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## **Transnet Port Terminals**

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

## **REQUEST FOR PROPOSAL (RFP)**

**FOR THE: COMPLETE ENGINEERING, INSTALLATION AND COMMISSIONING OF TIPPLER, TAIN POSITIONER, FEEDERS, DUST HANDLING PLANT AT PORT OF SALDANHA BAY, FOR TRANSNET SOC LTD (REG. NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS, (HEREINAFTER REFERRED TO AS "TPT").**

<b>RFP NUMBER</b>	<b>: iCLM HQ 788/TPT</b>
<b>ISSUE DATE</b>	<b>: 24 October 2023</b>
<b>COMPULSORY BRIEFING</b>	<b>: 08 November 2023</b>
<b>CLOSING DATE</b>	<b>: 24 November 2023</b>
<b>CLOSING TIME</b>	<b>: 10h00am</b>
<b>TENDER VALIDITY PERIOD</b>	<b>: 12 weeks from closing date</b>

Please note the following exclusion clause:

Transnet will not conduct business with pervious Employees, within the first twelve (12) months of termination of service. Suppliers or service providers that assisted or are involved in any capacity with drafting scopes may not Bid for that scope.

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## T1.1 TENDER NOTICE AND INVITATION TO TENDER

### SECTION 1: NOTICE TO TENDERERS

#### 1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

<b>DESCRIPTION</b>	<b>Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").</b>
<b>TENDER DOWNLOADING</b>	<b>This Tender may be downloaded directly from the National Treasury eTender Publication Portal at <a href="http://www.etenders.gov.za">www.etenders.gov.za</a> and the Transnet website at <a href="https://transnetetenders.azurewebsites.net">https://transnetetenders.azurewebsites.net</a> (please use <b>Google Chrome to access Transnet link</b>) <b>FREE OF CHARGE.</b></b>

<b>COMPULSORY TENDER CLARIFICATION MEETING</b>	<p>A Compulsory Tender Clarification Meeting will be conducted at Saldanha Iron Ore Terminal <b>on the 08 November 2023, at 09:00am [9 O'clock in the morning]</b> for a period of <math>\pm</math> 5 (five) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually and information will not be repeated for the benefit of Tenderers arriving late.</p> <p><b>A Site visit/walk will take place, tenderers are to note:</b></p> <ul style="list-style-type: none"><li>• Tenderers are required to wear safety shoes, goggles, long sleeve shirts, high visibility vests and hard hats.</li><li>• Tenderers without the recommended PPE will not be allowed on the site walk.</li><li>• Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing.</li><li>• All forms of firearms are prohibited on Transnet properties and premises.</li><li>• The relevant persons attending the meeting must ensure that their identity documents, passports or drivers licences are on them for inspection at the access control gates.</li></ul> <p>Certificate of Attendance in the form set out in the <b>Returnable Schedule T2.2-01</b> hereto must be completed and submitted with your</p>
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	<p>Tender as proof of attendance is required for a <b>compulsory</b> site meeting and/or tender briefing. Please note that we will verify the slip against the attendance register.</p> <p><b>Tenderers failing to attend the compulsory tender briefing will be disqualified.</b></p> <p><b>Kindly note that bidders who attend the briefing session will be afforded an additional day (09/11/2023) to come on site and do further assessments on the site should they need to. Appointments can be made through <a href="mailto:thabile.zuma@transnet.net">thabile.zuma@transnet.net</a></b></p> <p><b>Tenderers are required to bring this Returnable Schedule T2.2-01 to the Compulsory Tender Clarification Meeting to be signed by the <i>Employer's</i> Representative.</b></p>
<b>CLOSING DATE</b>	<p><b>10:00am on (2023/11/24)</b></p> <p>Tenderers must ensure that tenders are uploaded timeously onto the system. <b>If a tender is late, it will not be accepted for consideration.</b></p>

## 2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website (<https://transnetetenders.azurewebsites.net>);

- Click on "ADVERTISED TENDERS" to view advertised tenders;
- Click on "SIGN IN/REGISTER – for bidder to register their information (must fill in all mandatory information);
- Click on "SIGN IN/REGISTER" - to sign in if already registered;
- Toggle (click to switch) the "Log an Intent" button to submit a bid;
- Submit bid documents by uploading them into the system against each tender selected.
- **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges**

**experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**

- b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.
- c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

### **3. CONFIDENTIALITY**

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

### **4. DISCLAIMERS**

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;
- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;

- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable on T2.2-18], [**Breach of Law**] whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.
- 4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:
  - *unduly high or unduly low tendered rates or amounts in the tender offer;*
  - *contract data of contract provided by the tenderer; or*
  - *the contents of the tender returnables which are to be included in the contract.*

5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

## 6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at

Transnet Port Terminals

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The logo for Transnet, featuring the word "TRANSNET" in red capital letters above a stylized red and green graphic element.

<https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and Unique registration reference number.....(**Tender Data**)

**Transnet urges its clients, suppliers and the general public  
to report any fraud or corruption to  
TIP-OFFS ANONYMOUS: 0800 003 056 OR [Transnet@tip-offs.com](mailto:Transnet@tip-offs.com)**

## T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts. The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice No 9 of 2008 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

This edition incorporates the amendments made in Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019. (see [www.cidb.org.za](http://www.cidb.org.za)).

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

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Clause	Data
C.1.1	The <i>Employer</i> is <b>Transnet SOC Ltd (Reg No. 1990/000900/30)</b>
C.1.2	The tender documents issued by the <i>Employer</i> comprise:  <b>Part T: The Tender</b>  Part T1: Tendering procedures T1.1 Tender notice and invitation to tender T1.2 Tender data  Part T2 : Returnable documents T2.1 List of returnable documents T2.2 Returnable schedules  <b>Part C: The contract</b>  Part C1: Agreements and contract data C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2) C1.3 Form of Securities

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Part C2: Pricing data	C2.1 Pricing instructions C2.2 Activity Schedule
Part C3: Scope of work	C3.1 Works Information
Part C4: Site information	C4.1 Site information

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C.1.4 The Employer's agent is: Sourcing Specialist Bulk

Name: Thabile Zuma

Address: 202 Anton Lembede Street, Durban, 4000

Tel No. 031 361 7850

E – mail Thabile.Zuma@transnet.net

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C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

**1. Stage One - Eligibility with regards to attendance at the compulsory clarification meeting:**

An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a **Joint Venture (JV)** must attend the compulsory clarification meeting in terms C2.7

**2. Stage Two - Eligibility in terms of the Construction Industry Development Board:**

a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of **8ME or higher** class of construction work, are eligible to have their tenders evaluated.

b) Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation of not lower than one level below the required class of construction works under consideration and possesses the required recognition status; and

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3. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a 8ME or higher class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations  
The tenderer shall provide a certified copy of its signed joint venture agreement

***Any tenderer that fails to meet the stipulated eligibility criteria will be regarded as an unacceptable tender.***

**3. Stage Three – Eligibility:**

Professional Registration Engineering Council of South Africa (ECSA)

**4. Stage Four - Functionality:**

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is 70 points.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11 below.

***Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.***

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- C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also **required to bring their RFP document to the briefing session and have their returnable document T2.2-01 certificate of attendance** signed off by the Employer's authorised representative.

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- C.2.12 No alternative tender offers will be considered.

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- C.2.13.3 Each tender offer shall be in the **English Language.**
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C.2.13.5 The *Employer's* details and identification details that are to be shown  
C2.15.1 on each tender offer are as follows:

- Identification details: The tender documents must be uploaded with:
- Name of Tenderer:
  - Contact person and details:
  - The Tender Number: iCLM HQ 788/TPT
  - The Tender Description: Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

Documents must be marked for the attention of: ***Employer's Agent: Thabile Zuma***

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C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

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C.2.15 The closing time for submission of tender offers is:  
Time: **10:00am** on the 24 November 2023  
Location: The Transnet e-Tender Submission Portal:  
(<https://transnetetenders.azurewebsites.net>);

**NO LATE TENDERS WILL BE ACCEPTED**

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C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

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C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services. **Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.**
2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership in case of all EMEs and QSEs with 51% black ownership or more

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TRANSNET PORT TERMINALS

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together with the tender;

3. A valid CIDB certificate in the correct designated grading;
4. Proof of registration on the Central Supplier Database;
5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

**Note:** Refer to Section T2.1 for List of Returnable Documents

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C3.11 The minimum number of evaluation points for functionality is: **70**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

**Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.**

### Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:

<b>TECHNICAL EVALUATION</b>						
<b><u>DESCRIPTION OF THE WORKS: Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").</u></b>						
<b>Evaluation Criteria</b>	<b>Description</b>	<b>Scoring Principal</b>	<b>Returnable Schedule</b>	<b>Criteria</b>	<b>Weighting</b>	
<b>Eligibility</b>	CIDB Mechanical Engineering (ME)	Contractors to be registered with the Construction Industry Development Board (CIDB) as a Mechanical Contractor and be able to handle contracts that are grade 8 and above.	T2.2-02	Yes/No	N/A	
	Professional Registration	The tenderer to submit all active professional registration certificates for all key engineering personnel with Engineering Council of South Africa (ECSA). Curriculum Vitae to be submitted to demonstrate relevant experience in line with professional registration.	Mechanical Engineer (Train Wagon Tippler Design)	T2.2-03	Yes/No	N/A
			Mechanical Engineer (Bulk Material Handling)	T2.2-03	Yes/No	N/A
			Electrical Engineer (MV, LV, Substations)	T2.2-03	Yes/No	N/A
			Electronics Engineer (Control/Software - PLC/SCADA)	T2.2-03	Yes/No	N/A



				Civil Engineer (Structural)	T2.2-03	Yes/No	N/A
<b>Management &amp; CV's of Key Personnel = 40 Points</b>	General experience, Knowledge Pertinent to Project (=20 points)	Site Management = 15%	Project Manager = 35%	<p><b>(score 0)</b> - The Tenderer has submitted no information to determine a score.</p> <p><b>(score 20)</b> - Key staff do not have relevant levels of experience and knowledge pertinent to the project.</p> <p><b>(score 40)</b> - Key staff has limited levels of relevant experience and knowledge pertinent to the project.</p> <p><b>(score 60)</b> - Key staff has the required minimum levels of experience and knowledge pertinent to the project..</p> <p><b>(score 80)</b> - Key staff has extensive levels of relevant experience and knowledge pertinent to the project.</p> <p><b>(score 100)</b> - Key staff has outstanding levels of relevant experience and knowledge pertinent to the project.</p>	T2.2-04	3%	1.05
			Project Planner = 20%			2%	0.6
			Document Controller = 10%			1%	0.3
			Quantity Surveyor = 35%			3%	1.05
		Engineers = 80%	Mechanical Engineer (Train Wagon Tippler and Positioner) = 20%			8%	3.2
			Mechanical Engineer (BMH) = 15%			6%	2.4
			Electrical Engineer = 20%			8%	3.2
			Hydraulic Engineer = 15%			6%	2.4
			Electronics Engineer = 15%			6%	2.4
		Safety and Environment = 5%	Civil Engineer (Structural) = 15%			6%	2.4
			Health and Safety Officer = 100%			3%	1



	Education, training and skills (=20 points)	Site Management = 15%	Project Manager = 35%	<p><b>(Score 0)</b> - The Tenderer has submitted no information to determine a score.</p> <p><b>(Score 20)</b> - Key staff does not have project specific education, skills and training.</p> <p><b>(Score 40)</b> - Key staff has limited levels of project specific education, skills and training.</p> <p><b>(Score 60)</b> - Key staff has the required minimum levels of project specific education, skills and training.</p> <p><b>(Score 80)</b> - Key staff has extensive levels of project specific education, skills and training.</p> <p><b>(Score 100)</b> - Key staff has outstanding levels of project specific education, skills and training</p>		3%	1.05
			Project Planner = 20%			2%	0.6
			Document Controller = 10%			1%	0.3
			Quantity Surveyor = 35%			3%	1.05
		Engineers = 80%	Mechanical Engineer (Train Wagon Tippler and Positioner) = 20%			8%	3.2
			Mechanical Engineer (BMH) = 15%			6%	2.4
			Electrical Engineer = 20%			8%	3.2
			Electronics Engineer = 15%			6%	2.4
			Hydraulic Engineer = 15%			6%	2.4
		Safety Management = 5%	Civil Engineer (Structural) = 15%			6%	2.4
Health and Safety Officer = 100%	3%		1				
<b>Method Statement = 30 Points</b>	Contractor site establishment (=1,5 points)	Contractor site establishment to be completed by the tenderer taking into consideration all items in the scope of works, office facilities, safety and environmental requirements, connection of services and de-establishment when the project is complete.	<p><b>Score 0</b> - The tenderer has submitted no information to determine a score.</p> <p><b>Score 20</b> - The methodology/approa</p>	T2.2-05	5%	1.5	



	<p>Design, Site Installation and Commissioning (=22,5 points)</p>	<p>The tenderer to issue a Method Statement on the required engineering, component procurement, component fabrication, installation and commissioning stages for the total scope of works which will include;</p> <ol style="list-style-type: none"> <li>1. Dual Wagon Tippler</li> <li>2. Train Positioner</li> <li>3. Apron Feeders / Knife Gates</li> <li>4. Dust Handling Plant</li> <li>5. Electrical Works</li> <li>6. PLC/SCADA Works</li> </ol>	<p>ch and work alignment to project schedule is poorly presented and not tailored to address the specific project objectives and methodology.  <b>Score 40</b> - The methodology/approach is not tailored to address the specific project objectives and methodology.                  The methodology approach does not deal with the critical characteristics of the project.</p>		<p>75%</p>	<p>22.5</p>
	<p>Project handover (=6 points)</p>	<p>Handover of the project needs to include all training requirements, manual and data packs</p>	<p>The methodology approach does not deal with the critical characteristics of the project.  <b>Score 60</b> - Satisfactory response/solution to the particular aspect of the requirement and evidence given that the stated employer's requirements will be met.  <b>Score 80</b> - The methodology/approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may</p>		<p>20%</p>	<p>6</p>

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			<p>occur during execution. The methodology/approach to manage activities is specifically tailored to the critical characteristics of the project.</p> <p><b>Score 100</b> - Besides meeting the "80" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The methodology approach details ways to improve the project outcomes and the quality of the outputs.</p>			
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<b>Previous Experience = 20 Points</b>	Previous Experience (=14 points)	<p><b>0</b> - The Tenderer failed to address the question / issue. Has not submitted any information.</p> <p><b>20%</b> - The Tenderer's previous experience presented has no relevance to the scope of this project and did not address any of the required categories.</p> <p><b>40%</b> - The Tenderer's previous experience presented has some relevance to the project but lacks detail i.e. Description of previous projects, value and references.</p> <p><b>60%</b> - The Tenderer's previous experience presented demonstrates knowledge and experience to successfully execute this project scope.</p> <p><b>80%</b> - The Tenderer's previous experience presented demonstrates a real understanding and substantial evidence of the ability meet the stated project requirements. The tenderer has extensive previous experience in relation to the works</p> <p><b>100%</b> -The Tenderer's previous experience presented demonstrates real confidence extensive understanding in all of the categories as required.</p>	T2.2-06	70%	14
	References: Specific to the Design, Manufacture, Installation and Commissioning of Train Wagon Tippler (= 6 points)	<p><b>0</b> - The Tenderer failed to address the question / issue. Has not submitted any information.</p> <p><b>20%</b> - One (1) reference letters from companies where the Respondent has provided a similar service with details of SOW</p> <p><b>40%</b> - Two (2) reference letters from companies where the Respondent has provided a similar service with details of SoW</p> <p><b>60%</b>- Three (3) reference letters from companies where the Respondent has provided a similar service with details of SoW</p> <p><b>80%</b> - Four (4) reference letters from companies where the Respondent has provided a similar service with deatails of SoW</p> <p><b>100%</b> - Five (5) reference letters from companies where the Respondent has provided a similar service with deatails of SoW</p>		30%	6



<p><b>Programme = 10 Points</b></p>	<p>Meet the required timeframes ( = 4 points)</p>	<p>Ability to provide the services in terms of the Employer’s requirements; demonstrating timeframes to meet the works as stated in the Scope of Works by indicating, in a logical sequence, the order, the timing, and the duration of the works that will take place in order to Provide the Works.</p>	<p><b>Score 0</b> -The tenderer has submitted no information or inadequate information to determine a score. <b>Score 20</b> - The tenderer has not addressed date requirements and submission is missing activities and dates. <b>Score 40</b> -The tenderer has not addressed all date requirements and submission is missing critical activities and dates which renders it unrealistic / unachievable <b>Score 60</b> - The tenderer has addressed some but not all date requirements and submission is missing some activities and dates which renders it at risk of being unrealistic / unachievable. <b>Score 80</b> -The tenderer has addressed most date requirements correctly and submission contains</p>	<p>T2.2-07</p>	<p>40%</p>	<p>4</p>
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TRANSNET PORT TERMINALS

TENDER NUMBER: iCLM HQ 788/TPT

DESCRIPTION OF THE WORKS: Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

			<p>logic and sequencing which is accurate, and renders the submission realistic and achievable</p> <p><b>Score 100</b> - The tenderer has addressed all date requirements correctly and submission contains logic and sequencing which is accurate, and renders the submission realistic and achievable.</p>			
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	<p>Programme information (= 2 points)</p>	<p>The Contractor clearly indicates in the schedule all milestones, activities &amp; information related to the following –</p> <ol style="list-style-type: none"> <li>1. Float,</li> <li>2. Time Risk Allowances,</li> <li>3. Health and safety requirements,</li> <li>4. Procedures set out in this contract,</li> <li>5. Work by the Employer and Others,</li> <li>6. Access to a part of the site if later than its access date,</li> <li>7. Acceptances,</li> <li>8. Plant &amp; Materials and other things to be provided by the employer,</li> <li>9. Information by Others,</li> <li>10. Starting date, access dates, Key Dates and Completion Date</li> <li>11. Planned Completion for each Key Date for each option and the complete works</li> <li>12. Shows how each activity on the Activity Schedule relates to the operations on each programme</li> </ol>	<p><b>Score 0</b> - The tenderer has submitted no information or inadequate information to determine a score.  <b>Score 20</b> - The tenderer has addressed some but not all date requirements as listed in this returnable (4 or less of 12 addressed)  <b>Score 40</b> - The tenderer has addressed some but not all date requirements as listed in this returnable (5 or 6 of 12)addressed  <b>Score 60</b> - The tenderer has addressed most but not all date requirements as listed in this returnable ( 7 or 8 of 12 addressed)  <b>Score 80</b> - The tenderer has addressed most but not all date requirements as listed in this</p>	<p>T2.2-07</p>	<p>20%</p>	<p>2</p>
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TRANSNET PORT TERMINALS

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			returnable (9 or 10 of 12 addressed) <b>Score 100</b> - The tenderer has addressed all date requirements as listed in this returnable (11 or 12 of 12 addressed)			
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	<p>Resourcing &amp; Equipment (= 4 points)</p>	<p>The Contractor indicates for each operation, how the Contractor plans to do the work identifying the principal Equipment and other resources which he plans to use. Resources &amp; equipment are loaded against activities with their associated rates to the programme for evaluation.</p>	<p><b>Score 0</b> - The tenderer has submitted no information or inadequate information to determine a score.  <b>Score 20</b> - The tenderer has addressed some but not all resource requirements and the submission is missing critical both resources &amp; equipment which renders it unrealistic / unachievable.  <b>Score 40</b> - The tenderer has addressed some but not all resource requirements and the submission is missing either critical resources or equipment which renders it unrealistic / unachievable.  <b>Score 60</b> - The tenderer has addressed some but not all resource requirements and the submission is missing some resources &amp; equipment, but not critical providing the works, which renders</p>	<p>T2.2-07</p>	<p>40%</p>	<p>4</p>
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			<p>it at risk of being unrealistic / unachievable.</p> <p><b>Score 80</b> - The tenderer has addressed all resource requirements correctly and the submission contains resources &amp; equipment, which is accurate, and renders the submission realistic and achievable.</p> <p><b>Score 100</b> - The tenderer has addressed all resource requirements correctly and the submission contains resources &amp; equipment, which is accurate, and renders the submission realistic and achievable and is fully aligned to the method statements</p>			
<b>TOTAL RATING</b>						100
<b>Technical Qualification Threshold = 70%</b>						

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-02 CIDB Certificate Grading 8 ME or higher
- T2.2-03 All key engineering personnel with (ECSA)
- T2.2-04 Management & CV's of Key Personnel
- T2.2-05 Method Statement
- T2.2-06 Previous Experience
- T2.2-07 Programme

Each evaluation criteria will be assessed in terms of scores of 0, 20, 40, 60, 80 or 100 The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

**Note: Any tender not complying with the above mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.**

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C.3.11 Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 90/10 preference points systems as described in Preferential Procurement Regulations.

Up to 100 minus  $W_1$  tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed. **Should the BBEE rating not be provided, tenderers with no verification will score zero points for preferencing.**

**Note:** Transnet reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract.

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C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria** which will justify the award of the tender to another tenderer. Objective criteria include but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia;

the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- c) has the legal capacity to enter into the contract,
- d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- e) complies with the legal requirements, if any, stated in the tender data and
- f) is able, in the option of the employer to perform the contract free of conflicts of interest.

**Table 1: Transnet Preferential Procurement Policy (Specific Goals)**

Preference Point System 90/10		
Specific Goal	Number of Points	Price
B-BBEE Level 1&2	5	
Subcontracting 30% of the value of the contract to Black Owned EME's and QSE's 51%	5	
<b>Total</b>	<b>10</b>	<b>90</b>

C.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).

## **T2.1 List of Returnable Documents**

### **2.1.1 These schedules are required for pre-qualification and eligibility purposes:**

- T2.2-01 Stage One as per CIDB: Eligibility Criteria Schedule - Certificate of attendance at Compulsory Tender Clarification Meeting
- T2.2-02 Stage Two as per CIDB: Eligibility Criteria Schedule - CIDB Registration Certificate
- T2.2-03 Stage Three: All key engineering personnel with (ECSA)

### **2.1.2 Stage Four as per CIDB: these schedules will be utilised for evaluation purposes:**

- T2.2-04 **Evaluation Schedule:** Management & CV's of Key Personnel
- T2.2-05 **Evaluation Schedule:** Method Statement
- T2.2-06 **Evaluation Schedule:** Previous experience
- T2.2-07 **Evaluation Schedule:** Programme

### **2.1.3 Returnable Schedules:**

#### **General:**

- T2.2-08 Authority to submit tender
- T2.2-09 Record of addenda to tender documents
- T2.2-10 Letter of Good Standing
- T2.2-11 Risk Elements
- T2.2-12 Availability of equipment and other resources
- T2.2-13 Schedule of proposed Subcontractors
- T2.2-14 Site Establishment requirements

#### **Agreement and Commitment by Tenderer:**

- T2.2-15 CIDB SFU ANNEX G Compulsory Enterprise Questionnaire
- T2.2-16 Non-Disclosure Agreement
- T2.2-17 RFP Declaration Form
- T2.2-18 RFP – Breach of Law
- T2.2-19 Certificate of Acquaintance with Tender Document
- T2.2-20 Service Provider Integrity Pact
- T2.2-21 Supplier Code of Conduct
- T2.2-22 Job-Creation Schedule

### **1.3.2 Bonds/Guarantees/Financial/Insurance:**

- T2.2-23 Insurance provided by the Contractor
- T2.2-24 Form of Intent to provide a Defects Correction Guarantee
- T2.2-25 Forecast Rate of Invoicing
- T2.2-26 Three (3) years audited financial statements
- T2.2-27 Agreement in terms of Protection of Personal Information Act (POPIA)

### **1.3.3 Transnet Vendor Registration Form:**

- T2.2-28 Transnet Vendor Registration Form

## **2.2 C1.1 Offer portion of Form of Offer & Acceptance**

### **2.3 C1.2 Contract Data**

### **2.4 C1.3 Forms of Securities**

### **2.5 C2.1 Pricing Instructions (Activity Schedule)**

### **2.6 C2.2 Activity Schedule**

### **2.7 C3. Scope of Works**

**Mandatory Returnable**

## T2.2-01: Eligibility Criteria Schedule:

### Certificate of Attendance at Tender Clarification Meeting

This is to certify that

(Company Name)

Represented  
by:

(Name and  
Surname)

Was represented at the compulsory tender clarification meeting

Held at:	Saldanha Iron Ore Terminal	
On (date)		Starting time: 10am

#### Particulars of person(s) attending the meeting:

Name

Signature

Capacity

#### Attendance of the above company at the meeting was confirmed:

Name

Signature

**For and on Behalf of the  
Employers Agent.**

Date

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**Mandatory Returnable**

## T2.2-02: Eligibility Criteria Schedule:

**Note to tenderers:**

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date
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- Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **8ME or higher** class of construction work, are eligible to have their tenders evaluated.

### 2. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

- Every member of the joint venture is registered with the CIDB;
- The lead partner has a contractor grading designation of not lower than one level one level below the required grading designation in the class of construction works under consideration and possesses the required recognition status; and
- The combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **8ME** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
- The Contractor shall provide the employer with a certified copy of its signed joint venture agreement;
- And in the event that the joint venture is an 'Incorporated Joint Venture' the Memorandum of Incorporation to be provided within 4 (four) weeks of the Contract Date.

**Reference to attached submissions to this schedule:**

**TRANSNET PORT TERMINALS**

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The undersigned, who warrants that he/she is duly authorized to do so on behalf of the Tenderer, confirms that the contents and referenced submissions of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed		Date	
	.....		.....
Name		Position	
	.....		.....
Tenderer	.....		

**TRANSNET PORT TERMINALS**

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**Mandatory Returnable**

## T2.2-03: Eligibility Criteria Schedule:

### Professional Registration

The tender must be able to demonstrate that the project personnel have professional registration. The professional registration must be registered with the Engineering Council of South Africa (ECSA). Curriculum Vitae to be submitted to demonstrate relevant experience. The tenderer to submit the following professional registration with the tender:

Profession	Name and Surname	Professional Registration	Certification Attached (Yes/No)
Mechanical Engineer (Train Wagon Tippler and Positioner)		ECSA - Pr Eng / Pr Tech Eng	
Mechanical Engineer (BMH)		ECSA - Pr Eng / Pr Tech Eng	
Electrical Engineer (MV,LV)		ECSA - Pr Eng / Pr Tech Eng	
Electronic Engineer (PLC/SCADA)		ECSA - Pr Eng / Pr Tech Eng	
Civil Engineer (Structural)		ECSA - Pr Eng / Pr Tech Eng	

### Reference to attached submissions to this schedule:

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The undersigned, who warrants that he / she is duly authorised to do so on behalf of the Tenderer, confirms that the contents and referenced submissions of this schedule are within my personal knowledge and are to the best of my belief both true and correct.



**TRANSNET PORT TERMINALS**

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Signed

Date

Name

Position

Tenderer



**T2.2-04: Evaluation Schedule - Management & CV's of Key Personnel**

The tender must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required services and submit the following documents as a minimum with the tender:

1. The experience of assigned key persons in relation to the scope of work will be evaluated from three different points of view, namely:
  - i. The education, training and skills of the assigned staff in the specific sector, field, subject, etc. which is directly linked to the Scope of Works. Proof of education and training must be attached to the C.V.
2. Comprehensive CV's should be attached to this schedule:

As a minimum each CV should address the following, but not limited to;

- i. Personal particulars
  - a. Name
  - b. Place (s) of tertiary education and dates associated
- ii. Qualifications (degrees, diplomas, grades of membership of professional societies and professional registrations)
- iii. Name of current employer and position in enterprise
- iv. Overview of post graduate experience (year, organization and position)
- v. Outline of recent assignments / experience that has a bearing on the Scope of Works

The following table is to be populated by the tenderer identifying the resources for the key roles on the project.

Profession	Name and Surname	Professional Registration	CV attached (Yes/No)
Project Manager		PMP Registration	
Mechanical Engineer (Train Wagon Tippler Design)		ECSA - Pr Eng / Pr Tech Eng	
Mechanical Engineer (BMH)		ECSA - Pr Eng / Pr Tech Eng	
Electrical Engineer (MV, LV, Substation)		ECSA - Pr Eng / Pr Tech Eng	
Quantity Surveyor		Professional Registration SACQSP	
Electronics Engineer PLC/SCADA		ECSA - Pr Eng / Pr Tech Eng	
Civil Engineer (Structural)		ECSA - Pr Eng / Pr Tech Eng	
Hydraulics Engineer		NQF Level 5 Mechanical	
Health and Safety Officer		NQF Level 5	

3. CV's for people proposed for all identified posts including, amongst others:

### **Site Management**

- **Project Manager**

The Project Manager should have a qualification of a minimum Diploma in Mechanical/Electrical Engineering. Registration as a professional project manager with SACPCMP or PMP registration experience in Mechanical construction projects specifically focused in the Bulk Materials Handling industry is preferred. The Project Manager should further provide evidence in working with the NEC suit of contracts.

- **Quantity Surveyor**

The Quantity Surveyor should have a minimum qualification of a Diploma in Quantity Surveying and registered with SACQSP.

- **Document Controller**

Document controller should have experience working in Bulk Materials handling field and construction. Experience working with the NEC3 Engineering and Construction Contract Option A chosen for this contract is required.

- **Project Planner**

Project Planner should have experience working in bulk materials handling field as Planner and experience working with the NEC3 ECC and Primavera Software Suite.

The Planner is employed and shall be on-site for progress measurements and in attendance at progress meetings to present programme and tracking sheet updates to the *Project Manager* for the duration of the contract.

### **Engineering Team**

- **Mechanical Engineer (Train Wagon Tippler)**

The Mechanical Engineer must have a qualification of a, B.Tech or BSc.Eng in Mechanical Engineering with experience in design and construction of train wagon tippers and its associated infrastructure and equipment.

The Mechanical Engineer must be professionally registered (Pr Tech Eng or Pr Eng) with ECSA, for final sign off and provision of relevant compliance certifications.

- **Mechanical Engineer (Bulk Materials Handling)**

The Mechanical Engineer must have a qualification of a, B.Tech or BSc.Eng in Mechanical Engineering with experience in bulk material handling design and construction of its associated infrastructure and equipment.

The Mechanical Engineer must be professionally registered (Pr Tech Eng or Pr Eng) with ECSA, for final sign off and provision of relevant compliance certifications.

The Mechanical Engineer must also have experience in Conveyor and Chute construction and modelling and exhibit structural construction experience associated with the any infrastructure and equipment related to the Bulk Materials handling field.



- **Electrical Engineer**

The Electrical Engineer must have a qualification of a Diploma, B.Tech or BSc.Eng in Electrical Engineering with experience in design and construction of BMH Equipment and its associated infrastructure and equipment.

The Electrical Engineer must be professionally registered (Pr Tech Eng or Pr Eng) with ECSA, for final sign off and provision of relevant compliance certifications.

- **Civil Engineer**

The Civil Engineer must have a minimum qualification of a Diploma, B.Tech or BSc.Eng (or equivalent) in Civil Engineering with experience in design and construction of civil structures.

The Civil Engineer must be ECSA Professional Registered (Pr. Eng./ Pr.Tech. Eng.).

- **Electronics Engineer (PLC/SCADA)**

The Electronics Engineer must have a minimum qualification of a Diploma, B.Tech or BSc.Eng (or equivalent) in Electronic Engineering with experience in control systems of Bulk Material Handling Equipment – interface with I/O's and the general plant.

Experience with PLC systems and SCADA management systems.

The Electronics Engineer must be ECSA Professional Registered (Pr. Eng./ Pr.Tech. Eng.).

- **Hydraulics Engineer**

Experienced Hydraulics Engineer – must demonstrate Design, Installation and Commissioning of Hydraulic Systems as integrated in BHM Equipment.

The Hydraulics Engineer must expand on this experience and exposure to demonstrate competency. NQF level 5 Mechanical qualification.

**Safety**

- **Health and Safety Officer**

NQF Level 5 Health and Safety Management Course as a minimum qualification. Relevant qualification and experience in Structural or Mechanical projects.

The scoring of the Management & CV's of Key Persons will be as follows: **40 POINTS**

<b>General experience, Knowledge Pertinent to Project:</b>		<b>Education, training and skills Adequacy:</b>	
	<b>Weight</b>		<b>Weight</b>
<b>Site Management</b>	<b>15%</b>	<b>Site Management</b>	<b>15%</b>
Project Manager	35%	Project Manager	35%
Project Planner	20%	Project Planner	20%
Document Controller	10%	Document Controller	10%
Quantity Surveyor	35%	Quantity Surveyor	35%
<b>Engineers</b>	<b>80%</b>	<b>Engineers</b>	<b>80%</b>
Mechanical Engineer (Tippler)	20%	Mechanical Engineer (Tippler)	20%
Mechanical Engineer (BMH)	15%	Mechanical Engineer (BMH)	15%



Electrical Engineer	20%	Electrical Engineer	20%
Electronic Engineer	15%	Electronic Engineer	15%
Hydraulic Engineer	15%	Hydraulic Engineer	15%
Civil Engineer	15%	Civil Engineer	15%
<b>Safety and Construction</b>	<b>5%</b>	<b>Safety and Construction</b>	<b>5%</b>
Health and Safety Officer	100%	Health and Safety Officer	100%
<b>20 - POINTS</b>		<b>20 - POINTS</b>	
(Score 0)	The Tenderer has submitted no information to determine a score.		
(Score 20)	<p><b>Key staff do not have relevant levels of experience.</b></p> <p>Site Management:                      ≤2 years</p> <p>Engineers (post professional registration experience):                      ≤2 years</p> <p>Safety and Construction:                      ≤2 years</p>	<p><b>Key staff does not have project specific education, skills and training.</b></p> <ul style="list-style-type: none"> <li>• Very poor response – Education, training and skills are totally insufficient to satisfy the minimum requirements.</li> <li>• Does not have necessary registrations or education.</li> </ul>	
(Score 40)	<p><b>Key staff has limited levels of relevant experience.</b></p> <p>Site Management:                      &gt;2 ≤ 5 years</p> <p>Engineers (post professional registration experience):                      &gt;2 ≤ 5 years</p> <p>Safety and Construction:                      &gt;2 ≤ 5 years</p>	<p><b>Key staff has limited levels of project specific education, skills and training.</b></p> <ul style="list-style-type: none"> <li>• Below minimum response – Education, Training and skills lacks convincing evidence to satisfy the minimum requirements. Does not have all of the required registrations required.</li> </ul>	
(Score 60)	<p><b>Key staff has the required minimum levels of experience.</b></p> <p>Site Management:                      &gt; 5 ≤ 7 years</p> <p>Engineers (post professional registration experience):                      &gt; 5 ≤ 7 years</p> <p>Safety and Construction:                      &gt; 5 ≤ 7 years</p>	<p><b>Key staff has the required minimum levels of project specific education, skills and training.</b></p> <ul style="list-style-type: none"> <li>• Satisfactory response – Education, training and skills meet certain aspects of the minimum requirements. The key staff have the respective registrations required.</li> </ul>	
(Score 80)	<p><b>Key staff has extensive levels of relevant experience.</b></p> <p>Site Management:                      &gt; 7 ≤ 9 years</p> <p>Engineers (post professional registration experience):                      &gt; 7 ≤ 9 years</p> <p>Safety and Construction:                      &gt; 7 ≤ 9 years</p>	<p><b>Key staff has extensive levels of project specific education, skills and training.</b></p> <ul style="list-style-type: none"> <li>• Good response – Education, training and skills meet the minimum requirements. Key staff have the required qualifications and registrations as well as one additional qualifications or training relating to the project needs.</li> </ul>	



(Score 100)	<p><b>Key staff has outstanding levels of relevant experience.</b>                  Site Management:                  ≥10 years                  Engineers (post professional registration experience):                  ≥10 years                  Safety and Construction:                  ≥10 years</p>	<p><b>Key staff has outstanding levels of project specific education, skills and training.</b>                  Excellent response – All specified education, training and skills minimum requirements are met and exceeded. Key staff have the required qualifications and registrations as well more than one additional qualification, training or skill relating to the project needs.</p>
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**Reference to attached submissions to this schedule:**

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 .....

The undersigned, who warrants that he /she is duly authorised to do so on behalf of the Tenderer, confirms that the contents and referenced submissions of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed \_\_\_\_\_ Date \_\_\_\_\_  
 Name \_\_\_\_\_ Position \_\_\_\_\_  
 Tenderer \_\_\_\_\_

## T2.2-05: Evaluation Schedule: Method Statement = 30 Points

### Note to tenderers:

Method statement - The tenderers must sufficiently demonstrate the approach/methodology that will be employed to cover the scope of the project linked to the submitted project programme.

The method statement should include as a minimum the following, the contractor must refer to the works information for the full description of the scope of works.

1. **Contractor site establishment** - Contractor site establishment to be completed by the tenderer taking into consideration all items in the scope of works, office facilities, safety and environmental requirements, connection of services and de establishment when the project is complete.
2. **Design, Site Installation and Commissioning** -  
The tenderer to demonstrate the required engineering, component procurement, component fabrication, installation and commissioning stages for the total scope of works which will include;
  1. Dual Wagon Tippler
  2. Train Positioner
  3. Apron Feeders / Knife Gates
  4. Dust Handling Plant
  5. Electrical Works
  6. PLC/SCADA Works
3. **Project Management and Handover** - Handover of the project needs to include all training requirements, manual and data packs

The items above (1,2 and 3) will include as the minimum the following information.

- a) Outline of method statement
- b) Narrative to demonstrate alignment to the programme submission & basis of schedule.
- c) Detailed method statement, technical approach and sequencing of work
- d) Demonstrate and understanding on how the project objectives will be achieved
- e) Demonstrate how risks and constraints will be addressed and managed.
- f) Detailed method statement for document control and review
- g) Narrative related to project close out, as-builts, training, operator's manual, data packs etc

Please note: Tenderers are required to provide detailed method statements for the categories as listed above. Each sub-category as listed will be scored based on the linear scale below and will be averaged and weighed to provide a final score.

The table below will be used as guidelines for scoring / evaluating the method statement submitted by the Tenderer:



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	Contractor site establishment	Design Site installation and Commissioning	Project handover
No information submitted = 0	1.5 points	22.5 points	6 points
<b>Score 0</b>	The tenderer has submitted no information to determine a score.		
<b>Score 20%</b>	The methodology/approach and work alignment to project schedule is poorly presented and not tailored to address the specific project objectives and methodology.		
<b>Score 40%</b>	The methodology/approach is not tailored to address the specific project objectives and methodology. The methodology approach does not deal with the critical characteristics of the project.		
<b>Score 60%</b>	Satisfactory response/solution to the particular aspect of the requirement and evidence given that the stated employer's requirements will be met.		
<b>Score 80%</b>	The methodology/approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The methodology/approach to manage activities is specifically tailored to the critical characteristics of the project.		
<b>Score 100%</b>	Besides meeting the "80" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge an innovative approach. The methodology approach details ways to improve the project outcomes and the quality of the outputs.		

**Reference to attached submissions to this schedule:**

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 .....  
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The undersigned, who warrants that he I she is duly authorised to do so on behalf of the Tenderer, confirms that the contents and referenced submissions of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed \_\_\_\_\_ Date \_\_\_\_\_

Name \_\_\_\_\_ Position \_\_\_\_\_

Tenderer \_\_\_\_\_

**TRANSNET PORT TERMINALS****TENDER NUMBER:** iCLM HQ 788/TPT

**DESCRIPTION OF THE WORKS** Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

## T2.2-06: Evaluation Schedule: Previous Experience

### Note to tenderers:

Tenderers are required to demonstrate performance in comparable projects of similar size and nature by supplying the following:

1. **Design, Manufacture/Fabrication, Installation and Commissioning of similar works as detailed in the Works Information with reference to:**
  - **Mechanical/Structural/Civil/Electrical/ Control Systems C&I (SCADA) works.**
  - **Specific to Tippler/Train Positioner/Feeders/Dust Handling Plant**

**Note:** Detail description of the projects executed must include; Scope of works, Complexity, Challenges, Execution Strategy/Methodology.

2. **Five (5) reference letters from companies where the Respondent has provided a similar service with details of scope of works completed.**

### Index of documentation attached to this schedule.

Reference letters from companies where the Respondent has provided a similar service				
No	Project Name and Description	Client	Contactable reference details i.e., Name, Cell-phone, and email address	Specific Details of Scope of Works
1				
2				
3				
4				
5				



**TRANSNET PORT TERMINALS**

**TENDER NUMBER:** iCLM HQ 788/TPT

**DESCRIPTION OF THE WORKS** Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

<b>Score</b>	<b>Previous Experience</b>	<b>References</b>
	(Design, Manufacture/Fabrication, Installation and Commissioning (Train Tippler, Positioner and Dust Handling Plant) <b>(14 Points)</b>	(Design, Manufacture/Fabrication, Installation, and Commissioning (Train Tippler, Positioner and Dust Handling Plant) <b>(6 Points)</b>
<b>0%</b>	The Tenderer failed to address the question / issue. Has not submitted any information.	The Tenderer failed to address the question / issue. Has not submitted any information.
<b>20%</b>	The Tenderer's previous experience presented has no relevance to the scope of this project and did not address any of the required categories.	One (1) reference letter from companies where the Respondent has provided a similar service with details of Scope of Work performed
<b>40%</b>	The Tenderer's previous experience presented has some relevance to the project but lacks detail i.e. Description of previous projects, value and references.	Two (2) reference letter from companies where the Respondent has provided a similar service with details of Scope of Work performed
<b>60%</b>	The Tenderer's previous experience presented demonstrates knowledge and experience to successfully execute this project scope.	Three (3) reference letters from companies where the Respondent has provided a similar service with details of Scope of Work performed
<b>80%</b>	The Tenderer's previous experience presented demonstrates a real understanding and substantial evidence of the ability meet the stated project requirements. The tenderer has extensive previous experience in relation to the <i>works</i> .	Four (4) reference letters from companies where the Respondent has provided a similar service with details of Scope of Work performed
<b>100%</b>	The Tenderer's previous experience presented demonstrates real confidence extensive understanding in all of the categories as required.	Five (5) reference letters from companies where the Respondent has provided a similar service with details of Scope of Work performed

**Reference to attached submissions to this schedule:**

.....  
 .....



**TRANSNET PORT TERMINALS**

**TENDER NUMBER:** iCLM HQ 788/TPT

**DESCRIPTION OF THE WORKS** Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

.....  
.....  
.....

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the Tenderer, confirms that the contents and referenced submissions of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed	_____	Date	_____
Name	_____	Position	_____
Tenderer	_____		

**T2.2-07: Evaluation Schedule: Programme = 10 Points**

**Note to tenderers:**

The Tenderer provides a hard copy proposed programme and/or refers to his proposed programme and attaches it to this returnable schedule.

The Programme should indicate the following columns as a bare minimum:

<b>Task ID</b>	<b>Task description</b>	<b>Start date</b>	<b>Finish date</b>	<b>Successor</b>	<b>Resources &amp; Equipment</b>	<b>Time risk allowances (TRA)</b>
----------------	-------------------------	-------------------	--------------------	------------------	----------------------------------	-----------------------------------

The tenderer shall provide the proposed programme detailed to minimum of level 3 showing as a minimum the following: -

**1. Timeframes to be Established in line with the Works:**

Ability to provide the services in terms of the *Employer's* requirements; demonstrating timeframes to meet the works as stated in the Scope of Works by indicating, in a logical sequence, the order, the timing, and the duration of the works that will take place in order to Provide the Works.

The contractor to indicate at minimum the following four (4) milestones for each of the four components:

**List of components**

1. Dual Wagon Tippler
2. Train Positioner
3. Apron Feeder and Knife Gates
4. Dust Handling Plant

**List of Completion Milestones** (For each of the above listed components)

1. Design and Engineering
2. Fabrication, Procurement and Supply
3. Installation including Electrical, Mechanical and PLC/SCADA
4. Commissioning

**2. Programme Information:**

The *Contractor* clearly indicates in the schedule all milestones, activities & information related to the following –

1. Float,
2. Time Risk Allowances,
3. Health and safety requirements,
4. Procedures set out in this contract,
5. Work by the *Employer* and Others,
6. Access to a part of the site if later than its *access date*,
7. Acceptances,
8. Plant & Materials and other things to be provided by the employer,
9. Information by Others,

10. *starting date, access dates, Key Dates and Completion Date*
11. planned Completion for each Key Date for each option and the complete works
12. Shows how each activity on the Activity Schedule relates to the operations on each programme

**3. Resourcing & Equipment:**

The *Contractor* indicates for each operation, how the *Contractor* plans to do the work identifying the principal Equipment and other resources which he plans to use. Resources & equipment are loaded against activities with their associated rates to the programme for evaluation.

The scoring of the programme will be as follows:

	<b>Establish Timeframes (4)</b>	<b>Programme Information (2)</b>	<b>Resourcing &amp; Equipment (4)</b>
<b>Score 0</b>	The tenderer has submitted no information or inadequate information to determine a score.	The tenderer has submitted no information or inadequate information to determine a score.	The tenderer has submitted no information or inadequate information to determine a score.
<b>Score 20</b>	The tenderer has not addressed any date requirements and submission is missing activities and dates, which renders this incomplete.	The tenderer has addressed some but not all date requirements as listed in this returnable (4 or less of 12 addressed)	The tenderer has addressed some but not all resource requirements and the submission is missing critical both resources & equipment which renders it unrealistic / unachievable.
<b>Score 40</b>	The tenderer has not addressed all date requirements and submission is missing activities and dates which renders it incomplete and impacts on the Critical Path Calculation	The tenderer has addressed some but not all date requirements as listed in this returnable (5 or 6 of 12 addressed)	The tenderer has addressed some but not all resource requirements and the submission is missing either critical resources or equipment which renders it unrealistic / unachievable.
<b>Score 60</b>	The tenderer has addressed some but not all date requirements and submission is missing some activities and dates which renders it incomplete and does not impact on the Critical Path Calculation	The tenderer has addressed most but not all date requirements as listed in this returnable (7 or 8 of 12 addressed)	The tenderer has addressed some but not all resource requirements and the submission is missing some resources & equipment, but not critical providing the works, which renders it at risk of being unrealistic / unachievable.
<b>Score 80</b>	The tenderer has addressed all date requirements correctly and submission contains logic and sequencing which is accurate, and renders the	The tenderer has addressed most but not all date requirements as listed in this returnable (9 or 10 of 12 addressed)	The tenderer has addressed all resource requirements correctly and the submission contains resources & equipment, which is accurate, and renders the

**TRANSNET PORT TERMINALS**

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	submission is complete but is not fully aligned to the method statements		submission realistic and achievable.
<b>Score 100</b>	The tenderer has addressed all date requirements correctly and submission contains logic and sequencing which is accurate, and renders the submission complete and is fully aligned to the method statements	The tenderer has addressed all date requirements as listed in this returnable (11 or 12 of 12 addressed)	The tenderer has addressed all resource requirements correctly and the submission contains resources & equipment, which is accurate, and renders the submission realistic and achievable and is fully aligned to the method statements

**Reference to attached submissions to this schedule:**

.....  
 .....  
 .....  
 .....  
 .....

The undersigned, who warrants that he /she is duly authorised to do so on behalf of the Tenderer, confirms that the contents and referenced submissions of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed \_\_\_\_\_ Date \_\_\_\_\_  
 Name \_\_\_\_\_ Position \_\_\_\_\_  
 Tenderer \_\_\_\_\_

## T2.2-08: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

<b>A - COMPANY</b>	<b>B - PARTNERSHIP</b>	<b>C - JOINT VENTURE</b>	<b>D - SOLE PROPRIETOR</b>

### A. Certificate for Company

I, \_\_\_\_\_ chairperson of the board of directors \_\_\_\_\_  
\_\_\_\_\_, hereby confirm that by resolution of the  
board taken on \_\_\_\_\_ (date), Mr/Ms \_\_\_\_\_,  
acting in the capacity of \_\_\_\_\_, was authorised to sign all  
documents in connection with this tender offer and any contract resulting from it on behalf of  
the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

## B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as \_\_\_\_\_

\_\_\_\_\_ hereby authorise Mr/Ms \_\_\_\_\_

acting in the capacity of \_\_\_\_\_, to sign all documents in

connection with the tender offer for Contract \_\_\_\_\_ and any

contract resulting from it on our behalf.

Name	Address	Signature	Date

**NOTE:** This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.



**C. Certificate for Joint Venture**

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms \_\_\_\_\_, an authorised signatory of the company \_\_\_\_\_, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract \_\_\_\_\_ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

**D. Certificate for Sole Proprietor**

I, \_\_\_\_\_, hereby confirm that I am the sole owner of the business trading as \_\_\_\_\_.

Signed

Date

Name

Position

Sole Proprietor

## T2.2-09: Record of Addenda to Tender Documents

This schedule as submitted confirms that the following communications received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	<b>Date</b>	<b>Title or Details</b>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Attach additional pages if more space is required.



## **T2.2-10 Letter/s of Good Standing with the Workmen's Compensation Fund**

Attached to this schedule is the Letter/s of Good Standing.

- 1.
- 2.
- 3.
- 4.

Name of Company/Members of Joint Venture:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....







## T2.2-13: Schedule of Proposed Subcontractors

The tenderer is required to provide details of all the sub-contractors that will be utilised in the execution of the *works*.

### Note to tenderers:

- In terms of PPPFA Regulation 6 (5), A tenderer may not be awarded points for B-BBEE status level of contributor if the tender documents indicate that the tenderer intends subcontracting more than 25% of the value of the contract to any other person not qualifying for at least the points that the tenderer qualifies for, unless the intended subcontractor is an EME that has the capability to execute the subcontract.
- In terms of PPPFA Regulation 12 (3), A person awarded a contract may not subcontract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level of contributor that the person concerned, unless the contract is subcontracted to an EME that has the capability and ability to execute the contract.

**Tenderer to note that after award, any deviations from this list of proposed subcontractors will be subject to acceptance by the *Project Manager* in terms of the Conditions of Contract.**

Provide information of the Sub-contractors below:

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>						

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>						
Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work



<b>% Black Owned</b>	<b>EME</b>	<b>QSE</b>	<b>Youth</b>	<b>Women</b>	<b>Disabilities</b>	<b>Rural/ Underdeveloped areas/ Townships</b>	<b>Military Veterans</b>
	<input type="checkbox"/>	<input type="checkbox"/>					

<b>Name of Proposed Subcontractor</b>			<b>Address</b>		<b>Nature of work</b>		<b>Amount of Worked</b>	<b>Percentage of work</b>
<b>% Black Owned</b>	<b>EME</b>	<b>QSE</b>	<b>Youth</b>	<b>Women</b>	<b>Disabilities</b>	<b>Rural/ Underdeveloped areas/ Townships</b>	<b>Military Veterans</b>	
	<input type="checkbox"/>	<input type="checkbox"/>						



## T2.2-15: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

**Section 1: Name of enterprise:** \_\_\_\_\_

**Section 2: VAT registration number, if any:** \_\_\_\_\_

**Section 3: CIDB registration number, if any:** \_\_\_\_\_

**Section 4: CSD number:** \_\_\_\_\_

**Section 5: Particulars of sole proprietors and partners in partnerships**

Name	Identity number	Personal income tax number

\* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

**Section 6: Particulars of companies and close corporations**

Company registration number \_\_\_\_\_

Close corporation number \_\_\_\_\_

Tax reference number: \_\_\_\_\_

**Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.**

**Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.**



The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed	_____	Date	_____
Name	_____	Position	_____
Enterprise name	_____		

**SBD 6.1****PREFERENCE POINTS CLAIM FORM**

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution.

Transnet will award preference points to companies who provide valid proof of their B-BBEE status using either the latest version of the generic Codes of Good Practice or Sector Specific Codes (if applicable).

**1. GENERAL CONDITIONS**

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to exceed R50 000 000 (all applicable taxes included) and therefore the 90/10 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.

1.3 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution. (5 points)
- (c) Sub-contracting at least 30% of the value of the contract to Black Owned EME's and QSE's 51% (5 points)

1.4 The maximum points for this bid are allocated as follows:

	<b>POINTS</b>
<b>PRICE</b>	<b>90</b>
<b>B-BBEE STATUS LEVEL OF CONTRIBUTION</b>	<b>10</b>
<b>Total points for Price and B-BBEE must not exceed</b>	<b>100</b>

1.5 Failure on the part of a bidder to submit proof of B-BBEE status level of contributor

together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

## 2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **"B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
- i) the B-BBEE status level certificate issued by an authorised body or person;
  - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
  - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (k) **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.

## 3. POINTS AWARDED FOR PRICE

### 3.1 THE 90/10 PREFERENCE POINT SYSTEMS

A maximum of 90 points is allocated for price on the following basis:

90/10

$$P_s = 90 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

$P_s$  = Points scored for comparative price of bid under consideration

$P_t$  = Comparative price of bid under consideration

$P_{\min}$  = Comparative price of lowest acceptable bid

#### 4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

4.1 preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)
1	5
2	4
3	3
4	2
5	1
Non-compliant contributor	0

4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
<b>Large</b>	Certificate issued by SANAS accredited verification agency
<b>QSE</b>	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned) [Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at <a href="http://www.dti.gov.za/economic_empowerment/bee_codes.jsp">www.dti.gov.za/economic_empowerment/bee_codes.jsp</a> .]
<b>EME<sup>1</sup></b>	Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership

<sup>1</sup> In terms of the Implementation Guide: Preferential Procurement Regulations, 2017, Version 2, paragraph 11.11 provides that in the Transport Sector, EMES can provide a letter from accounting officer or get verified and be issued with a B-BBEE certificate by

	<p>Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership</p> <p>Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard</p>
--	--

- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

## 5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

## 6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: 1-2 . = (maximum of 5 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.



**7. SUB-CONTRACTING**

7.1 Will any portion of the contract be sub-contracted?

( *Tick applicable box* )

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE.

( *Tick applicable box* )

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------


**8. DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One person business/sole propriety
- Close corporation
- Company
- (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES



.....  
.....  
.....

8.6 COMPANY CLASSIFICATION

- Manufacturer
- Supplier
- Professional Service provider
- Other Service providers, e.g. transporter, etc.

[ TICK APPLICABLE BOX ]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
  - (a) disqualify the person from the bidding process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person’s conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
  - (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;
  - (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and



(f) forward the matter for criminal prosecution.

<p>WITNESSES</p> <p>1. ....</p> <p>2. ....</p>
--

<p>.....</p> <p>SIGNATURE(S) OF BIDDERS(S)</p> <p>DATE: .....</p>
---

### BIDDER'S DISCLOSURE

#### 1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

#### 2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest<sup>2</sup> in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of institution	State

<sup>2</sup> the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.



Description of the Works: Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....  
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....  
.....

### 3 DECLARATION

I, \_\_\_\_\_ the \_\_\_\_\_ undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium<sup>3</sup> will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process

<sup>3</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.



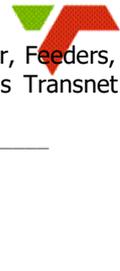
except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....	.....
Signature	Date
.....	.....
Position	Name of bidder



## **T2.2-16 NON-DISCLOSURE AGREEMENT**

**[..... 2020]**



**Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:**

**THIS AGREEMENT** is made effective as of ..... day of ..... 20..... by and between:

**TRANSNET SOC LTD**

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street , Braamfontein , Johannesburg 2000

**and**

.....

(Registration No. ....), a private company incorporated and existing under the laws of South Africa having its principal place of business at

.....

.....

**WHEREAS**

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

**IT IS HEREBY AGREED**

**1. INTERPRETATION**

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 **Bid or Bid Document** (hereinafter Tender) means Transnet’s Request for Information [**RFI**] Request for Proposal [**RFP**] or Request for Quotation [**RFQ**], as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party [the **Disclosing Party**] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the **Receiving Party**] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise, including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:

- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement]; or
- 1.3.2 was lawfully in the possession of the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
- 1.3.3 following such disclosure, becomes available to the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

## 2. CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement [the **Disclosing Party**] to the other party [the **Receiving Party**] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
- 2.3.1 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
- 2.3.2 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3.2 above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.

- 2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.
- 2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

### **3. RECORDS AND RETURN OF INFORMATION**

- 3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.
- 3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:
- 3.3.1 return all written Confidential Information [including all copies]; and
- 3.3.2 expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.
- 3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3.2 above.

### **4. ANNOUNCEMENTS**

- 4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.
- 4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

### **5. DURATION**

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

### **6. PRINCIPAL**

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.



**7. ADEQUACY OF DAMAGES**

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

**8. PRIVACY AND DATA PROTECTION**

8.1 The Receiving Party undertakes to comply with South Africa’s general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.

8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

**9. GENERAL**

9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.

9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.

9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.

9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.

9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.

9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

Signed	_____	Date	_____
Name	_____	Position	_____
Tenderer	_____		



## T2.2-17: RFP DECLARATION FORM

NAME OF COMPANY: \_\_\_\_\_

We \_\_\_\_\_ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this tender and the requirements requested from tenderers in responding to this tender have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below:

*[Respondent to indicate if this section is not applicable]*

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Indicate nature of relationship with Transnet:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]*

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.
8. We have acquainted ourselves and agree with the content of T2.2-20 "Service Provider Integrity Pact".

For and on behalf of ..... duly authorised thereto
Name:
Signature:
Date:

### IMPORTANT NOTICE TO TENDERERS

- Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of tenders exceeding R5,000,000.00 (five million S.A. Rand) in value. Should a Tenderer have any material concern regarding an tender process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.
- It is incumbent on the Tenderer to familiarise himself/herself with the Terms of Reference for the Transnet Procurement Ombudsman, details of which are available for review at Transnet's website [www.transnet.net](http://www.transnet.net).



- 
- An official complaint form may be downloaded from this website and submitted, together with any supporting documentation, within the prescribed period, to [procurement.ombud@transnet.net](mailto:procurement.ombud@transnet.net)
  - For transactions below the R5,000,000.00 (five million S.A. Rand) threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
  - All Tenderers should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a tenderer on its List of Excluded Bidders.

## T2.2-18: REQUEST FOR PROPOSAL – BREACH OF LAW

NAME OF COMPANY: \_\_\_\_\_

I / We \_\_\_\_\_ do hereby certify that ***I/we have/have not been*** found guilty during the preceding 5 (five) years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences.

*Where found guilty of such a serious breach, please disclose:*

NATURE OF BREACH:

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DATE OF BREACH:

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Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Tenderer from the tendering process, should that person or company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

Signed on this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

---

SIGNATURE OF TENDER

---

## T2.2-19 Certificate of Acquaintance with Tender Documents

NAME OF TENDERING ENTITY:

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1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any tender/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
  - a) has been requested to submit a Tender in response to this Tender invitation;
  - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
  - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - a) prices;

- 
- b) geographical area where Services will be rendered [market allocation]
  - c) methods, factors or formulas used to calculate prices;
  - d) the intention or decision to submit or not to submit, a Tender;
  - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
  - f) Tendering with the intention not winning the tender.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this tender relates.
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

---

SIGNATURE OF TENDERER

## **T2.2-20 Service Provider Integrity Pact**

**Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with, and agree with the content.**

**The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.**

### **INTEGRITY PACT**

Between

#### **TRANSNET SOC LTD**

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

## **PREAMBLE**

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractor's will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

## **1 OBJECTIVES**

- 1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
  - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
  - b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

## **2 COMMITMENTS OF TRANSNET**

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage

from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.

- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.
- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

### **3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER**

- 3.1 Transnet has a '**Zero Gifts**' Policy. No employee is allowed to accept gifts, favours or benefits.
  - a) Transnet officials and employees **shall not** solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
  - b) Transnet officials and employees **shall not** solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
  - c) Under **no circumstances** should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.
  - d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special

privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.

- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:
- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
  - b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.
- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.
- 3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.
- 3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:
- a) Human Rights
- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
  - Principle 2: make sure that they are not complicit in human rights abuses.
- b) Labour
- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
  - Principle 4: the elimination of all forms of forced and compulsory labour;
  - Principle 5: the effective abolition of child labour; and
  - Principle 6: the elimination of discrimination in respect of employment and occupation.
- c) Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
  - Principle 9: encourage the development and diffusion of environmentally friendly technologies.
- d) Anti-Corruption
  - Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

#### **4 INDEPENDENT TENDERING**

- 4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
- a) has been requested to submit a Tender in response to this Tender invitation;
  - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
  - c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.
- 4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.
- 4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
- a) prices;
  - b) geographical area where Goods or Services will be rendered [market allocation];
  - c) methods, factors or formulas used to calculate prices;
  - d) the intention or decision to submit or not to submit, a Tender;
  - e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
  - f) tendering with the intention of not winning the Tender.

- 4.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.
- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

## **5 DISQUALIFICATION FROM TENDERING PROCESS**

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.
- 5.2 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also exclude the Tenderer/Service Provider/Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst

others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.

- 5.3 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

## **6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)**

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.
- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "*prima facie*" (i.e. on the face of it) case has been established.
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future

business, Transnet may decide to terminate some or all existing contracts with the company/person as well.

6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.

6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:

a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;

b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;

c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;

d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;

e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;

f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:

(i) he made the statement in good faith honestly believing it to be correct; and

(ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;

g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;

h) has litigated against Transnet in bad faith.

6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National

Treasury's database of Restricted Service Providers or Register of Tender Defaulters.

- 6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

## **7 PREVIOUS TRANSGRESSIONS**

7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998, which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.

7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

## **8 SANCTIONS FOR VIOLATIONS**

- 8.1 Transnet shall also take all or any one of the following actions, wherever required to:
- a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/Service Provider/Contractor may continue;
  - b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
  - c) Recover all sums already paid by Transnet;
  - d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;
  - e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and

- f) Exclude the Tenderer/ Service Provider/Contractor from entering into any Tender with Transnet in future.

## **9 CONFLICTS OF INTEREST**

9.1 A conflict of interest includes, inter alia, a situation in which:

- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and
- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.

9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

## **10 DISPUTE RESOLUTION**

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on

which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

## 11 GENERAL

11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.

11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.

11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.

11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.

11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

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Transnet Port Terminals

Tender Number: iCLM HQ 788/TPT

Description of the Works: Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30)

Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

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I ..... duly authorised by the tendering entity, hereby certify that the tendering entity are **fully acquainted** with the contents of the Integrity Pact and further **agree to abide by it** in full.

Signature .....

Date .....

## **T2.2-21 : Supplier Code of Conduct**

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (BBBEE)
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

### ***Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices***

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

#### ***1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.***

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:
  - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;

- Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
  - Gain an improper advantage.
  - There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our "Tip-offs Anonymous" Hot line to report these acts. (0800 003 056).
- 2. *Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.***
- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
  - Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).
- 3. *Transnet's relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.***
- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
    - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
    - Collusion;
    - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
    - Corrupt activities listed above; and
    - Harassment, intimidation or other aggressive actions towards Transnet employees.
  - Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
  - Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

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***Conflicts of Interest***

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, \_\_\_\_\_ of \_\_\_\_\_  
*(insert name of Director or as per Authority Resolution from Board of Directors)* *(insert name of Company)*

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day \_\_\_\_\_ at \_\_\_\_\_

\_\_\_\_\_  
Signature

## T2.2-22: JOB-CREATION SCHEDULE

The Government has identified State Owned Enterprises sourcing activities as a key enabler to achieve the National Development Plan (NDP) objective of reducing unemployment from the current baseline of 28% to 6%.

In order to give effect to these job creation objectives, Tenderers are required to provide the following undertaking of new jobs that will be created (either by them or by their subcontractors) should they be awarded this tender.

**Tenderers to note, that if successful, any deviations from the Job creation Schedule in the contract phase will be subject to acceptance by the *Project Manager* in terms of the Conditions of Contract. Please also note the applicable Z clauses in Contract Data by *Employer*.**

(a) Please indicate total number of new jobs that will be created over the term of the contract:

Total number and value of new jobs created	Total number of new jobs	Total rand value of new jobs created

(b) Of the total number of new jobs created, please indicate the number and value of new jobs to be created for the following designated groups:

	Total number of new jobs	Total rand value of new jobs
Black men		
Black women		
Black Youth		
Black people living in rural or underdeveloped areas or townships		
Black People with Disabilities		

(c) Of the total number of new jobs created, please indicate the number of skilled, semi-skilled and unskilled new jobs that will be created over the term of the contract:

	Total number of Skilled jobs	Total number of Semi-skilled jobs	Total number of Unskilled jobs
Black men			
Black women			
Black Youth			
Black people living in rural or underdeveloped areas or townships			
Black People with Disabilities			
Other			

(d) Please indicate the number of new jobs to be created, broken down per quarter over the term of the contract.

<b>Period</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
Total number of new jobs				
Number of new jobs for Black men				
Number of new jobs for black women				
Number of new jobs for black youth				
Number of new jobs for black people living in rural or underdeveloped areas or townships				
Number of new jobs for black People with Disabilities				
Number of new jobs for other categories				
Number of new skilled jobs				
Number of new semi-skilled jobs				
Number of new unskilled jobs				

## T2.2-23: Insurance provided by the *Contractor*

Clause 84.1 in NEC3 Engineering & Construction Contract (June 2005)(amended June 2006 and April 2013) requires that the *Contractor* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

Please provide the following details for insurance which the *Contractor* is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

<b>Insurance against (See clause 84.2 of the ECC)</b>	<b>Name of Insurance Company</b>	<b>Cover</b>	<b>Premium</b>
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract			
Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5 000 000.			
Insurance in respect of loss of or damage to own property and equipment.			
(Other)			

## T2.2-24: Form of Intent to Provide a Defects Correction

### Guarantee

It is hereby agreed by the Tenderer that a Defects Correction Guarantee drafted **exactly** as provided in the tender documents will be provided by the Guarantor named below, which is a **bank or insurer registered in South Africa**:

Name of Guarantor  
(Bank/Insurer)

Address

The Defects Correction Guarantee shall be provided within **2 (Two)** weeks after the Contract Date defined in the contract unless otherwise agreed to by the parties.

