CORRIGENDUM

to Specific Procurement Notice (SPN)
Invitation for Tenders (Reference No. 0074-PAK-01)

Engineering, Procurement and Construction Works
(EPC/Turnkey Basis)

Country:	Islamic Republic of Pakistan
Name of Project:	Lahore Wastewater and Drainage Management Project (LWDMP) – Sewerage System from Larechs Colony to Gulshan-e-Ravi Lahore (Through Trenchless Technology)
Contract Title:	Laying of Sewer line from Karachi Phattak & Gurumangat Road to Gulshan-e-Ravi (Through Trenchless Technology) and Construction of Ultimate Disposal Station at Gulshan-e-Ravi including Allied Works Procurement of Works under Engineering, Procurement and Construction (EPC Mode/Turnkey Basis)
Tender Reference No.:	0074-PAK-01
Issued on:	5th December 2025

Reference is made to the Specific Procurement Notice (SPN) for Tender submission published in the prominent international and national dailies (Khaleej Times, UAE on 14.10.2025 & Duniya News vide IPL-5200 on 14.10.2025) through which the Tenders for the captioned Work were invited.

1. In partial modification to the above referred SPN (Para-5) and Section 2 – (Tender Data Sheet (TDS)) Page 2-9 (ITT 24.1 and ITT 27.1) of the Tender Documents; the Tender submission deadline and opening of Technical Tenders deadline is hereby extended to **January 15, 2026 (Thursday)**. Therefore, Tenders (Technical and Financial) must be delivered to the address below on or before **January 15, 2026 (Thursday)** at **1200 hours** (Pakistan Standard Time). Tenders submitted after the above deadline will be rejected.
2. Moreover, modifications have been made to rectify the clauses in Section 1 (Instructions to Tenderers (ITT)) Page No. 1-8 (ITT-7.1); Section 2 – (Tender Data Sheet (TDS)) Page No. 2-1, 2-7, 2-9 (ITT 4.1, ITT 11.2 (l) (i), ITT 24.1, 27.1); Section 4 – (Tender Forms) Page No. 4-33 (Schedule 3, Item 3.27); Section 6 – (Employer Requirements) Page No. 6-18, 6-28, 6-45, 6-46, 6-47, 6-48, 6-55, 6-67, 6-71, 6-103, 6-244, 6-247, 6-252, 6-266, 6-369, 6-397 (Sub-clause 4.1.10 (vii) A (g), Sub-clause 4.1.11 (iii), Sub-Clause 4.1.12 (Table 4.3, Table 4.4, Table 4.5, Table 4.6), Sub-clause 4.1.12 (xii) (d), Sub-clause 4.1.12 (xx), Sub-clause 4.1.5., Sub-Clause 4.8 (Monitoring Reports), Sub-Clause 5.1 (Wiring Types and Application, General, Low Voltage Switchboard and Distribution Boards – Scope, Electric Motors, On-Grid Solar Smart Inverters), Sub-Clause 6.6 (Site Details)), Section 6 – (Employer Requirements (Drawings)) (Drawing No. LW-TD-005A, -141, -142, -143, -144, -171, -177, -402, -491); Section 8 – (Particular Conditions of Contract) Part A – Contract Data [14.15(a)(i)]; and Section 9 – (Contract Forms) Page 9-10 (Item No. 3.27) of Tender Documents.
3. The aforementioned amendment(s) shall be considered as part & parcel of the original Tender Documents. All other terms and conditions will remain same.
4. Please visit WASA Lahore website under LWWMP Tab and/ or AIIB Project List Tab (Pakistan: Lahore Wastewater and Drainage Management Project) for all applicable Addendum(s), Clarification(s) and other details from time to time (Links given below).

Project Director (LWWMP),
Head Office Water and Sanitation Agency, Lahore (LWASA),
31-B Zahoor Elahi Rd, Block B Gulberg 2, Lahore, 54660
Phone: (042) 99268439, +92-333-333-0287
projectdirector.lwwmp@gmail.com,
https://wasa.punjab.gov.pk/node/52,
https://ppra.punjab.gov.pk
https://www.aiib.org/en/projects/details/2025/approved/Pakistan-Lahore-Water-and-Wastewater-Management-Project.html

ADDENDUM No.1

Tender Documents

Lahore Water and Wastewater Management Project (LWWMP)

Lahore Wastewater and Drainage Management Project (LWDMP) - Sewerage System from Larechs Colony to Gulshan E Ravi, Lahore (Through Trenchless Technology)

The revision made under the instant Addendum shall substitute and supersede and shall be considered as part & parcel of the original Tender Documents. All other terms and conditions will remain unaltered.

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
1.	Volume 1, Part I, Section 1, Instructions to Tenderers (ITT), ITT 7.1	Page 1-8	*The Employer will respond to any request for clarification, provided that such request is received no later than 14 days prior to the deadline for submission of Tenders.*	The text in Original Clause is replaced with: *"The Employer will respond to any request for clarification, provided that such request is received no later than 21 days (i.e., 25th December 2025) prior to the deadline for submission of Tenders."*
2.	Volume 1, Part I, Section 2, Tender Data Sheet, ITT 4.1	Page 2-1	"*The maximum number of Joint Venture partners shall be limited to Four (04). The share of the Lead Partner of Joint Venture must be greater than other partner(s) of the Joint Venture. Furthermore, minimum share of each partner(s) of Joint Venture must be at least twenty-five (25 %), except for the Design firm, if forming part of Joint Venture*."	The text in Original Clause is replaced with: *"The maximum number of Joint Venture partners shall be limited to Four (04). The share of the Lead Partner of Joint Venture must be greater than other partner(s) of the Joint Venture. Furthermore, minimum share of each partner(s) of Joint Venture must be at least twenty (20 %), except for the Design firm, if forming part of Joint Venture."*
3.	Volume 1, Part I, Section 2, Tender Data Sheet, ITT 11.2(l) (i)	Page 2-7	"*(i) Verified copies & translations of all documents comprising the tender, submitted by the foreign firm with the tender, by foreign firm's country of origin "Chamber of Commerce". The authenticity of Chamber of Commerce*	The text in Original Clause is replaced with: "*(i) Verified copies & translations of all documents comprising the tender, submitted by the foreign firm with the tender, by foreign firm's country of origin "Chamber of Commerce". The authenticity of Chamber of Commerce verification will be done by Pakistani*

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
			verification will be done by Pakistani Embassy/ Consulate in foreign firm's country of origin."	*Embassy/ Consulate in foreign firm's country of origin.* However, *where the* ***Apostille Convention*** *applies, verified copies and translations of documents submitted with the Tender shall certify the authenticity of documents by Apostille of the Ministry of Foreign Affairs of the Tenderer's country."*
4.	Volume 1, Part I, Section 2, Tender Data Sheet, ITT 24.1	Page 2-9	**The deadline for Tender submission is Date:** 11th December 2025 (Thursday) Time: 12:00 hrs Pakistan Standard Time	The text in Original Clause is replaced with: ***The deadline for Tender submission is Date:*** *15th January 2026 (Thursday)* *Time: 12:00 hrs Pakistan Standard Time*
5.	Volume 1, Part I, Section 2, Tender Data Sheet, ITT 27.1	Page 2-9	The Tender opening of Technical Tenders shall take place at Street address: Office of the Project Director (LWWMP), Head Office WASA, Lahore, 31-B Zahoor Elahi Road, Block B, Gulberg 2, Lahore, 54660 City: Lahore, Pakistan ZIP code: 54660 Country: Pakistan Date: 11th December 2025 (Thursday) Time: 12:00 hrs Pakistan Standard Time	The text in Original Clause is replaced with: *The Tender opening of Technical Tenders shall take place at Street address:* *Office of the Project Director (LWWMP), Head Office WASA, Lahore, 31-B Zahoor Elahi Road, Block B, Gulberg 2, Lahore, 54660* *City: Lahore, Pakistan* *ZIP code: 54660* *Country: Pakistan* *Date: 15th January 2026 (Thursday)* *Time: 12:00 hrs Pakistan Standard Time*
6.	Volume 1, Part I – Tender procedures Section 4 – Tender Forms "Schedules of Rates and Prices Priced Activity Schedule Table" Schedule No. 3: Civil Works, Item No. 3.27	Page 4-33	"*Construction of fully furnished three-story Office Building in frame structure, each story having covered area of at least 500 Square meter (as per Employer's Requirements) equipped with all basic amenities, washrooms, pantry, HVAC etc./ with A class tiles floors, fall ceilings, & wall paneling after testing in accordance with ER Sub Clause 4.1 & 5.1*"	The text in Original Clause is replaced with: "*Construction of fully furnished ground plus three storeys office building in frame structure (total four storeys) with covered area of 296 sq-m of each floor (with elevator on outer side) (as per Employer's Requirements) equipped with all basic amenities, washrooms, pantry, HVAC etc./ with A class tiles floors, fall ceilings, & wall paneling after testing in accordance with ER Sub Clause 4.1 & 5.1.*"
7.	Volume 2, Part II, Section 6, Employer's	Page 6-45	**Table 4.3: Size of Jacking Shafts along Trunk Lines**	**Table 4.3: Size of Jacking Shafts along Trunk Lines**

<table>
<tr><th>Sr. No.</th><th>Reference</th><th>Page no.</th><th>As Stated in Tender Documents</th><th>Revised Provisions</th></tr>
<tr><td></td><td>Requirement, Table 4.3: Size of Jacking Shafts along Trunk Lines</td><td></td><td>i) The number of Rectangular Jacking Shaft for Line-B at Sr. No. 1 and Sr. No. 3 are specified as 3 and 1 respectively.
ii) The number of Rectangular Jacking Shaft for Line-C at Sr. No. 1 is specified as ‘3’.
iii) The number of Circular Jacking Shaft for Line-C at Sr. No. 4 is specified as ‘4’.</td><td>i) The cumulative number of Rectangular Jacking Shaft for Line-B at Sr. No. 1 and Sr. No. 3 is 4.

