



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

FINANCE  
SUPPLY CHAIN MANAGEMENT

Tenders & Contracts, Supply Chain Management

SCM Tenders 10

Email : [SCM.Tenders10@capetown.gov.za](mailto:SCM.Tenders10@capetown.gov.za)

22 May 2025

**NOTICE TO TENDERERS NO: 2**  
(Pages: 14).

**TENDER 251Q/2024/25**

**DESCRIPTION: CONSTRUCTION OF THE NEW SANDDRIFT EAST SEWER PUMP STATION.**

**CLOSING DATE OF TENDER: 29 May 2025**

**TENDER BOX NUMBER: 204**

Dear Sir / Madam

Your attention is drawn to the following attachments in respect to the above tender.

This "Notice to Tenderers" is in addition to the Tender Documents in the Schedule of Documents. Any tender submitted will be deemed to be in accordance with those documents amended in accordance with the following instructions.

Please note that replacement pages have been added to Annexure E of the Notice to Tenderers No. 2. The replacement pages are to replace existing pages in the tender document for submission.

**NT2.1 QUERIES AND RESPONSES**

**2.1.1 Please provide the link to the Revit models (viewing rights only).**

The link for the Revit Model viewer has been provided in Notice to Tenderers No.1 (Clarification Meeting Minutes). <https://autode.sk/44BWq7k>

**2.1.2 Please indicate the anticipated date of commencement for contract 251Q/2024/25**

The 251Q/2024/25 contract is anticipated to commence in May-June 2026.

**2.1.3 Please assist with the head and flow requirements for the pumps.**

Refer to the Project Specific Specification, PSP 1.2.5 on Page 234 and Returnable Schedule 28, Detail Sheet 1 - Pump Set 1 on Page 311 for the head and flow requirements for the pumps.

**2.1.4 Demolition of existing MCC Building - Are as-built drawings available, and can they be provided?**

Refer to Notice to Tenderers No. 2, Annexure B for the existing pump station drawings and Annexure D for photographs of the existing MCC building.

**2.1.5 To what depth below ground is the existing MCC demolition required?**

The existing MCC building is to be demolished up to a depth of 1.0m below the natural ground level.

**2.1.6 Could arrangements be made to view the existing facilities on site, particularly the existing pump station, MCC equipment and bypass infrastructure, since these are billed as sums under R1.16.1, R1.16.2 and R1.16.3 for dismantling?**

Refer to Notice to Tenderers No. 2, Annexure B for the existing pump station drawings and Annexure D for photographs of the existing MCC building. All requests for an additional site inspection to be submitted by Friday, 23 May 2025. Arrangements for an additional site inspection will be confirmed.

**2.1.7 Is there an operator of the existing pump station and bypass system we can talk to, or obtain a contact detail?**

The Employer's Agent will be available at the site inspection to respond to queries.

**2.1.8 Conversion of existing sewer pump station to a sand trap and Drawing 34676.01-133-08 - Drawing 34676.01-133-08: Is this an As-Built drawing?**

No, drawing 34676.01-133-08 is the proposed sand trap drawing after completion of the works. Refer to Notice to Tenderers No. 2, Annexure B for as-built drawings of the existing pump station.

**2.1.9 Please confirm the only new work is the 750mm outlet to be built into an existing concrete ring and cleaning out billed as B1.18**

The sand trap repurposing will include but not limited to concrete benching reconfiguration, handrail installation, access cover replacement and odour extraction.

**2.1.10 Drawing 34676.01-133-08: Plan view. What is the pipe indicated below the one gantry plinth? It is not shown on the existing service layout drawing.**

The pipe is an abandoned connection pipe from the old screws pump station to the existing pump station sump. Refer to Notice to Tenderers No. 2, Annexure B for as-built drawings of the existing pump station.

**2.1.11 Please describe the existing pump infrastructure and requirements:**

**a) Pump duty data, outlet pipe information: route and discharge details**

Refer to Notice to Tenderers No. 2, Annexure A for datasheets of the existing pumps. Refer to Drawing 34676.01-100-01 and Annexure B for the existing services and pipe routes.

**b) What valves exist and their location and details.**

Refer to Notice to Tenderers No. 2, Annexure B for as-built drawings of the existing pump station indicating valves and positions.

**c) Operation procedures for using these pipeline routes.**

Refer to Drawing 34676.01-130-01. The operation of the existing pump station will remain with The City's operation and maintenance team during the duration of the contract. Full time access for City staff needs to be considered in the site setup and security arrangement.

**d) Existing flow rates that can be expected throughout a typical 24hrs.**

Refer to Notice to Tenderers No. 2, Annexure A for datasheets of the existing pumps. The current IPDWF is 117 l/s and the PWWF is 235 l/s.

**e) Please clarify the function of the new pipe between EXFSMH4 and new FSMH3 and when this new pipe needs to be constructed.**

The new pipe between EXFSMH4 and new FSMH3 will link the existing bypass system to be rerouted. The pipes between EXFSMH4-EXFSMH5 and between EXFSMH5-FSMH3 will be abandoned along with concrete channel indicated on drawing 34676.01-100-01.

**2.1.12 Tender document: Drawing List pg148 - List indicates Bending Schedules are bound into the Document. These were not received. Please provide the bending schedules.**

Refer to Notice to Tenderers No. 2, Annexure C for Bending Schedules.

**2.1.13 Bill item F13.2.4 Transformer Louvre door with 3.55m<sup>2</sup> air intake capacity (3CR12 & epoxy coated). This is a door to the Generator Room, not a transformer room. The Architect's drawing 1615/007/2 indicates this as door with 4 openings and provision for an I beam. Please issue a drawing for this door.**

Refer to Drawing EAM-ME-SS-014 Typical Steel Door 2x800 Type C3 with Louvres for Generator Room door detail bound to the document as listed on Page 148.

**2.1.14 Bill item F12.1.4 Epoxy coated HDG Steel Roller Shutter Door (3500mm W x 4200mm H). Drawing 34676.01-133-01 indicates 4200m wide. Drawing 34676.01-133-05 indicates 3200m high. Architects dwg 1615/007/2 indicates 3500 high. Please confirm the correct dimensions (width and height).**

The HDG steel roller shutter door is to be 3500mm H x 4200mm W.

Replace drawing 34676.01-133-05 T0 with drawing 34676.01-133-05 T1 in Annexure F.

Replace Page 103 with Page 103(R) in Annexure E.

**2.1.15 Bill item F13.2.1 Supply and install 2500 x 900mm wood viewing window. Drawings 34676.01-133-04 and 34676.01- 133-01 indicate different dimensions. Bill item F14.1.2 Supply and install window. Please confirm this frame and window's dimensions.**

The viewing window is to be 2000mm W x 1000mm H as per Drawings 34676.01-133-04 and 34676.01- 133-01. Description of dimensions in Bill item F13.2.1 and F14.1.2 updated.

Replace Page 104 with Page 104(R) in Annexure E.

Replace Page 106 with Page 106(R) in Annexure E.

**2.1.16 Page 144 C3.1 Description of Works 3.1.3 Mass concrete benching with HDPE anchor knob lining. Benching and anchor knob lining are considered incompatible. Please provide details and location of the anchor knob lining to the mass concrete benching.**

HDPE anchor knob lining will not be required to mass concrete benching. Mass concrete will be required in the in screening channels and wet well sump. HDPE anchor knob lining will be required on internal walls and roof soffit, above concrete benching level, for the inlet chamber, screening channels, and wet well sumps.



**2.1.17 Screen Chamber and Wet Well vs Bill items D1.7 and E1.8 HDPE anchor knob lining.**  
**Please clarify knob liner is not required to the concrete walls that get covered by the benching.**

HDPE anchor knob lining will not be required on walls to be covered with mass concrete. HDPE anchor knob lining will be required on internal walls and roof soffit, above concrete benching level, for the inlet chamber, screening channels, and wet well sumps.

**2.1.18 Bill items D3.7 and E3.7 concrete benching and other requirements. Please provide the specifications for this benching: concrete grade**

Mass concrete benching to be 20MPa/19mm as described in item description for Bill items D3.7 on Page 94 and E3.7 on Page 97.

**2.1.19 Specification PSG3.4 Concrete aggregate Dolomite aggregate shall be of natural stone and shall be selected for specific use in sewage containment application. Dwg 34676.01-104-04 indicates dolomitic aggregate to precast MH rings. Please confirm which other concrete is to have dolomitic aggregate: Structural concrete and concrete sewer pipes?**

All below ground concrete structures and sewer concrete pipes to have dolomitic aggregate.

Replace Page 182 with Page 182(R) in Annexure E.

**2.1.20 Specification PSG3.2 Cement for Concrete vs Specification PSG5.5.1 Concrete Quality General. PSG3.2: "All cement used in the works shall be ordinary Portland cement complying with SANS 471." PSG5.5.1 "... the concrete mix used for water retaining structures must provide a very dense and impervious concrete". Will a blended cement be acceptable?**

Concrete mix design with blended cement to be submitted to the Employer's Agent by the appointed contractor for review and approval.

**2.1.21 Bill item E3.8 anti-microbial additive. This bill item is under the Wet and Dry Well section, yet reference here is only made to the screening chamber base, walls and roof slab. Please confirm for which areas of structural concrete this is required?**

H2S resistant anti-microbial additive is required to concrete in screening chamber, screen room, inlet chamber and wet well base, walls and roof slab, as per specialist details.

Replace Page 97 with Page 97(R) in Annexure E.

**2.1.22 Bill item G5 Manholes refers to dwg 34676.01-104-05. The drawing 34676.01-104-05 is an Air valve chamber. The air valve is in a chamber and not a manhole. Please confirm the correct drawing reference.**

Refer to drawing 34676.01-104-06 for manhole detail referenced under Bill item G5.

Replace Page 108 with Page 108(R) in Annexure E.

**2.1.23 560mm diameter HDPE sewer rising main to Railway Road Bulk sewer. At the Site Clarification Meeting it was mentioned that this is a current contract. Please advise if this is to be completed before the 251Q/2024/25 contract commences**

The 560mm diameter HDPE sewer rising main to Railway Road Bulk sewer is anticipated to be completed prior to commencement of the 251Q/2024/25 contract.

**2.1.24 750mm diameter existing Montagu Drive outfall sewer. Please confirm that this sewer is to remain in use once the project is completed.**

The existing 750mm diameter Montagu Drive outfall sewer will remain in use after completion of the pump station project.

**2.1.25 600mm gravity bypass sewer Drawing 34676.01-130-01. The existing sewage pumps are not sufficiently detailed in the documents. Please provide details of the existing sewage pumps, their duty, outlet size, rising main routes and discharge manhole location.**

Refer to Notice to Tenderers No. 2, Annexure A for datasheets of the existing pumps.  
Refer to Drawing 34676.01-100-01 and Annexure B for existing services and pipe routes.

**2.1.26 We note a valve in the chamber marked BC2 on the existing services layout drawing 34676.01-100-01. Please provide details and a description of this valve's function and use.**

The existing flap valve to be demolished along with demolition of the concrete channel to be priced under Bill item B1.6 on Page 88.

**2.1.27 Please describe the current operation/use of the 600mm sewer bypass and the existing pipelines from the existing pump station to existing FSMH6 at the Montagu Drive outfall sewer.**

The existing gravity bypass system is activated in the event of pump failure in the existing pump station, or when the sluice gate on the inlet of the pump sump is closed. To bypass the pump station sewage will surcharge in the upstream sewer system up to the invert

level of the bypass sewer and gravitate to the existing Montagu Drive outfall sewer. The existing bypass sewer can be activated by closing the sluice gate to allow the decommissioning of the existing pump station and repurposing into a sand trap.

**2.1.28 Outline Specification: Door, window and louvre schedules: These have not been provided. Please can these be provided.**

Refer to Page 148 for list of external steel doors bound to the documents.

**2.1.29 Do you perhaps know if the project has roller shutter requirements that we can also price on?**

Yes, the project has roller shutter which tenderers are required to price on.

**2.1.30 Contract Data item 4.13.1 General Design Obligations, 4th paragraph "discovered the error ... before submitting the Tender." The 3rd paragraph allows the Contractor 6 weeks from Clause 5.3.1 notice to notify of any error, fault or other defect found in the Scope of Work: Part C3.1. At tender stage the M&E designers are not yet contracted. The M&E subcontractor's input in the tender duration is also shorter than 6 weeks. So for the bidders to discover errors, faults and other defects at Tender stage is not feasible. Since 6 weeks within the Contractual / Design stage is adequate and acceptable, could this requirement at Tender Stage be omitted?**

Delete the last sentence of Clause 4.13.1.

"If and to the extent that (taking account of cost and time) an experienced contractor exercising due care would have discovered the error, fault or other defect when examining the Site and the Scope of Work before submitting the Tender, the Time for Completion shall not be extended, and the Contract Price shall not be adjusted."

Replace Page 49 with Page 49 (R) in Annexure E.

**2.1.31 Could you please send us the drawing for shoring referred to in specification below.**

Refer to drawing 34676.01-201-02 for the proposed shoring lateral support for deep excavation.

Replace Page 174 with Page 174(R) in Annexure E.

Please feel free to contact Supply Chain Management if you are unclear about any point and if you require any additional information.

  
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**For: Director: Supply Chain Management**

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**ACKNOWLEDGEMENT OF RECEIPT FOR AND ON BEHALF OF THE TENDERER: TENDER NO 251Q/2024/25**

At ..... on this ..... day of ..... 2025

Signature: .....

Name of Signatory: .....  
(In ink and capitals)

TENDERER: .....  
(Name of firm in ink and capital letters.)

**ANNEXURE A**

**Existing Pumps Datasheet**

Pump type: Submersible vortex pump  
Application: Waste water, sewage

## Pump data

Solids passage 150 mm  
Discharge/ Suction diameter 200 mm/ 200 mm  
Impeller type: Vortex  
Impeller diameter 305 - 230 mm  
Recommended min. flow 13 l/sec (47 m3/h)  
Weight 340 kg

## Motor

Mains: 50 c/s – 3 phase  
Rated shaft power 26.0 kW  
Rated electrical power 29.4 kW  
Nominal speed 975 rpm  
Motor efficiency 88.5 %  
Power factor (cos phi) 0.81  
Degree of protection IP 68  
Isolation class F (155°C)  
Max. water temperature 40°C  
Standard cable length 10 m

## Materials

Pump casing Cast iron GG 25 (EN-GJL-250)  
Impeller S.g cast iron GGG 40 (EN-GJS-400-15)  
Motor unit Cast iron GG 25 (EN-GJL-250)  
Shaft AISI 431  
Alt: AISI 316  
Bolts AISI 316  
Elastomers Nitrile (NBR) of neoprene (CR)  
Alt: viton (FPM)  
Neoprene (CR)  
Electrical cable Oil  
Seal lubrication Oil  
Seal pump side Silicon carbide – silicon carbide  
Seal motor side Carbon - Ceramic  
Coating Two components polyurethane

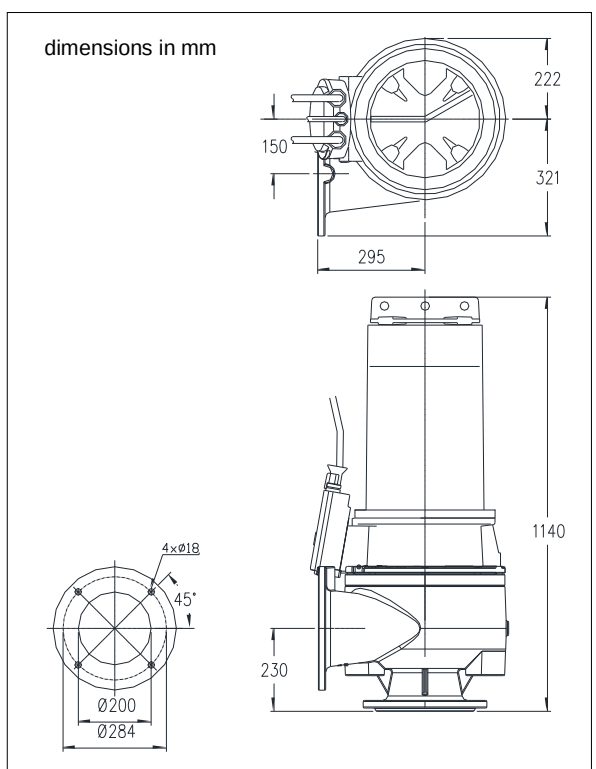
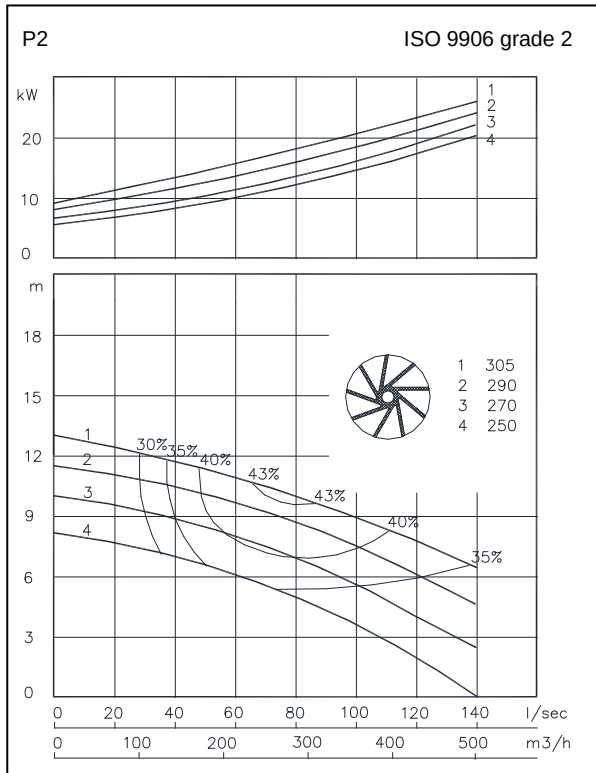
## Installation options

Guide bar coupling OWK 200  
Freestanding 200 mm hose connection  
Including support (VRS)  
Dry Installation vertical or horizontal install.  
Including cooling system discharge flange NW200  
(ODO) suction flange NW200



## Optional

- Version with cooling system
- Cable protective sheathing (AISI 316)
- Water detector in motor and oil chamber



## Connections

|                                                  |         | Electrical cable size [mm <sup>2</sup> ] |                  |  |  |  |                             |
|--------------------------------------------------|---------|------------------------------------------|------------------|--|--|--|-----------------------------|
| voltage                                          | current | motor protection and/or water detector   |                  |  |  |  |                             |
| [V]*                                             | [A]     | direct start                             | star-delta start |  |  |  |                             |
| 230                                              | 91      | -                                        | 2x4G16 + 4G2.5   |  |  |  |                             |
| 400                                              | 52.4    | 4G16 + 4G2.5                             | 2x4G6 + 4G2.5    |  |  |  |                             |
| 500                                              | 41.9    | 4G10 + 4G2.5                             | 2x4G6 + 4G2.5    |  |  |  |                             |
| starting current DOL start : 4.8 x rated current |         |                                          |                  |  |  |  |                             |
| starting current YD start : 1.6 x rated current  |         |                                          |                  |  |  |  | * other voltages on request |

## **ANNEXURE B**

### **Existing Pump Station As-built Drawings**







## **ANNEXURE C**

### **Bending Schedules**

| MEMBER                                                       | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C    | D    | E/R   | kg  |
|--------------------------------------------------------------|-------|---------|-----|------------|-------|----------|----|-----|------|------|------|-------|-----|
| 1. RC BASE FOOTING BF01 1500x1500x450 FOR COLUMN CL04        | 3     | 8       | Y16 | 2550       | 24    | BF01-01  | 55 | 300 | 350  | 1400 | 350  | [300] | 97  |
|                                                              | 3     | 8       | Y16 | 2450       | 24    | BF01-02  | 55 | 300 | 310  | 1400 | 310  | [300] | 93  |
|                                                              | 3     | 8       | Y16 | 1950       | 24    | BF01-03  | 38 | 310 | 1400 | 310  |      |       | 74  |
|                                                              | 3     | 8       | Y16 | 2050       | 24    | BF01-04  | 38 | 350 | 1400 | 350  |      |       | 78  |
|                                                              | 3     | 8       | Y20 | 1850       | 24    | BF01-05  | 37 | 400 | 1500 |      |      |       | 109 |
|                                                              | 3     | 7       | Y10 | 1200       | 21    | BF01-06  | 60 | 270 | 270  |      |      |       | 16  |
|                                                              | 3     | 7       | Y10 | 1000       | 21    | BF01-07  | 60 | 220 | 220  |      |      |       | 13  |
|                                                              |       |         |     |            |       |          |    |     |      |      |      |       |     |
| 2. RC BASE FOOTING BF02 2900x1500x450 FOR COLUMN CL04 & CL09 | 1     | 15      | Y16 | 2550       | 15    | BF02-01  | 55 | 300 | 350  | 1400 | 350  | [300] | 60  |
|                                                              | 1     | 8       | Y16 | 3850       | 8     | BF02-02  | 55 | 300 | 310  | 2800 | 310  | [300] | 49  |
|                                                              | 1     | 8       | Y16 | 3350       | 8     | BF02-03  | 38 | 310 | 2800 | 310  |      |       | 42  |
|                                                              | 1     | 15      | Y16 | 2050       | 15    | BF02-04  | 38 | 350 | 1400 | 350  |      |       | 49  |
|                                                              | 1     | 8       | Y20 | 1850       | 8     | BF02-05  | 37 | 400 | 1500 |      |      |       | 36  |
|                                                              | 1     | 7       | Y10 | 1200       | 7     | BF02-06  | 60 | 270 | 270  |      |      |       | 5   |
|                                                              | 1     | 7       | Y10 | 1000       | 7     | BF02-07  | 60 | 220 | 220  |      |      |       | 4   |
|                                                              | 1     | 7       | Y10 | 1100       | 7     | BF02-08  | 60 | 100 | 390  |      |      |       | 5   |
|                                                              | 1     | 7       | Y10 | 200        | 7     | BF02-09  | 85 | 80  | 100  | 40   | [40] |       | 1   |
|                                                              | 1     | 6       | Y16 | 1650       | 6     | BF02-10  | 37 | 400 | 1300 |      |      |       | 16  |

|       |   |   |    |    |     |     |    |    |    |       |
|-------|---|---|----|----|-----|-----|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16  | 20  | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |     |     |    |    |    |       |
| Y     |   |   | 44 |    | 556 | 146 |    |    |    | 746   |
| TOTAL |   |   | 44 |    | 556 | 146 |    |    |    | 746   |

|                                                                                                                                                                   |                                                                                                                                     |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                                                                        | REG. NO | 970672      | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                                                  |         |             | DATE        | 13/03/2025  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>RC BASE FOOTING BF01 (1500x1500x450)<br>RC BASE FOOTING BF02 (2900x1500x450)<br>REINFORCEMENT SCHEDULE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                                                                     |         |             | REF DWG     | 204-BF01-01 |
|                                                                                                                                                                   |                                                                                                                                     |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                                                                     |         |             | REVISION    | T0          |
|                                                                                                                                                                   |                                                                                                                                     |         | SCHEDULE NO | 206-BF01-01 |             |

