SCOPE OF WORKS

FOR

THE NATIONAL DEPARTMENT OF HEALTH

	DETAILS
PROJECT NAME	The appointment of a service provider for the Fabrication and Erection of a Steel Water Tank at Dysselsdorp Clinic
CONTRACT NO	**NDoHF02-2026/2027**
DESCRIPTION OF WORKS	The project comprises of the fabrication, delivery, erection, testing, and commissioning of a 43 KL steel water tank, including construction of foundations, structural supports and the installation of inlet/outlet pipework.

AND ACCEPTED BY

DETAILS OF THE SERVICE PROVIDER	
COMPANY NAME	
CIDB CRS NUMBER	
CSD NUMBER	
CONTACT PERSON	
E-MAIL ADDRESS	
TELEPHONE NUMBER	
CELLPHONE NUMBER	
SIGNATURE	

DOCUMENT PROPERTIES

DESCRIPTION	VALUE
Employer	National Department of Health
Scope of Works document	The Fabrication and Erection of a Steel Water Tank at Dysseldorp Clinic
Date	30 October 2025
Document Status	For Tender
Referenced as	**NDoHF02-2026/2027**

DOCUMENT HISTORY

REVISION	DATE	PREPARED BY	CHECKED BY	SUPPORTED BY
000	2025/10/27	Thabiso Maungwa (NDoH)	Hendrik Jooste (NDoH)	Christie Engelbrecht (NDoH)
001	2025/10/30	Thabiso Maungwa (NDoH)	Hendrik Jooste (NDoH)	Exley Louters (NDoH)
The steel tank capacity is revised from 173 KL to 43 KL pursuant to the NDoH/WCDHW site meeting resolution. Pumps are omitted given no backup power provision and the risk of theft.				

TABLE OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION
SANS	South African National Standards
NDoH	National Department of Health
WCDHW	Western Cape Department of Health and Wellness
KL	Kilolitres
SOW	Scope of Work
SOWs	Scope of Works
DoHs	Department of Health's
JBCC	Joint Building Contracts Committee
uPVC	Unplasticized Polyvinyl Chloride
HDPE	High-Density Polyethylene
QA	Quality Assurance
QC	Quality Control

ABBREVIATION	DESCRIPTION
O&M	Operation and Maintenance
ITPs	Inspection and Test Plans

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1 EXECUTIVE SUMMARY

1.1 This SOW outlines the requirements for the provision and installation of a 43 KL steel water tower at Dysseldorp Clinic. The project involves constructing a new elevated water storage system, including all civil, structural, and mechanical components to ensure a reliable potable water supply for the clinic. The works will encompass foundation construction, fabrication and erection of a steel support tower, installation of an elevated water tank, associated inlet and outlet pipework, and all necessary fittings and accessories. The Contractor is expected to deliver a fully functional and compliant installation within a 4-month timeframe from commencement, adhering to all specified quality, safety, and regulatory standards.

1.2 This project supports the public-sector objective of providing health facilities that meet prescribed norms and standards for infrastructure, achieving optimal functionality, safety, and sustainability for patient care. In addition to the primary goal of improving water supply reliability, the project aligns with secondary objectives such as utilizing local labour and skills development opportunities where feasible.

1.3 The outcome will be an operational water tower that augments the clinic's water infrastructure, delivered on time and in full compliance with the SANS, the National Building Regulations and Occupational Health and Safety Act.

2 EMPLOYER'S OBJECTIVES

2.1 Primary Objective

2.1.1 The Employer's primary objective is to provide health services to communities through facilities that comply fully with the prescribed norms and standards for health infrastructure and achieve optimum levels of operational functionality, safety, and sustainability for patient care.

2.2 Secondary Objective

2.2.1 The Employer's secondary objective is to deliver public health infrastructure in a manner that: promotes labour-intensive construction methods wherever feasible; creates temporary employment opportunities for local unemployed persons; and provides training and skills development to enhance their future employability.

2.3 Contractor's Obligation towards the Employer's Objectives

2.3.1 The Contractor shall plan, manage, and execute the works in a manner that demonstrably supports and achieves both the primary and secondary objectives of the Employer.

3 PURPOSE

3.1 Purpose of the SOWs

3.1.1 The SOWs forms an integral part of the Contract and sets out the Employer's requirements for the construction and completion of the works. Its objectives are to:

3.1.1.1 Define clearly what is to be provided, how it is to be provided, and to what standards so that the Contractor's design, planning and execution align with the Employer's objectives.

3.1.1.2 Establish a basis for the programme, ensuring that all activities and deliverables are costed, scheduled and resourced in line with the Contract.

3.1.1.3 Identify any constraints, statutory obligations, site-specific conditions, and quality and safety requirements to be observed by the Contractor.

3.1.1.4 Minimise ambiguities and potential for disputes by ensuring a single, consistent point of reference for the technical, contractual and procedural requirements of the Works.

3.2 Contractor's Considerations

3.2.1 When interpreting this SOWs, the Contractor shall:

3.2.1.1 Comply fully with the scope, standards, specifications, codes of practice and all legislative and regulatory obligations described herein.

3.2.1.2 Incorporate all Employer's activities (such as start and end dates, approvals, information supply, inspections, etc.) into the Programme, ensuring dependencies and interfaces are properly represented.

3.2.1.3 Recognise that under this contract (less than a year)

3.2.1.3.1 The prices are not adjustable for fluctuations, and the Contractor carries the risk of industrial relations, productivity, resource usage, market price changes and quantities unless stated otherwise in the Contract Data.

3.2.1.3.2 Front-loading of costs is not permitted; each item must fairly represent the value and timing of the corresponding work or deliverable.

3.2.1.4 Ensure that all activities, methods and temporary works required for proper execution (even if not explicitly described but reasonably inferred) are included in the Contractor's scope and

prices. The Contractor is to ensure that all subcontractors have the necessary temporary access to their works.

