

## CONSTRUCTION OF C102 ESCAPE TUNNEL SCOPE OF WORKS PRESENTED TO BID SPECIFICATION COMMITTEE

**BID SPECIFICATION COMMITTEE  
(BSC)**

**5 March 2024 11:00 to 13:00**

**BSC Comments:**

**Comment captured/ pending**

- On TEV- specify number of projects executed instead of years experience.
- Review the Battery Limit responsibilities.
- After Legal appointment, specify LACA verification.

SOW compiled and comments  
rectified by

Projects Engineer

*Theodora Neme*

Date *15/03/2024*

*[Signature]*

SOW Final Approval by

BSC Chairperson

Date

22 March 2024

## SCOPE OF WORK

**Tender No.:**  
**Description:** C102 Escape tunnel

### 1. PRE-QUALIFICATION

No	Pre-Qualification Requirements	Comments
1	Site Briefing attendance	The Tenderer must have filled in the site briefing attendance register
2	CIDB Grading of 4CE, or 3CEPE or above	Provide certificate of CIDB Grading

### 2. INVITATION TO TENDER

This document prescribes the requirements for Construction works of C102 Escape tunnel that is inclusive of the Supply, manufacturing, corrosion protection and installation.

### 3. DEFINITIONS AND ABBREVIATIONS

BOQ	–	Bill of Quantities	MHSA	–	Mine Health and Safety Act
BRA	–	Baseline Risk Assessment	NDT	–	Non-destructive Test
COC	–	Certificate of Compliance	OH&S	–	Occupational Health and Safety
COP	–	Code of Practice	OHC	–	Over-Head Crane
CTD	–	Critical task Descriptions	PEE	–	Portable Electrical Equipment
DAP	–	Diammonium Phosphate	PPE	–	Personal Protective Equipment
DB	–	Distribution Boards	QA	–	Quality Assurance
DWA	–	Department of water affairs	QC	–	Quality Control
DWG	–	Drawing	QCP	–	Quality control Plan
ECO	–	Engineering Change Order	QMS	–	Quality Management System
HDG	–	Hot-Dip galvanizing	RFI	–	Request for Inspection
HIRA	–	Hazard Identification and Risk Assessment	ROPS	–	Rollover Protection System
IFC	–	Issued for Construction	SANS	–	South African National Standards
ISO	–	International Organization of Standardization	SHE	–	Safety, Health, Environment
LDV	–	Light Delivery Vehicle	SHERQ	–	Safety Health Environment Risk & Quality
MAP	–	Monoammonium phosphate	TMMS	–	Trackless Mobile Machines
MCOP	–	Mandator Code of Practice	WBS	–	Work-breakdown structure

#### **4. COMPANY BACKGROUND**

*Foskor is one of the world's largest producers of phosphate rock (concentrate) and phosphoric acid. It is one of the world's few vertically integrated producers of phosphoric acid and is the second largest supplier to India, the world's largest consumer of phosphoric acid.*

*Company owns and mines phosphate resources and beneficiates the mined material to produce a phosphate concentrate at Phalaborwa, in the Limpopo Province of South Africa. The phosphate concentrate is sold locally and also transported to the Richards Bay plant on the coast of Kwa-Zulu Natal to produce phosphoric acid, sulphuric acid and granular fertilisers MAP and DAP from phosphoric acid and is the leading supplier of fertilisers to South Africa. In all about 95% of the phosphoric acid is exported and the granular sales are divided between exports and local markets. Since 1951 Foskor has supplied more than 95% of South Africa's fertiliser requirements.*

#### **5. SCOPE OF WORK**

##### **5.1 BACKGROUND**

According to mine health and safety act 29 of 1996 and regulations, section 5. employer to maintain healthy and safe mine environment (1) as far as reasonably practicable, every employer must provide and maintain a working environment that is safe and without risk to the health of employees. Therefore, every conveyor tunnel must be equipped with a escape tunnel to eliminate risks to employees health and safety.

The existing conveyor tunnel does not have an escape route at the end of the structure. This poses a health and safety risk; the scope of works is to construct an escape route towards the end of the existing conveyor 102 structure.

C102 Escape tunnel has been design by Knight Piesold. The drawings produced from the design are included as part of the scope of work package. It is recommended that all suppliers or bidders go through the Knight Piesold drawings for reference before sending their bids.

##### **5.2 BASIC REQUIREMENTS**

This work entails the task to supply all resources required and construct conveyor 102 escape tunnel.

- All resources refer to personnel (management, skilled labour and general workers required to execute the works); material including TMMS, equipment, tools and cranes.
- Obtain a work permit.
- Have legal appointments in place.

All that the contractor deems necessary to complete the works successfully and not limited to the list supplied herein.

##### **5.3 SCOPE ACTIVITIES**

###### **PHASE 1: Pre-shutdown**

###### **PHASE 1.1: PRE-AWARD**

###### **SITE PREPARATION REQUIREMENTS PRIOR TO SHUTDOWN PERIOD:**

- The contractor is to clear the stockpile prior to shutdown to natural ground level.  
(The exercise may take from 3 to 5 days with a designated dozer, FEL and tipper truck)
- Lay-down area to be identified by FOSKOR and approved by relevant stakeholders.

###### **PHASE 1.2: FROM AWARD TO SHUTDOWN**

###### **SITE ACCESS AND PREPARATION REQUIREMENTS PRIOR TO SHUTDOWN PERIOD:**

- Contractor to complete all safety; medicals; site access and work requirements/ permits.
- All materials to be ordered and stored on site prior to the designated operational shutdown period (payment for materials as per FOSKOR standard procedures).

- Reinforcement to be procured.
- Concrete Mix Design to be submitted on D2 FORM to Engineer for approval.  
Note: 30/20MPa concrete to contain minimum 30% fly ash.
- Contractor to supply the required construction vehicles. The vehicles are to be available when required.
- PRECAST UNITS:
  - 25 culvert box units to be constructed on site at FOSKOR. Curing period completed 10 days prior to the designated shutdown period.
  - Concrete to have a minimum of 20MPa strength before being craned into position during PHASE 2.
  - D2 FORM to be issued to engineer.
  - Contractor to note special inclined formwork required for base.

**\*AREA TO BE DEMARCATED AND ALL SAFETY FILES TO BE APPROVED PRIOR TO START.**

## **PHASE 2: SHUTDOWN PERIOD**

### **PHASE 2: DAILY REQUIREMENTS DURING THE SHUTDOWN PERIOD:**

- All excavations to be completed, levels, openings and skews surveyed to confirm against drawings with engineer.
- Contractor shall ensure when excavating that minimum batter of 1:1.5 slope is maintained for safety.
- If material requires greater batter, then safety requirement dictates.
- Excavation to be completed in layers, to desired level.
- Note: samples to be taken to lab for testing.
- Only when lab results are received, foundation fill below culverts may be constructed (see design note 4.1) and screed (15/20) placed.
- If poor foundation fill material is encountered, engineer to provide input (hold point).
- Existing 300mm foundation level to be ripped and recompact as specified on drawing.
- 75mm blinding layer to be cast.
- Precast culvert box units to be craned into position (minimum 20 tonne crane required). contractor to supply lifting methodology to engineer for approval prior to crane lifting.
- All joints to be sealed as detailed, and steel plates to be installed as detailed.
- Backfill as required to exit structure.

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## **PHASE 3: POST SHUTDOWN**

### **PHASE 3: REQUIREMENTS AFTER THE SHUTDOWN PERIOD:**

- Cast staircase within culvert.
- Exit chamber blinding cast.
- Exit chamber reinforcement for base placed and concrete cast.
- Exit chamber reinforcement for walls placed and concrete cast.
- Demolishing of internal wall of existing tunnel may only commence once backfill and exit chamber structure is complete.

- Surveyor to ensure accuracy of demolition.
- Mass concrete stairs cast within exit chamber. Exit chamber brickwork to be constructed. PFC channels mounted, IBR sheeting mounted and handrails for staircase installed.
- Steel frame and Louvre steel door to be installed.
- Lighting system installed and surrounding guardrails to be installed and miscellaneous items to be completed.
- Close out and inspection for defects
- Site clearance
- All levels and survey information supplied to engineer for as built records.

## 5.4 PROJECT URGENCY

Project urgency is defined below:

This is a Project that impacts production and safety of Foskor personnel. Major works will be conducted on a 24-hour basis during shutdown. The main works under the stockpile to be performed during shutdown. Construction of the house may take place after shutdown. Material supply to take place before shutdown.

## 5.5 ACCESS / WORK TIMES

### Phase 1: From Award to Shutdown

The Contractor will be granted an area for laydown and office space.

To be noted; Normal office hours is 07:00 to 16:00.

The Contractor will perform all works as per phase 1 deliverables within this document.

### Phase 2: Main Shutdown 14 days in August 2024; the exact dates will be confirmed.

The contractor will be granted full access to the site. The contractor to bring teams that will cover 24-hour construction work. All the works as stipulated in phase 2 will be completed during the 14 days.

Phases 1 and 2 work must be complete by the end of this main shutdown period. Failure to do so will render the contractor liable to penalties.

### Phase 3: Post Shutdown to Contract Completion.

The contractor will perform works as per phase 3 deliverables. The Contractor will be granted access to the site for outstanding works (Not shut down works)

To be noted; Normal office hours is 07:00 to 16:00.

Contract completion to be one calendar month after shut down

Proper communication to be managed by contractor and reported daily to the Foskor Engineer/supervisor

## 5.6 EXTENT OF WORK OR SERVICE REQUIRED

### 5.6.1 General Scope Considerations:

Please allow for a competent Quality Control Officer to compile and manage the contractor's quality management. In the event of quality system failures, Foskor will request the Quality Official's experience and qualifications and if this is not acceptable, it will be expected that the contractor obtain this service at its own cost.

Please allow for a competent person to compile the method statement and the subsequent Microsoft Project plan. This person will manage and update this plan on a weekly basis and present to the Foskor Project Engineer. It is expected that this planning and management is executed by the contractor. The contractor to allow for this service in the BOQ/cost schedule. In the event that the contractor cannot execute this planning and reporting to management, it will be expected that the contractor obtain this service at his/her cost

Scaffolding needs to be arranged by the contractor. It is expected that arrangements will be communicated to Phalaborwa Scaffolding at least 3 days before requirement. Proof of request and arrangements and actual scaffolding installation for Scaffolding to be provided to FOSKOR on request.

#### **5.6.2 Project costing and expenses**

The contractor shall supply all engineering services, materials, labour, transport, supervision, and consumable materials, equipment, tools and every item of expense in order for the scope of work to be completed successfully unless otherwise stated taking the following into consideration:

#### **5.6.3 Disposal of refuse**

The Contractor shall be responsible for disposal of refuse and waste generated by his staff daily. The site is to be kept clean, neat and tidy, by complying to FOSKOR Waste Management COP

#### **5.6.4 General requirements for commissioning**

Commissioning or handover will be executed as per FOSKOR Procedures or as directed by the Engineer. Normally the FOSKOR Punch list and Hand over certificate will be used.

#### **5.6.5 Scope Specific statutory and legislative requirements Legislative requirements**

The successful service provider shall ensure that all work is carried out in accordance with the following specifications and requirements.

The successful or appointed service provider shall comply with:

- i. COLTO (1998).

#### **5.6.6 The successful or appointed service provider shall comply with the latest revisions of the following FOSKOR CTD's (Critical task Descriptions) (CTD's are available on request):**

#### **5.6.7 Sub-Contracting and joint ventures**

The primary aspect of the works may not be subcontracted. For subcontracting the relevant companies supporting documentation needs to support the bidders tender.

Joint Ventures must be declared in the bidder's tender with all relevant supporting documentation.

#### **5.6.8 Project Site Management - focus areas**

This focus areas will be done by the FOSKOR project team in conjunction with relevant FOSKOR COP,s and procedures. Any non-conformance will be treated as a serious matter and tasks will be stopped until corrective action has been implemented.

Please ensure the aspect below are considered when costing, planning and executing a project on FOSKOR site.

