational facilities i.e., GBP school at a distance of 458m in the direction of west. There is a BHU karo khow on north side at a distance of 184m. A Noori Masjid at a distance of 134m. There is Karachi Canal in west side with the distance of 939m from proposed project site .
B	**Water Supply Schemes Taluka Sehwan**			
4	Gehalpur - WSS	Tube Well Non ERS	379284.00 m E 2928358.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N5 on the right side via Karo Khow road when moving towards Jamshoro. The number of household and population is 214 & 1500 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are no social sensitive receptors in te immediate vicinity of project area. A waterbody is flowing adjacent to proposed subproject site.
C	**Water Supply Schemes Taluka Manjhand**			
5	Manjhand City -WSS	Surface Water Non ERS	423607.00 m E 2866105.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Bacha Band road and Indus Highway N55 on the right side via Manjahnd City road when

No.	Schemes	Source and Status	Coordinates	Site Description
				moving towards Jamshoro. The number of household and population is 857 & 6000 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There is a centeral Imam Bargah at a distance on 125m and police Station Manjahd at a distance of 102m on East Side. There are some educational facilities i.e., GBG school at a distance of 378m in the direction of south, a Masjid e Faisal at a distance of 217m on west side. There is RBOD Canal in west side with the distance of 1Km from proposed project site .
6	Serai Solangi-WSS	Tube Well ERS	419414.00 m E 2875408.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via link road when moving towards Jamshoro. The number of household and population is 285 & 2000 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are no social sensitive receptors in the immediate vicinity of project area.
7	Aamri -WSS	Tube Well ERS	401661.00 m E 2895711.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via link road when moving towards Jamshoro-Amri. The number of household and population is 417 & 5000 respectively. There is Amri historical mound and Amri jo Daro on southwest side at a distance of 550m and 359m. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are no social sensitive receptors in the immediate vicinity of project area. There is indus river on east side at a distance of 118m from the proposed sub project area
8	New Sohanri-WSS	Surface Water Non ERS	401495.00 m E 2895759.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via link road when moving towards Jamshoro-Amri. The number of household and population is 214 & 1500 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are no social sensitive receptors in the immediate vicinity of project area. There is Indus river on east side at a distance of 151m from the proposed sub project are

No.	Schemes	Source and Status	Coordinates	Site Description
9	Juma khan Gabool-WSS	Tube Well ERS	400225.00 m E 2891256.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the left side via link road when moving towards Jamshoro-Amri. The number of household and population is 214 & 1500 respectively. The area is surrounded by the human settlement with commercial activities. There are no social sensitive receptors in the immediate vicinity of project area
10	Abad-WSS	Tube Well ERS	394831.00 m E 2901100.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the south side via link road when moving towards Jamshoro-Amri. The number of household and population is 57 & 400 respectively. There are no social sensitive receptors in the immediate vicinity of project area. There is Indus River flowing on south side at a distance of 779m. and a waterbody is flowing on west side at a distance of 231m from proposed site area.
11	Laki Shah Saddar- WSS	Tube Well ERS	391021.00 m E 2904760.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via link road when moving towards Jamshoro-Sehwan. The number of household and population is 357 & 2500 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are some educational facilities i.e., IRC Sojhro School at a distance of 243m on west side. There is a canal flowing on right side at a distance of 68m from the proposed sub project area
12	Bachha-WSS	Tube Well ERS	389937.00 m E 2909998.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via link road when moving from Jamshoro. The number of household and population is 107 & 750 respectively. There are no social sensitive receptors in the immediate vicinity of project area. There is a waterbody and Indus River flowing on left and right side at a distance of 187m and 696m from proposed site area.
13	Khanoth-WSS	Surface Water Non ERS	429088.00 m E 2847066.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via link road when moving from Jamshoro. The number of household and population is 714 & 5000 respectively. The area is surrounded by the

No.	Schemes	Source and Status	Coordinates	Site Description
				human settlement with commercial activities, some agricultural areas. There are some educational facilities i.e., GPSchool and GPS Kooreja at a distance of 161m and 224m from the proposed sub project area.
14	Uner Pur-WSS	Surface Water Non ERS	435206.00 m E 2836207.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via Unerpur Ave link road with Ghulam Mustafa Streat, when moving from Jamshoro. The number of household and population is 1000 & 7000 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are some educational facilities i.e., GBP School and at a distance of 68m, there is Underpur Bus terminal at a distance of 45m. and Unerpur Town Office at a distance of 146m from the proposed sub project area.
15	Makhdoom Seherabad-WSS	Surface Water Non ERS	434203.00 m E 2833895.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N5 on the right side via Hafeez Mehmood St and link road when moving towards Jamshoro. The number of household and population is 285 & 2000 respectively. The area is surrounded by the human settlement with commercial activities, some agricultural areas. There are no social sensitive receptors in th immediate vicinity of project area. A waterbody is flowing adjacent to proposed subproject site.
	Drainage Scheme -Taluka Sehwan			
16	Bajara- DS	Drainage Scheme	376506.00 m E 2915905.00 m N	The proposed site is located in District Jamshoro, it can be easily accessible by Indus Highway N55 on the right side via Manchar Lake Road from Jamshoro-Sehwan-Dadu. The number of household and population is 571 & 4000 respectively. The area is surrounded by the human settlement with commercial activities. There are some educational facilities i.e., GBP School and GBH School at a distance of 613m and 305m there is a waterbody flowing on left side at a distance of 252m from the proposed sub project area.

1.3 Sub-Projects Information

1.3.1 Brief introduction to the sub-project, its geographical location, components, and benefits.

The subproject sites are situated in District Jamshoro, Sindh, within the Government territory, specifically under the jurisdiction of the Public Health Engineering Department (PHED). The district has Four Talukas; 1. Kotri Taluka, 2. Sehwan Taluka, 3. Manjhand Taluka and 4. Thano Bula Khan. The aim is to rehabilitate and restore the water supply and drainage systems that were damaged or destroyed by the floods in 2022 in. These efforts will prioritize the selected water supply infrastructure, ensuring its recovery. Currently, the community in District Jamshoro has been suffering from a lack of safe drinking water due to high salinity as well as water contaminations and living in unhygienic conditions due to inadequate collection and treatment of storm water, which has led to the complete destruction of the drainage system.

The proposed subproject intends to address these issues by rehabilitating the water supply and drainage schemes to a resilient level. This will guarantee a continuous provision of safe drinking water to the community, while also ensuring the proper collection, treatment, and disposal of storm water in an environmentally friendly manner. The primary source of drinking water in the district is underground and surface water both. The water is extracted from underground or nearby canals using pumps and stored in Low Surface Reservoirs (LSRs) before being distributed to the community.

The aforementioned district lacks the presence of nearby main canals, sub-canals, or main distributary channels, resulting in the installation of bore water wells. To identify areas with access to abundant and good-quality water, there arises a requirement for conducting an Electric Resistivity Survey (ERS). In close alignment with the ERS findings and community water demands, the design phase ensued. New water sources, typically adjacent canals or watercourses, were identified and integrated into existing infrastructure. In cases where existing distribution networks were damaged, new pumping stations and distribution networks will be established.

The drinking water will undergo analysis in a recommended laboratory, and precautionary measures will be taken based on the results. surface water in the form of canals are available in some areas/schemes covered by the subproject. Overall, the proposed project aims to create a healthier environment in the area and uplift the socioeconomic conditions of the residents by providing them with safe water and employment opportunities for the locals.

1.3.2 Details about existing conditions of the area/facility and proposed scope of rehabilitation works.

The water supply and drainage schemes were not up to mark as almost all structures have been damaged by flood, 2022. The tube wells, pumping stations, distribution network and LSRs have been badly affected. As a result of which, the people of District Jamshoro are facing scarcity of safe drinking water. Comprehensive surveys have been conducted by the expert to monitor the sites and assessed the damages and restoration of infrastructures. Rehabilitation of damaged infrastructure will provide the capacity and efficiency for uninterrupted safe drinking water supply to the community.

Currently, community of District Jamshoro is living in unhygienic condition as drainage system has been broken-down and blocked in flood, 2022. The sewage disposal ponds (SDPs) including pumping stations and drainage network have also been affected. The damages have been assessed through proper survey and rehabilitation work is being made part of Sub-projects PC-1 of District.

The flood damaged the Water Supply and Drainage Schemes which affected the community. The community has been deprived by drinking water facility. Due to broken lines and blockages in the

drainage lines wastewater stagnate in the area after rain causes disturbance to the residents. The stagnant water provides breeding grounds to mosquitoes and flies which serve as vector of many diseases in the area. At some places, water supply lines are passing beside the storm water drains which also affect the quality of drinking water. Due to unavailability or insufficient supply of water, community have to fetch water from far flung areas and from pumping stations which creates social stress. Security and privacy of the local people has been disturbed as well. There is a need to rehabilitate the existing damaged water supply and drainage schemes in order to resolve the socioeconomic issues of the sub project area. The sub-project areas are located in different areas of District Jamshoro, the schemes and systems are operated under the Government territory. The activity involves in the subproject is restoration and rehabilitation of damaged Water Supply and Drainage Schemes of District Jamshoro.

i. Flora of Sub-Project Area

The major trees observed along the roads and canal banks include neem (*Azadirachta indica*), kikar (*Acacia nilotica*), poi or kapok bush (*Aerva javanica*), kandero or camel thorn (*Alhagi maurorum*), aak (*Calotropis procera*), shisham or talhi (*Dalbergia sissoo*), sufaida (*Eucalyptus globules*), ashok (*Polyalthea longifolia*), khajoor or date (*Phoenix dactylifera*), karka or common reed (*Phragmites*), vilayati kikar (*Parkinsonia aculeate*), devi or honey mesquite (*Prosopis glandulosa*), devi or mesquite (*Prosopis juliflora*), amaltas (*Cassia fistula*), conocarpus or white mangrove (*Conocarpus lanceolatus*), jhar or peelu/vann (*Salvadora oleoides*).

Important crops are wheat, jowar, maize, gram, barley, rapeseed & mustard, sugarcane, cotton, tobacco, and sesame [1].

ii. Fauna of the Sub-Project Area

[1] https://pakistanalmanac.com/sindh-jamshoro/#1633497127938-b1d45416-be12

The animal species has been disturbed due to increase in population of the subproject areas. Except domesticated animals no other specie has been found during surveys. Few reptiles and mammals are witnessed by residents i.e., striped palm squirrel, house mouse, Indian grey mongoose, common tree lizard, house gecko and saw-scaled viper.

The avifauna includes common myna, little cormorant, house crow, house sparrow, blue rock pigeon, red wattle lapwing, red vented bulbul, white cheeked bulbul, pond heron, little egret, pied kingfisher, green bee-eater, common crow, Indian myna, common kite, ring dove, bank myna, black drongo, Indian roller are found during survey.

[1] https://pakistanalmanac.com/sindh-jamshoro/#1633497127938-b1d45416-be12

1.3.3 Socio-Economic Condition of the Sub-Project Area

The total population of the district Jamshoro is 993,000 persons with 35% literacy rate[2]. Majority of the population of the district is Muslim. The culture life of the Muslims is greatly influenced by the Islamic way of life. After Muslims, Hindus also hold great confidence in the district. The languages mostly spoken in District are Sindhi, Balochi, Punjabi, Pashto and Urdu. However, Urdu is understood amongst all the population of district. The economy of Jamshoro is mainly based on Agriculture Forestary, Fishing & Hunting (57%), Elementary Occupations (31.8%), Social and Personal Service Workers & Shop & Market sales workers (30.1%). Major industries in the district Jamshoro are textile, paper board and cement, thermal power plants, pharmaceuticals, light, engineering, cotton textiles, foods and beverage, flour mills, rice husking mills and sugar mills.

1.3.4 Explain, whether this is purely rehabilitation of existing facilities or will involve any new works

The subproject involves rehabilitation of damaged Drainage and Water Supply Schemes of the existing utilities which are being operated by the PHED. No new work is involved under sub-project scope.

1.3.5 Are consultations with stakeholders conducted?

The social and environmental specialist of construction supervisory consultation-CSC held series of consultation meetings with the local community and relevant stakeholders, residents of the sub-project areas in November, 2023. The field team visited the nearby communities briefed salient features of the sub-projects to get the views of the communities who could be affected and beneficiaries. Social Sensitive Receptors like religious structures (mosques, shrines and graveyards), basic/rural health units (BHU/RHU), hospitals, schools, cultural and archeological etc. were observed during the survey and consultation in the sub-project areas. The indirect impacts on the receptors have been evaluated at 200 meters' buffer zone of the proposed sub-project sites. Most of the social receptors are located in an urban settlement and far away from proposed sub-project sites hence would not be affected by project activities. The community was very blissful by the rehabilitation work carried out by the involvement of the Govt. of Sindh. They appreciated for taking up the initiative of rehabilitation and restoration of damaged water supply and drainage schemes. The team assured that all the concerns raised by them would be addressed. Mitigation measures will be proposed to minimize the impacts during rehabilitation activities. According to the community, the rehabilitation works would provide them safe and sufficient drinking water and ensure safe disposal of wastewater. The detailed concerns of community are described in the section 3 of this ESSR.

[2] https://pakistanalmanac.com/sindh-jamshoro/#1633497127938-b1d45416-be12

The damaged utilities are owned by the PHED of District Jamshoro. Consultation with Line Department have also been completed. The subprojects were installed in Government owned land and no additional land will be acquired for rehabilitating the sub-projects.

1.3.6 Will this sub-project involve any ancillary impact/ activity away from the work site?

There is no secondary impact in the sub-project areas. All the impacts are minor, temporary and site specific during the rehabilitation/restoration phase. The project falls under the category C which creates minor or low environmental impacts limited to rehabilitation/restoration phase.

1.3.7 Timeframe for starting and completion of sub-project

The subproject will be started in June, 2024 and will be completed in June, 2025.

1.3.8 Drainage and Water Supply Schemes Design and Demand details

The main rehabilitation or restoration components of water supply schemes are transmission main, low surface reservoir tanks (LSR), existing water storage reservoirs, pump house, staff quarters, water filtration tanks, alternate energy source i.e. (solar system) and compounds walls. The drainage schemes include the rehabilitation of collection drains, screening chambers, collecting tanks, pumping machinery, and drainage disposal pipes.

The capacities of these structures have been designed with respect to population sizes including future growth pattern and water demand & supply of proposed subproject areas. The drawings and typical cross sections of components are provided in **Annexure-2**. However, the current and future drainage generation capacities and water supply demand are given in **Table-2** and **Table-3.**

The tentative details of major equipment, machineries and manpower that will be utilized for upgrading existing structures during rehabilitation works are given below **(Table-1)** However, exact number and quantities will be finalized at the stage of engaging contractors for bids based on the volume of work.

Table 1: Details of Equipment/Machineries and Manpower for Rehabilitation Works

Equipment/Machineries	Quantity	Manpower
Small Concrete Mixers	02	**Skilled:**
Generators	01	Mason, Steel Fixer, Plumber, Electrician,
Dewatering Pumps	02	Carpenter, Machine Operators etc.
Excavators	01	**Unskilled:**
Dumpers	02	Labors, Security Guards etc.
Tractor Trolley	02	
Bowser	01	

Table 2: Population Size and Wastewater Generation of District Jamshoro Drainage Schemes

Description	Total Population	Per Capita Sanitation Generation	Sanitation Generation	Total Population	Per Capita Sanitation Generation	Sanitation Generation	Total Population	Per Capita Sanitation Generation	Sanitation Generation
	2023			2025 (First Operational Year)			2050 (Last Operational Year)		
	Person	GPCD	GPD	Person	GPCD	GPD	Person	GPCD	GPD
Taluka Sehwan Drainage Scheme									
Drainage Scheme of Bajara	4,000	8.8	35200.0	4,141	8.8	36442.8	6,390	8.8	56230.5

Table 3: Population Size and Water Supply Demand of District Jamshoro Water Supply Schemes

Description	Total Population	Per Capita Water Demand	Water Supply Demand	Total Population	Per Capita Water Demand	Water Supply Demand	Total Population	Per Capita Water Demand	Water Supply Demand
	2023			2025 (First Operational Year)			2050 (Last Operational Year)		
	Person	UK GPCD	GPD	Person	UK GPCD	GPD	Person	UK GPCD	GPD
Improvement & Extension for Water Supply Schemes at Various Taluka's of District Jamshoro									
A. Taluka Kotri Water Supply Schemes									
Water Supply Scheme of Karo Khow	2,150	11	23650.0	2,226	11	24485.0	3,435	11	37779.9
Water Supply Scheme of Jeay Shah Muhalla	1,200	11	13200.0	1,242	11	13666.0	1,917	11	21086.4
Water Supply Scheme of Bhria Village	13,000	11	143000.0	13,459	11	148048.8	20,767	11	228436.4
B. Taluka Sehwan Water Supply Schemes									
Water Supply Scheme of Gehalpur	1,500	11	16500.0	1,553	11	17082.6	2,396	11	26358.0

Description	Total Population	Per Capita Water Demand	Water Supply Demand	Total Population	Per Capita Water Demand	Water Supply Demand	Total Population	Per Capita Water Demand	Water Supply Demand
	2023			2025 (First Operational Year)			2050 (Last Operational Year)		
	Person	UK GPCD	GPD	Person	UK GPCD	GPD	Person	UK GPCD	GPD
Improvement & Extension for Water Supply Schemes at Various Taluka's of District Jamshoro									
C. Taluka Manjhand Water Supply Schemes									
Water Supply Scheme of Manjhand City	6,000	11	66000.0	6,212	11	68330.2	9,585	11	105432.2
Water Supply Scheme of Serai Solangi	2,000	11	22000.0	2,071	11	22776.7	3,195	11	35144.1
Water Supply Scheme of Aamri	5,000	11	55000.0	5,177	11	56941.8	7,987	11	87860.2
Water Supply Scheme of New Sonhari	4,000	11	44000.0	4,141	11	45553.5	6,390	11	70288.1
Water Supply Scheme of Juma khan Gabool	1,500	11	16500.0	1,553	11	17082.6	2,396	11	26358.0
Water Supply Scheme of Abad	400	11	4400.0	414	11	4555.3	639	11	7028.8
Water Supply Scheme of Laki Shah Saddar	2,500	11	27500.0	2,588	11	28470.9	3,994	11	43930.1
Water Supply Scheme of Bachha	750	11	8250.0	776	11	8541.3	1,198	11	13179.0
Water Supply Scheme of Khanoth	5,000	11	55000.0	5,177	11	56941.8	7,987	11	87860.2
Water Supply Scheme of Uner Pur	2,500	11	27500.0	2,588	11	28470.9	3,994	11	43930.1
Water Supply Scheme of Makhdoom Seherabad	2,000	11	22000.0	2,071	11	22776.7	3,195	11	35144.1

1.3.9 Would rehabilitation works have done by considering the climate resilient factor?

The restoration and rehabilitation efforts prioritize climate resilience to enhance structural durability. To ensure this, civil works have been designed based on engineering design standards and ACI codes. The main goal of the subproject is to enhance resilience through a "build back better" approach. Key elements, like the pump house and compound walls, are designed with free board to withstand floods by raising them above flood levels. To address electricity shortages in remote Sindh areas, a resilient solar power system will be mounted on elevated structures to protect against flood damage. Additionally, the use of HDPE material for the rising main ensures long-term viability.

1.3.10 Scenario if there are any alternative designs options of sub-project

Here are some alternative approaches considered earlier for water supply and drainage systems but not opted for because the scope of proposed project which is to rehabilitate the existing water supply and drainage network infrastructure. On the other hand, these options require high maintenance, less cost effective and not feasible in the current scenario.

Rainwater Harvesting: Implementing rainwater harvesting techniques can help collect and store rainwater for later use. This alternative reduces the reliance on underground sources and provides a sustainable water supply.

Grey water Recycling: Instead of disposing of grey water from sinks, showers, and washing machines, it can be treated and reused for non-potable purposes such as toilet flushing or irrigation. This approach reduces the strain on freshwater resources and promotes water conservation.

Decentralized Water Treatment Systems: Instead of relying on a centralized water treatment plant, decentralized systems can be established at the community level. These systems utilize small-scale treatment methods such as filtration, disinfection, and purification to provide safe drinking water to local residents.

Sustainable Drainage Systems (SDS): SDS employ environmentally friendly techniques to manage storm water runoff. This includes features like permeable pavements, green roofs, and rain gardens that help absorb and filter rainwater, reducing the burden on drainage systems and preventing flooding.

Water Efficiency Measures: Promoting water-efficient practices and technologies, such as low-flow fixtures, dual-flush toilets, and water-efficient appliances, can significantly reduce water consumption in households, industries, and public facilities.

Desalination: In areas where freshwater resources are scarce, desalination plants can be utilized to convert brackish into potable water. Although this option requires substantial investment and energy, it provides an alternative water source for regions facing severe water shortages.

Water Reuse and Reclamation: Implementing advanced water treatment processes can enable the reuse of treated wastewater for various non-potable applications, such as irrigation, industrial processes, and groundwater replenishment. This approach reduces the demand for freshwater resources.

Aquifer Recharge: Managed aquifer recharge involves intentionally infiltrating excess surface water into underground aquifers, replenishing depleted groundwater resources. This technique helps to stabilize water levels and improve the sustainability of water supply systems.

Community-Based Water Systems: Engaging local communities in the planning, implementation, and maintenance of water supply and drainage systems can foster a sense of ownership and ensure sustainability. This approach empowers communities to take responsibility for their water resources.

Integrated Water Management: Adopting a holistic approach that considers the entire water cycle, including water supply, wastewater treatment, storm-water management, and water conservation, can lead to more efficient and sustainable water management practices.

It's important to assess the specific conditions, needs, and feasibility of each alternative before implementing them in a particular project or region.

