AIRPORTS COMPANY SOUTH AFRICA

CONTRACT NO: ORT 6029/2019

PROJECT DOCUMENT
FOR
THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

ISSUED BY:

AIRPORTS COMPANY SOUTH AFRICA
PRIVATE BAG X1
O.R. TAMBO INTERNATIONAL AIRPORT

MAY 2019

VOLUME 3

NAME OF CONTRACTOR: .................................................................
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

Note: All reference to “tenderer(s)” to be read referring to “contractor” after the signing of this document as the official Contract Document.
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AIRPORTS COMPANY SOUTH AFRICA
O.R. TAMBO INTERNATIONAL AIRPORT

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THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

Part T1: Tendering Procedures

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T1.1: TENDER NOTICE AND INVITATION TO TENDER

Airports Company South Africa invites suitably qualified contractors to bid for the THE REHABILITATION OF TAXIWAYS at O.R. Tambo International Airport.

Compulsory Briefing Session

A compulsory briefing session will be held on Monday **10 June 2019** at 12:00 in the Tlou 1 and Tlou 2 Boardroom, 4th Floor ACSA North Wing offices, O.R. Tambo International Airport. A compulsory site inspection will follow on the business day commencing at 09:00. Details will be confirmed.

Collection of Documents

Tender Documents can be downloaded free of charge from the National Treasury’s eTender Publication Portal (http://www.etenders.gov.za) from **01 May 2019**. No hard or soft copies of the tender document will be made available directly from ACSA.

Should you encounter any difficulties downloading the document please email all enquiries as per the contact information below.

Submission Closing Date

Bid submissions will close at 12:00 on **Thursday 27 June 2019**. All bid documentation must be sealed in a clearly marked envelope and placed in a tender box situated at the ACSA O.R. Tambo International Management Offices Reception, 3rd Floor O.R. Tambo International Airport.

Enquiries and Contact Information

All enquiries are to be directed to:

mapheu.mawasha@airports.co.za

1. Pre-Qualification

The tenderers are to fulfil the following criteria:

A. A tenderer having stipulated minimum B-BBEE status level of contributor 1 or 2
B. A tenderer subcontracting a minimum of 30% to –

I. an EME or QSE which is at least 51% owned by black people;
II. an EME or QSE which is at least 51% owned by black people who are youth
III. an EME or QSE which is at least 51% owned by black people who are women
IV. an EME or QSE which is at least 51% owned by black people with disabilities;
V. an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
VI. a cooperative which is at least 51% owned by black people;
VII. an EME or QSE which is at least 51% owned by black people who are military veterans;
VIII. an EME or QSE.

A tender that fails to meet any pre-qualifying criteria stipulated in the tender documents is an unacceptable tender.
Mandatory Administration Criteria

All bidding companies are to comply with the following minimum requirements:

1. Attendance of compulsory briefing session.
2. Locally (South African) Registered Entity.
3. CIDB contractor grading of 8CE or higher will be accepted, no 7CE PE will be accepted.
4. Bidders must accept ACSA’s Terms and Conditions
5. Tenderers must accept the ACSA Technical Services and Solutions transformation Contractor Participation Goals targets (form C16).

NB: No Bid will be awarded to any person whose tax matters have not been declared in order by South African Revenue Service. Additionally: No award will be made to a supplier or service provider who is not registered on the Central Supplier Database (CSD).
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

T1.2: TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement in Board Notice 86 of 2010 in the Government Gazette No 33239 of 28 May 2010 (see www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annex to this Tender Data.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

The additional conditions of tender are:

<table>
<thead>
<tr>
<th>Clause number</th>
<th>Tender Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.1.1</td>
<td>The Employer is the Airports Company South Africa (ACSA).</td>
</tr>
<tr>
<td>F.1.2</td>
<td>The documents listed below will form part of this contract. The tender documents issued by the Employer comprise Volumes 3, 4 and 5. The employer does not supply Volumes 1 and 2. Tenderers are to acquire their own copies of these documents.</td>
</tr>
</tbody>
</table>

VOLUME 1: The General Conditions of Contract for Construction Works (2015) published by the South African Institution of Civil Engineering, is applicable to this contract. Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (tel.: 011-805 5947).

VOLUME 2: The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials, which the tenderer shall obtain from the South African Institution of Civil Engineering.

VOLUME 3: Tender Documents

Tendering Procedures
T.1.1 Tender notice and invitation to tender
T.1.2 Tender data
T.2.1 List of returnable documents
T.2.2 Returnable schedules
Part 1: Agreements and contract data
C.1.1 Form of offer and acceptance
C.1.2 Contract data
C.1.3 Form of Guarantee
C.1.4 Adjudicator’s appointment

Part 2: Pricing data
C.2.1 Pricing instructions
C.2.2 Activity schedules/Bills of Quantities
<table>
<thead>
<tr>
<th>Clause number</th>
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<td><strong>VOLUME 4:</strong> The drawings: A3 size for tender purposes.</td>
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<td><strong>VOLUME 5:</strong> Procedure Manual for Working Airside.</td>
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The Employer’s Agent is:

Zimile Consulting Engineers
Corner Pioneer Avenue and Elizabeth Road (Building C)
International Business
Gateway Office park
Midridge Park
Midrand
1684

Proserve Consulting (Pty) Ltd
28 Panorama Road
Rooihuiskraal
0157
F.2.1 Tender Data

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

Tenderers who are capable of being so registered prior to the evaluation of submissions may be evaluated at the sole discretion of the Employer.

Joint Ventures are eligible to submit tenders provided that:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation in the 8CE class of construction work;
3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a CLASS 8 in the CE class of construction.

For alpha-numerics associated with the contractor Grading Designations see Annex G attached.

F.2.7 The arrangements for a compulsory clarification meeting and site visit are as stated in the Tender Notice and Invitation to Tender. (T1.1 refers).

Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list.
Tender Data

No alternative tender will be considered unless this tender is also submitted free of qualifications and strictly in accordance with the instructions given in the tender document.

Should a tenderer wish to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer’s standards and requirements, the details of which may be obtained from the Employer’s Agent.

Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer’s standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.

Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer’s standards and requirements.

The modified Pricing Data must include an amount equal to 3% of the amount tendered for the alternative items offered to cover the Employer’s costs of confirming the acceptability of the detailed design before it is constructed.

Parts of each tender offer communicated on paper shall be submitted as an original, plus 0 copies.

The employer’s address for delivery of tender offers and identification details to be shown on each tender offer package are:

Location of tender box: ACSA Offices, O.R. Tambo International Airport

Physical address: 3rd Floor, Tender Box A, ACSA Offices, OR Tambo International Airport

Identification details: O.R. Tambo International Airport
Contract No. ORT 6029/2019
Rehabilitation of Taxiways at O.R. Tambo International Airport

Closing Date: 27 June 2019
Time: 12:00

A two-envelope procedure will not be followed.

The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

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

The tender offer validity period is 12 weeks (84 days).

The tenderer is required to submit with his tender a Certificate of Contractor Registration issued by the Construction Industry Development Board and a copy of an original valid Tax Clearance Certificate issued by the South African Revenue Services. Where a tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.
F.3.4 Tender Data

Tenders will be opened immediately after the closing time for tenders at ACSA Offices, OR Tambo International Airport

F.3.8 Test for Responsiveness (Administrative Criteria)

Only tenders complying with these tests for responsiveness (Eligibility Requirements) will be evaluated in accordance with the adjudication criteria as stipulated in Clause F3.11.

i. Tenderers must be in good standing with the South African Revenue Services (SARS) and provide a valid, original, tax clearance certificate at the time of the tender submission. The certificate must be in the name of the tendering entity or in the case of a newly formed Close Corporation/Partnership, in the name of the individual member/s of the Close Corporation/Partnership. In the event that the SARS tax clearance certificate is not available, tenderers must submit proof of application on an official SARS letterhead confirming that arrangements have been made to obtain the SARS tax clearance certificate.

ii. Attendance of compulsory briefing session.

iii. Locally (South African) Registered Entity.

iv. An original (or certified copy) CIDB registration certificate or an original or certified copy) CIDB letter stating that the registration process is in progress must be submitted. Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a CLASS 8CE of construction work, are eligible to submit tenders.

v. Bidders must accept ACSA's Terms and Conditions

vi. Tenderers must have a valid B-BBEE certificate under the Construction Sector B-BBEE scorecard issued by a SANAS accredited rating agency.

vii. Tenderers must accept the ACSA Technical Services and Solutions transformation Contractor Participation Goals targets (Form C16).

viii. Proof of registration with the Central Supplier Database from the National Treasury.

ix. Duly Signed declaration of interest form SBD 4.
F3.11 Adjudication Criteria

1. Functionality Hurdle

Functionality is the terminology used to define the technical ability of the Tenderer, based on experience, to deliver the required product in accordance with the specialised quality, reliability and functionality.

Points allocated for Functionality shall be evaluated in accordance with the criteria as listed below. Total Quality points allocated shall be 100. Tenderer must score minimum score per each sub section and an overall minimum threshold of 80 points out of 100 is required to be achieved for the tender to be eligible for further evaluation on Price and B-BBEE (90/10 split).

Tenderers are required to list their relevant project experience. Relevant shall be defined as being within the past ten (10) years and works of a similar nature in respect of asphalt rehabilitation works which should preferably include airport experience, on Returnable Schedule A5 and form D1, D2 and D3 in Part T2.2 of this document. Tenderers shall indicate only those projects that have been successfully completed. Letters of reference are required for the stated projects.

Up to a maximum of five (5) projects will be evaluated and scored per specified criteria. Zero points will be awarded if there are no projects listed under categories listed below. The points indicated refer to the maximum points a tenderer can score under each criterion. Tenderers shall be required to score a minimum score for each sub-item as indicated.

The projects will be evaluated on the basis of the above described relevance as follows:

1.1 RELEVANT COMPANY PROJECT EXPERIENCE (30 points maximum).

Tenderers shall be required to score a minimum of 20 points for this Section to be considered eligible for further consideration. Projects must be listed on Schedule A5 and Form D1 in Part T2.2 of this document.

F3.11 (cont)

1.1.1 Asphalt Works

(1) Asphalt Rehabilitation of Airport Runways, Airport Taxiways and Highways. The work must include a milling operation. The value of the asphalt works must be at least 25% of the contract value. The criteria (including VAT) is stated below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Points per Project, up to 5 projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) R100 million or more</td>
<td>[7 Points per project, up to 5 projects]</td>
</tr>
<tr>
<td>(b) R60 million to R99 million</td>
<td>[5 Points per project, up to 5 projects]</td>
</tr>
<tr>
<td>(c) R30 million to R59 million</td>
<td>[3 Points per project, up to 5 projects]</td>
</tr>
</tbody>
</table>

Points will only be awarded if sufficient proof of the successful completion of the project is provided by means of a reference letter (from either the Client or Employer’s Agent). The letter must indicate that that the contractor performance was satisfactory.

Minimum required score (section 1.1) : 20 points
1.2  KEY PERSONNEL EXPERIENCE (70 points maximum)

Tenderers shall be required to score a minimum score for each sub-item as indicted for this Section to be considered eligible for further consideration.

1.2.1 Contracts Manager (35 points maximum)

Contracts Manager must provide proof of registration with ECSA as Pr.Eng or Pr.Tech or SACPCMP as a Professional Construction Project Manager or Professional Construction Manager. Candidate will not be evaluated if proof of registration is not provided.

(1) Relevant Experience (15 points maximum, points are not accumulative)

   (a) Proof that contracts manager has in excess of 15 years relevant* work experience [15 points].
   (b) Proof that contracts manager has 10-15 years relevant* work experience [10 points].

*Relevant shall be defined as works of a similar nature in respect of asphalt rehabilitation works which should preferably include airport experience.

Minimum requirement. The contracts manager needs to list a maximum of 5 relevant projects over the past 10 years for any points in the section otherwise 0 points will be awarded for this section. Projects must be listed on Form C6 and form D2 in Part T2.2 of this document.

(2) Relevant Asphalt Works experience as Contracts Manager (20 points maximum, points are not accumulative). The work must include a milling operation. The value of the asphalt works must be at least 25% of the contract value. The criteria (including VAT) is stated below:

   (a) R60 million or more [5 Points per project, up to 5 projects]
   (b) R30 million to R59 million [4 Points per project, up to 5 projects]

Note: The tenderer needs to score points for ALL of the categories (1.2.1(1) - 1.2.1(2) above) and provide the information required to score the categories.

Minimum required score (section 1.2.1) : 30 points
1.2.2 Construction Manager (35 points maximum)

(1) Relevant experience (15 points maximum, points are not accumulative)

(a) Proof that Construction Manager has in excess of 15 years relevant work experience [15 points]
(b) Proof that Construction Manager has 10-15 years relevant work experience [10 points]

*Relevant shall be defined as works of a similar nature in respect of asphalt rehabilitation works which should preferably include airport experience.

Minimum requirement. The contracts manager needs to list a maximum of 5 relevant projects over the past 10 years for any points in the section otherwise 0 points will be awarded for this section. Projects must be listed on Form C6 and Form D3 in Part T2.2 of this document.

(2) Relevant Asphalt Works as a Construction Manager (20 points maximum, points are not accumulative). The work must include a milling operation. The value of the asphalt works must be at least 25% of the contract value. The criteria (including VAT) is stated below:

(a) R60 million or more [5 Points per project, up to 5 projects]
(b) R30 million to R59 million [4 Points per project, up to 5 projects]

Note: The tenderer needs to score points for ALL of the categories (1.2.2 (1) - 1.2.2(2) above) and provide the information required to score the categories.

Minimum required score (section 1.2.2) : 30 points

The minimum hurdle requirement to be considered “responsive” and progress to the next round of the evaluation process is 80 points. Points awarded during the above process WILL NOT be carried forward to the next stage of evaluation.
Tender Data

F.3.11.1 The tender evaluation method for the evaluation of all responsive tender offers will be Method 2: Financial offer and preference in accordance with F.3.11.3.

F.3.11.7 Scoring financial offers

The financial offer will be scored using Formula 2 (Option 1) where the value of \( W_1 \) is 90 points.

F.3.11.8 The Tenderer is required to submit a B-BBEE verification certificate in accordance with the Construction Sector Codes of Practice promulgated in Gazette on 01 December 2017 and any subsequent amendments (see Returnable Schedule Form C1). See [www.sanas.co.za](http://www.sanas.co.za) for details of accredited verification agencies or [www.irba.co.za](http://www.irba.co.za) for details of registered auditors.

Preference points based on B-BBEE status level of contributor.

<table>
<thead>
<tr>
<th>B-BBEE Status Level of Contributor</th>
<th>Qualification</th>
<th>90:10 Preference System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( \geq 100 ) points</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>( \geq 95 ) but &lt; 100 points</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>( \geq 90 ) but &lt; 95 points</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>( \geq 80 ) but &lt; 90 points</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>( \geq 75 ) but &lt; 80 points</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>( \geq 70 ) but &lt; 75 points</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>( \geq 55 ) but &lt; 70 points</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>( \geq 40 ) but &lt; 55 points</td>
<td>1</td>
</tr>
<tr>
<td>Non-compliant Contributor</td>
<td>&lt; 40 points</td>
<td>0</td>
</tr>
</tbody>
</table>

NB: Tenderers that have valid BBBEE certificate using the old scoring points will be evaluated on such.

Eligibility for preference points is subject to the following conditions:

(a) A Tenderer’s scorecard shall be based on the Construction Sector Codes of Practice promulgated in Government Gazette on 01 December 2017.
(b) The scorecard shall be submitted as a certificate attached to Returnable Schedule Form C1
   (i) The certificate shall have been issued by a verification agency accredited by the South African National Accreditation System (SANAS); or a registered auditor approved by the Independent Regulatory Board of Auditors (IRBA), in accordance with Government Notice 754 issued by the Department of Trade and Industry.
(c) The date of issue of the certificate must be less than 12 (twelve) months prior to the advertised tender closing date (see Tender Data F.2.15)
(d) Compliance with any other information requested to be attached to Returnable Schedule Form C1
(e) Failure to submit any valid verification certificate will result in the award of 0 (zero) points for preference
(f) In the event of a joint venture (JV), a consolidated B-BBEE verification certificate in the name of the JV shall be submitted.

F.3.17 The number of paper copies of the signed contract to be provided by the employer is one.
Annex: Standard Conditions of Tender

(As contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement)

F.1 General

F.1.1 Actions

F.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all the legal obligations and not engage in anti-competitive practices.

F.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict, and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

F.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

F.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

F.1.3 Interpretation

F.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

F.1.3.2 These conditions of tender, the tender data and tender schedules which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.

F.1.3.3 For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

a) conflict of interest means any situation in which:

   i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;

   ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.

b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis.

c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and

d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels.

e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body.

f) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

**F.1.4 Communication and employer’s agent**

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer’s agent are stated in the tender data.

**F.1.5 The employer’s right to accept or reject any tender offer**

**F.1.5.1** The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection but will give written reasons for such action upon written request to do so.

**F.1.5.2** The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

**F.1.6 Procurement procedures**

**F.1.6.1 General**

Unless otherwise stated in the tender data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

**F.1.6.2 Competitive negotiation procedure**

**F.1.6.2.1** Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.
F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

F.1.6.2.4 The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13 after tenderers have been requested to submit their best and final offer.

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2 Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 Tenderer’s obligations

F.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

F.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

F.2.2 Cost of tendering

Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

F.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.
F.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

F.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

F.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) may not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

F.2.10 Pricing the tender offer

F.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT)), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.

F.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.
F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

F.2.12.2 Accept that an alternative tender offer may be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

F.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

F.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

F.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as “ORIGINAL” and “COPY”. Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked “financial proposal” and place the remaining returnable documents in an envelope marked “technical proposal”. Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

F.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.
F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity

F.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".

F.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

F.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

F.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

F.2.20 Submit securities, bonds, policies, etc.

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.
F.2.21  Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

F.2.22  Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data.

F.2.23  Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

F.3  The Employer’s undertakings

F.3.1  Respond to requests from the tenderer

F.3.1.1  Unless otherwise stated in the tender Data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.3.1.2  Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;

b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or

c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2  Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.

F.3.3  Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

F.3.4  Opening of tender submissions

F.3.4.1  Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers’ agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

F.3.4.2  Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.
F.3.4.3 Make available the record outlined in F.3.4.2 to all interested persons upon request.

F.3.5 Two-envelope system

F.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers’ agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation above the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

F.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

a) meets the requirements of these Conditions of Tender,
b) has been properly and fully completed and signed, and
c) is responsive to the other requirements of the tender documents.

F.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

• detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
• significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
• affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.
F.3.9  Arithmetical errors

F.3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

F.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

a) the gross misplacement of the decimal point in any unit rate;

b) omissions made in completing the pricing schedule or bills of quantities; or

c) arithmetic errors in:
  i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
  ii) the summation of the prices.

F.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.

F.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.

b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

F.3.10 Clarification of a tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

F.3.11.2 Scoring Financial Offers

In the case of a financial offer:

a) Rank tender offers from the most favourable to the least favourable comparative offer.

b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.

c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.
**F.3.11.3 Methods 2: Financial offer and preference**

In the case of a financial offer and preferences:

a) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11.7 and F.3.11.8.

b) Calculate the total number of tender evaluation points \( T_{EV} \) in accordance with the following formula:

\[
T_{EV} = N_{FO} + N_{P}
\]

where:
- \( N_{FO} \) is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
- \( N_{P} \) is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

**F.3.11.4 Method 3: Financial offer and quality**

In the case of a financial offer and quality:

a) Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

b) Calculate the total number of tender evaluation points \( T_{EV} \) in accordance with the following formula:

\[
T_{EV} = N_{FO} + N_{Q}
\]

where:
- \( N_{FO} \) is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
- \( N_{Q} \) is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.
F.3.11.5 Method 4: Financial offer, quality and preferences

In the case of a financial offer, quality and preferences:

a) Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

b) Calculate the total number of tender evaluation points \(T_{EV}\) in accordance with the following formula, unless otherwise stated in the Tender Data:

\[T_{EV} = N_{FO} + N_p + N_Q\]

where:  
- \(N_{FO}\) is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
- \(N_p\) is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.
- \(N_Q\) is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.6 Decimal places

Score financial offers, preferences and quality, as relevant, to two decimal places.

F.3.11.7 Scoring Financial Offers

Score the financial offers of remaining responsive tender offers using the following formula:

\[N_{FO} = W_1 \times A\]

where:
- \(N_{FO}\) is the number of tender evaluation points awarded for the financial offer.
- \(W_1\) is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
- \(A\) is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.

<table>
<thead>
<tr>
<th>Formula</th>
<th>Comparison aimed at achieving</th>
<th>Option 1 (^a)</th>
<th>Option 2 (^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Highest price or discount</td>
<td>(A = (1 + \frac{(P - P_m)}{P_m}))</td>
<td>(A = P / P_m)</td>
</tr>
<tr>
<td>2</td>
<td>Lowest price or percentage commission/fee</td>
<td>(A = (1 - \frac{(P - P_m)}{P_m}))</td>
<td>(A = P_m / P)</td>
</tr>
</tbody>
</table>

\(^a\) \(P_m\) is the comparative offer of the most favourable comparative offer.

\(P\) is the comparative offer of tender offer under consideration.
F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences. Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring quality

Score each of the criteria and subcriteria for quality in accordance with the provisions of the Tender Data.

Calculate the total number of tender evaluation points for quality using the following formula:

$$N_Q = W_2 \times S_O / M_S$$

where:

- $S_O$ is the score for quality allocated to the submission under consideration;
- $M_S$ is the maximum possible score for quality in respect of a submission; and
- $W_2$ is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data.

F.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

F.3.13 Acceptance of tender offer

Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer:

a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,

b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,

c) has the legal capacity to enter into the contract,

d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,

e) complies with the legal requirements, if any, stated in the tender data, and f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

a) addenda issued during the tender period,

b) inclusion of some of the returnable documents, and

c) other revisions agreed between the employer and the successful tenderer.

F.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.
F.3.15  Complete adjudicator’s contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

F.3.16  Notice to unsuccessful tenderers

F.3.16.1  Notify the successful tenderer of the employer’s acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.

F.3.16.2  After the successful tenderer has been notified of the employer’s acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

F.3.17  Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

F.3.18  Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender, but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.
Annex G
(normative)

Alpha-numeric associated with the Contractor Grading Designations

Table G1: Contractor grading designations and associated parameters

<table>
<thead>
<tr>
<th>Contractor Grading Designation</th>
<th>Less than or equal to (R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (class of construction works)</td>
<td>200 000</td>
</tr>
<tr>
<td>2 (class of construction works)</td>
<td>650 000</td>
</tr>
<tr>
<td>3 (class of construction works)</td>
<td>2 000 000</td>
</tr>
<tr>
<td>4 (class of construction works)</td>
<td>4 000 000</td>
</tr>
<tr>
<td>5 (class of construction works)</td>
<td>6 500 000</td>
</tr>
<tr>
<td>6 (class of construction works)</td>
<td>13 000 000</td>
</tr>
<tr>
<td>7 (class of construction works)</td>
<td>40 000 000</td>
</tr>
<tr>
<td>8 (class of construction works)</td>
<td>130 000 000</td>
</tr>
<tr>
<td>9 (class of construction works)</td>
<td>No Limit</td>
</tr>
</tbody>
</table>

Table G2: Classes of construction work (see next page)
### Table G2: Classes of Construction Work

<table>
<thead>
<tr>
<th>Description</th>
<th>Designation</th>
<th>Definition</th>
<th>Basic works types</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil engineering works</td>
<td>CE</td>
<td>Construction works that are primarily concerned with materials such as steel, concrete, earth and rock and their application in the development, extension, installation, maintenance, removal, renovation, alteration, or dismantling of building and engineering infrastructure</td>
<td>Water, sewerage, roads, railways, harbours and transport, urban development and municipal services</td>
<td>Structures such as a cooling tower, bridge, culvert, dam, grand stand, road, railway, reservoir, runway, swimming pool, silo or tunnel. The results of operations such as dredging, earthworks and geotechnical processes. Township services, water treatment and supply, sewerage works, sanitation, soil conservation works, irrigation works, storm-water and drainage works, coastal works, ports, harbours, airports and pipelines.</td>
</tr>
</tbody>
</table>
| Electrical engineering works       | EP          | Construction works that are primarily concerned with development, extension, installation, removal, renovation, alteration or dismantling of engineering infrastructure: a) relating to the generation, transmission and distribution of electricity; or b) which cannot be classified as EB. | Electrical power generation, transmission, control and distribution equipment and systems.                  | Power generation  
Street and area lighting  
Substations and protection systems  
Township reticulations  
Transmission Lines  
Supervisory control and data acquisition systems                                                                                                           |
| Electrical engineering works       | EB          | Construction works that are primarily concerned with the installation, extension, modification or repair of electrical installations in or on any premises used for the transmission of electricity from a point of control to a point of consumption, including any article forming part of such an installation | All electrical equipment forming an integral and permanent part of buildings and/or structures, including any wiring, cable jointing and laying and electrical overhead line construction | Electrical installations in buildings  
Electrical reticulations within a plot of land (erf) or building site  
Standby plant and uninterrupted power supply  
Verification and certification of electrical installations on premises                                                  |
<table>
<thead>
<tr>
<th>Description</th>
<th>Designation</th>
<th>Definition</th>
<th>Basic works types</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>General building works</td>
<td>GB</td>
<td>Construction works that: a) are primarily concerned with the development, extension, installation, renewal, renovation, alteration, or dismantling of a permanent shelter for its occupants or contents; or b) cannot be categorised in terms of the definitions provided for civil engineering works, electrical engineering works, mechanical engineering works, or specialist works.</td>
<td>Buildings and ancillary works other than those categorised as being: c) civil engineering works; d) electrical engineering works; e) mechanical engineering works; or f) specialist works.</td>
<td>Buildings for domestic, industrial, institutional or commercial occupancies Car ports Fences other than classified as SS Stores Walls</td>
</tr>
<tr>
<td>Mechanical engineering works</td>
<td>ME</td>
<td>Construction works that are primarily concerned with the development, extension, installation, removal, alteration, renewal of engineering infrastructure for gas transmission and distribution, solid waste disposal, heating, ventilation and cooling, chemical works, metallurgical works, manufacturing, food processing and, materials handling</td>
<td>Machine systems including those relating to the environment of building interiors: a) gas transmission and distribution systems b) pipelines c) solid waste disposal d) materials handling, lifting machinery, heating, ventilation and cooling, pumps, e) continuous process systems f) chemical works, metallurgical works, manufacturing, food processing such as that in concentrator machinery and apparatus, oil and gas wells, smelters, cyanide plants, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substances or other chemical processes.</td>
<td>Air-conditioning and mechanical ventilation Boiler installations and steam distribution Central heating Centralised hot water generation Cranes and hoists Dust and sawdust extraction Compressed air, gas and vacuum installations Conveyor and materials handling installations Continuous process systems involving chemical works, metallurgical works, oil and gas wells, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substances or other chemical processes Kitchen equipment Laundry equipment Lift installations and escalators Refrigeration and cold rooms Waste handling systems (including compactors)</td>
</tr>
<tr>
<td>Description</td>
<td>Designation</td>
<td>Definition</td>
<td>Basic works types</td>
<td>Examples</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Specialist works</td>
<td>SB</td>
<td>A subset of construction works identified and defined by the Board that involves specialist capabilities for its execution</td>
<td>The extension, installation, repair, maintenance or renewal, or removal, of asphalt</td>
<td>The development, extension, installation, repair, removal, or alteration of corrosion protection systems (cathodic, anodic and electrolytic)</td>
</tr>
<tr>
<td></td>
<td>SC</td>
<td></td>
<td>The development, extension, installation, removal, and dismantling, as relevant, associated with building excavations, shaft sinking and lateral earth support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td></td>
<td>The development, extension, installation, repair, renewal, removal, or alteration of corrosion protection systems (cathodic, anodic and electrolytic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE</td>
<td></td>
<td>Demolition of buildings and engineering infrastructure and blasting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td></td>
<td>The development, extension, installation, renewal, removal, alteration or dismantling of fire prevention and protection infrastructure (drencher and sprinkler systems and fire installation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SG</td>
<td></td>
<td>The development, extension, installation, renewal, removal, alteration or dismantling of glazing, curtain walls and shop fronts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SH</td>
<td></td>
<td>The development, extension, installation, maintenance, renewal, removal, alteration or dismantling, as relevant, of landscaping, irrigation and horticultural works</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td></td>
<td>The development, extension, installation, repair, maintenance, renewal, removal, renovation, alteration or, dismantling of lifts, escalators, travellators and hoisting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SJ</td>
<td></td>
<td>The development, installation, removal, or dismantling, as relevant, of piles and other specialized foundations for buildings and structures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SK</td>
<td></td>
<td>The installation, renewal, removal, alteration or dismantling, as relevant, road markings and signage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SL</td>
<td></td>
<td>The development, extension, installation, renewal, removal, renovation, alteration or dismantling of structural steelwork and scaffolding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SM</td>
<td></td>
<td>Timber buildings and structures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SN</td>
<td></td>
<td>The extension, installation, repair, maintenance, renewal, removal, renovation or alteration, as relevant, of the waterproofing of basements, roofs and walls using</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO</td>
<td></td>
<td>The development, extension, installation, renewal, removal, alteration or dismantling or demolition of water installations and soil and waste water drainage associated with buildings (wet services, plumbing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SQ</td>
<td></td>
<td>The development, extension, installation, repair, removal, alteration, dismantling or demolition of precast concrete or steel fencing</td>
<td></td>
</tr>
</tbody>
</table>
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 2019/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

Part T2: Returnable Documents

T2.1: List of Returnable Documents....................................... T2-2

T2.2: Returnable Schedules ...................................................... T2-4
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

T2.1: LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:  

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C1.1 Form of Offer and Acceptance</td>
</tr>
<tr>
<td></td>
<td>C1.2 Contract Data</td>
</tr>
<tr>
<td></td>
<td>C1.3 Performance Guarantee</td>
</tr>
<tr>
<td></td>
<td>C1.4 Retention Money Guarantee</td>
</tr>
<tr>
<td></td>
<td>C1.5 Adjudicator’s Agreement</td>
</tr>
<tr>
<td></td>
<td>C1.6 Form of Occupational Health and Safety Act 1993</td>
</tr>
<tr>
<td></td>
<td>C2.2 Bill of Quantities</td>
</tr>
</tbody>
</table>

2 Returnable Schedules required for tender evaluation purposes only

A1: Certificate of Attendance at Site Clarification Meeting
A2: Record of Addenda to Tender Documents
A3: Certificate of Authority for Signatory
A4: Certificate of Authority for Joint Ventures (where applicable)
A5: Schedule of the Tenderer’s Recent Experience related to this Project
A6: Schedule of Current Commitments
A7: Contractor’s Establishment on Site

3 Other documents required for tender evaluation purposes only

B1: Proof of registration for Contractor’s WCA registration
B2: A certified copy of Certificate of Contractor Registration issued by the Construction Industry Development Board
B3: An original valid Tax Clearance Certificate issued by the South African Revenue Services.
B4: An original Bank Statement of good financial standing (Bank Rating) for the tender sum

If the Tenderer wishes to submit an alternative tender offer, all information must be submitted as per Clause F2.12 of the Tender Data as specified under Part 1: Tender Procedure.

4 Returnable Schedules required for tender evaluation purposes that will be incorporated into the contract

C1: Enterprise Questionnaire
C2: Schedule of Proposed Subcontractors
C3: Schedule of Construction Equipment
C4: Schedule of Stand-by Construction Equipment (1hr establishment)
C5: A certified copy of B-BBEE Verification Certificate
C6: CV’s of key personnel
C7: Rates for Special Materials
C8: Preliminary Health & Safety Plan (See Health and Safety Specification Part C3.3.1)
C9: Preliminary Programme, Method Statement and Quality Management Plan
The tenderer must complete the following returnable documents:

<table>
<thead>
<tr>
<th>Returnable Documents</th>
<th>Completed (tick)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C10: Estimated Monthly Expenditure</td>
<td></td>
</tr>
<tr>
<td>C11: Safety and Fire Rules</td>
<td></td>
</tr>
<tr>
<td>C12: Occupational Health and Safety Questionnaire</td>
<td></td>
</tr>
<tr>
<td>C13: Schedule of Information to be provided by Tenderer (Banking Details etc.)</td>
<td></td>
</tr>
<tr>
<td>C14: Retention Money Guarantee (Pro-forma)</td>
<td></td>
</tr>
<tr>
<td>C15: Proposed Amendments and Qualifications</td>
<td></td>
</tr>
<tr>
<td>C16: Technical Services and Solution Contract Participation Goals</td>
<td></td>
</tr>
<tr>
<td>C17: Declaration of Bidder’s past Supply Chain management practices</td>
<td></td>
</tr>
<tr>
<td>C18: Declaration of Interest</td>
<td></td>
</tr>
<tr>
<td>D1: Evaluation Form – Tenderer’s Experience</td>
<td></td>
</tr>
<tr>
<td>D2: Evaluation Form – Contracts Manager</td>
<td></td>
</tr>
<tr>
<td>D3: Evaluation Form – Construction manager</td>
<td></td>
</tr>
</tbody>
</table>

Tender
Part T2: Returnable documents
Contract No: ORT 6029/2019

Returnable Schedules
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO:  ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

Part T2.2:  Returnable Schedules
Form A1: Certificate of Attendance at Briefing Meeting

This is to certify that

I, ………………………………………………………………………………………………………………………

Representative of tenderer)
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………

of (address)
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………

e-mail: …………………………………………………………………………………………………………………

telephone number: …………………………………………………………………………………………………

fax number: ……………………………………………………………………………………………………………

visited and examined the site on date: ………………………………………………………………………

Tenderer’s Representative

Signature: ………………………………… Position: ………………………………………

Employer’s
Representative:

Name: …………………………… Date: ………………………………………
Form A2: Record of Addenda to Tender Documents

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

<table>
<thead>
<tr>
<th>Date</th>
<th>Title or Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
</tbody>
</table>

Attach additional pages if more space is required.

Signed: ........................................ Date: ......................................................

Name: ................................. Position: ......................................................

Tenderer: ..............................................................................................................
Form A3: Certificate of Authority for Signatory

(1) Signatories for close corporations and companies shall confirm their authority by attaching to this form a duly signed and dated copy of the relevant resolution of their members or their board of directors, as the case may be.

(2) In the event that the tenderer is a joint venture, a certificate of authority for signatories (Form A4) is required from all members of the joint venture and the designated lead member shall be clearly identified as requested by tender condition F2.13.4.

An example is shown below:

"By resolution of the board of directors taken on ........................................ 20 ..........

Mr/Ms ..................................................................................................................................................

whose signature appear below, has been duly authorized to sign all documents in connection with this tender for CONTRACT No: ORT 6029/2019 and any contract which may arise there from on behalf of (block capitals) ........................................................................................................................................

Signed on behalf of Company: ........................................................................................................

In his/her capacity as: ....................................................................................................................... 

Date: ......................................................... Signatory of Authority: .............................................

Witnesses:

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

Signature  Signature

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

Name (print) Name (print)

Attach:

▪ Extract from minutes
▪ Annual Financial Report
▪ Tax Clearance Certificate
▪ Company Documents
▪ Bank reference

Signed: .............................................. Date: .................................................................

Name: .............................................. Position: ..........................................................

Tenderer: .................................................................................................................................
Form A4: Certificate of Authority for Joint Ventures (where applicable)
This Returnable Schedule is to be completed by joint ventures in addition to Form A3 for each JV member.
We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms . . . . . .
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . , authorised signatory of the company . . . . . . . . . . . . . . . . . . . . . .
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . , acting in the capacity of lead partner, to sign all
documents in connection with the tender offer and any contract resulting from it on our behalf.
NAME OF FIRM
Lead partner

ADDRESS

DULY AUTHORISED SIGNATORY

Signature: ……………………………
Name: …………………………………
Designation: ………………………….

Signature: ……………………………
Name: …………………………………
Designation: ………………………….

Signature: ……………………………
Name: …………………………………
Designation: ………………………….

Signature: ……………………………
Name: …………………………………
Designation: ………………………….
Signed:

…………………………………..

Date:

………………………………………………

Name:

…………………………………..

Position:

………………………………………………

Tenderer:

……………………………………………………………………………………………………….

Tender
Part T2: Returnable documents
Contract No: ORT 6029/2019

T2 - 8

T2.2
Returnable Schedules


Form A5: Schedule of the Tenderer’s Recent Experience related to this Project

The following is a statement of similar work successfully executed by myself/ourselves over the past ten (10) years:

<table>
<thead>
<tr>
<th>Employer, contact person and telephone number</th>
<th>Consulting Engineer (Name, Tel No, Contact Person)</th>
<th>Description of contract</th>
<th>Value of work inclusive of VAT (Rand)</th>
<th>Year completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: When completing the above schedule, Tenderer’s must take cognisance of the evaluation criteria as described in the Tender Data, Part T1.2, Clause F3.11

Signed: ........................................ Date: .................................................

Name: ........................................ Position: ..............................................

Tenderer: ..............................................................................................................

Tender
Part T2: Returnable documents
Contract No: ORT 6029/2019
Form A6: Schedule of Current Commitments

1. The tenderer shall list below all projects with which the proposed key personnel are currently involved.
2. In the event of a joint venture enterprise, details of all the members of the joint venture shall similarly be attached to this form.

<table>
<thead>
<tr>
<th>Employer, contact person and telephone number</th>
<th>Consulting Engineer, contact person and telephone number</th>
<th>Description of contract</th>
<th>Value of work inclusive of VAT (rand)</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signed: ............................................. Date: ..........................................................

Name: .................................................. Position: .....................................................

Tenderer: .....................................................................................................................................
Form A7: Contractor’s Establishment on Site

If the tenderer should require additional compensation for his obligations under Section 1300 (over and above the total tendered for item B1301) by including such additional compensation in the tendered rates and/or lump sum of items in the pricing schedule, these items and the value of such additional compensations shall be set out in a letter attached to this form.

Should the combined, extended total tendered for item B13.01. The contractor’s general obligations:

(a) Fixed obligations
(b) Value related obligations
(c) Time-related obligations

exceed a maximum of 15% of the tender sum, the tenderer shall clearly set out his reasons for tendering in this manner in a letter attached to this page.

The relevant regional project engineer will duly consider the reasons but reserves the right to consider the tendered rates to be imbalanced and to deal with them in terms of Conditions of Tender F3.9 contained in this volume.

Total tendered for Item B13.01 expressed as a percentage of the tender sum...........................................%.

Signed: .................................................. Date: .................................................................

Name: .................................................. Position: ..............................................................

Tenderer: ..........................................................................................................................
Form B1 to Form B4: Certificates

Attach the following Certificates to this page:

B1: Proof of registration for Contractor’s Compensation Commissioner or Insurers registration

B2: An original Certificate of Contractor Registration issued by the Construction Industry Development Board (CIDB)

B3: An original valid Tax Clearance Certificate issued by the South African Revenue Services. In the event of a Joint Venture, each member shall comply with this requirement.

B4: An original Bank Statement of good financial standing. (This document shall include a Bank Rating for the tender sum as indicated below)

<table>
<thead>
<tr>
<th>Bank Report on</th>
<th>(Tenderers Name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account No</td>
<td></td>
</tr>
<tr>
<td>Bank</td>
<td></td>
</tr>
<tr>
<td>Branch Code</td>
<td></td>
</tr>
<tr>
<td>Amount</td>
<td>(Tender Value)</td>
</tr>
<tr>
<td>Duration</td>
<td>6 months</td>
</tr>
</tbody>
</table>

BUSINESS POTENTIAL CODE (MARK X AGAINST APPLICABLE CLASSIFICATION)

- ( ) A UNDOUBTED FOR INQUIRY
- ( ) B GOOD FOR AMOUNT QUOTED
- ( ) C GOOD FOR AMOUNT QUOTED IF STRICTLY IN WAY OF BUSINESS
- ( ) D FAIR TRADE RISK
- ( ) E FIGURE CONSIDER TOO HIGH
- ( ) F FINANCIAL POSITION UNKNOWN
- ( ) G OCCASIONALLY DISHONOURED
- ( ) H FREQUENTLY DISHONOURED
**Form C1: Enterprise Questionnaire**

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

### Section 1: Name of enterprise

<table>
<thead>
<tr>
<th>Name of enterprise</th>
<th></th>
</tr>
</thead>
</table>

### Section 2: VAT registration number, if any

<table>
<thead>
<tr>
<th>VAT registration number, if any</th>
<th></th>
</tr>
</thead>
</table>

### Section 3: CIDB registration number, if any

<table>
<thead>
<tr>
<th>CIDB registration number, if any</th>
<th></th>
</tr>
</thead>
</table>

### Section 4: Particulars of sole proprietors and partners in partnerships

<table>
<thead>
<tr>
<th>Name*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity number*</td>
<td></td>
</tr>
<tr>
<td>Personal income tax number*</td>
<td></td>
</tr>
</tbody>
</table>

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

### Section 5: Particulars of companies and close corporations

<table>
<thead>
<tr>
<th>Company registration number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Close corporation number</td>
<td></td>
</tr>
<tr>
<td>Tax reference number</td>
<td></td>
</tr>
</tbody>
</table>

### Section 6: Record of service of the state

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- □ a member of any municipal council
- □ a member of any provincial legislature
- □ a member of the National Assembly or the National Council of Province
- □ a member of the board of directors of any municipal entity
- □ an official of any municipality or municipal entity
- □ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- □ a member of an accounting authority of any national or provincial public entity
- □ an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

<table>
<thead>
<tr>
<th>Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name of institution, public office, board or organ of state and position held</th>
<th></th>
</tr>
</thead>
</table>

Status of service:

(tick appropriate column)

Current

Within last 12 months

*insert separate page if necessary

### Section 7: Record of spouses, children and parents in the service of the state

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months been in the service of any of the following:

- □ a member of any municipal council
Tender

Part T2: Returnable documents

Contract No: ORT 6029/2019

☐ a member of any provincial legislature
☐ a member of the National Assembly or the National Council of Province
☐ a member of the board of directors of any municipal entity
☐ an official of any municipality or municipal entity
☐ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
☐ a member of an accounting authority of any national or provincial public entity
☐ an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

Name of spouse, child or parent

Name of institution, public office, board or organ of state and position held

Status of service: Current Within last 12 months

(tick appropriate column)

*insert separate page if necessary

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

(i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;

(ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;

(iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

(iv) confirms that I/we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;

(iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Name

Tenderer
Form C2: Schedule of Proposed Subcontractors

We notify you that it is our intention to employ the following Subcontractors for work in this contract. If we are awarded a contract we agree that this notification does not change the requirement for us to submit the names of proposed Subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

<table>
<thead>
<tr>
<th>Name and address of proposed Subcontractor</th>
<th>Nature and extent of work</th>
<th>Previous experience with Subcontractor (attach)</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Signed: .................................. Date: ........................................

Name: .................................. Position: ..................................

Tenderer: ........................................................................................................

(Attach information to this page)
Form C3: Schedule of Construction Equipment

The provisions of Subclause 30.1 of the General Conditions of Contract shall apply to the schedules of Construction Equipment appearing below.

The minimum requirements of paving plant are stated in Section C3.6 (Clause B4204) in the tender document.

The tenderer must state below what construction plant will be immediately available for this contract, what constructional plant will become available by virtue of outstanding orders, and what further constructional plant will be acquired or hired for the work should he be awarded the contract:

(a) CONSTRUCTION PLANT IMMEDIATELY AVAILABLE (I)
(b) CONSTRUCTION PLANT ON ORDER/ CONFIRMATION TO HIRE (O) (Proof of placed Order/ Letter of confirmation from Plant hire to be attached.
(c) CONSTRUCTIONAL PLANT STILL NEED TO BE HIRED OR PURCHASED (H) – No attachment.

<table>
<thead>
<tr>
<th>DESCRIPTION, SIZE, CAPACITY</th>
<th>NUMBER</th>
<th>AVAILABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Signed: ...........................................  Date: ...........................................

Name: ...........................................  Position: ...........................................

Tenderer: .........................................................................................................................
Form C4: Schedule of Stand-by Construction Equipment (1 hour establishment)

<table>
<thead>
<tr>
<th>DESCRIPTION, SIZE, CAPACITY</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

NB:

The Contractor is to take note of the Requirements for Equipment described in Clause C3.4.3(a) in C3: Scope of Work.

After the award of the Contract, the Contractor must satisfy the Employer’s Agent that all the above Construction Equipment or equivalent equipment will be on site and stand-by at all times when required. The Contractor shall maintain all Construction Equipment in a good working order for the duration of the Contract.

The minimum requirements of paving plant are stated in Section C3.6 (Clause B4204) in the tender document.

The Contractor undertakes to bring onto site, without additional costs to the Employer, any additional Construction Equipment which, in the opinion of the Employer’s Agent, is necessary for the completion of the Contract within the tendered contract period.

Signed:  
Date:  
Name:  
Position:  
Tenderer:  

Contract No: ORT 6029/2019
Returnable Schedules
Notes to tenderer:

1. The tenderer shall attach to this form a B-BBEE verification certificate in accordance with the Construction Sector Codes of Practice promulgated in Government Gazette on 01 December 2017 (see F.3.11.8 of the tender data)

2. In the event of a joint venture (JV), a consolidated B-BBEE verification certificate in the name of the JV shall be attached.

3. The attached verification certificate and the associated assessment report shall identify:
   a. The name and domicile citandi et executandi of the tenderer.
   b. The registration and VAT number of the tenderer.
   c. The dates of granting of the B-BBEE score and the period of validity.
   d. The expiry date of the verification certificate.
   e. A unique identification number.
   f. The standard and/or normative document, including the issue and/or revision used to evaluate the tenderer.
   g. The name and/or mark/logo of the B-BBEE verification agency or registered auditor.
   h. The category (Generic, QSE, Exempt) in which the tenderer has been measured.
   i. The B-BBEE procurement recognition level.
   j. The score achieved per B-BBEE element.
   k. The B-BBEE procurement recognition level.
   l. The score achieved per B-BBEE element.
   m. The % black shareholding.
   n. The % black women shareholding.
   o. The % black persons with disabilities.
   p. The value added status of the tenderer.

4. The Employer will not be responsible to acquire data that it needs for its own reporting systems and which may not form part of a verification agency’s standard certificate format. The tenderer, at its own cost, must acquire any missing specified data listed in 3 above from its selected verification agency or registered auditor and have it recorded on the certificate. Alternatively, such missing data must be supplied separately, but certified as correct by the same verification agency or registered auditor and also attached to this form. Failure to abide by this requirement will result in such tenderer scoring zero preference.
Form C6: CV’s of Key Personnel

Compulsory CV’s are required for the following:

- **Contracts Manager**
- **Construction Manager**

Complete and make copies of template as required

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname</td>
<td></td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
</tr>
<tr>
<td>Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Current Residence</td>
<td></td>
</tr>
</tbody>
</table>

**Education**

<table>
<thead>
<tr>
<th>Major Experience in previous 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company/Client Name</strong></td>
</tr>
<tr>
<td>--------------------------</td>
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</table>

**Note:** When completing the above schedule, Tenderer’s must take cognisance of the evaluation criteria as described in the Tender Data, Part T1.2, Clause F3.11
Form C7: Rates for Special Materials

Notes to tenderer:

1. Only net bitumen content of asphalt and bituminous products shall be subject to rise and fall and no account shall be taken of transport, emulsifiers, diluents or modifiers that may be supplied ex refinery or added later.