1. HIRA
  - HIRA to be done
  - All Persons authorised in HIRA.
  - HIRA Relevant and Mitigation actions clear and documented
  - HIRA available at workers on site
  - All workers participated in HIRA
2. TMMS
  - TMM inspection done in available TMM
  - Driver authorised for the specific TMM

- TMM clean (No scraps/dirt on the back of the LDV)
  - ROPS for Mining and tailings areas – See COP 59
3. COMMUNICATION
    - Proper communication on site regarding activities
    - Who is in charge of what activities – Documented and discussed
    - Who coordinate when required (Rigging, different teams, Top vs Bottom, interlinking tasks, etc) Documented and discussed
    - Who do what (Ensure persons are competent for specific task) Does the team know what they are responsible for and what they must achieve
    - Safe work procedures, task steps are communicated and all is informed
  4. BARRICADING - in conjunction with Housekeeping
    - Are relevant places barricaded
    - Storage areas barricaded and indicated
    - Waste or scrap area barricaded and indicated
    - Unsafe places barricaded
    - Use fixed barricading when dealing with heights or other identified high risks
    - Use scaffolding barricading on last resort
  5. TOOLS
    - All tools inspected and on register
    - Not inspected tools and defect tools to be treated as a very serious matter as this indicates the 2.9.2 competence and corrective measure will be taken
    - Correct tools for the task
    - Rigging equipment inspected and correctly marked

Confined space - Must have a meter that is calibrated – Certificate to be available

6. PPE
  - All persons to wear correct PPE for the task
7. HOUSEKEEPING - in conjunction with Barricading
  - Keep the site clean.
  - Every day or shift must have at least a dedicated cleaning time of 30min. All to participate
8. SUPERVISION ( 2.9.2 appointment and 2.6.1 appointment)
  - Keep the site clean.
  - Make sure hazards are continuously identifies and proper steps taken to correct or mitigate
  - Ensure tools and equipment are maintained, inspected and operated by competent and authorised workers
  - Ensure correct PPE is used by workers and in a good condition
  - Coordinate activities on site.
  - Understand the risks of the site or tasks
  - Understand the method statement
  - Understand the risk of the site
  - Understand the project schedule and milestone dates
  - Know what was tendered for in the BOQ. BOQ forms basis of method statement and risk mitigation
  - For shutdown tasks or where shift will be working a full time 2.9.2 appointee will be on site. The 2.6.1 appointee shall visit all shifts to support the 2.9.2 appointee, Site attendance shall be verified via clocking times. 2.9.2 appointee shall not be shared with any other work – ONLY 8 HOUR SHIFTS IF THE PLAN IS MORE THAN 2 DAYS

**NOTE** See duties of the supervisor/2.9.2 in the MHSA. If the supervisor/2.9.2 is a worker (Handling Tools or working with tools) then additional supervision /2.9.2 appointee needs to be provided. If he is working, he cannot be responsible for the site and ensure worker safety and a safe environment. Supervisors will not be allowed to do tool work.

## 9. PROGRESS REPORT

A Progress report needs to be submitted monthly to the respective project engineer or project leader. This will form the basis for Invoice certificates and Invoice approvals in conjunction with the relevant Bill of Quantities. No invoice shall be approved without the BOQ and Month report.

### PROGRESS REPORT INDEX

1. SHREQ
  - Safety issues, Environmental, Incidents, etc
  - Legal Appointees
  - Work Permit Expiry date.
  - Letter of Good standing Expiry date
2. Compliment
  - Trades, Qty, Hours, etc
  - Equipment on site
3. Progress
  - Planned versus actual.
  - Activities completed or milestones.
4. Activities
  - Task completed, milestones.
  - Technical issues
5. Quality
6. Drawings
  - Drawing issued
  - Drawing issues
7. Delays
8. Commercial / Financial & cashflow projection
9. General
10. Photos of site and progress

## 6 DELIVERY OF MATERIALS AND EQUIPMENT

It is the responsibility of the Contractor to take delivery, off-load, store and move into their permanent position all equipment and materials covered under this Scope. The Contractor shall, at his own expense, be responsible for the delivery to the Site of imported plant and equipment, materials and Contractor's plant and equipment in connection with the execution of the works, including but not limited to securing of permits and customs clearances, and payment of handling costs, storage costs, releasing costs, transportation costs, and duties, taxes, imposts, excise and charges of any kind that may be imposed by the South African Government, or any of its agencies and political subdivisions relating to the supply and delivery to the site of the imported plant and equipment, materials and Contractor's plant and equipment.

TAKE NOTE - Foskor pays for material delivered to Foskor site only!



NB: The contractor/ consultant must clearly state in his tender submission if there is an exclusion on the Foskor scope (As per the site meeting procurement scope and site meeting minutes) Failure to state the exclusion will mean that the full Foskor scope is still applicable.

Lay down areas are to be confirmed upon contract award.

## **7 BATTERY LIMITS – INCLUSIONS AND EXCLUSIONS**

List the boundaries in terms of equipment (Foskor plant specific). Up to where is it Foskor's responsibility and where/what is the contractor's responsibility.



## TABLE OF INCLUSIONS AND EXCLUSIONS

List the boundaries in terms of equipment (Foskor plant specific). Up to where is it Foskor's responsibility and where/what is the contractor's responsibility.

WHO WILL SUPPLY THE FOLLOWING?													
FF = FOSKOR, FREE OF CHARGE		FC = FOSKOR, AT COST TO CONTRACTOR				C = CONTRACTOR				N/A = NOT APPLICABLE			
1. Sanitary		2. Transport		3. Quality		4. Security		5. Lifting and Rigging		6. Medicals		7. Communication devices	
1.1 Water on site and portable toilet facilities / janitorial services	FF	2.1 Labour	C	3.1 Plan, Management, QA, QC	C	4.1 Site Security at laydown area	C	5.1 All rigging equipment (Slings, Chain blocks, turfers, etc	C	8.1 Entry and Exit	C	7.1 All communication devices like laptops, computers, networks, radios, cellphones, etc.	C
1.2 Potable connection point	FF	2.2 Materials	C	3.2 All quality test Civil, Paint, Mechanical, etc	C	4.2 Foskor ID Card	C	5.2 Rigger	C	8.2 First aid box at place of work	C		
1.3 Connection to construction water supply	C	2.3 Equipment	C	3.3 Sampling and laboratory testing	C			5.3 Mobile cranes	C				
1.4 Change rooms	FF	2.4 All TMMS	C										
8. PPE		9. Surveying		10. Safety File		11. Training & Authorizations		12. Site Establishment		13. Waste management		14. Painting	
8.1 Supply, Issue, inspect and manage	C	9.1 Site Surveys	C	10.1 Foskor will issue template	FF	11.1 All Required Training	C	13.1 Site office/s with suitable facilities for daily "Green Area" meetings, and lunch area	C	13.1 Transport all on site waste to Foskor designated waste sites	C	14.1 All Equipment and tools paint, labour, etc	C
				10.2 Ensure file conform/ populate to Foskor standards	C	11.2 Authorisation - As per Foskor COP	FF	13.2 Site establishment space	FF				
15. Fuel		16. Mechanical		17. Labour		18. Compressed air		19. Scaffolding		20. Tools & Equipment		21. Training	
15.1 Fuel Supply	C			17.1 All labour as per Scope of Work to execute task including management	C	18.1 Sandblasting or flash blast		19.1 Scaffolding Supply & Erect	FF	20.1 All Portable Electrical Equipment	C	21.1 All required training and training manuals as required to ensure that Foskor can train its workforce and operate the plant / equipment safely	C
15.2 Fuel storage	C					18.2 Compressor	C	19.2 Scaffolds be managed by the Contractor	C	20.2 Hot Work Equip as per Foskor COP - Welding Machines, Gas Cutting, Grinding, Gauging, etc	C		
15.3 Fuel fire protection	C					18.3 Air for power tools - If available	FF	19.3 Cherry Picker's –available by pre-booking	FF	20.3 Tools as required to execute task	C	21.2 All manuals and related documents to be supplied to project Eng. and Foskor Drawing office for safe keeping	C
15.4 Refuelling	C							19.4 Cherry Picker's Driver– Trained and authorized driver	C				
22. Certificates		23. Consumables		24. Storage and inventory control		25. Electrical							
22.1 Supply All certificates as required	C	23.1 Welding rods	C	24.1 Protective coverings/ tarpaulins	C	25.1 Generators	C	25.4 Temporary lighting	C	25.7 Electric panel + distributing wiring	C		
		23.2 Bolts & Nuts, etc.	C	24.2 Storage area and inventory control	C	25.2 Electrical Extensions	C	25.5 Power for tools on site from existing Foskor electrical supply point (Welding plugs and 220 v plugs	FF	25.5 Electrical connection point	FF		
						25.3 COC Site Establishment	C	25.6 Connection to Electrical supply	C	25.9 Electrical and Instrumentation Installation	C		



## NOTE

Foskor has made provision for the supply scaffolding free of charge the size and nature of the works. It is expected that arrangements will be communicated to the appointed Scaffolding contractor at least 3 days before requirement. Proof of request and arrangements and actual scaffolding installation for Scaffolding to be provided to Foskor on request. It should be noted that FOSKOR has an existing appointed and accredited scaffolding supplier.

## 8 AS BUILT DRAWINGS

All red lined drawings to be issued to Foskor Engineer.

Changes to the drawing must have an Engineer approval and approval date prior to proceeding with the work.

## 9 QUALITY

- i. The service provider must provide the necessary quality management systems and plans to ensure that the quality of his work complies with the requirements of this scope of work.
- ii. The service provider shall during all phases of construction comply with the Foskor approved Quality Assurance Plan
- iii. The service provider shall be responsible for all the resources required for executing the Quality Management System including but not limited to, developing the Quality Assurance Plan & performing the Quality Control measures to ensure that the deliverables comply to the specifications & standards mentioned in the scope of work.
- iv. Any change requests / additional work resulting due to inadequate quality management system will be to the account of the service provider.
- v. Foskor might appoint a third party for Quality Control Inspections
- vi. The Service provider will have to provide an approved quality system for all work executed.
- vii. This will include the following but is not limited to:
  - a. Quality plan
  - b. Quality compliance – Performance and reports
  - c. Quantity surveying
  - d. Quality Assurance
  - e. Quality Authorization matrix – part of Quality plan
  - f. Quality control
  - g. Quality administration. – All documents, checks, measurements, reports, variances, analysis, Corrective actions, etc. needs to be properly filed and available on request at any time. The file will require an index.
  - h. Includes all test work, laboratories, Filing, etc.
  - i. Survey and survey verifications.
  - j. Construction versus design - Any Deviations from the approved "Construction Drawings"
  - k. Quality communication – What needs to be reported to whom and at what frequency.
- viii. Foskor envisage a complete quality System driven by the Service provider and this system / plan will be approved by Foskor and the appointed designer (if applicable) before construction/fabrication will be started.
- ix. Compliance to this plan will be measured and failure to adhere to the quality plan will result in the stopping of construction activities until concerns have been addressed. The cost for this delay will be for the service provider's account.

- x. FOSKOR may appoint a third party to measure and control FOSKOR's interest in the terms of quality in this contract and the service provider is expected to work in conjunction with this company.
- xi. Hold points will be discussed and finalized with the successful service provider based on the approved Quality plan.

The Quality plan will only be compiled and signed off after the Method Statement and WBS\* have been compiled.

Quality on Shutdown type tasks will be included in the Scope of Works, but the service provider will have to submit proof of an experienced quality assurer or relevant qualifications. IF the service provider does not have this it will be required that this service be hired in by the service provider at his cost.

- i. State any specific hold points that is not negotiable here.
- ii. State any other quality that is applicable that is not in the "Parameters" section.

Method statement – the service provider must list all steps and actions required to complete the work as per the scope of work – typically includes the items listed below:

- i. Key step and stages of the work required.
- ii. Tools, Equipment, TMMS, etc
- iii. Labour requirements, etc
- iv. Spares, resources,
- v. Safety requirements

**\*WBS** is a hierarchical and incremental decomposition of the project into phases, deliverables and work packages. It is a tree structure, which shows a subdivision of effort required to achieve an objective, for example a program, project, and contract.

This includes arrangements, tools, equipment labour, Tasks, Purchase, Quality, Communication, etc.

## **10 PROJECT DELIVERABLES**

### **10.1 THE DELIVERABLES FOR THIS PROJECT INCLUDE:**

- C102 to be fully constructed and safe for personnel use.
- Day light housing
- Staircase

### **10.2 DATA BOOKS**

During the official handover of the escape route, the service provider shall submit a detailed DATA BOOK that shall contain the following documents and information:

- a) Precast manufacturer details and quality assurance certificates.
- b) Certificates and documents indicating welding procedures and standards used, material grade certificates and the qualifications of welders and workmen used in the staircase fabrication process.
- c) Comprehensive NDT (Non-Destructive Testing) report, including name and registration number of inspector indicating that all welds, joints and high stress points have been examined and are free from defects and cracks.
- d) All certificates, documents and records to be cross referenced for purposes of traceability.