2 ENVIRONMENTAL AND SOCIAL SCREENING TOOLS

2.1 Environmental and Social Management Screening

Project Area	Jamshoro District of Sindh, Pakistan
Project Title	Sindh Flood Emergency Rehabilitation Program (SFERP), P&DD Component, Sindh
Sub-project Title	Rehabilitation of Damaged Water Supply and Drainage Schemes

Table 4: Environmental and Social Screening Checklist

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
	A. Project Siting							
1.	Adjacent to or within any environmentally sensitive areas like Archeological/Cultural heritage site, Protected Forests, Wetlands, Wildlife Sanctuaries, Game Reserves etc.?	□	√	√	□	□	□	No environmental sensitive or cultural heritage site is in the vicinity of these project areas.
2.	Adjacent to or within any Buffer zone of protected area	□	□	√	□	□	□	No buffer zone viz. a sanctuary, forest, national park in its immediate surroundings. A few wild vegetation and trees were found outside of the proposed boundaries which will not be disturbed during the project activities.
3.	Are there any potential pollution sources in water supply network?	√	□	□	□	□	□	Yes, there are few potential pollution sources in the water supply network due to poor maintenance and flood affects like damages to the

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								existing infrastructure as the structures are old and material of existing structure could not stand with flood. The construction work will solely focus on rehabilitation and improvement of the existing system.
4.	Are there any potential sources that can damage drainage network? Or Is it affected by flood?	√	□	□	√	□	□	Natural disasters like flood and intensification in the urban population are the main factors for the destruction of existing drainage network. The scope of the proposed schemes is to rehabilitate the existing drainage network to resist with floods and cater the demands properly.
5.	Is there a possibility that the project will adversely affect the local landscape?	□	√	□	□	□	□	Local landscape will not be affected by the subproject activities because it doesn't involve any work outside the boundary and establishment of new infrastructure.
6.	Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions?	□	√	□	□	□	□	The project sites or discharge areas are not located in protected areas designated by the country's laws or any international treaties and conventions.
	B. Potential Impacts at Construction Phase							
7.	Will construction camp site cause land clearing and tree be cutting?	□	√	□	□	□	□	No construction camp will be constructed; existing built-in structures will be utilized as camp site. Also, it will not cause any land clearing and tree cutting activity as the subproject activities will involve upgrading existing structures.
8.	Will construction works create any disturbance/ hindrance/obstruction	□	√	□	□	□	□	No such issue of mobility/accessibility issues will be caused during the sub-project development. Few vehicles on specific timings will be used

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
	for public movement/access?							during construction work which will not obstruct access routes on road. **Mitigation Measures:** • Reduce traffic speeds on all unpaved surfaces to 15 km/ hour or less. • Contractor will strictly implement speed limits and defensive driving policies. • Traffic control will be maintained work sites. • Contractor machinery and equipment will not hamper the traffic at main road and sites. • Necessary training, information will be provided to the workers regarding traffic rules.
9.	Is there any sensitive receptor (school, mosque, health unit, community very close to the scheme) that will be impacted due to construction activities?	√	□	□	√	□	□	Some social sensitive receptors might be affected indirectly due to dust, noise or construction vehicles movements but suggested mitigations will reduce it effects. **Mitigation Measures:** • GRM must be communicated to the internal staff and the general public. Community grievances will be recorded and responded to on an urgent basis. • Provision of proper safety and diversion signage, particularly at socially sensitive receptors areas; • Ensure the placement of a proper sign board that the site is restricted from the entry of irrelevant people particularly children;

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								• Timely public notification on planned construction works should be communicated to the communities; • Setting up speed limits in close consultation with the traffic police with luminescence sign boards.
10.	Will construction activities require tree cutting?	□	√	□	□	□	□	No such activity will be done and if needed then for every tree that needs to be cut down, five saplings of approved tree species will be planted, emphasizing reforestation and the replenishment of tree cover.
11.	Will construction activities result in damaging existing local roads, bridges or other infrastructure?	□	√	□	□	□	□	The Sub-project activities do not involve damage to any nearby and existing road, bridge and any other infrastructure. The rehabilitation activities are limited to the demarcated boundary of existing facilities of WS & DS.
12.	Will construction activities generate noise?	√	□	□	√	□	□	Yes, noise will be generated from various sources such as plumbing, drilling, generators, rehabilitation activities and vehicular movement that will be limited to the proposed boundary of the sub-project and nearby community will not be affected. **Mitigation Measures:** • The contractors would ensure keeping noise levels from construction vehicles and machinery to be within safe limits. • Construction activities will not be allowed at nighttime. • Noisy machines and vehicles will not be allowed to be used at the sub project sites (noise level will not be more than 85 dBA at 7.5 m distance), properly tuned machinery and vehicles will be allowed only.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								• Workers will use noise protection equipment when working in a noisy area. • Notifying and coordinating with locals adjacent to project area prior to construction to inform them of the possibility of temporary noise disruption, and how to report noise complaints in accordance with the proposed GRM. The contractor will adhere to the requirements of the mitigation plan contained in the contract documents with true spirit and regular monitored as per SEQs.
13.	Will construction activities generate dust?	√	□	□	√	□	□	There will be construction vehicles and machines which may generate dust emissions. The machinery used in rehabilitation work will be tractors and trolleys for fetching material. **Mitigation Measures:** • Regular water sprinkling will be the responsibility of the contractor at the dust generation points during construction activities. Water will also be sprinkled at vehicular and machinery movement routes and sensitive receptor's location to avoid dust spreading to the nearby community. • Necessary PPE i.e., face mask will be provided to workers. • Contractor will ensure that dust emissions due to vehicular traffic are minimized by reducing the speed. • Well maintained and tuned vehicles will be used for the transportation and disposal of material.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
14.	Will construction activities cause air pollution due to stack emissions from generators, construction machines and vehicles?	□	√	□	□	□	□	The activities include rehabilitation of damaged water and drainage schemes in which air pollution at minor extent during the rehabilitation work will be caused. **Mitigation Measures:** • The emissions from generators, (if used) and vehicular/machinery movement at the site can affect the ambient air quality at sub project sites. It will be the responsibility of the contractor to use well maintained generators and vehicles/machines to keep ambient air quality within the desired level. The contractor will be obliged to provide fitness certificate/maintenance records of the generators, vehicles and machines before deploying them at the construction sites.
15.	Will construction activities cause soil pollution?	□	√	□	□	□	□	During construction work, various mitigation measures can be employed to address soil pollution. **Mitigation Measures:** • Implementing barriers and containment systems to prevent the spread of pollutants from construction sites to surrounding soil. • Ensuring proper disposal of construction waste, including hazardous materials, to prevent soil contamination. This involves following appropriate waste management procedures and regulations. • Implementing spill prevention measures and having protocols in place to quickly respond to any accidental spills of chemicals or pollutants that could contaminate the soil.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								• Contaminated soil management: If contaminated soil is encountered during construction, proper management procedures would be followed, including containment, removal, and disposal in accordance with local regulations. • Regular monitoring: Conducting regular soil quality monitoring throughout the construction process to detect any signs of pollution and take corrective actions promptly. • Providing training to construction personnel regarding the importance of soil protection and pollution prevention measures to ensure their active participation in maintaining a pollution-free construction site. By implementing these mitigation measures, construction activities can minimize soil pollution and contribute to environmental sustainability.
16.	Will construction activities generate construction debris?	√	□	□	√	□	□	Yes, as the sub-project will involve civil works for the development of Water Supply and Drainage Schemes, which may generate a very small quantity of construction debris. **Mitigation Measures:** • The debris (rejected material) and WS&DS broken materials produced during construction would be disposed-off in Government approved/allocated disposal sites by engaging third party which is certified from SEPA. Leftover material would not be dumped into storm water drains or watercourses, because such practices can clog these man-made and natural drainage systems and cause many other problems for the residents/Local Commuters.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
17.	Will construction activities generate hazardous solid waste?	□	√	□	□	□	□	No hazardous waste will be generated during construction phase of the project.
18.	Will construction take place near to water bodies? Or cause contamination of the surface water resources	□	√	□	□	□	□	Yes, there are a few water supply schemes that are near to surface water bodies like canals. The potential impacts of water pollution during the construction can be minimized, helping to protect water resources and aquatic ecosystems in the surrounding area. **Mitigation Measures:** • Contractor must provide the following facilities at each campsite: Latrines; lined washing areas; septic tanks, and soaking pits for toilet waste. • Soak pits will be built in absorbent soil and located 250 m away from a surface water source or groundwater well. • Diesel, oil, and lubricants should be properly stored following petroleum regulations. This will be the responsibility of the contractor. • Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; • Conduct surface water quality inspection according to the Environmental and Social Management and Monitoring Plan while adhering to SEQS 2016 and WHO standards.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
19.	Will construction activities take place near wastewater/ storm water drains and how quality of wastewater will be ensured?	√	□	√	□	□	□	No, construction work will be performed near wastewater or storm water drains as it will only be limited to pumping station boundary. To ensure the quality of wastewater before disposing is not in the scope of work. Wastewater quality analysis will be performed complaint to SEQS 2016 so that characteristics of wastewater could be recorded.
20.	Will construction activities result in damaging or relocating the utilities at site like electricity, gas, telecommunication etc.?	□	√	□	□	□	□	Neither relocation nor destruction of utilities will be involved in the construction scope. However, the sub-project scope is already restoration and rehabilitation of WS&DS of the proposed subproject area.
21.	Will construction activities involve excavation?	√	□	□	√	□	□	The excavation will be done for the foundation works of pump house, disposal stations/drainage works, boundary walls, collecting tanks and screening chambers. **Mitigation Measures:** • The excavation will be done carefully to avoid the damages. • Excavation area will be barricaded. • Contractor will use safety signs to warn and aware the local people during construction activities. • Contractor will be ensured availability of adequate Personal Protective Equipment (PPE) at the sub-project sites. • Risk assessment will be carried out by contractor before initiation of excavation work.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								• The contractor will ensure that all workers on site will be properly trained and certified to handle an excavation machine.
22.	Will construction involve heavy machinery?	□	√	□	□	□	□	No, despite few machines like excavators will be used for the civil works on need basis; however, the contractor will ensure safety precautions during construction phase of the sub-projects.
23.	Will construction activities/machines be the safety hazards for the workers or any anticipated OHS impacts?	√	□	□	√	□	□	Yes, Occupational Health & Safety issues are anticipated from the proposed rehabilitation work and mitigation measures have been proposed below. Risk can occur from machinery usage, vehicles, and civil work activities. General occupational hazards that may be encountered (e.g., moving machinery and motorized equipment, working at heights, repetitive motions, falling of objects, injuries etc. **Mitigation Measures:** • Ensure and strictly implement the SOPs regarding communicable diseases including daily body temperature check, PPEs, emergency response, and drills. • Unauthorized personnel will not be allowed to enter project site without permission and safety permits. • Assess the hazards associated with the required works and prepare and follow the safety procedures required for the specific works such as electrical works and works at height. • Provision of first aid facilities for workers at site for meeting the emergency needs of workers, and providing basic medical training to

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								specified work staff and basic medical service and supplies to workers. • Observe and maintain standards of Health and Safety towards all employees in line with WB EHS Guidelines along with Sindh Occupational Health and Safety Law. • Contractor will install safety signs and markings to demarcate the construction zone. • Contractor will ensure provision of controlled access points for the prevention of an unauthorized access to the site. The Contractor will maintain a record of the persons who enter or exit from the sub-project site.
	C. Potential Social Impacts During Design and Construction							
24.	Will involuntary resettlement cause by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?	□	√	□	□	□	□	There will be no involuntary resettlement because sub-project sites are located in Government own land.
25.	Will there a possibility that the project adversely affects the living conditions of inhabitants?	□	√	□	□	□	□	The proposed subproject will positively impact inhabitants and improve their social wellbeing. There is no possibility that the project will adversely affect the living conditions of inhabitants.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
26.	Will the construction cause any labor issues such as labor living and working conditions?	√	□	□	√	□	□	Labor condition or rights related issues will be complied such as working hours, leaves, benefits, wages, and other related facilities like provision of foods, clean water, transportation etc. However, no labor camps are anticipated as it involves small scale activities which doesn't involve any living conditions. **Mitigation Measures:** • The Workers' Grievance Redress Mechanism (GRM) will be developed and communicated among workers to lodge complains. • Workers should be provided with clean drinking water for free.
27.	Will construction activities cause community Health and Safety issues? Or any other such impacts.	□	√	□	□	□	□	No such impacts are anticipated, though following will be applicable to the project activities. **Mitigation Measures:** • GRM must be communicated to the general public. • Close consultation with local communities to identify optimal solutions where needed. Community grievances will be recorded and responded to on an urgent basis. • Contractor shall give preference to local community members in subproject areas, to the extent feasible, with respect to the employment of unskilled labor. • No Hazardous and non-hazardous waste will be dumped outside any community.

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
								• There should be sufficient signage to warn of dangers and hazards on a construction or worksite. Signs should be clear and accompanied by ropes, cones, and other equipment to cordon off dangerous areas. • Conduct worksite inspections daily to identify any potential dangers or hazards. Dangers and hazards should be cordoned off immediately.
28.	Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure?	√	□	□	□	□	□	Local Stakeholders have been consulted and their comments mentioned in stakeholders' consultation have been noted which will be addressed with true spirit during construction phase.
29.	Will the construction activities cause the socio- cultural issues or conflicts among workers and communities?	√	□	□	□	□	□	• Contractor should take proper measures and raise awareness among the communities and workers to address and resolve issues relating to harassment, intimidation (particularly those related to issues of labor influx), and exploitation, especially against women. • Measures to prevent Gender based violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) the Contractor must include relevant clauses in the workers' code of conduct. • Workers should not be allowed to crowd in the residential communities nearby the site.
30.	Are appropriate measures taken to	√	□	□	□	□	□	Yes, as the security guards will be deployed at subproject sites and they

S. No	SCREENING QUESTIONS	Yes	No	Impact Severity Ranking				Remarks/Mitigation Measures
				NR	1	2	3	
	ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?							are not allowed to move outside or provide entrance to anybody without permission of the site engineer.

NR: Not Relevant

1. No or Minor Impact
2. Moderate, Short Term, Reversible Impact
3. Severe, Long Term, Irreversible Impact

	Category	A	B	**C**
	Environmental Management Required	N/A	N/A	√
	Type of Environmental Management Tool to be Used	**Social and Environmental Screening Checklist**		

3 STAKEHOLDER CONSULTATION

Stakeholder consultation during a construction project is crucial for ensuring transparency, addressing concerns, and promoting collaborative decision-making.

Table 5: List of Stakeholders Consulted for Water Supply and Drainage Schemes of Jamshoro

No.	Schemes	Coordinates	Name of the Goth/Community	Date of Consultation
A	**Water Supply Schemes Taluka Kotri**			
1	Jeay Shah Muhalla - WSS	428921.00 m E 2814312.00 m N	Jeay Shah Muhalla	28/11/2023
2	Bahria Village- WSS	428280.00 m E 2812192.00 m N	Bahria Village	30/11/2023
3	Karo Khow - WSS	433470.00 m E 2798962.00 m N	Karo Khow	28/11/2023
B	**Water Supply & Drainage Schemes Taluka Sehwan**			
4	Gehalpur -WSS	379284.00 m E 2928358.00 m N	Gehalpur	30/11/2023
5	Bajara- DS	376506.00 m E 2915905.00 m N	Bajara	30/11/2023
C	**Water Supply & Drainage Schemes Taluka Manjhand**			
6	Manjhand City -WSS	423607.00 m E 2866105.00 m N	Manjahnd	29/11/2023
7	Serai Solangi- WSS	419414.00 m E 2875408.00 m N	Serai Solangi	29/11/2023
8	Aamri -WSS	401661.00 m E 2895711.00 m N	Aamri	29/11/2023
9	New Sohanri-WSS	401495.00 m E 2895759.00 m N	New Sohnari	29/11/2023
10	Juma khan Gabool-WSS	400225.00 m E 2891256.00 m N	Jumo Khan Gabool	29/11/2023
11	Abad-WSS	394831.00 m E 2901100.00 m N	Aabd	29/11/2023
12	Laki Shah Saddar- WSS	391021.00 m E 2904760.00 m N	Laki Shah Sadar	29/11/2023
13	Bachha-WSS	389937.00 m E 2909998.00 m N	Bachha	29/11/2023
14	Khanoth-WSS	429088.00 m E 2847066.00 m N	Khanoth	29/11/2023
15	Uner Pur-WSS	435206.00 m E 2836207.00 m N	Unerpur	29/11/2023
16	Makhdoom Seherabad-WSS	434203.00 m E 2833895.00 m N	Makhdoom Seherabad	29/11/2023

3.1 Community Concerns

Comments /Observations	Action /Response
Discussion regarding the importance and usefulness of rehabilitation of water supplies and drainage schemes was held.	The proposed water supply and drainage schemes will improve the socioeconomic status of the districts and offer clean drinking water, according to the briefing given to the attendees.
Concerns over the overall effects of drainage and water supply plans on public health and sanitation were expressed by community members.	The community was informed of the advantages to their health that come with having better access to clean water, and efficient drainage systems. The community's specific health problems will be handled appropriately by installation of Hypo-chlorinator, and steps taken to guarantee public safety will be outlined.
Questions regarding concerns and issues encountered during the monsoon season or following floods were asked by the community members.	They notified the team that the area is experiencing severe load shedding, which is a primary factor in the present water supply and drainage system's collapse. During the monsoon, the water turns quite murky and might induce stomach problems. There are rising mains concerns that need to be fixed, pumps that are broken or not functioning properly, and regular drain cleaning. Although solar panels are erected, a lack of upkeep has left the majority of them malfunctioning.
Stakeholders/ Local Community members asked about the operations and maintenance of Water Supply & Drainage Schemes.	The team responded that safe drinking water will be provided to the community without any interruption and Public health Engineering Department (PHED) will be responsible for operations and maintenance.
Local Community inquired about the project execution and its completion.	In response, the technical team stated that the project will start in June 2024 and be finished in June 2025. The proposed project area's current facilities will be the only ones undergoing repair, and it will be finished in a year.
The community urged to provide of semi-skilled and unskilled jobs for local labor.	Locals will be given preference for unskilled works during construction.
Typically, women in the sub-project area retrieve water from pumping stations. Some residents expressed concern that the privacy of the surrounding communities might not be violated, particularly in cases when the villages are close to or adjacent to pumping stations.	It was clarified that local labor would be employed to complete the project, and all staff members would be subject to limitations in order to protect people's privacy and local customs. There would be no labor interaction with women or children. And if community continue to have

Comments /Observations	Action /Response
	problems, they can contact SFERP GRC via email or at the toll-free number.
Concerns were expressed by the community regarding the sustainability and long-term upkeep of the drainage and water delivery systems.	The community was informed that the Department will guarantee operation and maintenance plans, that PHED is in charge of the project, and that any steps made to guarantee the infrastructure's long-term survival will be reported. Operational staff recruited by the GoS is present in every scheme undergoing rehabilitation.
Concerns from the community were also expressed over the possibility of noise, dust, traffic jams, and brief service outages resulting from construction projects related to drainage and water supply.	Community was assured that these disruptions will be minimized to the extent possible, provide a clear timeline of the construction activities, and communicate any alternative arrangements made to mitigate inconveniences.
Community had reservations about the proper maintenance of rehabilitated system and no availability of resources.	Community was informed that after rehabilitation works the system will be handed over to PHED who do proper maintenance and resource utilization.
The community asked for a comprehensive needs assessment to be conducted in order to pinpoint the shortcomings and challenges in drainage and water supply plans, as well as to address other concerns including the availability of health and education facilities, simple access to water supplies, and, if feasible, metaled access routes.	The community was informed that the proposed subproject will be carried out following a thorough needs assessment and an evaluation of the flood damage. Additionally, it was disclosed that budget will be available for the restoration of drainage and water infrastructure, but the construction contractor would be urged to take appropriate steps to fulfill their corporate social duty.

Community Consultation, Taluka Kotri, District Jamshoro

Community Consultation, Taluka Manjhand, District Jamshoro

Comments /Observations	Action /Response
	
Community Consultation, Taluka Thano Bula Khan, District Jamshoro	**Community Consultation, Taluka Sehwan, District Jamshoro**

Figure 2: Stakeholders Consultation

3.2 Institutional Consultation

The Environment and Social team conducted consultations with concerned Government Department in November, 2023. The team briefed the officers of Government Departments regarding the salient features of the proposed sub-projects. It was informed that the "Detailed Design of the Project, under PIU-SFERP-P&DD being implemented and funded by the World Bank. They were informed that the project intends to rehabilitate the damaged Water Supply and Drainage Schemes destroyed in flood 2022. The primary goal of the project is to meet the present and future requirements regarding provision of safe drinking water and drainage system. It was also briefed that the project will bring positive impacts on the lives of the local population.

According to the officials, the rehabilitation/restoration of the proposed Schemes will be beneficial for the residents of the project regions. The officials expressed their support for the planned project during the meeting and assured their full cooperation as a Line Department.

Table 6: Summary of Concerns Raised by Institutional Stakeholders

Sr. No	Department
1.	XEN PHED Department
2.	Deputy Director SEPA
3.	Representative of Municipal Administrator

Comments/Observations	Actions/ Responses
The majority of the participants involved had favorable opinions on the restoration of drainage and water supply systems.	The participants were largely in support of the project and agreed that it is desperately needed given the situation of the water supply and drainage schemes after the devastating floods of 2022.
Detailed discussions were held regarding the environmental and social issues of the area due to proposed rehabilitation activity.	The inhabitants, local flora, and fauna won't be negatively impacted by the project. The project is located on land owned by the government, and during the project's constructing phase, no significant social or environmental problems are anticipated. To counteract environmental deterioration, mitigating strategies will be suggested.
According to the stakeholders, if the proposed project is executed appropriately and with an effective team, it will improve the socioeconomic status of the community in the project areas.	The team acknowledged and responded that the proposed Water Supply and Drainage Schemes will be beneficial for community residing in the area. The living standard of the community would be elevated after rehabilitation of the schemes.
The stakeholders suggested that care must be given to protect biodiversity of the area during the construction phase and construction waste should not be disposed-off in nearby surroundings.	The plantation would be undertaken with the preference of local species; no exotic species will be promoted. No cutting of trees will be involved during the execution of the project activities. Plantation activity will be done around the boundary wall to enhance aesthetic beauty of the project area. It will be monitored to cut minimum number of trees. At few sites, trees will be cut or chopped and 1:10 trees will be planted in compensation and the Line Department would be responsible for caring the newly planted trees after construction phase. CSC team ensured that Construction debris would be disposed only at TMA lands and other materials will be handed over to SEPA certified waste contractors.
The Stakeholder shows their concern regarding the impacts during the construction stage on waste management and land acquisition	CSC team briefed that all type of waste would be handled properly as stated by SEPA through TMA approved lands and certified waste contractors. There are no issues regarding land acquisition, the land is vacant and owned by the Government. If the issues

Comments/Observations	Actions/ Responses
	occur, then these matters will be dealt with Revenue Department.
The stakeholders suggested to engage local people during project activities and take care of local customs and traditions during construction.	The teams responded that locals will be considered during construction activities while during operation priority will be given to the locals if not available then will be sourced from other regions. Privacies would be ensured. It was also assured that norms, ethics and traditions of community will not be disturbed.




Figure 3: Institutional Consultation

4 ENVIRONMENTAL AND SOCIAL MANAGEMENT & MONITORING PLAN

The purpose of the ESMMP for the rehabilitation works is to ensure that all necessary identified measures should be adopted during construction and operation phase for all schemes to protect the environment and social situations and to comply with the country's environmental and social legislation and applicable World Bank standards. After the preparation of ESMF, PIU has outlined site-specific EMP for the Contractors and executing agency.