3.2.1.5 Take account of site conditions, risks, constraints, health and safety obligations, environmental management measures, and community/stakeholder interfaces described in the SOWs.

3.2.1.6 Co-ordinate with other contractors, utilities and the Employer's representatives where stated, and include for such interfaces in the programme and resources.

3.2.1.7 Maintain records and submit all test certificates, quality control documentation, method statements, risk assessments, and as-built information as specified.

3.3 Alignment of Contractor's Bid Submissions with SOWs

3.3.1 The Contractor's programme shall be prepared and maintained strictly in line with the SOWs and all requirements stated therein. These documents must:

3.3.1.1 Reflect the scope, constraints, sequencing, milestones, and technical requirements described in the SOWs;

3.3.1.2 Be consistent with the standards, specifications, codes of practice, and quality obligations specified in the SOWs; and

3.3.1.3 Be updated as required to remain fully aligned whenever the SOWs is revised by the Employer.

3.4 Instruction and Variations

3.4.1 This SOWs will be managed in accordance with the Contract.

3.4.2 Any change to the SOWs will be issued as an Employer's instruction and treated in line with the contract.

3.4.3 The Contractor shall not depart from the SOWs without such written instruction.

4 PROJECT BACKGROUND AND OBJECTIVES

4.1 Dysseldorp Clinic is a public healthcare facility in need of an improved water storage solution to guarantee continuous water supply for clinical operations. The region has experienced intermittent water availability, prompting the DoHs to invest in an elevated water tower that will provide gravity-fed water storage for the clinic.

4.2 The provided designs (Annexure A) depicts the proposed water tower design, including a steel support structure. This project is funded under a public-sector infrastructure program and is to be executed

under the JBCC Small or Simple Works Ed 1.1 June 2024. The site is within the clinic grounds, requiring careful coordination to avoid disrupting healthcare services during construction.

4.3 The key project objectives are as follows:

4.3.1 Establish a robust elevated water storage system to ensure an uninterrupted potable water supply at adequate pressure for the clinic's operations and fire safety needs. The 43 KL elevated tank will provide both backup storage and pressure stabilisation for the water network.

4.3.2 Deliver infrastructure that fully complies with health facility norms and standards, National Building Regulations, and applicable SANS specifications, thereby meeting all regulatory and quality requirements for safety and performance. This includes compliance with structural design codes, water supply standards, and local authority approvals.

4.3.3 Complete the project within 4 months from commencement, as required by the Employer. The project schedule is driven by urgent service delivery needs; thus, the Contractor must plan and execute the works efficiently to meet this deadline without compromising quality.

4.3.4 Utilise cost-effective construction methods while maintaining high workmanship quality. All materials and work must conform to the specified requirements, and the Contractor is responsible for quality outcomes.

4.3.5 Execute the works with minimal disruption to the clinic's operations and surrounding community. Engage in proper communication and safety measures on an active healthcare site. Where practical, involve local labour and subcontractors, supporting public-sector goals for employment and skills development. Ensure that the completed infrastructure is user-friendly and sustainable for the clinic's maintenance team.

4.3.6 Uphold the highest standards of health, safety, and environmental management throughout construction and commissioning, in line with the Occupational Health and Safety Act and environmental regulations. Protect patients, staff, workers, and the environment from harm by implementing rigorous HSE controls.

5 GENERAL DESCRIPTION OF THE WORKS

5.1 The works comprise the supply, construction, testing, and commissioning of a new steel water tower and associated infrastructure at Dysseldorp Clinic. The installation will be based on the attached designs and includes all components necessary for a complete and operable system. In general, the project will include:

5.1.1 **Foundations and Support Structure**: Construct reinforced-concrete foundations for the tower columns, including embedded holding-down bolt groups and grout. Each column anchors to a base plate approx. 350 × 350 × 20 mm (per detail), fixed to the concrete footing with M25 anchor bolts (4 No. per base). Concrete strength and cover as specified on the drawings; reinforcement, blinding layers, compaction, and set-out to the engineer's details.

5.1.2 **Structural Steel Tower:** Fabricate and erect the elevated tower to the drawing, comprising 203 × 203 × 52 H-section columns, 254 × 146 × 31 main beams and 203 × 133 × 25 secondary beams, with plate connections, bracing, pipe-clamp brackets and base-plate details as shown. Provide a galvanized access ladder with safety loop and an access security gate. All structural steel to SANS 50025, Grade S275; workshop drawings to be submitted for approval before manufacture. Hot-dip galvanize exposed steelwork suitable for outdoor/water-service environments.

5.1.3 **Water Tank (43 KL):** Supply and install an elevated **steel water tank of 43 m^3 (43 KL)** mounted on the tower platform, complete with roof/cover, access hatch, internal/external stiffening per the engineer's design, and internal lining/coating for potability and corrosion resistance (welded mild-steel or bolted panel construction as specified). Provide the galvanized access ladder continuation to tank top.

5.1.4 **Inlet, Outlet and Risers:** Install above-ground GMS risers and appurtenances per the layout: a 100 mm GMS inlet line to tank, a 100 mm GMS domestic outlet from tank, and a 50 mm GMS overflow & scour line, including 100 mm isolation valve, 100 mm float-control valve, bellmouth, reducers (e.g., 100→50 mm where indicated), bends, distance pieces and flanged fittings. Secure all risers to tower columns using the detailed pipe-clamp plates/round bars and brackets. Interface to existing underground mains with appropriate flanged adaptors, couplings and thrust blocks (below-ground in uPVC/HDPE as designed).

5.1.5 **Connections and Specials:** Provide all pipe specials and transitions to connect the above-ground steelwork to the existing buried network, including flanged bends, tees, reducers and adaptors as scheduled on the drawings (e.g., 100 mm 90° flanged bend, 100→50 mm reducer, flanged tees, isolation valves). All supports, guides, and bracketry to the pipe-clamp details on the standard plates.