ii) The number of Rectangular Jacking Shaft for Line-C at Sr. No. 1 shall be read as ‘2’.
iii) The number of Circular Jacking Shaft for Line-C at Sr. No. 4 shall be read as ‘5’.</td></tr>
<tr><td>8.</td><td>Volume 2, Part II, Section 6, Employer’s Requirement, Table 4.4: Receiving Shafts along Trunk Lines</td><td>Page 6-46</td><td>-</td><td>Table 4.4: Receiving Shafts along Trunk Lines
For Line-B, one Rectangular receiving shaft is added at Sr. No. 5 with following dimensions:
<table><tr><th>Width (m)</th><th>Length (m)</th><th>Number</th></tr><tr><td>5.5</td><td>5.5</td><td>1</td></tr></table></td></tr>
<tr><td>9.</td><td>Volume 2, Part II, Section 6, Employer’s Requirement, Table 4.5: Jacking Shafts along Laterals of Line-A, -B and -C</td><td>Page 6-47</td><td>Table 4.5: Jacking Shafts along Laterals of Line-A, -B and -C
i) The number of Rectangular Jacking Shaft for Laterals of Line-C at Sr. No. 1 is specified as ‘4’.
ii) The number of Circular Jacking Shaft for Laterals of Line-C at Sr. No. 2 is specified as ‘2’.
iii) The number of Circular Jacking Shaft for Laterals of Line-C at Sr. No. 3 is specified as ‘2’.</td><td>Table 4.5: Jacking Shafts along Laterals of Line-A, -B and -C
i) The number of Rectangular Jacking Shaft for Laterals of Line-C at Sr. No. 1 shall be read as ‘3’.
ii) The number of Circular Jacking Shaft for Laterals of Line-C at Sr. No. 2 shall be read as ‘3’.
iii) The number of Circular Jacking Shaft for Laterals of Line-C at Sr. No. 3 shall be read as ‘1’.</td></tr>
<tr><td>10.</td><td>Volume 2, Part II, Section 6, Employer’s Requirement, Table 4.6: Receiving Shafts along Laterals of Line-A, -B and -C</td><td>Page 6-48</td><td>Table 4.6: Receiving Shafts along Laterals of Line-A, -B and -C
i) The number of Rectangular Receiving Shaft for Laterals of Line-A at Sr. No. 1 is specified as ‘5’.
ii) The number of Rectangular Receiving Shaft for Laterals of Line-A at Sr. No. 4 is specified as ‘4’.
iii) The number of Rectangular Receiving Shaft for Laterals of Line-C at Sr. No. 1 is specified as ‘3’.</td><td>Table 4.6: Receiving Shafts along Laterals of Line-A, -B and -C
i) The number of Rectangular Receiving Shaft for Laterals of Line-A at Sr. No. 1 shall be read as ‘4’.
ii) The number of Rectangular Receiving Shaft for Laterals of Line-A at Sr. No. 4 shall be read as ‘5’.
iii) The number of Rectangular Receiving Shaft for Laterals of Line-C at Sr. No. 1 shall be read as ‘4’.</td></tr>
</table>

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
			iv) The number of Circular Receiving Shaft for Laterals of Line-C at Sr. No. 2 is specified as '2'.	*iv) The number of Circular Receiving Shaft for Laterals of Line-C at Sr. No. 2 shall be read as '1'.*
11.	Volume 2, Part II, Section 6, Employer's Requirement Clause 4.1.12, subclause xx (Construction of Office Building)	Page 6-67	"*However, the Contractor must first construct a fully functional three-story building other than ground floor, (500 sq. m. per floor) at the proposed location to house staff and workforce*"	The text in Original Clause is replaced with: "*However, the Contractor must first construct a fully functional three-story building other than ground floor, (296 sq. m. per floor) at the proposed location to house staff and workforce*" Furthermore, tentative / conceptual layout of the building is attached as **Annexure-A**.
12.	Volume 2, Part II, Section 6, Employer's Requirement Clause 4.1.12, subclause xx (Construction of Office Building)	Page 6-67	*"The Office Building in frame structure, each story having covered area of at least 500 Square meters shall be equipped with all basic amenities, washrooms, pantry, HVAC etc. with A class titles floors, fall ceilings, & wall paneling, HVAC with Info Multimedia Screen."*	The text in Original Clause is replaced with: "*The Office Building in frame structure, each story having covered area of at least 296 Square meters shall be equipped with all basic amenities, washrooms, pantry, HVAC etc. with A class titles floors, fall ceilings, & wall paneling, HVAC with Info Multimedia Screen.*" Furthermore, tentative / conceptual layout of the building attached herewith as **Annexure-A**.
13.	Volume 2, Part II, Section 6, Employer's Requirement (Clause 4.1.5. SCOPE OF E&M WORKS AND SERVICES BY EPC CONTRACTOR)	Page 6-71	*"EPC Contractor will also be responsible for procurement, supply, installation, testing and commissioning of all mechanical equipment, auxiliaries' mechanical equipment, hydraulic steel structures, electrical equipment, auxiliaries' electrical equipment, SCADA system components/equipment, and solar system at roofs of both pumphouses. The EPC contractor is responsible to complete the project in all respects as per the timeline and will also provide the spare parts for at-least replacement for first 5 years."*	The text in Original Clause is replaced with: "*EPC Contractor will also be responsible for procurement, supply, installation, testing and commissioning of all mechanical equipment, auxiliaries' mechanical equipment, hydraulic steel structures, electrical equipment, auxiliaries' electrical equipment, SCADA system components/equipment, and solar system at roofs of both pump houses along with its complete integration with SCADA system. The EPC contractor is responsible to complete the project in all respects as per the timelines and will also provide the spare parts as replacement for at-least first 5 years.*

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
				The EPC Contractor shall also adopt a baseline cybersecurity framework aligned with best practices for industrial control systems (ICS) and critical infrastructure protection. To ensure resilience and risk mitigation, LWASA will implement the following key cybersecurity controls: *Network Segmentation: Isolate SCADA and other operational technology (OT) systems from corporate IT networks and external internet connections to limit attack surface and lateral movement.* *Secure Connectivity: Utilize Multiprotocol Label Switching (MPLS) for remote site communications to enhance data integrity, reliability, and resistance to interception or tampering.* *Access Control and Authentication: Enforce strict access management policies, including role-based access control (RBAC) and multi-factor authentication (MFA) for all remote access to critical systems.* *Periodic Security Reviews: Conduct regular cybersecurity risk assessments and audits to evaluate the effectiveness of controls and ensure alignment with emerging threats, regulatory requirements, and international standards.* *Commitment to Cyber Resilience: Ongoing monitoring, threat intelligence integration, and workforce awareness will be part of the broader cybersecurity strategy to ensure continuous improvement and resilience against evolving cyber threats.*"
14.	Volume-2, Part II, Section 6 - Employer Requirements – Sub-	Page 6-103	*"Monthly ESHS Compliance Report (including health & safety statistics, trainings conducted, inspections, and grievances received)."*	The text in Original Clause is replaced with: *"Monthly ESHS Performance, Compliance, and Monitoring Report (including health and safety statistics, training conducted, inspection findings,*

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
	Clause 4.8 (Health and Safety Obligations) - Monitoring Reports – 4th Bullet point			*grievance redressal status, corrective actions implemented, and other relevant ESHS aspects).”*
15.	Volume-2, Part II, Section 6 - Employer Requirements, (WIRING TYPES AND APPLICATIONS), (PVC Insulated and Sheathed Cables)	Page 6-244	“***PVC Insulated and Sheathed Cables:*** *PVC-insulated XLPE cables and steel wire armoured (SWA) cables for all sub-mains and final sub-circuits to electrical equipment installed in trunkings, trays, or conduits.*”	The text in Original Clause is replaced with: “*PVC Insulated and Sheathed Cables: Armouring shall be governed by the installation conditions, environmental exposure, segregation from power circuits, and mechanical protection requirements, rather than solely by the routing method. Therefore, where cables are laid in outdoor routes, buried ducts, exposed mechanical risk areas, shared containment with power feeders, or any location requiring additional protection, PVC-insulated XLPE and Steel Wire Armoured (SWA) cables shall be used. For installations within trunking, trays, or conduits, PVC-insulated (non-armoured) multicore cables shall be suitable. For wiring purposes, single-core PVC cables installed in PVC conduits shall be used.*”
16.	Volume-2, Part II, Section 6 - Employer Requirements, (GENERAL) – Bullet Points	Page 6-247	-	The following text is added as Bullet Point: • *“Form 4 internal separation classification applies on LV switchboards under IEC 61439, whereas, Form-2b is required for LV Switchgear as per IEC 61439-2. MV switchgear shall be designed and type-tested in full compliance with IEC 62271-200.”*
17.	Volume-2, Part II, Section 6 - Employer Requirements, (LOW VOLTAGE SWITCHBOARD AND DISTRIBUTION BOARDS),	Page 6-252	-	The following text is added at the end of paragraph: *Type-tested panels is mandatory for all LV switchgear, Form 2B shall apply to main and sub-main panels, while Form 1 type-tested DB will be acceptable for lighting and small power distribution boards.*