Table 7: Environmental and Social Management and Monitoring Plan (ESMMP)

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
1.	**Land Use**	**Construction Phase** Civil Works **Operation Phase** None	- The work will be carried out in the land of PHED which comprised of rehabilitation work only. - No need to clear land or cutting of trees is envisaged.	NA	None
2.	**Dust Emission**	**Construction Phase** Movement of construction vehicles. **Operation Phase** None	- Water will be sprinkled daily or when as required to avoid the dust emission near proposed project vicinity. - For dust control, cordon off the construction area through dust control net.	Daily during Construction Phase	**Construction phase** Contractor
3.	**Noise Emission**	**Construction Phase** Construction Equipment, Generator, Vehicle Movement **Operation Phase** None	- Proper design, maintenance and repair of construction machinery and equipment will be ensured.	Twice a month during Construction Phase	**Construction phase** Contractor

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
4.	**Water Management**	**Construction Phase** Construction activities Water sprinkling for dust minimization **Operation Phase** Supply of water and maintaining its quality will be managed by the PHED	- Contractor will handle and manage waste generated from the construction activities without contamination to natural environment/water bodies and it will reduce risk to general public who stay close to sites. - Water contamination during construction will be avoided through proper disinfection. - Excess use of water will be avoided and monitored in routine basis. - Water Tankers/water bowsers and bore water will be proposed for the utilization of water during project activities. - Clean and safe drinking water will be provided to the workers during working hours.	- Daily during Construction Phase - Water quality analysis at the beginning and end of construction phase	**Construction phase** Contractor **Operational phase** PHED
5.	**Ecological Impact**	**Construction Phase** Construction activities Clearance of top Soil No habitat loss	- As the subproject develops, plantation is grown in and around the subproject vicinity as a CSR.	None	None

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
		No tree cutting at site **Operation Phase** None			
6.	**Solid Waste Management**	**Construction Phase** In construction phase, cement bags, woods remain, debris will be generated. **Operation Phase** Food Waste and Recyclables Material like; paper, plastic etc.	- Waste reduction methodologies will be implemented. - On spot segregation will be ensured. - Covered bins shall be ensured. - Separate Bins for recyclable material and other type of solid waste shall be ensured. - Ensure the disposal of waste properly from the site on daily basis to avoid odor and maintained the site esthetics. - Food waste will be disposed of separately. - Waste inventory of hazardous and non-hazardous waste generated will be prepared and periodically updated. - Scrap metal waste generated from designing and construction	Daily during Construction Phase	**Construction phase** Contractor **Operational phase** PHED

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
			activities will be collected and stored separately in a waste yard and sold to local recyclers for reuse purposes. - Solid waste generated during construction and operation activities will be segregated disposed of appropriately. - Waste will be disposed of properly at designated disposal area. - Food waste and recyclables viz. paper, plastic, glass etc. will be stored in designated waste bins /containers. The recyclables will be periodically sold to local recyclers while food waste will be disposed through proper waste handling mechanism. - Separate bins with symbols shall be placed at construction area. - Secondary containment shall be ensured to avoid the leakages and seepages. - Waste disposal will not be allowed in agriculture lands.		

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
7.	**Soil and Land Contamination**	**Construction Phase** No any chemical or hazardous substance is used in the construction phase therefore there is no chance of soil or land contamination **Operation Phase** None	- Debris, Waste generated from construction material will be properly covered and stored and disposed-off periodically during the construction phase. No leftover construction waste will be left on the site. Maintenance of machinery will only be carried out at designated places to avoid any fuel spill if require. - Reinstate and protect cleared areas as soon as possible. - Cover unused area of disturbed or exposed surfaces immediately with mulch/grass turnings/tree plantations. - Locate stockpiles away from drainage lines. - Remove debris from drainage paths and sediment control structures. - Keep the final or finished surface of all the raised lands free from any kind of depression that causes water logging. - Reinstate the natural landscape of	Weekly during Construction Phase	**Construction phase** Contractor **Operational phase** PHED

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
			the ancillary construction sites after completion of works.		
8.	**Waste Water**	**Construction Phase** Water used in the construction material during preparing bed and lean activity, construction of pump house, septic tanks, LSRs and other works **Operation Phase** Sanitary waste water from the office	- Conduct daily inspections at the site to ensure removal of construction debris. - Store construction material containing fine particles in an enclosure so that sediment laden water does not drain into nearby water drains. - Sanitary waste will be drained to the drainage system properly.	- Visual inspection on daily basis during Construction Phase - Wastewater quality analysis at the beginning and end of construction phase	**Construction phase** Contractor
9.	**Safety Hazards**	**Construction Phase** Project related vehicular traffic Driving Injuries related with civil works and electrical works Heat Waves Cold Waves Communicable Diseases	- Ensure the World Bank EHS guideline will be followed. - Personal Protective Equipment will be provided during construction to the workers. - First Aid kits will be provided at sites. - Strict code of conduct will be followed. - Make safety precautions and display on the notice board of entry	Daily during Construction and operation phase	**Construction phase** Contractor **Operational phase** PHED

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
			gate in both national and local language.		
		Operation Phase Injuries during Operational phase	- During heat wave, working hours will be revised to make sure that labor work force work only in early hours or late evening hours. - Monitoring weather forecasts for outdoor work to provide advance warning of extreme weather and scheduling work accordingly. - Adjustment of work and rest periods according to temperature stress management procedures such as providing easy access to adequate hydration such as drinking water or electrolyte drinks depending on the temperature and workloads. - Providing temporary shelters to protect against the elements during working activities or for use as rest areas. - Implementation of health and hygiene practices to mitigate the communicable diseases.		

Sr. No.	Activity	Potential Impacts	Mitigation Measures	Monitoring & Reporting Frequency	Responsibility
10.	**Socio-Economic Environment**	**Construction Phase** Traffic and vehicle movement Noise generated form subproject activities Labor requirement form the nearby area Occupational health & safety issue of working labor **Operation Phase** Employment opportunities Awareness to local people to emergency situation Gender Issues, Gender inclusion GBS and VAC related impacts	- Plan temporary traffic arrangements during construction within the construction area. Review the plan periodically with respect to site conditions. - Give special consideration to local traffic management. - Take adequate precautions to prevent danger from electrical equipment (switches and wiring). - Provide a readily available first aid unit including an adequate supply of sterilized dressing material and appliances. - GRM shall be develop and ensure the accessibility to the local community and labor.	**Construction Phase** GRM for labor and community	**Construction phase** Contractor **Operational phase** PHED

5 PICTORIAL PROFILE OF PROJECT SITES

5.1 Water Supply Scheme Taluka Kotri, District Jamshoro

5.2 Water Supply Scheme, Taluka Sehwan, District Jamshoro

5.3 Water Supply Scheme, Taluka Manjhand, District Jamshoro

6 ENVIRONMENTAL AND SOCIAL IMPLEMENTATION BUDGET

There are total 16 schemes in District Jamshoro in which 01 is Drainage Scheme and 15 are water supply schemes. Environmental Quality Analysis for Air Quality Monitoring, Testing of Water and Wastewater Quality and Noise Level monitoring will be conducted at each sub-project site during the start and at completion of the sub-projects. The detail of cost has been given in table below. It is worthy to mention here that sub-projects are located in Government owned land and there will be no resettlement or land acquisition issues during the rehabilitation work.

Table 8: Environmental Compliance Cost

Table - 8: Estimated Environmental and Social Cost for 45 Water Supply and Drainage Scheme of Jamshoro District								
Item No.	**Item**	**Rational**	**Frequency**	**Average Rate (Rs.)/unit***	**Site-wise Quantity**	**No of units/sites**	**Total Quantity**	**Estimated Amount (Rs.)**
A. Environmental Analysis at Start of Civil Works								
1	Wastewater	1 Sample from Each Drainage Scheme	Once at the Start of Construction	17,000	1	1	1	17,000
2	Drinking Water	One Sample from each water supply scheme		15,000	1	15	15	225,000
3	Ambient Air	1 Sample from each subproject scheme		15,000	1	16	16	240,000
4	Ambient Noise	1 Sample from each subproject scheme		1,000	1	16	16	16,000
							Sub Total - A	**498,000**
B. Environmental Analysis Cost at Completion Phase (12 months)								
1	Drinking Water	One from camp area at each water supply scheme site	Once at the End of Construction	15,000	1	15	15	225,000
2	Wastewater	1 Sample from Each Drainage Scheme		17,000	1	1	1	17,000
3	Generators/Stack Emission (If available)	One Sample from construction site		10,000	1	16	16	160,000
4	Ambient Air	One from the camp area		15,000	1	16	16	240,000
5	Ambient Noise	One from the camp area		1,000	1	16	16	16,000
6	Mobilization Charges	At each water supply and drainage scheme		10,000	1	16	16	160,000
							Sub Total - B	**818,000**
C. EHS Management								
1	Personal Protective Equipment		Bi annual	6,000	1	25	25	150,000

Table - 8: Estimated Environmental and Social Cost for 45 Water Supply and Drainage Scheme of Jamshoro District								
Item No.	**Item**	**Rational**	**Frequency**	**Average Rate (Rs.)/unit***	**Site-wise Quantity**	**No of units/sites**	**Total Quantity**	**Estimated Amount (Rs.)**
2	Waste Disposal from Construction Sites						Lump sum	100,000
3	Project dissemination materials such as banners, flayers, notice board etc.			10000	1	98	98	980,000
							Sub Total - C	**1,230,000**
D. EHS Administrative Cost								
1	Training/Capacity Building (Environment, Social, Gender, & OHS)		50 persons	20,000	1	98	98	1,960,000
2	Social Expert (for social compliance & GRM implementation) Salary			120,000	12	1	12	1,440,000
3	GRM running & General Community support needs (if any)						Lump sum	500,000
4	Environmental & OHS Officer Salaries (120 thousand for each person)			120,000	12	1	12	1,440,000
							Sub Total - D	**5,340,000**
							TOTAL OF (A TO D)	**7,886,000**

*** Schemes wise testing will be performed at start of civil works**

7 OPERATION AND MAINTENANCE (O&M)

Operation and maintenance (O&M) of Water Supply (WS) and Drainage Systems is a critical task that ensures the continued provision of safe and reliable water and drainage services to communities. O&M activities can be divided into two main categories: preventive maintenance and corrective maintenance.

Preventive maintenance is carried out on a regular basis to prevent problems from occurring. This includes activities such as cleaning and inspecting pipes, valves, and other equipment; lubricating the moving machines etc. Corrective maintenance is carried out to address problems that have already occurred. This includes activities such as repairing broken pipes, replacing damaged equipment, and clearing blockages in drainage systems. In addition, the PHED should also ensure timely procurement of disinfectant chemicals for disinfection of the water and keep a sufficient stock of such chemicals so that there is no interruption in making the water safe for human consumption.

O&M of WS and Drainage Systems is a complex and challenging task. It requires a skilled workforce, a well-maintained inventory of spare parts, and a comprehensive set of procedures and documentation. However, the benefits of effective O&M are significant. By preventing problems from occurring and addressing problems quickly, O&M can help to ensure the continued provision of safe and reliable water services to communities. After completion of rehabilitation work, the project will be handed over to the PHED who will operate and maintain the project. PHED department has technical staff for operation and maintenance of proposed rehabilitation schemes. Moreover, GoS yearly allocates substantial budget for operation and maintenance of these schemes. After rehabilitation these schemes will be operationalized under PHED through its O&M section which is adequately staffed with required skills and expertise. Training of these staff would be required to operate new machinery installed during rehabilitation.

7.1 Key aspects of O&M for WSS and Drainage systems:

7.1.1 Operation:

i. Regular monitoring of water sources, such as reservoirs, wells, or treatment plants, to ensure a consistent water supply.

ii. Operation of pumps, valves, and control systems to regulate the flow of water through the distribution network.

iii. Monitoring and maintaining water pressure levels within acceptable limits.

iv. Disinfecting the water all the times prior to supplying to the consumers.

v. Managing water quality, including regular testing and treatment to ensure compliance with health and safety standards.

vi. Coordinating with the local community and consumers to address their water supply needs and concerns.

7.1.2 Maintenance

i. Routine inspection of pipelines, valves, and fittings to identify and repair leaks, cracks, or any other damages.

ii. Clearing blockages in pipelines, channels, and drains to maintain an unobstructed flow of water.

iii. Cleaning and desilting of reservoirs, tanks, and drainage channels to prevent sedimentation and maintain capacity. After every cleanup operation, the tanks, reservoirs and / or pipelines must be disinfected prior to putting them back to use.

iv. Repair and maintenance of water treatment plants, pumping stations, and other infrastructure components.

v. Regular calibration and maintenance of measuring instruments and control systems.

vi. Periodic maintenance of equipment such as pumps, motors, and generators.

7.1.3 Emergency Response

i. Developing contingency plans and emergency response protocols to address unexpected events such as equipment failures, natural disasters, or water contamination incidents.

ii. Establishing a communication system to notify the public and relevant authorities in case of emergencies.

iii. Rapid response and repair of damages during emergencies to restore the system's functionality as quickly as possible.

7.1.4 Water Conservation

i. Implementing water conservation measures, such as promoting public awareness campaigns, encouraging responsible water usage, and identifying and repairing water wastage points.

ii. Monitoring and managing water losses and leakages in the distribution network.

iii. Regular assessment and optimization of the system to reduce energy consumption and improve overall efficiency.

7.1.5 Data Management

i. Maintaining comprehensive records of system performance, maintenance activities, and water quality data.

ii. Utilizing data analysis and predictive modeling to optimize the operation and maintenance activities.

iii. Incorporating modern technologies, such as remote sensing, real-time monitoring systems, and data analytics, to improve decision-making and efficiency.

7.1.6 Documentation and Handover

i. Compile project documentation (operation and maintenance manuals, as-built drawings, warranties).

ii. Hand over documentation to the PHED for future reference.

7.1.7 Facilities Management

i. Establish a comprehensive facilities management plan.

ii. Outline responsibilities, protocols, and schedules for maintenance, inspections, repairs, and upgrades.

7.1.8 Staffing and Training

i. Increase adequate staffing.

ii. Provide necessary training for personnel deputed for O&M.

iii. Increase maintenance technicians, engineers, custodial staff, security personnel, and administrative support.

7.1.9 Preventive Maintenance

i. Implement a preventive maintenance program.

ii. Conduct regular inspections, cleaning, lubrication, adjustments, and equipment testing.

7.1.10 Repairs and Corrective Maintenance

i. Respond promptly to issues and conduct repairs.

ii. Establish an inventory of spare parts.

iii. Maintain relationships with reliable contractors or suppliers.

7.1.11 Safety and Compliance

i. Enforce safety protocols.

ii. Conduct regular inspections and provide safety training.

iii. Ensure compliance with relevant codes and regulations.

7.1.12 Energy Efficiency and Sustainability

i. Promote energy efficiency and sustainable practices.

ii. Implement energy management systems.

iii. Optimize equipment performance.

iv. Utilize renewable energy sources and green building practices.

7.1.13 Asset Management

i. Track and monitor equipment and systems.

ii. Maintain an asset inventory.

iii. Conduct periodic assessments and plan for replacements or upgrades.

7.1.14 Stakeholder Communication

i. Establish clear communication channels.

ii. Receive and address maintenance requests.

iii. Maintain effective communication with stakeholders.

7.1.15 Continuous Improvement

i. Regularly evaluate and seek feedback.

ii. Analyze maintenance records.

iii. Conduct user surveys.

iv. Involve the maintenance team in identifying areas for improvement.

7.1.16 Cleaning and maintenance of solar system

i. Regularly clean solar panels to remove dust, debris, and dirt.

ii. Inspect for any damage or wear and tear on the panels.

iii. Check the wiring and connections for any loose or damaged parts.

iv. Monitor the performance of the solar system to ensure it is generating the expected amount of energy.

v. Conduct preventive maintenance such as tightening bolts and screws, and replacing faulty components.

vi. Schedule professional inspections and maintenance by qualified solar technicians.

vii. Keep records of cleaning and maintenance activities for future reference.

viii. Follow manufacturer's guidelines and recommendations for cleaning and maintenance.

ix. Consider scheduling cleaning during periods of low sunlight or in cooler temperatures for safety reasons.

x. Ensure the safety of personnel when performing maintenance tasks on the solar system.

7.1.17 Regular maintenance and monitoring of Hypo-chlorinator

i. Routine inspections: Conduct regular inspections of the hypo-chlorinator system to identify any visible signs of damage, leaks, or malfunctions. Inspect all components, including injection systems, pipes, valves, and storage tanks.

ii. Calibration of equipment: Calibrate the hypo-chlorinator equipment periodically to ensure accurate dosing or injection of chlorine. Follow the manufacturer's guidelines for calibration procedures and frequency.

iii. Replacement of parts: Replace worn-out or damaged parts of the hypo-chlorinator system as needed. This may include valves, seals, gaskets, tubing, or other components. Use genuine manufacturer-approved parts for replacements.

iv. Monitoring chlorine levels: Regularly monitor chlorine levels in the water supply to ensure that the desired disinfection levels are being maintained. This can be done through manual sampling and testing or by using automated monitoring systems. Adjust the hypo-chlorinator settings if necessary to achieve the desired chlorine concentration.

v. System optimization: Continuously assess the performance of the hypo-chlorinator system and optimize its operation for efficiency and effectiveness. This may involve adjusting dosing rates, ensuring proper mixing of chlorine, optimizing contact time, and considering factors such as water temperature and flow rate.

vi. Documentation: Maintain detailed records of maintenance activities, inspections, calibrations, and chlorine monitoring results. This documentation serves as a reference for future maintenance, helps track system performance, and aids in regulatory compliance.

vii. Training and awareness: Regularly train and update the personnel responsible for operating and maintaining the hypo-chlorinator system. Ensure they are aware of proper maintenance procedures, safety protocols, emergency response measures, and any updates or changes in regulations.

7.1.18 PHED Responsibility

i. PHED solely responsible for operation and maintenance.

ii. Customize O&M plans for long-term success.

Overall, O&M of WSS and Drainage System requires a combination of technical expertise, regular monitoring, preventive maintenance, and prompt response to ensure the uninterrupted supply of clean water and effective wastewater management. The Public Health Engineering Division (PHED) would

typically be responsible for the operation and maintenance of public infrastructure projects related to Water Supply and Drainage System. They would be the primary entity overseeing the operation and maintenance activities to ensure the functionality and sustainability of the constructed assets. By considering these aspects and implementing effective O&M practices, the project can function optimally and provide long-term benefits to its users and stakeholders.

7.2 Key benefits of effective O&M of WSS and Drainage Systems

i. **Improved water quality:** O&M activities can help to prevent the contamination of water supplies, which can lead to waterborne diseases.

ii. **Increased water availability**: O&M activities can help to reduce leakages and improve the efficiency of water distribution systems, which can lead to increased water availability for communities.

iii. **Reduced flooding:** O&M activities can help to prevent flooding by clearing blockages in drainage systems and improving the capacity of storm water management systems.

iv. **Improved public health:** O&M activities can help to prevent the spread of waterborne diseases by improving the quality of water supplies and reducing the risk of flooding.

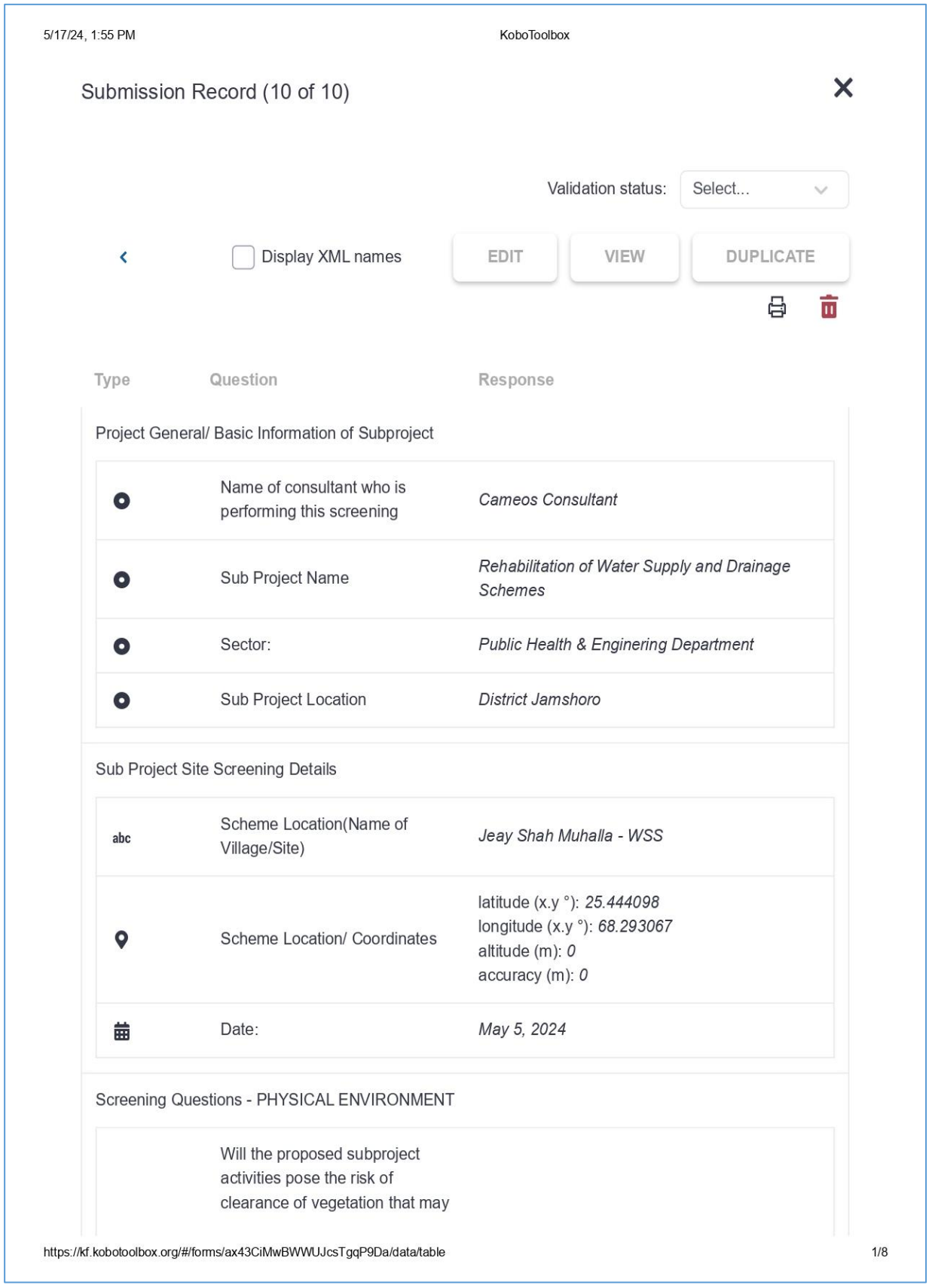
v. **Increased property values:** Communities with well-maintained WSS and drainage systems typically have higher property values.

The cost of O&M can be significant, but the benefits far outweigh the costs. By investing in effective O&M, communities can ensure the continued provision of safe and reliable water services to their residents.

ANNEXURE 1:

Environmental & Social Screening Checklist of All Schemes of District Jamshoro

Annexure 1: Water Supply Scheme- Jeay Shah, Taluka Kotri, District Jamshoro



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Submission Record (10 of 10)

Validation status: Select...