2. For the purposes of clarity when using this form, a supplier is any company (including refineries) that supplies to a tenderer a bituminous product that it manufactures using bitumen as the sole or blended ingredient in the product. A tenderer shall, in compliance with note 3 below, attach to this form a letter of supply from each supplier it intends using in the performance of the contract.

3. Tenderers shall append to this page the following information on a letterhead from their selected supplier:
   - the supplier’s company registration and address details; and
   - the product range available including refinery from which the base bitumen is drawn; and
   - the supply price (excluding VAT but including all other obligatory taxes and levies) to the tenderer for the net bitumen base content of each product; and
   - the date from which the supply prices apply.

4. Rise and fall adjustments shall only be made upon receipt by the Employer’s Agent of the appropriate letters of supply in compliance to note 3 above, but with the changed supply prices and date of application, as well as reasons for changes.

5. A change of supplier may be permitted, but only upon application to the Employer’s Agent with appropriate letters of supply in compliance to note 3 above and approval thereof.

6. Non-disclosure of reduction of supply prices shall be deemed a contractor’s deliberate action to defraud the Employers and grounds for the Employer, at its sole discretion, to terminate the contract.

<table>
<thead>
<tr>
<th>SPECIAL MATERIAL</th>
<th>UNIT*</th>
<th>RATE OR PRICE FOR THE BASE MONTH (Excl VAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitumen (Net Bitumen content)</td>
<td>Tons</td>
<td>As stated on supplier’s letter attached to this form</td>
</tr>
</tbody>
</table>

*Indicate whether the material will be delivered in bulk or in containers.

Signed: ...........................................  Date: ...........................................

Name: ...........................................  Position: ...........................................

Tenderer: ..............................................................................................

SPECIAL MATERIAL: Rates for Special Materials

Contract No: ORT 6029/2019

Tender
Part T2: Returnable documents
T2 - 20
Returnable Schedules
T2.2
Form C8: Preliminary Health and Safety Plan

(See Health and Safety Specification Part C3.7.1)

Attach a signed copy of the Plan to this page as well as the project specific health and safety plans to the tender.

Signed: ..................................    Date: ....................................................

Name: ..................................    Position: ..................................................

Tenderer: .................................................................................................
Form C9: Preliminary Programme, Method Statement & Quality Management Plan

The Tenderer shall attach a **Preliminary Programme**, reflecting the proposed sequence, duration and milestones of execution of the various activities comprising the work for this contract. The programme shall be in accordance with the information provided in the Schedule of Constructional Equipment and with all other relevant aspects of the tender.

The Tenderer shall attach a **Method Statement** that adequately details all activities, durations and any associated risks in terms of airside operations envisaged on this contract.

The Tenderer shall also attach his **Quality Management Plan** showing clearly how quality assurance and process control will be managed both at the plant and on site. The plan will be used to evaluate the tenders as the quality of workmanship is of highest priority in this contract. Any quality certification by recognised international body must be stated.

Signed: ........................................ Date: ..........................................................

Name: ................................. Position: ..........................................................

Tenderer: ...........................................................................................................
Form C10: Estimated Monthly Expenditure

If the tenderer wishes to submit an alternative tender then this form, appropriately completed, shall be attached to the Pricing Schedule for the alternative proposal.

The tenderer shall state his estimated value of the work to be completed every month, based on his preliminary programme and his Tendered value, in the table below. VAT is not to be included.

<table>
<thead>
<tr>
<th>MONTH</th>
<th>VALUE</th>
<th>MONTH</th>
<th>VALUE</th>
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<tbody>
<tr>
<td>1.</td>
<td>R</td>
<td>13.</td>
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<tr>
<td>2.</td>
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<td>14.(Final)</td>
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<td>3.</td>
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<tr>
<td>4.</td>
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<td>11.</td>
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<td>12.</td>
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</table>

TOTAL: R

Signed:………………………………….. Date:…………………………………..

Name:………………………………….. Position:…………………………………..

Tenderer:………………………………………………………………………………………….
SAFETY AND FIRE RULES FOR CONTRACTORS ON THE PREMISES

(i) All persons on company premises shall obey all health and safety rules, procedures and practices. In particular, NO SMOKING signs and the prohibition of the carrying of smoking materials in designated areas shall always be obeyed. A copy of the Safety Rules booklet is available on request.

(ii) All the applicable requirements of the Occupational Health and Safety Act (1993) and Regulations and any amendments thereto, shall be met as well as the Contractors approved health and safety plans.

(iii) Where the OHS Act prescribes certification of competency of persons performing certain tasks, proof of such certification shall be provided prior to signing of the contract or commencement of work as well as included in the health and safety file.

(iv) The Contractor’s Compensation Commissioners or Insurers Compensation fees must be up to date with a valid letter of good standing kept on site. A copy of Contractor’s WCA registration shall be produced on request. WCA Registration No. of the Contractor …………………………………………………

(v) The following areas in the company are declared as “HOT WORK PERMIT” areas:

AREA
PERSON RESPONSIBLE TO ISSUE PERMIT

All airside areas
Fire and Safety department

All basement areas
Fire and Safety department

All areas accessible to the public
Fire and Safety department

All enclosed areas
Fire and Safety department

The Terminal building
Fire and Safety department

Any process in the above mentioned areas involving open flames, sparks or heat shall be authorised by the issue of a permit to work, obtained from the company officials designated as permit issuer for the relevant area. Any work done under the protection of a permit to work shall be in strict compliance with every prescription on the permit.

(vi) Safety equipment shall be used where applicable, (e.g. safety goggles, boots, harness, etc.). The Contractor shall at his own expense provide as well as maintain such equipment, for his employees including some equipment for visitors to the site. The Contractor shall apply the necessary discipline and control to ensure compliance by his workers as well as all visitors to site.

(vii) All work shall be done during normal working hours, unless otherwise instructed or agreed in writing.
(viii) All Contractor shall appoint a duly competent emergency coordinator and all its employees shall familiarise themselves with the existing emergency procedures and co-operate in any drills or exercises, which might be held. Emergency/fire equipment and extinguishers shall not be obstructed at any time.

(ix) No person shall perform an unsafe/unhygienic act or operation whilst on the Company premises.

(x) No unsafe / dangerous equipment or tools may be brought onto or used on Company premises. The Company reserves the right to inspect all equipment/tools at any time and prevent/ prohibit their use, without any penalty to the Company and without affecting the terms of the Contract in any way.

(xi) The Contractor shall maintain good housekeeping standards in the area where he is working for the duration of the contract.

(xii) The Company reserves the right to act in any way to ensure the safety/ security of any persons, equipment or product on its premises and will not be liable for any cost or loss evoked by the action. This includes the right to search all vehicles entering, leaving or parked on the premises and to inspect any parcel, package, handbag and pockets. Persons who are not willing to permit searches may not bring any such items or vehicles onto the premises.

Signed: .............................................. Date: ..........................................................

Name: ............................................... Position: ..........................................................

Tenderer: ....................................................................................................................
### OCCUPATIONAL HEALTH AND SAFETY POLICY, ORGANISATION AND MANAGEMENT INVOLVEMENT

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1.1 Do you have an Occupational Health and Safety Policy? &lt;br&gt; Is this signed by the Chief Executive Officer?</td>
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<tr>
<td>1.2 Does a Occupational Health and Safety structure exist in your company?</td>
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<tr>
<td>1.3 Are senior and middle management actively involved in the promotions of Occupational Health and Safety?</td>
<td></td>
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<tr>
<td>1.4 Are the Occupational Health and Safety responsibilities of managers clearly defined?</td>
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<tr>
<td>1.5 Are annual Occupational Health and Safety objectives included in your business plan?</td>
<td></td>
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<tr>
<td>1.6 Is your company registered with the Compensation Commissioner? (COID Act)? &lt;br&gt; If so, please provide registration number</td>
<td></td>
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<tr>
<td>1.7 Do you have a copy of good standing certificate, confirming that your registration is paid up? &lt;br&gt; If so, please provide copy thereof</td>
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### OCCUPATIONAL HEALTH AND SAFETY TRAINING

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<table>
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<tbody>
<tr>
<td>2.1 Is training provided to employees at the following stages? &lt;br&gt; • When joining the company &lt;br&gt; • When changing jobs within the company &lt;br&gt; • When new plant or equipment needs to be operated &lt;br&gt; As a result of experience of and feedback from an accident/incident reports &lt;br&gt; Are you able to provide proof of specialist training provided? &lt;br&gt; Please state how this can be achieved</td>
<td></td>
</tr>
<tr>
<td>2.2 What formal Occupational Health and Safety training is provided specifically to? &lt;br&gt; • First line supervisors &lt;br&gt; • Middle and top management</td>
<td></td>
</tr>
<tr>
<td>2.3 Are all employees (including subcontractors) instructed as to the application of rules and regulations? &lt;br&gt; When is this done and how is it achieved?</td>
<td></td>
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</tbody>
</table>
2.4 Does this training include the selection, use and care of personal protective equipment?

2.5 What refresher training is provided and at what intervals?

Please list examples

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Target audience</th>
<th>Interval</th>
</tr>
</thead>
</table>

2.6 Has the person(s) allocated as your Occupational Health and Safety advisor followed specific Occupational Health and Safety training?

Please list most recent courses

2.7 Does this include refresher training?

3. **PURCHASE OF GOODS, MATERIALS AND SERVICES**

3.1 Do you have a system for establishing Occupational Health and Safety specifications as part of the assessment of goods, materials and services?

Please describe

3.2 Do you have a system which ensures that all statutory inspection of plant and equipment are carried out?

Please give examples of plant /equipment covered

3.3 Is there record of inspection?

Where is it kept?

Are you able to supply copies of these inspection records if required?

3.4 How is plant and equipment, which has been inspected identified as being safe to use?

3.5 Do you evaluate the Occupational Health and Safety competence of all sub-contractors?

Please describe how this is achieved and how the results are monitored

4. **OCCUPATIONAL HEALTH AND SAFETY INSPECTIONS**

4.1 Are periodic work inspections carried out by first line supervisors or your General Safety Regulation 11(1) appointee?

4.2 Are records of these inspections kept and available?

4.3 During the inspections are supervisors required to check that safety rules and regulations (including personal protective equipment) are adhered to?

4.4 Are unsafe acts and conditions reported and remedial actions formally monitored?
Please provide examples of the above

### 5. RULES AND REGULATIONS

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>5.1</td>
<td>Do health and safety rules and regulations exist for personnel and sub-contractors?</td>
<td></td>
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<tr>
<td></td>
<td>Do these cover:</td>
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<tr>
<td></td>
<td>• General rules</td>
<td></td>
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<tr>
<td></td>
<td>• Project rules</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Specific task rules</td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Do these rules include permit to work system (as applicable)</td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Do you have experience of project Occupational Health and safety plans?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Please give examples of where these have been used</td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>Do you have a formal company guidelines for holding pre-contract health and safety meetings with the client?</td>
<td></td>
</tr>
</tbody>
</table>

### 6. RISK MANAGEMENT

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Have the following, involved in the execution of your work, been identified?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hazards affecting health and safety?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The groups of people who might be affected?</td>
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</tr>
<tr>
<td></td>
<td>• An evaluation of the risk from each significant hazard?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Whether the risks arising are adequately controlled?</td>
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<tr>
<td>6.2</td>
<td>Are these findings and assessments recorded?</td>
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</tr>
<tr>
<td>6.3</td>
<td>How often are they reviewed?</td>
<td></td>
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<tr>
<td></td>
<td>Please list the time frame e.g. years</td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>For what processes/risk is personal protective equipment issued?</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Process/Risk</th>
<th>Type of PPE</th>
</tr>
</thead>
</table>

|   | Do you have a copy of the issue lists for PPE available on request? |   |

### 7. EMERGENCY ARRANGEMENTS

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>How do you manage your arrangements for dealing with emergencies?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are these communicated to your sub-contractors?</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>What provision have you made for first aid?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E.g. Trained First Aiders</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>What training do you provide to employees in Safety/Fire Fighting?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Please list institutions used for these training</td>
<td></td>
</tr>
</tbody>
</table>

### 8. RECRUITMENT OF PERSONNEL

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.1 Are health and Safety factors considered when hiring personnel?

8.2 Are medical examinations carried out prior to employment?
  In all cases
  Where type of work requires medical examination

8.3 Do you cover exit medical examination?

8.4 How do you assess the competence of staff before an appointment is made?
  E.g. Via trade testing, reference checks

| 9. REPORTING AND INVESTIGATION OF ACCIDENTS, INCIDENTS AND DANGEROUS CONDITIONS |
|---------------------------------|----------------|
| 9.1 Do you have a procedure for reporting, investigating and recording accidents and incidents? | YES | NO |
| Please supply a copy | |
| 9.2 Is there a standard report/investigation form used? | YES | NO |
| Please supply a copy | |
| 9.3 Do you have a formal system for reporting situations/near misses etc? | YES | NO |
| Please provide a copy | |
| 9.4 Please provide the following statistic for the last five years |

<table>
<thead>
<tr>
<th></th>
<th>YEAR1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>YEAR 4</th>
<th>YEAR 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost time accidents per 100 employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major/ Reportable injuries per 100 employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of dangerous occurrences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost man day due to accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 10 HEALTH AND SAFETY COMMUNICATION AND CONSULTATION |
|---------------------------------|----------------|
| 10.1 Are Health and Safety Committee meetings held between management and appointed Health and Safety representatives? | YES | NO |
| 10.2 Are the results of these meetings communicated to all employees? |
| If Yes please describe method | |
| 10.3 Are Health and Safety meetings held? |
| At what frequency? | |
| Chaired by whom? | |
| 10.4 Do you carry out Occupational Health and Safety promotions / campaigns? |
| If Yes please provide examples | |
The following documentation should also be provided with the tender:

1. Management Structure including organogram
2. Human Resource Plan
3. Letter of Good Standing from the Compensation Commissioner or licensed compensation insurer
4. COID Insurance

Declaration

I/we ……………………………………………. declare that the above information provided is correct.

Signed: …………………………………. Date: ………………………………………

Name: …………………………………. Position: ………………………………………

Tenderer: ………………………………………………………………………………………
Form C13: Schedule of Information to be provided by Tenderer

1. **Company details:**
   
   Registered Address:
   Contact Person:
   Telephone:
   Fax:

2. **Shareholders**
   
   Names/Percentages of holdings:

3. **Bankers**
   
   Name of Account Holder:
   Bank:
   Branch:
   Account Number:
   Bank and branch contact details:

4. **Turnover**
   
   Approximate turnover for each of the past three years:
   2012: ............................................................................................................................
   2013: ............................................................................................................................
   2014: ............................................................................................................................

5. **Management and Manpower Resources**
   
   Supervisors: ..................................................................................................................
   Labourers: ......................................................................................................................
   Other: ............................................................................................................................
   Name of Supervisor to be allocated to this contract: ....................................................

6. **Construction Equipment (Value in R)**
   
   Equipment owned by Company: ..................................................................................
   Own workshop/stores (location): ..................................................................................

Signed: .............................................. Date: .................................................................

Name: .............................................. Position: .............................................................

Tenderer: ........................................................................................................................
Form C14: Retention Money Guarantee (Pro-forma)

This form is a Pro-forma – It is to be supplied if applicable. Mark and sign if not applicable.

To: Airports Company South Africa

The guarantee is issued on behalf of ..........................................................(full name of guarantor) registration number ...........................................Undertake to pay you such amounts as you may from time to time demand from us, immediately upon receipt of a written demand from you.

1. Each demand shall be in writing and delivered to us at..............................or such other address as we shall in writing notify to you.
2. Our liability to make the payments herein referred to shall be unconditional and not be affected or diminished by any disputes, claims between the Employer and the Contractor.
3. Our aggregate liability under this guarantee is limited to........................................(R.................)
4. This guarantee shall expire on the date on which the last of the retention monies, which but for this guarantee would have been retained by the Employer, becomes payable to the Contractor.
5. This guarantee is neither negotiable nor transferable and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 4 (above), whichever is the earlier.

Signed at..............................................................for and on behalf of......................................on this day of..............................................................in the year..............................................................

GUARANTOR: ..........................................................................................

AS WITNESS:

1. .............................................................. 2. ..............................................................

ADDRESS: .............................................................. ADDRESS: ..............................................................

Signed: .............................................................. Date: ..............................................................

Name: .............................................................. Position: ..............................................................

Tenderer: ..............................................................................................
Form C15: Proposed Amendments and Qualifications

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualifications in a covering letter to his tender and reference such letter in this schedule.

The Tenderer’s attention is drawn to clause F.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the employer’s handling of material deviations and qualifications.

<table>
<thead>
<tr>
<th>Page</th>
<th>Clause or item</th>
<th>Proposal</th>
</tr>
</thead>
</table>

Signed: .................................. Date: ..........................................

Name: .................................. Position: ..........................................

Tenderer: .................................................................................................
Form C16: ACSA Technical Services and Solutions Contract Participation Goals

TRANSFORMATION FRAMEWORK & SPECIFICATION FORM

Airports Company South Africa aims to contract predominantly with Empowering Suppliers per the definition in P010 004P (ACSA internal transformation policy) were this relates to:

- an increase in local production,
- raw material beneficiation
- retention and employment of black people
- the transfer of skills to black owned EME’s and QSE’s.

1. Contract Participation Goals (CPG)

CPG refers to the extent to which the contracted resources achieve predetermined transformation objectives, expressed as a percentage (%) of the contract value. Bidders are expected to achieve this target by the end of the project.

2. Bidders are to submit a transformation proposal meeting the CPG target for all contracts over R1m including VAT.

3. CPG for this contract will be at 50% which will consist of the following B-BBEE elements:

   3.1. Equity (Target 50%): 40% weighting.
   3.2. Management (Target 50%): 40% weighting
   3.3. Skills development: 5% weighting
   3.4. Enterprise and supplier development: 10% weighting
   3.5. Socio economic development: 5% weighting

   Refer to C3.7.3.3 (6) which provides for a calculation table used to calculate the CPG score in Three (3) above.

4. To facilitate achievement of targets set out in 3, and transfer of skills, the tenderer must subcontract more than 30% of the contract value to CIDB Grade 2 to 6 CE contractors that are women owned, youth owned, PWPDO, or allocate to EME, QSE that are 51% black owned entities.

5. In the event that the Contractor/consultant fails to substantiate that any failure to achieve the contract participation goal relating to the granting of a preference was due to quantitative underruns, the elimination of items, or any other reason beyond the Contractor’s control which may be acceptable to the Employer, the Contractor/Consultant shall be liable to pay to the Employer a financial penalty calculated in the following manner:

   \[ P = \frac{(0.15 \times (D - Do) \times CA)}{100} \]

   where D is the tendered contract participation goal percentage;
   - Do is the contract participation goal which the Employer’s representative, certifies based on the credits passed, as being achieved upon completion of the contract;
   - CA is the contract amount.
   - P is the monetary value of penalty payable

No financial award is due for over performance on CPG.
6. Acceptance:

I/We ___________________________________________________________ acknowledge that I/we have read and understood the contents of this section and we will further achieve the Contract Participation Targets stated above per clause three (3) of this section by the end of this project.

Signed: ........................................ Date: .........................................................

Name: ........................................ Position: .........................................................

Tenderer: ..............................................................................................................
Form C17: Declaration of Bidder’s past supply chain management practices

1. This Standard Bidding Document must form part of all bids invited.

2. It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3. The bid of any bidder may be disregarded if that bidder, or any of its directors have:
   a. abused the institution’s supply chain management system;
   b. committed fraud or any other improper conduct in relation to such system; or
   c. failed to perform on any previous contract.

4. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Is the bidder or any of its directors listed on the National Treasury’s Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Apartment of the institution that imposed the restriction after the <em>audire alteram partem</em> rule was applied). The Database of Restricted Suppliers now resides on the National Treasury’s website(<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) and can be accessed by clicking on its link at the bottom of the home page.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1.1</td>
<td>If so, furnish particulars:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? The Register for Tender Defaulters can be accessed on the National Treasury’s website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) by clicking on its link at the bottom of the home page.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4.2.1</td>
<td>If so, furnish particulars:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4.3.1</td>
<td>If so, furnish particulars:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4.4.1</td>
<td>If so, furnish particulars:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SBD 8 CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)……………………………………………. CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

Signed: ...........................................  Date: ...........................................................

Name: ...........................................  Position: ...........................................................

Tenderer: ............................................................................................................................
Form C18: Declaration of interest (SBD4)

1. Any legal person, including persons employed by the state*, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest, where-

- the bidder is employed by the state; and/or

- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

2.1 Full Name of bidder or his or her representative: .................................................................

2.2 Identity Number: .......................................................................................................................

2.3 Position occupied in the Company (director, trustee, shareholder, member, etc): .......................

2.4 Company Registration Number: ..............................................................................................

2.5 Tax Reference Number: ............................................................................................................

2.6 VAT Registration Number: .......................................................................................................  

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / PERSAL numbers must be indicated in paragraph 3 below.

* “State” means –

(a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
(b) any municipality or municipal entity;
(c) provincial legislature;
(d) national Assembly or the national Council of provinces; or
(e) Parliament

2 “Shareholder” means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.7 Are you or any person connected with the bidder presently employed by the state? YES / NO
2.7.1 If so, furnish the following particulars:

Name of person / director / shareholder/ member: ............................................
Name of state institution to which you or the person connected to the bidder is employed: ..........................................................
Position occupied in the state institution: ..................................................

Any other particulars:

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

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector? YES/NO

2.7.2.1 If yes, did you attach proof of such authority to the bid document? YES/NO

Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.2.2 If no, furnish reasons for non-submission of such proof

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

2.8 Did you or your spouse, or any of the company's directors / shareholders / members or their spouses conduct business with the state in the previous twelve months? YES / NO

2.8.1 If so, furnish particulars:

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

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? YES / NO

2.9.1 If so, furnish particulars:

..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
2.10  Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between the bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid?  

YES / NO

2.10.1  If so, furnish particulars.

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

2.11  Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract?  

YES / NO

2.11.1  If so, furnish particulars.

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

3  Full details of directors / trustees / members / shareholders

<table>
<thead>
<tr>
<th>Full name</th>
<th>entity Number</th>
<th>Personal Income Tax Reference Number</th>
<th>Employee Number / PERSAL number</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
DECLARATION

I, THE UNDERSIGNED (NAME)…………………………………………………………………………………………

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 AND 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

Signed: ........................................ Date: .................................................................
Name: ................................. Position: .................................................................
Tenderer: ..........................................................................................................................
**Form D1: Evaluation form - Tenderers Relevant Experience**

**1.1.1 Asphalt Works Experience** - Asphalt Rehabilitation of Airport Runways, Airport Taxiways and Highways. The work must include a milling operation. The value of the asphalt works must be at least 25% of the contract value. Project details shall be listed below:

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Description and Value (Project Value in ZAR)</th>
<th>Client Contact Details (Tel Numbers)</th>
<th>Project Duration (dd/mm/yy to dd/dd/yy)</th>
<th>Possible points</th>
<th>Score per ref</th>
<th>Total score for section (Min: 20; Max: 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
<tr>
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<td>7</td>
<td>5</td>
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<td>5</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Point per project shall be awarded as follows:

- **7 points per project**
  - Project value of relevant projects listed is R100 million or more

- **5 points per project**
  - Project value of relevant projects listed is between R60 million to and including R99 Mill

- **3 points per project**
  - Project value of relevant projects listed is between R30 million to and including R59 Mill
### 1.2.1 Contracts Manager

#### 1.2.1 (1) Contracts Manager Years of relevant Experience: ____________ Years

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Possible Points</th>
<th>Points for Sub-section</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Proof that contracts manager has excess of 15 years relevant* work experience</td>
<td>[15 points]</td>
<td></td>
</tr>
<tr>
<td>(b) Proof that contract manager has 10 - 15 years relevant* work experience</td>
<td>[10 points]</td>
<td></td>
</tr>
</tbody>
</table>

#### 1.2.1 (2) Asphalt Works Experience
- Asphalt rehabilitation of Airport Runways, Airport taxiways and Highways. The work must include milling operations. The value of the asphalt works

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Description and Value (Project Value in ZAR)</th>
<th>Client Contact Details (Tel Numbers)</th>
<th>Project Duration (dd/mm/yy to dd/dd/yy)</th>
<th>Possible points</th>
<th>Score per ref</th>
<th>Total score for section (Min: 20; Max: 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
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<td>5</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Point per project shall be awarded as follows:

- **5 points per project**
  - Project value of relevant projects listed is R60 million or more
- **4 points per project**
  - Project value of relevant projects listed is between R30 million to and including R59 Mill
### Form D3: Evaluation form – Construction Manager

**1.2.2 Construction Manager**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Possible Points</th>
<th>Points for Sub-section</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Proof that contracts manager has experience has excess of 15 years relevant* work experience</td>
<td>15 points</td>
<td></td>
</tr>
<tr>
<td>(b) Proof that contract manager has 10 - 15 years relevant* work experience</td>
<td>10 points</td>
<td></td>
</tr>
</tbody>
</table>

#### 1.2.2 (1) Construction Manager Years of relevant Experience: ____________ Years

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Possible Points</th>
<th>Points for Sub-section</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Proof that contracts manager has experience has excess of 15 years relevant* work experience</td>
<td>15 points</td>
<td></td>
</tr>
<tr>
<td>(b) Proof that contract manager has 10 - 15 years relevant* work experience</td>
<td>10 points</td>
<td></td>
</tr>
</tbody>
</table>

#### 1.2.2 (2) Asphalt Works Experience
- Asphalt rehabilitaution of Airport Runways, Airport taxiways and Highways. The work must include a milling operations. The value of the asphalt works point per project shall be awarded as follows:

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Description and Value (Project Value in ZAR)</th>
<th>Client Contact Details (Tel Numbers)</th>
<th>Project Duration (dd/mm/yy to dd/dd/yy)</th>
<th>Possible points</th>
<th>Score per ref</th>
<th>Total score for section (Min: 20; Max: 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>4</td>
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</tr>
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<td>5</td>
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<td>4</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

- **Point per project shall be awarded as follows:**
  - 5 points per project
    - Project value of relevant projects listed is R60 million or more
  - 4 points per project
    - Project value of relevant projects listed is between R30 million to and including R59 Million
AIRPORTS COMPANY SOUTH AFRICA
O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

Part C1: Agreement and Contract Data

C1.1 Form of Offer and Acceptance.................................C1-2
C1.2 Contract Data..........................................................C1-6
C1.3 Form of Guarantee......................................................C1-17
C1.4 Retention Money Guarantee........................................C1-21
C1.5 Adjudicator’s Agreement..............................................C1-23
C1.6 Agreement in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) ..............................................C1-26
C1.1 Form of Offer and Acceptance (Agreement)

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

CONTRACT NO: ORT 6029/2019

FOR THE

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

The Tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

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

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

.............................................................................................................................................................................. Rand (in words);

.............................................................................................................................................................................. (in figures)

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

For the Tenderer

Signature ..............................................................................................................................................................

Name .................................................................................................................................................................

Capacity .............................................................................................................................................................

Name and address of organization ..........................................................................................................................

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

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

Signature and name of witness

Signature ..............................................................................................................................................................

Name .................................................................................................................................................................

Date ....................................................................................................................................................................

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

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

............................................................................................................................................
ACCEPTANCE

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

The terms of the contract, are contained in:

Part C1: Agreements and Contract Data, (which includes this Agreement)
Part C2: Pricing Data
Part C3: Scope of Work.
Part C4: Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto as listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer’s Agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature .................................................................................................................. Date.................................................................
Name .........................................................................................................................
Capacity .......................................................................................................................

For the

**Employer**

Airports Company South Africa
Private Bag X1
O.R. Tambo International Airport
1627

Name and
signature
of witness .................................................................................................................. Date.................................................................
### SCHEDULE OF DEVIATIONS

**Notes:**

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
2. A Tenderer’s covering letter shall not be included in the final contract document. Should any matter in such, letter, which constitutes a deviation as aforesaid become the subjects of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here,
3. Any other matter arising from the process from offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here,
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract,

<table>
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<tr>
<th>Subject</th>
<th>Details</th>
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<tr>
<td>5</td>
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</table>

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

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

For the Tenderer: ............................................................

For the Employer ............................................................

Name and address of organisation ............................................................

Witness Signature ............................................................

Date ............................................................

---

**Contract**

**Part C1: Agreement and Contract Data**

**Contract No: ORT 6029/2019**
CONFIRMATION OF RECEIPT

The Tenderer (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

the ............................................. (day)

of .................................................. (month)

20 .................................................... (year)

at ..................................................... (place)

For the Contractor

.................................................... Signature ...............................................

.................................................... Name .....................................................

.................................................... Capacity ..............................................

.................................................... Witness Signature ................................

.................................................... Name .....................................................
AIRPORTS COMPANY SOUTH AFRICA
O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

C1.2 Contract Data

C1.2.1 General Conditions of Contract

The following standardized General Conditions of Contract:

General Conditions of Contract for Construction Works (Third Edition) 2015

prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, email: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer and Employers Agent.

The Pro-formas bound with the General Conditions of Contract 2015, from page 96 to page 116 shall not apply to this Contract and shall be replaced with the documentation bound into this Contract Document.

C1.2.2 Special Conditions of Contract

Variations, amendments and additions to the General Conditions of Contract as Special Conditions of Contract prescribed by the Employer are set out below. Each item of the Special Conditions of Contract given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The following Special Conditions of Contract as prescribed by the Employer, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

1.1.1.16 Add the following to Clause 1.1.1.16:

"Where reference is made to the term ‘Engineer’ in the Project Specifications or anywhere in the contract document, the terms ‘Engineer and ‘Employer’s Agent’ shall have the same meaning."

2.4.3 Add the following Clause 2.4.3

"2.4.3.1 The originals of all Drawings and Specifications prepared by or on behalf of the Employer’s Agent shall remain in his custody and references wherein to delivery to the Contractor of Drawings or Specifications shall relate to true copies thereof.

2.4.3.2 The Contractor shall be entitled to receive free of charge, to the extent provided in the Contract, copies of each such Drawing and Specification and to receive, or reproduce, such additional copies as he shall reasonably require.

All additional copies, whether provided by the Employer’s Agent or reproduced by the Contractor, shall be to the Contractor’s account.
2.4.3.3 One copy of all documents constituting the Contract shall be kept on the Site and be available for perusal by the Employer's Agent or any person authorised by him.

2.4.3.4 The Contractor shall, in accordance with the Employer's Agent's instructions, maintain a register on the Site of all Drawings and revisions thereof in the chronological order in which they are delivered to him."

Amend the first three lines to read:

"Where any part of the Works, whether permanent or temporary is designed by the Contractor, he shall, notwithstanding any approval of the Employer's Agent be liable for any error or deficiency in and design, drawing or document and any loss or damage arising out of such error or deficiency."

Add the following new Clause 4.2.3:

"4.2.3.1 The Employer's Agent shall establish the basic reference pegs and benchmarks on the Site and give to the Contractor the particulars thereof in sufficient time to enable the Contractor to meet his approved programme.

4.2.3.2 After compliance by the Employer's Agent with the provisions of Clause 4.2.3.1, the Contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith.

4.2.3.3 If at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Employer's Agent, shall at his own expense rectify such error to the satisfaction of the Employer's Agent, but if such error is based on incorrect data supplied in writing by the Employer's Agent or if there is any delay in providing the particulars required in terms of Clause 4.2.3.1, the Contractor shall, in respect of that delay and the Cost of such rectification, be entitled to make a claim in accordance with Clause 10.

The Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting out the Works.
The checking of any setting-out or of any line or level by the Employer’s Agent shall not relieve the Contractor of his responsibility for the correctness thereof."

Liability for Subcontractors

Add the following to Clause 4.4.2 after the last sentence:

"The Contractor shall not subcontract any part of the Contract without the prior written consent of the Employer’s Agent, which consent shall not be unreasonably withheld."

Add the following new Clauses:

"4.9.2: In order to preclude seizure by the owner of any Construction Equipment being held by the Contractor on a hire-purchase agreement for the purposes of the Contract, the Employer shall be entitled to pay any such owner the amount of any outstanding instalment or other sum owing under any hire or hire-purchase agreement and in the event of his doing so, any amount thus paid by him shall be a debt payable to the Employer by the Contractor and may be deducted by the Employer from any monies owing or that may become owing the Contractor in terms of the Contract, or be recovered at law from the Contractor by the Employer.

4.9.3: When entering into any subcontract for the execution of any part of the works, the Contractor shall incorporate in such subcontract, by reference or otherwise, the provisions of this clause in respect of Construction Equipment brought to the Site by the subcontractor."

Time to instruct commencement of the Works

Add the following to Clause 5.3.3 after the last sentence:

"The Contractor shall not commence working until they have an approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2003 and complied with the initial requirements thereof."

Add the following paragraph:

"All additional copies, whether provided by the Employer’s Agent or reproduced by the Contractor, shall be to the Contractor’s account."

Add the following after “the Contractor,” in the third line:

"or by reason of any contractor executing construction work, which is not in accordance with, the Contractor’s Health and Safety Plan for the Site or which poses a threat to the health and safety of persons."

Add the following new Clause:

"Fifty per cent (50%) of the penalty as stated in the Contract Data (5.13) shall also be applicable should the Contractor fail to achieve the interim milestone dates as stated in Clause C3.5.1(a) (Management of the Works)."

Issue of Certificate of Practical Completion

Replace "the Employer’s Agent" in the second line with the following:

";, the Contractor shall notify the Employer’s Agent, who shall inspect the Works and the Employer’s Agent"
Add the following at the end of this Clause:

"However, a Certificate of Completion will not be issued before the Contractor hands over a consolidated Health and Safety file that shall include all the specified information."

In the last sentence:

In the first line of Clause 6.6.1.2.1 after the word "sums" and the fourth line of Clause 6.6.1.2.2 after the word "amount" insert "excluding VAT."

Insert "VAT and" after "excluding" in the parenthesis in the third line.

Replace the second sentence (commencing “The valuation of such materials ……….”) with the following:

“The valuation of such materials shall be based on the purchase price and delivery cost reflected by the relevant invoices or receipts, exclusive of Value Added Tax and discounts to the Contractor and inclusive of any other duties payable on such material. (Value Added Tax will be added only to the nett amount certified by the Employer’s Agent as payable to the Contractor in respect of each Payment Certificate, as provided for in Clause 6.10.1;"

Variations exceeding 15 per cent

Replace "15 per cent" in the heading, the marginal heading and in Clause 6.11.1.3 with "20 per cent".

Add the following to this sub-clause:

“The onus rests with the Contractor to produce work which conforms in quality and accuracy of detail to all the requirements of the specifications and drawings, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced personnel, together with all transport, instruments and equipment, to ensure adequate supervision and positive control of the works at all times.”

Add the following to this sub-clause:

“The Contractor shall conduct tests or have them conducted continually on a regular basis, to check the properties of natural materials and processed natural materials and of products manufactured on site, such as concrete and asphalt. Although not a requirement for the Contractor to conduct regular tests on any commercially produced products such as cement, bitumen, steel and pipes, the Contractor shall remain fully responsible for any defective material or equipment provided by him.

Similarly, the quality of all elements of the works shall be checked on a regular basis so as to ensure compliance with the specified requirements.

The intensity of control and of tests to be conducted by the Contractor in terms of these obligations is not specified but shall be adequate to ensure that proper control is being exercised to the satisfaction of the Employer’s Agent.

Where any natural materials or products made from natural materials are supplied, upon completion of each element of the construction works, the Contractor shall test and check such materials, products and or elements for compliance with the specified requirements and shall submit his results to the Employer’s Agent for approval. Such submission shall include all his measurements and test results and shall furnish adequate proof of compliance with the specified requirements.”
8.6.1  
Add the following new Clause:

“To stop any contractor from executing construction work, which is not in accordance with, the Contractor’s health and safety plan for the Site or which poses a threat to the health and safety of persons and to implement the required health and safety measures before continuing.”

Delete and replace with the following:

“Risk arising from political riot and malicious damage, unless these risks are insurable with the South African Special Risk Insurance Association at the time of tendering and it is stipulated in the Contract Data that the Contractor is to effect insurance against these risks.”

Delete and replace with the following:

“hereby indemnifies the Employer, the Employer’s Agent and all consultants against any liability in respect of damage to or physical loss of the property of any person, including any employee of the Contractor, or injury to or death of any person, including any employee of the Contractor and”

Delete and replace with the following:

(1)(b)  
Insurance Effected by the Contractor

Insurance requirements for PROJECTS with a value above R50 million on the AIRSIDE

Contract Works
With regards to contract works claims, the contractor is responsible for the following deductibles:

- All Civil Work and Earthworks excluding Taxiways – R300 000 deductible (excess);
- Taxiway Rehabilitation – R300 000 deductible (excess);
- New Taxiway Construction – R700 000 deductible (excess);
- All other claims – R300 000 deductible (excess);
- Other property insured – R700 000 deductible (excess);
- Contractors should re-insure the deductibles.

Public Liability

- In the event of a claim brought against the contractor for 3rd party property damage, the contractor will be responsible for a deductible (excess) of R1,025,000;
- In the event of a claim brought against the contractor / consultant for removal of lateral support, the contractor / consultant will be responsible for a deductible (excess) of R1,250,000;
- In the event of a claim for damage to aircraft, the contractor / consultant will be responsible for a deductible (excess) of R1,250,000;
- Contractors / consultants should re-insure the deductibles.

Professional Indemnity

- Contractors who have a material design element, excluding typical P & G related work, as part of their scope, are responsible for a Professional Indemnity cover of R10 million;
- In the event of a claim above R10 million, the ACSA PI cover will kick in for the amount in excess of R10 million;
- Proof of cover in the form of a certificate of insurance should be provided to ACSA before a contract is signed between ACSA and the contractor and/or consultant.

Without in any way detracting from any requirements contained elsewhere in this contract the Contractor and Sub-Contractors shall where applicable, provide as a minimum the following:
INSURANCE OF CONTRACTOR’S EQUIPMENT (including tools, offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the Site for a sum sufficient to provide for their replacement.

Insurance in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as may be amended or in terms of any similar Workers Compensation and Unemployment Insurance enactment’s in the Suppliers’ or Sub Supplier’s operational, manufacturing or assembly locations.

Motor Vehicle Liability Insurance comprising (as a minimum) “Balance of Third Party” Risks including Passenger Liability indemnity.

Where the Contract involves manufacturing and/or fabrication of the Works or parts thereof at premises other than at the site the Supplier shall satisfy the Employer that all Plant and Materials for incorporation in the Works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such works during manufacture or fabrication then such interest shall be noted by endorsement to the relevant Policies of Insurance.

Imported equipment or component parts or materials to be supplied in terms of this Contract which require any process of assembly or finishing in South Africa prior to delivery to the Site are to be insured by the Contractor up to the commencement of transit to Site of the assembled or finished equipment component parts or materials unless special arrangements are made by the Employer.

The insurances to be provided by the Contractor and his subcontractors shall:

(a) be affected with Insurers and on terms approved by the Employer.

(b) be maintained in force for whatever period the perils to be insured by the Contractor are at risk (including any defects liability period during which the Contractor is responsible for the care of the Works)

(c) submit to the Employer the relevant Policy or Policies of Insurance or evidence acceptable to the Employer that such insurances have been affected.

In the event that the Contractor or his subcontractor receives any notice of cancellation or restrictive modification to the insurance provided to them they shall immediately notify the Employer in writing of such cancellation or restriction and shall advise what action the Contractor or his subcontractor will take to remedy such action.

If the Contractor fails to effect and keep in force the insurances referred to then the Employer may effect and keep in force any such insurances and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount paid by the Employer from any monies due or which may become due to the Contractor or recover same as a debt from the Contractor.

**Subcontractors**

The Contractor shall:

(a) ensure that all potential and appointed subcontractors are aware of the whole contents of this clause, and

(b) enforce the compliance by sub-contractors with this clause where applicable.
Sub-Clause (2)

If required, the Contractor shall provide proof that he has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act, No 130 of 1993, and that he has complied with the provisions of the Occupational Health and Safety Act, No 85 of 1993 and, in respect of the later Act, shall when called upon to do so, enter into and execute an Agreement as provided under Section 37(2) of said Act. The Agreement shall be in the form included elsewhere in this document.”

Add the following new Clause:

“Has failed to execute construction work in accordance with the Contractor’s Health and Safety Plan or without a threat to the health and safety of persons within fourteen (14) days after receiving from the Employer’s Agent written notice of the same.”

Add the following Clause:

“10.1.6 Early warning – A Party shall notify the other as soon as he is aware of any circumstance which may delay or disrupt the Works, or which may give rise to a claim for additional payment. The Contractor shall take all reasonable steps to minimise these effects.

The Contractor’s entitlement to extension of the Time for Completion or additional payment shall be limited to the time and payment which would have been due if he had given prompt notice and had taken all reasonable steps.”
Part 1: Contract Data completed by the Employer

The General Conditions of Contract make several references to the Contract Data for specific data, which together with the General and Special conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The Contract Data and General Conditions of Contract shall have precedence over the Drawings, Scope of Work and Standardised Specifications in the interpretation of any ambiguity or inconsistency between these documents.

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

Clause

1 GENERAL

1.1.1.13 The Defects Liability Period is 12 months.

1.1.1.14 The time for achieving Practical Completion is 14 months from site hand over.

1.1.1.15 The Employer is the Airports Company South Africa, O.R. Tambo International Airport, represented by the Airport Manager and/or such other person or persons duly authorised thereto by the Employer in writing.

Address to: Airports Company South Africa Ltd
Private Bag X1
O.R. Tambo International Airport
1627

1.1.1.16 The Employer’s Agents are: Zimile Consulting Engineers and Proserve Consulting acting through a director or an official duly authorised thereto in writing.

Address to: Zimile Consulting Engineers
Corner Pioneer Road and Elizabeth Road (Building C)
International Business
Gateway Office Park
Midridge Park
Midrand
1684

Proserve Consulting (Pty) Ltd
28 Panorama Road
Rooihuiskraal
0157

1.1.1.26 The Pricing Strategy is a Re-measurement Contract as defined in Subclause 1.1.1.27

3.2.3 The Employer’s Agent is required to obtain the specific approval of the Employer before executing any of the following functions or duties:

1. Clause 3.3.1 Nomination of Employer’s Agent’s Representative
2. Clause 3.3.4 Employer’s Agent’s authority to delegate
3. Clause 5.8.1 Non-working times
4. Clause 6.3 Variations
5. Clause 5.11.2 Suspension of the Works
6. Clause 5.12.1 Extension of Time for Practical Completion
7. Clause 5.12.4 Acceleration instead of extension of time

5.3.1 The documentation required before commencement with Works execution are:

- Health and Safety Plan (Refer to Clause 4.3)
- Initial programme (Refer to Clause 5.6)
- Security (Refer to Clause 6.2)
- Insurance (Refer to Clause 8.6)
- Cash flow projection

5.3.2 The time to submit the documentation required before commencement with Works execution is fourteen (14) days.

5.4.2 The access and possession of Site shall not be exclusive to the Contractor but as set out in the Site Information.

5.8.1 The non-working days are non-working nights as designated in clause B1204 of Part C3.6.1. Refer to the working hours as detailed in the Manual of Procedures for Working Airside.

The special non-working days are gazetted public holidays falling outside of the year end break and the days on which the contractor grants the majority of his permanent workforce leave around 15 December and the first Monday of the subsequent year (as defined by SAFCEC).

5.13 (i) The penalty for failing to complete the Works is R60 000,00 per calendar day.
(ii) The penalty for failing to meet the taxiway or runway opening requirement is R60 000,00 per occurrence and also any additional expenses as may result from the delay in opening the facility.

5.16.3 The latent defects period is 10 years.

6.5.1.2.3 The percentage allowances to cover the relevant charges is 10%.

6.8.2 Contract Price Adjustment

The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.

If special materials are specified in the Contract then the provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials.

Where applicable, in terms of the foregoing, the value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

\[ x = 0.15 \]
\[ a = 0.15 \]
\[ b = 0.25 \]
\[ c = 0.50 \]
\[ d = 0.10 \]

"L" is Consumer Price Index for the area of Kempton Park i.e. Witwatersrand.

"F" is the Production Price Index for Diesel oil.
The base date for the purposes of calculating Contract Price Adjustment (CPA) shall be the month prior to the tender closing date.

NOTE: The contract price adjustment factor shall be calculated to six decimal places.

6.10.1.5 The percentage advance on materials not yet built into the Permanent Works is 80% upon proof of ownership.

Payment to the Contractor for any materials on site shall only be authorized after proof of ownership by the Contractor has been lodged with the Employer’s Agent in the form of receipted invoices or other acceptable documents.”

6.10.3 Notwithstanding the provision of a performance guarantee in terms of Clause 6.2.1, interim payments to the Contractors shall be subject to a retention by the Employer of an amount of 5% of the said amounts due to the Contractor. The limit of retention money is 5% of the Contract Price, including allowances for contingencies and Contract Price Adjustment. A guarantee in lieu of retention is permitted.

8.6.1.1.2 The value of Plant and materials supplied by the Employer to be included in the insurance sum is R0,00 (Nil).

10.5.3 The number of ad-hoc Adjudication Board Members to be appointed is 1 (one).

10.7.1 Disputes are to be referred for final settlement to arbitration.
Part 2: Data provided by the Contractor

Clause 1.1.1.9:
The name of the Contractor is ……………………………………………………………………………

Clause 1.2.1.2:
The address of the Contractor is

<table>
<thead>
<tr>
<th>Physical Address</th>
<th>Postal Address</th>
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Telephone: ........................................... Fax: ..................................................

email : ................................................

6.2.1 The security to be provided by the Contractor shall be one of the following:

<table>
<thead>
<tr>
<th>TYPE OF SECURITY</th>
<th>CONTRACTOR'S CHOICE</th>
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</thead>
<tbody>
<tr>
<td>Cash deposit of 10% of the Contract Sum (excluding VAT)</td>
<td>&quot;YES&quot; or &quot;NO&quot;</td>
</tr>
<tr>
<td>Performance Guarantee of 10% of the Contract Sum (excluding VAT)</td>
<td></td>
</tr>
</tbody>
</table>

General Conditions of Contract - Clause 6.8.3: Variation in the cost of special materials

Each material dealt with as a special material in terms of Clause 4.1 of the Contract Price Adjustment Schedule of the General Conditions of Contract is stated in the list below. The provisions of Subclause 6.8.3 of the General Conditions of Contract shall apply to such special materials. The rates and prices for the special materials shall be furnished by the tenderer, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies.

<table>
<thead>
<tr>
<th>Special Material</th>
<th>Source / Supplier</th>
<th>Rate or Price for the base month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitumen</td>
<td></td>
<td>/ ton *</td>
</tr>
<tr>
<td>Base Bitumen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicate whether the material will be delivered in bulk or in containers. This is to be the Oil Companies Industry Rate.
When called upon to do so, the tenderer shall substantiate the above rates or prices with acceptable documentary evidence.

No Special Materials are to be submitted unless clarified with Employer’s Agent (See F.2.11 & F.2.12)
Note: Fuel not to be include unless submitted as an alternative tender
When called upon to do so, the tenderer shall substantiate the above rates or prices with acceptable documentary evidence.