13/03/2025  
R.BOTHA  
204-BF01-01  
34676.01  
T0  
206-BF01-01

| MEMBER                                                  | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C    | D   | E/R   | kg |
|---------------------------------------------------------|-------|---------|-----|------------|-------|----------|----|-----|------|------|-----|-------|----|
| 3. RC BASE FOOTING BF03 (1200x1200x450) FOR COLUMN CL07 | 2     | 7       | Y16 | 2250       | 14    | BF03-01  | 55 | 300 | 350  | 1100 | 350 | [300] | 50 |
|                                                         | 2     | 7       | Y16 | 2150       | 14    | BF03-02  | 55 | 300 | 310  | 1100 | 310 | [300] | 48 |
|                                                         | 2     | 7       | Y16 | 1650       | 14    | BF03-03  | 38 | 310 | 1100 | 310  |     |       | 36 |
|                                                         | 2     | 7       | Y16 | 1750       | 14    | BF03-04  | 38 | 350 | 1100 | 350  |     |       | 39 |
|                                                         | 2     | 8       | Y16 | 1550       | 16    | BF03-05  | 37 | 300 | 1300 |      |     |       | 39 |
|                                                         | 2     | 6       | Y10 | 1000       | 12    | BF03-06  | 60 | 220 | 220  |      |     |       | 7  |
|                                                         | 2     | 6       | Y10 | 850        | 12    | BF03-07  | 60 | 180 | 180  |      |     |       | 6  |
|                                                         |       |         |     |            |       |          |    |     |      |      |     |       |    |
| 4. RC BASE FOOTING BF04 1500x1500x450 FOR COLUMN CL03   | 3     | 8       | Y16 | 2550       | 24    | BF04-01  | 55 | 300 | 350  | 1400 | 350 | [300] | 97 |
|                                                         | 3     | 8       | Y16 | 2450       | 24    | BF04-02  | 55 | 300 | 310  | 1400 | 310 | [300] | 93 |
|                                                         | 3     | 8       | Y16 | 1950       | 24    | BF04-03  | 38 | 310 | 1400 | 310  |     |       | 74 |
|                                                         | 3     | 8       | Y16 | 2050       | 24    | BF04-04  | 38 | 350 | 1400 | 350  |     |       | 78 |
|                                                         | 3     | 8       | Y16 | 1650       | 24    | BF04-05  | 37 | 400 | 1300 |      |     |       | 63 |
|                                                         | 3     | 6       | Y10 | 1200       | 18    | BF04-06  | 60 | 270 | 270  |      |     |       | 13 |
|                                                         | 3     | 6       | Y10 | 1000       | 18    | BF04-07  | 60 | 220 | 220  |      |     |       | 11 |

|       |   |   |    |    |     |    |    |    |    |       |
|-------|---|---|----|----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |     |    |    |    |    |       |
| Y     |   |   | 38 |    | 615 |    |    |    |    | 653   |
| TOTAL |   |   | 38 |    | 615 |    |    |    |    | 653   |

|                                                                                                                                                                   |  |                                                                                                                                     |  |             |             |           |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------|--|-------------|-------------|-----------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             |  | LEON PIENAAR                                                                                                                        |  | REG. NO     | 970672      | SIGNATURE |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 |  | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                                                  |  |             |             | DATE      | 13/03/2025  |
|                                                                                                                                                                   |  | <u>DRAWING TITLE:</u><br><br>RC BASE FOOTING BF03 (1200x1200x400)<br>RC BASE FOOTING BF04 (1500x1500x450)<br>REINFORCEMENT SCHEDULE |  |             |             | DET. BY   | R.BOTHA     |
|                                                                                                                                                                   |  |                                                                                                                                     |  |             |             | REF DWG   | 204-BF01-01 |
|                                                                                                                                                                   |  |                                                                                                                                     |  |             |             | JOB NO    | 34676.01    |
|                                                                                                                                                                   |  |                                                                                                                                     |  |             |             | REVISION  | T0          |
|                                                                                                                                                                   |  |                                                                                                                                     |  | SCHEDULE NO | 206-BF02-01 |           |             |

| MEMBER                                                       | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C    | D    | E/R   | kg |
|--------------------------------------------------------------|-------|---------|-----|------------|-------|----------|----|-----|------|------|------|-------|----|
| 5. RC BASE FOOTING BF05 1800x1200x450 FOR COLUMN CL10        | 1     | 10      | Y16 | 2250       | 10    | BF05-01  | 55 | 300 | 350  | 1100 | 350  | [300] | 36 |
|                                                              | 1     | 7       | Y16 | 2750       | 7     | BF05-02  | 55 | 300 | 310  | 1700 | 310  | [300] | 30 |
|                                                              | 1     | 7       | Y16 | 2250       | 7     | BF05-03  | 38 | 310 | 1700 | 310  |      |       | 25 |
|                                                              | 1     | 10      | Y16 | 1750       | 10    | BF05-04  | 38 | 350 | 1100 | 350  |      |       | 28 |
|                                                              | 1     | 6       | Y16 | 1650       | 6     | BF05-05  | 37 | 400 | 1300 |      |      |       | 16 |
|                                                              | 1     | 6       | Y10 | 1100       | 6     | BF05-06  | 60 | 100 | 390  |      |      |       | 4  |
|                                                              | 1     | 6       | Y10 | 200        | 6     | BF05-07  | 85 | 80  | 100  | 40   | [40] |       | 1  |
|                                                              |       |         |     |            |       |          |    |     |      |      |      |       |    |
| 6. RC BASE FOOTING BF06 2200x1500x450 FOR COLUMN CL03 & CL10 | 2     | 12      | Y16 | 2550       | 24    | BF06-01  | 55 | 300 | 350  | 1400 | 350  | [300] | 97 |
|                                                              | 2     | 8       | Y16 | 3150       | 16    | BF06-02  | 55 | 300 | 310  | 2100 | 310  | [300] | 80 |
|                                                              | 2     | 8       | Y16 | 2650       | 16    | BF06-03  | 38 | 310 | 2100 | 310  |      |       | 67 |
|                                                              | 2     | 12      | Y16 | 2050       | 24    | BF06-04  | 38 | 350 | 1400 | 350  |      |       | 78 |
|                                                              | 2     | 14      | Y16 | 1650       | 28    | BF06-05  | 37 | 400 | 1300 |      |      |       | 73 |
|                                                              | 2     | 6       | Y10 | 1200       | 12    | BF06-06  | 60 | 270 | 270  |      |      |       | 9  |
|                                                              | 2     | 6       | Y10 | 1000       | 12    | BF06-07  | 60 | 220 | 220  |      |      |       | 7  |
|                                                              | 2     | 6       | Y10 | 1100       | 12    | BF06-08  | 60 | 100 | 390  |      |      |       | 8  |
|                                                              | 2     | 6       | Y10 | 200        | 12    | BF06-09  | 85 | 80  | 100  | 40   | [40] |       | 1  |

|       |   |   |    |    |     |    |    |    |    |       |
|-------|---|---|----|----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |     |    |    |    |    |       |
| Y     |   |   | 31 |    | 528 |    |    |    |    | 558   |
| TOTAL |   |   | 31 |    | 528 |    |    |    |    | 558   |

|                                                                                                                                                                   |                                                                                                                                     |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                                                                        | REG. NO | 970672      | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                                                  |         |             | DATE        | 13/03/2025  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>RC BASE FOOTING BF05 (1800x1200x450)<br>RC BASE FOOTING BF06 (2200x1500x450)<br>REINFORCEMENT SCHEDULE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                                                                     |         |             | REF DWG     | 204-BF01-02 |
|                                                                                                                                                                   |                                                                                                                                     |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                                                                     |         |             | REVISION    | T0          |
|                                                                                                                                                                   |                                                                                                                                     |         | SCHEDULE NO | 206-BF03-01 |             |

| MEMBER                           | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D    | E/R   | kg  |
|----------------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|------|-------|-----|
| 1. BASE SLAB<br>300 THK          | 1     | 32      | Y16 | 3850       | 32    | CH01-01  | 55 | 200  | 200  | 3210 | 200  | [200] | 194 |
|                                  | 1     | 18      | Y16 | 6750       | 18    | CH01-02  | 55 | 200  | 170  | 6170 | 170  | [200] | 192 |
|                                  | 1     | 18      | Y16 | 6450       | 18    | CH01-03  | 38 | 170  | 6170 | 170  |      |       | 183 |
|                                  | 1     | 32      | Y16 | 3550       | 32    | CH01-04  | 38 | 200  | 3210 | 200  |      |       | 179 |
|                                  | 1     | 28      | Y10 | 1500       | 28    | CH01-05  | 83 | 390  | 150  | 450  | 450  |       | 26  |
|                                  |       |         |     |            |       |          |    |      |      |      |      |       |     |
| 2. WALL 1 &<br>WALL 3<br>200 THK | 2     | 116     | Y16 | 1350       | 232   | CH01-11  | 37 | 170  | 1200 |      |      |       | 494 |
|                                  | 2     | 58      | Y12 | 2350       | 116   | CH01-12  | 37 | 160  | 2230 |      |      |       | 242 |
|                                  | 2     | 72      | Y12 | 1800       | 144   | CH01-13  | 37 | 900  | 900  |      |      |       | 230 |
|                                  | 2     | 24      | Y10 | 5450       | 48    | CH01-14  | 20 | 5420 |      |      |      |       | 161 |
|                                  | 2     | 8       | Y12 | 1000       | 16    | CH01-15  | 20 | 1000 |      |      |      |       | 14  |
|                                  | 2     | 8       | Y12 | 600        | 16    | CH01-16  | 20 | 600  |      |      |      |       | 9   |
|                                  | 2     | 42      | Y10 | 300        | 84    | CH01-17  | 85 | 100  | 140  | 40   | [60] |       | 16  |
|                                  |       |         |     |            |       |          |    |      |      |      |      |       |     |
| 3. WALL 2 &<br>WALL 4<br>200 THK | 2     | 56      | Y16 | 1350       | 112   | CH01-21  | 37 | 170  | 1200 |      |      |       | 239 |
|                                  | 2     | 32      | Y12 | 2350       | 64    | CH01-22  | 37 | 160  | 2230 |      |      |       | 134 |
|                                  | 2     | 24      | Y10 | 2500       | 48    | CH01-23  | 20 | 2490 |      |      |      |       | 74  |
|                                  | 2     | 8       | Y12 | 1000       | 16    | CH01-24  | 20 | 1000 |      |      |      |       | 14  |
|                                  | 2     | 8       | Y12 | 600        | 16    | CH01-25  | 20 | 600  |      |      |      |       | 9   |
|                                  | 2     | 42      | Y10 | 300        | 84    | CH01-26  | 85 | 100  | 140  | 40   | [60] |       | 16  |
|                                  |       |         |     |            |       |          |    |      |      |      |      |       |     |
| 5. ROOF SLAB<br>200 THK          | 1     | 31      | Y16 | 3450       | 31    | CH01-41  | 55 | 200  | 140  | 2940 | 140  | [200] | 169 |
|                                  | 1     | 32      | Y16 | 6200       | 32    | CH01-42  | 38 | 170  | 5910 | 170  |      |       | 313 |
|                                  | 1     | 31      | Y16 | 3200       | 31    | CH01-43  | 38 | 160  | 2940 | 160  |      |       | 157 |
|                                  | 1     | 26      | Y10 | 1400       | 26    | CH01-44  | 83 | 390  | 90   | 450  | 450  |       | 22  |
|                                  | 1     | 32      | Y12 | 1200       | 32    | CH01-45  | 20 | 1200 |      |      |      |       | 34  |

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|-------|---|---|-----|-----|------|----|----|----|----|-------|
|       | 6 | 8 | 10  | 12  | 16   | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |     |      |    |    |    |    |       |
| Y     |   |   | 315 | 685 | 2120 |    |    |    |    | 3120  |
| TOTAL |   |   | 315 | 685 | 2120 |    |    |    |    | 3120  |

|                                                                                                                                                                                    |  |                                         |  |         |             |  |             |  |             |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------|--|---------|-------------|--|-------------|--|-------------|--|
| ENGINEER/TECHNOLOGIST                                                                                                                                                              |  | LEON PIENAAR                            |  | REG. NO | 970672      |  | SIGNATURE   |  |             |  |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> |  | <u>PROJECT:</u>                         |  |         |             |  | DATE        |  | 06/08/2024  |  |
|                                                                                                                                                                                    |  | COCT: SANDRIFT EAST PUMPSTATION UPGRADE |  |         |             |  | DET. BY     |  | R.BOTHA     |  |
|                                                                                                                                                                                    |  | <u>DRAWING TITLE:</u>                   |  |         |             |  | REF DWG     |  | 204-CH01-01 |  |
|                                                                                                                                                                                    |  |                                         |  |         |             |  | JOB NO      |  | 34676.01    |  |
|                                                                                                                                                                                    |  |                                         |  |         |             |  | REVISION    |  | A           |  |
| OVERPUMPING CHAMBER<br>REINFORCEMENT BENDING SCHEDULE                                                                                                                              |  |                                         |  |         | SCHEDULE NO |  | 206-CH01-01 |  |             |  |

| MEMBER                           | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D    | E/R   | kg  |
|----------------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|------|-------|-----|
| 1. BASE SLAB<br>300 THK          | 1     | 20      | Y16 | 2900       | 20    | CH02-01  | 55 | 200  | 200  | 2250 | 200  | [200] | 92  |
|                                  | 1     | 13      | Y16 | 4250       | 13    | CH02-02  | 55 | 200  | 160  | 3700 | 160  | [200] | 87  |
|                                  | 1     | 13      | Y16 | 3950       | 13    | CH02-03  | 38 | 160  | 3700 | 160  |      |       | 81  |
|                                  | 1     | 20      | Y16 | 2600       | 20    | CH02-04  | 38 | 200  | 2250 | 200  |      |       | 82  |
|                                  | 1     | 12      | Y12 | 1450       | 12    | CH02-05  | 83 | 340  | 150  | 450  | 450  |       | 15  |
|                                  |       |         |     |            |       |          |    |      |      |      |      |       |     |
| 2. WALL 1 &<br>WALL 3<br>200 THK | 2     | 32      | Y16 | 1850       | 64    | CH02-11  | 37 | 160  | 1700 |      |      |       | 187 |
|                                  | 2     | 32      | Y12 | 1150       | 64    | CH02-12  | 37 | 160  | 1000 |      |      |       | 65  |
|                                  | 2     | 16      | Y12 | 2400       | 32    | CH02-13  | 37 | 1200 | 1200 |      |      |       | 68  |
|                                  | 2     | 16      | Y10 | 2950       | 32    | CH02-14  | 20 | 2930 |      |      |      |       | 58  |
|                                  | 2     | 15      | R8  | 250        | 30    | CH02-15  | 85 | 100  | 100  | 40   | [50] |       | 3   |
|                                  |       |         |     |            |       |          |    |      |      |      |      |       |     |
| 3. WALL 2<br>200 THK             | 1     | 12      | Y16 | 1850       | 12    | CH02-31  | 37 | 160  | 1700 |      |      |       | 35  |
|                                  | 1     | 12      | Y12 | 1150       | 12    | CH02-32  | 37 | 160  | 1000 |      |      |       | 12  |
|                                  | 1     | 4       | Y12 | 1150       | 4     | CH02-33  | 38 | 160  | 900  | 160  |      |       | 4   |
|                                  | 1     | 4       | Y12 | 1100       | 4     | CH02-34  | 38 | 160  | 850  | 160  |      |       | 4   |
|                                  | 1     | 10      | Y10 | 1500       | 10    | CH02-35  | 20 | 1480 |      |      |      |       | 9   |
|                                  | 1     | 16      | Y12 | 450        | 16    | CH02-36  | 37 | 120  | 350  |      |      |       | 6   |
|                                  | 1     | 4       | Y12 | 500        | 4     | CH02-37  | 20 | 500  |      |      |      |       | 2   |
|                                  | 1     | 4       | Y16 | 1000       | 4     | CH02-38  | 20 | 1000 |      |      |      |       | 6   |
|                                  | 1     | 8       | R8  | 250        | 8     | CH02-39  | 85 | 100  | 100  | 40   | [50] |       | 1   |
|                                  |       |         |     |            |       |          |    |      |      |      |      |       |     |

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|-------|---|---|----|-----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   | 4 |    |     |     |    |    |    |    | 4     |
| Y     |   |   | 67 | 177 | 570 |    |    |    |    | 815   |
| TOTAL |   | 4 | 67 | 177 | 570 |    |    |    |    | 819   |

|                                                                                                                                                                                     |                                                                                                       |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                               | LEON PIENAAR                                                                                          | REG. NO | 970672      | SIGNATURE   |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> | <u>PROJECT:</u><br><br>COCT: SANDRIFT EAST PUMPSTATION UPGRADE                                        |         |             | DATE        | 06/08/2024  |
|                                                                                                                                                                                     | <u>DRAWING TITLE:</u><br><br>DISCHARGE SEWER MANHOLE<br>REINFORCEMENT BENDING SCHEDULE - SHEET 1 OF 2 |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                                     |                                                                                                       |         |             | REF DWG     | 204-CH02-01 |
|                                                                                                                                                                                     |                                                                                                       |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                                     |                                                                                                       |         |             | REVISION    | A           |
|                                                                                                                                                                                     |                                                                                                       |         | SCHEDULE NO | 206-CH02-01 |             |

| MEMBER                  | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D    | E/R   | kg  |
|-------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|------|-------|-----|
| 4. WALL 4<br>200 THK    | 1     | 16      | Y16 | 1850       | 16    | CH02-41  | 37 | 160  | 1700 |      |      |       | 47  |
|                         | 1     | 16      | Y12 | 1150       | 16    | CH02-42  | 37 | 160  | 1000 |      |      |       | 16  |
|                         | 1     | 4       | Y12 | 1100       | 4     | CH02-43  | 38 | 160  | 850  | 160  |      |       | 4   |
|                         | 1     | 4       | Y12 | 1050       | 4     | CH02-44  | 38 | 160  | 800  | 160  |      |       | 4   |
|                         | 1     | 14      | Y10 | 1500       | 14    | CH02-45  | 20 | 1480 |      |      |      |       | 13  |
|                         | 1     | 8       | R8  | 250        | 8     | CH02-46  | 85 | 100  | 100  | 40   | [50] |       | 1   |
|                         | 1     | 8       | Y12 | 500        | 8     | CH02-47  | 37 | 120  | 420  |      |      |       | 4   |
|                         | 1     | 4       | Y12 | 600        | 4     | CH02-48  | 20 | 600  |      |      |      |       | 2   |
|                         | 1     | 4       | Y12 | 800        | 4     | CH02-49  | 20 | 800  |      |      |      |       | 3   |
|                         |       |         |     |            |       |          |    |      |      |      |      |       |     |
| 5. ROOF SLAB<br>200 THK | 1     | 16      | Y16 | 2400       | 16    | CH02-51  | 55 | 200  | 130  | 1880 | 130  | [200] | 61  |
|                         | 1     | 20      | Y16 | 3650       | 20    | CH02-52  | 38 | 190  | 3320 | 190  |      |       | 115 |
|                         | 1     | 16      | Y16 | 2150       | 16    | CH02-53  | 38 | 160  | 1880 | 160  |      |       | 54  |
|                         | 1     | 4       | Y12 | 1000       | 4     | CH02-54  | 20 | 1000 |      |      |      |       | 4   |
|                         | 1     | 12      | Y10 | 1300       | 12    | CH02-55  | 83 | 340  | 80   | 450  | 450  |       | 10  |
|                         | 1     | 6       | Y16 | 1100       | 6     | CH02-56  | 55 | 200  | 130  | 600  | 130  | [200] | 10  |
|                         | 1     | 6       | Y16 | 850        | 6     | CH02-57  | 38 | 160  | 600  | 160  |      |       | 8   |
|                         | 1     | 6       | Y16 | 2700       | 6     | CH02-58  | 38 | 190  | 2390 | 190  |      |       | 26  |
|                         | 1     | 6       | Y16 | 600        | 6     | CH02-59  | 38 | 190  | 280  | 190  |      |       | 6   |
|                         | 1     | 16      | Y10 | 1300       | 16    | CH02-60  | 75 | 250  | 110  | 250  | 260  | 190   | 13  |

|       |   |   |    |    |     |    |    |    |    |       |
|-------|---|---|----|----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   | 1 |    |    |     |    |    |    |    | 1     |
| Y     |   |   | 35 | 36 | 327 |    |    |    |    | 398   |
| TOTAL |   | 1 | 35 | 36 | 327 |    |    |    |    | 399   |

|                                                                                                                                                                                     |                                         |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                               | LEON PIENAAR                            | REG. NO | 970672      | SIGNATURE   |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> | <u>PROJECT:</u>                         |         |             | DATE        | 06/08/2024  |
|                                                                                                                                                                                     | COCT: SANDRIFT EAST PUMPSTATION UPGRADE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                                     | <u>DRAWING TITLE:</u>                   |         |             | REF DWG     | 204-CH02-01 |
|                                                                                                                                                                                     |                                         |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                                     |                                         |         |             | REVISION    | A           |
| DISCHARGE SEWER MANHOLE<br>REINFORCEMENT BENDING SCHEDULE - SHEET 2 OF 2                                                                                                            |                                         |         | SCHEDULE NO | 206-CH02-02 |             |



| MEMBER                             | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C  | D    | E/R | kg  |
|------------------------------------|-------|---------|-----|------------|-------|----------|----|------|------|----|------|-----|-----|
| 1. CL01<br>350x350x<br>3300mm LONG | 6     | 8       | Y16 | 3800       | 48    | CL01-01  | 37 | 500  | 3350 |    |      |     | 288 |
|                                    | 6     | 22      | Y10 | 1200       | 132   | CL01-02  | 60 | 270  | 270  |    |      |     | 98  |
|                                    | 6     | 22      | Y10 | 1000       | 132   | CL01-03  | 60 | 220  | 220  |    |      |     | 81  |
| 2. CL02<br>160x450x<br>3300mm LONG |       |         |     |            |       |          |    |      |      |    |      |     |     |
|                                    | 2     | 6       | Y16 | 3800       | 12    | CL02-01  | 37 | 500  | 3350 |    |      |     | 72  |
|                                    | 2     | 22      | Y10 | 1050       | 44    | CL02-02  | 60 | 80   | 370  |    |      |     | 28  |
|                                    | 2     | 22      | Y10 | 250        | 44    | CL02-03  | 85 | 100  | 100  | 40 | [40] |     | 7   |
| 3. CL03<br>350x350x<br>4750mm LONG | 5     | 8       | Y16 | 4100       | 40    | CL03-01  | 20 | 4100 |      |    |      |     | 259 |
|                                    | 5     | 32      | Y10 | 1200       | 160   | CL03-02  | 60 | 270  | 270  |    |      |     | 118 |
|                                    | 5     | 32      | Y10 | 1000       | 160   | CL03-03  | 60 | 220  | 220  |    |      |     | 99  |
|                                    | 5     | 8       | Y16 | 1950       | 40    | CL03-04  | 37 | 500  | 1500 |    |      |     | 123 |
| 4. CL04<br>350x350x<br>5650mm LONG | 4     | 8       | Y20 | 5200       | 32    | CL04-01  | 20 | 5200 |      |    |      |     | 410 |
|                                    | 4     | 38      | Y10 | 1200       | 152   | CL04-02  | 60 | 270  | 270  |    |      |     | 112 |
|                                    | 4     | 38      | Y10 | 1000       | 152   | CL04-03  | 60 | 220  | 220  |    |      |     | 94  |
|                                    | 4     | 8       | Y16 | 1950       | 32    | CL04-04  | 37 | 500  | 1500 |    |      |     | 98  |
| 5. CL05<br>350x350x<br>4200mm LONG | 8     | 8       | Y20 | 4000       | 64    | CL05-01  | 20 | 4000 |      |    |      |     | 631 |
|                                    | 8     | 28      | Y10 | 1200       | 224   | CL05-02  | 60 | 270  | 270  |    |      |     | 166 |
|                                    | 8     | 28      | Y10 | 1000       | 224   | CL05-03  | 60 | 220  | 220  |    |      |     | 138 |
|                                    | 8     | 8       | Y16 | 1500       | 64    | CL05-04  | 37 | 500  | 1050 |    |      |     | 152 |

|       |   |   |     |    |     |      |    |    |    |       |
|-------|---|---|-----|----|-----|------|----|----|----|-------|
|       | 6 | 8 | 10  | 12 | 16  | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |    |     |      |    |    |    |       |
| Y     |   |   | 941 |    | 992 | 1042 |    |    |    | 2975  |
| TOTAL |   |   | 941 |    | 992 | 1042 |    |    |    | 2975  |

|                                                                                                                                                                   |                                                                                       |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                          | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                    |         |        | DATE        | 13/03/2025  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>COLUMNS<br>REINFORCEMENT BENDING SCHEDULE - SHEET 1 OF 2 |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                       |         |        | REF DWG     | 204-CL01-01 |
|                                                                                                                                                                   |                                                                                       |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                       |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                                                                       |         |        | SCHEDULE NO | 206-CL01-01 |