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Type	Question	Response
Project General/ Basic Information of Subproject		
	Name of consultant who is performing this screening	*Cameos Consultant*
	Sub Project Name	*Rehabilitation of Water Supply and Drainage Schemes*
	Sector:	*Public Health & Enginering Department*
	Sub Project Location	*District Jamshoro*
Sub Project Site Screening Details		
abc	Scheme Location(Name of Village/Site)	*Jeay Shah Muhalla - WSS*
	Scheme Location/ Coordinates	latitude (x.y °): *25.444098* longitude (x.y °): *68.293067* altitude (m): *0* accuracy (m): *0*
	Date:	*May 5, 2024*
Screening Questions - PHYSICAL ENVIRONMENT		
	Will the proposed subproject activities pose the risk of clearance of vegetation that may	

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⊙	result in an increase in the level of suspended solids washing into nearby water bodies?	*No*
abc	Remarks	
⊙	Will the proposed subproject activities pose a risk of contaminating drinking water sources due to construction activities?	*No*
abc	Remarks	
⊙	Is there any potential pollution source in water supply network?	*No*
abc	Remarks	
⊙	Is there any potential source that can damage drainage network? Or Is it affected by flood?	*Yes*
abc	Remarks	*By flood*
⊙	Will the proposed subproject interventions deplete groundwater because of the water used during rehabilitation activities?	*No*
abc	Remarks	
⊙	Will the proposed subproject interventions result in an increase in ambient air pollution, including chemical and particulate matter due to the construction and operation of related machinery?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
	Will the proposed subproject interventions result in an increase in ambient noise levels	

⊙	and vibrations due to the operation of construction machinery/vehicles?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
⊙	Will these ambient noise levels be beyond the specifications in the SEQS?	*No*
abc	Remarks	
⊙	Will the proposed subproject activities lead to increased soil erosion?	*No*
abc	Remarks	
⊙	Will the proposed subproject interventions result in the generation of hazardous and/or non-hazardous waste?	*Yes*
abc	Remarks	*non-hazardous*
⊙	Will the proposed subproject interventions result in potentially increased health risks for subproject workers and communities (e.g., communicable diseases)?	*No*
abc	Remarks	
⊙	Are the proposed subproject interventions being implemented in an area with high natural hazard risk? (e.g., floods, earthquakes, droughts, etc.)	*Yes*
abc	Remarks	

Screening Questions- ECOLOGICAL ENVIRONMENT

⊙	Will the proposed subproject interventions potentially cause any adverse impacts on habitats, ecosystems, and/or ecosystem services?	*No*
abc	Remarks	
⊙	Will any rehabilitation work be located in areas that would promote the conversion of natural habitats?	*No*
abc	Remarks	
⊙	Will any proposed subproject interventions be located on or near sensitive environmental areas, including national parks and protected areas?	*No*
abc	Remarks	
⊙	Are the proposed subproject interventions activities likely to pose risks to any endangered species?	*No*
abc	Remarks	

Screening Questions- SOCIAL ENVIRONMENT

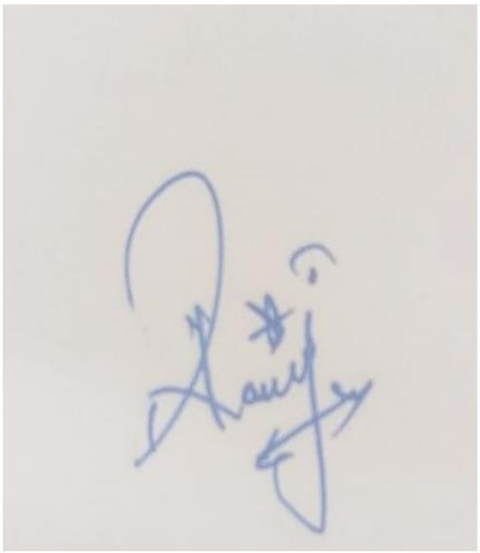
⊙	Will the proposed subproject activities involve land acquisition?	*No*
abc	Remarks	
⊙	Are there any forced labor or child labor risks associated with contractors or other third parties involved in implementing this proposed subproject intervention?	*No*

abc	Remarks	
◉	Is labor influx (outside labor force) expected during the construction of the proposed subproject?	*No*
abc	Remarks	
◉	Will local labor be used for the proposed subproject construction activities?	*Yes*
abc	Remarks	
◉	Will there be any temporary or permanent displacement as a result of the proposed subproject construction or operation activities?	*No*
abc	Remarks	
◉	Are there expected to be any traffic-related issues as a result of the proposed subproject intervention activities, particularly during the construction phase?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
◉	Are the proposed subproject activities likely to have impacts on important religious/cultural heritage sites?	*No*
abc	Remarks	
◉	Have there been any past security-related issues at the proposed subproject sites?	*No*
abc	Remarks	

⊙	Has stakeholder engagement taken place in the proposed subproject areas?	*Yes*
abc	Remarks	*Yes, Community requested to conduct a comprehensive needs assessment for the supply of drinking water as the population has increased but water supply and drainage networks are not available*
⊙	Were vulnerable groups involved in stakeholder consultations? (e.g., women, minorities, economically disadvantaged individuals, etc.)	*Yes*
abc	Remarks	*Yes, women of the subproject area were taken onboard also.*

Site Photo

Signature



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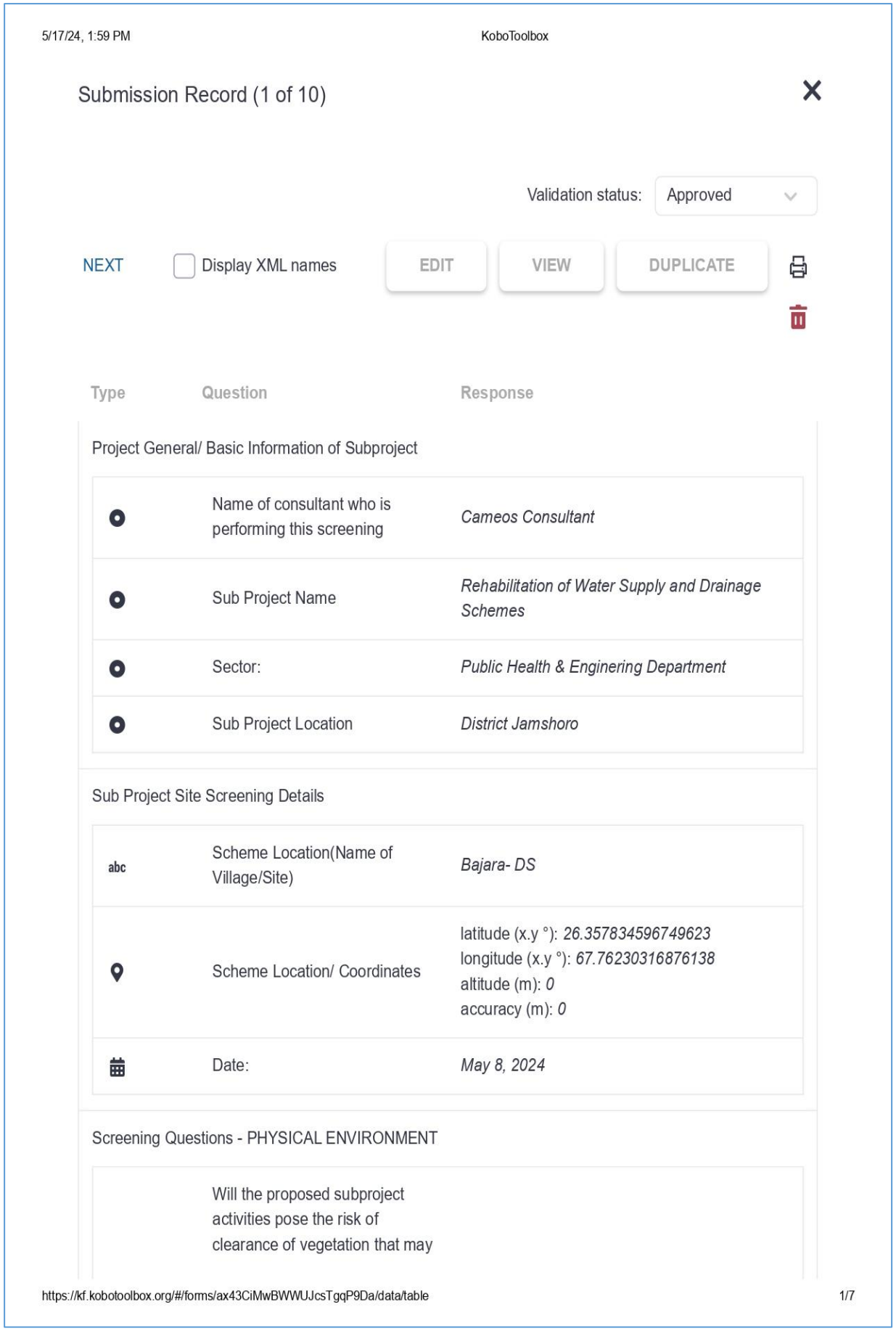

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Submission Record (1 of 10)

Validation status: Approved

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Type	Question	Response
Project General/ Basic Information of Subproject		
	Name of consultant who is performing this screening	*Cameos Consultant*
	Sub Project Name	*Rehabilitation of Water Supply and Drainage Schemes*
	Sector:	*Public Health & Enginering Department*
	Sub Project Location	*District Jamshoro*
Sub Project Site Screening Details		
abc	Scheme Location(Name of Village/Site)	*Bajara- DS*
	Scheme Location/ Coordinates	latitude (x.y °): *26.357834596749623* longitude (x.y °): *67.76230316876138* altitude (m): *0* accuracy (m): *0*
	Date:	*May 8, 2024*
Screening Questions - PHYSICAL ENVIRONMENT		
	Will the proposed subproject activities pose the risk of clearance of vegetation that may	

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⊙	result in an increase in the level of suspended solids washing into nearby water bodies?	*No*
abc	Remarks	
⊙	Will the proposed subproject activities pose a risk of contaminating drinking water sources due to construction activities?	*No*
abc	Remarks	
⊙	Is there any potential pollution source in water supply network?	*No*
abc	Remarks	
⊙	Is there any potential source that can damage drainage network? Or Is it affected by flood?	*Yes*
abc	Remarks	*by flood*
⊙	Will the proposed subproject interventions deplete groundwater because of the water used during rehabilitation activities?	*No*
abc	Remarks	
⊙	Will the proposed subproject interventions result in an increase in ambient air pollution, including chemical and particulate matter due to the construction and operation of related machinery?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
	Will the proposed subproject interventions result in an increase in ambient noise levels	

⊙	and vibrations due to the operation of construction machinery/vehicles?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
⊙	Will these ambient noise levels be beyond the specifications in the SEQS?	*No*
abc	Remarks	
⊙	Will the proposed subproject activities lead to increased soil erosion?	*No*
abc	Remarks	
⊙	Will the proposed subproject interventions result in the generation of hazardous and/or non-hazardous waste?	*Yes*
abc	Remarks	*non-hazardous*
⊙	Will the proposed subproject interventions result in potentially increased health risks for subproject workers and communities (e.g., communicable diseases)?	*No*
abc	Remarks	
⊙	Are the proposed subproject interventions being implemented in an area with high natural hazard risk? (e.g., floods, earthquakes, droughts, etc.)	*Yes*
abc	Remarks	

Screening Questions- ECOLOGICAL ENVIRONMENT

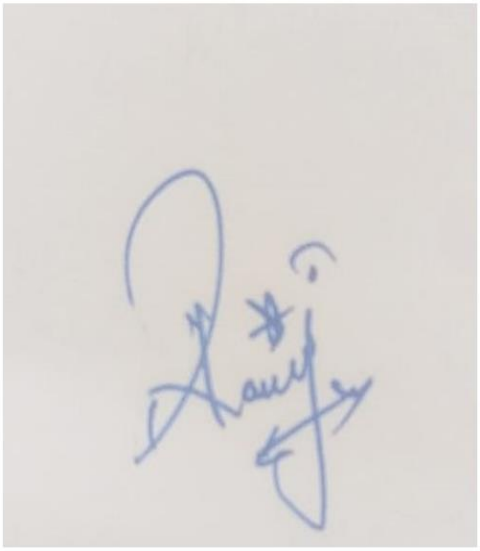
⊙	Will the proposed subproject interventions potentially cause any adverse impacts on habitats, ecosystems, and/or ecosystem services?	*No*
abc	Remarks	
⊙	Will any rehabilitation work be located in areas that would promote the conversion of natural habitats?	
abc	Remarks	
⊙	Will any proposed subproject interventions be located on or near sensitive environmental areas, including national parks and protected areas?	*No*
abc	Remarks	
⊙	Are the proposed subproject interventions activities likely to pose risks to any endangered species?	*No*
abc	Remarks	

Screening Questions- SOCIAL ENVIRONMENT

⊙	Will the proposed subproject activities involve land acquisition?	*No*
abc	Remarks	
⊙	Are there any forced labor or child labor risks associated with contractors or other third parties involved in implementing this proposed subproject intervention?	*No*

abc	Remarks	
◉	Is labor influx (outside labor force) expected during the construction of the proposed subproject?	*No*
abc	Remarks	
◉	Will local labor be used for the proposed subproject construction activities?	*Yes*
abc	Remarks	
◉	Will there be any temporary or permanent displacement as a result of the proposed subproject construction or operation activities?	*No*
abc	Remarks	
◉	Are there expected to be any traffic-related issues as a result of the proposed subproject intervention activities, particularly during the construction phase?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
◉	Are the proposed subproject activities likely to have impacts on important religious/cultural heritage sites?	*No*
abc	Remarks	
◉	Have there been any past security-related issues at the proposed subproject sites?	*No*
abc	Remarks	

⊙	Has stakeholder engagement taken place in the proposed subproject areas?	*Yes*
abc	Remarks	*"They were worried about health and hygiene problems caused by a lack of something."*
⊙	Were vulnerable groups involved in stakeholder consultations? (e.g., women, minorities, economically disadvantaged individuals, etc.)	*Yes*
abc	Remarks	*Female community members raised issues about accessing essential services and amenities due to construction-related disruptions."*
🖼	Site Photo	

	Signature	
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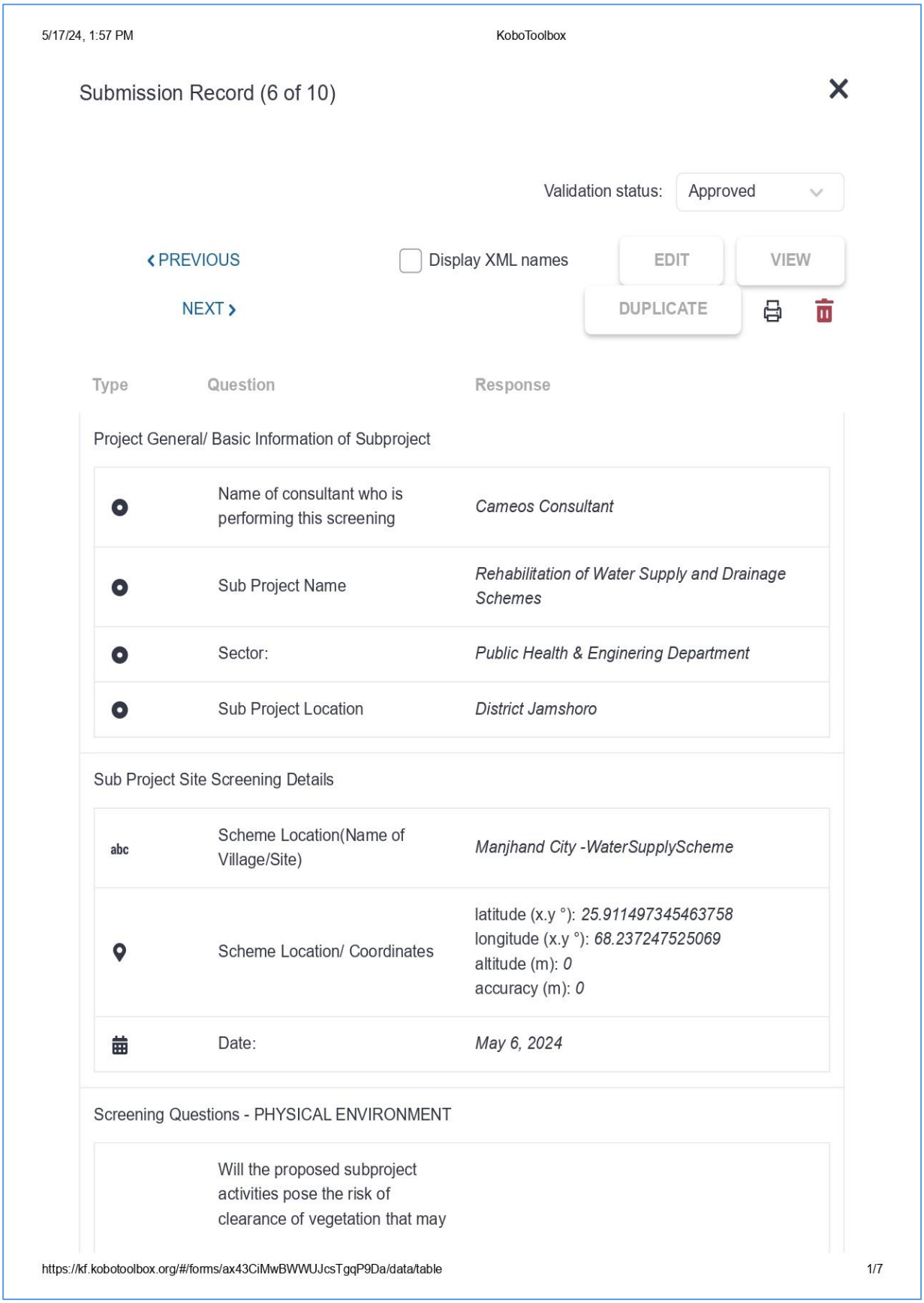
SFERP- ENVIROMENTAL ... 241 submissions S

Water Supply Scheme (Urban)- Manjhand City, Taluka Manjhand, Dsitrict Jamshoro



5/17/24, 1:57 PM KoboToolbox

Submission Record (6 of 10)

Validation status: Approved

‹ PREVIOUS NEXT › Display XML names EDIT VIEW DUPLICATE

Type	Question	Response
Project General/ Basic Information of Subproject		
	Name of consultant who is performing this screening	*Cameos Consultant*
	Sub Project Name	*Rehabilitation of Water Supply and Drainage Schemes*
	Sector:	*Public Health & Enginering Department*
	Sub Project Location	*District Jamshoro*
Sub Project Site Screening Details		
abc	Scheme Location(Name of Village/Site)	*Manjhand City -WaterSupplyScheme*
	Scheme Location/ Coordinates	latitude (x.y °): *25.911497345463758* longitude (x.y °): *68.237247525069* altitude (m): *0* accuracy (m): *0*
	Date:	*May 6, 2024*
Screening Questions - PHYSICAL ENVIRONMENT		
	Will the proposed subproject activities pose the risk of clearance of vegetation that may	

https://kf.kobotoolbox.org/#/forms/ax43CiMwBWWUJcsTgqP9Da/data/table 1/7

⊙	result in an increase in the level of suspended solids washing into nearby water bodies?	*No*
abc	Remarks	
⊙	Will the proposed subproject activities pose a risk of contaminating drinking water sources due to construction activities?	*No*
abc	Remarks	
⊙	Is there any potential pollution source in water supply network?	*No*
abc	Remarks	
⊙	Is there any potential source that can damage drainage network? Or Is it affected by flood?	*Yes*
abc	Remarks	*by flood*
⊙	Will the proposed subproject interventions deplete groundwater because of the water used during rehabilitation activities?	*No*
abc	Remarks	
⊙	Will the proposed subproject interventions result in an increase in ambient air pollution, including chemical and particulate matter due to the construction and operation of related machinery?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
	Will the proposed subproject interventions result in an increase in ambient noise levels	

⊙	and vibrations due to the operation of construction machinery/vehicles?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
⊙	Will these ambient noise levels be beyond the specifications in the SEQS?	*No*
abc	Remarks	
⊙	Will the proposed subproject activities lead to increased soil erosion?	*No*
abc	Remarks	
⊙	Will the proposed subproject interventions result in the generation of hazardous and/or non-hazardous waste?	*Yes*
abc	Remarks	*non-hazardous*
⊙	Will the proposed subproject interventions result in potentially increased health risks for subproject workers and communities (e.g., communicable diseases)?	*No*
abc	Remarks	
⊙	Are the proposed subproject interventions being implemented in an area with high natural hazard risk? (e.g., floods, earthquakes, droughts, etc.)	*Yes*
abc	Remarks	

Screening Questions- ECOLOGICAL ENVIRONMENT

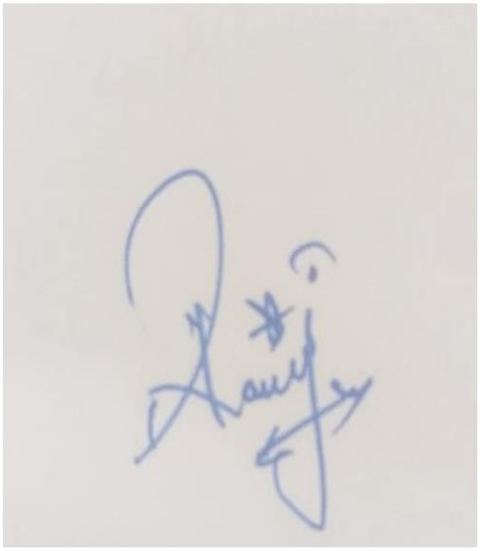
⊙	Will the proposed subproject interventions potentially cause any adverse impacts on habitats, ecosystems, and/or ecosystem services?	*No*
abc	Remarks	
⊙	Will any rehabilitation work be located in areas that would promote the conversion of natural habitats?	*No*
abc	Remarks	
⊙	Will any proposed subproject interventions be located on or near sensitive environmental areas, including national parks and protected areas?	*No*
abc	Remarks	
⊙	Are the proposed subproject interventions activities likely to pose risks to any endangered species?	*No*
abc	Remarks	

Screening Questions- SOCIAL ENVIRONMENT

⊙	Will the proposed subproject activities involve land acquisition?	*No*
abc	Remarks	
⊙	Are there any forced labor or child labor risks associated with contractors or other third parties involved in implementing this proposed subproject intervention?	*No*

abc	Remarks	
◉	Is labor influx (outside labor force) expected during the construction of the proposed subproject?	*No*
abc	Remarks	
◉	Will local labor be used for the proposed subproject construction activities?	*Yes*
abc	Remarks	
◉	Will there be any temporary or permanent displacement as a result of the proposed subproject construction or operation activities?	*No*
abc	Remarks	
◉	Are there expected to be any traffic-related issues as a result of the proposed subproject intervention activities, particularly during the construction phase?	*Yes*
abc	Remarks	*Minor to moderate and Short Term*
◉	Are the proposed subproject activities likely to have impacts on important religious/cultural heritage sites?	*No*
abc	Remarks	
◉	Have there been any past security-related issues at the proposed subproject sites?	*No*
abc	Remarks	

⊙	Has stakeholder engagement taken place in the proposed subproject areas?	*Yes*
abc	Remarks	*Yes, Community requested to conduct a comprehensive needs assessment for the supply of drinking water as the population has increased but water supply and drainage networks are not available.*
⊙	Were vulnerable groups involved in stakeholder consultations? (e.g., women, minorities, economically disadvantaged individuals, etc.)	*Yes*
abc	Remarks	*"Women expressed concerns about maintaining their daily mobility and independence during the construction period."*
🖼	Site Photo	