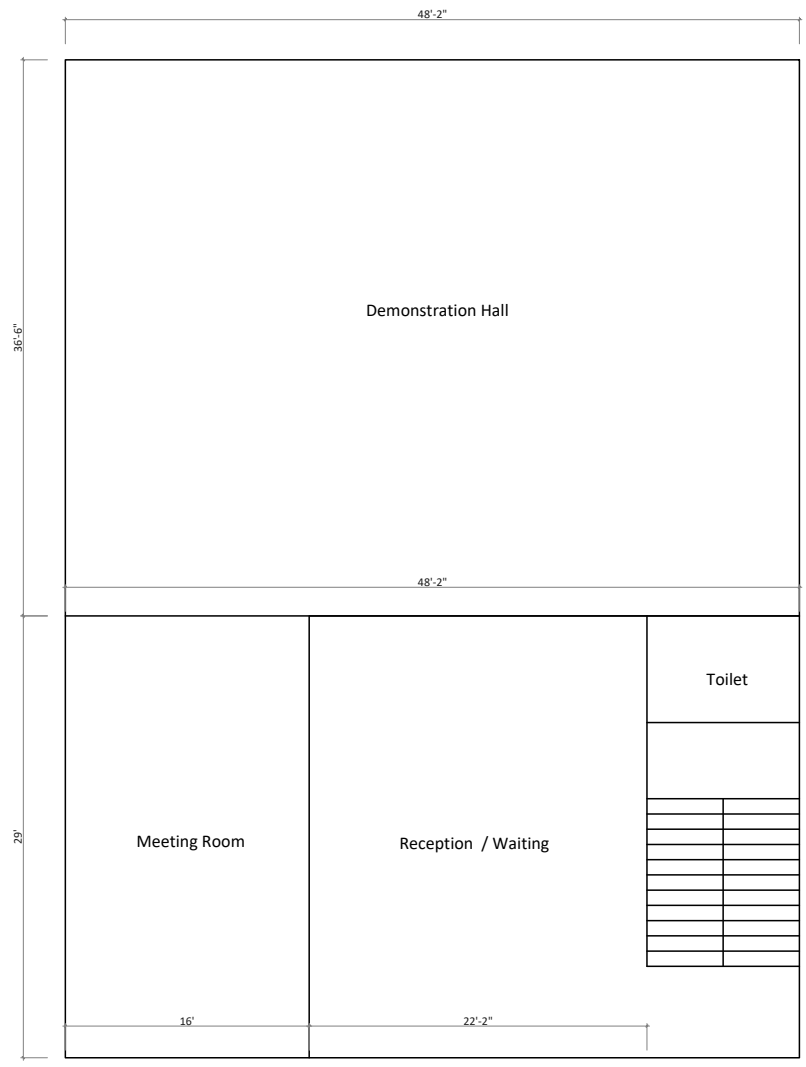
Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
	(SCOPE)			
18.	Volume-2, Part II, Section 6 - Employer Requirements, (ELECTRIC MOTORS)	Page 6-266	*"Cage induction motors shall operate on full-voltage direct-on-line (DOL) starting, while wound rotor induction motors shall utilize rotor resistance starting. Motors shall achieve a minimum efficiency of 97% at full load"*	The text in Original Clause is replaced with: "*Cage induction motors shall operate on full-voltage direct-on-line (DOL) starting, while wound rotor induction motors shall utilize rotor resistance starting. Motors shall achieve a minimum efficiency of 97% at full load. The Medium-voltage pump motors shall be provided with a minimum efficiency class of IE3 in accordance with IEC 60034-30-1. Where the guaranteed full-load efficiency is slightly lower than 97% (95% to 96%) yet remains compliant with IE3 performance for the rated power and pole configuration, such motors shall be acceptable subject to submission of OEM certification for Employer's review and approval.*"
19.	Volume-2, Part II, Section 6 - Employer Requirements, (On-Grid Solar Smart Inverter)	Page 6-369		The following text is added above the table under heading of On-Grid Solar Smart Inverter: *"The Tenderer may propose design using forced-air cooled inverters, along with supporting technical documentation demonstrating full compliance with the required IP rating, environmental conditions, performance guarantees, reliability, and maintainability criteria. The Employer shall review the submission in detail during the evaluation stage prior to acceptance. Any other proposal by the EPC Contractor shall be subject to prior approval by the Employer."*
20.	Volume-2, Part II, Section 6 - Employer Requirements, Sub-Clause 6.6	Page 6-397	"The Contractor shall provide labor camps (i.e. proper building) for its labor & employees preferably at Babu Sabu site at a designated area which is accessible through nearby access road or at Ferozepur Road (Refer Drawing No. LW-TD-5 & LW-TD-5A)."	The text in Original Clause is replaced with: *"The Contractor shall provide labor camps (i.e. proper building) for its labor & employees preferably at Babu Sabu site at a designated area which is accessible through nearby access road or at **Bhaini** Road (Refer Drawing No. LW-TD-5 & LW-TD-5A)."*

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
				Updated Drawing No. LW-TD-005A is attached at **Annexure-B.**
21.	Volume 3, Part II, Section 6, Employer's Requirement (Drawings) (Drawing No. LW-TD-005A) "WASA OWNED LAND"	Drawing No. LW-TD-005A	**Drawing No. LW-TD-005A** – WASA owned land indicated near Ferozepur Road	The original Drawing is replaced with: **Drawing No. LW-TD-005A** – WASA owned land indicated near Bhaini Road. Updated Drawing No. LW-TD-005A is attached at **Annexure-B.**
22.	Volume 3, Part II, Section 6, Employer's Requirement (Tender Drawings)	LW-TD-141 LW-TD-142 LW-TD-143 LW-TD-144	-	The referenced drawings have been amended as follows: Amended Drawing Nos. LW-TD-141, LW-TD-142, LW-TD-143 without Thrust Blocks are attached as **Annexure-C.** Drawing No. LW-TD-144 is deleted.
23.	Volume 1, 2 & 3	Where Drop Structures are mentioned in the Tender Documents	-	Total number of Drop Structures shall be read as: Sixteen (16) i.e., 14 No. at Intake Structures (Lift Stations) and 2 No. at Conveyance System (along Trunk Sewer) in all Tender Documents. Amended Drawing No. LW-TD-171 with 16 Drop structures is attached as **Annexure-D** in the Tender Documents. The number of drop structures anywhere in Tender Documents shall be read as sixteen (16).
24.	Volume 3, Part II, Section 6, Employer's Requirement (Drawings)	(Drawing No. LW-TD-171)	-	The referenced drawing has been amended as follows: Amended Drawing No. LW-TD-171 with 16 Drop structures is attached as **Annexure-D** in the Tender Documents.

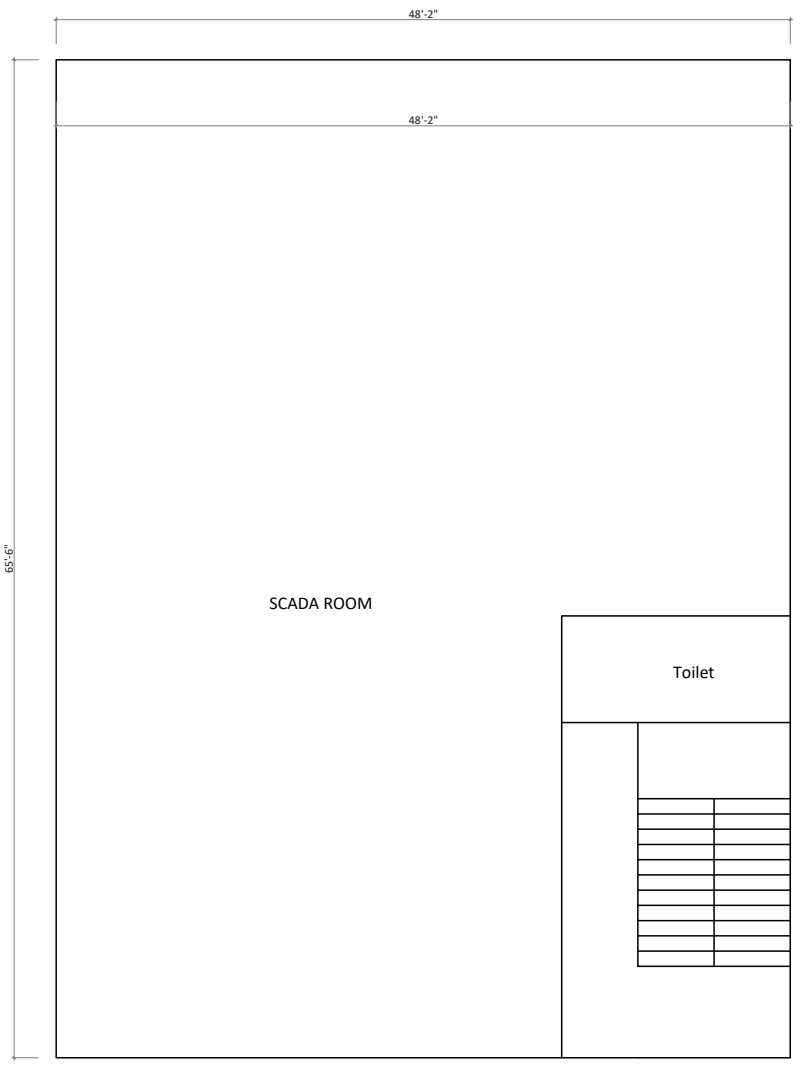
Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
				The number of drop structures elsewhere in Tender Documents shall be read as sixteen (16).
25.	Volume 1, 2 & 3	Complete Tender Documents		Total number of Odour Control and Ventilation System shall be read as: 29 (Twenty-Nine). The number of Odour Control and Ventilation System anywhere in Tender Documents shall be read as 29 (Twenty-Nine).
26.	Volume 3, Part II, Section 6, Employer's Requirement (Drawings)	Drawing No. LW-TD-177	-	The referenced drawing has been amended as follows: Amended Drawing No. LW-TD-177 with 29 Odour Control and Ventilation System is attached as **Annexure-E** in the Tender Documents. The number of Odour Control and Ventilation System anywhere in Tender Documents shall be read as Twenty-Nine (29).
27.	Volume 3, Part II, Section 6, Employer's Requirement (Drawings)	Drawing No. LW-TD-402		The referenced drawing has been amended as follows: Updated Drawing No. LW-TD-402, is hereby substituted and attached at **Annexure-F** herewith providing Ultimate Disposal Station Master layout Plan.
28.	Volume 3, Part II, Section 6, Employer's Requirement (Drawings)	Drawing No. LW-TD-491		The referenced drawing has been amended as follows: Updated Drawing No. LW-TD-491, is hereby substituted and attached at **Annexure-G** herewith providing updated Ultimate Disposal Station Single Line Diagram (SLD).
29.	Volume 4, Part III– Conditions of Contract and Contract Forms, Section 8 – Particular Conditions of Contract, Particular Conditions, Part A -	Proportions or amounts of Local and Foreign Currencies	*"Local Currency: Not less than Five percent (50%) of the total Contract Price."*	The text in original Clause is replaced with: *"Local Currency: Not less than **Fifty** percent (50%) of the total Contract Price."*