5.1.6 **Ancillary Components and Controls:** Include an overflow route to a safe discharge point, a drain/scour at tank bottom, air/vacuum relief where required by profile, and level control via the specified float-control valve and level indication. No pumps are included under this contract (omitted due to the absence of backup power and theft risk); tie-in to the existing supply will follow the passive/control arrangement shown.

5.1.7 **Site Works and Restoration:** Carry out all associated civils: excavation for foundations and trenches, bedding, backfilling and compaction, blinding layers, disposal or trimming of surplus material, and making good of disturbed surfaces/works. Reinforcement, concrete grades and covers as per the foundation and base reinforcement schedules; reinstate any temporary access/lay-down areas on completion.

5.2 The Contractor provides all labour, surveyor, materials, equipment, and expertise to deliver a complete and operational water tower system. The Contractor is responsible for verifying all dimensions and conditions on site before construction and for producing any necessary shop drawings or fabrication details for approval. The finished installation will be tested and commissioned to demonstrate it meets the performance requirements (no leaks, proper operation of valves, structural stability under load, etc.).

6 KEY DELIVERABLES

6.1 During and upon completion of the works, the Contractor must submit various deliverables to the Employer for approval and record. These deliverables form evidence that the work has been carried out to specification and provide information for future O&M. The following are the key deliverables required:

6.1.1 **Detailed Drawings:** All relevant drawings produced or used by the Contractor, including shop fabrication drawings for the steelwork, erection drawings (if any temporary works or special sequences were planned), and pipe layout drawings for any rerouting done, must be submitted. Upon completion, the Contractor shall prepare As-Built Drawings reflecting the final installation (exact positions of foundations, tower, pipes, valves, etc.). These as-builts should be in both hard copy and electronic CAD format as specified. They must be certified by the Contractor as true records of the work and will be subject to the Engineer's approval.

6.1.2 **Design Certificates:** If the Contractor or manufacturer provided any design input (for example, the tank design or temporary works design), those must come with a Professional Engineer's certification. Additionally, the Engineer of record (consultant) will issue a structural completion certificate.

6.1.3 **Statutory Approvals and Compliance Certificates:** The Contractor shall deliver all necessary statutory documents such as the Occupational Health and Safety file (with appointment letters, inspection records, etc. for site safety closure). If the local municipality requires an Occupation Certificate or similar for the water tower, the Contractor must assist in providing documents for that process

(usually the Engineer's sign-off and as-builts). All such approvals, test certificates, and regulatory compliance documents are to be handed over as part of completion,

6.1.4 **Test Results and Commissioning Reports:** Documented results of all tests conducted are required. This includes pressure test certificates for pipework (showing test pressure, duration, and outcome), leak test report for the tank (could be a simple certification that "Tank filled to brim, held for 24 hours with no leaks observed"), concrete cube test results from foundation pours (to show concrete achieved required strength), any weld non-destructive testing reports (if specified for critical welds), galvanising thickness test reports, and paint dry film thickness readings if painting was done. During commissioning, the Contractor should record key parameters (for example, time to fill the tank, any adjustments made to float valves, etc.) and compile a commissioning report summarising the procedures and outcomes. All these test and commissioning records will be reviewed by the Engineer and included in the handover file.

6.1.5 **O&M Manual:** An O&M manual must be provided for the water tower installation, this manual should include a description of the system, operating instructions (e.g., how to switch between direct feed and tank feed if applicable, how the level control works), recommended maintenance procedures and intervals (for cleaning the tank, inspecting the tower structure, repainting or re-galvanising schedule, lubricating any moving parts on valves, etc.), and troubleshooting guidelines. Contact details for suppliers of major components (tank manufacturer, pump supplier if relevant, valve suppliers) should be listed for future reference. Spare parts lists and any special tools required for maintenance should be indicated. The manual should also include as-built drawings and schematics, and copies of key certificates/warranties. Essentially, the O&M manual equips the clinic's facility managers or maintenance personnel with the knowledge to safely operate and maintain the water tower for its intended lifespan.

6.1.6 **Training and Handover Records:** The Contractor is expected to train the Employer's staff in basic operation and emergency procedures for the new system. A record of this training (attendance register, topics covered) should be provided and included in the handover documents. If a formal handover meeting is held, minutes of the meeting should also be recorded, noting the transfer of responsibility for the installation to the Employer.

6.1.7 **Warranties and Guarantees:** All equipment and materials installed should carry standard warranties. The Contractor must hand over warranty certificates for items such as the water tank (which may have a manufacturer's structural or corrosion warranty), pumps or electrical components (if any supplied), valves (some manufacturers give warranty against manufacturing defects), etc. The

Contractor also usually guarantees the workmanship for a defects liability period (typically 12 months from completion, or as stated in contract). These warranty terms should be clearly documented. For example, a guarantee letter that the structure is free of defects and that any defect arising in the first year will be corrected at no cost. Warranties for protective coatings (galvanising or paint) may specify lifespan; those documents should be included.

6.1.8 **Quality Assurance Records:** A complete set of QA/QC documents generated during the project shall be handed over. This includes material approval forms, site inspection requests and Engineer's inspection reports, Quality control test results, and any Non-Conformance Reports (NCRs) with their close-out evidence. While these may not all be required by the client, providing them shows transparency and gives the facility owner a record of how the project was controlled for quality.

6.1.9 **Health and Safety File:** At project completion, the Contractor must hand over a consolidated Health and Safety file. This file typically contains all the safety documentation (risk assessments, incident reports, inspection checklists, scaffolding tags, operator licenses, etc.) compiled during construction. It also should contain any environmental monitoring records (like waste disposal slips). Importantly, it includes the "as-built" Health and Safety Plan and recommendations for maintaining safety in future maintenance of the structure (for example, note that any future work at height on the tower should follow similar safety protocols). The Health and Safety file is handed to the Employer as a record and for use when doing maintenance or future construction at the site.