**NB! ALL CERTIFICATES AND DOCUMENTS MUST BE CROSS-REFERENCED**

### **10.3 MANUALS AND DOCUMENTATION**

The following must be supplied:

- a) Three "safety manuals" containing detailed and step-by-step task descriptions for general maintenance, major

component replacements and abnormal operating conditions. Task descriptions to show identified hazards and what corrective actions must be taken. (Risk assessment and safety precautions)

#### 10.4 FORMAT OF DOCUMENTS AND MANUALS

Note! - All Manuals must be in English

#### 10.5 TRANSMITTAL OF DOCUMENTS AND MANUALS

Documents and Manuals to be submitted in the flowing formats:

Type of Document	Hard Copy	Electronic Format
Manuals	X	X
Drawings	X	X
Reports	X	X
Data Books	X	X

Hard Copy: Book or binding arch file format and must be durable and of high quality.

Soft Copy: Manuals, Reports and Data Books – Word, Excel, PDF, etc.

Drawings – AutoCAD redlined drawings.

Storage – Memory stick

Language: English

### 11 ON-SITE SUPERVISION REQUIREMENT

- A Foskor work permit before commencement of site work.
- A full time 2.9.2 appointed supervisor will be on this site for the entire duration of site work.
- A 2.6.1 appointed site manager for overall site management
- Appointed SHE Rep for the entire duration of site work.

### 12 TENDER DELIVERABLES

The deliverables will include: -

- Complete Foskor pricing schedule (BOQ)
- Preliminary Project Schedule
- Preliminary method statement to execute the site work.
- CIDB grading certificate.
- Reference list of projects executed, contact detail and purchase order.
- Asset equipment list required for Civil project (see technical evaluation criteria-)
- Tax Clearance
- Letter of Good standing (Workman compensation)
- BEE Certificate
- Commercial documents requested by Procurement.

- **Take note of the tender evaluation documents that needs to be submitted.**
- **Disregard of technical evaluation will be based on:**
  - Not attending the compulsory site briefing meeting
  - Not submitting a CIDB grading certificate

### 13 **SAFETY**

Service provider to refer to the full and updated FOSKOR COP's available:

- i. The service provider and subservice providers need to comply with the Mine Health and Safety act at all times. All FOSKOR COP's Policies and procedures needs to be adhered to.
- ii. Medical, Induction, FOSKOR ID Card, etc. is approximately R800 per Person. Exit medicals need to be done at termination of contract.
- iii. The Successful tenderer will be required to compile a FOSKOR Work permit and at least 2 weeks should be allocated for this.
- iv. The service provider must provide the following appointed persons in terms of the MHSA: 2.6.1; 2.9.2 and Section 29(1) – SHE REP for the duration of the contract. A service provider **2.9.2 to be permanently on site.**
- v. All vehicles and cranes and other TMM's to be inspected before entering FOSKOR Premises.
- vi. All person competencies to be verified before being allowed to work on FOSKOR premises for a specific task.
- vii. The service provider must compile a Safety File as per FOSKOR standard for all service providers and sub-service providers.
- viii. Site access will need to be controlled and all persons must receive site specific induction before entering the site.
- ix. Conduct inspections as per FOSKOR Safety System. Analyse data and trends and recommend preventative measures where required.
- x. Ensure all authorizations are in place as per the FOSKOR Safety System. Arrangement with FOSKOR training to be done by the service provider to ensure that authorization and training is conducted. Arrange timeously.
- xi. Ensure all workers competencies are available and have been validated.
- xii. Ensure proper security, sign boards, fencing and barricading is in place on site where applicable.
- xiii. The service provider shall in general comply with the FOSKOR General Engineering Specifications, COP's, latest revisions and all relevant regulations.
- xiv. The service provider must complete a Baseline Risk Assessment (COP 01) before a work permit can be issued for the installation.
- xv. All service providers not in possession of a valid FOSKOR ID card have to complete the FOSKOR induction course and have to undergo a medical examination at the FOSKOR clinic for the service provider's account.
- xvi. The service provider shall be responsible for coordinating and integrating his schedule and responsibilities with other FOSKOR appointed contract manager on site for this Scope of Work.
- xvii. All personnel operating mobile equipment including LDV's must have a FOSKOR driver's permit.
- xviii. An open Pit Licence is required for driving in the mining areas.
- xix. All the required PPE and Safety Equipment are for the service provider's account.
- xx. All service providers must ensure that:



- a. His workers are issued with the correct personal protective equipment free of charge.
- b. That the workers wear the PPE in accordance with the project area's requirements or as given by the service provider Supervisor.
- c. Training is provided in the correct use of PPE to workers.
- d. Daily inspections are done on PPE.
- e. The registers will be complete at least monthly on findings on PPE. (All PPE must be kept in good condition)
- xxi. All providers of services need be informed of the following minimum training is applicable to all service providers (irrespective of the tasks or scope of work) that will enter Foskop Phalaborwa site with effect from 1 April 2014. This training is not presented by Foskop Training section and service providers must ensure that the training is sourced through accredited external training companies:
  - a. Basic health and safety principles
  - b. HIRA
  - c. First Aid Training
- xxii. All other training requirements must be aligned with the baseline risk assessment. Risks identified in the baseline risk assessment will guide the requirements for training. A summary of the training must be completed as well as status on required authorization as per Foskop COP's.
- xxiii. Training certificate must be from recognised or registered training providers accredited by SETA.

## **14 LEGISLATIVE REQUIREMENTS – SUMMARY**

### **14.1 MINIMUM LEGISLATIVE REQUIREMENTS:**

The successful or appointed service provider shall comply with:

- i. The Mines Health and Safety Act with Regulations (Latest revision)
- ii. The National Road Traffic Act with Regulations (Latest revision)
- iii. All applicable national and international legislative requirements and regulations.
- iv. Foskop (Pty) Ltd. COP (Code of Practise) No. 25 for Service provider Control (Available on request)
- v. Foskop (Pty) Ltd. COP (Code of Practise) No. 59 for Trackless Mobile Machinery (Available on request)
- vi. All Foskop (Pty) Ltd. safety, health, quality and environmental procedures applicable to the successful application of the contract. (Available on request)
- vii. All Foskop procedures and policies applicable to the successful application of the contract. (Available on request)

### **14.2 SUMMARISED REQUIREMENTS/EXTRACTS FROM FOSKOR COP'S**

#### **14.2.1 BEFORE ENTERING AND OPERATING A SERVICE VEHICLE (OWN VEHICLE) ON THE FOSKOR SITE, THE APPOINTED SERVICE PROVIDER SHALL:**

- i. Ensure that his driver/s are in possession of a valid national driver's licence for the specific class of vehicle, has been tested by the Foskop mobile equipment training centre and authorised by a Foskop MHSA (Mines Health and Safety Act) regulation 2.13.1 appointee for the class of vehicle to be used on site.  
(Contact the Foskop mobile equipment training centre on 015 789 2840 to make an appointment for competence testing and authorisations)
- ii. The appointed service provider shall, before entering and operating a vehicle or trailer on the Foskop premises:
  - a. Obtain permission from the Foskop Safety & Security manager to operate his nominated service vehicle/s or trailers on the Foskop site. (Forms will be provided)

- b. Obtain a certificate of fitness from the Foskop Light Vehicle maintenance workshop supervisor or appointed Foskop inspector for his nominated service vehicle/s. Inspections conducted daily between 08:00 and 08:30 and between 13:30 and 14:00 (Excl Fridays) at the Light Vehicle Maintenance workshop.
  - c. Submit the above permission and COF in at the main security office for issue of a vehicle access disk.
  - iii. Ensure that his service vehicles / trailers have been inspected (Daily) in accordance with the Foskop standard (COP 59) to ensure that they are safe and fit for use. (Forms will be provided)
- See Foskop COP 59, Trackless Mobile Machinery for details.

**14.2.2 Before entering and working on the Foskop site the appointed service provider shall ensure that his workmen are:**

- i. Briefed on the required task and have been informed of any abnormal conditions/situations.
- ii. Physically, emotionally and mentally fit to perform their duty.
- iii. Issued with the necessary PPE (Personal Protective Equipment) to safely operate his service vehicles and perform the duty of maintaining, servicing, inspecting and testing earthmoving- and mobile equipment.
- iv. Before commencement of work:
  - a. All tools and equipment shall have been inspected and tested to be in a good and safe working order.
  - b. All workmen have participated in the completion of a standard Foskop site risk assessment (Commonly known as a HIRA or Hazard Identification and Risk Assessment) and taken appropriate actions to mitigate any identified hazards.

14.2.3 Before entering and working on the Foskop site the appointed service provider shall ensure that his portable electrical equipment have been tested and declared safe to use by the Foskop electrical services workshop.

## 15 PERMIT TO WORK

Before any on-site work under this contract may commence, the appointed or successful service provider shall obtain from Foskop a PERMIT TO WORK. The following guidelines are provided in order to assist the appointed service provider in obtaining a PERMIT TO WORK. (See Foskop COP 28 Permit to work and COP 25 Control of Externally Provided Processes, Products and Services (Service provider Control) for details):

- i. The PERMIT TO WORK can be obtained from the Legal Administrator at Foskop Safety department, once all the signatures are obtained, it needs to be returned to the legal administrator.
- ii. Obtain a contract number from the Foskop procurement or projects department.
- iii. Appoint a subordinate manager in accordance with Regulation 2.6.1 and an on-site supervisor in accordance with Regulation 2.9.2 of the Mines Health and Safety Act.
  - The appointed subordinate manager and -supervisor shall be required to write and pass the Foskop 2.6.1 and 2.9.2 legal examinations within 30 days after being awarded this contract and pass the exams.
  - In order to prepare for the exams, they need to attend an hour-long legal exam briefing any Thursday between 08:00 and 09:00 at the Security training hall.
  - Write legal examination any Friday between 07:30 and 10:30 at the Security training hall. (Please book)
  - The Contactor legal appointees shall undergo further assessment by the legal appointment assessment committee (LACA)

COP 25 References to ISO 9001:2015 clause 7.2, (The company shall determine the necessary competency of persons doing work under its control. The legal appointment assessment committee (LACA) is a vehicle to assess legal appointees' candidates on the competency to be appointed as supervisors (regulations 2.9.2) and subordinate Manager (regulations 2.6.2) as it is defined by the Mines Health and safety Act. The scope of the committee will cover, but not limited to conduct theoretical assessment of the contractor legal appointment such as Reg: 2.9.2 and 2.6.1)

**The purpose of LACA committee is outlined as follow:**

- To conduct interviews with the contractor legal appointees' candidates as to assess competency,
- To recommend to sec3.1 (a) Managers whether to appoint or not to appoint the contractor's legal appointee candidate.
- To identify skills gap of the contractor legal appointee candidate.
- To recommend further training/coaching of the legal appointee candidate

- iv. Appoint an on-site SHE-Rep in accordance with section 29(1) of the MHSA to assist the Regulation 2.6.1 and 2.9.2 in the daily on-site management of health, safety and environmental issues.

The designated SHE Rep must have the ability to read, write and express him/herself.

The appointed SHE-Rep shall be required to attend a five day SHE-Rep training course within 30 days after being awarded this contract (Training free of charge). Make booking on 015 789 2531.

A pre-requisite for attending the SHE-Rep training course is successful completion of Basic Health & Safety Principals- and HIRA training.

See Foskop's COP 5 Health and Safety Representatives for details.