Sr. No.	Reference	Page no.	As Stated in Tender Documents	Revised Provisions
	Contract Data [14.15(a)(i)]			
30.	Volume 4, Part III– Conditions of Contract and Contract Forms, Section 9 – Contract Forms	Page 9-10	"*3.27. Construction of fully furnished three-story Office Building in frame structure, each story having covered area of at least 500 Square meter*"	The text in original Clause is replaced with: "*3.27. Construction of fully furnished ground plus three storeys office building in frame structure (total four storeys) with covered area of 296 sq-m of each floor (with elevator on outer side)*"

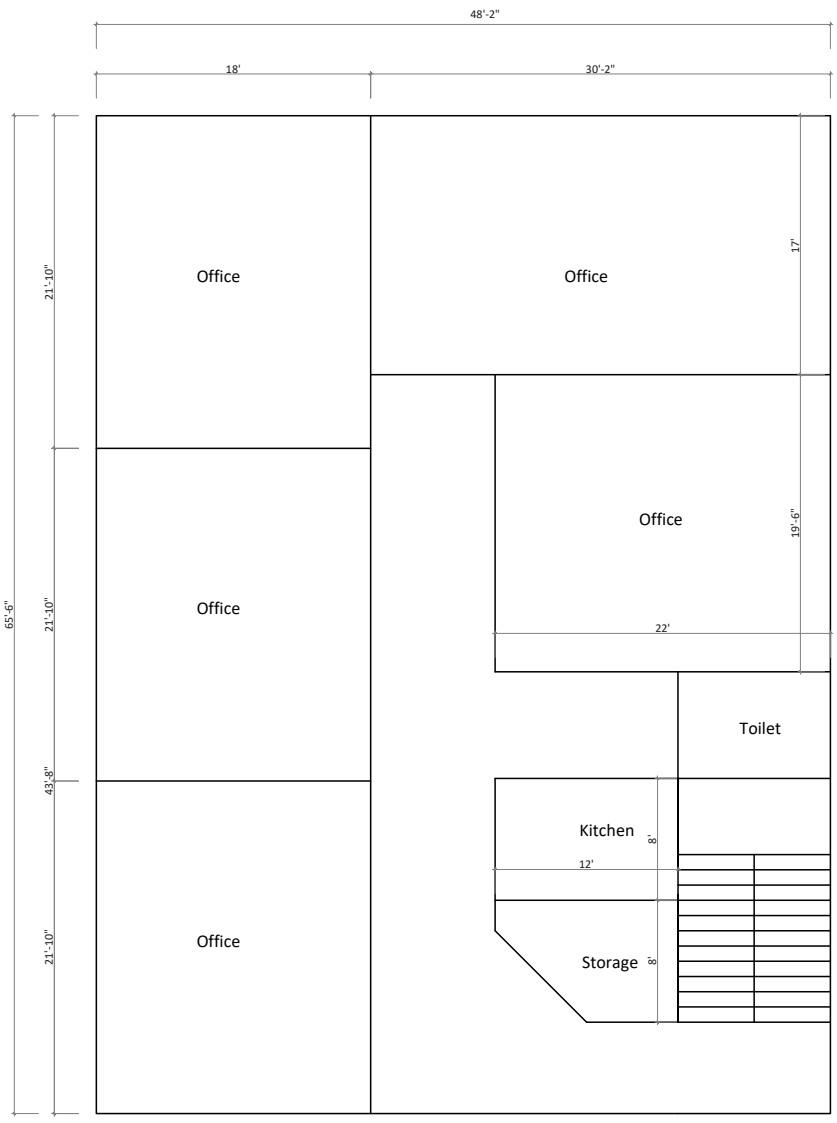
Annexure-A



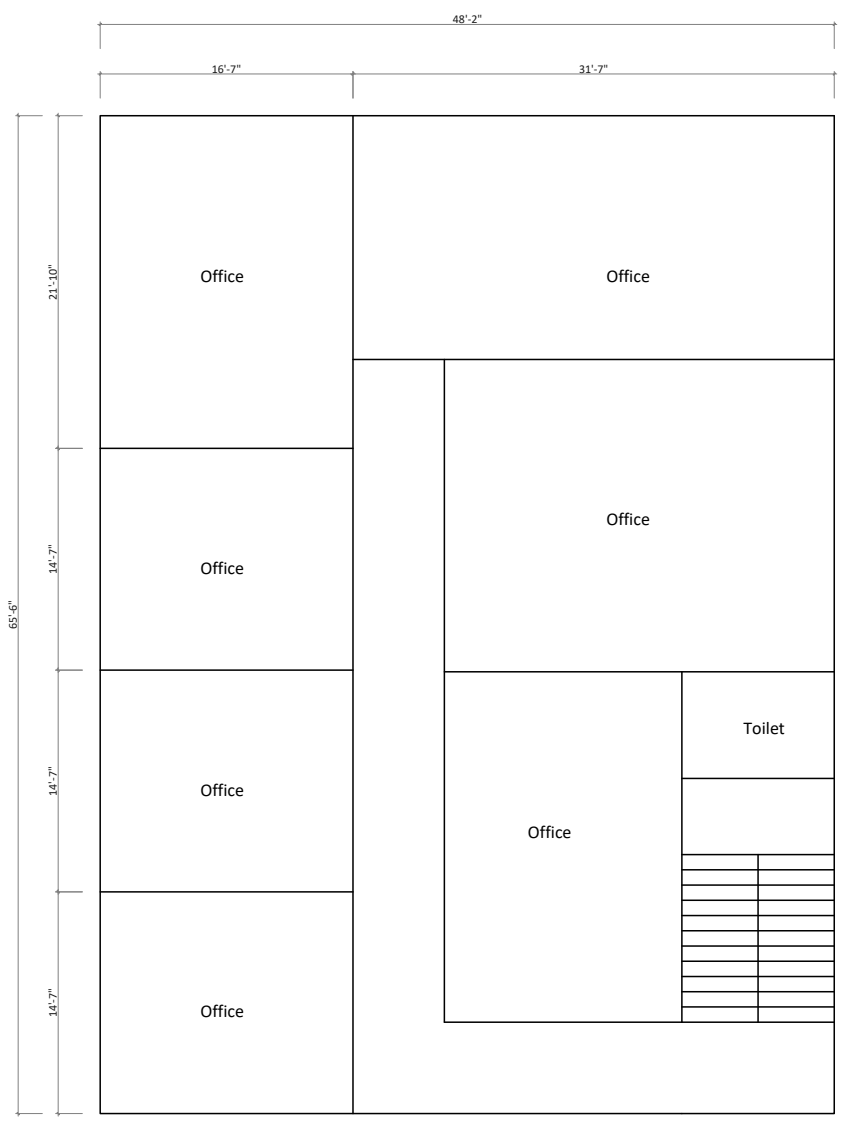
GROUND FLOOR



FIRST FLOOR

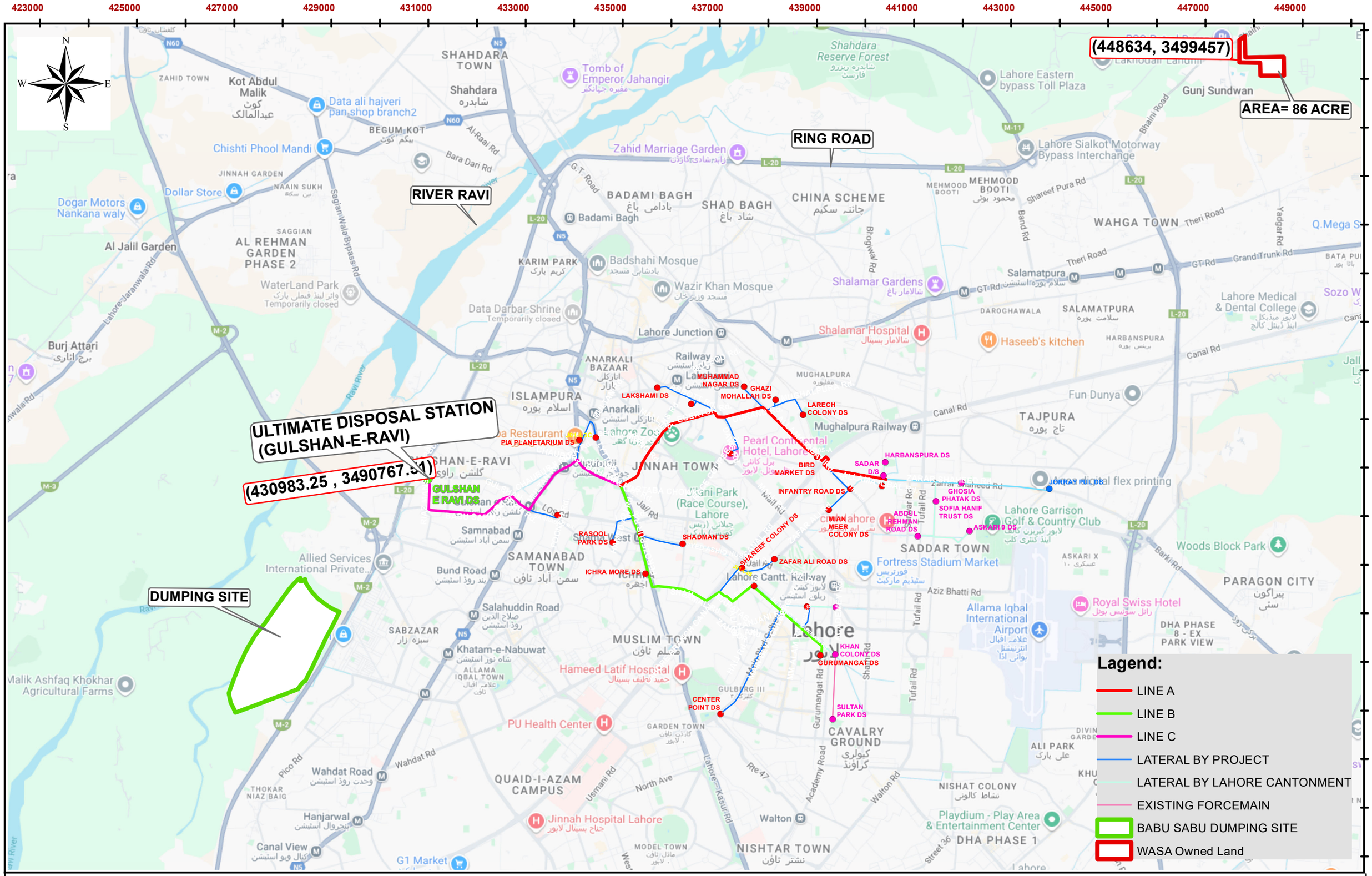


SECOND FLOOR



THIRD FLOOR

Annexure-B



LAHORE WASTEWATER AND DRAINAGE MANAGEMENT PROJECT (LWDMP) - SEWERAGE SYSTEM FROM LARECHS COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

WATER AND SANITATION AGENCY, LAHORE	EBA ENGINEERING, ECSP, CEC, team consultants — A JointVenture	REVISION	04			CONTROL	DRAWN		WASA OWNED LAND	SCALE 1:80,000
			03				CHECKED BY			
			02				RECOMMENDED			
			01				CHD./VER.		DATE :- November, 2025	DRAWING No. LW-TD-005A
			REV.	DATE	DESCRIPTION		APPROVED			REV:-

Annexure-C

TABLE OF DIMENSIONS FOR JACKING & RECEIVING SHAFTS

Sr. #	Pipe Inner Diameter (m)	Pipe Wall Thickness (m)	Pipe Outer Diameter (m)	Type of Shaft	No. of Shafts	Rectangular					Circular			Depth H-I (m)	Bracing Beams C/C Spacing (mm)			Base Slab Thickness (m)	PCC Thickness (m)	Thrust Block		Circular Shaft Wall Thickness (m)	Sheet Pile Embedment Depth H-II (m)
						Width (B) (m)	Length (A) (m)	Length including Thrust Block Thickness (m)	Total Length (L) (m)	Total Width (W) (m)	Diameter (D1) (m)	Diameter (D2) (m)	Diameter (D3) (m)		X	Y	Z			Thickness (m)	Height (m)		
Jacking Shafts of Line-A																							
1	2.4	0.225	2.85	A	7	6	8.8	10.0	10.9	6.9				14	2250	2250	5300	0.6	0.1	1.2	4		5
2	2.4	0.225	2.85	B	2	8.8	8.8	10.0	10.9	9.7	`			14	2250	2250	5300	0.6	0.1	1.2	4		5
