Jacobs | Al Jazeerah Drilling

TRANSMITTAL

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

PROJECT / CONTRACT TITLE : POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA PACKAGE-2 MAIN PUMPING STATION AND BOOSTER PUMPING STATION (JP108)

CONTRACTOR'S CONTRACT # JP-108

CONTRACTOR : M/S. AL JAZEERAH DRILLING LLC | CONSULTANT : M/S. JACOBS | EMPLOYER : M/S.SEWGA KALBA

TRANSMITTAL No. JP108-TRN-010 | **DATE: 6-Jan-2026**

To: Attention: Marwan Ahmed
Adrdess
Email ID: Marwan.Ahmed@jacobs.com
Phone #
Fax #

Submitted for
- [ ] As requested
- [ ] For Information / Record
- [ ] For Review / Comments
- [x] For Approval
- [ ] For necessary action

Shipment Method: Email | Confidentiality [Yes/No]: Yes

Document Type: Method Statement | Previous Submittal Ref: N/A

Discipline: [x] Civil [ ] Electrical [ ] Mechanical [ ] Plumbing [ ] ICA [ ] Other

SR.	Document No.	Description	Rev.	Copies	Remarks	Approval Code (For consultant use)
1	JP108-MS-002	Method Statement for Excavation Works	1	PDF		

For Contractor

Ahmed Al Juaidi (Name) | Project Manager (Designation) | (Signature) | 6-Jan-2026 (Date)

For Consultant Use | Contarct # | Jacobs' Project Number

[x] Approved [ ] Approved subject to comments [ ] Revise and Re-submit before proceeding [ ] Rejected

*Comments:

All comments are closed and found acceptable.

Review and approval are only for general conformance with the concept of the project and general compliance with the information provided in the contract documents. Contractor, and his Subcontractor / Supplier, remains responsible for compliance with contract documents, confirmation and correlation of quantities and dimensions, selection of fabrication process and techniques, coordination of trades, and performance of this work in a safe and satisfactory manner.

Use Submittal Review Sheet to track the closure of critical comments. Use legible handwriting.

Name:	Designation:	Signature:	Date:
Marwan Ahmed	Resident Engineer	Resident Engineer JACOBS® Sign	Jan/13/26

Al Jazeerah Drilling

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

Jacobs

PROJECT: Potable Water Supply to Jabal Al Deem - Kalba Package-2 Main Pumping Station and Booster Pumping Station

Review Comments/Response Sheet

Document No.	JP108-TRN-010	**Rev.**	1	**Date of Submission**	6-Jan-26
Title:	Method Statement for Excavation Works				
Jacobs Comments Sheet No.	AE643WTS-JAC-TRN-010-CRS	**Rev.**	1	**Date:**	13-Jan-26

No.	Comments	Initials	Date
Jacobs 0.1	All excavation works shall comply with project specifications, approved drawings, and relevant authority regulations.	GJ	4-Nov-25
AJD 0.1	Noted. We shall ensure that all excavation works are carried out in full compliance with the project specifications, approved drawings, and relevant authority regulations, as outlined in the approved Method Statement.	AJ	6-Jan-26
Jacobs 0.2	Excavation boundaries and levels shall be set out accurately and checked prior to commencement.	GJ	4-Nov-25
AJD 0.2	Noted. Excavation boundaries and levels shall be accurately set out and jointly checked prior to commencement of excavation works, in accordance with the approved drawings and Method Statement.	AJ	6-Jan-26
Jacobs 0.3	Suitable shoring, benching, or sloping shall be provided as required to prevent collapse and ensure trench stability.	GJ	4-Nov-25
AJD 0.3	Noted. Suitable shoring, benching, or sloping shall be provided as required based on site conditions to prevent collapse and ensure trench stability, in accordance with the approved Method Statement and HSE requirements.	AJ	6-Jan-26
Jacobs 0.4	Excavated material shall be stockpiled safely, away from the edge of the excavation, and reused or disposed of as per the approved plan.	GJ	4-Nov-25
AJD 0.4	Noted. Excavated material shall be safely stockpiled away from the edge of the excavation and shall be reused or disposed of in accordance with the approved plan, Method Statement, and Engineer's instructions.	AJ	6-Jan-26
Jacobs 0.5	Safe access/egress (ladders, ramps) shall be maintained at all times inside excavations.	GJ	4-Nov-25
AJD 0.5	Noted. Safe access and egress, including ladders and ramps, shall be provided and maintained at all times within excavations in accordance with the approved Method Statement, HSE Plan, and safety requirements.	AJ	6-Jan-26
Jacobs 0.6	Kindly specify the depth of the excavation and attached site specific excavation profile.	RAJ	10-Nov-25
AJD 0.6	As per attached drawing Appendix - 1	AJ	6-Jan-26
Jacobs 0.7	All utilities must be identified and marked with the appropriate color code and labeling indicating their type and location before excavation or construction activities begin.	RAJ	10-Nov-25
AJD 0.7	Noted & shall be provided	AJ	6-Jan-26
Jacobs 0.8	Since the work is located near a mountainous area, ensure that the MSRA includes identification of the mountain terrain conditions, Rock Fall ect.	RAJ	10-Nov-25
AJD 0.8	Updated in the Risk Assessment in section 22	AJ	6-Jan-26

NOTE: The review of this document was broad and general; any omissions, errors or discrepancies in the comments by Jacobs / SEWA shall not relieve the Contractor of their whole responsibility of works / design responsibility with respect to the contract requirements/ specifications and applicable codes & standards

Legend

- ☐ Comments issued for Rev. 0
- ☐ Closed Comments
- ☐ Open Comments
- ☐ Addl.Comments in Successive Revisions

The Jacobs Reviewer:

Reviewed by: Checked by:

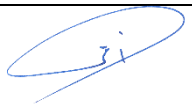
- ☑ **[A] No Objection**
- ☐ **[B] No Objection Subject to Comments**
- ☐ **[C] Returned with Comments**
- ☐ **[D] Review not Required**
- ☐ **[E] Information**

Position: Resident Engineer **Name:** Marwan Ahmed **Signature**

Jazeerah Response:

By **Ahmed Al Juaidi** **Checked By**

METHOD STATEMENT FOR EXCAVATION WORKS OF PUMPING STATION

		Name	Signature	Date
Prepared By:	Sr.QA / QC Engineer	MONISH KUMAR		06.01.2026
Reviewed By:	Project Control Manager	MUHAMMAD AZEEM		06.01.2026
Reviewed By:	HSE Officer	MUHAMMED ABID		06.01.2026
Reviewed & Approved By:	Project Manager	AHMED AL JUAIDI		06.01.2026

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1. PURPOSE

The project scope of work includes but is not limited to the construction, testing and commissioning of the following:

- Partially below ground RCC reservoir with a capacity of 910 m^3 at proposed Main Pump station in the vicinity of the tapping point with Wadi Al Helo pipeline.
- Main pump station with capacity of 25 lps in the vicinity of tap-off point from Wadi Al Helo pipeline including all Electro-Mechanical and Instrumentation, Control and Automation (ICA) works.
- Partially below ground potable water RCC break pressure tank at Booster Pump station in the halfway of the pipeline to Jabal Al Deem with a capacity of 300 m^3.
- Booster Pump Station with capacity of 25 lps in the halfway of the pipeline to Jabal Al Deem including all Electro-Mechanical and Instrumentation, Control and Automation (ICA) works.
- Tie-in with pipeline works included under Package -1 (Pipeline and Chambers)

This method statement shall also ensure that the work is executed safely and ensures that the quality assurance and quality control activities are conducted in a systematic manner, works are inspected and conformance is verified and documented.

2. SCOPE OF WORKS

- The Scope of work for this method statement is to provide the Client / Consultant an overview of the procedures explains the prerequisites (permits to work, setting out, safety arrangements, identifying the existing services, dewatering works, site enabling works etc.) and the sequence to be adopted for Excavation works of substructures including the preparation of formation making ready for the blinding concrete.

3. LOCATION

- Jabal Al Deem, Kalba Sharjah, UAE

4. RESPONSIBILITIES

Responsibilities as follows:

- The Project Manager is responsible for overall Management of the job with quality and safety as per approved method statement, ITP and Risk Assessment. The Project Manager shall be responsible for review and approve the Methodology for the execution

of the works, and ensure that the works are implemented in a safe & efficient manner. The Project Manager is also responsible for the overall project activities and liaises with Engineers & Employer.

- The Project Engineer is responsible for overall execution of the job with quality and safety as per approved method statement, ITP and Risk Assessment. The PE shall provide adequate resources to the site team to execute the job as per the MSRA. The PE shall be responsible for managing the construction activities at site. Communication with the Project Manager, responsible for implementation of Method Statement and ensures that all involved site construction personnel are aware of this method statement and shop drawings are followed. He shall ensure that the execution of works shall be carried out in safe manner.

- Site Engineer / General Foremen shall be responsible for the daily activities, carryout the work in safe manner and to supervise the work force together with the proper execution and monitoring of works and all appropriate checks will be carried out during each stage of the works. The foreman shall give daily pre-task briefing to his team. Before start of any new activity a pre-task briefing conversing the safe procedure of work shall be discussed by Foreman, who would be made knowledgeable by the Site Engineer and HSE Officer.

- The QA / QC Engineer shall be responsible for the QA/QC activities at site and to monitor the method statement implementation & regularities of respective works as per Project Quality Plan, inspect the work and ensure the compliances to the project requirement and specifications.

- The Surveyor shall be responsible for making use of geographical information systems (GIS) to analyze and interpret site features, measuring the ground, including aspects such as small and large-scale distance, angles and elevations, processing data in accordance with the design drawings and approved shop drawings.

- The HSE Officer shall be responsible for continuous inspection of project sites to ensure a hazard-free environment. Verification of tools and equipment to ensure good quality, promoting safe practice on site, carrying out drills and exercise on managing emergency situations. Establishing and maintaining health and safety communication structures and continuous monitoring of all safety related documents, reports and issues to keep them updated.

5. EQUIPMENT/ TOOL

The following does not infer that all items will be brought to site or utilized. Only tools/equipment for completion of the works will be drawn as required:

1. Aluminum Ladder
2. Excavator
3. JCB
4. Bobcat
5. Water Tanker
6. Car Double Cabin

7. Pick-ups
8. Survey Equipment
9. Crane
10. Wheel Loader
11. Dump Truck
12. Generator
13. Compactor Machine/Roller
14. Dewatering Pumps
15. Power & Hand Tools
16. Welding Machine, Cutting Set and Compressor Etc.

NOTE: All plant/equipment shall undergo an induction check such as verification of third-party certification, licenses if applicable, operator license & third-party competency certificate, maintenance records, etc. prior to start use at site. An inspection tag must be affixed on each equipment indicating the date of inspection and due date of inspection.

6. MANPOWER

1. Site Engineer (1)
2. QA/QC Engineer (1)
3. HSE Officer (1)
4. Foreman (1)
5. Charge Hand
6. Surveyor
7. First Aider
8. Drivers
9. Operators
10. Banks man
11. Flag man
12. Labors
13. Watchman

7. APPROVALS

1. Obtain all necessary NOC's and approvals prior to the start of the works.
2. Carry out the survey to obtain the OGL including preparation and submission of records.
3. Obtain approval of necessary Design drawings and details.

8. SETTING-OUT

1. Ensure all NOC's from authorities available at site.

2. A permanent benchmarks/ primary control stations provided will be used as reference for the demarcation of the area as per drawing attached in Appendix - 2.

3. Upon approval of the demarcation, all the works will then be set- out (or) positioned as accurately as possible from the approved control stations by the Engineer for the structure.
4. Setting out tolerances shall be in accordance with the contract specifications and construction drawings.

9. IDENTIFYING EXISTING SERVICES

1. All existing services crossings and adjacent services shall be identified by the competent personal using the calibrated CAT (Cable Avoidance Tools). This will help to take necessary precautions to protect the existing other services all as per method statement for trial trenches. Any exiting service will be clearly marked with size & type of service.

2. Jointly record original ground levels and photographs. The OGL drawings attached in Appendix-4 for quick reference and pre-survey videos & photographs submitted separately.

10. GENERAL SITE HSE ARRANGEMENTS

1. All works shall comply with the AJD Approved HSE Plan and SPSA HSE Standards.

2. Prior to commencement of any work, all personnel involved shall go through a detailed project HSE Induction.

3. Suitable and Sufficient PPE shall be provided and used by all personnel.

4. Daily pre-tasking briefing/ Toolbox talks shall be delivered by the Site Engineers/ Foreman as per HSE team advice. Approved MSRA to be communicated to the workforce involved.

5. Safe access and egress shall be provided for all work areas.

6. Hand tools to be checked prior starting the activity.

7. Appropriate safety signboards shall be placed at prominent locations within the work area.

8. Dust control by spraying of water where required will be carried out. Site access leading to the main road will be regularly cleaned.

9. Suitable and sufficient lighting arrangement shall be made if any work at night is planned.

10. Emergency contact details shall be displayed at strategic locations near workplaces.

11. Clean drinking water shall be provided to all personnel.

12. Localized shades/rest areas shall be available at proximity to workplaces.

13. Portable fans/air movers shall be deployed to increase air flow, particularly in locations where tasks generate radiant heat or low air circulation is expected.

14. All Plant & Equipment must undergo Inspection check by AJD before any operation. This inspection shall include verification checks (Third party certifications, licenses, operator competency certificates/licenses, Equipment maintenance records, internal inspection checks, arrangements for daily operator checks). After Inspection tags shall be fixed with last date and next date of inspection.

15. Requirement of flagman shall be assessed based on the activity and associated risks.

16. Risk Assessment is attached in Appendix -2.

11. PROCEDURE FOR EXCAVATION WORKS

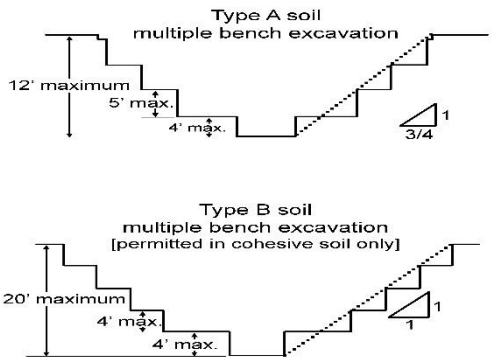
1. Ground dewatering will be carried out prior to the commencement of excavation (if require).

2. Demarcate the excavation setting out plan with reference co-ordinates and levels. Please note that the survey bench marks are away from the excavation in order to prevent the damage to markers and to maintain accuracy.

3. Mobilize the machinery for excavation.

4. Start the excavation from one end and proceed to another end in layers such as one meter depth layers.

5. Excavation will be started with open cut method in strips of layers 1m depth x 1m width up to the formation level of the structure.



6. The depth of excavation shall be periodically checked by a surveyor to avoid over-excavation as per approved drawing. The bank of the excavated area shall be sloped 30 degrees (if require) and shall be maintained to avoid a collapse of the bank into the excavated area. The sloping for the excavation will be defined based on geo-technical report.

7. For all excavation activities, adequate edge protection, signboards, advance warning signs would be used.

8. If the excavation is deep, it is better to provide long arm excavators to reach the required level.

9. All excavated material shall be kept a minimum of 2.0 meter from the edge of excavation or shall be stockpiled to the area designated by the Engineer.

