

# ETHEKWINI MUNICIPALITY

## Occupational Health & Safety Unit



### SITE BASELINE RISK ASSESSMENT

#### Construction Regulations 5.1.(a)

|                                       |                                                                                                                                                                             |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Document Title                        | Baseline S.H.E. Risk Assessment                                                                                                                                             |
| Client                                | EThekweni Municipality- COASTAL STORMWATER & CATCHMENT MANAGEMENT                                                                                                           |
| Project Name                          | Erosion Protection Works Opposite 24 Mpangele Road, Kwamashu P Section – Wards 104 & 41                                                                                     |
| Contract Number                       | <b>1D-48514</b>                                                                                                                                                             |
| Date                                  | <b>15.09.2021</b>                                                                                                                                                           |
| Compiled by (Safety Officer)          | Name and Surname: <u>Ntombifuthi Mazibuko</u><br>Signature: <br>Date: <u>15.09.2021</u> |
| Approved by (Safety and Risk Manager) | Name and Surname: <u>Arty Zondi</u><br>Signature: <br>Date: <u>15.09.2021</u>           |
| Revision Number                       | <b>BRA:41/09/21</b>                                                                                                                                                         |

## **BASELINE RISK ASSESSMENT**

**1. INTRODUCTION:** In accordance with the Occupational Health and Safety Act, (Act 85 of 1993) the Legislator places specific requirements on an Employer. One of these is prescribed in Section 8(i) of the Act where it requires the Employer to ascertain the risks and dangers which may occur within the workplace or section of the workplace and then goes on to establish working procedures or practices.

**2. PURPOSE:** This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.

**3. SCOPE:** This assessment could be approached on a site, regional or national level concerning any facet of the business operation or process or activity.

### **4. REVIEW AND MONITORING PLAN**

The risk assessment form part of the health and safety plan to be applied on the site and must include the following:

- (a) The identification of the risk and hazards to which persons may be exposed.
- (b) An analysis and evaluation of the risk and hazards identified based on a documented method,
- (c) A documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- (d) A monitoring plan; and
- (e) A review plan

### **5. REFERENCES**

- (a) Tender document number **1D-48514**
- (b) Occupational Health & Safety Act and its Regulation

## 6. LOCALITY PLAN



## **7. SCOPE OF WORKS**

1Erosion Protection Works Opposite 24 Mpangele Road, Kwamashu P Section – Wards 104 & 41

### **The scope of works is as follows:**

- Removal of collapsed gabion wall 25m long and unpack gabion stones for re-use.
- Remove damaged portion of concrete slab to spoil.
- Excavations for the proposed gabion wall position.
- Supply and construct gabion wall 40m long and 2m high
- Supply and place gabion mattresses, 40m long, 0.3m thickness and 8m wide
- Construct concrete slab to extend from the existing slab upstream of culvert inlet.
- Clear and tidy site

## **RISK ASSESSMENTS**

Site establishment

Site clearing, Vegetation, grubbing and Reinstatement

Material delivery to the site

Excavation work for the proposed gabion wall

Construction and installation of mainhole

Construction Activities of Gabions

Construction and installation of Kerbs

Working in public vicinity

The use of Construction mobile plants

Use of hand-tools

Removal of collapsed gabion Existing services

Traffic management

## 1. RISK ESTIMATION AND EVALUATION

### RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

|                                                                   |  |                            |
|-------------------------------------------------------------------|--|----------------------------|
| <b>Exposure (E) How frequently does the hazardous event occur</b> |  | <b>Risk classification</b> |
| Continuously .....                                                |  | 10                         |
| Frequently (daily) .....                                          |  | 6                          |
| Occasionally (weekly) .....                                       |  | 3                          |
| Unusually (monthly) .....                                         |  | 2                          |
| Rarely (few a year) .....                                         |  | 1                          |

  

|                                                                                      |  |                            |
|--------------------------------------------------------------------------------------|--|----------------------------|
| <b>Probability (P) The probability of a loss when the hazardous event does occur</b> |  | <b>Risk classification</b> |
| Frequent (happens often) .....                                                       |  | 10                         |
| Probable (quite possible) .....                                                      |  | 6                          |
| Occasional (unusual, but possible) .....                                             |  | 3                          |
| Remotely possible (has happened somewhere) .....                                     |  | 1                          |
| Improbable (practically impossible) .....                                            |  | 0.5                        |