| MEMBER                              | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C  | D    | E/R | kg  |
|-------------------------------------|-------|---------|-----|------------|-------|----------|----|------|------|----|------|-----|-----|
| 6. CL06<br>160x450x<br>2400mm LONG  | 1     | 6       | Y12 | 2400       | 6     | CL06-01  | 37 | 160  | 2240 |    |      |     | 13  |
|                                     | 1     | 16      | Y10 | 1050       | 16    | CL06-02  | 60 | 80   | 370  |    |      |     | 10  |
|                                     | 1     | 16      | Y10 | 200        | 16    | CL06-03  | 85 | 80   | 80   | 40 | [40] |     | 2   |
|                                     |       |         |     |            |       |          |    |      |      |    |      |     |     |
| 7. CL07<br>300x300x<br>3850mm LONG  | 2     | 8       | Y16 | 3250       | 16    | CL07-01  | 20 | 3220 |      |    |      |     | 82  |
|                                     | 2     | 23      | Y10 | 1000       | 46    | CL07-02  | 60 | 220  | 220  |    |      |     | 28  |
|                                     | 2     | 23      | Y10 | 850        | 46    | CL07-03  | 60 | 180  | 180  |    |      |     | 24  |
|                                     | 2     | 8       | Y16 | 1500       | 16    | CL07-04  | 37 | 500  | 1050 |    |      |     | 38  |
|                                     |       |         |     |            |       |          |    |      |      |    |      |     |     |
| 8. CL08<br>300x300x<br>2400mm LONG  | 5     | 8       | Y16 | 2850       | 40    | CL08-01  | 37 | 500  | 2400 |    |      |     | 180 |
|                                     | 5     | 17      | Y10 | 1000       | 85    | CL08-02  | 60 | 220  | 220  |    |      |     | 52  |
|                                     | 5     | 17      | Y10 | 850        | 85    | CL08-03  | 60 | 180  | 180  |    |      |     | 45  |
|                                     |       |         |     |            |       |          |    |      |      |    |      |     |     |
| 9. CL09<br>160x450x<br>5250mm LONG  | 1     | 6       | Y16 | 4650       | 6     | CL09-01  | 20 | 4650 |      |    |      |     | 44  |
|                                     | 1     | 36      | Y10 | 1050       | 36    | CL09-02  | 60 | 80   | 370  |    |      |     | 23  |
|                                     | 1     | 36      | Y10 | 200        | 36    | CL09-03  | 85 | 80   | 80   | 40 | [40] |     | 4   |
|                                     | 1     | 6       | Y16 | 1950       | 6     | CL09-04  | 37 | 500  | 1500 |    |      |     | 18  |
|                                     |       |         |     |            |       |          |    |      |      |    |      |     |     |
| 10. CL10<br>160x450x<br>4350mm LONG | 3     | 6       | Y16 | 3850       | 18    | CL10-01  | 20 | 3850 |      |    |      |     | 109 |
|                                     | 3     | 30      | Y10 | 1050       | 90    | CL10-02  | 60 | 80   | 370  |    |      |     | 58  |
|                                     | 3     | 30      | Y10 | 200        | 90    | CL10-03  | 85 | 80   | 80   | 40 | [40] |     | 11  |
|                                     | 3     | 6       | Y16 | 1950       | 18    | CL10-04  | 37 | 500  | 1500 |    |      |     | 55  |

|       |   |   |     |    |     |    |    |    |    |       |
|-------|---|---|-----|----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10  | 12 | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |    |     |    |    |    |    |       |
| Y     |   |   | 259 | 13 | 527 |    |    |    |    | 799   |
| TOTAL |   |   | 259 | 13 | 527 |    |    |    |    | 799   |

|                                                                                                                                                                   |                                                                                       |          |        |           |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|--------|-----------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                          | REG. NO  | 970672 | SIGNATURE |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                    |          |        | DATE      | 13/03/2025  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>COLUMNS<br>REINFORCEMENT BENDING SCHEDULE - SHEET 2 OF 2 |          |        | DET. BY   | R.BOTHA     |
|                                                                                                                                                                   |                                                                                       |          |        | REF DWG   | 204-CL01-01 |
|                                                                                                                                                                   | JOB NO                                                                                | 34676.01 |        |           |             |
|                                                                                                                                                                   | REVISION                                                                              | T0       |        |           |             |
| SCHEDULE NO                                                                                                                                                       | 206-CL01-02                                                                           |          |        |           |             |

| MEMBER                      | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C      | D     | E/R   | kg   |
|-----------------------------|-------|---------|-----|------------|-------|----------|----|------|------|--------|-------|-------|------|
| FOUNDATION 1<br>(600 THICK) | 1     | 39      | Y20 | 6800       | 39    | FN01-01  | 38 | 6000 | 400  | 500    |       |       | 654  |
|                             | 1     | 40      | Y20 | 4450       | 40    | FN01-02  | 38 | 3650 | 400  | 500    |       |       | 439  |
|                             | 1     | 36      | Y20 | 6350       | 36    | FN01-03  | 37 | 6000 | 400  |        |       |       | 564  |
|                             | 1     | 51      | Y20 | 4000       | 51    | FN01-04  | 37 | 3650 | 400  |        |       |       | 503  |
|                             | 1     | 114     | Y20 | 6950       | 114   | FN01-05  | 55 | 500  | 500  | 5150   | 500   | [500] | 1954 |
|                             | 1     | 75      | Y20 | 3400       | 75    | FN01-06  | 41 | 1250 | 890  | [1250] | 640   |       | 629  |
|                             | 1     | 102     | Y12 | 1750       | 102   | FN01-07  | 83 | 300  | 440  | 350    | 350   |       | 158  |
|                             | 1     | 19      | Y20 | 4950       | 19    | FN01-08  | 75 | 750  | 500  | 1140   | 1090  | 490   | 232  |
|                             | 1     | 57      | Y12 | 3400       | 57    | FN01-09  | 60 | 500  | 1150 |        |       |       | 172  |
|                             | 1     | 38      | Y20 | 3150       | 38    | FN01-10  | 41 | 1250 | 890  | [1000] | 640   |       | 295  |
|                             | 1     | 58      | Y20 | 2400       | 58    | FN01-11  | 37 | 450  | 2000 |        |       |       | 343  |
|                             | 1     | 64      | Y16 | 5200       | 64    | FN01-12  | 37 | 400  | 4850 |        |       |       | 525  |
|                             | 1     | 58      | Y20 | 3650       | 58    | FN01-13  | 38 | 450  | 2850 | 450    |       |       | 522  |
|                             | 1     | 57      | Y16 | 3500       | 57    | FN01-15  | 49 | 1040 | 1040 | [1400] | 740   | 740   | 315  |
|                             | 1     | 6       | Y16 | 5050       | 6     | FN01-16  | 37 | 250  | 4850 |        |       |       | 48   |
|                             | 1     | 14      | Y10 | 750        | 14    | FN01-17  | 85 | 150  | 500  | 50     | [100] |       | 6    |
|                             | 1     | 75      | Y20 | 4100       | 75    | FN01-18  | 41 | 1250 | 1600 | [1250] | 1090  |       | 758  |
|                             | 1     | 16      | Y20 | 3550       | 16    | FN01-19  | 38 | 2750 | 400  | 500    |       |       | 140  |
|                             |       |         |     |            |       |          |    |      |      |        |       |       |      |
| FOUNDATION 2<br>(600 THICK) | 1     | 29      | Y20 | 8800       | 29    | FN01-20  | 55 | 500  | 500  | 7000   | 500   | [500] | 629  |
|                             | 1     | 94      | Y20 | 6950       | 94    | FN01-21  | 38 | 6140 | 400  | 500    |       |       | 1611 |
|                             | 1     | 96      | Y20 | 4150       | 96    | FN01-22  | 37 | 3800 | 400  |        |       |       | 983  |
|                             | 1     | 48      | Y20 | 6000       | 48    | FN01-23  | 20 | 6000 |      |        |       |       | 710  |
|                             | 1     | 46      | Y20 | 8700       | 46    | FN01-24  | 55 | 500  | 500  | 6900   | 500   | [500] | 987  |
|                             | 1     | 150     | Y20 | 4600       | 150   | FN01-25  | 37 | 4150 | 500  |        |       |       | 1702 |
|                             | 1     | 6       | Y16 | 3350       | 6     | FN01-26  | 55 | 500  | 400  | 1700   | 400   | [500] | 32   |
|                             | 1     | 6       | Y16 | 2450       | 6     | FN01-27  | 38 | 400  | 1700 | 400    |       |       | 23   |
|                             | 1     | 13      | Y20 | 4800       | 13    | FN01-28  | 55 | 500  | 500  | 3000   | 500   | [500] | 154  |
|                             | 1     | 13      | Y20 | 3900       | 13    | FN01-29  | 38 | 500  | 3000 | 500    |       |       | 125  |
|                             | 1     | 82      | Y12 | 1750       | 82    | FN01-30  | 83 | 300  | 440  | 350    | 350   |       | 127  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

|       |   |   |    |     |     |       |    |    |    |       |
|-------|---|---|----|-----|-----|-------|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16  | 20    | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |     |       |    |    |    |       |
| Y     |   |   | 6  | 458 | 943 | 13934 |    |    |    | 15342 |
| TOTAL |   |   | 6  | 458 | 943 | 13934 |    |    |    | 15342 |

|                                                                                                                                                                    |                                                                                                               |         |             |             |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                              | LEON PIENAAR                                                                                                  | REG. NO | 970672      | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                            |         |             | DATE        | 13/03/2025  |
|                                                                                                                                                                    | <u>DRAWING TITLE:</u><br><br>WET WELL, DRY WELL - FOUNDATION REINFORCEMENT<br>BENDING SCHEDULE (SHEET 1 OF 2) |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                    |                                                                                                               |         |             | REF DWG     | 204-FN01-01 |
|                                                                                                                                                                    |                                                                                                               |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                    |                                                                                                               |         |             | REVISION    | T0          |
|                                                                                                                                                                    |                                                                                                               |         | SCHEDULE NO | 206-FN01-01 |             |

| MEMBER                      | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C     | D   | E/R   | kg   |
|-----------------------------|-------|---------|-----|------------|-------|----------|----|------|------|-------|-----|-------|------|
| FOUNDATION 3<br>(450 THICK) | 1     | 18      | Y16 | 6800       | 18    | FN01-31  | 38 | 6000 | 350  | 500   |     |       | 193  |
|                             | 1     | 18      | Y16 | 4450       | 18    | FN01-32  | 38 | 3650 | 350  | 500   |     |       | 126  |
|                             | 1     | 18      | Y16 | 3950       | 18    | FN01-33  | 37 | 3650 | 350  |       |     |       | 112  |
|                             | 1     | 18      | Y16 | 6300       | 18    | FN01-34  | 37 | 6000 | 350  |       |     |       | 179  |
|                             | 1     | 114     | Y16 | 1550       | 114   | FN01-35  | 41 | 450  | 650  | [450] | 290 |       | 279  |
|                             | 1     | 18      | Y16 | 2950       | 18    | FN01-36  | 38 | 300  | 2440 | 300   |     |       | 84   |
|                             | 1     | 74      | Y20 | 6750       | 74    | FN01-41  | 38 | 6000 | 350  | 500   |     |       | 1232 |
|                             | 1     | 57      | Y20 | 3050       | 57    | FN01-42  | 38 | 2300 | 350  | 500   |     |       | 429  |
|                             | 1     | 74      | Y20 | 3950       | 74    | FN01-43  | 37 | 3650 | 350  |       |     |       | 721  |
|                             | 1     | 57      | Y20 | 4950       | 57    | FN01-44  | 37 | 4650 | 350  |       |     |       | 696  |
|                             | 1     | 48      | Y16 | 3750       | 48    | FN01-45  | 38 | 3000 | 300  | 500   |     |       | 284  |
|                             | 1     | 48      | Y16 | 6000       | 48    | FN01-46  | 20 | 6000 |      |       |     |       | 455  |
|                             | 1     | 48      | Y16 | 5600       | 48    | FN01-48  | 37 | 5350 | 300  |       |     |       | 424  |
|                             | 1     | 7       | Y16 | 3150       | 7     | FN01-49  | 55 | 500  | 300  | 1700  | 300 | [500] | 35   |
|                             | 1     | 7       | Y16 | 2250       | 7     | FN01-50  | 38 | 300  | 1700 | 300   |     |       | 25   |
|                             | 1     | 51      | Y12 | 1600       | 51    | FN01-53  | 83 | 300  | 300  | 400   | 400 |       | 72   |
|                             | 1     | 13      | Y20 | 4000       | 13    | FN01-54  | 55 | 500  | 350  | 2500  | 350 | [500] | 128  |
|                             | 1     | 13      | Y20 | 2800       | 13    | FN01-55  | 37 | 350  | 2500 |       |     |       | 90   |
|                             | 1     | 48      | Y16 | 5250       | 48    | FN01-56  | 38 | 4500 | 300  | 500   |     |       | 398  |
|                             | 1     | 48      | Y16 | 7100       | 48    | FN01-57  | 37 | 6850 | 300  |       |     |       | 538  |

|       |   |   |    |    |      |      |    |    |    |       |
|-------|---|---|----|----|------|------|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16   | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |      |      |    |    |    |       |
| Y     |   |   |    | 72 | 3132 | 3295 |    |    |    | 6499  |
| TOTAL |   |   |    | 72 | 3132 | 3295 |    |    |    | 6499  |

|                                                                                                                                                                                     |                                                                                                               |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                               | LEON PIENAAR                                                                                                  | REG. NO | 970672      | SIGNATURE   |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                            |         |             | DATE        | 13/03/2025  |
|                                                                                                                                                                                     | <u>DRAWING TITLE:</u><br><br>WET WELL, DRY WELL - FOUNDATION REINFORCEMENT<br>BENDING SCHEDULE (SHEET 2 OF 2) |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                                     |                                                                                                               |         |             | REF DWG     | 204-FN01-01 |
|                                                                                                                                                                                     |                                                                                                               |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                                     |                                                                                                               |         |             | REVISION    | T0          |
|                                                                                                                                                                                     |                                                                                                               |         | SCHEDULE NO | 206-FN01-02 |             |

| MEMBER                    | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B   | C | D | E/R | kg   |
|---------------------------|-------|---------|-----|------------|-------|----------|----|------|-----|---|---|-----|------|
| FOUNDATION - STARTER BARS | 1     | 984     | Y20 | 2100       | 984   | FN01-61  | 37 | 1750 | 400 |   |   |     | 5096 |
|                           | 1     | 406     | Y20 | 2700       | 406   | FN01-62  | 37 | 2350 | 400 |   |   |     | 2703 |

|       |   |   |    |    |    |      |    |    |    |       |
|-------|---|---|----|----|----|------|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16 | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |    |      |    |    |    |       |
| Y     |   |   |    |    |    | 7799 |    |    |    | 7799  |
| TOTAL |   |   |    |    |    | 7799 |    |    |    | 7799  |

|                                                                                                                                                                   |                                                                     |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                        | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                                            |         |        | DATE        | 13/03/2025  |
|                                                                                                                                                                   | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                         |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   | DRAWING TITLE:                                                      |         |        | REF DWG     | 204-FN01-02 |
|                                                                                                                                                                   | FOUNDATION STARTER BARS - FOUNDATION REINFORCEMENT BENDING SCHEDULE |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                     |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                                                     |         |        | SCHEDULE NO | 206-FN01-03 |

| MEMBER   | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B   | C    | D   | E/R | kg |
|----------|-------|---------|-----|------------|-------|----------|----|------|-----|------|-----|-----|----|
| PLINTH 1 | 1     | 7       | Y12 | 3000       | 7     | FN02-01  | 53 | 400  | 900 | 520  | 900 | 400 | 19 |
|          | 1     | 6       | Y10 | 2700       | 6     | FN02-02  | 60 | 790  | 490 |      |     |     | 10 |
|          | 1     | 2       | Y12 | 3250       | 2     | FN02-03  | 53 | 400  | 880 | 790  | 880 | 400 | 6  |
|          |       |         |     |            |       |          |    |      |     |      |     |     |    |
| PLINTH 2 | 1     | 8       | Y12 | 3000       | 8     | FN02-11  | 53 | 400  | 900 | 520  | 900 | 400 | 21 |
|          | 1     | 10      | Y10 | 2800       | 10    | FN02-12  | 38 | 1150 | 520 | 1150 |     |     | 17 |
|          | 1     | 7       | Y12 | 2500       | 7     | FN02-13  | 53 | 400  | 650 | 500  | 650 | 400 | 16 |
|          | 1     | 4       | Y10 | 1950       | 4     | FN02-14  | 60 | 420  | 490 |      |     |     | 5  |
|          | 1     | 4       | Y12 | 2850       | 4     | FN02-15  | 53 | 400  | 880 | 420  | 880 | 400 | 10 |
|          |       |         |     |            |       |          |    |      |     |      |     |     |    |
| PLINTH 3 | 1     | 8       | Y12 | 3000       | 8     | FN02-21  | 53 | 400  | 890 | 520  | 890 | 400 | 21 |
|          | 1     | 10      | Y10 | 2800       | 10    | FN02-22  | 38 | 1150 | 520 | 1150 |     |     | 17 |
|          | 1     | 7       | Y12 | 2500       | 7     | FN02-23  | 53 | 400  | 650 | 500  | 650 | 400 | 16 |
|          | 1     | 4       | Y10 | 1950       | 4     | FN02-24  | 60 | 420  | 490 |      |     |     | 5  |
|          | 1     | 6       | Y12 | 2850       | 6     | FN02-25  | 53 | 400  | 880 | 420  | 880 | 400 | 15 |
|          |       |         |     |            |       |          |    |      |     |      |     |     |    |
| PLINTH 4 | 1     | 4       | Y12 | 3000       | 4     | FN02-31  | 53 | 400  | 890 | 520  | 890 | 400 | 11 |
|          | 1     | 8       | Y12 | 2500       | 8     | FN02-32  | 53 | 400  | 650 | 500  | 650 | 400 | 18 |
|          | 1     | 10      | Y10 | 2800       | 10    | FN02-33  | 38 | 1150 | 520 | 1150 |     |     | 17 |
|          | 1     | 2       | Y10 | 2000       | 2     | FN02-34  | 60 | 420  | 520 |      |     |     | 2  |

|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
|-------|---|---|----|-----|----|----|----|----|----|-------|
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   |   | 74 | 152 |    |    |    |    |    | 226   |
| TOTAL |   |   | 74 | 152 |    |    |    |    |    | 226   |

| MEMBER  | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D     | E/R   | kg  |
|---------|-------|---------|-----|------------|-------|----------|----|------|------|------|-------|-------|-----|
| WALL 16 | 1     | 56      | Y12 | 2100       | 56    | FN02-41  | 53 | 400  | 600  | 220  | 600   | 400   | 104 |
|         | 1     | 8       | Y10 | 4350       | 8     | FN02-42  | 20 | 4350 |      |      |       |       | 21  |
|         | 1     | 4       | Y10 | 4750       | 4     | FN02-43  | 38 | 190  | 200  | 4380 |       |       | 12  |
|         | 1     | 3       | Y12 | 1900       | 3     | FN02-44  | 53 | 400  | 500  | 220  | 500   | 400   | 5   |
|         | 1     | 10      | Y10 | 1900       | 10    | FN02-45  | 37 | 600  | 1300 |      |       |       | 12  |
|         | 1     | 9       | Y10 | 400        | 9     | FN02-46  | 85 | 100  | 220  | 40   | [100] |       | 2   |
|         | 1     | 6       | Y10 | 1300       | 6     | FN02-47  | 43 | 460  | 140  | 100  | 100   | [460] | 5   |
|         |       |         |     |            |       |          |    |      |      |      |       |       |     |
| WALL 17 | 1     | 8       | Y12 | 2100       | 8     | FN02-61  | 53 | 400  | 600  | 220  | 600   | 400   | 15  |
|         | 1     | 10      | Y10 | 950        | 10    | FN02-62  | 20 | 950  |      |      |       |       | 6   |
|         | 1     | 2       | Y10 | 400        | 2     | FN02-63  | 85 | 100  | 220  | 40   | [100] |       |     |
|         |       |         |     |            |       |          |    |      |      |      |       |       |     |
| WALL 18 | 1     | 8       | Y12 | 2100       | 8     | FN02-71  | 53 | 400  | 600  | 220  | 600   | 400   | 15  |
|         | 1     | 10      | Y10 | 1200       | 10    | FN02-72  | 37 | 600  | 600  |      |       |       | 7   |
|         | 1     | 5       | Y10 | 1250       | 5     | FN02-73  | 38 | 190  | 200  | 900  |       |       | 4   |
|         | 1     | 2       | Y10 | 400        | 2     | FN02-74  | 85 | 100  | 220  | 40   | [100] |       |     |

|       |   |   |    |     |    |    |    |    |    |       |
|-------|---|---|----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   |   | 70 | 139 |    |    |    |    |    | 209   |
| TOTAL |   |   | 70 | 139 |    |    |    |    |    | 209   |

|                                                                                                                                                                   |                                                                           |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                              | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                                                  |         |        | DATE        | 13/03/2025  |
|                                                                                                                                                                   | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                               |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   | DRAWING TITLE:                                                            |         |        | REF DWG     | 204-FN02-01 |
|                                                                                                                                                                   | DRY WELL - PLINTH & SLAB REINFORCEMENT<br>BENDING SCHEDULE (SHEET 2 OF 3) |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                           |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                                                           |         |        | SCHEDULE NO | 206-FN02-02 |

| MEMBER  | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D     | E/R   | kg  |
|---------|-------|---------|-----|------------|-------|----------|----|------|------|------|-------|-------|-----|
| WALL 16 | 1     | 56      | Y12 | 2100       | 56    | FN02-41  | 53 | 400  | 600  | 220  | 600   | 400   | 104 |
|         | 1     | 8       | Y10 | 4350       | 8     | FN02-42  | 20 | 4350 |      |      |       |       | 21  |
|         | 1     | 4       | Y10 | 4750       | 4     | FN02-43  | 38 | 190  | 200  | 4380 |       |       | 12  |
|         | 1     | 3       | Y12 | 1900       | 3     | FN02-44  | 53 | 400  | 500  | 220  | 500   | 400   | 5   |
|         | 1     | 10      | Y10 | 1900       | 10    | FN02-45  | 37 | 600  | 1300 |      |       |       | 12  |
|         | 1     | 9       | Y10 | 400        | 9     | FN02-46  | 85 | 100  | 220  | 40   | [100] |       | 2   |
|         | 1     | 6       | Y10 | 1300       | 6     | FN02-47  | 43 | 460  | 140  | 100  | 100   | [460] | 5   |
|         |       |         |     |            |       |          |    |      |      |      |       |       |     |
| WALL 17 | 1     | 8       | Y12 | 2100       | 8     | FN02-61  | 53 | 400  | 600  | 220  | 600   | 400   | 15  |
|         | 1     | 10      | Y10 | 950        | 10    | FN02-62  | 20 | 950  |      |      |       |       | 6   |
|         | 1     | 2       | Y10 | 400        | 2     | FN02-63  | 85 | 100  | 220  | 40   | [100] |       |     |
|         |       |         |     |            |       |          |    |      |      |      |       |       |     |
| WALL 18 | 1     | 8       | Y12 | 2100       | 8     | FN02-71  | 53 | 400  | 600  | 220  | 600   | 400   | 15  |
|         | 1     | 10      | Y10 | 1200       | 10    | FN02-72  | 37 | 600  | 600  |      |       |       | 7   |
|         | 1     | 5       | Y10 | 1250       | 5     | FN02-73  | 38 | 190  | 200  | 900  |       |       | 4   |
|         | 1     | 2       | Y10 | 400        | 2     | FN02-74  | 85 | 100  | 220  | 40   | [100] |       |     |

|       |   |   |    |     |    |    |    |    |    |       |
|-------|---|---|----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   |   | 70 | 139 |    |    |    |    |    | 209   |
| TOTAL |   |   | 70 | 139 |    |    |    |    |    | 209   |

|                                                                                                                                                                   |                                                                        |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                           | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                                               |         |        | DATE        | 13/03/2025  |
|                                                                                                                                                                   | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                            |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   | DRAWING TITLE:                                                         |         |        | REF DWG     | 204-FN02-01 |
|                                                                                                                                                                   | DRY WELL - PLINTH & SLAB REINFORCEMENT BENDING SCHEDULE (SHEET 3 OF 3) |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                        |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                                                        |         |        | SCHEDULE NO | 206-FN02-03 |