SIGNED ON BEHALF OF TENDERER: .........................................................
AIRPORTS COMPANY SOUTH AFRICA
O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

C1.3 Performance Guarantee (Pro Forma)


GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: ...........................................................................................................................................................

Physical address: ...............................................................................................................................................................

"Employer" means: .............................................................................................................................................................

"Contractor" means: ...............................................................................................................................................................

"Employer's Agent" means: ....................................................................................................................................................

"Works" means: ........................................................................................................................................................................

"Site" means: .......................................................................................................................................................................... 

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of R .................................................................

Amount in words: ..............................................................................................................................................................

"Guaranteed Sum" means: The maximum aggregate amount of R .................................................................

Amount in words: ..............................................................................................................................................................

Type of Performance Guarantee: Fixed

"Expiry Date" means: ..........................................................................................................................................................
1. VARIABLE PERFORMANCE GUARANTEE

1.1. Where a Variable Performance Guarantee has been selected, the Guarantor’s liability shall be limited during the following periods to diminishing amounts of the Guaranteed Sum as follows:

1.1.1. From and including the date of signing the Performance Guarantee up to and including the date of the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum: R……………………………………………………………………………..

(Amount in Words……………………………………………………………………………..)

1.1.2. From the day following the date of the said interim payment certificate up to and including the Expiry Date, or the date of issue by the Employer’s Agent of the Certificate of Completion of the Works, whichever occurs first:

R………………………………………………………………………………………………

(Amount in Words……………………………………………………………………………..)

1.2. The Employer’s Agent and/or the Employer shall advise the Guarantor in writing of the date on which the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum, has been issued and the date on which the Certificate of Completion of the Works has been issued.

2. FIXED PERFORMANCE GUARANTEE

2.1. Where a Fixed Performance Guarantee has been selected, the Guarantor’s liability shall be limited to the amount of the Guaranteed Sum.

2.2. The Guarantor’s period of liability shall be from and including the date on which the Performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer’s Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever occurs first.

2.3. The Employer’s Agent and/or Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion has been issued.

CONDITIONS APPLICABLE TO VARIABLE AND FIXED PERFORMANCE GUARANTEES

The Guarantor hereby acknowledges that:

3.1.1. Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.1.2. Its obligation under this Performance Guarantee is restricted to the payment of money.

3.2. Subject to the Guarantor’s maximum liability referred to in 1.1 or 2.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 3.2.1 to 3.2.3:
3.2.1. A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 3.2.2;

3.2.2. A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 3.2.1 and the sum certified has still not been paid;

3.2.3. A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 3.2.

3.3. Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

3.3.1. The Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 3.3; or

3.3.2. A provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 3.3; and

3.3.3. The aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

3.4. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.1 or 2.1.

3.5. Where the Guarantor has made payment in terms of 3.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

3.6. Payment by the Guarantor in terms of 3.2 or 3.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

3.7. Payment by the Guarantor in terms of 3.3 will only be made against the return of the original Performance Guarantee by the Employer.

3.8. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

3.9. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

3.10. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.1.2 or 2.2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

3.11. This Performance Guarantee, with the required demand notices in terms of 3.2 or 3.3, shall be regarded as a liquid document for the purposes of obtaining a court order.
3.12. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at: ...........................................................................................................

Date: ..................................................................................................................

Guarantor's signatory (1): ......................................................................................

Capacity: ...........................................................................................................

Guarantor's signatory (2): ......................................................................................

Capacity: ...........................................................................................................

Witness signatory (1): .........................................................................................

Witness signatory (2): .........................................................................................
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

C1.4 Retention Money Guarantee (Pro Forma)

ISSUED TO ......................................................................................................................... [INSERT NAME OF EMPLOYER] ............................................................................. (hereinafter called "the Employer")

ON BEHALF OF .................................................................................................................. [INSERT NAME OF CONTRACTOR] ............................................................................. (hereinafter called "the Contractor")

in connection with CONTRACT NO: ......................................................... (hereinafter called "the Contract").

WHEREAS the Employer and the Contractor have agreed that the Contractor may provide a guarantee in lieu of the whole or a portion of the retention moneys provided for under the Contract;

NOW THEREFORE we, the undersigned, undertake, in accordance with the following provisions, to pay to the Employer such amounts as the Employer may, from time to time, demand from us.

1 Each demand by the Employer shall be in writing, signed by the Employer and delivered to us at ............... [INSERT GUARANTOR'S FULL STREET ADDRESS] ............................................. or such other address in ...... [INSERT NAME OF COUNTRY] ...... as we shall in writing notify to the Employer, and shall be accompanied by a certificate complying with Clause 2, signed by the Employer’s Agent in office as such in terms of the Contract.

2 The Employer’s Agent’s certificate referred to in Clause 1 shall certify that:

(a) he is the Employer’s Agent in office as such in terms of the Contract,

(b) the Contractor is in breach of his obligations under the Contract, and

(c) the amount demanded, which amount the certificate shall specify, does not exceed

(i) the amount of retention moneys which, but for this guarantee, would have been retained by the Employer in terms of the Contract at the date of the certificate, less the aggregate of the amounts of retention money actually retained by the Employer and the amounts previously paid by us to the Employer in terms hereof,

(ii) a genuine estimate of the cost to the Employer of having the breach referred to in paragraph (b) remedied less the aggregate of any amounts withheld by the Employer from payments due to the Contractor in terms of the Contract by reason of the breach referred to, and any amount of retention money actually held by the Employer save to the extent that the same had been deducted from any previous demand in terms hereof;
3 We shall within ........................................ days after our receipt of a demand complying with the provisions in Clauses 1 and 2 make payment to the Employer of the amount demanded at ........................................, [INSERT EMPLOYER’S STREET ADDRESS] ........................................ or at such other address in ........ [INSERT EMPLOYER’S COUNTRY] .............. as the Employer shall in writing notify to us.

4 Subject to compliance with the provisions hereof, our liability to make the payments herein referred to shall be unconditional and shall not be affected or diminished by any disputes, claims or counterclaims between the Employer and the Contractor.

5 Our aggregate liability under this guarantee is limited to ......[INSERT AMOUNT OF GUARANTEE IN WORDS] .......... (R…………………….. [INSERT AMOUNT OF GUARANTEE IN FIGURES]).

6 This guarantee shall expire on the date on which the last of the retention moneys, which but for this guarantee would have been retained by the Employer, becomes payable to the Contractor.

7 This guarantee is not transferable and must be produced for endorsement if any part payment is made and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 6, whichever is the earlier.

Signed in the presence of the subscribing witnesses:

At ..............................................................................for and on behalf of .................................................................
...........................................................................................................................

on this the .............................................................. day of ............................................. 20........

SIGNATURE : ...........................................................................................................
CAPACITY : ...........................................................................................................
ADDRESS : ...........................................................................................................

AS WITNESSES : 1 ...........................................................................................................
2 .........................................................................................................................
AIRPORTS COMPANY SOUTH AFRICA

O.R. TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

C1.5 Adjudicator’s Agreement

This agreement is made on the ....... day of .............................................................. between:

....................................................................................................................... [name of company/organisation]
of ...................................................................................................................
....................................................................................................................... [address] and
....................................................................................................................... [name of company/organisation]
of ...................................................................................................................
....................................................................................................................... [address]
(the Parties) and
....................................................................................................................... [name]
of ...................................................................................................................
....................................................................................................................... [address]
(the Adjudicator).

Disputes or differences may arise/have arisen* between the Parties under a Contract dated
........................................ and known as .................................................................
..............................................................................................................................
and these disputes or differences shall be/have been* referred to adjudication in accordance with the
CIDB Adjudication Procedure [hereinafter called “the Procedure”], and the Adjudicator may be or has
been requested to act.

*Delete as necessary.

IT IS NOW AGREED as follows:

1. The rights and obligations of the Adjudicator and the Parties shall be as set out in the Procedure.

2. The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in
   accordance with the Procedure.

3. The Parties bind themselves jointly and severally to pay the Adjudicator’s fees and expenses in
   accordance with the Procedure as set out in the Contract Data.

4. The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and
   shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save
   with the consent of the other Parties which consent shall not be unreasonably refused.
5 The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

SIGNED BY: ____________ SIGNED BY ____________ SIGNED BY ____________
Name: __________________ Name: __________________ Name: __________________
who warrants that he/she is duly authorised to sign for
and on behalf of the first Party in the presence of
Witness: ________________
Name: __________________
Address: __________________
________________________
________________________
________________________
Date: _________________

Contract Data

1 The Adjudicator shall be paid at the hourly rate of R……………… in respect of all time spent upon, or in connection with, the adjudication including time spent travelling.

2 The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to:
   (a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs
   (b) Telegrams, telex, faxes and telephone calls
   (c) Postage and similar delivery charges
   (d) Travelling, hotel expenses and other similar disbursements
   (e) Room charges
   (f) Charges for legal or technical advice obtained in accordance with the Procedure.

3 The Adjudicator shall be paid an appointment fee of R………………. This fee shall become payable in equal amounts by each Party within 14 days of the appointment of the Adjudicator, subject to an invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 1 and/or item 2 of the Contract Data. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.

4 The Adjudicator is/is not* currently registered for VAT.
Where the Adjudicator is registered for VAT it shall be charged additionally in accordance with the rates current at the date of invoice.

All payments, other than the appointment fee (item 3) shall become due 7 days after receipt of invoice, thereafter interest shall be payable at 5% per annum above the Reserve Bank base rate for every day the amount remains outstanding.
C1.6 Agreement in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993)

THIS AGREEMENT made at .............................................................. on this the ...................................................... day of ........................................ in the year .......................... between ...................................................... [hereinafter called "the Employer"] of the one part, herein represented by .............................................................. in his capacity as .............................................................. and .......................................................................................................................... [hereinafter called "the Mandatary"] of the other part, herein represented by .............................................................. in his capacity as ..............................................................

WHEREAS the Employer is desirous that certain works be constructed, viz THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT and has accepted a Tender by the Mandatary for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatary have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatary with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Mandatary shall execute the work in accordance with the Contract Documents pertaining to this Contract.

2. This Agreement shall hold good from its Commencement Date, which shall be the date of a written notice from the Employer or Employer’s Agent requiring him to commence the execution of the Works, to either

   (a) the date of the Final Approval Certificate issued in terms of Clause 5.16.1 of the General Conditions of Contract [hereinafter referred to as "the GCC"], or

   (b) the date of termination of the Contract in terms of Clauses 9.1, 9.2 or 9.3.

3. The Mandatary declares himself to be conversant with the following:
(a) All the requirements, regulations and standards of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following sections of The Act:

   (i) Section 8   : General duties of employers to their employees;

   (ii) Section 9  : General duties of employers and self-employed persons to persons other than employees;

   (iii) Section 37 : Acts or omissions by employees or mandataries, and

   (iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.

(b) The procedures and safety rules of the Employer as pertaining to the Mandatary and to all his subcontractors.

4 In addition to the requirements of Clause 8.4 of the GCC and all relevant requirements of the Contract, the Mandatary agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

5 The Mandatary is responsible for the compliance with the Act by all his subcontractors, whether or not selected and/or approved by the Employer.

6 The Mandatary warrants that all his and his subcontractors’ workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

7 The Mandatary undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:

   (a) The Mandatary shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Mandatary shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatary obtains such approval and delegates any duty in terms of Section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.

   (b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Mandatary to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.

   (c) The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Mandatary and/or his employees and/or his subcontractors.
In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER: ..............................................................

WITNESS 1 ................................................................ 2 ......................................................

NAME 1 ................................................................ 2 ......................................................
(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATARY: ......................................................

WITNESS 1 ................................................................ 2 ......................................................

NAME 1 ................................................................ 2 ......................................................
(IN CAPITALS)
CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatary in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on ........................................ 20……,
Mr/Ms ........................................................................................................................................ whose signature appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) on behalf of .................................................................
...........................................................................................................................................................

SIGNED ON BEHALF OF THE COMPANY : .................................................................

IN HIS/HER CAPACITY AS : .................................................................................................

DATE : .................................................................................................................................

SIGNATURE OF SIGNATORY : ..............................................................................................

WITNESS: 1. ......................................................................................................................... 2.

NAME (IN CAPITALS): 1. ................................................................................................. 2. .................................................................................................
C2: Pricing Data

C2.1 Pricing Instructions ................................................. C2-2

C2.2 Bills of Quantity ...................................................... C2-5
C2.1 Pricing Instructions


2. The units of measurement described in these Bills of Quantities are metric units. Abbreviations used in these Bills of Quantities are as follows:

- % = percent
- h = hour
- ha = hectare
- kg = kilogram
- kl = kilolitre
- km = kilometre
- km-pass = kilometre-pass
- kPa = kilopascal
- kW = kilowatt
- l = litre
- m = metre
- mm = millimetre
- m² = square metre
- m²-pass = square metre-pass
- m³ = cubic metre
- m³-km = cubic metre-kilometre
- MN = meganewton
- MN.m = meganewton-metre
- MPA = megapascal
- No. = number
- Prov sum = Provisional sum
- PC sum = Prime Cost sum
- R/only = Rate only
- sum = lump sum
- t = ton (1 000 kg)
- W/day = Work day

3. For the purpose of these Bills of Quantities, the following words shall have the meanings hereby assigned to them:

   Unit: The unit of measurement for each item of work as defined in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).
   Quantity: The number of units of work for each item.
   Rate: The agreed payment per unit of measurement.
   Amount: The product of the quantity and the agreed rate for an item.
   Lump sum: An agreed amount for an item, the extent of which is described in the Bills of Quantities but the quantity of work of which is not measured in any units.

4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
5. It will be assumed that prices included in the bills 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.stanza.org.za or www.iso.org for information on standards)

6. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described 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 will be used as a basis for assessment of payment for additional work that may have to be carried out.

7. 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 such items

8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.

9. The quantities set out in these Bills 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 these Bills of Quantities.

10. Reasonable compensation will be received where no pay item appears in the Bills of Quantities in respect of work required in terms of the Contract and which is not covered in any other pay item.

11. The short descriptions of the items of payment given in these Bills 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.

AIRPORTS COMPANY SOUTH AFRICA
O.R. TAMBO INTERNATIONAL AIRPORT

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THE REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

C2.2 Bills of Quantity

C2.2.1 Schedule A: Contract No. ORT6029/2019 .............................................. C2-5
C2.2.2 Summary of Schedule of Quantities....................................................... C2-27
C2.2.3 Summary of Schedules ................................................................. C2-28
AIRPORTS COMPANY SOUTH AFRICA
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REHABILITATION OF TAXIWAYS AT O.R. TAMBO INTERNATIONAL AIRPORT

PROJECT SPECIFICATIONS

C3: Scope of the Works

C3: SCOPE OF WORKS

C3.1 DESCRIPTION OF THE WORKS ................................................................. C3-2
C3.2 ENGINEERING ....................................................................................... C3-10
C3.3 PROCUREMENT ...................................................................................... C3-12
C3.4 CONSTRUCTION ..................................................................................... C3-13
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C3.6 PARTICULAR (PROJECT) SPECIFICATIONS: CIVIL ......................... C3-23
C3.7 GENERIC SPECIFICATIONS...................................................................... C3-90
C3.1: DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER’S OBJECTIVES

The Employer’s objective is to rehabilitate various taxiways at OR Tambo International Airport to comply with the relevant recommended standards and practices in ICAO Annex 14. The scope of works also includes drainage improvements in side strips as well as subsoil drainage where required.

C3.1.2 OVERVIEW OF THE WORKS

The work to be performed under this contract comprises mainly the rehabilitation of taxiways at OR Tambo International Airport.

The following aspects will be addressed in this project:

180m Bravo taxiway section from Runway 03L towards CAT II hold line (Part 1: Concrete)*

- Rehabilitation of pavement section (25m wide) with 400mm of Jointed Concrete Pavement (JCP).
- Where required, reconstruction of supporting layers for the concrete base with 300mm C3 cement stabilised base, 300 mm G6 selected layers and 600mm of Rockfill
- Rehabilitation of taxiway shoulders (17.5m x 2) with 50mm A–E2 modified asphalt in section where support layers and drainage is sufficient
- Where required, reconstruction of shoulders with 50mm A-E2 modified asphalt, 150mm A-P1 modified BTB asphalt base.
- Removal of taxiway lights before paving and re-instalment of taxiway lights prior to opening of taxiway for aircraft.
- Reference existing paint markings and reinstatement before opening of the taxiway.
- Where instructed the position of the line markings and lights may change.
- Provision of a sub surface drainage system as per drawing 3961RD04DRA02

180m Bravo taxiway section from 180m from Runway 03L to CAT II hold line (Part 2: Asphalt)*

- Rehabilitation of pavement section (25m) with 80mm of A-P1 modified Continuously Graded Asphalt and a 220mm EME asphalt base.
- This will be followed by a 200mm BSM layer on top of a ripped and recompacted roadbed. (where required, reconstruction of supporting layers 300 mm G6 selected layers and 600mm of Rockfill)
- Where required, reconstruction of shoulders with 50mm A-E2 modified asphalt, 150mm A-P1 modified BTB asphalt base.
- Removal of taxiway lights before paving and re-instalment of taxiway lights prior to opening of taxiway for aircraft.
• Reference existing paint markings and reinstatement before opening of the taxiway.

• Where instructed the position of the line markings and lights may change.

• Provision of a sub surface drainage system as per drawing 3961RD04DRA02

Echo taxi lane*

The rehabilitation option will consider the current condition of

• Where Existing C3 layer is in good condition:
  - Rehabilitation of pavement section (25m) with 80mm of A-P1 modified Continuously Graded Asphalt and a 175mm EME base and aircraft lane section between concrete apron and taxiplane where required.

• Where Existing C3 layer is not in a good condition:
  - Rehabilitation of pavement section (25m) with 80mm of A-P1 modified Continuously Graded Asphalt and a 220mm EME asphalt base.
  - This will be followed by a 200mm BSM layer on top of a ripped and recompacted roadbed.

• Provision of a sub surface drainage system as per drawing 3961RD04DRA01

• Removal of taxiway lights before paving and re-instalment of taxiway lights prior to opening of taxiway for aircraft.

• Reference existing paint markings and reinstatement before opening of the taxiway.

• Where instructed the position of the line markings and lights may change.

Juliet taxiway section from Runway 03L to Bravo/Juliet/Alpha intersection*

• Rehabilitation of pavement section (25m wide) with 80mm of A-P1 modified Continuously Graded Asphalt

• Where required, reconstruction of supporting layers with 160mm A-P1 modified BTB asphalt base

• Removal of grass on taxiway shoulders (17.5m x 2) and rejuvenating areas which have started to age

• Removal of taxiway lights before paving and re-instalment of taxiway lights prior to opening of taxiway for aircraft.

• Reference existing paint markings and reinstatement before opening of the taxiway.

• Where instructed the position of the line markings and lights may change.

• Drainage improvements on the taxiway sides areas that may include level correction (with reinstatement of topsoil and re-vegetation/hydro seeding, excess grass removal and improvement to drain inlets.)
Alpha and Quebec*

- Rehabilitation of pavement section (25m wide) with 80mm of A-P1 modified Continuously Graded Asphalt

- Where required, reconstruction of supporting layers with:
  - 160mm A-P1 modified BTB asphalt base for Quebec
  - 220mm A-P1 modified BTB asphalt base for Alpha

- Removal of grass on taxiway shoulders (17.5m x 2) and rejuvenating areas which have started to age

- Removal of taxiway lights before paving and re-instalment of taxiway lights prior to opening of taxiway for aircraft.

- Reference existing paint markings and reinstatement before opening of the taxiway.

- Where instructed the position of the line markings and lights may change.

- Drainage improvements on the taxiway sides areas that may include level correction (with reinstatement of topsoil and re-vegetation/hydro seeding, excess grass removal and improvement to drain inlets.

* Layerworks on all taxiways/lanes may change on request from the Engineer.
C3.1.3 EXTENT OF THE WORKS

The description of the work contained in the Extent of Work is merely an outline of the work to be executed in terms of the contract, and shall not limit the work to be carried out by the Contractor. Estimated quantities of each type of work to be carried out are listed in the Bill of Quantities. The planned rehabilitation and construction measures are shown on the construction drawings.

The Works included in this contract will mainly consist of the works described in the sub-sections below:

(a) General

General work operations include:

i) Compilation and submission for approval of a detailed site safety plan and work method statements, all in compliance with the Manual for Working Airside – Volume 5.

ii) Attendance by all site staff of a safety training course and obtaining ACSA permits. This includes the necessary vehicle and equipment driving permits for any driver having to drive airside, as indicated in the Manual for Working Airside – Volume 5.

iii) Compile and submit a quality management plan for approval by the Employer’s Agent.

iv) Compliance with local and national Occupational Health and Safety regulations (OHS Act No. 85 of 1993) and ACSA Health and Safety regulations.

v) Full compliance with the ACSA Environmental Specifications.

vi) Establishment on site of the camp, asphalt plant and construction equipment on the area allocated for this project.

vii) Locating, relocating (where required) and protection of all services in the work areas.

viii) Undertaking of asphalt mix designs and trials to prove compliance with specifications.

ix) Structured and detailed interaction with various role players at the airport to ensure timeous completion of the works for each shift. These role players include the staff of the Airport Management (AM) and the Air Traffic Control (ATC). Management of the project planning and operational procedures for working airside.

x) Cleaning of the construction area after each work shift to the satisfaction of AM staff.

(b) Pavement rehabilitation

Work will have to be undertaken in phases taking the current traffic pattern into consideration and ensuring that the airport will still be operational during the construction period. All works will be night shift and the work areas will be available at the following time periods:

<table>
<thead>
<tr>
<th>MAIN ACTIVITY</th>
<th>DURATION</th>
<th>START</th>
<th>FINISH</th>
<th>CLOSURE TYPE</th>
<th>WORK DAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echo Taxilane (Subsoil Drainage)</td>
<td>4 months</td>
<td>21-Oct-19</td>
<td>28-Feb-20</td>
<td>21:00 - 07:00</td>
<td>Full week</td>
</tr>
<tr>
<td>Bravo Taxiway (Part 1: Concrete)</td>
<td>3 months</td>
<td>28-Feb-20</td>
<td>30-May-20</td>
<td>Full closure 2</td>
<td>Full week</td>
</tr>
<tr>
<td>Bravo Taxiway (Part 2: Asphalt)</td>
<td>3 months</td>
<td>28-Feb-20</td>
<td>30-May-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S; S</td>
</tr>
<tr>
<td>Alpha - Bravo - Juliet Junction - A1</td>
<td>1 month</td>
<td>30-May-20</td>
<td>30-Jun-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S; S</td>
</tr>
<tr>
<td>Alpha - Bravo - Juliet Junction - A2</td>
<td>1 month</td>
<td>30-May-20</td>
<td>30-Jun-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S; S</td>
</tr>
<tr>
<td>JULIET 1 TAXIWAY (btn Alpha and 03L)</td>
<td>1 month</td>
<td>30-Jun-20</td>
<td>30-Jul-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S; S</td>
</tr>
<tr>
<td>JULIET 2 TAXIWAY (btn Charlie and 03L)</td>
<td>1 month</td>
<td>30-Jun-20</td>
<td>30-Jul-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S; S</td>
</tr>
</tbody>
</table>
A layout corresponding to the program is shown in the figure below:

Irrespective of the above, all construction times are still tentative up to the approval of the NOTAMS.

The extent of the works can be summarised as follows:

(a) Pavement works

180m Bravo taxiway section from Runway 03L towards CAT II hold line*

- Rehabilitation of pavement section (25m wide) with 400mm of Jointed Concrete Pavement (JCP).

- Where required, reconstruction of supporting layers for the concrete base with 300mm C3 cement stabilised base, 300 mm G6 selected layers and 600mm of Rockfill

- Rehabilitation of taxiway shoulders (17.5m x 2) with 50mm A–E2 modified asphalt in section where support layers and drainage is sufficient

- Where required, reconstruction of shoulders with 50mm A-E2 modified asphalt, 150mm A-P1 modified BTB asphalt base.

180m Bravo taxiway section from 180m from Runway 03L to CAT II hold line*
• Rehabilitation of pavement section (25m) with 80mm of A-P1 modified Continuously Graded Asphalt and a 220mm EME asphalt base.

• This will be followed by a 200mm BSM layer on top of a ripped and recompacted roadbed. (where required, reconstruction of supporting layers 300 mm G6 selected layers and 600mm of Rockfill)

• Where required, reconstruction of shoulders with 50mm A-E2 modified asphalt, 150mm A-P1 modified BTB asphalt base.

Echo taxilane*

The rehabilitation option will consider the current condition of
• Where Existing C3 layer is in good condition:
  o Rehabilitation of pavement section (25m) with 80mm of A-P1 modified Continuously Graded Asphalt and a 175mm EME base and aircraft lane section between concrete apron and taxiplane where required.

• Where Existing C3 layer is not in a good condition:
  o Rehabilitation of pavement section (25m) with 80mm of A-P1 modified Continuously Graded Asphalt and a 220mm EME asphalt base.
  o This will be followed by a 200mm BSM layer on top of a ripped and recompacted roadbed.

Juliet taxiway section from Runway 03L to Bravo/Juliet/Alpha intersection*

• Rehabilitation of pavement section (25m wide) with 80mm of A-P1 modified Continuously Graded Asphalt

• Where required, reconstruction of supporting layers with 160mm A-P1 modified BTB asphalt base

• Removal of grass on taxiway shoulders (17.5m x 2) and rejuvenating areas which have started to age

Alpha and Quebec*

• Rehabilitation of pavement section (25m wide) with 80mm of A-P1 modified Continuously Graded Asphalt

• Where required, reconstruction of supporting layers with:
  o 160mm A-P1 modified BTB asphalt base for Quebec
  o 220mm A-P1 modified BTB asphalt base for Alpha

• Removal of grass on taxiway shoulders (17.5m x 2) and rejuvenating areas which have started to age

* Layerworks on all taxiways/lanes may change on request from the Engineer.
b) Taxiway Strips and drainage improvements

- Re-profile transverse slopes of identified areas on graded and ungraded strips to comply with ICAO recommendations where needed. The graded strip is to be free from any obstacles, other than visual aids required for navigational purposes and satisfying the relevant fragility requirement as set in Chapter 5 of Annex 14.

- It will be the responsibility of the contractor to ensure that no existing services are damaged due to construction activities within the graded strip.

- The affected areas on the taxiway side strips will be hydro seeded after the completion of the earthworks.

- The following activities are envisaged:
  - Blade 100 mm topsoil to windrow or designated stockpile areas
  - Shape areas to ensure grade compliance
  - Re-instate topsoil and hydro seed.

c) Other ancillary Works

There are a number of ancillary works which would be required as part of this contract which can be summarised as follows:

- Where asphalt overlay has been applied the new level will be re-profiled to ensure ICAO compliances
- Where applicable (only selected restricted areas), temporary paint markings would be required at the end of each shift to ensure normal taxiway operations
- Application of permanent taxiway and taxiway markings consisting of respectively reflective white and yellow markings using water based paint complying with ICAO recommendations
- Control dust and other pollution according to the safety plan and work method statements

d) Electrical Works

Electrical work is limited in this contract. The contractor shall make every effort to identify all existing underground services. This is especially required when work is carried out within the strips of Taxiway. The known services are shown in drawing 3961RD10S01 & 3961RD10S02

All lights on the taxiways affected by the remedial pavement works will need to be removed and replaced during the same night shift.

Provision has been made to upgrade the existing electrical works to ICAO standards. The following drawing shows the final layout of the electrical works that will be installed:

- 3961RD08LD01 BRAVO TAXIWAY
- 3961RD08LD02 JULIET TAXIWAY
- 3961RD08LD03 ECHO TAXILANE

Provision is made to install sleeves or to re-slot damaged and old cables next to the existing cables into the existing taxiways. This activity will be done before any rehabilitation works commence to limit the amount of joints on the final surfacing.

e) Changes to Scope of Work

It is a condition of this contract that the employer reserves the right to limit the total expenditure on the Works due to possible budget constraints. Should the tender sum exceed the budgeted
amount, the scope of the works may be reduced at any time before or during the contract period to ensure that the final contract amount does not exceed the budgeted amount. Refer to Scope of Works sub-clause B1209 (h).

C3.1.4 LOCATION OF THE WORKS

The site of the Works is situated on the airside of OR Tambo International Airport in Gauteng. The site is under the jurisdiction of the Airports Company South Africa (ACSA). Location of the site is shown on the Layout Plan (Drawing No. 3961RD01LOC01).

C3.1.5 TEMPORARY WORKS

The Contractor shall obtain written permission from the Employer’s Agent before construction of any temporary works may commence. Temporary works will include the following:

(a) Where applicable (in limited occupation areas), transverse and longitudinal ramps at the end of each shift during construction of the asphalt overlays on the taxiways and taxiways. The details for the construction and removal of these ramps are discussed in the project specification.

(b) Signage and markings for the surface movement of aircraft and vehicles.

(c) Placing and removal of barricades where required.

(d) All facilities within the Contractor’s construction camp. The design shall comply with the specifications where provided in these documents and all statutory requirements such as the Occupational Health and Safety Act and Regulations. The area is to be reinstated upon completion.

(e) Access roads for the construction camp and temporary material stockpile site. These roads are to be designed, constructed and maintained by the Contractor to comply with safety and environmental requirements. They must be reinstated upon completion the Works.
C3.2: ENGINEERING

C3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

The responsibilities for design and related documentation are as follows:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>RESPONSIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detailed design for construction</td>
<td>Employer’s Agent’s Representative</td>
</tr>
</tbody>
</table>
| Temporary works (Section C3.1.5):  
  Items a) to b)  
  Items c) to e) and any other temporary works required by the contractor | Employer’s Agent’s representative  
Contractor |
| As-built drawings:  
  Provision of data and marked up drawings  
  Preparation of drawings | Contractor  
Employer’s Agent’s representative |

C3.2.2 EMPLOYER’S DESIGN

The extent of the Employer’s design is shown on the construction drawings.

C3.2.3 CONTRACTOR’S DESIGN BRIEF

The design brief for Temporary Works is provided in Section C3.1.5.

C3.2.4 DRAWINGS

Drawings are not required for the Temporary Works and will be designed by the Contractor.

The reduced drawings that form part of the tender documents shall be used for tender purposes only. The Contractor will be issued with an A3 paper copy and PDF file of each of the drawings required for construction. The Contractor shall, at his own expense, produce all further prints required for the construction of the Works.

The Contractor shall not use the drawings for any purpose other than the execution of the works.

Only figured dimensions on the drawings shall be used, and drawings shall not be scaled. The Employer’s Agent shall supply any figured dimensions which have been omitted from the drawings.

The Employer’s Agent may issue additional drawings as necessary to the Contractor from time to time during the progress of the works. The Contractor shall timeously notify the Employer’s Agent of the priority in which drawings and details are required.

Before a Certificate of Completion will be issued, all as-built data must be provided to the Employer’s Agent on completion of the Permanent Works. The data must be provided in electronic form (as per the Employer’s Agent’s format) or where appropriate marked up on a set of drawings. Any information in the possession of the Contractor necessary for the Resident Engineer to complete his as-built drawings shall be supplied to the Resident Engineer on a regular basis and all information must be delivered before a Certificate of Completion will be issued.

The drawings as listed in Volume 4 form part of the tender documents and shall be used for tender purposes only.
C3.2.5 DESIGN PROCEDURES

Asphalt mixes to be designed in co-ordination with an approved (by the Employer’s Agent) specialist professional asphalt design engineer and laboratory and submitted to the Employer’s Agent for approval. The design laboratory and specialist asphalt design engineer shall be paid under a Provisional Sum item provided in the Bill of Quantities.

Fundamental design principals and methods (see applicable SABITA, and other applicable institutions, manuals and guidelines) to be utilized to ensure optimal mixes in accordance with the specified performance criteria.

C3.2.6 CONSTRUCTION IN CONFINED AREAS

Working space for some of the work to be carried out under this contract is restricted. The construction method used in these confined areas largely depends on the Contractor's plant. However, the Contractor must note that measurement and payment will be according to the specified cross-sections and dimensions irrespective of the method used, and that the rates and prices tendered will be deemed to include full compensation for difficulties encountered while working in confined areas.
C3.3: PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

The Works shall be executed in accordance with the requirements specified in Section T1.2, Tender Data (Clause F3.11) and submitted by the Contractor in his Returnable Schedules.

C3.3.2 SUBCONTRACTING

(a) Scope of Mandatory Subcontract Works

The Mandatory Works to be subcontracted are the Electrical Works described in Clause C3.1.3(e).

(b) Preferred Subcontractors

The subcontractors must meet the requirements as laid out in Clause F3.11 of this document.

(c) Subcontracting Procedures

The electrical works shall be subcontracted to ACSA maintenance contractor.

(d) Attendance on Subcontractors

The Contractor shall provide any necessary facilities in order to manage the specialist electrical subcontractor to ensure that the works are carried out in accordance with:

- The programme of works, and
- The contract requirements, and
- In the Project requirements concerning access to and from the airport facilities at the beginning and end of working shifts. He shall also ensure that the subcontractor complies with the requirements of the Safety Plan, Environmental Management Plan and Operational procedure requirements.
C3.4: CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

(e) Applicable Standard Specifications


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

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

(f) Applicable National and International Standards

The Works must comply with certain National and International Standards. These include:

- ICAO
- SANS (SABS)

Where required, compliance with these and other National and International Standards have been specified in the Standard and Project Specifications.

(g) Project Specifications

In certain clauses, the Standard Specifications allow a choice to be specified in the Particular (Project) Specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a Contract. Details of such alternatives or additional requirements applicable to this Contract are contained in the Particular (Project) Specifications (C3.6 Civil Works). It also contains some additional specifications required for this Contract.

(h) Certification by Recognized Bodies

Where required, South African Bureau of Standards (SABS) must undertake the certification of items for inclusion in the Works.

C3.4.2 PLANT AND MATERIALS

(a) Plant and Materials supplied by the Employer

Nil

(b) Materials, Samples and Shop Drawings

Where required, requirements for proof of compliance with materials specifications, submission of samples of materials and finishes and requirements for shop drawings, are stated in the standard or project specifications. This will also apply to the subcontracts.

All materials used in the works shall, where such mark has been awarded for a specific type of material, bear the official mark of the SANS (SABS). Written proof shall be obtained from the Employer’s Agent for any materials not bearing the official mark of the SANS.

C3.4.3 CONSTRUCTION EQUIPMENT

(a) Requirements for Equipment

Where applicable, minimum requirements for equipment are specified in the Standard and Project specifications.
The Contractor shall indicate in his Milling and Paving Method Statement how he will manage an emergency where a plant item breaks down during a milling and paving operation, or any other operation being undertaken within the 50 meter restriction zone of the main taxiway (from edge of taxiways) to ensure timeous opening of the taxiway (during short term closures). The equipment shall as a minimum include:

i. A low bed with winch that has sufficient capacity to remove a 30 ton roller.

ii. Equipment (porta-pack) capable of releasing the hydraulics on a milling machine and undertaking the removal thereof from the taxiway.

The Contractor shall, before the start of the milling and paving operations, successfully demonstrate to the Employer’s Agent how he will remove any substantial item of plant (i.e. milling machine, roller or paver) from the taxiway or graded strip when it is in a broken down state. This operation must be completed within 1 hour from the request for removal.

The equipment required for this operation shall always be available on the airside of OR Tambo International Airport for use in an emergency situation during a working shift where work is being carried out under short term closures on the taxiway or within a distance of 50m from the taxiway edge. Work on the taxiway and in the clearance zone will not be allowed if these requirements are not complied with.

(b) Equipment Provided by the Employer

Nil

C3.4.4 EXISTING SERVICES

Specifications related to existing services are provided in the Project Specifications (Section C3.6; Clause B1202)

C3.4.5 SITE ESTABLISHMENT

i. Services and Facilities Provided by the Employer

The location of and access to a proposed construction camp will be provided to the contractor (subject to change).

Approval for the establishment of a construction camp must be obtained from ACSA. The Contractor is responsible for all arrangements for obtaining all necessary approvals, establishment and subsequent removal and reinstatement of his construction camp. Note that services for water and sewer will not be free of charge, and the utilization of these services will be at the expense of the contractor. The Contractor must make provision for his own potable water for human consumption.

Other contractors may in part also use the proposed area. The contractor must at all time limit his personnel, plant, equipment and materials at the Contractor’s site or the working areas as approved by the Employer’s Agent. No personnel shall be accommodated on airport property. Only guards approved by the Employer and on duty may be on site at all times. The contractor shall only use the designated gate(s) for access purposes to the airside.

The area designated by the Employer’s Agent can be used for stockpiling material for use in the works and for temporary parking of plant and equipment. This location is to be confirmed by the Employer.

All regulations and local authority ordinances, as regards smoke emissions and noise abatements shall apply and compliance will be enforced as well as height restrictions and any required obstacle markers.

Also refer to the requirements of Clause 3 of the Procedure Manual for Working Airside (Volume 5).
ii. **Facilities Provided by the Contractor**

The requirements for facilities to be provided by the contractor for use by the employer and his agents such as office, ablution and laboratory facilities are stated in Part C3.6, Section B1400.

The contractor shall make his own arrangements for the supply of electrical power, water (see Clause B1219), telecommunication services, ablution facilities, sewer services, first aid facilities and other services, the payment thereof and all reinstatements required upon completion. No direct payment will be made to the Contractor for the provision of electrical and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

The contractor will be required to erect a security fence around the construction camp and temporary parking area for plant and equipment. The cost thereof is regarded to be included in the relevant rates for establishment on site.

The storage of fuels in tanks may be kept in the contractor's camp subject to the regulations of the Airport authorities that require a berm or wall around the installation sufficient to retain the capacity fuel of the tanks. The Contractor should make allowance for drip trays.

The Contractor shall make his own arrangements for telephone and facsimile facilities. Cellular phones will be acceptable, but the Contractor must obtain airside permits from ACSA at his own cost.

iii. **Storage and Laboratory Facilities**

The Contractor shall make a storage room available for use by the Employer's Agent's staff. A commercial laboratory shall undertake material testing for the Employer's Agent.

iv. **Other Facilities and Services**

The Contractor shall be responsible for the removal of all waste generated from the airport property and the proper disposal thereof elsewhere at his own cost.

If required by the Employer's Agent, the Contractor shall supply portable chemical toilet facilities next to the construction site for his staff as well as for the Employer's Agent's supervisory staff. These facilities must be erected and removed on a daily basis and regularly serviced to the satisfaction of the Airport Authorities and the Employer's Agent.

v. **Vehicles and Equipment**

The requirements (e.g. permits, etc.) for vehicles and drivers operating on the airside at OR Tambo International Airport are specified in the Procedure Manual for Working Airside (Volume 5). The responsibility will however remain with the Contractor to ensure that all necessary requirements are met to bring any vehicles and equipment on site.

vi. **Advertising Rights**

Only one sign board for the Contractor and his subcontractors may be erected at the entrance to the construction camp. Also refer to Clause 1207 (Volume 2) and Clause B1207 of the Project Specification (C3.6).

vii. **Notice Boards**

A construction notice board complying with the SAICE specifications must be provided and erected at a position to be agreed with the Employer's Agent. The cost of the supply and
erection of this notice board must be included in the establishment cost of the Contractor. Also refer to Clause 1207 (Volume 2) and Clause B1207 of the Project Specification (C3.6).

C3.4.6 SITE USAGE
Restrictions on the site usage are stated in the Procedure Manual for Working Airside (Volume 5).

C3.4.7 ALTERATIONS, ADDITIONS, EXTENSIONS AND MODIFICATIONS TO EXISTING WORKS
The Contractor must satisfy himself that the dimensional accuracy, alignment, levels and setting out of existing components are compatible with the proposed Works. Where this is not the case the Employer’s Agent’s Representative must be notified in writing at the earliest possible time.

C3.4.8 WATER FOR CONSTRUCTION PURPOSES
The Contractor must make all arrangements for the transport, storage and distribution of water required for construction purposes and for his own use and at his own cost (allowed for in the relevant tendered rates). Alternatively, water can be purchased from ACSA at a prescribed rate. Refer Clause B1219 for further details.

C3.4.9 SURVEY CONTROL AND SETTING OUT OF THE WORKS
The Contractor shall place beacons in concrete, marked and certified by a professional land surveyor. Beacons shall be check-levelled during construction to confirm the accuracy when instructed by the Employer’s Agent. Refer Clause B1206 for further details.
C3.5: MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

(a) Planning and Programming

The Contractor’s programme must be based on the interim milestone dates for completion specified in Table C3.5.1 below and the Working Times defined in the Procedure Manual for Working Airside (Volume 5). Penalties will be imposed if these Interim Milestone dates are not achieved. Refer to Section C1.2 (contract Data), Sub-clause 5.13.1.

TABLE C3.5.1: INTERIM MILESTONE DATES

<table>
<thead>
<tr>
<th>Milestone Event</th>
<th>General Description of Work</th>
<th>Milestone Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement section</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echo Taxilane</td>
<td>Completion: Subsoil drainage system installation and finishing</td>
<td>28 Feb 2020</td>
</tr>
<tr>
<td>Bravo Taxiway</td>
<td>Completion: Concrete section constructed and cured</td>
<td>30 May 2020</td>
</tr>
<tr>
<td>Alpha Taxiway (03L) - A1</td>
<td>All works on taxiways completed on deadlines as</td>
<td>30 June 2020</td>
</tr>
<tr>
<td>Alpha-Bravo-Juliet Junction A2</td>
<td>Completion: All works on taxiway</td>
<td>30 June 2020</td>
</tr>
<tr>
<td>Juliet 1 TAXIWAY (btn Alpha and 03L)</td>
<td>Completion: All works on taxiway</td>
<td>30 July 2020</td>
</tr>
<tr>
<td>Juliet 2 TAXIWAY (btn Charlie and 03L)</td>
<td>Completion: All works on taxiway</td>
<td>30 July 2020</td>
</tr>
<tr>
<td>Echo Taxilane</td>
<td>Completion: All works on taxiway</td>
<td>13 December 2020</td>
</tr>
<tr>
<td>Quebec Taxiway</td>
<td>Completion: All works on taxiway</td>
<td>31 August 2020</td>
</tr>
<tr>
<td>Alpha Taxiway (21R)</td>
<td>Completion: All works on taxiway</td>
<td>31 August 2020</td>
</tr>
</tbody>
</table>

1. All time periods (Contractual Requirements) indicated are excluding special non-workings days as defined in Clause 5.8.1.
An example of construction programme based on these phases is presented on the next page to assist the Contractor in the preparation of his Initial Programme. This programme is provided for illustrative purposes only and the Contractor must draw up his own programme that complies with all requirements of this project and which suits his own resources. Detailed specifications for the compilation and management of the construction programme are stated in Section C3.6 (Clause B1204) and in Clause 4 of the Airside Manual (Volume 5).

(b) **Sequence of the Works**

The sequence of the Works will be determined by the logical order of activities as illustrated in the potential construction programme on the next page and the specified Interim Milestone dates in Table C3.5.1. It is important to note that:

(a) The contractor shall also allow time in its programme for trial sections of the asphalt mixes.

(b) Some non-critical activities can be done in a different phase to those highlighted in TABLE C3.5.1 as long as that approval has been obtained from AM and subject to availability of escort.

(c) A minimum of seven (7) days advance notice from the contractor is required to switch between work areas.

(c) **Methods and Procedures**

The methods and procedures that must be complied with are contained in Volumes 2, 3, 4 and 5 of the contract documentation. These include but are not limited to:

- Methods and Procedures in the Standards Specifications (Volume 2, COLTO).
- Civil Works Methods and Procedures in the Project Specifications (C3.6).
- Occupational Health and Safety Specifications (C3.7.1).
- Environmental Work Instructions (C3.7.2).

(d) **Quality Plans and Control**

The requirements for Quality Plans and Control are stated in Section B1205 of the Project Specification (C3.6).
## Contract

**Part C3: Scope of work**

**Contract No:** ORT 6029/2019

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### MAIN ACTIVITY

<table>
<thead>
<tr>
<th>MAIN ACTIVITY</th>
<th>DURATION</th>
<th>START</th>
<th>FINISH</th>
<th>CLOSURE TYPE</th>
<th>WORK DAYS</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETA TANKLINE (SUSSOIL DRAINAGE)</td>
<td>4 Months</td>
<td>21 Oct 2019</td>
<td>28 Feb 2020</td>
<td>Full week</td>
<td>21:00 - 07:00</td>
<td>Oct</td>
<td>Nov</td>
</tr>
<tr>
<td>BRAVO TANKLINE (Part 1: Communal)</td>
<td>3 Months</td>
<td>25 Feb 2020</td>
<td>30 Mar 2020</td>
<td>Full closure</td>
<td>Full week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRAVO TANKLINE (Part 2: Asphalts)</td>
<td>3 Months</td>
<td>26 Feb 2020</td>
<td>30 May 2020</td>
<td>Full closure</td>
<td>Full week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALPHA-BRAVO-JULIET JUNCTION A1</td>
<td>1 Month</td>
<td>30 May 2020</td>
<td>26 Jun 2020</td>
<td>Full week</td>
<td>00:00 - 06:00</td>
<td>Mon, Wed, Fri, Sat, Sun</td>
<td>Oct, Nov, Dec</td>
</tr>
<tr>
<td>ALPHA-BRAVO-JULIET JUNCTION A2</td>
<td>1 Month</td>
<td>30 May 2020</td>
<td>26 Jun 2020</td>
<td>Full week</td>
<td>00:00 - 06:00</td>
<td>Mon, Wed, Fri, Sat, Sun</td>
<td>Oct, Nov, Dec</td>
</tr>
<tr>
<td>JULIET I TANKLINE (Irn-Arna and 02)</td>
<td>1 Month</td>
<td>30 Jun 2020</td>
<td>30 Jul 2020</td>
<td>Full week</td>
<td>00:00 - 06:00</td>
<td>Mon, Wed, Fri, Sat, Sun</td>
<td>Oct, Nov, Dec</td>
</tr>
<tr>
<td>JULIET 2 TANKLINE (Irn-Chare and 03)</td>
<td>1 Month</td>
<td>30 Jun 2020</td>
<td>30 Jul 2020</td>
<td>Full week</td>
<td>00:00 - 06:00</td>
<td>Mon, Wed, Fri, Sat, Sun</td>
<td>Oct, Nov, Dec</td>
</tr>
<tr>
<td>QUINCE TANKLINE</td>
<td>1 Month</td>
<td>30 Jul 2020</td>
<td>31 Aug 2021</td>
<td>Full week</td>
<td>00:00 - 06:00</td>
<td>Mon, Wed, Fri, Sat, Sun</td>
<td>Oct, Nov, Dec</td>
</tr>
<tr>
<td>ALPNA TANKLINE (2016)</td>
<td>1 Month</td>
<td>30 Jul 2020</td>
<td>31 Aug 2021</td>
<td>Full week</td>
<td>00:00 - 06:00</td>
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<td>Oct, Nov, Dec</td>
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<td>9 Dec 2020</td>
<td>Full week</td>
<td>21:00 - 07:00</td>
<td>Oct</td>
<td>Nov</td>
</tr>
</tbody>
</table>

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1. Where the indicated extended closure time is not achieved, the requirement to increase productivity is listed as an extra over-heat (961.20)
2. Must still be confirmed.
3. Additional hours are requested and may or may not be granted by contract award (21:00 - 07:00)

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**Locality Plan**

1/15 000

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C3 - 19
(e) **Construction Method Statement**

Within 14 days of the Commencement Date the Contractor shall submit a Construction Method Statement to the Employer's Agent for approval by the Employer. Once approved, this Statement will form part of Appendix C of the Procedure Manual for Working Airside (Volume 5). No work on the airside will be allowed until the Employer has approved this Construction Method Statement.