- v. Provide a name list, including ID numbers, residential and postal addresses and telephone numbers of all the appointed service providers on-site employees.
- vi. All the appointed service providers on-site employees shall undergo a full medical examination at the Foskop on-site Clinix Clinic. The clinic can be contacted at 015 789 2427 for an appointment. Please note:
- i. All NEW- and employees LEAVING the service of the appointed service provider must undergo a full entry or exit medical examination.
  - ii. Women who are pregnant or suspect that they may be pregnant must notify the examining medical practitioner.
- vii. The appointed service providers designated on-site drivers shall receive competence testing and authorisation to operate vehicles on the Foskop site.
- viii. All the appointed service providers' employees shall receive/have received training in:
- a. First aid level 1 (Provide own training)
  - b. Working at heights (Provide own training)
  - c. Basic Health & Safety Principals (Provide own training)
  - d. HIRA (Provide own training)
  - e. Basic firefighting. (Provide own- or receive Foskop training, contact 015 789 2531 to book)
  - f. Lock out. (Provide own- or receive Foskop training, contact 015 789 2531 to book)

All training not provided by Foskop must be verified by the Foskop training superintendent. The Engineer will supply contact details for confirmation of training certificate compliance before requesting his approval on the PERMIT TO WORK.

- ix. All the appointed service providers' on-site employees shall receive the basic Foskop site induction training at the Foskop Security office.

- x. All the appointed service providers' on-site employees shall receive site specific induction training provided by the Foscok area Regulation 2.6.1 appointee/s.
- xi. A BRA (Baseline Risk Assessment) shall be completed for ALL "typical" tasks that will be completed under this contract. The BRA to be approved by the responsible Foscok MSHA 2.13.1 appointee and signed by all of service providers employees. Make use of Foscok's own BRA document, Annexure 1.2, contained in COP 1, Risk and Opportunities Management (Available on request)
- xii. Attach a detailed SCOPE OF WORK describing the required task and -outcome of this contract.
- xiii. All Foscoks' appointed MSHA Regulation 2.9.2, 2.6.1, 2.13.1 and 3.1.a managers must undersign/approve the PERMIT TO WORK.
- xiv. Registration and proof of payment under the Compensation for Occupational Injuries and Diseases Act, no. 130 of 1993. Registration number must be provided.
- xv. SARS issued tax clearance certificate.
- xvi. All relevant documentation and/or evidence of compliance must be attached to the PERMIT TO WORK.
- xvii. Upon successful completion and approval of the PERMIT TO WORK the security department will issue the appointed service providers' employees with access ID cards.
- xviii. Any other documents, certificates or records as requested by a Foscok official deemed necessary to ensure that all safety, legislative and administrative requirements have been met must be attached to the PERMIT TO WORK.
- xix. The appointed service provider must allow at least three to ten working days to complete all the PERMIT TO WORK requirements.

## 16 SAFETY FILE

The appointed contractor must compile a SAFETY FILE specifically for this contract. The SAFETY FILE must always be available for inspection by a Foscok official: The following guidelines are provided to assist the appointed contractor in compiling a SAFETY FILE:

Before any work may commence, the appointed service provider must, IN CONJUNCTION WITH THE FOSKOR SAFETY DEPARTMENT, compile a SAFETY FILE specifically for THIS contract. (Contact the SHE receptionist, or attend the monthly service providers meeting every 2<sup>nd</sup> Monday of the month (3<sup>rd</sup> Monday if 1<sup>st</sup> or 2<sup>nd</sup> Monday a public holiday) at 13:30 in the Foscok Plant Training Hall)

The SAFETY FILE must at all times be available for inspection by a Foscok official.

### **Foscok Safety File Index**

### **SHE FILE INDEX / TABLE OF CONTENT - Typical**

<u>OHSAS / ISO clause / Description of item</u>	<u>File divider</u>
A. Clause 4.2: OH&S Policy SHEQ1; plus, other policies	A
B. Clause 4.3.3: Objectives and programs	B

COP88: Objectives, targets and management programmes  
 Clause 4.3.1: Hazard identification, risk assessment and determining controls.  
 COP1: Foskor risk management

C.	Clause 4.1.1: Resources, roles, responsibility, accountability and authority Clause 4.3.2: Legal and other requirements COP2: Legal, other requirements and appointments COP5: Health and safety representatives Organogram	C
D.	Clause 4.4.2: Competence, training and awareness COP9: First-aid training COP 15: SHREQ training COP 17: Mobile, technical and process training	D
E.	Clause 4.4.3: Communication, participation and consultation COP6: Committees and COP7: Communication Clause 4.4: Implementation and operation	E
F.	COP01: Critical task descriptions	F
G.	COP42: Lighting: natural and artificial COP43: Occupational health programme on thermal stress COP86: Exposure and Airborne Pollutant reports	G
H.	COP44: Toilets / Kitchen / Change room	H
I.	COP49: Waste management COP58: Hazardous chemical substances and control	I
J.	COP53: Lock out Procedure	J
K.	COP55: Ladders	K
L.	COP56: Lifting Equipment / Tackle; Scraper/Mono winches	L
M.	COP57: Gas cylinders and pneumatic tools	M

OHSAS / ISO clause / Description of item

File divider

N.	COP59: Vehicle inspection and licences	N
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O.	COP60: Portable electrical equipment: checks and registers	O
P.	COP61: Earth leakage Relays register	P
Q.	COP62: Electrical installations and machinery	Q
R.	COP63: Hand tools	R
S.	COP64: Ergonomics	S
T.	COP65: PPE; records of PPE issued	T
U.	Clause 4.4.7: Emergency preparedness and response COP69: Firefighting equipment COP72: Firefighting / emergency drill COP74: Emergency preparedness and response	U
V.	COP93: Conveyor belts	V
W.	COP94: Gas cutting equipment: Monthly checks & registers	W
X.	COP95: Confined spaces	X
Y.	COP96: Working on Heights COP97: Erection and Use of Scaffolding	Y
Z.	COP98: Water Safety	Z
AA.	COP99: MCOP Risk Based Fatigue Management COP100: MCOP Medical incapacity due to ill health COP102: MCOP Risk-Based medical Care on Mine Premises	AA
BB.	COP101: MCOP Right to Refuse Dangerous Work or Withdraw from dangerous Workplace	BB
CC.	COP103: Use of Mobile Devices on Mine Premises	CC
DD.	COP104: MCOP the Prevention of Fires at Mines	DD

- NOTE: 1) A Foskor representative may add or remove any other Foskor safety, health, quality and environmental policies and/or procedures deemed applicable.
- 2) If a COP is not applicable to this contract/project, please complete and attach the "Not applicable" form in the space of the COP

#### **TYPICAL CONTENTS OF SAFETY FILE:**

- i. Title and index cover page
- ii. A copy of the PERMIT TO WORK.
- iii. A copy of the MHSA Regulation 2.6.1 and -2.9.2 and SHE Rep appointment letters.
- iv. A copy of Foskor COP 25, Service provider control.
- v. A copy of LME (Lifting Machine Entity) registration certificate with the Department of Labour.
- vi. Copy of LMI (Lifting Machine Inspector) registration certificate with the Engineering Council of South Africa in the employ of the service provider.
- vii. Base line risk assessment of ALL and ANY POTENTIAL tasks that may be performed on site under this contract. See Foskor COP 26, Critical Task Descriptions for details.
- viii. Copies of critical task descriptions and standard operating/maintenance procedures.
- ix. Copies of the appointed service providers safety, health, environmental, HIV and AIDS, smoking and waste management policies.
- x. Training records of all on-site employees.
- xi. Employee records of actual time worked (Normal and overtime).
- xii. Copy of on-site induction training.
- xiii. Records of inspections of TMM (Trackless Mobile Machinery) and trailers. See Foskor COP 59, Trackless Mobile Machinery for details.
- xiv. Records of issues and inspections of PPE (Personal Protective Equipment) and safety equipment. See Foskor COP 65, Personal Protection Equipment for details.
- xv. Records of issues and inspections of PEE (Portable Electrical Equipment). See Foskor COP 60, Portable electrical Equipment for details.
- xvi. Records of issues and inspections of tools and equipment. See Foskor COP 63, hand tools for details.
- xvii. Records of daily, weekly and monthly 2.6.1 / SHE Rep safety inspections. See Foskor COP 22, SHE Inspections for details.
- xviii. Records of daily green-area and safety talks. See Foskor COP 7, Communication for details.
- xix. Any other documents, certificates or records as requested by a Foskor official deemed necessary to ensure that all safety, legislative and administrative requirements have been met.

**Note:** The bidder / Service provider can request an updated email with all Foskor COPs from Procurement department or Projects Department.



## COP 25 – CONTRACTORS LEGAL OBLIGATION AND MINIMUM REQUIREMENTS

*Contractor must comply to the requirements below within 4 weeks from awarding the contract unless otherwise agreed with 3.1 a and SHE Manager within 10 days from the awarding of such contract.*

	Visitors	Short Term Contractors (1-5 days)	Medium Term Contractors (1 days -1 month) – low risk	Long Term Contractors (>1 month) – low risk work	Medium or Term Contractors (1 days up to 12 month) – Risk work
Definition	Consultations, Sales persons, Foskor arranged and organised visitor groups, Family of injured employees	Deliveries, Consultation, Specialist, Auditors for less than 5 days and do not exceed 4 visits per year	Contractors working on the Mine premises for period more than 6 day but less than 1 month.	Duration of work is longer than 1 month	Duration of work is irrelevant (only focus on Risk exposure)
Special conditions	May perform no work on site	May perform no physical work on site that will involve tools, equipment or machinery.	<ul style="list-style-type: none"> <li>No work that relates to life saving behaviours e.g. Construction, Conveyors, Lifting, Electrical, Lock-out, Working at Heights, Hotwork.</li> <li>Specialist and consultants (experts) working in teams smaller than 5 for less than 1 month on site.</li> </ul>	No construction work or work that relates to life saving behaviours e.g. Conveyors, Lifting or Rigging, Electrical maintenance, Lock-out, Hot work, confined spaces, use of TMM's, Working at heights	This include all work relating to relates to life saving behaviours (risk work) and therefore must comply to relevant training and Authorisations as required in the Foskor COP's before work can start and permits signed.
Supervision	The organiser is responsible for the group. The visitors <u>must</u> be accompanied by a Foskor Regulation 2.9.2, Regulation 2.6.1 or legally appointed person.	Direct supervision of Foskor appointed Regulation 2.9.2. and Regulation 2.6.1	Direct supervision of Foskor appointed Regulation 2.9.2. and Regulation 2.6.1 appointed manager may be provided if contractor is unable to supply.	Must provide dedicated Regulation 2.9.2. with proof of competency and direct supervisor. Regulation 2.6.1 appointed manager may be provided if contractor is unable to supply.	Must provide <u>dedicated</u> Regulation 2.6.1. and Regulation 2.9.2. appointees with proof of competency. The Regulation 2.9.2 appointee must have technical competency and experience in line with scope and trained in the in all aspects as defined in Baseline risk.
Medical Surveillance	Only completed a declaration of fitness and health matters relevant to visit	Shortened medical surveillance Must declare Pregnancy and all chronic medical conditions at Mine Clinic	Full Medical Surveillance as per COP Must declare Pregnancy and all chronic medical conditions at Mine Clinic	Full Medical Surveillance as per COP Must declare Pregnancy and all chronic medical conditions at Mine Clinic	Full Medical Surveillance as per COP Must declare Pregnancy and all chronic medical conditions at Mine Clinic
Permit required	Day Permit is obtained at Security (Valid for 1 day)	Short term ID card at Security Return permit to Security when completed. (Permit each day)	Short term ID card at Security Permit to work at Foskor is required unless Specialists or Product experts. Return Permit to Security when work is complete	Permit to work at Foskor Permanent ID at security Return Permit to Security when work is complete	Permit to work at Foskor Permanent ID at security Return Permit to Security when work is complete



	Visitors	Short Term Contractors (1-5 days)	Medium Term Contractors (1 days -1 month) – low risk	Long Term Contractors (>1 month) – low risk work	Medium or Term Contractors (1 days up to 12 month) – Risk work
Induction	SHEQ Induction pamphlet only	Attend full FOSKOR Induction Site Specific Induction SHE Induction Pamphlet	Attend full FOSKOR Induction Site Specific Induction SHE Induction Pamphlet	Attend full FOSKOR Induction Site Specific Induction SHE Induction Pamphlet	Attend full FOSKOR Induction Site Specific Induction SHE Induction Pamphlet
Minimum training	None	None	1. First Aid Training 2. HIRA 3. Understanding Basic Health and Safety Principles	1. First Aid Training 2. HIRA 3. Understanding Basic Health and Safety Principles <u>PLUS</u> all training as defined in Baseline risk assessment and Scope (COP 1)	1. First Aid Training 2. HIRA 3. Understanding Basic Health & Safety <u>PLUS</u> all training as defined in Baseline risk assessment and Scope (COP 1). When construction or maintenance work is done – minimum 1 artisan per team.
Letter of Good standing	Not required	Not required	<u>May</u> be required (dependant on scope) and correct nature of business must reflect on the Letter of Good standing	Required and correct nature of business must reflect on the Letter of Good standing	Required and correct nature of business must reflect on the Letter of Good standing

#### Reminder of Risk identification – LIFE SAVING BEHAVIOURS

1. Trackless Mobile Machinery
2. Working at Heights
3. Lock-out
4. Lifting Machinery
5. Working with live electrical installations
6. Confined spaces
7. Machine guarding
8. Conveyors
9. Machine Safety Devices

Risk assessment is also on life saving behaviours – but this is applicable to all jobs and training apply to all that will do physical work!