| MEMBER            | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC  | A   | B    | C   | D    | E/R | kg  |
|-------------------|-------|---------|-----|------------|-------|----------|-----|-----|------|-----|------|-----|-----|
| 1. GROUND BEAM 01 | 1     | 9       | Y16 | 4650       | 9     | FN03-01  | 38  | 160 | 4390 | 160 |      |     | 66  |
|                   | 1     | 23      | Y10 | 1200       | 23    | FN03-02  | 60  | 220 | 320  |     |      |     | 17  |
|                   | 1     | 23      | Y8  | 400        | 23    | FN03-03  | 85  | 100 | 220  | 40  | [60] |     | 4   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 2. GROUND BEAM 02 | 1     | 9       | Y16 | 1500       | 9     | FN04-01  | 38  | 160 | 1240 | 160 |      |     | 21  |
|                   | 1     | 8       | Y10 | 1200       | 8     | FN04-02  | 60  | 220 | 320  |     |      |     | 6   |
|                   | 1     | 8       | Y8  | 400        | 8     | FN04-03  | 85  | 100 | 220  | 40  | [60] |     | 1   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 3. GROUND BEAM 03 | 1     | 9       | Y16 | 4350       | 9     | FN05-01  | 38  | 160 | 4120 | 160 |      |     | 62  |
|                   | 1     | 22      | Y10 | 1200       | 22    | FN05-02  | 60  | 220 | 320  |     |      |     | 16  |
|                   | 1     | 22      | Y8  | 400        | 22    | FN05-03  | 85  | 100 | 220  | 40  | [60] |     | 3   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 4. GROUND BEAM 04 | 1     | 9       | Y16 | 2200       | 9     | FN06-01  | 38  | 160 | 1940 | 160 |      |     | 31  |
|                   | 1     | 11      | Y10 | 1200       | 11    | FN06-02  | 60  | 220 | 320  |     |      |     | 8   |
|                   | 1     | 11      | Y8  | 400        | 11    | FN06-03  | 85  | 100 | 220  | 40  | [60] |     | 2   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 5. GROUND BEAM 05 | 1     | 9       | Y16 | 750        | 9     | FN07-01  | 38  | 160 | 520  | 160 |      |     | 11  |
|                   | 1     | 4       | Y10 | 1200       | 4     | FN07-02  | 60  | 220 | 320  |     |      |     | 3   |
|                   | 1     | 4       | Y8  | 400        | 4     | FN07-03  | 85  | 100 | 220  | 40  | [60] |     | 1   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 6. GROUND BEAM 06 | 1     | 9       | Y16 | 1100       | 9     | FN08-01  | 38  | 160 | 850  | 160 |      |     | 16  |
|                   | 1     | 6       | Y10 | 1200       | 6     | FN08-02  | 60  | 220 | 320  |     |      |     | 4   |
|                   | 1     | 6       | Y8  | 400        | 6     | FN08-03  | 85  | 100 | 220  | 40  | [60] |     | 1   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 7. GROUND BEAM 07 | 1     | 9       | Y16 | 2550       | 9     | FN09-01  | 38  | 160 | 2310 | 160 |      |     | 36  |
|                   | 1     | 13      | Y10 | 1200       | 13    | FN09-02  | 60  | 220 | 320  |     |      |     | 10  |
|                   | 1     | 13      | Y8  | 400        | 13    | FN09-03  | 85  | 100 | 220  | 40  | [60] |     | 2   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 8. GROUND BEAM 08 | 2     | 9       | Y16 | 2300       | 18    | FN10-01  | 38  | 160 | 2050 | 160 |      |     | 65  |
|                   | 2     | 12      | Y10 | 1200       | 24    | FN10-02  | 60  | 220 | 320  |     |      |     | 18  |
|                   | 2     | 12      | Y8  | 400        | 24    | FN10-03  | 85  | 100 | 220  | 40  | [60] |     | 4   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| 9. GROUND BEAM 09 | 1     | 9       | Y16 | 2600       | 9     | FN11-01  | 38  | 160 | 2370 | 160 |      |     | 37  |
|                   | 1     | 13      | Y10 | 1200       | 13    | FN11-02  | 60  | 220 | 320  |     |      |     | 10  |
|                   | 1     | 13      | Y8  | 400        | 13    | FN11-03  | 85  | 100 | 220  | 40  | [60] |     | 2   |
|                   |       |         |     |            |       |          |     |     |      |     |      |     |     |
| R                 |       |         |     |            |       |          |     |     |      |     |      |     |     |
| Y                 |       |         | 20  | 92         |       |          | 345 |     |      |     |      |     | 457 |
| TOTAL             |       |         | 20  | 92         |       |          | 345 |     |      |     |      |     | 457 |

|                                                                                                                                                                                     |                                                                           |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                               | LEON PIENAAR                                                              | REG. NO | 970672      | SIGNATURE   |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> | <u>PROJECT:</u>                                                           |         |             | DATE        | 13/03/2025  |
|                                                                                                                                                                                     | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                               |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                                     | <u>DRAWING TITLE:</u>                                                     |         |             | REF DWG     | 204-FN03-01 |
|                                                                                                                                                                                     | SCREENING ROOM - GROUND BEAMS 300x400mm<br>REINFORCEMENT BENDING SCHEDULE |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                                     |                                                                           |         |             | REVISION    | T0          |
|                                                                                                                                                                                     |                                                                           |         | SCHEDULE NO | 206-FN03-01 |             |

13/03/2025  
R.BOTHA  
204-FN03-01  
34676.01  
T0  
206-FN03-01

| MEMBER            | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C   | D    | E/R | kg  |
|-------------------|-------|---------|-----|------------|-------|----------|----|-----|------|-----|------|-----|-----|
| 1. GROUND BEAM 10 | 1     | 15      | Y16 | 3150       | 15    | FN12-01  | 38 | 160 | 2900 | 160 |      |     | 75  |
|                   | 1     | 16      | Y10 | 1200       | 16    | FN12-02  | 60 | 220 | 320  |     |      |     | 12  |
|                   | 1     | 16      | Y8  | 400        | 16    | FN12-03  | 85 | 100 | 220  | 40  | [60] |     | 3   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 2. GROUND BEAM 11 | 1     | 6       | Y16 | 2700       | 6     | FN13-01  | 38 | 160 | 2460 | 160 |      |     | 26  |
|                   | 1     | 22      | Y10 | 1200       | 22    | FN13-02  | 60 | 220 | 320  |     |      |     | 16  |
|                   | 1     | 22      | Y8  | 400        | 22    | FN13-03  | 85 | 100 | 220  | 40  | [60] |     | 3   |
|                   | 1     | 3       | Y16 | 4500       | 3     | FN13-04  | 38 | 160 | 4240 | 160 |      |     | 21  |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 3. GROUND BEAM 14 | 1     | 12      | Y16 | 4500       | 12    | FN14-01  | 38 | 160 | 4260 | 160 |      |     | 85  |
|                   | 1     | 23      | Y10 | 1200       | 23    | FN14-02  | 60 | 220 | 320  |     |      |     | 17  |
|                   | 1     | 23      | Y8  | 400        | 23    | FN14-03  | 85 | 100 | 220  | 40  | [60] |     | 4   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 4. GROUND BEAM 12 | 1     | 15      | Y16 | 3200       | 15    | FN15-01  | 38 | 160 | 2930 | 160 |      |     | 76  |
|                   | 1     | 16      | Y10 | 1200       | 16    | FN15-02  | 60 | 220 | 320  |     |      |     | 12  |
|                   | 1     | 16      | Y8  | 400        | 16    | FN15-03  | 85 | 100 | 220  | 40  | [60] |     | 3   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 5. GROUND BEAM 13 | 1     | 15      | Y16 | 3600       | 15    | FN16-01  | 38 | 160 | 3370 | 160 |      |     | 85  |
|                   | 1     | 18      | Y10 | 1200       | 18    | FN16-02  | 60 | 220 | 320  |     |      |     | 13  |
|                   | 1     | 18      | Y8  | 400        | 18    | FN16-03  | 85 | 100 | 220  | 40  | [60] |     | 3   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 6. GROUND BEAM 14 | 1     | 15      | Y16 | 4500       | 15    | FN17-01  | 38 | 160 | 4270 | 160 |      |     | 107 |
|                   | 1     | 23      | Y10 | 1200       | 23    | FN17-02  | 60 | 220 | 320  |     |      |     | 17  |
|                   | 1     | 23      | Y8  | 400        | 23    | FN17-03  | 85 | 100 | 220  | 40  | [60] |     | 4   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 7. GROUND BEAM 16 | 1     | 15      | Y16 | 3150       | 15    | FN18-01  | 38 | 160 | 2910 | 160 |      |     | 75  |
|                   | 1     | 16      | Y10 | 1200       | 16    | FN18-02  | 60 | 220 | 320  |     |      |     | 12  |
|                   | 1     | 16      | Y8  | 400        | 16    | FN18-03  | 85 | 100 | 220  | 40  | [60] |     | 3   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |
| 8. GROUND BEAM 17 | 1     | 15      | Y16 | 3600       | 15    | FN19-01  | 38 | 160 | 3370 | 160 |      |     | 85  |
|                   | 1     | 18      | Y10 | 1200       | 18    | FN19-02  | 60 | 220 | 320  |     |      |     | 13  |
|                   | 1     | 18      | Y8  | 400        | 18    | FN19-03  | 85 | 100 | 220  | 40  | [60] |     | 3   |
|                   |       |         |     |            |       |          |    |     |      |     |      |     |     |

|       |   |    |     |    |     |    |    |    |    |       |
|-------|---|----|-----|----|-----|----|----|----|----|-------|
|       | 6 | 8  | 10  | 12 | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |    |     |    |     |    |    |    |    |       |
| Y     |   | 24 | 112 |    | 634 |    |    |    |    | 771   |
| TOTAL |   | 24 | 112 |    | 634 |    |    |    |    | 771   |

|                                                                                                                                                                   |                                               |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                  | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                      |         |        | DATE        | 13/03/2025  |
|                                                                                                                                                                   | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE   |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   | DRAWING TITLE:                                |         |        | REF DWG     | 204-FN04-01 |
|                                                                                                                                                                   | MCC & GENERATOR ROOM - GROUND BEAMS 300x400mm |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   | REINFORCEMENT BENDING SCHEDULE                |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                               |         |        | SCHEDULE NO | 206-FN04-01 |

| MEMBER                | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C   | D   | E/R   | kg  |
|-----------------------|-------|---------|-----|------------|-------|----------|----|------|------|-----|-----|-------|-----|
| 1000x1000x300 RC BASE | 4     | 20      | Y12 | 1600       | 80    | FN01-11  | 55 | 200  | 200  | 900 | 200 | [200] | 114 |
|                       | 4     | 20      | Y12 | 1250       | 80    | FN01-12  | 38 | 200  | 900  | 200 |     |       | 89  |
|                       | 4     | 20      | Y12 | 1550       | 80    | FN01-13  | 55 | 200  | 170  | 900 | 170 | [200] | 110 |
|                       | 4     | 20      | Y12 | 1200       | 80    | FN01-14  | 38 | 170  | 900  | 170 |     |       | 85  |
|                       | 4     | 3       | Y8  | 950        | 12    | FN01-15  | 60 | 200  | 200  |     |     |       | 4   |
|                       | 4     | 4       | Y16 | 1400       | 16    | FN01-16  | 37 | 350  | 1100 |     |     |       | 35  |
|                       |       |         |     |            |       |          |    |      |      |     |     |       |     |
| 200 RC ROOF SLAB      | 1     | 20      | Y16 | 3350       | 20    | SL01-01  | 37 | 160  | 3220 |     |     |       | 106 |
|                       | 1     | 36      | Y16 | 1350       | 36    | SL01-02  | 37 | 160  | 1220 |     |     |       | 77  |
|                       | 1     | 16      | Y16 | 4050       | 16    | SL01-03  | 37 | 160  | 3920 |     |     |       | 102 |
|                       | 1     | 20      | Y16 | 3800       | 20    | SL01-04  | 38 | 160  | 3540 | 160 |     |       | 120 |
|                       | 1     | 16      | Y16 | 4500       | 16    | SL01-05  | 38 | 160  | 4240 | 160 |     |       | 114 |
|                       |       |         |     |            |       |          |    |      |      |     |     |       |     |
| 300x300 RC COLUMN     | 4     | 19      | Y10 | 1100       | 76    | CL01-01  | 60 | 240  | 240  |     |     |       | 52  |
|                       | 4     | 4       | Y16 | 3650       | 16    | CL01-02  | 37 | 160  | 3540 |     |     |       | 92  |
|                       |       |         |     |            |       |          |    |      |      |     |     |       |     |
| 300x420 RC BEAM       | 4     | 62      | Y10 | 1400       | 248   | BM01-01  | 60 | 380  | 240  |     |     |       | 214 |
|                       | 4     | 8       | Y12 | 3700       | 32    | BM01-02  | 20 | 3700 |      |     |     |       | 105 |
|                       | 4     | 8       | Y12 | 3000       | 32    | BM01-03  | 20 | 3000 |      |     |     |       | 85  |
|                       | 4     | 6       | Y10 | 1700       | 24    | BM01-04  | 37 | 850  | 850  |     |     |       | 25  |
|                       |       |         |     |            |       |          |    |      |      |     |     |       |     |
| 700x300 STRIP FOOTING | 1     | 46      | Y10 | 1750       | 46    | FN01-01  | 60 | 200  | 600  |     |     |       | 50  |
|                       | 1     | 16      | Y12 | 4200       | 16    | FN01-02  | 20 | 4200 |      |     |     |       | 60  |
|                       | 1     | 16      | Y12 | 3500       | 16    | FN01-03  | 20 | 3500 |      |     |     |       | 50  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

|       |   |   |     |     |     |    |    |    |    |       |
|-------|---|---|-----|-----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10  | 12  | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |     |     |    |    |    |    |       |
| Y     |   | 5 | 340 | 697 | 646 |    |    |    |    | 1688  |
| TOTAL |   | 5 | 340 | 697 | 646 |    |    |    |    | 1688  |

|                                                                                                                                                                                          |  |                                               |  |                                     |        |             |           |             |  |            |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------|--|-------------------------------------|--------|-------------|-----------|-------------|--|------------|--|
| ENGINEER/TECHNOLOGIST                                                                                                                                                                    |  | LEON PIENAAR                                  |  | REG. NO                             | 970672 |             | SIGNATURE |             |  |            |  |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p></div> <div>REGISTRATION NO. 1998/000157/07</div> |  | <u>PROJECT:</u>                               |  | SANDDRIFT EAST PUMP STATION UPGRADE |        |             |           | DATE        |  | 13/03/2025 |  |
|                                                                                                                                                                                          |  | <u>DRAWING TITLE:</u>                         |  |                                     |        |             |           | DET. BY     |  | R.BOTHA    |  |
|                                                                                                                                                                                          |  | GUARD HOUSE<br>REINFORCEMENT BENIDNG SCHEDULE |  |                                     |        | REF DWG     |           | 204-GN01-01 |  |            |  |
|                                                                                                                                                                                          |  |                                               |  |                                     |        | JOB NO      |           | 34676.01    |  |            |  |
|                                                                                                                                                                                          |  |                                               |  |                                     |        | REVISION    |           | T0          |  |            |  |
|                                                                                                                                                                                          |  |                                               |  |                                     |        | SCHEDULE NO |           | 206-GN01-01 |  |            |  |

| MEMBER                    | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D   | E/R   | kg |
|---------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|-----|-------|----|
| WALKWAY SLAB<br>170 THICK | 1     | 18      | Y12 | 4250       | 18    | SL01-01  | 38 | 4000 | 110  | 200  |     |       | 68 |
|                           | 1     | 18      | Y12 | 3000       | 18    | SL01-02  | 37 | 2900 | 120  |      |     |       | 48 |
|                           | 1     | 9       | Y12 | 3000       | 9     | SL01-03  | 20 | 3000 |      |      |     |       | 24 |
|                           | 1     | 49      | Y12 | 1550       | 49    | SL01-04  | 55 | 200  | 90   | 1100 | 90  | [200] | 67 |
|                           | 1     | 49      | Y12 | 1300       | 49    | SL01-05  | 38 | 120  | 1100 | 120  |     |       | 57 |
|                           | 1     | 10      | Y8  | 1150       | 10    | SL01-06  | 83 | 300  | 70   | 400  | 400 |       | 5  |
|                           | 1     | 18      | Y16 | 1500       | 18    | SL01-07  | 20 | 1500 |      |      |     |       | 43 |

|       |   |   |    |     |    |    |    |    |    |       |
|-------|---|---|----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   | 5 |    | 264 | 43 |    |    |    |    | 311   |
| TOTAL |   | 5 |    | 264 | 43 |    |    |    |    | 311   |

| MEMBER | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D   | E/R   | kg  |
|--------|-------|---------|-----|------------|-------|----------|----|------|------|------|-----|-------|-----|
| BOTTOM | 1     | 87      | Y16 | 4950       | 87    | SL02-01  | 37 | 160  | 4830 |      |     |       | 680 |
|        | 1     | 62      | Y16 | 5750       | 62    | SL02-02  | 37 | 160  | 5610 |      |     |       | 563 |
|        | 1     | 25      | Y12 | 1100       | 25    | SL02-03  | 37 | 160  | 940  |      |     |       | 24  |
|        | 1     | 63      | Y16 | 6600       | 63    | SL02-04  | 37 | 160  | 6490 |      |     |       | 656 |
|        | 1     | 31      | Y16 | 7800       | 31    | SL02-05  | 37 | 160  | 7680 |      |     |       | 382 |
|        | 1     | 31      | Y12 | 4000       | 31    | SL02-06  | 37 | 160  | 3880 |      |     |       | 110 |
|        |       |         |     |            |       |          |    |      |      |      |     |       |     |
| STOOLS | 1     | 120     | Y12 | 1400       | 120   | SL02-11  | 83 | 300  | 200  | 400  | 400 |       | 149 |
|        |       |         |     |            |       |          |    |      |      |      |     |       |     |
| TOP    | 1     | 87      | Y12 | 2800       | 87    | SL02-21  | 37 | 120  | 2690 |      |     |       | 216 |
|        | 1     | 62      | Y12 | 7850       | 62    | SL02-22  | 37 | 120  | 7760 |      |     |       | 432 |
|        | 1     | 25      | Y12 | 3200       | 25    | SL02-23  | 37 | 120  | 3090 |      |     |       | 71  |
|        | 1     | 63      | Y12 | 3600       | 63    | SL02-24  | 37 | 120  | 3520 |      |     |       | 201 |
|        | 1     | 31      | Y12 | 6100       | 31    | SL02-25  | 37 | 120  | 6010 |      |     |       | 168 |
|        | 1     | 31      | Y12 | 2300       | 31    | SL02-26  | 37 | 120  | 2210 |      |     |       | 63  |
|        | 1     | 63      | Y12 | 5450       | 63    | SL02-27  | 20 | 5440 |      |      |     |       | 305 |
|        | 1     | 4       | Y16 | 800        | 4     | SL02-28  | 20 | 800  |      |      |     |       | 5   |
|        | 1     | 11      | Y20 | 2900       | 11    | SL02-29  | 55 | 300  | 240  | 2000 | 240 | [300] | 79  |
|        | 1     | 11      | Y20 | 1900       | 11    | SL02-30  | 55 | 300  | 240  | 1000 | 240 | [300] | 52  |
|        | 1     | 11      | Y20 | 2800       | 11    | SL02-31  | 55 | 300  | 200  | 2000 | 200 | [300] | 76  |
|        | 1     | 11      | Y20 | 1800       | 11    | SL02-32  | 55 | 300  | 200  | 1000 | 200 | [300] | 49  |

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|-------|---|---|----|------|------|-----|----|----|----|-------|
|       | 6 | 8 | 10 | 12   | 16   | 20  | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |      |      |     |    |    |    |       |
| Y     |   |   |    | 1740 | 2285 | 255 |    |    |    | 4281  |
| TOTAL |   |   |    | 1740 | 2285 | 255 |    |    |    | 4281  |

|                                                                                                                                                                                    |  |                                    |  |         |             |  |             |  |             |  |
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| ENGINEER/TECHNOLOGIST                                                                                                                                                              |  | LEON PIENAAR                       |  | REG. NO | 970672      |  | SIGNATURE   |  |             |  |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> |  | <u>PROJECT:</u>                    |  |         |             |  | DATE        |  | 08/08/2024  |  |
|                                                                                                                                                                                    |  | SANDRIFT EAST PUMP STATION UPGRADE |  |         |             |  | DET. BY     |  | C.ABRAHAMS  |  |
|                                                                                                                                                                                    |  | <u>DRAWING TITLE:</u>              |  |         |             |  | REF DWG     |  | 204-SL02-01 |  |
|                                                                                                                                                                                    |  |                                    |  |         |             |  | JOB NO      |  | 34676.01    |  |
|                                                                                                                                                                                    |  |                                    |  |         |             |  | REVISION    |  | A           |  |
| MCC, GENERATOR, & ABLUTIONS - ROOF SLAB 300 THK<br>REINFORCEMENT BENDING SCHEDULE                                                                                                  |  |                                    |  |         | SCHEDULE NO |  | 206-SL02-01 |  |             |  |

08/08/2024  
C.ABRAHAMS  
204-SL02-01  
34676.01  
A  
206-SL02-01

| MEMBER     | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C    | D   | E/R   | kg  |
|------------|-------|---------|-----|------------|-------|----------|----|-----|------|------|-----|-------|-----|
| 150 THK RC | 1     | 23      | Y16 | 4250       | 23    | SL03-41  | 38 | 160 | 4020 | 160  |     |       | 154 |
| SLAB       | 1     | 20      | Y16 | 4850       | 20    | SL03-42  | 38 | 160 | 4610 | 160  |     |       | 153 |
|            | 1     | 4       | Y20 | 1100       | 4     | SL03-43  | 53 | 350 | 220  | 160  | 220 | 350   | 11  |
|            |       |         |     |            |       |          |    |     |      |      |     |       |     |
| 300 THK RC | 1     | 19      | Y20 | 3600       | 19    | SL03-01  | 38 | 200 | 3290 | 200  |     |       | 169 |
| SLAB BTM   | 1     | 35      | Y20 | 6650       | 35    | SL03-02  | 37 | 200 | 6480 |      |     |       | 574 |
| STEEL      | 1     | 35      | Y20 | 3550       | 35    | SL03-03  | 37 | 200 | 3400 |      |     |       | 306 |
|            | 1     | 19      | Y16 | 2000       | 19    | SL03-04  | 38 | 160 | 1740 | 160  |     |       | 60  |
|            | 1     | 22      | Y20 | 2300       | 22    | SL03-05  | 38 | 200 | 1990 | 200  |     |       | 125 |
|            | 1     | 22      | Y20 | 6000       | 22    | SL03-06  | 37 | 200 | 5860 |      |     |       | 326 |
|            | 1     | 22      | Y16 | 1400       | 22    | SL03-07  | 37 | 160 | 1260 |      |     |       | 49  |
|            | 1     | 22      | Y20 | 6000       | 22    | SL03-08  | 37 | 200 | 5840 |      |     |       | 326 |
|            | 1     | 22      | Y20 | 5150       | 22    | SL03-09  | 37 | 200 | 5000 |      |     |       | 279 |
|            | 1     | 16      | Y16 | 800        | 16    | SL03-10  | 20 | 800 |      |      |     |       | 20  |
|            |       |         |     |            |       |          |    |     |      |      |     |       |     |
| 300 THK RC | 1     | 19      | Y16 | 3550       | 19    | SL03-21  | 38 | 160 | 3290 | 160  |     |       | 106 |
| SLAB TOP   | 1     | 35      | Y16 | 5250       | 35    | SL03-22  | 37 | 160 | 5120 |      |     |       | 290 |
| STEEL      | 1     | 79      | Y16 | 4700       | 79    | SL03-23  | 37 | 160 | 4570 |      |     |       | 586 |
|            | 1     | 19      | Y16 | 2000       | 19    | SL03-24  | 38 | 160 | 1740 | 160  |     |       | 60  |
|            | 1     | 22      | Y16 | 2250       | 22    | SL03-25  | 38 | 160 | 1990 | 160  |     |       | 78  |
|            | 1     | 22      | Y16 | 7050       | 22    | SL03-26  | 37 | 160 | 6930 |      |     |       | 245 |
|            | 1     | 22      | Y16 | 1800       | 22    | SL03-27  | 37 | 160 | 1680 |      |     |       | 63  |
|            | 1     | 22      | Y20 | 3300       | 22    | SL03-28  | 55 | 300 | 200  | 2500 | 200 | [300] | 179 |
|            | 1     | 42      | Y20 | 2650       | 42    | SL03-29  | 55 | 300 | 240  | 1740 | 240 | [300] | 274 |
|            | 1     | 40      | Y20 | 1900       | 40    | SL03-30  | 55 | 300 | 240  | 1000 | 240 | [300] | 187 |
|            | 1     | 14      | Y20 | 3400       | 14    | SL03-31  | 55 | 300 | 240  | 2500 | 240 | [300] | 117 |
|            | 1     | 14      | Y20 | 3900       | 14    | SL03-32  | 55 | 300 | 240  | 3000 | 240 | [300] | 135 |
|            | 1     | 53      | Y20 | 2300       | 53    | SL03-33  | 55 | 300 | 200  | 1500 | 200 | [300] | 301 |
|            | 1     | 22      | Y20 | 2800       | 22    | SL03-34  | 55 | 300 | 200  | 2000 | 200 | [300] | 152 |
|            | 1     | 60      | Y10 | 1250       | 60    | SL03-50  | 83 | 300 | 180  | 350  | 350 |       | 46  |