6.2 All deliverables must be submitted in the format and number of copies stated in the contract (commonly, two hard copies and electronic copies on USB or emailed). The Engineer will review the deliverables for completeness and compliance. No final payment will be certified until all key deliverables are received and approved. The Contractor should therefore be diligent in preparing and organizing these documents ahead of the project completion to avoid delays in project close-out.

6.3 The quality of documentation reflects the project's professionalism. The SOW requires that the delivered facility comes with full documentation such that the Employer can operate, maintain, and reference the installation throughout its life. The Contractor's obligation includes making any revisions the Engineer may request to the deliverables if they are found incomplete or inaccurate (for example, if an as-built drawing is not truly representative or a test certificate is missing data, the Contractor must correct that).

7 QUALITY ASSURANCE AND CONTROL

7.1 **Quality Assurance Plan:** The Contractor is required to establish and implement a Quality Management Plan for the project. This plan should outline all procedures, inspections, and tests that will be carried out to ensure the works meet the specified quality standards. Within 21 days of appointment (or as stipulated), the Contractor should submit a Project Quality Plan for the Engineer's approval, detailing the quality objectives, organization, responsibilities, and the specific ITPS for each aspect of the works. The ITPs will identify hold points (where work cannot proceed without an inspection approval, e.g., prior to fabrication, casting concrete or before tank commissioning) and witness points (where the Engineer may choose to witness tests), along with acceptance criteria for each inspection or test.

7.2 **Materials and Workmanship:** The Contractor is fully responsible for delivering materials and workmanship that conform to the contract requirements in all respects. Incoming materials (steel, cement, pipes, etc.) should be inspected and verified against specifications. Mill certificates and supplier certifications must be checked and filed. Only approved materials should be incorporated into the works. The Contractor should maintain a Quality Control file on site with all relevant standards, inspection forms, and test records for quick reference. Workmanship must be closely supervised; tradesmen must be qualified for their tasks (e.g., certified welders, qualified scaffold erectors, etc.). If any work does not meet the standard, the Contractor must not cover it up, they should correct it immediately. The principle is "do it right the first time" to avoid rework and delays.

7.3 **Engineer/Third-Party Inspections:** The Engineer will conduct scheduled inspections at key stages. The Contractor must give at least 2 working days' notice to the Engineer for any inspections that are required before moving to the next stage. These required inspections will be identified in the ITPs. It is the Contractor's sole responsibility to proactively invite the Engineer for inspections on time. If the Contractor fails to get an inspection done and covers up work, the Engineer may request that work to be opened or additional proof of compliance to be provided. In some cases, an independent third-party might be engaged for specialized inspections, for instance, ultrasonic testing of welds or a certified civil laboratory for concrete strength tests. The Contractor shall facilitate such third-party inspections and tests as specified (costs would typically be covered as per contract, often in the Contractor's rates unless specifically a Client cost).

7.4 **Testing Requirements:** A variety of tests must be carried out to verify quality:

7.4.1 **Concrete Testing:** Take concrete cube samples for each batch of foundation concrete (as per SANS 1200 or project spec, typically 3 cubes per 30m³ or per day's pour). These cubes should be tested at 7 days and 28 days to ensure the concrete achieves the specified compressive strength. Results must be submitted to the Engineer.

7.4.2 **Steel Work Quality:** For structural steel, ensure mill certificates show correct grade. If welding is done on site, perform Non-Destructive Tests on a sample of welds (e.g., magnetic particle inspection on 10% of fillet welds, ultrasonic or radiographic inspection on any full penetration welds) if required by the Engineer. Bolt tightening can be tested via torque wrench or turn-of-nut method; keep records of bolt preloading if high-strength friction grip bolts are used.

7.4.3 **Galvanising & Coating:** Check galvanized members for coating thickness using an elcometer (random sampling, ensure the zinc layer meets minimum microns as per SANS 121). Also inspect for any bare spots or damage, repair them properly. If any painting (like touch-up or for colour coding pipes) is done, measure dry film thickness and adhesion as appropriate.

7.4.4 **Pipe Pressure Testing:** As mentioned, hydrostatic pressure tests on pipelines and tank must be done. Typically, for the PVC pipelines, test at 1.5 times operating pressure for 2 hours with less than a specified pressure drop. For the steel tank (atmospheric), a full fill test suffices for leaks. Ensure calibrated gauges are used and include a safety margin in tests.

7.4.5 **Water Quality Testing:** If required by the Employer or health regulations, have the water in the tank tested for potability (especially if the tank interior was painted or if contamination during construction is possible). A sample tested for basic bacteriological quality (E. coli count) might be prudent before the clinic uses the water. If tests fail, disinfect the tank and retest.

7.4.6 **Functional Tests:** Test that all moving parts function: open/close all valves under pressure to ensure they seat properly, test non-return valves (if any on pump discharge), verify overflow and drain flows. Also, do a simulation of pump cut-off by closing a valve or reaching the float valve trigger to ensure the system responds correctly.

7.5 The Contractor must compile test reports for each of the above and have them signed by a responsible person (site engineer or quality manager). These will be part of the quality file and handed to the Engineer regularly.