The Method Statement shall include:

i. All measures to be implemented to comply with the requirements of the Procedure Manual for Working Airside (Volume 5).

ii. All measures to be implemented to comply with the requirements of the OHS Act.

iii. A contingency plan to deal with interruptions of shifts by inclement weather, plant breakdowns or emergency closures of the work areas.

iv. Special measures, such as availability of back-up plant, to be implemented in normal shifts to comply with the Project Specifications.

v. Measures and equipment that will be used on site to limit the ingress of water into the excavations and to remove rain water from the excavations.

vi. Measures to protect services (above and below surface) during construction.

vii. Procedures to ensure that the whole work area is safe before removing staff or handing over of the site at the end of the each work shift.

viii. A watchman to remain on site of excavations/construction with telephone contact to the contract manager in case of emergency.

ix. The cost of complying with the ACSA approved method statement is deemed to be covered by the tendered rates for the Contractor's General Obligations.

(f) **Environment**

The Environmental requirements are specified in Generic Specifications (Section C3.7.2)

(g) **Accommodation of Traffic on Roads and Accesses used by the Contractor**

ACSA staff and other stakeholders will also use the access road to the construction site and camp. It is therefore a requirement that the contractor coordinate with all stakeholders on a daily basis (to be minuted at the daily meeting) on the usage of the roads by the Contractor's vehicles and construction equipment.

(h) **Testing, Completion, Commissioning and Correction of Defects**

Procedures for testing, completion, commissioning and correction of defects will be provided to the Contractor by the Employer's Agent on site.

(i) **Recording of Weather**

The contractor shall provide an electronic mobile weather station. He shall erect them according to the requirements of the weather bureau. The contractor shall record and keep a record of the daily rainfall and maximum/minimum temperatures and supply the data to the Employer's Agent on a daily basis.

The contractor shall also record wind speed measurements on site as agreed with the Employer's Agent's Representative. Data can also be obtained from the local weather bureau but has to be recorded on site on a daily basis.

The cost of complying with these requirements is deemed to be covered by the tendered rates for the Contractor's General Obligations.
(j) **Format of Communications**

All instructions or requests need to be confirmed in writing through:

- Site instructions.
- Requests for inspections.

(k) **Key Personnel**

The Contractor, Employer’s Agent and Employer must compile a schedule of their Key Personnel with their contact numbers and keep it updated as per requirements for the contact list in Volume 5 – Procedure Manual for Working Airside. The list must be made available to the Employer’s Agent, Employer and Contractor.

(l) **Management Meetings**

The following formal meetings will be held at the office of the Employer’s Agent’s Representative between the representatives of the Employer, Employer’s Agent and the Contractor:

- Daily kick-off meeting (One hour before the start of a shift).
- Weekly progress meeting (Two hours before the start of a shift).
- Monthly site meeting (Date and time to be agreed by attendees).
- Monthly technical meeting (Date and time to be agreed by attendees).

All the meetings stated above as well as the ACSA safety audit will be done during the day. The representatives must have the necessary delegated authority in respect of aspects such as planning, change management and health and safety.

(m) **Daily records**

The Contractor must keep daily records of resources (people and equipment employed) and site diaries in respect of work performed on the site. A copy of the previous day’s daily record must be provided to the Employer’s Agent on a daily basis.

(n) **Bonds and Guarantees**

Original copies of the bonds and guarantees must be lodged at the office of ACSA, OR Tambo International Airport and one copy of each must be kept on site with the Employer’s Agent’s representative. On release, the bond and guarantees can be collected from ACSA.

(o) **Payment Certificates**

The Employer’s Agent’s certificate will be issued only after receipt by him of a draft certificate prepared by the Contractor at his own expense in the form prescribed by the Employer’s Agent. The cost of duplicating and delivering copies of the certificate to the Contractor, the Employer’s Agent and the employer shall be borne by the Contractor. The Employer’s Agent and the employer shall require three (3) sets of A4-sized paper copies in total.

(p) **Permits**

All requirements in connection with the application for and usage of permits are stated in the Airside Manual (Volume 5) and Clause B1230 (Project Specification C3.6).
(q) **Insurance Provided by the Employer**

For information on the Employer Insurance, refer to Clause 35.1 Section C1.2.

**C3.5.2 HEALTH AND SAFETY**

(a) **Health and Safety Requirements and Procedures**

Health and Safety requirements and procedures are presented in Annexure B, Section C3.7.1.

(b) **Barricades and lighting**

Requirements for the provision and usage of barricades and lighting are stated in Volume 5 and Sections 1300 and 1500 of the Specifications.

(c) **Traffic Control**

Safety requirements and procedures where the Contractor has occupation of taxiways, taxiways or roads are stated in Volume 5 and Section 1500 of the Specification.
C3.6: PARTICULAR (PROJECT) SPECIFICATIONS: CIVIL

The Standard Specifications provide, in certain clauses, for a choice to be specified in the Construction 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 Specifications. It also contains some additional specifications required for this particular contract.

The number of each clause and each payment item in the Particular (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.

The Standard Specifications as well as the Particular (Project) Specifications refer to the ‘Engineer’ whereas the General Conditions of Contract for Construction Works, 2015, Third Edition, (GCC 2015) refer to the ‘Employer’s Agent’. In all cases where reference is made to the Engineer in the Standard Specifications or the Project Specifications, it shall have the same meaning as the Employer’s Agent as defined in the General Conditions of Contract.
C3.6.1  SECTION 1100: DEFINITIONS AND TERMS

B1107  CARRIAGeway AND FREEway

Add the following:

“The carriageway or freeway shall also mean the asphalt surface areas of the taxiways, RETs, taxiways and the concrete aprons.”

B1115  GENERAL CONDITIONS OF CONTRACT

Replace Clause 1115 with the following:

The General Conditions applicable to this Contract are the General Conditions of Contract for Construction Works, 2015, Third Edition, (GCC 2015).

Accordingly, all reference in the Standard Specifications to any other General Conditions of Contract (GCC) has to be amended. The Standard Specifications have been scrutinised and clauses which refer to another GCC, identified. These are tabulated below together with the relevant equivalent clause in the GCC 1998 Conditions of Contract. The context of the reference to the GCC is also noted.

Whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the GCC 2015 Conditions of Contract for Construction, as amended by the Special Conditions of Contract in Section C1.2 of this Volume, shall apply and the contractor shall be responsible for interpretation of the equivalent clause.

CHANGES TO ALL REFERENCES BY THE COLTO STANDARD SPECIFICATIONS TO THE COLTO GENERAL CONDITIONS OF CONTRACT AND 2015 GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (GCC 2015)

<table>
<thead>
<tr>
<th>Clause No</th>
<th>Page No</th>
<th>Clause No</th>
<th>Description or Reference</th>
<th>Clause No</th>
<th>Description or Reference amended to</th>
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<td>1100-2</td>
<td>1100</td>
<td>Definition of GCC</td>
<td>5.6</td>
<td>Construction programme</td>
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<td>1200-2</td>
<td>15</td>
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<td>Setting out of works</td>
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<td>1403(c)</td>
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<tr>
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<td>Clause No</td>
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<td>6.4</td>
<td>Payment for oversize material</td>
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<td>3303(b)</td>
<td>3300-2</td>
<td>Engineer’s decisions, with reference to materials classification</td>
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<td>Employer’s Agent’s decisions, with reference to materials classification</td>
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<td>4400-3</td>
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<td>Variation, for testing material</td>
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<td>8100-26</td>
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<td>5.15.1</td>
<td>Clearance of site on completion, with reference to core drilling</td>
<td></td>
</tr>
</tbody>
</table>

B1136    ROAD PRISM

Add the following:

“The road prism shall also mean the prism of the taxiways and taxilanes”

Add the following definitions and terms to Section 1100 of the Standard Specifications:
(Also refer to the definitions provided in the Airside Manual – Volume 5)

B1156    AIRPORT ROADS

Airport roads are defined by a network of public and non-public roads within the airport boundary providing access to the various airport buildings or areas.

B1157    AIR TRAFFIC

Means all aircraft in flight or operating on the manoeuvring areas of an aerodrome.

B1158    CONTROL TOWER

Means an air traffic control unit established to provide an air traffic control service.
B1159  INSTRUMENT LANDING SYSTEM CATEGORY I (ILS CAT I)

Means an approach and landing aid designed to identify an approach path for exact alignment and
descent of an aircraft making a landing with a taxiway visual range of 800 m and a decision height of 60 m.

B1160  INSTRUMENT LANDING SYSTEM CATEGORY II (ILS CAT II)

Means an approach and landing aid designed to identify an approach path for exact alignment and
descent of an aircraft making a landing with a taxiway visual range of 400 m and a decision height of 30 m.

B1161  INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO)


B1162  LANDING AREA

Means that part of a movement area intended for the landing or taking off of aircraft.

B1163  THRESHOLD

The threshold is the beginning of that portion of the taxiway used for the take-off and landing of aircraft. The clearway is the area beyond thresholds.

B1164  PARTY, PARTIES AND THIRD PARTY

‘Party’ and ‘Parties’ means the Client and the Consultant and ‘Third Party’ means any other person or entity as the contract requires.”
C3.6.2  SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS

B1202  SERVICES

Add the following after the second paragraph:

“The owners of services affected under this Contract are all under the control of the Airports Company South Africa whose representative must be contacted regarding the location of all services in the construction area. Inspections shall be undertaken by means of the authority's service detectors and such inspections shall be attended by the Contractor and the Engineer’s Representative. No payment shall be made to the Contractor for attending these inspections.

The following existing surface and subsurface services are currently known and exact locations should be determined with service detection and inspection.

<table>
<thead>
<tr>
<th>Service</th>
<th>Approximate Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxiway centre lights</td>
<td>Lights and cables run across the taxiway</td>
</tr>
<tr>
<td>Main electrical supplies</td>
<td>Main supply cables is crossing below the taxiways</td>
</tr>
</tbody>
</table>

Protection and/or relocation of certain services will be required. The Engineer will issue instructions after location and exposure of these services. No large compaction equipment will be allowed to work within 10 m of any ground mounted frangible light fixtures or any other navigational equipment without approval by the Engineer. The contractor shall allow for a 1.5 ton sit-on roller or similar compaction equipment approved by the Engineer to work within 10 m of the navigational equipment. No additional payment will be made for work close to the equipment as specified above.

Add the following to the sixth paragraph:

“The Contractor shall also be liable for any loss or consequential loss suffered by the owner of a service which is damaged by the contractor’s operations, e.g. loss of the ILS or Taxiway lighting due to a power failure.”

Add the following after the last paragraph:

“This work is planned to be executed in close proximity of approach, edge lights and taxiway closure crosses and must be executed without interfering with the operation of these lights. The contractor shall ensure that the position of the cables are known to himself and his personnel and shall take all reasonable care to avoid damage to the cables, lights or transformers. Protective covers and markers shall be used as required to protect the lights from being damaged or covered by products (e.g. bituminous) whilst the work is carried out. No additional payment will be made to protect the lights.

Should existing services be damaged, the contractor shall give adequate notice to all concerned and leave enough time after completing a particular work shift to allow for the reinstatement of the cables before opening the taxiway to air traffic.

Where applicable, existing edge and centre lighting systems for the taxiway and taxiways need to be kept operational during the course of the project. A number of these lights will need to be raised to match the new level of the surfacing. Payment for this work will be covered under pay item B12.08.

B1204  PROGRAMME OF WORK

(a)  General requirements

Delete the first paragraph and add the following:

“The Contractor shall submit his programme within the time stated in the Contract Data to the Engineer for approval. The programme shall be in the form of a bar chart (Gantt chart) or any other time-activity form acceptable to the Engineer, and shall clearly show:
(i) The proposed rate of progress in order to complete the Works within the required period as tendered, showing the various activities, their durations and proposed resourcing levels (major plant and labour) for each element of the Works. Sufficient detail shall be provided to enable the Engineer to be able to gauge construction progress. All activities, including establishment on site, trimming and finishing and the completion of all minor ancillary works are to be included in the programme.

(ii) The sequence of activities and any dependencies (time or resource related) between them.

(iii) The critical path activities.

(iv) The anticipated value of work to be done during each month.

(v) Other information specifically required by the Engineer

When drawing up his programme, the Contractor shall, inter alia, take into consideration and make allowance for:

(i) Working times and all other constraints stated in Volume 5.

(ii) Requirements of Clause B1230.

(iii) Expected weather conditions and their effects (Clause B1215).

(iv) Known physical conditions or artificial obstructions.

(v) The accommodation and safeguarding of public and air traffic.

(vi) Dealing with, altering and installing services.

(vii) The work to be undertaken by any sub-contractors. This work must be integrated into the programme of the main contractor.

(viii) All other actions required in terms of this contract.

(ix) Interim milestone dates and restrictions on the extent of work areas available at a given time (Section C3.5.1).

(x) Airside access for “normal hours” working as follows (if required):

<table>
<thead>
<tr>
<th>MAIN ACTIVITY</th>
<th>DURATION</th>
<th>START</th>
<th>FINISH</th>
<th>CLOSURE TYPE</th>
<th>WORK DAYS</th>
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</thead>
<tbody>
<tr>
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<td>21-Oct-19</td>
<td>28-Feb-20</td>
<td>21:00 - 07:00¹</td>
<td>Full week</td>
</tr>
<tr>
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<td>3 months</td>
<td>28-Feb-20</td>
<td>30-May-20</td>
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<td>Full week</td>
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<td>28-Feb-20</td>
<td>30-May-20</td>
<td>00:00 - 05:00³</td>
<td>M; W; F; S</td>
</tr>
<tr>
<td>Alpha - Bravo - Juliet Junction - A1</td>
<td>1 month</td>
<td>30-May-20</td>
<td>30-Jun-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S</td>
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<tr>
<td>Alpha - Bravo - Juliet Junction - A2</td>
<td>1 month</td>
<td>30-May-20</td>
<td>30-Jun-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S</td>
</tr>
<tr>
<td>JULIET 1 TAXIWAY (btw Alpha and 03L)</td>
<td>1 month</td>
<td>30-Jun-20</td>
<td>30-Jul-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S</td>
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<tr>
<td>JULIET 2 TAXIWAY (btw Charlie and 03L)</td>
<td>1 month</td>
<td>30-Jun-20</td>
<td>30-Jul-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S</td>
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<td>1 month</td>
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<td>31-Aug-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S</td>
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<td>31-Aug-20</td>
<td>00:00 - 05:00</td>
<td>M; W; F; S</td>
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<td>4 months</td>
<td>30-Jul-20</td>
<td>13-Dec-20</td>
<td>00:00 - 05:00³</td>
<td>Full week</td>
</tr>
</tbody>
</table>

1. Where the indicated extended closure is not achieved the ability to increase productivity is listed as an extra over item (B21.20)
2. Must still be confirmed
3. Additional hours are requested and may be granted by contract award (21:00 - 07:00)

Irrespective of the above, all construction times are still tentative up to the approval of the NOTAMS

(xl) Airside access for “after hours” working as follows:

- All other hours not defined as normal hours

The above hours of access to airside may be later due to delayed aircraft etc. In addition, the vacation times on Saturday and Sunday mornings may be extended by 1 hour and 2 hours respectively. For programming purposes, the above times should be adopted.

The following details shall be submitted together with the programme:

(i) The number of working hours per day, working days per week, assumed holiday or shut down
periods on which the programme is based.

(ii) The overall labour and major plant resource levels on which the programme is based.

(iii) The detailed traffic and construction equipment accommodation proposals on which the programme is based.

(iv) Sequence of work area closure to air traffic.

The Contractor shall base his initial programme of work on the scope of the work as described in the Scope of Works and the Bill of Quantities. This programme shall be reviewed on a regular basis by the Contractor in accordance with changing circumstances, delays and amendments to the work ordered by the Engineer as a result of further examinations made by him.

Minor revisions to the approved programme may be introduced from time to time by mutual agreement between the Contractor, and the Engineer. Should the Engineer believe that a major revision of the programme is required, the Contractor will be notified in writing and a revised programme shall be submitted within two weeks of receipt of such a notification.

It should be noted that it is in the Contractor’s interest to provide a comprehensive programme giving as much information as possible about the times allowed for the various activities as well as resources or other limitations affecting the programme, since the approved programme may be used to evaluate any claims in terms of the General Conditions of Contract for extensions of time.

**Monthly Meeting Programme:**

The Contractor shall submit to the Engineer, before each monthly site meeting (or whenever instructed) copies of the following:

(i) The Contract programme with progress charts and programme graphs updated to reflect the actual progress to date.

(ii) A summary of progress on site over the week preceding the site meeting. The report shall be in the form of a detailed narrative to the Contract programme.

(iii) Details of activities running late, indicating what steps have been or will be taken to ensure that the work is completed within the specified time.

(iv) A report on all labour, plant and materials on site.

(v) An Incident and or Accident Report that is fully detailed.

**Weekly Meeting (Fortnightly Rolling) Programme**

This programme will be presented at the weekly meetings and will show the work programmed over the next fortnight. It will be updated weekly. This programme will show the activities planned for each shift in a specific area, and will be subject to correlation with flight-schedules by the Airport Manager. The programme will show actual, projected and previous work.

*Add the following subclause:*

“(c) Safety and Contingency Plan

Within 14 days of award of the contract the Contractor shall draw up and submit a detailed Construction Method Statement addressing i.e. safety and contingency plan to ACSA for approval. Once approved, the Construction Method Statement will form part of the Procedure Manual for Working Airside (Volume 5). The method statement shall include:

(i) All measures to be implemented to comply with the requirements of the OHS Act (C3.7.1), Environmental requirements (C3.7.2) and the Procedure Manual for Working Airside (Volume 5).

(ii) A contingency plan to deal with shifts interrupted by inclement weather, construction equipment breakdowns or emergency closures of the work areas.

(iii) Special measures, such as back-up plant, to be implemented in normal shifts to comply with the specifications.

No work on the airside will be allowed until the Employer has approved the contractor’s Construction
Methodology Statement.

The cost of complying with the ACSA approved method statement is deemed to be covered by the tendered rates for the contractor’s general obligations.

The scope of work requires the temporary closure of certain facilities on the airside. The closure of any facilities and the period of such closures shall be arranged with the air and surface traffic control authorities. Minimum notification periods are included in Volume 5.

B1205 WORKMANSHIP AND QUALITY CONTROL

Delete the second to fifth paragraph and replace with the following:

“The Contractor shall submit a proposed Quality Management Plan in accordance with ISO 9002 for this contract (Form C9). Confirmation of the Quality Management Plan shall be submitted to the Engineer, for his approval within two weeks of the commencement date and prior to the commencement of construction activities. Once accepted by the Engineer the Contractor shall not deviate from it unless written notification of proposed changes have similarly been submitted and approved. The system shall record the lines and levels of responsibility and indicate the method and frequency by which testing procedures will be conducted.

The Contractor shall also appoint a Quality Manager who shall ensure that the Contractor’s staff comply with the requirements of the Quality Management Plan.

Payment for work done will not be made until the results of the Contractor’s process control testing have been submitted and the Engineer has approved the work. The Engineer shall conduct such tests as he may deem necessary to verify the process control test results and shall retain all rights as determined in the General Conditions of Contract related to bad workmanship or unacceptable materials. This shall also be applicable to accepted alternative (mix) designs and related specifications.”

Insert the following new subclauses:

(a) “External testing house

An external testing house will be appointed by the Engineer to undertake verification quality control testing of construction materials and workmanship by means of laboratory testing at an external testing facility to confirm results of the combined laboratory on a selected sampling basis. All sampling and testing by the external testing house will be done on the instruction of the Engineer. Materials will be sampled on site or at commercial supply sources or at the contractor’s asphalt or concrete plant and will be tested the following day. Results will be reported to the Engineer for interpretation and possible action. The external testing house will invoice the Contractor (nominated subcontractor) for the cost of material sampling and testing and for reporting the test results to the Engineer. This cost will be reimbursed under the provisional sum item on approval of the Engineer.

The contractor will be required to accommodate and support the sampling procedures of the external testing house during the course of the contract. Representatives of the Engineer and the testing house will be allowed to inspect any stockpile, storage facility or processing activity for the purpose of quality control.

(b) External testing house used as combined laboratory

The contract will utilize an external testing house as a combined laboratory. Testing shall be undertaken by a combined external testing house laboratory facility for process control (where the process control testing can be utilised as acceptance control), acceptance control and correlation testing subject to the following requirements laid down by the Employer:

(i) The contractor accepts the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault.
(ii) The contractor accepts that the Engineer will be in charge of the combined laboratory.

(iii) The external testing house must supply a suitable qualified material technician (with at least 10 years asphalt paving quality control experience). The material technician will be responsible for paving quality control (that includes but not limited to temperature control of asphalt, recording of compaction effort, recording of stoppage and prevention of cold joints, inspection of the surface prior to tacking). This material technician must be approved by the Engineer before commencement of any works.

(iv) The contractor must install suitable infrared sensors on the paver to record the material temperature on a continuous basis and these results must be available to the external laboratory and Engineer.

(iii) The contractor accepts the costs reduction factor as described below.

The total cost of the combined laboratory for the 14 month contract period has been estimated at an amount of R100 000.00 per month, which is included in Pay Item B14.11(a). The contractor’s contribution to the combined laboratory shall be a minimum of 30% of the amount claimable by the external testing house. This amount shall either be deducted from the Pay Item or the contractor can, with the Engineers approval, provide a combination of deducted amount, transport, additional staff or other means equating to the 30% value.”

B1206 THE SETTING OUT OF WORK AND PROTECTION OF BEACONS

Add the following to this clause:

“In order to comply with Clause 1206 of the Specification the Contractor shall contract or employ a professional land surveyor and supporting team who will check the reference and level beacons. Agreement shall be reached with the Engineer on the values of the beacons to be used. It is the Contractor’s responsibility to maintain and protect all reference beacons.”

Replace the requirements of the second to the third last paragraph with the following:

“There are a limited number of official reference and level beacons on the airport. Where necessary the Contractor shall place additional reference beacons on all sides of the work areas for accurate setting out and levelling purposes. These beacons shall be placed in concrete, marked and certified by a professional land surveyor. Beacons shall be check-levelled during construction to confirm the accuracy when instructed by the Engineer.

All existing paint markings shall be referenced prior to any milling or paving activities for setting out after the completion of the overlay. The contractor shall provide a survey of the existing markings to the Engineer who shall then review and amend as necessary before providing the final marking drawings. Setting out of the final paint marking positions must be done as specified on these supplied drawings. These shall be checked and agreed with the Resident Engineer in writing before final application.”

In the last paragraph, the first part of the sentence shall be changed as follows:

“The setting out of level beacons and level control pegs, the measurement of the existing levels and the setting out of the final levels for construction purposed shall not be measured and paid for directly, and …”

B1207 NOTICES, SIGNS AND ADVERTISEMENTS

Delete the final paragraph and replace with the following:
“All signboards erected in accordance with the drawings or as approved advertisements for the Contractors establishment, shall be removed at the same time as the Contractors de-establishment. Payment under subitem B13.01 for the final installment of 15% of the tendered lump sum shall not be made unless all the advertisements, notices and temporary signs have been removed.”

B1209 PAYMENT

*Add the following to the first paragraph of Clause 1209(b):*

“VAT shall be excluded from the rates and added as a lump sum to the total value of work measured for payment.”

(c) The meanings of certain phrases in payment clauses

(i) Procuring and furnishing...(material)

*Add the following:*

“Payment for procuring and furnishing material from commercial sources shall include all transport costs, irrespective of distance hauled.”

*Add the following new subclauses:*

(g) Work in restricted areas

All work in restricted areas shall be allowed for in the tendered rates in the Bill of Quantities. No additional payment or claim will be entertained for restricted work.

(h) Rates to remain unchanged when scope of work changes

Dependent on the rates and prices offered in the Pricing Schedule, the employer intends to increase or reduce the scope of work to match the budget allowed for this project. To this end the contractor has been provided the opportunity to price separately for unit rates of work and the establishment of major plant. The value of such increase or reduction in the scope of work shall not give cause for the contractor to vary the offered rates and prices, which shall remain final and binding for the duration of the contract, provided that:

(i) Notification of the change to the scope of work is given in writing within 28 days of the tender closing date.

(ii) The value of the increase or reduction in the scope of work does not alter the tendered sum by more than 20%.”

B1215 EXTENSION OF TIME RESULTING FROM INCLEMENT WEATHER AND DELAYS CAUSED BY ACTIONS OF AIRPORT AUTHORITIES

*Delete the entire clause and replace with the following:*

Change the existing heading of clause 1215 to read as above and wherever the expression ‘abnormal rainfall’ is encountered replace it with ‘inclement weather’ and make the following changes to Method (ii) (Critical-path method) which will apply to this Contract:

*Add the following as a new paragraph:*
"(a) Extension of time resulting from abnormal rainfall, very cold weather or other forms of inclement weather shall be calculated according to the requirements of Method (ii) (Critical-path method). The value of “n” working days per calendar month as specified in this clause shall be as given in Table B1215/1 below. If no abnormal rainfall or other inclement weather periods occur during a specific calendar month (or months), the n-values as specified shall not be taken as accumulating over the contract period. If the “n”-days allowed for in the programme of work are not taken up by standing time due to abnormal rainfall or inclement weather conditions, they will fall away and will not be considered in extension of time claims that may arise later during the contract period.

Table B1215/1: Average (‘n’) delays due to inclement weather

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan*</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec*</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘n’ days delay</td>
<td>5 (4)</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>5 (3)</td>
</tr>
</tbody>
</table>

* If the Contractor programmes to close during the traditional Christmas/New Year break, the days for December and January shall be reduced as shown in brackets.

The value ‘n’ is the average number of days on which it is expected that there will be inclement weather at OR Tambo International Airport.

The Engineer’s Representative will certify a shift loss due to cold weather, abnormal rain or adverse weather conditions based on the following criteria:

(i) No work was possible during the relevant shift on any item which is on the critical path according to the latest approved construction programme, given that sufficient temporary drainage of work areas was provided, or if

(ii) Less than 50% of the work force and plant planned for that specific shift could work.

Actual extensions of time due to inclement weather shall be agreed between the Engineer’s and Contractor’s representatives on the site. The agreed shifts or parts thereof shall be recorded at the bi-weekly site meetings and adjustments made to the contract period on a bi-weekly basis by extending the contract period according to the number of shifts lost less the allowance ‘n’. At the end of the contract, the Engineer shall prepare a variation order to formalise the payment of the accumulated delays in excess of the allowance due to inclement weather.

(b) Extension of time resulting from delays during shifts caused by operations of the Airport shall be allowed for in the contractor’s programme. The number of working days to be allowed for in the Contractors programme is 50 days for the full contract period. The criteria listed in (i) and (ii) above will also apply to this extension of time.

Time lost during shifts shall be agreed between the Engineer’s and Contractor’s representative on site. The agreed shifts or parts thereof shall be recorded at the bi-weekly site meetings and adjustment made to the contract period on a bi-weekly basis by extending the contract period according to the number of shifts lost less the allowance. At the end of the contract, the Engineer shall prepare a variation order to formalise the payment of the accumulated delays due to Airports operations. Losses for the first half-hour of delay are deemed to be covered in the rates tendered for items of work.

If the approved total extension of time (for delays due to inclement weather and Airport operations) extend the completion date beyond the start of the contractor’s holiday in December, the holiday period shall not be considered as working days. Any remaining extension of time at this date shall be calculated from the first statutory working day in January the following year, provided that the contractor has shown in his programme that he intends to close during the traditional Christmas/New Year break."

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B1219 WATER
Add the following to the first paragraph:

“Water for construction purposes will be made available near the site camp. The contractor will include in his rates for any connections, couplings or a standpipe and will provide a water meter to measure the water used for construction purposes. Water will be purchased from ACSA at R10 per kilolitre. The contractor shall allow in his rates for annual municipal increases. ACSA will invoice the contractor on a monthly basis for use of water. The first municipal water increase will be on 1 July 2020.”

B1225 Haul Roads

Add the following:

“The usage and selection of haulage roads on the employer’s (ACSA) premises and on the site will be coordinated on a daily basis between the Contractor, the Engineer’s Representative and the Employer’s representative.”

Add the following new clauses:

“B1230 Project Criteria and Requirements at Operational Airports

Note the special Safety Regulations in Volume 5 will strictly apply to this Contract. In the case of conflict with the following clauses Volume 5 will supersede this section.

Where work has to be executed on or in the vicinity of an operational airport, such work shall be subject to various special conditions and regulations as listed below in order to guarantee and safeguard the operation of the airport at all times.

The following criteria should be borne in mind when the programme is compiled

(a) Airport management and air traffic control responsibilities

The Airport Manager (AM) and the Air Traffic Controller (ATC) are ultimately responsible for the safe and efficient operation of the airport.

The AM or designated representative will in his official capacity have authority to give the Contractor verbal or written orders on matters concerning the operation, security or safety of the airport and the Contractor shall, after having informed the Engineer of the orders, carry out the instructions as if issued by the Engineer.

The ATC is responsible for the safe movement of all aircraft traffic, both in the air and whilst on the ground. The ATC shall at all times have absolute authority regarding the movement of any construction personnel, vehicles or equipment, where such movement takes place within the obstruction free areas of existing facilities or may affect the safe movement of the air traffic, and his instructions shall be implicitly obeyed. The ATC’s decision regarding the acceptability and programming of the Contractor’s activities within the above-mentioned areas shall be taken into account and may result in reprogramming of work where considered necessary.

All liaison with the AM or ATC shall be arranged through the Engineer and the Contractors Traffic Safety Officer.

(b) Radio communication on the airport

Refer to Clause 14 of Volume 5.

Two handsets must be provided to the Engineer for this purpose and must be handed over in a working condition to the Employer at the completion a radio operator’s basic (PARTAC) course at ACSA before commencement of work. The staff shall be in possession of their own radio to communicate with the tower when accessing the airside. The Contractor’s traffic safety officer and the Construction Manager shall complete a radio operator’s basic course at ACSA before commencement of the works. The Contractor shall be responsible for any maintenance costs, damages or loss of these sets. Payment
Item B14.03(xxiv) shall be deemed to include all costs of the Contractor in this regard (including training of relevant personnel).

(c) **Airport security**

*Refer to Clause 16 of Volume 5.*

(d) **Movement on the airport**

*Refer to Clause 17 of Volume 5.*

The crossing of any operational facility on the airport will require special control as ordered by the ATC or the airport manager and will be limited to pre-determined points as indicated on the drawings or instructed by the Engineer. The required controls may include any of the following:

(i) Unrestricted crossings used by the Contractor should be linked with a pre-warnings system that notifies the Contractor that the facility will be required for airport use within a certain period after notification.

(ii) Flagmen at crossing points, allowing movements across the facility whenever aircraft traffic permits.

(iii) Radio controlled crossing points, where movements across the facility may only take place after receiving clearance from the ATC.

(e) **Additional requirements regarding construction activities**

(i) **Identification numbers**

All construction vehicles and self-propelled equipment to be utilised within the airport security area shall be fitted with a boldly displayed identification number (minimum dimension 600 mm, line thickness 75 mm) on a white background on either side of the vehicle or equipment. A record of all identification numbers and related vehicles shall be available at all times for perusal by the authorities or the Engineer. The cost for providing and using these identification numbers must be included under Pay Item B13.01.

(ii) **Crossing points**

The surface of existing facilities at crossing points shall be absolutely clean whenever aircraft uses them. This will require the full-time presence of a cleaning team at such crossings to remove all debris, stones or other material from the surfaces. The Contractor shall be responsible for any damage to aircraft or other equipment as a result of failure to comply with this requirement.

(iii) **Barricades, lights and markings**

The Contractor shall provide, erect, maintain, move and finally remove temporary barriers, fences and markings all as prescribed by the airport authorities or as shown on the drawings. The work shall include the placing of temporary barriers where taxiways or taxiways have been closed as well as lights at these points to facilitate night-time interpretation of the situation. It may also include the painting of markings and the final removal thereof.

(iv) **Dust and pollution**

The Contractor shall control dust in all working areas, at borrow pits and on haul roads to the satisfaction of the airport authorities. No pollution from machines, batching plants, mixers, workshops or other sources (such as the breaking up of existing work) will be tolerated. Fires may only be lit after the Contractor has obtained written permission from the airport authorities who will also supervise the fires.

The Contractor shall keep the entire site of the works, including his own camp site, in a neat...
and clean condition to the satisfaction of the airport authorities.

(f) **Traffic safety officer**

*Refer to Clause 9.8 of Volume 5.*

A traffic safety officer shall be appointed by the Contractor. This person shall be a senior member of the site management team who has been duly authorised to perform his duties on his own initiative and to exercise control over others. He must also complete a communications training course successfully at the Airport Control Centre after which a license will be issued to him. He shall be on site full-time during the execution of the works and general site safety shall at all times be his first priority. The traffic safety officer shall liaise directly with the Engineer, airport control and air traffic control regarding matters related to safety.

In addition to the tasks specified in the Airside Manual the traffic safety officer will also be required to perform the following duties and this list shall not be deemed to be complete:

1. Responsible for keeping the traffic requirements up to specification 24 hours a day, 7 days a week.
2. Inspect and report to the Engineer on the state of all required signs and marks (and all traffic accommodation facilities) as often as the Engineer may require but in any event not less than twice a day.
3. Responsible for exercising control over the safe movement of personnel vehicles and plant on site according to the instructions of air traffic control.
4. Attend to the training and performance of flagmen and all other personnel involved in the control of traffic.
5. Responsible for compliance with prescribed measures at aircraft crossings.
6. Responsible for compliance to air traffic controller’s instructions.
7. Responsible for daily final inspection of work areas prior to re-opening thereof.

(g) **Provision of Permits**

The Contractor shall note that it is a condition of the contract that he applies for and obtains the required permits for all persons, equipment and vehicles to be utilized during the construction of the planned works. Refer to Clause 17.2 of the Airside Manual (Volume 5).

The onus shall be on the tenderer to verify these costs prior to completing his tender, but the following are typical costs which could apply:

<table>
<thead>
<tr>
<th>Permits</th>
<th>Duration</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicles Permits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permanent</td>
<td>R 916.00</td>
</tr>
<tr>
<td></td>
<td>Add on</td>
<td>R 4 040.77</td>
</tr>
<tr>
<td></td>
<td>Transponder cost</td>
<td>R 10 000</td>
</tr>
<tr>
<td></td>
<td>Practical Airport Radiotelephony and Airside Competency Course (PARTAC)</td>
<td>R 3099</td>
</tr>
<tr>
<td><strong>Personal Permits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airside Induction</td>
<td>R 595.70</td>
</tr>
<tr>
<td></td>
<td>Airside Induction Refresher</td>
<td>R 416.30</td>
</tr>
<tr>
<td></td>
<td>AVOP</td>
<td>R 595.70</td>
</tr>
<tr>
<td></td>
<td>Damaged card re-print</td>
<td></td>
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<tr>
<td></td>
<td>1st Lost card</td>
<td>R 1 000.00</td>
</tr>
<tr>
<td></td>
<td>2nd Lost card</td>
<td>R 5 000.00</td>
</tr>
</tbody>
</table>

**Windrow of material**
During the improvements of the side strips for taxiways, materials will be temporarily windrowed outside the work areas. No windrows shall be allowed within 37.5 m of the taxiway edge of taxiways of any threshold. Windrow heights shall also be managed to ensure that they do not exceed ACSA maximum obstacle height requirements.

B1231 CONTRACTOR’S ESCORTS

Escorts will be provided by the Contractor to lead all the construction team onto site and to serve as official communications port between the construction team and Air Traffic Control or Airport Management. The construction team will not be allowed to enter or operate on the airside facilities unless being escorted by a qualified escort. All escorts will be in possession of radio licenses to enable them to cross the taxiways and runways. The contractor is responsible for the cost of the escorts.

The Contractor will nominate one or more persons (own site management staff or others) to accept the duties and responsibilities of an escort if and when required by the Employer. The following conditions will apply:

(a) The nominated person/s (Contractor's escort) need to have passed the applicable training and examination as specified by Airport Management (including induction course, radio communications, etc.).

(b) The Contractor’s escort shall have a vehicle suitably equipped for driving airside. Equipment shall include amongst others a suitable communication device as specified by ATC required to communicate with Air traffic Control and Airport Management, signage and lights.

(c) The Contractor’s escort may only be used if Airport Management is not able to provide the required escort services if and when required by the Contractor. The Contractor needs to be provided with written approval by the Engineer before the Contractor’s escort will be allowed to substitute the official airport management’s escort.

(d) The Contractor’s escort shall at all times be in radio contact with Air Traffic Control and the Engineer’s safety controller and physically with the construction team. He will not be allowed to leave the site until such time that he has been relieved of his duties by a replacement escort and if approved by Air Traffic Control.

The Contractor will be able to recover the cost of carrying out the duties and responsibilities of the Contractor’s escort in the Bill of Quantities. The cost of lights and radio’s must be included under Pay Item B13.01.

B1232 MEASUREMENT AND PAYMENT

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B12.01 Standing time (Plant and Labour)</td>
<td></td>
</tr>
<tr>
<td>(a) Asphalt Milling team</td>
<td>hour (hr)</td>
</tr>
<tr>
<td>(b) Asphalt paving team</td>
<td>hour (hr)</td>
</tr>
<tr>
<td>(c) Concrete paving team</td>
<td>hour (hr)</td>
</tr>
<tr>
<td>(d) Taxiway Marking team</td>
<td>hour (hr)</td>
</tr>
<tr>
<td>(e) Earthwork team</td>
<td>hour (hr)</td>
</tr>
<tr>
<td>(f) Electrical team</td>
<td>hour (hr)</td>
</tr>
</tbody>
</table>

Where unforeseen delays attributable to the airport authorities occur and the contractor suffers lost day or night-shift time over and above the allowance made in Clause B1215 (b), the Contractor will be compensated with paid extensions of time to the contract for the durations lost.
Payment will be made only at the pro rata rate tendered for time related item 13.01 (c), if it is demonstrated that the activities in the shift met the criteria in clause B1215. Such extensions of time will be recorded in bi-weekly meetings.

Item B12.01 is for direct plant and labour costs incurred during such delays. Rates under this item shall include for any additional direct plant, operator and labour costs incurred by the Contractor during such delays. All supervision costs will be deemed to be part of the Contractor's General Obligations and no additional payment will be paid under this item for foremen or managers.

The unit of measurement is each hour or portion thereof of a particular operation that is delayed in excess of 30 minutes for each night shift. Losses for the first half-hour of delay are deemed to be covered in the rates tendered for items of work. The measurement will be taken from the time an instruction is received from the ATC to terminate the operation to the time the operation is commenced again or stopped for a particular shift.

The tendered rate shall include full compensation for all losses incurred by the Contractor."

“Item” Unit

B12.02 Control of dust and FOD pollution at all work areas including haul and site access roads and campsite/site offices ........................................... Lump sum

The tendered lump sum shall include full compensation for all precautions taken, methods used and costs incurred by the Contractor in order to control dust and pollution to a level that is acceptable to the airport authorities. The tendered lump sum shall include full compensation for all precautions taken, methods used and costs incurred by the Contractor in order to control dust during construction operations and Foreign Object Debris (FOD) pollution on a day to day basis to a level that is acceptable to the airport authorities. Precautions may include the regular watering of haul roads and taxiway strip areas, the enforcement of speed limits, the installation of pollution prevention systems at batching plants or other construction equipment, and the regular cleaning of the works, including the Contractor’s campsite, of all construction waste or other litter. Special precaution must be taken to ensure that all FOD e.g. loose stones from milling and paving and any other litter around the site is cleaned and removed off-site before the day or nights work is complete. The payment for the tendered lump sum shall be made pro rata during the contract period."

“Item” Unit

B12.03 Airside induction courses and permits ............................................. Provisional Sum

The provisional sum shall represent full compensation for all direct costs incurred for the attendance of the safety induction course for all the Contractors personnel and for all costs associated with the provision of all necessary permits as required by ACSA for the completion of the project.

The above costs cover all costs related to permits, airside courses, transponders, radio license courses, vehicle license courses or permits.

All time related costs and efforts to obtain permits should be priced under the time related preliminaries and general in the Bill of Quantities.

“Item” Unit

B12.04 Penalty to be deducted for non-compliance with requirements for accommodation of traffic as set out in B1230, 1500 and Volume 5

(a) Fixed penalty per occurrence ................................................................. Number (No)
(b) Time related penalty ............................................................................ Hour (Hr)
In sub-item B12.04 (a) a fixed penalty of R30 000.00 per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of sections 1500 of the standard specifications, Volume 5 and section B1230 of the particular specifications.

In addition, in sub-item B12.04 (b), a time related penalty of R5 000.00 per hour over and above the fixed penalty in sub-item B12.04(a) shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within a reasonable time after an instruction of this effect has been given by the Engineer. The Engineer’s instruction shall state the time in hours for re-instatement of the defects. Should the Contractor fail to adhere to the instruction, the time related penalty will be applied from the time the instruction was given. This also applies to opening after closures.

<table>
<thead>
<tr>
<th>“Item”</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B12.05 Security Guard</td>
<td>Prime Cost</td>
</tr>
<tr>
<td>(a) Provision of security guards</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>(b) Contractors charge in respect of item B12.05(a) above</td>
<td>Percentage (%)</td>
</tr>
</tbody>
</table>

The expenditure under this item shall be made in accordance with the general conditions of contract. The prices shall not be subject to the Contract Price Adjustment factor.

The tendered percentage in sub item (b) is a percentage of the amount actually spent under the provisional sum in (a) and shall also include all costs for obtaining quotations from ACSA accredited security companies.

Only ACSA accredited companies may be used.
C3.6.3 SECTION 1300: CONTRACTOR’S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

B1302 GENERAL REQUIREMENTS

(a) Camps, constructional plant and testing facilities

Add the following to the first paragraph:

“The site for the contractor’s office and stores as well as the engineer’s office and laboratory will be within ACSA’s premises (Landside) and is indicated in the Key Plan Drawing (Volume 4). The contractor shall provide 24-hr security at the camp site as well as a dedicated smoking area under roof as required in terms of legislation. The cost of this will be deemed to be included in item B13.01.”

Add the following new subclause:

“(d) Contractor’s ablution facilities

The Contractor shall provide sufficient portable chemical latrine units at the work sites as required by legislation i.e. 1:30 employees and catering for males and females. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the Engineer. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates tendered for the Contractor’s time-related obligations.

B1303 PAYMENT

“Item Unit

B13.01 Contractor’s general obligations ........................................................................................................... Month

Insert the following paragraph after the fourth paragraph:

“Should the combined total tendered for subitems (a), (b), and (c) exceed 15% of the tender sum, the tenderer shall state his reasons in writing for tendering in this manner.

If the tenderer should require additional compensation for his obligations under section 1300 (over and above the total tendered for item B13.01 by including such additional compensation in the tendered rates and/or lump sum of items in the schedule of quantities, these items and the value of such additional compensation shall also be indicated in writing in a letter.”

Delete the 17th paragraph commencing “The tendered rate per month for subitem 13.01(c) "and replace with:

“The tendered rate per month for subitem B13.01(c) represents full compensation for that part of the contractor’s general obligations, which are mainly a function of construction time. The tendered sum will be paid monthly, pro rata for parts of a month, from the Commencement Date until the end of the period for completion of the works, plus any extension thereof as provided in the general conditions of contract, provided that”.

Add the following at the end of this pay item:

“The amount payable to the contractor for time related costs arising from extensions of time granted by the employer, where the contractor is fairly entitled to such compensation in terms of the General Conditions of Contract, shall be calculated as follows:

(i) Account shall be taken of all time related items scheduled in Section 1300, 1400 and 1500

(ii) All pay items for which the unit of measurement is “month” shall be deemed to be based on a 23-day working month.”
Add the following to this pay item:

“The rate will include for the cost of all Escort requirements as specified in Clause B1231.”

Add the following pay items for the Environmental obligations (Clause EP 8):

“Item 

<table>
<thead>
<tr>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B13.02 Compliance with Environmental Specification:</td>
</tr>
<tr>
<td>(a) Time for environmental training…………………………………………………………..Lump Sum</td>
</tr>
<tr>
<td>(b) General compliance with Environmental Specifications………………………….. Lump Sum</td>
</tr>
<tr>
<td>(c) Penalty to non-compliance with Environmental Specifications (Per occurrence)………………………………..negative Number (No)</td>
</tr>
</tbody>
</table>

The tendered rate shall include full compensation for all activities and costs associated with environmental training as described in the Environmental Specification under C3.7.2. Payment shall be made on completion of the training.

The Contractor shall include a rate for general compliance with the Environmental Specifications. Failure to provide any item or comply with any instruction of the Responsible Person will be cause for non-payment of the whole lump sum and for ordering the cessation of works.

Item B13.02(c) makes provision for the deduction of penalties in terms of Clause EP 7.4.2 under C3.7.2. Records and penalty allocations of any non-compliance with the Environmental Specifications shall be recorded by the Engineer and the total allocation of the penalties shall be deducted as a negative lump sum from each month’s payment certificate.
C3.6.4 SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER’S SITE PERSONNEL

B1402 OFFICES AND LABORATORIES

(a) General

Add the following:

“The Resident Engineer’s offices shall, amongst other things, have one room at least 6 x 3.5 meters to serve as a conference room. All offices and laboratories shall be supplied with approved burglar proofing.”

(b) Offices

Add the following subitems:

“(xviii) Whiteboards of 1,5 m and 1,0 m fixed to wall, with tray and four different colour pens.

(xix) Each bookcase shall be at least 0,9 m long, 0,9 m high with three shelves.”

(c) Laboratories

Add the following:

“For the purposes of this Contract, commercial laboratory testing shall be used for acceptance control purposes.”

(d) Car ports

Replace the last sentence with the following:

“The carports shall be provided with at least 80% shade netting.”

B 1404 SERVICES

The following subclause shall be added to clause 1404 of the Specifications:

(e) First Aid

The Contractor shall provide a first aid kit at the site offices. No separate payment will be made and the Contractor shall allow for this in his tendered rates for accommodation for supervisory staff.”

B 1406 MEASUREMENT AND PAYMENT

“Item Unit

B14.03 Offices and laboratory fittings, installations and equipment:

(a) Items measured by number

Add the following new subitems:

(xix) Kitchen sink with drain board complete………………………………………………….Number (No)

(xx) Electric kettle………………………………………………………………………………………….Number (No)

(xxii) Provision of approved amber strobe lights…………………………………………………..Number (No)

(xxiii) ACSA approved lime coloured reflective safety jackets

(With lettering)…………………………………………………………………………………………Number (No)
Add the following new subitems:

(b) Prime-cost items and items paid for in a lump sum:

<table>
<thead>
<tr>
<th>“Item”</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ix)</td>
<td>The provision of the cost of cellphone calls and unlimited wireless connection for data communication in connection with site supervision and contract administration</td>
</tr>
<tr>
<td>(x)</td>
<td>Handling costs and profit in respect of subitem B14.03(b)(ix) above</td>
</tr>
</tbody>
</table>

The tendered rates shall collectively include full compensation for providing the furniture and equipment as specified.