Signed

Name

Capacity

On behalf of (name of  
tenderer)

Date

### Confirmed by Guarantor's Authorised Representative

Signature(s)

Name (print)

Capacity

On behalf of Guarantor  
(Bank/insurer)

Date

Transnet Port Terminals

Tender Number: iCLM HQ 788/TPT

Description of the Works: Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

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## **T2.2-25: Forecast Rate of Invoicing**

Tenderer to submit the forecast rate of invoicing (cash-flow) based on the Tender Price and Tender Programme.

**Index of documentation attached to this schedule:**

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## **T2.2-26: Three (3) years audited financial statements**

Attached to this schedule is the last three (3) years audited financial statements of the single tenderer/members of the Joint Venture.

NAME OF COMPANY/IES and INDEX OF ATTACHMENTS:

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## **T2.2-27 Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")**

### **1. PREAMBLE AND INTRODUCTION**

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

### **2. PROTECTION OF PERSONAL INFORMATION**

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":  
consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:  
Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement , the Operator is (.....) hereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.
- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent

from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.

- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party , cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's s possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations .
- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

**The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:**



<b>YES</b>	
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<b>NO</b>	
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2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/infoereg/>, click on contact us, click on complaints.IR@justice.gov.za

**3. SOLE AGREEMENT**

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 2021

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

..... **(Pty) Ltd**

(Operator)

Authorised signatory for and on behalf of ..... (Pty) Ltd who warrants that he/she is duly authorised to sign this Agreement.

**AS WITNESSES:**

1. Name: \_\_\_\_\_ Signature: \_\_\_\_\_

2. Name: \_\_\_\_\_ Signature: \_\_\_\_\_

## T2.2-28 VENDOR REGISTRATION FORM

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Transnet Vendor Management has received a request to load / change your company details onto the Transnet vendor master database. Please return the completed Supplier Declaration Form (SDF) together with the required supporting documents as per Appendix A to the Transnet Official who is intending to procure your company's services / products, to enable us to process this request. Please only submit the documentation relevant to your request.

**Please Note:** all organisations, institutions and individuals who wish to provide goods and/or services to organs of the State must be registered on the National Treasury's Central Supplier Database (CSD). This needs to be done via their portal at <https://secure.csd.gov.za/> **before applying to Transnet.**

### General Terms and Conditions:

**Please Note:** Failure to submit the relevant documentation will delay the vendor creation / change process.

Where applicable, the respective Transnet Operating Division processing your application may request further or additional information from your company.

The Service Provider warrants that the details of its bank account ("the nominated account") provided herein, are correct and acknowledges that payments due to the Supplier will be made into the nominated account. If details of the nominated account should change, the Service Provider must notify Transnet in writing of such change, failing which any payments made by Transnet into the nominated account will constitute a full discharge of the indebtedness of Transnet to the Supplier in respect of the payment so made. Transnet will incur no liability for any payments made to the incorrect account or any costs associated therewith. In such an event, the Service Provider indemnifies and holds Transnet harmless in respect of any payments made to an incorrect bank account and will, on demand, pay Transnet any costs associated herewith.

Transnet expects its suppliers to timeously renew their Tax Clearance and B-BBEE certificates (Large Enterprises and QSEs less than 51% black owned) as well as sworn affidavits in the case of EMEs and QSEs with more than 51% black ownership as per Appendices C and D.

### In addition, please note of the following very important information:

1. **If your annual turnover is R10 million or less**, then in terms of the DTI Generic Codes of Good Practice, you are classified as an Exempted Micro Enterprise (EME). If your company is classified as an EME, please include in your submission a sworn affidavit confirming your company's most recent annual turnover is less than R10 million and percentage of black ownership and black female ownership in the company (Appendix C) OR B-BBEE certificate issued by a verification agency accredited by SANAS in terms of the EME scorecard should you feel you will be able to attain a better B-BBEE score. It is only in this context that an EME may submit a B-BBEE verification certificate.

2. **If your annual turnover is between R10 million and R50 million**, then in terms of the DTI codes, you are classified as a Qualifying Small Enterprise (QSE). A QSE which is at least 51% black owned, is required to submit a sworn affidavit confirming their annual total revenue of between R10 million and R50 million and level of black ownership (Appendix D). QSE that does not qualify for 51% of black ownership, are required to submit a B-BBEE verification certificate issued by a verification agency accredited by SANAS their QSEs are required to submit a B-BBEE verification certificate issued by a verification agency accredited by SANAS.

**TRANSNET PORT TERMINALS****TENDER NUMBER:** TPT/2022/05/0220/4521/RFP**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.

**Please Note:** B-BBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. SANAS Member).

3. **If your annual turnover exceeds R50 million**, then in terms of the DTI codes, you are classified as a Large Enterprise. Large Enterprises are required to submit a B-BBEE level verification certificate issued by a verification agency accredited by SANAS.

**Please Note:** B-BBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. SANAS Member).

4. **The supplier to furnish proof to the procurement department as required in the Fourth Schedule of the Income Tax Act. 58 of 1962** whether a supplier of service is to be classified as an "employee", "personal service provider" or "labour broker". Failure to do so will result in the supplier being subject to employee's tax.

5. **No payments can be made to a vendor until the** vendor has been registered / updated, and no vendor can be registered / updated until the vendor application form, together with its supporting documentation, has been received and processed. No payments can be made to a vendor until the vendor has met / comply with the procurement requirements.

6. It is in line with PPPFA Regulations, only valid B-BBEE status level certificate issued by an unauthorised body or person OR a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice, OR any other requirement prescribed in terms of the Broad- Based Black Economic Empowerment Act.

7. As per the communique dated 04 March 2016 addressed to the **Members of the IRBA**, as of **30 September 2016**, the IRBA will no longer be the 'Approved Regulatory Body' as per Code Series 000, Statement 005 of the Codes of Good Practice. Any entity that seeks to apply for B-BBEE Accreditation to issue B-BBEE Verification Certificates post 30 September 2016 or wishes to participate in the B-BBEE Verification Industry must thus follow the Code Series 000, Statement 005, Section 5 of the Codes of Good Practice application process to the Accreditation Body (SANAS).'

**TRANSNET PORT TERMINALS****TENDER NUMBER:** TPT/2022/05/0220/4521/RFP**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.**APPENDIX A****Supplier Declaration Form**

**Important Notice:** all organisations, institutions and individuals who wish to provide goods and/or services to organs of the State must be registered on the National Treasury Central Supplier Database (CSD). This needs to be done via their portal at <https://secure.csd.gov.za/> before applying to Transnet.

CSD Number (MAAA xxxxxxxx):

Company Trading Name						
Company Registered Name						
Company Registration No Or ID No If a Sole Proprietor						
Company Income Tax Number						
Form of Entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor
	Non-profit (NPO's or NPC)	Personal Liability Co	State Owned Co	National Govt	Provincial Govt	Local Govt
	Educational Institution	Specialised Profession	Financial Institution	Joint Venture	Foreign International	Foreign Branch Office

Did your company previously operate under another name?	Yes		No	
---	-----	--	----	--

If **YES** state the previous details below:

Trading Name						
Registered Name						
Company Registration No Or ID No If a Sole Proprietor						
Form of Entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor
	Non-profit (NPO's or NPC)	Personal Liability Co	State Owned Co	National Govt	Provincial Govt	Local Govt
	Educational Institution	Specialised Profession	Financial Institution	Joint Venture	Foreign International	Foreign Branch Office

Your Current Company's VAT Registration Status

VAT Registration Number						
If <b>Exempted from VAT registration</b> , state reason and submit proof from SARS in confirming the exemption status						
If your business entity is not VAT Registered, please submit a current original sworn affidavit (see example in Appendix I). Your Non VAT Registration must be confirmed annually.						

Company Banking Details			Bank Name	
Universal Branch Code			Bank Account Number	

Company Physical Address		Code	
Company Postal Address		Code	
Company Telephone number			
Company Fax Number			
Company E-Mail Address			
Company Website Address			

Company Contact Person Name			
Designation			
Telephone			
Email			

**TRANSNET PORT TERMINALS****TENDER NUMBER:** TPT/2022/05/0220/4521/RFP**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.

Is your company a Labour Broker?		Yes		No	
Main Product / Service Supplied e.g. Stationery / Consulting / Labour etc.					
How many personnel does the business employ?		Full Time		Part Time	
Please Note: Should your business employ more than 2 full time employees who are not connected persons as defined in the Income Tax Act, please submit a sworn affidavit, as per Appendix II.					
Most recent Financial Year's Annual Turnover		<R10Million		>R10Million <R50Million	
				>R50Million	
Does your company have a valid B-BBEE certificate?				Yes	
				No	
Please indicate your Broad Based BEE status (Level 1 to 9)		1	2	3	4
		5	6	7	8
		9			
Majority Race of Ownership					
% Black Ownership		% Black Women Ownership		% Black Disabled person(s) Ownership	
				% Black Youth Ownership	
% White Ownership		% Indian Ownership		% Coloured Ownership	
<b>Please Note:</b> Please provide proof of B-BBEE status as per Appendix C. If you qualify as an EME or QSE then provide an affidavit following the templates provided in <b>Appendix C and D</b> respectively. If you have indicated Black Disabled person(s) ownership, then provide a <b>certified</b> letter signed by a physician, on the physician's letterhead, confirming the disability. A certified South African Identification Document will be required for all Black Youth Ownership.					

Supplier Development Information Required	
EMPOWERING SUPPLIER	YES <input type="radio"/> NO <input type="radio"/>
FIRST TIME SUPPLIER	YES <input type="radio"/> NO <input type="radio"/>
SUPPLIER DEVELOPMENT PLAN	YES <input type="radio"/> NO <input type="radio"/>
DEVELOPMENT PLAN DOCUMENT	* If Yes- Attach supporting documents
ENTERPRISE DEVELOPMENT BENEFICIARY	YES <input type="radio"/> NO <input type="radio"/>
SUPPLIER DEVELOPMENT BENEFICIARY	YES <input type="radio"/> NO <input type="radio"/>
GRADUATION FROM ED TO SD BENEFICIARY	YES <input type="radio"/> NO <input type="radio"/>
ENTERPRISE DEVELOPMENT RECIPIENT	YES <input type="radio"/> NO <input type="radio"/>

<b>By signing below, I hereby verify that I am duly authorised to sign for and on behalf of firm / organisation and that all information contained herein and attached herewith are true and correct</b>			
Name and Surname		Designation	
Signature		Date	



**APPENDIX B**

Affidavit or Solemn Declaration as to VAT registration status

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**Affidavit or Solemn Declaration**

I, \_\_\_\_\_ solemnly swear/declare that \_\_\_\_\_ is not a registered VAT vendor and is not required to register as a VAT vendor because the combined value of taxable supplies made by the provider in any 12 month period has not exceeded or is not expected to exceed R1million threshold, as required in terms of the Value Added Tax Act.

Signature: \_\_\_\_\_

Designation: \_\_\_\_\_

Date: \_\_\_\_\_

**Commissioner of Oaths**

Thus signed and sworn to before me at \_\_\_\_\_ on this the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_,

the Deponent having knowledge that he/she knows and understands the contents of this Affidavit, and that he/she has no objection to taking the prescribed oath, which he/she regards binding on his/her conscience and that the allegations herein contained are all true and correct.

\_\_\_\_\_  
Commissioner of Oaths

**TRANSNET PORT TERMINALS****TENDER NUMBER:** TPT/2022/05/0220/4521/RFP**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.**APPENDIX C****SWORN AFFIDAVIT – B-BBEE EXEMPTED MICRO ENTERPRISE**

I, the undersigned, \_\_\_\_\_

<b>Full name &amp; Surname</b>	
<b>Identity number</b>	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner of the following enterprise and am duly authorised to act on its behalf:

<b>Enterprise Name:</b>	
<b>Trading Name (If Applicable):</b>	
<b>Registration Number:</b>	
<b>Enterprise Physical Address:</b>	
<b>Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):</b>	
<b>Nature of Business:</b>	
<b>Definition of "Black People"</b>	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians – (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisations - i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"
<b>Definition of "Black Designated Groups"</b>	"Black Designated Groups means: a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; b) Black people who are youth as defined in the National Youth Commission Act of 1996;



**TRANSNET PORT TERMINALS**

**TENDER NUMBER:** TPT/2022/05/0220/4521/RFP

**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.

	<ul style="list-style-type: none"> <li>c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act;</li> <li>d) Black people living in rural and under developed areas;</li> <li>e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;”</li> </ul>
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3. I hereby declare under Oath that:

- The Enterprise is \_\_\_\_\_% Black Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is \_\_\_\_\_% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is \_\_\_\_\_% Black Designated Group Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
  - Black Youth % = \_\_\_\_\_%
  - Black Disabled % = \_\_\_\_\_%
  - Black Unemployed % = \_\_\_\_\_%
  - Black People living in Rural areas % = \_\_\_\_\_%
  - Black Military Veterans % = \_\_\_\_\_%
- Based on the Financial Statements/Management Accounts and other information available on the latest financial year-end of \_\_\_\_\_, the annual Total Revenue was R10,000,000.00 (Ten Million Rands) or less
- Please Confirm on the below table the B-BBEE Level Contributor, **by ticking the applicable box.**

100% Black Owned	<b>Level One</b> (135% B-BBEE procurement recognition level)	
At least 51% Black Owned	<b>Level Two</b> (125% B-BBEE procurement recognition level)	
Less than 51% Black Owned	<b>Level Four</b> (100% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the Owners of the Enterprise which I represent in this matter.

5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

**Deponent Signature** .....

**Date** .....

**Commissioner of Oaths**

Signature & stamp

**TRANSNET PORT TERMINALS****TENDER NUMBER:** TPT/2022/05/0220/4521/RFP**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.**APPENDIX D****SWORN AFFIDAVIT – QUALIFYING SMALL ENTERPRISE – GENERAL**

I, the undersigned, \_\_\_\_\_

<b>Full name &amp; Surname</b>	
<b>Identity number</b>	

Hereby declare under oath as follows:

- The contents of this statement are to the best of my knowledge a true reflection of the facts.
- I am a Member / Director / Owner of the following enterprise and am duly authorised to act on its behalf:

<b>Enterprise Name:</b>	
<b>Trading Name (If Applicable):</b>	
<b>Registration Number:</b>	
<b>Enterprise Physical Address:</b>	
<b>Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):</b>	
<b>Nature of Business:</b>	
<b>Definition of "Black People"</b>	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians – <ol style="list-style-type: none"> <li>who are citizens of the Republic of South Africa by birth or descent; or</li> <li>who became citizens of the Republic of South Africa by naturalisation. <ol style="list-style-type: none"> <li>before 27 April 1994; or</li> <li>on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"</li> </ol> </li> </ol>
<b>Definition of "Black Designated Groups"</b>	"Black Designated Groups means: <ol style="list-style-type: none"> <li>unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution;</li> <li>Black people who are youth as defined in the National Youth Commission Act of 1996;</li> <li>Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act;</li> <li>Black people living in rural and under developed areas;</li> <li>(e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"</li> <li></li> </ol>

- I hereby declare under Oath that:



**TRANSNET PORT TERMINALS**

**TENDER NUMBER:** TPT/2022/05/0220/4521/RFP

**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.

- The Enterprise is \_\_\_\_\_% Black Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is \_\_\_\_\_% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is \_\_\_\_\_% Black Designated Group Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
  - Black Youth % = \_\_\_\_\_%
  - Black Disabled % = \_\_\_\_\_%
  - Black Unemployed % = \_\_\_\_\_%
  - Black People living in Rural areas % = \_\_\_\_\_%
  - Black Military Veterans % = \_\_\_\_\_%
- Based on the Financial Statements/Management Accounts and other information available on the latest financial year-end of \_\_\_\_\_, the annual Total Revenue was between R10,000,000.00 (Ten Million Rands) and R50,000,000.00 (Fifty Million Rands),
- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% Black Owned	<b>Level One</b> (135% B-BBEE procurement recognition level)	
At Least 51% black owned	<b>Level Two</b> (125% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.
5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

**Deponent Signature** .....

**Date** .....

**Commissioner of Oaths**

Signature & stamp

**TRANSNET PORT TERMINALS****TENDER NUMBER:** TPT/2022/05/0220/4521/RFP**DESCRIPTION OF THE WORKS:** DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE AUTOMATIC VEHICLE WASH BAY SYSTEMS FOR TRANSNET SOC LTD (REG NO. 1990/000900/30) OPERATING AS TRANSNET PORT TERMINALS (HEREINAFTER REFERRED AS "TPT") FOR THE PORT OF SALDHANA AS ONCE OFF.VENDOR REGISTRATION DOCUMENTS CHECKLIST

**Please note that you will have to provide the first two documents on the list and the rest will be provided by the supplier:**

	Yes	No
1. Complete the "Supplier Declaration Form" (SDF) (commissioned). See attachment.		
2. Complete the "Supplier Code of Conduct" (SCC). See attachment.		
3. Copy of cancelled cheque OR letter from the bank verifying banking details (with <b>bank stamp not older than 3 Months &amp; sign by Bank Teller</b> ).		
4. Certified ( <b>Not Older than 3 Months</b> ) copy of Identity document of Shareholders/Directors/Members (where applicable).		
5. Certified copy of certificate of incorporation, CM29 / CM9 (name change).		
6. Certified copy of share Certificates of Shareholders, CK1 / CK2 (if CC).		
7. A letter with the company's letterhead confirming both <b>Physical</b> and <b>Postal</b> address.		
8. Original or certified copy of SARS Tax Clearance certificate and Vat registration certificate.		
9. BBBEE certificate and detailed scorecard from a <b>SANAS</b> Accredited Verification Agency and/or Sworn Certified Affidavit.		
10. Central Supplier Database (CSD) Summary Registration Report.		

**Transnet Port Terminals****Tender Number:** iCLM HQ 788/TPT**Description of the Works:** Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").**C1.1: Form of Offer & Acceptance****Offer**

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

**Title of the Contract**

The tenderer, identified in the Offer signature block, has

<i>either</i>	examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.
<i>or</i>	examined the draft contract as listed in the Acceptance section and agreed to provide this Offer.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	<b>R</b>
Value Added Tax @ 15% is	<b>R</b>
The offered total of the Prices inclusive of VAT is	<b>R</b>
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the tenderer:***(Insert name and address of organisation)*

Name &amp; signature of witness

Date

Tenderer's CIDB registration number:

**Transnet Port Terminals****Tender Number:** iCLM HQ 788/TPT**Description of the Works:** Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

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**Acceptance**

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Contractor* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).

**Transnet Port Terminals****Tender Number:** iCLM HQ 788/TPT**Description of the Works:** Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

**for the  
Employer**

Transnet SOC Ltd

*(Insert name and address of organisation)*Name &  
signature of  
witness

Date

**Transnet Port Terminals****Tender Number:** iCLM HQ 788/TPT**Description of the Works:** Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

TRANSNET

**Schedule of Deviations**

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

**For the tenderer:****For the Employer**

Signature

Name

Capacity

On behalf  
of*(Insert name and address of organisation)*

Transnet SOC Ltd

Name &  
signature  
of witness

Date

## C1.2 Contract Data

### Part one - Data provided by the *Employer*

Clause	Statement	Data
1	<b>General</b>  The <i>conditions of contract</i> are the core clauses and the clauses for main Option	<b>A: Priced contract with activity schedule</b>
	dispute resolution Option  and secondary Options	<b>W1: Dispute resolution procedure</b>
		<b>X2 Changes in the law</b>
		<b>X7: Delay damages</b>
		<b>X13: Defects Correction Bond</b>
		<b>X18: Limitation of liability</b>
		<b>Z: <i>Additional conditions of contract</i></b>
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)	
10.1	The <i>Employer</i> is:	<b>Transnet SOC Ltd (Registration No. 1990/000900/30)</b>

	Address	Registered address: <b>Transnet Corporate Centre</b> <b>138 Eloff Street</b> <b>Braamfontein</b> <b>Johannesburg</b> <b>2000</b>
	Having elected its Contractual Address for the purposes of this contract as:	<b>Transnet Port Terminals</b> <i>Address of the applicable office</i> <b>Transnet Port Terminals (HQ)</b> <b>202 Anton Lembede Street</b> <b>Durban</b> <b>4000</b>
10.1	The <i>Project Manager</i> is: (Name)	<b>TBC (To Be Communicated)</b>
	Address	<b>TBC</b>
	Tel	<b>TBC</b>
	e-mail	<b>TBC</b>
10.1	The <i>Supervisor</i> is: (Name)	<b>TBC</b>
	Address	<b>TBC</b>
	Tel No.	<b>TBC</b>
	e-mail	<b>TBC</b>
11.2(13)	The <i>works</i> are	<b>Complete Engineering, Installation and Commissioning of Tippler, Tain Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").</b>
11.2(14)	The following matters will be included in the Risk Register	<b>No further information</b>
11.2(15)	The <i>boundaries of the site</i> are	<b>As stated in Part C3."Description of the Site and it surroundings"</b>
11.2(16)	The Site Information is in	<b>Part C3</b>
11.2(19)	The Works Information is in	<b>Part C3</b>

12.2	The <i>law of the contract</i> is the law of	<b>the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.</b>
13.1	The <i>language of this contract</i> is	<b>English</b>
13.3	The <i>period for reply</i> is	<b>2 weeks</b>
<b>2</b>	<b>The <i>Contractor's</i> main responsibilities</b>	<b>No additional data is required for this section of the <i>conditions of contract</i>.</b>
<b>3</b>	<b>Time</b>	
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	<b>TBC</b>
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	<b>Condition to be met                      key date</b>
		<b>As per SoW deliverables      TBC</b>
30.1	The <i>access dates</i> are	<b>Part of the Site                      Date</b>
		<b>As per C4 Site      TBC</b> <b>information</b>
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	<b>2 weeks of the Contract Date.</b>
31.2	The <i>starting date</i> is	<b>TBC</b>
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	<b>2 weeks.</b>
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	
<b>4</b>	<b>Testing and Defects</b>	
42.2	The <i>defects date</i> is	<b>52 (fifty-two) weeks after Completion of the whole of the <i>works</i>.</b>
43.2	The <i>defect correction period</i> is	<b>2 weeks</b>
<b>5</b>	<b>Payment</b>	
50.1	The <i>assessment interval</i> is	<b>25<sup>th</sup> (twenty fifth) day of each successive month.</b>

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51.1	The <i>currency of this contract</i> is the	<b>South African Rand.</b>
51.2	The period within which payments are made is	<b>Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.</b>
51.4	The <i>interest rate</i> is	<b>the prime lending rate of Standard Bank of South Africa.</b>

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**6 Compensation events**

60.1(13) The *weather measurements* to be recorded for each calendar month are,

**the cumulative rainfall (mm)**

**the number of days with rainfall more than 10 mm**

**the number of days with minimum air temperature less than 0 degrees Celsius**

**the number of days with snow lying at 08:00 hours South African Time**

**and these measurements: 10mm**

The place where weather is to be recorded (on the Site ) is: **Saldanha Iron Ore Terminal**

The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at: **Saldanha Iron Ore Terminal**

and which are available from: **South African Weather Service 012 367 6023 or [info3@weathersa.co.za](mailto:info3@weathersa.co.za).**

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<b>7</b>	<b>Title</b>	<b>No additional data is required for this section of the <i>conditions of contract</i>.</b>
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**8 Risks and insurance**

80.1 These are additional *Employer's* risks **No further information**

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84.1	The <i>Employer</i> provides these insurances from the Insurance Table	
1	Insurance against:	<b>Loss of or damage to the <i>works</i>, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.</b>
	Cover / indemnity:	<b>to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are:	<b>as stated in the insurance policy for Contract Works / Public Liability</b>
<hr/>		
2	Insurance against:	<b>Loss of or damage to property (except the <i>works</i>, Plant and Materials &amp; Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability</b>
	Cover / indemnity	<b>Is to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are	<b>as stated in the insurance policy for Contract Works / Public Liability</b>
<hr/>		
3	Insurance against:	<b>Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability</b>
	Cover / indemnity	<b>Is to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are:	<b>As stated in the insurance policy for Contract Works / Public Liability</b>
<hr/>		
4	Insurance against:	<b>Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon</b>
	Cover / indemnity	<b>Cover / indemnity is to the extent provided by the SASRIA coupon</b>

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The deductibles are

**The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.**

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Note:

**The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."**

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84.1

The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is

**The *Contractor* must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.**

The *Contractor* provides these additional Insurances

- 1 Where the contract requires that the design of any part of the *works* shall be provided by the *Contractor* the *Contractor* shall satisfy the *Employer* that professional indemnity insurance cover in connection therewith has been affected**
- 2 Where the contract involves manufacture, and/or fabrication of Plant & Materials, components or other goods to be incorporated into the *works* at premises other than the site, the *Contractor* shall satisfy the *Employer* that such plant & materials, components or other goods for incorporation in the *works* are adequately insured during manufacture and/or fabrication and transportation to the site.**
- 3 Should the *Employer* have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any sub-contractor**

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**4 Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000.**

**5 The insurance coverage referred to in 1, 2, 3 and 4 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the *Employer*. The *Contractor* shall arrange with the insurer to submit to the *Project Manager* the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the *Contractor*.**

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84.2 The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is

**Whatever the *Contractor* requires in addition to the amount of insurance taken out by the *Employer* for the same risk.**

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84.2 The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:

**Principal Controlled Insurance policy for Contract OR Project Specific Insurance for the contract**

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**9 Termination**

**There is no additional Contract Data required for this section of the *conditions of contract*.**

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<b>10</b>	<b>Data for main Option clause</b>	
<b>A</b>	<b>Priced contract with Activity Schedule</b>	<b>No additional data is required for this Option.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The <i>Adjudicator</i> is	<b>Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the <i>Adjudicator</i>, the Chairman of the Association of Arbitrators will appoint an <i>Adjudicator</i>.</b>
W1.2(3)	The <i>Adjudicator nominating body</i> is:  If no <i>Adjudicator nominating body</i> is entered, it is:	<b>The Chairman of the Association of Arbitrators (Southern Africa)</b>  <b>the Association of Arbitrators (Southern Africa)</b>
W1.4(2)	The <i>tribunal</i> is:	<b>Arbitration</b>
W1.4(5)	The <i>arbitration procedure</i> is	<b>The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)</b>
	The place where arbitration is to be held is	<b>Durban, South Africa</b>
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	<b>The Chairman of the Association of Arbitrators (Southern Africa)</b>
<b>12</b>	<b>Data for secondary Option clauses</b>	
<b>X2</b>	<b>Changes in the law</b>	<b>No additional data is required for this Option</b>
<b>X7</b>	<b>Delay damages</b>	
X7.1	Delay damages for Completion of the whole of the <i>works</i> are	<b>To be equated to the actual monetary loss of Transnet per day</b>
<b>X13</b>	<b>Defects Correction bond</b>	

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X13.1	The amount of the defects correction bond is	<b>10% of the total of the Prices</b>
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<b>X16</b>	<b>Retention</b>	
X16.1	The retention free amount is	<b>Nil</b>
	The retention percentage is	<b>10% on all payments certified provided the defects correction bond isn't received by the time payment is due.</b>

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<b>X18</b>	<b>Limitation of liability</b>	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	<b>Nil (this is the default position depending on a risk assessment, therefore this can go up to Total of the Prices)</b>
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	<b>The deductible of the relevant insurance policy</b>
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	<b>The cost of correcting the Defect</b>
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	<b>The Total of the Prices</b>
X18.5	The <i>end of liability date</i> is	<b>5 years after Completion of the whole of the works</b>

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**Z**            ***Additional conditions of contract are:***

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**Z1**            **Job Creation**

**Z1.1**

**It will be a material term of this contract that the *Contractor* must contribute to the *Employer's* job-creation objectives as set out in Returnable Schedule T2.2-22**

**Z1.2**

**The *Contractor's* undertaking as to the number of new jobs created due to the award of this contract as set out in Returnable Schedule T.2.2-22 will constitute a binding agreement throughout the duration of the contract until Completion, if not, it will be deemed that the *Contractor* has failed in full to meet this specific material term of the contract, which may constitute a reason for termination..**

**Z1.3**

**The *Contractor* shall provide to the *Employer*, on a monthly basis or upon receiving an instruction to do so by the *Project Manager*, any documentation and/or evidence required by the *Employer*, which in the *Employer's* opinion would be necessary to verify whether the *Contractor* has maintained the job-creation undertaking as stipulated in Returnable Schedule T.2.2-22 The *Contractor* shall provide the said documentation and/or evidence within the period stated or as instructed. The provision of the documentation and/or evidence shall not constitute a compensation event.**

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**Z2 Additional clause relating to  
Defects Correction Bonds  
and/or Guarantees**

**Z2.1**

**The Defects Correction Guarantee under X13 above shall be an irrevocable, on-demand defects correction guarantee, to be issued exactly in the form of the Pro Forma documents provided for this purpose under C1.3 (Forms of Securities), in favour of the *Employer* by a financial institution reasonably acceptable to the *Employer*.**

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## **Z3 Additional clauses relating to Joint Venture**

### **Z3.1**

#### **Insert the additional core clause 27.5**

**27.5. In the instance that the *Contractor* is a joint venture, the *Contractor* shall provide the *Employer* with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.**

**The Joint Venture agreement shall contain but not be limited to the following:**

- **A brief description of the Contract and the Deliverables;**
- **The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture;**
- **The constituent's interests;**
- **A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents;**
- **Details of an internal dispute resolution procedure;**
- **Written confirmation by all of the constituents:**
  - i. **of their joint and several liabilities to the *Employer* to Provide the Works;**
  - ii. **identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the *Contractor's* representative;**

iii. **Identification of the roles and responsibilities of the constituents to provide the Works.**

• **Financial requirements for the Joint Venture:**

iv. **the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time;**

v. **the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.**

## Z3.2

**Insert additional core clause 27.6**

**27.6. The *Contractor* shall not alter its composition or legal status of the Joint Venture without the prior approval of the *Employer*.**

## Z4 **Additional obligations in respect of Termination**

### Z4.1

**The following will be included under core clause 91.1:**

**In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and**

**Under the second main bullet, insert the following additional bullets after the last sub-bullet:**

- **commenced business rescue proceedings (R22)**
- **repudiated this Contract (R23)**

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<b>Z4.2</b>	<b>Termination Table</b>	<b>The following will be included under core clause 90.2 Termination Table as follows:</b>
		<b>Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"</b>
<b>Z4.3</b>		<b>Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."</b>
<b>Z5</b>	<b>Right Reserved by the Employer to Conduct Vetting through SSA</b>	
<b>Z5.1</b>		<b>The Employer reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any Contractor who has access to National Key Points for the following without limitations:</b>
		<b>1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state.</b>
		<b>2. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state.</b>
		<b>3. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.</b>

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**Z6 Additional Clause Relating to Collusion in the Construction Industry**

**Z6.1** The contract award is made without prejudice to any rights the *Employer* may have to take appropriate action later with regard to any declared tender rigging including blacklisting.

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**Z7 Protection of Personal Information Act**

**Z7.1** The *Employer* and the *Contractor* are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.

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## **Z8 Anti-corruption**

### **Z8.1**

**The contractor hereby undertakes and warrants that, at the date of the entering into force of the Contract, itself, its directors, officers or employees have not offered, promised, given, authorized, solicited or accepted any undue pecuniary or other advantage or gift of any kind (or implied that they will or might do any such thing at any time in the future) in any way connected with the Contract (hereinafter referred to as any "Corrupt Act") and that it has taken all reasonable measures to prevent its subcontractors, agents or any other third parties, subject to its control or determining influence, from doing so.**

**In the event that the contractor has committed any corrupt act or is found by any competent court or judicial body to have committed any corrupt act in relation to this Contract or in relation to another contract that has a material impact on this Contract, or in the event that:**

**i. Improper payments are being or have been made or offered to Transnet officials or any other person by the contractor or those acting on behalf of the contractor with respect to the Services; or**

**ii. The contractor or those acting on behalf of the contractor has accepted any payment or benefit, regardless of value, as an improper inducement to award, obtain or retain business or otherwise gain or grant an improper business advantage from or to any other person or entity; then:**

**(a) In addition to the remedies available in law to Transnet, Transnet reserves the right to instruct the contractor to**

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**(i) dismiss the employee(s) involved, and/or**

**(ii) to terminate its contracts with the relevant supplier/subcontractor, as the case may be, and should the contractor fail to do so, or if the breach is incapable of being remedied, Transnet may terminate the Contract; and**

**(b) Transnet will be entitled to recover the direct damages suffered by Transnet as a result of the termination of the Contract and no further payments will be made to the contractor, save for those sums which have already been committed. The contractor shall deliver to Transnet all works already completed in terms of the contract which Transnet has paid for.**

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## **Z9 TPT Indemnity**

### **Z9.1**

**The contractor irrevocably and unconditionally undertakes to indemnify and does hereby keep TPT indemnified and hold TPT harmless against, and, in respect of, all and any loss or damage incurred by itself or any other third- Party as a result of, arising out of or connected with any failure, act or omission or breach of this Agreement by the contractor or any of its employees, security officers, servants, agents , assigns, contractors or sub-contractors, or occurring during or as a result of the provision by the Contractor of the Security Service. Such absolute obligation of the Contractor to indemnify TPT on a full indemnity basis against all claims shall including, but not be limited to:**

- a) liability in respect of any loss or damage to property, whether movable or immovable, belonging to third parties; or other**
- b) liability in respect of lost property belonging to third parties;**
- c) liability arising out of any unlawful act committed by the contractor or its employees, security officers, servants, agents, contractors and sub-contractors during the process of rendering a Security Service; or at any other time when a claim has been and could be made against the TPT arising out of the acts of or omissions of one or more of such persons;**
- d) liability in respect of the death, unlawful arrest, injury, illness or disease of any person, or entity should the damage, loss, unlawful arrest, death, injury, illness or disease referred to above be attributable to or arise out of the Security Services that are being or**

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**have been rendered by the contractor, its agents, service providers, sub-contractors in terms of this Agreement.**

**The contractor shall at its own expense and with effect from the date of signature hereof, take reasonable precautions for the protection of life and or property that is in any way connected with in whole or any part of this agreement and shall hold TPT harmless against all claims for any loss, demands, proceedings, damages, costs, charges, expenses whatsoever, arising out of this agreement.**

**The contractor agrees that it shall intervene in any claim arising and to indemnify and hold TPT harmless from any claim, damage, loss, cost, expense, legal expenses, arising from or attributable to the contractor provision of services, its acts, or omissions or those of its agents, employees, sub-contractors, representative/s or other for whom TPT may be / may not be deemed responsible for in terms of the agreement.**

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## C1.2 Contract Data

### Part two - Data provided by the *Contractor*

The tendering *Contractor* is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The <i>direct fee percentage</i> is	%
	The <i>subcontracted fee percentage</i> is	%
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	

		<b>CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .</b>		
11.2(14)	The following matters will be included in the Risk Register			
31.1	The programme identified in the Contract Data is			
<b>A</b>	<b>Priced contract with activity schedule</b>			
11.2(20)	The <i>activity schedule</i> is in			
11.2(30)	The tendered total of the Prices is	<b>(in figures)</b> <b>(in words), excluding VAT</b>		
11.2(31)	The tendered total of the Prices is	(in figures) (in words), excluding VAT		
	<b>Data for Schedules of Cost Components</b>	<i>Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.</i>		
<b>A</b>	<b>Priced contract with activity schedule</b>	<b>Data for the Shorter Schedule of Cost Components</b>		
41 in SSCC	The percentage for people overheads is:	<b>%</b>		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	<b>% (state plus or minus)</b>		
22 in SSCC	The rates of other Equipment are:	<b>Equipment</b>	<b>Size or capacity</b>	<b>Rate</b>



61	in	The hourly rates for Defined Cost of SSSC design outside the Working Areas are	<b>Category of employee</b>	<b>Hourly rate</b>
62	in	The percentage for design overheads is	<b>%</b>	
63	in	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:		



## C1.3 Forms of Securities

### **Pro forma Defects Correction Guarantee**

For use with the NEC3 Engineering & Construction Contract - June 2005 (with amendments June 2006 and April 2013)

The *conditions of contract* stated in the Contract Data Part 1 include the following Secondary Option:

Option X13: Defects Correction bond

The pro forma document for this Guarantee is provided here for convenience but is to be treated as part of the *Works Information*.

The organisation providing the Guarantee does so by copying the pro forma document onto its letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

The Defects Correction Bond needs to be issued by an institution that are reasonably acceptable to the *Employer*.

Transnet may choose to not to accept an Issuer. Should the issuer not being accepted, the Defects Correction bond needs to be replaced by an issuer that are acceptable to Transnet. Issuers need to be verified for acceptance by Transnet before a Defects Correction bond is issued.



## Pro-forma Defects Correction Bond (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Surety)

Transnet SOC Ltd  
C/o Transnet Port Terminals  
Transnet Corporate Centre  
138 Eloff Street  
Braamfontein  
Johannesburg  
2000

Date:

To whom it may concern,

### Defects Correction Bond for Contract No. iCLM HQ 788/TPT

With reference to the above numbered contract made or to be made between

**Transnet SOC Limited, Registration No. 1990/000900/30** (the *Employer*) and

**{Insert registered name and address of the Contractor}** (the *Contractor*), for

**{Insert details of the works from the Contract Data}** (the *works*).

I/We the undersigned

on behalf of the  
Guarantor

of physical address

and duly authorised thereto do hereby bind ourselves as Guarantor and co-principal debtors in solidum for the due and faithful Defects Correction of all the terms and conditions of the Contract by the *Contractor* and for all losses, damages and expenses that may be suffered or incurred by the *Employer* as a result of non-Defects Correction of the Contract by the *Contractor*, subject to the following conditions:

1. The terms *Employer*, *Contractor*, *Project Manager*, *works* and Completion Certificate have the meaning as assigned to them by the *conditions of contract* stated in the Contract Data for the aforesaid Contract.
2. We renounce all benefits from the legal exceptions "Benefit of Excussion and Division", "No value received" and all other exceptions which might or could be pleaded against the validity of this bond, with the meaning and effect of which exceptions we declare ourselves to be fully acquainted.
3. The *Employer* has the absolute right to arrange his affairs with the *Contractor* in any manner which the *Employer* deems fit and without being advised thereof the Guarantor shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the Guarantor. Without derogating from the foregoing compromise, extension of the construction period, indulgence, release or variation of the *Contractor's* obligation shall not affect the validity of this Defects Correction bond.



4. This bond will lapse on the earlier of
- the date that the Guarantor receives a notice from the *Project Manager* stating that the Completion Certificate for the whole of the *works* has been issued, that all amounts due from the *Contractor* as certified in terms of the contract have been received by the *Employer* and that the *Contractor* has fulfilled all his obligations under the Contract, or
  - the date that the Surety issues a replacement Defects Correction Bond for such lesser or higher amount as may be required by the *Project Manager*.
5. Always provided that this bond will not lapse in the event the Guarantor is notified by the *Project Manager*, (before the dates above), of the *Employer's* intention to institute claims and the particulars thereof, in which event this bond shall remain in force until all such claims are paid and settled.
6. The amount of the bond shall be payable to the *Employer* upon the *Employer's* demand and no later than 7 days following the submission to the Guarantor of a certificate signed by the *Project Manager* stating the amount of the *Employer's* losses, damages and expenses incurred as a result of the non-Defects Correction aforesaid. The signed certificate shall be deemed to be conclusive proof of the extent of the *Employer's* loss, damage and expense.
7. Our total liability hereunder shall not exceed the sum of:
- (say) \_\_\_\_\_
- R \_\_\_\_\_
8. This Defects Correction Bond is neither negotiable nor transferable and is governed by the laws of the Republic of South Africa, subject to the jurisdiction of the courts of the Republic of South Africa

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 201\_

Signature(s)	
Name(s) (printed)	
Position in Guarantor company	
Signature of Witness(s)	
Name(s) (printed)	

## PART C2: PRICING DATA

<b>Document reference</b>	<b>Title</b>	<b>No of pages</b>
C2.1	Pricing instructions: Option A	2
C2.2	Activity Schedule	30
C2.2	C2.2 Staff Rates	1

## C2.1 Pricing instructions: Option A

### 1 The conditions of contract

#### 1.1 How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering Construction Contract (ECC), June 2005 (with amendments June 2006 and April 2013) **Option A** states:

- Identified and defined terms**
- 11 (20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.
- 11.2 (22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events
- (27) The Price for Services Provided to Date is the total of the Prices for the activities which have been completed. A completed activity is one which is without Defects which would delay immediately following work.
- (30) The Prices are the lump sums for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

#### 1.2 Measurement and Payment

The activity schedule provides the basis of all valuations of the Price for Services Provided to Date, payments in multiple currencies and general progress monitoring.

- 1.2.1 The amount due at each assessment date is based on **completed activities and/or milestones** as indicated on the activity schedule.
- 1.2.2 The activity schedule work breakdown structure provided by the *Contractor* is based on the activity schedule provided by the *Employer*. The activities listed by the *Employer* are the minimum activities acceptable and identify the specific activities which are required to achieve Completion. The activity schedule work breakdown structure is compiled to the satisfaction of the *Employer* with any additions and/or amendments deemed necessary.
- 1.2.3 The *Contractor's* detailed activity schedule summates back to the activity schedule provided by the *Employer* and is in sufficient detail to monitor completion of activities related to the Accepted Programme in order that payment of completed activities may be assessed.
- 1.2.4 The Prices are obtained from the activity schedule. The Prices includes for all direct and indirect costs, overheads, profits, oncosts, risks, liabilities, obligations, etc. relative to the contract.

### 1.3 C2.2 Activity Schedule

The details given below serve as guidelines only and the *Contractor* may split or combine the activities to suit his particular methods.

**\* This activity schedule is based on the initial scope of works as agreed on. Scope and timelines for deliverables may be modified due to changes in circumstances, with written consent required from both parties.**

Activity No.	Activity	Unit	Price of each activity
<b>A</b>	<b>Preliminaries - Fixed</b>	<b>Sum</b>	
<b>A.1</b>	<b>Establishment of the site</b>		
A1.1	Offices, stores, ablution facilities, other amenities		
A1.2	Connections of temporary power, water, telephone		
A1.3	Security, access, fences		
<b>A.2</b>	<b>Mobile and lifting Equipment - Establishment</b>		
A2.1	Telehandler/Forklift		
A2.3	Heavy Duty Transport		
A2.4	Diesel Generator (LV) duration of project		
A2.5	Diesel Generator (Capacity to turn Tippler Cage and Power-up Positioner and Dust Handling Plant) 2 weeks		
A2.6	Diesel Welding Machine		
A2.7	Transport Staff and Management		
A2.8	Craneage		
A2.9	Other		
A2.10			
<b>A.3</b>	<b>Contractual Items</b>		
A3.1	Insurances, permits, fees		
A3.2	Inspections, tests, notices		
A3.3	Sureties and Contractual Items		
<b>A.4</b>	<b>Final clean &amp; handover</b>		
A4.1	Final clean – labour, bins, cleaner, disposal		
A4.2	Documentation, manuals, tests, guarantees, warranties		
A4.3	Site de-establishment and clear		
	<b>Sub-total Fixed Preliminaries</b>		
<b>B</b>	<b>Preliminaries - Time Related</b>	<b>Duration</b>	
<b>B.1</b>	<b>Insurance's</b>		
B1.1	Workmen's Compensation Insurance		
B1.2	Insurance of Contractor's Equipment		
B1.3	Insurance of Goods in Transit/Public liability		
B1.4	Insurance Excesses		
B1.5	Other		
<b>B.2</b>	<b>Site Offices, Stores and Facilities</b>		
B2.1	Temporary offices, sheds, etc.		
B2.2	Containers		
B2.3	Chemical Toilets, Sanitary facilities, etc		
B2.4	Telephone facilities		
B2.5	Office consumables		
B2.6	Other		
<b>B.3</b>	<b>Employee Transport</b>		
B3.1	Bus		
B3.2	LDV		
B3.3	Other		
<b>B.4</b>	<b>Mobile and lifting equipment</b>		
B4.1	Telehandler/Forklift		
B4.2	Heavy Duty Transport		
B4.3	Diesel Generator (LV) duration of project		
B4.4	Diesel Generator (Capacity to turn Tippler Cage and Power-up Positioner) 2 weeks		
B4.5	Diesel Welding Machine		
B4.6	Transport Staff and Management		
B4.7	Craneage		
B4.8	Other		
<b>B.5</b>	<b>Management, Supervision and Accommodation</b>		
B5.1	On Site Management and Supervision		
B5.2	Off Site Management		
B5.3	Head Office Overhead Costs		
B5.4	Accommodation and messing		



<b>B.6</b>	<b>Sundry Items</b>		
B6.1	Programme, project planning and control		
B6.2	Project Finance		
B6.3	Sub-Contractors		
B6.4	Other		
	<b>Sub-total Time Related Preliminaries</b>		
<b>C</b>	<b>Engineering, Detail Design &amp; Draughting</b>	<b>Sum</b>	
<b>C1</b>	<b>Tippler Cage</b>		
C1.1	3D Scan of Tippler Cage		
C1.2	FEA Model of Tippler Cage		
C1.3	Stress Analysis of Tippler Cage (Simulation – Components and Superstructure)		
C1.4	Design of Load Bearing supports to jack Tippler		
C1.5	Design on Trestle to Jack and Support Tippler Cage		
<b>C2</b>	<b>Train Holding Devices</b>		
C2.1	Repositioning of the Gripper HPUs from inside the concrete pits to ground level		
<b>C3</b>	<b>Tippler Dust Cowl</b>		
C3.1	Carry out a dimensional survey of the Dust Cowl components		
C3.2	Engineer any modifications as well as update the detail drawing compiled by Takraf		
<b>C4</b>	<b>Hopper</b>		
C4.1	Carry out a 3D scan of the Hopper and immediate areas to facilitate necessary design work for the fixing of the ceramic lined plates		
C4.2	Engineer the fixing details of the liners which need to be installed in the tippler hopper		
<b>C5</b>	<b>Upper Deflector Wall</b>		
<b>C5.1</b>	<b>Tip Side</b>		
C5.1.1	Make use of the current design and make the necessary structural design modifications to the Impact Wall		
<b>C5.2</b>	<b>Non-Tip Side</b>		
C5.2.1	Improve the clearance between the underside of the clamp ballast and the top of the non-tip side deflector wall		
<b>C6</b>	<b>Support Roller Dust Shrouds</b>		
C6.1	Redesign the Dust Shrouds in order to ensure effectiveness of the dust extraction and containment		
<b>C7</b>	<b>Apron Feeder Support Steelwork</b>		
C7.1	Carry out an engineering strength review of the apron feeder support structure to check that the design is fit for purpose		
C7.2	Incorporated into the existing drawings changes due to design weaknesses		
<b>C8</b>	<b>Isolation Knife Gates</b>		
C8.1	Engineering, Detail design of Knife Gates		
<b>C8</b>	<b>Tippler Substation</b>		
C8.1	Review the current support structure of electrical panels and improve on the rigidity of the floor structure		
<b>C9</b>	<b>Civil Works</b>		
C9.1	Update any civil foundation drawings pertaining to the tippler		
<b>C10</b>	<b>Main Rail Tracks</b>		
C10.1	Provide detail drawings of the track support beams, along with the fixing method of the support beams to the concrete troughs		
<b>C11</b>	<b>Dust Extraction</b>		
C11.1	Carry-out ducting modification to suit error in floor slab		
<b>C12</b>	<b>Maintenance Equipment</b>		
C12.1	Design and detail 20ton crawl beam for apron feeder lifting		
<b>C13</b>	<b>Electrical</b>		
C13.1	400V Bus Bar design location and design.		
C13.2	TAG Numbering revision		
C13.3	Cable Routing		
C13.4	LCS & JB Positioning (Local Control Station/ Junction Box)		
C13.5	Instrument brackets		
<b>C14</b>	<b>SCADA System</b>		
C14.1	Development of software		
C14.2	MIS/MES Additional Equipment Inclusion		
C14.3	SCADA/Overview Modifications		
C14.5	PLC Addition and Tag Addition		
C14.6	TCS Equipment Modifications		



C14.8	PLC Configuration and Development		
C14.9	Network Configuration		
	<b>Sub-total Engineering, Detail Design &amp; Draughting</b>		
<b>D</b>	<b>Procurement &amp; Supply</b>	<b>Sum</b>	
D1	Procure all grease lubrication piping and distribution blocks.		
D2	Procure all hydraulic pipes and missing fittings.		
D3	Procure of Busbar System from 11kV/400V Transformer to MCC panel		
D4	Procure all power and control cables.		
D5	Procure, all power and control cables termination kits.		
D6	Procure missing cable trays.		
D7	Procure missing field devices and instruments.		
D12	Procure holding down bolts and anchorages		
D13	Procure positioner track rail clips		
D14	Procure main track rail clips		
D15	Procure foundation bolts for locating Thrust Brackets		
D16	Procure Motorized Trolley Chain Hoist Come Along rated for 20-ton lifting capacity		
<b>D17</b>	<b>Medium Voltage Cable</b>		
D17.1	3 core XLPE insulated, copper tape screened, PVC bedded, galvanised steel wire armoured, and PVC sheathed		
<b>D18</b>	<b>Medium Voltage Cable Joints</b>		
D18.1	3-core, XLPE insulated, copper tape screened, PVC bedded, galvanised steel wire armoured, and PVC sheathed		
<b>D19</b>	<b>Medium Voltage Cable termination</b>		
D19.1	Termination for 3-core, XLPE insulated, copper tape screened, and PVC sheathed		
<b>D20</b>	<b>Low Voltage cable</b>		
D20.1	4-core, ECC, PVC insulated, galvanised steel wire armoured and PVC sheathed cable		
<b>D21</b>	<b>Low Voltage Cable termination</b>		
D21.1	Termination for 4-core, ECC, PVC insulated, galvanised steel wire armoured and PVC sheathed cable		
<b>D22</b>	<b>Cable Clamps</b>		
D22.1	Supply and installation of cable Clamps 316 stainless steel for 3-core, XLPE insulated, copper tape screened, PVC bedded, galvanised steel wire armoured and PVC sheath		
D22.2	Supply and installation of cable Clamps 316 stainless steel for 4-core ECC, PVC insulated, galvanised steel wire armoured and PVC sheathed cable		
<b>D23</b>	<b>Cable Racking</b>		
D23.1	Heavy Duty Cable Ladder System, 800mm 316 Stainless Steel Including Fittings and Accessories (4-Way Piece, 90° Internal Bend, Staggered Cantilever, 90° External Bend and Tee Piece, Etc.)		
<b>D24</b>	<b>SCADA</b>		
D24.1	SCADA Industrial PC		
D24.2	Multi-touch built-in Control Panel		
D24.3	SCADA software package		
D24.4	CAT.6A cable from the industrial PC to the Control Panel		
<b>D25</b>	<b>Miscellaneous Substation Items/Equipment</b>		
D25.1	Tool Rack (wall mounted)		
D25.2	Steel Substation Desk (to Transnet Specifications)		
D25.3	VCB trolley		
D25.4	Substation Key Rack (wooden key rack to accommodate 10 keys with glass window)		
D25.5	Stainless steel plate to cover ducts around the switchgear panels, stainless steel 6mm thick non- corrosive with lifting holes at intervals of 1000mm		
D25.6	Wiring for LV/MV inter-tripping		
D25.7	General signage in substation (To Transnet Port Terminals specifications)		
<b>D26</b>	<b>Instruments</b>		
<b>D26.1</b>	<b>Tippler, Positioner &amp; Loco Signalling</b>		
D26.1.1	Encoders		
D26.1.2	Brake Release Switches		
D26.1.3	Torque Limit Switches		
D26.1.4	Overtravel Limit Switches		
D26.1.5	Forward & Reverse Limit Switches		
D26.1.6	Sensors (HP, LP, Oil Flow, Oil Pressure, Blocked)		
D26.1.7	Lasers		
<b>D26.2</b>	<b>Hopper</b>		
D26.2.1	Level Detectors		

D26.2.2	Full Tilt Switches		
D26.2.3	Gate Open Switch/s		
D26.2.4	Gate Closed Switch/s		
D26.2.5	Transfer Chute Block Chute		
<b>D26.3</b>	<b>Apron Feeder</b>		
D26.3.1	Pull Cord Switch (PCS)		
D26.3.2	Speed Switches		
<b>D27</b>	<b>Control &amp; Instrumentation Cables, Cable Terminations &amp; Cable Racking</b>		
<b>D27.1</b>	<b>Cables</b>		
D27.1.1	Tippler cage		
D27.1.2	Positioner (on-board)		
D27.1.3	Knife Gates		
D27.1.4	Apron Feeders		
D27.1.5	Dust Extraction Plant		
<b>D27.2</b>	<b>Cable Terminations</b>		
D27.2.1	Tippler cage		
D27.2.2	Festoon Cables		
D27.2.3	Knife Gates		
D27.2.4	Apron Feeders		
D27.2.5	Dust Extraction Plant (Control)		
<b>D27.3</b>	<b>Cable Racking</b>		
D27.3.1	Tippler Cage		
D27.3.2	Positioner		
D27.3.3	Hoppers		
D27.3.4	Train Holding devices		
D27.3.5	Dust Extraction Plant		
D27.3.6	Tippler Vault		
D27.3.7	Tippler E-House		
D27.3.8	Tippler Control Room		
<b>D27.4</b>	<b>Gland Plates</b>		
D27.4.1	Tippler Cage		
D27.4.2	Positioner		
D27.4.3	Train Holding devices		
D27.4.4	Hoppers		
D27.4.5	Dust Extraction Plant		
	<b>Sub-total Procurement &amp; Supply</b>		
<b>E</b>	<b>Manufacturing &amp; Installation</b>	<b>Sum</b>	
E.1	Manufacturing and corrosion protection in-go and out-go rail support beam		
E.2	Manufacture, and corrosion protection of four-cage links		
E.3	Installation of 5x hopper knife gates		
E.4	Manufacture and corrosion protection of instrument brackets		
E.5	Manufacture of trim plates		
E.6	Manufacture and corrosion protection of ducting modification to suit error in floor slab		
E.7	Manufacture and corrosion protection of Coupler Alignment Tool		
E.8	Manufacture and corrosion protection of Encoder Guards		
E.9	Manufacture and corrosion protection of trackside handrailing to reach Towing Arm		
E.10	Machine chamfer thrust pads installed		
E.11	Machine rack lubrication roller		
E.12	Manufacture and corrosion protection of train holding devices concrete pit ladder cleats		
E.13	Manufacture and corrosion protection of access support angles and rail location plates for ground mounted thrust pads.		
E.14	Manufacture and corrosion protection of Access Support Frame and all Floor Panels for ground mounted thrust pads.		
E.15	Manufacture and corrosion protection of Tie Rod/Pin Spacers for hopper maintenance doors		
E.16	Manufacture and corrosion protection of 20ton crawl beam for apron feeder lifting		
E.17	Manufacture and corrosion protection of Apron Feeder drive Torque Reaction Arm anchor bracket		
E.18	Manufacture and corrosion protection of removable platforms support steelwork		
E.29	Manufacture and corrosion protection of new strengthening members for the Deflector wall		



E.20	Manufacture and corrosion protection of Support Roller Dust Shrouds		
	<b>Sub-total Manufacturing &amp; Machining</b>		
<b>F</b>	<b>Transportation</b>	<b>Sum</b>	
F.1	Transport to site all components in storage – Saldanha		
	<b>Sub-total Transportation</b>		
<b>G</b>	<b>Stripping, inspecting and re-assemble</b>	<b>Sum</b>	
<b>G.1</b>	<b>Tippler support rollers</b>		
G1.1	Remove one set of support roller bogies on the in-go and out-go side strip, and the bearings cleaned and inspected for corrosion pitting as well as brinelling		
G1.2	If the inspection reveals that the bearings are still in a good condition, then the Contractor will repack the bearings with grease and re-assemble the bogies		
G1.3	If the inspection reveals that the bearings are showing signs of corrosion pitting and/or brinelling, then all the bogie wheels will be removed, and the bearings replaced.		
G1.4	Once the bogies have been re-installed the Contractor will then re-check that the support rollers are installed in accordance with procedure and tolerances as specified in the Ashton Bulk Site Installation drawings		
G1.5	When satisfied with the alignment, the Contractor will re-check the holding down bolts. Re-check the beam height and the roller alignment.		
<b>G.2</b>	<b>Tippler Structure</b>		
<b>G2.1</b>	<b>End Rings &amp; Tippler Cage</b>		
G2.1.1	Design load bearing beams to Jack Tippler Cage – to accommodate change out of shrink discs		
G2.1.2	Design trestles to support beam once in the position to work		
G2.1.3	Jack cage and allow for alignment of end rings		
	<b>Sub-total Stripping, inspecting and re-assemble</b>		
<b>H</b>	<b>Stripping, replacing and re-assemble</b>	<b>Sum</b>	
<b>H.1</b>	<b>End Rings &amp; Tippler Cage</b>		
H1.1	Replace the four-cage links		
H1.2	Replace star shaped end plates		
	<b>Sub-total Stripping, replacing and re-assemble</b>		
<b>J</b>	<b>Stripping, surface rust removal and re-assemble</b>	<b>Sum</b>	
<b>J.1</b>	<b>End Rings &amp; Tippler Cage</b>		
J1.1	Remove all the surface rust from the end ring racks coat the rack teeth with a thin layer of graphite grease and re-assemble		
J1.2	Side beam and ballast beams: replace the four Incorrect Shrink Discs		
J1.3	Pivot Shafts inside the Side Beam and Ballast Beam		
J1.4	Platform pivot shaft: replace the incorrect Shrink Discs		
J1.5	Torque brackets - Correct exit Non-Tip Side		
<b>J.2</b>	<b>Tippler Clamp Gear</b>		
J2.1	Remove all surface rust of pivot pins and coat the surface of the pivot pins and pivot pin bores with Moly slip Copaslip anti seize compound grease		
J2.2	Repair of all the clamp gear articulation pins if necessary		
<b>J.3</b>	<b>Positioner track</b>		
J3.1	Remove all the surface rust from the positioner racks coat the rack teeth with a thin layer of graphite grease and re-assemble		
<b>J.4</b>	<b>Positioner Drives</b>		
J4.1	Remove the eight drive shafts complete with the respective pinions and remove all the surface rust and coat the pinions with graphite grease		
<b>J.5</b>	<b>Positioner Main Arm</b>		
J5.1	Remove all the articulation pins remove all surface rust and coat the pinions with graphite grease		
<b>J.6</b>	<b>Last Wagon Arm</b>		
J6.1	Remove the pivot shaft and remove all surface rust and coat with Moly slip Copaslip anti seize compound grease		
J6.2	Remove latch assembly and remove surface rust and coat with Moly slip Copaslip anti seize compound grease		
J6.3	Remove LWA Pivot Pin, carry out the removal of surface rust, particularly the splined end and coat with Moly slip Copaslip anti seize compound grease		
<b>J.7</b>	<b>Positioner Guide Rollers</b>		
J7.1	Remove Guide Rollers complete, dismantle roller assembly and re-assemble with new bearings and seals		
<b>J.8</b>	<b>Sprung support rollers</b>		
J8.1	Remove Sprung Support Roller complete, dismantle roller assembly and re-assemble with new bearings and seals		
<b>J.9</b>	<b>Entry &amp; Exit Grippers</b>		

J9.1	Remove gripper articulation pivot pins and remove the surface rust and coat with Moly slip Copaslip anti seize compound grease		
<b>J.10</b>	<b>Fixed Support Roller</b>		
J10.1	Remove Fixed Support Roller complete, dismantle roller assembly and re-assemble with new bearings and seals		
	<b>Sub-total Stripping, surface rust removal and re-assemble</b>		
<b>K</b>	<b>Weld repairs (Including paint repairs as per Transnet Corrosion Specification)</b>	<b>Sum</b>	
<b>K.1</b>	<b>End Rings &amp; Tippler Cage</b>		
K1.1	internal box sections of the end rings		
K1.2	external welds of the end rings		
K1.3	repair of external welds on the tippler platform		
K1.4	side beam: repair entry end and exit end underside fillet welds		
K1.5	ballast beam: repair entry end and exit end underside fillet welds		
<b>K.2</b>	<b>Positioner</b>		
<b>K2.1</b>	<b>Positioner Main Frame</b>		
K2.1.1	Weld located between mainframe trackside web and bottom flange		
K2.1.2	The weld located at the main frame front fixed support roller wheel		
<b>K2.2</b>	<b>Positioner Main Arm</b>		
K2.2.1	Front Pedestal front plate to bottom flange weld		
	<b>Sub-total Weld repairs (Including paint repairs as per Transnet Corrosion Specification)</b>		
<b>L</b>	<b>Erection &amp; corrosion protection (Structural, Mechanical, Hydraulics &amp; Grease Lubrication)</b>	<b>Sum</b>	
<b>L.1</b>	<b>Tippler Cage</b>		
<b>L1.1</b>	<b>Tippler Structure</b>		
L1.1.1	Lower the cage structure onto the support rollers		
L1.1.2	Install machined thrust pads in-go and out-go		
L1.1.3	Install Oleo Buffers on the in-go and out-go end rings		
L1.1.4	Modify tippler access flooring to suit installation of Support Frame and Braces and re-install access flooring after modification		
<b>L1.2</b>	<b>Tippler Ballast Box</b>		
L1.2.1	Procure, Transport, and install concrete ballast into ballast box compartments		
L1.2.2	Procure, Transport and install trim plates		
<b>L1.3</b>	<b>Tippler Thrust Pads</b>		
L1.3.1	Install foundation bolts for locating Thrust Brackets		
L1.3.2	Install the thrust pads as detailed on the Ashton Bulk drawings		
L1.3.3	Install Access Support Angles and Rail Location Plates as detailed on the Ashton Bulk drawings		
L1.3.4	Install Access Support Frame and all Floor Panels as detailed on the Ashton Bulk drawings		
L1.3.5	Install Rail Clips		
<b>L1.4</b>	<b>Tippler Lubrication System</b>		
L1.4.1	Install fully automated Stand-alone, electrically driven pump type, progressive, grease lubrication system		
L1.4.2	Install fully automated Stand-alone, electrically driven pump type spray lubricant system		
L1.4.3	Install Grouped Manual: (GM)Total loss greasing of individual components		
<b>L1.5</b>	<b>Tippler Drive Gear</b>		
L1.5.1	Install Tippler Drive Unit Base Plate onto grout packers as detailed on Ashton Bulk's drawings		
L1.5.2	Survey the alignment and position of the drive base plate and record all dimensions shown on Ashton Bulk's drawings.		
L1.5.3	Grout Drive base plate using full strength grout		
L1.5.4	Position and align each individual drive unit until correct mesh is obtained between the drive pinion and rack		
<b>L.2</b>	<b>Positioner system</b>		
L2.1	Install the Liner Trays		
L2.2	Procure and fit positioner track rail clips at all module joints that are missing		
L2.3	Install, level and align in-go and out-go rail support beam		
L2.4	Fit and adjust the sprung support roller as per Ashton Bulk drawing		
L2.5	Adjust the twin guide rollers on opposite side of rack to achieve a clearance between the rollers and the spine bar as per the Ashton Bulk drawing		
L2.6	Adjust the single guide rollers to achieve a clearance as per Ashton Bulk drawing between the rollers and the spine bar		
L2.7	Adjust resolver unit as per Ashton Bulk drawing to obtain correct backlash with racks		



L2.8	Install positioner drives		
L2.9	Fill main arm ballast box with concrete		
L2.10	Install Coupler Alignment Tool		
L2.11	Fit trackside handrailing to reach Towing Arm and to be turned in at Drive Cartridge end		
L2.12	Fit access flooring		
<b>L2.13</b>	<b>Positioner Hydraulic System (Including piping &amp; fittings)</b>		
L2.13.1	Install the Positioner hydraulics in accordance with the hydraulic OEM installation method statement		
<b>L2.14</b>	<b>Positioner Grease Lubrication System (Including piping &amp; fittings)</b>		
L2.14.1	Install fully automated Stand-alone, electrically driven pump type, progressive, grease lubrication system		
L2.14.2	Install fully automated Stand-alone, electrically driven pump type spray lubricant system		
<b>L.3</b>	<b>Train holding devices</b>		
L3.1	Assemble the gripper mechanisms once the pivot pins and bores are cleaned		
L3.2	Check the alignment with the main rail and when positioned correctly on the grout packers		
L3.3	Grout under the foundation frames using full strength grout		
<b>L3.4</b>	<b>Entry &amp; exit grippers hydraulic powerpacks (Including piping &amp; fittings)</b>		
L3.4.1	Flush the powerpacks to remove all contamination from the pipe runs/hoses etc in accordance with the hydraulic OEM installation commissioning schedule		
L3.4.2	Place the hydraulic powerpacks at floor level alongside the respective gripper concrete pits		
L3.4.3	Install a removable barrier to safeguard the hydraulic powerpacks		
L3.4.4	Install the powerpacks with the isolation valves on all units		
L3.4.5	Install, the pipes to the gripper Clamp cylinders		
<b>L3.5</b>	<b>Entry &amp; exit grippers grease lubrication (Including piping &amp; fittings)</b>		
L3.5.1	Install fully automated Stand-alone, electrically driven pump type, progressive, grease lubrication system		
<b>L.4</b>	<b>Hoppers &amp; Apron Feeders &amp; Isolation Knife Gates</b>		
L4.1	Install the hopper chutes and hopper outlet liner panels		
L4.2	remove all the removable panels of the apron feeder chutes as well as the temporary spacer chute		
L4.3	Install the isolation gate frame assemblies		
L4.4	Install the five apron feeder assemblies		
L4.5	Install the five apron feeder drive assemblies in positions		
L4.6	Install all the hopper liners in line with the installation drawing compiled by Tenova Takraf		
L4.7	Install 20ton crawl beam for apron feeder lifting		
L4.8	Install Apron Feeder Safety Guards		
L4.9	Install Apron Feeder drive Torque Reaction Arm anchor bracket		
L4.10	Install 5 off Knife Gates		
L4.11	Install Knife Gate HPU		
L4.12	Manufacture in-situ and install cut-outs in non-tip side steel hopper wall to accommodate Wagon Clamp Counterweights		
<b>L4.13</b>	<b>Apron Feeder grease lubrication (Including piping &amp; fittings)</b>		
L4.13.1	Install 5 fully automated Stand-alone, electrically driven pump type, progressive, grease lubrication systems		
<b>L.5</b>	<b>Dust Extraction &amp; Collection System</b>		
<b>L5.1</b>	<b>Structural (Dust Extraction Plant)</b>		
L5.1.1	Install columns T1 to T9		
L5.1.2	Install ducting pipes 002/D11 to 002/D31		
L5.1.3	Install compensator		
L5.1.4	Install Bearing access platform		
L5.1.5	Install dust monitor access platform		
L5.1.6	Install extraction fan support structure		
L5.1.7	Install dust extraction fan ducting		
L5.1.8	Install columns T10 to T12		
L5.1.9	Install ducting pipe 002/D32 followed by ducting pipes 004/D53 to 004/D59		
L5.1.10	Once all the dust cowl connecting piping has been installed the Contractor will proceed to install the vertical piping in the pipe shafts down to the apron feeder extraction level		
L5.1.11	Install ducting pipes 011/D34 to 011/D38 followed by 003/D39		
L5.1.12	Install ducting pipes 002/D47 to 022/D52 followed by 003/D46 and 003/D44		