  

|                                                                                                                                               |  |                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|
| <b>Severity (S) Consequences of the hazardous event</b>                                                                                       |  | <b>Risk classification</b> |
| <b>Catastrophic</b> many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m ..... |  | 100                        |
| <b>Disaster</b> (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m) .....    |  | 40                         |
| <b>Very serious</b> (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000 .....             |  | 7                          |
| <b>Important</b> (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000 .....                             |  | 3                          |
| <b>Noticeable</b> (first aid needed; or interruption of less than 6 hours; damage exceeding R1000) .....                                      |  | 1                          |

  

|                                                      |                                                    |
|------------------------------------------------------|----------------------------------------------------|
| <b>Risk classification (Risk score = E x P x S )</b> |                                                    |
| <b>Risk score</b>                                    | <b>Risk classification</b>                         |
| Over 400-----5                                       | Very high risk – discontinue operation or activity |
| 200 to 400 ----- 4                                   | High risk – immediate correction needed            |
| 70 to 200----- 3                                     | Substantial risk – correction needed               |
| 20 to 70----- 2                                      | Possible risk – attention needed                   |
| Under 20 ----- 1                                     | Risk accepted                                      |

### **BASELINE RISK ASSESSMENT WORKSHEET**

|          | <b>ACTIVITY</b>                                                                                                                                                                                                                                                            | <b>HAZARDS</b>                                                                                                                                                                                                                                                                                                                                                 |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b> | <b>Site establishment</b>                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                |
|          | <ul style="list-style-type: none"> <li>• Manual and mechanical clearing of the land</li> <li>• Off-loading and positioning of containers by mobile crane</li> <li>• Fencing</li> <li>• Installation of temporary water supply, electricity, ablution facilities</li> </ul> | <ul style="list-style-type: none"> <li>• Incompetent construction mobile plant operator</li> <li>• Manual Handling of equipment and materials.</li> <li>• Uneven surfaces</li> <li>• Driving on dangerous and undulating terrain.</li> <li>• Reckless driving.</li> <li>• Electrocution</li> <li>• Incorrect/ poor connection of temporary services</li> </ul> |
| <b>2</b> | <b>Site clearing, Vegetation, grubbing and Reinstatement</b>                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                |
|          | <ul style="list-style-type: none"> <li>• Manually and mechanical site clearing</li> </ul>                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Overgrown vegetation</li> <li>• Incompetent driver/ operator</li> <li>• Unsafe construction mobile plant</li> <li>• Petrol and oil spillages</li> <li>• Unsafe hand tools</li> <li>• Manual handling</li> </ul>                                                                                                       |
| <b>3</b> | <b>Material delivery to the site</b>                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                |
|          | <ul style="list-style-type: none"> <li>• Loading and offloading of equipment manually.</li> </ul>                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Employee being struck by the load.</li> </ul>                                                                                                                                                                                                                                                                         |

|           |                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                             |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | <ul style="list-style-type: none"> <li>Mechanical handling.</li> </ul>                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                             |
| <b>4</b>  | <b>Excavation work for the proposed gabion wall position</b>                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                             |
|           | <ul style="list-style-type: none"> <li>Manual and mechanical excavation</li> </ul>                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Unforeseen underground services</li> <li>Unsafe hand tools</li> <li>Unsafe construction mobile plants</li> <li>Uneven surface/ ground condition</li> <li>Incompetent construction mobile plant operator</li> <li>Oil leak</li> </ul>                                                                                 |
| <b>5.</b> | <b>Laying of storm waterpipe</b>                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                             |
|           | <ul style="list-style-type: none"> <li>Operating of TLB or Excavator in close proximity to workers and public vehicles</li> <li>Using TLB or mobile crane for lifting pipes or other material</li> <li>Incorrect use of defective hand tools</li> </ul> | <ul style="list-style-type: none"> <li>Critical injuries caused by TLB/ Excavator striking workers or TLB rolling over</li> <li>Critical injuries caused by the TLB, crane or Excavator striking workers or rolling over</li> <li>The incorrect and or defective hand tools could result in non- disabling/ first aid case i.e. the hand or eyes</li> </ul> |
| <b>6.</b> | <b>Construction and installation of mainhole</b>                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                             |
|           |                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Manual handling of retaining blocks</li> <li>Falling of object</li> <li></li> </ul>                                                                                                                                                                                                                                  |
| <b>7.</b> | <b>Construction Activities of Gabions</b>                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                             |
|           | Construction of Gabion                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Cutting of the mesh fabric</li> </ul>                                                                                                                                                                                                                                                                                |