<table>
<thead>
<tr>
<th>“Item”</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 14.10 Provision of copying facility</td>
<td>month</td>
</tr>
</tbody>
</table>

Amend this pay item description to read “Provision of copying facilities” and in the payment prescription, amend “photocopier” to read “combination colour printer/copier/scanner/facsimile machine”.

Add the following

“The tendered rate shall only be paid from the date that all services are operational and approved by the engineer.”

Add the following new items:

<table>
<thead>
<tr>
<th>“Item”</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B14.11 Combined Commercial laboratory testing</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>Actual cost of testing</td>
</tr>
<tr>
<td>(b)</td>
<td>Contractor’s charges in respect of sub item B 14.11(a) above</td>
</tr>
</tbody>
</table>

Expenditure under this item shall be made in accordance with the general conditions of contract.

The provisional sum is allowed to cover the cost of all authorised testing carried out by commercial laboratories or academic institutions on the instructions of the Engineer, as well as the transport of the relevant samples. The Contractor shall be required to pay for all testing instructed by the Engineer and carried out by a commercial laboratory and the Contractor shall be reimbursed for the invoiced costs. Measurement and payment shall be based on invoices submitted to the Engineer.

The item does not include for the Contractor’s own control testing of workmanship and materials. Also refer to B1205 regarding the incorporation of Combined Laboratory as applicable to this contract and approved by the Engineer.

The tendered percentage is a percentage of the amount actually spent under sub item (a) and shall include full compensation for all charges and incidental costs of the Contractor, profit and overheads in connection with the laboratory testing.

Payment for expenditure under this item will be made in full as and when the money is expended subject to written proof by the Contractor of payment of the amounts. No payment other than that provided above will be made in respect of laboratory testing.
B14.12 Services of labourers for the Engineer

(a) Actual cost of wages ................................................................. Provisional Sum
(b) Handling costs in respect of subitem B 14.12(a) above........ Percentages (%)

Expenditure under this item shall be made in accordance with the general conditions of the contract. The provisional sum allowed above shall be the actual cost incurred in the employment of the labourers for the use of the Engineer.

The tendered percentage is a percentage of the amount actually spent under subitem (a) and shall include full compensation for all charges for accommodation and transport, the handling costs of the Contractor and shall include all charges for documents and levies to local and other authorities, profit and overheads in connection with providing the semi-skilled labourers.

Payment for expenditure under this item will be made in full as and when the money is expended subject to written proof by the Contractor of payment of the amounts. No payment other than that provided above will be made in respect of the semi-skilled labourers for the Engineer. The payment shall not be subject to contract price adjustment."
C3.6.5 SECTION 1500: ACCOMMODATION OF TRAFFIC

B1502 GENERAL REQUIREMENTS

Add the following to clause 1502:

This Contract is divided into limited occupation areas in order to allow for the airport to be fully operational during construction. All occupation areas will be over a short duration (e.g. for night shift works). The Contractor shall inform and obtain approval from ATNS and AM prior to closing any taxiway/RET/taxiway for construction. The requirements of Volume 5 and Clause B1230 shall be fully adhered to by the Contractor. The Contractor is also to note that escort services are to be provided by the contractor for vehicles entering the restricted area to areas where work is taking place (see Clause B1231).

Details of the envisaged Phasing of the work are contained in Volume 4 (Book of Drawings) and also in C3.5 of this document. If the Contractor wishes to deviate from these details in any way, the Contractor shall request approval for such deviation and if approved shall keep the Airport Manager (AM) and the Engineer fully informed of changes.

Add the following new sub-clauses:

(j) Night work

All plant used on site shall be equipped with suitable lights including flashing amber lights to enable the work to be properly performed and controlled at night. Night work will only commence if, according to the Engineer, the Contractor provides all equipment, personnel and stand-by reserves to execute the work at night as if in normal daytime hours.

Payment shall be made under item B15.15 for provision of the lighting for the whole working site in work areas as specified above.

The Contractor shall provide for artificial lighting to ensure the proper execution of the work in terms of the contract. The artificial lighting shall be subject to the Engineer’s approval and shall consist of at least the following:

(i) At least 3 floodlight towers per work area shall be provided when works are performed during the night shift. A work area is defined as an area of radius 15 m in which night work is being done. The Contractor shall provide adequate lighting at night as specified for every work area. The light in a work area shall be a minimum of 75 lux.


No additional payment will be made to the Contractor over and above payment for the Contractor’s general obligations for providing and maintaining all extra personnel and equipment for executing night work.

Upon request by the Engineer or his representative, the Contractor shall make available a mobile flood light tower for use by the Engineer’s staff. Payment for this request shall be made under item B15.16.

B1517 MEASUREMENT AND PAYMENT

Add the following payment items:

“The Contractor’s obligation under this Section 1500 shall not be measured or paid for directly (except as hereinafter provided for) and compensation for the work involved to comply with these obligations shall be deemed to be covered by the rates and amounts tendered for the various items of work included under this contract.
### B15.14 Safety Barriers:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B15.14</strong> Safety Barriers:</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>Provide HDPE plastic mobile road safety barrier, NJ type (2 m x 1 high) taped with yellow reflective tape, two strips on either side.................................................Number (No)</td>
</tr>
<tr>
<td>(b)</td>
<td>Placing, moving and final removal of HDPE NJ type barriers upon completion of the works ..........................................................................................................................Lump Sum</td>
</tr>
<tr>
<td>(c)</td>
<td>Provide precast concrete temporary barrier, NJ type (2 m x 0.8 high with 0.6m base) taped with yellow reflective tape, two strips on either side and with two amber flashing lights mounted on each barrier................................. Number (No)</td>
</tr>
<tr>
<td>(d)</td>
<td>Placing, moving and final removal of concrete barriers upon completion of the apron works ..........................................................................................................................Lump Sum</td>
</tr>
<tr>
<td>(e)</td>
<td>Provide Taxiway/Taxiway closure barriers as per drawing complete...............Number (No)</td>
</tr>
<tr>
<td>(f)</td>
<td>Placing, moving and final removal of taxiway/taxiway closure barriers upon completion of the works .................................................................Lump Sum</td>
</tr>
</tbody>
</table>

The Contractor shall be responsible for maintaining the barriers (including ballast of plastic barriers) and lights. Placing and removal of barriers will be measured once only for payment for each barrier. No additional payment will be made for the intermediate moving and placing of barriers during the contract.

Payment of the lump sums tendered will be made in three instalments.

1. The first instalment, 30% of the lump sum, will be made after the contractor has made the initial provision and first placement with the first facility closure
2. The second instalment, 40% of the lump sum, will be paid when the value of the work reaches one half of the tendered amount, excluding contingencies and price adjustments.
3. The third and final instalment, 30% of the lump sum, will be paid when the barriers are no longer needed and have final been removed off-site.

### B15.15 Provision of lighting on site for works areas during night work or where instructed

The tendered sum shall include compensation for providing and maintaining lighting as specified and shall include for all units, required for all the operations being done during the same working period.

Payment shall be made monthly, pro rata to the contract time elapsed but shall not finally exceed the tendered sum, except when extension of time for completion is granted in terms of the general conditions of contract, when additional payment will be made pro rata to the initial contract period of the main portion of the works.

Payment for the moving and operation of the lighting equipment and other incidentals necessary for lighting the site shall be included in the tendered rates.
<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B15.16</strong></td>
<td>Provision of mobile flood light tower for the use by the Engineer’s staff for works areas during night work or where instructed.</td>
</tr>
</tbody>
</table>

The tendered sum shall include compensation for providing and maintaining a mobile flood light tower lighting as specified and shall include for all units, required for all the operations being done during the same working period.

Payment shall be made monthly, pro rata to the contract time elapsed but shall not finally exceed the tendered sum, except when extension of time for completion is granted in terms of the general conditions of contract, when additional payment will be made pro rata to the initial contract period of the main portion of the works.

Payment for the moving and operation of the lighting equipment and other incidentals necessary for lighting the site shall be included in the tendered rates."

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B15.17</strong></td>
<td>Traffic Safety Officer</td>
</tr>
</tbody>
</table>

The tendered rate shall include full compensation for providing a traffic safety officer and all requirements and obligations to perform the requirements required by the traffic safety officer as defined in terms of 1502(i) and B1230(f).

The tendered rate shall be paid monthly. The Engineer has the right to subtract days if the traffic officer has neglected his duties in the opinion of the Engineer."

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B15.18</strong></td>
<td>Provision of escort services for all project vehicles</td>
</tr>
</tbody>
</table>

Payment of the lump sum tendered will be made for the escort services required by ACSA to be provided by the Contractor. The tendered lump sum shall include full compensation for providing all transport, safety equipment not otherwise specifically covered, labour and ancillaries required to perform an escort service for all construction vehicles from the security gate to the area where work is taking place.

Payment of the lump sum tendered will be made in three instalments.

1. The first instalment, 50% of the lump sum, will be made in the first payment certificate after the contractor has made a substantial start with construction in accordance with the approved programme.

2. The second instalment, 35% of the lump sum, will be paid when the value of the work reaches one half of the tendered amount, excluding contingencies and price adjustments.

3. The third and final instalment, 15% of the lump sum, will be paid when the work has been completed and certificate of practical completion has been issued.

The tendered sum shall include full compensation for providing all transport, safety equipment not otherwise specifically covered, labour and ancillaries required to perform an escort service for all construction vehicles from the security gate to the area where work is taking place."
C3.6.6  SECTION 1600: OVERHAUL

B1601  SCOPE

*Add the following to Clause 1601:*

“No overhaul will be paid to the Contractor for transporting any materials whatsoever, whether obtained from commercial sources, designated borrow areas or any other source of material supplied by the Contractor.”

The designated stockpile and spoil areas will be provided by the AM within the boundaries of OR Tambo International Airport.

B1602  DEFINITIONS

(b)  Overhaul

*Delete the entire clause and replace with the following:*

“Ordinary overhaul shall apply to all overhaul material in respect of haul in excess of 2.0 km, and shall be measured by the product of the volume of material hauled, measured as specified hereafter, and the overhaul distance as defined in clause 1602(e) hereof.”

(d)  Free-haul Distance

*Delete the second sentence and replace with the following:*

“This distance shall be 2.0 km in the case of all overhaul materials.”

(e)  Overhaul distance

*Delete “1,0 km” and replace with “2,0 km”.*

B1603  MEASUREMENT AND PAYMENT

*Delete Item 16.01.*

*Change the heading of Item 16.02 to read as follows:*

“Item  

Unit

B16.02  Overhaul on material hauled in excess of 2.0 km free-haul (only where instructed by the engineer, or for items which do not include all haul)..................................................cubic metre-kilometres (m³-km)”

*Replace “1,0” km with “2,0” km in the first paragraph of Item 16.02.*
C3.6.7 SECTION 1700 CLEARING AND GRUBBING

B1702 DESCRIPTION OF WORK

(c) Conservation of Topsoil

Add to the end of the 1st paragraph:

“The depth of the topsoil removal shall be reliant on the terrain, suitability of material and topsoil requirements of the work. Failure of the contractor to comply with the removal of topsoil, and/or failure of the contractor to protect the topsoil for later reuse shall result in the contractor having to provide topsoil at his cost.”

B1703 EXECUTION OF THE WORK

Add the following new subclause:

“(f) Windrow of Topsoil and management of windrows

During the improvements of the shoulder areas strips for taxiways, materials will be temporarily windrowed outside the work areas. No windrows shall be allowed within 37.5 m of the taxiway edge within 150m of any threshold. Windrow heights shall also be managed to ensure that they do not exceed ACSA maximum obstacle height requirements”

B1704 MEASUREMENT AND PAYMENT

Amend the following pay items as follows:

“Item Unit
B17.01 Clearing and grubbing:
(a) On and next to shoulders..........................................................................................hectare (ha)”

Add the following new pay items as follows:

“Item Unit
B17.07 Removal of topsoil to windrows and/or temporary stockpiling at designated locations outside strip areas (unlimited free-haul)
(i) Topsoil in windrows alongside the work areas..................................................cubic metre (m^3)

The unit of measurement shall be the cubic metre of topsoil removed, to either windrows alongside the construction area or to temporary stockpiles (applicable to areas where temporary windrows are not allowed) where instructed by the engineer. The moving of topsoil from windrow or the loading of topsoil from temporary stockpiles and the placing and spreading thereof within the strip areas after shaping, is covered in Section 5800.

The contractor shall constantly liaise and agree with the engineer as to the depth of topsoil to be removed. The rates tendered shall include full compensation for all plant, equipment and labour for the excavation of the topsoil and where required, the loading and hauling thereof to temporary stockpile(s) as well as the maintenance of the windrows and stockpiles until re-use of the material.
C3.6.8 SECTION B1800: DAYWORKS

Add the following section to the standard specifications:

“Contents

B1801 Scope
B1802 General Requirements
B1803 Measurement and Payment

B1801 SCOPE

This section covers the listing of daywork items in accordance with the general conditions of contract clause 6.5, for the use in determining payment for work which cannot be quantified in specific units in the schedule of quantities, or work ordered by the engineer during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the schedule of quantities.

B1802 GENERAL REQUIREMENTS

Work will be classified as daywork only if the Engineer considers no other rate in the Bill of Quantities appropriate for payment purposes.

An instruction regarding all work to be carried out under daywork in terms of Clause 6.5 of the General Conditions of Contract will be issued at the discretion of the Engineer. Some or all of the items priced under daywork in the Bill of Quantities may possibly not be required for this Contract.

The Contractor and the Engineer will agree on the method of recording the working hours prior to the commencement of the work. Any long period of idling at any one time which in the opinion of the Engineer or his representative is beyond that required for normal operating conditions will not be paid for as working time. Non-working hours for any reason shall not be measured for payment.

Before ordering any material, the Contractor shall submit quotations to the Engineer for his approval, and shall submit such receipts or vouchers to the Engineer as may be necessary for proving the amount claimed.

B1803 MEASUREMENT AND PAYMENT

<table>
<thead>
<tr>
<th>“Item”</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B18.01 Personnel:</td>
<td></td>
</tr>
<tr>
<td>(a) List as necessary</td>
<td>..................................................hour (hr)</td>
</tr>
<tr>
<td>Item</td>
<td>Unit</td>
</tr>
<tr>
<td>B18.02 Plant and equipment:</td>
<td></td>
</tr>
<tr>
<td>(a) Specify</td>
<td>..................................................hour (h)</td>
</tr>
</tbody>
</table>
B18.03 Materials:

(a) Procurement of materials ............................................................... provisional (Prov) sum

(b) Contractor's handling costs, profit and all other charges
in respect of subitem B18.03(a) .............................................................. percentage (%)

The unit of measurement for items B18.01 and B18.02 shall be the hour for the item of plant or personnel. Non-working hours for transport breakdown, lack of operator of any other reason shall not be measured. The time shall be taken from the time that the personnel and/or plant depart until return.

Prior to the commencement of any work by the labourers described under item B18.01, the contractor must obtain written consent from the engineer regarding the classification of all labourers in terms of "unskilled", "semi-skilled", "skilled" labourers, "labourer", "chargehand" and "supervisor".

The tendered rates for labour for item B18.01 shall include full compensation to cover overhead charges and profit, leave pay, bonuses, subsistence, allowances, employer's contributions, additional payment for overtime where applicable, insurances, housing, site supervision, use of small hand tools and appliances, non-mechanical plant and equipment and consumable stores, for all administrative, supervisory, operative and contingent costs, relating to the supply of personnel.

The tendered rates for plant for item B18.02 shall be an all-inclusive hire charge for the use of the vehicle and driver or plant/equipment and operator and shall apply only to vehicles plant and equipment nominated in writing by the engineer, for all administrative, supervisory operative and contingent cost, and profit, relating to the running of the plant.

The unit of measurement for subitem B18.03(a) shall be the amounts actually paid for the procurement of materials to be purchased and shall be made in accordance with the provision of the Conditions of Contract. Only the actual quantities of materials used, as verified by the Engineer, shall be paid for.

The percentage tendered for subitem B18.03(b) shall be the percentage of the amounts actually paid for the procurement of materials as ordered under subitem B18.03(a) and shall be in full and final compensation in respect of the Contractor's handling costs, profit and all other charges in connection with the procurement and supply of the materials to the point of usage.

The above-mentioned tendered rates shall be full compensation for the various items as specified and no further profit shall be paid.

The rates shall be for the working hours of this contract."
Amend the first paragraph to read:

“This section covers all new work in connection with the excavation and construction of subsoil drainage and to the sizes, shapes, grades and dimensions as shown on the drawings or as directed by the engineers, and the test flushing of subsoil drains.”

Amend this sub-clause by adding the following to the end of the third paragraph:

“ASTM D2412 (Mod) (> 200kPa)

The pipes change in core cross-sectional area under confining pressure of 156.5 kPa should be less than 5%.

Pipes must be stored in a shaded area without exposure to direct sunlight.

Under item (4) Selection, of this sub-clause, replace the 1st paragraph with the following:

“The filter-fabric used for subsoil drains shall be grade 2 and shall satisfy the criteria for this grade of geotextile as given in Table 2104/2.”

Add the following item:

“(5) Testing

General:

The tests to be carried out on geo-textiles relate to the material and the method of manufacture and are mainly to ascertain that the correct grade of geo-textile is supplied, and that the material is equivalent in quality to that selected and specified for use in the works. The contractor will be required, on the request of the engineer, to submit a certificate by an approved laboratory to prove compliance with specified tests as stated in B8114 without additional cost to the employer.”

Providing of pipes in subsoil drainage systems

On completion of the pipe laying and prior to backfilling, all pipe joints shall be surveyed as proof of their installation to line and level. After backfilling the pipes shall be proved by pulling through a cylindrical cleaning brush followed by a wooden mandrill ± 400mm long and 5mm in diameter less than the bore
of the pipe. Proving of pipes shall not be paid for separately and the cost thereof shall be deemed to be included in the rate tendered for laying the pipe."

B21.07 MEASUREMENT AND PAYMENT

B21.07 Natural permeable material in subsoil drainage systems (washed sand)"

Amend the following payment item.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B21.10 Composite in-plane drainage systems</td>
<td></td>
</tr>
<tr>
<td>(a) “Megaflo”-type drain system or similar approved</td>
<td></td>
</tr>
<tr>
<td>(i) (State size)…………………………………………………………… Metre (m)”</td>
<td></td>
</tr>
</tbody>
</table>

The unit of measure shall be the metre of composite in-plane drainage system measured in place along the centreline of the system.

The tendered rate shall include full compensation for procuring, furnishing, assembling, installing and jointing the composite in-plane drainage system, including the type of pipe as specified."

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B21.20 Extra over for increasing production rate for installing “Megaflo” system complete</td>
<td></td>
</tr>
</tbody>
</table>

This extra over item applies to items 21.03, 21.07, 21.10 and 21.11. This item will include any additional labour, equipment and material that will be required to increase the production rate to allow for a full days work to be completed in 5 hours. This extra over will be applied on instruction of the Engineer where only 5 hour closures are allowed on Echo taxilane instead of the normal 9 hour closure.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B21.23 Break into existing drainage structures and install subsoil drain pipe</td>
<td></td>
</tr>
</tbody>
</table>

The unit of measurement is the number of subsoil drain pipes built into existing drainage structures in accordance with the details on the drawings or as instructed by the engineer.

The tendered rates shall include full compensation for supplying all labour, constructional plant and materials required, for all excavation, breaking into existing drainage structures, building pipes into the newly formed accesses, sealing around the pipes and making the joints watertight, breaking out existing benching and channelling where required and reconstructing them complete with granolithic rendering to suit the new pipe arrangement, backfilling and compacting to 90% of modified AASHTO density, transporting (including all haul) and disposing of all surplus excavated material and debris to approved dumping sites provided by the contractor, and dealing with the flows in the existing structures.

No distinction will be made between different types of structures, or diameters of subsoil drain pipes."
C3.6.9  SECTION 3300: MASS EARTHWORKS

B3305 TREATING THE ROADBED

Add the following new subclause

“(g) Improvement of the taxiway strips

Electrical conduits and any other instrumentations shall be identified and where required protected against possible damage by the contractor. The contractor shall take cognisance of Clause B1202 when working within the taxiway strips.”

B3312 MEASUREMENTS AND PAYMENT

Amend the following pay items as follows:

“Item                                      Unit

B33.01 Cut and borrow to fill for taxiway Including all haul:

(c) Rock fill:

(i) Rock fill / drainage layer (as specified in subclause 3209(c) of crushed stone (75mm minimum size aggregate) obtained from commercial source and constructed 300mm thick ……………………………………………………cubic metre (m³)"

Replace the fifth paragraph after the pay items with the following:

“The tendered rates shall include full compensation for procuring from commercial source, furnishing and placing and compacting the material, including excavating as if in soft excavation, providing and placing of synthetic fibre filter fabric, the cutting of benches, for transporting the material for an unlimited free-haul distance, for preparing, processing, shaping, watering, mixing, and compacting the materials to the densities or in the manner specified herein and for removing and disposing of oversize material after processing, including transport for an unlimited free-haul distance.”

Amend the title of pay item 33.04 as follows:

“Item                                      Unit

B33.04 Cut to spoil, including all haul,

(i) Soft excavation (Specify)…………… …………………cubic metre (m³)

The tendered rates for cut to spoil shall include full compensation for excavating from the road prism and roadbed, for loading, transporting the material for an unlimited free-haul distance, off-loading and disposing of the material as specified, including shaping and levelling-off any piles of spoil material.”

Add new pay item 33.20 as follows:

“Item                                      Unit

B33.20 Geofabric for rockfill (grade stated) …………………………………………square metre (m²)

The unit of measurement shall be the square metre of the grade of geofabric as specified and placed on the rockfill as instructed or indicated on the drawings.”
C3.6.10 SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL

B3401 SCOPE

Add the following to this clause:

“This section covers the construction the shoulder drainage improvements on the main taxiway and works to RETs at OR Tambo International Airport:

B3407 MEASUREMENTS AND PAYMENT

Amend the title of pay item 34.01 as follows:

“Item Unit

B34.01 Pavement layers constructed from commercially obtained gravel including all haul:

(a) Gravel selected layer

Add the following new payment subitem:

(iii) G7 quality, compacted to 95% of modified AASHTO density (150mm compacted layer thickness) …………………………… cubic metre (m³)

(c) Gravel subbase

Add the following new payment subitem:

(ii) G5 quality, compacted to 97% of modified AASHTO density (300mm compacted layer thickness) …………………………… cubic metre (m³)

Amend the second paragraph as follows:

“The tendered rates shall include full compensation for procuring from a commercial source, placing and compacting the material including all haul and the protection and maintenance of the layer and the conducting of control testing, all as specified.”
SECTION B3500: STABILIZATION

B3501 SCOPE

Add the following as a 3rd paragraph:

“The use of recyclers for cold in situ recycling purposes is also covered in this section, which includes cement, lime and emulsion of base layers consisting of gravel material as described in sections 3400.”

B3502 MATERIALS

a) Chemical stabilizing agents

Add the following:

“The Engineer will specify to the Contractor the percentage and blend ratio of the specified stabilizing agents after tests on the Site during construction.”

Delete sub-clauses (ii) Ordinary Portland cement and (iii) Portland blast-furnace cement and replace with the following:

“Cement shall comply with the relevant requirements of SANS 50197-1:2000. The use of strength classes greater than 32.5 shall not be permitted.

On this contract CEM II 32.5 N shall be used for stabilization purposes.”

B3503 CHEMICAL STABILIZATION

a) Preparing the layer

Insert the following before the first paragraph:

“Moisture content tests shall not be undertaken more than one day in advance of in situ stabilization operations. Care shall be taken to ensure that samples are representative of the in situ material. Checks shall be conducted when wet weather occurs between initial testing and work commencing on any section.”

b) Applying the stabilizing agent

Replace the second sentence of the second paragraph with the following:

“Spreading shall only commence when the Engineer is satisfied that the correct quantity of stabilizing agent has been placed on the layer and has given permission that the stabilizing agent may be spread uniformly over the entire surface to be treated.”

Add the following to this subclause:

“The minimum rate of application shall be 1.0% and the nominal rate is 1.5% by mass per mass of the specified stabilizing agent. The Engineer may order an increased rate of application. The spreading of stabilizing agent shall be done by placing sacks along the road and spreading by hand using rubber squeegees. Sacks which have become damaged or wet shall not be used and such sacks shall be replaced at the Contractor’s cost.”
B3505 BITUMINOUS STABILIZING

a) Preparing the material

Replace the 1st paragraph with the following:

“The material to be stabilised shall be prepared and placed as specified in section 3200. The moisture content during mixing-in of the stabilising agent shall be between 60-80% of optimum moisture content.”

d) Applying the stabilising agent

Delete the entire sub-clause and replace with the following:

“The bitumen stabilising agent shall only be applied by means of an approved in situ recycling machine as specified in B3511. The recycling process as described in B3512 shall apply to the application and mixing-in of the stabilising agent.”

f) Compaction

Delete the entire sub-clause and replace with the following:

The compaction process as described in B3512 shall apply.”

g) Construction limitations

Replace this sub-clause with the following:

“No stabilization shall be done during windy conditions, wet weather or with falling air temperatures (7°C and dropping), or during rising air temperatures (when the air temperature is below 3°C).

Furthermore the material temperature shall not be less than 10°C for bitumen emulsion and 15°C for foam bitumen.

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The contractor shall be responsible for taking the necessary precautions to prevent the layer from freezing.

All stabilized layers damaged by rain, frost or by the formation of ice in the layer shall be removed and replaced by the contractor at his own expense.

The maximum time allowed to complete the stabilisation process shall be 12 hours.

The contractor shall make allowance for these requirements in his construction programme.”

B3509 QUALITY OF MATERIALS AND WORKMANSHIP

Add the following after the second paragraph:

“The test results and measurements will be judged in accordance with the provisions of Section 8200. Bitumen stabilised layers shall be judged on the same criteria as chemically stabilised layers.”

Add the following paragraphs:

“The Engineer shall be notified in good time to enable him to conduct tests himself.

Sample preparation and testing for cement stabilization testing shall be done by means of the Rapid Cure Method as described in clause B8110 while bitumen stabilisation sampling and testing shall be in accordance with the latest edition of the TG2.”
The stabilized material sampled from the layer for the compaction of modified AASHTO briquettes, shall be prepared according to SANS 3001; GR54; ie discard material coarser than a 37.5 mm test sieve, and compacted according to SANS 3001; GR31.

Any delamination of the completed layer (biscuiting), identified by the hollow sound caused when a chain is dragged over the stabilized layer, shall be removed and repaired prior to the construction of subsequent layers. The repair method shall be approved by the Engineer. No payment will be made for repairs.

**B3510 MEASUREMENT AND PAYMENT**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B35.08</td>
<td>Bituminous stabilizing agent</td>
</tr>
</tbody>
</table>

Replace the 2nd payment paragraph with the following:

"The tendered rate for bituminous stabilising agents shall include full compensation for procuring and transporting the bituminous stabilising agent to site, for transfer into storage tanks, storage, heating and transfer into tankers for coupling to the recycling train, for all transport on site, for issuing the required weighbridge ticket showing the mass of bitumen contained in the tanker, for any re-heating required, for all wastage and for strict adherence to all safety measures required when handling warm or hot bitumen. The rate shall further include full compensation for diluting and applying the stabilising agent, irrespective of the prescribed rated of application. For foamed bitumen, the rate shall include for foaming the bitumen on the recycler, including the water and any other additive that may be required to achieve the minimum foaming characteristics and for injecting the foamed bitumen into the recycled material."

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B35.15</td>
<td>Removal from site of surplus material</td>
</tr>
</tbody>
</table>

The unit of measurement shall be the cubic metre of surplus material removed from site. The quantity shall be taken as 70% of the loose volume measured in trucks. Accurate load records shall be kept on site and submitted to the Engineer on a daily basis.

The tendered rate shall include full compensation for gathering the surplus material by windrowing or pushing it into heaps, for loading and transporting to a designated spoil or stockpile site including haul for a free haul distance of 1km, for offloading and either spreading the material or placing in neat stockpiles. It shall further include for all labour, plant, equipment and incidentals required to remove the material as specified.

**B3512 CONSTRUCTION OF LAYERS BY MEANS OF COLD IN SITU RECYCLING**

(a) Requirements before recycling commences

(i) Stabilisation mix design procedure for cold in situ recycling

The following mix design procedure shall be followed as a minimum requirement for each stabilisation type:

This mix design shall be carried out on samples of neat materials extracted from the full depth of the recycling horizon. Bulk samples shall be extracted by means of the recycling machine proposed for the stabilisation work. For each material uniform section identified, two separate bulk samples shall be extracted from the recycling horizon and used in the stabilisation mix design process. The location at which such samples are taken shall be indicated by the engineer.

Stabilisation mix designs shall be undertaken by the engineer to determine:
- details for blending the recycled material with imported material (where necessary);
- application rates for stabilising agent(s);
- target strengths achieved from such application rates; and
- impact of material variations (sensitivity analysis)
Stabilisation mix designs shall be carried out in accordance with the latest edition of the following best practice guideline publications:

- Cementitious stabilisation: SAPEM, SANRAL M5 manual and TRH 13
- Bituminous stabilisation: SAPEM and TG2
C3.6.11 SECTION 3800: BREAKING UP EXISTING PAVEMENT LAYERS

B3801 SCOPE

Add the following:

“The pre-treatment of the taxiways shall be:

“Approximately 25 000m$^3$ of existing asphalt shall be milled out from the Taxiway”

B3805 CONSTRUCTION

(a) General

Add the following:

“All bituminous layers will be removed through milling of the material to specified depths or levels.

Milling may also be required by the Engineer for repairing patches and shall be executed as described below.

Compensation for milling of keys, milling slots and asphalt paving of temporary ramps are deemed to be included in the rates for associated pay items. Permanent ramps will be paid under the relevant pay items.

No separate payment will be done for provision of the milling machine on the site or moving of the milling machine on site or for re-establishment of the machine. All such costs shall be included in the rates tendered for milling of the respective materials.

No additional payment will be made for milling or otherwise excavating any material in restricted areas or restricted width or tapered areas at end of section transverse joints or on cold joints (cut back areas as specified).”

B3807 MEASUREMENT AND PAYMENT

Add the following:

“This pay item is deemed to include the cost of treating the exposed surface so that it is firm and stable without signs of ravelling, laminations or corrugations.

The tendered rate shall also include full compensation for an additional labourer, equipped with a shovel, pick, broom and hand held spot light to assist the Engineer and/or Engineer’s staff to inspect the milled area. The rate shall also include for the management and maintenance of the stockpile to ensure that a height of 1,5m or as otherwise instructed by ACSA is maintained at the stockpile area.”

Amend the sub-title description to the following payitem:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B38.02</td>
<td>Milling out existing bituminous material with an average milling depth:</td>
</tr>
</tbody>
</table>

Change the depth ranges and descriptions as follows:

“(a) Not exceeding 100 mm in depth ................................................... cubic meter (m$^3$)

“(b) Exceeding 100 mm................................................................. cubic meter (m$^3$)
Add the following to payment item B38.02:

"The rate for all subitems to be inclusive of all haulage costs and for milling and removal of the excavated bituminous material to spoil.

The rates shall also include all machine establishment and re-establishment costs whatsoever."

Amend the sub-title description to the following payitem:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B38.03</strong> Milling out cemented pavement layers:</td>
<td></td>
</tr>
<tr>
<td>(a) Cemented material...............................cubic meter (m³)</td>
<td></td>
</tr>
</tbody>
</table>

Add the following to payment item B38.03:

"The provisions of item 38.02 shall apply mutatis mutandis."
C3.6.12  SECTION 4200: ASPHALT BASE AND SURFACING

B4202  MATERIALS

(a)  Bituminous binders

Reference is drawn to Clause B1232: SANS BITUMEN SPECIFICATIONS of the project specifications with regards to SANS Bitumen Specifications that shall apply to this contract

(i)  Conventional binders

Add the following:

“The binder to be used shall be:

a)  50/70 penetration grade
b)  30% Stable grade bitumen emulsion for tack coat.
c)  Stable grade modified with 3% SBR
d)  High modulus asphalt (EME): 10/20 penetration grade bitumen and shall comply with the relevant requirements of Table B4202/13”.

Add the following:

“The binders shall comply with SANS 4001 Latest Amendment. The Contractor shall submit the following to the Engineer for each batch of bitumen used on site:

- A copy of the SANS quality certificate, indicating the batch number and grade.
- A sample of the (base) bitumen.
- The source of the bitumen.

The Engineer will require the Contractor to submit samples of the bitumen to an approved accredited laboratory at random intervals to check compliance with the SANS 4001 criteria. The cost of these additional tests will be reimbursed through a prime cost item.

Add the following new table:

<table>
<thead>
<tr>
<th>TABLE B4202/13: PROPERTIES OF 10-20 PENETRATION BINDER FOR EME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Before Ageing</td>
</tr>
<tr>
<td>Softening Point</td>
</tr>
<tr>
<td>Penetration @25°C</td>
</tr>
<tr>
<td>Viscosity @ 60°C</td>
</tr>
<tr>
<td>After Ageing (RTFOT)</td>
</tr>
<tr>
<td>Increase in Softening Point</td>
</tr>
<tr>
<td>Retained penetration (% of original)</td>
</tr>
<tr>
<td>Mass Change</td>
</tr>
</tbody>
</table>

Add the following sub-sub-clause to sub clause (iv):

All bituminous binders shall be transported and handled as recommended in SABITA manual 25: ‘Quality management in the handling and transport of bituminous binders.”

(iii)  Homogeneous modified binders

Add the following to the end of the Clause

“The binder to be used shall be:


a) A - E2 (elastomer modified)
b) A - P1 (plastomer modified)

Add the following:

The supplier of the A-P1 binder shall quantify the fuel resistant properties of the binder according to both the CEN standard EN 12697-43:2005 (use in Europe) and NF P 98-251-1 (French standard). The engineer will approve the binder if sufficient evidence is provided that it is fit for purpose in terms of fuel resistance.

(b) Aggregates

Add the following:

“The fine aggregate for the asphalt wearing course and bitumen treated base shall consist of crushed stone.”

(i) Resistance to crushing

Add the following

“The minimum 10% FACT for EME base mixes shall be 160kN”

(ii) Shape of the aggregate

Add the following

“The maximum flakiness index of the aggregates used in EME base mixes shall be 25%. In addition, the percentage of fully crushed (>5mm) coarse aggregate shall be 100%.

For EME mixes the particle index test in accordance with Sabita Manual 33 shall be a minimum of 15% (ie >15%).”

(v) Absorption

Add the following:

“In addition, the total binder absorption of the combined coarse and fine aggregate blend shall not exceed 1.5%.”

(vi) Design requirements

Add the following:

“The designs shall be undertaken in accordance with Clause 3.2.5 and conform to the requirements of the latest version of Interim Guidelines for the Design of Hot-Mix Asphalt in South Africa and also specifically with the design and performance criteria as amended and specified in B4203. The grading requirements of the specifications will serve only as a guideline and on the approval by the Engineer, where required to obtain performance, this will be relaxed.”

(viii) Grading

Add the following:

“The use of crushed stone base (run-of-the-crusher) material shall not be permitted. Any mix shall be manufactured using single size coarse aggregate fractions. The use of natural sand will not be permitted. The Engineer may request a reconsideration of a blend to achieve any grading within the given envelope to improve certain properties. The grading may fall partially outside the given envelope if approved by the Engineer.”
"The grading limits for the EME base mix, shall be based on those given in table B4202/6:

**TABLE B4202/6: GRADING LIMITS FOR EME BASE MIXES**

<table>
<thead>
<tr>
<th>Sieve Size (mm)</th>
<th>NMPS = 14 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>90-100</td>
</tr>
<tr>
<td>10</td>
<td>67-90</td>
</tr>
<tr>
<td>7.1</td>
<td>47-66</td>
</tr>
<tr>
<td>5.0</td>
<td>42-62</td>
</tr>
<tr>
<td>2.0</td>
<td>25-38</td>
</tr>
<tr>
<td>1.0</td>
<td>20-30</td>
</tr>
<tr>
<td>0.600</td>
<td>15-25</td>
</tr>
<tr>
<td>0.300</td>
<td>11-20</td>
</tr>
<tr>
<td>0.150</td>
<td>7-16</td>
</tr>
<tr>
<td>0.075</td>
<td>5.5-7.9</td>
</tr>
<tr>
<td>Aggregate</td>
<td>93%</td>
</tr>
<tr>
<td>Nominal binder content</td>
<td>6.0%</td>
</tr>
<tr>
<td>Active filler</td>
<td>1%</td>
</tr>
</tbody>
</table>

(c) Fillers

*Add the following to the first paragraph:*

"For tender purposes the active filler shall be hydrated lime for conventional mixes at an active filler content of 1,0% by mass.

In no instance shall more than 2% by mass of active filler be used in the mixes, however where hydrated lime is used for in EME the quantity should be limited to 1% by mass of the total aggregate."
(h) General

Add the following after the second paragraph:

"In case where drum mixing is used, the aggregate stockpiles shall be tested every second day or whenever new material is delivered. The test results must be presented to the Engineer.

B4203 COMPOSITION OF ASPHALT BASE AND SURFACING MIXTURES

In the fifth paragraph, delete “TRH 8” and replace with “Interim Guidelines for the Design of Hot-Mix Asphalt in South Africa and the design criteria specified in B4203.”

Also add the following to this clause:

The asphalt used for the asphalt surfacing at the Echo taxi lane and other taxiways sections (where instructed) shall consist of a medium, continuously graded asphalt as specified in Section 4200 and given in Table 4202/7 of the standard specifications. The binder shall consist of a suitable fuel resistant A-P1 modified binder bitumen. The nominal binder content for tender purposes shall be 4.5% (by mass) with a target Marshall voids-in-mix (VIM's) of 6.0%.

The asphalt used for the asphalt surfacing on Juliet and Section of Bravo and for thin base repairs (shall consist of a medium, continuously graded asphalt as specified in Section 4200 and given in Table 4202/7 of the standard specifications. The binder shall consist of a A-E2 modified binder bitumen. The nominal binder content for tender purposes shall be 5.0% (by mass) with a target Marshall voids-in-mix (VIM's) of 4.5%.

The asphalt used for thick base repairs on the all taxiways shall consist of a continuously graded asphalt Hot Mix Asphalt Base as specified in Section 4200 and given in Table 4202/6 (continuously graded 26.5mm maximum). The binder shall consist of a A-P1 modified bitumen bitumen. The nominal binder content for tender purposes shall be 4.5% (by mass) with a target Marshall voids-in-mix (VIM's) of 4.5%.

The asphalt used for the asphalt surfacing the shoulders of Juliet and Bravo and for thin base repairs (shall consist of a medium, continuously graded warm asphalt as specified in Section 4200 and given in Table 4202/7 of the standard specifications. The binder shall consist of a A-E2 modified binder bitumen. The nominal binder content for tender purposes shall be 6.0% (by mass) with a target Marshall voids-in-mix (VIM's) of 3.0%. If instructed, the binder can be changed to A-R1 (or equivalent) and/or hot mix asphalt can be used.

The design of the asphalt surfacing mix shall be in accordance with the design criteria at 100% Marshall density (2 X 75 blows) given in Table B4203/1.

Additional joint permeability and other mix design criteria which are given below (B4203/1) will also apply and the Contractor will be required to make special provision in his tender prices for ensuring that the asphalt will comply with this criteria and also for fine-tuning of the mix based on performance testing (Model Mobile Load Simulator Tests on 150mm Gyratory compacted briquettes compacted to 95% RICE density and on Gyratory refusal density briquette) on trial mixes (plant mixed) immediately after the award of the contract. Mix design proposals and approvals shall be finalised between the Contractor and the Engineer before commencement of paving work. The contractor shall submit proposed mixes to approved or instructed test laboratories for performance property assessment within 1 week after award or contract acceptance to enable adequate testing time.

For the EME base, the “Interim Design Manual for High Modulus Asphalt, Manual 33, July 2015” as published by Sabita should be followed. The nominal binder content for tender purposes shall be 6.0% (by mass) with a target Marshall voids-in-mix (VIM's) of 3.5%.
### Table B4203/1: Composition and performance of the asphalt mixes

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Medium continuously graded WC mixes (A-E2 and 50/70 bitumen)</th>
<th>Continuously graded BTB mixes (A-P1 and 50/70 bitumen)</th>
<th>EME Class 2</th>
<th>Medium continuously graded WC mixes (A-P1 binder)</th>
<th>Shoulder mixes Hot asphalt (A-E2 binders and 50-70 pen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td></td>
<td>Surfacing of taxiways and thin base repairs</td>
<td>Thick base repairs</td>
<td>Thick base repairs</td>
<td>Heavy duty areas i.e. take-off areas and holding areas</td>
<td>Taxiway shoulder surfacing</td>
</tr>
</tbody>
</table>

| Target voids in mix                             | %          | Min 4.0 Max 5.0 | Min 4.0 Max 5.0 | Min 5.0 Max 6.0 | Min 6.0 Max 2.5 | Min 2.5 Max 3.5 |
| Filler/bitumen ratio                            | -          | 1.3 1.5         | 1.1 1.5         | 1.3 1.5         | 0.6 1.0         | 0.6 1.0         |
| VMA                                             | %          | 15 -            | 14 -            | -               | -               | 19 -            |
| Indirect tensile strength @ 25°C                | kPa        | 1100 -          | 1000 -          | 1200            | -               | -               |
| Dynamic modulus at 10 hz, @15°C                 | GPa        | 16              |                |                |                |                |
| Average Micron strain deformation per cycle in the Dynamic creep test in the 2000 – 3000 cycle range | Microns / cycle | - 0.45 - 0.45 | - 0.3 - 0.3 | -               | -               | -               |
| Hamberg Wheel Tracking Test (HWTT) (20 000k repetitions, 95% RICE slabs, Wet, 50°C) | mm         | - 5.0 - 5.0 | - 3.0 - 3.0 | 500k 4000k      | 40k 300k        | 3.0 3.0         |
| 4 Pt Beam fatigue repetitions to failure at 5°C at 200μ (100% Marshall) | μ          | 2400k 1200k    | 500k 4000k      |                |                |                |
| 4 Pt Beam fatigue repetitions to failure at 5°C at 350μ (100% Marshall) (Failure is 50% repetitions in stiffness) | μ          | 130k 80k       | 40k 300k        |                |                |                |
| 4 Pt Beam fatigue repetitions to failure at 10°C at 260μ (Failure is 50% reduction in stiffness) | Rept       | 1000k          |                |                |                |                |
| Richness Modulus K                              |            | 3.4             |                |                |                |                |
| Binder film thickness                           | Micron     | 7 -             | 7 -             | 7               | N/A             |                |
| Marvel Permeability on joints                   | Litre/h    | - 3 -           | - 3             | 3               | - 3             |                |
| Voids in mix @ 300 gyrations of the Superpave Gyratory Compactor | %          | 2.5 - 3.0 - 6.0 | - 1 - 1 - 1 |                |                |                |
| Modified Lottman Durability                     | %          | 80 -            | 80 -            | 80 -            | 80              | 80 -            |
| Paving thickness – final layer                   | mm         | 50 60 NA NA     | NA NA NA NA     | 70 90 45 60     |                |                |
| Paving thickness – base repairs                  | mm         | 40 60 120 60    | 60 120 NA NA NA | NA 90 60 45 60  |                |                |

Note k = 1000 repetitions
B4204 PLANT AND EQUIPMENT

(a) General

Add the following:

““In all cases of night work and/or other limited occupation work sections, the contractor shall ensure that a minimum of 50 tons of asphalt is available in hot bins at the plant before milling commences. The contractor is to ensure that the production shall be such that should there be a problem at the plant that sufficient asphalt is stored in hot bins to backfill the full milled areas. In cases of night time work or other limited access occupation areas requiring opening to traffic at the end of the occupation period, binned asphalt or asphalt already on site shall be equivalent / or greater than the quantity of material required to backfill any milled work.

The Contractor shall have at least two pavers on site working simultaneously. The details of these pavers should be listed on Forms C3 and C4 respectively. The onus will remain with the Contractor to supply sufficient subsequent plant to match the production of the pavers.”

(b) Mixing plant

(i) Conventional Binders

For item B4204 (b) (i) replace the amended second paragraph with:

“The mixing plant shall be automatically controlled such as to ensure that a uniform mix will be produced at all times under normal operating conditions to the satisfaction of the Engineer. Special care shall be taken to ensure a continuous free flow of active filler and modifier. The mixing process will immediately be stopped if manual intervention is required to enhance the flow of aggregate, filler or modifier. The mixing process will not be allowed to continue until the Engineer has been satisfied that the mixing plant can be controlled adequately to ensure a continuous uniform mix without manual intervention. If the process cannot be rectified in time to complete the days work, the mixing and paving will be allowed to continue but the asphalt layer produced by the mixing plant will be rejected and will have to be replaced with a new approved mix. The Employer reserves the right to instruct the Contractor to use an alternative mixing plant if the problem persists. No additional payment will be made in such an event, even if the Contractor elects to change his asphalt supplier.”

Add the following at the end of the third paragraph:

“Batch plants shall be provided with efficient means of sampling the aggregate in each hot bin and filler storage bin.

All mixers shall be provided with a sampling point for hot bitumen between the storage tanks and the mixer.

All thermometric equipment shall be clearly visible to the plant operator.

The manufacturer’s rated capacity of the mixing plant shall be adequate to meet production requirements for the work. The rate of production shall not exceed 80% of the manufacturer’s rated capacity of the plant.

All plant used by the Contractor for the preparation of asphalt base and surfacing, stone mastic asphalt and levelling and bedding layer mixtures shall be open to inspection by the Engineer at all times. Calibration at all feeders shall be done in the presence of a representative of the Engineer.”

Add the following at the end of the fifth paragraph:

“A separate cold feed bin shall be allocated for each aggregate size.”
Add the following at the end of the sixth paragraph:

“...or the latest revision or replacement act.”

(c) Spreading equipment

(i) Paver

Replace the last paragraph with the following:

“The paving of the asphalt surfacing shall be controlled by the use of wires or similar approved methods to achieve the specified levels and thickness.

Averaging beams (levelling beams) are to be used for the asphalt surfacing. They shall be at least 9 m long and shall be assembled from rigid sections having multiple spring-load feet.”

(d) Rollers

Replace the next sentence in the first paragraph with the following:

“Approved tandem-axled steel-wheel rollers with a minimum roller width of 1.5 m and a minimum length of 2.0 m must be used for initial rolling. The roller drum must be smooth without any indentations or marks that may lead to pick-up of the asphalt carpet. A 25-ton pneumatic roller must be used for the final rolling and finishing of asphalt surfacing. The use of the pneumatic roller shall be assessed in the trial section.”

B4205 GENERAL LIMITATIONS AND REQUIREMENTS AND THE STOCKPILING OF MIXED MATERIAL

(a) Weather conditions

Add the following paragraph:

No paving or patching shall be carried out under unstable weather conditions. Should rain or cold weather threaten, all exposed areas shall immediately be reinstated with asphalt and milling operations shall cease.”