## 17 PARAMETERS

### 17.1 **DESIGN PARAMETERS**

All plant and equipment will be designed to:

- Operate satisfactorily under atmospheric, ambient and other conditions present at the site location.
- Ensure inter changeability of units and/or sub parts throughout the plant to reduce spares holding requirements – take old plant equipment into account.
- Ensure reliability and maintainability. A minimum availability of 98% is required.
- Operate without undue vibration, stresses(temperature and built in) and excessive noise
- Comply with legal requirements in terms of the water license and DWA.

### 17.2 Specifications, Codes, Standards and Regulations

Latest addition of the South African National Standards in effects at the date of projects design shall establish the minimum requirements for design, materials and construction. This should be referenced with the Foskor General Engineering specifications and requirements of the Foskor SHEQ system (COP's)

No work shall be contemplated which is in breach of any Legislation in South Africa – Typically:

- Water license (04/B72K/ACGIJ/962)
- Occupational Health and Safety Act
- South African Mine Health and Safety Acts and regulations (Act 29 of 1996)
- Explosive Acts and Regulations - South Africa
- DWA and the National Water Act.
- Foskor COP's
- Foskor Engineering Specifications
- The latest revisions of the SANS standardized specifications and Foskor Specifications as applicable at the time of quotation shall apply to this contract.

Note! The equipment to be capable of continuous operation 24 hrs/day, 365 days/year with operating availability equal to 100%.

### 17.3 Site Geography

The plant is located at Phalaborwa, Limpopo, South Africa























### 17.4 Ambient conditions

- Ambient temperature

Summer	35 Degrees Avg.	50 Degrees Max
Winter	17 Degrees Avg.	2 Degrees Min

- Site Altitude: 380m
- Prevailing wind direction: Generally South Easterly - Maximum design velocity 40m/s (144km/h)
- Very dusty conditions
- Average annual rainfall = 540 mm

**17.5** Foskor General Engineering Specifications (should be consulted prior to finalization of any design or specification)

	Name	Modified	Modified By
	Engineering Specification Index	... 15 April, 2016	Khayelihle Pepu
	GS001 - General Design Information - Rev 1	... 15 April, 2016	Khayelihle Pepu
	GS002 - Engineering Drawings - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS003 - Quality Control Procedures - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS005 - Concrete and Formwork - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS007 - Plate work - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS008 - Welding procedures - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS009 - Structural fabrication and erection - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS011- Piping - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS012 - Pressure vessels - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS013M - Painting and Protective Coatings	... 15 April, 2016	Khayelihle Pepu
	GS014 - Rubberlining - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS015 - Fencing - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS016 - Roofing and side cladding - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS017 - Fuel - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS018 - Lubrication - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS019 - Liquid containemt bund walls - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS020 - General purpose valves - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS021 - Gearboxes - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GS022 - Chainblocks and lever hoists - Rev 0	... 15 April, 2016	Khayelihle Pepu
	GSI-004 - Field Instrumentation Standards	... 15 April, 2016	Khayelihle Pepu

Service provider /Contrator /Supplier - Please ensure that you have the latest copy of Specifications before any activity is committed.

ELECTRICAL SPECIFICATIONS		
<u>SPECIFICATION NUMBER</u>	<u>REVISION</u>	<u>TITLE</u>
EE-1	Latest Revision	Motor Control Centre & Switchgear
EE-2	Latest Revision	Squirrel Cage Induction & Wound Rotor Motors
EE-11	Latest Revision	Power Factor Correction Equipment
GE-1	Latest Revision	Design Criteria for Electrical Installations
GA-1	Latest Revision	Procedures for Enquiries & Tenders
GD-1	Latest Revision	General Requirements for Design, Project Management & Tenders
GD-2	Latest Revision	Engineering Change Order (E.C.O) Procedure
GM-1	Latest Revision	Mechanical Equipment
GM-5	Latest Revision	Pipe Standards
GM-6	Latest Revision	Engineering Drawing & Document Requirements
GM-8	Latest Revision	Surface Protection
GM-3	Latest Revision	Painting & Surface Protection of Steel
GS-1	Latest Revision	Structural Steel work & Plate work Fabrication & Erection
GQ-1	Latest Revision	Quality Control
GI-1	Latest Revision	EE. General specifications & Procedures
GI-2	Latest Revision	FF. Installation & Commissioning
GI-3	Latest Revision	GG. General Equipment Specification
GI-4	Latest Revision	HH. Field Instrumentation Specification

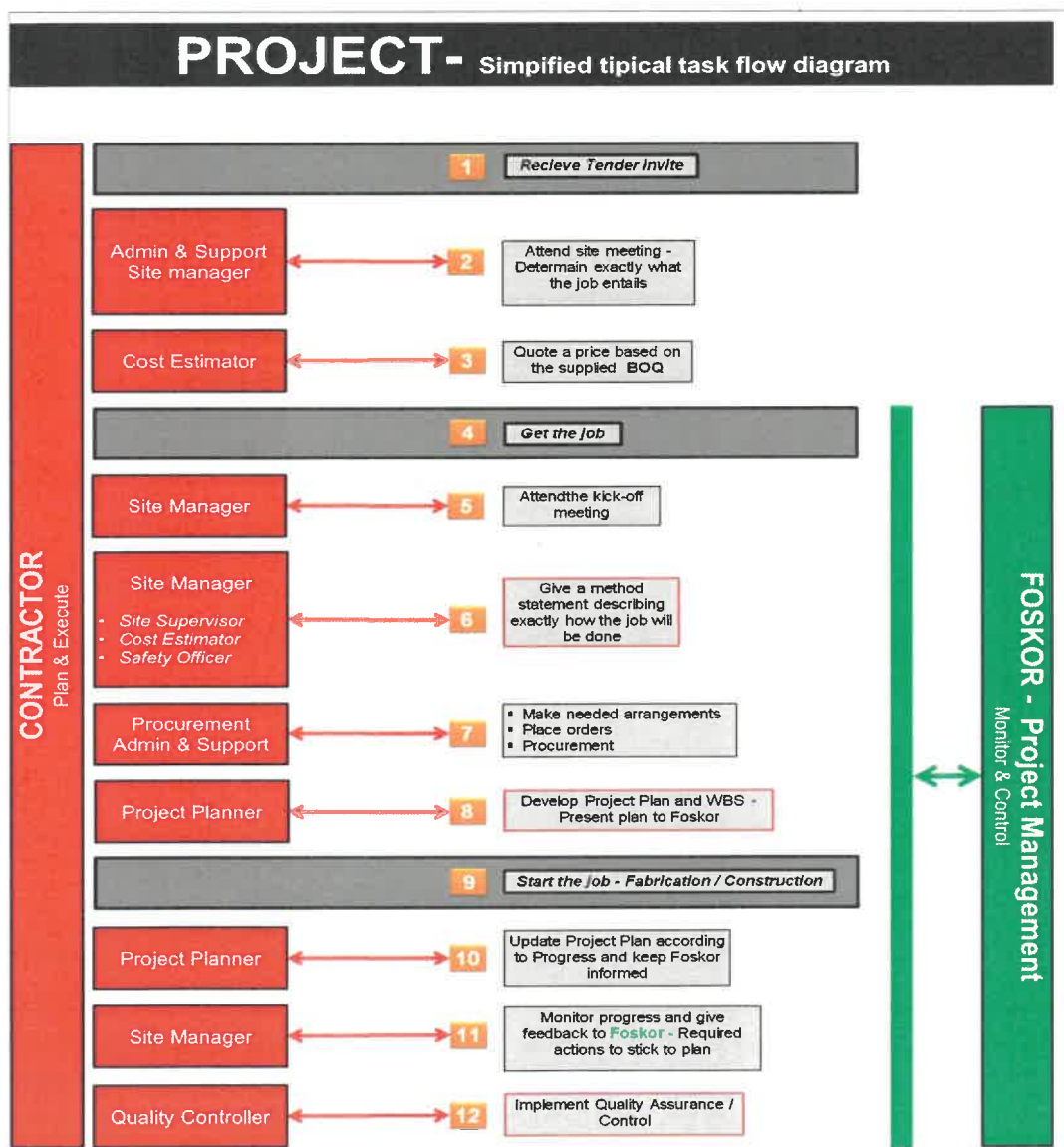
## 18 PROJECT MANAGEMENT - CONTRACTOR

- a) Nominate a single window of communication to Foskor – Typically the appointed contractor 2.6.1
- b) Attend meetings as agreed during the project kick off meeting.
- c) Submit Progress reports (Format & interval) as defined in the Kick off Meeting (Invoicing, Labour, Performance against plan, Contractor purchases, Quality Management, Safety, Etc.
- d) Manage and participate in the "Daily Journal" as part of executing the project.
- e) All meetings will be held at FOSKOR offices, unless otherwise stated.
- f) The contractor to provide updated project management plans on progress as defined by the Foskor Project Engineer.
- g) If the project is executed based on a shutdown approach the contractor will produce a formal Works Breakdown Structure of the works.

- h) If the contractor cannot produce a proper WBS then the contractor will be required to subcontract this function to produce the WBS and manage the WBS for the duration of the project. This cost must be included in the contractors price.
- i) WBS - WBS is a hierarchical and incremental decomposition of the project into phases, deliverables and work packages. It is a tree structure, which shows a subdivision of effort required to achieve an objective, for example a program, project, and contract.
- j) This includes arrangements, tools, equipment, labour, Tasks, Purchase, Quality, Communication, etc.
- k) Project progress updates - If the contractor cannot produce proper updates on a WBS then the contractor will be required to sub contract this function to produce the WBS updates for the duration of the project. This cost must be included in the contractors price.

The Service provider is responsible for managing the project and this is graphically displayed below indicating where what functions lies. Graphical presentation only covers some basic aspects.

#### 18.1 Add any additional project management requirements



## 19 LIAISON AND CO-OPERATION WITH OTHERS

- The CONTRACTOR/ SERVICE PROVIDER shall be required to co-operate and liaise with Foskop appointed project manager.
- The CONTRACTOR/ SERVICE PROVIDER must note that construction is within an operational plant; some works will take place during shut down.
- The CONTRACTOR/ SERVICE PROVIDER may appoint a Foskop approved sub-contractor.
- The CONTRACTOR/ SERVICE PROVIDER shall be required to work in conjunction with the Foskop appointed structural-, electrical-, equipment- and instrumentation installation contractor – if applicable.

## 20 GENERAL CONDITIONS – COMMERCIAL

### 20.1 Extensions, penalties and retentions

- Extension on the promised completion or Milestone date may be requested but needs to be approved by Foskop. The contractor should be in possession of a formal document issued via Foskop Procurement indicating that this request was approved.
- Any additional works not defined in the order needs to be approved by Foskop in writing before any work commence.

Description	Condition	Duration
Penalties	2% per week	Late Delivery after promised completion date
Performance Bond	0% of Contract Value	0 Year after completion
Retention	10 % of Contract value	Release after 6 months
Type Of Contract	Foskop General condition of contract	
Tender price validity	3 months	
Escalation	None	None

All delays must be immediately brought under the attention of the section engineer and the responsible party agreed upon immediately.