3	2.4	0.225	2.85	C	7						11	11.9	13.1	14	2750	2750	5300	0.6	0.1	0.6	4	0.6	5
Jacking Shafts of Line-B																							
1	2.4	0.225	2.85	A	4	6	8.8	10.0	10.9	6.9				14	2250	2250	5300	0.6	0.1	1.2	4		5
2	2.4	0.225	2.85	B	2	8.8	8.8	10.0	10.9	9.7				14	2250	2250	5300	0.6	0.1	1.2	4		5
3	2.4	0.225	2.85	C	4						11	11.9	13.1	14	2750	2750	5300	0.6	0.1	0.6	4	0.6	5
4	1.5	0.169	1.838	D	3						10	10.9	12.1	12	2250	2250	5300	0.6	0.1	0.6	4	0.6	5
5	1.5	0.169	1.838	E	3	5	8.2	9.4	10.3	5.9				12	1950	1950	5300	0.6	0.1	1.2	4		5
Jacking Shafts of Line-C																							
1	3.5	0.3	4.1	A	2	7	8.8	10.0	10.9	7.9				18	2250	2250	5300	0.6	0.1	1.2	4		8
2	3.5	0.3	4.1	B	1	8.8	8.8	10.0	10.9	9.7				18.64	2250	2250	5300	0.6	0.1	1.2	4		8
3	3.5	0.3	4.1	C	2	6	10.0	11.2	12.1	6.9				18.76	2850	2850	5300	0.6	0.1	1.2	4		8
4	3.5	0.3	4.1	D	5						12	12.9	14.1	20	3250	3250	5300	0.6	0.1	0.6	4	0.6	8
Receiving Shafts of Line-A																							
1	2.4	0.225	2.85	A	9	3.5	5.5		6.4	4.4				14				0.6	0.1				5
2	2.4	0.225	2.85	B	7						7		7.9	14	750	750	5300	0.6	0.1			0.6	5
Receiving Shafts of Line-B																							
1	2.4	0.225	2.85	A	4	3.5	5.5		6.4	4.4				13				0.6	0.1				5
2	1.5	0.169	1.838	B	4	2.5	4.5		5.4	3.4				12				0.6	0.1				5
3	2.4	0.225	2.85	C	1	5.5	5.5		6.4	6.4				12.35				0.6	0.1				5
4	1.5	0.169	1.838	D	2						6		6.9	11.77	250	250	5300	0.6	0.1			0.6	5
5	2.4	0.225	2.85	E	5						7		7.9	14	750	750	5300	0.6	0.1			0.6	5
Receiving Shafts of Line-C																							
1	3.5	0.3	4.1	A	6	4	6.5		7.4	4.9				19				0.6	0.1				8
2	3.5	0.3	4.1	B	5						8		8.9	18.5	1250	1250	5300	0.6	0.1			0.6	8

NOT FOR CONSTRUCTION

LAHORE WATER & WASTEWATER MANAGEMENT PROJECT - SEWERAGE SYSTEM FROM LARECH COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

WASA LAHORE

WATER AND SANITATION AGENCY, LAHORE

EBA ENGINEERING | ECSP | ECC | tcm — A Joint Venture

REV.	DATE	DESCRIPTION
04		
03		
02		
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DRAWN	
CHECKED BY	
RECOMMENDED	
CHD./VER.	
APPROVED	