	Signature	
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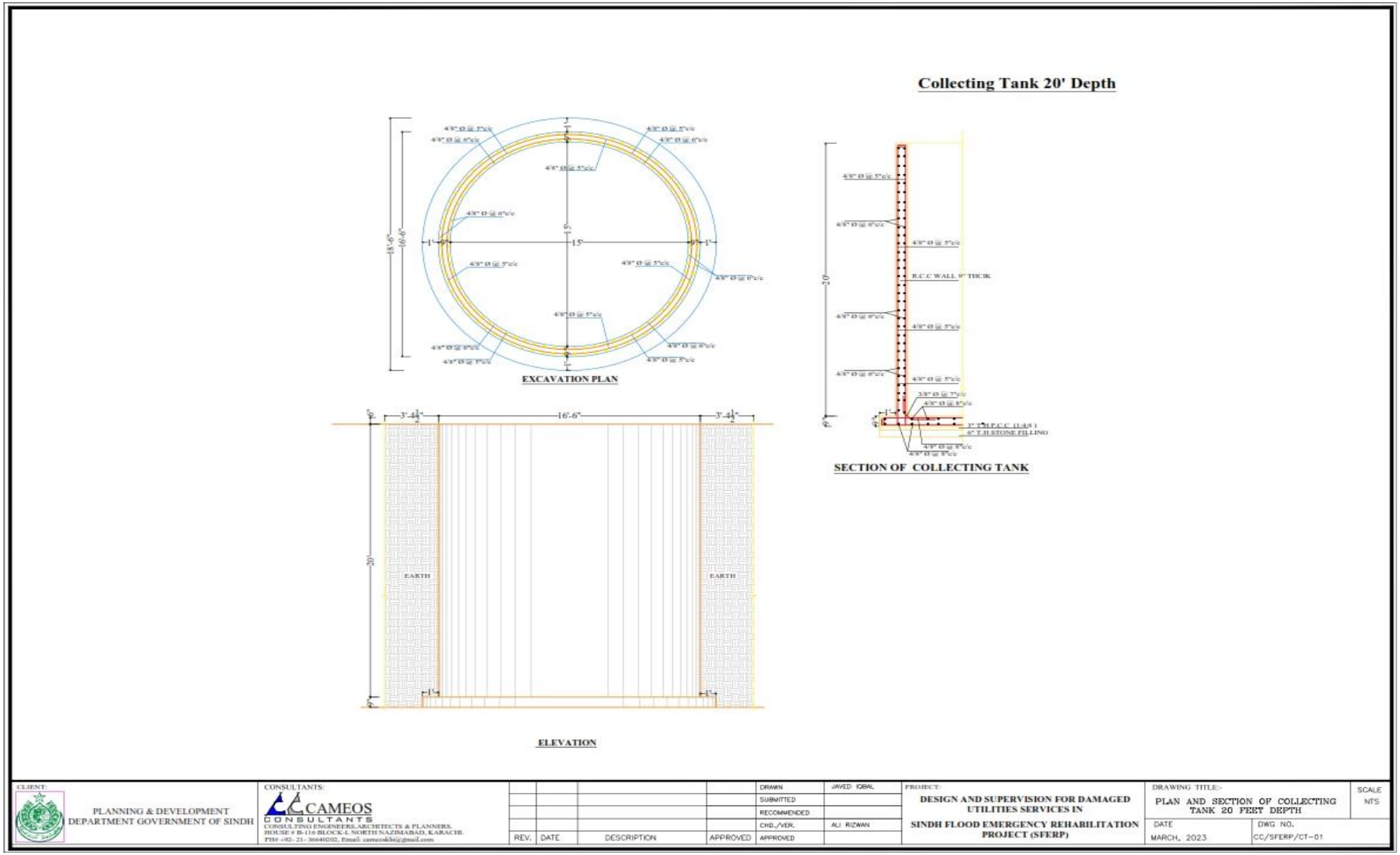
SFERP- ENVIROMENTAL ... 241 submissions S

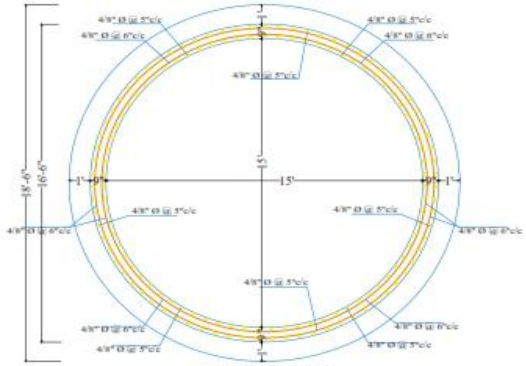
ANNEXURE 2:

Design Drawings of Water Supply Schemes & Drainage

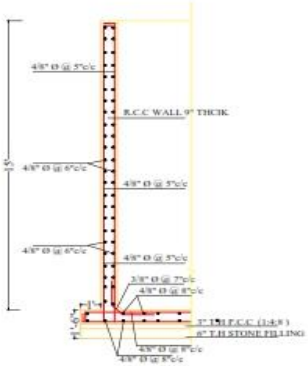
Annexure 2: Design Drawings of Water Supply Schemes & Drainage



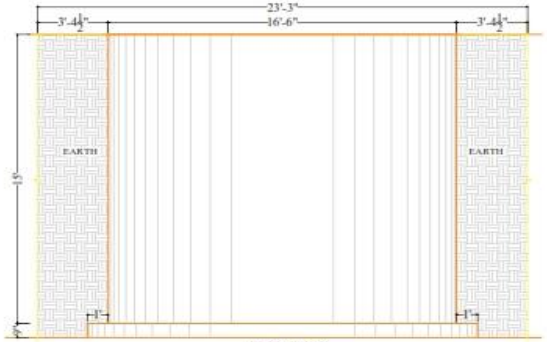
Collecting Tank 15' Depth



EXCAVATION PLAN



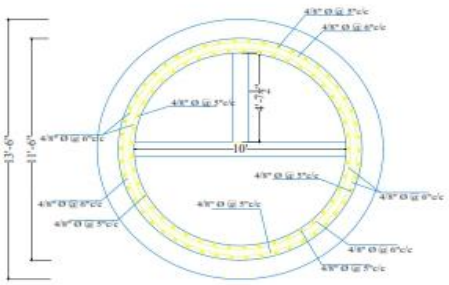
SECTION OF U.G.WATER TANK



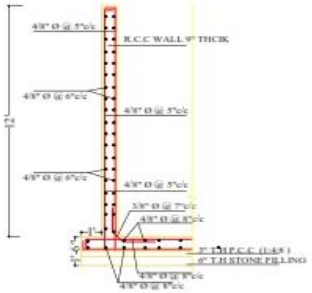
ELEVATION

CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS, CONSULTING ENGINEERS, ARCHITECTS & PLANNERS, HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI, PH# +92- 21- 36640202, Email: cameoskhi@gmail.com					DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF COLLECTING TANK 15 FEET DEPTH	SCALE NTS
						SUBMITTED				
						RECOMMENDED				
						CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/CT-02
	REV.	DATE	DESCRIPTION	APPROVED		APPROVED				

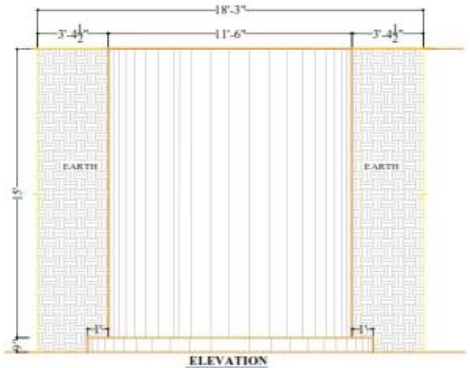
Collecting Tank 12' Depth



EXCAVATION PLAN



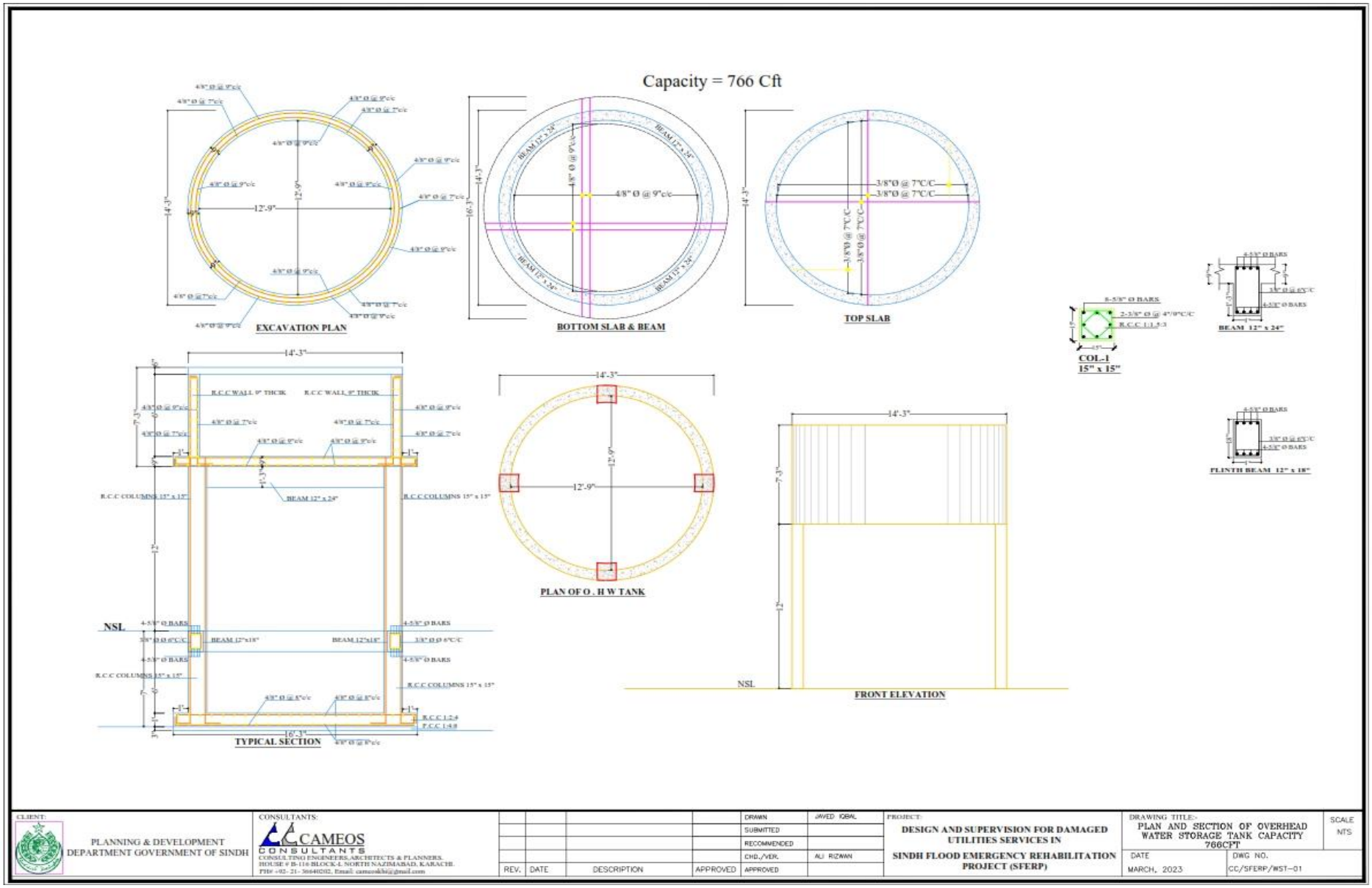
SECTION OF U.G.WATER TANK

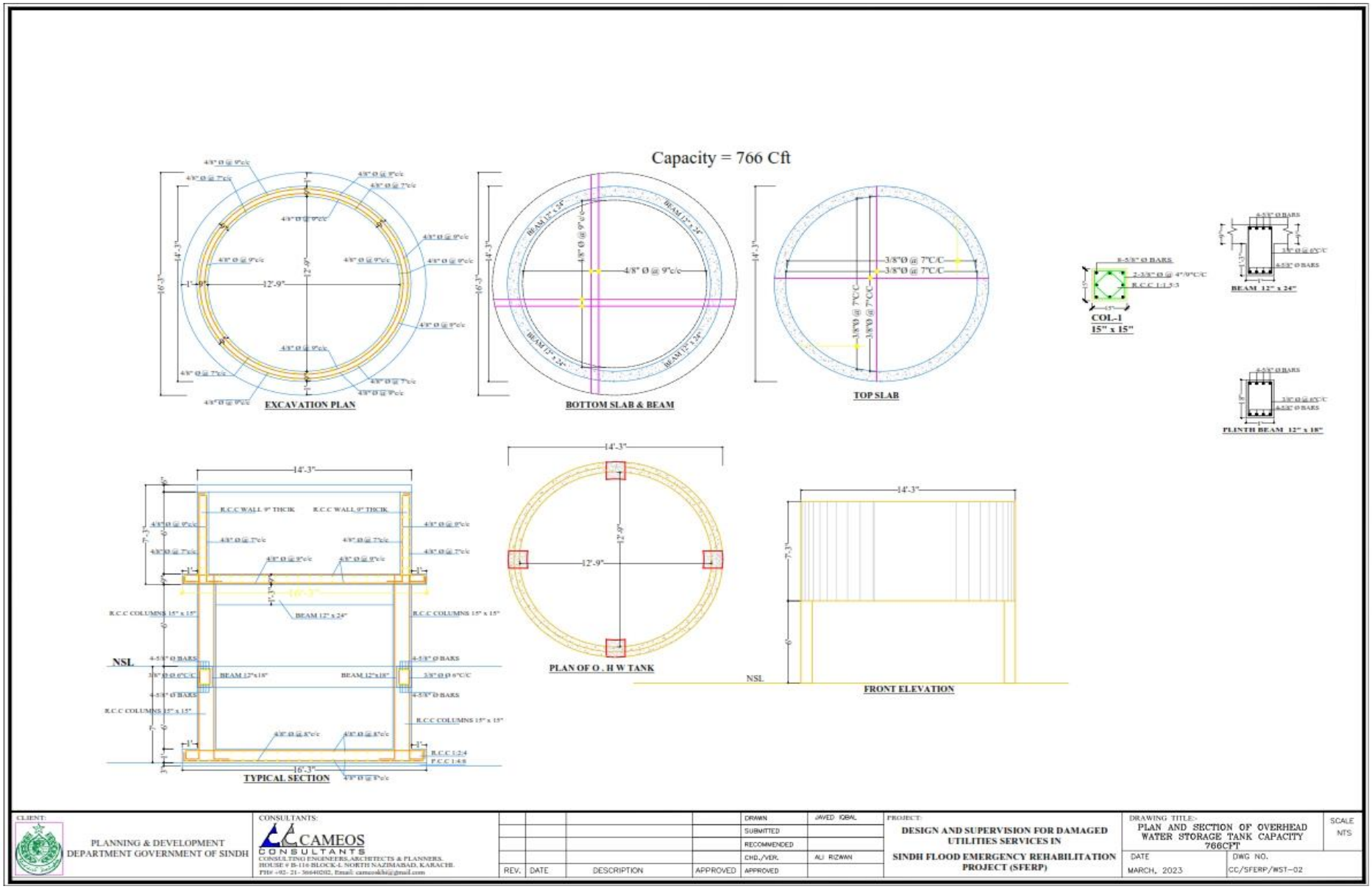


ELEVATION

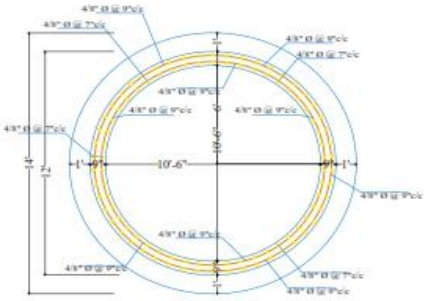
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS, CONSULTING ENGINEERS, ARCHITECTS & PLANNERS, HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92- 21- 36640202, Email: cameoskhi@gmail.com			DRAWN: JAVED IQBAL; SUBMITTED; RECOMMENDED; CHD./VER.: ALI RIZWAN; APPROVED	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF COLLECTING TANK 12 FEET DEPTH; DATE: MARCH, 2023; DWG NO.: CC/SFERP/CT-03; SCALE: NTS

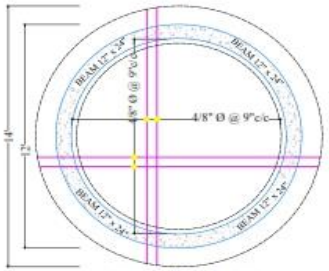
REV.	DATE	DESCRIPTION	APPROVED

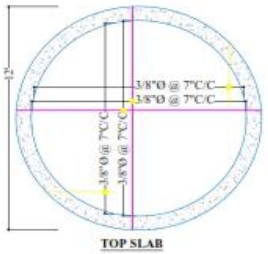

Capacity = 766 Cft
EXCAVATION PLAN
BOTTOM SLAB & BEAM
TOP SLAB
COL.-1
15" x 15"
BEAM 12" x 24"
PLINTH BEAM 12" x 18"
PLAN OF O . H W TANK
FRONT ELEVATION
TYPICAL SECTION
NSL
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CAMEOS CONSULTANTS
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
PLAN AND SECTION OF OVERHEAD WATER STORAGE TANK CAPACITY 766CFT
MARCH, 2023
CC/SFERP/WST-01
SCALE NTS

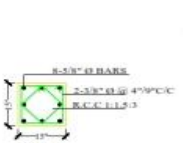

Capacity = 766 Cft
EXCAVATION PLAN
BOTTOM SLAB & BEAM
TOP SLAB
COL.-I
15" x 15"
BEAM 12" x 24"
PLINTH BEAM 12" x 18"
PLAN OF O . H W TANK
FRONT ELEVATION
TYPICAL SECTION
NSL
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CAMEOS CONSULTANTS
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
PLAN AND SECTION OF OVERHEAD WATER STORAGE TANK CAPACITY 766CFT
MARCH, 2023
CC/SFERP/WST-02

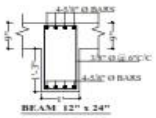
Capacity = 520 Cft

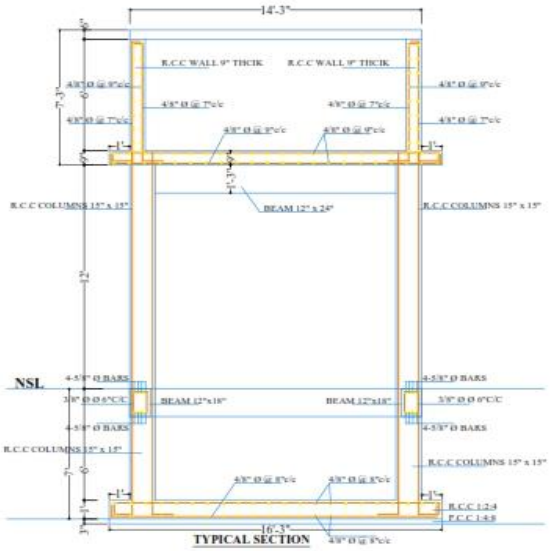


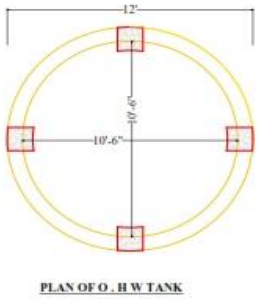


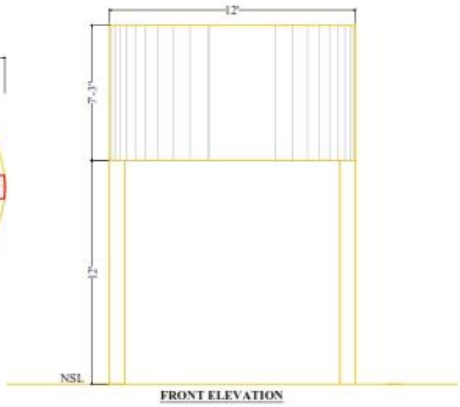


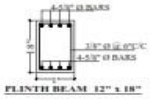








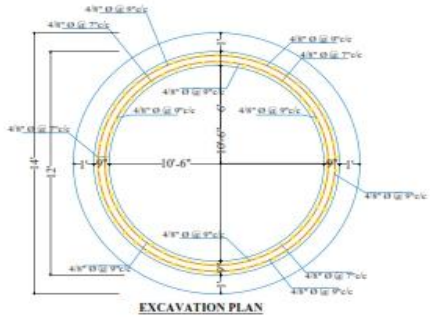


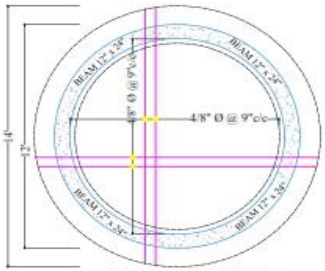


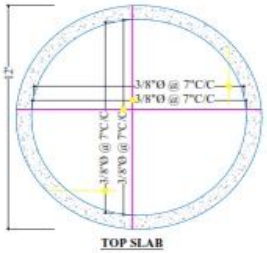
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS, CONSULTING ENGINEERS, ARCHITECTS & PLANNERS, HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92- 21- 36640202, Email: cameoskhi@gmail.com			DRAWN: JAVED IQBAL; SUBMITTED; RECOMMENDED; CHD./VER.: ALI RIZWAN; APPROVED	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF OVERHEAD WATER STORAGE TANK CAPACITY 520CFT; DATE: MARCH, 2023; DWG NO.: CC/SFERP/WST-03; SCALE: NTS

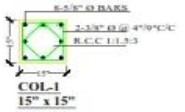
REV. | DATE | DESCRIPTION | APPROVED

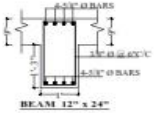
Capacity = 520 Cft

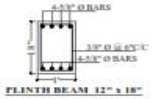


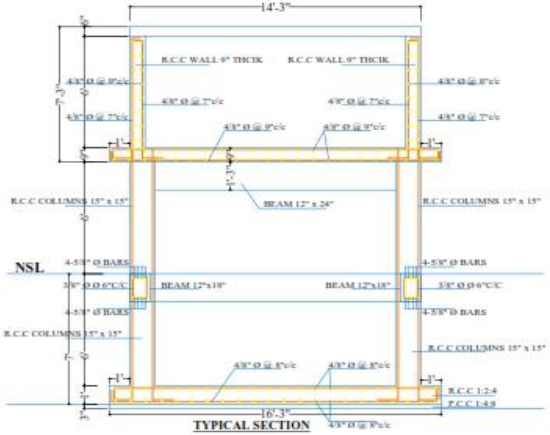


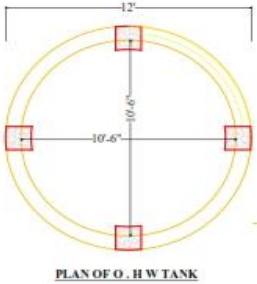


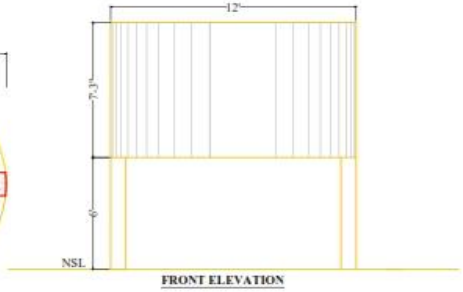






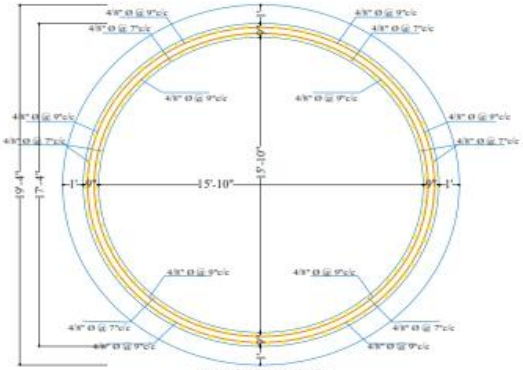


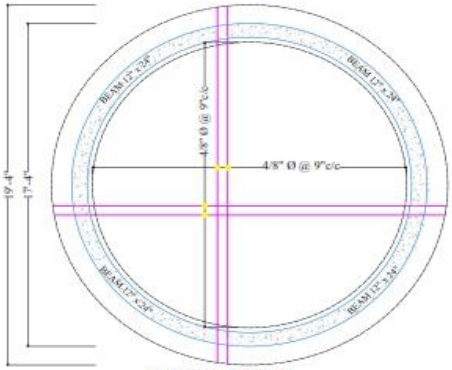


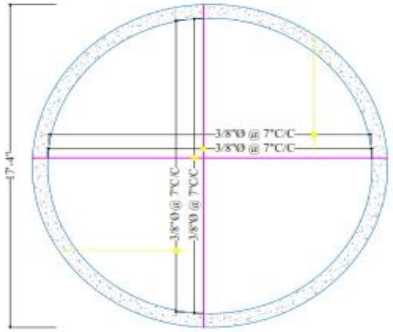


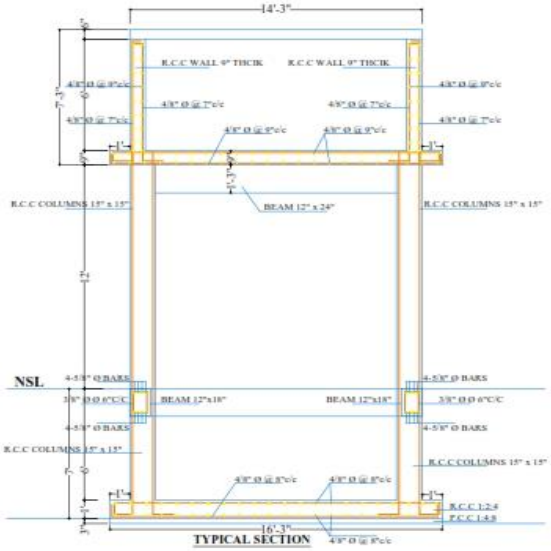
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS, CONSULTING ENGINEERS, ARCHITECTS & PLANNERS, HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92- 21- 36640202, Email: cameoskhi@gmail.com				DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF OVERHEAD WATER STORAGE TANK CAPACITY 520CFT	SCALE NTS
					SUBMITTED				
					RECOMMENDED				
					CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/WST-04
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED			