L5.1.13	Install ducting pipes 002/D41 to 003/D43 followed by 002/D43 and 003/D44.		
<b>L5.1.14</b>	<b>Mechanicals (Dust Extraction Plant)</b>		
L5.1.14.1	Install bag filter units (Bag filter A & B)		
L5.1.14.2	Install dust extraction fan		
L5.1.14.3	Install dust extraction blower fan		
L5.1.14.4	Install dust extraction blower valve		
L5.1.14.5	Install dust storage isolation valve		
L5.1.14.6	Install dust storage rotary valve		
L5.1.14.7	Install dust storage diverter chute		
L5.1.14.8	Install dust storage pug mill		
L5.1.14.9	Install Dust Storage Ventilation Valve (Pressure Relief)		
L5.1.14.10	Install Dust storage Control Air Valve		
L5.1.14.11	Install Dust Extraction Compressor 1		
L5.1.14.12	Install Dust Extraction Compressor 1 - Non-Return Valve		
L5.1.14.13	Install Dust Extraction Air Receiver 1		
L5.1.14.14	Install Dust Extraction Air Receiver 1- Various Valves		
L5.1.14.15	Install Dust Extraction Desiccant Dryer 1 Primary Filter 1		
L5.1.14.16	Install Dust Extraction Desiccant Dryer 1 Secondary Filter 2		
L5.1.14.17	Install Dust Extraction Desiccant Dryer 1		
L5.1.14.18	Install Dust Extraction Desiccant Dryer 1 - Various Bypass Valves		
L5.1.14.19	Install Dust Extraction Desiccant Dryer 1 - Various Pressure Relief Valves		
L5.1.14.20	Install Dust Extraction Desiccant Dryer 1 - Various Air Blow Off Valves		
L5.1.14.21	Install Dust Extraction Desiccant Dryer 2 - Tertiary Filter 3		
L5.1.14.22	Install Dust Extraction Dust Collector 1		
L5.1.14.23	Install Dust Collector 1 Screw Conveyor		
L5.1.14.24	Install Dust Collector 1 Screw Conveyor - Motor		
L5.1.14.25	Install Dust Extraction Screw Conveyor 1 - Field Isolator		
L5.1.14.26	Install Dust Collector 1 Various Valves		
L5.1.14.27	Install Dust Extraction Compressor 2		
L5.1.14.28	Install Dust Extraction Compressor 2 - Non-Return Valve		
L5.1.14.29	Install Dust Extraction Air Receiver 2		
L5.1.14.30	Install Dust Extraction Air Receiver 2 - Various Valves		
L5.1.14.31	Install Dust Extraction Desiccant Dryer 2 - Primary Filter 1		
L5.1.14.32	Install Dust Extraction Desiccant Dryer 2 - Secondary Filter 2		
L5.1.14.33	Install Dust Extraction Desiccant Dryer 2 - Secondary Filter 2		
L5.1.14.34	Install Dust Extraction Desiccant Dryer 2 - Various Bypass Valves		
L5.1.14.35	Install Dust Extraction Desiccant Dryer 2 - Various Pressure Relief Valves		
L5.1.14.36	Install Dust Extraction Desiccant Dryer 2 - Various Air Blow Off Valve		
L5.1.14.37	Install Dust Extraction Desiccant Dryer 2 - Tertiary Filter 3		
L5.1.14.38	Install Dust Extraction Dust Collector 2		
L5.1.14.39	Install Dust Collector 2 Screw Conveyor		
L5.1.14.40	Install Dust Collector 2 Screw Conveyor - Motor		
L5.1.14.41	Install Dust Extraction Screw Conveyor 2 - Field Isolator		
L5.1.14.42	Install Dust Collector 2 - Various Valves		
L5.1.14.43	Install Dust Collector 2 Rotary Vane Feeder - Motor		
L5.1.14.44	Install Dust Extraction Rotary Vane Feeder 2 - Field Isolator		
<b>L.6</b>	<b>DUST COWL &amp; DEFLECTOR WALL/BARRIER</b>		
L6.1	Re-install dust cowl and correct manufacturing errors		
L6.2	Modification to North-East floor hatch to provide clearance for Tippler Rotational Switches		
L6.3	Cutting and welding of seal ring at the dust cowl to achieve a consistent gap with Tippler End Rings		
L6.4	Install replacement Support Roller Dust Shrouds.		
	<b>Sub-Total Erection &amp; corrosion protection (Structural, Mechanical, Hydraulics &amp; Grease Lubrication)</b>		
<b>M</b>	<b>Electrical installation &amp; corrosion protection electrical installation</b>	<b>Sum</b>	
<b>M.1</b>	<b>Instruments</b>		
<b>M1.1</b>	<b>Tippler, Positioner &amp; Loco-Signalling (Includes any brackets and fixtures)</b>		
M1.1.1	Install Encoders		
M1.1.2	Install Brake Release Switches		
M1.1.3	Install Torque Limit Switches		

M1.1.4	Install Overtravel Limit Switches		
M1.1.5	Install Forward & Reverse Limit Switches		
M1.1.6	Install Sensors (HP, LP, Oil Flow, Oil Pressure, Blocked)		
M1.1.7	Install Reflectors		
M1.1.8	Install Lasers		
<b>M1.2</b>	<b>Hopper</b>		
M1.2.1	Install Level Detectors		
M1.2.2	Install Full Tilt Switches		
M1.2.3	Install Knife Gate Open Switch/s		
M1.2.4	Install Knife Gate Closed Switch/s		
M1.2.5	Transfer Chute Block Chute		
<b>M1.3</b>	<b>Apron Feeder</b>		
M1.3.1	Install Pull Cord Switch (PCS)		
M1.3.2	Install Speed Switches		
<b>M1.4</b>	<b>Dust Extraction Plant</b>		
M1.4.1	Install instruments for valves, field isolators, pressure indicators, filters		
<b>M.2</b>	<b>Positioner and Positioner Building (All brackets, frames and fixtures required for LCS's, LOS's and JB's to be provided by contractor)</b>		
M2.1	Install, align, and level Tippler Lock Out Station to support frame		
M2.2	Install, align, and level Tippler Lock in Station to support frame		
M2.3	Install, align, and level Positioner Land LCS to support frame		
M2.4	Install, align, and level Positioner Onboard LCS to support frame		
M2.5	Install, align, and level Festoon JB's (Power) to support frame		
M2.6	Install, align, and level Lube System 1 (Positioner) Junction Box to support frame		
M2.7	Install, align, and level Lube System 2 (Positioner) Junction Box to support frame		
<b>M.3</b>	<b>Train Holding Devices (All brackets, frames and fixtures required for LCS's, LOS's and JB's to be provided by contractor)</b>		
M3.1	Install, align, and level Entry Wheel Grippers LCS to support frame		
M3.2	Install, align, and level Exit Wheel Grippers LCS to support frame		
M3.3	Install, align, and level Lube System 3 (Entry Gripper) Junction Box to support frame		
M3.4	Install, align, and level Lube System 4 (Exit Gripper) Junction Box to support frame		
<b>M.4</b>	<b>Tippler Cage (All brackets, frames and fixtures required for LCS's, LOS's and JB's to be provided by contractor)</b>		
M4.1	Install, align, and level Tippler Entry LCS to support frame		
M4.2	Install, align, and level Lube System 5 (Tippler) Junction Box to support frame		
M4.3	Install, align, and level Tippler Exit LCS to support frame		
M4.4	Install, align, and level Lube System 5 (Tippler) Junction Box to support frame		
<b>M.5</b>	<b>Tippler Hopper (All brackets, frames and fixtures required for LCS's, LOS's and JB's to be provided by contractor)</b>		
M5.1	Install, align, and level Hopper LCS to support frame		
M5.2	Install, align, and level Hopper Bin #1 LCS to support frame		
M5.3	Install, align, and level Hopper Bin #2 LCS to support frame		
M5.4	Install, align, and level Hopper Bin #3 LCS to support frame		
M5.5	Install, align, and level Hopper Bin #4 LCS to support frame		
M5.6	Install, align, and level Hopper Bin #5 LCS to support frame		
<b>M.6</b>	<b>Apron Feeders (All brackets, frames and fixtures required for LCS's, LOS's and JB's to be provided by contractor)</b>		
M6.1	Install, align, and level Apron Feeder #1 LCS to support frame		
M6.2	Install, align, and level Apron Feeder #2 LCS to support frame		
M6.3	Install, align, and level Apron Feeder #3 LCS to support frame		
M6.4	Install, align, and level Apron Feeder #4 LCS to support frame		
M6.5	Install, align, and level Apron Feeder #5 LCS to support frame		
<b>M.7</b>	<b>Dust Extraction Plant</b>		
M7.1	Install, align, and level extraction fan LCS to support frame		
M7.2	Install, align, and level extraction blower fan LCS to support frame		
M7.3	Install, align, and level air compressor #1 LCS to support frame		
M7.4	Install, align, and level Air Receiver #1 LCS to support frame		
M7.5	Install, align, and level Dust Extraction Desiccant Dryer #1 LCS to support frame		
M7.6	Install, align, and level screw conveyor #1 LCS to support frame		

M7.7	Install, align, and level air compressor #2 LCS to support frame		
M7.8	Install, align and level Air Receiver #2 LCS to support frame		
M7.9	Install, align, and level Dust Extraction Desiccant Dryer #2 LCS to support frame		
M7.10	Install, align, and level screw conveyor #2 LCS to support frame		
<b>M.8</b>	<b>Cable Racking ( Contractor is responsible to provide all fixtures and brackets to fix cable racking to structures)</b>		
M8.1	Install and fix cable racking to Tippler Building concrete cable vault for Positioner Power & Control Cables		
M8.2	Install and fix cable racking to Tippler Building concrete cable vault for Entry gripper hydraulic system Power & Control Cables		
M8.3	Install and fix cable racking to Tippler Building concrete cable vault for Entry gripper Control Cables		
M8.4	Install and fix cable racking to Tippler Building concrete cable vault for Exit gripper hydraulic system Power & Control Cables		
M8.5	Install and fix cable racking to Tippler Building concrete cable vault for Entry gripper Control Cables		
M8.6	Install and fix cable racking to Tippler Building concrete cable vault for Lube System 3 (Entry Gripper) Junction Box for Power & Control Cables		
M8.7	Install and fix cable racking to Tippler Building concrete cable vault for Lube System 4 (Exit Gripper) Junction Box for Power & Control Cables		
M8.8	Install and fix cable racking to Tippler Building concrete cable vault for Positioner Land mounted JB Power & Control Cables		
M8.9	Install and fix cable racking to Tippler Building concrete cable vault for tippler drive LCS Power & Control Cables		
M8.10	Install and fix cable racking to Tippler Building concrete cable vault for dust extraction fan/s and screw conveyor/s LCS Power & Control Cables		
M8.11	Install and fix cable racking to Tippler Building concrete cable vault for hopper LCS Power & Control Cables		
M8.12	Install and fix cable racking to Tippler Building concrete cable vault for Hopper Bin #1 LCS Power & Control Cables		
M8.13	Install and fix cable racking to Tippler Building concrete cable vault for Hopper Bin #2 LCS Power & Control Cables		
M8.14	Install and fix cable racking to Tippler Building concrete cable vault for tippler vault Power & Control Cables		
M8.15	Install and fix cable racking to apron feeder support structure for apron feeder LCS Power & Control Cables		
M8.16	Install and fix cable racking to conveyor stringers for conveyor drive LCS Power & Control Cables		
M8.17	Install and fix cable racking to conveyor stringers and moving head structure for moving head drive LCS Power & Control Cables		
M8.18	Install and fix cable racking to Tippler Building concrete cable vault for tippler workshops power cables		
M8.19	Install and fix cable racking to Tippler shed columns for overhead crane JB Power Cable		
<b>M9</b>	<b>Operators Control desk</b>		
M9.1	Complete installation of operators control desk including operators' controls, industrial PC, Multi-touch built-in Control Panel and CCTV monitor		
M9.2	Install and terminate power & control cables from LV & PLC panels to control desk		
M9.3	Polish operators control desk before handing over to client		
	<b>Sub-Total Electrical installation &amp; corrosion protection electrical installation</b>		
<b>N</b>	<b>Cable Installation ( This includes pulling cables, installing cables and strapping to cable racks)</b>	<b>Sum</b>	
<b>N.1</b>	<b>Medium Voltage</b>		
N1.1	From substation ___ 3.3kV Switchgear to dust extraction fan MCC		
<b>N.2</b>	<b>Low Voltage - 400V</b>		
N2.1	Busbar system from tippler #3 substation main 11kV/400Vtransformer to tippler 400V MCC		
N2.2	400V MCC to Lighting & Small Power Distribution Panel		
N2.3	400V MCC to PLC panel and Auxiliary panel		
N2.4	400V MCC to UPS/s		
N2.5	400V MCC to Control TX1		
N2.6	400V MCC to Control TX2		
<b>N2.7</b>	<b>Entry Grippers</b>		
N2.7.1	400V MCC to wheel gripper #1 (entry) hydraulic system		
N2.7.2	400V MCC to wheel gripper #2 (entry) hydraulic system		
N2.7.3	400V MCC to wheel gripper #3 (entry) hydraulic system		
N2.7.4	400V MCC to wheel grippers (entry) lub system		
<b>N2.8</b>	<b>Exit Grippers</b>		
N2.8.1	400V MCC to wheel grippers (exit) hydraulic system		

N2.8.2	400V MCC to wheel grippers (exit) lub system		
<b>N2.9</b>	<b>Positioner</b>		
N2.9.1	400 V MCC Busbar to positioner VVVF panel Busbar		
N2.9.2	From positioner VVVF #1 panel to positioner land mounted JB		
N2.9.3	From positioner VVVF #2 panel to positioner land mounted JB		
N2.9.4	From positioner VVVF #3panel to positioner land mounted JB		
N2.9.5	From positioner VVVF #4 panel to positioner land mounted JB		
N2.9.6	From positioner VVVF #5 panel to positioner land mounted JB		
N2.9.7	From positioner VVVF #6 panel to positioner land mounted JB		
N2.9.8	From positioner VVVF #7 panel to positioner land mounted JB		
N2.9.9	From positioner VVVF #8 panel to positioner land mounted JB		
N2.9.10	400V MCC to Positioner land mounted JB (Hydraulic System)		
N2.9.11	400V MCC to Positioner land mounted JB (lub system #1)		
N2.9.12	400V MCC to Positioner land mounted JB (lub system #2)		
<b>N2.10</b>	<b>Tippler Cage</b>		
N2.10.1	400V MCC to tippler cage #1 VVVF panel		
N2.10.2	From tippler cage VVVF panel to tippler cage drive motor #1		
N2.10.3	400V MCC to tippler cage #2 VVVF panel		
N2.10.4	From tippler cage VVVF panel to tippler cage drive motor #2		
N2.10.5	400V MCC to Tippler cage drive brake #1		
N2.10.6	400V MCC to Tippler cage drive brake #2		
N2.10.7	400V MCC to tippler cage lub system #1		
N2.10.8	400V MCC to tippler cage lub system #2		
<b>N2.11</b>	<b>Hopper Knife Gates</b>		
N2.11.1	400V MCC to hopper knife gate #1		
N2.11.2	400V MCC to hopper knife gate #2		
N2.11.3	400V MCC to hopper knife gate #3		
N2.11.4	400V MCC to hopper knife gate #4		
N2.11.5	400V MCC to hopper knife gate #5		
<b>N2.12</b>	<b>Apron Feeders</b>		
N2.12.1	400V MCC Busbar to Apron Feeders VVVF panel Busbar		
N2.12.2	400V MCC to apron feeder #1 VVVF panel		
N2.12.3	400V MCC to apron feeder #2 VVVF panel		
N2.12.4	400V MCC to apron feeder #3 VVVF panel		
N2.12.5	400V MCC to apron feeder #4 VVVF panel		
N2.12.6	400V MCC to apron feeder #5 VVVF panel		
N2.12.7	From apron feeder VVVF panel #1 to apron feeder drive motor #1		
N2.12.8	From apron feeder VVVF panel #1 to apron feeder drive motor #2		
N2.12.9	From apron feeder VVVF panel #1 to apron feeder drive motor #3		
N2.12.10	From apron feeder VVVF panel #1 to apron feeder drive motor #4		
N2.12.11	From apron feeder VVVF panel #1 to apron feeder drive motor #5		
<b>N2.13</b>	<b>Dust Extraction Plant</b>		
N2.13.1	400V MCC to extraction fan		
N2.13.2	400V MCC to extraction blower fan		
N2.13.3	400V MCC to air compressor #1		
N2.13.4	400V MCC to Air Receiver #1		
N2.13.5	400V MCC to Dust Extraction Desiccant Dryer #1		
N2.13.6	400V MCC to screw conveyor #1		
N2.13.7	400V MCC to air compressor #2		
N2.13.8	400V MCC to Air Receiver #2		
N2.13.9	400V MCC to Dust Extraction Desiccant Dryer #2		
N2.13.10	400V MCC to screw conveyor #2		
N2.13.11	Auxiliary panel to Railway signal supplies		
N2.13.12	Auxiliary panel to PLC panel lighting		
N2.13.13	Auxiliary panel to CCTV cameras & monitor		
N2.13.14	Auxiliary panel to Battery Charger/s		
N2.13.15	Auxiliary panel to air-conditioning motor starters (MV, LV & Control Rooms)		
N2.13.16	Auxiliary panel to overhead crane JB		
N2.13.17	Overhead crane JB to crane hot rails		
N2.13.18	Auxiliary panel to tippler cage drive motor anti-condensation heater		
N2.13.19	Auxiliary panel to Positioner land mounted JB (positioner drive motors anti-condensation heaters)		
N2.13.20	Auxiliary panel to LCS & I/O station heaters		

N2.13.21	Auxiliary panel to panels in MV, LV & Control room anti-condensation heater		
N2.13.22	Auxiliary panel to hydraulic pump motors anti-condensation heater		
<b>N.3</b>	<b>Low Voltage Cables- 230V</b>		
N3.1	230V to UPS		
N3.2	UPS to PLC Rack		
N3.3	UPS to socket outlet for laptop		
N3.4	UPS to operators control room SCADA PC		
N3.5	UPS to Positioner land mounted JB (positioner encoder module)		
N3.6	UPS to tippler cage encoder module #1		
N3.7	UPS to tippler cage encoder module #2		
<b>N.4</b>	<b>Control Cables - 110V</b>		
N4.1	110V from PLC to operators control room fibre optic module		
N4.2	110V to PLC panel for warning relay supply		
N4.3	110V to Positioner Land LCS		
N4.4	110V to Tippler entry LCS		
N4.5	110V to Tippler exit LCS		
N4.6	110V to hopper LCS		
N4.7	110V to Entry Wheel grippers #1 LCS		
N4.8	110V to Entry Wheel grippers #2 LCS		
N4.9	110V to Entry Wheel grippers #3 LCS		
N4.10	110V to Exit Wheel grippers LCS		
N4.11	110V to Positioner Land LCS		
N4.12	110V to Positioner Land Distributed I/O panel		
N4.13	110V to Tippler entry Distributed I/O panel		
N4.14	110V to Tippler exit Distributed I/O panel		
N4.15	110V to hopper LCS Distributed I/O panel		
N4.16	110V to Entry Wheel grippers #1 Distributed I/O panel		
N4.17	110V to Entry Wheel grippers #2 Distributed I/O panel		
N4.18	110V to Entry Wheel grippers #3 Distributed I/O panel		
N4.19	110V to Exit Wheel grippers Distributed I/O panel		
N4.20	110V to positioner over-travel circuit		
N4.21	110V to tippler cage over-travel circuit		
N4.22	110 V to hopper LCS for the following signals: i. Hopper full; ii. Block chute; iii. Tilt switch/bindicator iv. Control units		
N4.23	110V to entry gripper #1 solenoids		
N4.24	110V to entry gripper #2 solenoids		
N4.25	110V to entry gripper #3 solenoids		
N4.26	110V to exit gripper solenoids		
N4.27	110V to positioner main arm solenoids (on-board)		
N4.28	110V to positioner Last Car Arm solenoids (on-board)		
N4.29	110V to positioner drive #1 brake solenoids (on-board)		
N4.30	110V to positioner drive #2 brake solenoids (on-board)		
N4.31	110V to positioner drive #3 brake solenoids (on-board)		
N4.32	110V to positioner drive #4 brake solenoids (on-board)		
N4.33	110V to positioner drive #5 brake solenoids (on-board)		
N4.34	110V to positioner drive #6 brake solenoids (on-board)		
N4.35	110V to positioner drive #7 brake solenoids (on-board)		
N4.36	110V to positioner drive #8 brake solenoids (on-board)		
N4.37	110V to tippler warning siren		
<b>N.5</b>	<b>Control Cables - 24V</b>		
N5.1	24V to laser		
N5.2	24V to operators control room fibre optic module		
N5.3	24V for fibre optic modules		
<b>N.6</b>	<b>Positioner Festoon ( Contractor will install festoon cables from land mounted JB over the festoon carriers to the positioner motors, including termination)</b>		
<b>N6.1</b>	<b>Festoon Cables (Power)</b>		
N6.1.1	400V positioner motor #1 supply & earth		
N6.1.2	400V positioner motor #2 supply & earth		
N6.1.3	400V positioner motor #3 supply & earth		

N6.1.4	400V positioner motor #4 supply & earth		
N6.1.5	400V positioner motor #5 supply & earth		
N6.1.6	400V positioner motor #6 supply & earth		
N6.1.7	400V positioner motor #7 supply & earth		
N6.1.8	400V positioner motor #8 supply & earth		
N6.1.9	400V hydraulic pump supply		
N6.1.10	400V lube system #1 supply		
N6.1.11	400V lube system #2 supply		
N6.1.12	400V hydraulic fill/filter pump supply		
<b>N6.2</b>	<b>Festoon Cables (Control)</b>		
N6.2.1	110V motor heaters		
N6.2.2	110V hydraulic motor heater/s		
N6.2.3	110V on-board pos. hydraulic solenoid supply		
N6.2.4	110V on-board positioner brake solenoid supply		
N6.2.5	110V AC on-board LCS		
N6.2.6	110V warning beacon/horn supply		
N6.2.7	110V hardwiring		
N6.2.8	110V positioner motors encoder & temp		
N6.2.9	24V photocells supply		
<b>N.7</b>	<b>Cable Glanding</b>		
N.7.1	Supply and installation of appropriate glands for Multicore cables wired direct to electrical equipment		
<b>N.8</b>	<b>Gland Plates</b>		
N8.1	Supply and installation of Gaskets/sealant to be used to ensure watertight joints between surfaces of all gland plates		
<b>N.9</b>	<b>Core Identification</b>		
N9.1	Supply and installation of cable ferrule idents at both ends adjacent to terminations		
	<b>Sub-Total Cable Installation (This includes pulling cables, installing cables and strapping to cable racks)</b>		
<b>P</b>	<b>Cable Terminations ( Contractor is responsible to provide all termination kits, splicing kits and any other consumables required to terminate)</b>	<b>Sum</b>	
<b>P.1</b>	<b>Medium Voltage Cables</b>		
P1.1	Terminate at substation ___ dust extraction fan 3.3kV Switchgear and VVVF panel		
P1.2	Terminate at dust extraction fan VVVF panel and dust extraction fan		
<b>P.2</b>	<b>Low Voltage Cables- 400V</b>		
P2.1	Terminate tippler #3 substation main 11kV/400Vtransformer and tippler 400V MCC		
P2.2	Terminate at 400V MCC and Lighting & Small Power Distribution Panel		
P2.3	Terminate at 400V MCC to PLC panel and Auxiliary panel		
P2.4	Terminate at 400V MCC and UPS/s		
P2.5	Terminate at 400V MCC and Control TX1		
P2.6	Terminate at 400V MCC and Control TX2		
P2.7	Terminate at 400V MCC Busbar and positioner VVVF panel Busbar		
P2.8	Terminate at positioner VVVF #1 panel and positioner land mounted JB		
P2.9	Terminate at positioner VVVF #2 panel and positioner land mounted JB		
P2.10	Terminate at positioner VVVF #3panel and positioner land mounted JB		
P2.11	Terminate at positioner VVVF #4 panel and positioner land mounted JB		
P2.12	Terminate at positioner VVVF #5 panel and positioner land mounted JB		
P2.13	Terminate at positioner VVVF #6 panel and positioner land mounted JB		
P2.14	Terminate at positioner VVVF #7 panel and positioner land mounted JB		
P2.15	Terminate at positioner VVVF #8 panel and positioner land mounted JB		
P2.16	Terminate at 400V MCC and wheel grippers (entry) hydraulic system #1		
P2.17	Terminate at 400V MCC and wheel grippers (entry) hydraulic system #2		
P2.18	Terminate at 400V MCC and wheel grippers (entry) hydraulic system #3		
P2.19	Terminate at 400V MCC and wheel grippers (exit) hydraulic system		
P2.20	Terminate at 400V MCC and Positioner Hydraulic System		
P2.21	Terminate at 400V MCC busbar and tippler cage VVVF panel busbar		
P2.22	Terminate at tippler cage VVVF panel #1 and tippler cage drive motor #1		
P2.23	Terminate at tippler cage VVVF panel #1 and tippler cage drive motor #2		
P2.24	Terminate at 400V MCC and Tippler cage drive brake #1		
P2.25	Terminate at 400V MCC and Tippler cage drive brake #2		

P2.26	Terminate at 400V MCC and tippler lub system in-go		
P2.27	Terminate at 400V MCC and tippler lub system out-go		
P2.28	Terminate at 400V MCC and Positioner land mounted JB (Hydraulic System)		
P2.29	Terminate at 400V MCC and Positioner land mounted JB (lub system #1)		
P2.30	Terminate at 400V MCC and Positioner land mounted JB (lub system #2)		
P2.31	Terminate at Positioner Hydraulic System (on-board)		
P2.32	Terminate at Positioner lub system #1 (on-board)		
P2.33	Terminate at Positioner lub system #2 (on-board)		
P2.34	Terminate at 400V MCC and apron feeder VVVF panel		
P2.35	Terminate at apron feeder VVVF panel and apron feeder drive motor		
P2.36	Terminate at 400V MCC Busbar and apron feeders VVVF panel Busbar		
P2.37	Terminate at apron feeder VVVF panel #1 and apron feeder drive motor #1		
P2.38	Terminate at apron feeder VVVF panel #1 and apron feeder drive motor #2		
P2.39	Terminate at apron feeder VVVF panel #1 and apron feeder drive motor #3		
P2.40	Terminate at apron feeder VVVF panel #1 and apron feeder drive motor #4		
P2.41	Terminate at apron feeder VVVF panel #1 and apron feeder drive motor #5		
P2.42	Terminate at 400V MCC and knife gate #1		
P2.43	Terminate at 400V MCC and knife gate #2		
P2.44	Terminate at 400V MCC and knife gate #3		
P2.45	Terminate at 400V MCC and knife gate #4		
P2.46	Terminate at 400V MCC and knife gate #5		
P2.47	Terminate at 400V MCC and extraction fan		
P2.48	Terminate at 400V MCC and extraction blower fan		
P2.49	Terminate at 400V MCC and air compressor #1		
P2.50	Terminate at 400V MCC and Air Receiver #1		
P2.51	Terminate at 400V MCC and Dust Extraction Desiccant Dryer #1		
P2.52	Terminate at 400V MCC and screw conveyor #1		
P2.53	Terminate at 400V MCC and air compressor #2		
P2.54	Terminate at 400V MCC and Air Receiver #2		
P2.55	Terminate at 400V MCC and Dust Extraction Desiccant Dryer #2		
P2.56	Terminate at 400V MCC and screw conveyor #2		
P2.57	Terminate at Auxiliary panel and Railway signal supplies		
P2.58	Terminate at Auxiliary panel and PLC panel lighting		
P2.59	Terminate at Auxiliary panel and CCTV cameras & monitor		
P2.60	Terminate at Auxiliary panel and Battery Charger/s		
P2.61	Terminate at Auxiliary panel and overhead crane JB		
P2.62	Terminate at Auxiliary panel and tippler cage drive motor anti-condensation heater		
P2.63	Terminate at Auxiliary panel and positioner drive motors anti-condensation heaters		
P2.64	Terminate at Auxiliary panel and LCS & I/O station heaters		
P2.65	Terminate at Auxiliary panel and panels in MV, LV & Control room anti-condensation heaters		
P2.66	Terminate at Auxiliary panel and hydraulic pump motors anti-condensation heater		
<b>P.3</b>	<b>Low Voltage Cables- 230V</b>		
P3.1	Terminate at 230V at 400V MCC panel and UPS		
P3.2	Terminate at UPS and PLC Rack		
P3.3	Terminate at UPS and socket outlet for laptop		
P3.4	Terminate at UPS and operators control room SCADA PC		
P3.5	Terminate at UPS and positioner encoder module		
P3.6	Terminate at UPS and tippler cage encoder modules #1 & #2		
<b>P.4</b>	<b>Control Cables - 110V</b>		
P4.1	Terminate 110V at PLC and operators control room fibre optic module		
P4.2	Terminate 110V at PLC panel and warning relay supply		
P4.3	Terminate 110V at marshalling panel and Positioner Land LCS		
P4.4	Terminate 110V at marshalling panel and Tippler entry LCS		
P4.5	Terminate at 110V marshalling panel and hopper LCS		
P4.6	Terminate 110V at marshalling panel and Entry Wheel grippers LCS		
P4.7	Terminate 110V at marshalling panel and Exit Wheel grippers LCS		
P4.8	Terminate 110V at marshalling panel and Positioner Land LCS		
P4.9	Terminate 110V at marshalling panel and Positioner Land Distributed I/O panel		
P4.10	Terminate 110V at marshalling panel and Tippler entry Distributed I/O panel		
P4.11	Terminate 110V at marshalling panel and hopper LCS Distributed I/O panel		

P4.12	Terminate 110V at marshalling panel and Entry Wheel grippers Distributed I/O panel		
P4.13	Terminate 110V at marshalling panel and Exit Wheel grippers Distributed I/O panel		
P4.14	Terminate 110V at marshalling panel and positioner over-travel circuit		
P4.15	Terminate 110V at marshalling panel and tippler cage over-travel circuit		
P4.16	Terminate 110V at marshalling panel and hopper LCS for the following signals: i. Hopper full; ii. Block chute; iii. Tilt switch/bindicator iv. Control units		
P4.17	Terminate 110V at marshalling panel and entry gripper #1 solenoids		
P4.18	Terminate 110V at marshalling panel and entry gripper #2 solenoids		
P4.19	Terminate 110V at marshalling panel and entry gripper #3 solenoids		
P4.20	Terminate 110V at marshalling panel and exit gripper solenoids		
P4.21	Terminate 110V at marshalling panel and positioner main arm solenoids		
P4.22	Terminate 110V at marshalling panel and positioner last car arm solenoids		
P4.23	Terminate 110V at marshalling panel and positioner drive #1 brake solenoids		
P4.24	Terminate 110V at marshalling panel and positioner drive #2 brake solenoids		
P4.25	Terminate 110V at marshalling panel and positioner drive #3 brake solenoids		
P4.26	Terminate 110V at marshalling panel and positioner drive #4 brake solenoids		
P4.27	Terminate 110V at marshalling panel and positioner drive #5 brake solenoids		
P4.28	Terminate 110V at marshalling panel and positioner drive #6 brake solenoids		
P4.29	Terminate 110V at marshalling panel and positioner drive #7 brake solenoids		
P4.30	Terminate 110V at marshalling panel and positioner drive #8 brake solenoids		
P4.31	Terminate 110V at marshalling panel and tippler warning siren		
<b>P.5</b>	<b>Control Cables - 24V</b>		
P5.1	24V to laser		
P5.2	24V to operators control room fibre optic module		
P5.3	24V for fibre optic modules		
	<b>Sub-Total Cable Terminations (Contractor is responsible to provide all termination kits, splicing kits and any other consumables required to terminate)</b>		
<b>Q</b>	<b>Works Punch Listing &amp; Inspection – Mechanical</b>	<b>Sum</b>	
<b>Q.1</b>	<b>Wagon tippler cage</b>		
<b>Q1.1</b>	<b>Tippler Punch Listing</b>		
Q1.1.1	The Contractor will create Punch Lists		
<b>Q1.2</b>	<b>Final Inspection</b>		
Q1.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>Q1.3</b>	<b>Final Document Check</b>		
Q1.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Q.2</b>	<b>Positioner system</b>		
<b>Q2.1</b>	<b>Positioner Punch Listing</b>		
Q2.1.1	The Contractor will create Punch Lists		
<b>Q2.2</b>	<b>Final Inspection</b>		
Q2.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>Q2.3</b>	<b>Final Document Check</b>		
Q2.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Q.3</b>	<b>Train holding devices</b>		
<b>Q3.1</b>	<b>Grippers Punch Listing</b>		
Q3.1.1	The Contractor will create Punch Lists		
<b>Q3.2</b>	<b>Final Inspection</b>		
Q3.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>Q3.3</b>	<b>Final Document Check</b>		
Q3.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Q.4</b>	<b>Hoppers &amp; apron feeders</b>		
<b>Q4.1</b>	<b>Punch Listing</b>		
Q4.1.1	The Contractor will create Punch Lists		

<b>Q4.2</b>	<b>Final Inspection</b>		
Q4.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>Q4.3</b>	<b>Final Document Check</b>		
Q4.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Q.5</b>	<b>Dust Extraction &amp; Collection System</b>		
<b>Q5.1</b>	<b>Punch Listing</b>		
Q5.1.1	The Contractor will create Punch Lists		
<b>Q5.2</b>	<b>Final Inspection</b>		
Q5.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>Q5.3</b>	<b>Final Document Check</b>		
Q5.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Q.6</b>	<b>Dust Cowl</b>		
<b>Q6.1</b>	<b>Punch Listing</b>		
Q6.1.1	The Contractor will create Punch Lists		
<b>Q6.2</b>	<b>Final Inspection</b>		
Q6.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>Q6.3</b>	<b>Final Document Check</b>		
Q6.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Sub-Total Works Punch Listing &amp; Inspection – Mechanical</b>			
<b>R</b>	<b>Works Punch Listing &amp; Inspection – Electrical</b>	<b>Sum</b>	
<b>R0.10</b>	<b>Cables</b>		
<b>R1.10</b>	<b>Continuity &amp; Insulation</b>		
R1.1.1	<i>Continuity Tests</i>		
R1.1.2	<i>Insulation Tests</i>		
R1.1.3	<i>Main Earth Bonding Checks</i>		
<b>R1.20</b>	<b>Punch Listing</b>		
R1.2.1	The Contractor will create Punch Lists		
<b>R1.30</b>	<b>Final Inspection</b>		
R1.3.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R1.40</b>	<b>Final Document Check</b>		
R1.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.20</b>	<b>Electrics House and Control Room</b>		
<b>R2.10</b>	<b>Conduct checks applicable to the following equipment: -</b>		
R2.1.1	<i>400V MCC</i>		
R2.1.2	<i>Positioner VVVF Drive Panel</i>		
R2.1.3	<i>Tippler VVVF Drive Panel</i>		
R2.1.4	<i>Apron Feeders VVVF Drive Panel</i>		
R2.1.5	<i>PLC Panel.</i>		
R2.1.6	<i>Operators Control desk</i>		
<b>R2.20</b>	<b>Punch Listing</b>		
R2.2.1	The Contractor will create Punch Lists		
<b>R2.30</b>	<b>Final Inspection</b>		
R2.3.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R2.40</b>	<b>Final Document Check</b>		
R2.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.30</b>	<b>Junction Boxes (JB) and Marshalling Boxes (MB)</b>		
<b>R3.10</b>	<b>Punch Listing</b>		
R3.1.1	The Contractor will create Punch Lists		
<b>R3.20</b>	<b>Final Inspection</b>		
R3.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R3.40</b>	<b>Final Document Check</b>		
R3.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.40</b>	<b>Local Control Stations</b>		
<b>R4.10</b>	<b>Punch Listing</b>		

R4.1.1	The Contractor will create Punch Lists		
<b>R4.20</b>	<b>Final Inspection</b>		
R4.2.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R4.30</b>	<b>Final Document Check</b>		
R4.3.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.50</b>	<b>Entry Wheel Grippers &amp; Exit Wheel Grippers</b>		
<b>R5.10</b>	<b>Conduct checks applicable to the following equipment: -</b>		
R5.1.1	<i>Entry Wheel Grippers Limit Switches.</i>		
R5.1.2	<i>Entry Wheel Grippers Hydraulic Unit.</i>		
R5.1.3	<i>Exit Wheel Grippers Limit Switches.</i>		
R5.1.4	<i>Exit Wheel Grippers Hydraulic Unit.</i>		
<b>R5.20</b>	<b>Punch Listing</b>		
R5.2.1	The Contractor will create Punch Lists		
<b>R5.30</b>	<b>Final Inspection</b>		
R5.3.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R5.40</b>	<b>Final Document Check</b>		
R5.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.60</b>	<b>Positioner</b>		
<b>R6.10</b>	<b>Conduct checks applicable to the following equipment: -</b>		
R6.1.1	<i>Positioner Drive Motors, Cooling Fans &amp; Encoders.</i>		
R6.1.2	<i>Positioner Arm Motor &amp; Encoder.</i>		
R6.1.3	<i>Positioner Drive Gearbox Sensors.</i>		
R6.1.4	<i>Positioner Arm &amp; Last Car Lasers.</i>		
R6.1.5	<i>Positioner Lubrication Systems.</i>		
R6.1.6	<i>Positioner Brake Systems.</i>		
R6.1.7	<i>Positioner Limit Switches.</i>		
R6.1.8	<i>Festoon System.</i>		
R6.1.9	<i>Audible Alarm.</i>		
R6.1.10	<i>Warning Beacon.</i>		
<b>R6.20</b>	<b>Punch Listing</b>		
R6.2.1	The Contractor will create Punch Lists		
<b>R6.30</b>	<b>Final Inspection</b>		
R6.3.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R6.40</b>	<b>Final Document Check</b>		
R6.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.70</b>	<b>Tippler</b>		
<b>R7.10</b>	<b>Conduct checks applicable to the following equipment: -</b>		
R7.1.1	<i>Motors, Cooling Fans &amp; Encoders</i>		
R7.1.2	<i>Lubrication Systems</i>		
R7.1.3	<i>Roller Bearing Temperature Sensors</i>		
R7.1.4	<i>Brake Systems</i>		
R7.1.5	<i>Limit Switches</i>		
R7.1.6	<i>Entry &amp; Exit Clear Photocells</i>		
R7.1.7	<i>Cables</i>		
R7.1.8	<i>Audible Alarms</i>		
R7.1.9	<i>Warning Beacons.</i>		
<b>R7.20</b>	<b>Punch Listing</b>		
R7.2.1	The Contractor will create Punch Lists		
<b>R7.30</b>	<b>Final Inspection</b>		
R7.3.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R7.40</b>	<b>Final Document Check</b>		
R7.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>R0.80</b>	<b>Land Cables and Cable Trays</b>		
<b>R8.10</b>	<b>Conduct checks of all interconnecting cables</b>		
R8.1.1	<i>Check that all cables have been properly secured along their length</i>		
R8.1.2	<i>Check that the gland at each end of all cables has been fitted correctly</i>		
R8.1.3	<i>Check that the cable trays have been fitted correctly and have earth bonding straps fitted</i>		

<b>R8.20</b>	<b>Punch Listing</b>		
R8.2.1	The Contractor will create Punch Lists		
<b>R8.30</b>	<b>Final Inspection</b>		
R8.3.1	The Contractor will conduct a final inspection to confirm that the equipment, including paintwork, is in a good state		
<b>R8.40</b>	<b>Final Document Check</b>		
R8.4.1	Final document check to verify that all specified operations have been completed with satisfactory results		
<b>Sub-Total Works Punch Listing &amp; Inspection – Electrical</b>			
<b>S</b>	<b>Testing (De-Energised): Electrical Land Equipment</b>	<b>Sum</b>	
<b>S.1</b>	<b>Conduct point to point tests applicable to the following equipment: -</b>		
S1.1	<i>400V MCC</i>		
S1.2	<i>Positioner Drive Inverter Panels</i>		
S1.3	<i>Tippler Drive Inverter Panels</i>		
S1.4	<i>Land Junction Boxes and Marshalling Boxes</i>		
S1.5	<i>Land Local Control Stations</i>		
S1.6	<i>Entry Wheel Grippers Limit Switches</i>		
S1.7	<i>Entry Wheel Grippers Hydraulic Unit</i>		
S1.8	<i>Exit Wheel Grippers Limit Switches</i>		
S1.9	<i>Exit Wheel Grippers Hydraulic Unit</i>		
S1.10	<i>Positioner Festoon Track Limit Switches</i>		
S1.11	<i>Tippler Motors, Cooling Fans &amp; Encoders</i>		
S1.12	<i>Tippler Entry &amp; Exit Lasers</i>		
S1.13	<i>Tippler Lubrication Systems</i>		
S1.14	<i>Tippler Roller Bearing Temperature Sensors</i>		
S1.15	<i>Tippler Brake Systems</i>		
S1.16	<i>Tippler Limit Switches</i>		
S1.17	<i>Tippler Cable Loops</i>		
S1.18	<i>Land Audible Alarms</i>		
S1.19	<i>Land Warning Beacons</i>		
S1.20	<i>Land Interconnecting Cables.</i>		
<b>S.2</b>	<b>Continuity Tests</b>		
<b>S.3</b>	<b>Insulation Resistance (IR) Tests</b>		
<b>S.4</b>	<b>Earth Fault Continuity Tests</b>		
<b>Sub-Total Testing (De-Energised): Electrical Land Equipment</b>			
<b>T</b>	<b>TESTING (DE-ENERGISED): Positioner</b>	<b>Sum</b>	
<b>T.1</b>	<b>Positioner Festoon cables</b> (tests should be completed on the Positioner festoon cables before their connection either end)		
T1.1	<i>Continuity Tests</i>		
T1.2	<i>Insulation Resistance Tests on Power Cables</i>		
T1.3	<i>Insulation Resistance Tests on Control Cables</i>		
T1.4	<b>Cables To Positioner Machine</b>		
T1.4.1	<b>Perform tests after the festoon cables have been connected both ends and before connection to any incoming power supplies</b>		
T1.5	<i>Termination Checks</i>		
T1.6	<i>Earth Continuity Checks</i>		
T1.7	<i>Earth Bonding Checks</i>		
<b>Sub-Total TESTING (DE-ENERGISED): Positioner</b>			
<b>U</b>	<b>Electrical Site Testing</b>	<b>Sum</b>	
<b>U.1</b>	<b>Energising: MCC &amp; PLC (Carry out the following checks:)</b>		
<b>U1.1</b>	<b>Protection Settings</b>		
<b>U1.2</b>	<b>MCC Panel Incoming Supply Voltage</b>		
<b>U1.3</b>	<b>MCC Panel Distribution Voltages</b>		
<b>U1.4</b>	<b>Energising PLC</b>		
<b>U1.4.7</b>	<b>Check the Following</b>		
U1.4.7.1	<i>Positioner Encoder</i>		
U1.4.7.2	<i>Tippler Encoder.</i>		
U1.4.8	<i>Check that these encoders are operating correctly in accordance with their operating manuals and are correctly addressed and communicating via the Profibus network</i>		
<b>U.2</b>	<b>Energising Intouch SCADA</b>		

U2.1	Check, that the Intouch SCADA system hardware is operating correctly in accordance with its operating manual.		
U2.2	Check that the Intouch SCADA application program is loaded correctly and running.		
U2.3	Check that Intouch SCADA is communicating with the PLC Ethernet Communication Card and PLC I/O Database.		
U2.4	Toggle the "Cycle Start Pushbutton" on the relevant Intouch SCADA Screen and Check that the PLC receives the correct Signal.		
U2.5	Toggle the status of a known PLC Input or Output and check that the Intouch SCADA shows the correct status.		
<b>U.3</b>	<b>110V AC Relay and Contactor Circuitry</b>		
U3.1	Check out the correct operation of all the 110V AC relay and contactor circuitry against the schematic drawings and rectify any errors found		
<b>U.4</b>	<b>Emergency Stop &amp; Overtravel Circuitry</b>		
U4.1	Check out the correct operation of all the emergency stop & overtravel circuitry in schematic drawing and rectify any errors found		
<b>U.5</b>	<b>Energising MCC Motor Starter Modules</b>		
<b>U5.1</b>	<b>Tests apply respectively to all the motor starter modules</b>		
U5.1.1	<i>Entry Wheel Grippers &amp; THA Hyd. Pump Motor #1</i>		
U5.1.2	<i>Entry Wheel Grippers &amp; THA Hyd. Pump Motor #2</i>		
U5.1.3	<i>Entry Wheel Grippers &amp; THA Hyd. Pump Motor #3</i>		
U5.1.4	<i>Entry Wheel Grippers &amp; THA Fill Filter Pump #1</i>		
U5.1.5	<i>Entry Wheel Grippers &amp; THA Fill Filter Pump #2</i>		
U5.1.6	<i>Entry Wheel Grippers &amp; THA Fill Filter Pump #3</i>		
U5.1.7	<i>Exit Wheel Grippers &amp; THA Hyd. Pump Motor #1</i>		
U5.1.8	<i>Exit Wheel Grippers &amp; THA Fill Filter Pump</i>		
U5.1.9	<i>Positioner Hyd. Pump Motor #1</i>		
U5.1.10	<i>Positioner Hyd. Pump Motor #2</i>		
U5.1.11	<i>Positioner Fill Filter Pump.</i>		
<b>U.6</b>	<b>Commission the brake systems</b>		
<b>U6.1</b>	<b>Positioner Brake Systems</b>		
U6.1.1	<b>Commission the Positioner Brake Systems for operation in accordance with their Manufacturer Instruction Manuals. This should include but not be limited to:</b> – Ensuring all safety devices are fully functional – Checking correct operation all associated PLC inputs and outputs for these systems.		
U6.1.2	Check correct operation of all brakes and feedback signals to the PLC		
<b>U6.2</b>	<b>Commission the Tippler Brake System</b>		
U6.2.1	Commission the Tippler Brake System for operation in accordance with the Manufacturer Instruction Manuals. This should include but not be limited to: – Tippler Entry & Exit Normal Brake – Tippler Entry & Exit Emergency Brake – Ensuring all safety devices are fully functional – Checking correct operation all associated PLC inputs and outputs for these systems.		
U6.2.2	Check correct operation of all the tippler brake systems and their feedback signals to the PLC		
<b>U.7</b>	<b>ENERGISING: AC VVVF DRIVE CUBICLES &amp; EQUIPMENT TESTING</b>		
<b>U7.1</b>	<b>Test AC drives and their VVVF drive motors</b>		
U7.1.1	<i>Positioner Drive Motor #1</i>		
U7.1.2	<i>Positioner Drive Motor #2</i>		
U7.1.3	<i>Positioner Drive Motor #3</i>		
U7.1.4	<i>Positioner Drive Motor #4</i>		
U7.1.5	<i>Positioner Drive Motor #5</i>		
U7.1.6	<i>Positioner Drive Motor #6</i>		
U7.1.7	<i>Positioner Drive Motor #7</i>		
U7.1.8	<i>Positioner Drive Motor #8</i>		
U7.1.9	<i>Tippler Entry Drive Motor</i>		
U7.1.10	<i>Tippler Exit Drive Motor</i>		
U7.1.11	<i>Apron Feeder Drive Motor #1</i>		
U7.1.12	<i>Apron Feeder Drive Motor #2</i>		
U7.1.13	<i>Apron Feeder Drive Motor #3</i>		
U7.1.14	<i>Apron Feeder Drive Motor #4</i>		
U7.1.15	<i>Apron Feeder Drive Motor #5.</i>		
<b>U7.2</b>	<b>Protection Settings</b>		
<b>U7.3</b>	<b>110V AC DC Control Supply Voltages</b>		

<b>U7.4</b>	<b>240V AC Motor Heater Supplies</b>		
<b>U7.5</b>	<b>Software Configuration of AC drives</b>		
<b>U7.6</b>	<b>AC Drive Cubicle Ancillary Circuits</b>		
<b>U7.6.1</b>	<b>Perform checks and tests on the following associated circuits before the AC drives are powered up:</b>		
U7.6.1.1	<i>Drive motor thermistor circuit</i>		
U7.6.1.2	<i>Drive motor tacho speed encoder</i>		
U7.6.1.3	<i>Profibus data communication circuitry</i>		
U7.6.1.4	<i>Emergency stop circuitry</i>		
U7.6.1.5	<i>Start Contactor circuitry</i>		
U7.6.1.6	<i>Positioner Encoder circuitry</i>		
U7.6.1.7	<i>Tippler Encoder circuitry</i>		
	<b>Sub-Total Electrical Site Testing</b>		
<b>V</b>	<b>Commissioning No-Load Operation:</b>	<b>Sum</b>	
<b>V.1.1</b>	<b>Positioner Drive Motors</b>		
V1.1.1	<i>Positioner Drive Motor #1</i>		
V1.1.2	<i>Positioner Drive Motor #2</i>		
V1.1.3	<i>Positioner Drive Motor #3</i>		
V1.1.4	<i>Positioner Drive Motor #4</i>		
V1.1.5	<i>Positioner Drive Motor #5</i>		
V1.1.6	<i>Positioner Drive Motor #6</i>		
V1.1.7	<i>Positioner Drive Motor #7</i>		
V1.1.8	<i>Positioner Drive Motor #8.</i>		
<b>V1.1.10</b>	<b>Energising the Positioner Motors on No-Load</b>		
<b>V1.1.10.1</b>	<b>Ensure the following AC drive Profibus signals are communicating and are calibrated correctly:</b>		
V1.1.10.1.1	<i>Speed reference</i>		
V1.1.10.1.2	<i>Speed feedback</i>		
V1.1.10.1.3	<i>Torque feedback (if required)</i>		
V1.1.10.8	After the individual Positioner AC drives have been set-up and operated successfully, operate the complete Positioner AC drive 'system' under no load conditions at all speeds, recording the values of voltage, current and frequency		
<b>V.1.2</b>	<b>Tippler Drive Motors</b>		
V1.2.1	<i>Tippler Entry Drive Motor</i>		
V1.2.2	<i>Tippler Exit Drive Motor.</i>		
<b>V1.2.3</b>	<b>Energising Each Tippler Motor on No-Load</b>		
V1.2.3.1	Operate each Tippler AC drive and its associated drive motor. Perform functional tests to confirm that each drive 'system' is operating satisfactorily, including the motor's tacho speed encoder, thermistor, and anti-condensation heater circuit.		
<b>V1.2.4</b>	<b>Ensure the following AC drive Profibus signals are communicating and are calibrated correctly:</b>		
V1.2.4.1	<i>Speed reference</i>		
V1.2.4.2	<i>Speed feedback</i>		
V1.2.4.3	<i>Torque feedback (if required)</i>		
<b>V1.2.5</b>	<b>Operating Tippler on No-Load</b>		
V1.2.5.1	Operate both Tippler AC drives as a 'system' under no load conditions at all the speeds specified in the Results Table, recording the values of voltage, current and frequency.		
V1.2.5.2	Set the maximum 'Maintenance Mode' speed of each Tippler cell to 6.0 degrees/second.		
V1.2.5.3	Isolate the MCC motor starters for the Tippler Brake Motors and remove any temporary PLC changes made		
	<b>Sub-Total Commissioning No-Load Operation:</b>		
<b>W</b>	<b>Operational Tests in Maintenance Mode</b>	<b>Sum</b>	
<b>W1.2</b>	<b>Commission the Entry Wheel Grippers Hydraulic Systems</b>		
	<b>Commission the Entry Wheel Grippers Hydraulic Power Pack and hydraulic system in accordance with the Manufacturers Instruction Manual. This should include but not be limited to:</b>		
W1.2.1	<i>Checking for correct rotation of all Motors &amp; Pumps</i>		
W1.2.2	<i>Flushing the system for at least two hours using temporary filters</i>		
W1.2.3	<i>Fitting new filters after flushing</i>		
W1.2.4	<i>Inspecting all pipework for leaks and rectify any found</i>		
W1.2.5	<i>Ensuring correct pressures are attained</i>		
W1.2.6	<i>Ensuring all safety devices are fully functional</i>		
W1.2.7	<i>Checking correct operation all PLC inputs and outputs at the hydraulic power pack.</i>		
<b>W1.3</b>	<b>Operating the Entry Wheel Grippers #1, #2, #3</b>		



W1.3.1	Operate the Wheel Grippers to check for correct operation of all the limit / Pressure switches and their signals back to the PLC.		
W1.3.2	Operate the Wheel Grippers to measure and record the pressures, operating times, pressure and settings, record results and present the results to the Transnet Project Manager for review and approval in principle.		
	<b>Sub-Total Operational Tests in Maintenance Mode</b>		
<b>X</b>	<b>Operational Tests IN 'LOCAL' MODE</b>	<b>Sum</b>	
<b>X.1</b>	<b>EXIT WHEEL GRIPPERS (NO WAGONS)</b>		
<b>X1.1</b>	<b>Commission the Entry Wheel Grippers Hydraulic Systems</b>		
	<b>Commission the Exit Wheel Grippers Hydraulic Power Pack and hydraulic system in accordance with the Manufacturers Instruction Manual. This should include but not be limited to:</b>		
X1.1.1	<i>Checking for correct rotation of all Motors &amp; Pumps</i>		
X1.1.2	<i>Flushing the system for at least two hours using temporary filters</i>		
X1.1.3	<i>Fitting new filters after flushing</i>		
X1.1.4	<i>Inspecting all pipework for leaks and rectify any found</i>		
X1.1.5	<i>Ensuring correct pressures are attained</i>		
X1.1.6	<i>Ensuring all safety devices are fully functional</i>		
X1.1.7	<i>Checking correct operation all PLC inputs and outputs at the hydraulic power pack.</i>		
<b>X1.2</b>	<b>Operating the Exit Wheel Grippers</b>		
X1.2.1	Operate the Wheel Grippers to check for correct operation of all the limit / Pressure switches and their signals back to the PLC.		
X1.2.2	Operate the Wheel Grippers to measure and record the pressures, operating times, pressure and settings, record results and present the results to the Transnet Project Manager for review and approval in principle.		
	<b>Sub-Total Operational Tests IN 'LOCAL' MODE</b>		
<b>Y</b>	<b>Operational Tests IN 'LOCAL' MODE</b>	<b>Sum</b>	
<b>Y.1</b>	<b>Positioner (No Wagons)</b>		
Y1.1	Commission the Positioner Lock-off Stop Pushbuttons		
Y1.2	Commission the Tippler Warning Devices		
Y1.3	Commission the Positioner Lubrication Systems		
Y1.4	Commission the Positioner Lubrication Systems for operation in accordance with their OEM's Instruction Manuals. This should include but not be limited to:		
Y1.4.1	<i>Filling with lubricant(s)</i>		
Y1.4.2	<i>Checking for correct rotation of the pump motor and air compressor</i>		
Y1.4.3	<i>Flushing the systems using temporary filters</i>		
Y1.4.4	<i>Fitting new filters after flushing</i>		
Y1.4.5	<i>Inspecting all pipework for leaks and rectify any found</i>		
Y1.4.6	<i>Ensuring correct pressures are attained</i>		
Y1.4.7	<i>Ensuring all safety devices are fully functional</i>		
Y1.5	Checking correct operation all associated PLC inputs and outputs for these systems		
Y1.6	Force respective PLC outputs as required to check correct delivery of lubricant at each delivery point and feedback signals to the PLC		
<b>Y1.7</b>	<b>Commission the Positioner Limit Switches</b>		
	<b>Set up the following Positioner travel limit switches in accordance with the relevant drawing:</b>		
Y1.7.1	<i>Positioner Forward Overtravel Limit</i>		
Y1.7.2	<i>Positioner Forward Limit</i>		
Y1.7.3	<i>Positioner Reverse Limit</i>		
Y1.7.4	<i>Positioner Reverse Overtravel Limit</i>		
	<b>Set up the following Positioner Arm limit switches in accordance with the relevant drawing:</b>		
Y1.7.5	<i>Positioner Arm Lowered</i>		
Y1.7.6	<i>Positioner Arm Lowered Slowdown Limit</i>		
Y1.7.7	<i>Positioner Arm Raised</i>		
Y1.7.8	<i>Positioner Arm Raised Slowdown Limit</i>		
Y1.7.9	<i>Commission the Last Car laser.</i>		
<b>Y1.8</b>	<b>Commission the Positioner travel motion over normal travel range</b>		
<b>Y1.9</b>	<b>Commission the Positioner travel motion overtravel recovery</b>		
<b>Y1.10</b>	<b>Commission the Positioner Arm</b>		
<b>Y1.11</b>	<b>Commission the Positioner Encoder</b>		
<b>Y1.12</b>	<b>Commission the Positioner Arm Gap Laser</b>		
<b>Y1.13</b>	<b>Check Operation of Positioner temperature and vibration sensors</b>		

<b>Sub-Total Operational Tests IN 'LOCAL' MODE</b>			
<b>Z</b>	<b>Operational Tests In 'Maintenance' Mode – Tippler (No Wagons)</b>	<b>Sum</b>	
<b>Z.1</b>	<b>Tippler</b>		
<b>Z1.1</b>	<b>Commission the Tippler Lubrication Systems</b>		
<b>Z1.1.1</b>	<b>Commission the Tippler Lubrication Systems for operation in accordance with their Manufacturers Instruction Manuals. This should include but not be limited to:</b>		
Z1.1.1.1	<i>Filling with lubricant(s)</i>		
Z1.1.1.2	<i>Checking for correct rotation of the pump motor</i>		
Z1.1.1.3	<i>Flushing the systems using temporary filters</i>		
Z1.1.1.4	<i>Fitting new filters after flushing</i>		
Z1.1.1.5	<i>Inspecting all pipework for leaks and rectify any found</i>		
Z1.1.1.6	<i>Ensuring correct pressures are attained</i>		
Z1.1.1.7	<i>Ensuring all safety devices are fully functional</i>		
Z1.1.1.8	<i>Checking correct operation all associated PLC inputs and outputs for these systems.</i>		
Z1.1.2	Force respective PLC outputs as required to check correct delivery of lubricant at each delivery point and feedback signals to the PLC		
<b>Z1.2</b>	<b>Commission the Tippler Limit Switches</b>		
<b>Z1.2.1</b>	<b>Set up the following Tippler limit switches in accordance with the relevant Drawings</b>		
Z1.2.1.1	<i>Overtravel Return Limit</i>		
Z1.2.1.2	<i>At Rail Level Limit</i>		
Z1.2.1.3	<i>Not Over tipped Limit</i>		
Z1.2.1.4	<i>Overtravel Tip Limit.</i>		
Z1.2.2	Operate each of the limit switches to ensure correct operation and feedback signals to the PLC		
<b>Z1.3</b>	<b>Commission the Tippler Local Control Stations</b>		
<b>Z1.4</b>	<b>Commission the Tippler Entry Clear lasers</b>		
<b>Z1.5</b>	<b>Commission the Tippler Exit Clear lasers</b>		
<b>Z1.6</b>	<b>Check Operation of Tippler Temperature Sensors</b>		
<b>Z1.8</b>	<b>Commission the Tippler Drive Motion Over Normal Travel Range</b>		
<b>Z1.9</b>	<b>Commission the Tippler Overtravel Recovery</b>		
<b>Z1.10</b>	<b>Conduct Tippler Motion No-Load Tests</b>		
<b>Z1.11</b>	<b>Conduct over tipping the Empty Tippler in Maintenance Mode</b>		
<b>Operational Tests In 'Maintenance' Mode – Tippler (No Wagons)</b>			
<b>AA</b>	<b>Operational Tests in Semi-Auto Mode (No Wagons)</b>	<b>Sum</b>	
<b>AA.1</b>	<b>Positioner</b>		
<b>AA1.2</b>	<b>Initialising System for 'Semi-Auto' Mode</b>		
<b>AA1.2.3</b>	<b>Ensure in Maintenance Mode that:</b>		
AA1.2.3.1	<i>Positioner is fully back</i>		
AA1.2.3.2	<i>Positioner Arm is fully raised</i>		
AA1.2.3.3	<i>Train Holding Arm is fully Raised</i>		
AA1.2.3.4	<i>Tippler is at rail level</i>		
AA1.2.3.5	<i>Entry Wheel Grippers are fully released</i>		
AA1.2.3.6	<i>Exit Wheel Grippers are fully released</i>		
AA1.2.3.7	<i>The beam of the Last Car laser pair broken (block with a temporary cover).</i>		
<b>Operational Tests in Semi-Auto Mode (No Wagons)</b>			
<b>BB</b>	<b>Operating Complete Car Tippler System In 'Semi-Auto' Mode (Individual Movements Through 'Next Step' Button)</b>	<b>Sum</b>	
<b>BB.2</b>	<b>Carry out the following:</b>		
BB2.1	<i>Entry Wheel Grippers will engage.</i>		
BB2.2	<i>Tippler to the normal tip position.</i>		
BB2.3	<i>Tippler travel back to rail level</i>		
BB2.4	<i>Positioner travel to the arm engage position.</i>		
BB2.5	<i>Positioner Arm swing up and down</i>		
BB2.6	<i>Entry Wheel Grippers release.</i>		
BB2.7	<i>Positioner travel to Train Holding Arm Engage position.</i>		
BB2.8	<i>Exit Wheel Grippers and train holding arm engage.</i>		



BB2.9	<i>Tippler move to the normal tip position.</i>		
BB2.10	<i>Tippler return back to rail level.</i>		
BB2.11	<i>Positioner arm retract to the fully retracted position. The positioner will then travel back to the arm engage position. The Entry wheel grippers will engage at the pre-determined position.</i>		
BB2.12	<i>Positioner arm will engage, entry &amp; exit grippers will retract and Train Holding Arm will swing</i>		
	<b>Sub-Total Operating Complete Car Tippler System In 'Semi-Auto' Mode (Individual Movements Through 'Next Step' Button)</b>		
<b>CC</b>	<b>Operational Tests In 'Auto' Mode (No Wagons)</b>	<b>Sum</b>	
<b>CC.1</b>	<b>Operating Complete Car Tippler System in 'Auto Mode'</b>		
<b>CC1.1</b>	<b>Confirm the following events occur in sequence:</b>		
CC1.1.1	<i>The Entry Wheel Grippers release</i>		
CC1.1.2	<i>The Positioner moves to the fully forward position</i>		
CC1.1.3	<i>The Entry Wheel Grippers engage</i>		
CC1.1.4	<i>The Exit Wheel Grippers engage</i>		
<b>CC.2</b>	<b>TIP CYCLE</b>		
<b>CC2.1</b>	<b>Confirm the following events occur in sequence:</b>		
CC2.1.1	<i>The Exit Wheel Grippers release.</i>		
CC2.1.2	<i>The Entry Wheel Grippers engage at a pre-determined positioner position.</i>		
CC2.1.3	<i>The Positioner moves to the arm engage position.</i>		
CC2.1.4	<i>The Positioner Arm engages.</i>		
CC2.1.5	<i>The positioner moves to the fully forward position (THD Engage Position)</i>		
CC2.1.6	<i>The Exit Wheel Grippers engage.</i>		
<b>CC.3</b>	<b>Stopping the 'Auto' Mode by Removal of 'Tippler Permissive' Signal</b>		
<b>CC4</b>	<b>Locomotive and wagon clearances through tippler system</b>		
<b>CC4.1</b>	<b>Testing Locomotive and Wagon Clearances</b>		
CC4.1.1	Arrange for the train to be driven very slowly through the Entry Wheel Grippers, past the Positioner, through Tippler Cells and through the Exit Wheel Grippers		
<b>CC4.2</b>	<b>Setting Up Train Position Control Points</b>		
<b>CC4.2.1</b>	<b>Set-up or confirm the settings for correct operation of the following items:</b>		
CC4.2.1.1	<i>Last Car arm lasers</i>		
CC4.2.1.2	<i>Tippler Entry Clear lasers</i>		
CC4.2.1.3	<i>Tippler Exit Car lasers</i>		
CC4.2.1.4	<i>Positioner Forward Slowdown limit</i>		
CC4.2.1.5	<i>Positioner Reverse Slowdown limit</i>		
CC4.2.1.6	<i>Positioner Forward Limit</i>		
CC4.2.1.7	<i>Positioner reverse Limit</i>		
CC4.2.1.8	<i>Positioner Encoder settings</i>		
CC4.2.1.9	<i>Positioner Drive systems</i>		
CC4.2.1.10	<i>Rectify any problems found.</i>		
	<b>Sub-Total Operational Tests In 'Auto' Mode (No Wagons)</b>		
<b>DD</b>	<b>Full Operational Test In 'Auto' Mode (Complete Train of full Wagons)</b>	<b>Sum</b>	
<b>DD.1</b>	<b>Operating Complete Car Tippler System in 'Auto' Mode</b>		
<b>DD1.1</b>	<b>On Intouch SCADA, select 'Start Cycle' then confirm the following events occur in sequence:</b>		
DD1.1.1	<i>The Positioner arm engages.</i>		
DD1.1.2	<i>The Entry Wheel Grippers release.</i>		
DD1.1.3	<i>The Positioner moves to the fully forward position.</i>		
DD1.1.4	<i>The Exit Wheel Grippers engage.</i>		
DD1.1.5	<i>The Entry Wheel Grippers engage as the positioner returns to the back limit</i>		
<b>DD.2</b>	<b>TIP CYCLE</b>		
<b>DD2.1</b>	<b>Confirm the following events occur in sequence:</b>		
DD2.1.1	<i>The Tippler moves to normal tip position before returning to rail level and at the same time the Positioner Arm raises, and the Positioner returns to the fully back position</i>		
DD2.2.2	<i>The Positioner Travel VVVF drives are de-energised, and the brakes are applied</i>		
<b>DD2.2</b>	<b>Confirm the following events occur in sequence:</b>		
DD2.2.1	<i>The Exit Wheel Grippers release</i>		
DD2.2.2	<i>The Entry Wheel Grippers release</i>		
	<b>Sub-Total Full Operational Test In 'Auto' Mode (Complete Train of full Wagons)</b>		