10. Appoint Flag man if the excavation is done by a mini excavator followed by soil disposal by another excavator.

11. The excavated material shall be carried away and stockpiled in an appropriate manner for reuse. The material which is not suitable for reuse shall be carried away and disposed to approve dump yard.

12. Provision for drainage is to be made with sufficient pumps and collecting pits in case of rain.

13. Sufficient flood lights have to be provided at regular intervals.

14. Complete the excavation as per the levels mentioned in the drawings.

15. For foundation, as soon as the excavation reaches the required depth/elevation as per drawing, the surface shall be levelled and shall be compacted to 95 % of maximum dry density or MDD.

16. Before the compaction starts, it shall make sure that the excavated level is free from standing water or excessive moisture content.

17. Inspection would be conducted during compaction for checking and approval of the Engineer.

18. The compaction test report shall be submitted to the Engineer for approval prior to proceeding to succeeding work.

19. Excavation Works on Hard Strata shall be done as follows:

- Excavation will be done using a combination of excavators and hydraulic rock-breaking hammers.
- The amount of equipment within the combination will be deployed on the project site and shall work simultaneously. All excavation equipment will be fitted with sound suppression devices such as mufflers or as recommended by manufacturers.
- All personnel, including operators/riggers, shall wear adequate ear protection and dust mask in addition to the required PPEs on site. In order to keep dust emissions to the minimum level, frequent water spraying will be done in the working area with the water trucks assigned for each location.
- All extracted materials from the excavation site shall be properly hauled by loading onto dump trucks/tipper trailers using wheel loaders or bucket excavators and shall be disposed of only in the approved disposal area.
- Before reaching the formation level, the final 0.5m of rock layer shall be excavated using light jackhammers to ensure the integrity of the founding stratum after the excavation
- The final excavation level shall be levelled together with the side slope, shall be trimmed, and shall be free from any loose/soft materials. The area will be clean and free from debris, deleterious materials, and any unsuitable soil/surface as defined in project specifications.
- Access ramps and routes shall be maintained periodically for easy and convenient working conditions. Access ramps shall be properly sloped and graded, and embankment shall be properly shored/supported. Both sides of access ramps shall be installed with a concrete barrier for fall protection.

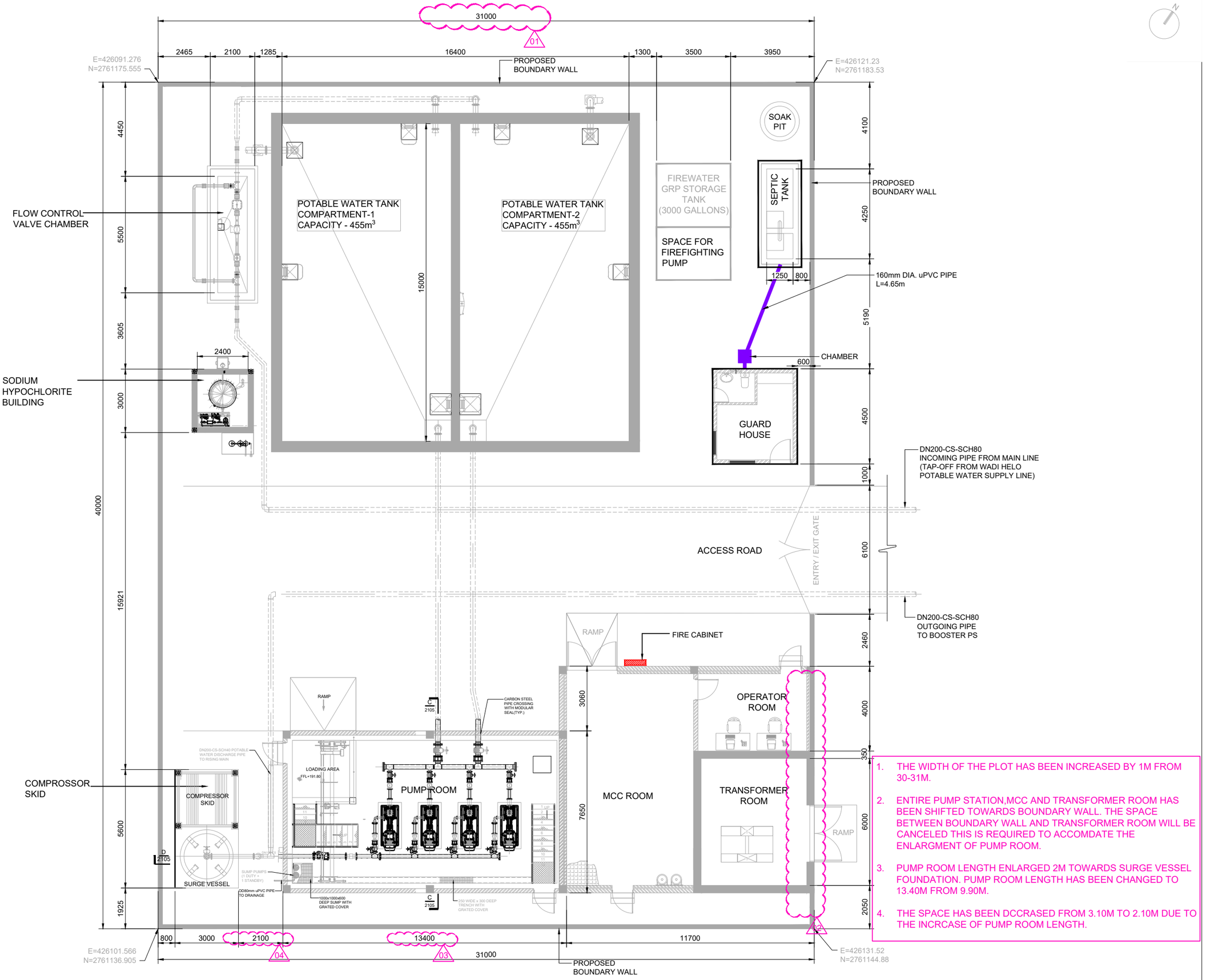
12. REFERENCES

1. All Applicable UAE federal legal requirements.
2. Sharjah Prevention & Safety Authority (SPSA)
3. Contract Specifications (Volume 2A Part 1 - General Civil Specifications Section 3).
4. Project HSE Plan Requirements (JP108-TRN-07).

13. APPENDICES

1. Appendix-1 “Site Layout”
2. Appendix-2 “Risk Assessment”
3. Appendix-3 “ITP”

APPENDIX - 1



1. THE WIDTH OF THE PLOT HAS BEEN INCREASED BY 1M FROM 30-31M.
2. ENTIRE PUMP STATION,MCC AND TRANSFORMER ROOM HAS BEEN SHIFTED TOWARDS BOUNDARY WALL. THE SPACE BETWEEN BOUNDARY WALL AND TRANSFORMER ROOM WILL BE CANCELED THIS IS REQUIRED TO ACCOMDATE THE ENLARGMENT OF PUMP ROOM.
3. PUMP ROOM LENGTH ENLARGED 2M TOWARDS SURGE VESSEL FOUNDATION. PUMP ROOM LENGTH HAS BEEN CHANGED TO 13.40M FROM 9.90M.
4. THE SPACE HAS BEEN DCCRASED FROM 3.10M TO 2.10M DUE TO THE INCRCASE OF PUMP ROOM LENGTH.

NOTES:

1. GRID DATA
   SPHEROID - WGS 84
   PROJECTION - UTM, ZONE 40
   HORIZONTAL DATUM - WGS 84 BP5 (ITRF 93)
   VERTICAL DATUM - HALCROW SHARJAH.
2. ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE.
3. THE PUMPING STATION PLOT SHALL BE SLOPPED 0.5% TOWARDS THE GATE FOR THE SITE DRAINAGE.
4. CONSTRUCTION DETAILS FOR CARRIAGEWAY
   80mm THICK PAVING BLOCKS
   30mm THICK SAND BED
   150MM THICK GRAVEL ROAD BASE
   150MM THICK SUB-BASE.
5. CONSTRUCTION DETAILS FOR BLOCK PAVING
   60mm THICK BLOCK PAVING
   30mm THICK SAND BED
   150mm THICK SUB-BASE.

LEGEND

- 80mm THICK BLOCK PAVING (PROPOSED ACCESS ROAD)
- 60mm THICK BLOCK PAVING
- DRAINAGE PIPE

0 50 100 150 200 250 600

SCALE 1:6000 @ A1 ; 1:12000 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	29.10.25	ISSUED FOR APPROVAL

CLIENT

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Sharjah Electricity, Water and Gas Authority

CONSULTANT

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CONTRACTOR

AL JAZEERAH DRILLING
P. O. Box: 2845 Sharjah UAE

PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

MAIN PUMPING STATION
SITE LAYOUT

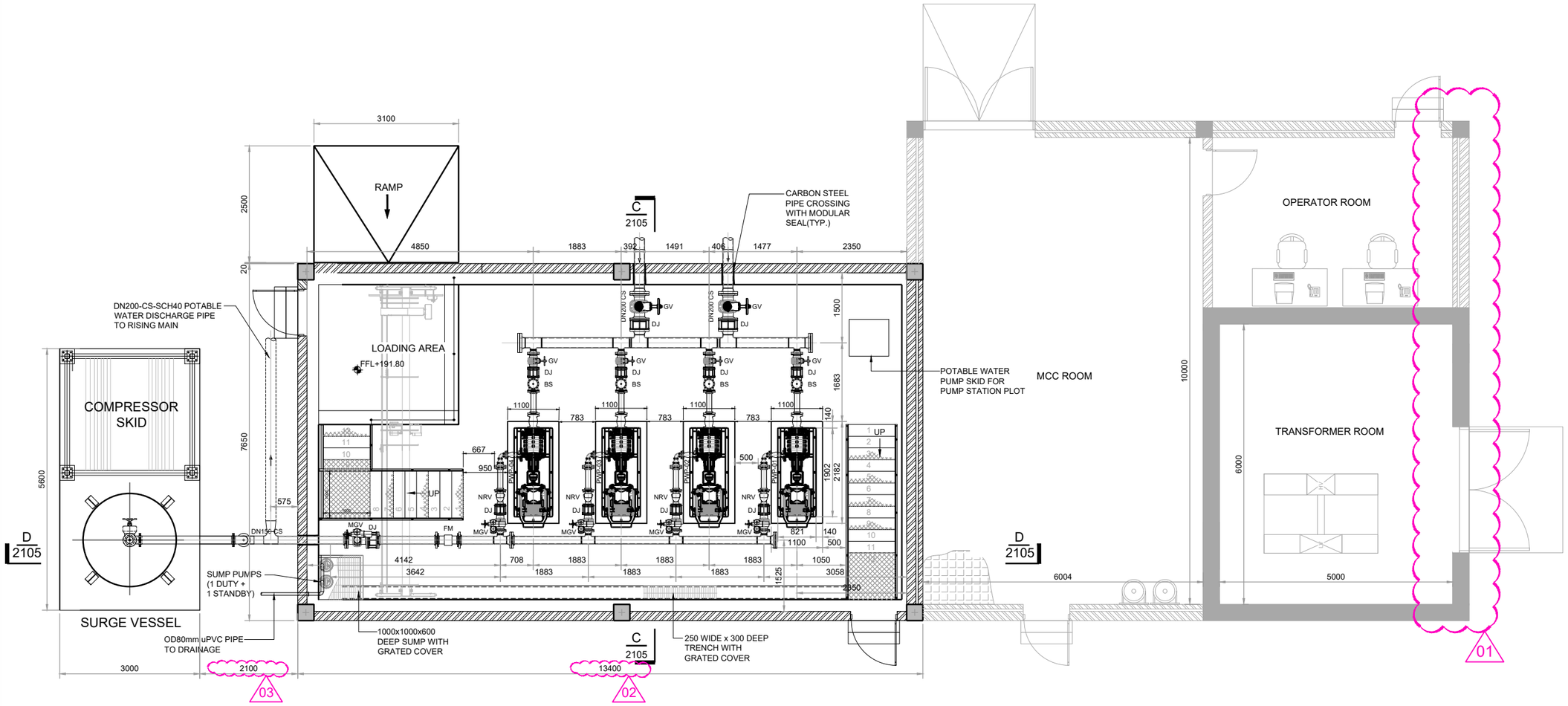
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Checked by	AJ	Date:	29/10/2025
Authorised by	RE	Date:	29/10/2025

REF.DRAWING No. AE339WTDJA-C-2010 — Revision A

DRAWING No. JP108-SD-MPS-00 — Revision 0

Drawing Scale: 1:50 — Plot scale: 1:1

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SECTIONAL PLAN AT GROUND LEVEL

1. ENTIRE PUMP STATION,MCC AND TRANSFORMER ROOM HAS BEEN SHIFTED TOWARDS BOUNDARY WALL. THE SPACE BETWEEN BOUNDARY WALL AND TRANSFORMER ROOM WILL BE CANCELED THIS IS REQUIRED TO ACCOMDATE THE ENLARGMENT OF PUMP ROOM.
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CONTRACTOR

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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

MAIN PUMP STATION
SECTIONAL PLAN AT GROUND LEVEL

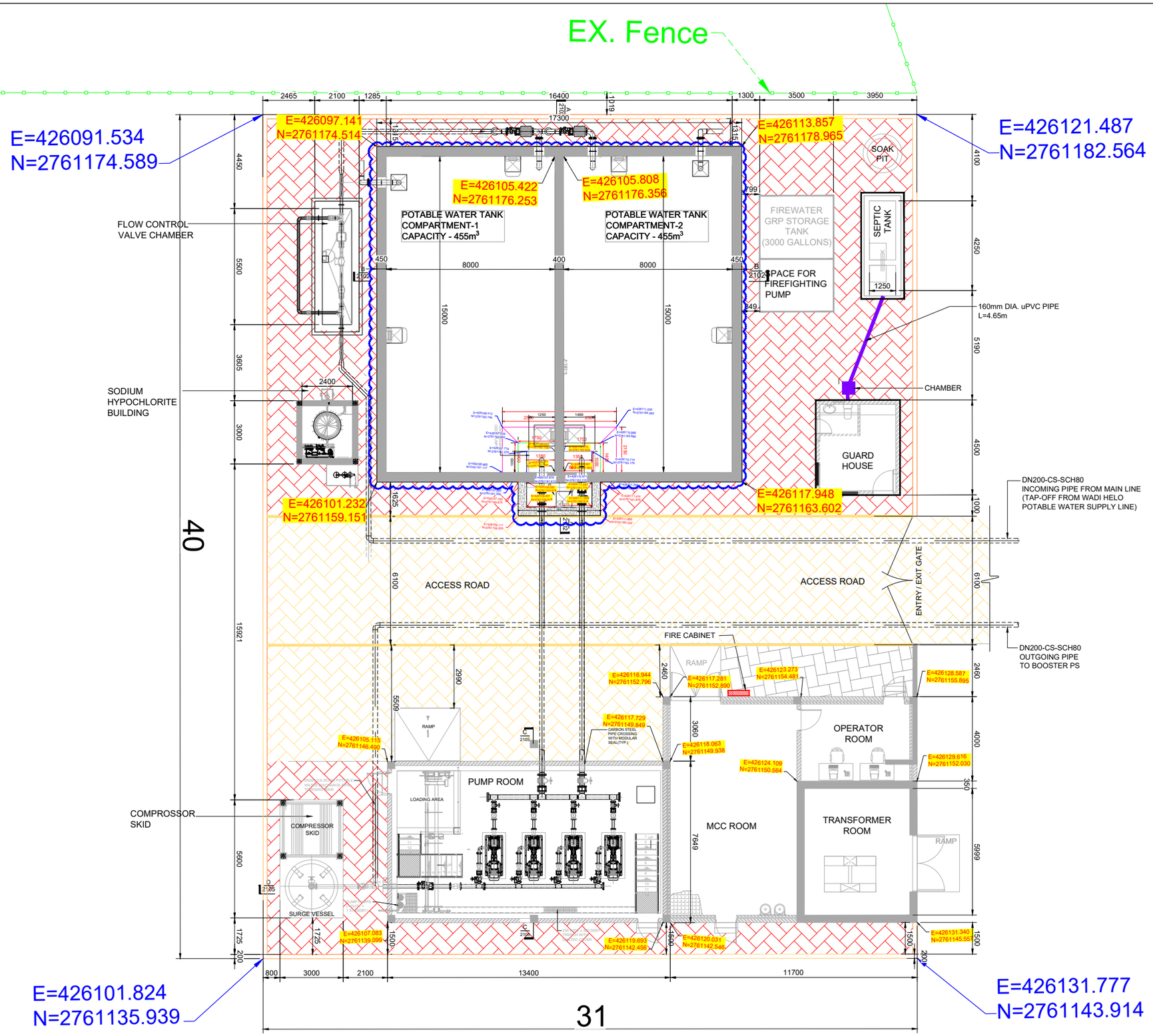
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Checked by	AJ	Date:	29/10/2025
Authorised by	RE	Date:	29/10/2025