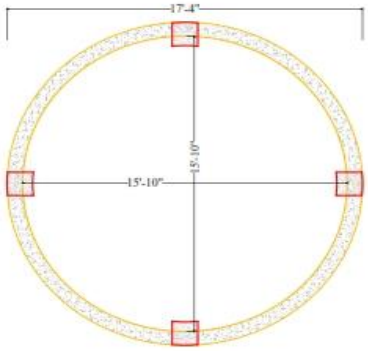
Capacity = 1180 Cft

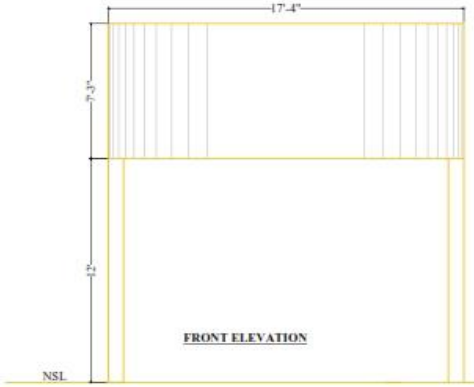


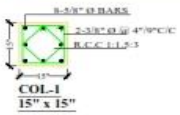


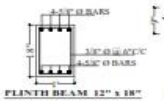


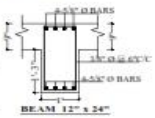




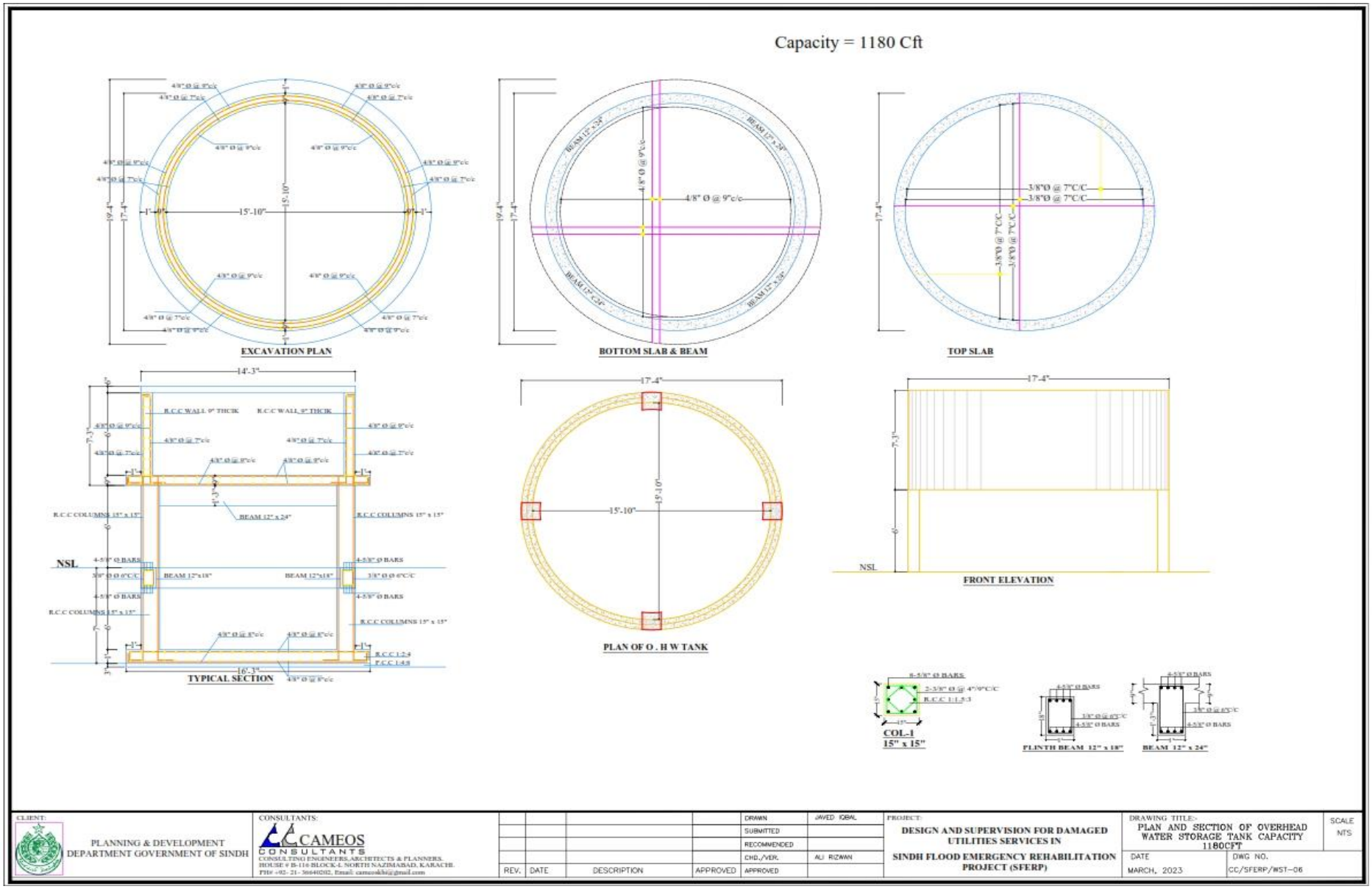


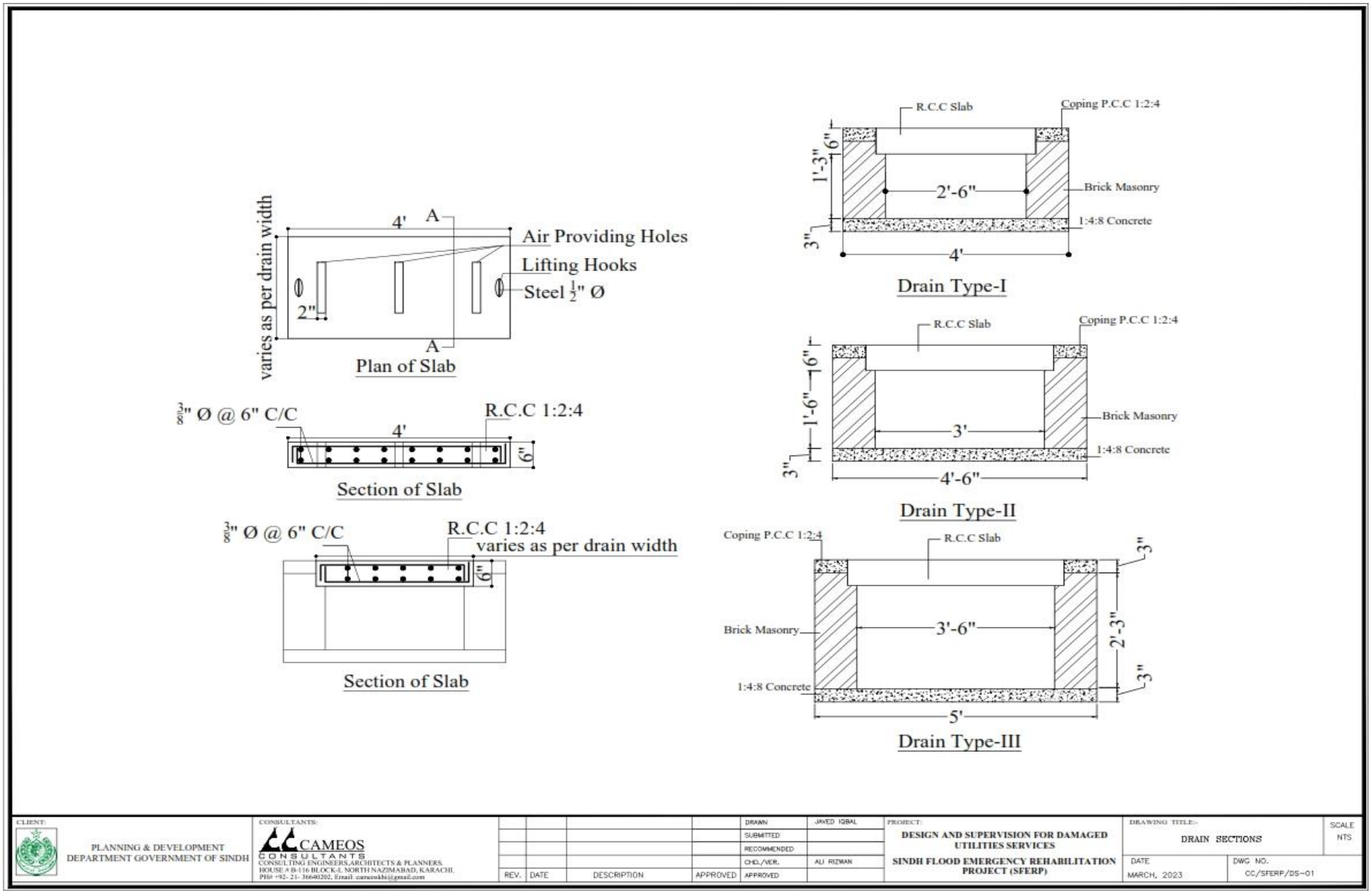


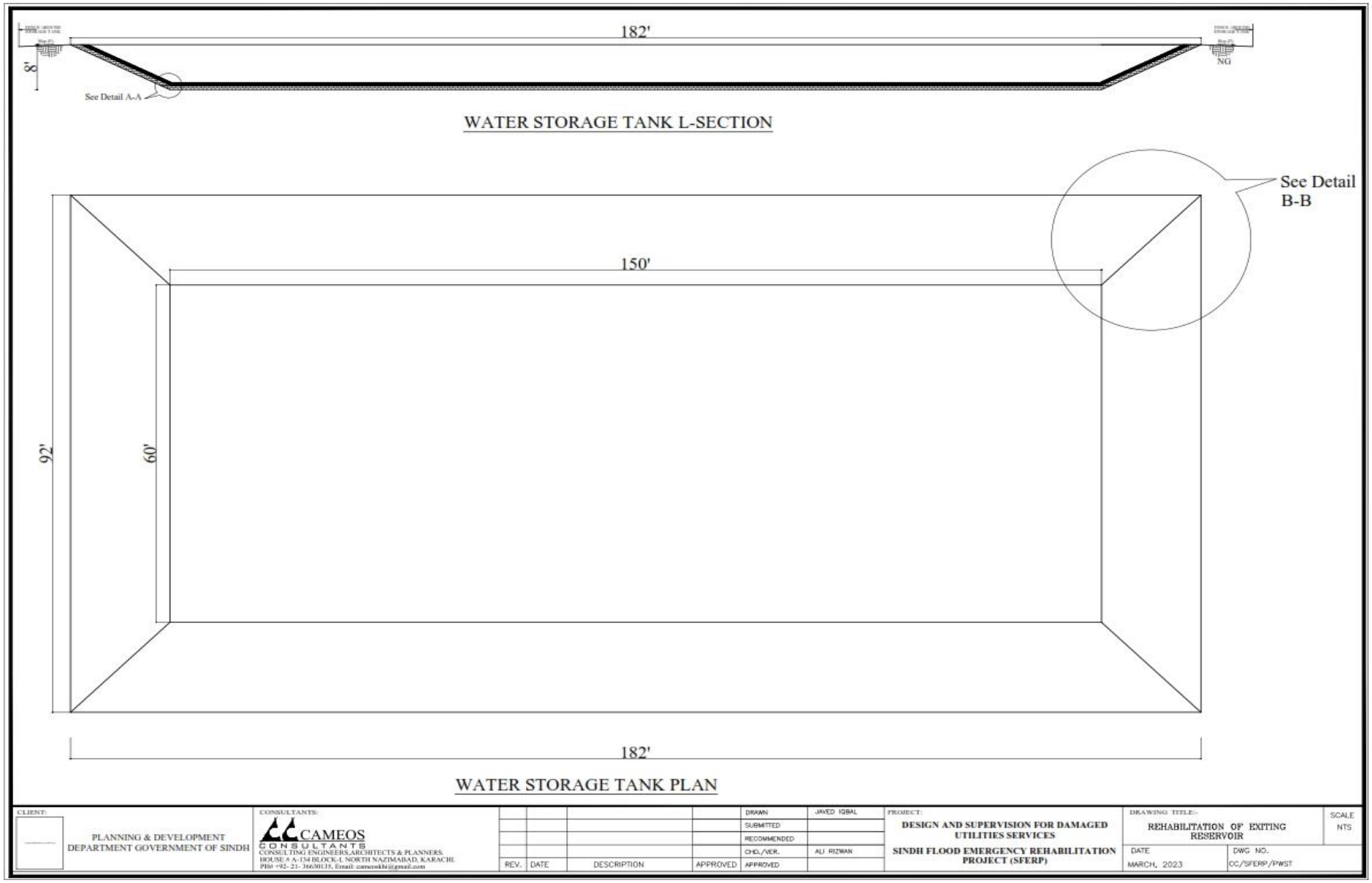


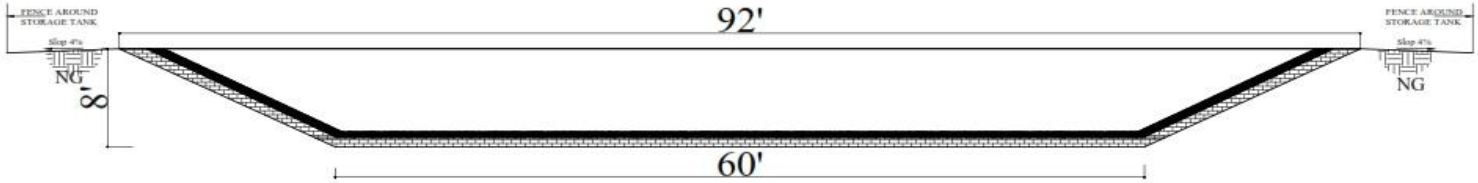


CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS, CONSULTING ENGINEERS, ARCHITECTS & PLANNERS, HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92- 21- 36640202, Email: cameoskhi@gmail.com					DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF OVERHEAD WATER STORAGE TANK CAPACITY 1180CFT	SCALE NTS
						SUBMITTED				
						RECOMMENDED				
						CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/WST-05
	REV.	DATE	DESCRIPTION	APPROVED		APPROVED				

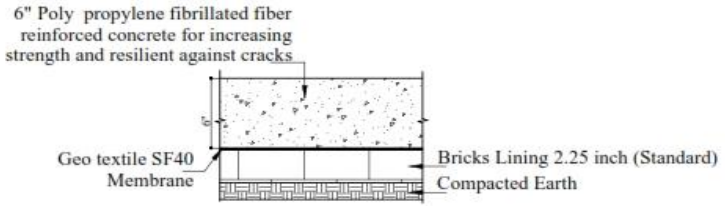

Capacity = 1180 Cft
EXCAVATION PLAN
BOTTOM SLAB & BEAM
TOP SLAB
TYPICAL SECTION
PLAN OF O . H W TANK
FRONT ELEVATION
COL-1
15" x 15"
PLINTH BEAM 12" x 18"
BEAM 12" x 24"
CLIENT:
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CONSULTANTS:
CAMEOS CONSULTANTS
CONSULTING ENGINEERS, ARCHITECTS & PLANNERS.
HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI.
PH# +92- 21- 36640202, Email: cameoskhi@gmail.com
DRAWN JAVED IQBAL
SUBMITTED
RECOMMENDED
CHD./VER. ALI RIZWAN
APPROVED
REV. DATE DESCRIPTION APPROVED
PROJECT:
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES IN
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
DRAWING TITLE:-
PLAN AND SECTION OF OVERHEAD WATER STORAGE TANK CAPACITY 1180CFT
SCALE NTS
DATE MARCH, 2023
DWG NO. CC/SFERP/WST-06


4'
A
Air Providing Holes
Lifting Hooks
Steel ½" Ø
2"
varies as per drain width
A
Plan of Slab
⅜" Ø @ 6" C/C
4'
R.C.C 1:2:4
6"
Section of Slab
⅜" Ø @ 6" C/C
R.C.C 1:2:4
varies as per drain width
6"
Section of Slab
R.C.C Slab
Coping P.C.C 1:2:4
6"
1'-3"
2'-6"
Brick Masonry
1:4:8 Concrete
3"
4'
Drain Type-I
R.C.C Slab
Coping P.C.C 1:2:4
6"
1'-6"
3'
Brick Masonry
1:4:8 Concrete
3"
4'-6"
Drain Type-II
Coping P.C.C 1:2:4
R.C.C Slab
3"
Brick Masonry
3'-6"
2'-3"
1:4:8 Concrete
3"
5'
Drain Type-III
CLIENT:
PLANNING & DEVELOPMENT
DEPARTMENT GOVERNMENT OF SINDH
CONSULTANTS:
CAMEOS
CONSULTANTS
CONSULTING ENGINEERS,ARCHITECTS & PLANNERS.
HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI.
PH# +92- 21- 36640202, Email: cameoskhi@gmail.com
REV.
DATE
DESCRIPTION
APPROVED
DRAWN
JAVED IQBAL
SUBMITTED
RECOMMENDED
CHD./VER.
ALI RIZWAN
APPROVED
PROJECT:
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
DRAWING TITLE:-
DRAIN SECTIONS
SCALE
NTS
DATE
MARCH, 2023
DWG NO.
CC/SFERP/DS-01

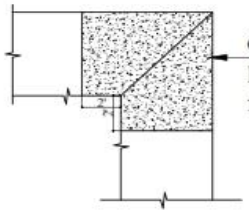

182'
8'
See Detail A-A
NG
WATER STORAGE TANK L-SECTION
See Detail B-B
150'
92'
60'
182'
WATER STORAGE TANK PLAN
CLIENT:
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CONSULTANTS:
CAMEOS CONSULTANTS
CONSULTING ENGINEERS,ARCHITECTS & PLANNERS.
HOUSE # A-134 BLOCK-L NORTH NAZIMABAD, KARACHI.
PH# +92- 21- 36630135, Email: cameoskhi@gmail.com
REV. DATE DESCRIPTION APPROVED
DRAWN JAWED IQBAL
SUBMITTED
RECOMMENDED
CHD./VER. ALI RIZWAN
APPROVED
PROJECT:
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
DRAWING TITLE:-
REHABILITATION OF EXITING RESERVOIR
SCALE NTS
DATE MARCH, 2023
DWG NO. CC/SFERP/PWST



WATER STORAGE TANK X-SECTION

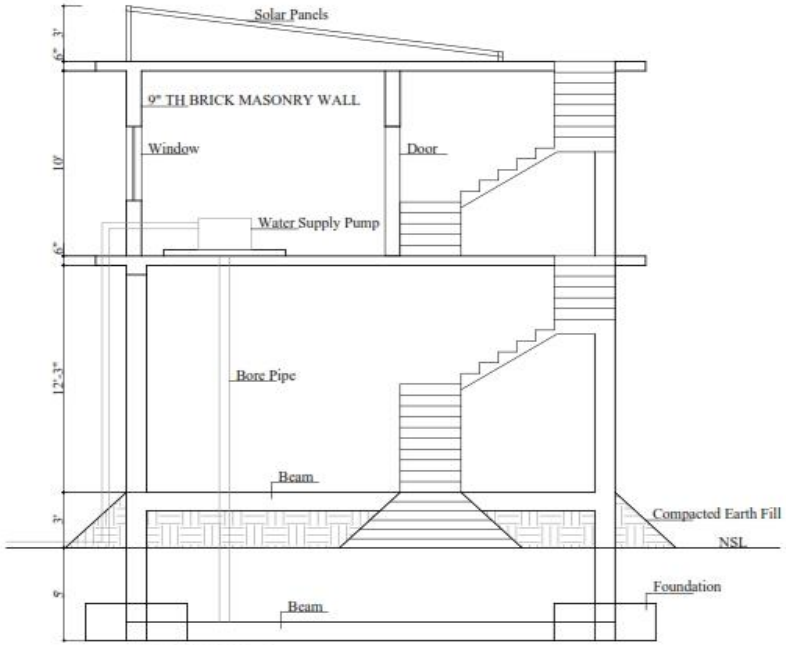


Detail A-A

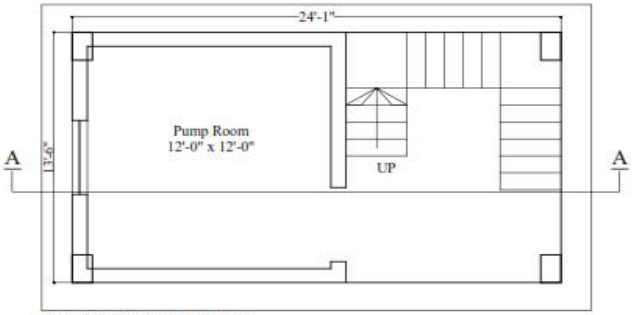


Detail B-B
Joint treatment with
Geo textile SFS6 membrane

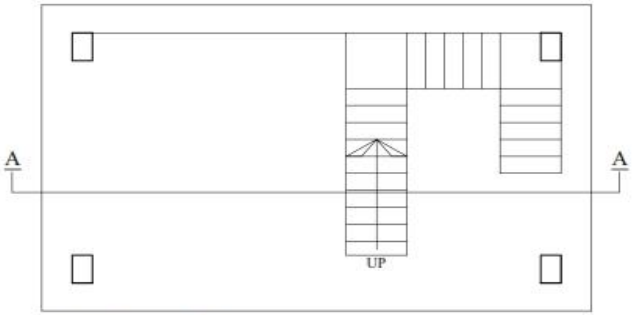
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # A-134 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92- 21- 36630139, Email: cameokhi@gmail.com					DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- EXISTING RESERVOIR X-SECTION & EXPANSION JOINT DETAIL	SCALE NTS
						SUBMITTED				
						RECOMMENDED				
						CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/WST-01
	REV.	DATE	DESCRIPTION		APPROVED	APPROVED				