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|-------|---|---|----|----|------|------|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16   | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |      |      |    |    |    |       |
| Y     |   |   | 46 |    | 1864 | 3461 |    |    |    | 5371  |
| TOTAL |   |   | 46 |    | 1864 | 3461 |    |    |    | 5371  |

|                                                                                                                                                                   |                                                                                                         |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                                            | REG. NO | 970672      | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>SANDRIFT EAST PUMP STATION UPGRADE                                               |         |             | DATE        | 08/08/2024  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>SCREENING ROOM - ROOF SLAB 150 & 300 THK<br>REINFORCEMENT BENDING SCHEDULE |         |             | DET. BY     | C.ABRAHAMS  |
|                                                                                                                                                                   |                                                                                                         |         |             | REF DWG     | 204-SL03-01 |
|                                                                                                                                                                   |                                                                                                         |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                                         |         |             | REVISION    | A           |
|                                                                                                                                                                   |                                                                                                         |         | SCHEDULE NO | 206-SL03-01 |             |

| MEMBER      | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C   | D   | E/R | kg  |
|-------------|-------|---------|-----|------------|-------|----------|----|-----|------|-----|-----|-----|-----|
| 200 THK RC  | 1     | 12      | Y12 | 4800       | 12    | SL04-11  | 37 | 120 | 4720 |     |     |     | 51  |
| SLAB REINF. | 1     | 9       | Y12 | 3950       | 9     | SL04-12  | 37 | 120 | 3860 |     |     |     | 32  |
| GL 4-6/A-B  | 1     | 44      | Y12 | 2800       | 44    | SL04-13  | 38 | 120 | 2620 | 120 |     |     | 109 |
|             | 1     | 32      | Y12 | 2050       | 32    | SL04-14  | 38 | 120 | 1850 | 120 |     |     | 58  |
|             | 1     | 4       | Y12 | 800        | 4     | SL04-15  | 20 | 800 |      |     |     |     | 3   |
|             | 1     | 12      | Y12 | 6500       | 12    | SL04-16  | 37 | 120 | 6390 |     |     |     | 69  |
|             | 1     | 9       | Y12 | 2300       | 9     | SL04-17  | 37 | 120 | 2190 |     |     |     | 18  |
|             | 1     | 10      | Y10 | 1200       | 10    | SL04-18  | 83 | 300 | 100  | 400 | 400 |     | 7   |

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|-------|---|---|----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   |   | 7  | 341 |    |    |    |    |    | 348   |
| TOTAL |   |   | 7  | 341 |    |    |    |    |    | 348   |

|                                                                                                                                                                   |                                                    |         |        |             |             |
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| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                       | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                           |         |        | DATE        | 08/08/2024  |
|                                                                                                                                                                   | SANDRIFT EAST PUMP STATION UPGRADE                 |         |        | DET. BY     | C.ABRAHAMS  |
|                                                                                                                                                                   | DRAWING TITLE:                                     |         |        | REF DWG     | 204-SL04-01 |
|                                                                                                                                                                   | ACCESS STAIRCASE - ROOF SLAB 200 THK (GL. 4-6/A-B) |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   | REINFORCEMENT BENDING SCHEDULE                     |         |        | REVISION    | A           |
|                                                                                                                                                                   |                                                    |         |        | SCHEDULE NO | 206-SL04-01 |

| MEMBER   | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C   | D | E/R | kg  |
|----------|-------|---------|-----|------------|-------|----------|----|-----|------|-----|---|-----|-----|
| B1 STEEL | 1     | 16      | Y16 | 2600       | 16    | SL05-01  | 38 | 160 | 2330 | 160 |   |     | 66  |
|          | 1     | 18      | Y16 | 2300       | 18    | SL05-02  | 38 | 160 | 2070 | 160 |   |     | 65  |
|          | 1     | 6       | Y16 | 1900       | 6     | SL05-03  | 38 | 160 | 1640 | 160 |   |     | 18  |
|          | 1     | 69      | Y16 | 4200       | 69    | SL05-04  | 37 | 160 | 4070 |     |   |     | 457 |
|          | 1     | 17      | Y16 | 2350       | 17    | SL05-05  | 38 | 160 | 2090 | 160 |   |     | 63  |
|          | 1     | 6       | Y16 | 2700       | 6     | SL05-06  | 38 | 160 | 2450 | 160 |   |     | 26  |
|          | 1     | 23      | Y16 | 1400       | 23    | SL05-07  | 38 | 160 | 1140 | 160 |   |     | 51  |
|          | 1     | 28      | Y16 | 2850       | 28    | SL05-09  | 37 | 160 | 2720 |     |   |     | 126 |
|          | 1     | 6       | Y16 | 1450       | 6     | SL05-10  | 38 | 160 | 1190 | 160 |   |     | 14  |
|          | 1     | 17      | Y16 | 1000       | 17    | SL05-11  | 38 | 160 | 740  | 160 |   |     | 27  |
|          | 1     | 54      | Y16 | 3500       | 54    | SL05-12  | 37 | 160 | 3390 |     |   |     | 298 |
|          | 1     | 28      | Y16 | 2050       | 28    | SL05-13  | 37 | 160 | 1940 |     |   |     | 91  |
|          | 1     | 27      | Y16 | 5700       | 27    | SL05-14  | 37 | 160 | 5550 |     |   |     | 243 |
|          | 1     | 14      | Y16 | 3500       | 14    | SL05-15  | 38 | 160 | 3230 | 160 |   |     | 77  |
|          | 1     | 1       | Y16 | 2800       | 1     | SL05-16A | 38 | 100 | 2680 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2700       | 1     | SL05-16B | 38 | 100 | 2545 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2550       | 1     | SL05-16C | 38 | 100 | 2415 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2400       | 1     | SL05-16D | 38 | 100 | 2280 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2300       | 1     | SL05-16E | 38 | 100 | 2145 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2150       | 1     | SL05-16F | 38 | 100 | 2015 | 100 |   |     | 3   |
|          | 1     | 1       | Y16 | 2000       | 1     | SL05-16G | 38 | 100 | 1880 | 100 |   |     | 3   |
|          | 1     | 7       | Y16 | 1500       | 7     | SL05-17  | 60 | 250 | 440  |     |   |     | 17  |
|          | 1     | 36      | Y16 | 4200       | 36    | SL05-18  | 37 | 160 | 4060 |     |   |     | 239 |
|          | 1     | 9       | Y16 | 4400       | 9     | SL05-19  | 38 | 160 | 4140 | 160 |   |     | 63  |
|          | 1     | 7       | Y16 | 2800       | 7     | SL05-20  | 37 | 160 | 2670 |     |   |     | 31  |
|          | 1     | 7       | Y16 | 5800       | 7     | SL05-21  | 37 | 160 | 5660 |     |   |     | 64  |
|          | 1     | 6       | Y16 | 2950       | 6     | SL05-22  | 37 | 160 | 2810 |     |   |     | 28  |
|          | 1     | 7       | Y16 | 5000       | 7     | SL05-23  | 37 | 160 | 4890 |     |   |     | 55  |
|          | 1     | 4       | Y16 | 1500       | 4     | SL05-24  | 38 | 160 | 1230 | 160 |   |     | 9   |
|          | 1     | 9       | Y16 | 4700       | 9     | SL05-25  | 37 | 160 | 4580 |     |   |     | 67  |

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| ENGINEER/TECHNOLOGIST                                                                                                                                                              |  | LEON PIENAAR                       |  | REG. NO     | 970672      | SIGNATURE |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> |  | <u>PROJECT:</u>                    |  |             |             | DATE      | 08/08/2024  |
|                                                                                                                                                                                    |  | SANDRIFT EAST PUMP STATION UPGRADE |  |             |             | DET. BY   | R.BOTHA     |
|                                                                                                                                                                                    |  | <u>DRAWING TITLE:</u>              |  |             |             | REF DWG   | 204-SL05-01 |
|                                                                                                                                                                                    |  |                                    |  |             |             | JOB NO    | 34676.01    |
|                                                                                                                                                                                    |  |                                    |  |             |             | REVISION  | A           |
| 150, 200 & 300 THK RC GROUND SLAB BOTTOM REINFORCEMENT SCHEDULE                                                                                                                    |  |                                    |  | SCHEDULE NO | 206-SL05-01 |           |             |



| MEMBER   | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C   | D | E/R | kg  |
|----------|-------|---------|-----|------------|-------|----------|----|-----|------|-----|---|-----|-----|
|          | 1     | 17      | Y16 | 1800       | 17    | SL05-26  | 37 | 160 | 1650 |     |   |     | 48  |
|          | 1     | 21      | Y16 | 1700       | 21    | SL05-27  | 37 | 160 | 1550 |     |   |     | 56  |
|          | 1     | 8       | Y16 | 4100       | 8     | SL05-28  | 38 | 160 | 3850 | 160 |   |     | 52  |
|          | 1     | 17      | Y16 | 4350       | 17    | SL05-29  | 37 | 160 | 4210 |     |   |     | 117 |
|          | 1     | 16      | Y16 | 1150       | 16    | SL05-30  | 38 | 160 | 900  | 160 |   |     | 29  |
|          | 1     | 9       | Y16 | 1600       | 9     | SL05-31  | 38 | 160 | 1340 | 160 |   |     | 23  |
|          | 1     | 17      | Y16 | 1550       | 17    | SL05-32  | 37 | 160 | 1400 |     |   |     | 42  |
|          | 1     | 17      | Y16 | 2900       | 17    | SL05-34  | 37 | 160 | 2750 |     |   |     | 78  |
|          | 1     | 27      | Y16 | 2150       | 27    | SL05-35  | 37 | 160 | 2000 |     |   |     | 92  |
|          | 1     | 4       | Y16 | 1950       | 4     | SL05-36  | 38 | 160 | 1690 | 160 |   |     | 12  |
|          | 1     | 27      | Y16 | 1800       | 27    | SL05-37  | 62 | 900 | 190  | 900 |   |     | 77  |
|          | 1     | 21      | Y16 | 2550       | 21    | SL05-38  | 38 | 160 | 2290 | 160 |   |     | 85  |
|          | 1     | 1       | Y16 | 2000       | 1     | SL05-39A | 38 | 100 | 1880 | 100 |   |     | 3   |
|          | 1     | 1       | Y16 | 2150       | 1     | SL05-39B | 38 | 100 | 2010 | 100 |   |     | 3   |
|          | 1     | 1       | Y16 | 2250       | 1     | SL05-39C | 38 | 100 | 2140 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2400       | 1     | SL05-39D | 38 | 100 | 2270 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2550       | 1     | SL05-39E | 38 | 100 | 2400 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2650       | 1     | SL05-39F | 38 | 100 | 2530 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2800       | 1     | SL05-39G | 38 | 100 | 2660 | 100 |   |     | 4   |
|          | 1     | 1       | Y16 | 2900       | 1     | SL05-39H | 38 | 100 | 2790 | 100 |   |     | 5   |
|          | 1     | 27      | Y16 | 2750       | 27    | SL05-40  | 37 | 160 | 2600 |     |   |     | 117 |
|          | 1     | 9       | Y16 | 2050       | 9     | SL05-41  | 38 | 160 | 1780 | 160 |   |     | 29  |
|          |       |         |     |            |       |          |    |     |      |     |   |     |     |
| B2 STEEL | 1     | 11      | Y16 | 2800       | 11    | SL05-51  | 37 | 160 | 2650 |     |   |     | 49  |
|          | 1     | 19      | Y16 | 950        | 19    | SL05-52  | 38 | 160 | 690  | 160 |   |     | 28  |
|          | 1     | 6       | Y16 | 2550       | 6     | SL05-53  | 38 | 160 | 2290 | 160 |   |     | 24  |
|          | 1     | 6       | Y16 | 900        | 6     | SL05-54  | 38 | 160 | 650  | 160 |   |     | 9   |
|          | 1     | 6       | Y10 | 950        | 6     | SL05-55  | 60 | 250 | 150  |     |   |     | 4   |
|          | 1     | 4       | Y16 | 7700       | 4     | SL05-56  | 37 | 160 | 7550 |     |   |     | 49  |
|          | 1     | 3       | Y16 | 2000       | 3     | SL05-57  | 38 | 160 | 1750 | 160 |   |     | 9   |

|                                                                                                                        |                                                                                              |         |             |             |             |
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| ENGINEER/TECHNOLOGIST                                                                                                  | LEON PIENAAR                                                                                 | REG. NO | 970672      | SIGNATURE   |             |
| <br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>SANDRIFT EAST PUMP STATION UPGRADE                                    |         |             | DATE        | 08/08/2024  |
|                                                                                                                        | <u>DRAWING TITLE:</u><br><br>150, 200 & 300 THK RC GROUND SLAB BOTTOM REINFORCEMENT SCHEDULE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                        |                                                                                              |         |             | REF DWG     | 204-SL05-01 |
|                                                                                                                        |                                                                                              |         |             | JOB NO      | 34676.01    |
|                                                                                                                        |                                                                                              |         |             | REVISION    | A           |
|                                                                                                                        |                                                                                              |         | SCHEDULE NO | 206-SL05-02 |             |

| MEMBER | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C   | D | E/R | kg  |
|--------|-------|---------|-----|------------|-------|----------|----|-----|------|-----|---|-----|-----|
|        | 1     | 58      | Y16 | 3350       | 58    | SL05-58  | 38 | 160 | 3110 | 160 |   |     | 307 |
|        | 1     | 19      | Y16 | 1650       | 19    | SL05-59  | 38 | 160 | 1390 | 160 |   |     | 49  |
|        | 1     | 4       | Y16 | 4300       | 4     | SL05-60  | 37 | 160 | 4150 |     |   |     | 27  |
|        | 1     | 47      | Y16 | 1600       | 47    | SL05-61  | 38 | 160 | 1350 | 160 |   |     | 119 |
|        | 1     | 19      | Y16 | 950        | 19    | SL05-62  | 37 | 160 | 800  |     |   |     | 28  |
|        | 1     | 23      | Y16 | 2150       | 23    | SL05-63  | 37 | 160 | 2000 |     |   |     | 78  |
|        | 1     | 23      | Y16 | 1500       | 23    | SL05-64  | 62 | 900 | 140  | 600 |   |     | 54  |
|        | 1     | 2       | Y16 | 6950       | 2     | SL05-65  | 37 | 160 | 6820 |     |   |     | 22  |
|        | 1     | 6       | Y16 | 3650       | 6     | SL05-66  | 38 | 160 | 3390 | 160 |   |     | 35  |
|        | 1     | 2       | Y16 | 7550       | 2     | SL05-67  | 37 | 160 | 7440 |     |   |     | 24  |
|        | 1     | 6       | Y16 | 3250       | 6     | SL05-68  | 37 | 160 | 3100 |     |   |     | 31  |
|        | 1     | 1       | Y16 | 2050       | 1     | SL05-69A | 37 | 100 | 1970 |     |   |     | 3   |
|        | 1     | 1       | Y16 | 2150       | 1     | SL05-69B | 37 | 100 | 2090 |     |   |     | 3   |
|        | 1     | 1       | Y16 | 2300       | 1     | SL05-69C | 37 | 100 | 2205 |     |   |     | 4   |
|        | 1     | 1       | Y16 | 2400       | 1     | SL05-69D | 37 | 100 | 2320 |     |   |     | 4   |
|        | 1     | 1       | Y16 | 2500       | 1     | SL05-69E | 37 | 100 | 2440 |     |   |     | 4   |
|        | 1     | 9       | Y16 | 6500       | 9     | SL05-70  | 38 | 160 | 6240 | 160 |   |     | 92  |
|        | 1     | 1       | Y16 | 2100       | 1     | SL05-71A | 38 | 100 | 1980 | 100 |   |     | 3   |
|        | 1     | 1       | Y16 | 2250       | 1     | SL05-71B | 38 | 100 | 2125 | 100 |   |     | 4   |
|        | 1     | 1       | Y16 | 2400       | 1     | SL05-71C | 38 | 100 | 2270 | 100 |   |     | 4   |
|        | 1     | 1       | Y16 | 2550       | 1     | SL05-71D | 38 | 100 | 2415 | 100 |   |     | 4   |
|        | 1     | 1       | Y16 | 2700       | 1     | SL05-71E | 38 | 100 | 2560 | 100 |   |     | 4   |
|        | 1     | 32      | Y16 | 4050       | 32    | SL05-72  | 38 | 160 | 3790 | 160 |   |     | 205 |
|        | 1     | 3       | Y16 | 2500       | 3     | SL05-73  | 38 | 160 | 2250 | 160 |   |     | 12  |
|        | 1     | 28      | Y16 | 3700       | 28    | SL05-74  | 38 | 160 | 3450 | 160 |   |     | 164 |
|        | 1     | 15      | Y16 | 1200       | 15    | SL05-75  | 38 | 160 | 930  | 160 |   |     | 28  |
|        | 1     | 40      | Y16 | 3200       | 40    | SL05-76  | 38 | 160 | 2950 | 160 |   |     | 202 |
|        | 1     | 19      | Y16 | 1250       | 19    | SL05-77  | 38 | 160 | 1000 | 160 |   |     | 37  |
|        | 1     | 23      | Y16 | 1600       | 23    | SL05-78  | 38 | 160 | 1370 | 160 |   |     | 58  |
|        | 1     | 43      | Y16 | 1950       | 43    | SL05-79  | 37 | 160 | 1800 |     |   |     | 132 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

|                                                                                                                                                                   |                                                                                              |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                                 | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>SANDRIFT EAST PUMP STATION UPGRADE                                    |         |        | DATE        | 08/08/2024  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>150, 200 & 300 THK RC GROUND SLAB BOTTOM REINFORCEMENT SCHEDULE |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                              |         |        | REF DWG     | 204-SL05-01 |
|                                                                                                                                                                   |                                                                                              |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                              |         |        | REVISION    | A           |
|                                                                                                                                                                   |                                                                                              |         |        | SCHEDULE NO | 206-SL05-03 |

| MEMBER | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C   | D   | E/R | kg  |
|--------|-------|---------|-----|------------|-------|----------|----|------|------|-----|-----|-----|-----|
|        | 1     | 7       | Y16 | 1750       | 7     | SL05-80  | 38 | 160  | 1490 | 160 |     |     | 19  |
|        | 1     | 6       | Y16 | 5700       | 6     | SL05-81  | 37 | 160  | 5590 |     |     |     | 54  |
|        | 1     | 32      | Y16 | 7750       | 32    | SL05-82  | 20 | 7750 |      |     |     |     | 391 |
|        | 1     | 6       | Y16 | 4100       | 6     | SL05-83  | 37 | 160  | 3950 |     |     |     | 39  |
|        | 1     | 12      | Y16 | 3350       | 12    | SL05-84  | 37 | 160  | 3200 |     |     |     | 63  |
|        | 1     | 8       | Y16 | 6050       | 8     | SL05-85  | 37 | 160  | 5940 |     |     |     | 76  |
|        | 1     | 15      | Y16 | 2650       | 15    | SL05-86  | 38 | 160  | 2400 | 160 |     |     | 63  |
|        | 1     | 17      | Y16 | 2450       | 17    | SL05-87  | 38 | 160  | 2210 | 160 |     |     | 66  |
|        | 1     | 6       | Y16 | 7500       | 6     | SL05-88  | 20 | 7470 |      |     |     |     | 71  |
|        | 1     | 3       | Y16 | 1800       | 3     | SL05-90  | 37 | 160  | 1670 |     |     |     | 9   |
|        | 1     | 6       | Y16 | 4900       | 6     | SL05-91  | 37 | 160  | 4780 |     |     |     | 46  |
|        | 1     | 11      | Y16 | 2100       | 11    | SL05-92  | 38 | 160  | 1840 | 160 |     |     | 36  |
|        | 1     | 7       | Y16 | 3700       | 7     | SL05-93  | 38 | 160  | 3460 | 160 |     |     | 41  |
|        |       |         |     |            |       |          |    |      |      |     |     |     |     |
| STOOLS | 1     | 60      | Y8  | 1250       | 60    | SL05-110 | 83 | 300  | 100  | 400 | 400 |     | 30  |
|        | 1     | 100     | Y10 | 1400       | 100   | SL05-111 | 83 | 300  | 200  | 400 | 400 |     | 86  |

|       |   |    |    |    |      |    |    |    |    |       |
|-------|---|----|----|----|------|----|----|----|----|-------|
|       | 6 | 8  | 10 | 12 | 16   | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |    |    |    |      |    |    |    |    |       |
| Y     |   | 30 | 90 |    | 5992 |    |    |    |    | 6111  |
| TOTAL |   | 30 | 90 |    | 5992 |    |    |    |    | 6111  |

|                                                                                                                                                                                     |                                    |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                               | LEON PIENAAR                       | REG. NO | 970672      | SIGNATURE   |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> | <u>PROJECT:</u>                    |         |             | DATE        | 08/08/2024  |
|                                                                                                                                                                                     | SANDRIFT EAST PUMP STATION UPGRADE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                                     | <u>DRAWING TITLE:</u>              |         |             | REF DWG     | 204-SL05-01 |
|                                                                                                                                                                                     |                                    |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                                     |                                    |         |             | REVISION    | A           |
| 150, 200 & 300 THK RC GROUND SLAB BOTTOM REINFORCEMENT SCHEDULE                                                                                                                     |                                    |         | SCHEDULE NO | 206-SL05-04 |             |

| MEMBER                | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A   | B    | C     | D    | E/R   | kg  |
|-----------------------|-------|---------|-----|------------|-------|----------|----|-----|------|-------|------|-------|-----|
| FOUNDATION<br>800x300 | 1     | 63      | Y12 | 1400       | 63    | ST01-01  | 55 | 200 | 200  | 700   | 200  | [200] | 78  |
|                       | 1     | 75      | Y12 | 1050       | 75    | ST01-02  | 38 | 200 | 700  | 200   |      |       | 70  |
|                       | 1     | 8       | Y12 | 2700       | 8     | ST01-03  | 37 | 160 | 2560 |       |      |       | 19  |
|                       | 1     | 8       | Y12 | 4950       | 8     | ST01-04  | 38 | 160 | 4700 | 160   |      |       | 35  |
|                       | 1     | 7       | Y12 | 2050       | 7     | ST01-05  | 53 | 200 | 750  | 250   | 750  | 200   | 13  |
|                       | 1     | 8       | Y12 | 1850       | 8     | ST01-06  | 38 | 160 | 1600 | 160   |      |       | 13  |
|                       | 1     | 8       | Y12 | 2500       | 8     | ST01-07  | 38 | 160 | 2240 | 160   |      |       | 18  |
|                       | 1     | 8       | Y12 | 1850       | 8     | ST01-08  | 54 | 600 | 700  | [600] |      |       | 13  |
|                       | 1     | 8       | Y12 | 1700       | 8     | ST01-09  | 54 | 600 | 530  | [600] |      |       | 12  |
|                       | 1     | 8       | Y12 | 2150       | 8     | ST01-10  | 54 | 600 | 1000 | [600] |      |       | 15  |
|                       | 1     | 8       | Y12 | 2300       | 8     | ST01-11  | 54 | 600 | 1160 | [600] |      |       | 16  |
|                       | 1     | 4       | Y12 | 1850       | 4     | ST01-12  | 38 | 600 | 700  | 600   |      |       | 7   |
|                       | 1     | 4       | Y12 | 2250       | 4     | ST01-13  | 38 | 800 | 700  | 800   |      |       | 8   |
|                       | 1     | 16      | Y12 | 1900       | 16    | ST01-14  | 37 | 160 | 1750 |       |      |       | 27  |
|                       | 1     | 8       | Y12 | 2300       | 8     | ST01-15  | 41 | 700 | 900  | [700] | 700  |       | 16  |
|                       | 1     | 8       | Y12 | 2450       | 8     | ST01-16  | 41 | 600 | 1220 | [600] | 1180 |       | 17  |
| STARTER BARS          | 1     | 160     | Y16 | 1550       | 160   | ST01-17  | 37 | 400 | 1200 |       |      |       | 391 |