### 20.2 After sales service or requirements

After sales service requirements are listed below:

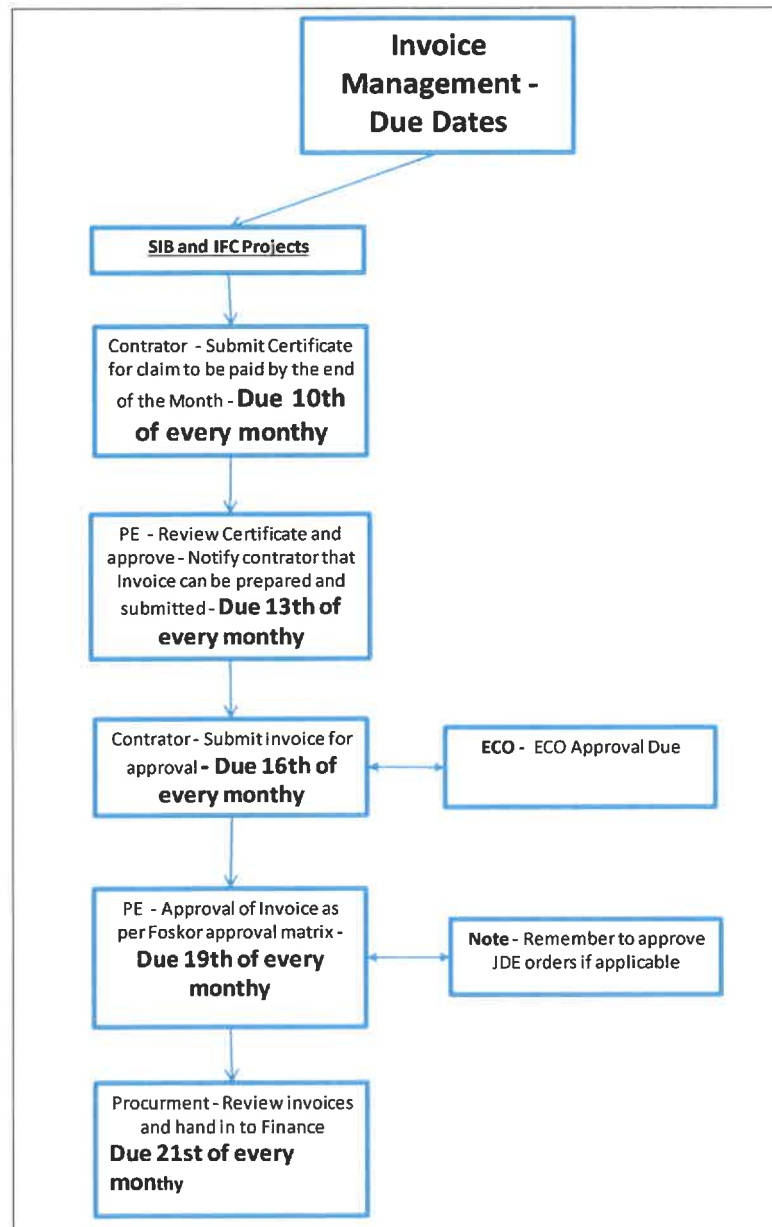
- Full description of guarantee and guarantee period to be attached to the official tender.
- Full description of planned support during AND after the guarantee period to be attached to the official tender.
- After a period of 6 months the supplier shall conduct a full scheduled service and inspection of the entire crane/s. The supplier shall supply all labour, travelling, accommodation, service kits and any other item of expense to complete the service and inspection as per the maintenance schedule. During the service and inspection, the supplier shall also conduct a thorough inspection of the crane/s in order to ensure that all components and control- & safety devices are secure and functioning according to requirement. Foskop will provide lubricants.

(The supplier must take note that he will be required to undergo specific inductions, training and obtain authorisations before being allowed to enter and work on the Foskop site – details can be forwarded on request)



## 20.3 Invoice due dates

The due dates for certificate and invoices are outlined in the graphical presentation.



## 21 TENDER EVALUATION CRITERIA

### 21.1 Evaluation Criteria

The following tender evaluation criteria will be used for adjudicating the Contractor submitted tender:

- Please provide the required documentation as requested in the "Proof / documents to be submitted" column. Please be specific when submitting documents by ensuring it answer the item specified.
- Please use the annexure number as indicated to identify proof submitted.
- Failure to submit the relevant documentation as requested in the Evaluation criteria document may lead to a disregard of the submitted tender.

The prequalification specified below are the minimum requirements for a tenderer to be approved for technical adjudication. Failure to satisfy the meet the requirements will result in the Tenderer being disregarded.

No	Pre-Qualification Requirements	Comments
1	Compulsory Site Briefing attendance	<p>The Tenderer must fill the site briefing attendance register.</p> <p><b>To be Noted: On the site briefing date, the Tenderer is to arrive 1 hour before the meeting for Mine Induction at the Security gate.</b></p>
2	CIDB Grading of 4CE, or 3CEPE or above	Provide certificate of CIDB Grading



Evaluation Criteria (Technical)				
T ??? / Conveyor 102 Escape Route				
No	Technical Criteria Description	% Contribution	Proof / documents to be submitted	Notes
1	<b>Experience &amp; Team competence - <u>Section Weight not to be less than 25%</u></b>			
a)	Company - Previous construction experience in an industrial environment  <b>Scoring:</b> 0 Projects=0% 1-3 project =25%; 4 to 6 projects 50%; 7 to 9 projects = 75%; 10 projects and above =100%	15%	Give reference list, and contact numbers for verification including purchase order  <u>Annexure A</u>	
b)	CIDB Rating of 4CE, or 3CEPE or above  <b>Scoring:</b> No Comply = 0 %, Comply 100 %	20%	CIDB Grading certificate  <u>Annexure B</u> <b>Mandatory</b>	
c)	Team skills - to provide specialised skill ; welding and rigging.  <b>Scoring:</b> Not Comply = 0 %, Comply 100 %	5%	Provide proof of certificates  <u>Annexure C</u>	
2	<b>Company Capacity – <u>Weight not to be less than 25%</u></b>			
a)	Company - Execute construction according to a pre-approved WBS / Project Schedule  <b>Scoring:</b> Not Comply = 0 %; Comply 100 %	10%	Provide proof of one (1) previous signed off WBS/ Project Schedule  <u>Annexure D</u>	
b)	Quality Planning, Quality assurance/control plan, Quality Control  <b>Scoring:</b> No Quality Plan = 0. Quality Plan not signed off = 50%. Quality Plan signed off = 100 %	10%	Provide documentation of one (1) previous signed off Project quality plan or inspection check list.  <u>Annexure E</u>	
c)	Contractor Site Equipment List (Project Specific); owned or to be rented  <b>Scoring:</b> No equipment = 0 %; All Relevant Equipment = 100 %	5%	LDV, Tipper Truck, Lifting tackle, Excavator, Dozer, Torque equipment, Hand tools and Mobile Crane.  <u>Annexure F</u>	

Evaluation Criteria (Technical)				
T ??? / Conveyor 102 Escape Route				
No	Technical Criteria Description	% Contribution	Proof / documents to be submitted	Notes
d)	Project team Organogram indicating names, positions, trades for this project  <b>Scoring:</b> No Organogram = 0 %. Organogram with some skills = 50 %; Organogram with all relevant skills = 100%	10%	Submit organogram with names, position and skills.  <u>Annexure G</u>	
<b>3</b>	<b>Project requirement</b>			
a)	C102 plan schedule  <b>Scoring:</b> Not supplied = 0 %; Supplied 100 %	10%	Supply a schedule that incorporated WBS activities relating to project requirements <u>Annexure H</u>	
<b>4</b>	<b>Minimum Safety Training required on Foskor</b>			
a)	Basic health and Safety, First Aid, Hira.  <b>Scoring:</b> No Training = 0%. 25% team Trained =25 %. 50% team Trained =50%. 75% team Trained =75%. All relevant personal trained =100 %	5%	Supply Training matrix of Team proposed to execute task and certificates.  <u>Annexure I</u>	
<b>5</b>	<b>Foskor Required relevant training requirements as per Foskor COP - Foskor Authorisation required after proof of training</b>			
a)	Basic fire fighting SHEQ COP Level 1 COP 56: Lifting equipment & lifting tackle. COP 95: Confined Space COP 96: Working at Heights  <b>Scoring:</b> No Training = 0 %. Basic firefighting=2% SHEQ COP Level 1=2% COP 56: Lifting equipment & lifting tackle=2% COP 95: Confined Space=2% COP 96: Working at Heights=2% All relevant personnel trained with certificates specified above= 100 %	10%	Supply Training matrix of Team proposed to execute task and certificates.  <u>Annexure J</u>	
	<b>Total Technical Score</b>	<b>100.00%</b>		

	<b>Evaluation Criteria (Technical)</b>			
	<b>T ??? / Conveyor 102 Escape Route</b>			
<b>No</b>	<b>Technical Criteria Description</b>	<b>% Contribution</b>	<b>Proof / documents to be submitted</b>	<b>Notes</b>
	<b>Note: In order to be adjudicated, all mandatory requirements must be met. To qualify for the second evaluation phase (commercial) your company need to score a minimum of 70% on the technical evaluation.</b>			

**Tender No.:** XXXX

**Description:** Conveyor 102: Escape Route

1. Measurement and payment clauses of the COLTO (1998) Standardised Specifications, as well as the Particular Specifications, shall be deemed to form part of and included in the pricing instructions.
2. The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

%	=	percent	m <sup>2</sup> .pass	=	square metre-pass
h	=	hour	m <sup>3</sup>	=	cubic metre
ha	=	hectare	m <sup>3</sup> .km	=	cubic metre-kilometre
kg	=	kilogram	MN	=	meganeutron
kl	=	kilolitre	MN.m	=	meganeutron-metre
km	=	kilometre	MPa	=	megapascal
km-pass	=	kilometre-pass	No.	=	number
kPa	=	kilopascal	Prov sum	=	Provisional sum
kW	=	kilowatt	P C sum	=	Prime Cost sum
l	=	litre	sum	=	lump sum
m	=	metre	t	=	ton (1 000 kg)
mm	=	millimetre	W/day	=	Work day
m <sup>2</sup>	=	square metre			

3. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
4. The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the items. Such prices and rates shall cover all costs and expenses that may be required in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices shall be used as a basis for assessment of payment for additional work that may have to be carried out.
5. It will be assumed that prices included in the Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to [www.sabs.co.za](http://www.sabs.co.za) or [www.iso.org](http://www.iso.org) for information on standards).
6. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered for such items.
7. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.

8. The quantities set out in the Bill of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.
9. Reasonable compensation will be received where no pay item appears in respect of work required in the Bills of Quantities in terms of the Contract and which is not covered in any other pay item.
10. The short descriptions of the items of payment given in the Bill of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
11. The Bill of Quantities has been drawn up in accordance with the latest issue of the COLTO (1998) Standardised Specifications. Descriptions in the Bill of Quantities are abbreviated and must be read in conjunction with the measurement and payment clauses of the applicable specifications.