SECTION A-A

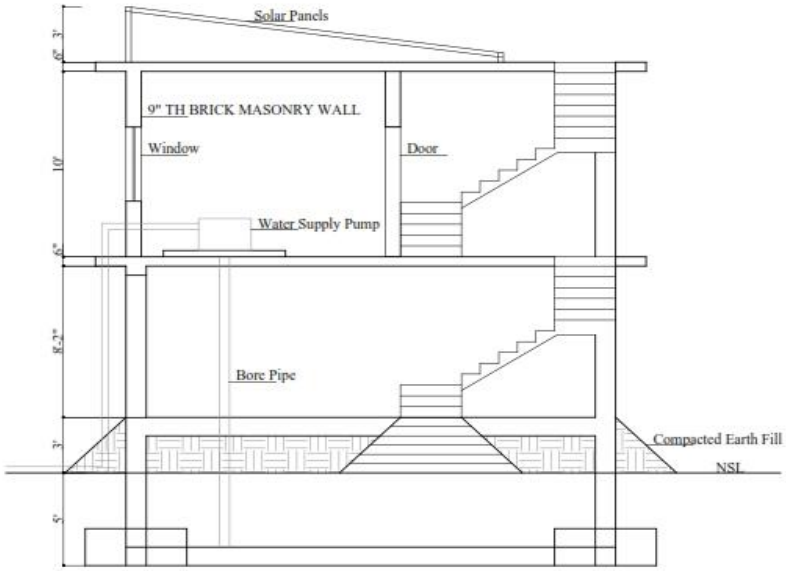


FIRST FLOOR PLAN

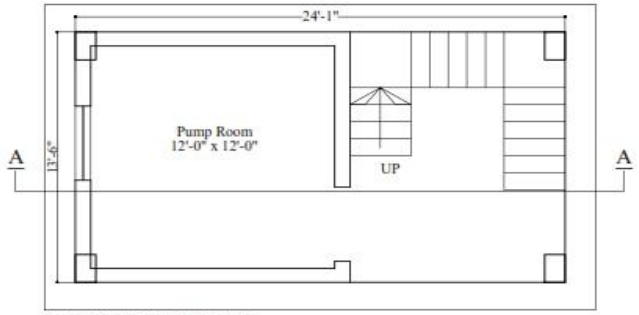


GROUND FLOOR PLAN

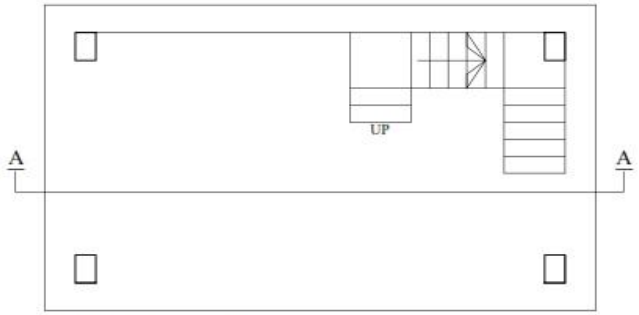
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: camcookhi@gmail.com					DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF PUMP HOUSE	SCALE NTS
						SUBMITTED				
						RECOMMENDED				
						CHD./VER.	ALI RIZWAN			
	REV.	DATE	DESCRIPTION		APPROVED	APPROVED			DATE MARCH, 2023	DWG NO. CC/SFERP/PH-01



SECTION A-A

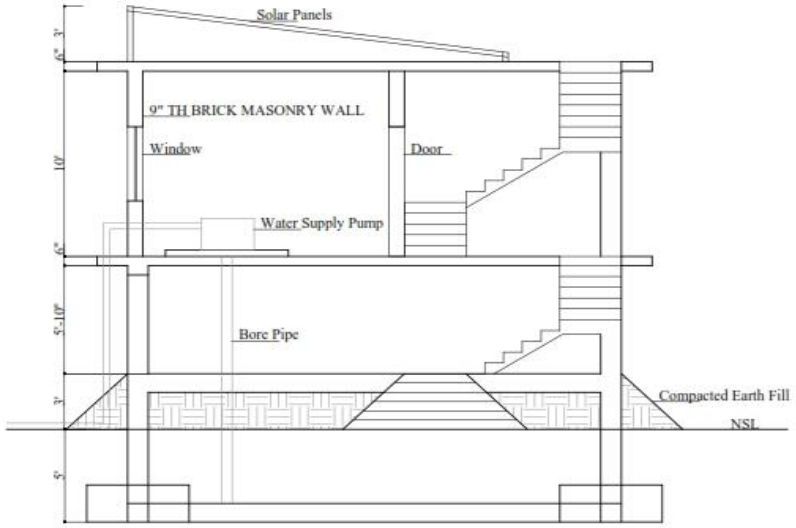


FIRST FLOOR PLAN

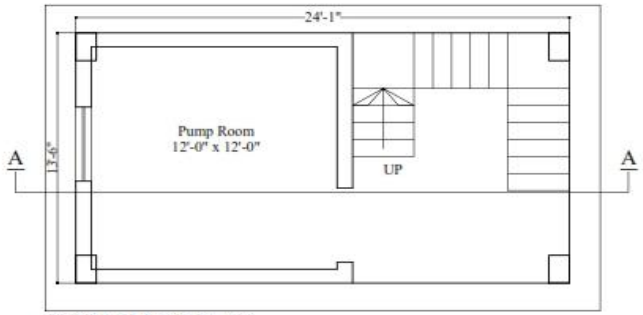


GROUND FLOOR PLAN

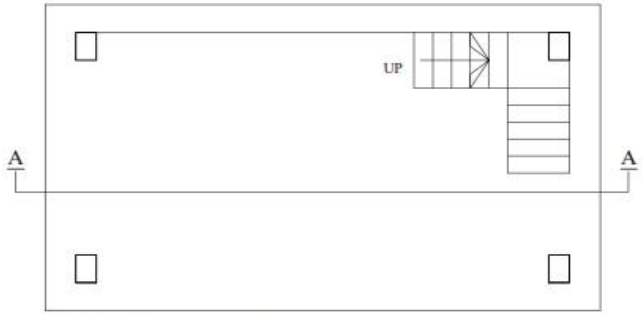
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS,ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: camcookhi@gmail.com				DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF PUMP HOUSE	SCALE NTS
					SUBMITTED				
					RECOMMENDED				
					CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/PH-02
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED				



SECTION A-A

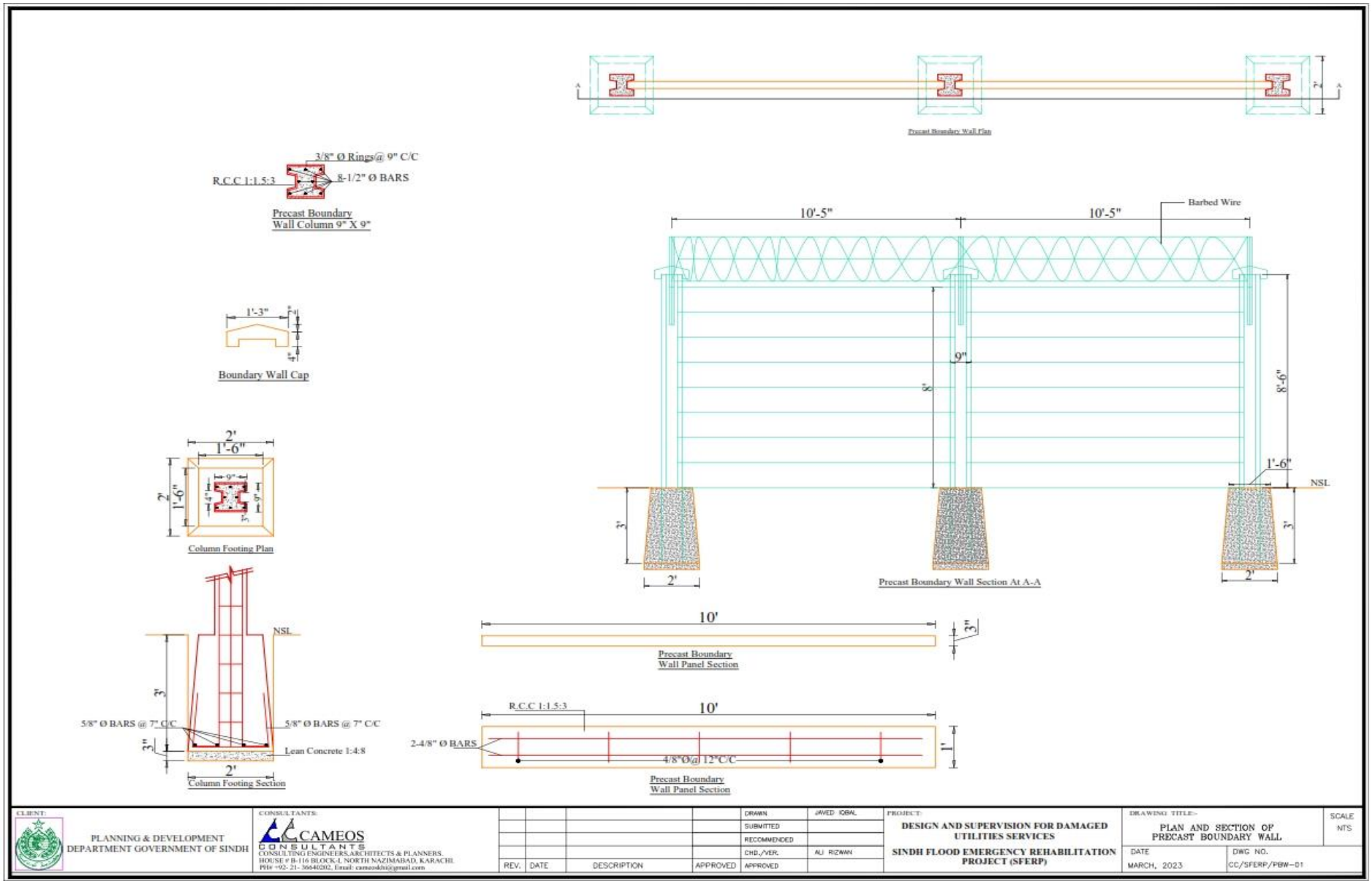


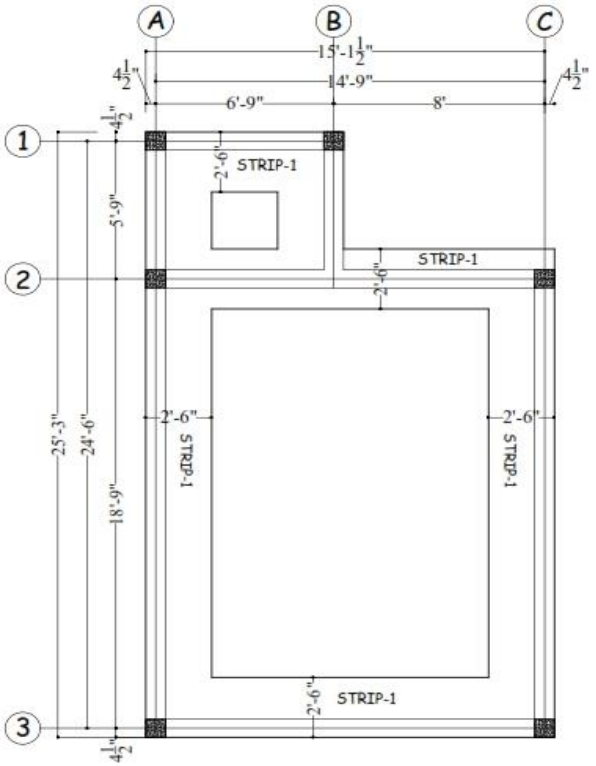
FIRST FLOOR PLAN



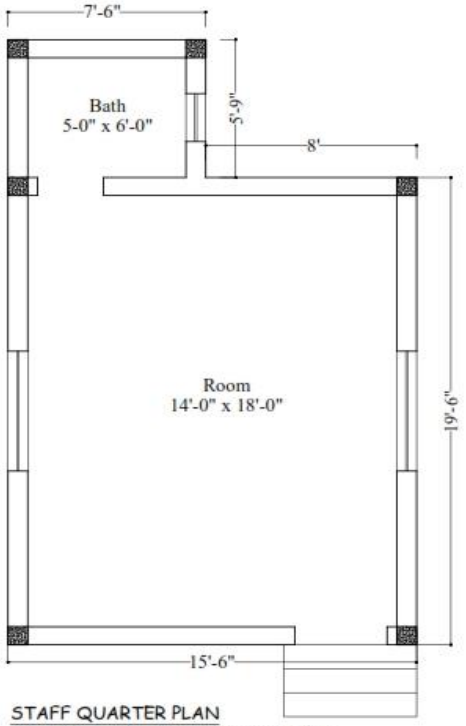
GROUND FLOOR PLAN

CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: camcookhi@gmail.com				DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- PLAN AND SECTION OF PUMP HOUSE	SCALE NTS
					SUBMITTED				
					RECOMMENDED				
					CHD./VER.	ALI RIZWAN			
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED			DATE MARCH, 2023	DWG NO. CC/SFERP/PH-03


3/8" Ø Rings@ 9" C/C
R.C.C 1:1.5:3
8-1/2" Ø BARS
Precast Boundary Wall Column 9" X 9"
Precast Boundary Wall Plan
Barbed Wire
10'-5"
10'-5"
9"
8"
8'-6"
1'-6"
NSL
3"
2'
Precast Boundary Wall Section At A-A
1'-3"
Boundary Wall Cap
2'
1'-6"
Column Footing Plan
NSL
3'
5/8" Ø BARS @ 7" C/C
5/8" Ø BARS @ 7" C/C
3"
Lean Concrete 1:4:8
2'
Column Footing Section
10'
3"
Precast Boundary Wall Panel Section
R.C.C 1:1.5:3
10'
2-4/8" Ø BARS
4/8"Ø@ 12"C/C
1'
Precast Boundary Wall Panel Section
CLIENT:
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CONSULTANTS:
CAMEOS
CONSULTANTS
CONSULTING ENGINEERS,ARCHITECTS & PLANNERS.
HOUSE # B-116 BLOCK-I, NORTH NAZIMABAD, KARACHI.
PH# +92- 21- 36640202, Email: cameoskhi@gmail.com
REV.
DATE
DESCRIPTION
APPROVED
DRAWN
JAWED IQBAL
SUBMITTED
RECOMMENDED
CHD./VER.
ALI RIZWAN
APPROVED
PROJECT:
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
DRAWING TITLE:-
PLAN AND SECTION OF PRECAST BOUNDARY WALL
SCALE
NTS
DATE
MARCH, 2023
DWG NO.
CC/SFERP/PBW-01

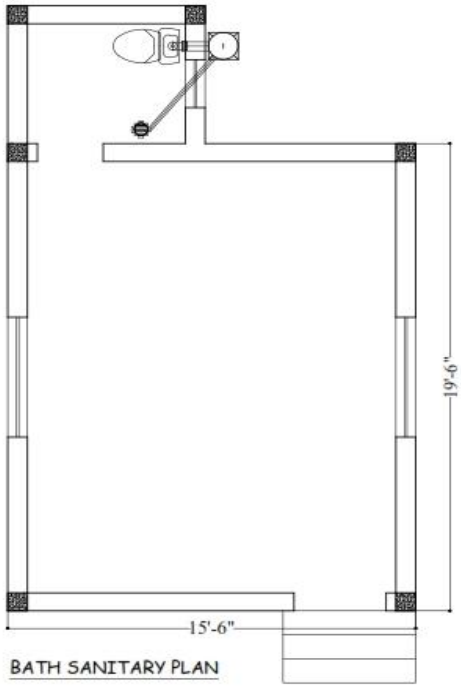


STAFF QUARTER LAYOUT PLAN

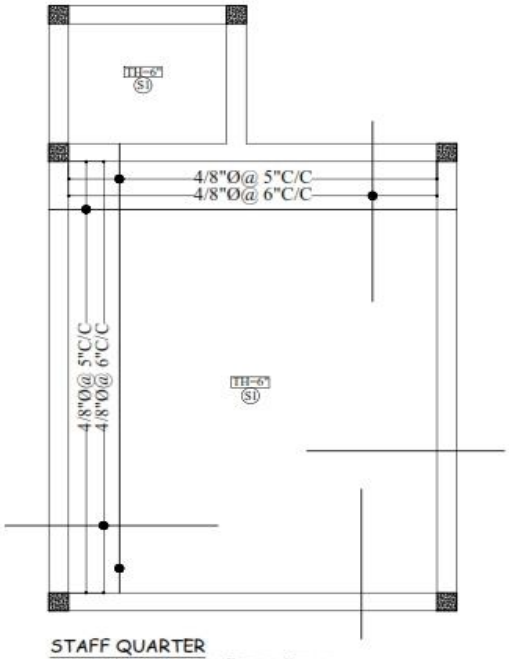


STAFF QUARTER PLAN
COVERED AREA (476.625 square ft.)

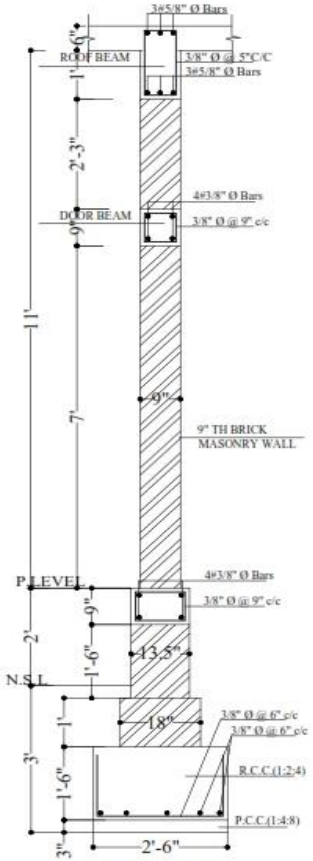
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: cameoskhi@gmail.com				DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- LAYOUT PLAN OF STAFF QUARTER	SCALE NTS
					SUBMITTED				
					RECOMMENDED				
					CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/SQ-01
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED				



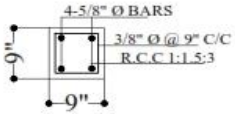
BATH SANITARY PLAN



STAFF QUARTER
SLAB REINFORCEMENT DETAIL

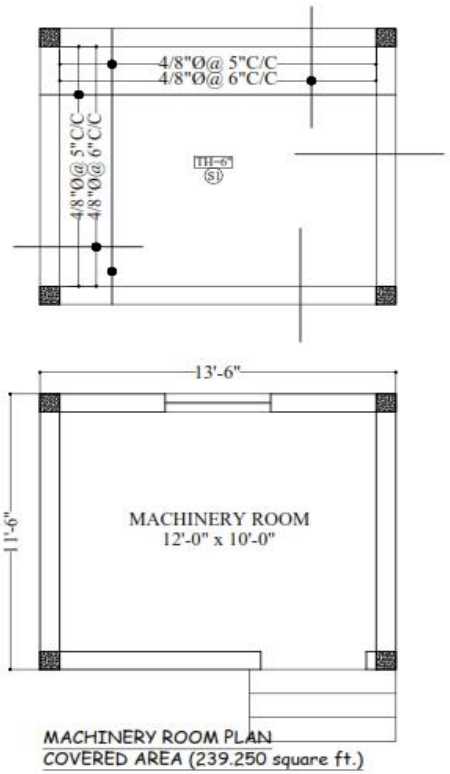


STRIP-01 SECTION
WALL FOOTING DETAIL

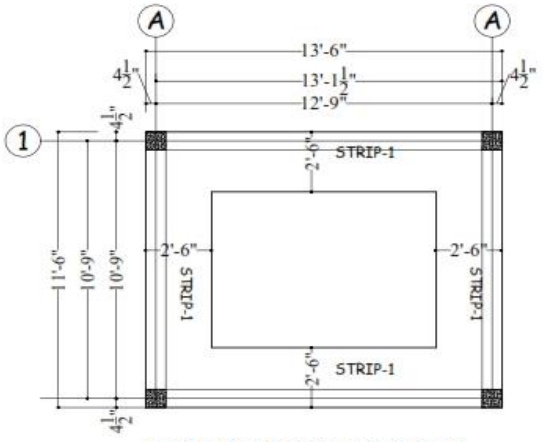


COL-1
9" X 9"

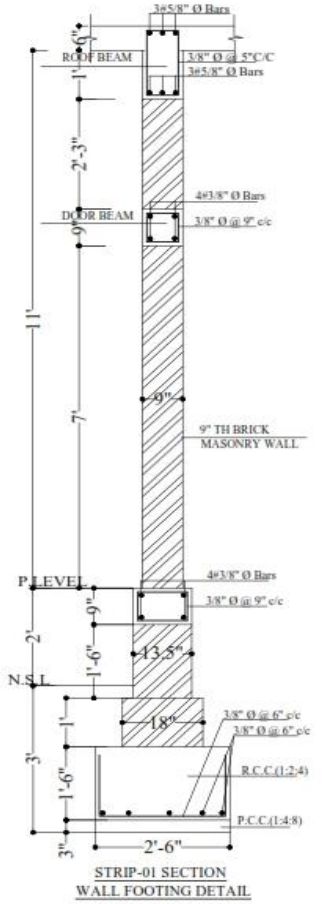
CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: camcookhi@gmail.com				DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- SANITARY PLAN AND REINFORCEMENT DETAIL OF STAFF QUARTER	SCALE NTS
					SUBMITTED				
					RECOMMENDED				
					CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/SQ-02
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED				



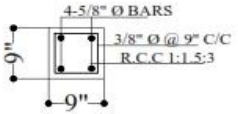
MACHINERY ROOM PLAN
COVERED AREA (239.250 square ft.)



MACHINERY ROOM LAYOUT PLAN
COVERED AREA (239.250 square ft.)