7.6 **Quality Records and Meetings:** All quality control documentation (inspection requests, test results, material approvals) should be systematically filed. The Engineer may call for Quality Assurance

meetings if issues arise or to review certain aspects in detail. Normally, quality is also a standing agenda item in regular site meetings, where recent test results and any quality concerns are discussed. The Contractor's site agent or quality representative should attend these meetings prepared with data on compliance. If persistent quality problems occur, the Engineer can issue a Non-Conformance Report (NCR) or Quality Improvement Notice. The Contractor must address NCRs promptly by investigation, correction, and preventive action documentation. Repeated or unresolved quality issues may lead the Engineer to issue stop orders for affected work until resolved (sometimes termed a "Quality Stop Work Notice"),

7.7 **Rectification of Defects:** It is emphasized that any work or materials not meeting the specifications shall be removed and replaced by the Contractor at their own cost. The Engineer will not approve sub-standard work for payment. For example, if a concrete cube test fails, the Contractor may be required to core the foundation to test in-situ strength or even reconstruct the foundation if unsafe. If a weld is found defective, it must be ground out and re-welded. No defective component should remain in the permanent works. The Contractor should strive to avoid defects through diligent work, but if they occur, correcting them is part of the Contractor's responsibility and must be done in coordination with the Engineer.

7.8 **Documentation Handover:** As detailed in the deliverables section, all quality assurance and control records will be handed to the Employer. This ensures transparency and provides a maintenance baseline. The Contractor should prepare a Quality Handover Dossier organized into sections (concrete works, steel works, piping, etc.) containing all relevant certificates and test reports. The Engineer will review this dossier for completeness.

7.9 In summary, a culture of "Quality First" must be maintained throughout. By following the QA/QC procedures, the Contractor will achieve the required standards, and the Employer will receive a water tower that meets all specifications. Adherence to the quality requirements is not only contractual but critical for the safety and longevity of the structure, holding thousands of litres of water above ground is a significant responsibility, and only sound, quality-controlled construction can ensure it performs safely in the long term.

8 HEALTH, SAFETY AND ENVIRONMNETAL OBLIGATION

8.1 The Contractor has an overriding obligation to execute the works with the highest regard for health, safety, and environmental (HSE) regulations. The nature of this project, involving heavy construction activities, working at heights, and operation within a healthcare facility environment, necessitates a rigorous HSE management approach. The following outlines the key HSE requirements:

8.1.1 **Legal Compliance (Safety):** Comply fully with the Occupational Health and Safety Act, 1993 and the Construction Regulations, 2014 at all times, Prior to construction, the Contractor must submit a site-specific Health and Safety Plan to the Employer's safety agent (or Engineer) for approval. This plan should be based on the Employer's HSE specification (if provided) and include risk assessments for all anticipated work activities. No work may begin until the safety plan is approved and the site is in compliance (e.g., notification of construction work to Department of Employment and Labour if required for project size).

8.1.2 **Safety Appointments and Training:** The Contractor shall appoint competent persons to key safety roles as required by law: a full-time Construction Supervisor, a Health & Safety Officer (depending on project risk category), risk assessors, first aiders, firefighting attendants, lifting machinery inspectors, etc. All workers must undergo a safety induction before starting on site, ensuring they are aware of site rules, emergency procedures, and hazards. Toolbox talks should be conducted at least weekly (and before any high-risk activity) to reinforce safety instructions. Specific training or certification is required for certain tasks: e.g., crane operators must be licensed, scaffold erectors and inspectors must be trained and formally appointed, welders to have appropriate PPE for arc welding, etc. Only authorized personnel shall operate equipment.

8.1.3 **Personal Protective Equipment (PPE):** Enforce the use of appropriate PPE at all times on site. Mandatory minimum PPE includes safety helmets, safety shoes, and high-visibility vests. Based on tasks, additional PPE is required: fall-arrest harnesses for work above 2m or on the tower (with secure attachment points per a fall protection plan), gloves and goggles for handling sharp or chemical materials, hearing protection for noisy works (like grinding or using percussion drills), and respiratory masks if there is dust (e.g., during concrete cutting) or fumes (welding). The Contractor must provide all necessary PPE to their workers and ensure it is worn. Regular inspections should be done to replace damaged PPE.

8.1.4 **Working at Heights:** Erecting a water tower means significant work at heights. The Contractor must develop a Fall Protection Plan as required by the Construction Regulations, detailing how work at height will be managed. This includes the design and use of scaffolding or mobile elevating work

platforms, use of lifelines or static lines on the structure, ladder safety (the permanent ladder on the tower should not be used for construction access until the structure is complete; temporary ladders must be secured and inspected). All scaffolding must be erected and signed off by a competent scaffold erector and inspected weekly by a scaffold inspector. Workers on scaffolds or open steelwork must use harnesses and lanyards to prevent falls. During steel erection, a controlled access zone should be established beneath, and only essential personnel allowed. Tools should be secured to prevent dropping. The permanent ladder cage offers fall protection for future maintenance, but during construction, do not rely solely on it, use proper climbing harness and twin lanyards when climbing.

8.1.5 **Cranes and Lifting Operations:** Lifting of heavy components (steel columns, tank sections) must be done with carefully planned rigging operations. All lifting gear (slings, shackles) must be certified and inspected. Mobile cranes must have valid load test and operator certification. A qualified rigger should supervise lifts. Exclusion zones must be set up to keep everyone clear of suspended loads. Tag lines should be used to control loads. Never exceed lifting capacities or perform lifts in high winds (especially pertinent when placing a large tank at height, coordinate with weather forecasts).

8.1.6 **Excavation Safety:** Although foundations are not extremely deep, any excavation over 1.5m requires measures against collapse. If excavation sides are near vertical and deeper than 1.5m, provide shoring or step the excavation sides to a safe slope, unless the soil is proven stable and a risk assessment approves steeper sides. Keep excavated soil heaps at least 1m away from pit edges. Barricade open excavations with danger tape and signage to protect clinic staff or public from falling in. If the excavation is in an area accessible to the public or clinic operations, provide solid barriers or covers. Also, ensure safe ingress/egress for workers (ladder access into pits). Check for underground services before digging, get service plans from the Employer or use a cable locator to avoid striking any water pipes, electrical cables, etc. If found, those services should be temporarily diverted or protected.