#### **SCHEDULE OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
<b>1300</b>	<b>CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS</b>				
<b>B13.01</b>	<b>Contractor's general obligations</b>				
(a)	Fixed obligations	L/sum	1		0.00
(b)	Value-related obligations	L/sum	1		0.00
(c)	Time-related obligations	Months	4.5		0.00
(d)	Contractor's obligation in respect of Health and Safety	L/sum	1		0.00
TOTAL FOR SECTION 1300 CARRIED FORWARD TO SUMMARY					0.00
<b>5400</b>	<b>GUARDRAILS</b>				
<b>54.01</b>	<b>Contractor's general obligations (Guardrails on timber posts):</b>				
(a)	Galvanized	(m)	35		0.00
<b>54.03</b>	<b>Extra over item 54.01, for horizontally curved guardrails factory bent to a radius of less than 45m ( on timber posts)</b>	(m)	20		0.00
<b>54.04</b>	<b>End treatments:</b>				
(a)	End wings	No.	2		0.00

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
TOTAL FOR SECTION 5400 CARRIED FORWARD TO SUMMARY					0.00
<b>6100</b>	<b>FOUNDATIONS FOR STRUCTURES</b>				
<b>61.01</b>	<b>Additional foundation investigations</b>	Prov Sum	1		0.00
<b>61.02</b>	<b>Excavation:</b>				
Note:	Quantities allow for 500mm working space around perimeter of excavations. Excavation depth measured down from ground level and rates shall be inclusive of all precautions to stabilize the excavation and all shoring if required.				
(a)	Excavating soft material situated within the following successive depth ranges:				
(i)	0 m up to 2 m	m <sup>3</sup>	1400		0.00
(ii)	Exceeding 2 m and up to 4 m	m <sup>3</sup>	1290		0.00
(iii)	Exceeding 4 m and up to 6 m	m <sup>3</sup>	980		0.00
(iii)	Exceeding 6 m and up to 8 m	m <sup>3</sup>	620		0.00
(iii)	Exceeding 8 m and up to 10 m	m <sup>3</sup>	90		0.00
(b)	Extra over sub-item 61.02(a) for excavation in hard material irrespective of depth (provisional)	m <sup>3</sup>	100		0.00
(c)	Extra over sub-item 61.02(a) for additional excavation required by the engineer after the excavation has been completed (provisional)	m <sup>3</sup>	50		0.00
(d)	Extra over sub-item 61.02(a) for excavation by hand (provisional)	m <sup>3</sup>	15		0.00
<b>61.03</b>	<b>Access and drainage:</b>				
(b)	Drainage	lump sum	1		0.00
<b>61.04</b>	<b>Backfill to excavations utilizing:</b>				
(a)	Material from the excavation	m <sup>3</sup>	790		0.00
(b)	Imported material	m <sup>3</sup>	3200		0.00
(c)	Soil cement (provisional)	m <sup>3</sup>	80		0.00

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
61.05	Fill within restricted areas (extra over item 33.01) - No separate payment will be made	m <sup>3</sup>	0		Rate Only
61.06	Overhaul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m <sup>3</sup> km	84500		0.00
61.07	Overbreak in excavation in hard material (Provisional)	m <sup>2</sup>	65		0.00
61.08	Foundation fill consisting of:				
(a)	Rock fill (provisional)	m <sup>3</sup>	65		0.00
(b)	Crushed-stone fill (provisional)	m <sup>3</sup>	65		0.00
(d)	Mass concrete class 15/38 (provisional)	m <sup>3</sup>	2		0.00
(e)	Concrete screed class 15/20				
(i)	75mm thick to culvert barrel and exit chamber	m <sup>3</sup>	10		0.00
61.14	Foundation lining to sides of rock excavation, consisting of 0.25mm thick polyethylene sheeting (provisional)	m <sup>2</sup>	40		0.00
TOTAL FOR SECTION 6100 CARRIED FORWARD TO SUMMARY					0.00
6200	FALSEWORK, FORMWORK AND CONCRETE FINISH				
62.02	Vertical formwork to provide:				
(a)	Class F1 surface finish to				
(i)	Concealed surfaces of culvert barrel, exit chamber and stop ends at expansion joints	m <sup>2</sup>	405		0.00
(b)	Class F2 surface finish to				
(i)	Exposed surfaces of culvert barrel, mass concrete staircase and exit chamber	m <sup>2</sup>	170		0.00
62.04	Inclined formwork to provide:				
(a)	Class F2 surface finish to				
(i)	Haunches to culvert barrel roof slab	m <sup>2</sup>	40		0.00
(ii)	Roof slab of culvert barrel	m <sup>2</sup>	30		0.00
(iii)	Base slab of culvert barrel	m <sup>2</sup>	70		0.00

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
TOTAL FOR SECTION 6200 CARRIED FORWARD TO SUMMARY					0.00
<b>6300</b>	<b>STEEL REINFORCEMENT FOR STRUCTURES</b>				
<b>63.01</b>	<b>Steel reinforcement for:</b>				
(a)	Foundations, culvert barrel, wingwalls, headwalls, apron slabs and guardrail post plinths				
(i)	Mild steel bars (hot-rolled, plain)	t	0.5		0.00
(ii)	High-yield stress steel bars (hot-rolled, deformed)	t	37		0.00
TOTAL FOR SECTION 6300 CARRIED FORWARD TO SUMMARY					0.00
<b>6400</b>	<b>CONCRETE FOR STRUCTURES</b>				
<b>64.01</b>	<b>Cast in situ concrete:</b>				
(a)	Concrete				
(i)	Class 30/20 in foundations and exit chamber	m <sup>3</sup>	35		0.00
(ii)	Mass concrete 15/40 for stairs within culvert and in exit structure	m <sup>3</sup>	25		0.00
(iii)	Culvert box units (Price to include Craning into position).	m <sup>3</sup>	105		0.00
<b>64.06</b>	<b>Demolishing existing concrete:</b>				
(a)	Reinforced concrete in:				
(i)	Demolishing of internal wall of existing tunnel	m <sup>3</sup>	1		0.00
<b>64.07</b>	<b>Curing of concrete:</b>				
(a)	Barrel sections and exit chamber walls:				
(i)	Formed surfaces (tenderer to specify method of curing.....)	m <sup>2</sup>	715		0.00
(ii)	Unformed surfaces (tenderer to specify method of curing.....)	m <sup>2</sup>	80		0.00
TOTAL FOR SECTION 6400 CARRIED FORWARD TO SUMMARY					0.00
<b>6600</b>	<b>NO-FINES CONCRETE, JOINTS, BEARINGS, PARAPETS AND DRAINAGE FOR STRUCTURES</b>				
<b>66.05</b>	<b>Expansion joints:</b>				
	(a) Torch on waterproofing Bituminous Fabric application to internal opening of exit chamber to culvert interface and joints.	No.	26		0.00
<b>66.06</b>	<b>Filled joints:</b>				



ITEM	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
(a)	Depth greater than 150mm (measured per square meter)				
(i)	10mm thick bitumen impregnated fibre board to expansion joints to culvert barrel and between barrel and existing structure and exit chamber.	m <sup>2</sup>	90		0.00
<b>66.08</b>	<b>Sealing of joints with:</b>				
(a)	Two component gun-grade polysulphide sealant "Duracol G HM" or approved equal, 10x10mm to expansion joints as shown on the drawings				
(i)	Horizontal to barrel floor, barrel roof and between entrance/exit slab and barrel floor slab	m	145		0.00
(ii)	Vertical to barrel walls and between barrel and entrance/exit walls	m	80		0.00
<b>B66.30</b>	<b>Joint protection plates:</b>				
(a)	Galvanized mild steel cover plate 300mm wide x 1,6mm thick to filled joints in contact with soil to walls and deck slab, including fixing with concrete nails	m	195		0.00
TOTAL FOR SECTION 6600 CARRIED FORWARD TO SUMMARY					0.00
<b>6700</b>	<b>STRUCTURAL STEELWORK</b>				
<b>67.01</b>	<b>Structural steel, Grade S355JR:</b>				
	(a) Structural steel measured per ton mass				
	(i) Sliding door frame and door Internal Tunnel (Provisional)	t	0.2		0.00
	(ii) Steel Tubed Handrails (Galvanized)	No	2		0.00
	(iii) PFC 180 x 70 including bolting to brickwork	t	0.5		0.00
	(iv) IBR Roof Sheeting including bolting to PFC	m <sup>2</sup>	30		0.00
<b>67.02</b>	<b>Anchor bolts:</b>				
	(a) Chemical Anchors M10, 80mm depth (Provisional)	No.	40		0.00
<b>67.03</b>	<b>Door with Steel Frame (Exit Chamber Access)</b>	No.	1		0.00
<b>67.04</b>	<b>Shop Details:</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
	(i) Brickwork	m <sup>2</sup>	45		0.00
	(ii) Concrete lintel (114 x 75 x 1450)	No.	1		0.00
<b>67.05</b>	<b>Fabrication and Assembly:</b>				
	(i) LED Strip lighting including electrical connection	L/sum	1		0.00
TOTAL FOR SECTION 6700 CARRIED FORWARD TO SUMMARY					0.00
<b>8100</b>	<b>TESTING MATERIALS AND WORKMANSHIP</b>				
<b>B81.02</b>	<b>Other special tests requested by the Engineer</b>				
(a)	Additional durability tests were requested by the Engineer:				
(i)	Tests for concrete cover	Prov Sum	1		0.00
(b)	Other tests	Prov Sum	1		0.00
TOTAL FOR SECTION 8100 CARRIED FORWARD TO SUMMARY					0.00
<b>8400</b>	<b>PAINTING</b>				
<b>84.01</b>	<b>Painting [FOSKOR paint specification]</b>				
(a)	Structural steel handrail - finish to be yellow	Prov Sum	1		0.00
TOTAL FOR SECTION 8400 CARRIED FORWARD TO SUMMARY					0.00
<b>8500</b>	<b>RELOCATION OF STOCKPILE MATERIAL TO DESIGNATED LOCATION</b>				
<b>85.01</b>	<b>Removal of stockpile material</b>				
(a)	Supply the Earth moving machines and designated drivers	Prov Sum	1		0.00
TOTAL FOR SECTION 8500 CARRIED FORWARD TO SUMMARY					0.00
OVERALL TOTAL EXCLUDING vat					

# SCHEDULE SUMMARY:

SECTION	DESCRIPTION	AMOUNT R
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	0.00
5400	GUARDRAILS	0.00
6100	FOUNDATIONS FOR STRUCTURES	0.00
6200	FALSEWORK, FORMWORK AND CONCRETE FINISH	0.00
6300	STEEL REINFORCEMENT FOR STRUCTURES	0.00
6400	CONCRETE FOR STRUCTURES	0.00
6600	NO-FINES CONCRETE, JOINTS, BEARINGS, PARAPETS AND DRAINAGE FOR STRUCTURES	0.00
6700	STRUCTURAL STEELWORK	0.00
8100	TESTING MATERIALS AND WORKMANSHIP	0.00
8400	PAINTING	0.00
8500	RELOCATION OF STOCKPILE MATERIAL	0.00
TOTAL		0.00

All price alterations must be signed for by the bidder confirming that such changes were made by the bidder. **PLEASE NOTE THAT PRICE CHANGES WITHOUT A SIGNATURE WILL LEAD TO THE DISQUALIFICATION OF THE BID SUBMITTED.**

**NOTE:** The onus lies with the tenderer to make sure that all formulas and calculations are correct. Calculation errors discovered during the evaluation process will be logged as a non-conformance and the tender / quotation will therefore be disregarded.

## 23 ACCEPTANCE

The conditions and requirements as stated in this "Scope of Work" are accepted with the following **exceptions / exclusions**: -

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The conditions and requirements as stated in this "Scope of Work" are accepted with the following **inclusions**: -

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**Sub-contractor** (Please provide list and function)

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**Failure to complete this form will lead to disqualification – Please do not leave blanks!**

BBBEE Level	<input type="text"/>	Black Ownership	<input type="text"/> %	Black Woman Ownership	<input type="text"/> %
Tender Validity	<input type="text"/> Days	Manufacturing Period	<input type="text"/> Days	Installation Period	<input type="text"/> Days
Guarantee	<input type="text"/> Months	Commencement after receipt of official purchase order			<input type="text"/> Days
Payment terms	<input type="text"/>				

Price Basis for the duration of the contract / till supply of goods (Please tick):

Fixed	<input type="checkbox"/>	Duration of fixed price	<input type="text"/> 12 Months <input type="checkbox"/>	<input type="text"/> 24 Months <input type="checkbox"/>
Variable	<input type="checkbox"/>	Price Base Date	<input type="text"/>	

If variable provide price variation factors, percentages and formula in cover letter. (Please specify indices to be used)

Price variation factors & percentages (e.g. material, labour, fuel, overheads, admin etc)

Factor	%	Factor	%	Factor	%	Factor	%	Factor	%

Where prices include a foreign currency rate please provide:

% of price subject R O E	<input type="text"/> %	ROE	<input type="text"/> = ZAR
ROE Base Date	<input type="text"/>		

**Note: If the above fields are not completed, it is confirmed that the quoted price/s are valid for the entire contract period mentioned and no escalation in the price is allowed under any circumstances.**

I, \_\_\_\_\_ in my capacity as \_\_\_\_\_ for and on behalf of \_\_\_\_\_ hereby acknowledge that I have read and understand the Instruction to Tender and the Scope of Work as detailed in this document and accept all the Terms and Conditions of Tender T -18.

Signed at \_\_\_\_\_ on this the \_\_\_\_\_ day of \_\_\_\_\_ 2018.

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

**Witnesses:**

1. \_\_\_\_\_ Name: \_\_\_\_\_
2. \_\_\_\_\_ Name: \_\_\_\_\_

**For and on behalf of Foskor (Pty) Limited**

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

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

**Note:** It is imperative to complete this schedule in full where applicable, marked "N/A" where not applicable and signed off in full, unsigned bids will not be accepted. All the supporting documentation requested with the tender

document, scope of work and evaluation criteria need to be submitted with the tender. Tenders received without supporting documentation requested for the tender evaluation **will not be considered**.