|       |   |   |    |     |     |    |    |    |    |       |
|-------|---|---|----|-----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |     |    |    |    |    |       |
| Y     |   |   |    | 378 | 391 |    |    |    |    | 770   |
| TOTAL |   |   |    | 378 | 391 |    |    |    |    | 770   |

|                                                                                                                                                                   |                                                                                       |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                          | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:<br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                           |         |        | DATE        | 08/08/2024  |
|                                                                                                                                                                   | DRAWING TITLE:<br><br>ACCESS STAIRCASE - FOUNDATION REINFORCEMENT<br>BENDING SCHEDULE |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                       |         |        | REF DWG     | 204-ST01-01 |
|                                                                                                                                                                   |                                                                                       |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                       |         |        | REVISION    | A           |
|                                                                                                                                                                   |                                                                                       |         |        | SCHEDULE NO | 206-ST01-01 |

| MEMBER  | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C     | D     | E/R | kg  |
|---------|-------|---------|-----|------------|-------|----------|----|------|------|-------|-------|-----|-----|
| WALL 16 | 1     | 32      | Y16 | 2650       | 32    | ST01-21  | 37 | 200  | 2500 |       |       |     | 134 |
|         | 1     | 36      | Y12 | 2250       | 36    | ST01-22  | 37 | 2050 | 200  |       |       |     | 72  |
|         | 1     | 9       | Y10 | 450        | 9     | ST01-23  | 85 | 150  | 220  | 60    | [100] |     | 2   |
|         |       |         |     |            |       |          |    |      |      |       |       |     |     |
| WALL 17 | 1     | 58      | Y16 | 2650       | 58    | ST01-31  | 37 | 200  | 2500 |       |       |     | 243 |
|         | 1     | 20      | Y16 | 2150       | 20    | ST01-32  | 37 | 200  | 2000 |       |       |     | 68  |
|         | 1     | 28      | Y16 | 1150       | 28    | ST01-33  | 37 | 200  | 1000 |       |       |     | 51  |
|         | 1     | 66      | Y12 | 3100       | 66    | ST01-34  | 20 | 3100 |      |       |       |     | 182 |
|         | 1     | 8       | Y12 | 1700       | 8     | ST01-35  | 20 | 1700 |      |       |       |     | 12  |
|         | 1     | 22      | Y10 | 450        | 22    | ST01-36  | 85 | 150  | 220  | 60    | [100] |     | 6   |
|         | 1     | 11      | Y12 | 2700       | 11    | ST01-37  | 49 | 1040 | 1040 | [600] | 740   | 740 | 26  |
|         | 1     | 33      | Y12 | 2400       | 33    | ST01-38  | 37 | 1200 | 1200 |       |       |     | 70  |
|         |       |         |     |            |       |          |    |      |      |       |       |     |     |
| WALL 18 | 1     | 16      | Y16 | 1150       | 16    | ST01-41  | 37 | 200  | 1000 |       |       |     | 29  |
|         | 1     | 6       | Y16 | 3450       | 6     | ST01-42  | 37 | 200  | 3300 |       |       |     | 33  |
|         | 1     | 16      | Y12 | 1500       | 16    | ST01-43  | 20 | 1500 |      |       |       |     | 21  |
|         | 1     | 34      | Y12 | 1800       | 34    | ST01-44  | 60 | 610  | 220  |       |       |     | 54  |
|         | 1     | 4       | Y10 | 450        | 4     | ST01-45  | 85 | 150  | 220  | 60    | [100] |     | 1   |
|         | 1     | 6       | Y16 | 2450       | 6     | ST01-46  | 37 | 200  | 2300 |       |       |     | 23  |
|         | 1     | 6       | Y16 | 1100       | 6     | ST01-47  | 20 | 1100 |      |       |       |     | 10  |

|       |   |   |    |     |     |    |    |    |    |       |
|-------|---|---|----|-----|-----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16  | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |     |    |    |    |    |       |
| Y     |   |   | 10 | 438 | 590 |    |    |    |    | 1038  |
| TOTAL |   |   | 10 | 438 | 590 |    |    |    |    | 1038  |

|                                                                                                                                                                                                                       |                                                                    |         |        |             |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                                                                 | LEON PIENAAR                                                       | REG. NO | 970672 | SIGNATURE   |             |
| <br>CESA<br>bvi 50<br>YEAR CELEBRATION EST 1967-2017<br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                                           |         |        | DATE        | 08/08/2024  |
|                                                                                                                                                                                                                       | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                        |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                                                                       | DRAWING TITLE:                                                     |         |        | REF DWG     | 204-ST01-01 |
|                                                                                                                                                                                                                       | ACCESS STAIRCASE - WALLS 16, 17, 18 REINFORCEMENT BENDING SCHEDULE |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                                                                       |                                                                    |         |        | REVISION    | A           |
|                                                                                                                                                                                                                       |                                                                    |         |        | SCHEDULE NO | 206-ST01-02 |

| MEMBER                  | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D   | E/R | kg |
|-------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|-----|-----|----|
| FLOOR SLAB<br>200 THICK | 1     | 44      | Y12 | 2250       | 44    | ST01-61  | 38 | 120  | 2050 | 120  |     |     | 88 |
|                         | 1     | 10      | Y12 | 950        | 10    | ST01-62  | 38 | 120  | 740  | 120  |     |     | 8  |
|                         | 1     | 12      | Y12 | 4000       | 12    | ST01-63  | 38 | 120  | 3800 | 120  |     |     | 43 |
|                         | 1     | 18      | Y12 | 3300       | 18    | ST01-64  | 38 | 120  | 3090 | 120  |     |     | 53 |
|                         | 1     | 12      | Y10 | 1100       | 12    | ST01-65  | 83 | 290  | 100  | 350  | 350 |     | 8  |
|                         |       |         |     |            |       |          |    |      |      |      |     |     |    |
| ACCESS<br>STAIRCASE     | 1     | 20      | Y12 | 3750       | 20    | ST01-71  | 62 | 3550 | 2900 | 200  |     |     | 67 |
|                         | 1     | 20      | Y12 | 4050       | 20    | ST01-72  | 62 | 3550 | 2900 | 500  |     |     | 72 |
|                         | 1     | 44      | Y12 | 1250       | 44    | ST01-73  | 20 | 1250 |      |      |     |     | 49 |
|                         | 1     | 20      | Y12 | 1700       | 20    | ST01-74  | 62 | 980  | 810  | 700  |     |     | 30 |
|                         | 1     | 16      | Y12 | 1500       | 16    | ST01-75  | 38 | 160  | 1250 | 160  |     |     | 21 |
|                         | 1     | 6       | Y12 | 1100       | 6     | ST01-76  | 38 | 160  | 850  | 160  |     |     | 6  |
|                         | 1     | 40      | Y12 | 1800       | 40    | ST01-77  | 62 | 1280 | 750  | 500  |     |     | 64 |
|                         | 1     | 14      | Y12 | 2150       | 14    | ST01-78  | 45 | 1280 | 810  | [90] | 750 |     | 27 |

|       |   |   |    |     |    |    |    |    |    |       |
|-------|---|---|----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   |   | 8  | 527 |    |    |    |    |    | 535   |
| TOTAL |   |   | 8  | 527 |    |    |    |    |    | 535   |

|                                                                                                                                                                   |                                                                                                       |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                                          | REG. NO | 970672      | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                    |         |             | DATE        | 08/08/2024  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>ACCESS STAIRCASE - FLOOR SLAB & STAIRS<br>REINFORCEMENT BENDING SCHEDULE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                                       |         |             | REF DWG     | 204-ST01-01 |
|                                                                                                                                                                   |                                                                                                       |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                                       |         |             | REVISION    | A           |
|                                                                                                                                                                   |                                                                                                       |         | SCHEDULE NO | 206-ST01-03 |             |

| MEMBER | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C      | D     | E/R   | kg   |
|--------|-------|---------|-----|------------|-------|----------|----|------|------|--------|-------|-------|------|
| WALL 1 | 1     | 43      | Y20 | 5350       | 43    | WL01-01  | 41 | 3100 | 90   | [2150] | 90    |       | 567  |
|        | 1     | 105     | Y20 | 5300       | 105   | WL01-02  | 20 | 5300 |      |        |       |       | 1372 |
|        | 1     | 296     | Y16 | 3050       | 296   | WL01-03  | 37 | 2850 | 250  |        |       |       | 1425 |
|        | 1     | 152     | Y16 | 4800       | 152   | WL01-04  | 20 | 4800 |      |        |       |       | 1152 |
|        | 1     | 36      | Y20 | 4400       | 36    | WL01-06  | 20 | 4400 |      |        |       |       | 391  |
|        | 1     | 116     | Y20 | 3400       | 116   | WL01-07  | 20 | 3400 |      |        |       |       | 973  |
|        | 1     | 528     | Y12 | 2400       | 528   | WL01-08  | 37 | 1200 | 1200 |        |       |       | 1125 |
|        | 1     | 100     | Y16 | 6000       | 100   | WL01-09  | 20 | 6000 |      |        |       |       | 947  |
|        | 1     | 108     | Y16 | 4350       | 108   | WL01-10  | 38 | 3950 | 230  | 250    |       |       | 742  |
|        | 1     | 76      | Y16 | 2500       | 76    | WL01-11  | 38 | 2100 | 230  | 250    |       |       | 300  |
|        | 1     | 131     | Y10 | 500        | 131   | WL01-12  | 85 | 150  | 270  | 60     | [100] |       | 40   |
|        | 1     | 35      | Y10 | 600        | 35    | WL01-13  | 85 | 150  | 370  | 60     | [100] |       | 13   |
|        | 1     | 76      | Y16 | 2100       | 76    | WL01-14  | 38 | 1700 | 230  | 250    |       |       | 252  |
|        | 1     | 52      | Y12 | 2850       | 52    | WL01-16  | 49 | 1040 | 1040 | [750]  | 740   | 740   | 132  |
|        | 1     | 34      | Y16 | 1700       | 34    | WL01-17  | 38 | 1300 | 230  | 250    |       |       | 91   |
|        | 1     | 12      | Y12 | 3100       | 12    | WL01-18  | 49 | 1040 | 1040 | [1000] | 740   | 740   | 33   |
|        |       |         |     |            |       |          |    |      |      |        |       |       |      |
| WALL 3 | 1     | 43      | Y20 | 5350       | 43    | WL03-01  | 41 | 3100 | 90   | [2150] | 90    |       | 567  |
|        | 1     | 99      | Y20 | 5300       | 99    | WL03-02  | 20 | 5300 |      |        |       |       | 1294 |
|        | 1     | 294     | Y16 | 3050       | 294   | WL03-03  | 37 | 2850 | 250  |        |       |       | 1415 |
|        | 1     | 104     | Y16 | 6000       | 104   | WL03-04  | 20 | 6000 |      |        |       |       | 985  |
|        | 1     | 12      | Y12 | 3100       | 12    | WL03-05  | 49 | 1040 | 1040 | [1000] | 740   | 740   | 33   |
|        | 1     | 34      | Y20 | 4700       | 34    | WL03-06  | 20 | 4700 |      |        |       |       | 394  |
|        | 1     | 120     | Y20 | 3400       | 120   | WL03-07  | 20 | 3400 |      |        |       |       | 1006 |
|        | 1     | 384     | Y12 | 2400       | 384   | WL03-08  | 37 | 1200 | 1200 |        |       |       | 818  |
|        | 1     | 36      | Y16 | 3800       | 36    | WL03-09  | 20 | 3800 |      |        |       |       | 216  |
|        | 1     | 131     | Y10 | 500        | 131   | WL03-10  | 85 | 150  | 270  | 60     | [100] |       | 40   |
|        | 1     | 35      | Y10 | 600        | 35    | WL03-11  | 85 | 150  | 370  | 60     | [100] |       | 13   |
|        | 1     | 74      | Y16 | 6200       | 74    | WL03-12  | 55 | 300  | 230  | 5270   | 230   | [300] | 724  |
|        | 1     | 76      | Y16 | 5400       | 76    | WL03-13  | 20 | 5400 |      |        |       |       | 648  |
|        | 1     | 76      | Y16 | 6000       | 76    | WL03-14  | 37 | 5800 | 250  |        |       |       | 720  |
|        | 1     | 14      | Y16 | 1650       | 14    | WL03-15  | 37 | 1420 | 250  |        |       |       | 36   |
|        | 1     | 40      | Y12 | 2850       | 40    | WL03-16  | 49 | 1040 | 1040 | [750]  | 740   | 740   | 101  |

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|-------|---|---|-----|------|------|------|----|----|----|-------|
|       | 6 | 8 | 10  | 12   | 16   | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |      |      |      |    |    |    |       |
| Y     |   |   | 107 | 2242 | 9652 | 6565 |    |    |    | 18566 |
| TOTAL |   |   | 107 | 2242 | 9652 | 6565 |    |    |    | 18566 |

|                                                                                                                                                                                    |             |                                             |  |         |        |           |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------|--|---------|--------|-----------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                                              |             | LEON PIENAAR                                |  | REG. NO | 970672 | SIGNATURE |             |
| <div><p>• ENGINEERING • PROCUREMENT • MANAGEMENT</p><p>REGISTRATION NO. 1998/000157/07</p></div> |             | PROJECT:                                    |  |         |        | DATE      | 13/09/2024  |
|                                                                                                                                                                                    |             | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE |  |         |        | DET. BY   | R.BOTHA     |
|                                                                                                                                                                                    |             |                                             |  |         |        | REF DWG   | 204-WL01-01 |
|                                                                                                                                                                                    |             | DRAWING TITLE:                              |  |         |        | JOB NO    | 34676.01    |
|                                                                                                                                                                                    |             | WALLS 1 & 3 - REINFORCEMENT SCHEDULE        |  |         |        | REVISION  | T0          |
| SCHEDULE NO                                                                                                                                                                        | 206-WL01-01 |                                             |  |         |        |           |             |

| MEMBER                     | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B   | C      | D   | E/R | kg  |
|----------------------------|-------|---------|-----|------------|-------|----------|----|------|-----|--------|-----|-----|-----|
| WALL 16<br>(BUTTRESS WALL) | 1     | 10      | Y20 | 3600       | 10    | WL16-01  | 20 | 3600 |     |        |     |     | 89  |
|                            | 1     | 10      | Y20 | 5150       | 10    | WL16-02  | 37 | 5000 | 200 |        |     |     | 127 |
|                            | 1     | 2       | Y20 | 3650       | 2     | WL16-03  | 41 | 2300 | 120 | [1200] | 100 |     | 18  |
|                            | 1     | 24      | Y16 | 2400       | 24    | WL16-04  | 38 | 1000 | 480 | 1000   |     |     | 91  |
|                            | 1     | 24      | Y16 | 2200       | 24    | WL16-05  | 38 | 900  | 480 | 900    |     |     | 83  |
|                            | 1     | 24      | Y16 | 2000       | 24    | WL16-06  | 38 | 800  | 480 | 800    |     |     | 76  |
|                            | 1     | 24      | Y16 | 1800       | 24    | WL16-07  | 38 | 700  | 480 | 700    |     |     | 68  |
|                            | 1     | 6       | Y16 | 1600       | 6     | WL16-08  | 38 | 600  | 480 | 600    |     |     | 15  |
|                            |       |         |     |            |       |          |    |      |     |        |     |     |     |
| WALL 17<br>(BUTTRESS WALL) | 1     | 12      | Y20 | 4150       | 12    | WL17-01  | 37 | 3800 | 400 |        |     |     | 123 |
|                            | 1     | 12      | Y16 | 2400       | 12    | WL17-02  | 38 | 1000 | 480 | 1000   |     |     | 45  |
|                            | 1     | 12      | Y16 | 2200       | 12    | WL17-03  | 38 | 900  | 480 | 900    |     |     | 42  |
|                            | 1     | 12      | Y16 | 2000       | 12    | WL17-04  | 38 | 800  | 480 | 800    |     |     | 38  |
|                            | 1     | 12      | Y16 | 1800       | 12    | WL17-05  | 38 | 700  | 480 | 700    |     |     | 34  |
|                            | 1     | 6       | Y16 | 1600       | 6     | WL17-06  | 38 | 600  | 480 | 600    |     |     | 15  |

|       |   |   |    |    |     |     |    |    |    |       |
|-------|---|---|----|----|-----|-----|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16  | 20  | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |     |     |    |    |    |       |
| Y     |   |   |    |    | 508 | 357 |    |    |    | 864   |
| TOTAL |   |   |    |    | 508 | 357 |    |    |    | 864   |

|                                                                                                                                                                   |  |                                                   |  |         |        |             |  |             |
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| ENGINEER/TECHNOLOGIST                                                                                                                                             |  | LEON PIENAAR                                      |  | REG. NO | 970672 | SIGNATURE   |  |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 |  | PROJECT:                                          |  |         |        | DATE        |  | 13/09/2024  |
|                                                                                                                                                                   |  | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE       |  |         |        | DET. BY     |  | R.BOTHA     |
|                                                                                                                                                                   |  |                                                   |  |         |        | REF DWG     |  | 204-WL01-01 |
|                                                                                                                                                                   |  | DRAWING TITLE:                                    |  |         |        | JOB NO      |  | 34676.01    |
|                                                                                                                                                                   |  | WALLS 16 & 17 (BUTTRESS) - REINFORCEMENT SCHEDULE |  |         |        | REVISION    |  | T0          |
| SCHEDULE NO                                                                                                                                                       |  |                                                   |  |         |        | 206-WL01-02 |  |             |



| MEMBER | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B   | C      | D     | E/R | kg   |
|--------|-------|---------|-----|------------|-------|----------|----|------|-----|--------|-------|-----|------|
| WALL 2 | 1     | 64      | Y20 | 5350       | 64    | WL02-01  | 41 | 3100 | 90  | [2150] | 90    |     | 844  |
|        | 1     | 64      | Y20 | 5300       | 64    | WL02-02  | 20 | 5300 |     |        |       |     | 837  |
|        | 1     | 130     | Y16 | 3050       | 130   | WL02-03  | 37 | 2850 | 250 |        |       |     | 626  |
|        | 1     | 208     | Y16 | 4900       | 208   | WL02-04  | 20 | 4900 |     |        |       |     | 1609 |
|        | 1     | 55      | Y10 | 600        | 55    | WL02-05  | 85 | 150  | 370 | 60     | [100] |     | 20   |
|        | 1     | 64      | Y10 | 500        | 64    | WL02-06  | 85 | 150  | 270 | 60     | [100] |     | 20   |
|        |       |         |     |            |       |          |    |      |     |        |       |     |      |
| WALL 4 | 1     | 80      | Y20 | 3400       | 80    | WL04-01  | 20 | 3400 |     |        |       |     | 671  |
|        | 1     | 80      | Y16 | 3050       | 80    | WL04-02  | 37 | 2850 | 250 |        |       |     | 385  |
|        | 1     | 76      | Y16 | 5800       | 76    | WL04-03  | 20 | 5800 |     |        |       |     | 696  |
|        | 1     | 36      | Y10 | 500        | 36    | WL04-04  | 85 | 150  | 270 | 60     | [100] |     | 11   |
|        | 1     | 8       | Y12 | 800        | 8     | WL04-05  | 20 | 800  |     |        |       |     | 6    |
|        |       |         |     |            |       |          |    |      |     |        |       |     |      |
| WALL 5 | 1     | 17      | Y20 | 5350       | 17    | WL05-01  | 41 | 3100 | 90  | [2150] | 90    |     | 224  |
|        | 1     | 285     | Y20 | 5300       | 285   | WL05-02  | 20 | 5300 |     |        |       |     | 3725 |
|        | 1     | 122     | Y16 | 3050       | 122   | WL05-03  | 37 | 2850 | 250 |        |       |     | 587  |
|        | 1     | 100     | Y16 | 5100       | 100   | WL05-04  | 20 | 5100 |     |        |       |     | 805  |
|        | 1     | 96      | Y12 | 800        | 96    | WL05-05  | 20 | 800  |     |        |       |     | 68   |
|        | 1     | 9       | Y10 | 600        | 9     | WL05-06  | 85 | 150  | 370 | 60     | [100] |     | 3    |
|        | 1     | 66      | Y10 | 500        | 66    | WL05-07  | 85 | 150  | 270 | 60     | [100] |     | 20   |
|        | 1     | 16      | Y20 | 2850       | 16    | WL05-08  | 41 | 1600 | 240 | [1000] | 100   |     | 112  |
|        | 1     | 16      | Y20 | 2050       | 16    | WL05-09  | 41 | 1000 | 240 | [800]  | 100   |     | 81   |
|        | 1     | 32      | Y16 | 3650       | 32    | WL05-10  | 20 | 3650 |     |        |       |     | 184  |
|        |       |         |     |            |       |          |    |      |     |        |       |     |      |
| WALL 6 | 1     | 90      | Y20 | 3700       | 90    | WL06-01  | 20 | 3700 |     |        |       |     | 821  |
|        | 1     | 90      | Y16 | 3050       | 90    | WL06-02  | 37 | 2850 | 250 |        |       |     | 433  |
|        | 1     | 172     | Y16 | 4400       | 172   | WL06-03  | 38 | 4000 | 230 | 250    |       |     | 1194 |
|        | 1     | 96      | Y16 | 800        | 96    | WL06-04  | 20 | 800  |     |        |       |     | 121  |
|        | 1     | 48      | Y10 | 500        | 48    | WL06-05  | 85 | 150  | 270 | 60     | [100] |     | 15   |