|            |                                                                                                                  |                                                                                                                                                                                                                                                                                                                              |
|------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                                                  | <ul style="list-style-type: none"> <li>• Handling wire</li> <li>• Poor ergonomics may result in muscular skeletal injuries</li> </ul>                                                                                                                                                                                        |
| <b>8.</b>  | <b>Working in public vicinity</b>                                                                                |                                                                                                                                                                                                                                                                                                                              |
|            |                                                                                                                  | <ul style="list-style-type: none"> <li>• High Traffic Area cars to be redirected</li> <li>• Narrow area space for public be to</li> <li>• Public exposure to construction activities</li> <li>• Conflict of activities</li> <li>• Community unrest</li> <li>• Distraction of services</li> <li>• Community forums</li> </ul> |
| <b>9.</b>  | <b>The use of construction mobile plants</b>                                                                     |                                                                                                                                                                                                                                                                                                                              |
|            |                                                                                                                  | <ul style="list-style-type: none"> <li>• Unsafe construction plants and equipment</li> <li>• Incompetent drivers/ operators</li> <li>• Uneven surface</li> <li>• Equipment/ machinery failure</li> <li>• Running out of control</li> <li>• Noise</li> <li>• Vibration</li> <li>• Oil leaks</li> <li>• Dust</li> </ul>        |
| <b>10.</b> | <b>Use of hand-tools</b>                                                                                         |                                                                                                                                                                                                                                                                                                                              |
|            | <ul style="list-style-type: none"> <li>• Conducting activities using hand-tools</li> </ul>                       | <ul style="list-style-type: none"> <li>• Unsafe hand-tools</li> <li>• Possible of pinch</li> </ul>                                                                                                                                                                                                                           |
| <b>11.</b> | <b>Removal of collapsed gabion</b>                                                                               |                                                                                                                                                                                                                                                                                                                              |
|            | <ul style="list-style-type: none"> <li>• Mechanical and manual demolition of the concrete foundations</li> </ul> | <ul style="list-style-type: none"> <li>• Vibration</li> <li>• Noise</li> <li>• Incompetent operator</li> <li>• Machine running out of control</li> <li>• Oil spill</li> </ul>                                                                                                                                                |

|            |                                                                                                                                                       |                                                                                                                                                                                                                                 |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Unsafe stockpiling/ dumping of debris</li> <li>• Flying particles</li> <li>• Inclined surfaces</li> </ul>                                                                              |
| <b>12.</b> | <b>Existing services</b>                                                                                                                              |                                                                                                                                                                                                                                 |
|            | <ul style="list-style-type: none"> <li>• Existing roads, watermains, sewerlines, electricity</li> </ul>                                               | <ul style="list-style-type: none"> <li>• Damage to existing services,</li> <li>• Destruction of services in the area,</li> <li>• Electrocution</li> <li>• Unforeseen existing hazards</li> </ul>                                |
| <b>13.</b> | <b>Traffic management</b>                                                                                                                             |                                                                                                                                                                                                                                 |
|            | <ul style="list-style-type: none"> <li>• The use of construction vehicle and mobile plant in the public and next to private roads/ streets</li> </ul> | <ul style="list-style-type: none"> <li>• Poor/ no traffic management plan in place</li> <li>• Lack of traffic management training</li> <li>• Unroadworthy plant and vehicle</li> <li>• Collision with other vehicles</li> </ul> |