## **DOCUMENTED INFORMATION**

DESCRIPTION	RESP	LOCATION	FILE NAME / INDEX	RETENTION TIME (MINIMUM)
Scope of Works	Procurement	Procurement	Procurement	As per Procurement Policies and procedures

## **24 REFERENCES**

Code of Practice Foskor Risk Assessment (COP 01).  
 Quality Management Systems – Requirements (ISO 9001:2015).  
 Environmental Management Systems – Requirements with guidance for use (ISO 14001:2015).  
 DEKRA SHIELD Systems

## **25 ANNEXURES**

**ANNEXURE A:** Executed projects reference list, and contact numbers for verification including purchase order.

**ANNEXURE B:** 4CE, or 3CEPE or above CIDB grading certificate.

**ANNEXURE C:** Team skills certificates

**ANNEXURE D:** Proof of one (1) previous signed off WBS/ Project Schedule

**ANNEXURE E:** Previous signed off project quality plan or inspection check list.

**ANNEXURE F:** Contractor site equipment list (whether tented or owned)

**ANNEXURE G:** Organogram of key personnel and their CVs

**ANNEXURE H:** C102 Escape tunnel plan schedule.

**ANNEXURE I:** Team training matrix for Basic health and Safety, First Aid, Hira.

**ANNEXURE J:** Team training matrix for Basic firefighting, SHEQ COP Level 1, COP 56: Lifting equipment & lifting tackle.  
 COP 95: Confined Space and COP 96: Working at Heights

**PART B: MATTERS RELATING TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS****B1. STANDARD SPECIFICATIONS**

The Standard General and Technical Specifications for Roadworks shall be the COTO - Standard Specifications for Road and Bridge Works for State Road Authorities (1998). Formerly known as COLTO.

The Standard Specifications forming part of this contract have been written to cover all phases of work usually encountered on contracts and may therefore cover items of work not encountered in this particular contract.

The Contractor is responsible for ensuring that he is thoroughly familiar with all the amendments and corrections before submitting his tender.

**B2. PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS AND ADDITIONAL SPECIFICATIONS**

The standard specifications provide, in certain clauses, for a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or a new payment item, which does not form part of a clause or a payment item in the standard specifications and is included here, is also prefixed by B followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the standard specifications.

**SECTION 6400: CONCRETE FOR STRUCTURES****B6402 MATERIALS****(a) Cement**

*Replace the colon at the end of the first paragraph with a comma and add the following:*

"Taking into account the adoption of the new SANS 50197-1:2000 code for cements: (refer to C&CI website [www.cnci.org.za](http://www.cnci.org.za))".

*Add the following paragraphs:*

"The type of cement to be used in any concrete element shall take into account the environmental conditions and durability requirements at the location of the site of the works and shall be as approved by the Engineer.

With the exception of the standard SANS approved cement blends supplied by the primary cement producers, the blending of cement and extenders shall not be permitted unless specifically approved by the Engineer based on an acceptable quality assurance procedure. The source of supply for each type of cementitious material shall not be changed during the contract period.

The Contractor shall submit certificates from the supplier indicating compliance with the requirements of SANS 1491 for any cement extenders used in blending the cement.

Test certificates from an approved laboratory shall be furnished by the Contractor for all cements and prior to their use in the works, indicating the alkalinity of the cement expressed as the percentage sodium oxide equivalent ( $\%Na_2O + 0,658(\%K_2O)$ ). Cement with such an alkalinity content in excess of 0,60% shall only be used with the written authority of the Engineer regardless of whether or not the aggregates are considered to be potentially alkali reactive."

## (b) Aggregates

Replace the 2<sup>nd</sup> last paragraph of sub-clause (i) with the following:

"The aggregates used in all structural concrete for this contract shall be from approved sources known to produce aggregates with low shrinkage and low water demand characteristics. Test certificates from an approved laboratory shall be furnished by the Contractor for all aggregates and prior to their use in the works indicating compliance with the above limiting shrinkage values."

Add the following new sub-sub-clauses:

- "(vi) The maximum chloride ion content of fine aggregate shall be 0,03% by mass of aggregate as measured by SANS 1083:2002. Where concrete is situated in a chloride environment as determined by the Engineer, the value shall be reduced from 0,03% to 0,01%.
- (vii) Test certificates from an approved testing authority shall be furnished by the Contractor for all aggregates and prior to their use in the works, indicating the potential alkali-silica reactivity. Where, in the opinion of the Engineer, any aggregate shows potential reactivity, then the use of such an aggregate in the works shall only be permitted if the total alkali content of the concrete as determined from all its constituents does not exceed between 2,1 kg/m<sup>3</sup> to 2,8 kg/m<sup>3</sup> depending on the assessed severity of the potential reactivity of the aggregate, and then only with the written authority of the Engineer.
- (viii) The grading of the fine aggregate shall in addition to the requirements in SABS 1083 also comply with the grading limits in the following table:

GRADING OF THE FINE AGGREGATE

Sieve size (mm)	Cumulative percentage passing sieve
4,75	90 - 100
2,36	75 - 100
0,18	60 - 90
0,60	40 - 60
0,30	20 - 40
0,15	10 - 20
0,075	Natural sand 5 – 10 Crusher sand 5 - 20

Blending of fine and coarse sands will be permitted where necessary to achieve the above grading limits for fine aggregate."

## (d) Water

Add the following:

"Water for concrete, other than for prestressed concrete, shall not contain chlorides calculated as sodium chloride in excess of three thousand parts per million (3000ppm) nor sulphates calculated as sodium sulphate in excess of two thousand parts per million (2000ppm).

Water for curing concrete shall not contain impurities in sufficient amount to cause discolouration of the concrete or produce etching of the surface. No sea-water or water containing salts shall be used."

## (e) Admixtures

Add the following sub-sub clauses:

- "(v) Only admixtures of the type that do not increase the water demand of the mix will be considered by the Engineer.
- (vi) Admixtures, which have a retarding effect on the rate of hydration of the cement, may not be used when the concrete temperature is below 20°C.

(vii) A retarding admixture shall be used if temperatures of concrete mixes using cements of strength class 42.5 or higher is between 20 to 30°C or where the ambient temperature is between 20 and 30°C."

**(f) Curing agents**

*Add the following:*

"Full technical specifications and product data sheets as well as samples of not less than 1 litre of the proposed curing agents shall be submitted to the Engineer for approval, and no curing agent shall be used until approved by the Engineer."

**B6404 CONCRETE QUALITY**

**(a) General**

*Replace the first paragraph with the following:*

"All concrete in the Works shall comply with the requirements for strength concrete as specified in sub-clause 6404(b). Minimum 30% Fly ash to be used.

**(b) Strength Concrete**

*Add the following:*

"Concrete mix designs complying with the specifications shall be submitted to the Engineer for approval at least two weeks prior to casting the concrete and shall for each mix include the following:

- Target strength and slump
- 7 and 28 day compressive strength results with measured slumps
- Cement source, type and composition
- Test results for mixing water, see COLTO clause 8116.
- Brand and dosage of any admixtures
- Proportions of all constituents in the mix
- Cement quality certificates including Na<sub>2</sub>O equivalent.
- Certificates of compliance iro any cement extenders used (SANS1491)
- Data sheets for admixtures
- Aggregate source and test results to confirm compliance with SANS 1083, including grading, flakiness and FM.
- Shrinkage characteristics and potential alkali reactivity of fine and coarse aggregate
- Results of the concrete drying shrinkage (Colto clause 6402(b)(i)(3)).

**No concrete mix designs will be considered for approval until all the above-mentioned data has been submitted and no concrete may be placed until such time that the concrete mix has been approved by the Engineer.**

**(d) Consistence and workability**



*Add the following:*

"On-site slump cone test measurements for all structural concrete used in the works and taken at the time of actual placing shall fall within the range  $75 \pm 25$ mm. Concrete which has a slump outside of this range shall not be placed in the structure and removed immediately from the site."

## **B6406 MIXING**

### **(f) Ready-mixed concrete**

*Add the following:*

"Delivery tickets for all ready-mixed concrete delivered to site shall be checked prior to discharge to ensure the correct mix has been delivered and the time of arrival recorded and compared to the time of batching to ensure consistency with the expected travel time and that no undue delay has occurred between dispatch and delivery.

The temperature limits at the point of delivery shall be as specified in SANS 878:2004 unless the Engineer has specified other limits due to specific design requirements.

No water shall be added on site prior to placing the concrete to improve workability. Prior to placing all concrete delivered to site shall be checked for workability using the slump cone test and slump measured outside of the limits set for the design mix shall be rejected and removed from the site.

The rate of change in concrete properties shall be closely monitored. When, in the opinion of the Engineer, the workability drops to the extent that the concrete cannot be satisfactorily placed and compacted with the available equipment and manpower it shall be deemed unsuitable for use and removed from the site of the works. Under no circumstances shall water be added to maintain or reinstate workability.

No admixtures shall be added on site before or during placing the concrete to improve or maintain workability."

## **B6408 CONSTRUCTION JOINTS**

### **(a) General**

*Add the following:*

"No construction joints other than those indicated on the drawings will be permitted without the written approval of the Engineer. In all cases the proposed method of forming the joint shall be discussed and agreed with the Engineer."

## **B6409 CURING AND PROTECTION**

*Add the following to the end of sub-clause 6409(f):*

"Where a curing compound is used, it shall consist of an approved water based low viscosity clear wax emulsion applied in accordance with the manufacturer's instructions."

*Add the following paragraphs to the end of this sub-clause:*

"Where curing by retention of formwork is used as the only method of curing the concrete, it must be left in place for the minimum period specified in Table 6206/1 but in no instance shall it be less than 7 days.

The materials used for formwork shall take into account properties such as thermal insulation and moisture absorption when assessing the suitability of the material, to the approval of the Engineer.

If impermeable curing membranes are to be used as a curing method, they shall be installed at the same time as formwork is removed and no portion of a concrete surface may be left unprotected for a period in excess of 2 hours. If the surface is an unformed finish e.g. top of deck slab, then the surface must be protected immediately by appropriate methods approved by the Engineer after it is finished, without damage to that surface, since it is vulnerable to plastic shrinkage and plastic settlement cracking due to high rates of evaporation while the concrete is still in a plastic state. Plastic shrinkage and settlement shall not be permitted on any of the structural elements since it compromises the durability of the concrete. In order to prevent early settlement and shrinkage of the concrete, the concrete placed shall be re-vibrated after initial compaction

while the concrete is still in a plastic state. Any remedial measures shall be as approved in writing by the Engineer.

**B6410 ADVERSE WEATHER**

*Add the following at the end of this clause:*

"Placing of concrete during dry and windy conditions irrespective of ambient temperature will not be allowed unless fully motivated in exceptional circumstances and expressly permitted under the special precautionary measures approved by the Engineer."

*Add the following sub-clause:*

**(d) Temperature and hydration of concrete**

"The temperature of concrete when placed shall be within the range 10°C to 30°C. Concrete which has a temperature outside of this range shall not be placed in the structure. Care shall also be taken not to cast concrete onto hot steel shutters as this might induce cracking.

The rate of hydration of the cement in the concrete shall be such that the concrete can be placed and properly compacted within 2 hours after the addition of water to the mix ingredients. The initial set of the concrete shall not be unduly delayed due to inappropriateness of admixtures or cement type, which could promote bleeding."

**B6414 QUALITY OF MATERIALS AND WORKMANSHIP****(a) Criteria for compliance with the requirements**

*Add the following:*

"Routine inspection and quality control will be done by the Engineer as specified in Section 8300. All reference in clause 6414 to Section 8200 and its clauses or sub clauses shall be deleted."

**SECTION B6700: STRUCTURAL STEELWORK****B6701 SCOPE**

*Add the following:*

"This section also covers the supply of all materials, fabrication, transport and erection of all structural steelwork associated with the conveyor support to be erected under this contract.

For additional requirements in respect of Materials, Shop Drawings, Quality Plan & Control, Welding, Fabrication, Corrosion Protection as well as Inspections and Testing reference shall be made to the specifications included on the relevant steelwork drawings."

**SECTION 8400: PAINTING****SECTION B8400: PAINTING****B8402 MATERIAL**

*Add the following:*

"The painting system for corrosion protection of all steelwork shall be as per Foskor GM3 Rev7 – Surface preparation and protection specification paint.



Signed with Impression - Chain of Custody



#### Signature Request

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