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|-------|---|---|----|----|------|------|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16   | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |      |      |    |    |    |       |
| Y     |   |   | 90 | 74 | 6641 | 7316 |    |    |    | 14120 |
| TOTAL |   |   | 90 | 74 | 6641 | 7316 |    |    |    | 14120 |

|                                                                                                                                     |             |                                                        |  |         |        |           |             |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------|--|---------|--------|-----------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                               |             | LEON PIENAAR                                           |  | REG. NO | 970672 | SIGNATURE |             |
| <div><p>REGISTRATION NO. 1998/000157/07</p></div> |             | <u>PROJECT:</u>                                        |  |         |        | DATE      | 13/09/2024  |
|                                                                                                                                     |             | COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE            |  |         |        | DET. BY   | R.BOTHA     |
|                                                                                                                                     |             | <u>DRAWING TITLE:</u>                                  |  |         |        | REF DWG   | 204-WL02-01 |
|                                                                                                                                     |             |                                                        |  |         |        | JOB NO    | 34676.01    |
|                                                                                                                                     |             | WALLS 2, 4, 5, & 6 - REINFORCEMENT<br>BENDING SCHEDULE |  |         |        | REVISION  | T0          |
| SCHEDULE NO                                                                                                                         | 206-WL02-01 |                                                        |  |         |        |           |             |

| MEMBER                                     | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D     | E/R | kg  |
|--------------------------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|-------|-----|-----|
| WALL 7 & 8<br>(300mm THICK)                | 2     | 34      | Y16 | 5200       | 68    | WL07-01  | 37 | 200  | 5050 |      |       |     | 558 |
|                                            | 2     | 18      | Y16 | 5200       | 36    | WL07-02  | 37 | 200  | 5050 |      |       |     | 295 |
|                                            | 2     | 6       | Y20 | 1100       | 12    | WL07-03  | 38 | 200  | 810  | 200  |       |     | 33  |
|                                            | 2     | 6       | Y16 | 4650       | 12    | WL07-04  | 38 | 200  | 4300 | 200  |       |     | 88  |
|                                            | 2     | 74      | Y16 | 4100       | 148   | WL07-05  | 20 | 4070 |      |      |       |     | 958 |
|                                            | 2     | 12      | Y16 | 1850       | 24    | WL07-06  | 37 | 200  | 1700 |      |       |     | 70  |
|                                            | 2     | 8       | Y12 | 800        | 16    | WL07-07  | 20 | 800  |      |      |       |     | 11  |
|                                            | 2     | 35      | Y10 | 450        | 70    | WL07-08  | 85 | 150  | 220  | 60   | [100] |     | 19  |
|                                            | 2     | 80      | Y16 | 2600       | 160   | WL07-09  | 38 | 1250 | 180  | 1250 |       |     | 657 |
|                                            | 2     | 8       | Y16 | 1650       | 16    | WL07-10  | 37 | 200  | 1500 |      |       |     | 42  |
|                                            |       |         |     |            |       |          |    |      |      |      |       |     |     |
| BAFFLE WALL<br>9, 10 & 11<br>(300mm THICK) | 1     | 18      | Y16 | 3150       | 18    | WL09-01  | 37 | 200  | 3000 |      |       |     | 89  |
|                                            | 1     | 18      | Y16 | 5400       | 18    | WL09-02  | 37 | 200  | 5250 |      |       |     | 153 |
|                                            | 1     | 42      | Y10 | 2700       | 42    | WL09-03  | 60 | 220  | 1050 |      |       |     | 70  |
|                                            | 1     | 18      | Y10 | 450        | 18    | WL09-04  | 85 | 150  | 220  | 60   | [100] |     | 5   |
|                                            |       |         |     |            |       |          |    |      |      |      |       |     |     |
| WALL 12<br>(350mm THICK)                   | 1     | 62      | Y16 | 3400       | 62    | WL12-01  | 20 | 3400 |      |      |       |     | 333 |
|                                            | 1     | 90      | Y16 | 3000       | 90    | WL12-02  | 37 | 200  | 2850 |      |       |     | 426 |
|                                            | 1     | 30      | Y16 | 3150       | 30    | WL12-03  | 37 | 200  | 3000 |      |       |     | 149 |
|                                            | 1     | 66      | Y16 | 6500       | 66    | WL12-04  | 20 | 6500 |      |      |       |     | 677 |
|                                            | 1     | 71      | Y16 | 2650       | 71    | WL12-05  | 38 | 1250 | 230  | 1250 |       |     | 297 |
|                                            | 1     | 10      | Y16 | 1900       | 10    | WL12-06  | 37 | 200  | 1750 |      |       |     | 30  |
|                                            | 1     | 10      | Y16 | 1500       | 10    | WL12-07  | 38 | 200  | 1220 | 160  |       |     | 24  |
|                                            | 1     | 10      | Y16 | 1150       | 10    | WL12-08  | 38 | 200  | 840  | 160  |       |     | 18  |
|                                            | 1     | 10      | Y16 | 700        | 10    | WL12-09  | 38 | 200  | 390  | 200  |       |     | 11  |
|                                            | 1     | 24      | Y12 | 800        | 24    | WL12-10  | 20 | 800  |      |      |       |     | 17  |
|                                            | 1     | 42      | Y10 | 500        | 42    | WL12-11  | 85 | 150  | 270  | 60   | [100] |     | 13  |

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|       |   |   |     |    |      |    |    |    |    |       |
|-------|---|---|-----|----|------|----|----|----|----|-------|
|       | 6 | 8 | 10  | 12 | 16   | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |    |      |    |    |    |    |       |
| Y     |   |   | 107 | 28 | 4876 | 33 |    |    |    | 5044  |
| TOTAL |   |   | 107 | 28 | 4876 | 33 |    |    |    | 5044  |

|                                                                                                                                                                   |                                                                                                           |         |             |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------|-------------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                                              | REG. NO | 970672      | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                                        |         |             | DATE        | 19/04/2024  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>WALLS 7, 8,12,<br>& 9,10,11 (BAFFLE WALLS)<br>REINFORCEMENT BENDING SCHEDULE |         |             | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                                           |         |             | REF DWG     | 204-WL03-01 |
|                                                                                                                                                                   |                                                                                                           |         |             | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                                           |         |             | REVISION    | T0          |
|                                                                                                                                                                   |                                                                                                           |         | SCHEDULE NO | 206-WL03-01 |             |

| MEMBER                        | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C    | D     | E/R | kg   |
|-------------------------------|-------|---------|-----|------------|-------|----------|----|------|------|------|-------|-----|------|
| WALL 13<br>(350mm THICK)      | 1     | 36      | Y16 | 3200       | 36    | WL13-01  | 20 | 3200 |      |      |       |     | 182  |
|                               | 1     | 20      | Y16 | 3150       | 20    | WL13-02  | 37 | 200  | 3000 |      |       |     | 99   |
|                               | 1     | 10      | Y16 | 1100       | 10    | WL13-03  | 38 | 200  | 770  | 200  |       |     | 17   |
|                               | 1     | 10      | Y16 | 1550       | 10    | WL13-04  | 38 | 200  | 1220 | 200  |       |     | 24   |
|                               | 1     | 10      | Y16 | 1050       | 10    | WL13-05  | 38 | 200  | 720  | 200  |       |     | 17   |
|                               | 1     | 16      | Y12 | 800        | 16    | WL13-06  | 20 | 800  |      |      |       |     | 11   |
|                               | 1     | 66      | Y16 | 2650       | 66    | WL13-07  | 38 | 1250 | 230  | 1250 |       |     | 276  |
|                               | 1     | 66      | Y16 | 3800       | 66    | WL13-08  | 20 | 3800 |      |      |       |     | 396  |
|                               | 1     | 54      | Y16 | 3000       | 54    | WL13-09  | 37 | 200  | 2850 |      |       |     | 256  |
|                               | 1     | 24      | Y10 | 500        | 24    | WL13-10  | 85 | 150  | 270  | 60   | [100] |     | 7    |
|                               |       |         |     |            |       |          |    |      |      |      |       |     |      |
| WALL 14 & 15<br>(350mm THICK) | 2     | 86      | Y20 | 3200       | 172   | WL14-01  | 20 | 3200 |      |      |       |     | 1357 |
|                               | 2     | 86      | Y16 | 3000       | 172   | WL14-02  | 37 | 200  | 2850 |      |       |     | 814  |
|                               | 2     | 76      | Y16 | 2650       | 152   | WL14-03  | 38 | 1250 | 230  | 1250 |       |     | 636  |
|                               | 2     | 76      | Y16 | 6200       | 152   | WL14-04  | 20 | 6170 |      |      |       |     | 1487 |
|                               | 2     | 42      | Y10 | 500        | 84    | WL14-05  | 85 | 150  | 270  | 60   | [100] |     | 26   |

|       |   |   |    |    |      |      |    |    |    |       |
|-------|---|---|----|----|------|------|----|----|----|-------|
|       | 6 | 8 | 10 | 12 | 16   | 20   | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |    |      |      |    |    |    |       |
| Y     |   |   | 33 | 11 | 4205 | 1357 |    |    |    | 5607  |
| TOTAL |   |   | 33 | 11 | 4205 | 1357 |    |    |    | 5607  |

|                                                                                                                                                                   |                                                                                     |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                                                                        | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | <u>PROJECT:</u><br><br>COCT: W&S-SANDRIFT EAST PUMPSTATION UPGRADE                  |         |        | DATE        | 19/04/2024  |
|                                                                                                                                                                   | <u>DRAWING TITLE:</u><br><br>WALLS 13, 14, & 15 - REINFORCEMENT<br>BENDING SCHEDULE |         |        | DET. BY     | R.BOTHA     |
|                                                                                                                                                                   |                                                                                     |         |        | REF DWG     | 204-WL03-01 |
|                                                                                                                                                                   |                                                                                     |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   |                                                                                     |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                                                                     |         |        | SCHEDULE NO | 206-WL03-02 |

| MEMBER     | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B   | C | D | E/R | kg  |
|------------|-------|---------|-----|------------|-------|----------|----|------|-----|---|---|-----|-----|
| 250x500 RC | 1     | 273     | Y10 | 1400       | 273   | BM01-01  | 60 | 440  | 190 |   |   |     | 236 |
| UPSTAND    | 1     | 8       | Y12 | 6750       | 8     | BM01-02  | 20 | 6740 |     |   |   |     | 48  |
| BEAM       | 1     | 4       | Y12 | 7200       | 4     | BM01-03  | 20 | 7210 |     |   |   |     | 26  |
|            | 1     | 4       | Y12 | 5000       | 4     | BM01-04  | 20 | 5000 |     |   |   |     | 18  |
|            | 1     | 4       | Y12 | 5050       | 4     | BM01-05  | 20 | 5020 |     |   |   |     | 18  |
|            | 1     | 4       | Y12 | 3200       | 4     | BM01-06  | 20 | 3190 |     |   |   |     | 11  |
|            | 1     | 4       | Y12 | 4650       | 4     | BM01-07  | 20 | 4640 |     |   |   |     | 17  |
|            | 1     | 4       | Y12 | 3550       | 4     | BM01-08  | 20 | 3540 |     |   |   |     | 13  |
|            | 1     | 4       | Y12 | 4750       | 4     | BM01-09  | 20 | 4760 |     |   |   |     | 17  |
|            | 1     | 36      | Y12 | 1600       | 36    | BM01-10  | 37 | 800  | 800 |   |   |     | 51  |
|            | 1     | 3       | Y20 | 2500       | 3     | BM01-11  | 20 | 2500 |     |   |   |     | 18  |

|       |   |   |     |     |    |    |    |    |    |       |
|-------|---|---|-----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10  | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |     |     |    |    |    |    |    |       |
| Y     |   |   | 236 | 218 |    | 19 |    |    |    | 472   |
| TOTAL |   |   | 236 | 218 |    | 19 |    |    |    | 472   |

|                                                                                                                                                                   |                                         |         |        |             |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                                                             | LEON PIENAAR                            | REG. NO | 970672 | SIGNATURE   |             |
| <br>• ENGINEERING • PROCUREMENT • MANAGEMENT<br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                |         |        | DATE        | 13/03/2025  |
|                                                                                                                                                                   | SANDRIFT EAST PUMP STATION UPGRADE      |         |        | DET. BY     | C.ABRAHAMS  |
|                                                                                                                                                                   | DRAWING TITLE:                          |         |        | REF DWG     | 204-BM01-01 |
|                                                                                                                                                                   | 250x500dp RC UPSTAND BEAM REINFORCEMENT |         |        | JOB NO      | 34676.01    |
|                                                                                                                                                                   | BENDING SCHEDULE                        |         |        | REVISION    | T0          |
|                                                                                                                                                                   |                                         |         |        | SCHEDULE NO | 206-BM01-01 |

| MEMBER     | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B     | C | D | E/R | kg  |
|------------|-------|---------|-----|------------|-------|----------|----|------|-------|---|---|-----|-----|
| 150x250 RC | 1     | 92      | Y10 | 700        | 92    | BM02-01  | 81 | 200  | [100] |   |   |     | 40  |
| DWNSTAND   | 1     | 8       | Y12 | 4400       | 8     | BM02-02  | 20 | 4410 |       |   |   |     | 31  |
| BEAM       | 1     | 8       | Y12 | 3850       | 8     | BM02-03  | 20 | 3820 |       |   |   |     | 27  |
|            | 1     | 64      | Y12 | 1600       | 64    | BM02-05  | 37 | 800  | 800   |   |   |     | 91  |
|            |       |         |     |            |       |          |    |      |       |   |   |     |     |
| 250x500 RC | 1     | 196     | Y12 | 1400       | 196   | BM02-11  | 60 | 190  | 440   |   |   |     | 244 |
| UPSTAND    | 1     | 16      | Y12 | 4650       | 16    | BM02-12  | 20 | 4620 |       |   |   |     | 66  |
| BEAM       | 1     | 16      | Y12 | 5550       | 16    | BM02-13  | 20 | 5530 |       |   |   |     | 79  |
|            |       |         |     |            |       |          |    |      |       |   |   |     |     |
| 300x500 RC | 1     | 100     | Y12 | 1500       | 100   | BM02-21  | 60 | 240  | 440   |   |   |     | 133 |
| UPSTAND    | 1     | 6       | Y12 | 3750       | 6     | BM02-22  | 20 | 3730 |       |   |   |     | 20  |
| BEAM       | 1     | 4       | Y12 | 3150       | 4     | BM02-23  | 20 | 3140 |       |   |   |     | 11  |
|            | 1     | 10      | Y25 | 5000       | 10    | BM02-24  | 20 | 5000 |       |   |   |     | 193 |
|            |       |         |     |            |       |          |    |      |       |   |   |     |     |
| CRNR BARS  | 1     | 56      | Y12 | 1600       | 56    | BM02-31  | 37 | 800  | 800   |   |   |     | 80  |

|       |   |   |    |     |    |    |     |    |    |       |
|-------|---|---|----|-----|----|----|-----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25  | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |     |    |    |       |
| Y     |   |   | 40 | 782 |    |    | 193 |    |    | 1014  |
| TOTAL |   |   | 40 | 782 |    |    | 193 |    |    | 1014  |

|                                                                                                                       |                                                          |         |        |             |             |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                 | LEON PIENAAR                                             | REG. NO | 970672 | SIGNATURE   |             |
| <br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                                 |         |        | DATE        | 13/03/2025  |
|                                                                                                                       | SANDRIFT EAST PUMP STATION UPGRADE                       |         |        | DET. BY     | C.ABRAHAMS  |
|                                                                                                                       | DRAWING TITLE:                                           |         |        | REF DWG     | 204-BM02-01 |
|                                                                                                                       | SCREENING ROOM BEAMS - 150x250dp & 250x500dp & 300x500dp |         |        | JOB NO      | 34676.01    |
|                                                                                                                       | REINFORCEMENT BENDING SCHEDULE                           |         |        | REVISION    | T0          |
|                                                                                                                       |                                                          |         |        | SCHEDULE NO | 206-BM02-01 |

| MEMBER        | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B   | C | D | E/R | kg  |
|---------------|-------|---------|-----|------------|-------|----------|----|------|-----|---|---|-----|-----|
| 250x500 RC    | 1     | 40      | Y12 | 1400       | 40    | BM03-01  | 60 | 190  | 440 |   |   |     | 50  |
| UPSTND BM     | 1     | 8       | Y12 | 2550       | 8     | BM03-02  | 37 | 2470 | 120 |   |   |     | 18  |
| (GL. 3/A-B)   | 1     | 4       | Y12 | 2550       | 4     | BM03-03  | 20 | 2520 |     |   |   |     | 9   |
|               |       |         |     |            |       |          |    |      |     |   |   |     |     |
| 250x500 RC    | 1     | 86      | Y12 | 1400       | 86    | BM03-01  | 60 | 190  | 440 |   |   |     | 107 |
| UPSTND BM     | 1     | 8       | Y12 | 4050       | 8     | BM03-11  | 20 | 4040 |     |   |   |     | 29  |
| (GL. 4-6/A-B) | 1     | 4       | Y12 | 2150       | 4     | BM03-12  | 20 | 2120 |     |   |   |     | 8   |
|               | 1     | 4       | Y12 | 4300       | 4     | BM03-13  | 37 | 4180 | 120 |   |   |     | 15  |
|               | 1     | 4       | Y12 | 1700       | 4     | BM03-14  | 37 | 1600 | 120 |   |   |     | 6   |
|               |       |         |     |            |       |          |    |      |     |   |   |     |     |
| CRNER BRS     | 1     | 42      | Y12 | 1600       | 42    | BM03-31  | 37 | 800  | 800 |   |   |     | 60  |

|       |   |   |    |     |    |    |    |    |    |       |
|-------|---|---|----|-----|----|----|----|----|----|-------|
|       | 6 | 8 | 10 | 12  | 16 | 20 | 25 | 32 | 40 | TOTAL |
| R     |   |   |    |     |    |    |    |    |    |       |
| Y     |   |   |    | 301 |    |    |    |    |    | 301   |
| TOTAL |   |   |    | 301 |    |    |    |    |    | 301   |

|                                                                                                                       |                                                     |         |        |             |             |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                 | LEON PIENAAR                                        | REG. NO | 970672 | SIGNATURE   |             |
| <br>REGISTRATION NO. 1998/000157/07 | PROJECT:                                            |         |        | DATE        | 13/03/2025  |
|                                                                                                                       | SANDRIFT EAST PUMP STATION UPGRADE                  |         |        | DET. BY     | C.ABRAHAMS  |
|                                                                                                                       | DRAWING TITLE: CONCRETE STAIRS & ODOUR CONTROL ROOM |         |        | REF DWG     | 204-BM03-01 |
|                                                                                                                       | UPSTAND BEAMS 250x500dp (GL. 3-6/A-B)               |         |        | JOB NO      | 34676.01    |
|                                                                                                                       | REINFORCEMENT BENDING SCHEDULE                      |         |        | REVISION    | T0          |
|                                                                                                                       |                                                     |         |        | SCHEDULE NO | 206-BM03-01 |

| MEMBER     | NO OF | NO BARS | DIA | CUT LENGTH | TOTAL | BAR MARK | SC | A    | B    | C   | D   | E/R   | kg  |
|------------|-------|---------|-----|------------|-------|----------|----|------|------|-----|-----|-------|-----|
| 300x500 RC | 1     | 100     | Y10 | 1750       | 100   | BM04-01  | 60 | 560  | 240  |     |     |       | 108 |
| BEAM       | 1     | 100     | Y12 | 1700       | 100   | BM04-02  | 43 | 300  | 440  | 270 | 310 | [240] | 151 |
|            | 1     | 78      | Y10 | 1500       | 78    | BM04-03  | 60 | 440  | 240  |     |     |       | 72  |
|            | 1     | 78      | Y12 | 1750       | 78    | BM04-04  | 43 | 300  | 460  | 270 | 320 | [240] | 121 |
|            | 1     | 24      | Y16 | 4700       | 24    | BM04-05  | 37 | 160  | 4580 |     |     |       | 178 |
|            | 1     | 12      | Y16 | 5200       | 12    | BM04-06  | 37 | 160  | 5050 |     |     |       | 98  |
|            | 1     | 12      | Y16 | 3550       | 12    | BM04-07  | 37 | 160  | 3400 |     |     |       | 67  |
|            | 1     | 12      | Y16 | 2150       | 12    | BM04-08  | 38 | 160  | 1900 | 160 |     |       | 41  |
|            |       |         |     |            |       |          |    |      |      |     |     |       |     |
| 300x600 RC | 1     | 75      | Y10 | 1700       | 75    | BM04-11  | 60 | 540  | 240  |     |     |       | 79  |
| BEAM       | 1     | 6       | Y16 | 5000       | 6     | BM04-12  | 37 | 160  | 4880 |     |     |       | 47  |
|            | 1     | 6       | Y16 | 3150       | 6     | BM04-13  | 20 | 3150 |      |     |     |       | 30  |
|            | 1     | 6       | Y16 | 1050       | 6     | BM04-14  | 20 | 1040 |      |     |     |       | 10  |
|            | 1     | 6       | Y16 | 1250       | 6     | BM04-15  | 20 | 1260 |      |     |     |       | 12  |
|            | 1     | 6       | Y16 | 1200       | 6     | BM04-16  | 20 | 1190 |      |     |     |       | 11  |
|            | 1     | 4       | Y16 | 1350       | 4     | BM04-17  | 20 | 1320 |      |     |     |       | 9   |
|            | 1     | 6       | Y16 | 1700       | 6     | BM04-18  | 37 | 160  | 1570 |     |     |       | 16  |
|            | 1     | 24      | Y16 | 1750       | 24    | BM04-19  | 62 | 900  | 640  | 830 |     |       | 66  |
|            | 1     | 6       | Y12 | 1600       | 6     | BM04-20  | 37 | 800  | 800  |     |     |       | 9   |

|       | 6 | 8 | 10  | 12  | 16  | 20 | 25 | 32 | 40 | TOTAL |
|-------|---|---|-----|-----|-----|----|----|----|----|-------|
| R     |   |   |     |     |     |    |    |    |    |       |
| Y     |   |   | 259 | 281 | 586 |    |    |    |    | 1125  |
| TOTAL |   |   | 259 | 281 | 586 |    |    |    |    | 1125  |

|                                                                                                                            |                                    |         |        |             |             |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------|--------|-------------|-------------|
| ENGINEER/TECHNOLOGIST                                                                                                      | LEON PIENAAR                       | REG. NO | 970672 | SIGNATURE   |             |
|  <p>REGISTRATION NO. 1998/000157/07</p> | PROJECT:                           |         |        | DATE        | 13/03/2025  |
|                                                                                                                            | SANDRIFT EAST PUMP STATION UPGRADE |         |        | DET. BY     | C.ABRAHAMS  |
|                                                                                                                            | DRAWING TITLE:                     |         |        | REF DWG     | 204-BM04-01 |
|                                                                                                                            |                                    |         |        | JOB NO      | 34676.01    |
|                                                                                                                            |                                    |         |        | REVISION    | T0          |
| SCHEDULE NO                                                                                                                |                                    |         |        | 206-BM04-01 |             |
| GROUND FLOOR BEAMS - 300x500dp & 300x600dp<br>REINFORCEMENT BENDING SCHEDULE                                               |                                    |         |        |             |             |

## **ANNEXURE D**

### **Existing Pump Station Photographs**



EXISTING SANDDRIFT EAST SEWER PUMP STATION



i.



EXISTING SANDDRIFT EAST SEWER PUMP STATION



i.

**ANNEXURE E**

**Replacement Pages**

*Add the following clause after Clause 4.12.3*

#### Clause 4.13 CONTRACTOR'S MECHANICAL AND ELECTRICAL DESIGN

##### 4.13.1 General Design Obligations

The Contractor shall carry out, and be responsible for, the design of the Works to the extent specified in the contract. The Contractor shall ensure that all design work to be undertaken by the Contractor or on behalf of the Contractor is undertaken by professionals registered with the relevant professional bodies related to their disciplines. If required by the Employer's Agent the Contractor shall submit the name and particulars of each proposed designer and design Subcontractor.

The Contractor warrants that he, his designers and design Subcontractors have the experience and capability necessary for the design. The Contractor undertakes that the designers shall be available to attend discussions with the Employer's Agent at all reasonable times, until the expiry date of the relevant Defects Liability Period.

Upon receiving notice under Clause 5.3.1 of the GCC, the Contractor shall scrutinise the Scope of Work: Part C3.1 (including design criteria and calculations, if any) and Setting Out as mentioned in the Contract. Within a period of 6 weeks, calculated from the Commencement Date, the Contractor shall give notice to the Employer's Agent of any error, fault or other defect found in the Scope of Work: Part C3.1.

After receiving this notice, the Employer's Agent shall determine whether Clause 6.3 of the GCC shall be applied and shall give notice to the Contractor accordingly.

##### 4.13.2 Contractor's Documents

The Contractor's Documents shall comprise the technical documents specified in the Scope of Work, documents required to satisfy all regulatory approvals, and the documents described in Clause 3.2.5 of Part C3.2. Unless otherwise stated in the Contract, the Contractor's Documents shall be written in English.

The Contractor shall prepare all Contractor's Documents and shall also prepare any other documents necessary to instruct the Contractor's Personnel. The Employer's Personnel shall have the right to inspect the preparation of all these documents, wherever they are being prepared.

If the Scope of Work describe the Contractor's Documents which are to be submitted to the Employer's Agent for review and/or for approval, they shall be submitted accordingly, together with a notice as described below. In the following provisions of this Sub-Clause, (i) "review period" means the period required by the Employer's Agent for review and (if so specified) for approval, and (ii) "Contractor's Documents" exclude any documents which are not specified as being required to be submitted for review and/or for approval.

Unless otherwise stated in the Scope of Work, each review period shall not exceed 21 days, calculated from the date on which the Employer's Agent receives a Contractor's Document and the Contractor's notice. This notice shall state that the Contractor's Document is considered ready, both for review (and approval, if so specified) in accordance with this Clause and for use. The notice shall also state that the Contractor's Documents complies with the Contract, or the extent to which it does not comply.

The Employer's Agent may, within the review period, give notice to the Contractor that a Contractor's Document fails (to the extent stated) to comply with the Contract. If a Contractor's Document so fails to comply, it shall be rectified, resubmitted and reviewed (and, if specified, approved) in accordance with this Clause, at the Contractor's cost.