8.1.7 **Site Security and Public Safety:** Given that the work occurs at a clinic, the Contractor must isolate the construction zone effectively. Install temporary fencing, hoardings, dust screens, and warning signs around the work area as needed, This is to prevent patients, staff, or passers-by from wandering into danger (especially important if the clinic is operational nearby). Maintain site security after hours, lock up equipment and secure any hazardous materials. Adequate lighting should be provided if any work is to be done or if the area is dark, to avoid accidents. The Contractor’s plan should also cover traffic management on site if construction vehicles are moving in/out (use flagmen if needed when trucks enter public roads).

8.1.8 **Emergency Preparedness:** The H&S plan must include emergency procedures. At least one first aid box and a trained first aider must be on site at all times. Identify the nearest emergency medical facility (the clinic itself might help for minor injuries, but serious accidents might require transfer to a hospital). An emergency drill (e.g., fall rescue or fire) might be conducted if the duration allows. Fire extinguishers should be available, especially near welding operations or fuel storage. Establish a means of communication (cell phone or two-way radios) to quickly summon help if needed.

8.1.9 **Health Considerations:** The Contractor must be mindful that they are working in a healthcare environment. Noise, dust, and vibrations should be minimized to avoid impacting clinic operations or patient recovery. If extremely noisy work is required (like cutting steel or concrete), coordinate timing with clinic staff (e.g., do it during times that cause least disruption). Use dust suppression techniques (water spray during concrete cutting, covering of stockpiles). Ensure proper housekeeping to prevent creating pest attractants or infection risks (remove food waste, standing water where mosquitoes breed, etc.). Workers should behave professionally on site given the sensitive environment; any inappropriate conduct could lead to removal from site.

8.1.10 **Environmental Protection:** Implement measures to protect the environment on and around the site. This includes:

8.1.10.1 **Waste Management:** Sort and contain construction waste (wood offcuts, scrap steel, cement bags, etc.). Hazardous waste like welding rods or oil-soaked rags should be kept separate and disposed of at proper facilities. No waste should be left scattered on site or blown into neighbouring areas.

8.1.10.2 **Spill Prevention:** If fuel or oil will be stored for generators or equipment, do so on an impermeable surface with a bund to contain spills. Have spill kits available. Any machinery (like excavator or crane) should be well-maintained to prevent oil leaks. Refuel equipment on a hardstand or with drip trays.

8.1.10.3 **Water Protection:** Avoid any contamination of water sources. If the clinic has a borehole or water supply, ensure nothing can leach into it (e.g., concrete or chemicals). Concrete runoff water (from washing mixers) is highly alkaline, designate a safe washout area where this water can evaporate or be treated, rather than letting it into soil or drains.

8.1.10.4 **Dust and Erosion:** As mentioned, control dust via water spraying on dry days especially when excavating or driving on dirt. After backfilling, compact and reinstate surfaces to prevent erosion or trip hazards.

8.1.11 **Monitoring and Reporting:** The Contractor must conduct regular HSE inspections (at least weekly

safety inspections by a safety officer, daily checks by supervisors, etc.). Any incident (injury, near miss, property damage) must be reported to the Engineer and Employer per the OHS Act requirements (notifiable incidents to the Department of Labour within 7 days on prescribed form, etc.). The Engineer may also have their own safety audits, the Contractor is required to co-operate and resolve any findings. A register of all HSE statistics will be maintained (man-hours worked, injuries, inspections, etc.) and typically discussed in site meetings.

8.1.12 **COVID-19 and Health Protocols:** If still applicable, follow all relevant health protocols (screening of workers for illnesses, providing handwashing facilities, wearing masks if required in medical environments, social distancing, etc.). Although by 2025 COVID-19 restrictions may have eased, a clinic is a sensitive place so infection control is important.

8.1.13 **Community Relations:** Often part of HSE in public projects is being mindful of community relations. Ensure workers behave and no harassment of clinic staff or patients occurs. If local labour is employed, treat them fairly and provide necessary facilities (toilets, shelter, clean drinking water on site for workers). Avoid any discriminatory practices. Sometimes, the Employer may require labour statistics for local employment, provide those if needed as part of social responsibility.

8.2 Given the scope (foundation works, steel erection, work at heights, crane operations, welding, etc.), the following legal appointments (where applicable) must be made before work begins:

8.2.1 Construction Manager

8.2.2 Construction Supervisor

8.2.3 Safety Officer

8.2.4 Fall Protection Supervisor

8.2.5 Lifting Equipment Inspector / Appointed Rigger

8.2.6 First Aider

8.2.7 Health & Safety Representative

8.2.8 Risk Assessor

8.2.9 These appointments must be formally documented, signed by both the employer and the appointee, and included in the Health and Safety File submitted to the Engineer/Client before site establishment.

8.3 In summary, no aspect of the works is so urgent or important that it justifies compromising safety or environmental standards. The Contractor must plan and execute all activities with a safety-first mindset. This not only prevents accidents (which could halt the project and have legal consequences)

but also ensures a smoother project delivery. The Employer places high priority on HSE, and this will be a factor in performance evaluation.

8.4 The completion of the project will not only be judged on the physical installation but also on the Contractor's HSE record. Therefore, the Contractor is urged to allocate sufficient resources (safety personnel, budget for safety equipment, time for training) to meet these obligations. By diligently following the OHS Act, Construction Regulations, and environmental good practices, the project can be completed without injuries or incidents, leaving a positive legacy for the community and the project team.

9 SOCIAL FACILITATION AND LOCAL EMPLOYMENT GENERATION

9.1 Introduction

9.1.1 The employer has identified job creation and access to procurement opportunities by Start-ups, Small and Micro Enterprises (SMMEs) as an essential requirement towards building an economically viable country and in particular locations where it executes projects.

9.2 General Labour minimum targets

9.2.1 It is mandatory that Contractors employ the minimum stipulated personnel on the contracts from the local community where the project is being implemented. This employment is outside the existing employees of the Contractor.