JACKING AND RECEIVING SHAFTS
TABLES OF DIMENSIONS

DATE:- May, 2025

DRAWING NO.:- **LW - TD - 141**

Jacking Shafts of Line-A Laterals																					
MIAN MEER COLONY - L1A																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				10.82	1650	1650	5300	0.6	0.1	1.2	4		5
INFANTRY ROAD - L2A																					
1	1.5	0.169	1.838	A	1	5	8.2	9.4	10.3	5.9				11.42	1950	1950	5300	0.6	0.1	1.2	4		5
LARECH COLONY - L3A																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				9.34	1650	1650	5300	0.6	0.1	1.2	4		5
GHAZI MOHALLAH - L4A																					
1	1.05	0.15	1.35	A	1	4.5	7.6	8.8	9.7	5.4				9.99	1650	1650	5300	0.6	0.1	1.2	4		5
MUHAMMAD NAGAR - L6A																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				10.72	1650	1650	5300	0.6	0.1	1.2	4		5
GOVERNER HOUSE - L7A																					
1	1.05	0.15	1.35	A	1	4.5	7.6	8.8	9.7	5.4				10.78	1650	1650	5300	0.6	0.1	1.2	4		5
2	1.05	0.15	1.35	B	1						9	9.9	11.1	11.43	1750	1750	5300	0.6	0.1	0.6	4	0.6	5
LAKSHAMI CHOWK - L8A																					
1	1.5	0.169	1.838	A	1	5	8.2	9.4	10.3	5.9				12.02	1950	1950	5300	0.6	0.1	1.2	4		5
2	1.5	0.169	1.838	B	1						10	10.9	12.1	8.72	2250	2250	5300	0.6	0.1	0.6	4	0.6	5
ABBOTT ROAD- L10A																					
1	1.5	0.169	1.838	A	1	5	8.2	9.4	10.3	5.9				12.02	1950	1950	5300	0.6	0.1	1.2	4		5
Jacking Shafts of Line-B Laterals																					
Q BLOCK D/S - L1B																					
1	1.05	0.15	1.35	A	2						9	9.9	11.1	11.23	1750	1750	5300	0.6	0.1	0.6	4	0.6	5
CENTER POINT D/S - L2B																					
1	1.05	0.15	1.35	A	6	4.5	7.6	8.8	9.7	5.4				10	1650	1650	5300	0.6	0.1	1.2	4		5
2	1.05	0.15	1.35	B	1						9	9.9	11.1	9.43	1750	1750	5300	0.6	0.1	0.6	4	0.6	5
ZAFAR ALI ROAD D/S - L3B																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				14	1650	1650	5300	0.6	0.1	1.2	4		5
SHAREEF COLONY - L4B																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				13	1650	1650	5300	0.6	0.1	1.2	4		5
2	1.05	0.15	1.35	B	1						9	9.9	11.1	13.72	1750	1750	5300	0.6	0.1	0.6	4	0.6	5
SHADMAN COLONY - L5B																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				11.29	1650	1650	5300	0.6	0.1	1.2	4		5
2	1.05	0.15	1.35	B	1						9	9.9	11.1	13.22	1750	1750	5300	0.6	0.1	0.6	4	0.6	5
RASOOL PARK - L6B																					
1	1.5	0.169	1.838	A	2	5	8.2	9.4	10.3	5.9				10	1950	1950	5300	0.6	0.1	1.2	4		5
Jacking Shafts of Line-C Laterals																					
LYTTON ROAD D/S - L1C																					
1	1.05	0.15	1.35	A	2	4.5	7.6	8.8	9.7	5.4				13.5	1650	1650	5300	0.6	0.1	1.2	4		5
2	1.05	0.15	1.35	B	2						9	9.9	11.1	13.5	1750	1750	5300	0.6	0.1	0.6	4	0.6	5
PIA PLANETARIUM D/S - L2C																					
1	1.05	0.15	1.35	A	1						9	9.9	11.1	12.93				0.6	0.1	0.6	4	0.6	5
LAKE ROAD - L3C																					
1	1.05	0.15	1.35	A	1	4.5	7.6	8.8	9.7	5.4				13.59	1650	1650	5300	0.6	0.1	1.2	4		5
POONCH ROAD - L4C																					
1	1.5	0.169	1.838	A	1						10	10.9	12.1	15.41	2250	2250	5300	0.6	0.1	0.6	4	0.6	8

NOT FOR CONSTRUCTION

LAHORE WATER & WASTEWATER MANAGEMENT PROJECT - SEWERAGE SYSTEM FROM LARECH COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

WASA LAHORE

WATER AND SANITATION AGENCY, LAHORE

EBA ENGINEERING ECSP ECC team consultants
A JointVenture

REV.	DATE	DESCRIPTION
04		
03		
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DRAWN	
CHECKED BY	
RECOMMENDED	
CHD./VER.	
APPROVED	

JACKING AND RECEIVING SHAFTS
TABLES OF DIMENSIONS

DATE:- May, 2025

DRAWING NO.:- **LW - TD - 142**

Receiving Shafts of Line-A Laterals																						
MIAN MEER COLONY - L1A																						
1	1.05	0.15	1.35	A	1	2.5	3.5		4.4	3.4				10.64				0.6	0.1			5
2	1.05	0.15	1.35	B	1						5		5.9	8.94	0	0	4800	0.6	0.1			0.6	5
INFANTRY ROAD - L2A																						
1	1.5	0.169	1.838	A	1	2.5	4.5		5.4	3.4				11.47				0.6	0.1			5
2	1.5	0.169	1.838	B	1						6		6.9	11.37	250	250	5300	0.6	0.1			0.6	5
LARECH COLONY - L3A																						
1	1.05	0.15	1.35	A	2						5		5.9	8.89	0	0	4800	0.6	0.1			0.6	5
GHARI SHAHU BAZAR - L5A																						
1	1.05	0.15	1.35	A	1						5		5.9	8.89	0	0	4800	0.6	0.1			0.6	5
MUHAMMAD NAGAR - L6A																						
1	1.05	0.15	1.35	A	1	2.5	3.5		4.4	3.4				10.52				0.6	0.1			5
GOVERNER HOUSE - L7A																						
1	1.05	0.15	1.35	A	3	2.5	3.5		4.4	3.4				11				0.6	0.1			5
LAKSHAMI CHOWK - L8A																						
1	1.5	0.169	1.838	A	2	2.5	4.5		5.4	3.4				10				0.6	0.1			5
ABBOTT ROAD- L10A																						
1	1.5	0.169	1.838	A	1	2.5	4.5		5.4	3.4				12.72				0.6	0.1			5
2	1.5	0.169	1.838	B	1						6		6.9	12.95	250	250	5300	0.6	0.1			0.6	5
Receiving Shafts of Line-B Laterals																						
Q BLOCK D/S - L1B																						
1	1.05	0.15	1.35	A	1	2.5	3.5		4.4	3.4				11.27				0.6	0.1			0.6	5
CENTER POINT D/S - L2B																						
1	1.05	0.15	1.35	A	7	2.5	3.5		4.4	3.4				10.5				0.6	0.1			5
ZAFAR ALI ROAD D/S - L3B																						
2	1.05	0.15	1.35	A	3						5		5.9	14	0	0	4800	0.6	0.1			0.6	5
SHAREEF COLONY - L4B																						
1	1.05	0.15	1.35	A	1	2.5	3.5		4.4	3.4				13.41				0.6	0.1			5
2	1.05	0.15	1.35	B	1						5		5.9	12.49	0	0	4800	0.6	0.1			0.6	5
SHADMAN COLONY - L5B																						
1	1.05	0.15	1.35	A	2	2.5	3.5		4.4	3.4				11				0.6	0.1			5
2	1.05	0.15	1.35	B	1						5		5.9	11.53	0	0	4800	0.6	0.1			0.6	5
RASOOL PARK - L6B																						
1	1.5	0.169	1.838	A	2						6		6.9	10	250	250	5300	0.6	0.1			0.6	5
Receiving Shafts of Line-C Laterals																						
LYTTON ROAD D/S - L1C																						
1	1.05	0.15	1.35	A	3	2.5	3.5		4.4	3.4				13.5				0.6	0.1			5
PIA PLANETARIUM D/S - L2C																						
1	1.05	0.15	1.35	A	1						5		5.9	13.74	0	0	4800	0.6	0.1			0.6	5
LAKE ROAD - L3C																						
1	1.05	0.15	1.35	A	1	2.5	3.5		4.4	3.4				15.85				0.6	0.1			8
POONCH ROAD - L4C																						
1	1.5	0.15	1.8	A	2						6		6.9	15.3	250	250	5300	0.6	0.1			0.6	8

NOT FOR CONSTRUCTION

LAHORE WATER & WASTEWATER MANAGEMENT PROJECT - SEWERAGE SYSTEM FROM LARECH COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

WASA LAHORE

WATER AND SANITATION AGENCY, LAHORE

EBA ENGINEERING ECSP CEC team consultants
A Joint Venture

REV.	DATE	DESCRIPTION
04		
03		
02		
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DRAWN | CHECKED BY | RECOMMENDED | CHD./VER. | APPROVED

JACKING AND RECEIVING SHAFTS
TABLES OF DIMENSIONS

DATE:- May, 2025

DRAWING NO.:- **LW - TD - 143**

Annexure-D

Note.
1. READ ALL DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL, PLUMBING/SEWERAGE, MECHANICAL, ELECTRICAL AND ANY OTHER RELEVANT DRAWINGS.

Tangential Vortex Drop Structure

Sr. No.	Line No.	Location	NSL (m)	FFL (m)	IL1 (m)	IL 2 (m)	A (m)	B (m)	C (m)	H (m)	F (m)	e (m)	Lt (m)	LC (m)	Lv (m)	D1 (m)	D2 (m)	D3 (DN)	D4 (DN)	T1 (mm)	T2 (mm)	Material of Construction (Approach Channel & Drop Shaft)
1	Line A	Main Mir	213.400	213.700	207.994	205.829	5.010	0.40	2.165	0.835	2.00	0.132	0.871	6.618	2.574	0.529	0.931	500	250	-	-	GRP/SS316
2		Infantary	214.630	214.930	208.662	204.892	8.443	0.67	3.770	1.407	2.00	0.223	1.468	11.153	4.338	0.892	1.570	800	450	300	300	RCC
3		Bird Market	213.650	213.950	206.678	205.488	6.252	0.50	1.190	1.042	2.00	0.165	1.087	8.258	3.212	0.660	1.162	600	350	-	-	GRP/SS316
4		Governor House	212.550	212.850	206.387	203.237	4.157	0.33	3.150	0.693	2.00	0.110	0.723	5.491	2.136	0.439	0.773	400	250	-	-	GRP/SS316
5		Lakshami Chowk	210.460	210.760	204.036	202.770	9.819	0.78	1.266	1.637	2.00	0.259	1.707	12.970	5.045	1.037	1.826	900	500	300	300	RCC
6		Qurtaba Chowk (Line A)	210.750	211.050	198.192	195.152	17.050	1.35	3.040	2.842	3.00	0.450	2.963	22.521	8.759	1.801	3.170	1600	900	300	300	RCC
7	Line B	Gurumangat	214.220	214.520	207.598	204.621	5.693	0.45	2.977	0.949	2.00	0.150	0.990	7.521	2.925	0.601	1.059	600	300	-	-	GRP/SS316
8		Q Block	214.430	214.730	208.543	204.672	5.582	0.44	3.871	0.931	2.00	0.148	0.970	7.374	2.868	0.589	1.038	500	300	-	-	GRP/SS316
9		G Block	213.120	213.420	206.695	202.330	7.034	0.56	4.365	1.173	2.00	0.186	1.223	9.292	3.614	0.743	1.308	700	350	300	300	RCC
10		Zafar Ali Road	213.660	213.960	208.658	203.642	2.948	0.23	5.016	0.491	2.00	0.078	0.513	3.895	1.515	0.311	0.548	300	150	-	-	GRP/SS316
11		Ichra	212.170	212.470	206.071	202.728	6.144	0.49	3.343	1.024	2.00	0.162	1.068	8.115	3.156	0.649	1.142	600	300	-	-	GRP/SS316
12		Shama	213.470	213.770	206.167	201.370	4.947	0.39	4.796	0.824	2.00	0.131	0.860	6.534	2.541	0.522	0.920	450	250	-	-	GRP/SS316
13		Qurtaba Chowk (Line B)	210.730	211.030	198.910	194.157	16.138	1.28	4.753	2.690	3.00	0.426	2.805	21.317	8.291	1.704	3.000	1600	850	300	300	RCC
14	Line C	Lytton Road	208.120	208.420	202.929	197.080	6.661	0.53	5.849	1.110	2.00	0.176	1.158	8.798	3.422	0.703	1.238	600	350	-	-	GRP/SS316
15		PIA Planetarium	208.990	209.290	201.543	196.160	5.670	0.45	5.383	0.945	2.00	0.150	0.986	7.490	2.913	0.599	1.054	600	300	-	-	GRP/SS316
16		Ponch Road	209.000	209.300	201.756	194.570	9.444	0.75	7.186	1.574	2.00	0.249	1.642	12.475	4.852	0.997	1.756	900	500	300	300	RCC