EE	Mechanical Site Commissioning for The Wagon Unloading Station	Sum	
<b>EE.1</b>	<b>Hoppers And Apron Feeders</b>		
EE1.1	Check that the hoppers and feeders have been installed as per the relevant drawings. Particular attention should be given to the clearances around the feeder.		
EE1.2	Check the lubrication systems have been installed as described in the relevant drawings and lubrication schedule of the grease lubrication OEM. Pipes must be adequately supported and protected from damage from mechanical movement		
EE1.3	Check the Hopper liners have been installed and are secured		
EE1.4	Check the operation of the Knife Gate Assembly ensure that all the knife gates are able to extend and retract		
EE1.5	Check operation of all Apron Feeders and clearances between adjacent chutes and skirts		
<b>EE.2</b>	<b>Train Holding Devices</b>		
EE2.1	Check that the Gripper units have been assembled as described in the Contractor's drawings. Particular attention shall be given to each Gripper unit's relationship to the main rails		
EE2.2	Check the security of all bolted components and foundation bolts, particularly the rail clip fasteners		
EE2.3	Set each Gripper bar gap to the dimensions as shown on Contractor's drawings and check that the offset of this gap in relation to the main rail is correct.		
EE2.4	Check that the lubrication system has been installed to the requirements the grease lubrication OEM. Check that all pipe runs are secure, primed with grease and all discharge valves are set.		
EE2.5	Operate lubrication pump to ensure that all points requiring grease have been lubricated.		
EE2.6	Check that the hydraulic system has been installed to the requirements shown on the Contractors drawings and the hydraulic OEM requirements. Check that all pipe runs, and hoses are secure, and all connections are adequately tightened and free from leaks when the system is pressurised. Work thru OEM Pre-commissioning document.		
EE2.7	Ensure that grippers engage and retract fully.		
EE2.8	During operation, check that there is no binding of the pins and bushes.		
EE2.9	Check that limit switches are adjusted to trip when the grippers are in the retracted position.		
<b>EE.3</b>	<b>POSITIONER</b>		
EE3.1	Check that the positioner and track have been assembled and installed as per the Contractors drawings. Particular attention shall be given to the installation and alignment of positioner track and racks and their relationship to the main track as shown on the Contractors drawings.		
EE3.2	Check the security of all bolted components and foundation bolts.		
EE3.3	Check gearboxes are filled with oil to manufacturers requirements.		
EE3.4	Check that the lubrication systems have been installed to the grease lubrication OEM requirements. Check that all pipe runs are secure, purged and primed with grease.		
EE3.5	Check that the drive brake system has been installed to the suppliers' requirements.		
EE3.6	Release and lock off all positioner drive brakes		
EE3.7	Check that the rack is adequately coated with lubricant.		
EE3.8	Check positioner pinion mesh and guide roller clearances as required in Contractor's drawings		
EE3.9	Reset brakes		
EE3.10	Operate the positioner main arm for several cycles ensuring that there is free movement of all links, pins, and rollers.		
EE3.11	Check that the head is capable of lowering to the 908 mm dimension stated on Contractor's drawings from main rail level to underside of head and record below		
EE3.12	Operate positioner last wagon arm for several cycles ensuring that there is free movement of the rotary actuator. Check that the head is capable of lowering to the 840 dimension as per the Contractors drawings from main rail level to centre line of head. Also check that the arm will swing completely to the rest position		
EE3.13	Operate positioner last wagon arm coupler mechanism for several cycles ensuring that there is free movement of the coupler pin linkage and hydraulic cylinder. Check that the coupler is set for both the engaged and release positions		
EE3.14	Run Positioner along the entire length of track in "inch" mode in both directions with no wagon present. Stop the positioner at regular intervals and check that guide roller and track clearances correspond to those specified in the Contractors drawings. Re-adjust guide rollers if necessary		
EE3.15	Check guide roller setting as per Contractor's drawings and adjust if necessary		
EE3.16	Run positioner at slow speed to end stops at both ends of travel and check that the hydraulic buffers contact the end stops at the same time. Weld on suitable packing plate to stop face if necessary		
EE3.17	At the same time, check the stroke and freedom of movement of the positioner festoon system		



<b>EE.4</b>	<b>TIPPLER</b>		
EE4.1	Check that the tippler cage has been assembled and installed as described in the Contractors drawings. Particular attention should be given to support roller settings and main cage assembly tolerances		
EE4.2	Check the security of all bolted components and foundation bolts.		
EE4.3	Ensure gearboxes are filled with oil to manufacturers requirements.		
EE4.4	Check that the lubrication system has been installed to the grease lubrication OEM requirements		
EE4.5	Check that all pipe runs are secure, primed with grease and all discharge valves are set. If necessary, operate lubrication pumps to ensure that all points requiring grease have been purged, pressurised, and lubricated.		
EE4.6	Check that tippler racks have been adequately coated with lubricant.		
EE4.7	Check that the platform rails are aligned with the main rails to within ±3mm both laterally and vertically		
EE4.8	"Inch" rotate the cell through one complete cycle (to 180° and return) to check for correct mesh between the rack and pinion		
EE4.9	Inspect surface of racks for evidence of any hard contact with pinion, indicated by bright polished areas on the tooth face		
<b>EE4.10</b>	<b>During inch rotation test to 180° also check the following: -</b>		
EE4.10.1	<i>Rack and pinion engagement is satisfactory.</i>		
EE4.10.2	<i>Working clearances between rotating cage and foundations are satisfactory. Also, between the rotating cage and the dust cowl.</i>		
EE4.10.3	<i>Clamp gear operation is satisfactory and contacts their fully tipped stops without any interference.</i>		
EE4.11	During inch rotation test check operation of clamp gear assemblies through their full range of. Ensure there is no binding of links, pins or bushes. Check for lubrication pipework snags over full movement of clamps. In particular check that the tip side clamps are clear of any obstruction from the side pad.		
EE4.12	Rotate empty tippler cage through one complete tip and return cycle to 150° at slow speed and repeat checks.		
EE4.13	Rotate empty tippler cage through one complete tip and return cycle to 150° at full speed and check for smooth operation.		
EE4.14	Back rotate the tippler to confirm that the operation of the overtravel limit switch at - 2.5 degrees and that buffers contact the stops at the same time. Weld on suitable packing plate to the stop face if necessary.		
EE4.15	Forward rotate the tippler to confirm the operation of the overtravel limit switch at 181° degrees and that buffers contact the stops at the same time. Weld on suitable packing to the stop face if necessary		
<b>EE.5</b>	<b>Dust extraction system</b>		
<b>EE5.1</b>	<b>DRIVE CHECKS</b>		
EE5.1.1	Dust extraction fan		
EE5.1.2	Dust extraction blower fan		
EE5.1.3	Dust storage pug mill		
EE5.1.4	Compressor 1		
EE5.1.5	Desiccant Dryer 1		
EE5.1.6	Dust Collector 1 Screw Conveyor		
EE5.1.7	Dust Collector 1 Rotary Vane Feeder		
EE5.1.8	Compressor 2		
EE5.1.9	Desiccant Dryer 2		
EE5.1.10	Dust Collector 2 Screw Conveyor		
EE5.1.11	Dust Collector 2 Rotary Vane Feeder		
<b>EE5.2</b>	<b>PULSE SYSTEMS</b>		
EE5.2.1	Pulse system across the cartridges		
<b>EE5.3</b>	<b>TESTS</b>		
EE5.3.1	Pulse System 1		
EE5.3.2	Pulse System 2		
EE5.3.3	Pulse System 3		
EE5.3.4	Pulse System 4		
EE5.3.5	Duct Pressure Sensor 1		
EE5.3.6	Duct Pressure Sensor 2		
<b>EE5.4</b>	<b>AIR VOLUME</b>		
EE5.4.1	Using a pilot tube and magnehelic gauge or manometer, check air volume at stack test points		
	<b>Sub-Total Mechanical Site Commissioning for The Wagon Unloading Station</b>		
<b>FF</b>	<b>System No Load Test (Individual Loaded Test)</b>	<b>Sum</b>	
<b>FF.1</b>	<b>TRAIN HOLDING DEVICES</b>		
FF1.1	Check clearances of the wagon in the tippler as the rake is pushed through		

FF1.2	Ensure the gripper bars are contacting the wagon wheel rims and that the wheels are central in the gripper units		
FF1.4	Check that the 4 wagon wheels are aligned with the exit wheel gripper units and engage wheel grippers. Ensure the gripper bars are contacting the wagon wheel rims and that the wheels are central in the gripper units		
<b>FF.2</b>	<b>POSITIONER</b>		
	<b>To ensure that full functional test of the plant equipment can be carried out, a minimum of 14 empty wagons are required. Prior to loco marshalling into the Wagon Unloading system the following conditions must be satisfied: -</b>		
FF2.1	<i>Positioner located at its datum position</i>		
FF2.2	<i>Positioner main arm raised</i>		
FF2.3	<i>Positioner last car arm swung out of the way</i>		
FF2.4	<i>Tippler aligned and stationary at rail level</i>		
FF2.5	<i>Tippler clamps fully raised. Note - clamp counterweight arms to be in contact with stop faces</i>		
FF2.6	<i>Tippler drive brakes on</i>		
FF2.7	<i>Entry track clear</i>		
FF2.8	<i>All wheel grippers retracted.</i>		
<b>FF2.9</b>	<b>Bringing in a new train</b>		
	<b>Check relative clearance between the locomotive and the following components during this operation: -</b>		
FF2.9.1	<i>End Rings and 'U' Frame Structures &amp; Guide Blocks</i>		
FF2.9.2	<i>Clamps</i>		
FF2.9.3	<i>Side Pad &amp; Tip Side Guide Blocks</i>		
FF2.9.4	<i>Cross Beam Guide Blocks</i>		
FF2.9.5	<i>End Ring Spill Plates and Covers.</i>		
<b>FF2.10</b>	<b>Complete Positioner Maintenance Set-Up Operation</b>		
<b>FF2.11</b>	<b>Complete Positioner Semi-Automatic Operation</b>		
<b>FF2.12</b>	<b>Complete Positioner Automatic Operation</b>		
<b>FF.3</b>	<b>TIPPLER</b>		
<b>FF3.1</b>	<b>At 90° carry out the following checks: -</b>		
FF3.1.1	<i>That there is full contact between the side pad and the wagon body.</i>		
FF3.1.2	<i>That there is a positive clamping action and full contact between all clamps and sill faces of wagons.</i>		
FF3.1.3	<i>That there is a positive clamping action and full contact between wagon wheels and platform rails.</i>		
FF3.1.4	<i>There is clearance between the clamp arm and the rear face of the side pad.</i>		
FF3.1.5	<i>That all clamp counterweight arms are not engaged with the stop pads.</i>		
<b>FF3.2</b>	<b>Return the tippler to rail level at slow speed and check the following: -</b>		
FF3.2.1	<i>That clamp gear assemblies return to the normal retracted position</i>		
FF3.2.2	<i>The stopping angles for normal return and over return conditions have not varied</i>		
FF3.2.3	<i>The platform rail and main rails are aligned to within ±3mm both laterally and vertically in the normal return position.</i>		
<b>FF3.3</b>	<b>Rotate the tippler at slow speed to normal tip position (actual tip angle to be recorded) and observe the following: -</b>		
FF3.3.1	<i>That there is full contact between the side pad and the wagon body.</i>		
FF3.3.2	<i>That there is a positive clamping action and full contact between all clamp beams and sill faces of wagon.</i>		
FF3.3.3	<i>That there is a positive clamping action and full contact between wagon wheels and platform rails.</i>		
FF3.3.4	<i>The stopping angle at the normal tip condition has not varied.</i>		
FF3.3.5	<i>The spillage of material around the end ring spill plates.</i>		
<b>FF3.4</b>	<b>Return the tippler to rail level at slow speed and observe the following:</b>		
FF3.4.1	<i>That the clamp gear assemblies return to the normal raised position, (counterweight arms in contact with stop pads).</i>		
FF3.4.2	<i>The stopping angle at normal return condition has not varied.</i>		
FF3.4.3	<i>The platform rails and main rails are aligned to within ±3mm both laterally and vertically in the normal return position.</i>		
	<b>Sub-Total System No Load Test (Individual Loaded Test)</b>		
<b>GG</b>	<b>SYSTEM LOADED TEST (TOTAL SEQUENTIAL OPERATION)</b>	<b>Sum</b>	
<b>GG.1</b>	<b>LOAD COMMISSIONING</b>		

	<b>Chart recordings shall be made of the following parameters: -Recordings are required for no-wagon, empty wagon and maximum CR5, CR13 &amp; CR14 wagon loads at normal operating speed and slow (maintenance) speed.</b>		
GG1.1	Position (rotation or linear as appropriate)		
GG1.2	Volts		
GG1.3	Amps		
GG1.4	Frequency		
GG1.5	Kilowatts		
GG1.6	Brake application sequence		
GG1.7	Positioner Main Arm operating time and pressures		
GG1.8	Positioner Last Wagon operating time and pressures		
GG1.9	Gripper's application times and pressures		
GG1.10	Reducer bearing and support roller bearing temperatures		
GG1.11	Noise emission levels at agreed locations.		
<b>GG.2</b>	<b>Performance Testing</b>		
GG2.1	The performance test shall operate for a minimum of 5 rakes of 110 CR5 ore wagons and 5 rakes of 110 CR13 or CR14 wagons. During the performance testing, no further adjustments shall be performed.		
GG2.2	The performance test of the tippler, positioner, wheel grippers, feeders, and conveyor 308 shall achieve the required cycle times and feed rates for each component and the entire system.		
GG2.3	Feeder operation, including trimming to minimise feeder stoppages due to hoppers emptying below low level between tip cycles and prevent delays to subsequent cycles as a result of the hoppers overflowing		
GG2.4	Operation of Dust Extraction Equipment		
	<b>Sub-Total SYSTEM LOADED TEST (TOTAL SEQUENTIAL OPERATION)</b>		
<b>FF</b>	<b>Submittals</b>	<b>Sum</b>	
	<b>The Contractor shall submit to the Project Manager documentation and drawings, including all revisions thereof, required for the project management, design, furnishing of equipment, fabrication, erection, installation, maintenance, and operation of the Machine</b>		
<b>FF.1</b>	<b>Submittals shall include the following</b>		
FF1.1	Design Brief		
FF1.2	Project Management Procedures		
FF1.3	Equipment Specifications		
FF1.4	Control System Level 1,2 & 3		
FF1.5	Control System Quality Plan		
FF1.6	Operators Control Room & SCADA Specification		
FF1.7	PLC I/O Schedule		
FF1.8	Device Schedule		
FF1.9	Level 2 PLC Control Sequence Descriptions		
FF1.10	Drawings		
FF1.11	Calculations		
FF1.12	Erection Procedures		
FF1.13	Commissioning Procedures		
FF1.14	Installation, Operation, and Maintenance Manuals		
FF1.15	Quality Assurance Manual		
FF1.16	Contract Quality Plan		
FF1.17	Programs.		
<b>FF.2</b>	<b>Drawings</b>		
	<b>The Contractor shall submit certified drawings for all of the detailed items supplied under the agreement and related equipment provided by others</b>		
<b>FF2.1</b>	<b>Layout drawings</b>		
FF2.1.1	The Contractor shall submit certified drawings of all machine layouts or general arrangement drawings including, but not limited to motion extreme positions and limits. The arrangements shall indicate the location of major equipment components with requirements for installation, removal, and maintenance clearances		
<b>FF2.2</b>	<b>Structural drawings</b>		
FF2.2.1	The Contractor shall submit general arrangement and detail drawings showing the Machine steel structure and the loads for which it is designed.		
<b>FF2.3</b>	<b>Mechanical drawings</b>		
	<b>The Contractor shall submit general arrangement and detail drawings showing all mechanical components and equipment assemblies, sub-assemblies and details including proprietary equipment. The drawings shall include but not be limited to:</b>		

FF2.3.1	Overall arrangements showing leading dimensions of the Machine		
FF2.3.2	General arrangement and details of each component		
FF2.3.4	Arrangements, diagrams, and details of all hydraulic, pneumatic, lubrication, and dust suppression systems		
FF2.3.5	Manufacturer's certified arrangement and detail drawings of all equipment and components purchased by the Contractor		
<b>FF2.4</b>	<b>Electrical drawings</b>		
	<b><i>The Contractor shall submit certified drawings of all electrical power and control system equipment including, but not limited to:</i></b>		
FF2.4.1	Electrical Equipment Single Line Diagram		
FF2.4.2	General Arrangement drawings showing locations of all major items of electrical equipment, control equipment and lighting fixtures		
FF2.4.3	Control, instrumentation and alarm system block and wiring diagrams		
FF2.4.4	Main cable/conduit routing drawings and schedules		
FF2.4.5	Equipment lists indicating equipment voltages, rating, manufacturer, type and where applicable, fault current ratings		
FF2.4.6	Operator Panel Arrangements to scale		
<b>FF2.5</b>	<b>Erection drawings</b>		
	<b><i>The Contractor shall provide erection drawings required for the Machine to be fully assembled and erected on site. Erection drawings shall include, but not be limited to the following:</i></b>		
FF2.5.1	Sequence field assembly, installation and erection layouts identifying all components and clearance requirements		
FF2.5.2	Crane position and loading diagrams		
FF2.5.3	Weights and centres of gravity of major assemblies		
FF2.5.4	Connection details for major assemblies showing welding and bolting requirements at all connections		
FF2.5.5	Field run conduit and cable drawings, schedules and wiring diagrams		
<b>FF2.6</b>	<b>As-built drawings</b>		
	<b><i>The Contractor shall provide the Project Manager with complete sets of certified A3 size As-Built Drawings plus electronic copies in AutoCAD format. The As-Built Drawings shall show all details of the Plant as actually built or constructed. The As-Built Drawings shall include the following, but not limited:</i></b>		
FF2.6.1	<i>Family Tree</i>		
FF2.6.2	<i>All general arrangement drawings</i>		
FF2.6.3	<i>Detail drawings</i>		
FF2.6.4	<i>All mechanical component drawings including fully dimensional detail drawings and material specifications for all internal and external components</i>		
FF2.6.6	<i>Electrical drawings</i>		
FF2.6.8	<i>As-Built Bill of Quantities of the Plant in Excel format</i>		
<b>FF.3</b>	<b>Calculations</b>		
	<b><i>The Contractor shall submit for review by the Transnet Project Manager, copies of design calculations and all explanatory notes including, but not limited to the following:</i></b>		
FF3.1	<i>Scan 3D Tippler Cage</i>		
FF3.2	<i>FEA Model Tippler Cage</i>		
FF3.3	<i>Stress analyses plots</i>		
FF3.4	<i>Power and load calculations</i>		
FF3.5	<i>Other design calculations where requested by the Project Manager</i>		
<b>FF.4</b>	<b>Erection procedures</b>		
FF4.1	The Contractor shall submit a detailed erection procedure for the balance of plant		
<b>FF.5</b>	<b>Commissioning procedures</b>		
FF5.1	The Contractor shall submit written commissioning procedures		
<b>FF.6</b>	<b>Installation, operation and maintenance manuals</b>		
FF6.1	The Contractor shall submit to the Project Manager for review two (2) draft copies of Installation, Operation, Maintenance and Training Manuals for all of the equipment covered by Machine Specifications		
FF6.2	The final issue of the manuals shall be six (6) sets of hard copies bound in A4 size, three-ring binders and two (2) sets of electronic files in MS Word and PDF format on compact disks		
<b>FF.7</b>	<b>PLC and HMI programs</b>		
FF7.1	The Contractor will provide the Programmable Logic Control (PLC) and Human Machine Interface (HMI) licensed software shall be provided on the original manufacturer's discs. The customised programs shall be provided in the electronic format on CDs and in hardcopy printout		
<b>FF.8</b>	<b>Spare parts</b>		
	<b><i>The Contractor shall submit detailed lists of all recommended spare parts for:</i></b>		
FF8.1	<i>Commissioning and start-up;</i>		

FF8.2	<i>Twelve (12) months of operation;</i>		
	<b>Sub-Totals Submittals</b>		
<b>HH</b>	<b>Environmental Constraints and Management</b>	<b>Sum</b>	
	<i>The Contractor must supply the following, namely: -</i>		
HH.1	<i>Environmental Management plan</i>		
HH.2	<i>Environmental file</i>		
HH.3	<i>Environmental method statements for all construction operations at the Site and/or Working Area</i>		
	<b>Sub-Totals Environmental Constraints and Management</b>		
<b>JJ</b>	<b>Project Execution</b>	<b>Sum</b>	
	<i>The Contractor must supply a Project Execution plan, which will cover as a minimum the following: -</i>		
JJ.1	<i>Project Definition and Set-up phase</i>		
JJ.2	<i>Design phase</i>		
JJ.3	<i>Procurement and fabrication phase</i>		
JJ.4	<i>Construction phase</i>		
JJ.5	<i>Commissioning, handover, and close-out phase.</i>		
	<b>Sub-Total Project Execution</b>		
<b>KK</b>	<b>Safety Management</b>	<b>Sum</b>	
KK.1	Full-time, site-based Health and Safety Officer		
KK.3	Site-based staff entry medical examinations		
	<b>Sub-Total Project Execution</b>		
<b>LL</b>	<b>Project Controls</b>	<b>Sum</b>	
<b>LL.1</b>	<b>Document management</b>		
LL1.1	Contractor document controller		
<b>LL.2</b>	<b>Project reporting</b>		
LL2.1	Contractor Project Planner		
<b>LL.3</b>	<b>Cost Reporting</b>		
LL3.1	Contractor Cost Controller		
	<b>Sub-Total Project Controls</b>		
<b>MM</b>	<b>Project Quality Assurance</b>	<b>Sum</b>	
	<i>The Contractor shall submit the following: -</i>		
MM.1	Project Quality Management plan		
MM.2	Contractor Quality Lead		
	<b>Sub-Total Project Quality Assurance</b>		
<b>NN</b>	<b>Training</b>	<b>Sum</b>	
	<i>The Contractor shall be responsible for the following: -</i>		
NN.1	Operational Training Manual		
NN.2	Maintenance Training Manual		
NN.3	Training Officer for a period of 3 months		
	<b>Sub-Total Training</b>		

<b>GRAND TOTAL TIPPLER 3</b>		
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## C2.2 Staff Rates

This section can be used when the *staff rates* are considerable in number and more conveniently located here than in the Contract Data. Entries in the Contract Data should refer to this section of Part 2.

### 1.4 The staff and equipment rates are:

No.	Designation (or category) or name of staff member	Rate per {hour, day, month} excluding VAT
1	Mechanical Engineer (Tippler Design)	
2	Mechanical Engineer (BMH)	
3	Electrical Engineer	
4	Electronics Engineer	
5	Hydraulic Engineer	
6	Civil Engineer	
7	Quantity Surveyor	
8	Fitter	
9	Welder	
10	Boilermaker	
11	Electrician	
12	PLC Engineer	
13	Drives Integrator	
14	Hydraulic technician	
15	Grease Lubrication technician	
16	Semi-Skilled labourer	
17	Helper	
18	Sandblast Operator	
19	Spray Painter	
20	Sandblast Pot and painting equipment	
21	Container c/w with tools and rigging equipment to support above resources	
22	Generator/Welding machine	
23	Air Compressor	
24	Cranes - Specify	
25	Telehandler	
26	Cherry Picker	
27	Truck	
28	LDV	
29		
30		
31		

TRANSNET PORT TERMINALS

ENQUIRY NUMBER: iCLM HQ 788/TPT

DESCRIPTION OF THE SERVICES: Complete Engineering, Installation and Commissioning of Tippler, Train Positioner, Feeders, Dust Handling plant at Port of Saldanha Bay, for Transnet SOC Ltd (Reg. No. 1990/000900/30) Operating as Transnet Port Terminals, (Hereinafter Referred to as "TPT").

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## Appendix A

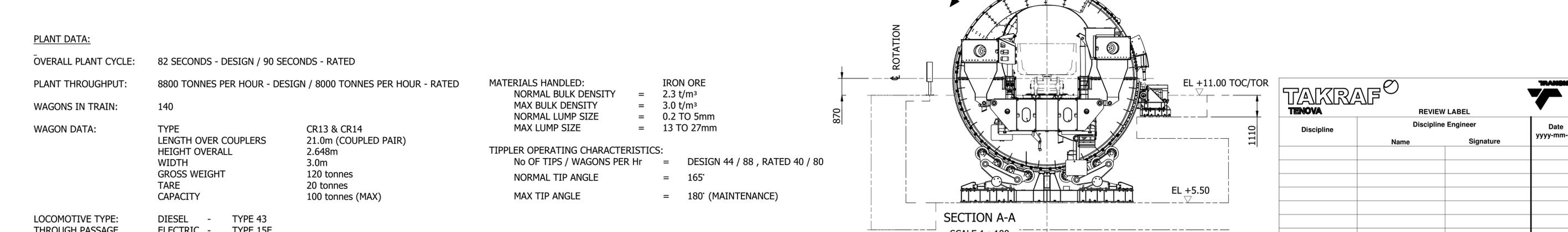
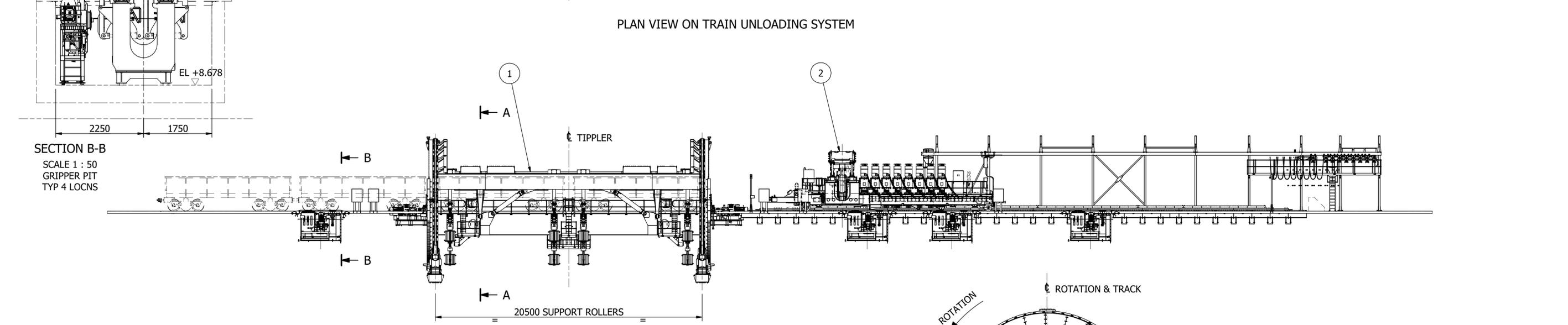
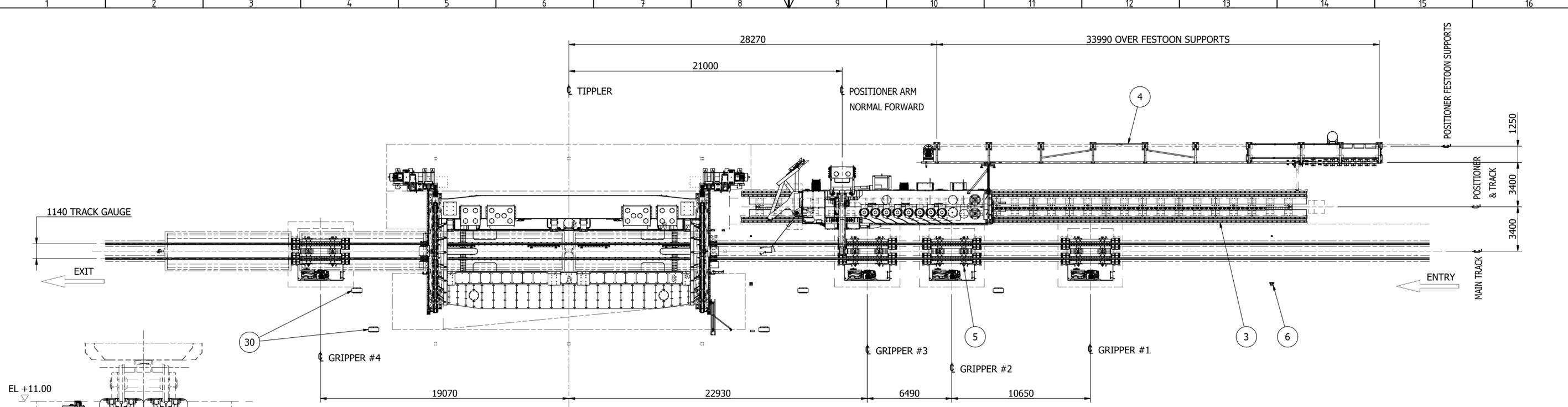
### Project Drawing List

9144-1_D01	Family Tree of Train Unloading System & Balance of Plant
49055271	GA of Unit Train Unloading System
49055272	Assembly of Cage Link Rotary Tippler
49055208	Tippler Cage
49055207	Assembly of Tippler Rotating Structures
49055232	Assembly of Support Rollers
49055245	Assembly of Train Positioner
49055255	Assembly of Train Holding Devices
TIPP3-DJB-001	GA of Dust Cowl and Deflector Wall/Barrier
TIPP3-DAA-001	GA of Chute Work, Hoppers and Apron Feeder Chutes

9144-1_D01 - SALDANHA BAY		Revision: A		ashton bulk materials handling					
TIPLER 3		Issue Date: 15-Sep-21							
UNIT TRAIN UNLOADING SYSTEM		Print Date: 03-Mar-22							
TRAIN UNLOADING SYSTEM MECH / HYD / LUB EQUIPMENT - FAMILY TREE (MAP) OF DRAWINGS & BILLS OF QUANTITIES									
Index Number	TRANSET Drawing No.	Supplier Drawing No.	Tier 1	Tier 2	Tier 3	Tier 4	Revision	Designer	Supplier
<b>TRAIN UNLOADING SYSTEM - MECHANICAL</b>									
1	1001705-0-000	M-GA-0072	49055271	49055271 GENERAL ARRANGMENT OF UNIT TRAIN UNLOADING SYSTEM			0	AB	TENOVA / TZME
<b>WAGON TIPLER</b>									
2	1001705-0-000	M-GA-0073	49055272	49055272 ASSEMBLY OF LINK CAGE ROTARY TIPLER			1	AB	TENOVA / TZME
3	1001705-0-000	M-GA-0008	49055207	49055207 ASSEMBLY OF TIPLER ROTATING STRUCTURES			1	AB	TENOVA / TZME
4	1001705-0-000	M-GA-0009	49055208	49055208 ASSEMBLY OF CAGE STRUCTURE			1	AB	TENOVA / TZME
5	1001705-0-000	M-GA-0010	49055209	49055209 ASSEMBLY OF END RING - LEFT HAND (ENTRY)			2	AB	TENOVA / TZME
6	1001705-0-000	M-GA-0011	49055210	49055210 ASSEMBLY OF END RING - RIGHT HAND (EXIT)			2	AB	TENOVA / TZME
7	1001705-0-000	M-GA-0012	49055211	49055211 ASSEMBLY OF PLATFORM			2	AB	TENOVA / TZME
8	1001705-0-000	M-GA-0013	49055212	49055212 ASSEMBLY OF SIDE BEAM			2	AB	TENOVA / TZME
9	1001705-0-000	M-GA-0014	49055213	49055213 ASSEMBLY OF BALLAST BEAM			1	AB	TENOVA / TZME
10	1001705-0-000	M-GA-0032	49055231	49055231 ASSEMBLY OF SIDE & BALLAST BEAM PIVOT SHAFT			1	AB	TENOVA / TZME
11	1001705-0-000	M-GA-0081	49055280	49055280 ASSEMBLY OF CAGE LINK			4	AB	TENOVA / TZME
12	1001705-0-000	M-GA-0082	49055281	49055281 ASSEMBLY OF TORQUE BRACKET NON-TIP SIDE LH			2	AB	TENOVA / TZME
13	1001705-0-000	M-GA-0083	49055282	49055282 ASSEMBLY OF TORQUE BRACKET TIP SIDE LH			2	AB	TENOVA / TZME
14	1001705-0-000	M-GA-0084	49055283	49055283 ASSEMBLY OF TORQUE BRACKET NON-TIP SIDE RH			2	AB	TENOVA / TZME
15	1001705-0-000	M-GA-0085	49055284	49055284 ASSEMBLY OF TORQUE BRACKET TIP SIDE RH			2	AB	TENOVA / TZME
16	1001705-0-000	M-GA-0086	49055285	49055285 ASSEMBLY OF PLATFORM PIVOT SHAFT			1	AB	TENOVA / TZME
17	1001705-0-000	M-GA-0020	49055219	49055219 ASSEMBLY OF END RING RAILS			2	AB	TENOVA / TZME
18	1001705-0-000	M-GA-0021	49055220	49055220 ASSEMBLY OF TIPLER DRIVE RACKS			0	AB	TENOVA / TZME
19	1001705-0-000	M-GA-0022	49055221	49055221 ASSEMBLY OF WAGON CLAMP GEAR			3	AB	TENOVA / TZME
20	1001705-0-000	M-GA-0023	49055222	49055222 ASSEMBLY OF TIPLER BALLAST			0	AB	TENOVA / TZME
21	1001705-0-000	M-GA-0024	49055223	49055223 ASSEMBLY OF SIDE PAD			2	AB	TENOVA / TZME
22	1001705-0-000	M-GA-0025	49055224	49055224 ASSEMBLY OF PLATFORM WALKWAYS			1	AB	TENOVA / TZME
23	1001705-0-000	M-GA-0026	49055225	49055225 ASSEMBLY OF PLATFORM RAILS			2	AB	TENOVA / TZME
24	1001705-0-000	M-GA-0028	49055227	49055227 ASSEMBLY OF SPILL PLATES			0	AB	TENOVA / TZME
25	1001705-0-000	M-GA-0033	49055232	49055232 ASSEMBLY OF SUPPORT ROLLERS			0	AB	TENOVA / TZME
26	1001705-0-000	M-GA-0034	49055233	49055233 ASSEMBLY OF LOCATING SUPPORT ROLLERS			0	AB	TENOVA / TZME
27	1001705-0-000	M-GA-0035	49055234	49055234 ASSEMBLY OF FLANGED SUPPORT ROLLER			0	AB	TENOVA / TZME
28	1001705-0-000	M-GA-0074	49055273	49055273 ASSEMBLY OF NON-LOCATING SUPPORT ROLLERS			0	AB	TENOVA / TZME
29	1001705-0-000	M-GA-0036	49055235	49055235 ASSEMBLY OF PLAIN SUPPORT ROLLER			0	AB	TENOVA / TZME
30	1001705-0-000	M-GA-0037	49055236	49055236 ASSEMBLY OF TIPLER DRIVE GEAR			1	AB	TENOVA / TZME
31	1001705-0-000	M-GA-0078	49055277	49055277 ASSEMBLY OF ROTATIONAL BUFFERS			1	AB	TENOVA / TZME
32	1001705-0-000	M-GA-0029	49055228	49055228 ASSEMBLY OF TIPLER ROTATIONAL LIMIT SWITCHES			0	AB	TENOVA / TZME
33	1001705-0-000	M-GA-0030	49055229	49055229 ASSEMBLY OF TIPLER MAINTENANCE LOCK			0	AB	TENOVA / TZME
34	1001705-0-000	M-GA-0031	49055230	49055230 ASSEMBLY OF GROUT PACKING			0	AB	TENOVA / TZME
35	1001705-0-000	M-GA-0090	49055290	49055290 ASSEMBLY OF GROUND MOUNTED THRUST PADS			0	AB	TENOVA / TZME
36	1001705-0-000	M-GA-0038	49055237	49055237 TIPLER LUBRICATION INSTALLATION			0	AA / xx	TENOVA / TZME
<b>TRAIN POSITIONER</b>									
37	1001705-0-000	M-GA-0046	49055245	49055245 ASSEMBLY OF TRAIN POSITIONER			0	AB	TENOVA / TZME
38	1001705-0-000	M-GA-0047	49055246	49055246 ASSEMBLY OF POSITIONER MAIN FRAME			3	AB	TENOVA / TZME
39	1001705-0-000	M-GA-0048	49055247	49055247 ASSEMBLY OF POSITIONER ARM & RAISE MECHANISM			2	AB	TENOVA / TZME
40	1001705-0-000	M-GA-0049	49055248	49055248 ASSEMBLY OF POSITIONER ARM STRUCTURE & HEAD			0	AB	TENOVA / TZME
41	No Transet Drawing Number	49055303	49055303	49055303 ASSEMBLY OF RAISED ARM REACTION BRACKET MOD			0	AB	TENOVA / TZME
42	1001705-0-000	M-GA-0040	49055239	49055239 ASSEMBLY OF POSITIONER ARM LATCH			0	AB	TENOVA / TZME
43	1001705-0-000	M-GA-0050	49055249	49055249 ASSEMBLY OF LAST WAGON ARM			5	AB	TENOVA / TZME
44	1001705-0-000	M-GA-0096	49055295	49055295 ASSEMBLY OF LWA HEAD			4	AB	TENOVA / TZME
45	1001705-0-000	M-GA-0099	49055298	49055298 ASSEMBLY OF LAST WAGON ARM COUPLER			0	AB	TENOVA / TZME
46	1001705-0-000	M-GA-0041	49055240	49055240 ASSEMBLY OF GUIDE ROLLERS			0	AB	TENOVA / TZME
47	1001705-0-000	M-GA-0042	49055241	49055241 ASSEMBLY OF SPRUNG SUPPORT ROLLER			2	AB	TENOVA / TZME
48	1001705-0-000	M-GA-0043	49055242	49055242 ASSEMBLY OF FIXED SUPPORT ROLLER			1	AB	TENOVA / TZME
49	1001705-0-000	M-GA-0044	49055243	49055243 ASSEMBLY OF DRIVE CARTRIDGE			0	AB	TENOVA / TZME
50	1001705-0-000	M-GA-0092	49055291	49055291 ASSEMBLY OF LONG TRAVEL ENCODER			1	AB	TENOVA / TZME
51	1001705-0-000	M-GA-0045	49055244	49055244 ASSEMBLY OF POSITIONER ACCESS			0	AB	TENOVA / TZME
52	1001705-0-000	M-GA-0052	49055251	49055251 POSITIONER HYDRAULIC INSTALLATION			0	AB / AA	TENOVA / TZME
53	1001705-0-000	M-GA-0053	49055252	49055252 POSITIONER LUBRICATION INSTALLATION			4	AB / xx	TENOVA / TZME
54	1001705-0-000	M-GA-0097	49055296	49055296 ASSEMBLY OF LUBRICATION PINION			0	AB	TENOVA / TZME
55	1001705-0-000	M-GA-0102	49055301	49055301 ASSEMBLY OF LONG TRAVEL CARTRIDGE ENCODER			0	AB	TENOVA / TZME
56	1001705-0-000	M-GA-0054	49055253	49055253 ASSEMBLY OF POSITIONER TRACK			2	AB	TENOVA / TZME
57	1001705-0-000	M-GA-0065	49055264	49055264 ASSEMBLY OF POSITIONER TRACK REAR MODULE			0	AB	TENOVA / TZME
58	1001705-0-000	M-GA-0066	49055265	49055265 ASSEMBLY OF POSITIONER TRACK INNER MODULE			1	AB	TENOVA / TZME
59	1001705-0-000	M-GA-0067	49055266	49055266 ASSEMBLY OF POSITIONER TRACK FRONT MODULE			1	AB	TENOVA / TZME
60	1001705-0-000	M-GA-0068	49055267	49055267 ASSEMBLY OF 3-RACK POSITIONER TRACK MODULE			1	AB	TENOVA / TZME
61	1001705-0-000	M-GA-0077	49055276	49055276 ASSEMBLY OF 3-RACK POSITIONER TRACK MODULE			1	AB	TENOVA / TZME
62	1001705-0-000	M-GA-0055	49055254	49055254 ASSEMBLY OF POSITIONER CABLE FESTOON SYSTEM			1	AB	TENOVA / TZME
<b>TRAIN HOLDING DEVICES</b>									
63	1001705-0-000	M-GA-0056	49055255	49055255 ASSEMBLY OF TRAIN HOLDING DEVICES			0	AB	TENOVA / TZME
64	1001705-0-000	M-GA-0057	49055256	49055256 ASSEMBLY OF WHEEL GRIPPER UNIT			4	AB	TENOVA / TZME
65	1001705-0-000	M-GA-0058	49055257	49055257 TRAIN HOLDING DEVICE HYDRAULIC INSTALLATION			0	AB/AA	TENOVA / TZME
66	1001705-0-000	M-GA-0098	49055297	49055297 ASSEMBLY OF GRIPPER PIT LADDER			0	AB	TENOVA / TZME
67	1001705-0-000	M-GA-0060	49055259	49055259 ASSEMBLY OF PLANT CONTROL SWITCHES			0	AB	TENOVA / TZME
<b>TRAIN UNLOADING SYSTEM - CIVIL WORKS</b>									
68	1001705-0-000	C-LA-0003	49055200	49055200 TIPLER & PLANT FOUNDATION DETAILS			8	AB	
69	1001705-0-000	C-LA-0005	49055202	49055202 POSITIONER FOUNDATION DETAILS			8	AB	
70	1001705-0-000	C-LA-0004	49055201	49055201 TRAIN HOLDING DEVICES FOUNDATION DETAILS			3	AB	
<b>TRAIN UNLOADING SYSTEM - HYDRAULIC SYSTEM</b>									
<b>POSITIONER HYDRAULIC SYSTEM</b>									
71	No Transet Drawing Number	32261.A3	32261.A3	32261.A3 HYDRAULIC PIPE ASSEMBLY FOR MAIN ARM - POSITIONER			C	AA	
72	No Transet Drawing Number	CY-AM025D0021	CY-AM025D0021	CY-AM025D0021 25mm BORE 14mm ROD DOUBLE ACTING HYDRAULIC CYLINDER			2	ALLEY HYDRAULICS	
73	No Transet Drawing Number	32262.A3	32262.A3	32262.A3 POSITIONER ANCLARY PIPE ASSEMBLY			C	AA	
74	No Transet Drawing Number	31661.A3	31661.A3	31661.A3 HYDRAULIC CYLINDER SPECIAL - 40-22-100			A	AA	
75	No Transet Drawing Number	EC.30173.A3	EC.30173.A3	EC.30173.A3 ELECTRICAL CONNECTION FOR POSITIONER ARM HPU			B	AA	
76	No Transet Drawing Number	GA.30346.A3	GA.30346.A3	GA.30346.A3 ARM ACTUATOR 1250 STROKS 125-90			1	AA	
77	No Transet Drawing Number	GA.30371.A3	GA.30371.A3	GA.30371.A3 HYDRAULIC POWER UNIT FOR POSITIONER ARM WITH SLEW			C	AA	
78	No Transet Drawing Number	HC.30141.A3	HC.30141.A3	HC.30141.A3 HYDRAULIC CIRCUIT FOR POSITIONER ARM HPU SYMBOLS			D	AA	
<b>TRAIN HOLDING DEVICES HYDRAULIC SYSTEM</b>									
79	No Transet Drawing Number	31985.A3	31985.A3	31985.A3 PIPE ASSEMBLY FOR GRIPPER			C	AA	
80	No Transet Drawing Number	803160	803160	803160 WHEEL GRIPPER HYDRAULIC ACTUATOR			F1	AB	
81	No Transet Drawing Number	EC.30180.A3	EC.30180.A3	EC.30180.A3 ELECTRICAL CONNECTION FOR GRIPPER HPU			D	AA	
82	No Transet Drawing Number	GA.30336.A3	GA.30336.A3	GA.30336.A3 HYDRAULIC POWER UNIT FOR GRIPPER DRIVE			C	AA	
83	No Transet Drawing Number	HC.30148.A3	HC.30148.A3	HC.30148.A3 HYDRAULIC CIRCUIT FOR GRIPPER HPU WITH QUICK CONNECTION			A	AA	
<b>TRAIN UNLOADING SYSTEM - LUBRICATION SYSTEM</b>									
84	No Transet Drawing Number	PL_AU_020486	PL_AU_020486	PL_AU_020486 TIPLER & POSITIONER UNIT 1 & 2			-	BIJUR-DELIMON	
85	No Transet Drawing Number	EZL05A40M050101010500001	EZL05A40M050101010500001	EZL05A40M050101010500001 TIPLER & POSITIONER I1			-	BIJUR-DELIMON	
86	No Transet Drawing Number	EP905A40M02010105M00001	EP905A40M02010105M00001	EP905A40M02010105M00001 TIPLER & POSITIONER M1			-	BIJUR-DELIMON	

**BALANCE OF PLANT MECH / HYD / LUB EQUIPMENT - FAMILY TREE (MAP) OF DRAWINGS & BILLS OF QUANTITIES**

Index Number	TRANSET Drawing No.	Supplier Drawing No.	Tier 1	Tier 2	Tier 3	Tier 4	Revision	Designer	Supplier
<b>BALANCE OF PLANT - MECHANICAL</b>									
1	104703-0-000	M-AR-0001	TIPP3-FAA-001	TIPP3-FAA-001	TIPPLER VAULT MECHANICAL ARRANGEMENT		0B	TAFR	TBC
2	104703-0-000	C-LA-0007	TIPP3-BAA-002	TIPP3-BAA-002	CIVIL OUTLINES CAST-IN PLATES		1	TAFR	TBC
<b>MECHANICAL HOPPERS &amp; CHUTES</b>									
3	104703-0-000	G-AR-0003	TIPP3-DA-001	TIPP3-DA-001	GENERAL ARRANGEMENT CHUTE WORK HOPPERS AND APRON FEEDER CHUTES		01	TAFR	TBC
4	104703-0-000	S-AR-0007	TIPP3-DAD-001	TIPP3-DAD-001	APRON FEEDER CHUTE 1 DETAILS			TAFR	TBC
5	104703-0-000	S-AR-0008	TIPP3-DAD-002	TIPP3-DAD-002	APRON FEEDER CHUTE 2 DETAILS		0	TAFR	TBC
6	104703-0-000	S-AR-0009	TIPP3-DAD-003	TIPP3-DAD-003	APRON FEEDER CHUTE 2 DETAILS		0	TAFR	TBC
7	104703-0-000	S-AR-0013	TIPP3-DEA-001	TIPP3-DEA-001	STRUCTURAL ARRANGEMENT STEEL HOPPER 1 DETAILS		0	TAFR	TBC
8	104703-0-000	S-AR-0014	TIPP3-DEA-002	TIPP3-DEA-002	STRUCTURAL ARRANGEMENT STEEL HOPPER 2 DETAILS		0	TAFR	TBC
9	104703-0-000	S-AR-0015	TIPP3-DEA-003	TIPP3-DEA-003	STRUCTURAL ARRANGEMENT STEEL HOPPER MAINTENANCE DOOR DETAILS		0	TAFR	TBC
10	104703-0-000	S-AR-0016	TIPP3-DEA-004	TIPP3-DEA-004	STRUCTURAL ARRANGEMENT CAST-IN STEEL HOPPER 1 DETAILS		0	TAFR	TBC
11	104703-0-000	S-AR-0017	TIPP3-DEA-005	TIPP3-DEA-005	STRUCTURAL ARRANGEMENT STEEL HOPPER 2 DETAILS		0	TAFR	TBC
12	104703-0-000	S-AR-0018	TIPP3-DEA-006	TIPP3-DEA-006	STRUCTURAL ARRANGEMENT CAST-IN STEEL HOPPER 3 DETAILS		0	TAFR	TBC
13	104703-0-000	M-AS-0005	No Drg.No.				0B	QUALITY ENG	QUALITY ENG
14	104703-0-000	M-DE-0003	No Drg.No.		No Drg.No. IRON ORE TIPPLER 3 CAST-IN CHUTES LINER PLATE FIXING SHT 1-7		A	QUALITY ENG	QUALITY ENG
15	104703-0-000	S-AR-0022	TIPP3-DAD-004	TIPP3-DAD-004	STRUCTURAL ARRANGEMENT TEMPORARY SPACER CHUTE DETAILS		0	TAFR	TBC
16	104703-0-000	M-GA-0089	TIPP3-MKG-001	TIPP3-MKG-001	ISOLATION GATE GENERAL ASSEMBLY		C	TAFR	TBC
	104703-0-000	M-SC-0001	TIPP3-MKG-002	TIPP3-MKG-002	ISOLATION GATE GATE FRAME ASSEMBLY		C7	TAFR	TBC
	104703-0-000	M-SC-0002	TIPP3-MKG-003	TIPP3-MKG-003	ISOLATION GATE KNIFE CARTRIDGE ASSEMBLY		C7	TAFR	TBC
	104703-0-000	M-SC-0003	TIPP3-MKG-004	TIPP3-MKG-004	ISOLATION GATE KNIFE ASSEMBLY		C	TAFR	TBC
	104703-0-000	M-SC-0004	TIPP3-MKG-005	TIPP3-MKG-005	ISOLATION GATE GATE KNIFE ASSEMBLY		C	TAFR	TBC
17	104703-0-000	S-GA-0001	TIPP3-CA-001	TIPP3-CA-001	GENERAL ARRANGEMENT CAST-IN HOPPERS & CAST-IN PLATES SUPPORT STEELWORK		0	TAFR	TBC
18	104703-0-000	S-AR-0019	TIPP3-CA-002	TIPP3-CA-002	STRUCTURAL ARRANGEMENT CAST-IN HOPPERS & PLATES SUPPORT STEEL WORK - DETAILS		0	TAFR	TBC
19	104703-0-000	M-SC-0007	TIPP3-CA-003	TIPP3-CA-003	GENERAL ARRANGEMENT APRON FEEDER LIFTING FRAME		0	TAFR	TBC
20		No Transet Drawing Number	TIPP3-BAA-004 / 008	TIPP3-BAA-004 / 008	X		0	TAFR	TBC
21	104703-0-000	S-AR-0020	TIPP3-BAA-013	TIPP3-BAA-013	STRUCTURAL ARRANGEMENT CONCRETE HOPPER - CAST-IN PLATE DETAILS		0	TAFR	TBC
22	104703-0-000	S-GA-0009	TIPP3-DGA-004	TIPP3-DGA-004	GENERAL ARRANGEMENT CHUTE WORK HOPPERS & APRON FEEDER CHUTES		B	TAFR	TBC
23	104703-0-000	S-LA-0001	TIPP3-WFA-002	TIPP3-WFA-002	LAYOUT OF APRON FEEDER HOPPERS		C	TAFR	TBC
24	104703-0-000	S-LA-0002	TIPP3-WFA-003	TIPP3-WFA-003	LAYOUT OF APRON FEEDER SUPPORT STEEL STRUCTURE		0C	TAFR	TBC
25	104703-0-000	S-LA-0003	TIPP3-WFA-004	TIPP3-WFA-004	LAYOUT OF APRON FEEDER CHUTES		0B	TAFR	TBC
<b>MECHANICAL APRON FEEDER</b>									
26	104703-0-000	M-GA-0001	E8009-B100-EAK-001	E8009-B100-EAK-001	5 OFF 1830 W X 2184 LG D4 APRON FEEDER GENERAL ARRANGEMENT		0	TAKRAF	TAKRAF
27	104703-0-000	M-GA-0120	E8009-B100-DHA-001	E8009-B100-DHA-001	5 OFF 1830 W X 2184 LG D4 APRON FEEDER SAFETY GUARDS GENERAL ARRANGEMENT		0	TAFR	TBC
28	104703-0-000	S-AR-0004	TIPP3-CBA-001	TIPP3-CBA-001	STRUCTURAL ARRANGEMENT TIPPLER VAULT STEELWORK APRON FEEDER SUPPORT STEEL DETAILS		0	TAFR	TBC
29	104703-0-000	S-AR-0006	TIPP3-CBA-002	TIPP3-CBA-002	STRUCTURAL ARRANGEMENT TIPPLER VAULT STEELWORK APRON FEEDER SUPPORT STEEL DETAILS		0	TAFR	TBC
30	104703-0-000	S-AR-0005	TIPP3-CBA-002	TIPP3-CBA-002	STRUCTURAL ARRANGEMENT UNDER VAULT CRAWL BEAMS		1	TAFR	TBC
31	104703-0-000	S-AR-0010	TIPP3-DAF-001	TIPP3-DAF-001	STRUCTURAL ARRANGEMENT APRON FEEDER UNDERPAN 1 DETAILS		0	TAFR	TBC
32	104703-0-000	S-AR-0011	TIPP3-DAF-002	TIPP3-DAF-002	STRUCTURAL ARRANGEMENT APRON FEEDER UNDERPAN 2 DETAILS		0	TAFR	TBC
33	104703-0-000	S-AR-0012	TIPP3-DAF-003	TIPP3-DAF-003	STRUCTURAL ARRANGEMENT APRON FEEDER UNDERPAN 3 DETAILS		0	TAFR	TBC
<b>MECHANICAL DUST COWL</b>									
34	104703-0-000	M-GA-0088	TIPP3-DIB-001	TIPP3-DIB-001	GENERAL ARRANGEMENT DUST COWL & DEFLECTOR WALL/BARRIER		0	TAFR	TBC
35	104703-0-000	S-GA-0001	TIPP3-DIB-002	TIPP3-DIB-002	STRUCTURAL ARRANGEMENT DUST COWL ASSEMBLY DETAIL		0	TAFR	TBC
	104703-0-000	S-AR-0023	TIPP3-DIB-006	TIPP3-DIB-006	STRUCTURAL ARRANGEMENT DUST COWL TYPICAL VIEWS - RING BEAM & SHELL PANEL DETAILS		0	TAFR	TBC
	104703-0-000	S-AR-0024	TIPP3-DIB-007	TIPP3-DIB-007	STRUCTURAL ARRANGEMENT DUST COWL MAINTENANCE DOOR & SIDE PANEL DETAILS		0	TAFR	TBC
	104703-0-000	S-AR-0026	TIPP3-DIB-009	TIPP3-DIB-009	STRUCTURAL ARRANGEMENT DUST COWL SHELL PANEL DEVELOPMENT DETAILS		0	TAFR	TBC
	104703-0-000	S-AR-0025	TIPP3-DIB-008	TIPP3-DIB-008	STRUCTURAL ARRANGEMENT DUST COWL MAINTENANCE DOOR & SIDE PANEL DETAILS		0	TAFR	TBC
36	104703-0-000	S-AR-0002	TIPP3-DIB-003	TIPP3-DIB-003	STRUCTURAL ARRANGEMENT DEFLECTOR WALL / BARRIER SUPPORT STEELWORK DETAILS		0	TAFR	TBC
	104703-0-000	S-AR-0021	TIPP3-DIB-005	TIPP3-DIB-005	STRUCTURAL ARRANGEMENT DUST COWL TRUNNION BASE SPILL PLATES		0	TAFR	TBC
	104703-0-000	S-AR-0003	TIPP3-DIB-004	TIPP3-DIB-004	STRUCTURAL ARRANGEMENT DUST COWL DEFLECTOR WALL / BARRIER DETAILS		0	TAFR	TBC
<b>MECHANICAL DUST EXTRACTION SYSTEM</b>									
37	104703-0-000	M-GA-0007	B100-JKA-001	B100-JKA-001	ARRANGEMENT OF BAG FILTERS & DUCTING		2	TAFR	TBC
38	104703-0-000	F-PF-0001	B100-CAA-017	B100-CAA-017	ARRANGEMENT OF DUST MONITOR ACCESS PLATFORM		0	TAFR	TBC
39	104703-0-000	P-PI-0001	B100-PID-001	B100-PID-001	PIPING & INSTRUMENTATION DIAGRAM - SHEET 1 OF 7		1	TAFR	TBC
	104703-0-000	P-PI-0001	B100-PID-002	B100-PID-002	PIPING & INSTRUMENTATION DIAGRAM - SHEET 2 OF 7		3	TAFR	TBC
	104703-0-000	P-PI-0001	B100-PID-003	B100-PID-003	PIPING & INSTRUMENTATION DIAGRAM - SHEET 3 OF 7		3	TAFR	TBC
	104703-0-000	P-PI-0001	B100-PID-004	B100-PID-004	PIPING & INSTRUMENTATION DIAGRAM - SHEET 4 OF 7		2	TAFR	TBC
	104703-0-000	P-PI-0001	B100-PID-005	B100-PID-005	PIPING & INSTRUMENTATION DIAGRAM - SHEET 5 OF 7		3	TAFR	TBC
	104703-0-000	P-PI-0001	B100-PID-006	B100-PID-006	PIPING & INSTRUMENTATION DIAGRAM - SHEET 6 OF 7		3	TAFR	TBC
	104703-0-000	P-PI-0001	B100-PID-007	B100-PID-007	PIPING & INSTRUMENTATION DIAGRAM - SHEET 7 OF 7		2	TAFR	TBC
40	104703-0-000	S-GA-0007	B100-CAA-017	B100-CAA-017	ARRANGEMENT OF DUST MONITOR ACCESS PLATFORM		0	TAFR	TBC
<b>BALANCE OF PLANT - CIVIL WORKS</b>									
	104703-0-000	C-LA-0006	TIPP3-BAA-001	TIPP3-BAA-001	APRON FEEDER SUPPORT STRUCTURE CIVIL OUTLINES		0	TAFR	TBC
	104703-0-000	C-LA-0011	TIPP3-BAA-009	TIPP3-BAA-009	CIVIL OUTLINES DUST COWL		0	TAFR	TBC
	104703-0-000	C-LA-0012	TIPP3-BAA-010	TIPP3-BAA-010	CIVIL OUTLINES DUST COWL DEFLECTOR WALL/BARRIER		1	TAFR	TBC
	104703-0-000	C-L5-0001	TIPP3-BAA-011	TIPP3-BAA-011	DUST COWL CIVIL LOADS SHEET		0B	TAFR	TBC
	104703-0-000	C-L5-0002	TIPP3-BAA-012	TIPP3-BAA-012	DEFLECTOR WALL/BARRIER CIVIL LOADS SHEET		0	TAFR	TBC
	104703-0-000	C-LA-0010	B100-BAA-001	B100-BAA-001	DUST EXTRACTOR SYSTEM CIVIL OUTLINE		5	TAFR	TBC
	104703-0-000	C-LA-0010	B100-BAA-001	B100-BAA-001	DUST EXTRACTOR SYSTEM CIVIL LOADS (SHEET 2)		2	TAFR	TBC
	104703-0-000	C-LA-0001	TIPP3-WFA-001	TIPP3-WFA-001	LAYOUT OF VAULT GEOMETRY		0C	TAFR	TBC
	104703-0-000	C-LA-0008	TIPP3-BAA-003	TIPP3-BAA-003	CIVIL OUTLINES CRAWL BEAMS - CAST-IN ITEMS		3	TAFR	TBC
	104703-0-000	C-LA-0009	TIPP3-BAA-004	TIPP3-BAA-004	CONCRETE HOPPER CAST-IN CHUTES		3	TAFR	TBC
<b>BALANCE OF PLANT - HYDRAULIC SYSTEM</b>									
NO DRAWINGS OR BQ'S PROVIDED			KNIFE GATE HYDRAULIC SYSTEM						
<b>BALANCE OF PLANT - LUBRICATION SYSTEM</b>									
NO DRAWINGS OR BQ'S PROVIDED			APRON FEEDER LUBRICATION SYSTEM						
								OIL TECH	OIL TECH
								LINCOLN	LINCOLN



**PLANT DATA:**  
 OVERALL PLANT CYCLE: 82 SECONDS - DESIGN / 90 SECONDS - RATED  
 PLANT THROUGHPUT: 8800 TONNES PER HOUR - DESIGN / 8000 TONNES PER HOUR - RATED  
 WAGONS IN TRAIN: 140  
 WAGON DATA:  
 TYPE: CR13 & CR14  
 LENGTH OVER COUPLERS: 21.0m (COUPLED PAIR)  
 HEIGHT OVERALL: 2.648m  
 WIDTH: 3.0m  
 GROSS WEIGHT: 120 tonnes  
 TARE: 20 tonnes  
 CAPACITY: 100 tonnes (MAX)  
 LOCOMOTIVE TYPE: DIESEL - TYPE 43  
 THROUGH PASSAGE: ELECTRIC - TYPE 15E

**MATERIALS HANDLED:**  
 IRON ORE  
 NORMAL BULK DENSITY = 2.3 t/m<sup>3</sup>  
 MAX BULK DENSITY = 3.0 t/m<sup>3</sup>  
 NORMAL LUMP SIZE = 0.2 TO 5mm  
 MAX LUMP SIZE = 13 TO 27mm  
**TIPPLER OPERATING CHARACTERISTICS:**  
 No OF TIPS / WAGONS PER Hr = DESIGN 44 / 88 , RATED 40 / 80  
 NORMAL TIP ANGLE = 165°  
 MAX TIP ANGLE = 180° (MAINTENANCE)

<b>TAKRAF</b> TENOVA			<b>REVIEW LABEL</b>		
Discipline	Discipline Engineer	Date			
	Name	Signature	yyyy-mm-dd		

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED. 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.			
DIMENSIONS IN MILLIMETERS & DEGREES GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)		MASS: N/A	
RANGE	MACH	FAB	CAST
0-500	0.25	2	2
501-1000	0.5	3	4
1001-2000	1.0	4	6
ABOVE 2000	2.0	6	10
REFER ALSO TO MANUFACTURING SPECIFICATION WELD SYMBOLS BS EN 22553 SURFACE FINISH BS 1134			
UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.			
DRAWING NO.		REFERENCE	
<b>REFERENCE DRAWINGS</b>			
Rev.	Drawing Sheet No.	Part List	See technical modification report No. Day Name

**TAKRAF**  
TENOVA

Project Number:  
**AC0339**

Drawing Number: **49055271** BG: **9921**

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CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ		19 04 18	SIGNAL ENG.			
CHECKED	RHW		** 18	MECH. ENG.			
MECHANICAL	JMD		** 18	ELEC. ENG.			
PROJECT ENG.	ASM		** 18	CIVIL ENG.			
PROJECT MAN.	D.STARK		** 18	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			
OPERATING DIVISIONS				PR.ENG. / PR.TECH./PR. ARCH			
TITLE	NAME	SIGN	DATE	NAME	SIGN	DATE	
				RICHARD WOOD			
				SIGNATURE		** 18	
				REG. NUMBER	70386304		
				SCALE:	1:150 UOS		

REVISIONS			
NO.	DESCRIPTION	BY	CHKD APPD DATE
0	FIRST ISSUE	RCJ	RHW JMD ** 18

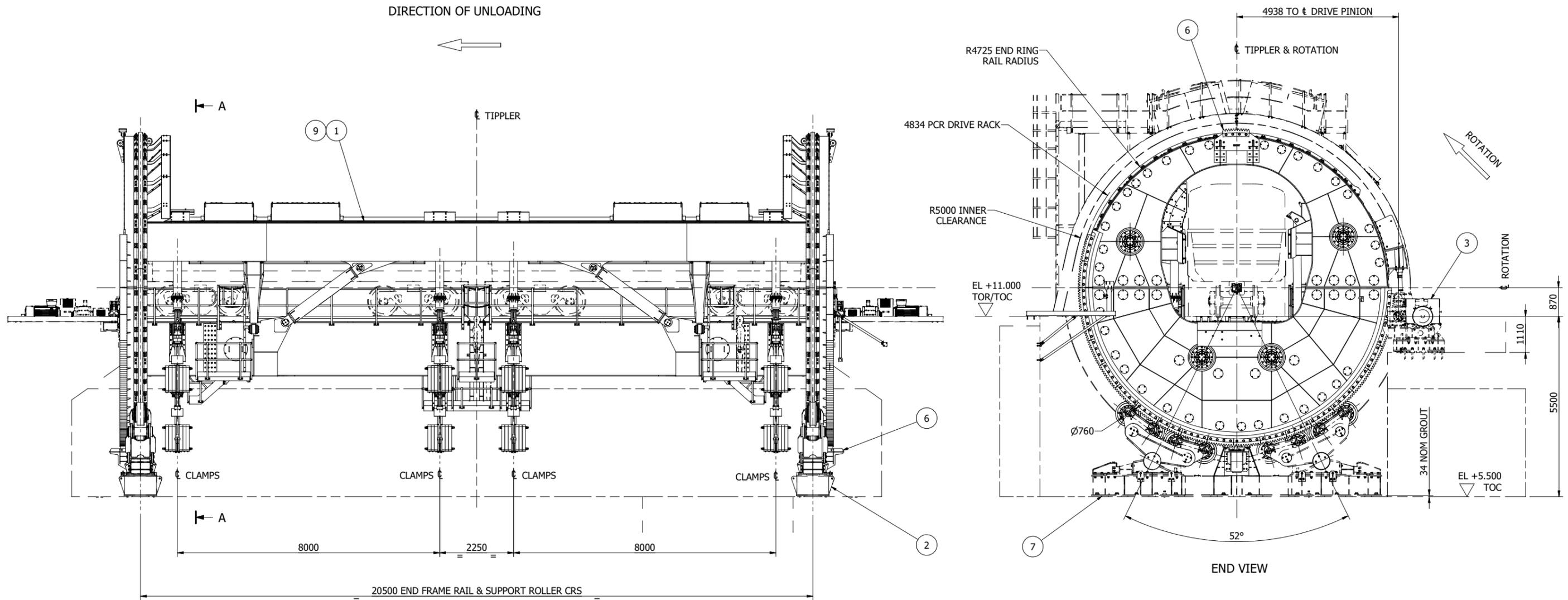
Transnet Capital Projects  
 TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) - REG. NO. 1990/0000006  
 TABLE BAY BUILDING, TYGERBERG PARK,  
 163 UYS KRIGER DRIVE,  
 PLATTEKLOOF,  
 8001  
 TEL: 021 940 1999  
 FAX: 086 677 2455

**TRANSNET**

**PORT OF SALDANHA**  
 IRON ORE TIPPLER 3  
 GA OF UNIT TRAIN UNLOADING SYSTEM

PROJECT NUMBER	00	FBS	00	DIS	00	TYPE	M	DRAWING NO.	GA	00	SHEET	07	REV	1	ID	0
SCALE: 1:150 UOS																





**TECHNICAL DATA**

TIPLER:		WAGONS:		LOCOMOTIVE:	
TIME TO TIP & RETURN	30 secs	GROSS WEIGHT	120 tonnes	TYPE	1 TRANSNET CLASS 34D
NORMAL ANGLE OF TIP	165°	TARE WEIGHT	20 tonnes	LENGTH	17982 mm
MAX ANGLE OF TIP	180°	MAX HEIGHT (EMPTY)	2648 mm	MAX MASS	113 tonnes
MASS INCLUDES BALLAST MASS OF 27918 kg		MAX WIDTH	3000 mm	TYPE	2 TRANSNET CLASS 43D
		MAX LENGTH	21000 mm	LENGTH	20256 mm
				MAX MASS	130 tonnes

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED. 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEG SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.	
DIMENSIONS IN MILLIMETERS & DEGREES GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)	
RANGE	MACH FAB CAST
0-500	0.25 2 2
501-1000	0.5 3 4
1001-2000	1.0 4 6
ABOVE 2000	2.0 6 10
REFER ALSO TO MANUFACTURING SPECIFICATION. WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134	
UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.	
Rev.	Drawing Sheet No.
Part List	See technical modification report No.
Day	Name

**TAKRAF**  
TENOVA

Project Number:  
**AC0339**

Drawing Number: **49055272** BG: **4100**

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CONTRACTOR / CONSULTANT		TRANSNET CAPITAL PROJECTS	
TITLE	NAME SIGN DATE	TITLE	NAME SIGN DATE
DRAWN	RCJ 04 12 17	SIGNAL ENG.	
CHECKED	DWB 04 12 18	MECH. ENG.	
MECHANICAL	JMD 05 12 18	ELEC. ENG.	
PROJECT ENG.	ASM 05 12 18	CIVIL ENG.	
PROJECT MAN.	D.STARK 05 12 18	STRUCT. ENG.	
		C&I. ENG.	
		ENG. MNG.	