(c) Surfacing requirements

(ii) Tack coat

Add the following paragraph:

“Hand spraying shall only be permitted on areas approved by the engineer. The binder distributor shall be capable to apply the binder evenly over the full area. The equipment shall comply with clause 4103. Tack coat shall be applied to all transverse and longitudinal joints in the asphalt by hand utilizing a paint brush.”
B4206  PRODUCING AND TRANSPORTING THE MIXTURE

(b) Transporting the mixture

Add the following:

“Segregated mixes will under no circumstances be accepted by the Engineer. Effective steps must be taken by the Contractor to prevent segregation. Trucks with segregated asphalt mixes will be rejected by the Engineer.”

“Special precautions shall be taken by the Contractor to ensure that the temperature of the total mass of asphalt does not decrease by more than 15°C from point of dispatch to the point where it is to be

B4207  SPREADING THE MIXTURE

Add the following to subclause (a):

“The following paving restrictions will strictly apply:

- No paver stops will be allowed for reversing supply trucks.
- Continuous paving operation is a requirement. Paver speed to be regulated to prevent supply related stops. Paving operations may only start if sufficient asphalt supply trucks are available to ensure a continuous paving operation.
- Levelling skid-beams (9 m length at least with free wire between ends) or wire guide system to be used on both sides – no joint matchers except if agreed or instructed by the Engineer.
- Automatic auger feed control, which can keep the asphalt mount in-front of the screed constant, are required.
- No pneumatic rolling as breakdown rolling on the final surfacing layer.
- Handwork shall not be allowed.
- No fat spots or loose stones.
- No water ponding.

In the case of non-appliance herewith the Engineer's personnel will stop the paving operations and sections done in non-compliance can be rejected after assessment by the Engineer.”

B4208  JOINTS

Add the following to this clause:

“a) Asphalt Surfacing

All joints not paved with tandem pavers will be considered to be cold joints with reference to joint treatment preparation. All asphalt joints shall be cut back by an approved roller wheel or milling machine (minimum 70 mm in 2 x roller wheel cuts on surfacing layer) in a straight line to the satisfaction of the Engineer.

The lateral distance between joints of two (2) successive asphalt layers shall not be less than 200 mm.

Where the difference in level between the new work and the existing road surface exceeds 25 mm, joints shall be treated as follows:

Transverse steps at the end of a day’s work on operational taxiways and taxiways shall be tapered off at a slope of 1 vertical to 20 horizontal (1:20) to tie in with the existing surface. The tapered section shall be removed before surfacing is recommenced and a joint formed in accordance with clause 4208 of the specification. Longitudinal joints exposed to traffic shall be provided with a taper of compacted asphalt material over the full length of the exposed joint. The width of the taper shall be at least 5 times the difference in level between the old and new work.
All costs involved in the provision and removal of these temporary ramps shall be deemed to have been included in the rates tendered for the relevant asphalt pay item.

b) Longitudinal Joints

Longitudinal joints shall be cut back as specified in a) above.

No saw-cutting will be allowed on newly placed asphalt. All wearing course transverse joints to be cut and treated similar to the specifications for longitudinal joints.

Whenever the paver stops for more than 5 minutes on thinner wearing course layers and/or the uncompacted material already laid cools down to below compaction temperature (110°C for wearing course), a joint shall be constructed as specified and all cooled uncompacted materials removed from the pavement."

**B4210 COMPACtion**

Add the following to the 4th paragraph:

“An appropriate rolling temperature range will be determined by the Contractor and will be submitted to the Engineer for verification during the trial sections. This range will be applied as specification during the contract.”

Replace the 6th paragraph with the following:

“The sequence of rollers used in compaction is at the discretion of the Contractor (except as specified for pneumatic rolling in B4207) provided the completed layers shall have minimum and maximum density as specified in table B4210/1 below as described in TMH1, method C4 (Rice’s density).

<table>
<thead>
<tr>
<th>Layer</th>
<th>Min Density</th>
<th>Max Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wearing courses and thin base repairs (40mm to 60mm thick)</td>
<td>93% MTRD</td>
<td>97% MTRD</td>
</tr>
<tr>
<td>BTB mixes (60mm to 120 mm thick)</td>
<td>93% MTRD</td>
<td>97% MTRD</td>
</tr>
<tr>
<td>EME base mixes (60mm to 120mm thick)</td>
<td>94% MTRD</td>
<td>97% MTRD</td>
</tr>
<tr>
<td>Heavy duty A-P1 modified surfacing (70mm to 90mm)</td>
<td>92% MTRD</td>
<td>96% MTRD</td>
</tr>
<tr>
<td>Shoulder mixes (4060mm thick)</td>
<td>93% MTRD</td>
<td>99% MTRD</td>
</tr>
</tbody>
</table>

In addition hereto the compaction immediately adjacent to joints and across the joints shall be done to ensure densities of not less than 1% of those specified (above) in the rest of the layers (including all hot and cold joints). Joint densities measured across the joint shall not have densities of less than 2% of the minimum specified layer density. A combination of asphalt cores and Marvel permeability testing will be used to access and approve joint densities before covering thereof with consecutive layers.

**B4213 CONSTRUCTION TOLERANCES AND FINISH REQUIREMENTS**

(a) Construction tolerances

(iv) Cross-section

Replace the entire clause as follows:

“When tested with a 3 m straight edge laid in any direction on the taxiway (excluding areas on the crown of the taxiway), the surface shall not deviate from the bottom of the straight-edge by more than 3 mm for the taxiway.
(d) Binder content

Delete the words “clause 8206 or clause 8305” in the third line and Substitute with “clause 8305”.

(e) Air-void tolerance

Replace the content with the following:

“The actual air voids may not deviate by more than 1 percentage point from the air voids in the approved working asphalt mixes, based on a Marshall compaction of the approved working mix.”

B4214 QUALITY OF MATERIALS AND WORKMANSHIP

Add the following to this clause:

(b) Coring of asphalt layers

Delete the first sentence and replace with the following:

“The Contractor shall provide suitable coring machines capable of cutting 100 mm and 150 mm cores from the completed asphalt layers.”

Add the following at the end of the first paragraph:

“No laying of asphalt surfacing shall be permitted unless a suitable core cutting machine is available on site at all times when asphalt paving is taking place. Cores shall be taken as specified in Section 8100 and Section 8300 or as directed by the Engineer. Cores may only be drilled when the layer temperature is less than 20°C. Core holes must immediately after coring be filled with hot asphalt and compacted. Cores shall be taken within 48 hours of paving. The density test results on the cores will be submitted to the Engineer 24 hours after coring.”

Add the following sub-clauses:

(d) Quality Control

The Contractor will be required to submit his detailed Quality Assurance Plan (system) to the Engineer for approval. Once approved, the Contractor shall not deviate from the system.

(e) Riding quality

“For the overlaid areas, the surface regularity, in addition to the specified requirements, shall be determined with a high speed profilometer (HSP), capable of producing a class 1 vertical measurement and class 3 longitudinal sampling distance as defined in ASTM standard E950-94, with a valid validation certificate. Record the longitudinal profile in both wheel tracks, 1.7 m apart for each paved lane. Then, from the data, determine the average IRI for the left and right wheel track for each 100 m section for each lane paved in one width (the values indicated in Table B4213/2 may be relaxed by the Engineer on the portion of the width that does not get an infill. This will be determined and communicated once the existing IRI’s have been determined). The first and last 50m of the taxiway will not be assessed for riding quality.

The IRI shall be judged in terms of the payment adjustment factors in Table B4213/2.

<table>
<thead>
<tr>
<th>Riding quality</th>
<th>Payment adjustment factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 m IRI values (mm / m)</td>
<td>overlay on existing surface</td>
</tr>
<tr>
<td>&lt; 1,20</td>
<td>1,0</td>
</tr>
<tr>
<td>1,21 – 1,30</td>
<td>1,0</td>
</tr>
</tbody>
</table>
Sections that are found to be unacceptable in terms of regularity shall either be replaced, or remedial measures implemented that will provide the required riding quality. A method statement describing these measures shall be approved by the employer before implementation. Skimming of the areas with a milling machine shall not be allowed. Corrective work shall be done at the contractor's expense. After completion of the corrective work the specific 100 m section shall be re-evaluated as described above.

Any adjustment to the payment of asphalt surfacing shall be done by multiplying the payment adjustment factor derived as above with the full payment of the relevant asphalt pay item plus tack coat and other payable incidentals. The payment adjustment factor shall apply to the full layer width paved in one operation for that specific 100 m section.

Riding quality tests using the HSP shall be paid for under pay item B12.07.

Any acceptance of asphalt quality control will not be deemed to include for this clause until such testing has been complete and finalised with the Engineer. Acceptance at partial payment, based on obtained riding quality between 1.4 and 2.0, is at the discretion of the Engineer (based on adherence to B4207 and all other applicable COLTO workmanship specifications). In areas where the Engineer can certify adherence to the criteria, in the absence of available IRI test results, he may do so with permission of both the Employer and Contractor.

The rolling straight edge test in the Standard Specifications will not be applicable except on the transverse construction / stop joints of all paved sections. The maximum irregularity measure with the wheels of the standard apparatus removed (only outer wheels at 3m spacing in place) shall be + or - 3mm. Joints that do not satisfy these criteria shall be milled and reconstructed over a minimum “10m in length” section.”

The Contractor shall arrange for the IRI testing of all sections by a Laboratory approved by the Engineer, before the end of the Contract or when instructed within 21 days of such instruction. Costs for such testing of all relevant sections shall be deemed to be included in the rates of these wearing course layers; additional IRI testing as instructed by the Engineer shall be paid under B12.07 PC Sum.

The contractor is to supply surveyed levels of each layer (including the milled interface and the original surface) to the engineer at a frequency of at least five positions along the width of the paved layer and at 20m interval. These co-ordinated positions shall then be used for all subsequent surveyed layers."

(f) Special tests

(i) Recovery of binder for further testing

Extraction of bitumen and its recovery from samples taken from the asphalt layers shall be carried out in accordance with ASTM D1856/79 (Abson).

(ii) n-Heptane-xylene Equivalent (Spot Test) (AASHTO – T102)

If the Engineer considers that bitumen or asphalt has been overheated he may order that the bitumen or the bitumen recovered from the asphalt be subjected to the spot test.

Recovery of binder for use in the spot test shall be carried out as described in (d) (i) above.
Any sample showing an n-Heptane-xylene equivalent in excess of 36 or if the bitumen contains a proportion of bitumen prepared from cracked stock, in excess of the manufacturers test result on the new stock, shall be considered to have been overheated and shall be rejected.

(iii) The following additional test shall be carried out on asphalt samples taken from the paver hopper:

- Penetration of recovered binder @ 25°C (Method ASTM D5)

Should the penetration of the recovered binder be less than 24 at 25°C, the asphalt layer shall be deemed to be unsatisfactory and shall be condemned by the Engineer. The Engineer on site shall decide the frequency of testing.

(g) As-Built

The Contractor shall keep accurate records and submit the following information to the Engineer on a daily basis:

I. Where every truckload of asphalt is laid (load, position, lane, time and date).
II. The truck number from which control samples have been taken. All samples taken from trucks shall be numbered.
III. The temperature of the asphalt in the truck both at the mixing plant and at the paving equipment.
IV. Process control results

These shall be summarised on a spreadsheet/database and mapped for as-built purposes and supplied to the engineer on a daily basis."
Amend the following payment item:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.04 Tack coat</td>
<td></td>
</tr>
<tr>
<td>(a) 30% stable-grade emulsion</td>
<td>Litre (ℓ)</td>
</tr>
<tr>
<td>(a) Stable grade modified with 3% SBR</td>
<td>Litre (ℓ)</td>
</tr>
</tbody>
</table>

Amend the 1st sentence to:

“The unit of measure shall be the litre if 30% stable-grade emulsion or Stable grade emulsion with 3% SBR applied as specified.”

Add the following payment item:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.08 100mm cores in asphalt paving</td>
<td>number (no)</td>
</tr>
</tbody>
</table>

Amend the 1st sentence by adding the following after the word “drilled…”:

“irrespective of depth of core.”

Add new payment item (iii) to B42.11(a):

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.11 Asphalt layer constructed for rehabilitation purposes in accordance with the provisions of sub-sub-clause B4213(f)(ii) and B4213(f)(iii)</td>
<td></td>
</tr>
<tr>
<td>(a) Base constructed with new asphalt 75mm - 250mm compacted thickness</td>
<td></td>
</tr>
<tr>
<td>(iii) EME Class 2 14mm maximum particle size using 10-20 pen bitumen</td>
<td>ton (t)”</td>
</tr>
</tbody>
</table>

Insert the following paragraphs after the 1st paragraph:

“The unit of measurement for subitem (a) shall be the ton of asphalt base placed in compacted layer thickness not exceeding 100mm, and measured according to certified weighbridge tickets issued in respect of the mixture used.

Add the following new items

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.21 Provisional Amount for bitumen price rise</td>
<td>Prov-sum</td>
</tr>
</tbody>
</table>

The expenditure under this item shall be made in accordance with the general conditions of contract.
<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.22</td>
<td>Special additional initial design testing required by the Engineer ........................ Prov-sum</td>
</tr>
</tbody>
</table>

The expenditure under this item shall be made in accordance with the general conditions of contract and also Clause 6.5.1.2.3 of the contract data.”

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.23</td>
<td>Installation of 25 mm dia HDPE cable duct and cable complete in new or existing asphalt of runway or taxiway</td>
</tr>
</tbody>
</table>

(a) Specify depth ................................................................................ metre (m)

The unit of measurement shall be metre of 25 mm diameter HDPE, PE63, Class PN10 ducting installed as indicated in the drawings.

The tendered rate shall include full compensation for saw cutting the slots, removal and spoil of the material, HDPE ducting (including tie downs around the sleeve) resin (ABE, abecote sf 356 type, 3 part silica sand with one part resin) backfill, SABS fine asphalt backfill, copper markers, galvanised draw wires, labour and all plant necessary for the completion of the works as indicated in the drawings”

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.24</td>
<td>Asphalt reinforcing (Specify type) ...........................................square metre (m²)</td>
</tr>
</tbody>
</table>

The unit of measurement shall be the square metre of asphalt reinforcing installed. This item will include the full compensation of the supply of material, preparation of the layer, installation and finishing of the system

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.25</td>
<td>Materials (a) Actual costs of the purchasing and delivering materials to site................................................ Prime Cost Sum (PC-Sum)</td>
</tr>
</tbody>
</table>

(b) Handling costs and profit in respect of subitem B42.25(a) above .......................................................... percentage (%)

The expenditure under this item shall be made in accordance with the general conditions of contract. The prices shall not be subject to the Contract Price Adjustment factor.

The tendered percentage in sub item (b) is a percentage of the amount actually spent under the provisional sum in (a). The type and quantity of material purchased under this item must be approved by the Employers agent prior to any orders placed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.26</td>
<td>Electrical work (removal and replacement of airfield lights and base) as instructed by the Engineer</td>
</tr>
</tbody>
</table>

(a) Electrical work as instructed by the engineer and specifically referring to this clause.....................................................Number (No)

The unit of measurement shall be the number of lights removed and reinstated.

The tendered rate to include for all labour and ancillary costs required to temporarily remove and then reinstate lights in accordance with ICAO and ACSA requirements.
The rate however excludes all material required for this activity. All material required will be paid under payment item B42.25" Refer to drawing number:

- 3961RD08LD01: Lighting detail: Bravo taxiway
- 3961RD08LD02: Lighting detail: Juliet taxiway
- 3961RD08LD03: Lighting detail: Echo taxiway
- 3961RD08LD04: Lighting detail: Typical detail (1 of 2)
- 3961RD08LD05: Lighting detail: Typical detail (2 of 2)

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B42.27 Spoiling material attained from stockpile</td>
<td>cubic metres (m³)</td>
</tr>
</tbody>
</table>

The unit of measurement shall be the amount of cubic metres of material removed by the Contractor on site and spoiled at a spoil site.

The rate is inclusive of all costs in locating an preparing a spoil site as well as all haul."
C3.6.13 SECTION 4800: TREATMENT OF AN EXISTING SURFACE EXHIBITING CERTAIN DEFECTS

B4802 MATERIALS

Add the following:

“The classification of modified binders for crack sealing shall be as shown in Table B4801.

Table B4801

<table>
<thead>
<tr>
<th>Modified Binder Class (C)</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>C – E1</td>
<td>Crack Sealant – Hot applied</td>
</tr>
<tr>
<td>C – R1</td>
<td>Crack Sealant – Hot applied</td>
</tr>
</tbody>
</table>

The letter codes used in the classification are defined as follows:
C – crack seal applications (hot applied)
E – a polymer of the elastomer type (e.g. SBR, SBS, etc)
R – Bitumen Rubber type

The binders to be used on this contract for the sealing of cracks shall be C – E1. The properties of the crack sealant shall conform to the requirements listed in Table B4802.

Table B4802

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Test Method</th>
<th>C – E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point (R&amp;B)</td>
<td>°C</td>
<td>MB - 17</td>
<td>80 (min)</td>
</tr>
<tr>
<td>Elastic recovery @ 15°C</td>
<td>%</td>
<td>MB - 04</td>
<td>80 (min)</td>
</tr>
<tr>
<td>Flow @ 60°C</td>
<td>mm</td>
<td>MB - 12</td>
<td>Nil</td>
</tr>
<tr>
<td>Resilience</td>
<td>%</td>
<td>MB - 10</td>
<td>N/A</td>
</tr>
<tr>
<td>Torsion recovery @ 15°C</td>
<td>%</td>
<td>MB - 05</td>
<td>Report</td>
</tr>
<tr>
<td>Solids content (m/m)</td>
<td>%</td>
<td>MB - 22</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity @ 165°C</td>
<td>Pa.s</td>
<td>MB - 18</td>
<td>0.55 (max)</td>
</tr>
<tr>
<td>Dynamic viscosity (Haake @ 190°C)</td>
<td>Dpa.s</td>
<td>MB - 13</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity @ 25°C</td>
<td>Pa.s</td>
<td>MB - 18</td>
<td>N/A</td>
</tr>
</tbody>
</table>

B4803 PLANT AND EQUIPMENT

(b) Equipment for crack sealing

Delete this subclause, and replace with the following:

“The contractor shall inter alia provide the following equipment for crack sealing:

(i) Blowing out cracks
The contractor shall provide a mobile compressor capable of discharging at least 3-m³/min compressed air at 650kPa pressure. The compressed air shall be free of deleterious matter that may adversely affect the bond between the sealant and the cracks. The compressor shall be free of oil, and diesel leaks.

A lance shall be used to direct the force of the air into the cracks and must be sufficiently manoeuvrable to enable the path of the crack to be followed accurately.

If hot air is specified, the compressed air must be heated by a hot air lance capable of achieving a temperature of 300°C in the combustion chamber.

(ii) Sealant applicator

“The sealant shall be applied through an applicator manufactured specifically for this purpose. Essentially the equipment for the hot sealant shall consist of a mobile vessel capable of heating the sealant to the required application temperature by indirect heat and controlled by a thermostat to prevent overheating. A calibrated thermometer shall be fitted in an accessible position to accurately measure the sealant temperature in the tank. Special pumps, which can deliver the sealant to the crack in a controlled manner, shall be used.

The sealant shall only be applied with pressure type application equipment to ensure that the cracks are filled rather than covered.

The contractor shall ensure that all equipment is kept clean so as to prevent blockages and resultant poor workmanship.”

B4804 CONSTRUCTION

(e) Sealing cracks

Add the following:

“Prior to sealing, areas for sealing shall be delineated by the engineer.”

(ii) Preparation

Add the following:

“The cracks shall be blown out with heated ("hot air lance") compressed air. All dirt, grit and other base or foreign matter shall be blown out and be removed from the cracks and pavement surface.”

(iii) Cracks smaller than 3 mm

Add the following:

“No cracks smaller than 3 mm width shall be sealed unless so ordered by the engineer.”

(iv) Cracks of 3 mm and wider

Add the following:

“Cracks shall first be cleaned before the crack is sealed. The sealant shall be forced into the cracks by means of the specified sealant applicator. The contractor shall ensure that the sealant mixture actually penetrates the crack and does not merely cover the crack in the form of a bandage. All excess sealant on the road surface wider than 30mm on either side of the crack, and thicker than 1mm, shall be removed, and shall not be paid for.”
B4807 MEASUREMENT AND PAYMENT

Add the following new payment items:

B48.14 Sealing cracks:

(a) Cleaning crack with hot compressed air and sealing using
Class C-R1 modified binder crack sealant…………………………………………………metre (m)

(b) Cleaning crack with cold compressed air and sealing using
Class C-E1 modified binder crack sealant…………………………………………………metre (m)

The unit of measurement for sealing of cracks shall be the metre of crack sealed as specified.

The tendered rates shall include full compensation for providing, mixing, heating (where required) and applying all the materials as specified, and for all equipment, labour, supervision and incidentals for completing the work. No additional payment will be made for multiple applications of material, and payment will not distinguish between the various types, widths or lengths of cracks."
C3.6.14  SECTION 5700: ROAD MARKINGS

B5707  APPLYING THE PAINT

*Add the following:*

"Where the taxiway or taxiway is to be re-opened to traffic after shifts, the Contractor will be required to apply all necessary paint markings at completion of each such shift within a designated area. The paint shall be non-reflectorised and applied strictly in accordance with the manufacturer's instructions. The paint shall be normal road marking paint complying with SABS 731. Solvent-based paints will be used for temporary paint markings and water-based paint for all permanent paint markings. At the start of the project, the Contractor will supply samples of the paint he intends to use and apply trial sections to the satisfaction of the Engineer which will also include environmental risk mitigation measures to be implemented and maintained as well as waste management.

The existing paint markings will be removed and replaced in accordance with ICAO standards. The final paint markings are shown in the following drawing:

- 3961RD07RM01 BRAVO TAXIWAY
- 3961RD07RM02 JULIET TAXIWAY
- 3961RD07RM03 ECHO TAXILANE"
C3.6.15  SECTION 5800: LANDSCAPING AND GRASSING

B5803  LANDSCAPING THE AREAS

(a)  Shaping

Replace the term “road reserve” with “taxiway end safety areas and taxiway strips”

B5805  GRASSING

(c)  Hydroseeding

Add the following:

During seeding, the seed mixture shall be regularly mixed by hand in order to prevent the separation of smaller and larger seeds in the mixture. After seeding, the soil surface shall be lightly raked parallel to the contours in order to cover the seed. During raking, care shall be taken to prevent the redistribution or removal of seed from any area. Seeding to comply with supplier’s guidelines and all additional costs are deemed to be included in tendered rates. This includes shade netting at areas close to taxiway thresholds.”

B5806  PLANTING AND MAINTAINING THE PLANTS

(a)  Watering, weeding, mowing and replanting

Add the following to the second paragraph:

“The Contractor shall remain off newly grassed areas or areas that have been prepared for grassing. Any damages caused by the Contractor to newly grassed areas or areas that have been prepared for grassing shall be repaired to the satisfaction of the Engineer, at the Contractor’s own expense.”

(c)  Maintenance period

Add the following before the first paragraph:

“In this subclause all reference to the maintenance period in respect of grass shall mutatis mutandis also apply to the maintenance of the shade netting required to protect the grass sods or newly planted hydroseed against the damage caused by jet blast. The maintenance period is also one (1) year and comprises the repair and securing of the netting as and when required by the Engineer. The Contractor may be required to remove the netting before the maintenance period has expired.”

B5809  MEASUREMENT AND PAYMENT

Amend the payment unit in subitems to 58.04(c)(ii) as follows:

“Item  
Unit

B58.04  Grassing:

(c) Hydroseeding

(i) Providing an approved seed mixture for hydroseeding………………………………….Prov-Sum

(ii) Providing an approved mulch……………………………………………………………Kilogram (kg)
(iii) Hydroseed............................................................................................................................................ Hectare (ha)

The expenditure under this item shall be made in accordance with the general conditions of contract and also Clause 6.5.1.2.3 of the contract data."
C3.6.15  SECTION 7000:  SUNDRY STRUCTURES

SECTION B7100:  CONCRETE PAVEMENTS

B7101  SCOPE

Add the following:

This section includes the provision of a 400 mm thick Jointed Concrete Pavement (JCP) as shown on the drawings.

B7102  MATERIALS

(a)  Cement

Delete the last paragraph and add:

The cement to be used for this contract shall be in accordance with the latest SANS 50197-1 "Cement - composition specifications and conformity criteria Part 1: Common Cements" and shall be either:

- Portland Cement CEM I: 42.5 or 32.5R or higher
- Portland Slag Cement CEM II A-S: 32.5 or higher

Rapid hardening cement in accordance with the SANS 50197-1 specification may, subject to the engineer's approval and the contractor's discretion, be used in the Jointed Concrete Pavement (JCP) to initiate fast strength gains and early opening of the taxiways to traffic.

(c)  Aggregate for concrete

(ii)(5)  The nominal size of coarse aggregate shall be 26,5 mm.

(e)  Material for joints

(iii)  Silicone sealant

To Clause (iii) add the following:

“Tear strength determined in accordance with ASTM D624 using Die C = 5,25 kN/m minimum.”

(g)  Curing compound

Replace both paragraphs with the following:

“The curing compound used shall be a 60% bitumen emulsion curing compound.”

B7103  REQUIREMENTS IN RESPECT OF CONCRETE

(d)  Specified strength

Add the following:

“The taxiway may only be opened to traffic when the concrete has attained a flexural strength of 4,2 MPa.”
Add the following sub-clauses:

"(c) Changes to the mix proportions in the materials

(iv) When hand placement of concrete is required and instructed by the engineer the requirements of clause 7103 shall apply to all concrete which is placed, vibrated and finished by hand methods, irrespective of the size of concrete panel or concrete patch. However, should the contractor produce written proof that the requirements of clause 7103 cannot be complied with; the engineer may allow the mix proportion to be adjusted to allow hand placing. These changes shall be made in terms of clause 7104(d).

(v) The contractor is cautioned that the quality of cement may vary considerably from batch to batch, which will require adjustments to the cement contents of the mix. In order to ensure the uniform quality of the concrete, the contractor shall obtain from the cement manufacturer the data pertaining to cement quality for each batch in order to make the required adjustment to the cement content. This information shall be supplied to the engineer.

Irrespective of such variation in the cement quality no claim will be entertained for extra payment for additional costs which may arise as a result thereof. The contractor shall make allowance for these extra costs in his rate for concrete pavement under item B71.02."

Delete the first paragraph and substitute with the following:

"The contractor shall be allowed to purchase concrete from a commercial supplier, but only if such product complies in all respects to the desired strength, workability and durability characteristics, and only if the required paving output, as specified under B7110(b), will be achieved. The use of ready-mix type trucks for delivery of concrete will not be allowed. The contractor shall remain responsible for providing suitable materials, determining the mix proportions, providing the mix design details and samples of the components of the concrete, manufacturing the concrete of the required quality as specified in clauses 7103 and 7104 of the standard specifications and clauses B7103 and B7104 of the project specifications."

Add the following:

"The contractor shall, with his tender, submit a detailed method statement of his proposed placing/paving technique.

(c) Adverse weather conditions

(i) Protection against rain, hail and jet blast."

Add the following:

"As an alternative to the frame mounted waterproof and heat covers specified, the contractor may cover the concrete with a plastic sheet of sufficient length, width and weight as protection against rain, hail or jet blast. The same sheeting used for curing as specified under B7114 may be used as protection against rain, hail and jet blast.

Irrespective of the protective method used, the contractor shall be responsible for the repair of any damage to the concrete or texturing that may occur."
Add the following:

"The concrete surface shall be finished to a burlap-drag-and-ground texture. The contact length of the Burlap-drag shall be a minimum of 1.0 m and shall be kept damp permanently."

Replace the first three paragraphs with:

"The exposed surfaces, including the sides of the slab, shall be treated immediately after the required texturing of the surface has been effected and after the side formwork has been removed by covering it with white plastic sheeting.

The plastic sheeting shall be removed after three days and the concrete sprayed with a 60% bitumen emulsion, as soon as the surface moisture has evaporated, at a rate of 0.55 litre/m², or as directed by the engineer, and shall be applied mechanically by means of curing bridge capable of producing a spray which will not damage the surface of the concrete. No construction vehicles shall be permitted on the concrete during spraying of the bitumen emulsion curing membrane. Coverage shall be uniform over the entire surface and the rate of application of the bitumen emulsion shall be accurately controlled.

The spray nozzles shall be adequately protected against wind."

Replace "curing compound" in the fourth paragraph with "bitumen emulsion"

Replace "curing compound" in the sixth paragraph with "bitumen emulsion"

Add the following paragraphs:

"Plastic sheeting shall only be applied after the initial setting of the concrete has occurred. Plastic sheeting shall have an overlap of at least 300 mm and shall be completely sealed at the joints and overlaps to ensure that no moisture escapes from the concrete. The plastic sheeting shall cover all exposed edges of the concrete by at least 500 mm and shall be weighed down so that wind will not lift the plastic sheeting of the pavement either by getting underneath the edges or by means of aerodynamic lifting. The plastic sheeting shall be placed and weighed such that it remains in contact with the surface covered at all times.

The plastic sheeting shall be placed in such a manner as not to damage the surface or texturing of the concrete. Any damage caused to the concrete surface or texturing during the curing process shall be repaired by the contractor at his own expense and to the approval of the engineer. The plastic sheeting shall be maintained by the contractor at all times to ensure adequate curing of the concrete pavement."
B7115  CONSTRUCTION JOINTS

Add the following:

B7120  JOINT SEALING

(a)  Pre-formed Elastomeric Compression Seals

Add the following:

Pre-formed elastomeric compression seals shall not be used in this contract.

(b)  Silicone Sealant

Add the following:

"(i)  The joint sealant shall be Dow Corning 890 - SL low modulus type self levelling (or an equivalent) approved by the engineer.

The silicone sealant shall be tested by an approved laboratory according to the methods specified in sub-clause B7102(e). The certificate issued by the laboratory shall not be older than 3 months on the date of commencement of the sealing of joints.

A trial is to be carried out in the field with the proposed sealant to determine the suitability of the product before it will be approved by the engineer."

B7122  CONSTRUCTION TOLERANCES

(d)  Thickness

Add the following:

"The engineer reserves the right to vary the thickness of the JCP. The concrete paving shall be measured in cubic metres and the contractor shall therefore be deemed to be fully compensated by his tendered rate for any thickness variation.

The thickness tolerances shall be as specified in the standard specification clause 7122(d)."
**B7124 QUALITY CONTROL AND WORKMANSHIP**

*Add the following new sub-clauses:*

"(f) Sampling the Cement

The contractor shall supply the engineer, free of charge, a sample of at least 10 kg in mass from each bulk load of cement delivered to the site or from the commercial batching plant.

The sample shall be drawn off either directly from the bulk tanker or from the delivery line between the bulk tanker and the storage silo.

The sample shall be drawn off in five (5) approximately equal increments during the discharge of the tanker.

The sample shall be placed in a strong, clean plastic bag which shall be immediately sealed and marked as follows:

1. The date and time of sampling.
2. An identification of the delivery vehicle.
3. The date of manufacture of the cement.
4. The silo into which the cement is discharged.
5. Delivery note number.

**B7125 REMEDIAL WORK**

(d) Repairing of Cracks

*Delete the first sentence and replace with the following:*

"The contractor shall be responsible for constructing a pavement which will show no other cracks.

Should crack repair be necessary, the contractor shall submit proposals for such repair work to the engineer for approval.

The cost of repairing cracks or demolishing, removing and replacing crack defective sections of concrete pavements shall be to the contractor's account."

**B7126 OPENING TO TRAFFIC**

*Add the following:*

"As specified in clause B7103(d) the JCP may not be opened to public or construction traffic until the concrete has attained a flexural strength of 4.2 MPa."
### B7127 MEASUREMENT AND PAYMENT

**Amend item 71.02 as follows:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B71.02</td>
<td>Concrete pavement excluding texturing and curing:</td>
</tr>
<tr>
<td>(a)</td>
<td>Jointed Concrete Pavement (JCP):</td>
</tr>
<tr>
<td>(i)</td>
<td>400 mm thick...............................square metre (m²)</td>
</tr>
</tbody>
</table>

The unit of measurement shall be the square metre of concrete pavement placed and finished in accordance with the specification and the project specifications. The quantity shall be calculated from the net authorised dimensions, without adjustment for the allowed tolerances.

The tendered rate shall include full compensation for procuring and furnishing all the materials, storing the materials, providing all plant, determining the mix proportions, mixing, transporting, placing and finishing the concrete, including formwork, repairs done to defective work, protecting the pavement against damage, construction joints and process control.

The tendered rate shall also allow for variations in the thickness authorised by the engineer.

The tendered rate shall also include full compensation for constructing concrete pavements which cannot be constructed with conventional plant (i.e. varying widths), as envisaged in Section 7100.**

**Amend item 71.04 description as follows:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B71.04</td>
<td>Texturing and curing the concrete pavement:</td>
</tr>
<tr>
<td>(a)</td>
<td>Burlap-dragged-and-grooved texture.................................square metre (m²)</td>
</tr>
<tr>
<td>(b)</td>
<td>Curing.................................square metre (m²)</td>
</tr>
</tbody>
</table>

The tendered rate shall also include full compensation for providing the plastic sheeting and its application as specified.

**Amend the description of 71.06 as follows:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B71.06</td>
<td>Joints:</td>
</tr>
<tr>
<td>(a)</td>
<td>Isolation joint (as shown on drawing):</td>
</tr>
<tr>
<td>(i)</td>
<td>Jointed concrete .....................metre (m)</td>
</tr>
<tr>
<td>(b)</td>
<td>Sealed, tied longitudinal joint (as shown on drawing):</td>
</tr>
<tr>
<td>(i)</td>
<td>Jointed concrete .....................metre (m)</td>
</tr>
<tr>
<td>(ii)</td>
<td>Jointed concrete between existing and new surfaces .....................metre (m)</td>
</tr>
<tr>
<td>(c)</td>
<td>Sealed transverse joint (as shown on drawing) .....................metre (m)</td>
</tr>
</tbody>
</table>
(d) Dowel bars (mild steel) (25 mm diameter, 450 mm long):

(i) Installed in new concrete .............................................................. number (No)

(ii) Installed in existing concrete in rehabilitation work ....................... number (No)

(e) Tie bars (16 mm diameter, 700 mm long):

(i) Installed in new concrete .............................................................. number (No)

(ii) Installed in existing concrete in rehabilitation work ....................... number (No)

Add the following item:

"Item  

B71.22  Anchor blocks and terminal joints:

(a) Jointed concrete to existing surface joint..................................................... metre (m)

The unit of measurement shall be the metre of anchor blocks and terminal joints complete in accordance with the project specifications and drawings.

The tendered rate shall include full compensation for procuring and furnishing all the different components and materials (including the steel), providing all plant, determining the mix proportions, mixing, placing and bending of steel, transportation, placing and finishing the concrete including formwork, repairs done to defective work, protecting the anchor blocks or terminal joints against damages, construction joints and process control."

Add the following new clauses:

"B7128  CONCRETE END BLOCKS AND RELATED PAVEMENT LAYER DRAINAGE

Concrete end blocks and related pavement layer drainage shall be constructed at positions indicated on the drawings, all in accordance with the requirements of the relevant sections of these specifications. Subsoil drainage systems shall be provided at all concrete end blocks.

B7129  PLANT AND EQUIPMENT

Prior to the start of the work the contractor shall supply to the engineer copies of the manufacturer's handbook relating to the concrete batching plant and paving train, containing details of the correct setting and adjustment of the plant and inspector's check lists."
C3.6.17 SECTION 8200: QUALITY CONTROL (SCHEME 1)

B 8201 SCOPE

Add the following paragraph:

“Quality Control Scheme 1 as specified in section 8200 shall apply to this contract.”

B 8206 JUDGEMENT PLAN B

Notes (Table 8206/3)

Replace note 1(a) with the following:

“(a) Density \(L_s=93\%\) of theoretical relative maximum density for all base and wearing course layers (Rice's density, see also clause B4210).”

To note 1(b) add “Non-homogeneous modified binders” to the first sentence and delete the third to fifth paragraphs from the sentence “For gap graded mixes, slurry seals and non-homogeneous modified binders.”

Change this specification to read:

“Binder variations to be 0.3\% (by mass) for all mixes.”

Replace note 1(c) with the following:

“Voids
\(L_s = \) specified values \(- 1\) percentage points
\(L's = \) specified values \(+ 1\) percentage points”
"C3.6.16 SECTION 9100: APPLICATION OF POLYMERIZED BITUMEN REJUVENATOR WITH MASTIC FILLER (PBRF)

CONTENTS

9101 SCOPE
9102 INTERPRETATIONS
9103 MATERIALS
9104 PLANT AND EQUIPMENT
9105 CONSTRUCTION
9106 TOLERANCES AND FINISH REQUIREMENTS
9107 MEASUREMENT AND PAYMENT

9101 SCOPE

This Specification covers the materials and construction requirements for the construction of a seal using a polymerised bitumen rejuvenator with a mastic filler (PBRF).

9102 INTERPRETATIONS

(a) Application

This Specification contains clauses that are generally applicable to sealing of cracks. Interpretations and variations of this specification are set out in the Project Specification which precedes this Specification in a Contract Document.

9103 MATERIALS

(a) Base Bitumen

The bituminous binder used in the production of the PBRF shall comply with the requirements of SANS 307.

(b) Aggregates

The aggregates shall be an approved mixture of selected crusher sands.

9104 PLANT AND EQUIPMENT

(a) General

All plant and equipment used on the works shall be of adequate rated capacity and in good working condition.

All plant and equipment shall be in good working condition and shall be operated by properly qualified operators. It shall be free of any binder, fuel or oil leaks and no
refuelling or servicing shall take place while such plant or equipment is on the airside pavement surface.

(b) **Mixer for PBRF**
A batch mixer or a continuous type mixer shall be provided. The paddles of the mixer shall be so designed as to ensure thorough blending of the constituents of the PBRF.

(c) **Application of PBRF**
Hand work shall be used in applying PBRF, and then only in accordance with approved methods under the strict supervision of experienced personnel and with equipment suitable for performing the work in accordance with specified requirements.

(d) **Miscellaneous Equipment**
Suitable fire fighting equipment for dealing with bitumen fires shall be available on site, together with suitable first aid equipment for dealing with bitumen burns. (Refer to Sabita Manual 8: Bitumen Safety Handbook).

### 9105 CONSTRUCTION

(a) **Traffic accommodation**
Sealing shall be scheduled in conjunction with the controlling authority in order not to interfere with air traffic operations.

(b) **Weather limitations.**
A minimum aperiodsurface temperature of 8°C and rising shall apply to PBRF. No work shall be done during foggy or rainy weather. When the wind is blowing, the above temperature shall be increased by 3 – 6°C, as directed by the Engineer.

When the emulsion breaking process accelerates to such an extent that it renders the product unworkable in attaining the required end result, for instance when the surface temperature is in excess of 60°C, no sealing shall be done.

When strong winds are blowing which are likely to interfere with the proper execution of the work, no sealing shall be done.

(c) **Moisture content**
No sealing shall be carried out immediately after a rainy spell on an existing partly cracked and/or highly permeable surfacing, which could result in the trapping of moisture in the pavement structure. A minimum delay of 24 hrs, or such extended period as ordered by the Engineer shall apply.

(d) **Preparation of areas to be sealed**
Areas to be sealed shall be cleaned of all dust, dirt, dung, oil or any other foreign matter that may be deleterious to the seal.

(e) **Existing surfaces to be resealed**
Any failures in the existing road pavement shall first be repaired before applying the PBRF.
(f) Storage of polymerised bitumen rejuvenator with a mastic filler
In instances where the modified binder is stored for extended periods (> 36 hours), such storage will be at ambient temperature in a dry storage facility, not located in direct sunlight.

(g) Stockpiling of aggregate
Sites for the stockpiling of aggregates shall be prepared in such a manner that no grass, mud, dirt or other deleterious material will be included when the aggregates are loaded for use.
Access roads to stockpile sites shall be prepared and maintained in such a way that no dirt is conveyed by vehicle wheels onto the areas to be resealed whilst aggregate is being transported to or from the stockpiles.
Stockpiles shall be so sited that they will not be exposed to excessive contamination with dust arising from traffic on the road or access roads.

(h) Protection of kerbs, channels, etc.
Kerbs, channels, manholes and any other structures which may be soiled by PBRF during application shall be suitably protected.
The Contractor shall replace, at his own cost, any items that have been soiled and cannot be cleaned entirely. The painting of soiled surfaces will not be accepted as a suitable remedy.

(i) Rate of application
PBRF shall be applied on the designated area at the rate of application determined by the supplier and the Engineer. The nominal rate for tendering purposes shall be 1 kg/m².

(j) Blinding
A light blinding layer of washed natural sand shall be applied by the Contractor to prevent PBRF from being picked up by traffic. If required by the Engineer, the blinding shall be spread evenly by means of hand brooms.

(k) Opening to traffic
The Contractor shall be responsible for determining when any sealing layer is to be opened to traffic.
The airside pavement shall not be opened to traffic until the binder has set sufficiently to prevent being picked up by the wheels of passing traffic.

(l) Defects
Where, in the opinion of the Engineer, any unacceptable loss of PBFR or bleeding of the road surface, has occurred during the contract or maintenance period and this can be attributed to the Contractor not having observed any of the requirements of the specifications, not using the correct application, or to any other omission or fault on the part of the Contractor, any corrective work required shall be at the Contractor’s expense.
(m) Maintenance

The Contractor shall maintain the bituminous surface until the work is finally accepted by the Employer. Any damage done to the surface, or any defects which may develop before the issue of the completion certificate, fair wear and tear excepted, shall be corrected by the Contractor at his own cost and to the requirements of the Engineer.

9106 TOLERANCES AND FINISH REQUIREMENTS

The completed seal shall be of uniform texture, without gaps or patches, and shall be free from any bitumen spillages.

Any areas which show signs of bleeding after the section has been opened to traffic shall be corrected. Corrective work shall be carried out in such a manner as to blend in colour, texture and finish with the adjacent work. The maximum permissible variation from the rate of application specified for the PBRF shall be plus or minus 5% (± 5%).

9107 MEASUREMENT AND PAYMENT

General Directions

No separate payments will be made for transport or for traffic accommodation measures required to execute the work.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>91.01 Preparation of surface and sealing of cracks</strong></td>
<td></td>
</tr>
<tr>
<td>(a) Cleaning of surface and cracks with compressed air</td>
<td>square metre (m²)</td>
</tr>
</tbody>
</table>

The unit of measurement for cleaning the surface and cracks with compressed air shall be the square metre of surface on which all cracks have been blown clean.

The tendered rate shall include full compensation for providing all equipment, labour, supervision and incidentals necessary for blowing clean the cracks over the full width of the runway.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>91.02 Applying a polymerised bitumen rejuvenator with mastic filler</strong></td>
<td></td>
</tr>
<tr>
<td>(a) Applying a polymerised bitumen rejuvenator with mastic filler at a rate of 1 kg/m² by hand</td>
<td>square metre (m²)</td>
</tr>
</tbody>
</table>

The tendered rate shall include full compensation for procuring and furnishing all the materials, for mixing and applying PBRF, demarcating all areas to be treated, as well as for all plant, labour and incidentals necessary to complete the work as specified.
91.03 Variation in application

(a) Polymerised bitumen rejuvenator with mastic filler-binder………………litre

Variations within the tolerances for the rate of application specified in 9105(i) will not be taken into account for the purpose of measurement. Where the specified rate of application varies from the nominal rate in 9106 adjustment of compensation will be made as follows:

(a) as a payment to the Contractor in respect of each increase in rate of application above that specified, only where such increases have been ordered by the Engineer in writing

(b) as a refund by the Contractor in respect of each decrease in quantity below that specified, only where such decrease has been ordered by the Engineer.

In the case of an increase or decrease in the rate of application owing to facility workmanship on the part of the Contractor, in the opinion of the Engineer, the Engineer may condemn the work, require the Contractor to rectify the work or agree to a refund by the Contractor to cover the cost to the Employer of the earlier maintenance which will be required because the surfacing does not comply with the specification.

91.04 Aggregate for blinding

(a) Blinding with washed natural aggregate ……………cubic meter (m³)

The unit of measurement shall be the cubic metre of washed natural sand measured in the hauling vehicles.

The tendered rate shall include full compensation for providing the sand and applying the blinding coat complete as specified, and, if so required, for temporarily stockpiling the material at an approved locality."
C3.7: Generic Specifications

C3.7.1: OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

This part of the Specifications contains comprehensive occupational health and safety specifications.

LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACSA</td>
<td>Airports Company South Africa</td>
</tr>
<tr>
<td>GAR</td>
<td>General Administration Regulations</td>
</tr>
<tr>
<td>GSR</td>
<td>General Safety Regulations</td>
</tr>
<tr>
<td>OHSA</td>
<td>Occupational Health and Safety Act 85 of 1993</td>
</tr>
<tr>
<td>OHSS</td>
<td>Occupational Health and Safety Specification</td>
</tr>
<tr>
<td>SABS</td>
<td>South African Bureau of Standards</td>
</tr>
</tbody>
</table>

PART A: GENERIC SPECIFICATIONS

1.  INTRODUCTION

1.1  Purpose of the Occupational Health and Safety Specification

The purpose of the OHSS is to assist Contractors to achieve compliance with the Occupational Health and Safety law, in order to reduce incidents and injuries. The OHSS will be implemented during the construction of this project or any construction activity that the Employer has control over.

The OHSS is a performance specification to ensure that the Employer and any bodies that enter into formal agreements with the Employer viz. Agents, Consultants and Contractors achieve an acceptable level of OHS performance. No advice, approval of any document required by the OHSS such as hazard identification and risk assessment action plan or any other form of communication from the Employer shall be construed as an acceptance by the Employer of any obligation that absolves the Contractor from achieving the required level of performance and compliance with legal requirements. Further, there is no acceptance of liability by the Employer which may result from the Contractor failing to comply with the OHSS, i.e. the Contractor remains responsible for achieving the required performance levels.

1.2  Implementation of the Occupational Health and Safety Specification

This OHSS forms an integral part of the Contract, and Contractors are required to make it an integral part of their Contracts with Sub-Contractors and Suppliers. It will be disseminated by the Employer to persons responsible for and inspection of the design of the infrastructure works, who will ensure that it is included in the Tender Document(s) issued to prospective Contractors. The prospective Contractors shall incorporate the requirements of the OHSS in their submission of tenders to the Employer as well as provide health and safety plans for evaluation.

This specification must be read in conjunction with the OHS Act No 85 of 1993 (as amended), the Regulations as published in Government Gazette No 7721 of 18 July 2003 as well as the General Safety Regulations published in Government notice No. R 1031 of 30 May 1986, as amended.

The OHS Act Agreement in this document (Returnable Schedules) must be fully completed by the Contractor.
2. STANDARD OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

2.1 Scope

This OHSS covers the requirements for eliminating and mitigating incidents and injuries in all Employer controlled projects.

The scope also addresses legal compliance, hazard identification and risk control, promoting a health and safety culture amongst those working on ACSA projects and those affected by the activities taking place in and around them.