9.2.2 Contractors are to-note that it is an explicit condition of this contract that all unskilled labourers on the project are to be employed from the local community. The Contractor is therefore expected in general to maximise the involvement of the local community.

9.2.3 Note must be taken that the local labour employed must not be paid lower than the minimum approved Municipal rates in that district or area.

9.2.4 The Contractor shall be required to submit employment data monthly to the employers authorised representative.

9.3 Small Micro & Medium Enterprises (SMME)

9.3.1 Where SMMEs are sufficiently resourced, a minimum of 10% of the value of the work must be subcontracted. Where SMMEs are insufficient resources to execute the proposed works as a complete package the Contractor may conclude contracts on a management/labour basis in which event a

minimum of 5% of the value the works is to be subcontracted. The onus is on the Contractor to prove to the employer that not fully fledged SMMES are active in the project.

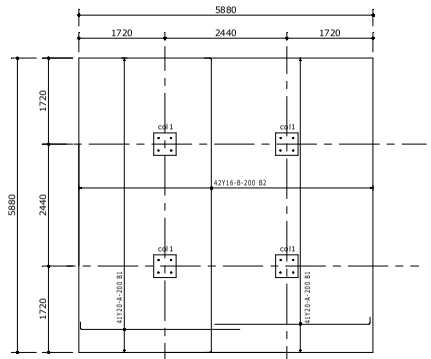
9.3.2 Regarding procurement of materials, local is hereby defined as the district in which the project is located. Where materials are not available within the local area as defined above, the Contractor shall provide sufficient proof thereof prior to procuring outside of the local area.

10 DRAWINGS AND SPECIFICATION

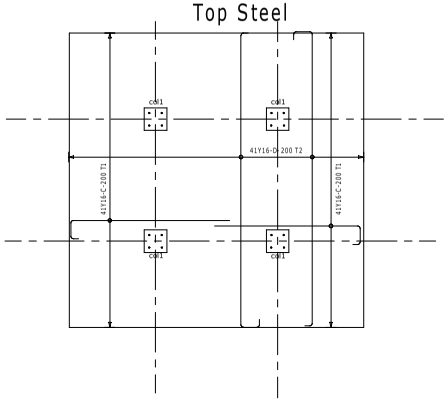
Drawing and Specifications	Deliverables
Water Tank and Structural Designs	Annexure A

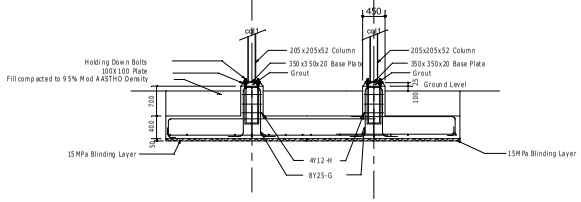
11 ANNEXURE A: WATER TANK AND STRUCTURAL DESIGNS

Bottom Steel



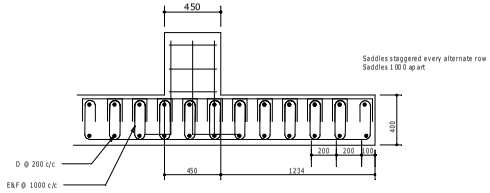
Top Steel





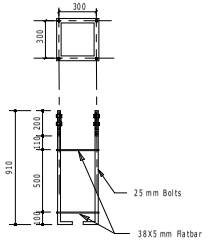
Section

Scale 1:50



Detail

Scale 1:20



Holding Down Bolt Group

4 nuts@ REQUIRED

Scale 1:20

Notes.
Notas.

1. All Concrete to be 35 Mpa. @ 28 Days
2. All reinforcing to be 75mm off bottom of foundations.
3. All reinforcing to have a min. of 25mm cover at all times.
4. All Bricks to be of structural quality as per S.A.B.S. 0400-1990
5. All Mortar to be Class II as per S.A.B.S. 0400-1990
6. All dimensions must be checked with Architect drawings.
7. All steel must be checked by Engineer before concrete is poured
8. Workshop drawings to be submitted for approval to engineer before manufacturing commence.
9. All structural steel to be to SANS 50025 standards. Steel to be Grade S275