OPERATING DIVISIONS		PR.ENG. / PR.TECH./PR. ARCH	
TITLE	NAME SIGN DATE	NAME	RICHARD WOOD DATE
		SIGNATURE	05 12 17
		REG. NUMBER	70386304
		SCALE:	1:50

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	UPDATED TO AS DESIGNED STATUS	EMD	RCJ	JMD	09-07-18
0	FIRST ISSUE	RCJ	DWB	JMD	05-12-17

**TAKRAF**  
TENOVA

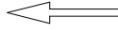
Project Number: **1924701-0000-M-GA-0073-1-1 JV**

Scale: **1:50**

Project Name: **PORT OF SALDANHA IRON ORE TIPLER 3 ASSEMBLY OF LINK CAGE ROTARY TIPLER**

REVIEW LABEL		
Discipline	Discipline Engineer Name	Date yyyy-mm-dd
	Signature	

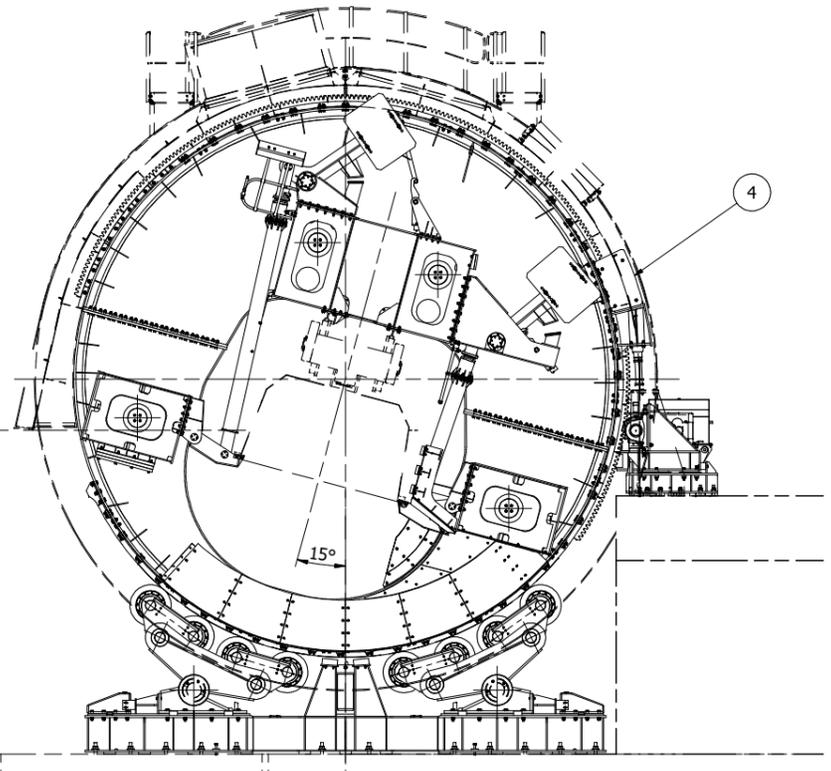
DIRECTION OF UNLOADING



NON-TIP SIDE

TIP SIDE

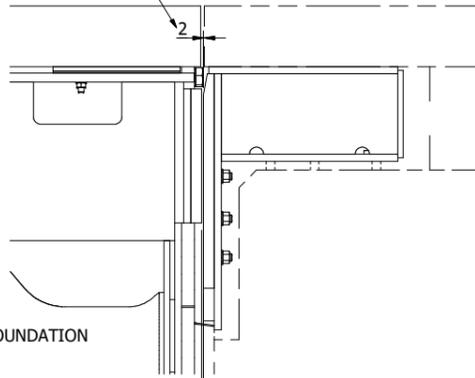
1140  
RAIL CRS



SECTION A-A  
165° ROTATION

THRUST PAD MUST PROTRUDE  
BEYOND RAIL END BY NO LESS  
THAN SPECIFIED DIMENSION

10 NOM GAP  
BETWEEN RAILS



6 NOM GAP  
BETWEEN THRUST PADS

SECTION B-B  
SPACING BETWEEN TIPPLER AND FOUNDATION  
SECTION C-C SIMILAR  
SCALE 1:10

<b>TAKRAF</b> TENOVA			<b>REVIEW LABEL</b>		
Discipline	Discipline Engineer Name	Signature	Date yyyy-mm-dd		

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.  
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEG SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DIMENSIONS IN MILLIMETERS & DEGREES.  
GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS):

RANGE	MACH	FAB	CAST
0-500	0.25	2	2
501-1000	0.5	3	4
1001-2000	1.0	4	6
ABOVE 2000	2.0	6	10

REFER ALSO TO MANUFACTURING SPECIFICATION.  
WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134.

UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.

**TAKRAF**  
TENOVA

Project Number:  
**AC0339**

Drawing Number: **49055272**    BG: **4100**

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CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ		04 12 17	SIGNAL ENG.			
CHECKED	DWB		04 12 18	MECH. ENG.			
MECHANICAL	JMD		05 12 18	ELEC. ENG.			
PROJECT ENG.	ASM		05 12 18	CIVIL ENG.			
PROJECT MAN.	D.STARK		05 12 18	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			
OPERATING DIVISIONS				PR.ENG. / PR.TECH./PR. ARCH			
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE	
				SIGNATURE		05 12 17	
				REG. NUMBER	70386304		
				SCALE:	1:60		

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	UPDATED TO AS DESIGNED STATUS	EMD	RCJ	JMD	09-07-18
0	FIRST ISSUE	RCJ	DWB	JMD	05-12-17

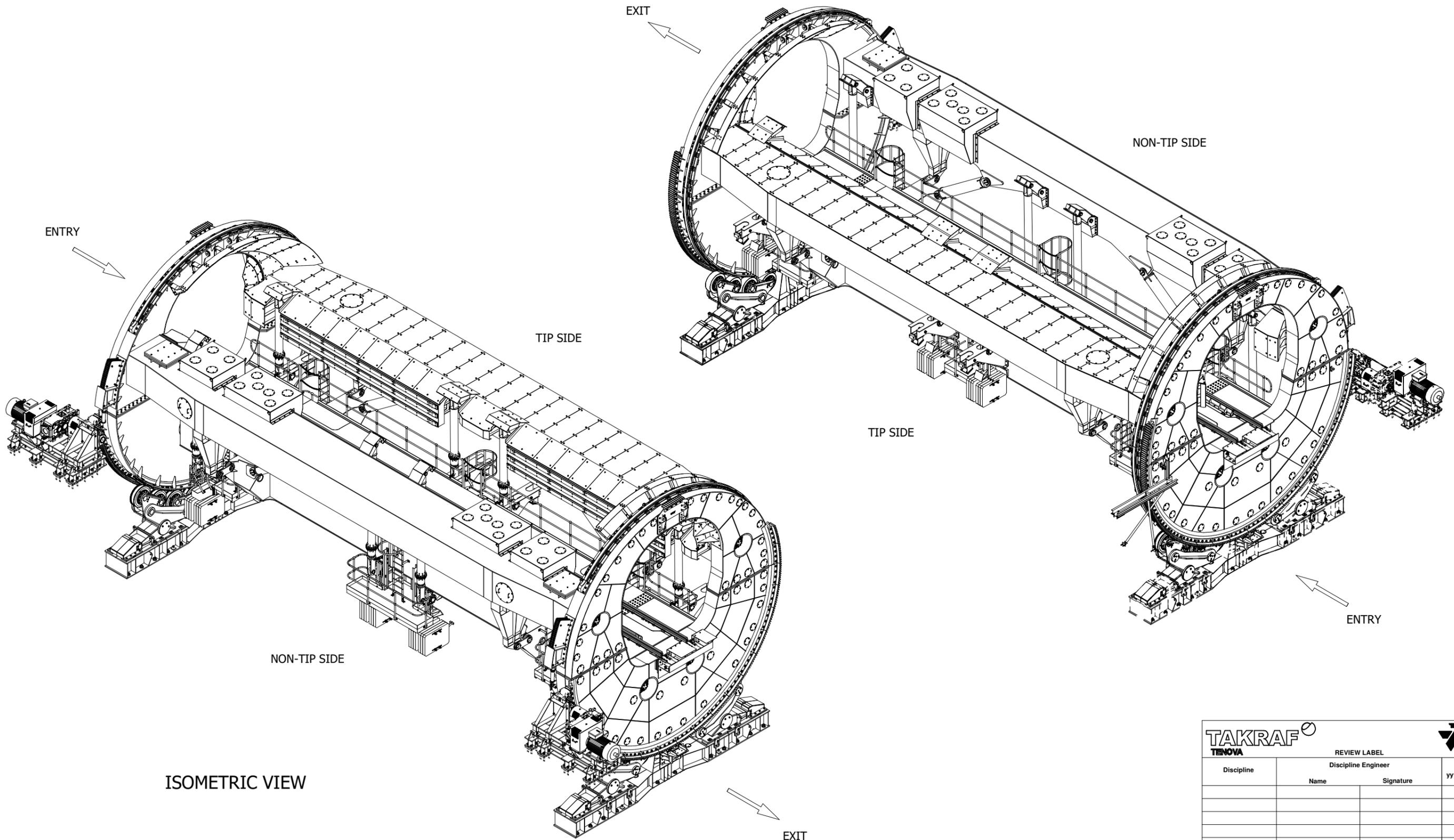
**TRANSNET**

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8001

TEL: 021 940 1999  
FAX: 021 940 2455

**PORT OF SALDANHA  
IRON ORE TIPPLER 3  
ASSEMBLY OF LINK CAGE  
ROTARY TIPPLER**

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A1	19	24	7	0	1-0-0	0	0	0
					M-GA	0	0	73
						2	1	JV



ISOMETRIC VIEW

<b>TAKRAF</b> TENOVA		<b>REVIEW LABEL</b>	
Discipline	Discipline Engineer	Date	
	Name	Signature	yyyy-mm-dd

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED. 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEG SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.			
DIMENSIONS IN MILLIMETERS & DEGREES GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE ( PLUS OR MINUS )			
RANGE	MACH	FAB	CAST
0-500	0.25	2	2
501-1000	0.5	3	4
1001-2000	1.0	4	6
ABOVE 2000	2.0	6	10
REFER ALSO TO MANUFACTURING SPECIFICATION. WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134			
UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.			
Rev.	Drawing Sheet No.	Part List	See technical modification report No.
			Day
			Name

**TAKRAF**  
TENOVA

Project Number:  
**AC0339**

Drawing Number: **49055272**    BG: **4100**

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CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ		04 12 17	SIGNAL ENG.			
CHECKED	DWB		04 12 18	MECH. ENG.			
MECHANICAL	JMD		05 12 18	ELEC. ENG.			
PROJECT ENG.	ASM		05 12 18	CIVIL ENG.			
PROJECT MAN.	D.STARK		05 12 18	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			
OPERATING DIVISIONS				PR.ENG. / PR.TECH./PR. ARCH			
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE	
				SIGNATURE		05 12 17	
				REG. NUMBER	70386304		
				SCALE:	1:40		

REVISIONS	
NO.	DESCRIPTION
1	UPDATED TO AS DESIGNED STATUS
0	FIRST ISSUE
	BY
	CHKD
	APPD
	DATE

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FAX: 086 677 2455

**PORT OF SALDANHA**  
**IRON ORE TIPPLER 3**  
**ASSEMBLY OF LINK CAGE**  
**ROTARY TIPPLER**

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A1	19	24	7	0	1-0-0	0-0	0-0	M-GA-0073-3-1

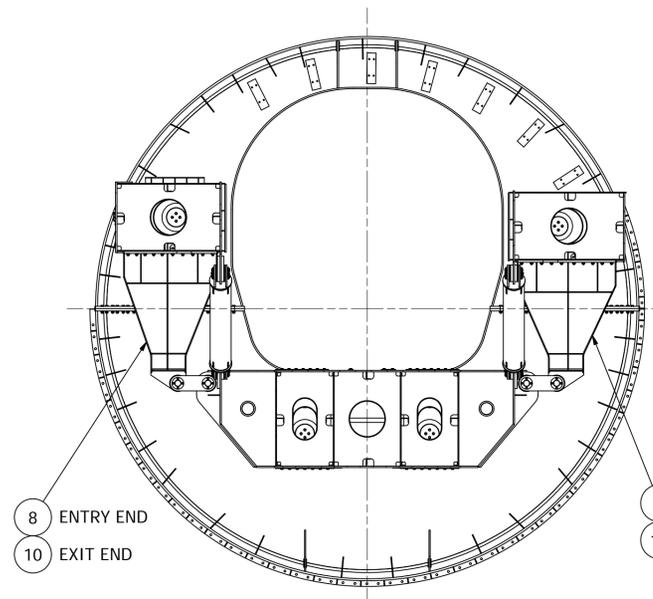
**NOTES:**

1. ASSEMBLE, ALIGN & PROTECT FOR SHIPMENT IN ACCORDANCE WITH:

- ASSOCIATED ASSEMBLY/SUB-ASSEMBLY DRAWINGS.
- MECHANICAL SHOP ASSEMBLY & INSPECTION SCHEDULE
- QUALITY ASSURANCE INSPECTION PROCEDURES
- CONTRACT MANUFACTURING SPECIFICATION
- SURFACE TREATMENT SPECIFICATION
- PACKING, TRANSPORT & SHIPPING SCHEDULE

**TOOLS, JIGS & PROCEDURES:**

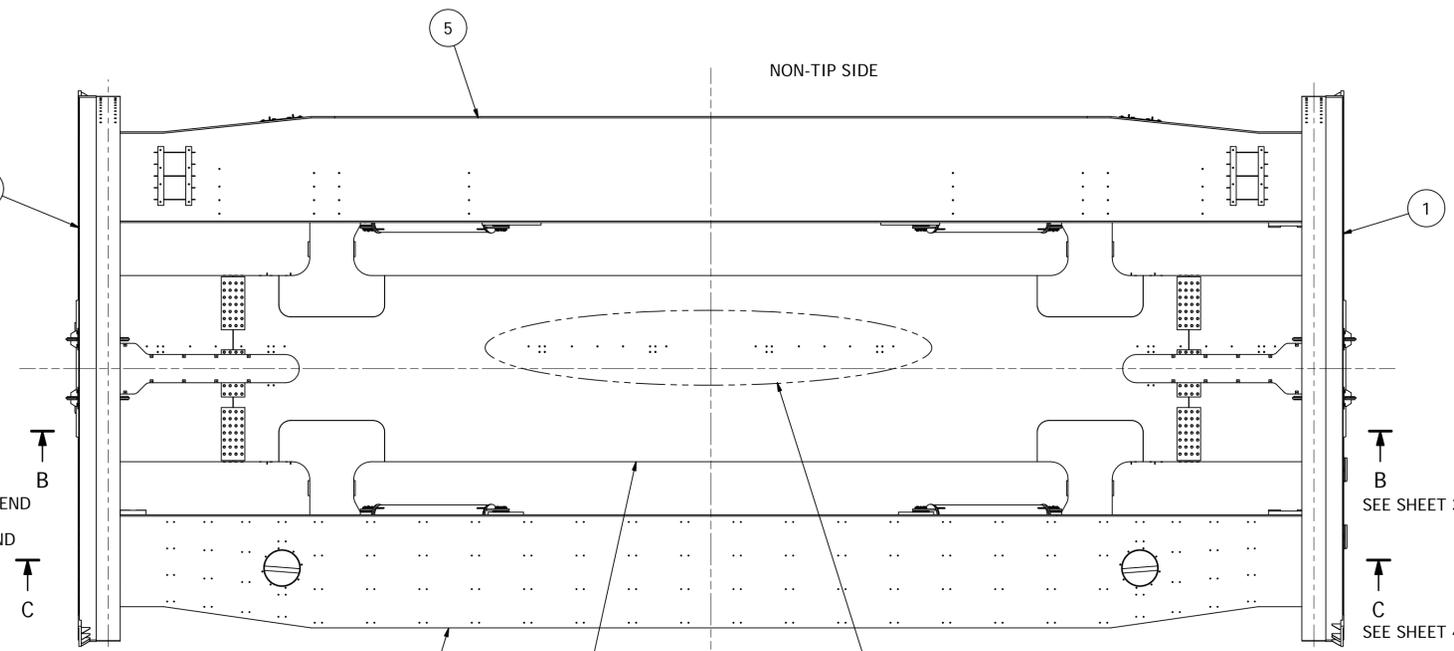
- 49055288 PIVOT SHAFT INSTALLATION TOOLS
- 49055286 CAGE STRUCTURE MACHINING JIG
- 49055300 TIPPLER CAGE ALIGNMENT JIG
- 59060560 SHOP ASSEMBLY SEQUENCE DIAGRAMS



SECTION A-A

8 ENTRY END  
10 EXIT END

9 ENTRY END  
11 EXIT END



NON-TIP SIDE

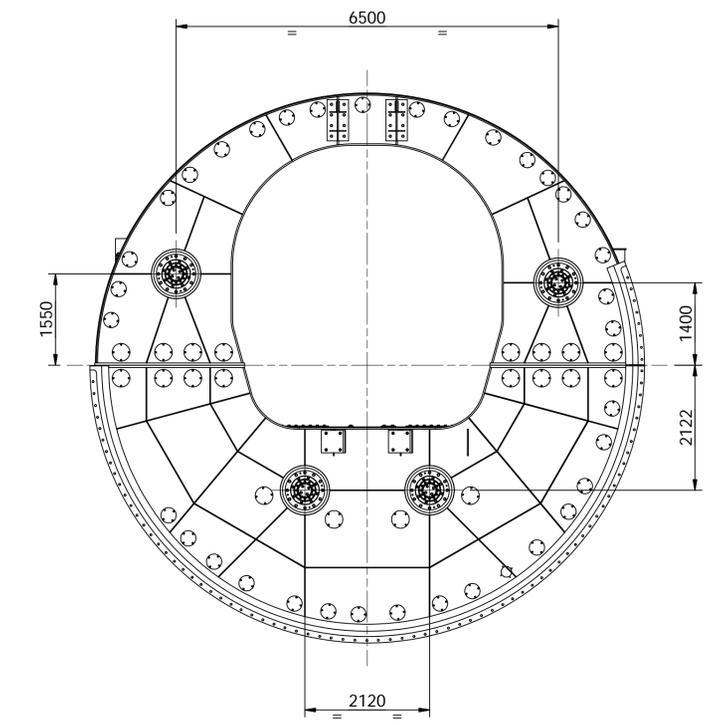
TIP SIDE

NOTE: IT IS IMPORTANT THAT THE RAIL PLATFORM, ITEM 3, IS INSTALLED IN THE CORRECT ORIENTATION. HOLE GROUP INDICATED TO BE LOCATED ON THE NON-TIP SIDE OF THE TIPPLER CAGE.

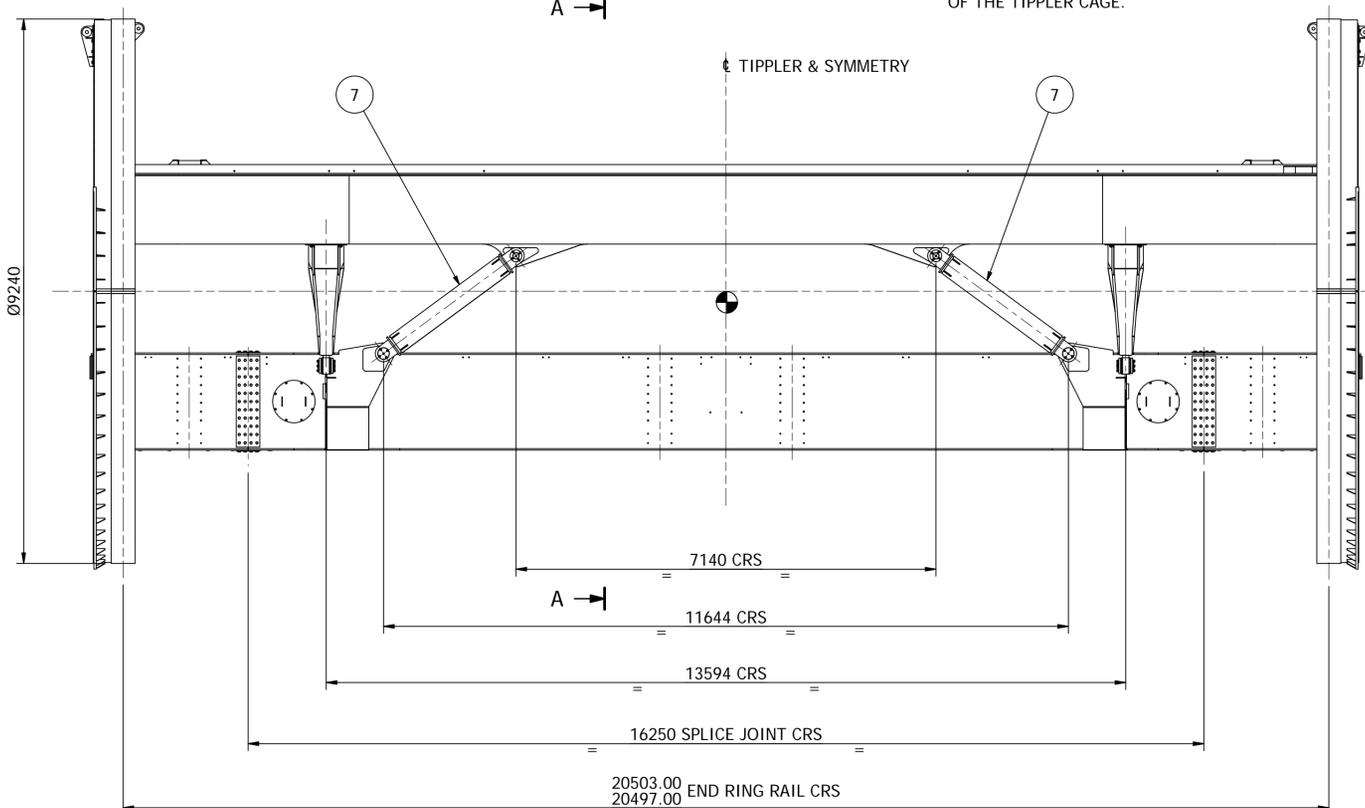
EXIT - RIGHT HAND END

ENTRY - LEFT HAND END

B  
SEE SHEET 3  
C  
SEE SHEET 4



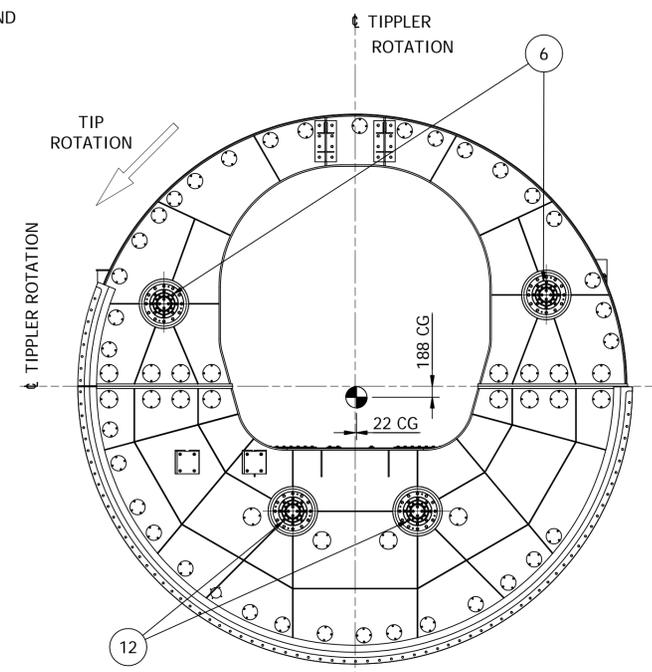
VIEW ON EXIT - RIGHT HAND END



TIPPLER & SYMMETRY

A →

A →



VIEW ON ENTRY - LEFT HAND END

TIP ROTATION  
TIPPLER ROTATION

<b>TAKRAF</b> TENOVA		<b>REVIEW LABEL</b>	
Discipline	Discipline Engineer	Date	
	Name	yyyy-mm-dd	
	Signature		

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED. 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.	
DIMENSIONS IN MILLIMETERS & DEGREES. GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)	
RANGE	MACH FAB CAST
0-500	0.25 2 2
501-1000	0.5 3 4
1001-2000	1.0 4 6
ABOVE 2000	2.0 6 10
REFER ALSO TO MANUFACTURING SPECIFICATION WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134	
UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.	
DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	
Rev.	Drawing Sheet No.
	Part List
	See technical modification report No.
	Day
	Name

MASS.	191964 kg
MATERIAL.	
SPEC.	
NOTES.	
DRAWN TO BS 8888	
THIRD ANGLE PROJECTION	
Project Number:	AC0339
Drawing Number:	49055208
BG:	4101
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<b>TAKRAF</b> TENOVA					
Project Number: AC0339					
Drawing Number: 49055208		BG: 4101			
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1	SHEETS 3 & 4 ADDED	EMD	RHW	ASM	12-03-18
0	FIRST ISSUE	RCJ	RHW	JMD	18-05-17
NO.	DESCRIPTION	BY	CHKD	APPD	DATE
<b>REVISIONS</b>					

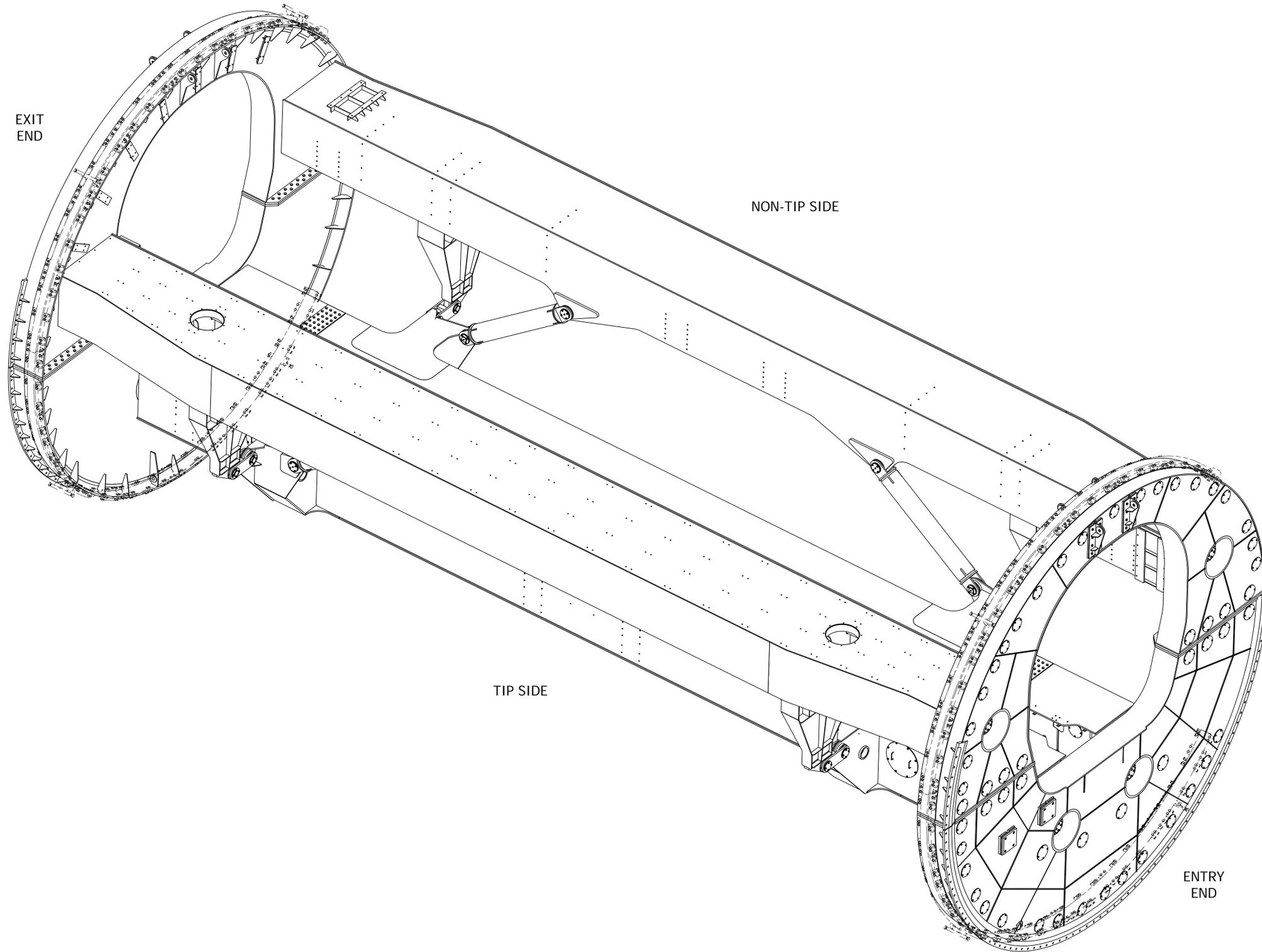
<b>CONTRACTOR / CONSULTANT</b>				<b>TRANSNET CAPITAL PROJECTS</b>			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ		18 05 17	SIGNAL ENG.			
CHECKED	RHW		24 05 17	MECH. ENG.			
MECHANICAL	DWB		20 06 17	ELEC. ENG.			
PROJECT ENG.	ASM		26 06 17	CIVIL ENG.			
PROJECT MAN.	D.STARK		30 06 17	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			
<b>OPERATING DIVISIONS</b>				<b>PR.ENG. / PR.TECH./PR. ARCH</b>			
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE	
				SIGNATURE		30 06 17	
REG. NUMBER	70386304						
SCALE:	1:60 UOS						

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TEL: 021 940 1999		FAX: 086 677 2455	
<b>PORT OF SALDANHA</b>			
<b>IRON ORE TIPPLER 3</b>			
<b>ASSEMBLY OF CAGE STRUCTURE</b>			
PROJECT NUMBER	OD	FBS	DIS
1924701	0	0	0
TYPE	DRAWING NO.	SHEET	REV ID
MGA	0009	1	1 JV









NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.  
 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DIMENSIONS IN MILLIMETERS & DEGREES.  
 GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)

RANGE	MACH	FAB	CAST
0-500	0.25	2	2
501-1000	0.5	3	4
1001-2000	1.0	4	6
ABOVE 2000	2.0	6	10

REFER ALSO TO MANUFACTURING SPECIFICATION WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134

UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT  $\nabla$  AND IN THE MANNER SHOWN.

MASS. 191964 kg

MATERIAL.

SPEC.

NOTES.

DRAWN TO BS 8888

HOME PROJECTION

**TAKRAF**  
TENOVA

Project Number:  
AC0339

Drawing Number: 49055208  
 BG: 4101

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	SHEETS 3 & 4 ADDED	EMD	RHW	ASM	12-03-18
0	FIRST ISSUE	RCJ	RHW	JMD	18-05-17

CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ	[Signature]	18 05 17	SIGNAL ENG.			
CHECKED	RHW	[Signature]	24 05 17	MECH. ENG.			
MECHANICAL	DWB	[Signature]	20 06 17	ELEC. ENG.			
PROJECT ENG.	ASM	[Signature]	26 06 17	CIVIL ENG.			
PROJECT MAN.	D.STARK	[Signature]	30 06 17	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			

**TAKRAF**  
TENOVA

REVIEW LABEL

Discipline	Discipline Engineer	Date
Name	Signature	yyyy-mm-dd

Transnet Capital Projects  
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 PLATTEKLOOF,  
 8001  
 TEL: 021 940 1999  
 FAX: 086 677 2455

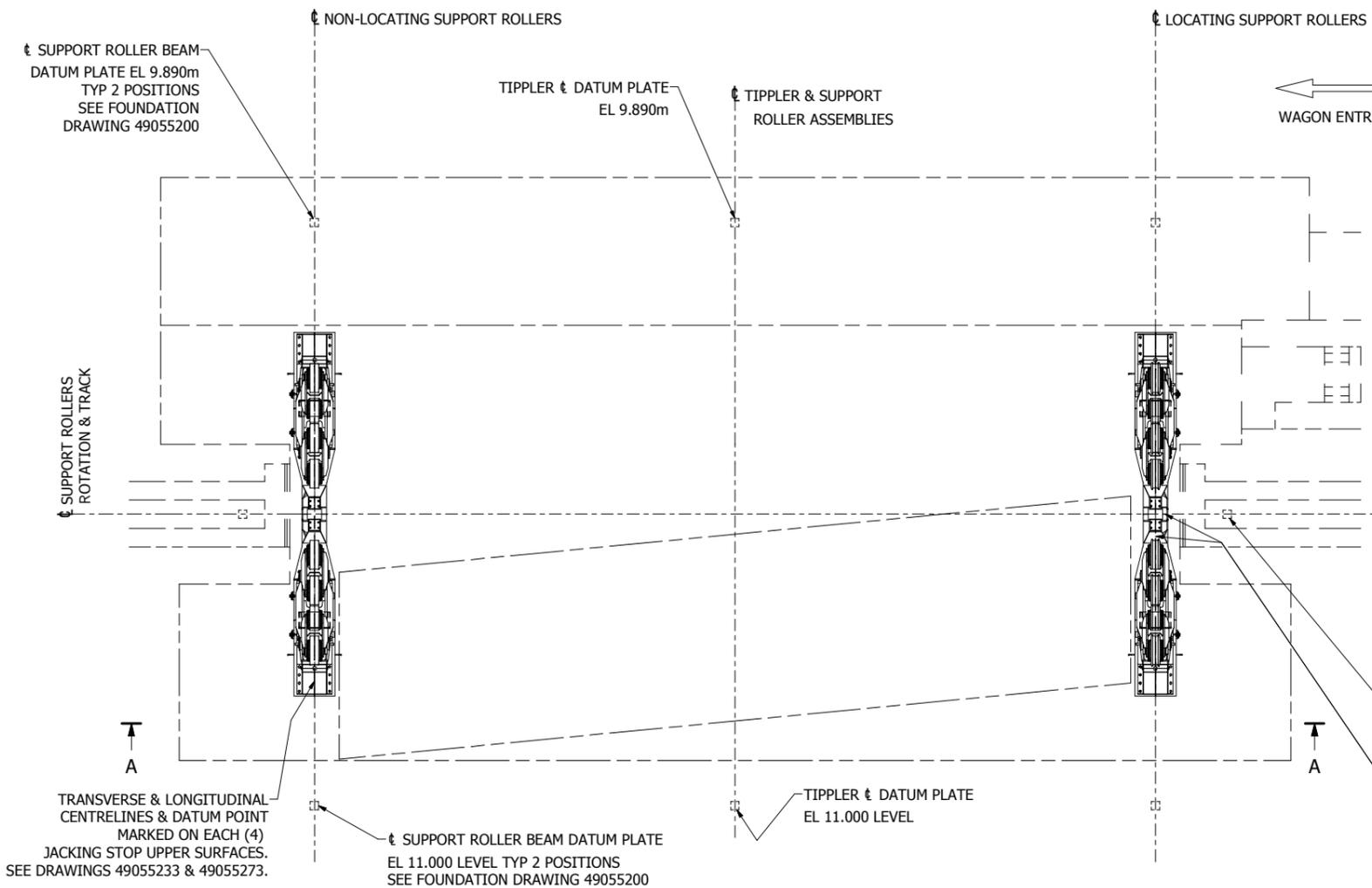
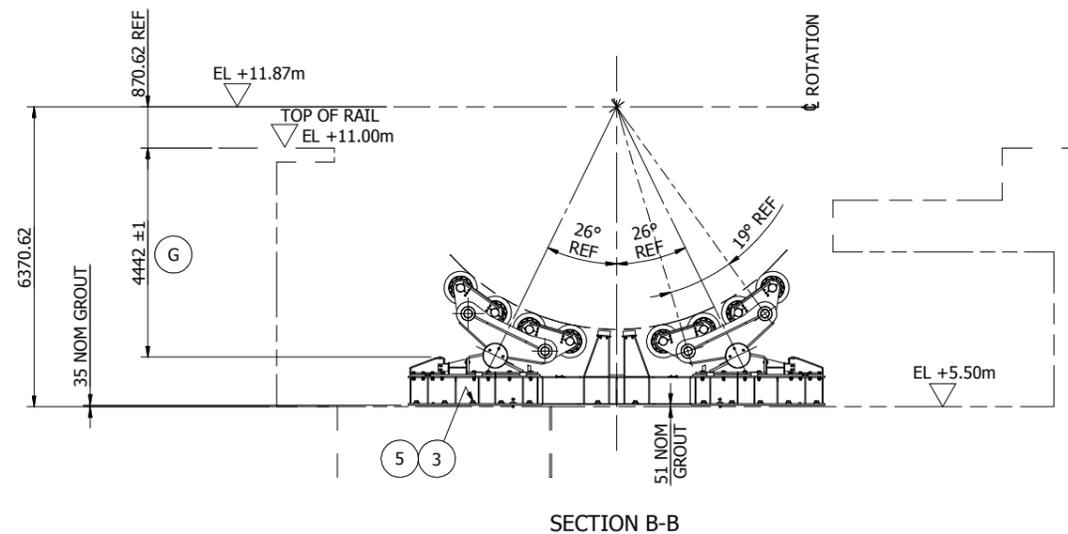
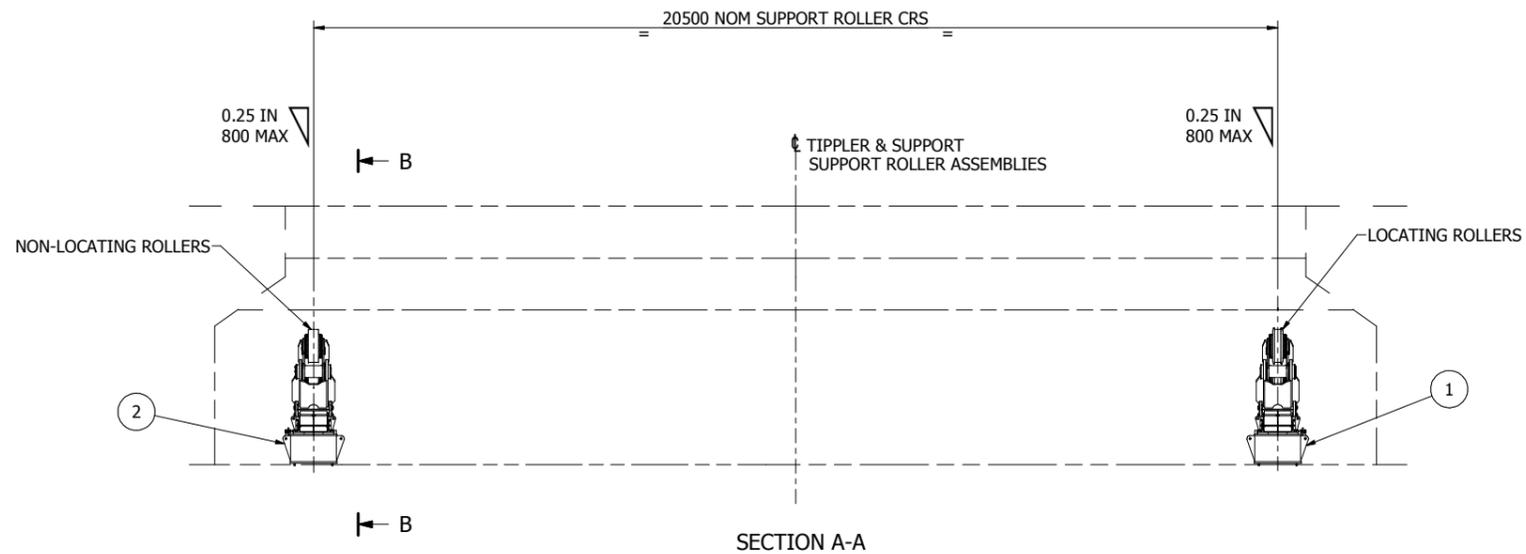
**TRANSNET**

**PORT OF SALDANHA**  
 IRON ORE TIPPLER 3  
 ASSEMBLY OF CAGE  
 STRUCTURE

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	0	0	0	M	GA-0009	5	1	JV

SCALE: 1:40 UOS





**SITE ASSEMBLY PROCEDURE:**

- INSTALL & ALIGN IN ACCORDANCE WITH & REFERENCE TO:  
 INSTRUCTIONS & TOLERANCES INCLUDED ON THIS DRAWING  
 ASSEMBLY DRAWINGS 49055233 & 49055273  
 ASSEMBLY OF GROUT PACKING DRAWING 49055230  
 MECHANICAL SITE ASSEMBLY & INSPECTION PROCEDURE  
 TIPPLER & PLANT FOUNDATION DETAILS DRAWING 49055200  
 MECHANICAL SHOP ASSEMBLY & INSPECTION PROCEDURE (FOR RECORDED SHOP ASSEMBLY DIMENSIONS)
- VERIFY ALL RECORDED SHOP ASSEMBLY DIMENSIONS. IT IS IMPERATIVE THAT THE JACKING STOPS ARE CORRECTLY ALIGNED & FIXED TO THE ROLLER SUPPORT BEAMS.
- SUPPORT ROLLER ASSEMBLIES TO BE INSTALLED & ALIGNED IN ACCORDANCE WITH MECHANICAL SITE INSTALLATION METHOD STATEMENT & USING CAST IN DATUM PLATES, TOP SURFACE OF THE ROLLER SUPPORT BEAMS & JACKING STOP DATUMS AS PRIMARY ALIGNMENT REFERENCE POINTS AS IDENTIFIED ON FOUNDATION DRAWINGS & THIS DRAWING.
- SUPPORT ROLLERS CAN BE INSTALLED AS:
  - COMPLETELY ASSEMBLED UNITS INCLUDING ROLLERS OR,
  - USING SUPPORT BEAM ASSEMBLIES ONLY FOR INITIAL ALIGNMENT WITH ROLLER ASSEMBLIES INSTALLED AFTER FOR FINAL ALIGNMENT. ENSURE PIVOT BORES CLEANED OF PROTECTIVE MATERIALS & PIVOT PINS FULLY GREASED ON ASSEMBLY.
 ENSURE MAINTENANCE LOCK BRACKETS & ROLLER GREASE NIPPLES FACE OUTWARDS.
- ALL INSTALLATION & ALIGNMENT DIMENSIONS ARE TO BE RECORDED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS DRAWING & THE MECHANICAL SITE ASSEMBLY & INSPECTION PROCEDURE.
- JACKING SCREWS & GROUT PACKERS TO BE USED TO ALIGN & LEVEL THE SUPPORT BEAMS. FOLLOWING ALIGNMENT, FULL TIGHTENING OF THE FOUNDATION BOLTS & RECORDING OF ALL REQUIRED ALIGNMENT DIMENSIONS, THE GAP BETWEEN THE UNDERSIDE OF THE BEAMS AND THE FOUNDATIONS IS TO BE FILLED WITH FULL STRENGTH GROUT.
- FOUNDATION WASHERS, ITEM 3, TO BE WELDED TO THE ROLLER SUPPORT BEAM TO MAINTAIN SETTINGS. IT IS ESSENTIAL THAT THE DIMENSIONS & TOLERANCES SHOWN ON THIS DRAWING ARE ACHIEVED. ANY VARIATIONS MUST BE ADVISED TO THE DESIGNER BEFORE GROUTING & THE FOUNDATION WASHERS ARE WELDED IN POSITION.
- IF SUPPORT ROLLER FRAMES & ROLLER ASSEMBLIES WERE REMOVED FROM ROLLER SUPPORT BEAM ASSEMBLIES PRIOR TO INSTALLATION, OR IF THE SUPPORT ROLLER FRAMES HAVE BEEN MOVED DURING INSTALLATION;
  - INSTALL THE FRAME & ROLLER ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENT OF ASSEMBLY DRAWINGS 49055233 & 49055273.
  - MASTIC SEALANT TO BE APPLIED IN THE JOINTS BETWEEN THE FRAMES AND PIVOT BLOCKS TO SEAL THE GREASED PIVOT PINS.
 ENSURE ROLLER GREASE NIPPLES FACE AWAY FROM THE TIPPLER CENTRE.

<b>TAKRAF</b> TENOVA			<b>REVIEW LABEL</b>		
Discipline	Discipline Engineer	Date			
	Name	Signature	yyyy-mm-dd		

DRAWING NO.		REFERENCE	
<b>REFERENCE DRAWINGS</b>			
Rev.	Drawing Sheet No.	Part List	See technical modification report No.
			Day
			Name

**TAKRAF**  
TENOVA

Project Number:  
**AC0339**

Drawing Number:  
**49055232**

BG:  
**4112**

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0	FIRST ISSUE	RGF	ASM	JMD	08-03-17
NO.	DESCRIPTION	BY	CHKD	APPD	DATE
<b>REVISIONS</b>					

<b>CONTRACTOR / CONSULTANT</b>				<b>TRANSNET CAPITAL PROJECTS</b>			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RGF		08 03 17	SIGNAL ENG.			
CHECKED	ASM		10 03 17	MECH. ENG.			
MECHANICAL	JMD		13 03 17	ELEC. ENG.			
PROJECT ENG.	DWB		17 03 17	CIVIL ENG.			
PROJECT MAN.	D.STARK		17 03 17	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			
<b>OPERATING DIVISIONS</b>				<b>PR.ENG. / PR.TECH./PR. ARCH</b>			
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE	
				SIGNATURE		17 03 17	
				REG. NUMBER	70386304		
SCALE:				A1			

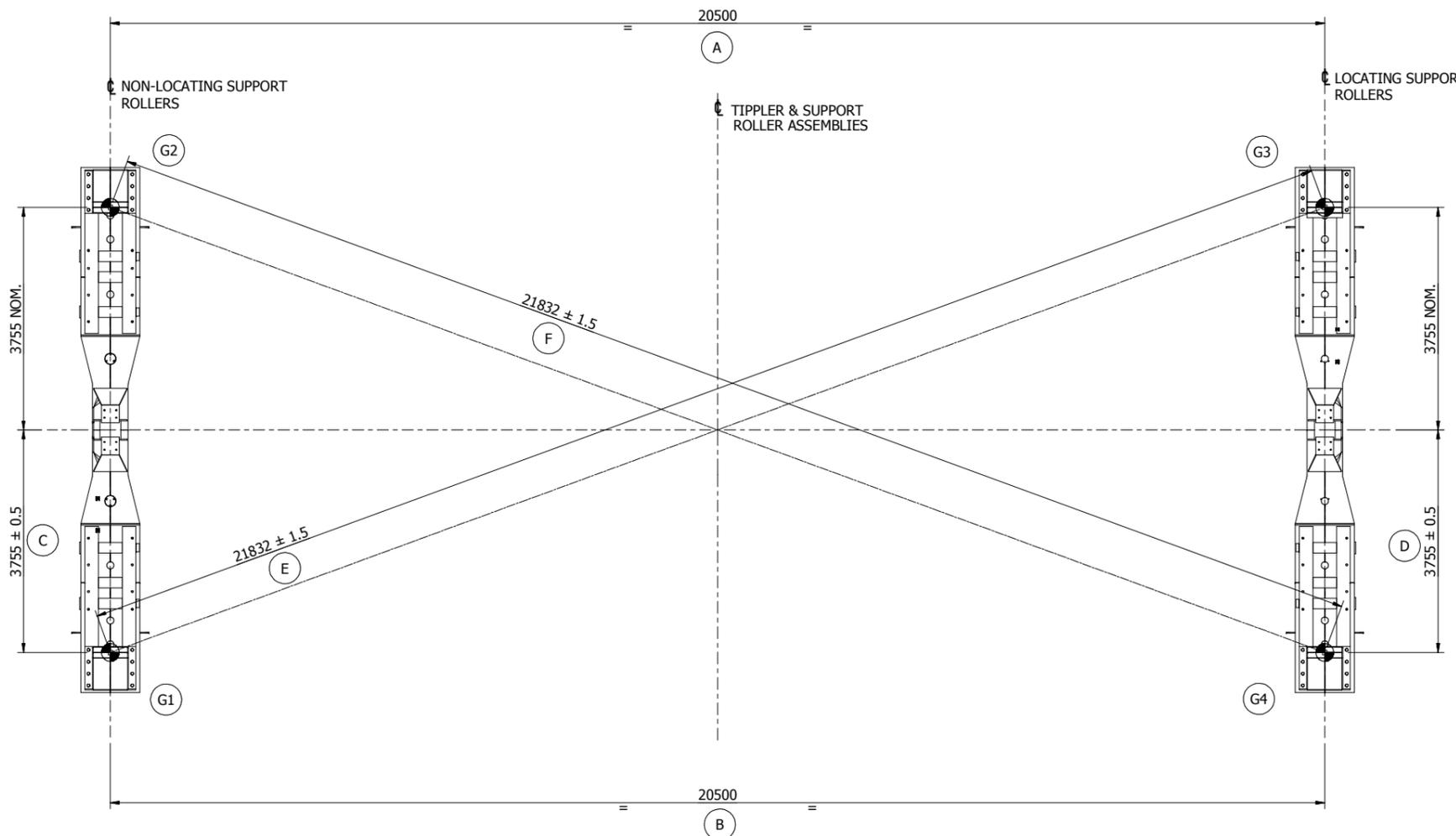
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 8001

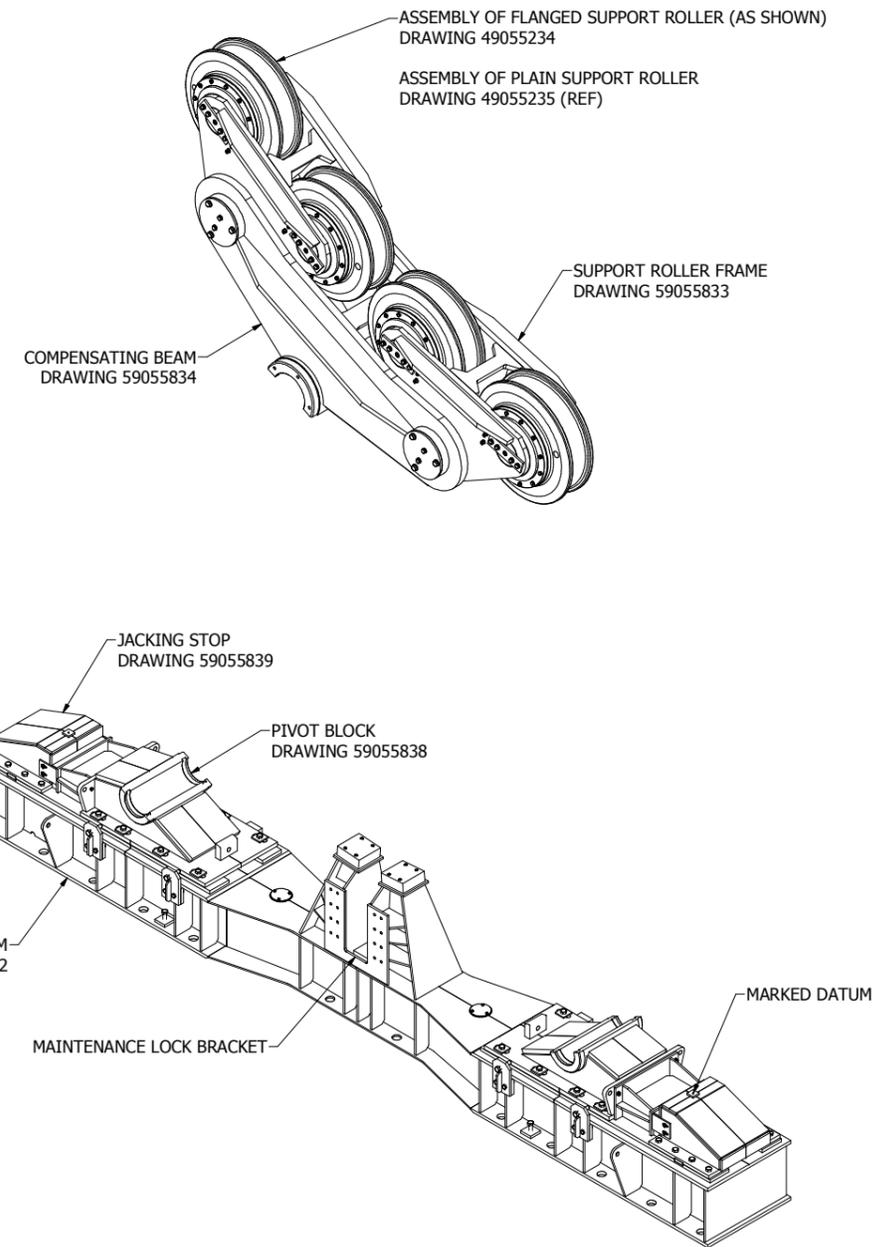
TEL: 021 940 1999  
 FAX: 021 677 2455

**PORT OF SALDANHA**  
**IRON ORE TIPPLER 3**  
**ASSEMBLY OF SUPPORT ROLLERS**

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
A1	X	X	X	X	X	X	X	X



PLAN VIEW SHOWING TOLERANCES BETWEEN MACHINED DATUMS ON JACKING STOPS (SUPPORT ROLLER FRAMES & ROLLER ASSEMBLIES OMITTED FOR CLARITY)



INSTALLATION & ALIGNMENT RECORD		
DIMENSION REFERENCE	NOMINAL / DRAWING DIMENSION	RECORDED DIMENSION
A	20500	
B	20500	
C	3755	
D	3755	
E	21832	
F	21832	
G1	4442	
G2	4442	
G3	4442	
G4	4442	

TAKRAF TENOVA REVIEW LABEL		
Discipline	Discipline Engineer Name	Date yyyy-mm-dd
	Signature	

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED. 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEG SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.		MASS: 50988 kg	
DIMENSIONS IN MILLIMETERS & DEGREES. GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS): RANGE MACH FAB CAST 0-500 0.25 2 2 501-1000 0.5 3 4 1001-2000 1.0 4 6 ABOVE 2000 2.0 6 10		DRAWN TO BS 8888	
REFER ALSO TO MANUFACTURING SPECIFICATION. WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134		THIRD ANGLE PROJECTION	
UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.			
DRAWING NO.	REFERENCE		
REFERENCE DRAWINGS			
Rev.	Drawing Sheet No.	Part List	See technical modification report No. Day Name

**TAKRAF TENOVA**

Project Number: AC0339

Drawing Number: 49055232

BG: 4112

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TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RGF		08 03 17	SIGNAL ENG.							
CHECKED	ASM		10 03 17	MECH. ENG.							
MECHANICAL	JMD		13 03 17	ELEC. ENG.							
PROJECT ENG.	DWB		17 03 17	CIVIL ENG.							
PROJECT MAN.	D.STARK		17 03 17	STRUCT. ENG.							
				C&I. ENG.							
				ENG. MNG.							
OPERATING DIVISIONS					PR.ENG. / PR.TECH./PR. ARCH						
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE					
				SIGNATURE		17 03 17					
				REG. NUMBER	70386304						
				SCALE:							

REVISIONS											
NO.	DESCRIPTION	BY	CHKD	APPD	DATE						
0	FIRST ISSUE	RGF	ASM	JMD	08-03-17						

**TAKRAF TENOVA**

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PLATTEKLOOF,  
8001

TEL: 021 940 1999  
FAX: 086 677 2455

**PORT OF SALDANHA**  
**IRON ORE TIPPLER 3**  
**ASSEMBLY OF SUPPORT ROLLERS**

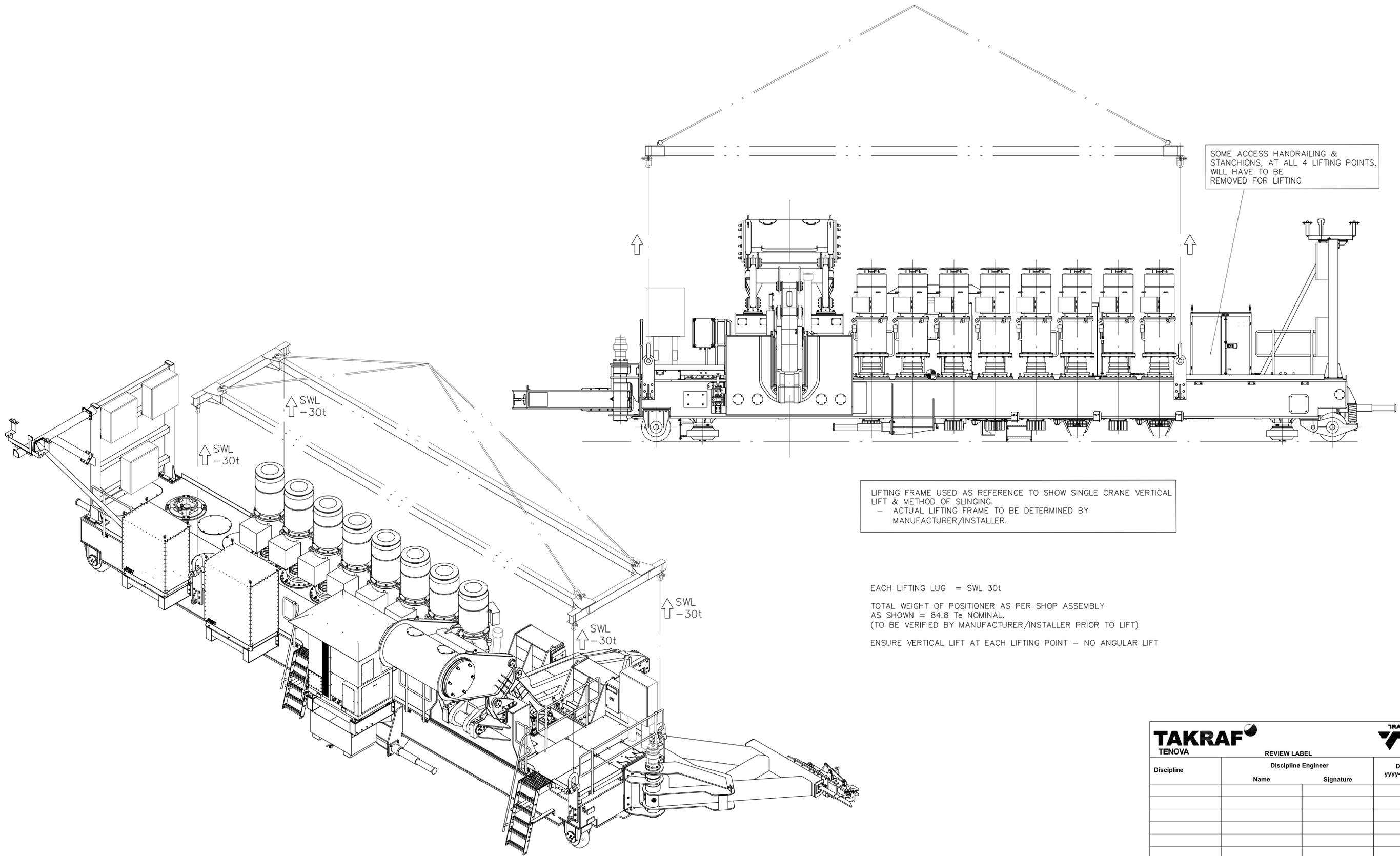
PROJECT NUMBER	00	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
	A1	X	X	X	X	X	2	0 JV











SOME ACCESS HANDRAILING & STANCHIONS, AT ALL 4 LIFTING POINTS, WILL HAVE TO BE REMOVED FOR LIFTING

LIFTING FRAME USED AS REFERENCE TO SHOW SINGLE CRANE VERTICAL LIFT & METHOD OF SLINGING.  
 - ACTUAL LIFTING FRAME TO BE DETERMINED BY MANUFACTURER/INSTALLER.

EACH LIFTING LUG = SWL 30t  
 TOTAL WEIGHT OF POSITIONER AS PER SHOP ASSEMBLY AS SHOWN = 84.8 Te NOMINAL.  
 (TO BE VERIFIED BY MANUFACTURER/INSTALLER PRIOR TO LIFT)  
 ENSURE VERTICAL LIFT AT EACH LIFTING POINT - NO ANGULAR LIFT

<b>TAKRAF</b> TENOVA		<b>REVIEW LABEL</b>		<b>TRANSNET</b>
Discipline	Discipline Engineer Name	Signature	Date	yyyy-mm-dd

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.  
 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DIMENSIONS IN MILLIMETERS & DEGREES.		MASS	SEE SHEET 1
GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)		MATERIAL	
RANGE	MACH	FAB	CAST
0-500	0.25	2	2
501-1000	0.5	3	4
1001-2000	1.0	4	6
ABOVE 2000	2.0	6	10

REFER ALSO TO MANUFACTURING SPECIFICATION.  
 WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134

UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT  $\nabla$  AND IN THE MANNER SHOWN.

Rev.	Drawing Sheet No.	Part List	See technical modification report No.	Day	Name

**TAKRAF**  
TENOVA

Project Number:  
AC0339

Drawing Number: 49055245    BG: 2100

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	SEE SHEETS 6 - 9	EMD	RCJ	JMD	19-02-19
0	FIRST ISSUE	RCJ	RHW	JMD	26-06-18

**REVISIONS**

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CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ	<i>R. C. Jones</i>	04 06 18	SIGNAL ENG.			
CHECKED	RHW	<i>R. Wood</i>	25 06 18	MECH. ENG.			
MECHANICAL	JMD	<i>J. M. D.</i>	26 06 18	ELEC. ENG.			
PROJECT ENG.	ASM	<i>A. S. M.</i>	26 06 18	CIVIL ENG.			
PROJECT MAN.	D. STARK	<i>D. Stark</i>	26 06 18	STRUCT. ENG.			
				C&I ENG.			
				ENG. MNG.			