2.2 Interpretations

2.2.1 Application

The OHSS contains clauses that are applicable to building / construction and that impose pro-active controls associated with activities that impact on human health and safety as they relate to plant and machinery.

Compliance to the requirements of the OHSA, Construction Regulations and General Safety Regulations is in addition to the requirements of the OHSS and is part of the Contractor’s responsibility. The Employer will through the Agents, as appointed, monitor that the Contractor complies with the requirements of the OHSA and will not prescribe to the Contractor how such compliance is achieved.

Definitions

The definitions used will be those set out in the Regulation Gazette No 7721 of 18 July 2003 with the following addition:

ACSA: Airports Company South Africa

Hazard Identification and Risk Assessment and Risk Control:
Means a documented plan, which identifies hazards, assesses the risks and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

Health and Safety Management Plan:
Means a documented plan which addresses the OHSS requirements hazards identified and include safe working procedures to mitigate, reduce or control the hazards identified.

Induction Training:
Means once off introductory training on general health and safety issues as well as project specific matters given to all employees before commencement of work or other visitors to the site.

Risk:
Means the probability or likelihood that a hazard can result in injury or damage.

Site:
Means the area in the possession of the Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the Contractor, and approved for such use by the Engineer.

The Act:
Means, unless the context indicates otherwise, the Occupational Health and Safety Act, 1993 (Act NO. 85 of 1993) and Regulations promulgated there under.

Contractor:
The Contractor terminology used in these specifications shall be deemed to cover Principle Contractor, Contractors and Sub-Contractors.
3. REQUIREMENTS AT TENDER STAGE

The Contractor shall make available the following with his completed tender:

A Health and Safety Plan as described in Regulation 7 of the Construction Regulations. The Safety Plan must be based on the Construction Regulations 2014 and this specification and will be subject to approval by the Employer. This will include a Hazard Identification and Risk Assessment appropriate to the project, expansion of Annexure D, and a declaration to the effect that he has the competence, completion of Occupational Health and Safety Questionnaire, and necessary resources to carry out the work safely in compliance with the Construction Regulations 2014.

Failure to submit the foregoing with his tender, will lead to the conclusion that the Contractor is not able to carry out the work under the contract safely in accordance with the Construction Regulations and may result in the tender being disqualified.

4. NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK

Due to the estimated project cost the Clients Health and Safety Agent will apply for a construction works permit. No construction or related work such as site establishment or delivery of any equipment or material may commence before the construction works permit has been received and the Engineer approved the start of the works.

A copy of the construction works permit must be conspicuously displayed at the main entrance to the site as well as be kept on the health and safety files, and be available for inspection by inspectors, Employer, Engineer, employees and other duly authorised persons on site.

5. GUIDELINES FOR THE DEVELOPMENT OF A HEALTH & SAFETY PLAN

5.1 Background

In terms of the Construction Regulations [ Regulation 5 (1) (b)] of the Occupational Health and Safety Act, No 85 of 1993, the Client is required to compile an Occupational Health and Safety specification for each of its projects and the Contractor, appointed by the Client in terms of Regulation 5 (1) (k), is required to prepare an Occupational Health and Safety Plan. This plan has to be prepared in terms of Regulation 7 (1)(a) as well as the Client’s Occupational Health & Safety Specification. In terms of Regulation 5 (1)(l), the Client and the Contractor are required to agree on the Occupational Health and Safety Plan before any work may commence.
5.2 Framework for an Occupational Health and Safety Plan

5.2.1 Introduction
The Contractor has to demonstrate to the Client that he has a suitable and sufficiently documented Occupational Health and Safety Plan as well as the necessary competencies, experience and resources to perform the construction work safely. The Contractor is required to submit, the following documentation for perusal and verification by the Client:

- Management Structure including an organogram – Tender Stage
- Quality Plan – Tender Stage
- Human Resources Plan – Tender Stage
- Registered Workplace Skills Plan
- “Letter of good standing” from the Compensation Commissioner or licensed compensation insurer – Tender Stage
- Proof of induction and other training of employees
- Example copies of minutes of previous Occupational Health and Safety Committee meetings and copies of Incident Investigation Reports

5.2.2 Contents of an Occupational Health and Safety Plan
The Occupational Health and Safety Plan shall include the following:

5.2.2.1 Occupational Health and Safety Management Programme
- Management of Occupational Health and Safety risks
- Occupational Health and Safety structures and appointments
- Programme of Occupational Health and Safety inspections
- Occupational Health and Safety Representatives
- Occupational Health and Safety committee

5.2.2.2 Statement Regarding the Communication and Management of the Work
- Management structure and responsibilities
- Occupational Health and Safety objectives for the project and arrangements for monitoring and review of Occupational Health and Safety performance
- Arrangements for regular liaison between parties on site
- Consultation with the workforce
- The exchange of design information between the Client, Engineer, supervisors and subcontractors on site
- Handling design changes during the project
- Selection and control of subcontractors
- The exchange of Occupational Health and Safety information between all subcontractors
- Security
- Site induction and on site training
- Facilities and first-aid
- The reporting and investigation of accidents and incidents
- The production and approval of risk assessments and method statements
- Site Occupational Health and Safety rules
- Fire and emergency procedures
- Reporting to the Client i.e. results of Occupational Health and Safety inspections.
- Incident investigations and committee meetings
- Reporting of incidents to the Department of Labour and Compensation Commissioner where appropriate
6. APPOINTMENT OF SAFETY PERSONNEL

6.1 Construction Supervisor

In terms of Section 16 of the Act, the Chief Executive Officer of the Contractor may delegate, in writing, part or all of his powers to a suitable person on the site. The Contractor shall appoint a full-time Construction Manager, in writing, in terms of Section 8(1) of the Construction Regulations with the duty of supervising the performance of the construction work as well as ensuring occupational health and safety compliance.

He may also have to appoint one or more competent employees to assist the construction manager where justified by the scope and complexity of the works as well as an Alternate Construction Manager when applicable.

6.2 Construction safety officer

In terms of Section 8(5) of the Construction Regulations the Contractor shall appoint in writing a full-time Construction Safety Officer which is duly accredited by SACPCMP. The Safety Officer shall have the necessary competence and resources to perform his duties diligently.

Provision will be made in the Bill of Quantities to cover the cost of a dedicated construction safety officer appointed after award of the contract.

6.3 Health and safety representatives

In terms of Sections 17 and 18 of the Act (OHSA 1993) the Contractor shall appoint, in writing, a health and safety representative whenever he has more than 20 employees in his employ on the works. The health and safety representative must be selected from employees who are employed in a full-time capacity at a specific workplace.

The number of health and safety representatives for a workplace shall be at least one for every 50 employees which will include the employees of subcontractors.

The function of the health and safety representative(s) will be to review the effectiveness of health and safety measures, to identify potential hazards and major incidents, to examine causes of incidents (in collaboration with his employer, the Contractor), to investigate complaints by employees relating to health and safety at work, to make representations to the employer (Contractor) or inspector on general matters affecting the health and safety of employees, to inspect the workplace, plant, machinery etc. on a regular basis, but at least on a weekly basis to participate in consultations with inspectors and to attend meetings of the health and safety committee.

6.4 Health and safety committee

In terms of Sections 17,18 and 19 of the Act (OHSA 1993) the Contractor (as employer), shall establish one or more health and safety committee(s) where there are two or more health and safety representatives at a workplace. The persons selected by the employees and appointed by the Contractor to serve on the committee shall be designated in writing.

The function of the health and safety committee shall be to hold meetings at regular intervals, but at least once every three months, to review the health and safety measures on the contract, to discuss incidents related to health and safety with the Contractor’s representative and any Department of Labour inspector, and to make recommendations regarding health and safety to the Contractor and to keep record of meetings, recommendations and reports made by the committee.
6.5 Competent persons

In accordance with the Construction Regulations the Contractor shall appoint, in writing, competent persons responsible for supervising construction work for the following work situations that may be expected on the site of the works, as applicable to the project.

- Risk assessment (Regulation 9);
- Fall protection (Regulation 10);
- Excavation work (Regulation 13);
- Demolition work (Regulation 14);
- Suspended platform operations (Regulation 17);
- Material Hoists (Regulation 19);
- Bulk mixing plant operations (Regulation 208);
- Explosive actuated fastening device (Regulation 21);
- Construction vehicle and mobile plant (Regulation 23);
- Use of temporary storage of flammable liquids on construction site (Regulation 25);
- Water environments (Regulation 26);
- Housekeeping on construction sites (Regulation 27);
- Stacking and storage on construction sites (Regulation 28);
- Fire precautions on construction sites (Regulation 29); and
- Construction employees’ facilities (Regulation 308).

A competent person may be appointed for more than one part of the construction work with the understanding that the person must be suitably qualified and able to supervise at the same time the construction work on all the work situations for which he has been appointed.

The appointment of competent persons to supervise parts of the construction work does not relieve the Contractor from any of his responsibilities to comply with all requirements of the Construction Regulations.

7. PROJECT / SITE SPECIFIC REQUIREMENTS

A list of activities and considerations that have been identified for the project and the construction site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor is given in Annexure D. This list is not to be considered as inclusive and other items must be added as required.

In addition, the following health risks should be taken into account. It may become necessary to include others according to the requirements of the project.

Health risks

- Health risks arising from neighbouring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, inclement weather etc.
- Exposure to noise
- Exposure to vibration
- Protection against dehydration and heat exhaustion
- Protection from wet & cold conditions
- Exposure to hazardous substances and chemicals used on site.

Emergency Procedures

The Principal Contractor shall submit a detailed Emergency Procedure for approval by the Client prior to commencement on site. The procedure shall detail the response plan including the following key elements:
- List of key competent personnel
- Details of emergency services
- Actions or steps to be taken in the event of the specific types of emergencies
- Information on hazardous material/situations.

Emergency procedure(s) shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, bomb threats, major incidents/accidents, etc. The Principal Contractor shall advise the Client, Agent, Engineer and all relevant authorities forthwith, of any emergencies, together with a record of action taken. This shall be confirmed in writing as soon as possible after the incident. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, Construction Manager, Safety Officer etc) must be maintained and available to site personnel. These procedures shall form part of the Health and Safety Plan.

**First Aid Boxes and First Aid Equipment**

The Principal Contractor and all Contractors shall appoint in writing First Aider(s). If not already accredited, the appointed First Aider(s) are to be sent for accredited first aid training. Valid certificates are to be kept on site. The Principal Contractor shall provide an on-site First Aid Station with first aid facilities, including first aid boxes containing, at least, the requirements of the Annexure to Section 3 of the General Safety Regulations. All Contractors with 5 or more employees shall supply their own first aid box. Contractors with 10 or more employees shall have a trained and certified First Aider on site at all times.

**Personal Protective Equipment (PPE) and Clothing**

The Principal Contractor shall ensure that all employees are issued with and shall wear hard hats, protective footwear and overalls as well as any other necessary PPE as set out in Section 2.3 of the General Safety Regulations. Contractors are encouraged to provide reflective vests for all their employees. The Principal Contractor and all Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. This shall include necessary safety gear for visitors. The Principal Contractor shall clearly outline procedures to be taken when PPE or Clothing is:

- Lost or stolen
- Worn out or damaged
- Issued to temporary employees.

The above procedure applies to Contractors and their Sub-contractors, as they are all Employers in their own right.

**Occupational Health and Safety Signage**

The Contractor shall provide adequate on-site OHS signage. This should include but is not limited to: 'no unauthorised entry', 'report to site office', 'site office', 'beware of overhead work', 'hard hat area'. Signage shall be posted up at all entrances to site as well as on site in strategic locations e.g. access routes, stairways, entrances to structures and buildings, and other potential risk areas/operations. These signs shall be in accordance with the requirements of the General Safety Regulations as amended.

8. **HEALTH AND SAFETY FILE**

The Contractor shall in terms of Construction Regulation 7(1)(b) maintain a Health and Safety File on site at all times. The Health and Safety File is a file or other permanent record containing information on aspects of the construction project - which will be necessary to ensure the health and safety of any person who may be affected by the construction work.

The Contractor shall appoint a suitably qualified person to prepare the Health and Safety File and to keep it up to date for the duration of the contract. The Health and Safety file shall include at least the following information:

- All Documents as required by the Act and Regulations
- All reports of inspections and audits
- All non-conformity reports
• All working drawings, calculations and design where applicable
• Detailed list of sub-contractors with contact details
• List of all hazardous materials used and stored on site with Material Safety Data Sheets
• All Hazard Identification and Risk Assessments carried out for the project.
• All Health and Safety Plans for the project.
• All safe working procedures and method statements
• Minutes of all relevant meetings
• Incident records, including investigations and results
• Record of all appointments under the Regulations

Annexure B is a list of the records to be kept on site.

The Health & Safety File shall be handed over to the Client on completion of the contract. It must contain all the documentation as set out above, or as instructed, as well as any handed to the Principle Contractor by any subcontractors together with a record of all drawings, designs, materials used and other similar information concerning the completed project.

9. RISK ASSESSMENT

Before commencement of any construction work during the construction period, the Contractor shall have a risk assessment performed and recorded in writing by a competent person. (Refer Regulation 9 of the Construction Regulations 2014).

Risk is a measure of the likelihood that the harm from a particular hazard will be realised, taking into account the possible severity of the harm. Harm to people includes death, injury (permanent or temporary), physical or mental health or any combination thereof. Risk management in health and safety includes the identification of hazards, assessing risks, taking action to eliminate or reduce the risk, monitoring the effectiveness and performing regular reviews of the entire process. The Contractor shall compile method statements to address or handle the following:

• Hazards particulars to the contract
• Identify what could go wrong and how
• Identify the likelihood of this happening
• Identify the persons or asset at risk
• Identify the extent of possible harm
• Eliminating or reducing this risk
• A monitoring plan
• A review plan

Contractors must ensure that all subcontractors conduct risk assessments for their scope of work as well. All risk assessments shall be updated and re-evaluated with any extra works or with any change to the scope of the works.

The risk assessment shall identify and evaluate the risks and hazards that may be expected during the execution of the work under the contract, and it shall include a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards identified.

The risk assessment shall be available on site for inspection by inspectors, Employer, Engineer, Health and Safety Agent, subcontractors, employees, trade unions and health and safety committee members, and must be monitored and reviewed periodically by the Contractor.

10. ARRANGEMENTS FOR MONITORING AND REVIEW

The Client and/or Agent will conduct a Monthly, or at greater frequency, Audit to audit compliance with Construction Regulation 5 (1) (o) to ensure that the Contractor has implemented and is maintaining the agreed and approved OH&S Plan. Annexure C will be used as format when conducting the audit.

The Client reserves the right to conduct other ad hoc audits and inspections as deemed necessary.
A representative of the Contractor must accompany the Client on all audits and inspections and may conduct his own audit/inspection at the same time. Each party will, however, take responsibility for the results of his own audit/inspection results.

11. MEASUREMENT AND PAYMENT

In tendering rates for these items the Contractor shall ensure that the sum of the amounts of the four items shall be based upon as well as be expressed as a percentage (i.e. 1%) of the Work Value of the Tender (Total: Schedule A).

“Item” Unit

C11.01 Contractor’s initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations .......................... Lump Sum

The full amount will be paid in one instalment only once:-
(a) The construction works permit has been issued by the Department of Labour.
(b) The Contractor has made the required initial Appointments of Employees and Sub-Contractors.
(c) The Client has approved the Contractor’s Health and Safety Plan.
(d) The Contractor has set up his Health and Safety File and this has been approved by the client.

“Item” Unit

C11.02 Contractor’s time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations .......................... Month

The tendered rate shall represent full compensation for that part of the contractors general obligations in terms of the Occupational Health and Safety Act and the Construction Regulations which are mainly a function of time. The sum will be paid per month only after payment for Item C11.01 has been made. This item shall also cover all updates of the files, plans and reports associated with the Occupational Health and Safety Act and the Construction Regulations.

“Item” Unit

C11.03 Provision of full time Construction Safety Officer .......................... Month

The tendered sum shall include for the cost of a SACPCMP accredited construction safety officer on a full time basis, his overheads, transport and all others items necessary for the proper carrying out of his duties.

“Item” Unit

C11.04 Submission of the Health and Safety File .......................... Lump Sum

This amount will be paid only once the Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client’s satisfaction. This must be done prior to the issue of a Certificate of Completion.”
PART B: PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATIONS

Project Health and Safety Specification
In terms of Construction Regulations 2014

Client

ACSA

Description of Project Works

REHABILITATION OF TAXIWAYS

Project Location

OR TAMBO INTERNATIONAL AIRPORT

Date

May 2019
The Principal Contractor will have to prove that they comply with the Occupational Health & Safety Act – Act 85 of 1993 and Regulations as well as all the incorporated safety standards, when appointed, by proving to the appointed Health and Safety Agent that they have a documentation management system to deal with all the aspects of the requirements of the Act, Regulations and Safety Standards. The Cairnmead representative will take photos of all the documents, personal records of all employees will only be taken one as example and all the detail will be expected that the Principal Contractor keep record, these photo records will serve as a consolidation which can be submitted to the client at the end of the project. These photo records of the documents will be summarized by the Agent on a one-page document “Contractors Matrix” which will indicate the compliance status of the responsibilities of the Principal Contractor and all their appointed Contractors (Sub-Contractors) once a month. The audit results get summarised once a month for all the Projects which Cairnmead are involved with and we will publish these results of all the Projects to all the Projects. Any non-compliance can result that a specific activity of the Contractor get stopped and that stoppage will be for the account of the Principal Contractor or the appointed Contractor. The Health and Safety Agent will do audits on site at agreed intervals to determine whether the Principal Contractor and the appointed Contractors do comply with the Act, Regulations and Safety Standards. It is expected from the Principal Contractor and appointed Contractors to supply to their employees all the required personal protective equipment and clothing which is required for the applicable task. It is further required that the Principal Contractor appoint a full time Health & Safety Representative/Safety Officer (Principal Building Contractor only – multi discipline Contractor) for the Project. See the specification in the special conditions. Each appointed Contractor under the Principal Contractor, whether they are selected, nominated or domestic Sub Contractors they must all have a Health & Safety Representative and this person will be responsible to manage their detail Health & Safety program. See attached a copy of the Contractor’s matrix.

1. PROJECT NAME: ACSA OR TAMBO TAXIWAY

2. Client: Airports Company South Africa

3. Principal Contractor: …………………………………………………

4. List special conditions on site:
   (The special conditions on site are items that need special attention or items that are agreed upon between the Client and Principal Contractor or principal contactor and Contractor before the start of the construction activities, for example, underground services, overhead power lines, site access control (fencing), etc.)

4.1 The Principal Contractor must at all times have supervision on site for all construction activities at that point in time, which include work after hours and weekends.
4.2. The Principal Contractor must have a Risk Assessment which is compiled based on their methodology and processes, for each of the items as listed in the Baseline Risk Assessment, in order to reduce the high rating of the activity. The Principal Contractor must ensure that all their activities must be addressed in site and task specific risk assessments that must be available in their Health and Safety File. The Risk Review and Monitor Plan must also be available in the Health and Safety File.

4.3. The Principal Contractor must do site establishment as indicated by principal agent. These areas must be controlled at all times.

4.4. The Principal Contractor must have, as a first activity, chemical toilets in the site establishment to ensure that all construction employees have the facility from the outset.

4.5. The Principal Contractor must have an Employee Facilities Inspector appointed in writing, and this person must be required to complete a weekly facilities Checklist.

4.6. The Principal Contractor must control excessive dust as far as possible.

4.7. The Principal Contractor must appoint a Stacking & Storage Supervisor in writing, and a weekly stacking & storage Checklist must be completed by the appointed person.

4.8. The Principal Contractor/sub-Contractors to comply with the National Road Traffic Act 93 of 1996 at all times when carrying out their disciplines on roads, intersections, cross overs etc.

4.9. The Principal Contractor must ensure that the construction vehicles get cleaned off on the sides, between double wheels and the back to prevent loose soil and stones falling from the truck into the public road or any part of the Airport while driving out of the work area.

4.10. The Principal Contractor must despite the cleaning of the trucks ensure that there is at all times someone to clean the public road surface from the soil that might be brought onto the road by the wheels of the construction vehicles.

4.11. There must be a detailed traffic management plan available for any lane restrictions or road closures that may be required throughout the project. This traffic management plan must be communicated to all contractors working on site.

4.12. Sufficient firefighting equipment must be available inside each of the construction vehicle and mobile plant being used on site.

4.13. The Principal Contractor must ensure that all Health & Safety files are updated for the month during the first week of the month.

4.14. The Principal Contractor must take note that no barricading or any form of loose material can be left in any work area after each closure. All work areas to be checked on a register after each shift to ensure that it is kept safe.

4.15. The Principal Contractor must further ensure that his work is timed in such a manner that at the end of every closure that the area is left in a safe and suitable manner not posing any danger to passing aircrafts.

4.16. The Principal Contractor must take special note of the Diagram from the Engineer indicating the Jet Blast Radius and ensure that all material and employees are kept out of this area at all times.
4.17. The Principal Contractor to ensure that every employee on site has a valid, certified copy of their South African ID or a valid work permit and contact information of next of kin, and proof of a medical fitness certificate, in the form of an Annexure 3 issued by a registered Occupational Practitioner. Any employee found on site without the correct documentation will be asked to leave the premises immediately.

4.18. All services like water, electricity and gas will be pointed to the Principal Contractor by the professional team appointed by the Client as far as reasonably possible. There must be a documented proof that the services for water, storm water, sewer, gas (if applicable) and electricity was terminated successfully. For the gas and electricity there must be a Certificate of Compliance to say it was terminated.

4.19. The Principal Contractor must ensure that the appointed Contractors with 5 and more employees have a first aid box and that Contractors with 10 and more employees have a first aid box with at least one person on site with a first aid certificate.

4.20. The Principal Contractor must ensure that at least 1 representative from each appointed Contractor attend at least one safety meeting per month chaired by the Principal Contractor. The Health and Safety Chairman from the Principal Contractor must be nominated and appointed in writing.

4.21. The Principal Contractor must take note that all his employees must undergo the ACSA Permitting System and that no employee without such permit will be allowed on the project. The cost of these permits will be for the Contractors Account.

4.22. The Principal Contractor and all the Contractors are not allowed to burn or deposit any waste on site it is to be discarded to an approved dump site or a recycling facility.

4.23. The Principal Contractor must appoint a Housekeeping Supervisor and also ensure that all Contractors appoint their own Housekeeping Supervisors, to ensure that the Housekeeping on site is maintained on a daily basis. To ensure this each Contractor will be required to complete a weekly Housekeeping checklist.

4.24. Each Contractor is required to appoint a Risk Assessor, Incident Investigator and Fall Protection Plan Developer (if applicable), and each discipline must be appointed in writing, with a competency certificate in the Health and Safety file.

4.25. The Principal Contractor must appoint a Hazardous Chemical Substance Controller in writing, to control and manage the hazardous chemicals on site.

4.26. The Principal Contractor must take note that a Construction Work Permit Application for this Project will be submitted by the Health and Safety Agent (Cairnmead Industrial Consultants). Once the Approved Permit is received, the Permit Number must be displayed at the entrance of the site.

4.27. The Principal Contractor must take note of the details below for the Local Department of Labour offices: Gauteng

4.27.1. Contact person: Marelize Dorfling
4.27.2. Telephone number: 012 309 5008
4.27.3. E-mail address: marelize.dorfling@labour.gov.za

4.28. The Principal Contractor must inform Cairnmead, on the same day, when the Department of Labour issue any written notices for a non-compliance on the site, and a copy of such notice must be forwarded, as soon as possible on the same day, to Cairnmead. The Principal Contractor must not submit any reports to the Department of Labour unless verified by Cairnmead.

4.29. The Principal Contractor and their appointed Contractors must take note that if it is found that an employee committed an unsafe act or caused an unsafe condition on site Cairnmead will take action against the foreman/management/legal appointee responsible for this activity. The most likely action will be that Cairnmead will instruct the foreman/management/legal appointee in question to stop that activity with immediate effect. It will not be tolerated that management allow unsafe conditions.

4.30. The Principal Contractor must appoint a Full Time Health & Safety Officer (registered with SACPCMP) to monitor the activity of the Principal Contractor as well as all the appointed Contractors. It is also required that each appointed Contractor, appoint a Health & Safety representative, irrespective of whether the Contractor employ twenty or less employees for this Project.

4.31. The Principal Contractor and all appointed Contractors must appoint a Hand Tool Inspector, and this person must be required to complete a Hand Tool Checklist at least once a month.

4.32. Site Emergency Evacuation Procedures must be compiled by the Principal Contractor and all employees and Contractors on site must be trained on the Emergency Procedures. This Procedure must be updated as and when needed. The Principal Contractor must also appoint in writing a competent Emergency Evacuation Coordinator. This procedure must be based on and In accordance with the Emergency Procedure of the Airport.

4.33. An Emergency Evacuation Drill must be conducted at least once every six months. The applicable escape routes must be accessible at all times.

4.34. The Principal Contractor must ensure that a close out report is issued to Cairnmead within three working days after a Cairnmead report was issued to site.

4.35. In the event of a fatal incident it will be required that the Principal Contractor and all the appointed Contractors who can have an influence on the incident, that they hand in their Health & Safety files with immediate effect to Cairnmead.

4.36. Site incident reporting procedures must be compiled and communicated with all employees on site.

4.37. The Principal Contractor must ensure that any Incident Investigation is reflected in a Report, and this Report should deal with the detail of the Incident under at least the four headings listed below:

4.37.1. History of the Incident - This will give a description of the project in general, the time and date, the injured persons’ name, designation, ID number, description of the area, activities and the extent of the injuries the person incurred.
4.37.2. Applicable legislation - The investigator must list here in his/her opinion which specific Sections of the Act and Regulations as well as incorporated safety standards are applicable/relevant to the incident.

4.37.3. Evidence - The investigator must list here all the evidence which was taken to consider in the investigation. For example: photos, statements, documentation out of the Health and Safety File and drawings/sketches. This is an example of the types of evidence, but there may be more.

4.37.4. Conclusions - The investigator should compare the evidence with the applicable legislation and highlight where there was no compliance.

4.38. Cairnmead will keep record of the Health & Safety documentation on the Contractor matrix to report on the legal requirements of site. The Contractor matrix has got an assessment with it and these assessments will be done on a monthly basis. The results of these matrix reports and the site notice reports will be combined on one summarised report per Client. This in practice will mean that Cairnmead is involved on various Projects for the same Client / Developer, and it is for this Client / Developer which we will have a combined summary report.

Issued by Cairnmead Industrial Consultants (Pty) Ltd on behalf of Airports Company South Africa

C.P.J. Lourens
CHSM/480/2018
For: Cairnmead Industrial Consultants (Pty) Ltd

Date: 10 May 2019

Received by ........................................ on behalf of ..................................................

Date: _______________
Baseline Hazard Identification and Risk Assessment Register ©

1. Civils Projects
2. Methodology
3. HIRA
4. Risk Assessment

Configuration Management

<table>
<thead>
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<th>Prepared By</th>
<th>Register Number</th>
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<tr>
<td>Cairnmead Industrial Consultants (Pty) Ltd</td>
<td>CIC 3746</td>
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<tr>
<td>Approved By</td>
<td>Revision</td>
</tr>
<tr>
<td>CPJ Lourens CHSM/480/2018</td>
<td>2018/02/20</td>
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<td>Issue Date</td>
<td>Project:</td>
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<tr>
<td>2019/05/10</td>
<td>ACSA Taxiway</td>
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## 2. Methodology

### Plot consequence & likelihood in risk matrix to determine risk priority level

<table>
<thead>
<tr>
<th>Seriousness rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No injury or illness</td>
</tr>
<tr>
<td>2</td>
<td>First-aid treatment case, medical treatment case and temporary discomfort case</td>
</tr>
<tr>
<td>3</td>
<td>Medical mitigation case; occupational disease with non-permanent effect</td>
</tr>
<tr>
<td>4</td>
<td>Lost Time Injury. Occupational disease with permanent consequence e.g. hearing loss</td>
</tr>
<tr>
<td>5</td>
<td>Fatality (as a result of incident or occupational disease e.g. asbestosis)</td>
</tr>
<tr>
<td>6</td>
<td>Multiple fatalities or multiple permanent occupational diseases</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seriousness</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>IV</td>
<td>IV</td>
<td>IV</td>
</tr>
<tr>
<td>Description</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

A = Low; B = Medium; C = High; D = Extra High; E = Very Extra High
Part C3: Scope of works
Reference No. ORT 6029/2019

Generic Specifications
Project Specific: Occupational Health and Safety Specification

Evaluate the risk based on the level of risk determined, as well the effectiveness of the current risk controls

<table>
<thead>
<tr>
<th>Priority</th>
<th>Risk ranking</th>
<th>Action required</th>
<th>Escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Very High</td>
<td>Immediate action required</td>
<td>Report to CEO and Client Agent.</td>
</tr>
<tr>
<td>ii</td>
<td>High</td>
<td>Strong mandatory action required</td>
<td>Report to Contracts manager and Client Agent.</td>
</tr>
<tr>
<td>iii</td>
<td>Medium</td>
<td>Action required, possibly at administrative level</td>
<td>Report to Contracts manager.</td>
</tr>
<tr>
<td>iv</td>
<td>Low</td>
<td>Minor or no action required</td>
<td>No escalation required.</td>
</tr>
</tbody>
</table>

Determine the likelihood that the event will occur

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| E        | • 99% probability, or<br> • impact is occurring now, or<br> • could occur within "days to weeks"
| D        | • >50% probability, or<br> • balance of probability it will occur, or<br> • could occur within "weeks to months"
| C        | • >20% probability, or<br> • may occur shortly but a distinct probability it will not, or<br> • could occur within "months to years"
| B        | • >5% probability, or<br> • may occur but not anticipated, or<br> • could occur in "years to decades"
| A        | • <5% probability<br> • occurrence requires exceptional circumstances<br> • only occurs as a "100-year event"
The organization shall **establish, implement and maintain a procedure(s)** for the on-going hazard identification, risk assessment, and determination of necessary controls.

The procedure(s) for hazard identification and risk assessment shall take into account:

a) routine and non-routine activities;

b) activities of all persons having access to the workplace (including contractors and visitors);

c) human behaviour, capabilities and other human factors;

d) identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization within the workplace;

e) hazards created in the vicinity of the workplace by work-related activities under the control of the organization;

**NOTE 1** It may be more appropriate for such hazards to be assessed as an environmental aspect.

f) infrastructure, equipment and materials at the workplace, whether provided by the organization or others;

g) changes or proposed changes in the organization, its activities, or materials;

h) modifications to the OH&S management system, including temporary changes, and their impacts on operations, processes, and activities;

I) any applicable legal obligations relating to risk assessment and implementation of necessary controls;

j) the design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities.

The organization’s methodology for hazard identification and risk assessment shall:

a) be defined with respect to its scope, nature and timing to ensure it is proactive rather than reactive; and

b) provide for the identification, prioritization and documentation of risks, and the application of controls, as appropriate.

For the management of change, the organization shall identify the OH&S hazards and OH&S risks associated with changes in the organization, the OH&S management system, or its activities, prior to the introduction of such changes.

When determining controls, or considering changes to existing controls, consideration shall be given to reducing the risks according to the following hierarchy:
Before construction start, the Baseline Risk Assessment is a theoretical assessment before the construction start in order to highlight the foreseen hazards, but this is not intended to be seen as an absolute 100% of hazards that may occur.

The Principal Contractor or their appointed Contractor should take this and whatever hazards that may be presented, due to the unique process which get used to execute the specific construction activity. This Baseline Risk Assessment does not give any control measures because that need to be done with the applicable unique Risk Assessment by the Principal Contractor or their appointed Contractor. The risk rating is deliberately rated high because there is no controls in this and without the required controls the possibility of the potential risk are very high, as indicated.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Potential Risk (Source of potential risk)</th>
<th>Controls (Occupational Health &amp; Safety)</th>
<th>Pictorial (where available)</th>
<th>Existing Controls (Environmental)</th>
<th>H-S-E Identification</th>
<th>Risk Rating</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BLD 001</td>
<td>Induction &amp; Medical certificate of fitness</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
<td>As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done.</td>
<td>N/A</td>
<td>H&amp;S</td>
<td>6 E 6E</td>
<td>Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards.</td>
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<td></td>
<td>- Employees entering site not being inducted.</td>
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<td></td>
<td>- Visitors entering site not being inducted / signing visitors’ induction form.</td>
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<td>- Visitors not being provided with the necessary personal protective equipment.</td>
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<td></td>
<td>- Induction being conducted on employees without them being in possession of a valid medical certificate of fitness in the form of an Annexure 3. The medical must be conducted by a registered Occupational Health Practitioner.</td>
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<td></td>
<td>- Construction vehicles and mobile plant operators entering the site without being inducted.</td>
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<td>- Driver of delivery vehicles not made aware of the specific site conditions.</td>
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<td>- Employees being inducted without valid work permits / certified ID Copies.</td>
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<tr>
<td>BLD 002</td>
<td>Site Clearing</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
<td>As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done.</td>
<td>N/A</td>
<td>H&amp;S</td>
<td>6 E 6E</td>
<td>Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards.</td>
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<td></td>
<td>- Use of unsafe mobile plant or machinery.</td>
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<td></td>
<td>- Damage of site fence due to site clearing operations.</td>
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<td>- Damage to existing services not marked or pointed out to the Principal Contractor.</td>
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<td>- Employees being struck by moving plant working in the area.</td>
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<td>- No dust control measures in place.</td>
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<td>- Removing tall trees unsafely.</td>
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<td></td>
<td>- Damage to neighboring properties.</td>
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</table>
| BLD 003          | Temporary water supply                     | - No proper water supply available on site.  
                  |                                              | - Improper water connection causing water spillages on site.  
                  |                                              | - Contaminated waste.  
                  |                                              | - No drinkable water available for employees on site until temporary water supply is available. |                           | N/A            | H&S            | 6 E          | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
| BLD 004          | Temporary power supply                     | - No COC available for the temporary electrical connection used on site.  
                  |                                              | - No weekly inspection done by competent person appointed in writing.  
                  |                                              | - Temporary DB not installed in accordance to the legal requirements. |                           | N/A            | H&S            | 6 E          | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
| BLD 005          | Site establishment                         | - Safety signs and notice boards not placed close to entrance of main gate.  
                  |                                              | - Lay down areas not off sufficient size.  
                  |                                              | - No toilets provided as per requirements.  
                  |                                              | - Not informing employees and public what the site rules are.  
                  |                                              | - Damaged / loose wires exposed at site offices.  
                  |                                              | - Material handling can cause crush injuries and falling objects.  
                  |                                              | - Incorrect placement / position of containers / site offices.  
                  |                                              | - Tripping hazards / Fall risk.  
<pre><code>              |                                              | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times. |                           | N/A            | H&amp;S            | 6 E          | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
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<tr>
<td>BLD 006 Employee facilities</td>
<td>- Insufficient employee facilities on site, causing employees to pollute the site. - Polluting the environment. - Facilities not being cleaned and maintained. - No changing facilities available for employees on site. - No canteen / dining / sheltered eating areas available for employees on site. - No inspections conducted and no checklist completed as per the Cairnmead Specification.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>Waste removal</td>
<td>- Trip, fall and stumble. - Bearers, stacks or palettes collapse. - Falling load can struk employees. - Scattered or protruding objects. - Incorrect PPE issued to workers. - Incorrect placing of rubble shoots. - Incorrect sorting of materials. - Insufficient bins allocated in designated, prominent areas on site for employees to make use of to throw their domestic waste in. - Employees burning waste on site. - Hazardous waste being removed from site as normal waste.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>H&amp;S</td>
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<td>Exit / entry into the public roads</td>
<td>- Injuries to pedestrians / members of public. - Collision with public vehicles. - No points men / flagmen positioned at access gates. - No warning signage displayed at the access gates to site for vehicles turning. - No stop and go process in place should it be applicable.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td></td>
<td>N/A</td>
<td>H&amp;S</td>
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<td>Surveying</td>
<td>- Wrong readings. - Access for surveyor to site being obstructed by material / plants.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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| BLD 010 Underground services and servitude | - Underground services not clearly identified can lead to damages of services during construction activities.  
- Services not pointed out to the contractor.  
- Termination of services not documented and certified. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times. | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&S 6 | E 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
| BLD 011 Excavations  
- Digging of excavations using plant and manual labour.  
- Working in and around excavations  
- Trenches | - Materials can fall onto employees due to dislodgement of earth or rock.  
- Unstable / loose material causes unsafe conditions.  
- Employees not able to enter or exit the excavation safely.  
- Employees being trapped inside excavation due to the collapse of the excavation.  
- Inappropriate placement of excavated materials, plant or other loads close to/on the edge of the excavation.  
- Employees being struck by moving plant working in and around the excavation.  
- Inadequate warning signs of deep excavations for employees in close vicinity.  
- The instability of the excavation due to persons or plant working adjacent to the excavation. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times. | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&S 6 | E 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
| BLD 012 Excavations  
- Digging of excavations | - The presence of or possible inrush of water (example: ground water) and the control thereof. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&S 6 | E 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
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<tr>
<td>using plant and manual labour.</td>
<td>• Working in and around excavations • Trenches</td>
<td>- Employees being exposed to hazardous atmosphere in an excavation including welding fumes, gases and arcs. - Employees being exposed to hazardous chemicals that might be present in the soil where excavation work are being carried out. - Excavation work taking place underneath or close to overhead services (powerlines) and ground mounted services. - Employees being exposed to vibration and high noise levels. - The sides of the excavation is not adequately supported by means of shoring. - Shoring installed not of adequate design. - Previous disturbance of the ground including previous excavation or old sewer lines etc. - Excavation positioned close or nearby existing structures. - Employees being exposed to an airborne contaminant while working inside excavation. - Employees falling into excavation due to inadequate barricading. - The improper management of the interface with other works or trade activities. - Excavations not being inspected daily by the competent appointed Excavation inspector. - Excavation work close to existing services.</td>
<td>controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
<td>illiterate readers when the detailed risk assessment is done.</td>
<td></td>
<td>Regulations (85 of 1993) and incorporated safety standards.</td>
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<p>| BLD 013 | Compaction • Compaction of excavations. • Compaction of bases. • Use of roller. • Use of compactor. | - Checking the machine. - Injury especially to feet and hands from any moving parts. - Not holding the machine firmly when starting it. - Sides of excavation may collapse causing persons to fall or being struck by falling material. - Worker may be buried in soil. - Employee and operators being exposed to high noise levels. - Vibration of machines. - Dust. - Spillages due to refuelling of machinery. - Fire hazard. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times. | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&amp;S | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |</p>
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<td>BLD 014 Backfilling</td>
<td>• Layer works to roads. • Layer works to excavations.</td>
<td>- Excavations not backfilled as soon as possible after excavation work is complete. - Not wearing personal protective equipment. - Sides of excavation may collapse causing person to fall into excavation / employees inside excavation being trapped / buried. - Worker may be buried in / under soil. - Collision of construction vehicles and mobile plant working in close proximity of each other / congested areas. - Possible injuries to employees when handling materials / equipment or plant.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>N/A</td>
<td>H&amp;S</td>
<td>6</td>
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<td>BLD 015 Material &amp; equipment handling</td>
<td>• Receiving and off-loading and loading of equipment and/or material</td>
<td>- Delivery vehicle driver not familiar with the site. - Driver not instructed on site rules. - Vehicle parking in unauthorized area. - Loads incorrectly / unsafely off loaded from vehicle. - Loads incorrectly loaded onto vehicle or stacked incorrectly. - No wayleave in place when offloading materials in public road. - Materials have moved on / inside truck or delivery vehicle making it unstable. - Overloading of vehicle. - Materials falling onto employee. - Employee handling materials sustaining hand injuries. - Materials offloaded in the incorrect area / unsafe area.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>H&amp;S</td>
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<td>BLD 016 Interface with adjacent construction activities of other contractors.</td>
<td></td>
<td>- No communication with other contractors on premises in close vicinity of work area.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>risk assessment is done.</td>
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<tr>
<td>BLD 017 Night work / After-hours work</td>
<td>- No supervision / inadequate supervision on site during after-hours work. - Inadequate illumination. - Rise in increasing shift length. - Insufficient breaks. - Exposed to extreme temperatures (cold) - Use of drugs on site.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>6E</td>
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<td>BLD 018 Concrete breaking</td>
<td>- Incorrect position and concrete chute not correctly positioned. - Slipping and falling of breakers due to incorrect handling. - Danger offload (concrete) falling or rubble bucket hitting people. - Overloading of surface with building rubble accumulating.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>6</td>
<td>6E</td>
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<td>BLD 019 Jack hammer / breaker operations - Use of electrical jack hammer - Use of compressor jack hammer.</td>
<td>- Employees not wearing the correct personal protective equipment while using jack hammer. - Hand and arm vibrations can cause white finger syndrome. - Injury to back and joints from manual handling. - Damage to hearing from constant noise. - Electrocution from faulty equipment or from operating in wet areas. - Operator losing control over the tool. - Foreign objects entering employees’ eyes. - Damage to existing services.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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| **BLD 020** Use of lifting tackle | - Use of unsafe lifting tackle.  
- No test certificate available for lifting tackle.  
- Lifting tackle not inspected by competent LMI at required intervals.  
- Lifting tackle not conspicuously and clearly marked.  
- Defective lifting tackle being used on site.  
- Lifting tackle exposed to extreme weather conditions.  
- Lifting tackle not stored correctly. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times. | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&S | 6 | E | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
| **BLD 021** Operating of construction vehicles and mobile plant  
- Transport of employees & materials to site.  
- Operating plant on site. | - One construction vehicle can bump into another.  
- A construction vehicle can bump/drive over pedestrians.  
- Unauthorized use of construction vehicle and mobile plant.  
- Operator of construction vehicle not appointed and not competent.  
- No reverse hooter installed / not in working condition.  
- Operator not conducting pre-start inspection on machine before operating.  
- Operator leaving the vehicle / plant unattended whilst the engine is still running or with the key still in the ignition.  
- Operator speeding on site.  
- Construction vehicle / mobile plant parked at an incline without stop blocks being put in place behind the wheels. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times. | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&S | 6 | E | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
| **BLD 022** Operating of construction vehicles and mobile plant  
- Transport of employees & | - Construction vehicle or mobile plant overturning.  
- Construction vehicles and mobile plant operating in close vicinity or next to power lines.  
- Inclement weather.  
- Operator speeding on site.  
- Unauthorized / unsafe transportation of employees. | The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner | As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done. | N/A | H&S | 6 | E | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards. |
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<th>Potential Risk (Source of potential risk)</th>
<th>Controls (Occupational Health &amp; Safety)</th>
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<th>H-S-E Identification</th>
<th>Risk Rating</th>
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<td>materials to site. Operating plant on site.</td>
<td>- Integration between pedestrians and construction vehicles not planned and controlled. The Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
<td>risk assessment is done.</td>
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<td>BLD 023 Hand tools</td>
<td>- Tools not inspected prior to use or issue. Strike injuries to hand. &quot;Home – made&quot; hand tools being used. Cuts from sharp blades.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
<td>As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done.</td>
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<td>BLD 024 Use of compressors</td>
<td>- Dirty hoses being used, cannot see damages to hose. Hose fittings not secured properly. Hoses lying across the floor or walkway, being a tripping hazard for employees in the vicinity. Hose ends not secured can cause whipping and serious injuries to employees. Employees working with the compressor or in close vicinity not wearing the required personal protective equipment. Pressure test of pressure tank not conducted every 36 months. No fire extinguisher available in close vicinity. Operator not conducting a pre-use inspection on compressor before use. Air hoses not secured with safety chains to prevent whipping. Pressure regulators not in working condition.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>Stacking and storage</td>
<td>- Brick pallets double stacked and not secured by being tied or wrapped. Brick pallets double stacked next to public areas. No Stacking &amp; storage supervisor appointed.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>Risk Assessment by the Contractor</td>
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<td>machinery and structures are</td>
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<td>assured at all times.</td>
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<td>BLD 026 Housekeeping</td>
<td>- Materials / equipment not stored properly.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>BLD 027 Storage and use of flammable liquids</td>
<td>- Flammable liquids solids, and gasses not stored correctly.</td>
<td>The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of</td>
<td>As far as possible have a picture which can be of benefit for illiterate readers when the detailed risk assessment is done.</td>
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<td>BLD 028 Fire Fighting</td>
<td>- No competent fire equipment inspector appointed.</td>
<td>- The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>BLD 029 Emergency preparedness and response</td>
<td>- Principal Contractors' emergency plan and procedures not issued to subcontractors on site and not communicated with all employees.</td>
<td>- The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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<td>BLD 030 Incident Reporting procedures</td>
<td>- Incidents not reported as per the Cairnmead specification.</td>
<td>- The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.</td>
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| Department of Labour. | - Employees not being trained on Incident reporting procedures.  
- No trained First aider appointed.  
- No first aid kit readily available on site. | | | | | | |
| BLD 031 Incident Reporting procedures  
- First Aid  
- First aid dressing register  
- Incident investigations  
- Reporting of incidents to Department of Labour. | - No first aid kit sign displayed.  
- Name and contact details of trained appointed First Aider not displayed on Emergency contact numbers or on first kit if applicable.  
- Monthly inspections not being done on first aid kit to ensure legal compliance.  
- All usage of first aid kit not recorded on dressing register. | | | | | | |

The Principal Contractor or their appointed Contractor should have a detailed Risk Assessment to reduce the high risk rating to within a lower controlled risk rating. The detailed Risk Assessment by the Contractor should be done in such a manner that the Health and Safety of persons, the safe guarding of machinery and structures are assured at all times.

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N/A | H&S | 6 | 6E | Occupational Health and Safety Act and Regulations (85 of 1993) and incorporated safety standards.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Appointed Client Health &amp; Safety Agent / Risk Assessor</td>
<td>CPJ Lourens</td>
<td>©</td>
<td>2019/05/10</td>
</tr>
</tbody>
</table>
BASELINE RISK ASSESSMENT FOR PROJECT

Irrespective of the risk presented on site, it will be ensured that sufficient supervision is in place on site, that personnel are trained in accordance with legislation, including the requirement for site specific inductions on site to inform personnel on site of the risks and hazards applicable to the site. Construction Manager and Site supervision are responsible for ensuring that the control measures required below are implemented on site.
### ISSUE REGISTER

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### Acknowledgement:

I, ___________________________, representing ___________________________(Contractor), have satisfied myself with the content of this Health and Safety Specification and shall ensure that our employees and contractors on site comply with the requirements of this document, our safety documentation and health and safety legislation.

__________________________________________  ______________________
Signature of Contractor                     Date

### Comments:

_________________________________________________________________________________

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C3.7.2: ENVIRONMENTAL WORK INSTRUCTIONS

THE ACSA ENVIRONMENTAL SPECIFICATION

It is a requirement of the Airports Company South Africa (ACSA) that all construction works within ACSA airports be undertaken in accordance with the ACSA Environmental Specification.