Note:

1. All those components of the drop structures like Approach Channel, Drop Shaft, & Deaeration Chamber whose sizes are small and their on-site construction in RCC is not possible, will be in SS316/GRP.
2. For Rasool Park Disposal Station, the drop manhole is considered due to insufficient drop for the construction of the Drop Structure. The contractor will check the possibility and will incorporate it if required at that stage.

NOT FOR CONSTRUCTION

LAHORE WASTEWATER AND DRAINAGE MANAGEMENT PROJECT (LWDMP) - SEWERAGE SYSTEM FROM LARECHS COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

WASA LAHORE

WATER AND SANITATION AGENCY, LAHORE

EBA ENGINEERING ECSP EGC team consultants
A JointVenture

REV.	DATE	DESCRIPTION	APPROVED
04			
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CHECKED BY	
RECOMMENDED	
CHD./VER.	
APPROVED	

DROP STRUCTURE DIMENSION TABLE

SCALE

DATE:- MAY 2025

DRAWING NO:- LW - TD - 171

REV.:- A

Annexure-E

Note.
1. READ ALL DRAWINGS IN CONJUNCTION
2. WITH ARCHITECTURAL, PLUMBING/SEWERAGE,
3. MECHANICAL, ELECTRICAL AND ANY OTHER
4. RELEVANT DRAWINGS.

ODOUR CONTROL SYSTEM

Sr. No.	Drop Sturcture Location	Odor Control Room Size (m) L x W x H	NSL(m)	FGL(m)	TL(m)	Depth of Foundation from NSL (m)	Width of Foundation (m)					Thickness of Foundation steps (m)				Roof Slab Thickness (m)
							W1	W2	W3	W4	W5	T1	T2	T3	T4	T5
1	Mian Mir (D1)	As shown on Plan	213.40	213.70	217.70	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
2	Infantory Road (D2)	4.5 x 5.0 x 4.5	209.00	209.30	213.80	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
3	Bird Market (D3)	4.5 x 4.5 x 4.0	213.65	213.95	217.95	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
4	Governor House (D4)	3.5 x 3.5 x 4.0	212.55	212.85	216.85	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
5	Lakshimi Chowk (D5)	5.5 x 6.5 x 4.5	210.46	210.76	215.26	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
6	Qurtaba Chowk (D6)	4.5 x 4.5 x 4.0	210.75	211.05	215.05	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
7	Gurumangat (D7)	3.5 x 3.5 x 4.0	214.22	214.52	218.52	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
8	Q Block (D8)	3.5 x 3.5 x 4.0	214.43	214.73	218.73	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
9	G Block (D9)	3.5 x 4.0 x 4.0	213.12	213.42	217.42	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
10	Zafar Ali Rd (D10)	3.5 x 3.5 x 4.0	213.66	213.96	217.96	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
11	Ichara (D11)	4.5 x 4.5 x 4.0	212.17	212.47	216.47	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
12	Shama (D13)	6.5 x 6.5 x 4.5	213.47	213.77	218.27	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
13	Qurtaba Chowk (D14)	6.0 x 4.5 x 4.0	208.99	209.29	213.29	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
14	Lyton Rd (D15)	3.5 x 4.0 x 4.5	208.12	208.42	212.92	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
15	Samnabad Poonch (D16)	4.5 x 5.0 x 4.5	209.00	209.30	213.80	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
16	PIA Plantrium (D17)	3.5 x 3.5 x 4.0	214.43	214.73	218.73	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
17	Karachi Phatak (E1)	5.5 x 6.5 x 4.5	214.47	214.77	219.27	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
18	Infantory Road Crossing (E2)	5.5 x 6.5 x 4.5	215.31	215.61	220.11	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
19	Alama Iqbal Rd Crossing (E3)	3.5 x 4.0 x 4.0	212.67	212.97	216.97	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
20	Durand Road to Davis Road crossing (E4)	3.5 x 4.0 x 4.0	213.49	213.79	217.79	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
21	Edgerton Road to Ganga Ram Hospital Emergency Chowk (E5)	3.5 x 4.0 x 4.0	213.82	214.12	218.12	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
22	Q Block link Rd Crossing (E6)	4.0 x 3.5 x 4.5	214.27	214.57	219.07	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
23	Gulberg Main Boulevard (E7)	4.5 x 5.0 x 4.5	213.83	214.13	218.63	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
24	Shareef to Canal Crossing (E8)	5.5 x 6.5 x 4.5	212.41	212.71	217.21	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
25	Canal crossing to Ichara (E9)	5.5 x 6.5 x 4.5	211.32	211.62	216.12	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
26	Rasool Park To ferozpur Rd (E10)	3.5 x 4.0 x 4.0	210.90	211.20	215.20	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
27	PIA Road Junction (E11)	3.5 x 4.5 x 4.0	209.37	209.67	213.67	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
28	Poonch Road Junction (E12)	3.5 x 4.5 x 4.0	209.37	209.67	213.67	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15
29	Gulshan-e-Ravi (E13)	4.5 x 4.5 x 4.0	207.58	207.88	211.88	0.9	0.9	0.57	0.45	0.34	0.23	0.15	0.15	0.15	0.15	0.15

NOT FOR CONSTRUCTION

LAHORE WASTEWATER AND DRAINAGE MANAGEMENT PROJECT (LWDMP) - SEWERAGE SYSTEM FROM LARECHS COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

WATER AND SANITATION AGENCY, LAHORE

EBA ENGINEERING ECSP CEC team consultants
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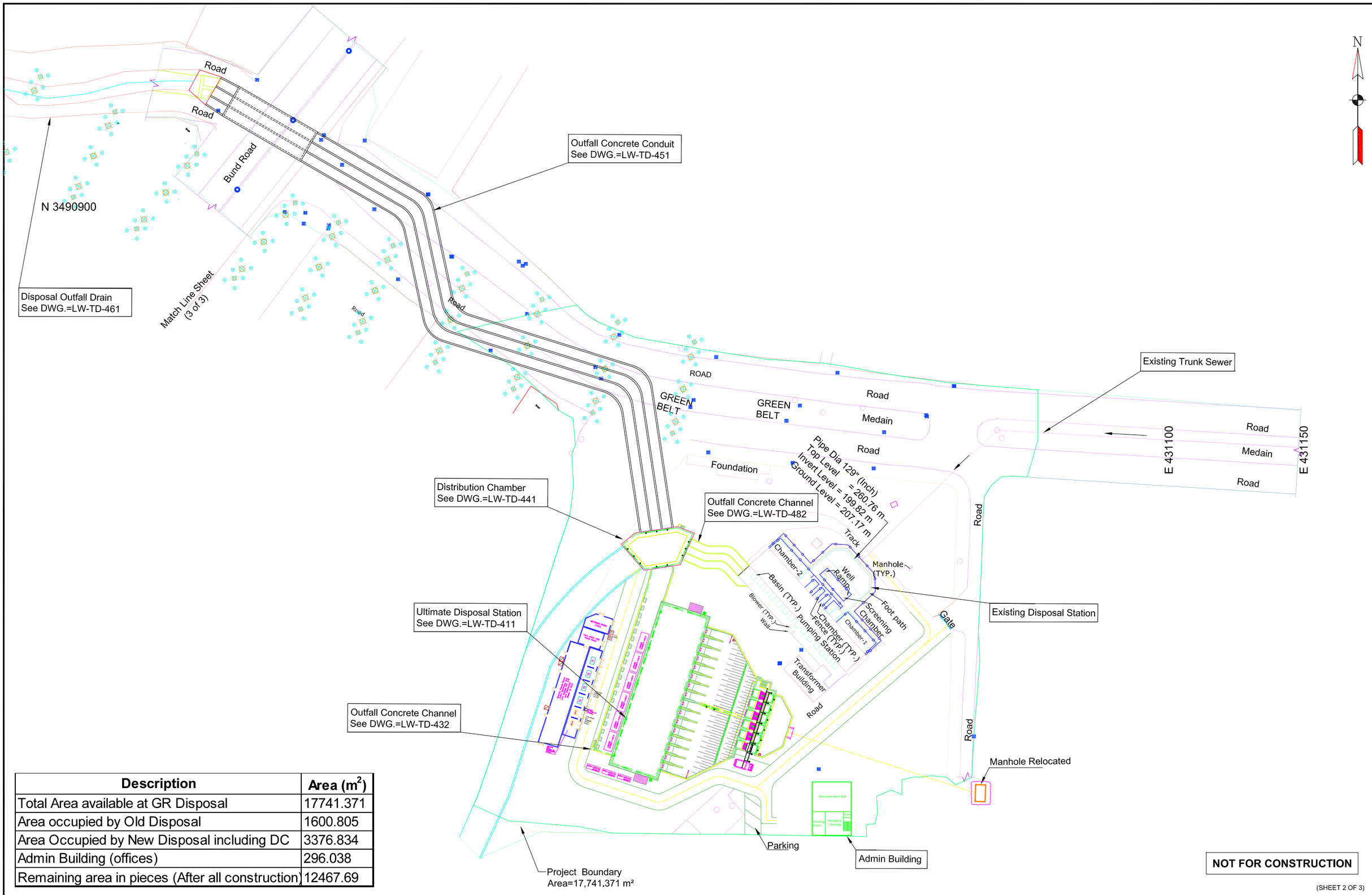
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DIMENSION TABLE FOR ODOR CONTROL STRUCTURES