STRIP-01 SECTION
WALL FOOTING DETAIL



COL-1
9" X 9"

CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: cameoskhi@gmail.com			DRAWN	JAVED IQBAL
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	ALI RIZWAN
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	

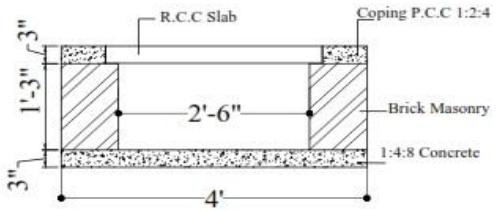
PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)

DRAWING TITLE:- PLAN AND REINFORCEMENT DETAIL OF MACHINERY ROOM

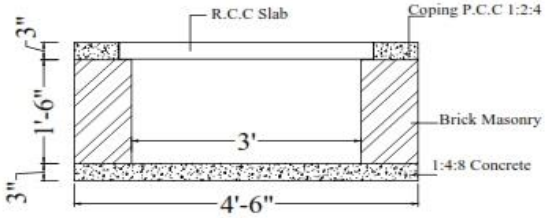
SCALE: NTS

DATE: MARCH, 2023

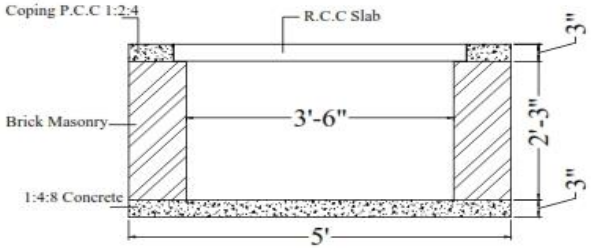
DWG NO.: CC/SFERP/MR-01



Drain Type-I

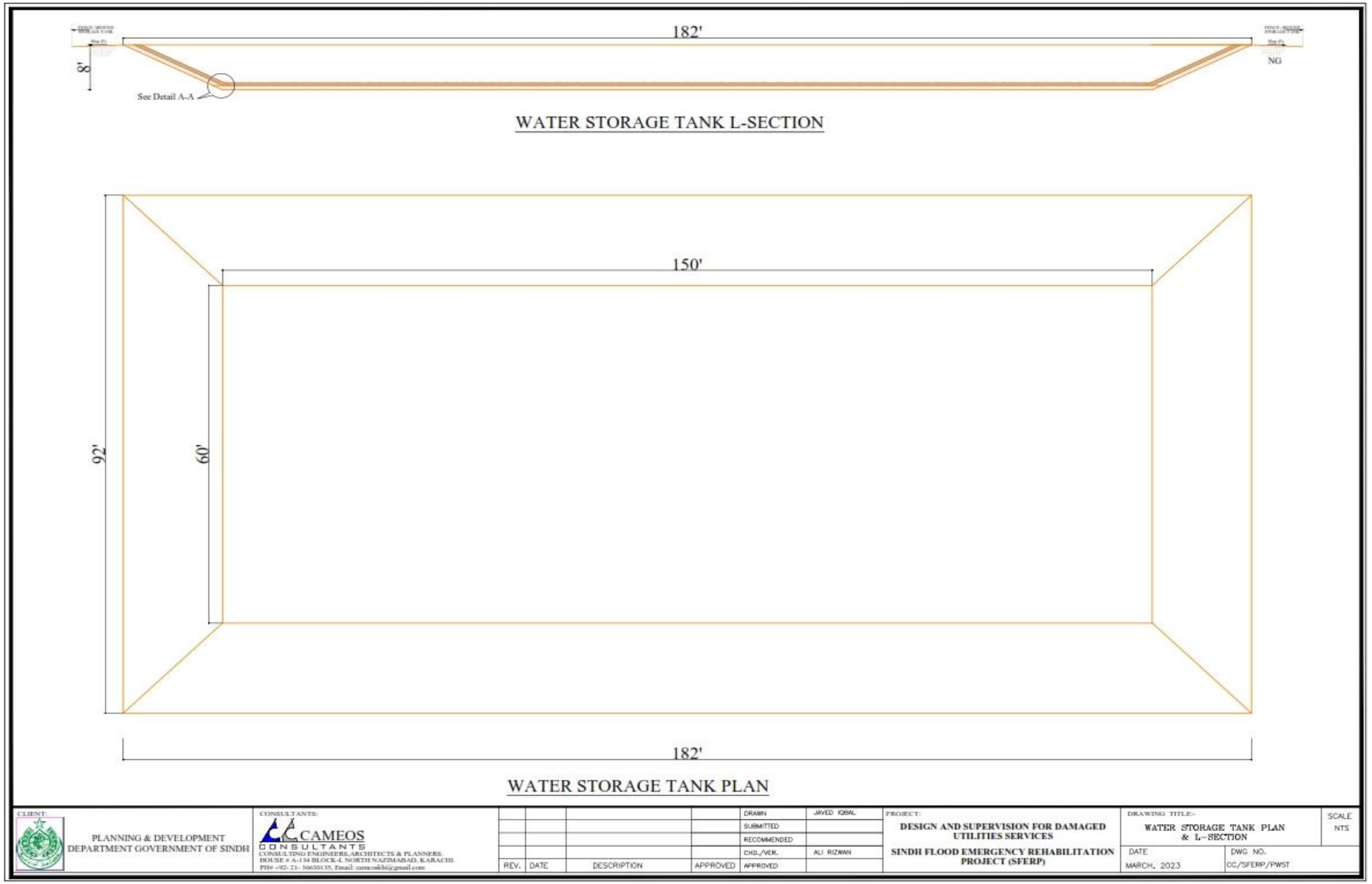


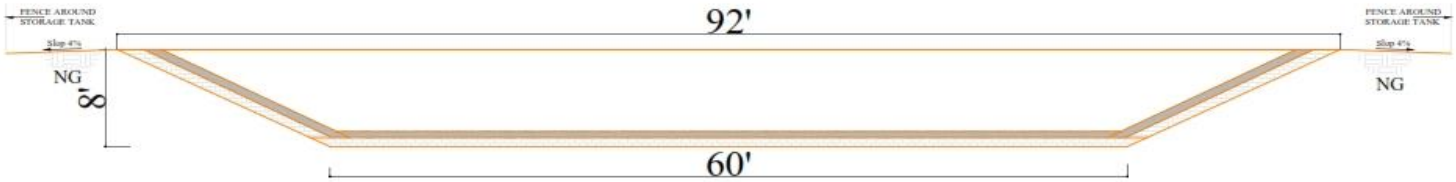
Drain Type-II



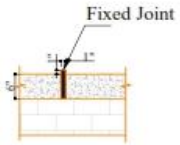
Drain Type-III

CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # B-116 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36640202, Email: cameoskhi@gmail.com			DRAWN: JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- DRAIN SECTIONS	SCALE NTS
				SUBMITTED			
				RECOMMENDED			
				CHD./VER. ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/DS-01
REV.	DATE	DESCRIPTION	APPROVED	APPROVED			


182'
8'
See Detail A-A
NG
WATER STORAGE TANK L-SECTION
150'
92'
60'
182'
WATER STORAGE TANK PLAN
CLIENT:
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CONSULTANTS:
CAMEOS CONSULTANTS
CONSULTING ENGINEERS, ARCHITECTS & PLANNERS.
HOUSE # A-134 BLOCK-L NORTH NAZIMABAD, KARACHI.
PH# +92-21-36630135, Email: cameokhi@gmail.com
REV. DATE DESCRIPTION APPROVED
DRAWN JAVED IQBAL
SUBMITTED
RECOMMENDED
CHD./VER. ALI RIZWAN
APPROVED
PROJECT:
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
DRAWING TITLE:-
WATER STORAGE TANK PLAN & L-SECTION
SCALE NTS
DATE MARCH, 2023
DWG NO. CC/SFERP/PWST



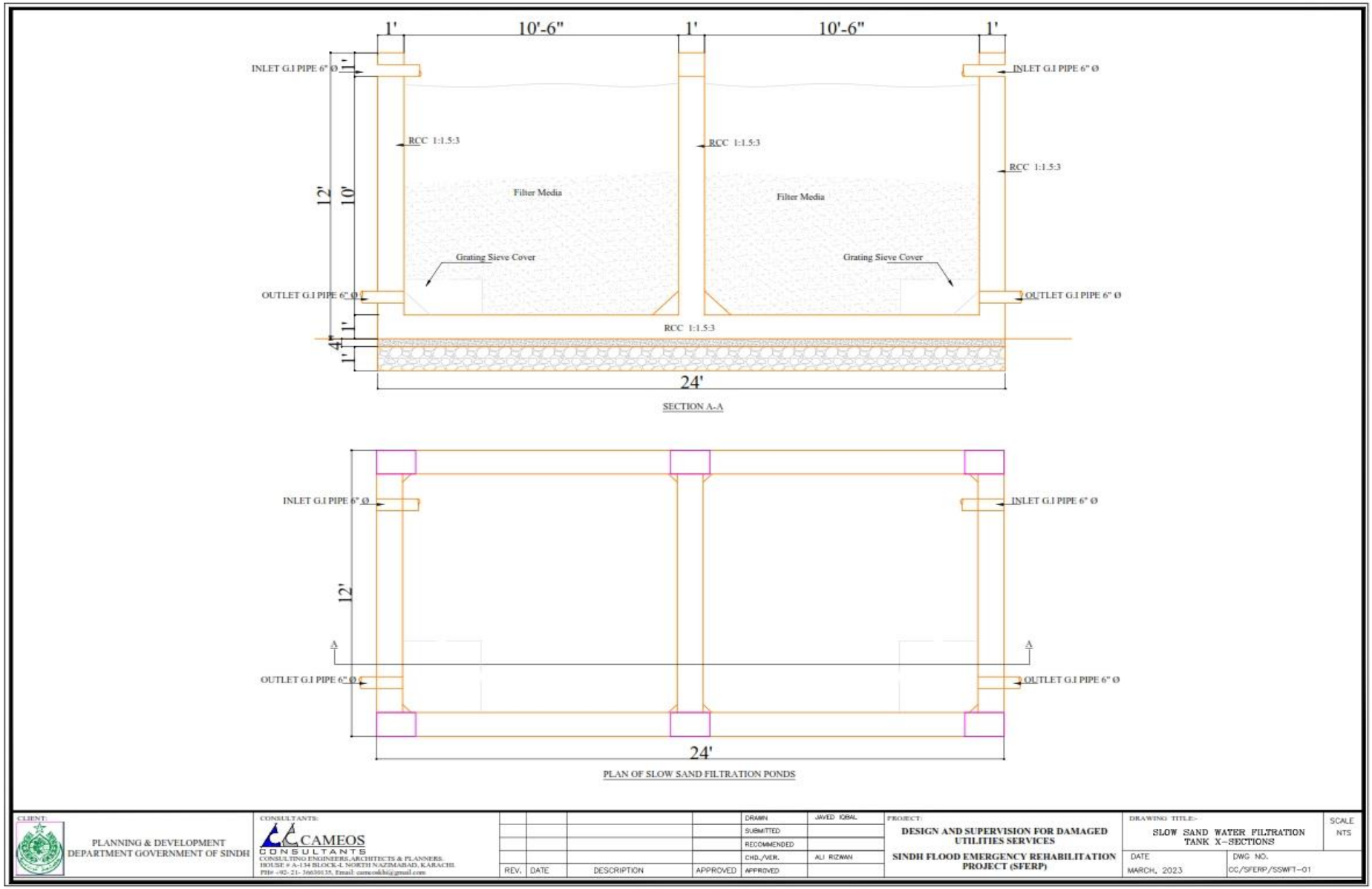
WATER STORAGE TANK X-SECTION

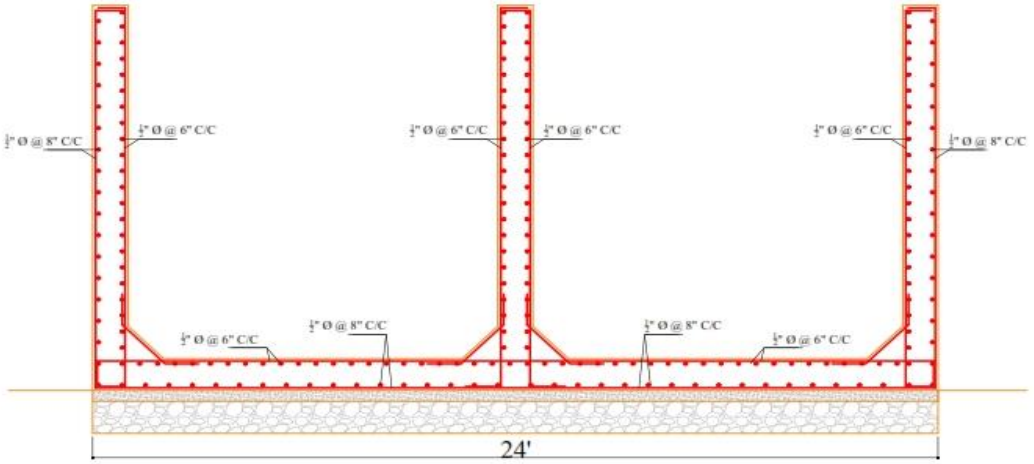


Detail of Expansion Joint

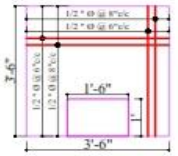
Note: Bitumastic Rubberized or Neoprene Rubber
Fixed Joint Sealant (Fix before laying of concrete)

CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # A-134 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36630135, Email: cameokhi@gmail.com					DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- WATER STORAGE TANK X-SECTION & EXPANSION JOINT DETAIL	SCALE NTS
						SUBMITTED				
						RECOMMENDED				
						CHD./VER.	ALI RIZWAN		DATE MARCH, 2023	DWG NO. CC/SFERP/WST-01
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED				


1'
10'-6"
1'
10'-6"
1'
INLET G.I PIPE 6" Ø
INLET G.I PIPE 6" Ø
RCC 1:1.5:3
RCC 1:1.5:3
RCC 1:1.5:3
12'
10'
Filter Media
Filter Media
Grating Sieve Cover
Grating Sieve Cover
OUTLET G.I PIPE 6" Ø
OUTLET G.I PIPE 6" Ø
1'
RCC 1:1.5:3
4"
1'
24'
SECTION A-A
INLET G.I PIPE 6" Ø
INLET G.I PIPE 6" Ø
12'
A
A
OUTLET G.I PIPE 6" Ø
OUTLET G.I PIPE 6" Ø
24'
PLAN OF SLOW SAND FILTRATION PONDS
CLIENT:
PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH
CONSULTANTS:
CAMEOS CONSULTANTS
CONSULTING ENGINEERS, ARCHITECTS & PLANNERS.
HOUSE # A-134 BLOCK-L NORTH NAZIMABAD, KARACHI.
PH# +92-21-36630135, Email: cameokhi@gmail.com
REV.
DATE
DESCRIPTION
APPROVED
DRAWN
JAVED IQBAL
SUBMITTED
RECOMMENDED
CHD./VER.
ALI RIZWAN
APPROVED
PROJECT:
DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES
SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)
DRAWING TITLE:-
SLOW SAND WATER FILTRATION TANK X-SECTIONS
SCALE
NTS
DATE
MARCH, 2023
DWG NO.
CC/SFERP/SSWFT-01



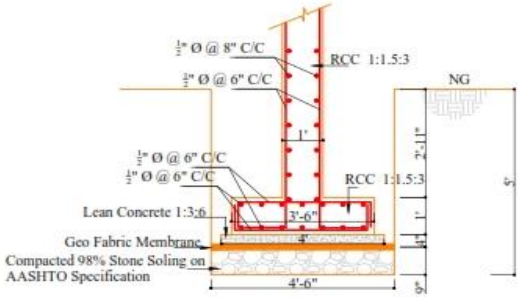
SECTION A-A REINFORCEMENT DETAIL



COLUMN FOOTING PLAN

8- 1/2" Ø Bars 60 grade twisted
1/4" Ø Rings @ 8" c/c
60 Grade Plain

COLUMN SECTION



COLUMN FOOTING SECTION

CLIENT: PLANNING & DEVELOPMENT DEPARTMENT GOVERNMENT OF SINDH	CONSULTANTS: CAMEOS CONSULTANTS, CONSULTING ENGINEERS, ARCHITECTS & PLANNERS. HOUSE # A-134 BLOCK-L NORTH NAZIMABAD, KARACHI. PH# +92-21-36630135, Email: cameokhi@gmail.com				DRAWN	JAVED IQBAL	PROJECT: DESIGN AND SUPERVISION FOR DAMAGED UTILITIES SERVICES SINDH FLOOD EMERGENCY REHABILITATION PROJECT (SFERP)	DRAWING TITLE:- SLOW SAND WATER FILTRATION REINFORCEMENT DETAIL	SCALE NTS
					SUBMITTED				
					RECOMMENDED				
					CHD./VER.	ALI RIZWAN			
	REV.	DATE	DESCRIPTION	APPROVED	APPROVED			DATE MARCH, 2023	DWG NO. CC/SFERP/SSWFT-01

ANNEXURE 3:

Attendence Sheets During Consultation

Annexure 3: Attendence Sheets During Consultation

Government of Sindh

SFERP
Project Implementation Unit (PIU)

Public Consultation on **Environmental and Social Screening Report (ESSR)** for **Rehabilitation of Damaged Water Supply and Drainage Schemes**
arranged by *Project Implementation Unit* **(PIU)** under *Sindh Flood Emergency Rehabilitation Project* **(SFERP)**, P&DD Component, **Government of Sindh**

خراب ٿيل پاڻي جي فراهمي ۽ نيڪال جي اسڪيمن جي بحالي لاءِ
ماحولياتي ۽ سماجي اسڪريننگ رپورٽ تي عوامي مشاورت
سنڌ فلڈ ايمرجنسي بحالي منصوبي (SFERP) تحت پروجيڪٽ
امپليمينٽيشن يونٽ (PIU) پاران ترتيب ڏنل،
P&DD جزو، حڪومت سنڌ

KOTRI TALUKA
:Location/جڳهه جام شورو

::Subproject Name/سب پروجيڪٽ جو نالو

تاريخ/Date: 28/11/2023 ~~28/11/2023~~

Sr. No. سيريل نمبر	Name نالو	Fathers Name پيءُ جو نالو	CNIC No./ Mobile No. CNICنمبر / موبائل نمبر	Occupation/ Profession پيشو	Address: Village Name, Taluka ايڈريس: ڳوٺ جو نالو، تعلقو	Signature/ Thumb Impression دستخط / انگوٺي جو نشان
.1	مير سلطانہ	فريد	41204-8525291-6	ياوس وائف	جام شورو	Mehar
.2	جميل الرحمن	عتيق الرحمن	41504-0401014-1	دوڪان دار	" "	

Page 1 of 6

Government of Sindh

چاڪ شوڏو - KOTRI TALUKA

28/11/23

SFERP

Project Implementation Unit (PIU)

Sr. No. سيريل نمبر	Name نالو	Fathers Name پيءُ جو نالو	CNIC No./ Mobile No. CNICنمبر / موبائل نمبر	Occupation/ Profession پيشو	Address: Village Name, Taluka اڈريس: ڳوٺ جو نالو، تعلقو	Signature/ Thumb Impression دستخط / انگوٺي جو نشان
.3	سريتا	شيباز	41504-0698260-8	ٽيلر	چاڪ شوڏو	Surya
.4	ليئر علي	محرم	41504-0499353-9	هاري	〃 〃	
.5	شاهد علي	مشتاق	41504-0603311-2	هاري	〃 〃	
.6	گل حسن	صيادن	41504-0440145-9	هاري	〃 〃	
.7	وحيد علي	الله بخش	41301-3656218-1	مزدور	〃 〃	
.8	آصف علي	غير محمد	41504-0526712-9	ڪسان	〃 〃	Ayaz
.9	قادر بخش	علي محمد	41504-0423519-3	مزدور	〃 〃	Kadir Bux
.10	شهباز	الله ڏنيو	41504-0613018-4	مزدور	〃 〃	
.11	غلام فاطمي	ادريس	41504-0611863-6	ورڪر	〃 〃	G. Fatima

Page 2 of 6

24/11/2023

Government of Sindh

ماجهنڊ TALUKA MANJHAND

SFERP
Project Implementation Unit (PIU)

Signature/ Thumb Impression دستخط / انگوٺي جو نشان	Address: Village Name, Taluka اڊريس: ڳوٺ جو نالو، تعلقو	Occupation/ Profession پيشو	CNIC No./ Mobile No. CNICنمبر / موبائل نمبر	Fathers Name پيءُ جو نالو	Name نالو	Sr. No. سيريل نمبر
	ماجهنڊ	مزدور	41201-7138623-9	خلیل	ساجد علی	.12
SALEEM	" "	مزدور	41204-0627955-9	الحق	سلیم	.13
	" "	بارکی	41204-4013405-5	حبیب	غلام رسول	.14
MoAzam	" "	دوکاندار	41204-9224630-7	اشرف	محمد اعظم	.15
	" "	بیوپاری	41204-0891505-1	نذیر	امانت	.16
	" "	بارکی	41204-0956590-1	اشفاق	ارشد	.17
	" "	مزدور	41204-4876182-3	محمد حسین	بشیر محمد	.18
Imtiaz	" "	کسان	41204-8250097-3	محمد رفیق	امتیاز علی	.19
	" "	مزدور	41204-8224018-9	اشفاق	وسیم احمد	.20

Page 3 of 6

TALUKA SEHWAN
30/6/2023

SFERP
Project Implementation Unit (PIU)

Signature/ Thumb Impression دستخط / انگوٹي جو نشان	Address: Village Name, Taluka ائڊريس: ڳوٺ جو نالو، تعلقو	Occupation/ Profession پيشو	CNIC No./ Mobile No. CNICنمبر / موبائل نمبر	Fathers Name پيءُ جو نالو	Name نالو	Sr. No. سيريل نمبر
	لیبون	مزدور	41203-1397037-9	FAKhar محمد	معراج الدین	.21
NASEEM	//	بادی خاتون	41205-3200479-0	عزیز	نسیم خاتون	.22
	//	مزدور	41205-6439999-5	حبیب الدین	نور الدین	.23
انتظار الحق	//	دهقان	41205-2334504-7	منصور احمد	انتظار الحق	.24
	//	بادی خاتون	41205-5733102-6	فراز	شگفتہ	.25
اکرم	//	کسان	41205-8289625-3	احمد علی	اکرم علی	.26
	//	مزدور	41205-9913116-3	اعجاز	شمشاد	.27
	//	بادی خاتون	41205-0268450-4	غلام	ماجده	.28
	//	مزدور	41205-0747764-7	عزیز	واجد علی	.29

Page 4 of 6

Government of Sindh

KOTRI TALUKA
30/11/23

تعلقہ کوٹڑی

SFERP
Project Implementation Unit (PIU)

Signature/ Thumb Impression دستخط / آنگوٺي جو نشان	Address: Village Name, Taluka ائڊريس: ڳوٺ جو نالو، تعلقو	Occupation/ Profession پيشو	CNIC No./ Mobile No. CNICنمبر / موبائل نمبر	Fathers Name پيءُ جو نالو	Name نالو	Sr. No. سيريل نمبر
	تعلقہ کوٹڑی	[illegible]	41207-8796411-0	اشرف	صمات اقبال	.30
منور	تعلقہ کوٹڑی	یاری	41207-2560256-5	محمد ہاشم	منور	.31
GhulumNABI	〃	مزدور	41207-1850550-7	غلام رسول	غلام نبی	.32
Iftkhar/...	〃	کسان	41207-0294784-8	عظیم	افتخار	.33
Asif	〃	مزدور	41207-6086398-1	احسان	آصف	.34
Rehman	〃	دکاندار	41207-5315939-4	منور	رحمان	.35
Nazir	〃	کسان	41207-0420241-2	کامران	نذیر	.36
رفیق	〃	یاری	41207-2760458-2	احسان	رفیق	.37
نادر علی	〃	مزدور	41207-7029780-3	مولابخش	نادر علی	.38

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