TABLE OF CONTENTS

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SECTION 1: ACSA - ENVIRONMENTAL SPECIFICATIONS OVERVIEW

1. Purpose of the Environmental Specifications
2. Implementation of the Environmental Specifications
3. Structure of the Environmental Specifications

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EP1 Introduction
EP2 Organisational Requirements
EP3 Method Statements
EP4 General Site Procedures
EP5 Site Clearance
EP6 Site Rehabilitation
EP7 Management and Monitoring
EP8 Measurement and Payment

LIST OF ABBREVIATIONS

ACSA Airports Company South Africa
AEC Airport Environmental Committee
EO Environmental Officer
ES Environmental Specification
EMS Environmental Management System for ACSA
ESA Environmentally Sensitive Areas
SABS South African Bureau of Standards
SAHRA South African Heritage Resource Agency
SSSI Sites of Special Scientific Interest
1. PURPOSE OF THE ENVIRONMENTAL SPECIFICATIONS

The purpose of the Environmental Specifications (ES) is to translate the recommendations of the Environmental Management System (EMS) into a contractual environmental specification for application during construction activities.

The Environmental Specifications will be applicable to all construction activities that occur on ACSA owned and/or managed airports. Construction activities include construction of buildings, infrastructure as well as developer / tenant property and rehabilitation works at the airport.

2. IMPLEMENTATION OF THE ENVIRONMENTAL SPECIFICATIONS

The Environmental Specifications is intended for dissemination by ACSA to the “Employer”, who is the party for whom the construction works are to be executed (hereafter referred to as the Employer). The Employer may therefore be ACSA (the relevant Departmental Manager responsible for construction activities), a tenant or a developer with a land lease or another party such as a contractor responsible for developing or rehabilitation of the site or sites at the airport.

The Employer shall ensure that the Environmental Specification is included in the Tender Document(s) issued to the prospective Contractor and is also responsible for appointing/designating, in writing, a Responsible Person for the construction works.

The Responsible Person would manage the requirements outlined in the Environmental Specifications on behalf of the Employer. The Contractors shall incorporate the requirements of the ES in their tender submissions to the Employer and are responsible for implementing the ES on a daily basis.

The Environmental Officer (EO) will be responsible for updating the ES as required, auditing the implementation of the ES for each construction project and for maintaining the document control and record systems associated with it.

The Environmental Specifications report has been structured to be incorporated into a standard engineering tender document as the Environmental Particular Specification.

A ‘Particular Specification’ is the terminology used for a specification that covers activities that are not adequately covered in the standardised SABS 1200 series specifications for engineering contracts, or where the specification is sufficiently detailed to make it inappropriate for inclusion as a variation or addition to a standardised specification.

The Environmental Specification is a generic document applicable to construction projects at all ACSA airports. The majority of the specifications within the ES will apply to all construction work, although it is anticipated that variations to this specification may need to be included for some specific developments. Variations would be made by the Environmental Officer, prior to the issue of the ES to the Employer.
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INTRODUCTION

The ES has been prepared and is to be implemented as part of the Environmental Management Systems for ACSA.

The ES provides specifications that the Contractor shall adhere to, in order to minimise adverse environmental impacts and optimise opportunities associated with construction activities.

The ES is provided to the Contractor at the tender stage so that the costs of implementing the ES are included into the contract cost and so that the Contractor is aware of his environmental responsibilities before commencing work.

The aim of this ES is to ensure that environmental management of site activities is integrated into the other management systems implemented by the Contractor (e.g. quality management, health and safety). For this reason, the ES includes a requirement for the Contractor(s) to develop their own system (i.e. roles, responsibilities and timing) for ensuring that the requirements of the ES are met, and that the Contractor checks, by means of an internal audit, that this system is operating effectively.

ORGANISATIONAL REQUIREMENTS

Organisational Structure

This section outlines the required management structure for the administration of the ES, with particular emphasis on the roles and responsibilities of key individuals.

The organisational structure for the implementation of the ES is presented in Figure 1 and should be viewed in conjunction with the roles and responsibilities below.

Roles and responsibilities

Airports Company South Africa

Airports Company South Africa is ultimately responsible for ensuring effective environmental management at the airport in terms of the scope of the Environmental Management Systems.

Environmental Officer (EO)

The Environmental Officer has been appointed by ACSA, and is responsible for monitoring the implementation of the requirements of the Environmental Specification by the relevant parties as specified.

The Environmental Officer shall:

- Review and approve in writing valid method statements;
- Inspect the Contractor’s site to check compliance with method statements and the requirements of the ES (at least weekly and more frequently if thought to be warranted by the EO) and maintain inspection reports on file;
- Meet with the Responsible Person for the developer or tenant, whereby the Responsible Person reports on the implementation of the ES (at least monthly) and keep a record of minutes of the above meetings;
- Provide material / manuals and assistance to the Responsible Person for the initial environmental training sessions; and
- Report in writing any problems related to conformance with the ES which cannot be resolved in co-operation with the relevant Responsible Person to ACSA Managers or the relevant developer / tenant.

Employer

The Employer shall:

- Include the ES, with any revisions, in any tender document related to construction activities on site;
- Designate in writing a Responsible Person for the proper implementation of the ES; and
- Send a copy of the letter of appointment of the Responsible Person to the EO.

Responsible Person

EP1

INTRODUCTION

EP2

ORGANISATIONAL REQUIREMENTS

EP2.1

Organisational Structure

EP2.2

Roles and responsibilities

EP2.2.1

Airports Company South Africa

EP2.2.2

Environmental Officer (EO)

EP2.2.3

Employer

EP2.2.4

Responsible Person
The Responsible Person for each building site or infrastructure installation shall:

- Develop a system to ensure that the ES is effectively implemented;
- Audit this system so that he/she can demonstrate to the EO that the ES is being effectively implemented;
- Ensure that Contractors staff, sub-contractors, suppliers etc. receive appropriate environmental awareness training prior to commencement of work on the project and maintain records of training. It is anticipated, though not a requirement, that the Responsible Person will deliver training sessions;
- Ensure that responsible persons for sub-contractors are designated to carry out the requirements of the Environmental Specifications;
- Submit method statements to the Environmental Officer for approval as specified in the Environmental Specifications and maintain approved method statements on file; and
- Have sufficient authority to issue site instructions to the Contractors staff on their site. It is probable, though not a requirement, that the Responsible Person will be the Engineers Representative.

**Figure 1:** Organisational structure showing lines of responsibility and communication during the construction phase at the airport.
EP3 METHOD STATEMENTS

The Contractor shall submit a written method statement to the Responsible Person for approval, covering those activities which are identified (in this document and/or by the Environmental Officer), as being potentially harmful to the environment.

Method statements indicate how compliance with the Environmental Particular Specification will be achieved.

The method statement shall state clearly:

- timing of activities;
- materials to be used;
- equipment and staffing requirements;
- the proposed construction procedure designed to implement the relevant environmental specifications;
- the system to be implemented to ensure compliance with the above; and
- other information deemed necessary by the Environmental Officer and Responsible Person.

The method statement shall be submitted at least five working days prior to expected commencement of work on an activity, to allow the Responsible Person time to study and approve the method statement. The contractor shall ensure ACSA that the activity is conducted according to the method statement which will be approved in writing by the ACSA successful tenderer (and also signed by the ACSA Environmental Officer), which shall be done within five working days of receipt.

Due to changing circumstances, it may be necessary to modify method statements. In such cases, the proposed modifications must be indicated and agreed upon in writing between the Environmental Officer and Responsible Person. The EO and Responsible Person must retain records of any amendments and ensure that the most current version of any method statement is being used.

EP4 GENERAL SITE PROCEDURES

EP4.1 Demarcation of Environmentally Sensitive Areas

Before construction commences there needs to be confirmation by ACSA’s Environmental Officer that the vegetation in the area to be impacted by construction activities is not identified as an Environmentally Sensitive Area (ESA). However, should Environmental Sensitive Areas be identified during the construction period the following actions would have to be taken to minimize adverse impacts:

- Environmentally Sensitive Areas, shall not be entered or used for any purpose unless a written motivation has been submitted to the EO by the Responsible Person, and written approval has been obtained from the EO;
- The Contractor shall exercise special care when working close to the ESA’s in order to avoid damage or physical disturbance of these areas. The EO may instruct the Responsible Person to restrict the number of construction personnel and equipment operating near Environmentally Sensitive Areas (ESA’s);
- Damage caused to ESAs by the Contractor shall be cause for the Contractor to make good any damaged areas to the written satisfaction of the EO;
- The Contractor shall note the proximity to the site of any designated ESAs. The Contractor shall fence any ESAs located within 20-m of the site boundary. The fencing shall extend along the boundary of the ESA for sufficient distance to ensure that the location of the ESA is obvious from the Contractor’s site and from the approach to the Contractor’s Site; and
- The Contractor shall make provision for the demarcation of ESAs with fencing to the following specifications:
  - Posts shall be wooden droppers or steel standards where the ground is too hard for wooden droppers to be driven in;
  - The posts shall be long enough and spaced closely enough to support a strand of 12-gauge wire at 750- mm above the ground level; and
  - The top 300-mm of the posts shall be painted white for easy visibility.

EP4.2 Location of camp and depot

The Contractor’s Camp and Materials Storage Area shall be located at a position approved by the Responsible Person. No site staff other than security personnel shall be housed on site.
The Contractor shall provide water and/or washing facilities at the Contractor’s Camp for personnel.

The Contractor’s Camp and Materials Storage Area shall be kept neat and tidy and free of litter.

EP4.3 Demarcation of the site

It is important that activities are conducted within a limited area to facilitate control and to minimise the impact on the existing natural environment, existing tenants and other construction activities in the vicinity and public thoroughfares.

The Contractor shall demarcate the boundaries of the site in order to restrict his construction activities to the site. The method of demarcation and the location of the demarcated area shall be determined by the Contractor and approved by the Responsible Person before any work being undertaken. The Contractor shall ensure that all plant, labour and materials remain within the boundaries of the site. Failure to do so may result in the Contractor being required to fence the boundaries of the site at his/her own expense to the satisfaction of the Responsible Person.

If additional areas (e.g. for lay down, rest areas) are required, these must be approved in writing by the Responsible Person. The Contractor is advised that it may take approximately one week to obtain such permission from the Responsible Person.

Suitable temporary fencing may need to be erected during construction to minimise the risk of injury to the public, and animals.

EP4.4 Ablution Facilities

The Contractor shall provide the necessary ablution facilities for all his personnel.

Toilets with chemical disinfectants shall be provided, with a minimum of one toilet per 15-persons. Toilets shall be easily accessible and shall be transportable. The toilets shall be secured to prevent them from blowing over, and shall be provided with an external closing mechanism to prevent toilet paper from being blown out. Toilet paper dispensers shall be provided in all toilets. Toilets shall be cleaned and serviced regularly by a reputable toilet servicing company. Toilets shall be emptied before long weekends and builders’ holidays.

The Contractor shall ensure that chemicals and/or waste from toilet cleaning operations are not spilled on the ground at any time. Should there be repeated spillage of chemicals and/or waste (i.e. more than three incidents), the EO shall require the Contractor to place the toilets on a solid base with a sump at his own expense. Accumulations of chemicals and waste will have to be removed from the site and disposed at an approved waste disposal site or sewage plant.

Abluting anywhere other than in the toilets shall not be permitted. Repeated use of open areas, rivers or other areas for ablution purposes (i.e. more than three incidents) may result in the guilty party being given a spot fine. The Contractor shall also be responsible for cleaning up any waste deposited by his personnel.

EP4.5 Domestic waste water

Waste-water from any other ablution or kitchen facilities on site shall be discharged into a suitable conservancy tank. The Contractor shall be responsible for ensuring that the system continues to operate effectively throughout the project and that the conservancy tank is emptied as required during the project. The Contractor shall employ a suitable qualified sub-contractor or the local authority to empty the conservancy tank.

EP4.6 Refuse

Refuse refers to all solid waste, including construction debris (e.g. wrapping materials, timber, cans etc.) waste and surplus food, food packaging etc.

The Contractor shall institute an on-site waste management system that is acceptable to the Responsible Person in order to prevent the spread of refuse within and beyond the site. The Contractor is reminded that wind velocities on the construction site can be extremely high.
All waste shall be collected and contained immediately. The Contractor shall institute a weekly clean up of the site if so instructed by the Responsible Person. This daily/weekly clean up shall be for the Contractor’s account.

The Contractor shall not dispose of any waste and/or construction debris by burning or burying. The use of waste bins and skips is recommended. The bins shall be provided with lids and an external closing mechanism to prevent their contents from blowing out. The Contractor shall ensure that all waste is deposited by his employees in the waste bins for removal by the Contractor. Bins shall not be used for any purposes other than waste collection and shall be emptied on a regular basis. All waste shall be disposed of off-site at approved landfill sites.

Waste generated at the construction camps shall be separated into recyclable and non-recyclable waste, and shall be separated as follows:

- Hazardous waste (including used oil, diesel, petrol tins, paint, bitumen, etc.);
- Recyclable waste (paper, tins, glass);
- General waste; and
- Reusable construction material

Recyclable waste shall be deposited in separate skips/bins and removed off-site for recycling. The Contractor may wish to enter into an agreement with the surrounding communities and/or his staff with regard to the collection and sale of recyclable and reusable materials.

Hazardous waste, including waste oil and other chemicals (e.g. paints, solvents) shall be stored in (an) enclosed area(s), and shall be clearly marked. If deemed necessary by the Responsible Person, the Contractor shall obtain the advice of a specialist waste expert concerning the storage of hazardous waste. Such waste shall be disposed of off-site by a specialist waste contractor, at a permitted hazardous waste disposal site.

The EO shall be consulted about, and agree to, the method of storage and disposal of hazardous waste.

The Contractor is advised that spot fines for littering have been included in this document. Offenders found littering will be liable for a spot fine.

**EP4.7 Protection of fauna and flora**

All fauna within and around the site shall be protected. Birds and animals shall not be caught or killed by any means, including poisoning, trapping, shooting or setting of snares. Offenders may be prosecuted in terms of the Animals Protection Act 71 of 1962.

**EP4.8 Defacement of natural features**

Defacement of any features outside of the construction site shall not occur without the prior written permission of the Responsible Person. Any features defaced by the Contractor shall be restored to the satisfaction of the Responsible Person.

**EP4.9 Protection of archaeological and palaeontological Sites**

If any possible palaeontological /archaeological material is found during excavations, the Contractor shall stop work immediately and inform the Responsible Person. The Responsible person will inform the South African Heritage Resource Agency (SAHRA) and arrange for a palaeontologist/archaeologist to inspect, and if necessary excavate, the material, subject to acquiring the requisite permits from the National Monuments Council. Costs incurred will be for the Employer’s account.

**EP4.10 Effluent and storm-water management**

**EP4.10.1 General**

The Contractor must ensure that pollution of the ground or surface water does not occur as a result of site activities. Pollution could result from the accidental release of contaminated run-off from construction camps, discharge of contaminated construction water, chemicals, oils, fuels, sewage, run-off from stockpiles, solid waste, litter, etc.

**EP4.10.2 Run off from construction camps**
The Contractor shall ensure that polluted run-off (excluding silt “pollution”), such as run-off from construction camps where equipment is cleaned and/or serviced, fuel stores, workshops, etc. is not discharged overland. The Contractor may direct it into the local sewerage main, with the written permission of the Responsible Person. Alternatively, the Contractor shall erect an earth/brick berm 0.5 m high around such areas and shall collect all run-off from these areas and store it in a conservancy tank for removal from the site. The Contractor shall ensure that silt-laden water is not discharged directly into any surface watercourses (i.e. vleis, etc.), and shall take suitable measures to prevent this.

Natural run-off shall be diverted away from any camps towards the storm-water drains where these are available. Special care must be taken in areas susceptible to erosion, e.g. steep slopes. The Contractor shall ensure that excessive quantities of sand, silt and silt-laden water do not enter the storm-water drain system, or any surface watercourse. The Contractor shall take appropriate measures, e.g. the erection of silt traps, or drainage retention areas, to prevent silt and sand entering drainage or watercourses. Any partial or complete blockage of the storm-water drainage system shall be cleared by the Contractor at his / her own expense.

**EP4.10.3 Discharge of construction water**

Construction water refers to all water dirtied as a result of construction activities.

The Contractor may discharge silt laden water overland and allow this water to filter into the ground. However, s/he shall ensure that he does not cause erosion as a result of any overland discharge.

The Contractor may discharge limited quantities (less than 50L) of cement-laden water overland, i.e. washings from trowels, wheelbarrows and the like.

Water from washing large concrete-mixing equipment (mixers and the like) shall not be discharged overland. Such water shall be collected in a conservancy tank, removed from the site and disposed of in the correct manner. The Contractor may consider reusing such water for washing other concrete equipment to minimise the amount required to be removed off-site.

Trucks delivering concrete shall not wash the trucks or the chutes on the site. All washing operations shall take place off-site at a location where wastewater can be disposed of in the correct manner.

**EP4.10.4 Servicing/fuelling of construction equipment**

Servicing and fuelling should preferably occur off-site.

However, if these activities occur on site, the Contractor shall ensure that all servicing of vehicles and equipment takes place in designated areas agreed upon by the Responsible Person. All waste shall be collected and disposed of off-site at an appropriately licensed landfill site. All equipment that leaks onto the ground shall be repaired immediately or removed.

Similarly, no vehicles or machines shall be refuelled on site except at designated refuelling locations, unless otherwise agreed with the Responsible Person. The Contractor shall not change oil or lubricants anywhere on site except at designated locations, except if there is a breakdown or an emergency repair. In such instances, the Contractor shall ensure that he has Drizit pads (or equivalent) and/or drip trays available to collect any oil, fluid, etc.

**EP4.10.5 Fuels and chemicals**

The Contractor shall take all reasonable precautions to prevent the pollution of the ground and/or water resources by fuels and chemicals as a result of his activities.

The Contractor shall keep the necessary materials and equipment on site to deal with ground spills of any of the materials used or stored on site.

The Contractor shall ensure that no oil, petrol, diesel, etc. is discharged onto the ground. Pumps and other machinery requiring oil, diesel, which is intended to remain in one position for longer than two days shall be placed on drip trays. The drip trays shall be emptied regularly and the contaminated water disposed of off-site at a facility capable of handling such wastewater. Drip trays shall be cleaned before any possible rain events that may result in the drip trays overflowing, and before long week ends and holidays.
The Contractor shall remove all oil-, petrol-, and diesel-soaked sand immediately and shall dispose of it as hazardous waste.

Should the Responsible Person/ECO and/or the relevant authorities deem it necessary to institute a programme for the removal of contaminated ground resulting from the non-compliance of the controls detailed above, these costs will be for the Contractor's account. Remedial action shall be approved by the ECO and relevant authorities, if appropriate.

EP4.11 Dust control

The Contractor shall be responsible for the continued control of dust arising from his/her operations, through measures including, but not limited to, spraying of water on bare areas, rotovating straw bales into the soil surface and the scheduling of dust-generating activities to times when wind velocity is low. Overhead sprayers shall not be used in windy conditions, due to water loss through evaporation. The use of water carts is preferred.

The Contractor shall inform the Responsible Person 48 hours in advance of anticipated “unavoidable” dust-generating activities. The Responsible Person and/or ECO may inform adjacent land users, tenants and communities about the possibility of dust pollution, and the approximate duration of the problem.

EP4.12 Noise control

The Contractor shall take all reasonable precautions to minimise noise generated on site as a result of his operations, especially when working in areas or on activities that may impact on neighbouring land users.

The Contractor shall comply with the applicable regulations with regard to noise.

The Contractor shall inform the Responsible Person 48-hours in advance of anticipated “unavoidable” noise-generating activities. The Responsible Person and/or Environmental Officer may inform adjacent land users, tenants and communities about the possibility of noise pollution and the approximate duration of the problem.

EP4.13 Materials use, handling, storage and transport

Procedure for material handling must be discussed with and approved by the Responsible Person prior to commencement of this activity.

EP4.13.1 Use of cement/concrete

The Contractor is advised that cement and concrete are regarded as highly hazardous to the natural environment on account of the very high pH of the material, and the chemicals contained therein. Therefore the Contractor shall ensure that:

- concrete is mixed on mortar boards, and not directly on the ground;
- visible remains of concrete, either solid, or from washings, are physically removed immediately and disposed of as waste. Washing visible signs into the ground is not acceptable; and
- all aggregate is also removed.

EP4.13.2 Fuel storage and use

Tanks containing fuels shall have lids and shall remain firmly shut. Only clean, empty tanks may be stored on the bare ground. Fuel stores shall be placed on a bunded sealed base - the bunds shall have a volume of 110% of the volume of the largest tank in the storage area. Any waste-water or spilled fuel collected within the bund shall be disposed of as hazardous waste.

The Contractor shall take all the necessary precautions to prevent fires or spills. No smoking shall be allowed in the vicinity of the fuel stores. Failure to adhere to this specification shall be cause for a spot fine being imposed on the offender.

The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores.

EP4.13.3 Hazardous materials
The Contractor shall comply with all relevant national, regional and local legislation with regard to the transport, use and disposal of hazardous materials. If necessary, the Contractor shall obtain the advice of the manufacturer with regard to the safe handling of hazardous materials. Any claims against the Contractor shall be for his/her account.

The Contractor shall provide the Responsible Person with a list of hazardous substances on site, together with storage procedures for these materials.

The Contractor shall ensure that there is an emergency procedure to deal with accidents and incidents (e.g. spills) arising from hazardous substances. The Contractor shall report major incidents (spills in excess of 50 litres) to the Responsible Person immediately.

The Contractor shall maintain a register of spills or incidents involving hazardous materials, as well as measures taken.

The Contractor shall ensure that information on all hazardous substances is available to all personnel on site. The Contractor shall furthermore be responsible for the training of all personnel on site who will be handling the material about its proper use, handling and disposal.

**EP4.13.4 Transport of materials outside the site**

The Contractor shall comply with all the applicable local, regional and national by-laws with regard to road safety and the transport of materials, especially hazardous and/or toxic materials. Any claims against the Contractor shall be for his account.

The Responsible Person shall provide the Environmental Officer with a schedule of the proposed transportation of significant quantities of hazardous material onto the site, before commencing work on site. The Environmental Officer may request further details or notifications of specific material movements if considered necessary.

**EP4.14 Emergency procedures**

**EP4.14.1 General**

The Contractor shall ensure that emergency procedures are set up prior to commencing work. Emergency procedures shall include, but are not limited to, fire, spills, contamination of the ground, accidents to employees, use of hazardous substances, etc. Emergency procedures, including responsible personnel, contact details of emergency services, etc. shall be made available to all the relevant personnel and shall be clearly demarcated at the relevant locations around the site.

The Responsible Person shall advise the EO of any emergencies on site, together with a record of action taken.

**EP4.14.2 Fire**

The Contractor shall take all the necessary precautions to ensure that fires are not started as a result of his/her activities on site, and shall also comply with the requirements of the Occupational Health and Safety Act 85 of 1993.

No open fires shall be permitted on or off-site. Closed fires or stoves shall only be permitted at designated safe sites in the construction camps. Fires shall also not be permitted near any potential sources of combustion, such as fuel stores, stockpiles of plant material etc.

The Contractor is advised that sparks generated during welding, cutting of metal or gas cutting can cause fires. Every possible precaution shall therefore be taken when working with this equipment near potential sources of combustion. Such precautions include having an approved fire extinguisher immediately available at the site of any such activities.

The Contractor shall be liable for any expenses incurred by any organisations called to assist with fighting fires, and for any costs relating to the rehabilitation of burnt areas.

**EP4.15 Social issues**

**EP4.15.1 Third party or public complaints**

The Environmental Officer shall be responsible for responding to queries and/or complaints and may request assistance from the Responsible Person in this regard.
The Environmental Officer shall notify the Responsible Person of any complaints lodged by a third party, and request appropriate information and measures to address such complaints. The Environmental Officer shall be responsible for maintaining a complaints register in which all complaints are recorded, as well as action taken. This register shall be available to the Responsible Person and the Contractor on request.

**EP4.15.2 Information sharing**

The Responsible Person and/or the Contractor may need to make staff available for formal consultation with affected parties for the purpose of explaining the construction process and answering queries if necessary.

**EP5 SITE CLEARANCE**

**EP5.1 Removal of topsoil**

Following removal of vegetation from the site, all topsoil shall be removed (up to a maximum of 30-cm depth) and stockpiled for re-use in subsequent rehabilitation and landscaping activities. The stockpiles shall not be higher than 2-m in order to minimise composting. The stockpiles of topsoil shall be located in an area agreed with the Responsible Person.

**EP5.2 Stabilisation of steep slopes**

The disturbance of steep slopes, for example by the removal of vegetation, may result in slope instability and erosion by rain and surface run off. The Contractor shall ensure that slopes that are disturbed during construction are stabilised to prevent erosion occurring. Where re-vegetation of slopes is undertaken, this shall be in accordance with the specification provided in EP6.

Slopes that are susceptible to accidental damage during construction shall be protected to reduce the risk of disturbance.

Any erosion that does occur must be reinstated at the Contractor’s cost.

**EP5.3 Removal of alien vegetation**

The Contractor shall clear all alien vegetation from areas within the demarcated site that are to be landscaped or which fall within open space or buffer zones (e.g. pipeline routes, road fringes).

**EP6 SITE REHABILITATION**

**EP6.1 Scope**

The Contractor shall be responsible for rehabilitating any areas cleared or disturbed for construction purposes that are to be incorporated into open space or buffer zones. The Contractor shall re-vegetate such areas in accordance with the specification provided below.

The Contractor shall stabilise, by straw rotovation or other means, any areas that are cleared or disturbed for construction purposes which are not going to be incorporated into open space or buffer zones (i.e. areas that will be subsequently developed by another party).

All construction equipment and excess aggregate, gravel, stone, concrete, bricks, temporary fencing and the like shall be removed from the site upon completion of the work. No discarded materials of whatsoever nature shall be buried on the site or on any other land not owned by ACSA.

**EP6.2 Landscaping and preparation for re-vegetation**

Areas that require reshaping shall be cut, filled and compacted so as to follow the contours of the surrounding landscape. Topsoil removed from the area initially shall be replaced. Care must be taken not to mix the topsoil with the subsoil during shaping operations. Should a crust form on the soil before re-vegetation is commenced, the Contractor shall, at his own cost, loosen the crust by scarifying to a depth of 150-mm.

**EP7 MANAGEMENT AND MONITORING**

This section focuses on the systems and procedures required to ensure that the environmental specifications are effectively implemented. The emphasis is on monitoring, training and penalties/incentives aimed at ensuring compliance with this
EP7.1 General Inspection, Monitoring and Reporting

The Responsible Person shall:

- Inspect the site on a daily basis to ensure that the environmental specifications are adhered to.
- Provide the Environmental Officer with a monthly written report, detailing both compliance with the Environmental Specifications as well as general environmental performance.
- Maintain a record of major incidents (spills, impacts, complaints, legal transgressions etc) as well as corrective and preventive actions taken, for submission to the Environmental Officer at scheduled monthly report back meetings.
- Conduct regular internal audits to ensure that the system for implementation of the ES is operating effectively. The audit shall check that a procedure is in place to ensure that:
  - the Method Statements and Environmental Specifications being used are the up-to-date versions;
  - variations to the Environmental Specifications/Method Statements and non-compliances and corrective action are documented;
  - appropriate environmental training of personnel is undertaken; and
  - emergency procedures are in place and effectively communicated to personnel.
- Provide the required information to the Environmental Officer during external audits conducted, as part of the Environmental Management Systems auditing procedure. The information required will include the reports of internal audits conducted by the Responsible Person.

EP7.2 Environmental awareness training

EP7.2.1 Environmental awareness training prior to commencing work

An initial environmental awareness training workshop shall be held prior to any work commencing at the airport. The Responsible Person shall organise (deliver) the workshop and will record the names of those attending. It is recommended that the Contractor allow one hour for this workshop. The workshop shall be attended by all site staff, including subcontractor’s staff.

The Contractor is responsible for ensuring that personnel commencing work on site after the start of the contract (who therefore miss the initial workshop) are also made aware of the environmental procedures before commencing work.

The emphasis should be on any (potential) environmental impacts relating to the construction activities to be undertaken on site and the related environmental precautions, which need to be taken to avoid or mitigate these impacts. The contractual obligation to comply with the specifications in the Environmental Specifications must also be emphasised (some training material will be specific to certain sites or tenders).

A general environmental awareness programme aimed at all employees of the Contractor, sub-contractors and suppliers is available from the Environmental Officer.

EP7.2.2 Additional environmental awareness sessions

If there are persistent breaches of the specifications contained in the Environmental Specification and/or if new environmental issues arise during the course of construction, the Environmental Officer may require additional environmental training sessions. Attendance at these sessions will be determined by the EO, in consultation with the Responsible Person. The Contractor shall make provision for one hour a month for attendance (of construction staff) at these meetings.

EP7.3 Documentation
The Responsible Person shall ensure that all records of spills, pollution incidents, spot fines, training details etc. are copied to the Environmental Officer for his/her records. All documents shall be open for inspection by the Airport Environmental Committee (AEC).

The Environmental Officer shall ensure that a register of public complaints and action taken thereon, plus the relevant documentation from the Contractors, is maintained.

**EP7.4 Incentives and penalties**

**EP7.4.1 Incentives**

The Environmental Officer may identify a Contractor that is best implementing this Environmental Specifications and may make a (monthly) award to, or acknowledge, that Contractor.

**EP7.4.2 Penalties**

Spot fines shall be imposed by the Environmental Officer on Contractors who are found to be infringing these specifications. The Contractor shall be advised in writing of the nature of the infringement and the amount of the spot fine, and furthermore the Contractor shall determine how to recover the fine from the relevant employee and/or sub-contractor. The Contractor shall also take the necessary steps (e.g. training) to prevent a recurrence of the infringement and shall advise the Environmental Officer accordingly.

The Contractor is also advised that the imposition of spot fines does not replace any legal proceedings by the Council, authorities, land owners and/or members of the public may institute against the Contractor.

Spot fines shall be between R500 and R2000, depending upon the severity of the infringement. The decision on how much to impose will be made by the Environmental Officer, and will be final. In addition to the spot fine, the Contractor shall be required to make good any damage caused as a result of the infringement at his/her own expense.

A preliminary list of infringements for which spot fines will be imposed is as follows:

- moving outside the demarcated site boundaries;
- littering of waste on site and surrounds and burying waste on site and surrounds;
- smoking in the vicinity of fuel storage and filling areas and in any other areas where flammable materials are stored/used;
- making fires outside designated areas;
- defacement of natural features;
- spillage onto the ground of oil, diesel, etc;
- picking/damaging plant material;
- damaging/killing wild animals; and
- additional fines as determined by the Environmental Officer.

The Responsible Person may also order the Contractor to suspend part or all the works if the Contractor repeatedly causes damage to the environment by not adhering to the ES (i.e. more than 3 cases of infringements). The suspension will be enforced until the offending actions, procedure or equipment is corrected. No extension of time will be granted for such delays and all costs will be borne by the Contractor.

**EP7.5 External audit**

Regular scheduled audits of the EMS will be conducted. However, this is not a dedicated audit of the implementation of this document (which is one of many components of the EMS). Nevertheless, it is anticipated that implementation of the terms and specifications contained in this document will be periodically audited as part of the EMS audit.

All documentation held by the Environmental Officer shall be available for the EMS audit at all times. Contractors shall also be required to provide any information required by the EMS auditors.
AIRSIDE PROJECT/WORK SAFETY PLAN

(OHS and Environmental Safety Plans to be submitted separately)

Contractor: ..........................................................
Project/work: ..........................................................
ACSA Dept: ..........................................................

1 Disruption to normal operations (Minimise)
   a. Hours of work
   b. Information to Stakeholders in writing
   c. NOTAM

2 Access
   a. Access point and route
   b. Marking of Route
   c. Movement area crossing points
   d. Vehicle / Equipment control
   e. Communication facilities
   f. Escorts

3 Height restrictions
   a. Vehicles / Cranes
   b. Operating heights of crane jibs

4 Aircraft movement area inspections : F&RS/Airside Safety
   a. Frequency
      ▪ Areas open to a/c use
      ▪ Areas closed to a/c use
   b. Cleaning / sweeping

5 Site inspection
   a. Adherence to safety requirements

6 Marking of obstacles
   a. Hoarding / demarcation of site
   b. Markings
   c. Lighting

7 Safety training
   a. Airside Inductions
   b. AVOP
   c. OHS
   d. Environment

8 Security Permits
   a. Personnel
   b. Vehicles / equipment inspections

9 PPE
   a. Reflective jackets / vests
   b. Ear protections
10 **Hot work permit** – Fire & Rescue

11 **Contractor staff briefings** (proof may be requested)
   a. Precise area in which work may be done
   b. Routes to be followed to and from working area
   c. R/T procedures to be used
   d. Escorting procedures and briefs
   e. Safety precautions to be observed, eg:
      ▪ Maintenance of listening watch
      ▪ Use of look-outs
   f. Reporting procedure to be followed on completion of work

12 **Written warning to contractor of possible hazards to personnel**
   (Attach copy)
   eg: - Jet blast; Noise

13 **List of mechanical equipment**
   (Brief descriptions of equipment may be requested to enhance understanding.)

14 **Schedule of Contractors**

15 **General comments**

Compiled by: ........................................

Signature: ........................................

Date: ........................................
APPENDIX A

SITE INSPECTION PROTOCOL FOR CONSTRUCTION ACTIVITIES

The ACSA: Environmental Officer should audit one or more method statement per site (if applicable), as well as the general requirements of the Construction ES (see checklist overleaf) during a site inspection.

<table>
<thead>
<tr>
<th>Project reference:</th>
<th>Contractor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Person:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

Method statement(s) audited: .................................................................

Tick one box:

☑️  method statement properly implemented
☐  method statement not properly implemented

If method statement not properly implemented, describe deviations/omissions/problems:

1. .................................................................................................................................

2. .................................................................................................................................

3. .................................................................................................................................

Describe actions/plans to ensure proper implementation of the method statement:

1. .................................................................................................................................

2. .................................................................................................................................

3. .................................................................................................................................

Other observations about implementation (if any):

1. .................................................................................................................................

Signed: ............... (ACSA ECO)  Signed: ....................... (Responsible Person)

Date: .....................  Date:  .....................
### SITE INSPECTION PROTOCOL FOR CONSTRUCTION ACTIVITIES

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>REQUIREMENT FOR COMPLIANCE</th>
<th>COMMENTS/ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site</td>
<td>Site boundary is clearly demarcated and activities undertaken within boundary.</td>
<td></td>
</tr>
<tr>
<td>Toilets</td>
<td>Adequate toilets have been provided. These are secure and well maintained.</td>
<td></td>
</tr>
<tr>
<td>Wastewater</td>
<td>Waste water is discharged to the reticulated system or to a conservancy tank which is emptied as required.</td>
<td></td>
</tr>
<tr>
<td>Refuse</td>
<td>Site is generally tidy and free from litter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No burning or burying waste.</td>
<td></td>
</tr>
<tr>
<td>Natural features</td>
<td>No defacement of natural features to be protected in the site or the immediate surrounding area.</td>
<td></td>
</tr>
<tr>
<td>Runoff</td>
<td>No polluted runoff from the site.</td>
<td></td>
</tr>
<tr>
<td>Fuels &amp; chemicals</td>
<td>Servicing &amp; fuelling occurs in designated place. No significant ground contamination.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drip trays in place for pumps and other machinery in fixed location for at least 2 days.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel stores on sealed base and adequately bunded.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hazardous materials stored in an enclosed area or as agreed in method statement and appropriately labelled.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spill clean up materials available on site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No significant spillage.</td>
<td></td>
</tr>
<tr>
<td>Dust</td>
<td>No excessive dust which could cause a nuisance to employees or the public.</td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>No fires on site. Use of closed stoves or fires limited to construction camps.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire extinguishers available near any welding or metal cutting.</td>
<td></td>
</tr>
<tr>
<td>Topsoil</td>
<td>Topsoil removed and stockpiled &lt; 2m high.</td>
<td></td>
</tr>
<tr>
<td>Stabilisation</td>
<td>Slopes stabilised as necessary to prevent erosion.</td>
<td></td>
</tr>
<tr>
<td>Monitoring</td>
<td>Responsible Person’s record of major incidents is up to date.</td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td>All Contractors’ personnel are aware of environmental responsibilities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Records of training maintained by Responsible Person.</td>
<td></td>
</tr>
</tbody>
</table>
C3.7.3: REQUIREMENTS OF GOVERNMENT’S PROGRAMME FOR BROAD-BASED BLACK EMPOWERMENT

C3.7.3.1 SCOPE

1. GOVERNMENT POLICY

There is a compelling need to elevate development of previously disadvantaged individuals and enterprises, and leadership by ACSA is required to establish the framework for the development of previously disadvantaged individuals and enterprises. (based on CIDB NCDP 2011).

The objective of the NCDP is to promote equity ownership across the different contracting categories and grades, as well as improving skills and performance in the delivery and maintenance of capital works across the public sector.

2. APPLICABLE LEGISLATION

All tenders will be considered with specific reference to applicable legislation in force from time to time and which are specifically applicable to organs of state for example the following:-

2.1 Public Finance Management Act No. 1 of 1999;
2.2 Preferential Procurement Policy Framework Act No. 5 of 2000;
2.3 The Constitution of South Africa
2.4 Broad-Based Black Economic Empowerment Act No. 53 of 2003
2.5 National Small Business Amendment Act No. 26 of 2003

C3.7.3.2 DEFINITIONS

1) BBBEE
   Broad-Based Black Economic Empowerment
2) BO
   Black Owned
3) BWOYO
   Black Woman Owned, Youth Owned
4) CIDB
   Construction Industry Development Board
5) CPG
   Contract Participation Goals
6) EME
   Exempted Micro Enterprise
7) ISO
   Quality management systems standards
8) JV
   Joint Venture
9) NCDP
   National Contractors Development Programme
10) PPPFA
    Preferential Procurement Policy Framework Act
11) PWPDO
    Persons with Physical Disability Owned
12) SADC
    Southern African Development Community
13) TSS PPM
    Technical Services Solutions – Project Portfolio Management
TABLE A

<table>
<thead>
<tr>
<th>Size</th>
<th>Total Gross asset value (fixed property excluded) (less than)</th>
<th>Total annual turnover (less than)</th>
<th>Total full time equivalent of paid employees (less than)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>R 5 m</td>
<td>R 26 m</td>
<td>200</td>
</tr>
<tr>
<td>Small</td>
<td>R 1 m</td>
<td>R 6 m</td>
<td>50</td>
</tr>
<tr>
<td>Very Small</td>
<td>R 0.5 m</td>
<td>R 3 m</td>
<td>20</td>
</tr>
<tr>
<td>Micro</td>
<td>R 0.1 m</td>
<td>R 0.2 m</td>
<td>5</td>
</tr>
</tbody>
</table>

C3.7.3.3 CONTRACT PARTICIPATION

Airports Company South Africa aims to contract predominantly with Empowering Suppliers per the definition in P010 004P (ACSA internal transformation policy) were this relates to:
- an increase in local production,
- raw material beneficiation
- retention and employment of black people
- the transfer of skills to black owned EME’s and QSE’s.

1. Contract Participation Goals (CPG)

CPG refers to the extent to which the contracted resources achieve predetermined transformation objectives, expressed as a percentage (%) of the contract value. Bidders are expected to achieve this target by the end of the project.

2. Bidders are to submit a transformation proposal meeting the CPG target for all contracts over R1m including VAT.

3. CPG for this contract will be at 50% which will consist of the following B-BBEE elements:
   3.1. Equity (Target 50%): 40% weighting.
   3.2. Management (Target 50%): 40% weighting
   3.3. Skills development: 5% weighting
   3.4. Enterprise and supplier development: 10% weighting
   3.5. Socio economic development: 5% weighting

4. To facilitate achievement of targets set out in 3, and transfer of skills, the tenderer must subcontract more than 30% of the contract value to CIDB Grade 2 to 6 CE contractors that are women owned, youth owned, PWPDO, or allocate to EME, QSE that are 51% black owned entities.

5. In the event that the Contractor/consultant fails to substantiate that any failure to achieve the contract participation goal relating to the granting of a preference was due to quantitative underruns, the elimination of items, or any other reason beyond the Contractor’s control which may be acceptable to the Employer, the Contractor/Consultant shall be liable to pay to the Employer a financial penalty calculated in the following manner:

\[
P = (0.15 \times (D - Do) \times CA)/100
\]

- where D is the tendered contract participation goal percentage;
- Do is the contract participation goal which the Employer’s representative, certifies based on the credits passed, as being achieved upon completion of the contract;
- CA is the contract amount.
- P is the monetary value of penalty payable

No financial award is due for over performance on CPG.
### Sample score sheet for Calculation of Contract Participation goals

<table>
<thead>
<tr>
<th>Contract value</th>
<th>R1 000 000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ownership</strong></td>
<td></td>
</tr>
<tr>
<td>Target 51%</td>
<td></td>
</tr>
<tr>
<td>Method 1</td>
<td></td>
</tr>
<tr>
<td>% of contract being executed by prime contractor</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>% Black ownership</td>
</tr>
<tr>
<td>Method 2</td>
<td></td>
</tr>
<tr>
<td>% of contract being executed targeted Jv partners</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>% black ownership</td>
</tr>
<tr>
<td>Method 3</td>
<td></td>
</tr>
<tr>
<td>% on contract being executed by targeted sub contractors</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>% black ownership</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td></td>
</tr>
<tr>
<td>Target 51%</td>
<td></td>
</tr>
<tr>
<td>Method 1</td>
<td></td>
</tr>
<tr>
<td>% of contract being executed by prime contractor</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>% Black Management</td>
</tr>
<tr>
<td>Method 2</td>
<td></td>
</tr>
<tr>
<td>% of contract being executed targeted Jv partners</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>% black management</td>
</tr>
<tr>
<td>Method 3</td>
<td></td>
</tr>
<tr>
<td>% on contract being executed by targeted sub contractors</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>% black management</td>
</tr>
<tr>
<td><strong>ESD</strong></td>
<td></td>
</tr>
<tr>
<td>manadatory</td>
<td>minimum 30%</td>
</tr>
<tr>
<td>59%</td>
<td></td>
</tr>
<tr>
<td>Method 2</td>
<td></td>
</tr>
<tr>
<td>% of contract being executed targeted Jv partners</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>% black management</td>
</tr>
<tr>
<td>Method 3</td>
<td></td>
</tr>
<tr>
<td>% on contract being executed by targeted sub contractors</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>% black management</td>
</tr>
</tbody>
</table>
AIRPORTS COMPANY SOUTH AFRICA

OR TAMBO INTERNATIONAL AIRPORT

CONTRACT NO: ORT 6029/2019

REHABILITATION OF TAXIWAYS AT OR TAMBO INTERNATIONAL AIRPORT

C4: SITE INFORMATION

C4.1 SCOPE AND DISCLAIMERS

C4.2 SITE DESCRIPTION

C4.3 CLIMATE DATA

C4.4 CONSTRUCTION CONSTRAINTS AND ENVIRONMENTAL CONDITIONS

C4.5 RESTRICTED ACCESS TO THE SITE OF THE WORKS

C4.6 TRAFFIC

APPENDIX C4A
C4 SITE INFORMATION

C.4.1. SCOPE AND DISCLAIMERS

The information contained in Part C4 is intended as an indication of the conditions likely to be encountered. All drawings, opinions, interpretations and suggested working methods given in this volume must be regarded as a guide. The results are given in good faith but no warranty is given that the information is representative of the entire airport or route, and no responsibility will be accepted for any consequence arising from actual conditions being different from those indicated in this volume.

C.4.2. SITE DESCRIPTION

C.4.2.1 General

The general locality of the main facilities is indicated in the diagram below:

Figure 1: Layout plan showing the work areas as well as access gates to Airside
C4.2.2 Pavement Layer Works

C4.3 CLIMATE DATA

The rainfall in this region averages 515mm per year and mainly follows a summer rainfall pattern. The rainy season starts in December and ends in April, with peak rainfalls in the months of December and January. The driest period occurs in the months of winter and spring, from June and November. Climate data (as obtained from ORTIA) is presented in Figures 1 and 2.

**Figure 2: Temperature data on ORTIA**

**Figure 3: Rainfall data at ORTIA**

C4.4 CONSTRUCTION CONSTRAINTS AND ENVIRONMENTAL CONDITIONS

The following climatic aspects are of significance to the construction and performance of the asphalt work and others:

- During the summer, rainfall occurs mostly in the form of high intensity thunderstorms, the month that should have the least disruption on construction activities is May to November. The rest of the month’s rain delays can be expected with the highest delays in December to February.
Asphalt & BRASO temperatures cool very rapidly when being placed during days when the temperature drops to below 5°C and, it might be difficult to achieve effective compaction of thin asphalt and surfacing layers. Bitumen's are also sensitive for these conditions with possible stripping of stone particularly for night work during the winter months.

It is undesirable to construct the asphalt in very cold weather, which highlights the importance of planning in months May, June, July and August as previously mentioned, asphalt premix work will be severely constrained with the minimum temperature falling below 5°C.

- Very low temperatures increase the stiffness of asphalt mixes and also the brittleness of the mixes. This can lead to early fatigue and shrinkage cracking if design principles are ignored.

- Consistently high air temperatures (> 25°C,) during the summer can result in the softening of the asphalt leading to rutting (deformation) in the upper asphalt under slow moving (creep load) with high tyre pressures. Special attention needs to be given to asphalt and bitumen properties, considering the choice of binder and mix stability.

C4.5  RESTRICTED ACCESS TO THE SITE OF THE WORKS

C4.5.1  Restricted Areas

The contractor will have restricted access to the works at any given time because simultaneous closure of the runway and taxiways during normal operational hours will not be permitted.

Although the entire site will be handed to the Contractor at the start of the contract, the airport manager and the air traffic controller have the right to decide at short notice where on the site the Contractor may work. Works on all Runways, RETs and Taxiways will remain operational and has access on the runway which will be limited only to night work and subject to approval by the AM.

C4.5.2  Access Point and Routes

The designated access point for plant and personnel will be provided to the contractor. The Contractor will be required to provide 24 hour security at these Gates. The security stall at this Gate will be in radio contract with Fire & Rescue at all times to enable the provision of escort services.

Construction material must be delivered via the temporary access gate to the site camp under escort service. The Contractor shall erect, maintain, move and finally remove temporary barriers, fences, signs and markings, all as prescribed by the airport authorities. The Contractor shall ensure that all barricades, markers and signs are placed under escort, prior to entering a work area for construction purposes.

Movement outside the areas demarcated for construction shall not be permitted, unless special arrangements have been made and approved by the AM.

C4.6  TRAFFIC

Detailed Annual Aircraft Movements since 1991 has obtained and is summarised in Figure 4 below. The years referred to are the ACSA financial years ending in March.
The direction of the departure has a significant impact on the pavement design. The majority of departure is in the northern direction (03L) using runway 03L/21R. Information supplied by ACSA is provided in Table 1 below.

Table 1: Directions of departure and arrivals

<table>
<thead>
<tr>
<th>Runway option</th>
<th>Departures</th>
<th>Arrivals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runway</td>
<td>Direction</td>
<td>% Threshold Used*</td>
</tr>
<tr>
<td>03L/21R</td>
<td>03L</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>21R</td>
<td>30%</td>
</tr>
<tr>
<td>03R/21L</td>
<td>03R</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>21L</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note:
*Estimates received from Justeyn Van Zyl
**ATNS traffic sample
APPENDIX C4.A

SUMMARY OF PAVEMENT INVESTIGATION AND MATERIAL TEST RESULTS