Tender Drawing

Date Datum	By Deur	No Nr	Description Beskrywing

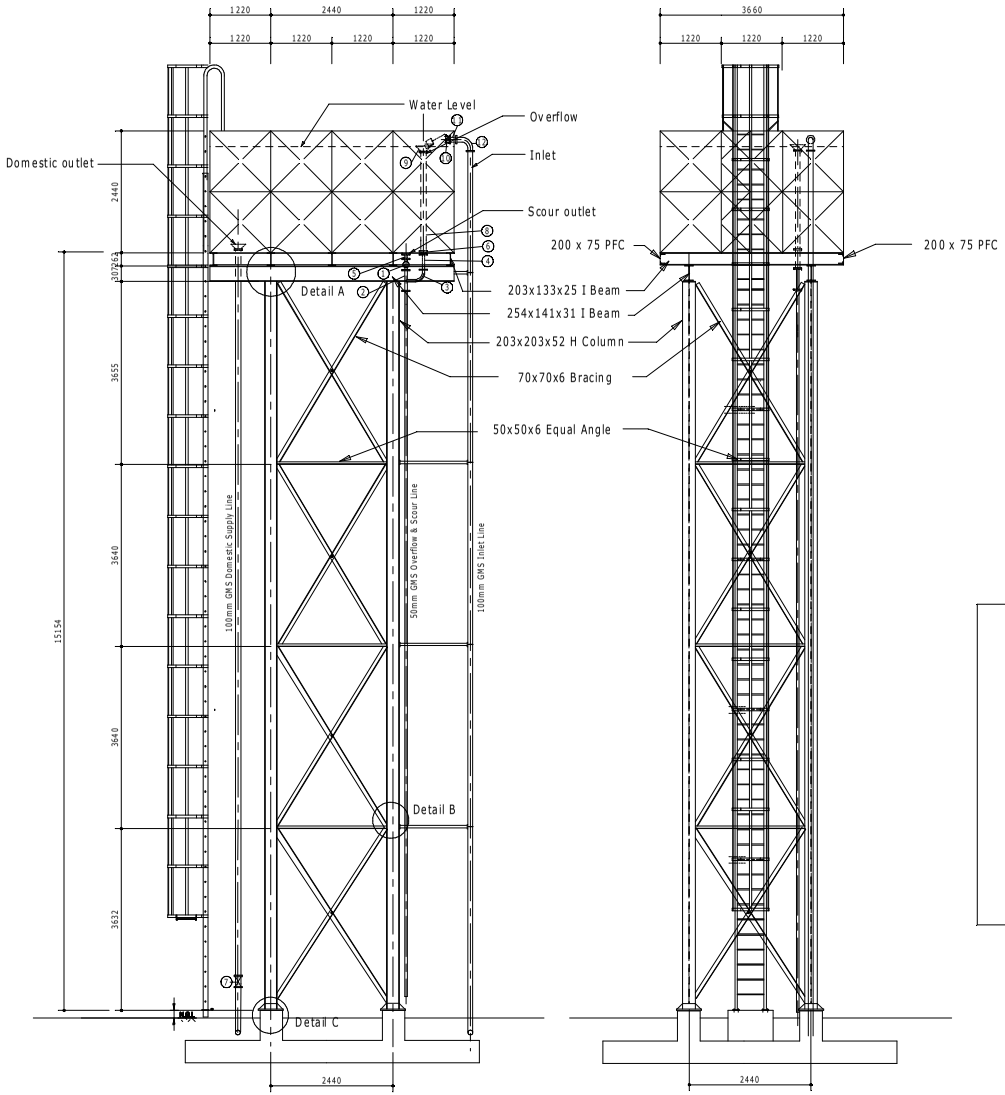
Revisions ----- Wysigings

FJ Consulting Engineers cc
Civil Struct Eng & Proj Man
Tel: 043 726 6256
East London

Project: / Projek:
SCHOOLS WATER TANK PROJECT
CONTRACT WS 54410/17302

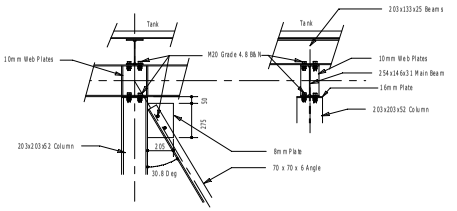
Drawing: / Tekening:
FOUNDATION LAYOUT TO WATER TANK

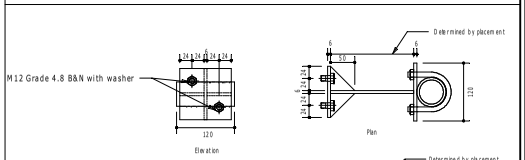
Drawing No: / Tekening No:		REV. No:	
25-002-002			0
Scale / Skaal	Designed / Ontwerp	Drawn / Getrek	Checked / Nagesien	Date / Datum
As Shown	H P Jooste 830362	HPJ		27-09-17

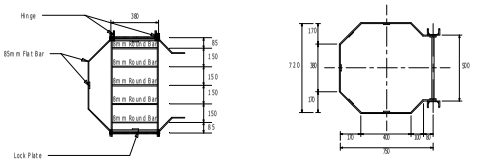


DETAIL A

Scale 1:20

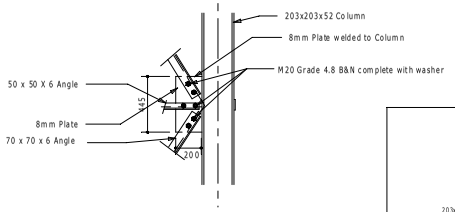




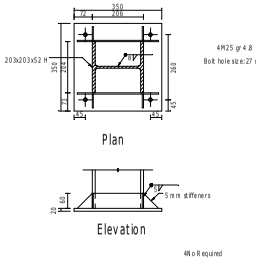


DETAIL B

Scale 1:20



DETAIL C



ITEM NO	DESCRIPTION Scal 1:10	No
1	50mm Isolation Valve	1
2	50mm Flange T	1
3	50mm 90 deg Bend	1
4	50mm Distance Piece	1
5	50mm Distance Piece	1
6	100 mm to 50mm Reducer	1
7	100 mm ISOLATION Valve	1
8	100mm distance piece & 2000mm LONG FBE	1
9	100mm Bellmouth	2
10	100mm FLOAT CONTROL Valve	1
11	1000mm distance piece & 100mm Long FBE	1
12	100mm 90 Deg Bend	1

Notes.
Notas.

1. All Concrete to be 35 Mpa. @ 28 Days
2. All reinforcing to be 75mm off bottom of foundations.
3. All reinforcing to have a min. of 25mm cover at all times.
4. All Bricks to be of structural quality as per S.A.B.S. 0400-1990
5. All Mortar to be Class II as per S.A.B.S. 0400-1990
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Tender Drawing

Date Datum	By Deur	No Nr	Description Beskrywing
30-10-25	HPJ	2	Tanks size changed and structure redesign
27-10-25	HPJ	1	Tank size changed

Revisions ----- Wysigings

FJ Consulting Engineers cc
Civil Struct Eng & Proj Man
Tel: 043 726 6256
East London

Client:
Klient:
NATIONAL DEPARTMENT of HEALTH

Project:
Projek:
DYSSELDORP CLINIC

Drawing:
Tekening:
43m3 WATER TANK

Drawing No: Tekening No:	25-002-001	REV. No: 2	
Scale Skaal	Designed Ontwerp	Drawn Geteken	Checked Nagesien	Date Datum
As Shown	H P Jooste 830362	HPJ		30-10-25