DATE:- November, 2025

DRAWING NO.:- LW - TD - 177

Annexure-F



Description	Area (m^2)
Total Area available at GR Disposal	17741.371
Area occupied by Old Disposal	1600.805
Area Occupied by New Disposal including DC	3376.834
Admin Building (offices)	296.038
Remaining area in pieces (After all construction)	12467.69

NOT FOR CONSTRUCTION

(SHEET 2 OF 3)

LAHORE WASTEWATER AND DRAINAGE MANAGEMENT PROJECT (LWDMP) - SEWERAGE SYSTEM FROM LARECHS COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

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REV.	DATE	DESCRIPTION
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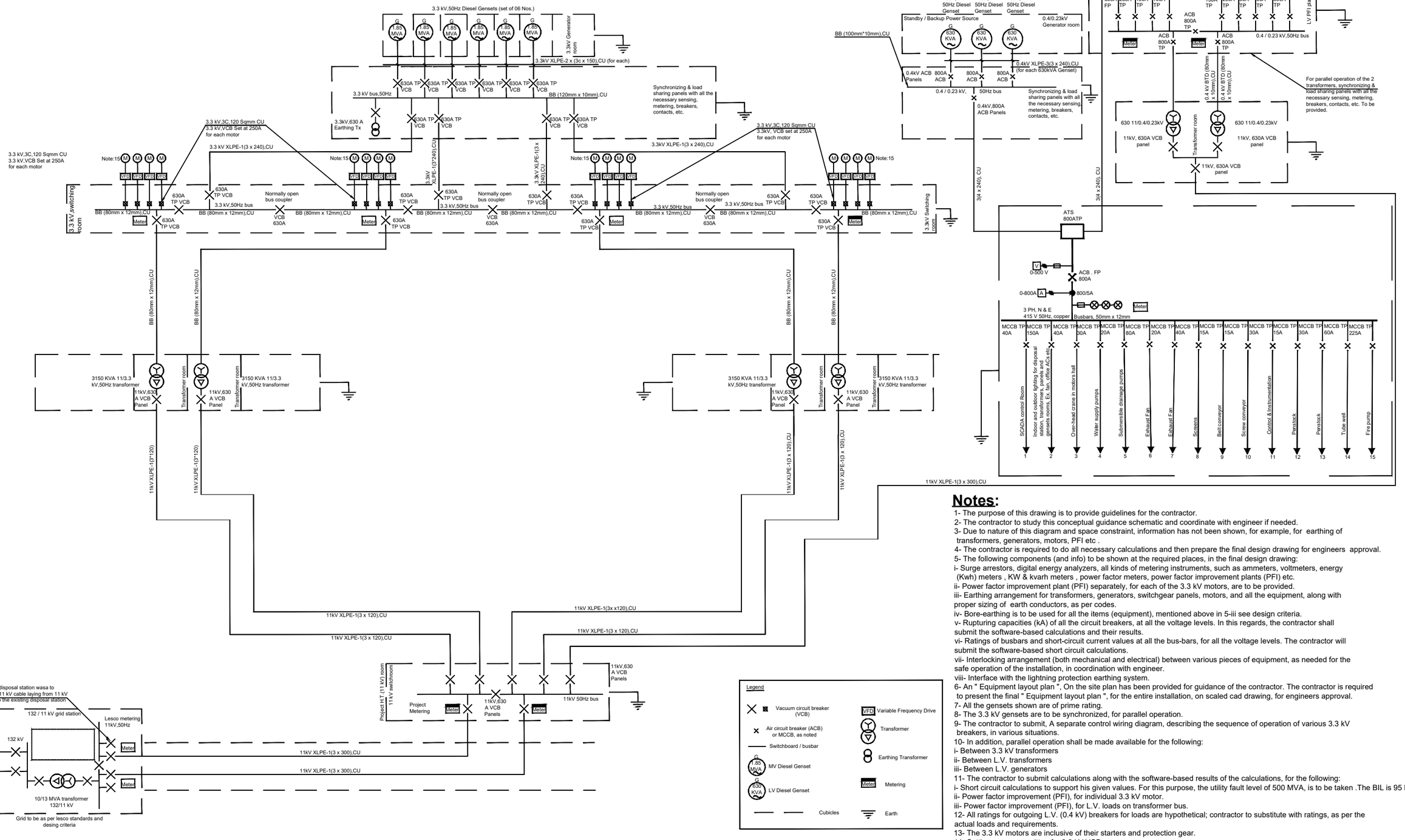
DRAWN	MUHAMMAD HAMMAD NASEER
CHECKED BY	MUHAMMAD SAQIB RAZA
RECOMMENDED	
CHD./VER.	
APPROVED	

ULTIMATE DISPOSAL STATION
MASTER LAYOUT PLAN PUMP HOUSE

DATE:- NOVEMBER, 2025

DRAWING NO.:- **LW - TD - 402**

Annexure-G



Notes:

1- The purpose of this drawing is to provide guidelines for the contractor.
2- The contractor to study this conceptual guidance schematic and coordinate with engineer if needed.
3- Due to nature of this diagram and space constraint, information has not been shown, for example, for earthing of transformers, generators, motors, PFI etc .
4- The contractor is required to do all necessary calculations and then prepare the final design drawing for engineers approval.
5- The following components (and info) to be shown at the required places, in the final design drawing:
i- Surge arrestors, digital energy analyzers, all kinds of metering instruments, such as ammeters, voltmeters, energy (Kwh) meters , KW & kvarh meters , power factor meters, power factor improvement plants (PFI) etc.
ii- Power factor improvement plant (PFI) separately, for each of the 3.3 kV motors, are to be provided.
iii- Earthing arrangement for transformers, generators, switchgear panels, motors, and all the equipment, along with proper sizing of earth conductors, as per codes.
iv- Bore-earthing is to be used for all the items (equipment), mentioned above in 5-iii see design criteria.
v- Rupturing capacities (kA) of all the circuit breakers, at all the voltage levels. In this regards, the contractor shall submit the software-based calculations and their results.
vi- Ratings of busbars and short-circuit current values at all the bus-bars, for all the voltage levels. The contractor will submit the software-based short circuit calculations.
vii- Interlocking arrangement (both mechanical and electrical) between various pieces of equipment, as needed for the safe operation of the installation, in coordination with engineer.
viii- Interface with the lightning protection earthing system.
6- An " Equipment layout plan ", On the site plan has been provided for guidance of the contractor. The contractor is required to present the final " Equipment layout plan ", for the entire installation, on scaled cad drawing, for engineers approval.
7- All the gensets shown are of prime rating.
8- The 3.3 kV gensets are to be synchronized, for parallel operation.
9- The contractor to submit, A separate control wiring diagram, describing the sequence of operation of various 3.3 kV breakers, in various situations.
10- In addition, parallel operation shall be made available for the following:
i- Between 3.3 kV transformers
ii- Between L.V. transformers
iii- Between L.V. generators
11- The contractor to submit calculations along with the software-based results of the calculations, for the following:
i- Short circuit calculations to support his given values. For this purpose, the utility fault level of 500 MVA, is to be taken .The BIL is 95 kV.
ii- Power factor improvement (PFI), for individual 3.3 kV motor.
iii- Power factor improvement (PFI), for L.V. loads on transformer bus.
12- All ratings for outgoing L.V. (0.4 kV) breakers for loads are hypothetical; contractor to substitute with ratings, as per the actual loads and requirements.
13- The 3.3 kV motors are inclusive of their starters and protection gear.
14- Setting amps are written for 3.3 kV VCBs.
15- VFD Panels for each 3.3kV- 525kW Power Rated Motor (total 16 Nos.) shall be placed inside the dry well in-front of each associated motor.

NOT FOR CONSTRUCTION

LAHORE WATER & WASTEWATER MANAGEMENT PROJECT - SEWERAGE SYSTEM FROM LARECH COLONY TO GULSHAN-E-RAVI, LAHORE (THROUGH TRENCHLESS TECHNOLOGY)

PACKAGE 2: CONSTRUCTION OF ULTIMATE DISPOSAL STATION, ITS APPURTENANT STRUCTURES AND INSTALLATION OF PUMP HOUSE E&M EQUIPMENT

WATER AND SANITATION AGENCY, LAHORE

EBA ENGINEERING · ECSP · CEC · team consultants — A JointVenture

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CHECKED BY	M.SAQIB RAZA
RECOMMENDED	
CHD./VER.	
APPROVED	

ULTIMATE DISPOSAL STATION
SINGLE LINE DIAGRAM (SLD)

DATE:- NOVEMBER, 2025

DRAWING NO.:- **LW - TD - 491**