For each part of the Works, except to the extent that the prior approval or consent of the Employer's Agent shall have been obtained:

- (a) in the case of a Contractor's Document which has (as specified) been submitted for the Employer's Agent approval:
  - (i) the Employer's Agent shall give notice to the Contractor that the Contractor's Document is approved, with or without comments, or that it fails (to the extent stated) to comply with the Contract;
  - (ii) execution of such part of the Works shall not commence until the Employer's Agent has approved the Contractor's Document; and

**CONSTRUCTION OF THE NEW SANDDRIFT EAST SEWER PUMP STATION****CONTRACT NO. 251Q/2024/25****BILL OF QUANTITIES**

SCHEDULE E : CIVIL &amp; STRUCTURAL - WET AND DRY WELL

| Number                | Payment   | Item Description                                                                                                                                                                                                                                                                                                                                                                      | Unit           | Quantity | Rate | Amount R |
|-----------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|------|----------|
| Brought Forward       |           |                                                                                                                                                                                                                                                                                                                                                                                       |                |          |      |          |
| E3.6                  |           | Concrete Strength grade 20 MPa/19mm to:<br>450mm Surface bed                                                                                                                                                                                                                                                                                                                          | m <sup>3</sup> | 55       |      |          |
| E3.7                  |           | Concrete benching                                                                                                                                                                                                                                                                                                                                                                     | m <sup>3</sup> | 7        |      |          |
| E3.8                  |           | H <sub>2</sub> S resistant anti-microbial additive to concrete in screening chamber base screen room, inlet chamber a wet well walls and roof slab, as per specialist details. To be added to the concrete strictly in accordance to the manufacturer's specifications, at a dosage rate of 1% by weight of total cementitious material, including extenders & tracing agent included | m <sup>3</sup> | 250      |      |          |
| E4                    | PSG8-1    | <b>GRANOLITHIC SCREED</b>                                                                                                                                                                                                                                                                                                                                                             |                |          |      |          |
| E4.1                  |           | Granolithic screed 50 mm thick to Dry Well                                                                                                                                                                                                                                                                                                                                            | m <sup>2</sup> | 55       |      |          |
| E4.2                  |           | Granolithic screed 50 mm thick to roof slab                                                                                                                                                                                                                                                                                                                                           | m <sup>2</sup> | 55       |      |          |
| E5                    | 8.4.4     | <b>UNFORMED SURFACE FINISHES</b>                                                                                                                                                                                                                                                                                                                                                      |                |          |      |          |
| E5.1                  | 8.4.4 (a) | Wood-floated finish to top of walls, eaves beams, slabs, water and cable channels, platforms, floors and plinths etc.                                                                                                                                                                                                                                                                 | m <sup>2</sup> | 250      |      |          |
| E6                    |           | <b>JOINTS</b>                                                                                                                                                                                                                                                                                                                                                                         |                |          |      |          |
| E6.1                  |           | 300mm galvanised water stop inclusive of supply, placing and fixing for casting                                                                                                                                                                                                                                                                                                       | m              | 35       |      |          |
| E6.2                  |           | Joint around new pipes formed with 20mm Sondor jointex and sealed with Polyurethane sealant up to 300mm dia                                                                                                                                                                                                                                                                           | No             | 4        |      |          |
| E7                    | 8.8       | <b>CAST IN ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                  |                |          |      |          |
| E7.1                  |           | 370mm diam stainless steel puddle flange inlet (Install only)                                                                                                                                                                                                                                                                                                                         | No             | 3        |      |          |
| E7.2                  |           | 370mm diam stainless steel puddle flanged outlet pipe manifold (Install only)                                                                                                                                                                                                                                                                                                         | No             | 1        |      |          |
| E7.3                  |           | 160mm diam PVC sleeve pipe for Electric cabling (Supply and Install) from Dry Well to MCC room                                                                                                                                                                                                                                                                                        | No             | 3        |      |          |
| E8                    | PSG 8.6   | <b>WATERTIGHTNESS TESTS</b>                                                                                                                                                                                                                                                                                                                                                           |                |          |      |          |
| E8.1                  |           | Sump chambers                                                                                                                                                                                                                                                                                                                                                                         | Sum            | 1        |      |          |
| E9                    | SABS1200H | <b>STRUCTURAL STEELWORK</b>                                                                                                                                                                                                                                                                                                                                                           |                |          |      |          |
|                       |           | Structural Steel                                                                                                                                                                                                                                                                                                                                                                      |                |          |      |          |
|                       | 8.3.1     | Supply, shop drawings, fabrication, transportation and erection of steelwork including plates, packs, nuts, bolts etc. to SABS 1431 Grade 200W (Nuts and bolts not measured but to be included in the steel rate):                                                                                                                                                                    |                |          |      |          |
| E9.1                  |           | Staircases complete with channel stringers and 250mm wide Mentis Stair Treads (or equivalent approved) for access from platform to concrete floor as per dwg 34676.01-212-01 & 02                                                                                                                                                                                                     | Sum            | 1        |      |          |
| E9.2                  |           | Standard GRP hand rails for level platform                                                                                                                                                                                                                                                                                                                                            | m              | 20       |      |          |
| E9.3                  |           | Standard GRP hand rails for staircase complete with all fixing bolts to channel stringers                                                                                                                                                                                                                                                                                             | m              | 30       |      |          |
| Total Carried Forward |           |                                                                                                                                                                                                                                                                                                                                                                                       |                |          |      |          |

**CONSTRUCTION OF THE NEW SANDDRIFT EAST SEWER PUMP STATION****CONTRACT NO. 251Q/2024/25****BILL OF QUANTITIES****SCHEDULE F : CIVIL & STRUCTURAL - ABOVE GROUND STRUCTURES**

| Number                | Payment    | Item Description                                                                                                                               | Unit | Quantity | Rate | Amount R |
|-----------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------|----------|
| Brought Forward       |            |                                                                                                                                                |      |          |      |          |
| F9                    |            | <b>CAST IN ITEMS</b>                                                                                                                           |      |          |      |          |
| F9.1                  | 8.8PSG 8.9 | <b>CAST IN ITEMS - PUMP STATION</b>                                                                                                            |      |          |      |          |
| F9.1.1                |            | 110mm to 160mm dia uPVC sleeve pipe for Electric cabling (install only) from Pump room to MCC room                                             | m    | 50       |      |          |
| F9.2                  | 8.8PSG 8.9 | <b>CAST IN ITEMS - SECURITY KIOSK</b>                                                                                                          |      |          |      |          |
| F9.2.1                |            | 110mm diam PVC sleeve pipe for Electric cabling (Install only) from Pump room to MCC room                                                      | m    | 50       |      |          |
| F10                   | 8.8        | <b>BOLTED IN POSITION (SUPPLY AND INSTALL)- PUMP STATION</b>                                                                                   |      |          |      |          |
| F10.1                 |            | Edge angles to cable trenches 45 x 45 x 5 stainless steel with lugs                                                                            | m    | 15       |      |          |
| F11                   |            | <b>GANTRY FRAME AND ASSOCIATED WORK</b>                                                                                                        |      |          |      |          |
| F11.1                 | SABS1200 H | <b>GANTRY FRAME AND ASSOCIATED WORK - SCREEN ROOM</b>                                                                                          |      |          |      |          |
| F11.1.1               |            | Galvanised steel crawl beam system bolted to walls and roof soffit including all bolts and fixings installed complete similar for 500kg rating | No   | 1        |      |          |
| F11.2                 |            | <b>GANTRY BEAM AND ASSOCIATED WORK- PUMP STATION</b>                                                                                           |      |          |      |          |
| F11.2.1               | 8.3        | Galvanised 305 x 165 x 41 I-beam including all bolts travelling Gantry                                                                         | kg   | 450      |      |          |
| F11.2.2               | 8.3.6      | Heavy duty Hilti (or equivalent approved) HVA M16 chemical anchors with HAS ROD                                                                | No   | 48       |      |          |
| F12                   |            | <b>BUILDERS WORKS - SCREEN &amp; ODOUR CONTROL ROOM</b>                                                                                        |      |          |      |          |
|                       |            | <b>SCREEN &amp; ODOUR CONTROL ROOM</b>                                                                                                         |      |          |      |          |
| F12.1                 | PSA 8.10   | <b>DOORS AND FRAMES</b>                                                                                                                        |      |          |      |          |
|                       |            | Steel Doors                                                                                                                                    |      |          |      |          |
| F12.1.1               |            | Steel door - Type A (EAM-ME-SS-009)                                                                                                            | No   | 1        |      |          |
| F12.1.2               |            | Steel door - Type B (EAM-ME-SS-010)                                                                                                            | No   | 1        |      |          |
| F12.1.3               |            | Steel door - Type C (EAM-ME-SS-013 )                                                                                                           | No   | 1        |      |          |
| F12.1.4               |            | Epoxy coated HDG Steel Roller Shutter Door (3500mm H x 4200mm W)                                                                               | No   | 1        |      |          |
| F12.2                 | PSA 8.10   | <b>FINISHES</b>                                                                                                                                |      |          |      |          |
|                       |            | Walling                                                                                                                                        |      |          |      |          |
| F12.2.1               |            | Finish with 703w (or silimar) to external facebrick.                                                                                           | m²   | 350      |      |          |
| F12.2.2               |            | Plaster to reveals                                                                                                                             | m²   | 8        |      |          |
| Total Carried Forward |            |                                                                                                                                                |      |          |      |          |

**CONSTRUCTION OF THE NEW SANDDRIFT EAST SEWER PUMP STATION****CONTRACT NO. 251Q/2024/25****BILL OF QUANTITIES****SCHEDULE F : CIVIL & STRUCTURAL - ABOVE GROUND STRUCTURES**

| Number                | Payment  | Item Description                                                                               | Unit | Quantity | Rate | Amount R |
|-----------------------|----------|------------------------------------------------------------------------------------------------|------|----------|------|----------|
| Brought Forward       |          |                                                                                                |      |          |      |          |
| F12.3                 | PSA 8.10 | <b>PAINTING</b>                                                                                |      |          |      |          |
|                       |          | Painting generally                                                                             |      |          |      |          |
| F12.3.1               |          | Prime and 2 coat - exterior quality PVA acrylic to plastered and bagged surfaces               | m²   | 270      |      |          |
| F12.4                 | PSA 8.10 | <b>FITTINGS</b>                                                                                |      |          |      |          |
| F12.4.1               |          | Padlock to doors A, B and C                                                                    | Sum  | 1        |      |          |
| F12.4.2               |          | Drop bolt and rubber door-stop on cast in bracket                                              | item | 2        |      |          |
| F13                   |          | <b>BUILDING WORKS - PUMP STATION</b>                                                           |      |          |      |          |
| F13.1                 | PSA 8.10 | <b>BRICKWORK</b>                                                                               |      |          |      |          |
|                       |          | Brick walls on RC sump structure both sides                                                    |      |          |      |          |
| F13.1.1               |          | 280m cavity brick wall, facebrick                                                              | m²   | 400      |      |          |
| F13.1.2               |          | 230 brick wall, facebrick both sides                                                           | m²   | 55       |      |          |
| F13.1.3               |          | 230 brick walls in trenches                                                                    | m²   | 10       |      |          |
| F13.1.4               |          | 110 brick wall, facebrick                                                                      | m²   | 45       |      |          |
| F13.1.5               |          | 75mm brickforce                                                                                | m    | 250      |      |          |
| F13.1.6               |          | 150mm brickforce                                                                               | m    | 2,500    |      |          |
| F13.1.7               |          | E/O for building in wall ties @ 4.5 per m²                                                     | No   | 450      |      |          |
| F13.1.8               |          | Hoop iron fixing between brickwork and RC column                                               | No   | 1        |      |          |
| F13.1.9               |          | E/O for door and window reveals                                                                | m    | 12       |      |          |
| F13.1.10              |          | DPC - cranked at base of brickwall                                                             | m    | 120      |      |          |
| F13.1.11              |          | Mortar fillet below DPC                                                                        | m    | 120      |      |          |
| F13.2                 | PSA 8.10 | <b>DOORS AND FRAMES</b>                                                                        |      |          |      |          |
| F13.2.1               |          | Supply and install 2000 x 1000mm wood viewing window (Windows as per Architect Specifications) | No   | 1        |      |          |
|                       |          | Timber Doors                                                                                   |      |          |      |          |
| F13.2.2               |          | Supply and build in timber door frame for FLB pedestrian door                                  | No   | 2        |      |          |
| F13.2.3               |          | Supply and hang FLB hardwood door - 2032 x 850                                                 | No   | 2        |      |          |
|                       |          | Supply and build in steel frame and install doors:                                             |      |          |      |          |
| F13.2.4               |          | Transformer louver doors with 3,55m² air intake capacity (3CR12 & Epoxy coating)               | No   | 2        |      |          |
| F13.2.5               |          | Steel door - Type A (EAM-ME-SS-009)                                                            | No   | 2        |      |          |
| F13.2.6               |          | Steel door - Type B (EAM-ME-SS-010)                                                            | No   | 1        |      |          |
| F13.2.7               |          | Steel door - Type C (EAM-ME-SS-013 )                                                           | No   | 1        |      |          |
| Total Carried Forward |          |                                                                                                |      |          |      |          |

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SCHEDULE F : CIVIL & STRUCTURAL - ABOVE GROUND STRUCTURES

| Number                           | Payment  | Item Description                                                                                              | Unit | Quantity | Rate | Amount R |
|----------------------------------|----------|---------------------------------------------------------------------------------------------------------------|------|----------|------|----------|
| Brought Forward                  |          |                                                                                                               |      |          |      |          |
| F14.1.2                          | PSA 8.10 | Supply and install 2000 x 1000mm wood viewing window                                                          | No   | 1        |      |          |
|                                  |          | Timber Doors                                                                                                  |      |          |      |          |
| F14.1.3                          |          | Supply and hang FLB hardwood door - 2032 x 850                                                                | No   | 1        |      |          |
| F14.2                            |          | <b>FINISHES</b>                                                                                               |      |          |      |          |
|                                  |          | Walling                                                                                                       |      |          |      |          |
| F14.2.1                          | PSA 8.10 | Finish with Sikaguard - 703w (or silimar) to external face.                                                   | m²   | 20       |      |          |
| F14.2.2                          |          | Plaster to reveals                                                                                            | m²   | 5        |      |          |
|                                  |          | Tiling (as per Architects Specifications)                                                                     |      |          |      |          |
| F14.2.3                          |          | Tiles to bathroom wall (200 x 200mm)                                                                          | m²   | 21       |      |          |
| F14.2.4                          |          | Tiles to bathroom floor (200 x 200mm)                                                                         | m²   | 3        |      |          |
| F14.2                            | PSA 8.10 | <b>PAINTING</b>                                                                                               |      |          |      |          |
| F14.2.1                          |          | Supply and build in timber door frame for FLB pedestrian door                                                 | No   | 1        |      |          |
|                                  |          | Painting generally                                                                                            |      |          |      |          |
| F14.2.2                          |          | Prime and 2 coat - exterior quality PVA acrylic to plastered and bagged surfaces                              | m²   | 25       |      |          |
| F14.2.3                          |          | Prime and two coat gloss enamel to galvanised steel windows and exposed timber or steel roof trusses.         | Sum  | 1        |      |          |
| F14.3                            | PSA 8.10 | <b>FITTINGS</b>                                                                                               |      |          |      |          |
| F14.3.1                          |          | Padlock to doors A, B and C                                                                                   | Sum  | 1        |      |          |
| F14.3.2                          |          | Drop bolts to bottom of each leaf of double doors (8.3.1)                                                     | No   | 1        |      |          |
| F14.3.4                          |          | Brass butt hinges and screws at timber door                                                                   | item | 2        |      |          |
| F14.3.5                          |          | Drop bolt and rubber door-stop on cast in bracket                                                             | item | 2        |      |          |
| F14.3.6                          |          | White front flush Coral toilet, mounted complete with water taps and plumbing to connect to external drainage | No   | 1        |      |          |
| F14.3.7                          |          | Toilet paper holder                                                                                           | No   | 1        |      |          |
| F14.3.8                          |          | White hand-wash basin, wall mounted complete with water taps and plumbing                                     | No   | 1        |      |          |
| F14.3.9                          |          | 3 Lever mortice lockset at timber door                                                                        | No   | 1        |      |          |
| F14.3.10                         |          | Wall mounted hardwood table top, including all bolts and supports (2500mm x 900mm)                            | No   | 1        |      |          |
| F14.3.11                         |          | Supply and Install HDG burglar bars to windows                                                                | m²   | 5        |      |          |
| Total Carried Forward To Summary |          |                                                                                                               |      |          |      |          |



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SCHEDULE G : CIVIL & STRUCTURAL - SEWERS

| Number                | Payment     | Item Description                                                                                                                                                                        | Unit | Quantity | Rate | Amount R |
|-----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------|----------|
| Brought Forward       |             |                                                                                                                                                                                         |      |          |      |          |
| G3.3                  | 8.2.1       | Provision of bedding material compacted to 93% of MOD AASHTO density (100% for sand) with material from commercial sources                                                              |      |          |      |          |
| G3.3                  |             | Selected granular material                                                                                                                                                              | m³   | 45       |      |          |
| G3.4                  |             | Selected fill material                                                                                                                                                                  | m³   | 60       |      |          |
| G4                    | SANS1200LD  | <b>SEWERS</b>                                                                                                                                                                           |      |          |      |          |
|                       | PSL 8.2.1   | Supply, lay, joint, bed for Rigid pipes on Class B bedding and test sewer pipes for:                                                                                                    |      |          |      |          |
| G4.1                  |             | 160mm dia Class 34 uPVC                                                                                                                                                                 | m    | 35       |      |          |
| G4.2                  |             | 250mm dia Class 34 uPVC                                                                                                                                                                 | m    | 20       |      |          |
| G4.3                  |             | 600mm dia s/s Class 75D concrete sewer pipe to SANS 677 with HDPE liner                                                                                                                 | m    | 25       |      |          |
| G4.3.1                |             | 750mm dia s/s Class 75D concrete sewer pipe to SANS 677 with HDPE liner                                                                                                                 | m    | 25       |      |          |
|                       | PSL 8.2.1   | Supply, Lay, joint, bed for flexible pipes and test rising sewer pipes for:                                                                                                             |      |          |      |          |
| G4.4                  |             | 560mm dia HDPE                                                                                                                                                                          | m    | 20       |      |          |
| G5                    | 8.2.3       | <b>MANHOLES</b>                                                                                                                                                                         |      |          |      |          |
|                       | SANS1200DB  | <b>EXCAVATION</b>                                                                                                                                                                       |      |          |      |          |
|                       | 8.3.2       | Sewer manholes complete to detail drawing (dwg. 34676.01-104-06) including flexible couplings with SABS EN124 D400 heavy duty hinged ductile iron cover and frame for depths:           |      |          |      |          |
|                       |             | Over and Up to                                                                                                                                                                          |      |          |      |          |
| G5.1                  |             | 3,5 m 4,5m                                                                                                                                                                              | No   | 2        |      |          |
| G5.2                  |             | 4,5 m 5,5m                                                                                                                                                                              | No   | 2        |      |          |
| G6                    | SABS 1200 G | <b>REINFORCED CONCRETE STRUCTURES (DISCHARGE SEWER MANHOLES)</b>                                                                                                                        |      |          |      |          |
| G6.1                  |             | Excavate in all materials including hand excavation and working space for trenches, select backfill, compact and dispose of all surplus material for discharge manholes up to 4,5m deep | m³   | 50       |      |          |
|                       | 8.2         | <b>FORMWORK</b>                                                                                                                                                                         |      |          |      |          |
|                       | 8.2.1       | Rough Formwork (Foundations):                                                                                                                                                           |      |          |      |          |
| G6.1.1                |             | Plane vertical to edge of ground floor slab (300mm high)                                                                                                                                | m    | 30       |      |          |
| G6.1.2                |             | Plane vertical to sides roof slab (300mm high)                                                                                                                                          | m    | 28       |      |          |
| G6.1.3                |             | Plane horizontal to soffit of roof slab                                                                                                                                                 | m²   | 20       |      |          |
| Total Carried Forward |             |                                                                                                                                                                                         |      |          |      |          |

**PSD EARTHWORKS (SANS 1200D)**

**PSD8.3 SCHEDULED ITEMS**

**PSD8.3.15 Freehaul and Overhaul (New Item)**

Notwithstanding any clauses in any of the standardised specification dealing with the definition or payment of transport, freehaul and/or overhaul, all haulage will be considered to be freehaul and the cost thereof to be covered by other rates in the Schedule, unless specifically scheduled or provided for in the document.

**PSD8.3.16 Trimming and finishing of cut slopes (New Item)**

The area measured will be the plan area of the surface of the excavation trimmed to receive concrete. The rate shall cover the cost of all labour, plant, materials, and other incidentals necessary to trim excavations and embankments to the standard of finish required for the construction of concrete linings. All excavation, including the removal of unsuitable ground and backfilling with suitable material, will be measured as stated for the relevant items of SABS 1200 D or SABS 1200 DA, as applicable.

The cost of finishing off all slopes, including compaction as required against the slopes, is deemed to be included in the tendered rates. The cost of backfilling the embankment as an engineered fill is measured elsewhere.

**PSD8.3.17 Extra over for sheet pile shoring (New Item)**

This item is measured as a design and supply item. The area of measurement shall be the square meter of the open face that requires shoring for the contractor to excavate and continue with work inside the shored area. The method of shoring shall be sheet pile shoring as per drawing 34676.01-201-02, unless the contractor provides an alternative method of shoring that is approved in writing by the engineer at no addition cost to the employer. The cost shall include full compensation for providing all equipment, and material required, establishment on site, piling/erecting, maintaining sheet piles and make safe for the duration of the contract as needed as well as complete and safe removal and good upon completion. The design of the shoring shall be designed and approved by a professionally registered engineer appointed by the Contractor. No payment will be made for over-excavating of the area, and the cost of backfilling over-excavated areas will be borne by the contractor.

## **PSG CONCRETE (STRUCTURAL) (SANS 1200 G)**

### **PSG2 INTERPRETATIONS**

#### **PSG2.3 DEFINITIONS**

*Please add the following to clause G2.3:*

A Constructional joint: a joint required on account of constraints or convenience in the method of construction and that is not a movement, contraction or expansion joint.

#### **PSG2.4.1 Exposure Condition**

*Please add the following to clause G2.4.1:*

All Concrete on the Works shall be as specified for severe exposure condition.

#### **PSG2.4.2 Strength Concrete**

*Please add the following to clause G2.4.2:*

Grade 30MPa/40mm means strength concrete grade 30 MPa with 40 mm stone.

#### **PSG2.3 JOINTS**

*Please add the following to clause G2.3:*

Notwithstanding Subclause G2.4.3, designed joints will only be joints that are shown on the drawings. Any other joints that are required by the contractor as a result of his construction constraints or for any other reason, whether approved by the Engineer or not, will not be considered to be designated joints as defined in Subclause G2.4.3, i.e. they will be considered to be non-designated joints.

### **PSG3 MATERIALS**

*Please add the following to clause G3:*

The joint materials shall be resistant to ultraviolet light and to biological degradation.

#### **PSG 3.2 CEMENT**

*Please add the following to clause G3.2:*

All cement used in the works shall be ordinary Portland cement complying with SANS 471.

#### **PSG3.2.3 Storage of cement**

*Please add the following to clause G3.2.3:*

Cement shall be used in the order in which it is received. Unless approved by the Engineer, cement kept in storage for longer than 8 weeks shall not be used in the Works. Any cement that contains lumps that cannot easily be crumbled to powder between the fingers may not be used.

#### **PSG3.3 WATER**

*Please add the following to clause G3.3:*

Only potable water from an approved source may be used for mixing concrete.

#### **PSG3.4 AGGREGATE**

*Please add the following to clause G3.4:*

The nominal stone size specified in the concrete grade (e.g. 30 MPa/40 mm) shall mean stone conforming to the grading specified in SANS 1083 for the nearest equivalent size, i.e. 40 mm means stone that complies with SANS 1083 for 37,5 mm size.

Dolomite aggregate shall be of natural stone and be selected for specific use in sewage containment application for all below ground concrete structures and sewer concrete pipes.

**ANNEXURE F**

**Tender Drawings**