OPERATING DIVISIONS				PR.ENG. / PR.TECH./PR. ARCH			
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE	
				SIGNATURE	<i>R. Wood</i>	26 06 18	
				REG. NUMBER	70386304		
				SCALE:	1:60 UOS		

Transnet Capital Projects

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 6001

TEL: 021 940 1999  
 FAX: 086 677 2455

**PORT OF SALDANHA**  
**IRON ORE TIPPLER 3**  
**ASSEMBLY OF TRAIN POSITIONER**

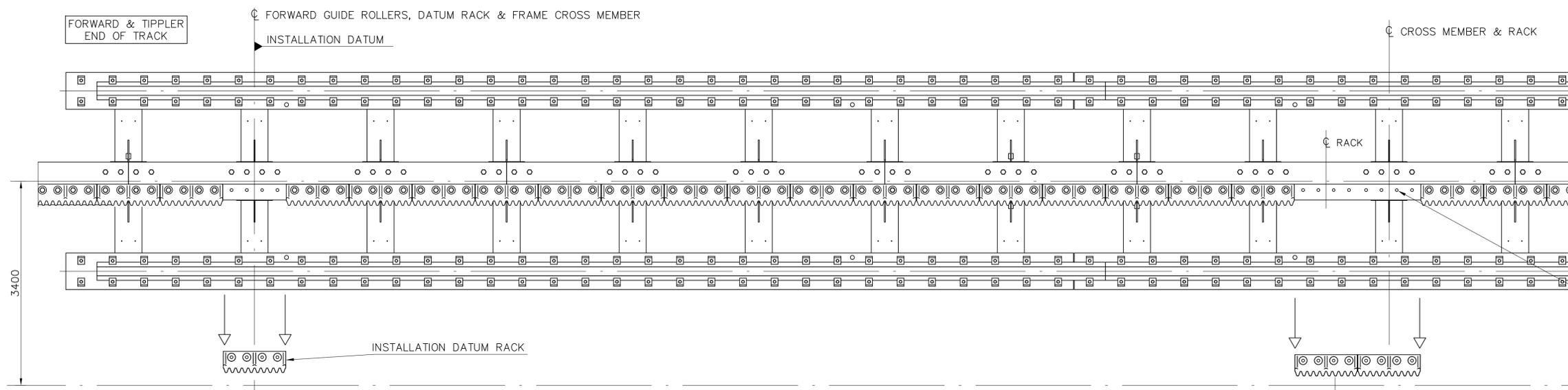
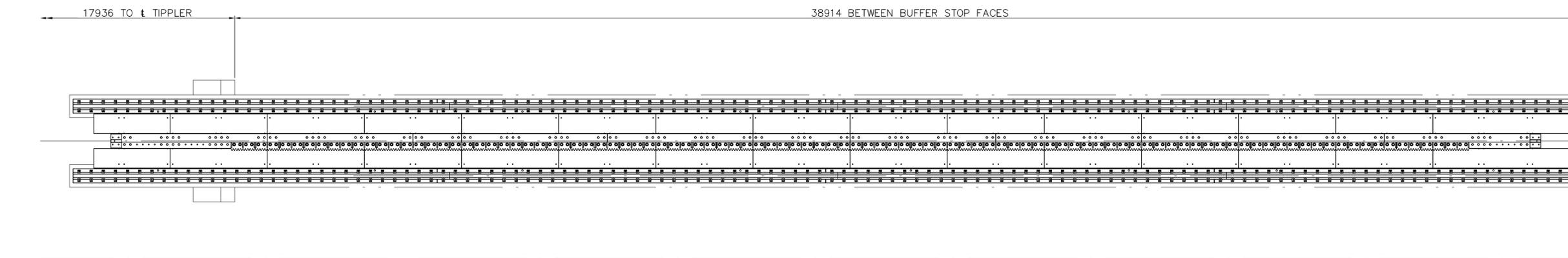
**SHEET 5 OF 9**

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	0	0	0	M-GA	0046	5	1	JV

# SITE INSTALLATION PROCEDURE

## (A) ASSEMBLING POSITIONER ONTO POSITIONER TRACK

POSITIONER TO BE INITIALLY LOCATED BETWEEN BUFFER STOPS CONVENIENT FOR CRANE LIFT WITH FORWARD END GUIDE ROLLER COINCIDENT WITH A TRACK MODULE CROSS MEMBER AS SHOWN.



POSITIONER TO BE INITIALLY LOCATED BETWEEN BUFFER STOPS CONVENIENT FOR CRANE LIFT WITH FORWARD END GUIDE ROLLER COINCIDENT WITH A TRACK MODULE CROSS MEMBER AS SHOWN.

REMOVE NON-DRIVE SIDE GUIDE ROLLERS PRIOR TO INSTALLING POSITIONER.

REMOVE A SINGLE RACK SEGMENT (INSTALLATION DATUM).

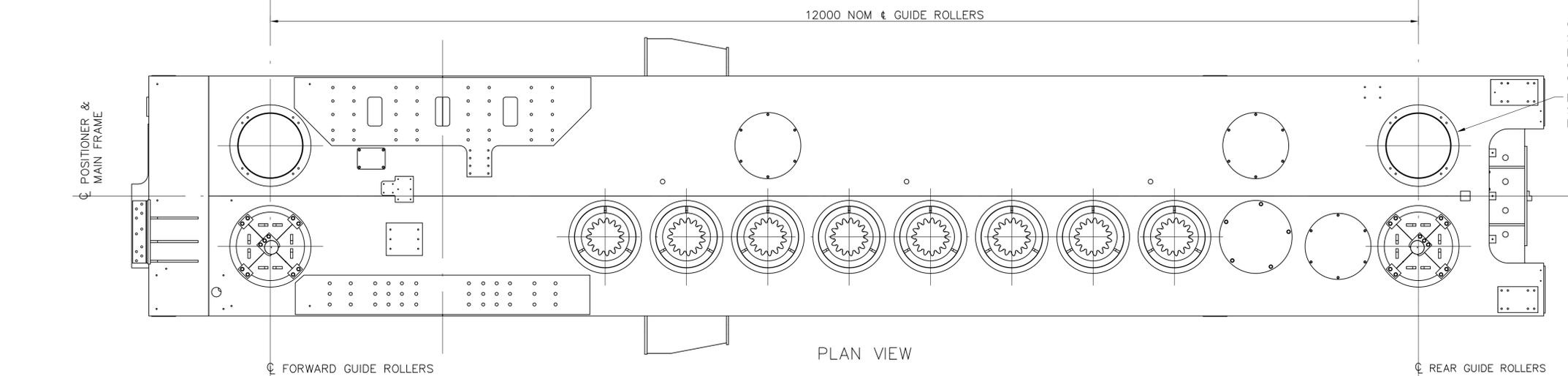
REMOVE 2 RACK SEGMENTS ADJACENT TO REAR

NOTE:  
BOLTS FOR THE 3 RACK SECTIONS, ITEMS 7, 14 & 15 ON ASSEMBLIES 49055264/5/6, TO BE REMOVED & REPLACED WITH NEW ITEMS:

(15) (16) (17)

CHECK 430 DIMENSION 'A' & 'B' AS SHOWN ON SHEET 3 ('D' GUIDE ROLLERS) TO ENSURE DRIVE SIDE GUIDE ROLLER IS IN CORRECT ORIENTATION.

REMOVE FORWARD & REAR NON-DRIVE SIDE GUIDE ROLLERS PRIOR TO INSTALLING POSITIONER.



<b>TAKRAF</b> TENOVA		<b>REVIEW LABEL</b>		<b>TRANSNET</b>
Discipline	Discipline Engineer Name	Signature	Date	yyyy-mm-dd

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.  
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DIMENSIONS IN MILLIMETERS & DEGREES.					
GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)					
RANGE	MACH	FAB CAST			
0-500	0.25	2 2			
501-1000	0.5	3 4			
1001-2000	1.0	4 6			
ABOVE 2000	2.0	6 10			
REFER ALSO TO MANUFACTURING SPECIFICATION. WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134					
UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT AND IN THE MANNER SHOWN.					
Rev.	Drawing Sheet No.	Part List	See technical modification report No.	Day	Name

**TAKRAF**  
TENOVA

Project Number:  
AC0339

Drawing Number: 49055245 BG: 2100

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TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ	[Signature]	04 06 18	SIGNAL ENG.							
CHECKED	RHW	[Signature]	25 06 18	MECH. ENG.							
MECHANICAL	JMD	[Signature]	26 06 18	ELEC. ENG.							
PROJECT ENG.	ASM	[Signature]	26 06 18	CIVIL ENG.							
PROJECT MAN.	D.STARK	[Signature]	26 06 18	STRUCT. ENG.							
				C&I ENG.							
				ENG. MNG.							
OPERATING DIVISIONS					PR.ENG. / PR.TECH./PR. ARCH						
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE					
				SIGNATURE	[Signature]	26 06 18					
				REG. NUMBER	70386304						
				SCALE:	NTS						

REVISIONS													
NO.	DESCRIPTION	BY	CHKD	APPD	DATE	TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
1	SITE INSTALLATION PROCEDURE REVISED	EMD	RCJ	JMD	19-02-19								
0	FIRST ISSUE	RCJ	RHW	JMD	26-06-18								

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**TAKRAF**  
TENOVA

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8001

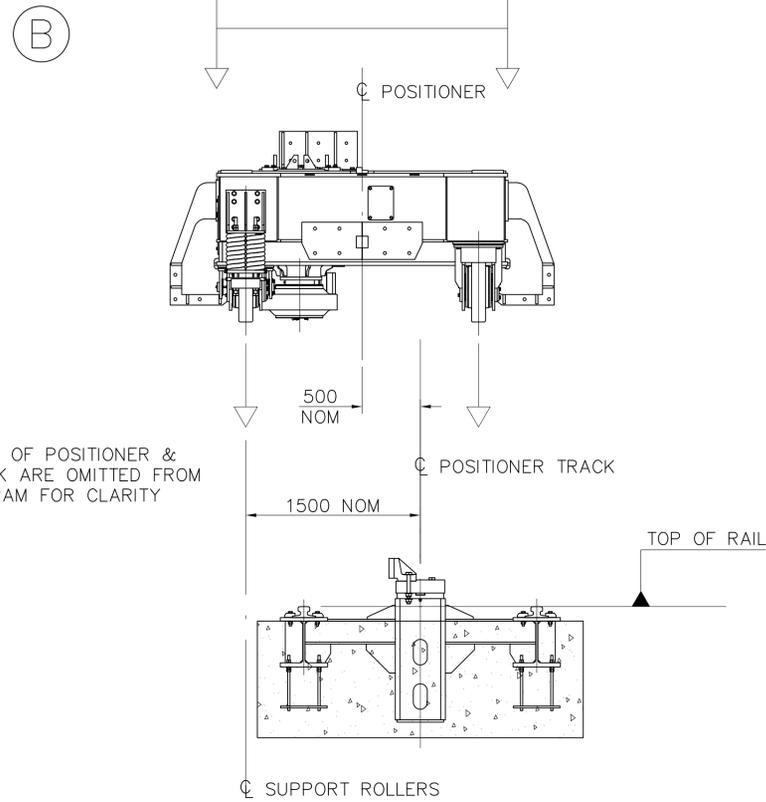
TEL: 021 940 1999  
FAX: 086 677 2455

**PORT OF SALDANHA**  
**IRON ORE TIPPLER 3**  
**ASSEMBLY OF TRAIN POSITIONER**

**SHEET 6 OF 9**

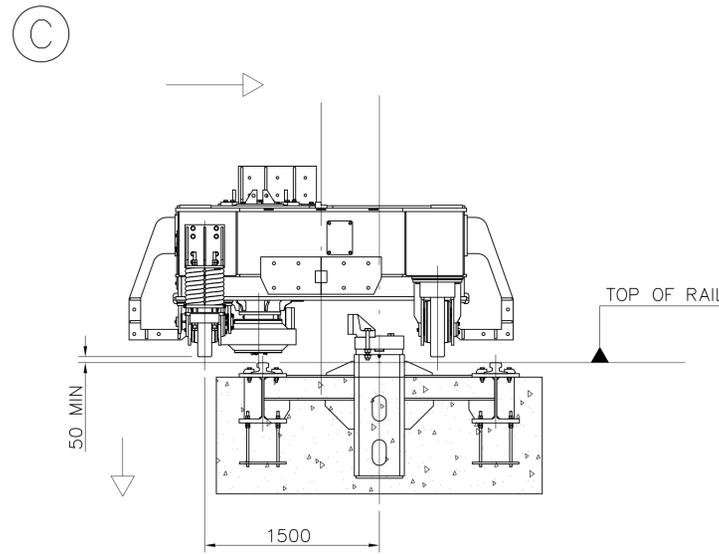
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	0	0	0	M-GA	0046	6	1	JV

SITE INSTALLATION PROCEDURE



PRIOR TO INSTALLING POSITIONER ON TRACK, REMOVE NON-DRIVE SIDE GUIDE ROLLERS AND ENCODER ASSEMBLY.

LOWER POSITIONER TO WITHIN 50mm OF RAILS BIASED TOWARDS DRIVE SIDE OF TRACK.

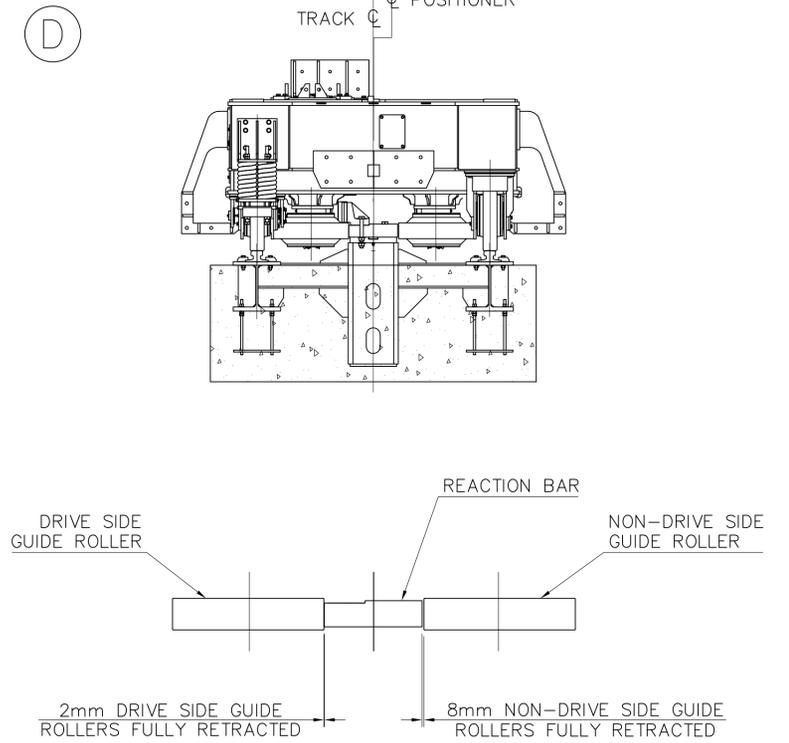


PRIOR TO HORIZONTAL MOVEMENT OF POSITIONER, ENSURE DRIVE PINIONS ARE ALIGNED TO ENGAGE WITH DRIVE RACK, DRIVE CARTRIDGE BRAKES TO BE RELEASED AND DRIVE SIDE GUIDE ROLLERS ARE IN THE FULLY RETRACTED POSITION.

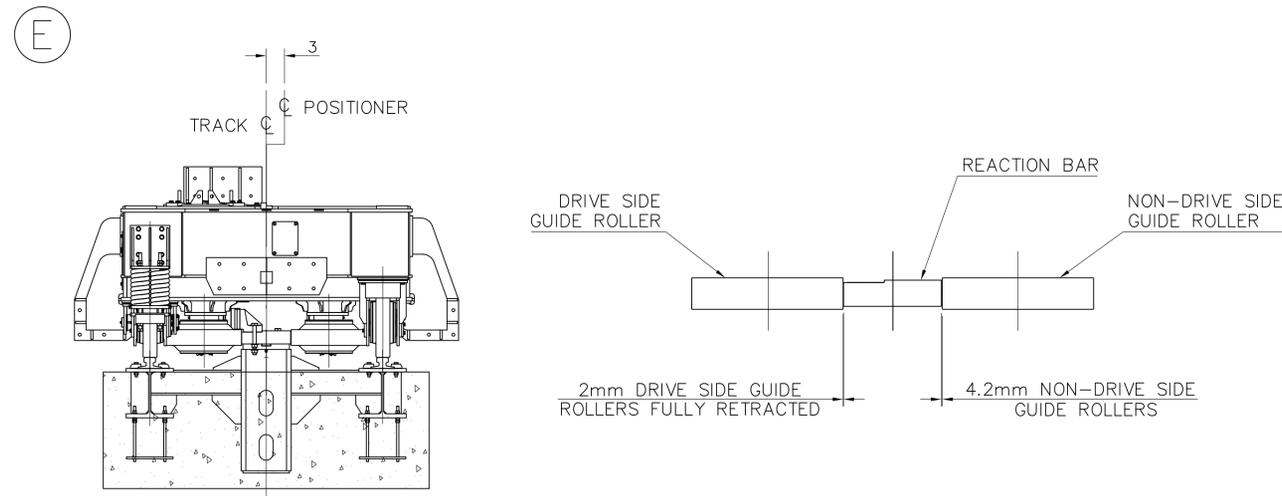
MOVE POSITIONER HORIZONTALLY UNTIL ALL DRIVE PINIONS ARE ENGAGED WITH THE DRIVE RACK AND IN FULL TOOTH FLANK CONTACT.

PRIOR TO LOWERING THE POSITIONER ONTO THE RAILS, APPLY GREASE TO THE RAIL DIRECTLY UNDER THE SUPPORT ROLLERS TO AID FURTHER LATERAL MOVEMENT/ADJUSTMENT.

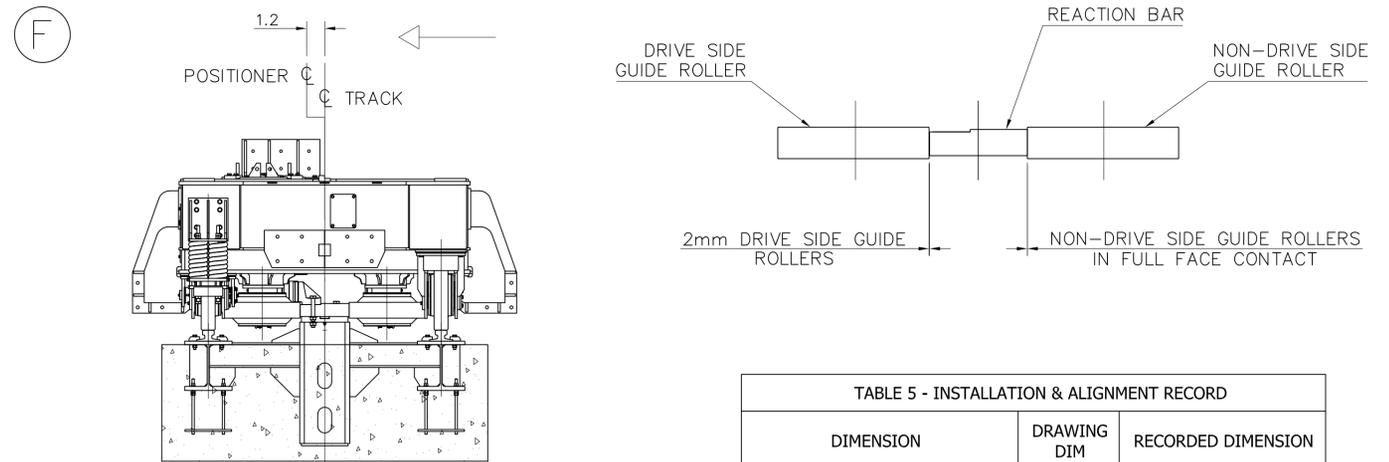
LOWER THE POSITIONER ONTO THE RAILS.



INSTALL THE NON-DRIVE SIDE GUIDE ROLLERS IN THE FULLY RETRACTED POSITION.



ROTATE NON-DRIVE SIDE GUIDE ROLLERS TO CLEAR REACTION BAR BY 4.2mm.



MOVE POSITIONER 4.2mm HORIZONTALLY IN THE DRIVE DIRECTION UNTIL NON-DRIVE SIDE GUIDE ROLLERS ARE IN HARD CONTACT WITH REACTION BAR. CLEARANCE BETWEEN DRIVE SIDE GUIDE ROLLERS AND REACTION BAR WILL INCREASE TO 6.2mm.

ROTATE THE DRIVE SIDE GUIDE ROLLERS TO CLEAR THE REACTION BAR BY 2mm.

RACK AND PINION BACKLASH IN THIS CONDITION IS 2.9mm.

DIMENSION	DRAWING DIM	RECORDED DIMENSION
DRIVE SIDE GUIDE ROLLER - FWD	2.0	
DRIVE SIDE GUIDE ROLLER - REAR	2.0	

NOTES: 1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.  
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.

DIMENSIONS IN MILLIMETERS & DEGREES	GENERAL MANUFACTURING TOLERANCES UNLESS STATED OTHERWISE (PLUS OR MINUS)	RANGE	MACH	FAB	CAST
0-500	0.25	2	2		
501-1000	0.5	3	4		
1001-2000	1.0	4	6		
ABOVE 2000	2.0	6	10		

REFER ALSO TO MANUFACTURING SPECIFICATION. WELD SYMBOLS BS EN 22553. SURFACE FINISH BS 1134

UNLESS OTHERWISE SPECIFIED IDENTIFY THE ITEM WITH THE DRAWING NUMBER AND ISSUE LEVEL AT  $\Delta$  AND IN THE MANNER SHOWN.

Rev.	Drawing Sheet No.	Part List	See technical modification report No.	Day	Name

**TAKRAF**  
TENOVA

Project Number: AC0339

Drawing Number: 49055245 BG: 2100

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	SITE INSTALLATION PROCEDURE REVISED	EMD	RCJ	JMD	19-02-19
0	FIRST ISSUE	RCJ	RHW	JMD	26-06-18

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TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ	[Signature]	04 06 18	SIGNAL ENG.			
CHECKED	RHW	[Signature]	25 06 18	MECH. ENG.			
MECHANICAL	JMD	[Signature]	26 06 18	ELEC. ENG.			
PROJECT ENG.	ASM	[Signature]	26 06 18	CIVIL ENG.			
PROJECT MAN.	D.STARK	[Signature]	26 06 18	STRUCT. ENG.			
				C&I ENG.			
				ENG. MNG.			

**OPERATING DIVISIONS**

TITLE	NAME	SIGN	DATE
PR.ENG. / PR.TECH./PR. ARCH	RICHARD WOOD	[Signature]	26 06 18

REG. NUMBER: 70386304  
SCALE: NTS

Transnet Capital Projects

TRANSNET

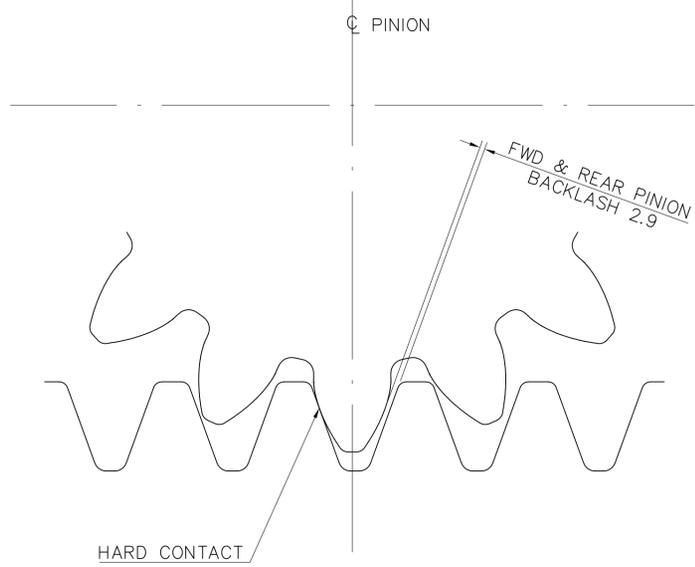
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PLATTEKLOOF,  
8001

TEL: 021 940 1999  
FAX: 086 677 2455

**PORT OF SALDANHA**  
**IRON ORE TIPPLER 3**  
**ASSEMBLY OF TRAIN POSITIONER**

**SHEET 7 OF 9**

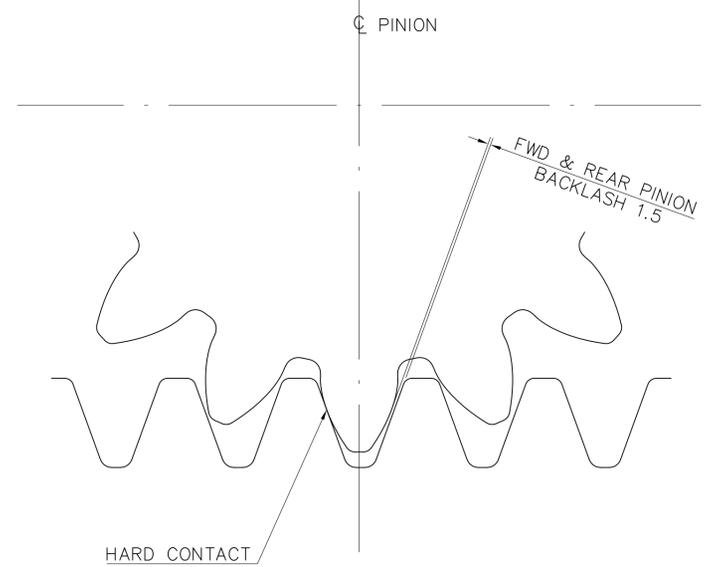
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	0	0	0	M-GA	0046	7	1	JV



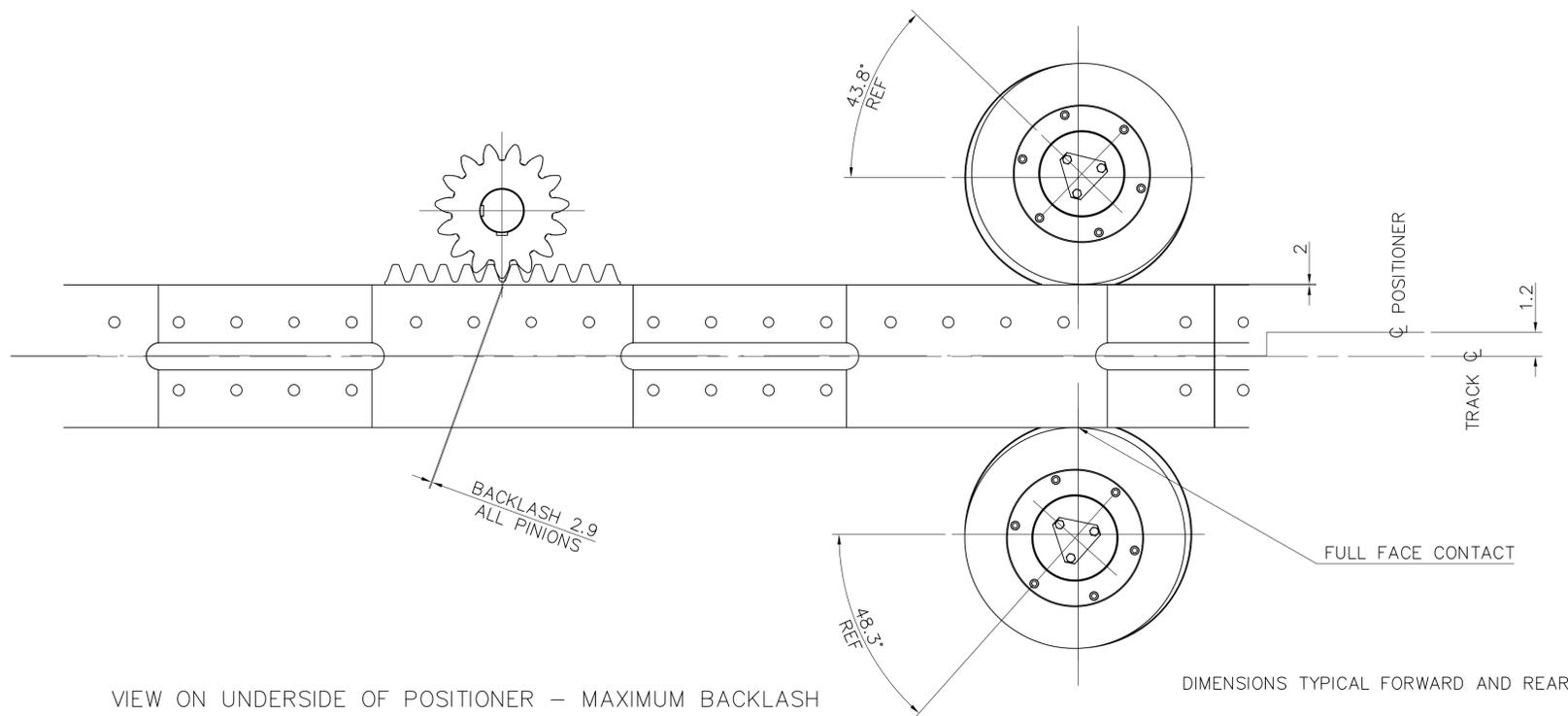
MAXIMUM BACKLASH WITH NON-DRIVE SIDE GUIDE ROLLERS  
IN FULL FACE CONTACT WITH REACTION BAR

TABLE 6 - INSTALLATION & ALIGNMENT RECORD		
DIMENSION	DRAWING DIM	RECORDED DIMENSION
MAX PINION BACKLASH - FWD	2.9	
MAX PINION BACKLASH - REAR	2.9	

CHECK BACKLASH & RECORD DIMENSION  
BETWEEN RACK & PINION IN FORWARD #1  
END & REAR #8 DRIVE PINION.

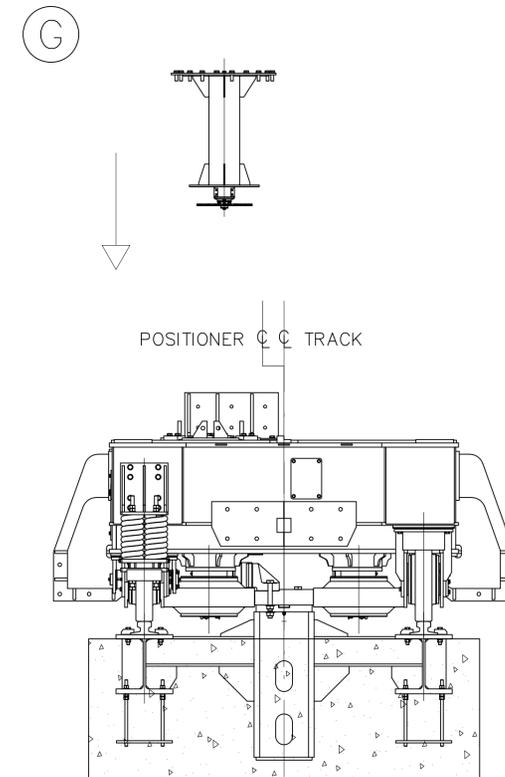


MINIMUM BACKLASH WITH DRIVE SIDE GUIDE ROLLERS  
IN FULL FACE CONTACT WITH REACTION BAR  
(REFERENCE)



VIEW ON UNDERSIDE OF POSITIONER - MAXIMUM BACKLASH

DIMENSIONS TYPICAL FORWARD AND REAR



REINSTALL ENCODER ASSEMBLY INTO POSITIONER.  
ALIGN ENCODER PINION WITH DRIVE RACK DURING LOWERING.

TAKRAF TENOVA		REVIEW LABEL		TRANSNET
Discipline	Discipline Engineer Name	Signature	Date	yyyy-mm-dd

DRAWING NO.		REFERENCE	
REFERENCE DRAWINGS			
1	2	3	4

**TAKRAF TENOVA**

Project Number: AC0339

Drawing Number: 49055245

BG: 2100

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NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	SITE INSTALLATION PROCEDURE REVISED	EMD	RCJ	JMD	19-02-19
0	FIRST ISSUE	RCJ	RHW	JMD	26-06-18

CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ	[Signature]	04 06 18	SIGNAL ENG.			
CHECKED	RHW	[Signature]	25 06 18	MECH. ENG.			
MECHANICAL	JMD	[Signature]	26 06 18	ELEC. ENG.			
PROJECT ENG.	ASM	[Signature]	26 06 18	CIVIL ENG.			
PROJECT MAN.	D.STARK	[Signature]	26 06 18	STRUCT. ENG.			
				C&I ENG.			
				ENG. MNG.			

Transnet Capital Projects

**TAKRAF TENOVA**

**PORT OF SALDANHA**

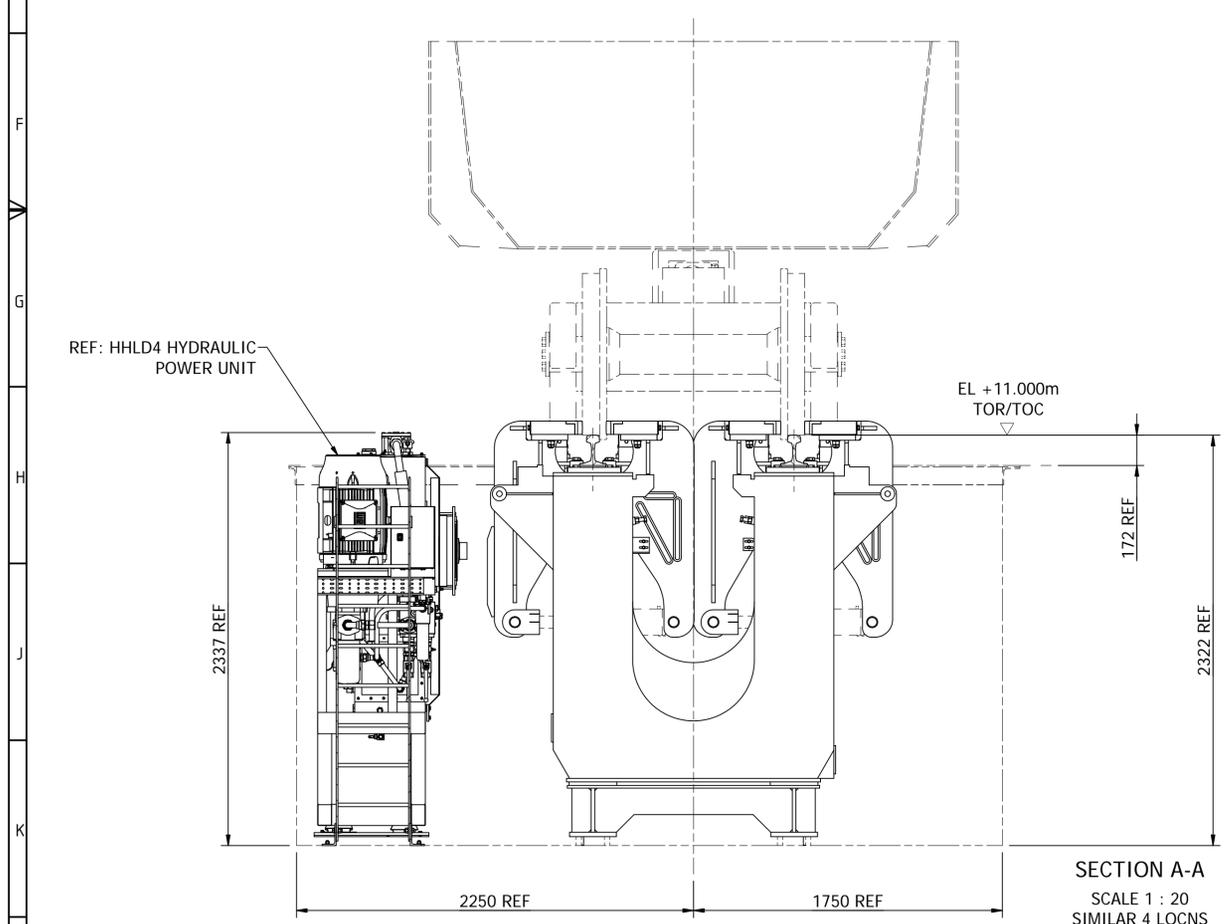
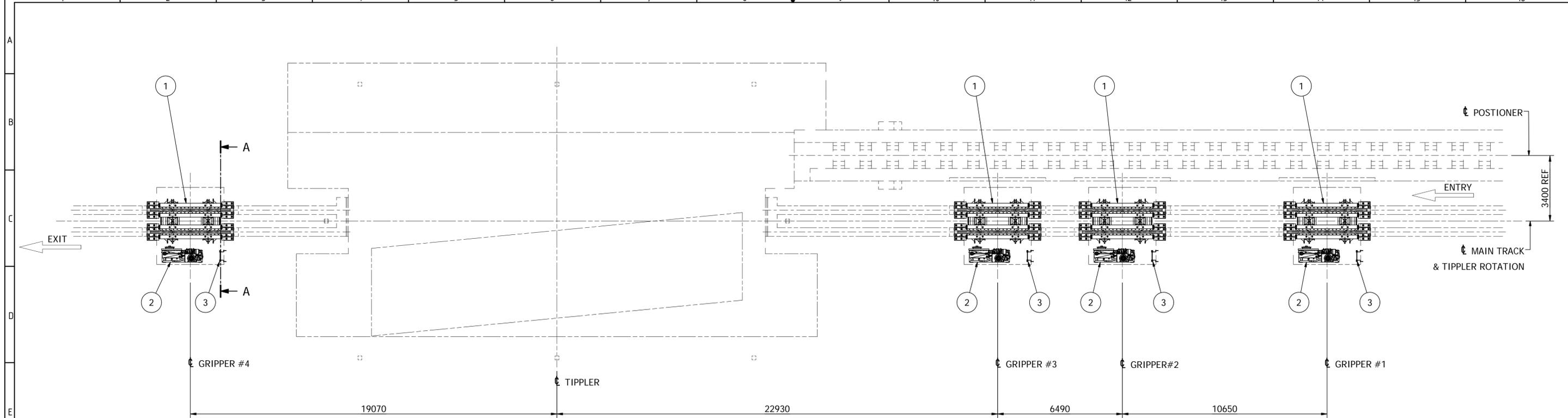
**IRON ORE TIPPLER 3**

**ASSEMBLY OF TRAIN POSITIONER**

**SHEET 8 OF 9**

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
1924701	0	0	0	M-GA	0046	8	1	JV





- NOTES:**
- FOR DETAILS OF TRAIN HOLDING DEVICES FOUNDATIONS SEE DRG 49055201.
  - FOR DETAILS OF TIPPLER & PLANT FOUNDATIONS SEE DRG 49055200.
  - INDIVIDUAL ITEMS MUST NOT BE GROUTED UNTIL AFTER FINAL ALIGNMENT CHECKS HAVE BEEN CARRIED OUT.
  - CENTRE LINE OF MAIN TRACK & CENTRE LINE OF TIPPLER ARE TO BE CONSIDERED PRIMARY DATUMS. ALL OTHER SPECIFIED DATUMS ARE TO BE SET OUT USING THE PRIMARY DATUMS.

<b>TAKRAF</b> TENOVA			<b>REVIEW LABEL</b>		
Discipline	Discipline Engineer	Date			
	Name	Signature	yyyy-mm-dd		

DRAWING NO.		REFERENCE	
REFERENCE DRAWINGS			
Rev.	Drawing Sheet No.	Part List	See technical modification report No.
			Day Name

**TAKRAF**  
TENOVA

Project Number:  
**AC0339**

Drawing Number:  
**49055255**

BG:  
**1100**

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THIRD ANGLE PROJECTION

MASS: 53602 kg

MATERIAL:

SPEC.:

NOTES:

DRAWN TO BS 8888

CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
DRAWN	RCJ		04 10 17	SIGNAL ENG.			
CHECKED	RHW		13 03 18	MECH. ENG.			
MECHANICAL	JMD		13 03 18	ELEC. ENG.			
PROJECT ENG.	ASM		13 03 18	CIVIL ENG.			
PROJECT MAN.	D.STARK		13 03 18	STRUCT. ENG.			
				C&I. ENG.			
				ENG. MNG.			
OPERATING DIVISIONS				PR.ENG. / PR.TECH./PR. ARCH			
TITLE	NAME	SIGN	DATE	NAME	RICHARD WOOD	DATE	
				SIGNATURE		13 03 18	
				REG. NUMBER	70386304		
				SCALE:	1:100 UOS		

Transnet Capital Projects

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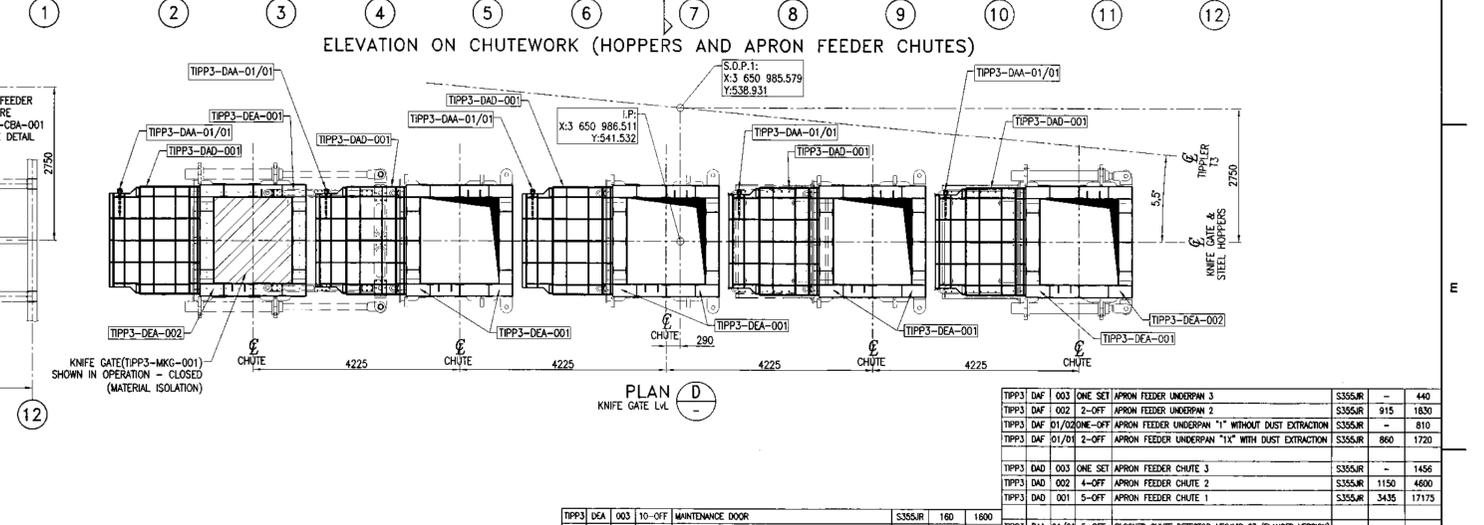
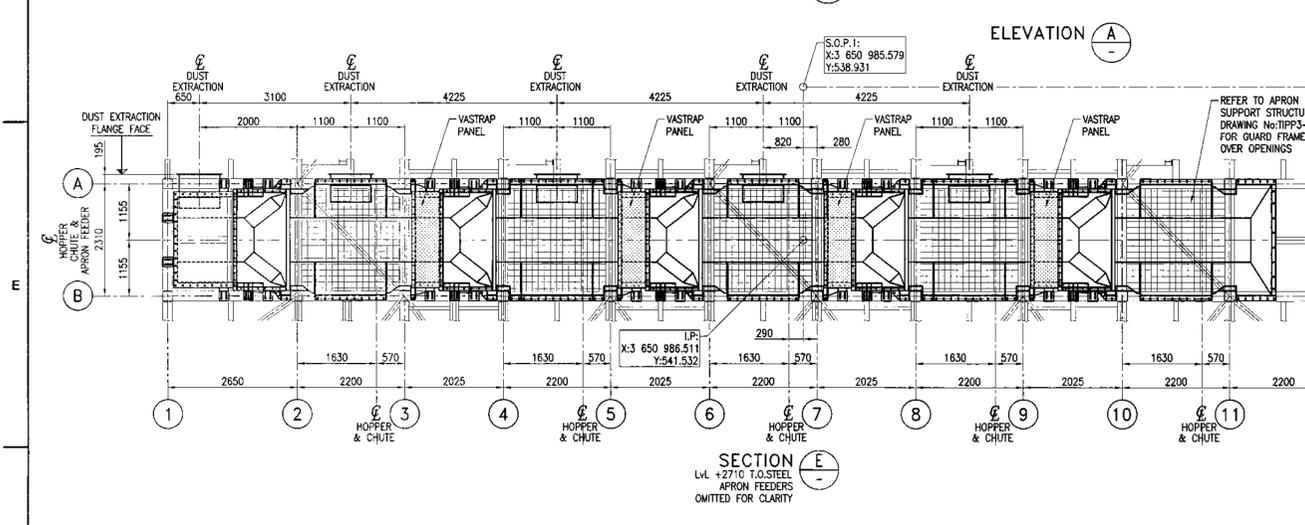
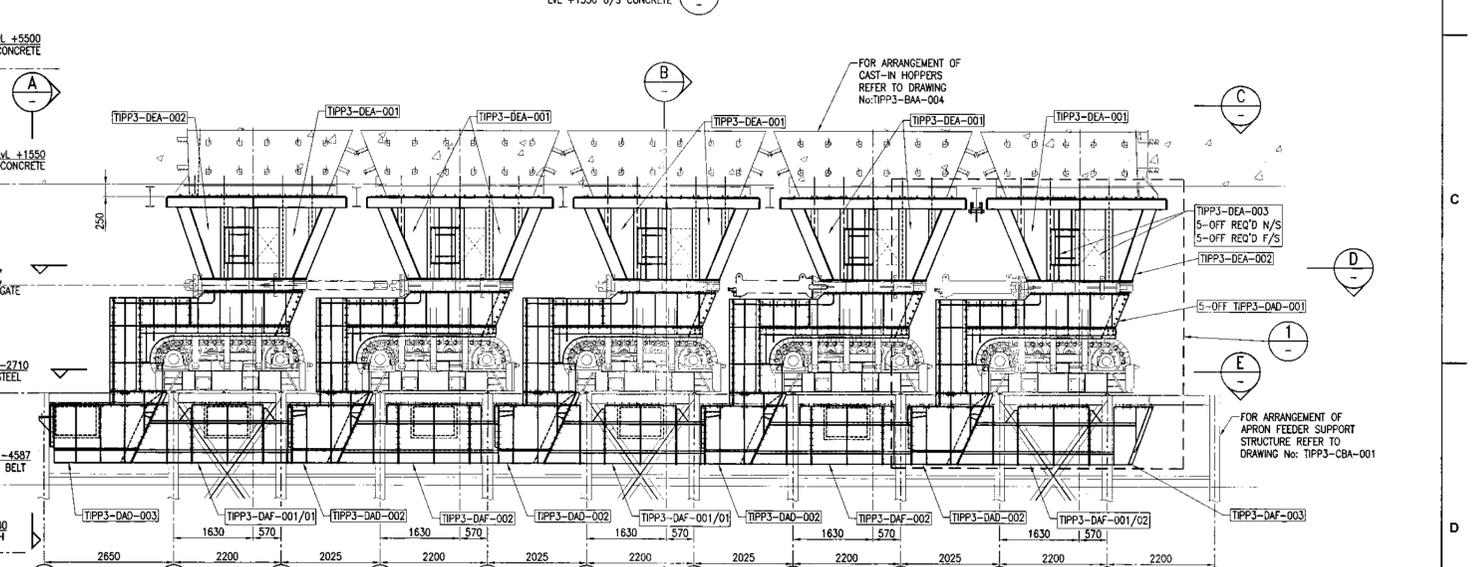
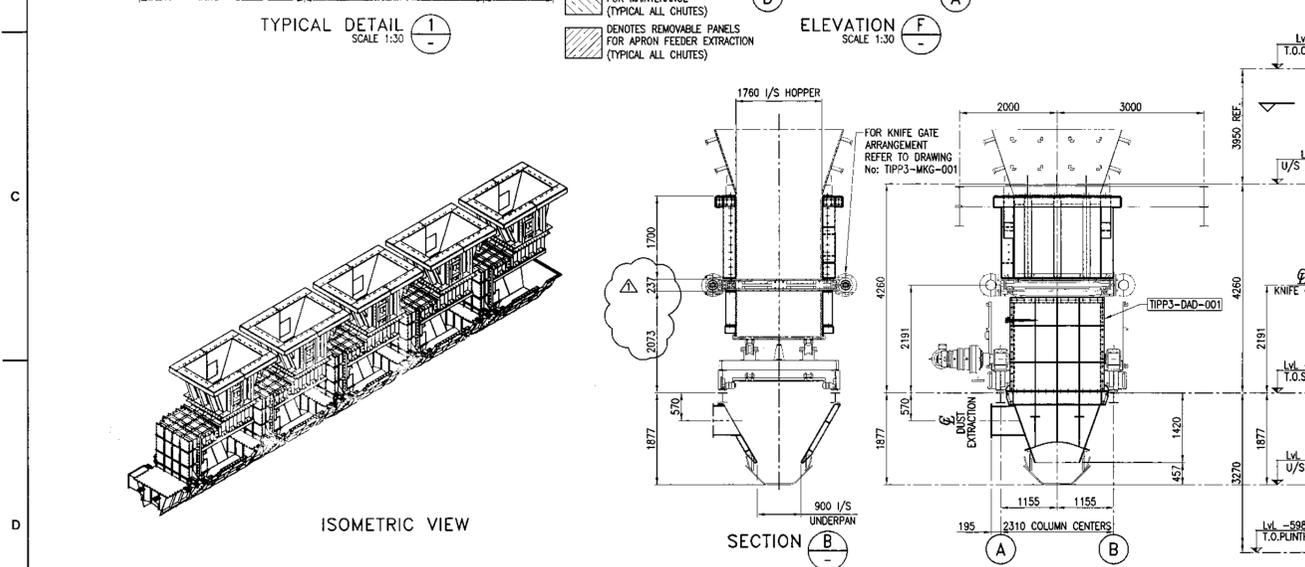
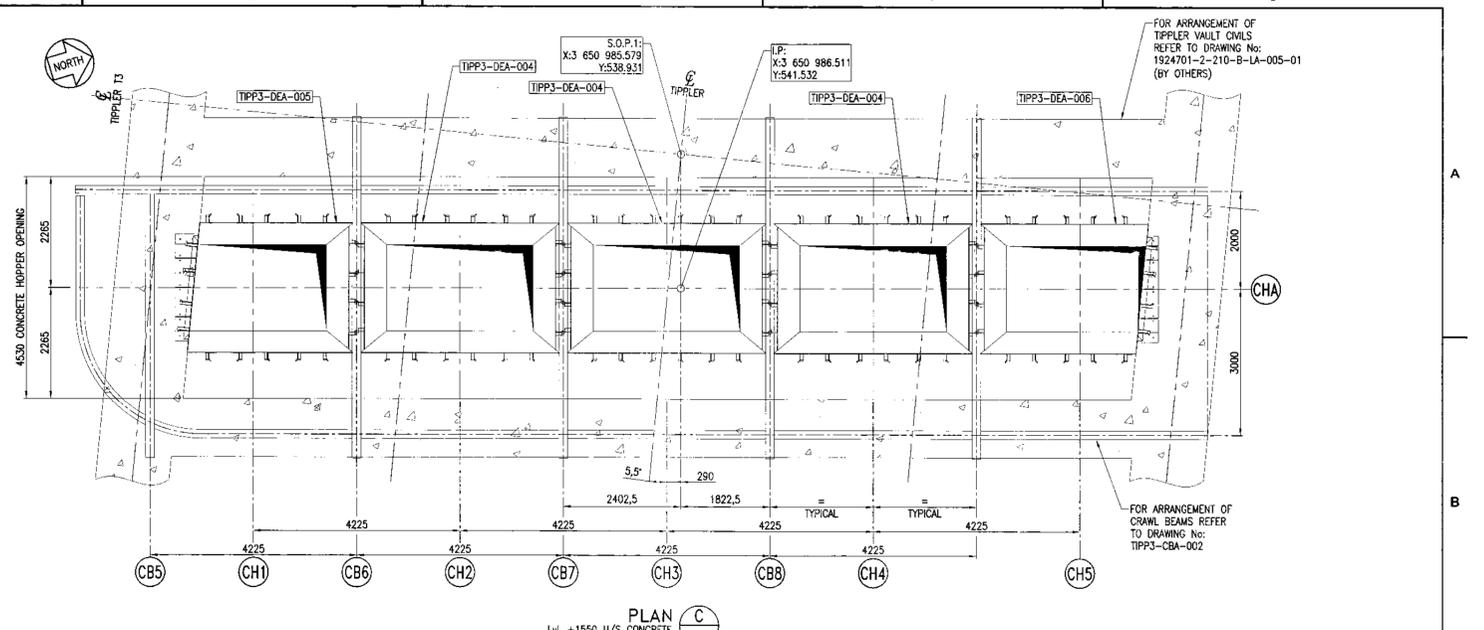
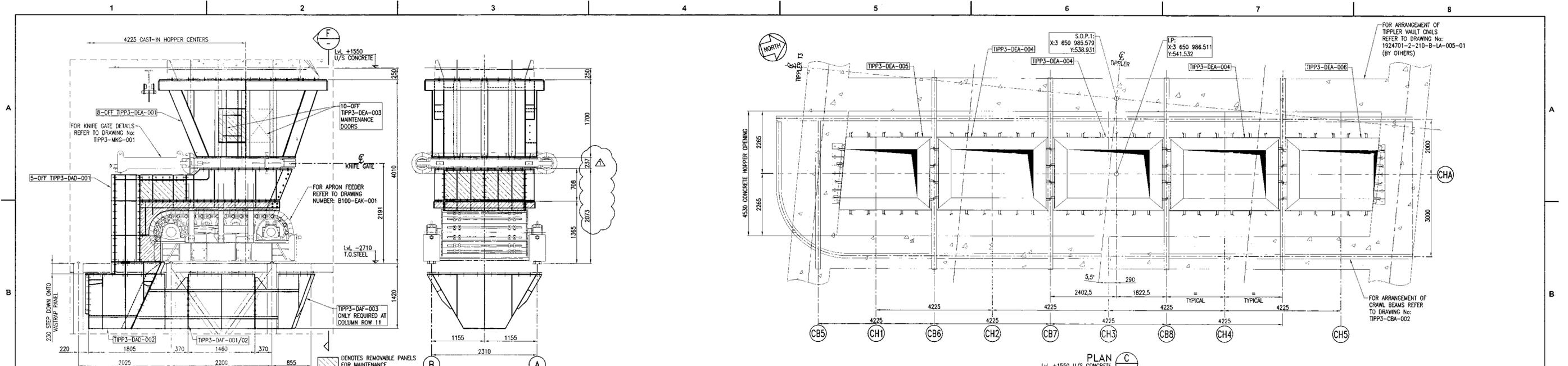
**PORT OF SALDANHA**

**IRON ORE TIPPLER 3**

**ASSEMBLY OF TRAIN HOLDING DEVICES**

PROJECT NUMBER	1924701	OD	0	FBS	0	DIS	0	TYPE	M	DRAWING NO.	GA-0056	SHEET	1	REV	0	ID	JV
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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	TOTAL MASS
TPP3 DAF 003	ONE SET APRON FEEDER UNDERPAN 3	S355JR	440	-
TPP3 DAF 002	2-OFF APRON FEEDER UNDERPAN 2	S355JR	915	1830
TPP3 DAF 01/02	ONE-OFF APRON FEEDER UNDERPAN 1" WITHOUT DUST EXTRACTION	S355JR	-	810
TPP3 DAF 01/01	2-OFF APRON FEEDER UNDERPAN 1" WITH DUST EXTRACTION	S355JR	860	1720
TPP3 DAF 003	ONE SET APRON FEEDER CHUTE 3	S355JR	-	1456
TPP3 DAF 002	4-OFF APRON FEEDER CHUTE 2	S355JR	1150	4600
TPP3 DAF 001	5-OFF APRON FEEDER CHUTE 1	S355JR	3435	17175

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	TOTAL MASS
TPP3 DEA 003	10-OFF MAINTENANCE DOOR	S355JR	160	1600
TPP3 DEA 002	2-OFF STEEL HOPPER 2	S355JR	1890	3780
TPP3 DEA 001	8-OFF STEEL HOPPER 1	S355JR	2050	16400

ITEM NO.	DESCRIPTION	MATL	UNIT	QUANTITY	TOTAL MASS
TPP3 DAF 003	ONE SET APRON FEEDER UNDERPAN 3	S355JR	440	-	440
TPP3 DAF 002	2-OFF APRON FEEDER UNDERPAN 2	S355JR	915	1830	1830
TPP3 DAF 01/02	ONE-OFF APRON FEEDER UNDERPAN 1" WITHOUT DUST EXTRACTION	S355JR	-	810	810
TPP3 DAF 01/01	2-OFF APRON FEEDER UNDERPAN 1" WITH DUST EXTRACTION	S355JR	860	1720	1720
TPP3 DAF 003	ONE SET APRON FEEDER CHUTE 3	S355JR	-	1456	1456
TPP3 DAF 002	4-OFF APRON FEEDER CHUTE 2	S355JR	1150	4600	4600
TPP3 DAF 001	5-OFF APRON FEEDER CHUTE 1	S355JR	3435	17175	17175

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
1	KNIFE GATE GAP WAS 240				09/05/18
2	ISSUED FOR CONSTRUCTION				12/03/2018
3	ISSUED FOR CLIENT REVIEW				03/07/2017
4	ISSUED FOR CIRCULATION AND CHECKING				08/08/2017

CONTRACTOR / CONSULTANT	TRANSNET CAPITAL PROJECTS
TAKRAF	TRANSNET
Project Number: AC0339/G0299	Tiger Drawing Number: TPP3-DAA-001
OPERATING DIVISIONS	PR. ENG. / PR. TECH. / PR. ARCH

PROJECT NUMBER	REV	DATE	DESCRIPTION
1924701	01	01/01/18	ISSUED FOR CONSTRUCTION
1924701	02	03/07/17	ISSUED FOR CLIENT REVIEW
1924701	03	08/08/17	ISSUED FOR CIRCULATION AND CHECKING
1924701	04	09/05/18	KNIFE GATE GAP WAS 240

## Appendix B

### Phase 2 - Site Work Scope

## Appendix B - Phase 2 Site Work Scope

Tier 1	Tier 2	Tier 3	Tier 4	Description of Work Required	Continuation Work (Work Required to Complete Installation Under Original Contract)	Refurbishment Work (Work Required Due to Time Lapsed Since Termination & Poor Storage Conditions)	Remedial Work (Work Required Due to Incorrect or Premature Installation)
Tippler	Tippler Rotating Structures	Tippler Cage Structure		Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Lift out of vault & re-align			✓
				Random 20% torque tightness tests on splice joint bolts			✓
				Remove one bolt & nut assembly from each splice joint for analysis			✓
			End Ring - LH	Random 20% torque tightness tests on flange joint bolts			✓
				Remove one bolt & nut assembly from each flange joint for analysis			✓
			End Ring - RH	Random 20% torque tightness tests on flange joint bolts			✓
				Remove one bolt & nut assembly from each flange joint for analysis			✓
			Platform				
			Side Beam	Access Side Beam internals to inspect welds and surface coating			✓
			Ballast Beam	Access Ballast Beam internals to inspect welds and surface coating			✓
			Side & Ballast Beam Pivot Shafts	Check torque tightness of inner shrink discs fasteners			✓
				Replace outer shrink disc with correct item			✓
			Cage Link				
			Torque Bracket Non-Tip LH	Random 20% torque tightness tests on flange joint bolts			✓
			Torque Bracket Tip LH	Random 20% torque tightness tests on flange joint bolts			✓
			Torque Bracket Non-Tip RH	Random 20% torque tightness tests on flange joint bolts			✓
			Torque Bracket Tip RH	Random 20% torque tightness tests on flange joint bolts			✓
			Platform Pivot Shaft	Check torque tightness of inner shrink discs fasteners			✓
				Replace outer shrink disc with correct item			✓
		End Ring Rails		Re-align			✓
		Tippler Drive Racks		Random 20% torque tightness tests on Rack bolts			✓
				Check pitching of Rack segments	✓		
		Wagon Clamp Gear					
		Tippler Ballast		Calculate quantity and add ballast	✓		
		Side Pad		Manufacture and install missing wear plates			✓
		Platform Walkways					
		Platform Rails		Random 20% torque tightness tests on rail clamp bolts			✓
		Spill Plates					
Support Rollers				Apply Transnet surface protection repair procedure to corroded and paint damaged areas			
		Locating Support Rollers		Dismantle, clean and re-assemble with fresh grease all pivots		✓	
			Flanged Support Roller	Rebuild with new bearings and seals. Check existing bearings for serviceability		✓	
				Dismantle, clean and re-assemble with fresh grease all pivots		✓	
			Plain Support Roller	Rebuild with new bearings and seals. Check existing bearings for serviceability		✓	
Tippler Drive Gear				Remove and return to OEM for rebuild of gearbox and motor		✓	
				Install and align	✓		
Rotational Buffers				Install	✓		
Tippler Rotational Limit Switches				Install	✓		
Tippler Maintenance Lock							
Grout Packing							
Ground Mounted Thrust Pads				Finish grouting and adjust clearance with Tippler	✓		
Tippler Lubrication Installation				Install	✓		
Positioner				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Align on Tracks			
	Main Frame			Install buffers	✓		
	Arm & Raise Mechanism			Random 20% torque tightness tests on rear pedestal bolts			✓
				Remove one bolt & nut assembly from rear pedestal joint for analysis			✓
				Remove old and install new pedestal			✓
				Dismantle counterweight mechanism, clean pins and bushes and re-assemble with fresh grease		✓	
				Add ballast to counterweight box	✓		
				Shim main arm to achieve correct arm lowered position	✓		
		Arm Structure & Head					
		Raised Arm Reaction Brackets		Install	✓		
	Arm Latch			Install actuator	✓		
	Last Wagon Arm			Dismantle main pivot, clean pin and bushes and re-assemble with fresh grease		✓	
		Last Wagon Arm Head		Remove LWA head, clean sliding head and re-assemble with fresh grease		✓	
				Remove shear pin, clean and re-assemble with fresh grease		✓	
				Replace coupler alignment tool			✓
			Last Wagon Arm Coupler	Un-seize and dismantle coupler, clean and re-assemble with fresh grease		✓	
				Install spring	✓		
	Guide Rollers			Rebuild with new bearings and seals. Check existing bearings for serviceability		✓	
				Re-install		✓	

Tier 1	Tier 2	Tier 3	Tier 4	Description of Work Required	Continuation Work (Work Required to Complete Installation Under Original Contract)	Refurbishment Work (Work Required Due to Time Lapsed Since Termination & Poor Storage Conditions)	Remedial Work (Work Required Due to Incorrect or Premature Installation)
				Adjust to achieve correct drive pinion clearance	✓		
	Sprung Support Roller			Rebuild with new bearings and seals. Check existing bearings for serviceability		✓	
				Re-install		✓	
				Install springs and adjust tension	✓		
	Fixed Support Roller			Rebuild with new bearings and seals. Check existing bearings for serviceability		✓	
				Re-install		✓	
	Drive Cartridge			Remove and return to OEM for rebuild of gearbox and motor		✓	
				Re-install		✓	
	Long Travel Encoder			Adjust backlash of existing unit	✓		
	Positioner Access			Remanufacture and install handrailing at trackside rear end			✓
				Reinforce handrailing on LCS platform adjacent to main arm	✓		
	Positioner Hydraulic Installation			Install HPU, support frame and Bund	✓		
				Install rotary actuator, main arm actuator, LWA latch actuator and coupler latch actuator	✓		
				Install piping	✓		
	Positioner Lubrication Installation			Install 2x lubrication units and support frames	✓		
		Lubrication Pinion		Install	✓		
	Long Travel Cartridge Encoder			Manufacture, supply and install			✓
Positioner Track				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
	Track Rear Module						
	Track Inner Module			Tighten loose rack section			✓
				Loosen rail clips, close gaps between adjacent rail and re-tighten clips			✓
	Track Front Module			Loosen rail clips, close gaps between adjacent rail and re-tighten clips			✓
	5 Rack Track Module			Tighten bolts	✓		
				Install missing fitted bolts			✓
	3 Rack Track Module			Tighten bolts	✓		
				Install missing fitted bolts			✓
Cable Festoon System				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Complete ladder installation	✓		
				Install towing link	✓		
Train Holding Devices				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
	Wheel Gripper Unit			Remove Support Frame from pit, dismantle Gripper units, clean and re-assemble with new pins and fresh grease.		✓	
				Install Gripper jaw assemblies on Support Frames and align.	✓		
				Install complete unit in foundation, align, bolt down and grout.	✓		
				Install foundation pieces and Gripper Stops	✓		
				Install cover plates			✓
	Train Holding Device Hydraulic Installation			Install HPU	✓		
				Install THD actuators	✓		
	Train Holding Device Pit Ladder			Install	✓		
Plant Control Switches				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Install Support Posts	✓		
Apron Feeder Supports				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
	Support Steelwork Access			Random 20% torque tightness tests on joint bolts			✓
Conveyor Feed Chutes				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Complete installation	✓		
Apron Feeder Feed Chutes				Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Complete installation	✓		
Apron Feeders							
	Apron Feeder Unit			Install drive	✓		
				Install and align	✓		
	Apron Feeder Hydraulic Installation						
	Apron Feeder Lubrication Installation			Supply piping and fittings		✓	
				Install	✓		
Knife Gates							
	Knife Gate Unit						
	Knife Gate Hydraulic Installation						
Knife Gate Feed Hoppers				Resolve mis-alignment with conveyor Feed Chutes		✓	
				Complete installation	✓		
Impact Wall				Remove Impact Wall for Tippler removal & re-install later			✓
				Design review of Impact Wall			✓
				Replacement of Support Roller Dust Shrouds			✓
				Notching of non-tip side hopper to clear Tippler Wagon Clamp Ballast Weights			✓
Hopper Liner Plates				Design, supply and install liner plates for concrete cast in-situ hopper and Impact Wall			✓

Tier 1	Tier 2	Tier 3	Tier 4	Description of Work Required	Continuation Work (Work Required to Complete Installation Under Original Contract)	Refurbishment Work (Work Required Due to Time Lapsed Since Termination & Poor Storage Conditions)	Remedial Work (Work Required Due to Incorrect or Premature Installation)
				Install liner plates for Apron Feeder feed chutes	✓		
				Install liner plates for conveyor feed chutes	✓		
	Crawl Beams			Design review & strength check			✓
	Dust Cowl			Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Remove and re-install			✓
	Dust Extraction System	Ducting		Design, manufacture and supply new dog-leg section		✓	
				Install	✓		
		Bag House		Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Complete installation	✓		
				Respective OEMs to refurbish and test where necessary:			
				Dust Blower		✓	
				Immersion Tanks		✓	
				Immersion Tank Pressure Gauges, Safety Valves, Drain valves		✓	
				Solenoid Valves		✓	
				Screw Conveyors		✓	
				Knife Gate Valves, Rotary Vane Feeders, Double Flap Valves		✓	
				Bagfilters		✓	
				Install filter bags	✓		
				Install screw conveyors, valves and piping	✓		
				Install Knife Gate Valves, Rotary Vane Feeders, Double Flap Valves	✓		
				Install Dust Blower	✓		
				Install Immersion Tanks - 6 off	✓		
				Install immersion tank pressure gauges, safety valves and drain valves	✓		
				Install blow pipes	✓		
				Install solenoid valves - 66 off	✓		
				Install hopper mesh supports	✓		
				Install hopper mesh - 6 off	✓		
				Install access doors	✓		
				Install plenum closing plate next to Dust Silo	✓		
				Install plenum access steps, grab handles and safety cages	✓		
				Epoxy seal between stitch welds on Bag Filter Housings			✓
				Seal weld internal bag plate over all joints	✓		
				Grout structure to foundations	✓		
	Dust Silo			Apply Transnet surface protection repair procedure to corroded and paint damaged areas		✓	
				Complete installation	✓		
				Respective OEMs to refurbish and test where necessary:			
				Over Pressure Relief Valve		✓	
				Diverter Chute		✓	
				Pug Mill		✓	
				Knife Gate Valve, Rotary Vane Feeder		✓	
				Loading Spout Hand Winch		✓	
				Water Supply Pressure Gauge		✓	
				Install pug mill and piping	✓		
				Install truck loading spout	✓		
				Install over-pressure relief valve	✓		
				Install diverter chute	✓		
				Install Knife Gate valve, Rotary Vane Feeder	✓		
				Install water supply	✓		
				Install loading spout hand winch	✓		
				Install ball valve for water supply	✓		
				Grout structure to foundations	✓		
	Compressed Air System			Respective OEMs to refurbish and test where necessary:			
				Air Compressors		✓	
				Desiccant Dryers		✓	
				Particulate Filters		✓	
				Pressure Gauges		✓	
				Remove air receivers, pressure test and re-install		✓	
		Compressor House		Complete installation	✓		
				Install air compressors	✓		
				Install desiccant dryers	✓		
				Install particulate filters	✓		
				Install piping and valves	✓		
				Install pressure gauges	✓		
				Install air receiver pressure gauges, safety valves and drain valves	✓		

Tier 1	Tier 2	Tier 3	Tier 4	Description of Work Required	Continuation Work (Work Required to Complete Installation Under Original Contract)	Refurbishment Work (Work Required Due to Time Lapsed Since Termination & Poor Storage Conditions)	Remedial Work (Work Required Due to Incorrect or Premature Installation)
				Install cladding	✓		
				Load test crawl beams	✓		
				Supply trolley hoists			✓
				Install trolley hoists	✓		
	Main Fan			Assemble fan on foundations	✓		
				Install drive motor	✓		
				Install bearing temperature sensors	✓		
	Electrical and Control System			Return sequential controllers to OEM for condition checking		✓	
				Install sequential controllers in S/S enclosures	✓		
				Respective OEMs to refurbish and test where necessary:			
				Double Flap Valve Solenoids		✓	
				Speed Switch Mounts for Rotary Vane Feeders		✓	
				Install all instruments and devices	✓		
Main Track Supports				Design, manufacture, supply and install			✓

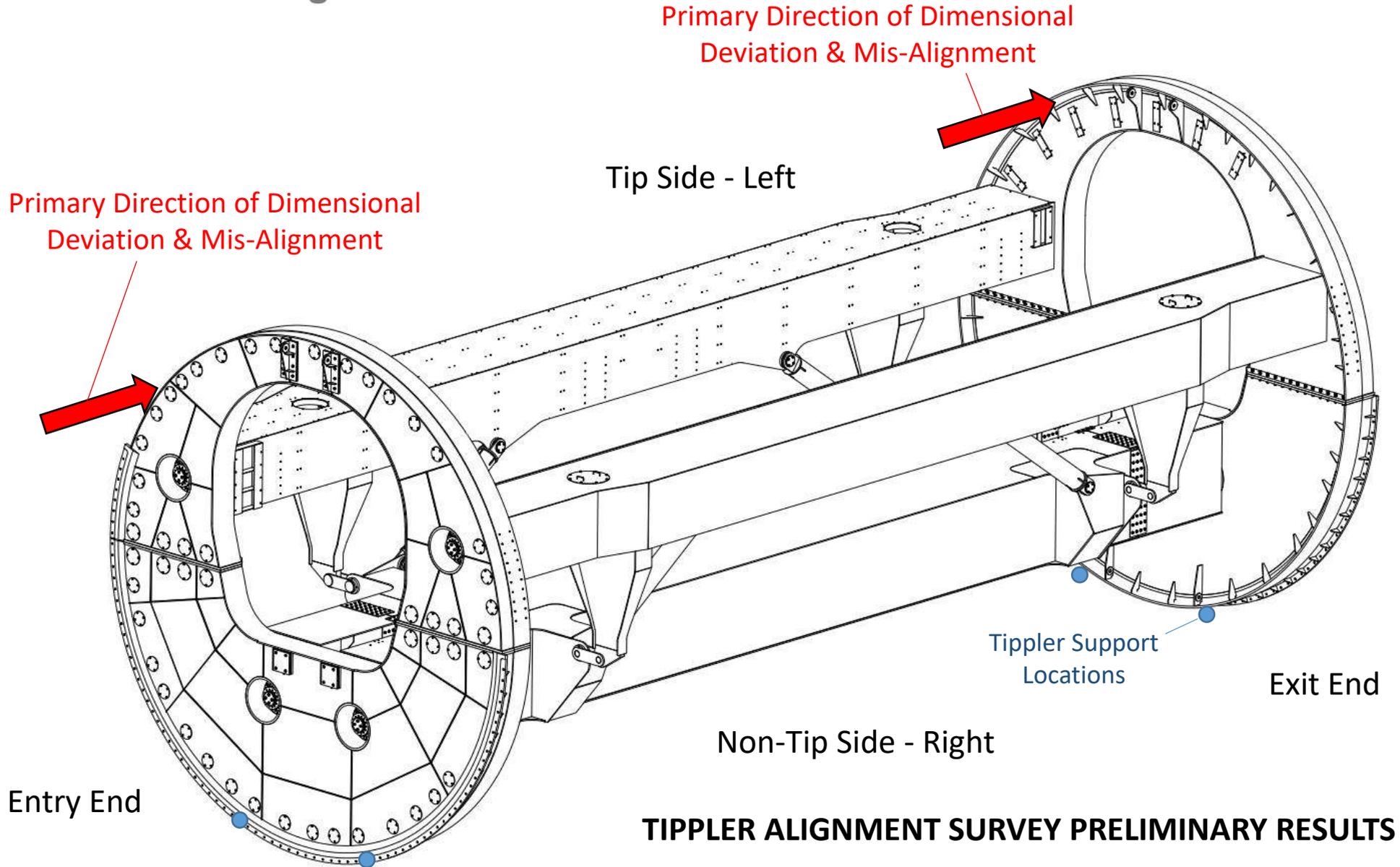
## Appendix C

### Tippler Alignment Survey Report & Engineering Assessment

### Engineering Assessment Notes

The Site Survey was undertaken with Ashton Bulk in attendance and the results have been assessed in detail during subsequent reviews. Based on the datums established during the survey and specification (accuracy) of the industry leading surveying equipment, the following has been established:

- I. All results are consistent with both the established datums (absolute) and individually analysed location (relative).
- II. Manual measurements have confirmed the survey results in several points of consideration.
- III. The misalignment relates to the End Rings, End Ring Rails and Drive Racks. The trend is similar for each of these components but the magnitude of deviation differs.
- IV. The magnitude of deviation of the End Rings and End Ring Rails is such that the sides of the Rail Head would contact and exert excessive sideways force upon the flanges of the Locating Support Rollers. This would result in damage and also impose forces on the Tippler Cage for which it has not been designed, or need to be designed, under normal modes of operation.
- V. The magnitude of deviation of the End Rings and End Ring Rails is also of an extent that the Tippler Cage will travel in the longitudinal/axial direction during rotation, i.e. it will “Corkscrew”. This movement will exacerbate the condition and effects outlined in Item IV above, thus increasing the unwarranted and indeterminate sideways forces on the Support Rollers and Tippler Cage.
- VI. While the End Ring T-section and the End Ring Rail follow the same trend of misalignment as shown by the graphs on the AB Summary Sheet, there is a deviation in the centre of End Ring Rail to centre of End Ring Web which exceeds the drawing tolerance of  $\pm 1.5\text{mm}$ . Refer to the numbers highlighted in blue on the Survey Summary Sheet. Whilst efforts will be made to improve this deviation during Tippler re-alignment, it will not be possible to completely correct the error. This offset in centre distance where exceeding  $\pm 1.5\text{mm}$  will induce a rotation in the T-section of the End Ring which will increase localised stress levels and potentially the fatigue life of the End Ring Structure.