REF.DRAWING No. AE339WTDJA-M-2103 Revision A

DRAWING No. JP108-SD-MPS-01 Revision 0

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



NOTES:

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60mm THICK BLOCK PAVING

DRAINAGE PIPE

0 50 100 150 200 250 600

SCALE 1:6000 @ A1 ; 1:12000 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

هيئة كهرباء ومياه وغاز الشارقة
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CONSTRUCTION OF MAIN AND BOOSTER PUMPING POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

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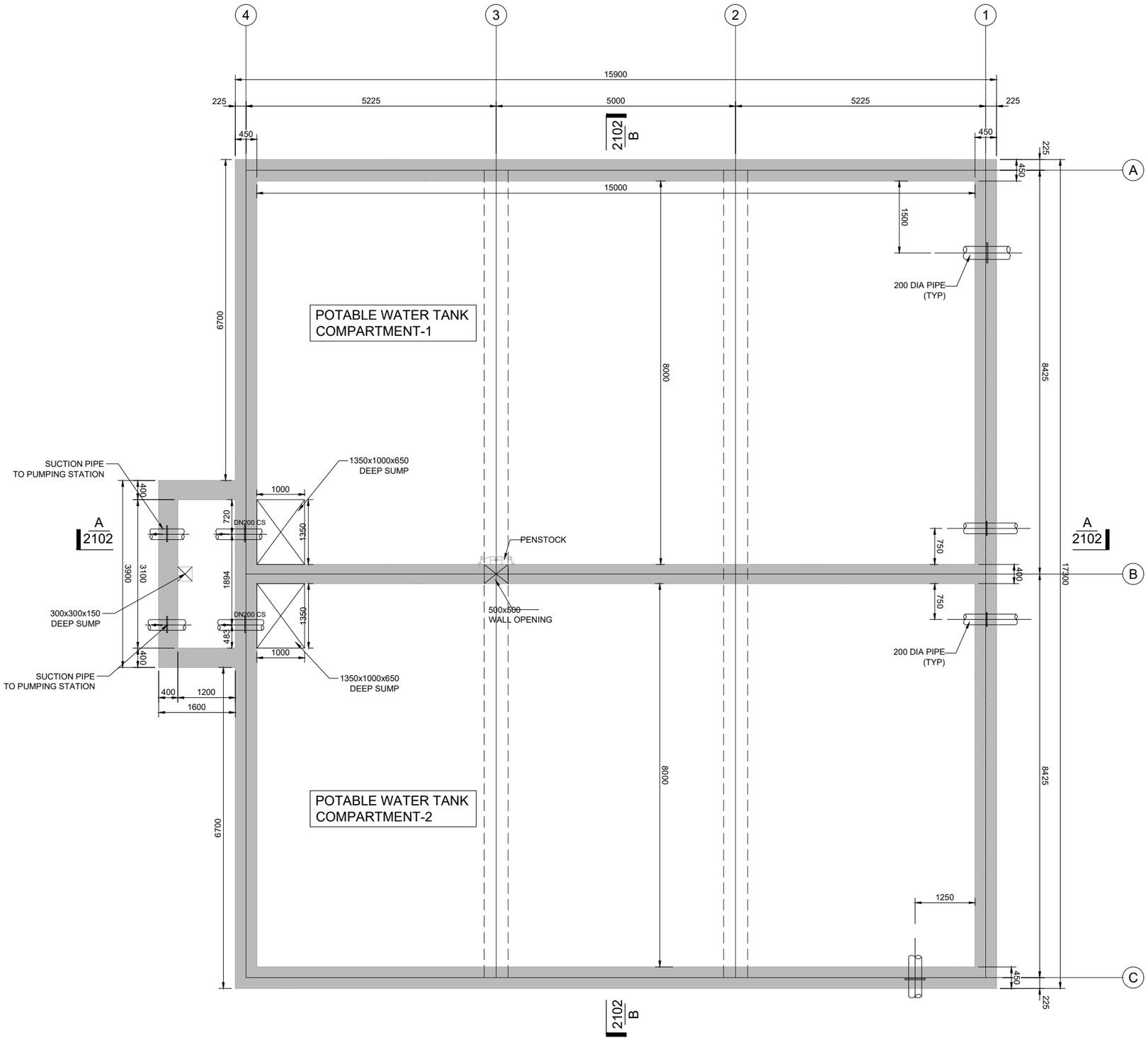
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Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

DRAWING No. AE339WTDJA-C-2010 Revision A

DRAWING No. JP108-SD-MPS-01 Revision 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



WALL PLAN
SCALE 1:50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS
3. REINFORCEMENT SHALL BE DEFORMED TYPE-2 BARS WITH YIELD STRENGTH OF Fy=500 N/mm² IN ACCORDANCE WITH BS 4449 AND BENT IN ACCORDANCE WITH BS 8666.
4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS.
7. SOIL BEARING CAPACITY IS ASSUMED AS 250 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
8. GROUND WATER ASSUMED 1 METER BELOW FINISHED GROUND LEVEL.
9. CONCRETE GRADE TO BE AS FOLLOWS:
   STRUCTURAL CONCRETE SUPERSTRUCTURE AND SUBSTRUCTURE : 40/20/R
   BLINDING : 30/20/S
10. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

LEGEND

TOS	: TOP OF SLAB
FGL	: FINISHED GROUND LEVEL
FFL	: FINISHED FLOOR LEVEL
SSL	: STRUCTURE SLAB LEVEL
IJ	: ISOLATION JOINT
RC	: REINFORCED CONCRETE
SWL	: STRUCTURE WALL LEVEL
BL	: BLINDING LEVEL
FL	: FORMATION LEVEL
SFL	: STRUCTURE FOUNDATION LEVEL
TWL	: TOP WATER LEVEL

0 0.5 1 1.5 2 2.5 5
SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

CONSULTANT

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www.jacobs.com

CONTRACTOR

AL JAZEERAH DRILLING
P. O. Box: 2845 Sharjah UAE

PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

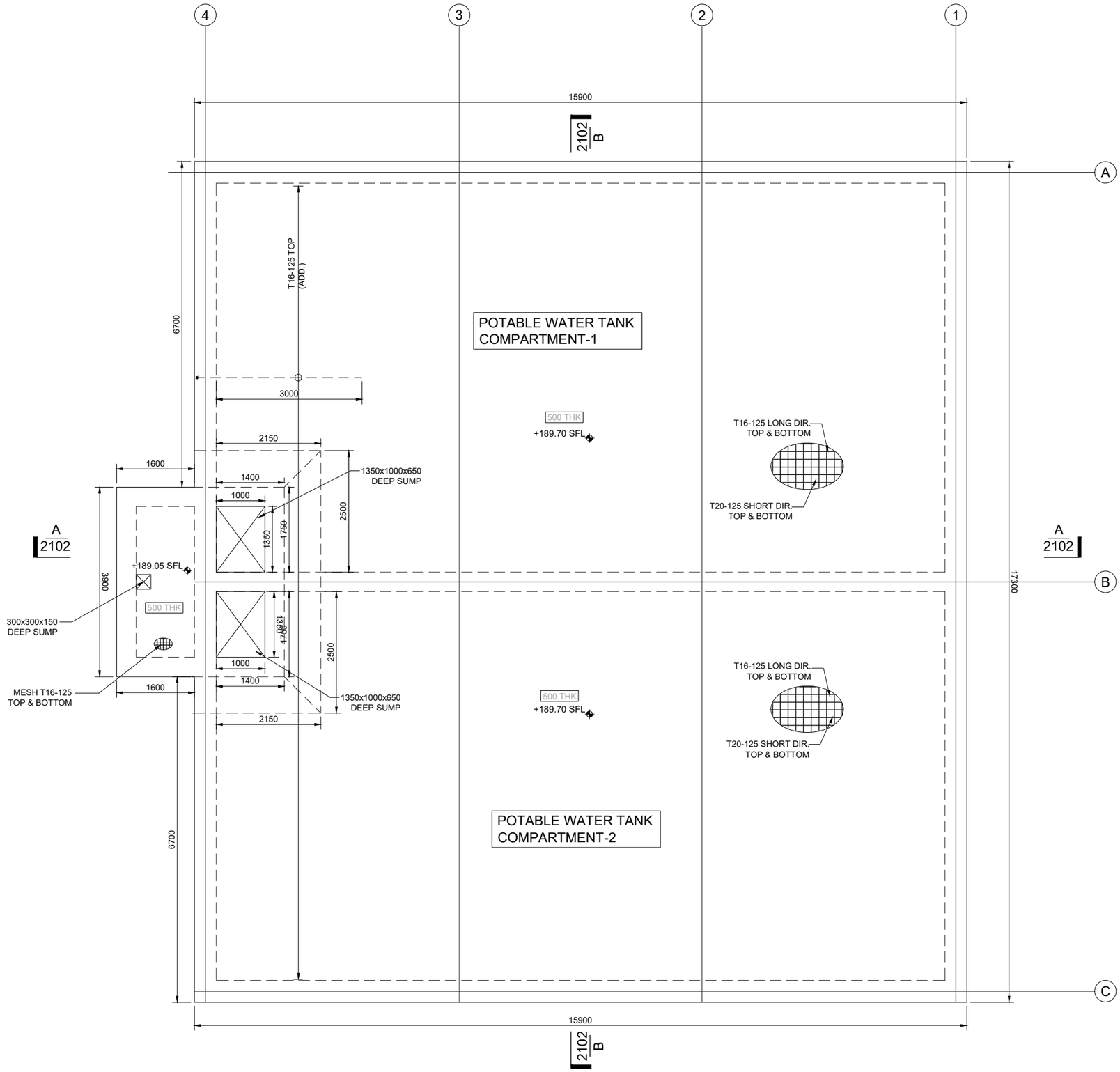
POTABLE WATER PIPELINE MAIN PUMPING STATION STORAGE TANK GENERAL ARRANGEMENT (SHEET 1 OF 3)

Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

REF.DRAWING No.	Revision
AE339WTDJA-S-2100	A
DRAWING No.	Revision
JP108-SD-MPS-02	1

Drawing Scale: 1:50 Plot scale: 1:2.0829

CAD filename:



FOUNDATION PLAN

SCALE 1:50

PLOT TIME:

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS
3. REINFORCEMENT SHALL BE DEFORMED TYPE-2 BARS WITH YIELD STRENGTH OF Fy=500 N/mm² IN ACCORDANCE WITH BS 4449 AND BENT IN ACCORDANCE WITH BS 8666.
4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS.
7. SOIL BEARING CAPACITY IS ASSUMED AS 250 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
8. GROUND WATER ASSUMED 1 METER BELOW FINISHED GROUND LEVEL.
9. CONCRETE GRADE TO BE AS FOLLOWS:
   STRUCTURAL CONCRETE SUPERSTRUCTURE AND SUBSTRUCTURE : 40/20/R
   BLINDING : 30/20/S
10. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

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IJ	: ISOLATION JOINT
RC	: REINFORCED CONCRETE
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BL	: BLINDING LEVEL
FL	: FORMATION LEVEL
SFL	: STRUCTURE FOUNDATION LEVEL
TWL	: TOP WATER LEVEL

0 0.5 1 1.5 2 2.5 5

SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

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Sharjah Electricity, Water and Gas Authority

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CONTRACTOR

AL JAZEERAH DRILLING
P. O. Box: 2845 Sharjah UAE

PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

POTABLE WATER PIPELINE MAIN PUMPING STATION STORAGE TANK GENERAL ARRANGEMENT (SHEET 1 OF 3)

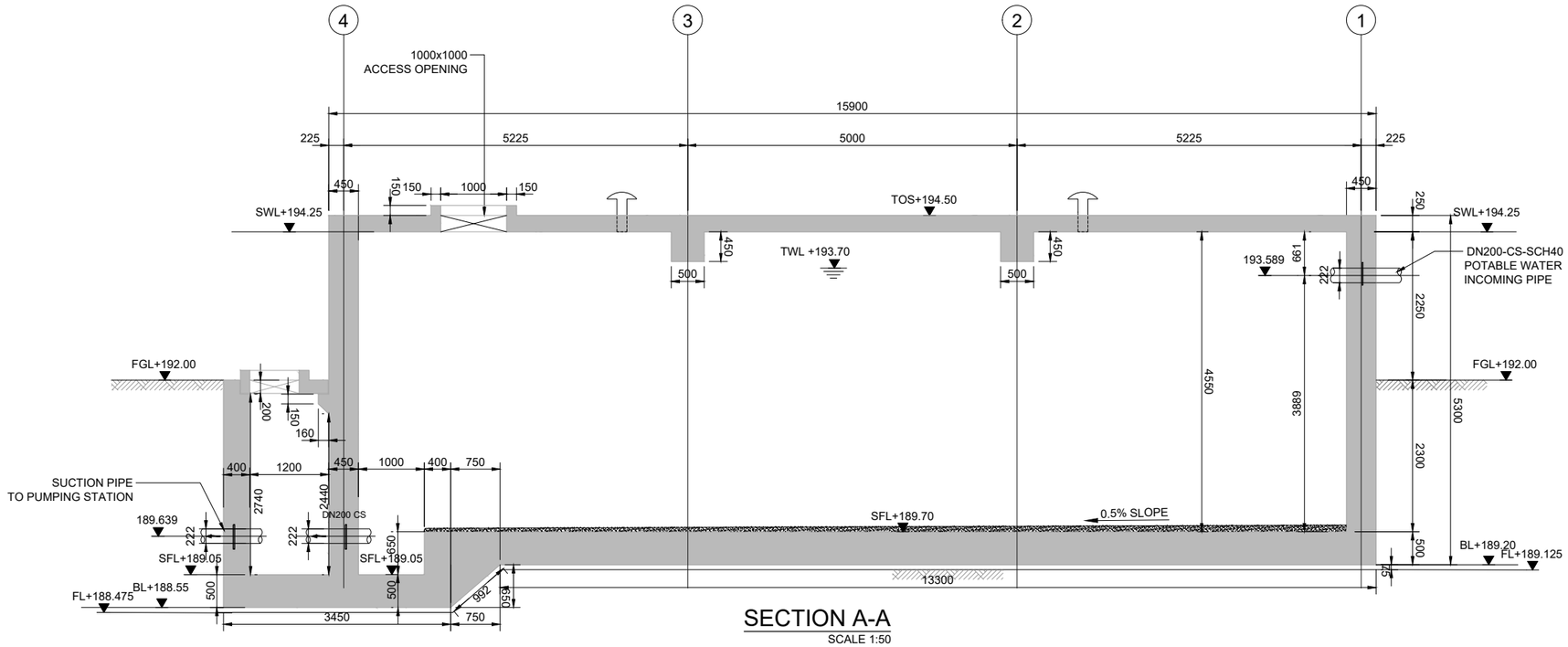
Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

REF.DRAWING No. AE339WTDJA-S-2100 — Revision A

DRAWING No. JP108-SD-MPS-03 — Revision 1

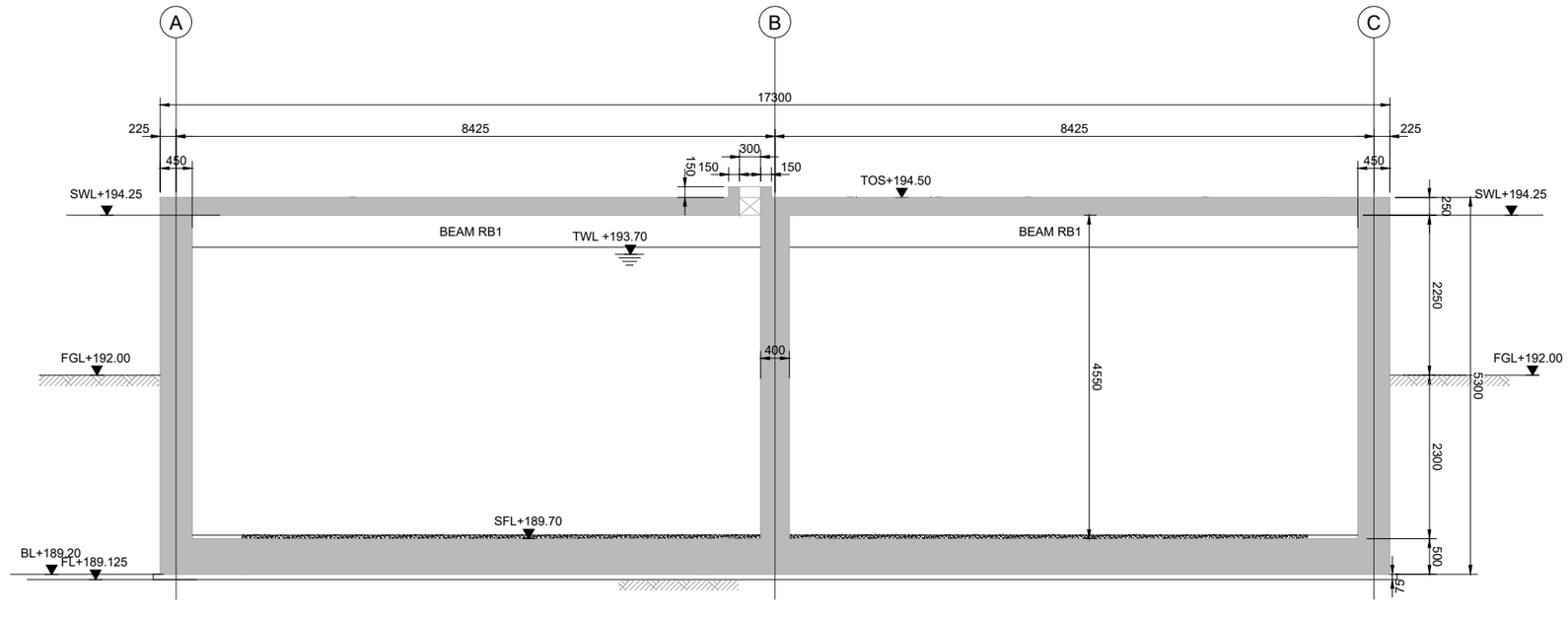
Drawing Scale: 1:50 — Plot scale: 1:2.0829

CAD filename:



SECTION A-A

SCALE 1:50



SECTION B-B

SCALE 1:50

NOTES

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4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS.
7. SOIL BEARING CAPACITY IS ASSUMED AS 250 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
8. GROUND WATER ASSUMED 1 METER BELOW FINISHED GROUND LEVEL.
9. CONCRETE GRADE TO BE AS FOLLOWS:
   STRUCTURAL CONCRETE SUPERSTRUCTURE AND SUBSTRUCTURE : 40/20/R
   BLINDING : 30/20/S
10. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

LEGEND

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FFL	: FINISHED FLOOR LEVEL
SSL	: STRUCTURE SLAB LEVEL
IJ	: ISOLATION JOINT
RC	: REINFORCED CONCRETE
SWL	: STRUCTURE WALL LEVEL
BL	: BLINDING LEVEL
FL	: FORMATION LEVEL
SFL	: STRUCTURE FOUNDATION LEVEL
TWL	: TOP WATER LEVEL

0 0.5 1 1.5 2 2.5 5

SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

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CONTRACTOR

AL JAZEERAH DRILLING
P. O. Box: 2845 Sharjah UAE

PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

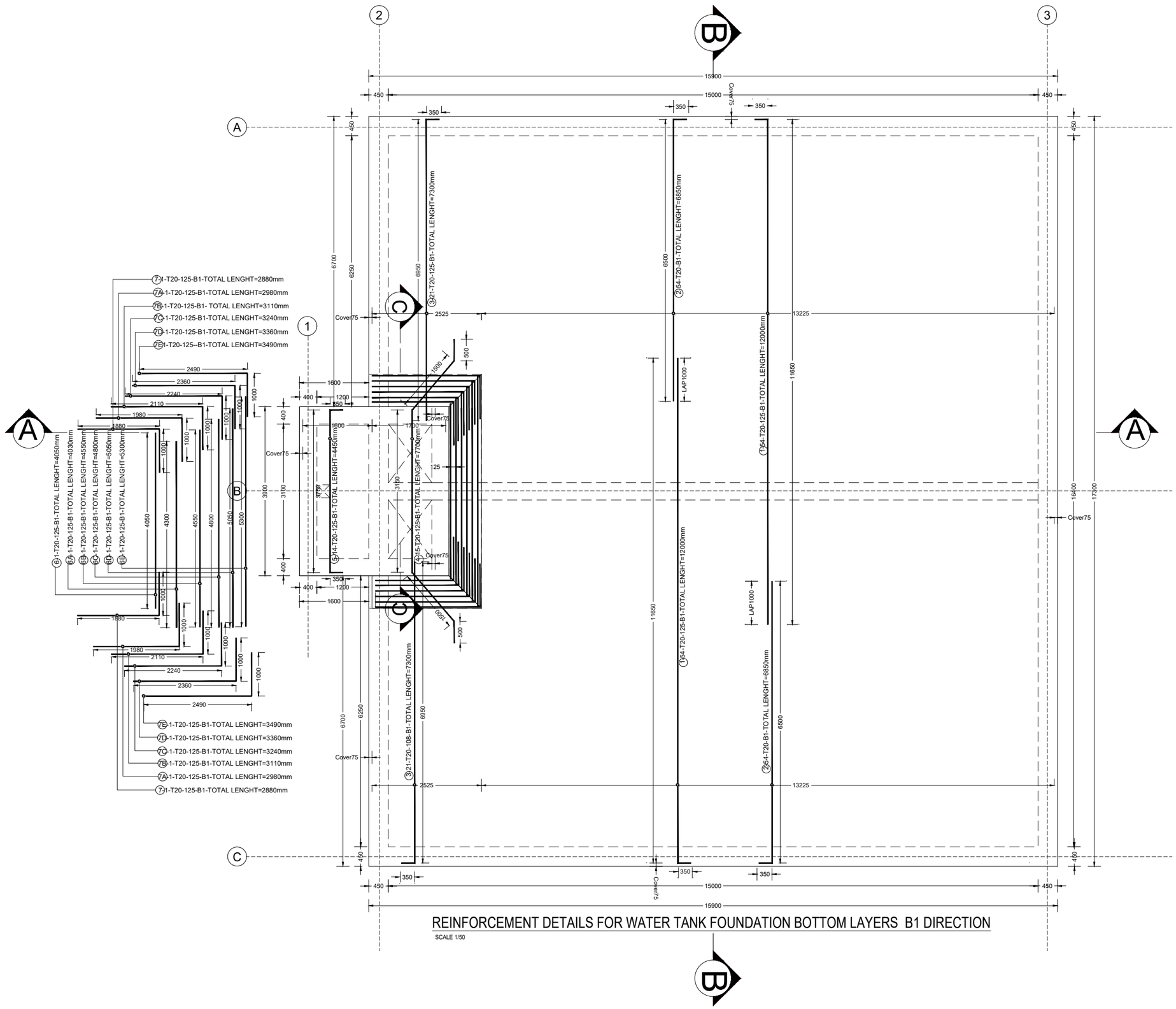
POTABLE WATER PIPELINE MAIN PUMPING STATION STORAGE TANK GENERAL ARRANGEMENT (SHEET 3 OF 3)

Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

REF.DRAWING No.	Revision
AE339WTDJA-S-2102	A
DRAWING No.	Revision
JP108-SD-MPS-04	1

Drawing Scale: 1:50 Plot scale: 1:2.0829

CAD filename:



REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION BOTTOM LAYERS B1 DIRECTION

SCALE 1/50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS .
3. REINFORCEMENT SHALL BE DEFORMED TYPE-2 BARS WITH YIELD STRENGTH OF Fy=500 N/mm² IN ACCORDANCE WITH BS 4449 AND BENT IN ACCORDANCE WITH BS 8666.
4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. SOIL BEARING CAPACITY IS ASSUMED AS 150 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
7. GROUND WATER WAS NOT ENCOUNTERED UP TO END OF BORE HOLES BELOW FROM EXISTING GROUND LEVEL.
8. CONCRETE GRADE TO BE AS FOLLOWS:
   STRUCTURAL CONCRETE SUPERSTRUCTURE AND
   SUBSTRUCTURE : 40/20/R
   BLINDING : 30/20/S
9. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

LEGEND

FGL : FINISHED GROUND LEVEL
FFL : FINISHED FLOOR LEVEL
SSL : STRUCTURE SLAB LEVEL
IJ : ISOLATION JOINT
RC : REINFORCED CONCRETE
ALT : ALTERNATELY STAGGERED
---------- - TOP BARS
——— - BOTTOM & OTHER BARS

10. BAR MARKS TO BE READ AS;
    (1)-T20-125
    (1) - BAR MARKS
    5 - NOS OF BARS
    T - TYPE OF STEEL
    20 - DIA OF STEEL
    125 - SPACING OF STEEL

0 0.5 1 1.5 2 2.5 5

SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

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CONTRACTOR

AL JAZEERAH DRILLING
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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION BOTTOM LAYERS B1 DIRECTION

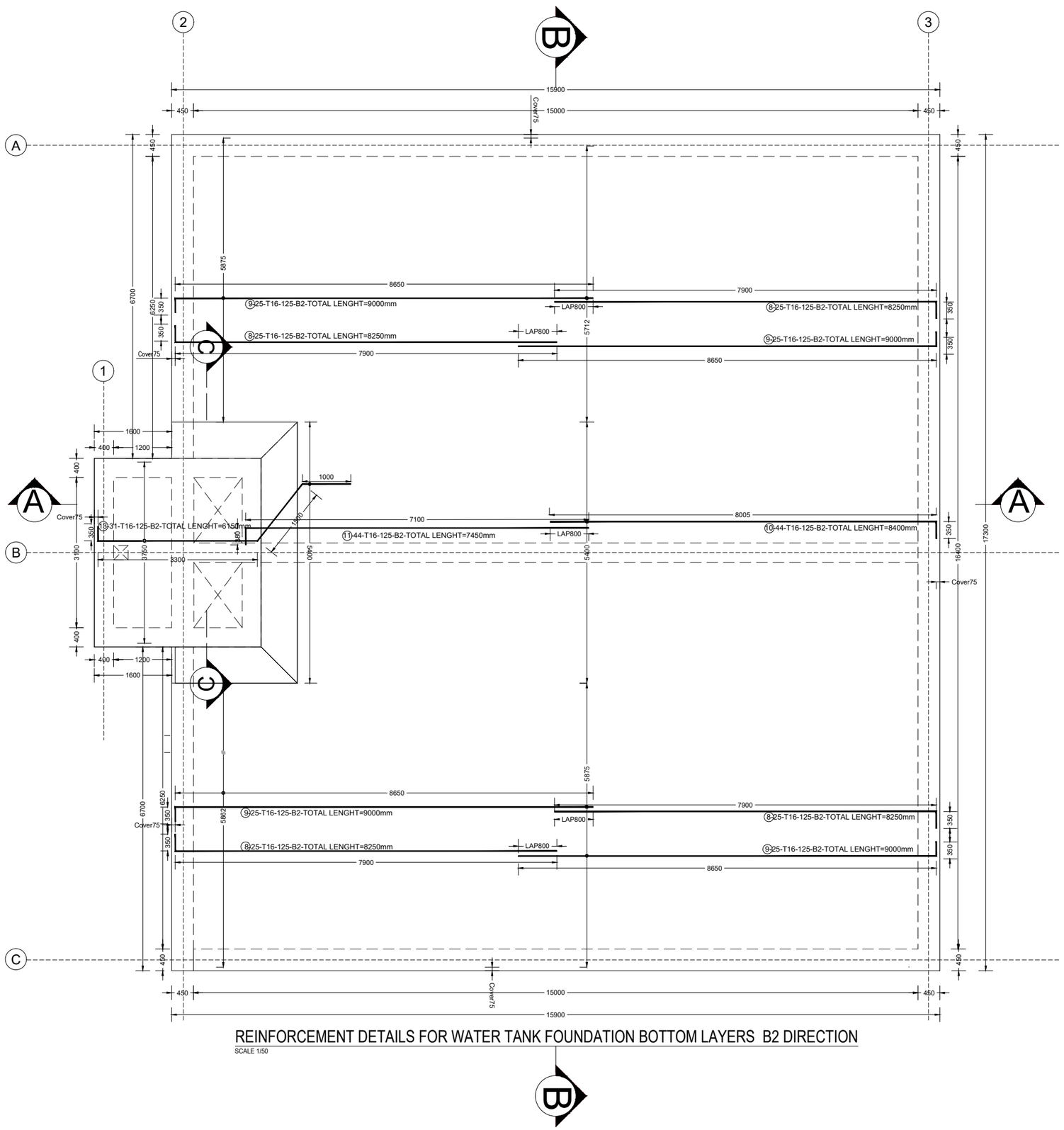
Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