**TIPPLER ALIGNMENT SURVEY PRELIMINARY RESULTS**

## Saldanha Tippler 3 As-Built Survey Introduction

**Machine Baseline** Tippler 3 has 2 Centreline Benchmarks established during the construction of the civils for the housing of the tippler. These benchmarks are punched points on stainless plates fixed on the floor at the rail level. These points constitute the Primary Machine Baseline at the Entry and Exit ends.

The coordinate and elevation values for these benchmarks are punched on the stainless steel plates. The Entry Benchmark was adopted as the Primary Point and the Exit Benchmark was used as the Zero direction for the Machine Baseline. The points were surveyed to check the baseline length and the height difference as per the punched coordinate values.

Name	X	Y	Z
ENTRY	0.000	-15.000	11.000
EXIT	0.000	15.000	11.300



ENTRY Benchmark



EXIT Benchmark

The punched values on the Benchmark plates indicate the Machine Baseline: Entry to Exit

Baseline Length **30.000m**

Height Difference **+0.030m**

The survey of these points indicated the following:

Baseline Length **30.008m** (Difference: +0.008m)

Height Difference of **-0.033m** (Difference: -0.063m).

Further survey checks were performed to establish the accuracy of scribed height values on the concrete columns and walls on the Ground Floor and in the Basement. These height checks were all 0.030m lower than the written values on the scribe marks.

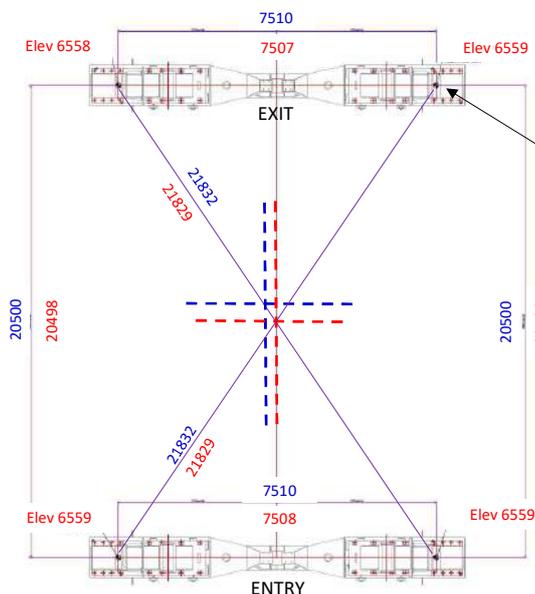
This indicated that the punched height of the Primary Entry Benchmark (11.000m) is 0.030m lower than the height marks used to construct the civils and install the tippler.

The surveyed values of the Machine Baseline indicate that the punched height values of the points were transposed and incorrectly punched on the plates. By adopting the height value of 11.033m for the Primary Entry Benchmark the height difference between the Entry and Exit Benchmarks is true and values of the scribed height marks on the concrete columns and walls become accurate.

### Machine Baseline: New Adopted Benchmark Values

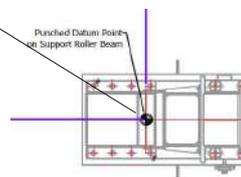
Name	X	Y	Z
ENTRY	0.000	-15.004	11.033
EXIT	0.000	15.004	11.000

These new values for the ENTRY and EXIT Benchmarks were adopted as the Machine Baseline and this baseline was transferred down to the basement for the survey of the Support Roller Bases to determine their accuracy of installation.



### Support Roller Beam Survey:

The positions of the punched Datum Points on the Jacking Stops of the Support Beams were indicated as the alignment and elevation points for positioning of the Beams.



Blue is Design Dimension / Red is Surveyed Dimension

Blue dashed line is the Tippler Centre as per the adopted Machine Baseline Benchmark points

Red dashed line is the Tippler Centre as per the surveyed position of the Support Roller Beams

Difference:  
 X +0.009m  
 Y -0.029m

**Conclusion:** The As-Built position of the Support Roller Beams does not relate to the Primary Machine Baseline installed on the ground floor. The elevations of the Primary Machine Baseline as adopted are correct. As such this As-Built Survey of Tippler 3 has been based on the centrelines defined by the Datum Points on the jacking stops of the Support Roller Beams as these surveyed dimensions are sound.

We would advise that the Benchmark plates on the ground floor be removed and replaced with fresh plates that can be correctly positioned to match the baseline adopted from the Support Roller Beams.

### Survey Methodology

The initial survey indicated that the installed Machine Baseline Benchmarks were unrelated to the installed position of the Tippler. We could not locate any other official benchmark positions and thus created a new Primary Benchmark System from the surveyed position and alignment of the Support Roller Bases. A series of Reflective Wall Targets were installed in positions outside and inside the Tippler Building at strategic positions for future reference should another survey of the tippler be required and to assist with positioning of new Machine Baseline Benchmark plates.

A series of Laser Scan Targets were placed at strategic positions surrounding the tippler to enable accurate positioning of the laser scan data. These were surveyed from the new Primary Benchmark System to ensure that the laser scan data of the tippler structure and components was directly related to the installed positions of the Support Roller Beams.

### Survey Equipment

Survey of Benchmarks and positioning of additional benchmarks

Instrument:

#### **Leica MS50 Multistation**

Angular Accuracy - 1"

Distance Accuracy - 1mm + 1.5ppm

Single Point Position Accuracy - 0,5mm

3D Laser Scan Survey of Tippler Structure and Components

Instrument:

#### **Leica P40 Scanstation**

Angular Accuracy - 8"

Distance Accuracy - 1,2mm + 10ppm

Single Point Position Accuracy - 3mm at 50m

### Tippler 3 As-Built Survey Report 170322

Contents		1.0) Tippler 3_As-Built Survey Report_170322
		1.1) Tippler 3_As-Built Survey_Support Roller Beams_170322
		1.2) Tippler 3_As-Built Survey_Entry Locating Roller Offsets_170322
		1.3) Tippler 3_As-Built Survey_Exit Non-Locating Roller Offsets_170322
		1.4) Tippler 3_As-Built Survey_End Ring Rail Offsets_170322
		1.5) Tippler 3_As-Built Survey_T-Section Offsets_170322
		1.6) Tippler 3_As-Built Survey_Pivot Pin Offsets_170322

Signed:

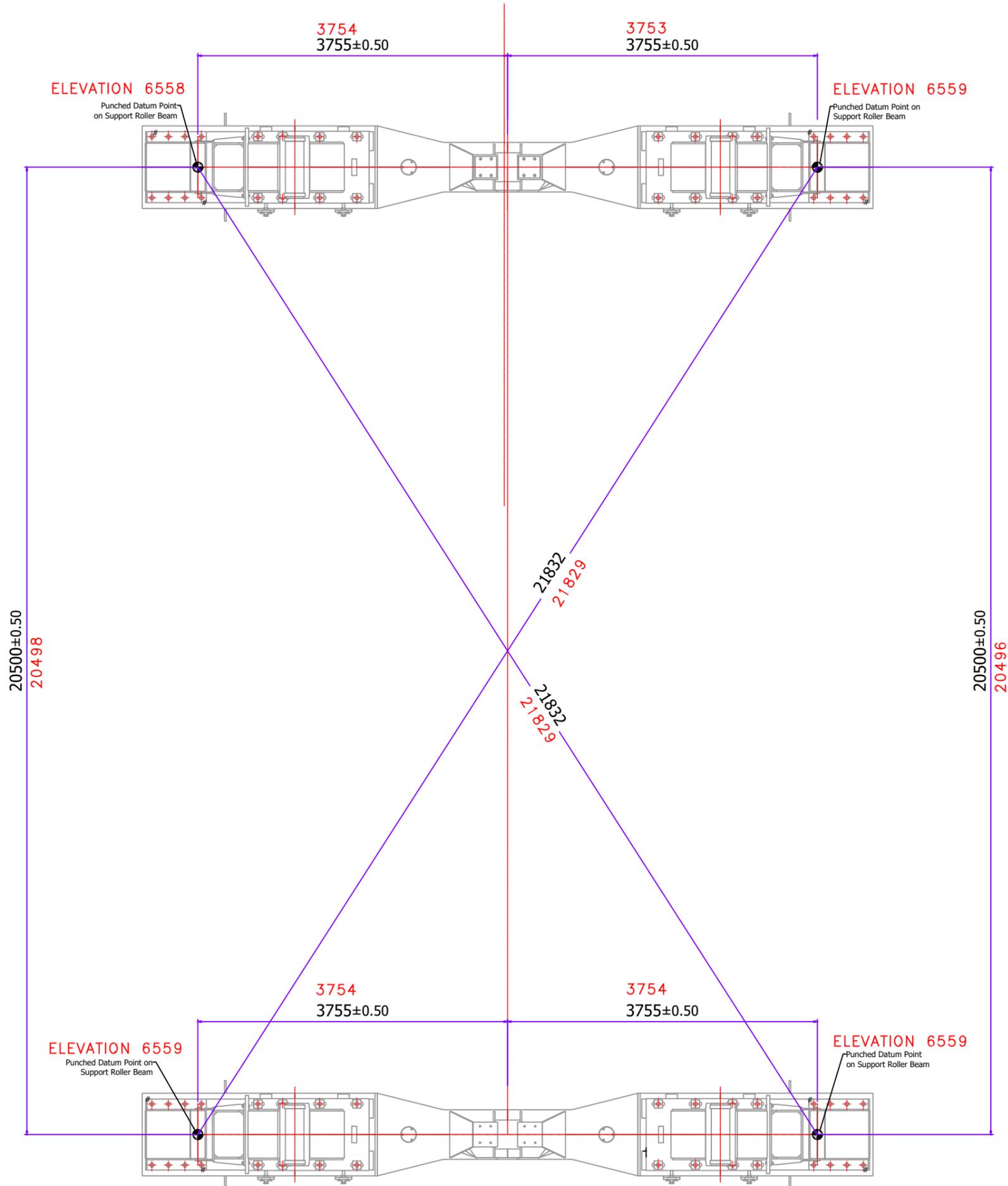


Bradley Inggs

Registered Geomatics Technologist (GTg E5499)

# Tippler 3 - Support Roller Beams Offsets

Note: The measurements were taken on the punch marks on the Datum Plates  
Red Text is the Surveyed Dimensions



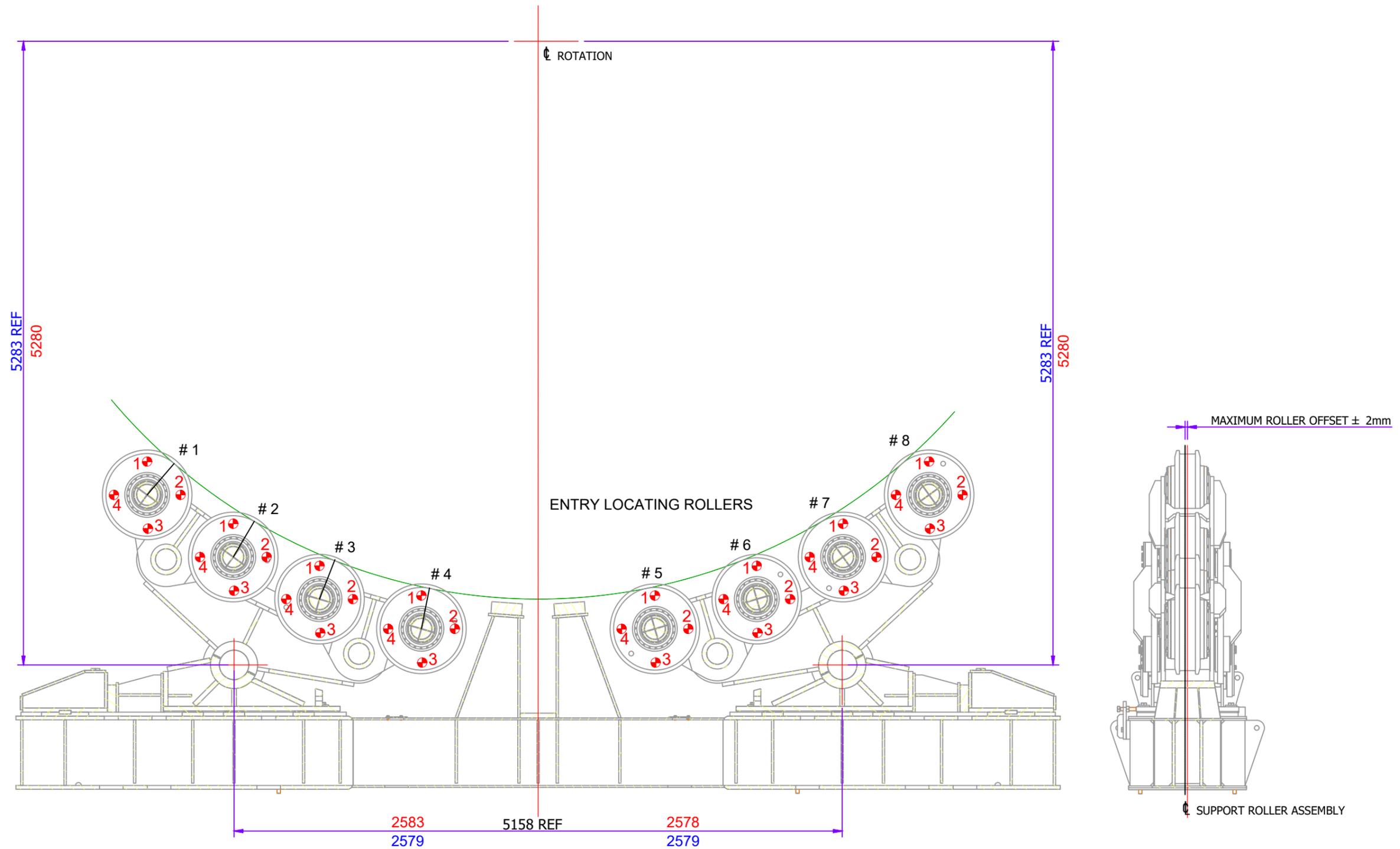
# Tippler 3 - Locating Roller Offsets from the Tippler Centreline

Measured point is on the outside of the roller (107.5mm Offset to Centre of Roller)

Red Text is the Entry End As-Built Measurements

Blue Text is the Design Dimensions

View is from the Entry End Ring toward the Exit End Ring



ENTRY LOCATING ROLLERS											
#1	Measured	Design	Offset	#2	Measured	Design	Offset	#3	Measured	Design	Offset
1	10249	10250	-1	1	10248	10250	-2	1	10248	10250	-2
2	10248	10250	-2	2	10247	10250	-3	2	10249	10250	-1
3	10249	10250	-1	3	10247	10250	-3	3	10251	10250	1
4	10250	10250	0	4	10247	10250	-3	4	10251	10250	1
	mm	mm	mm		mm	mm	mm		mm	mm	mm
#4	Measured	Design	Offset	#5	Measured	Design	Offset	#6	Measured	Design	Offset
1	10248	10250	-2	1	10246	10250	-4	1	10246	10250	-4
2	10247	10250	-3	2	10247	10250	-3	2	10248	10250	-2
3	10248	10250	-2	3	10247	10250	-3	3	10249	10250	-1
4	10248	10250	-2	4	10246	10250	-4	4	10247	10250	-3
	mm	mm	mm		mm	mm	mm		mm	mm	mm
#7	Measured	Design	Offset	#8	Measured	Design	Offset				
1	10245	10250	-5	1	10246	10250	-4				
2	10247	10250	-3	2	10246	10250	-4				
3	10247	10250	-3	3	10245	10250	-5				
4	10245	10250	-5	4	10246	10250	-4				
	mm	mm	mm		mm	mm	mm				



# Tippler 3 - Rail Centreline Offsets from the Tippler Centreline

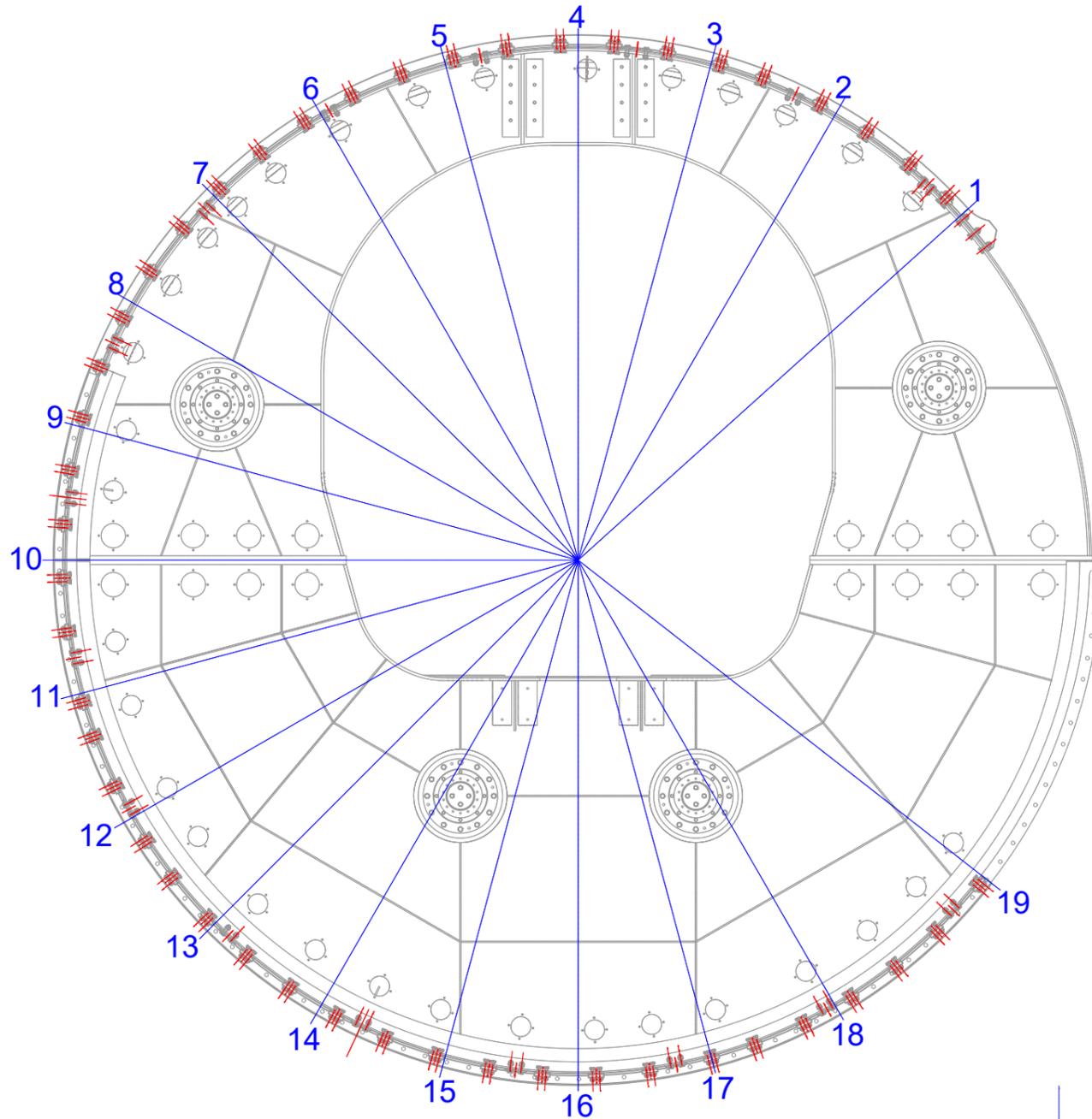
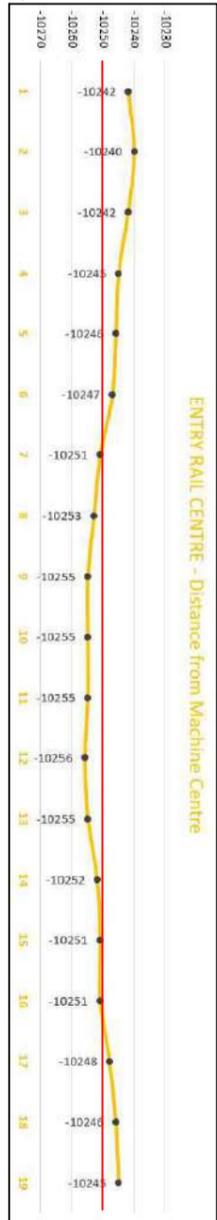
Measured point is on the outside of the rail (60mm Offset to Centre Rail)

Points measured at 15 Degree Segments

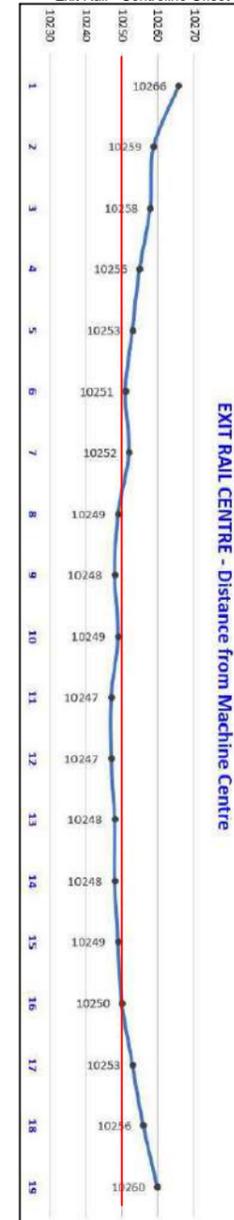
Note: Points 4 & 5 Derived by interpolation between adjacent points as the line of sight was obscured at these points

View is from the Entry End Ring toward the Exit End Ring

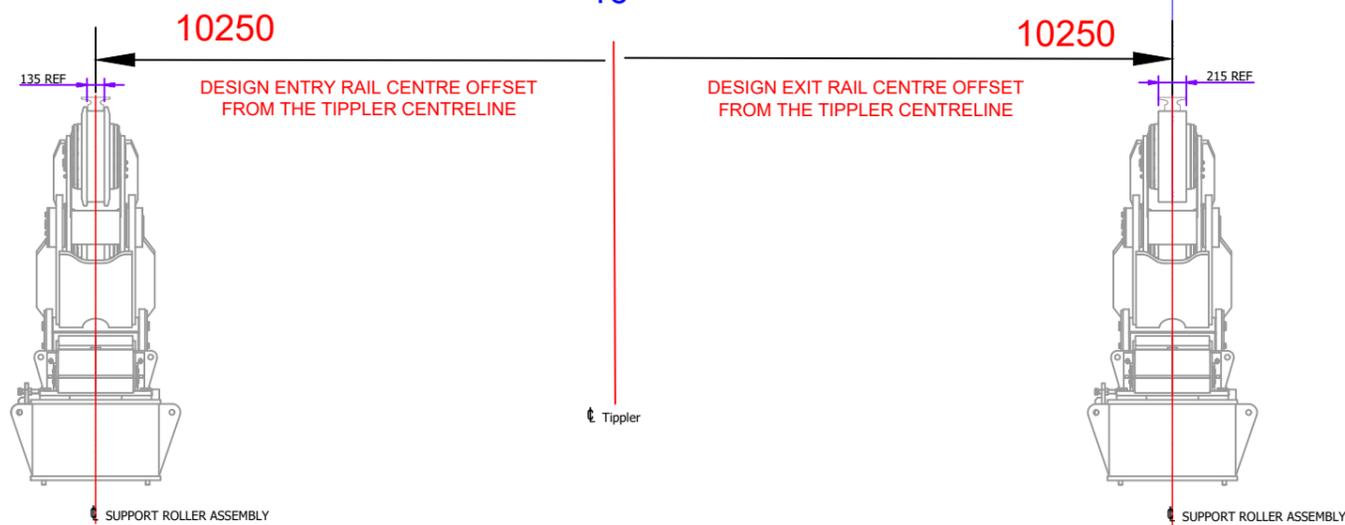
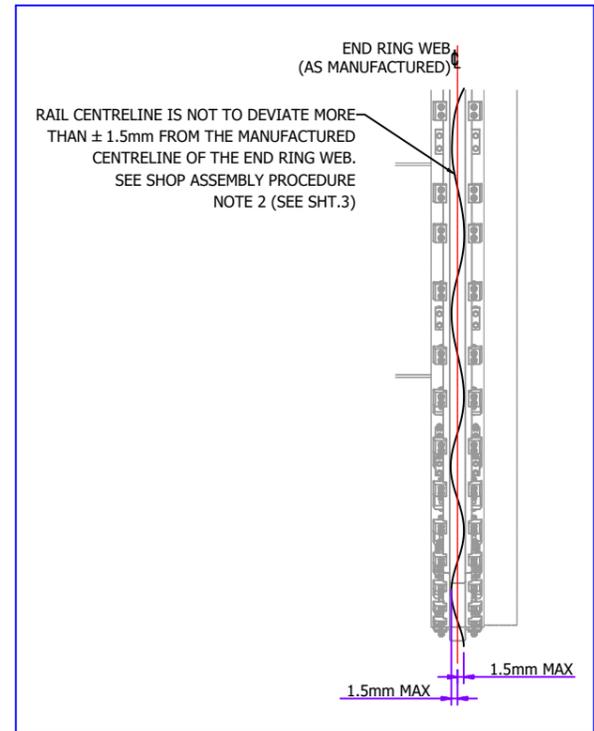
Entry Rail - Centreline Offset in mm



Exit Rail - Centreline Offset in mm



## End Ring Rail Assembly Note



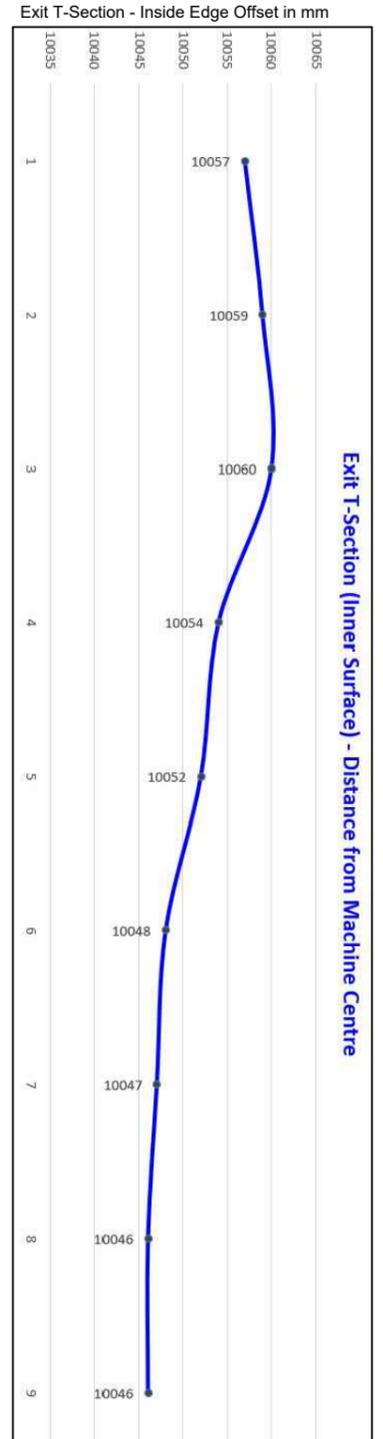
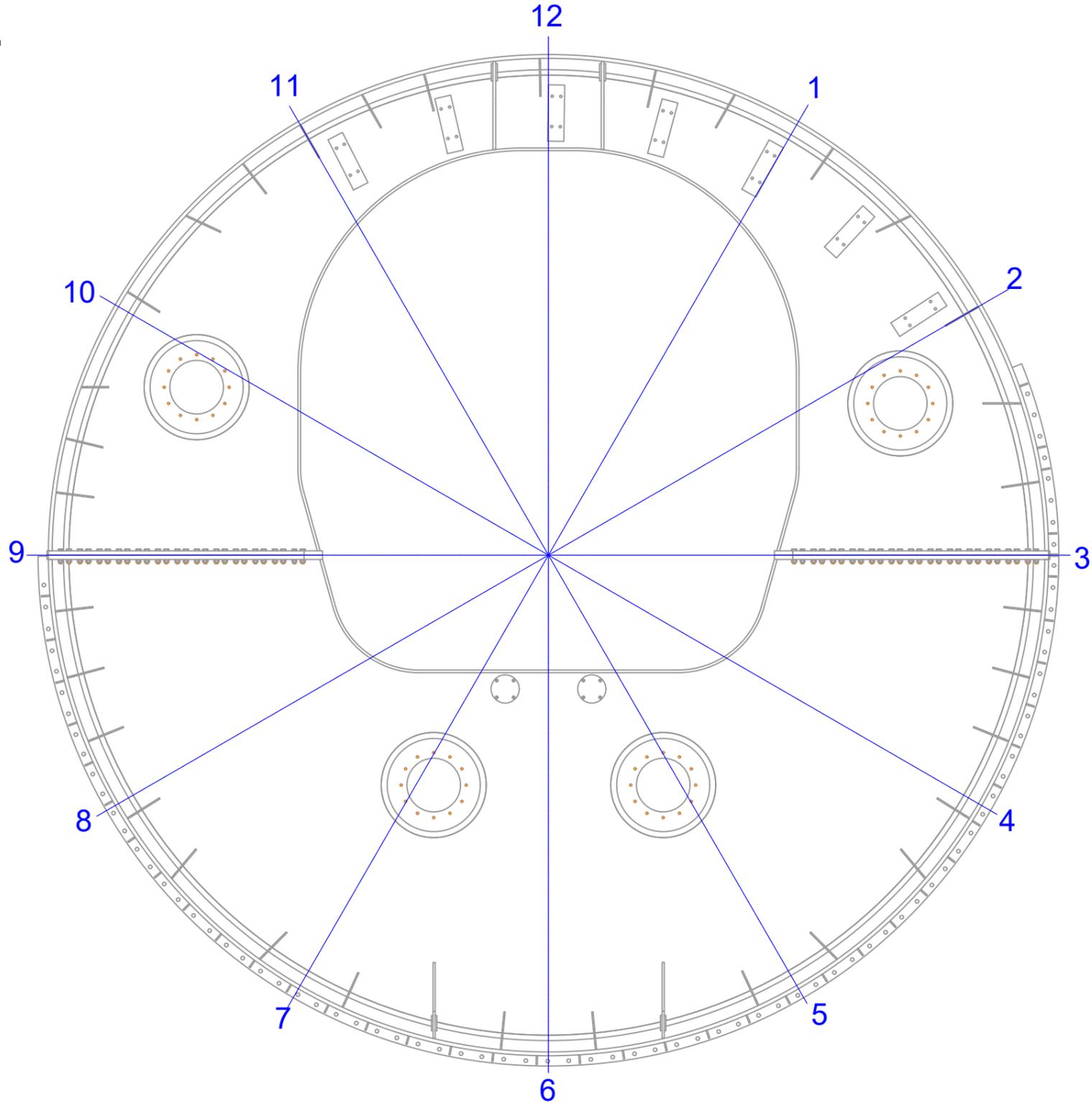
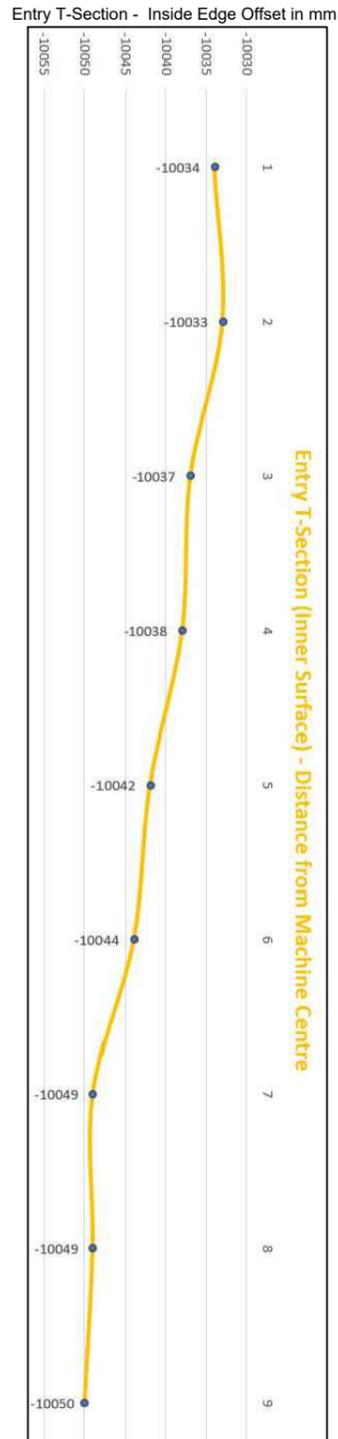
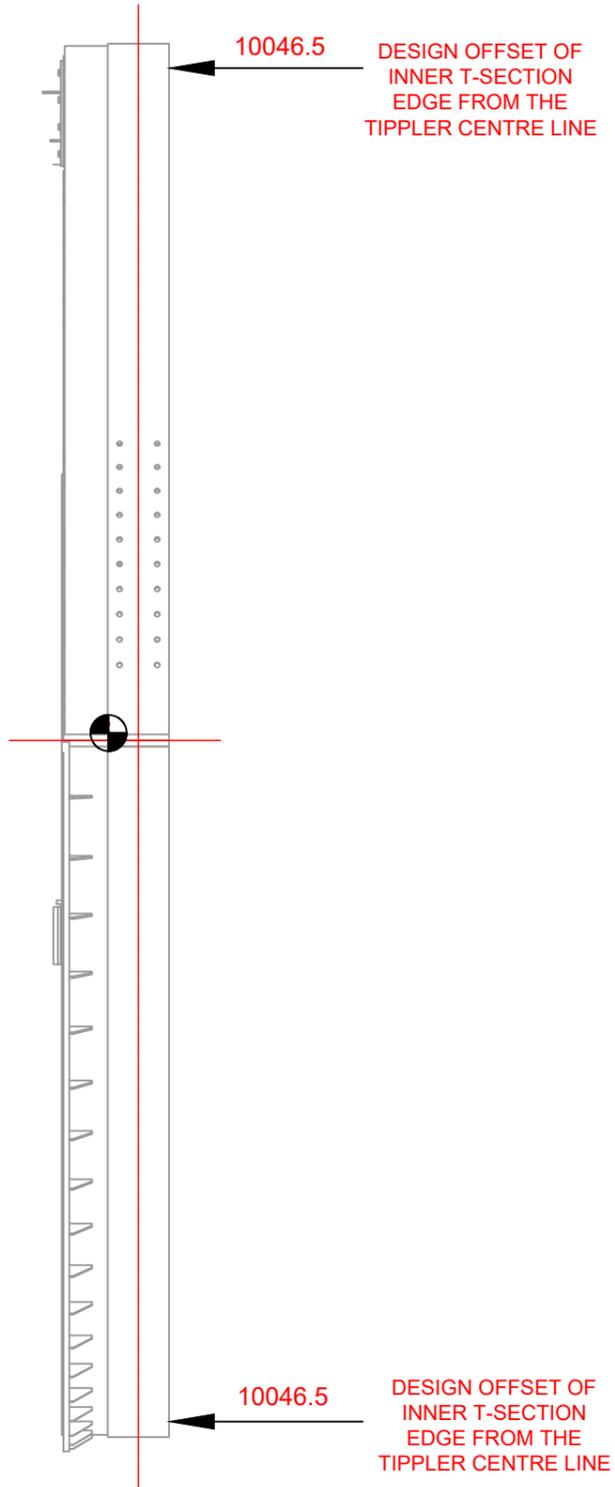
# Tippler 3 - T-Section Offsets from the Tippler Centreline

Measured point is on the inside edge of the T-Section (203.5mm Offset to Centre End Ring)

Points measured at 30 Degree Segments

Note: Points 10, 11 & 12 do not have measurements  
as the line of sight was obscured at these points

View is from the Entry End Ring toward the Exit End Ring



# Tippler 3 - Pivot Pin offsets from the Tippler Centreline

View is from the Entry End Ring toward the Exit End Ring

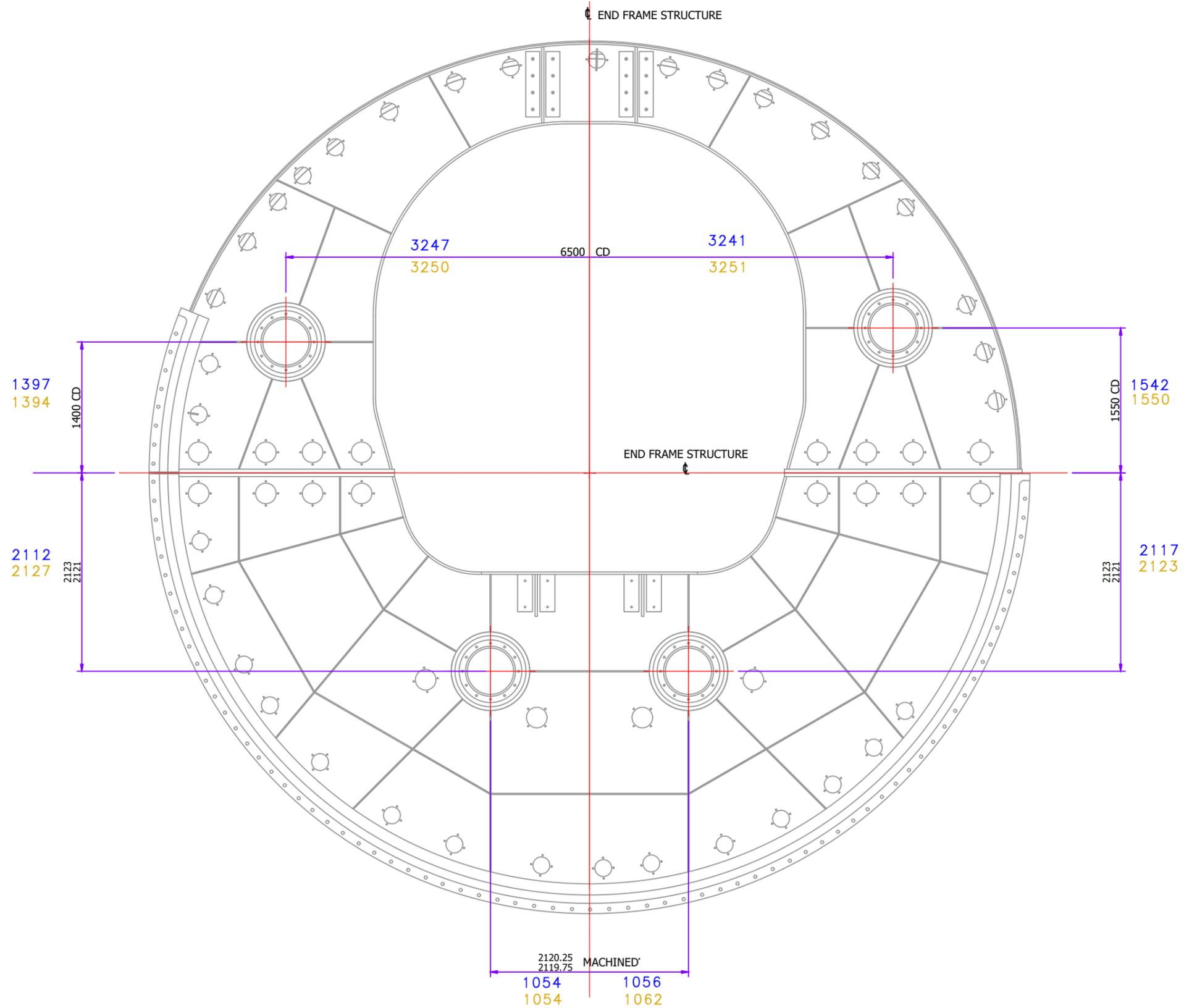
Note: The measurements were taken on the centres of the cover plates

This assumes that the cover plate positioning holes were placed according to the pin bore position

View is from the Entry End Ring toward the Exit End Ring

Gold Text is the Entry End As-Built Measurements

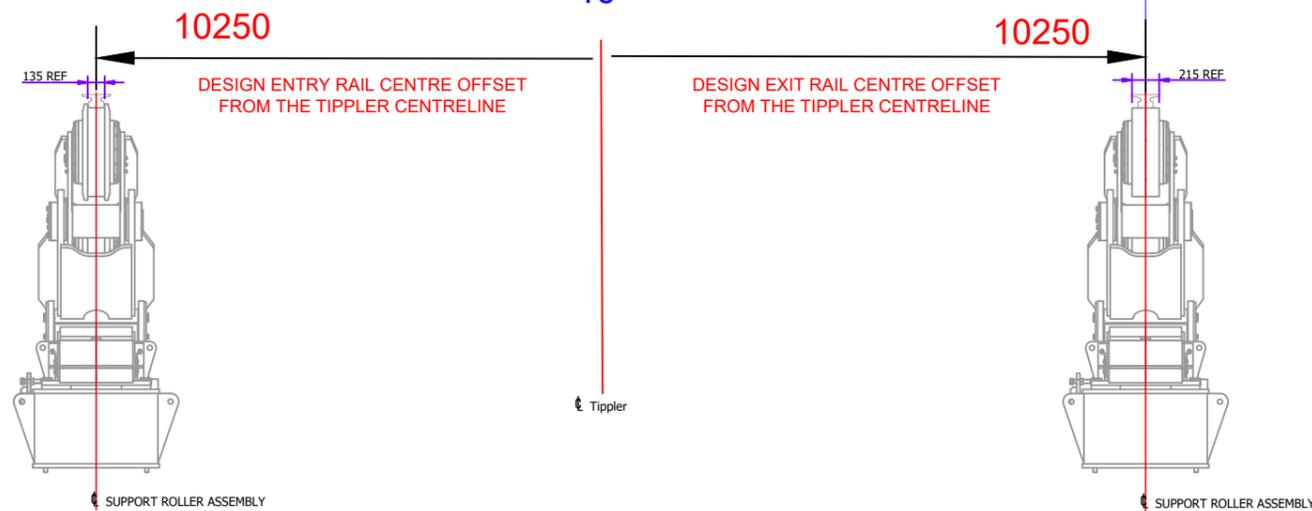
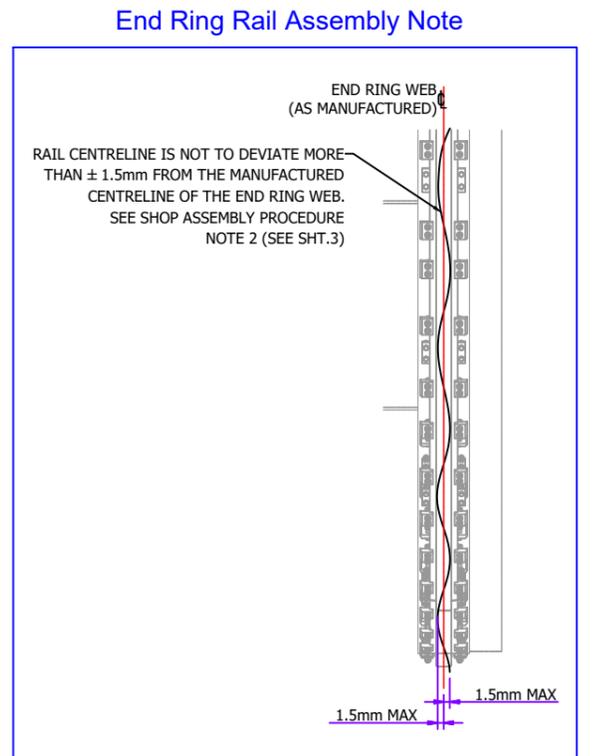
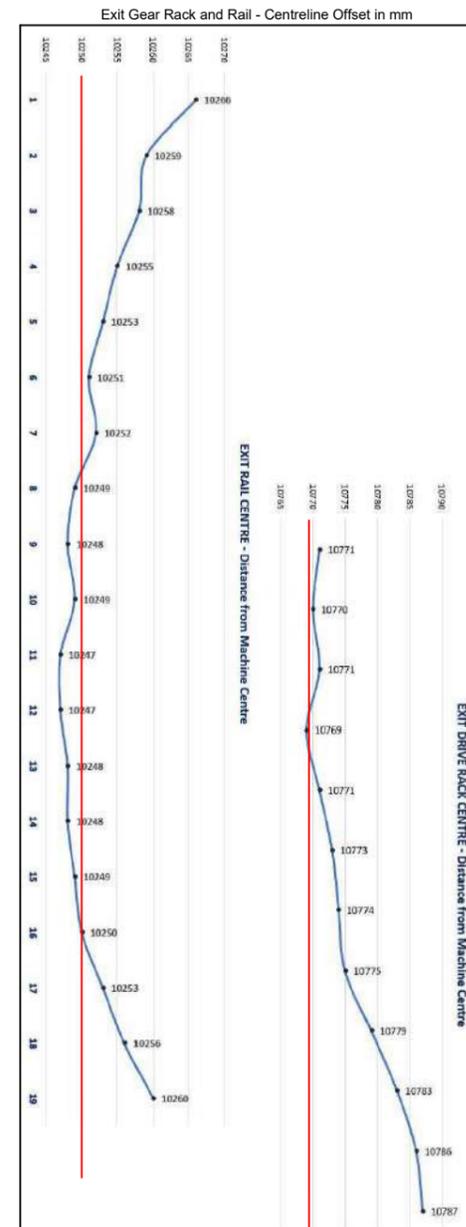
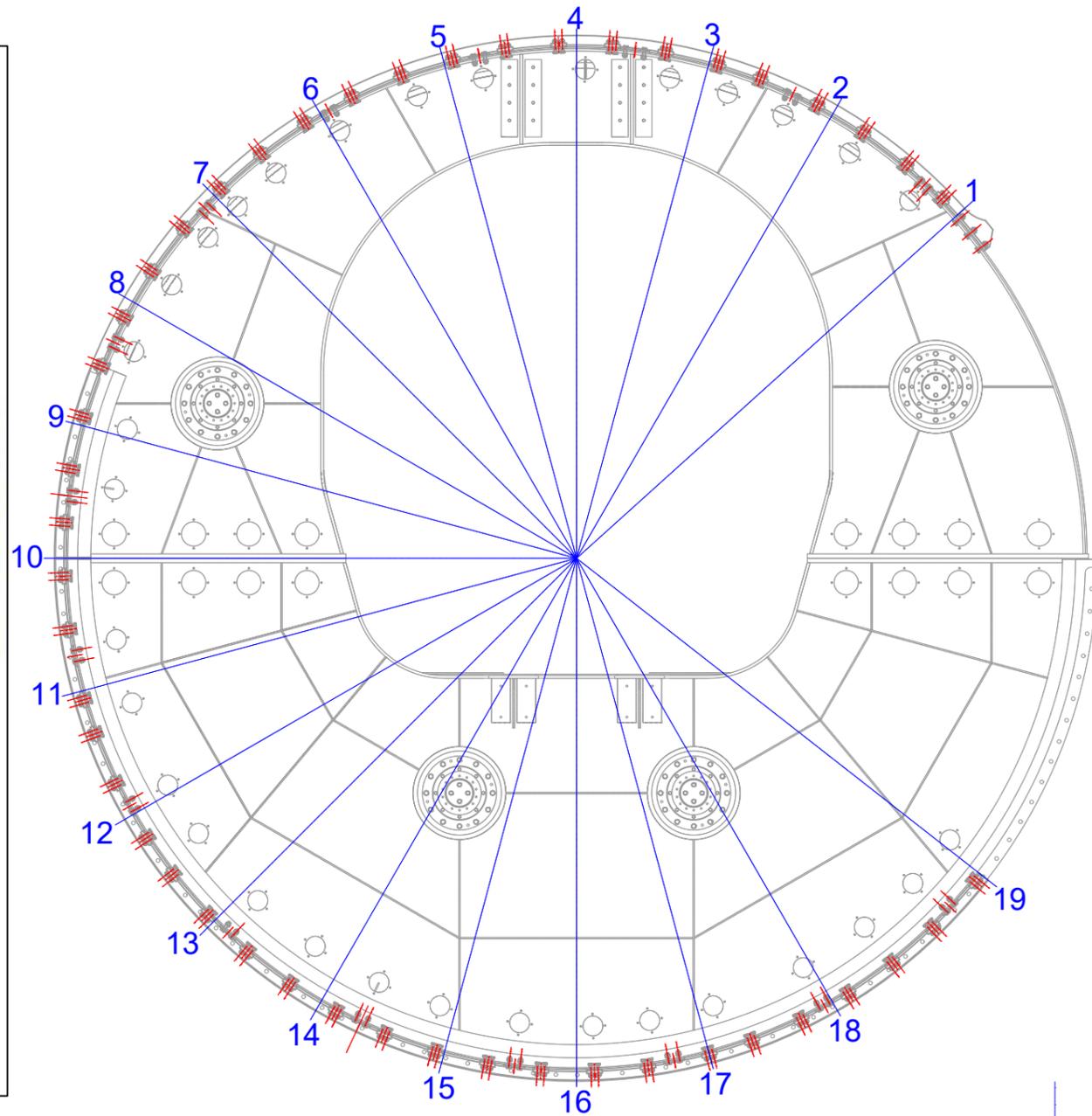
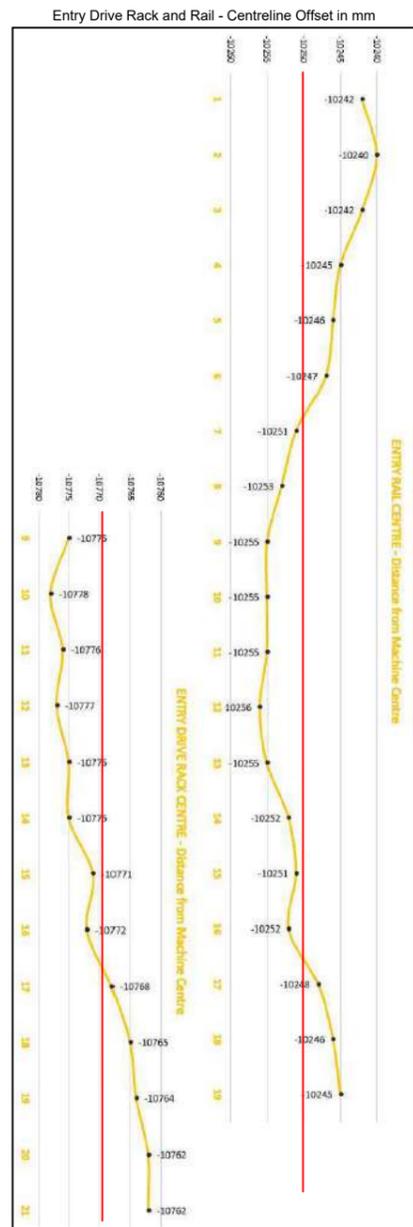
Blue Text is the Exit End As-Built Measurements





# Tippler 3 - Gear Rack and Rail Centreline Offsets from the Tippler Centreline

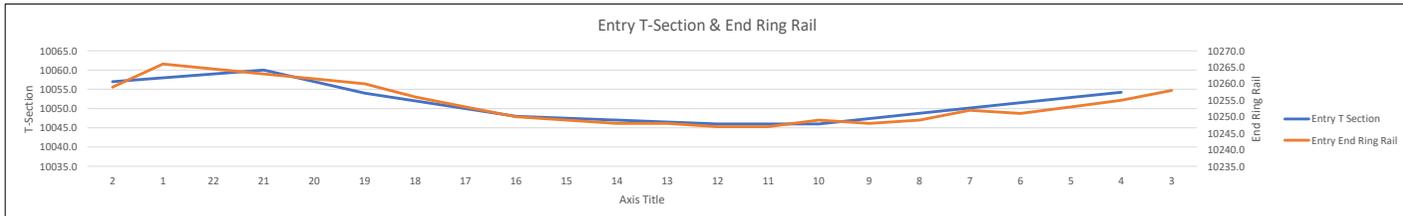
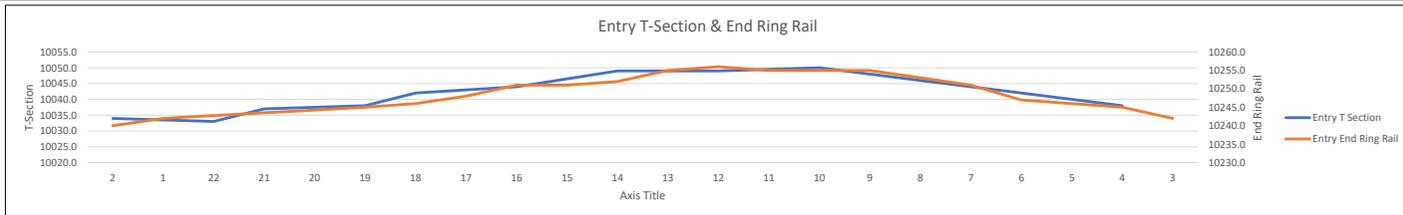
Measured Point is on the outside of the Gear Rack (110mm Offset to Centre)  
 Measured point is on the outside of the Rail (60mm Offset to Centre Rail)  
 Points measured at 15 Degree Segments  
 Note: Points 4 & 5 on the Rail are derived by interpolation between adjacent points as the line of sight was obscured at these points  
 View is from the Entry End Ring toward the Exit End Ring



# ASHTON BULK ENGINEERING ASSESSMENT OF TIPPLER SURVEY REPORT



Rail Centrelines Tippler CL to outside of Rail			Drive Rack Centrelines Tippler CL to outside of Drive Rack			21538 10769		Inside T-sections Tippler CL to inside T-section			20093 10046.5			Date: Revision:		03-May-22 A					
Entry T-Section			Entry End Ring Rail			Entry Drive Rack		Exit Drive Rack		Exit End Ring Rail			Exit T-Section		T-Section to T-Section						
NOM Dim = 10046.5	SIDD T-section Target Loc'n	Surveyed Dim From Tippler Centreline	NOM Dim = 10250	SIDD Rail Target Loc'n	Surveyed Dim From Tippler Centreline	Rail Offset From T-Section CL	Surveyed Dim From Tippler Centreline	NOM Dim = 10769	NOM Dim = 10769	Surveyed Dim From Tippler Centreline	Rail Offset from T-Section CL	Surveyed Dim From Tippler Centreline	SIDD Rail Target Loc'n	NOM Dim = 10250	Surveyed Dim From Tippler Centreline	SIDD T-section Target Loc'n	NOM Dim = 10046.5	T-Section to T-Section	NOM Dim = 20093	Rail CL to Rail CL	NOM Dim = 20500
Displacement			Displacement					Displacement			Displacement			Displacement				Displacement			
TDC +30	-12.5	1	10034.0	-10.0	2	10240.0	-2.5				1.5	10259.0	2	9.0	10057.0	1	10.5	20091.0	-2.0	20499.0	-1.0
	-8.0	1	10033.0	-8.0	1	10242.0					2.0	10266.0	1	16.0	10059.0	2	12.5	20092.0	-1.0	20508.0	8.0
T SIDE	-13.5	2	10033.0	-7.3	22	10242.8	-6.3	10762.0	-7.0	10762.0	-2.0	10264.5	22	14.5	10060.0	2	13.5	20097.0	4.0	20507.3	7.3
	-9.5	3	10037.0	-6.5	21	10243.5	-3.0	10762.0	-7.0	10762.0	0.5	10263.0	21	13.0	10054.0	3	11.5	20092.0	-1.0	20506.5	6.5
	-5.8	20	10244.3	-5.8	20	10244.3		10762.0	-7.0	10762.0	18.0	10787.0	20	11.5	10054.0	4	7.5	20092.0	-1.0	20505.8	5.8
BDC	-8.5	4	10038.0	-5.0	19	10245.0	-3.5	10764.0	-5.0	10764.0	-2.5	10260.0	19	10.0	10052.0	4	5.5	20094.0	1.0	20505.0	5.0
	-4.5	5	10042.0	-4.0	18	10246.0	-0.5	10765.0	-4.0	10765.0	-0.5	10256.0	18	6.0	10048.0	5	1.5	20092.0	-1.0	20502.0	2.0
	-2.5	6	10044.0	-2.0	17	10248.0	-1.0	10768.0	-1.0	10768.0	10.0	10779.0	17	3.0	10047.0	6	0.5	20094.0	1.0	20501.0	1.0
	2.5	7	10049.0	1.0	16	10251.0	-3.5	10772.0	3.0	10772.0	6.0	10775.0	16	0.0	10046.0	8	-0.5	20092.0	-1.0	20501.0	1.0
	2.5	8	10049.0	1.0	15	10251.0		10771.0	2.0	10771.0	5.0	10774.0	15	-1.0	10046.0	9	-0.5	20096.0	3.0	20500.0	0.0
	2.5	8	10049.0	2.0	14	10252.0	0.5	10775.0	6.0	10775.0	2.5	10248.0	14	-2.0	10046.0	8	-0.5	20096.0	3.0	20500.0	0.0
	3.5	9	10050.0	5.0	13	10255.0		10775.0	6.0	10775.0	2.0	10248.0	13	-2.0	10046.0	8	-0.5	20095.0	2.0	20503.0	3.0
NT SIDE	-0.5	10	10046.0	6.0	12	10256.0	-3.5	10777.0	8.0	10777.0	2.5	10247.0	12	-3.0	10046.0	8	-0.5	20095.0	2.0	20503.0	3.0
	-4.5	11	10042.0	5.0	11	10255.0		10776.0	7.0	10776.0	0.5	10247.0	11	-3.0	10046.0	9	-0.5	20096.0	3.0	20504.0	2.0
	-8.5	12	10038.0	5.0	10	10255.0	-1.5	10778.0	9.0	10778.0	0.5	10249.0	10	-1.0	10046.0	9	-0.5	20096.0	3.0	20504.0	2.0
	-4.0	5	10246.0	3.0	8	10253.0	-3.5	10775.0	6.0	10775.0	3.3	10249.0	8	-1.0	10048.8	10	2.3	20094.8	1.8	20502.0	3.0
	-3.0	6	10247.0	1.0	7	10251.0					4.0	10251.0	6	1.0	10051.5	11	5.0	20093.5	0.5	20498.0	-2.0
	-4.0	5	10246.0	1.0	7	10251.0					4.0	10251.0	6	1.0	10051.5	11	5.0	20093.5	0.5	20498.0	-2.0
	-4.0	5	10246.0	-4.0	5	10246.0					2.8	10253.0	5	3.0	10054.3	12	7.8	20093.5	0.5	20499.0	-1.0
	-5.0	4	10245.0	-5.0	4	10245.0					2.8	10255.0	4	5.0	10054.3	12	7.8	20092.3	-0.8	20500.0	0.0
	-8.0	3	10242.0	-8.0	3	10242.0					2.8	10258.0	3	8.0	10053.0	12	8.0	20092.3	-0.8	20500.0	0.0
	-13.5	Min	10033.0	3.0	8	10253.0	-3.5	10775.0	6.0	10775.0	2.0	10247.0	11	-3.0	10046.0	9	-0.5	20091.0		20498.0	Min
	-4.7	Mean	10041.8	1.0	7	10251.0					1.2	10254.0	Mean	10046.0	Min	10052.0	Mean	20093.8	Mean	20502.5	Mean
	3.5	Max	10050.0	1.0	7	10251.0					4.0	10266.0	Max	10060.0	Max	10053.0	Max	20097.0	Max	20508.0	Max
	-5.0	Mid	10041.5	5.0	9	10255.0					0.8	10256.5	Mid	10053.0	Mid	10053.0	Mid	20094.0	Mid	20503.0	Mid
Unsurveyed Section Analysis (10-12)			Unsurveyed Section Analysis (10-12)			Unsurveyed Section Analysis (10-12)			Unsurveyed Section Analysis (10-12)			Unsurveyed Section Analysis (10-12)			Unsurveyed Section Analysis (10-12)			Unsurveyed Section Analysis (10-12)			
Location 1		10034	Location 1		10242.0			Location 1		10266.0			Location 1		10057	Location 1		Location 1		20498.0	
Location 9		10050	Location 19		10245.0			Location 19		10260.0			Location 19		10046	Location 9		Location 9		20502.5	
Difference		16	Difference		3.0			Difference		-6.0			Difference		-11	Difference		Difference		20508.0	
No of sectors unsurveyed		4	No of sectors unsurveyed		4			No of sectors unsurveyed		4			No of sectors unsurveyed		4	No of sectors unsurveyed		No of sectors unsurveyed		20499.0	
Av displacement / sector		4	Av displacement / sector		0.75			Av displacement / sector		-1.5			Av displacement / sector		-2.75	Av displacement / sector		Av displacement / sector		20500.0	



## Appendix D

### Reference Documents

Electrical Site Inspection Report

Dust Extraction Report

## Site Inspection Report

<b>Customer:</b>	<b>Saldanha Tippler 3 Project - Transnet</b>	<b>Contract No.:</b>	<b>IAC: P220534</b>
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<b>Work Carried Out By:</b>	<b>Jaco de Waal &amp; Egon Herrmann</b>
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### Engineering & Documentation

1. TUS (IAC produced documents)
  - Documentation to be reviewed to confirm “issued for construction” status. Whilst construction drawings have been issued and construction work proceeded on the basis of such documentation the revision status of the documentation as “Issued for construction” was questioned by Transnet and stated as not approved for construction.
  - Tag numbers and cable numbers to be reviewed and where applicable changed to reflect Transnet specification.
2. Balance of plant (documentation produced by others)
  - All tag numbers and cable numbers to be revised to Transnet specification 1924701-SP-0006
  - Documentation is available only in PDF format and must be re-produced in native file format.
  - Existing redlined documentation must be revised to as-built.
  - All “issued for construction” drawings must be re-submitted to Transnet for approval since it was stated that construction drawings have not been approved and the contractor was not authorised to proceed with construction on the basis of the drawings.
3. Summary of findings:
  - Drawings produced by IAC are up to standard and require changes where Transnet specifications were not communicated to IAC following engineering reviews (i.e. tag number specification).
  - BOP drawings are not available in native \*.dwg format and needs to be re-produced incorporating all comments and changes required by Transnet as well as available redlined documents/comments.