DRAWING No. JP108-SD-MPS-05

Revision A 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION BOTTOM LAYERS B2 DIRECTION

SCALE 1/50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS .
3. REINFORCEMENT SHALL BE DEFORMED TYPE-2 BARS WITH YIELD STRENGTH OF Fy=500 N/mm² IN ACCORDANCE WITH BS 4449 AND BENT IN ACCORDANCE WITH BS 8666.
4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. SOIL BEARING CAPACITY IS ASSUMED AS 150 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
7. GROUND WATER WAS NOT ENCOUNTERED UP TO END OF BORE HOLES BELOW FROM EXISTING GROUND LEVEL.
8. CONCRETE GRADE TO BE AS FOLLOWS:

STRUCTURAL CONCRETE	SUPERSTRUCTURE AND
SUBSTRUCTURE	: 40/20/R
BLINDING	: 30/20/S

9. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

LEGEND

FGL : FINISHED GROUND LEVEL
FFL : FINISHED FLOOR LEVEL
SSL : STRUCTURE SLAB LEVEL
IJ : ISOLATION JOINT
RC : REINFORCED CONCRETE
ALT : ALTERNATELY STAGGERED
---------- - TOP BARS
——— - BOTTOM & OTHER BARS

10. BAR MARKS TO BE READ AS;
(1)5-T20-125
(1) - BAR MARKS
5 - NOS OF BARS
T - TYPE OF STEEL
20 - DIA OF STEEL
125 - SPACING OF STEEL

0 0.5 1 1.5 2 2.5 5
SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

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CONTRACTOR

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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION BOTTOM LAYERS B2 DIRECTION

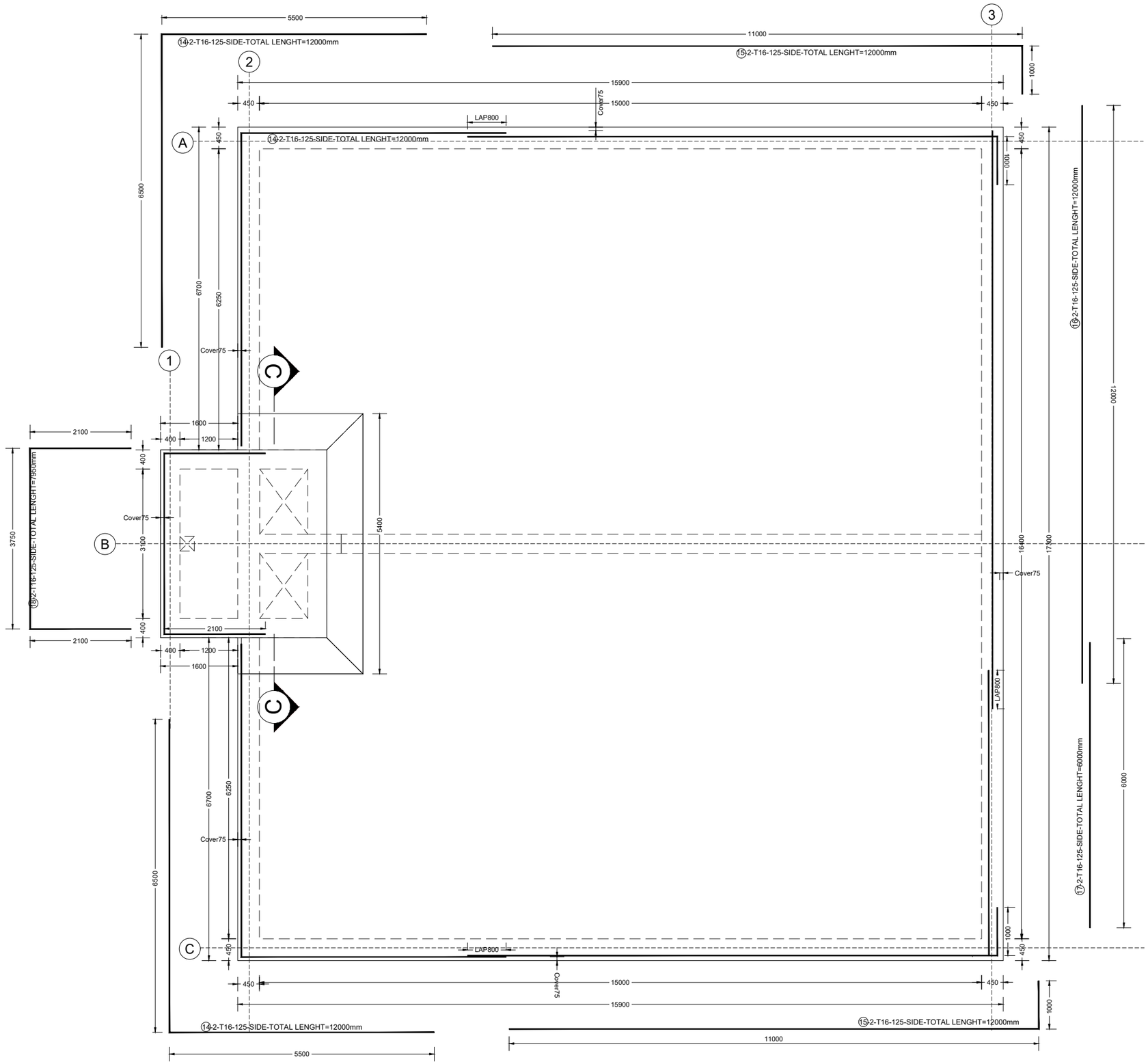
Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

DRAWING No. JP108-SD-MPS-06

Revision A 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION SIDE LAYERS

SCALE 1/50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
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3. REINFORCEMENT SHALL BE DEFORMED TYPE-2 BARS WITH YIELD STRENGTH OF Fy=500 N/mm² IN ACCORDANCE WITH BS 4449 AND BENT IN ACCORDANCE WITH BS 8666.
4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. SOIL BEARING CAPACITY IS ASSUMED AS 150 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
7. GROUND WATER WAS NOT ENCOUNTERED UP TO END OF BORE HOLES BELOW FROM EXISTING GROUND LEVEL.
8. CONCRETE GRADE TO BE AS FOLLOWS:

STRUCTURAL CONCRETE		SUPERSTRUCTURE AND
SUBSTRUCTURE	: 40/20/R	
BLINDING	: 30/20/S	

9. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

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FFL : FINISHED FLOOR LEVEL
SSL : STRUCTURE SLAB LEVEL
IJ : ISOLATION JOINT
RC : REINFORCED CONCRETE
ALT : ALTERNATELY STAGGERED
---------- - TOP BARS
———— - BOTTOM & OTHER BARS

10. BAR MARKS TO BE READ AS;
1-T20-125
1 - BAR MARKS
5 - NOS OF BARS
T - TYPE OF STEEL
20 - DIA OF STEEL
125 - SPACING OF STEEL

0 0.5 1 1.5 2 2.5 5

SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

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CONTRACTOR

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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION SIDE LAYERS

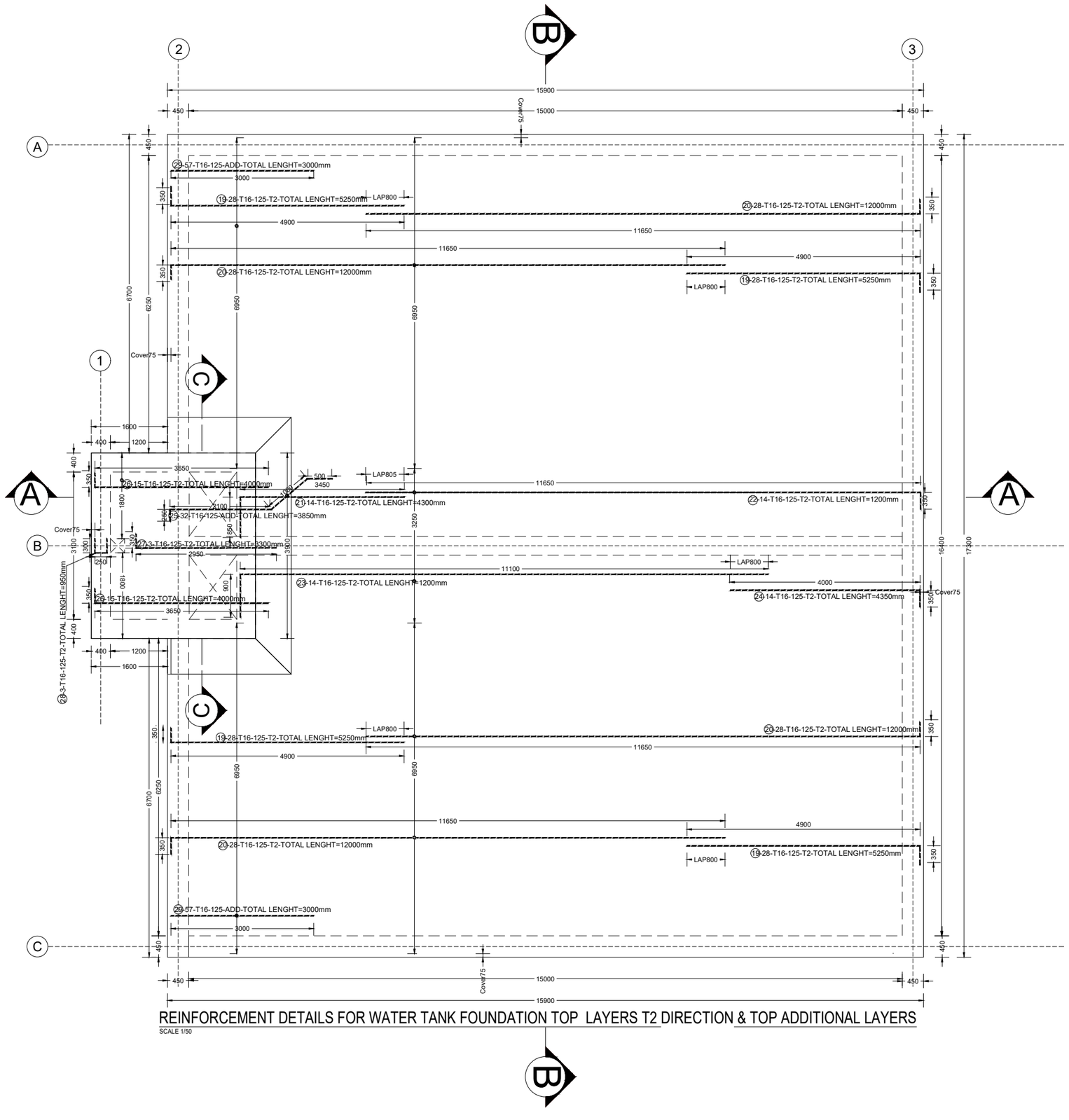
Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

DRAWING No. JP108-SD-MPS-07

Revision A 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION TOP LAYERS T2 DIRECTION & TOP ADDITIONAL LAYERS

SCALE 1/50

NOTES

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7. GROUND WATER WAS NOT ENCOUNTERED UP TO END OF BORE HOLES BELOW FROM EXISTING GROUND LEVEL.
8. CONCRETE GRADE TO BE AS FOLLOWS:

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SUBSTRUCTURE	: 40/20/R
BLINDING	: 30/20/S

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——— - BOTTOM & OTHER BARS

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    20 - DIA OF STEEL
    125 - SPACING OF STEEL

0 0.5 1 1.5 2 2.5 5

SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
0	FN	AJ	RE	05.12.25	ISSUED FOR APPROVAL

CLIENT

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

CONSULTANT

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CONTRACTOR

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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION TOP LAYERS T2 DIRECTION & TOP ADDITIONAL LAYERS

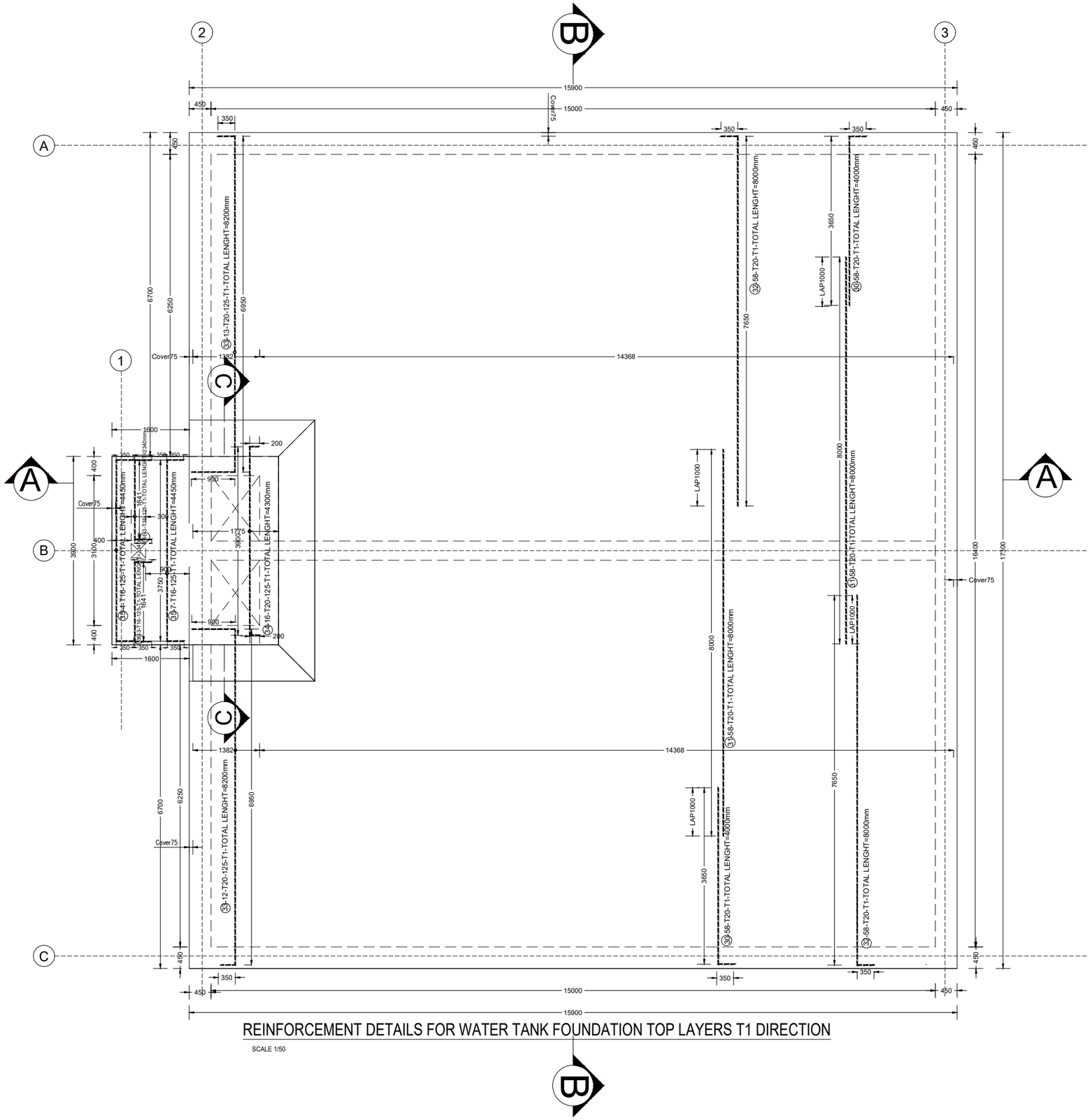
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DRAWING No. JP108-SD-MPS-08