### Site Inspections

1. Location of equipment
  - All drive and control systems were located and are on site.
2. Condition of equipment
  - With the exception of a few minor issues such as damaged hinges, scratches and damaged switch handles the equipment is in good condition.
  - The dust plant 3.3kV variable speed drive was stored outside since it first arrived on site and upon inspection it was found that the hermetical seal on the packaging was compromised and therefore it is assumed that the drive was exposed to the elements and water ingress is very likely. It was also determined that this drive is no longer produced by Siemens and it is recommended that a new replacement Generation 5 drive be procured as a matter of urgency.
    - Delivery: 35 working weeks – DAP Transnet Saldanha port.
    - Siemens commissioning engineer for 5 days on site.
  - All drive motors (Positioner, Tippler, Apron Feeder and Dust plant main blower) have been located and will have to be sent to WEG and Siemens for assessment and refurbishment.
  - All low voltage VSD's will require inspection and testing on site to be performed by the Cape Town office of Siemens. Pricing for this is yet to be received from Siemens.

### 3. Installation and procurement progress

- LV switch room:
  - All panels are located and installed. Panel support design must be reviewed, and support bracing (bolt-on) is suggested since the panel supports are unstable and allows for too much lateral movement.
  - Shipping split wiring must be re-done since the wiring appears to have been done in a rush and is not to proper standard.
  - Torquing of busbars have been checked and is complete.
  - Cable support system supply and installation: Complete
  - Cable supply and installation: 0%
  - Small power and lighting (by others): UPS commissioning is incomplete.
  - Small power and lighting (by others): Sub DB's installed and connected.
  - Small power and lighting (by others): Plant wiring and installation complete. COC to be confirmed and copy of as-built circuit diagrams required for co-ordination purposes.
  - Resin encapsulated busbar system to incomer: 0%
    - Resin encapsulated busbar system to incomer.
- Server room:
  - PLC: Located and installed
  - Cable support system supply and installation: Supply – complete, Installation 0%
  - Cable supply and installation: 0%
- Control room
  - Control desks: located – note, location of control desks to be reviewed.
  - Cable routing to be reviewed since ducting occupies the service void.
- Site Installation - General
  - Cable support system supply: 100%
  - Cable support system field installation: 100%
  - Cable supply: 0%
  - Cable installation: 0%
- Positioner
  - Festoon system saddles: mechanically installed.
  - Cable support system supply: 100%
  - Cable support system on board installation: 0%
  - Festoon cable supply: 100%
  - General cable supply: 0%
  - Cable and support system installation: 0%
- Tippler
  - Cable support system supply: 100%
  - Cable support system field installation: 90%
  - Cable supply: 0%
  - Cable installation: 0%
- Apron Feeders
  - Cable support system supply: 100%
  - Cable support system field installation: 90%
  - Cable supply: 0%
  - Cable installation: 0%
- Local control stations & RIO panels
  - Cable support system supply: 100%
  - Cable support system field installation: 0%
  - Cable supply: 0%
  - Cable installation: 0%
- Wheel grippers
  - Cable support system supply: 100%
  - Cable support system field installation: 0%
  - Cable supply: 0%
  - Cable installation: 0%

- Dust Plant
  - Cable support system supply: 0%
  - Cable support system field installation: 0%
  - Cable supply: 0%
  - Cable installation: 0%
  - MV VSD installation: Sub-station not complete
  - Main blower fan MV drive motor not mounted.
- Main cable support system from Switch room via cable tunnel:
  - Cable support system supply: 95%
  - Cable support system field installation: 0%
  - Cable supply: 0%
  - Cable installation: 0%
  - Note: Some racks still need to be positioned and secured inside the main cable tunnel. This should take 3-5 days to complete.
- Instrumentation bracketry:
  - Very little brackets exist for the mounting of instrumentation. This is specifically relevant to the BOP. Electrical installation quote to provide for this.

#### 4. Summary

- The 450kW medium voltage VFD is a major item for consideration. It is recommended that the existing drive on site be scrapped and in its place a Gen 5 drive be purchased as soon as possible in order not to delay the start of commissioning.
- According to Siemens the generation 4 drive has been discontinued and replaced by a more efficient generation 5 drive which is not interchangeable with the generation 4 drive.
- Even if it was possible to use the generation 4 drive (assuming that there is no damage), Siemens will not guarantee the drive. If they were to extend the warranty on the drive the cost to do so would be the equivalent of a new drive.



**AED030 – Ashton Bulk  
Transnet Saldanha Tippler 3  
Dust Control System  
Site Audit Report  
08 April 2022**

**Report by: C. Van Niekerk**

## Purpose of Report

The purpose of this report is to record all observations made during the site audit of Tippler 3 Dust Control System at Transnet Saldanha project site in Western Cape.

## Equipment List

*Reference Drawing: AED008-B100-WBA-001*

- 2 off – 594-WS-6000-BE Bagfilters
- 1 off – 450kW Fan Set
- 1 off – 40m<sup>3</sup> Storage Silo
- 1-set – Pneumatic Conveying System and Piping
- 1-set – Inlet Ducting, Orifice Plates and Supports
- 1-set – Compressed Air System and Piping

## Site Audit

An audit of the Dust Control System was completed on 30/03/2022.

The following observations were made :

## Equipment Inspection

The following equipment Air Envirotech recommend be sent back to the OEM to inspect the equipment over all condition and report what actions are required to bring the equipment back to commissioning status. Details as follow:

Supplier: TEC Dust Control

- 1) 2-off Autel Eco-S20 Sequential Controllers for Control and Operation of Bagfilter Pulse System



- 2) 6-off 10" Immersion Tanks c/w 11-off 2" Integrated Valves each for Bagfilter Pulse System



- 3) 10-off 2" Spare Integrated Valves for Bagfilter Pulse System



- 4) 66-off Solenoid Valves for Bagfilter Pulse System Control and 21-off Spare



- 5) Immersion Tank Kit consisting of:  
6-off Pressure Gauges for 1-off each Immersion Tank  
6-off Safety Valves for 1-off each Immersion Tank  
6-off Drain Valves for 1-off each Immersion Tan  
12-off Plugs for 2-off each Immersion Tank



Important notes to this supply (Prior OEM inspection):

- The Immersion Tanks were fabricated to SANS 347 and will need to be pressure tested and signed off by the AIA.
- The Sequential Controllers were supplied in manufacturer standard plastic enclosures and will have to be put over in S/S Panels as per specification.



- All Pressure Gauges to be pressure tested.

Supplier: Ingersoll Rand

- 1) 2-off UP5-22-7,5 Rotary Screw Compressors c/w Remote Start / Stop Wiring Harness ea. for Compressed Air System



- 2) 2-off D299 IM Modular Desiccant Dryers for Compressed Air System





3) 6-off Particulate Filters (Pre-Dryer and Post-Dryer) for Compressed Air System





4) 2-off R6A-1100kPa 2140m<sup>3</sup> Air Receivers for Compressed Air System



- 5) Air Receiver Kit consisting of:
- 2-off Pressure Gauges for 1-off each Air Receiver
  - 2-off Safety Valves for 1-off each Air Receiver
  - 2-off Auto Drain Valves for 1-off each Air Receiver
  - 2-off 3/4" Manual Drain Valves for 1-off each Air Receiver



Important notes to this supply (Prior OEM inspection):

- The Air Receivers were fabricated to SANS 347 and will need to be pressure tested and signed off by the AIA.
- All Pressure Gauges to be pressure tested.
- Compressors will need to be serviced before first start-up.
- Desiccant will need to be replaced before Dryer first start-up.

Supplier: Trojan Fans

- 1) 1-off 30kW MPR Multi-Stage Blower for Pneumatic Conveying System



- 2) Blower Spares consisting of:
  - 2-off Plummer Block and Bearing assemblies
  - 1-off Outlet Compensator (Material only)
  - 1-off Coupling



Supplier: Bulkmatic Solids Machinery (BSM)

- 1) 1-off Silo Over Pressure Relief Valve OPV-150



- 2) 1-off Pneumatic Actuated Diverter Chute DC-0300-P-SYS for Silo Paddle Mixer or Truck discharge



Supplier: Tenova Mining and Minerals

- 1) 1-off 3kW Paddle Mixer for Silo discharge



Supplier: PD Engineering

- 1) 2-off 2,2kW V-Trough Screw Conveyors for Bagfilter discharge



- 2) 1-off Manual Retractable Loading Spout for Silo discharge



Supplier: 4b Africa

- 1) 2-off Hand Wheel Knife Gate Valves 4BSG200-HW-SQ for Bagfilter discharge  
2-off 0,37kW Rotary Vane Feeders 4BRVA200-S-ST-SQ for Bagfilter discharge  
2-off Kinetrol Actuated Double Flap Valves 4BFV200-DP-RQ for Bagfilter discharge  
1-off Hand Wheel Knife Gate Valve 4BSG300-HQ-RD for Silo discharge  
1-off 0,75kW Rotary Vane Feeder 4BRVAR300-S-SR-RD c/w 1-off Whirligig Mount for Rotary Vane Feeder Speed Switch for Silo discharge



- 2) 4-off Limit Switch Boxes and 4-off Solenoids for 1-off ea. Kinetrol Actuator



- 3) 3-off Whirligig Speed Switch Mounts for 1-off ea. Rotary Vane Feeder



Supplier: Dymot Engineering

- 1) 1-off Hand Winch 300S for Manual Retractable Loading Spout for Silo discharge



Supplier: BWF Environmental Dynamics

1) 1200-off Polyester Needle Felt 550g/m<sup>2</sup> ePTFE Filter Bags for Bagfilters



2) 100-off Polyester Needle Felt 550g/m<sup>2</sup> ePTFE Spare Filter Bags for Bagfilters



Supplier: Rhomberg Instruments

- 1) 1-off Pressure Gauge for Paddle Mixer Water Supply



- 2) 2-off Pressure Gauges for 1-off ea. Pressure Regulating Valves of Compressed Air System



Supplier: Zest WEG

- 1) 1-off 450kW Motor for Extraction Fan (No Photo available)

=====

The following equipment Air Envirotech recommend be kept in safe (under roof) storage at site and supply a spare of each as critical for commissioning as they are still in a good condition for operation. Details as follow:

Supplier: Invincible Valves

- 1) 14-off S/S 50NB Manual Ball Valves for Compressed Air System



Supplier: DLM Valves

- 1) 5-off S/S 25NB Manual Ball Valves for Compressed Air System and Paddle Mixer Water Supply  
2-off S/S 15NB Manual Ball Valves for Compressed Air System and Paddle Mixer Water Supply  
5-off S/S 8NB Manual Ball Valves for Compressed Air System and Paddle Mixer Water Supply



Supplier: Klinger Mzansi

- 1) 2-off S/S 50NB Pressure Regulating Valves for Compressed Air System  
2-off BR 50NB Pressure Relief Valves for Compressed Air System



- 2) 1-off CI 125NB Butterfly Valve for Pneumatic Conveying System



- 3) 1-off S/S 15NB Pneumatic Actuated Ball Valve for Paddle Mixer Water Supply



Supplier: Temperature Controls (via Universal Fans)

- 1) 2-off Temperature Sensors for Extraction Fan Bearings



Supplier: IFM Electronic

- 1) 4-off Pressure Indicating Transmitters for Compressed Air System  
11-off Speed Switches for Rotating equipment i.e. Screw Conveyors, Rotary Vane Feeders and Paddle Mixer



2) 7-off Wireable Sockets for Speed Switches



3) 3-off Proximity Sensors for Flow Control equipment i.e. Knife Gates



4) 3-off Level Switches for Blocked detection i.e. Bagfilters and Truck discharge



- 5) 1-off Flow Indicating Transmitter c/w Connection Sockets for Paddle Mixer Water Supply



- 6) 17-off Connection Cables c/w Additional Cable Roll for Instruments



Supplier: Spray Nozzle

- 1) 6-off Mist Spray Nozzles for Paddle Mixer Water Supply



Supplier: Rhomberg Instruments

- 1) 1-off S/S 15NB O-Siphon c/w BR 15NB Gauge Cock for Paddle Mixer Water Supply Pressure Gauge



Supplier: Chick Henderson

- 1) 11m Yellow Line Rubber Hose for Bagfilter Pulse System

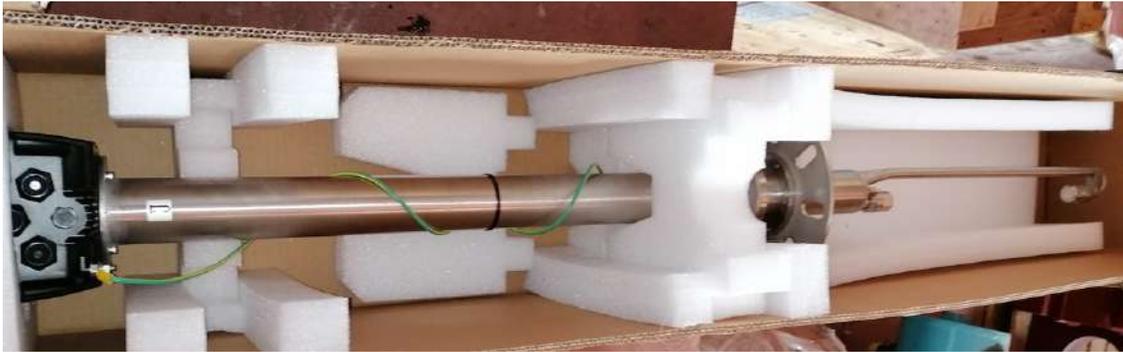


- 2) 132-off 78mm – 86mm B-Series Hose Clamps c/w 3-off Spare



Supplier: Ansyco SA

- 1) PCME Stack Flow 400 Sensor for Clean Air Ducting Flow Monitoring



- 2) PCME 990 Pro 2 Controller System for Clean Air Ducting Particulate Monitoring



Supplier: Flowseal Engineering

- 1) 2-off 2500mm I/Dia. 350mm F/F Fabric Expansion Joint for Ducting



Supplier: SA Filter Cages

- 1) 1240-off E-Galv.Wire Cages for Bagfilters (No Photo available, all cages stored in Breedt Asia Workshop)
- 2) 100-off Spare E-Galv.Wire Cages for Bagfilters



Supplier: Universal Fans

- 1) 1-off HDBC-I 2260 SISW Fanset (No Photo available, Fanset stored in Breedt Asia Workshop)

Fanset was already inspected by Universal Fans maintenance specialist with the following comments:

**The following items was present in the crate and at the workshop:**

- Casing in 3 sections
- Glue and fiberglass seal for the sections of casing sections
- Impeller with shaft + key (denso-taped)
- Bearing and motor base with jacking blocks welded to base
- Inlet cone
- Flexible connection
- Bearings + sleeves + locating rings + bearing plumber blocks.
- Shaft seal + PTFE seal.
- Coupling half (motor and fan side) + coupling seals and gasket + coupling cover. (Bibby coupling)
- Shaft and coupling guards
- Grouting
- Nuts and bolts

**Notes and Observations**

- It is clear that some of the content/packaging was opened, thus resalting in the nuts and bolts all over the bottom of the crate
- one of the Bearing Plumber Blocks protective covers on both sides were removed, resulting in surface rust.
- a lot of dust on all the content, indicating that the crate was opened and left open for an extended period of time
- The shaft key is still in the shaft underneath the denso tape.
- No damage or scratches to the base and casings, still in very good condition
- Drain plug still in the casing
- Flexible connection and rings are still connected with bolts
- Impeller still in good condition, no bumps or scratches.
- Did not see any grease to be used with bearings

=====

The following equipment Air Envirotech could not locate on site and has most likely not been procured for this project. Details as follow:

- 1-off Vibration Detection Sensor for Extraction Fan Bearings
- 1-off Silo Level Transmitter
- 2-off Retractable Loading Spout Dust Socks
- 1-lot Electrical and Lighting Accessories and Equipment c/w Cabling

=====

**Bagfilter, Silo and Supporting Structures Inspection**

Air Envirotech inspected the Bagfilter and Silo c/w Support Structures. The following will need to be rectified in order to complete the installation and to ready the plant for commissioning:

**Compressor and Dryer Housing (Takraf Drg. Ref. EB0008-B100-CAA-011)**

- Access Doors was located on site and need to be installed.



- No Sheeting located on site. Sheeting will need to be supplied and fitted. At least 1-bay to be translucent for natural light during daytime.



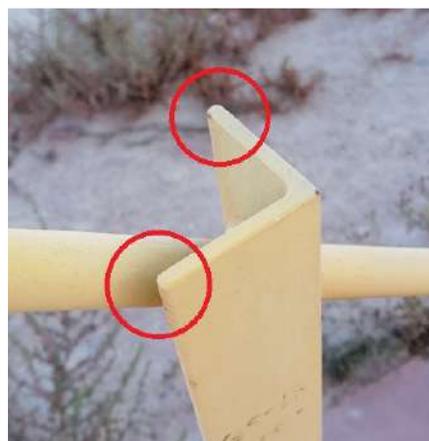
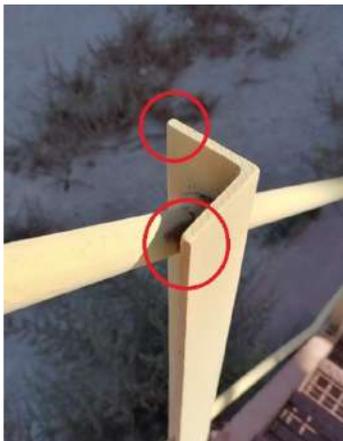
- Crawl Beams need to be painted yellow and clearly state the S.W.L. – 1 TONNE on each. Notice board will have to be procured with note – ONLY ONE CRAWL HOIST ALLOWED TO DO LIFTING AT A TIME. No Crawl Hoists or end stops located on site. Crawl Hoist will have to be procured with end stops and installed to exit Crawl Beam (drilling allowed for)



Bearing Access Platform (Takraf Drg. Ref. EB0008-B100-CAA-015)



- Sharp edges on railing noted that need to be chamfered.



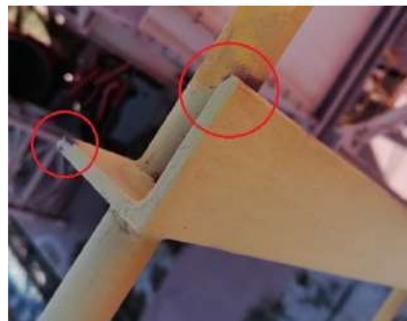
Dust Monitor Access Platform (Takraf Drg. Ref. EB0008-B100-CAA-018)



- Catladder support legs to be fixed to concrete with either Chemical Anchors or RAWL Bolts. Slotted support leg angles do not have corrosion protection applied.



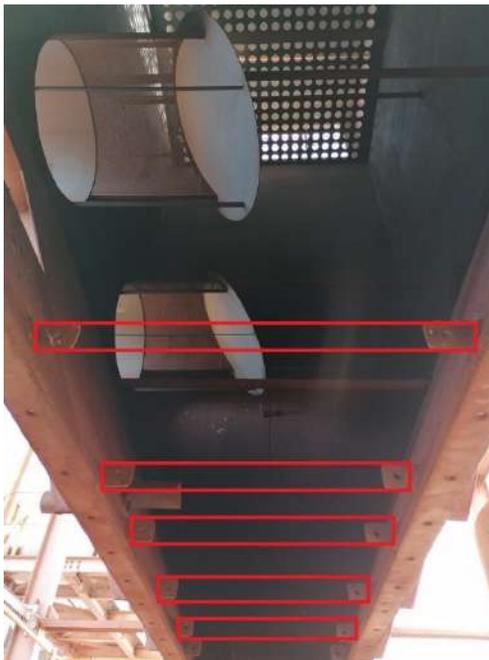
- Sharp edges on railing noted that need to be chamfered.



Bagfilters and Access Platforms (Takraf Drg. Ref. EB0008-B100-CAA-001  
EB0008-B100-CAA-002  
EB0008-B100-GKA-013)



- Not all Hopper Mesh Supports installed and none located on site. 18-off required in total, 9-off each for respective Bagfilter. Only 3-off installed. (Liaise with Breedt Asia)



- No Hopper Mesh Panels installed. 6-off required in total, 3-off each for respective Bagfilter. Only 3-off located on site. (Liaise with Breedt Asia)



- Sharp edges on railing noted that need to be chamfered (Hopper Access Platforms)



- Hopper Access Doors not installed. 2-off required in total, 1-off each for respective Bagfilter. 2-off Doors located on site. Fixing Bracket sets not located (Liaise with Breedt Asia)



- 1-off railing section bent on Hopper Access Platform and will need to be rectified.

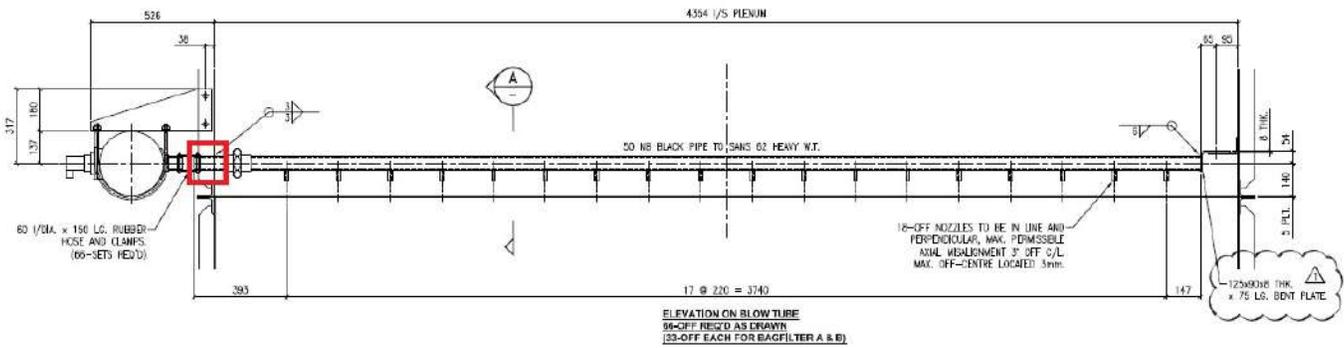
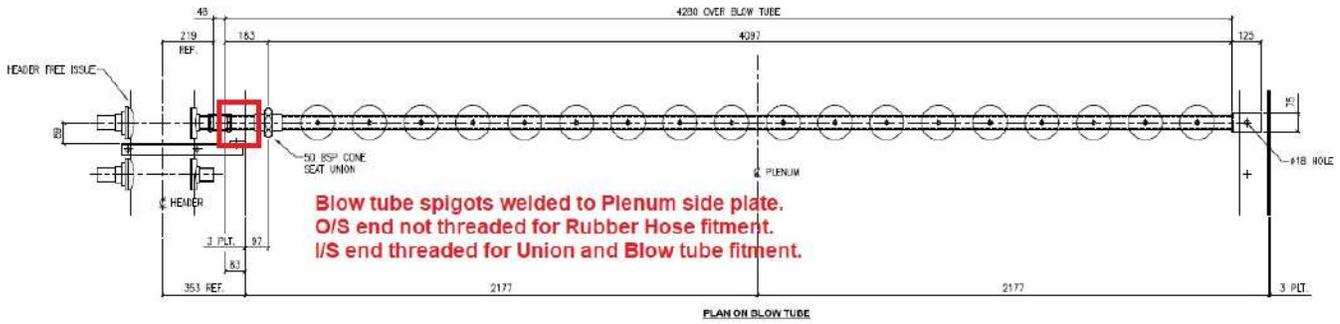


- Opening in Plenum adjacent Silo. Closure plate not procured. Opening to be measured, designed, manufactured and installed. Opening is not part of the filter design and only 1-off opening is required for Ducting outlet on opposite end.

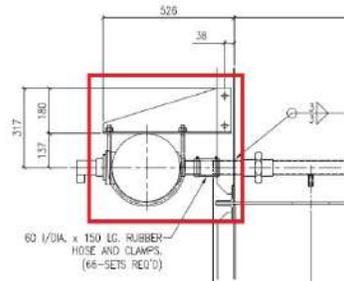


- Blow Tube Spigots not installed and none located on site. 66-off required in total, 33-off each for respective Bagfilter. Spigots to be procured and installed.





- Immersion Tank Support Brackets c/w U-Bolts not installed and not located on site. 12-off required in total 6-off each for respective Bagfilters. (Liaise with Breedt Asia)



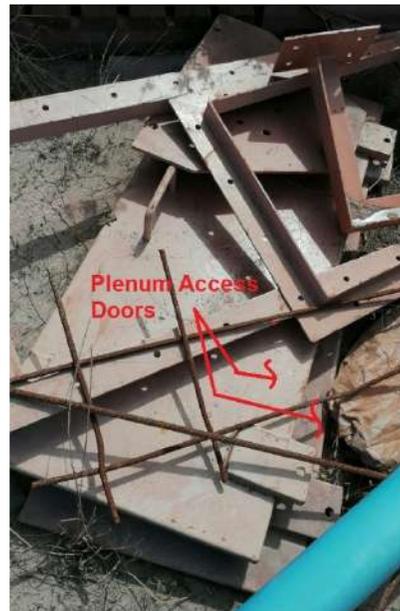
- 4-off Differential Pressure sockets required in Plenum and Bagfilter Housing side plates. 2-off installed on Bagfilter 'B', 1-off hole drilled in Clean air chamber of Bagfilter 'A'. No socket or hole in Bagfilter 'A' Dirty air chamber.



- Blow Tube Pipe fabrication incomplete. Raw material identified on site. Blow Tube Pipe accessories to be procured, manufactured and installed.



- Plenum Access Doors not installed. 4-off required in total, 2-off each for respective Bagfilter. 4-off Doors located on site. Fixing Bracket sets not located (Liaise with Breedt Asia)



- Plenum Access Steps not installed. 4-off required in total, 2-off each for respective Bagfilter. All 4-off located on site.



- Plenum Access Grab Handles not installed. 8-off required in total, 4-off each for respective Bagfilter. All 8-off located on site.



- Plenum Safety Cages not installed. 4-off required in total, 2-off each for respective Bagfilter. All 4-off located on site.



- Selected railing stanchion does not have corrosion protection applied.



- Access Platform Knee Brace Support to be installed correctly.



- Economizer Back Plate drilling only on Bagfilter 'B'. Drilling to be completed on Bagfilter 'A'. Back Plate to be re-procured due to change over to S/S panel with different drilling.



- No epoxy sealer applied between space welding. It was noted on the detailed engineering drawings to have all areas between space welding filled with an approved epoxy sealer after primer. All space welded stiffeners to be wire brushed and apply an approved epoxy sealer to avoid rust forming behind stiffeners that has not been welded.



- After installation, complete bagfilter housing, including internal bag plate to be seal welded over all joints.



Silo and Access Platform (Takraf Drg. Ref. EB0008-B100-DEA-001)



- Railing installed incorrectly. Back of angles to face platform walk area.





- Selected railing section does not have corrosion protection applied.



- Crawl Beam need to be painted yellow and clearly state the S.W.L. – 1 TONNE. No Crawl Hoist or end stops located on site. Crawl Hoist will have to be procured with end stops and installed to Crawl Beam (drilling allowed for)



- Paddle Mixer rear bracket drilling not in beam. Drilling to be done and item number welding ground flat for Paddle Mixer support footings. (Liaise with Breedt Asia)



- No HD bolts cast in concrete form staircase base. Staircase base to be fixed to concrete with either Chemical Anchors or RAWL Bolts.



- Grouting to be done on complete structure base.



- Cross beam 005/S51 not installed and not located on site. (Liaise with Breedt Asia)



- Retractable Loading Spout Sheave support brackets not installed. 3-off in total. 1-off located on site, 2-off not located on site. Winch support bracket not installed and not located on site. (Liaise with Breedt Asia)





- Silo top inspection hatch cover fasteners to be installed. (Liaise with Breedt Asia)



- Paddle Mixer return feed piping not procured. Pipe route to be measured, designed, manufactured and installed.



Additional notes for Bagfilter and Silo c/w Support Structures

- Air Envirotech recommend a structural engineer to inspect, comment and sign-off on the installed units and support structures.
- Selected fasteners and plate surfaces indicate signs of rust (as indicated below) and has to be inspected and rectified.



- Selected HD Bolt surface lengths to be trimmed to required lengths.

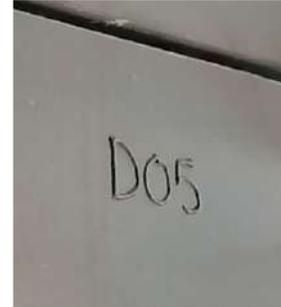


**Ducting, Pneumatic and Compressed Air Piping Inspection**

Air Envirotech inspected the Ducting, Pneumatic and Compressed Air Piping c/w Supports. The following will need to be rectified in order to complete the installation and to ready the plant for commissioning:

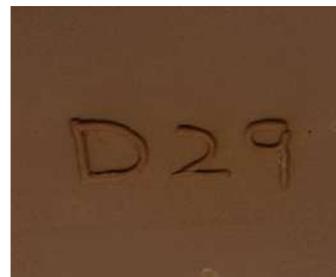
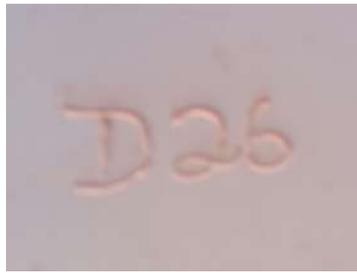
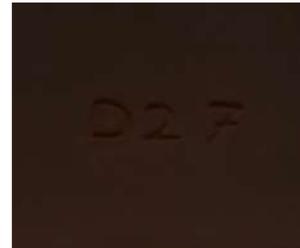
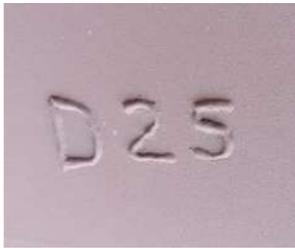
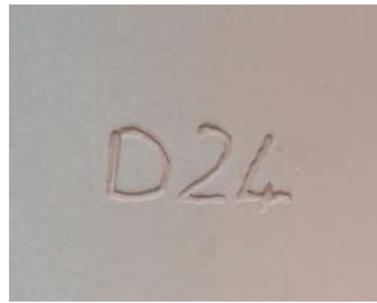
Ducting (Takraf Drg. Ref. EB0008-B100-JKA-001  
EB0008-B100-DEA-001)

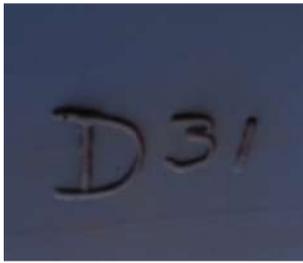
- No ducting has been installed except for items D05 & D06. The following was located on site:





















- No Sealer or Fasteners were located on site.
- On Items D05 & D06 the following comments:
  - No Spacer Plates installed to accommodate Anti-Swirl Plate installation. Spacers were not located on site.



- Selected HD Bolt surface lengths to be trimmed to required lengths.



- Items D05 & D06 must be seal welded to Bottom Plate.

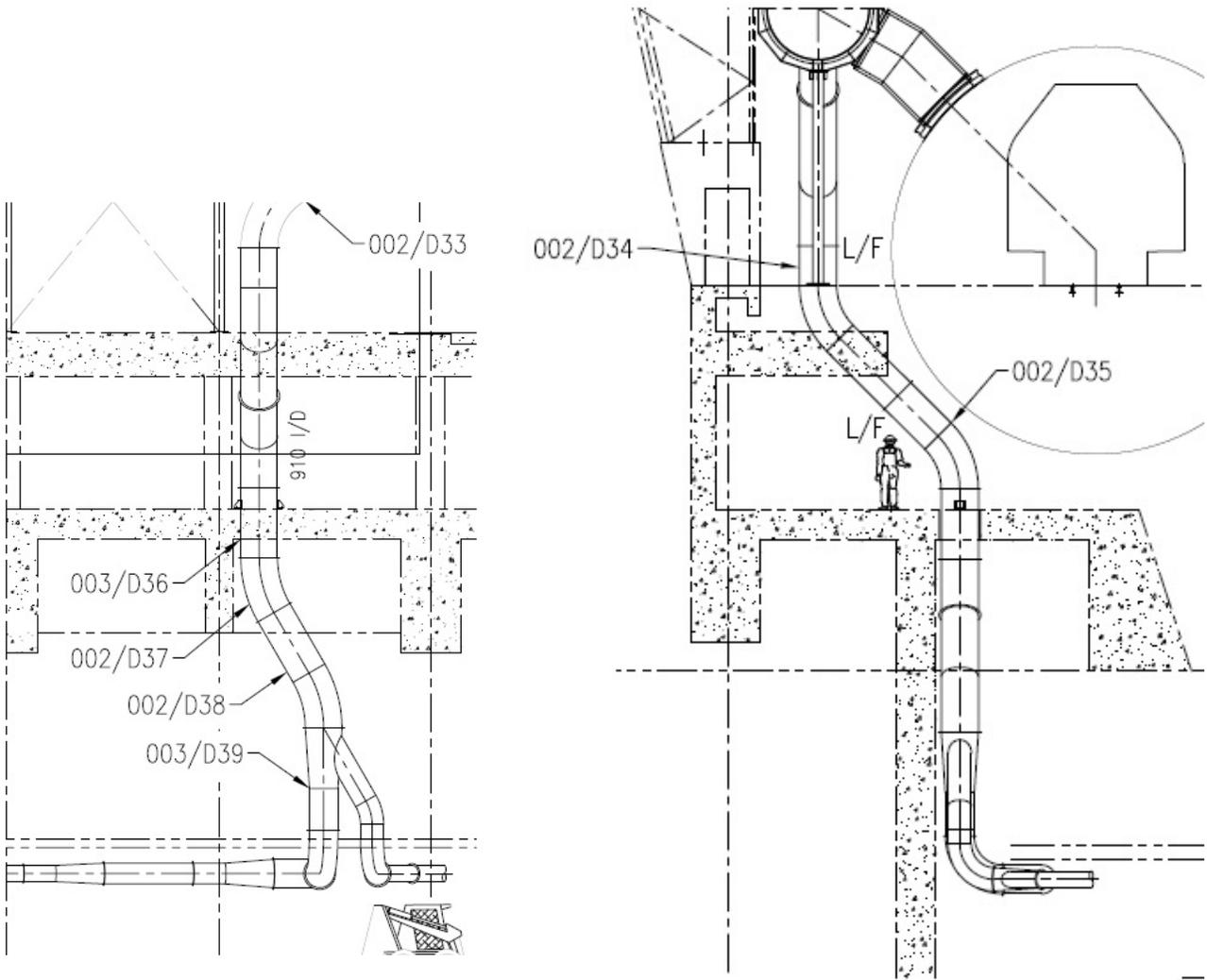


- Item D05 Inspection Door not installed. 1-off required and located on site.

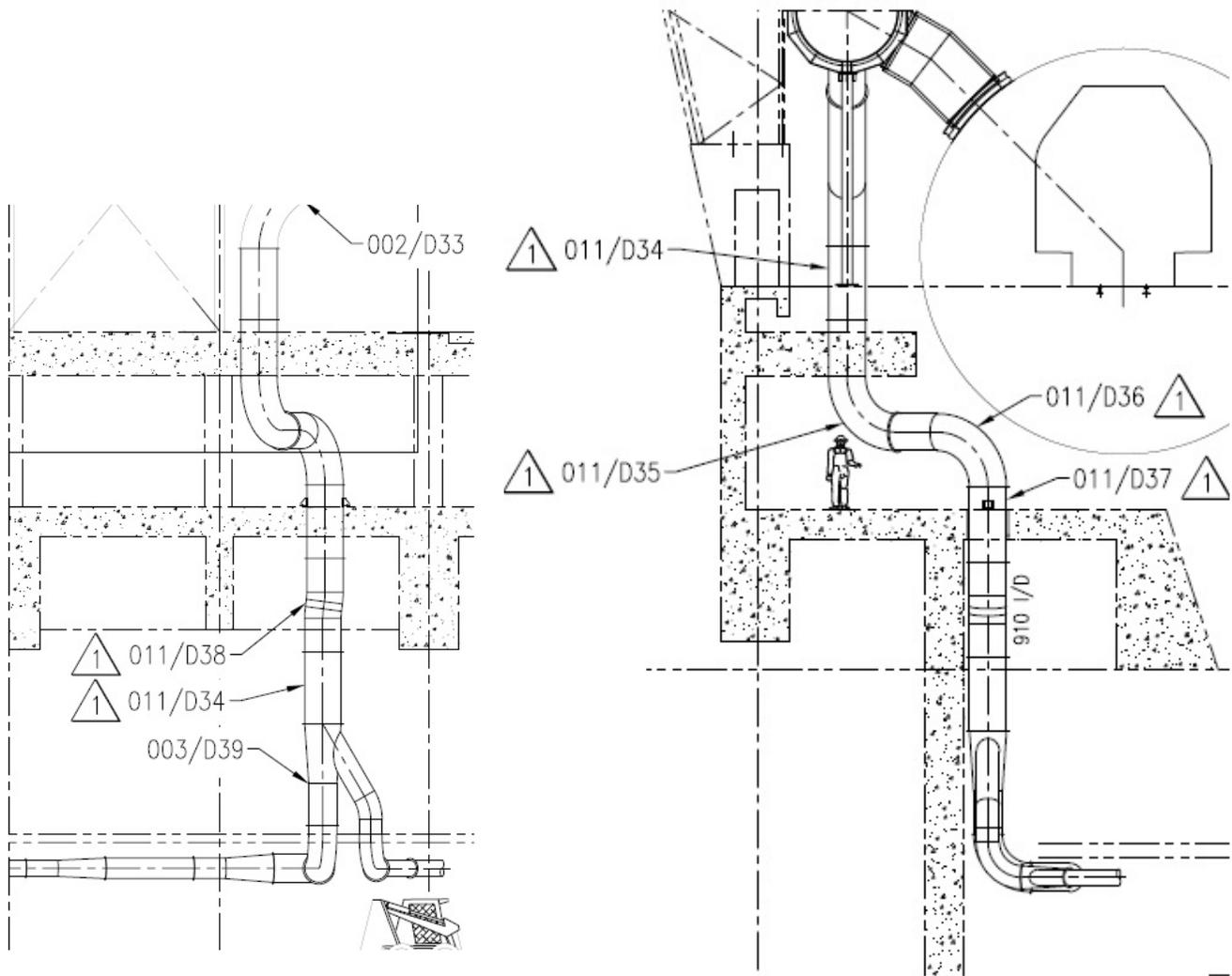


- Item D56 Closure plate not procured. Opening to be measured, designed, manufactured and installed. Opening is not part of the ducting design and only 1-off opening is required on the other end where D55 bolts to.
- Ducting items D34, D35, D36, D37 and D38 is redundant ducting due to incorrect cut hole location in cast concrete by the civil contractor. New replacement sections are to be measured, designed, manufactured and installed as follow:

**Routing as per original design:**



**Revised routing to suit incorrect cut hole location in cast concrete:**



- 1-off Column Duct Support T9 on grid 1e-L installed in position.



- 1-off Duct Support T2-G / F and T3-G / F placed in position. Support to be aligned correctly and fixed to concrete with HD Bolts.



- Supports Trestles T1-G / F, T4-G / F, T5-G / F, T6-1c / 1d, T7-K / J and T8-K / J not installed. All located on site. No sliding joint plates located on site for T5 & T7.



- 1-off Column Duct Support located with no item number. 3-off not located on site. T9 on grid 1f-L, T10 on grid 1g-L, T11 on grid 1h-L and T12 on grid 1k-L. Column Duct Supports T10 on grid 1g-L and T11 on grid 1h-L are braced. 5-off Column Duct Supports required in total.



- No Hanger Duct Supports Installed. 3-off U-type and 4-off O-type required. All Hanger Duct Supports located on site.



- 3-off Horseshoe type Orifice Plate sets located on site. 3-off required in total.



- 1-off Large Round Orifice Plate located on site, 1-off required in total. Orifice Plate is redundant due to re-designed ducting required due to incorrect cut hole location in cast concrete by the civil contractor. New replacement section is to be measured, designed, manufactured and installed.



- 3-off Rectangular type Orifice Plate sets located on site. 1-off Rectangular type Orifice Plate half set located on site. 1-off Rectangular type Orifice Plate half set and complete set not located on site. 5-off sets required in total.



Pneumatic Conveying System and Piping (Takraf Drg. Ref. EB0008-B100-XAA-001

- Blower support frame not installed. 1-off frame required and located on site.



- Pneumatic Pipe Lines partially fitted. All piping located on site. 7-off Straight sections, 1-off Straight + Cone section, 2-off 90 degree bend sections and 2-off Feeding Tee sections required in total.

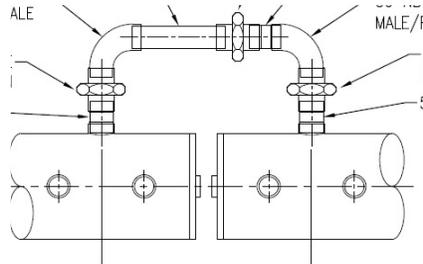




- Pipe supports installed (No photos). No Gaskets and support U-Bolts not located on site.

Compressed Air System and Piping (Takraf Drg. Ref. EB0008-B100-JKA-002  
EB0008-B100-JKA-003)

- Compressed Air piping c/w gaskets, fasteners and supports not procured. Pipe routing to be designed, manufactured and installed.
- Immersion Tank joint pipes not located on site. 4-off required in total, 2-off each for respective Bagfilter.



We trust that the above meets with your approval.

Please do not hesitate to contact us should you wish to discuss or clarify any part of this report.

Yours sincerely,

**Chris Van Niekerk**  
*Director of Engineering*

**Air Envirotech (Pty) Ltd.**  
Tel : +27 84 504 1449  
E-Mail : [chrisvn@airenvirotech.com](mailto:chrisvn@airenvirotech.com)

## Appendix E

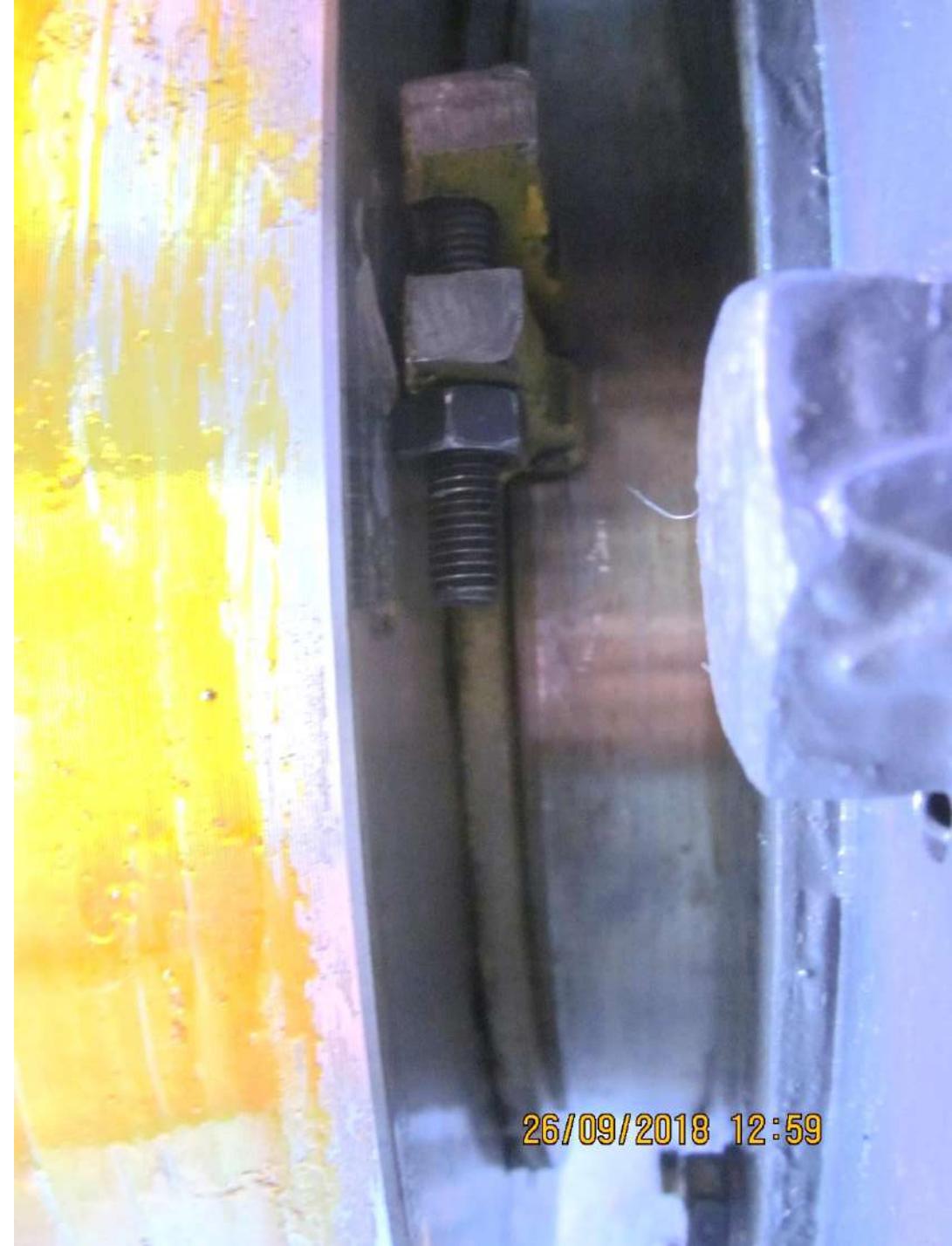
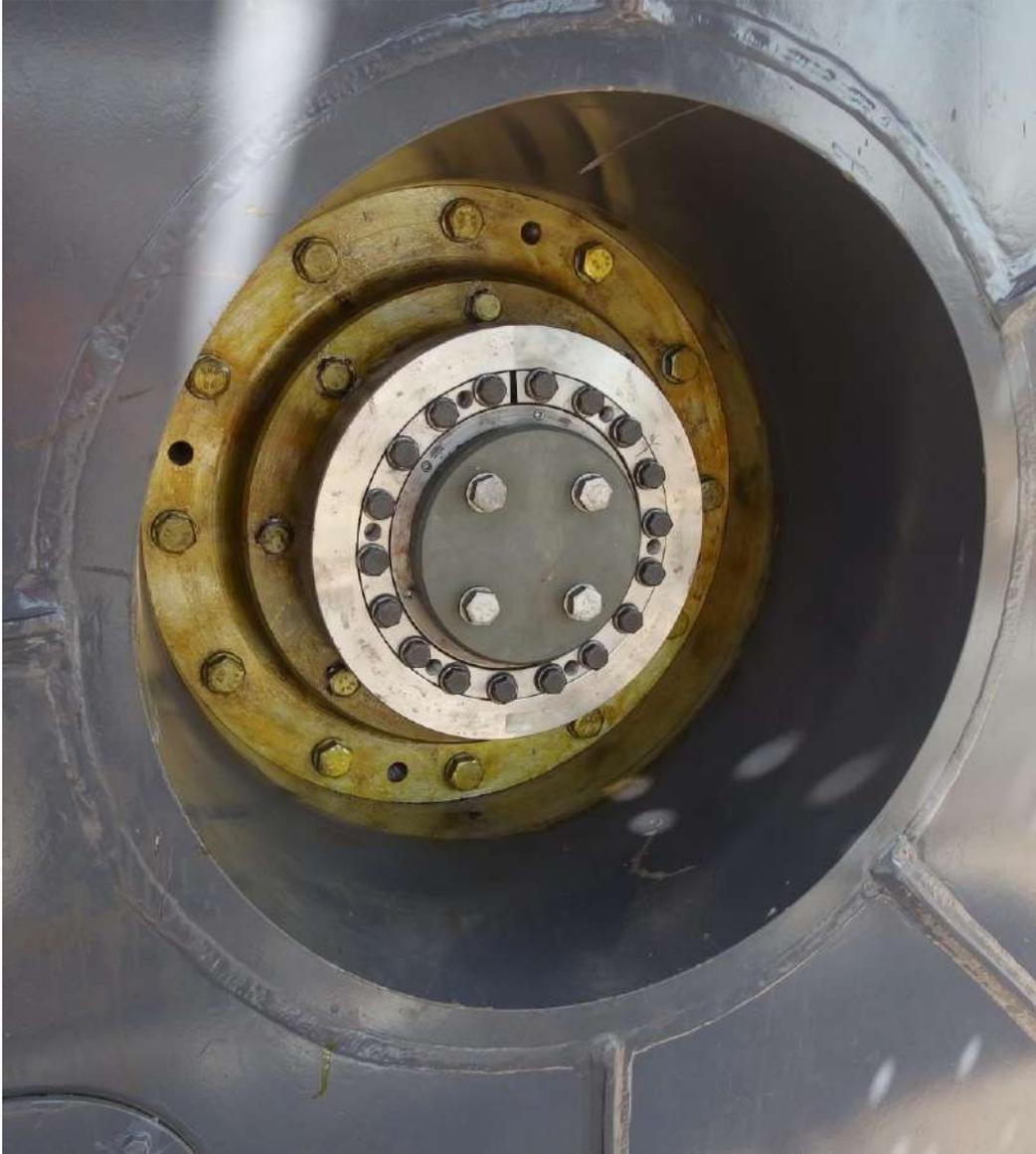
### Site Inspection Photographs

This Appendix contains selected copies of photographs included in the Site Inspection Plans which indicate the subject matter of the this report. Reference should be made to the Site Inspection Plans for further information regarding the condition of the equipment.

Photo 1

Incorrect Shrink Disc

Tippler Pivot Shaft Temporary Spacer



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Photo 2

Tippler Pivot Shaft Condensation



Photo 3  
Tippler Cage Link  
Mis-Alignment

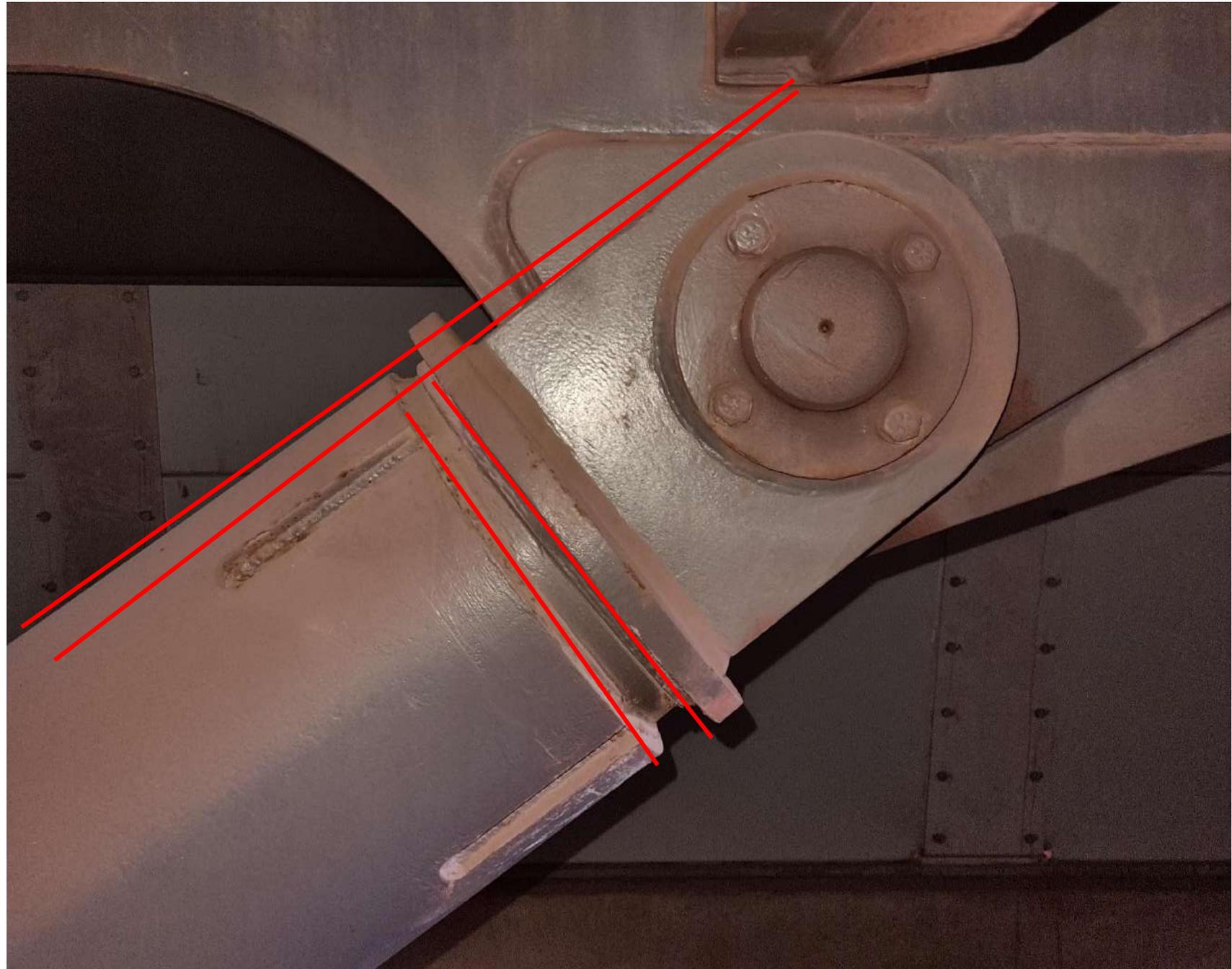


Photo 4  
Torque Reaction  
Bracket Mis-Alignment

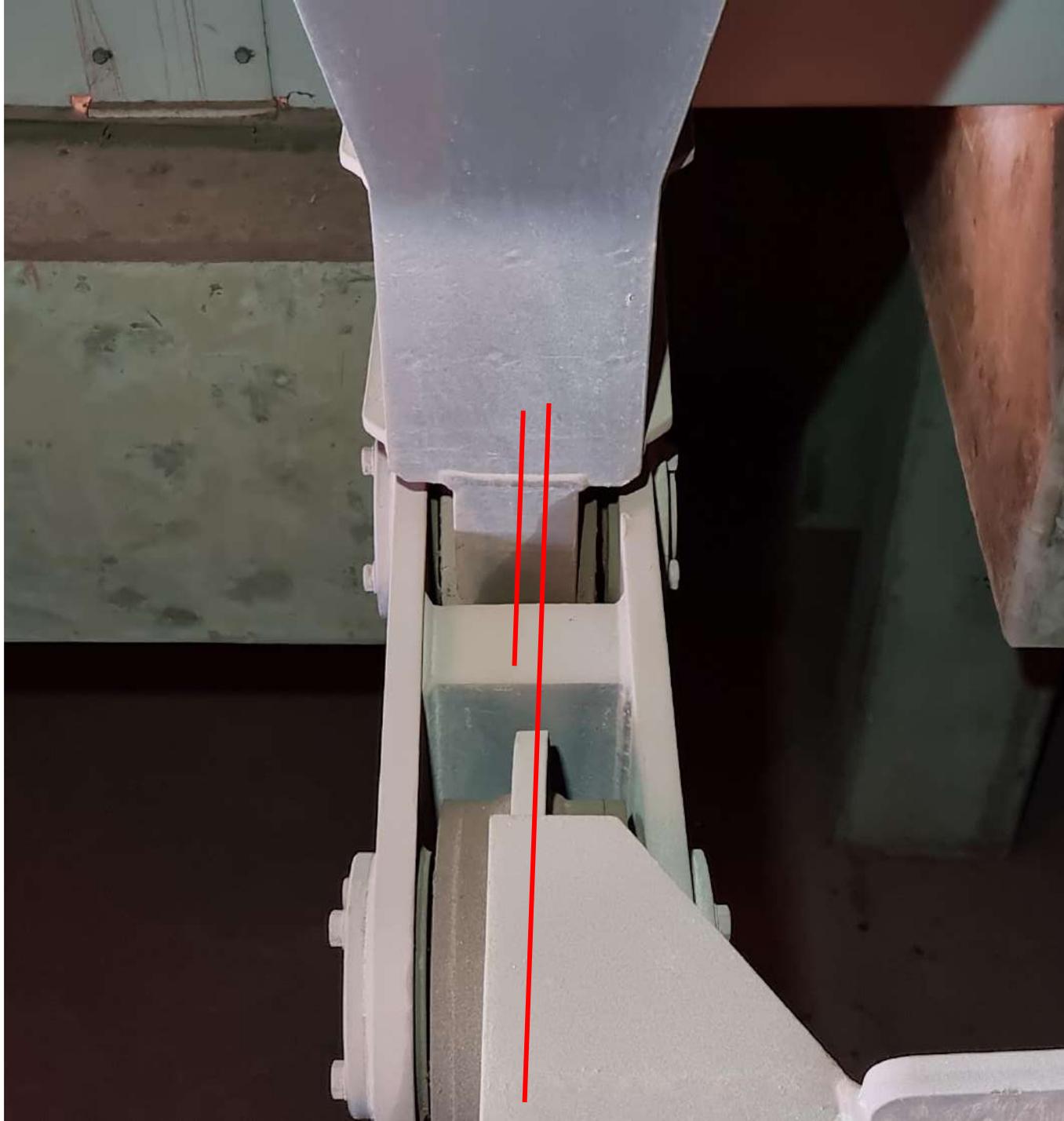


Photo 5  
Tippler Rail  
Platform Internal  
Surface  
Corrosion



Photo 6

Positioner Front Pedestal Poor Quality Weld



Photo 7  
Positioner Main Frame Internal Surface  
Corrosion



Photo 8

Wheel Gripper – Pivot Pin, Fitted Bolt & Shim Corrosion





### Photo 9

- Non-Tip Side Deflector Wall - Insufficient Clearance with Wagon Clamp Ballast Weights
- Dust Shroud Short at Hopper End



Photo 10  
Incomplete Manufacture – Absence of  
Machining



Photo 11

Incorrect Lubrication Hose Fittings



Photo 12

Apron Feeder Chute Support Mis-Alignment



## Appendix G

### Schedule of Enabling Works

### **SALDANHA BAY TIPPLER 3 – INTERIM ENABLING WORK SCOPE PROPOSAL**

Following the Phase 1 site inspections, the works and activities listed below are required to prepare for, and reduce the duration of, Phase 2.

1. Site Establishment & General Transport - Breedts Asia
  - Consolidate equipment currently stored inside the Tippler building and selective equipment outside of the Tippler building to Breedts works. This excludes excluding Dust Extraction ducting and support structures.
  - Monthly storage cost for all items from December 2021 to July 2022 – 8 Months
  - Removal of Tippler Drives (2) and transport to Brevini SA.
  - Removal of Positioner Drives (8) and transport to Brevini SA.
  - Transport of Apron Feeder Drives (5) to Brevini SA.
  - Removal of Gripper Frames for relocation at Breedts Asia works and provision of replacement floor plate supports (support currently provided by the Gripper Frames which are not intended or design for supporting trucks or cranes).
  - Transport of Dust Extraction VFD, Air Inlets and 450 kW Drive Motor to Siemens in Elansfontein, SA.
  - Consolidate all remaining equipment that is not to be stored at Breedts Asia into an outside laydown and storage area.
2. Removal of Dust Cowl including match marking, store in designated laydown area outside Tippler Building - Breedts Asia.
3. Hardcore access to Tippler Building at North and South ends to allow mobile crane and transport truck entry - Breedts Asia.
4. Full consolidation and cataloguing of all equipment including location/re-location ready for sequenced of use immediately at commencement of Phase 2. Identification of all necessary parts for replacement/manufacture for Phase 2. To include one month's services of:
  - One (1) Mechanical Engineer
  - One (1) Electrical Engineer
  - One (1) QS/Administrator
5. Detailed review of all quality data packs provided to AB by Transnet during course of Phase 1 Scoping exercise. This exercise is very important to understand whether all production objectives were achieved by TZME and other manufacturers and what additional inspections such as weld testing may be required. To include one month's the services of:
  - Scanning Documents and Administration where only hard copies have been provided to Transnet by Takraf
  - QA Engineer
  - Welding Engineer (part time)

6. Inspection of Dust Extraction Variable Speed Drive, Air Inlets and Drive Motor at Siemens facility in Elansfontein, SA by Siemens engineer from Germany.
7. Hopper Liner Type and Fitting Method Selection and Final Agreement with SA Supplier - Quality Engineering Ltd.
8. Buss Bar manufacturer site inspection visit to agree location and design.
9. Dismantling, internal inspection and determination of the condition of the mechanical Drives by Brevini ready for direct inspection by AB and Transnet. Important for identifying any necessary replacement long lead items and potential agreement by Brevini on extended product warranties. Service covers:
  - 2 x Tippler Drives
  - 8 x Positioner Drives
  - 5 x Apron Feeder Drives
10. Dismantling, internal inspection and determination of the condition of the large Electric Motors ready for direct inspection by AB and Transnet. Important for identifying any necessary replacement long lead items and potential agreement by Siemens on extended product warranties. Service covers:
  - 2 x Tippler Motors
  - 8 x Positioner Motors
  - 5 x Apron Feeder Motors
11. Dismantling, internal inspection and refurbishment with new seals as necessary of all hydraulic actuators including:
  - 1 x Positioner Main Arm Actuator
  - 1 x Main Arm Latch Actuator
  - 1 x Coupler Release Actuator
  - 1 x Last Wagon Arm Latch Actuator
  - 1 x Last Wagon Arm Rotary Actuator
  - 16 x Wheel Gripper Actuators

Note – Knife Gate actuators have been excluded at this stage until a solution on their suitability is reached.
12. Fill all 5 HPUs with fresh hydraulic oil and using the HPU test rig, power up all 5 HPUs and repeat Factory Acceptance Test procedure. Protect for further 6 months potential storage. Important for identifying any necessary replacement long lead items and potential agreement by Advances Actuators on extended product warranties. Service covers:
  - 1 x Positioner Hydraulic Power Unit
  - 4 x Wheel Gripper Hydraulic Power Units
13. Evaluate existing Knife Gate design and suitability with the consideration of alternative designs (Spile Bars etc).

#### 14. Control System Engineering

Undertake:

- Review of plant control requirements with Transnet Engineering, TFR and other interested parties to finalise control system requirements and complete final software program.
- Re-visit train hauling force calculations and Positioner drive calculations to include for Brake Wagon operations and effects on empty rake of wagons.

#### 15. Project Management & General Engineering

- Mechanical Engineer for Construction / Installation Pricing
- Electrical Engineer for Construction / Installation Pricing
- Overall Project Management of activities listed in Items 1 to 15.

#### 16 Removal of Tippler Cage for Re-Alignment