Revision A 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION TOP LAYERS T1 DIRECTION

SCALE 1/50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS .
3. REINFORCEMENT SHALL BE DEFORMED TYPE-2 BARS WITH YIELD STRENGTH OF Fy=500 N/mm² IN ACCORDANCE WITH BS 4449 AND BENT IN ACCORDANCE WITH BS 8666.
4. LAP LENGTH SHALL BE 50 DIAMETER OF BAR.
5. MINIMUM CLEAR COVER TO REINFORCEMENT

BASE SLAB (BOTTOM)	: 75mm
BASE SLAB (TOP)	: 50mm
WALL (EARTH FACE)	: 75mm
WALL (INNER FACE)	: 75mm
BEAM (BELOW GROUND)	: 75mm
BEAM (ABOVE GROUND)	: 40mm
ROOF SLAB TOP	: 50mm
ROOF SLAB BOTTOM	: 50mm

6. SOIL BEARING CAPACITY IS ASSUMED AS 150 kN/m² AT FOUNDING LEVEL THIS SHOULD BE ACHIEVED ON SITE ACCORDING TO SOIL INVESTIGATION REPORT OR AS INSTRUCTED BY THE ENGINEER.
7. GROUND WATER WAS NOT ENCOUNTERED UP TO END OF BORE HOLES BELOW FROM EXISTING GROUND LEVEL.
8. CONCRETE GRADE TO BE AS FOLLOWS:
   STRUCTURAL CONCRETE SUPERSTRUCTURE AND
   SUBSTRUCTURE : 40/20/R
   BLINDING : 30/20/S
9. "R" MEANS CONCRETE CONTAINING SECONDARY CEMENTITIOUS MATERIALS (SCM) E.G. FLY ASH, GROUND GRANULATED BLAST FURNACE SLAG, SILICA FUME. "S" MEANS CONCRETE CONTAINING SULPHATE RESISTING PORTLAND CEMENT (SRPC).

LEGEND

FGL : FINISHED GROUND LEVEL
FFL : FINISHED FLOOR LEVEL
SSL : STRUCTURE SLAB LEVEL
IJ : ISOLATION JOINT
RC : REINFORCED CONCRETE
ALT : ALTERNATELY STAGGERED
---------- - TOP BARS
——— - BOTTOM & OTHER BARS

10. BAR MARKS TO BE READ AS;
    ①5-T20-125
    ① - BAR MARKS
    5 - NOS OF BARS
    T - TYPE OF STEEL
    20 - DIA OF STEEL
    125 - SPACING OF STEEL

0 0.5 1 1.5 2 2.5 5
SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

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CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS FOR WATER TANK FOUNDATION TOP LAYERS T1 DIRECTION

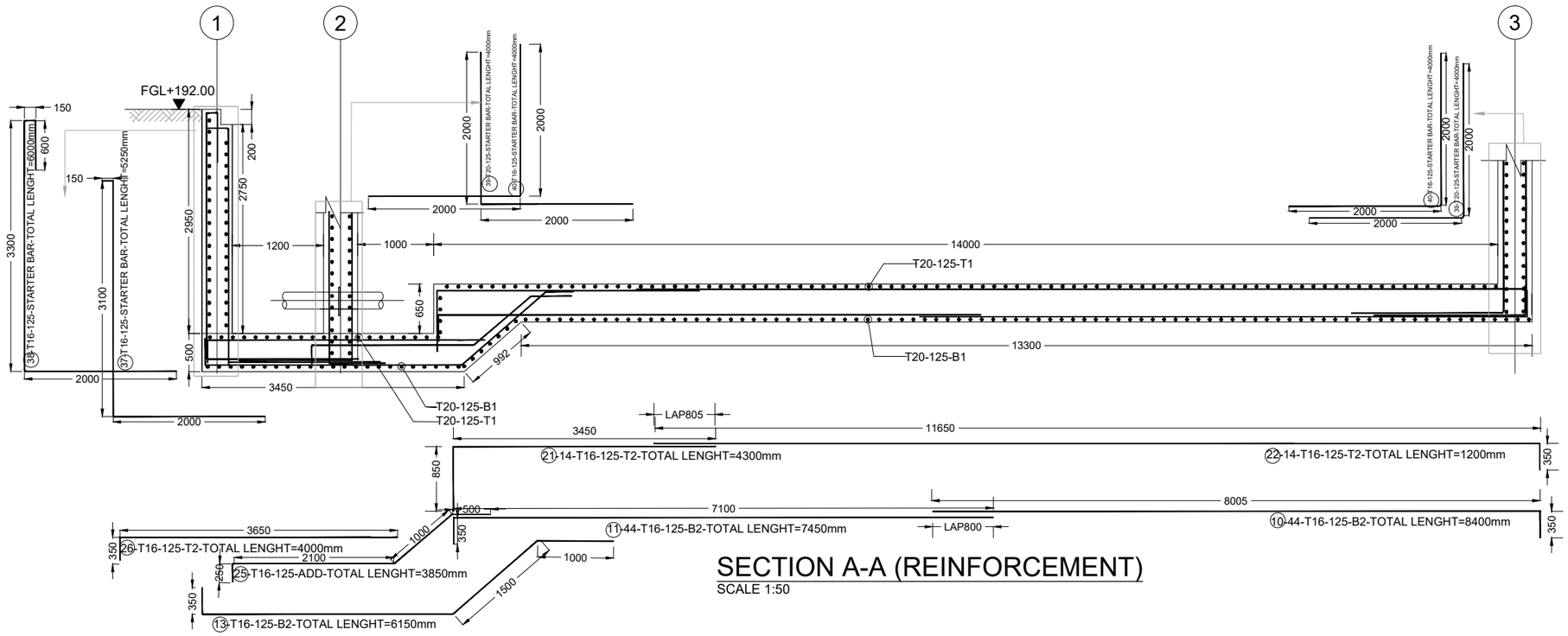
Drawn by	FN	Date:	05/12/2025
Checked by	AJ	Date:	05/12/2025
Authorised by	RE	Date:	05/12/2025

DRAWING No. JP108-SD-MPS-09

Revision A 1

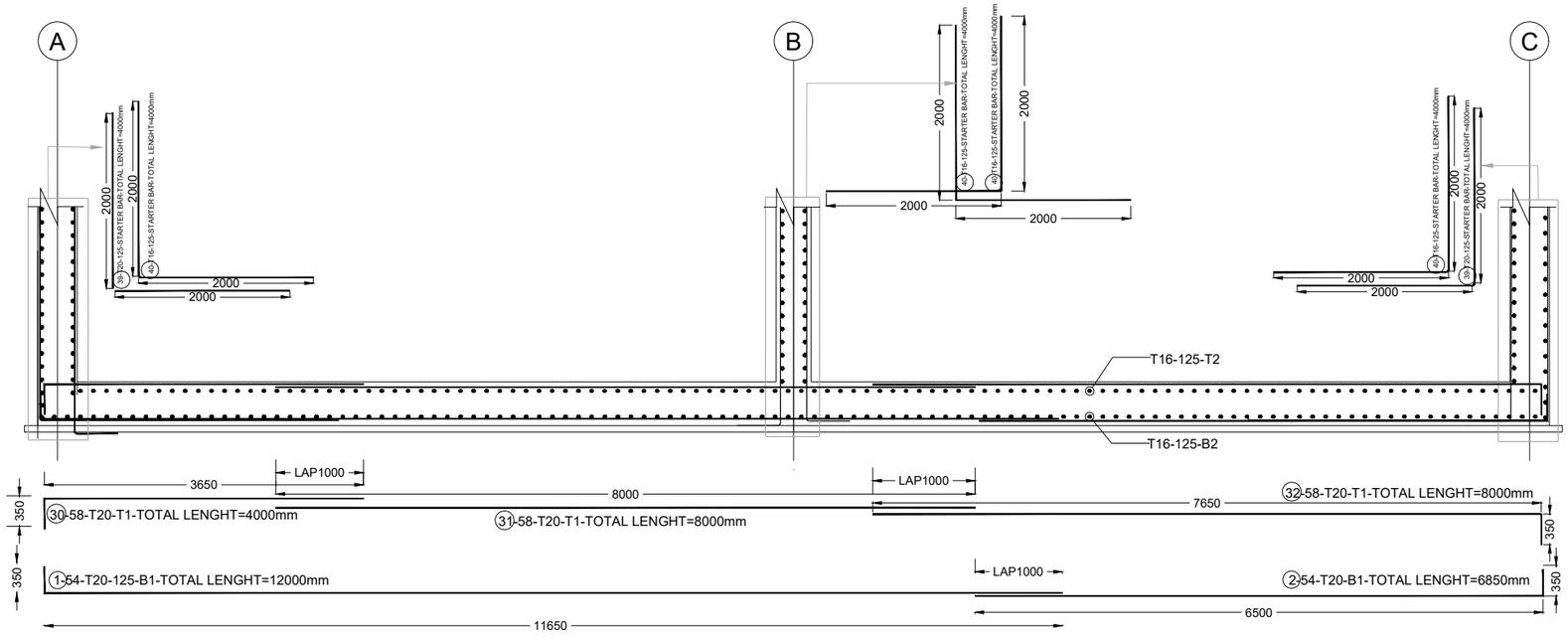
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CAD filename:



SECTION A-A (REINFORCEMENT)

SCALE 1:50



SECTION B-B (REINFORCEMENT)

SCALE 1:50

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BLINDING	: 30/20/S

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① - BAR MARKS
5 - NOS OF BARS
T - TYPE OF STEEL
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0 0.5 1 1.5 2 2.5 5
SCALE 1:50 @ A1 ; 1:100 @ A3 METRES

Revision	By	Checked	Approved	Date	Description
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CLIENT

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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS

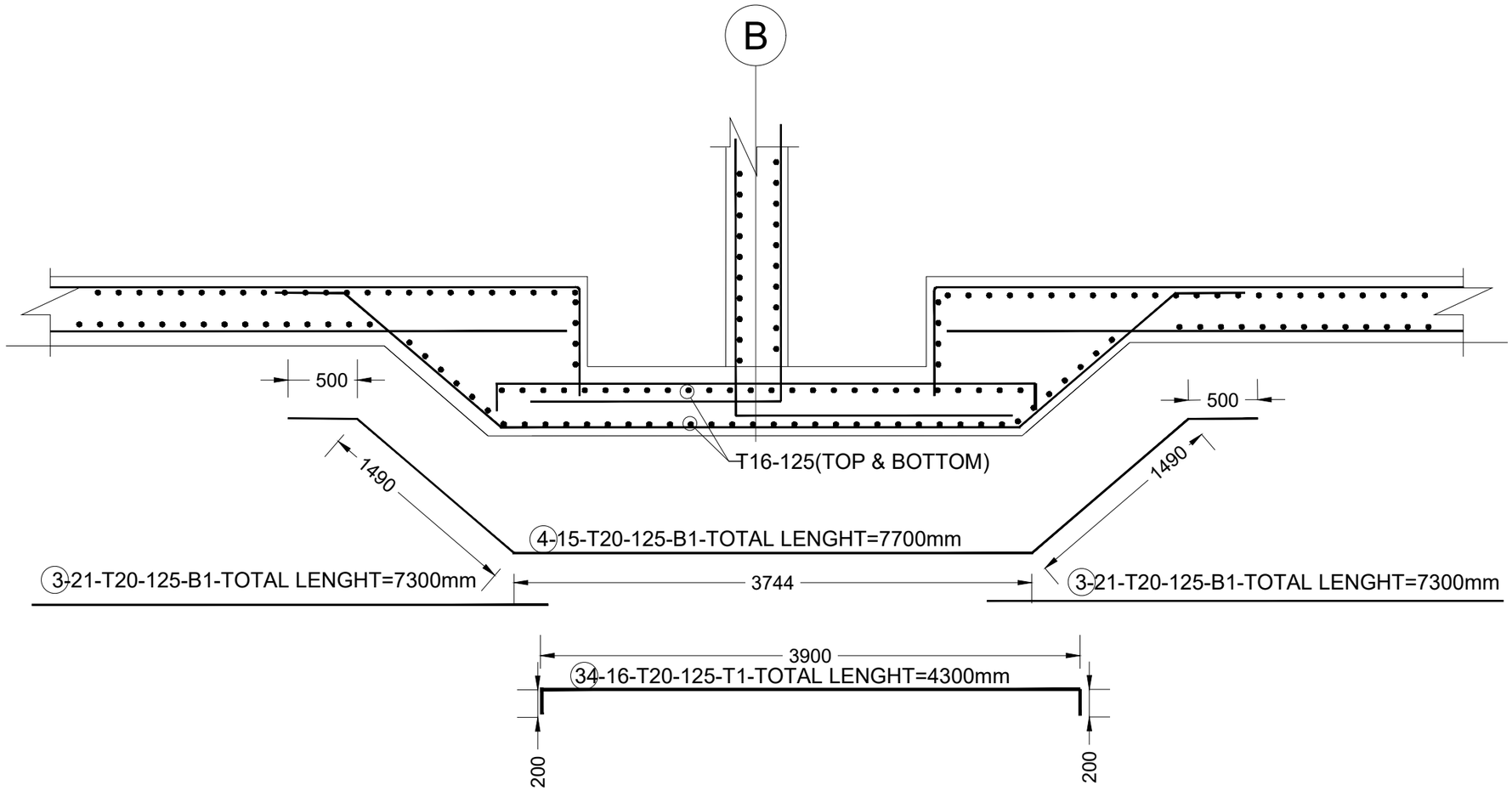
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Authorised by	RE	Date:	05/12/2025

DRAWING No. JP108-SD-MPS-10

Revision A 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:



SECTION C-C (REINFORCEMENT)

SCALE 1:50

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PROJECT

CONSTRUCTION OF MAIN AND BOOSTER PUMPING STATION POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA (PACKAGE 2)

DRAWING

REINFORCEMENT DETAILS

Drawn by	FN	Date:	05/12/2025
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DRAWING No. JP108-SD-MPS-10A

Revision A 1

Drawing Scale: 1:50 Plot scale: 1:1

CAD filename:

APPENDIX - 2

Sl. No.	ACTIVITY	HAZARDS	RISKS	LIKELIHOOD L	SEVERITY S	INITIAL RISK R1	CONTROLS MEASURES	LIKELIHOOD L	SEVERITY S	REDUCED RISK R2	ADDITIONAL CONTROLS	LIKELIHOOD L	SEVERITY S	FINAL RISK R3
1	**Survey to locate if any present utilities.**	• Damages/Striking existing utilities,	• Personal injury • Property Damage	4	3	12	• All necessary legal documents like PTW, NOCs, Utility Locate Report, Work Method Statements should be obtained and remain onsite throughout the work activity. • TBT to be given to the work force. • Experience and trained work force to be deployed. • Ensure calibrated cable detectors or scanners to identify presence of any underground utilities. Mark and support services as per NOC. • The worksite must confirm with the local reports received. Verify if the location of buried utilities (markings, stakes, flags or other methods) and worksite correspond with the excavation to be executed. • Soft excavation (hand-digging) must be followed within the 1-meter buffer zone on either side of the utility markings. • Use soft digging whenever possible and do not use mechanized equipment. • Use only rounded/blunt edged tools when hand digging in the vicinity of utility lines. Use of tools like axes, mattocks, picks, posthole diggers may result in damage to utilities. • All emergency numbers to be available on worksite. • Workers to wear required PPE such as high visibility jackets, hard hat, safety shoes, • Competent Supervision shall be required during the task.	1	3	3				

2	**Mobilization of Plant & Equipment**	• Fire • Slip, Trips & falls • Failure of lifting equipment • Road Traffic • Heat stress due excessive heat exposure • Underground power lines • Moving vehicles & machineries	• Serious reportable incidents • Property damage • Personal injury • LTI • Fatality • Public prosecution.	4	4	1	6	• All lifting gear/accessories at site must be colour coded (indicating they have valid third-party certifications). • All mobile plant/equipment must have adequate visibility aids or rear cameras as appropriate, must be verified during inspection checks. • Provide exclusion zone around the equipment with warning tapes, shall be provided where possible. • Firefighting equipment must be available on site. • Warning sign, good housekeeping and access/ egress need to be clear and not obstructed • Suitable means of cooling must be available within operator cabins • Proper material stacking should be maintained to avoid pipe rolling. • Avoid congestion always keep working place tidy. • Equipment maintenance inspection check list to be provided & monitored. • Observe & follow traffic rules & regulations. • Mobile equipment/heavy vehicle movement must be guided by trained flagman. Ground conditions must be suitable for the operation of any mobile plant/equipment. Must be confirmed prior to use. • Safe distance to be maintained from moving plants, barricading crane • Adverse weather conditions forecast to be checked. • Constant air speed monitoring with adequate monitoring devices. • Proper housekeeping should be maintained. • Do not move heavy equipment on soil above buried utilities unless protection has been provided to travel over the area using checkered plate/ other arrangements to spread the load.	2	4	8	• All plant/equipment must undergo an inspection check from main contractor prior to start use at site (verify the third-party certificates, vehicle license, operator license, operator & equipment third party certification, previous maintenance records).	1	4	4

3	**Loading and unloading of materials**	• Moving or overturning vehicles	• Machinery can seriously hurt people • Major Injuries or death.	4	4	1	6	• Choose appropriate lifting equipment. Forks are not supposed to lift the GRP pipes which can cause fall of pipes. • Use web slings to lift and shift the GRP pipes. It can used with a mobile crane or an excavator with certified "Lifting Eye" attached with D-Shackle or Hiab. • Restrict personnel on foot from the loading zone during operations • Clear of other traffic. • Pedestrians and people not involved in loading or unloading. • Clear of overhead electric cables so there is no chance touching them • Maintain stability, trailers should be parked on firm level ground. • Loads should be spread as evenly as possible, rigging should be rated to handle the weight of the load. Only attach the load to points provided and approved by the manufacturer • Train loaders and drivers to identify hazards and apply safe work practices. • Establish procedures to ensure workers are clear of trailers wheels before moving. • Protect all gaps and drop-offs on loading docks and lift gates. • Assure appropriate forklift and machinery equipment have valid training & certificates. • Never be downhill of a moving load.	1	4	4				

4	Excavation	• Objects falling into excavation • Trench Collapse/Cave-ins, • Water Accumulation, • Plant movement • Collisions/Accidents	• Major Injury • Engulfment • Suffocation • Fatality	4	4	16	• Dewatering will be carried-out as required • Approved MSRA to be communicated & implemented. • If any road crossing is undertaken approved detour permission must be taken from SRTA before starting any work. All the requirement mentioned in the drawing must be fulfilled. • PTW to be implemented and sign by Competent person to perform the job. • Daily pre-task briefing to be carried out to all the workforce. • All plants and machinery to be 3rd party inspected and to be kept away at least 2m from the leading edges and equipped with Fire Extinguishers. • Stop blocks to be used where equipment is to be used close to excavation edges to prevent run over. • Excavated material to be stored 2M away from the edges of the excavation. • Conditions of excavations must be daily checked (including checks of any signs of cave in, conditions of protective systems, conditions of access/ egress to excavations, etc.) by supervision team prior to start of the shift. • Selection of barriers shall assessed & based on the risk and as per the SRTA & police requirements Plastic jersey barriers filled with water with flash lights must be placed while excavations are adjacent to public roads/highways. • Step/Sloping method shall be used / implemented based on geotechnical report. • All machinery will be fitted with a reverse alarms and beacon light. • Warning sign boards to be placed. • All machinery operators will have a valid license and competent for the job. • Ensure Shoring system is based on the geotechnical report.	2	4	8	• Emergency evacuation procedures to be established for any person collapsed within deep excavation • Certified Flagman/bunks man/rigger to be deployed at site. • Adequate means of side wall protection must be maintained for any excavation/trench depth more than 1.25m without fail	1	4	4

5	Back filling with gravel and sand.	• Flying objects (partials of stones and dust) • Mobile equipment (compactor, Rollers etc), • Collusion with moving equipment • Engulfment	• Damage to Underground services • Serious injury/property damage • LTI/MTC • Personnel and cave in due to excavated material. • Lead to serious vehicle incidents.	4	4	1	6	• Underground utilities to be secure properly • Rigid barriers should be erected around any excavations which are 2 meters or more in depth • Safe access for vehicles, plant and persons should be in place • Adequate space should be provided for aggregates, cement etc., • Adequate barriers to be provided where the utility services are interrupting in the trenches. • All mobile equipment/portable tools to be inspected by competent person prior to start work. • Bunks man/flag man to be deployed at site. • Toolbox talk should be given to personnel. • Operators of mobile equipment should be competent. • Close monitoring should be maintained at all time at site during tasks. • Dust mask to be worn in addition to Mandatory PPE. • Stop blocks must be in use while plant/equipment/heavy vehicles are to be operated close to excavation. • Water to be sprayed at dusty areas	1	4	4				
6	Access and Egress	• Slip, trip and fall	• Injury to trench entrants (fracture/ severe back injury)	4	3	1	2	• Safe access and egress to all excavations, including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations 4 feet (1.22 meters) or deeper. • Staircase will be provided when sloping excavations are done. • Aluminum ladders to be secured at both ends, 1m above landing and must be located within 7.5 meter of all workers will be provided for access/egress • Proper housekeeping to be maintained at all times. • Cage ladders with platforms to be provided where required. • Ladder not be used as a working platform. • Ladder inspection to be carried-out on a regular interval by the competent person.	1	3	3				

7	Manual Handling	• Sustained awkward posture - long duration, - repetitive / sustained actions, high force - heavy loads	• Back injuries, falling objects, injuries sustained from improper lifting and Untrained workers	3	3	9	• Minimize the manual handling and increase the mechanical handling. • Determine the number of persons required to carry out work in safely. • Team lifting. • Adequate rest and Job rotation. • Safe manual handling lifts to be trained. • Conducted toolbox meeting before start work.	1	3	3				
8	Working with Plants/Equipment and machinery	• Rotating parts of machinery • Vehicles incidents • Noise • Electrocution • fire explosion	• Major Injury • Severe cuts • Trauma • Death	4	4	1 6	• Competent supervision. • TBT to be given to the work force, operators. • Experience and trained work force to be deployed • Certified Banks-man to be assigned. • All Heavy plant and vehicles operators must have valid U.A.E. driving license • Daily operator checklist by the operator must be undertaken for all Plant & Equipment in use. • Nobody allowed working close to running heavy equipment. • All equipment should be checked and certified by a 3rd Party. • No open flame near operating equipment. • No smoking is allowed while on site activities and near machineries. • Moving parts of the machinery to be covered at all times. • Authorized personnel to only operate the machines. • Fire Extinguishers shall be available in the area. • Emergency procedures should be communicated to the workers. • PPE [Ear plugs, gloves, goggles, overalls, etc to be worn. • Loose clothing should be avoided; pumps / machinery should be regularly maintained by mechanics to ensure safe operation. • Flanges are to be properly rubber sealed to avoid any leaks. • When refueling, ensure noncombustible goods in the area. • All electrical connections are to be inspected and have records • Mobilization checklist for all the plant & Equipment coming to the site to be checked by the workshop engg and provide with the colour code sticker after verifying.	1	4	4				

9	Housekeeping work	• Slip / Trip / Fall	• Injury (cuts and bruises) to the work force	4	3	12	• Ensure that before and after any work execution, proper housekeeping to be done. • Remove all unnecessary materials and place it in storage area. • All electrical outlets that are not in use should be removed and stored. • Full isolation in work sites before leaving the site and no gaps in fences. • Ensure tidiness and frequent removal of waste.	1	3	3				
		• Dropped Loads	• Injury (fracture, back strains) to the work force	4	3	12	• Manual handling training shall be implemented for the workforce to ensure that they are aware of the hazards present and the precautions necessary • Ensure the load is secure prior to lifting it. • Ensure that suitable PPE (overall, hand gloves, helmet, safety shoes. Reflective jackets etc.) are used.	1	3	3				
10	All project activities (Violence)	• Work related stress • Violence • Fighting	• Psychological effects & Injury (bruises, fracture) to the work force	3	3	9	• Adequate training and awareness should be provided. • Stressful and violent situations should be avoided. • Operatives behavior should be monitored • Healthy work environment to be maintained at all time. • Job rotation and work & break schedule to be incorporated to minimize the stressful time at work. • Employee assistance and counselling services to be available. • Adequate program should be in place to handle drug abuse. • Disciplinary action should be taken against the violators. • Adequate emergency control measures to be in place including security.	1	3	3				

11	Public Safety	• Trespassing • Struck By moving machinery (workers as well as public) • Fall into excavations • Horseplay	• Major injury • Fatality • Severe to minor injuries • Trauma	4	4	1	6	• Site to be completely isolated. • Site security to be in place • Trained watchman should be made available. • Suitable warning signs should be fixed at prominent locations. • Emergency contact numbers should be displayed at prominent locations. Public footpaths & right of ways shall be protected or alternative pathway provided as approved by authorities. • Excavations in public areas will be planned to be completed at the earliest so that it can be backfilled soon to avoid safety issues • Never work in unprotected zones • Strictly no gaps to be allowed for barriers in public roads. • Keep lookout for colleagues working in road works, competent supervision must always be present. • In case of horseplay by workforce, disciplinary action will be taken. In case of horseplay by public, authorities will be notified. • Flagmen will be positioned without themselves exposing to hazard to alert road users/ public about moving equipment. • Mandatory PPE to be used (emphasis on high visitiblity PPE). • The residential/other applicable third parties shall be notified about the works in their area in advance and the duration of the works and the controls required. • Permits & Inspection at end of shift before leaving the workplace to confirm & ensure the work location is safe and all controls are in place and shall not pose any risk to public	2	4	8	• Obtain approvals from authorities prior to work • Follow traffic management Plan • Provide crash worthy barriers, suitable signage and lighting. • Permit System to ensure works start with required controls.	1	4	4

12	Temporary Site Electrical Installation	• The use of portable/transportable electrical equipment.	• Electrocution risks to the operatives	4	4	1	6	• Regular examinations should also be made by ensuring that flexible mains cable has no damage to insulation, severing to outer casing, or lose connections. • Competent electrician should check that the plug has no live terminals on show. • Ensure that it has the correct fuse, and ensure that the pins are present and in good condition. • Use of a Residual Current Device is recommended. • Drip Tray to be provided for Generators. • All faults should be reported in the first instance and the equipment should not be used. • Any piece of electrical equipment that sustains damage; becomes worn, or where there is any reason at all to suspect its safety, should be taken out of use, clearly labeled and tested before being used again. • The use of Personal Protective Equipment where/when required. (I.e. eye protection; gloves; face masks meeting electrical voltage rates). • Monthly inspection of all electrical tools, DB to be carried out by competent electrician.	1	4	4				
		• Using electrical equipment in wet areas or outside in wet conditions.	• Electric shock to the operatives	4	4	1	6	• Ensure that equipment is suitably insulated and only approved equipment is used. • In severe environmental conditions the use of electrical equipment should be avoided. • If working in the vicinity of the pool area the use of a R.C.D. should be used and the use of a transformer to reduce the electrical voltage to 110V	1	4	4				
		• Faulty cables. Faulty appliances.	• Electric shock to the operatives	4	4	1	6	• Cables: Visual checks should be carried out at specific times i.e. before use; weekly; monthly or annually dependent on type of equipment. • For the repair of electrical equipment only allow trained, competent persons to carry out any repairs. • Remove any faulty equipment from use.	1	4	4				

13	**Lifting Operations**	• Fall of materials • Failure of equipment • Collapse of load • Struck by materials / equipment • Wrong communications • Overhead Utilities	• Fatality • Serious injuries • Property Damage	4	4	16	• Follow the lifting Operations Plan • Lifting PTW must in place prior any lifting • 3rd party Inspection of Equipment and accessories • Periodic maintenance of lifting equipment and accessories, Inspection of plant and accessories before entry to site, daily inspections by operator and weekly checks by HSEO • Cordon off the lifting zone • Safe load and the load radius indicators will be checked periodically for accuracy • Before lifting, all loads are checked to ensure they are within the safe working load of the equipment • Works controlled by a banks man, all needed/ necessary PPE's will be worn by employees involve in work activities • All involved will be aware of the procedures to be followed, helps to ensure equipment is in good working order • Trained & competent Rigger/ slingers will be provided where required. • Will reduce the likelihood of misunderstanding signals which could lead to dangerous situations • Risks identified in pre-task briefings • Lifting Supervisor to be present during the lifting operations.	1	4	4				

		• Faulty lifting equipment and accessories	• Property Damage • Major Injury (severe trauma, fracture,) • Fatality	4	4	16	• TBT to the work force. • Experienced and trained work force to be deployed. • All lifting gear shall be periodically tested by approved 3rd party. Check color coding and test certificates shall be checked to ensure that they are in date. • Visually inspect all lifting accessories for damage prior to use. • Third party certificate for the Concrete bucket must be present. • Visual Inspection for the concrete bucket to be carried out before commencing the work. • All equipment shall be of adequate rating to perform operation • On completion of task, check and return all accessories to storage. • Any damaged accessories shall be removed and reported to related supervisor immediately. • All accessories shall be properly maintained and inspected on a monthly basis and records • All lifting operations will be ceased if wind speed exceeds 38km/hr.	2	4	8	• Visually inspect all accessories for damage prior to use. • Tag lines must be used to control the swing of load. • Loads shall never be suspended over personnel • Daily operator checks for cranes to be done/recorded	1	4	4
14	Hot Works	• Fire	• Major injury • Fatality	4	4	16	• TBT session to be organized prior commencing the activity. • Hot PTW procedure should be implemented. • Gas cylinders & welding machines should be checked and inspected regularly by a competent person. • Flash back arrestor should be fixed with the gas hose. • Leaking cylinders should not be used and removed from site. • Trained, competent and experience welders to be engaged. • Flammable & Combustibles materials should be removed from the welding area. • Site supervision to be done by a competent and experienced person. • Fire extinguisher to be available near the working area. • Appropriate PPE to be worn by the welders (Apron, welding gloves, welding face shield, etc.) • First Aid facility to be available on site. • Warning signs to be available. • Appropriate storage for the cylinders will be available. • Cylinders to be provided inside the trolley with chain	1	4	4				

15	Use of Hand & Power Tools	• Fire, Rough use of tools, lack of training, improper maintenance,	• Major injury, fatality, Foot injury when roll over by the compactor, Respiratory illness • Hearing irritation	4	4	16	• Use to the right tools for the job. • Tool Box Talk shall be given before start of job. • Certified operatives to perform the job, • First Aider to be available to treat minor injuries. • Report and remove defective tools. • Inspection by the competent person to be carried-out prior using the tools, colour code for the tools to be provided. • Guards must be in place. • Proper and safe electric tools to be used. • Ensure proper maintenance of tools. • Un authorized workers shall not be allowed to go near the area • Wear PPE such as hard hat, cover all, safety shoes, traffic vest, safety mask, goggle, ear plug, gloves, etc. • Whip check arrestor to be provided for the air hose.	1	4	4				
16	**Environmental Pollution**	• Smoke, exhaust emissions from vehicles, mobile equipment's	• Deterioration of air quality. (Air Pollution) • Soil contamination	3	3	9	• Inspection and maintenance of all equipment will be conducted regularly. • Provide drip trays to avoid direct leak on the ground. • Spill kit provisions to minimize the impact. • Workers to be trained in environmental protection & pollution prevention. • Contaminated soil to be collected and disposed of adequately. • Noise reducing mechanism to be utilized minimize the noise pollution. • Dewatering pump provided in the site must be maintained & serviced regularly	1	3	3				
17	Protection of existing utilities	• Damage of the existing Utilities • Electrical Cables • Telephone lines • Fire • Shocks	• Flooding • Ground Settlement • Personal Injury • Electrocution Fire/Explosion	4	4	1 6	• Obtain permit to work from the relevant authorities. • Standard procedures to work in the vicinity of authorized client with their services should be followed strictly as what was mentioned in their NOC. • Manual excavation will be carried out to locate the underground utilities. • Provide suitable protection for the utilities • All operation should be under qualified supervision, competent person & as per approved method statement & RA. • Awareness training shall be provided regarding underground services damage prevention	1	4	4				

18	**Working in extreme heat /Summer**	• Heat Stress / Sun Stroke	• Major Health Hazard (extreme dehydration, loss of body fluid)	4	4	16	• Ministry of labour official summer working hours shall be followed. • Job rotation, short breaks and scheduled timings will be followed. • Ensure that heat stress awareness sessions to familiarize causes is to be given to all levels or working personnel. • Training will be carried out in workers language. • Safety tool box talk and basic first aid trainings to be given to workers for emergency situations. • Provide and advise to drink water in order to regain sweat or loss and avoid dehydration. • Rehydration drinks or ORS to be supplied. • Ventilated rest shade and sitting areas to be provided so that employees can sit and cool themselves.	2	4	8	• Trained First-Aider Shall be provided. • Regular heath surveillance will be carried.	1	4	4
		• Exhaustion	• Major Health Hazard (extreme dehydration, loss of body fluid)	4	3	12	• Obtain Doctor's medical and physical condition check-ups regularly. • Provide rotation short breaks and scheduled timing. • Ventilated rest shades and sitting areas.	2	3	6	• Emergency preparedness training & drill to be conducted. • Emergency vehicle to be on standby.	1	3	3

19	**Dewatering Works**	• Loose formation of soil. • Equipment failure. • Damaged Underground utilities. • Unguarded rotating parts • Fire • Rupture of hose /pipes.	• Electrocution, • Property damage • Personal injury • Ergonomics injuries. • Cave in situation for the personnel due to ground settlement. • WRULD (Work related upper limb disorder) • Equipment damages. • Property damages	4	3	12	• To obtain NOC's from concerned utility service authorities. • Identify the Buried services through drawings, cable /pipe locator and trial pit method. • Competent personnel to perform the job. • Prior to starting manual excavation / Trial Pit excavations has taken place. • Selection of suitable dewatering pump. • Ensure periodic Maintenance. • Selection of suitable hoses for the job. • Work site shall be clear from obstacles and maintain the good housekeeping. • Hosepipes shall protect / barricaded. • Ensure work area shall be barricaded and warning signs displayed. • Ensure access, egress routes are always clear from obstructions. • Maintain good housekeeping. • Check the ground compactness and soil stability prior to installation of tanks. • Minimal number of operatives to be placed. • All emergency services to be in place. • Rotation of workers is to be done to avoid fatigue. • Kinetic techniques of lifting to be communicated via tool box meeting/ trainings. • Use of right tools for the right job. • Use mechanical means of lifting, where applicable. • Certified First Aider to be present on site.	1	3	3				

20	**Traffic Management**	• Over speeding • resulting in turnover of the vehicle/equipment • Crush under reversing vehicle. • Vehicle hitting pedestrian • Inadequate lighting / poor visibility • Liberation of dust, dirt on the roads	• Major injury • Property damage • Fines • Fatality	4	4	16	• Ensure all operators & drivers has UAE driving license. • Vehicles / equipments should be operated obeying traffic signs and signals. • Site Speed limit 20KMPH to be respected and followed. • First aid box is maintained at the work site. • Vehicular routes are designed / planned in a way avoiding the requirement of reversing. • Flagman / Banks man is provided and used in congested areas to guide the vehicles. • All heavy equipment should have reverse alarm with amber lights. • Pedestrian walkways are segregated from vehicular traffic. • Walkways are kept free from materials. • Implemented detours measures are daily inspected and any deviations are reported for rectification. • Operators, free from vision complains are engaged in driving works during day and nights. • Adequate lighting is provided at the work area. • Maneuvering of vehicles at nights to be guided by banks man equipped with colored light sticks. • The Traffic Management Plan is implemented at site. • Site Traffic Representatives are consulted while implementing the detours / Traffic Plans and acquire NOC / Permission from respective authorities • Dirt / Dust on the roads are regularly cleaned up. • Internal access roads are constructed to minimize the dust generation and maintained by spraying water regularly.	1	4	4				

21	**Working close to the road and public**	• Risk of being struck by moving vehicles or equipment. • Potential conflicts with pedestrians or bystanders. • Exposure to high noise levels from traffic and machinery • Risk of unauthorized persons entering the work zone.	• Major injury • Property damage • Fines • Fatality	4	4	16	• Use barriers, cones, and signage to delineate work zones. • Employ flag man to control vehicle flow. • Implement speed restrictions near the work area. • Provide clear pedestrian pathways and signage. • Use temporary fencing to separate the public from the work zone. • Ensure workers wear high-visibility clothing, helmets, and safety boots. • Provide hearing protection and masks for noise and air pollution. • Train workers on safe work practices near roads and public areas. • Use water sprays or dust suppression systems to reduce air pollution. • Schedule noisy operations during off-peak hours where possible. • Engage with the public to address concerns and minimize disturbances. • Monitor the work zone to prevent unauthorized access.	2	4	8	• Regularly inspect the work zone to ensure control measures are effective. • Establish clear emergency response plans for accidents or injuries. • Ensure first aid kits and emergency contact numbers are readily available. • Train workers on emergency protocols, including traffic accidents and public altercations	1	4	4

22	**Working Near Mountain**	• Landslides/Rockfalls • Falling from Heights • Adverse Weather • Steep or Uneven Terrain • Altitude Sickness • Wildlife Encounters • Communication Gaps	• Personal Injury • Property Damage • Major injury	4	4	16	• Install protective barriers, such as rockfall nets or retaining walls. • Monitor weather conditions for early signs of landslides • Mandatory PPE must be worn • Task specific Training must be provided • The area must be stabilized & confirm from the authority before starting the work • Fulltime watchers must be assigned to check for any cracks or falling of materials • Competent supervisor must be available. • Maintain and inspect access roads regularly. • Use vehicles suited for rugged terrain. • Ensure drivers are trained in mountain driving techniques. • Create emergency response plans. • Daily inspection must be performed for the vehicle • Daily weather notice must be checked • Use fall protection systems like harnesses and lifelines. • Ensure proper anchorage points on slopes. • Task specific training to be provided • Real-time weather monitoring. • Provide PPE for cold and rain. • Establish work halts during storms. • Emergency vehicle to be in standby • Provide health checks before deployment. • Train workers on acclimatization techniques. • Schedule regular breaks. • Trained first must be available in the site • Use walkie/talkie, megaphone • Establish clear communication protocols • Establish evacuation routes and meeting points. Ensure availability of first aid kits and trained personnel.	1	4	4	•			

Note:

1. Control measure shall follow AJD and consultant hierarchy of controls.
2. Keep dummy flag man wherever adjacent to road premises.
3. Revolving flash lights shall be fixed over vehicle whole working nearby main roads.

<u>Required & Recommended safety equipment's</u>:

1. Hard Helmet
2. Safety shoes (gum boots).
3. Gloves
4. Safety harness
5. Coverall

0 – 5 = Low Risk 6 – 10 = Moderate Risk 11 – 15 = High Risk 16 – 25 = extremely high unacceptable risk		Severity of the potential injury/damage				
		Insignificant damage to Property, Equipment or Minor Injury 1	Non-Reportable Injury, minor loss of Process or slight damage to Property 2	Reportable Injury moderate loss of Process or limited damage to Property 3	Major Injury, Single Fatality critical loss of Process/damage to Property 4	Multiple Fatalities Catastrophic Loss of Business 5
Likelihood of the hazard happening	Almost Certain 5	5	10	15	20	25
	Will probably occur 4	4	8	12	16	20
	Possible occur 3	3	6	9	12	15
	Remote possibility 2	2	4	6	8	10
	Extremely Unlikely 1	1	2	3	4	5

		Name	Signature	Date
Prepared By:	HSE Officer	Muhammed Abid		02.01.2026
Reviewed & Approved By	Project Manager	Ahmed Juaidi		02.01.2026

APPENDIX - 3

INSPECTION AND TEST PLAN (ITP)

Project / Contract No.	**POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA PACKAGE-2 MAIN PUMPING STATION AND BOOSTER PUMPING STATION (JP108)**
Contractor	**M/s. AL JAZEERAH DRILLING LLC**
Subcontractor	**N/A**
ITP Ref. No.	**JP108-ITP-002**
Rev.	**0**
Date	**28-Oct-25**

Method Statement Ref. No.	ITP Title / Work Description	Area / Location	BOQ Item No.
JP108-MS-002	EXCAVATION WORKS	Jabal Al Deem	N/A

Item No.	Construction Activity	Inspection / Test Description	Relevant Contract Documents (Specifications, drawings)	Acceptance Criteria	Frequency	Verifying Document	Inspection Parties / Intervention Point			
							Third Party / Laboratory	Subcontractor	Contractor	Consultant
1	Section 1 – Submittals / Documentation									
1.1	Permits to work	Document Verification	Volume 2A Part 1 - General civil specification Section1.1.2	NOC's/WRR/WSN/HSE Permits	Prior to Start of Work	Granted Permit from Authorities	N/A	N/A	R	R
2	Section 2 – Pre-Commencement Activities (Control Sample, Mock Up, Prototype Trial mix etc.)									
2.1	Method Statement	Document Verification	JP108-MS-002	Compliance with project requirements	Prior to Start of Work	Contract Documents & Approval records	N/A	N/A	R	R
2.2	Safety Induction	Document Verification	Volume 2A Part 1 - General civil specification Section 1.5	HSE Plan(JP78-TRN-02)	Prior to Start of Work	Induction Attendance form	N/A	N/A	H	R
2.3	Calibration of Survey Equipment	Document Verification	Relevant ISO 9001:2015 section for each equipment	Calibration Certificates	Prior to Start of Work	Valid Certificate	N/A	N/A	R	R
2.4	Survey and Setting Out	Visual inspection	Volume 2A Part 1 - General civil specification Section 1.8	As per IFC Drawings	Prior to Start of Work	Survey Records & WIR	N/A	N/A	W	S
2.5	Detection of utilities	Document Verification	Volume 2A Part 1 - General civil specification Section 1.8	Knownledge of Underground utilities and necessary permits in place to execute works	Prior to Start of Work	Survey Records,ITP for Trial Trench & WIR	N/A	N/A	W	S
2.6	Dewatering works(If Required)	Document Verification	Volume 2A Part 1 - General civil specification Section 3.2.6	Stable, dry sub grade which is suitable for the execution of subsequent operations	Each stage of work	Valid Permission for discharge point, ITP for dewatering works & WIR	N/A	N/A	W	S
2.7	Shoring works(If Required)	Document Verification	Volume 2A Part 1 - General civil specification Part 4 Section 3.2.6	Documents Available	Prior to Start of Work	Valid Permit	N/A	N/A	W	S
3	Section 3 – Main Works Activities									
3.1	Excavation	Visual inspection & Dimension check	Volume 2A Part 1 - General civil specification Section 3	Properly Levelled and compacted	Each stage of work	WIR & Checklist	N/A	N/A	H	W
4	Section 4 – Final Inspection (Factory acceptance test / Site acceptance test etc.)									
4.1	Formation Level	Visual inspection	Volume 2A Part 1 - General civil specification Section 3.2.9	95% Maximum Dry Density	Each stage of work & One test per 1500m^2	WIR & FDT test results	P	N/A	H	H
5	Section 5 – As-Built Documentation									
5.1	Field Records and As Constructed drawings	Document Verification	Volume 2A Part 1 - General civil specification Section 1.12	All Site informations captured in drawings	Each stage of work	As Constructed Drawings	N/A	N/A	R	R

ABBREVIATIONS

R- Review and Approval	H - Hold Point	W - Witness Point	P	S - Surveillance
Review of technical submittals such as Method Statement, Material Submittals, Test Report, Shop drawings, etc.	Mandatory inspection/test of work required by Consultant and work may not proceed if not attended by Consultant. Contractor / subcontractor is obliged to perform the inspection/ test and to verify that the results are acceptable according to contract documents including technical specifications and design drawings. The relevant quality records including inspection checklist, survey report, test report etc. shall be signed off by consultant.	Contractor / Subcontractor is obliged to perform the inspection/ test and to verify that the results are acceptable according to contract documents including technical specifications and design drawings. The relevant quality records including inspection checklist, survey report, test report etc. shall be reviewed by consultant. The Contractor may proceed with work beyond such witness points if the witnessing party not showed-up within a duration of one hour unless communicated in advance, with the contractor's risk.	P- Perform sample collection and material testing	Random inspection/test of ongoing construction work activities, partially completed, by Consultant, contractor and subcontractor to the degree necessary for confidence that it follows quality requirements. Consultant shall advise the Contractor to submit Inspection & Test Request (ITR) at any stage of work activity, If required,