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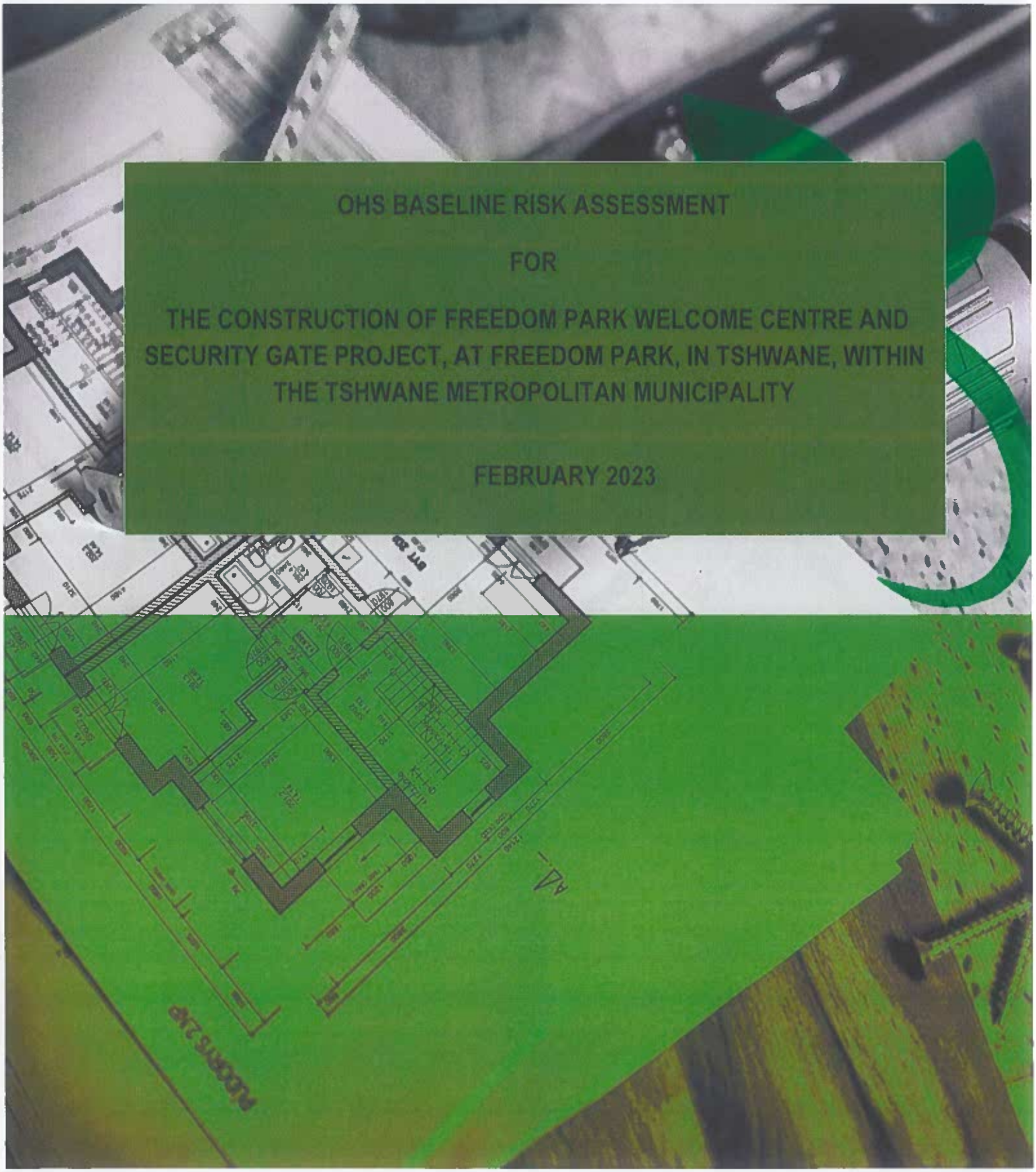
Freedom PARK
a heritage destination
an agency of the Department of Sport, Arts and Culture



OHS BASELINE RISK ASSESSMENT

FOR

THE CONSTRUCTION OF FREEDOM PARK WELCOME CENTRE AND SECURITY GATE PROJECT, AT FREEDOM PARK, IN TSHWANE, WITHIN THE TSHWANE METROPOLITAN MUNICIPALITY

FEBRUARY 2023

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1 PURPOSE

To identify Occupational Health and Safety (OHS) hazards and assess/evaluate associated OHS risks according to a formal, systematic methodology and holistic approach and to implement necessary control measures to facilitate effective risk reduction.

2 DEFINITIONS

2.1 AIA

Approved Inspection Authority, approved by the Department of Labour.

2.2 Acceptable Risk

Acceptable risk is a risk that has been reduced to a level that can be tolerated by the organization, taking into account legal obligations, corporate directives and / or guidelines.

2.3 Competent Person

A competent person is conversant with theoretical and practical knowledge of the required subject matter.

2.4 Hazard

A Hazard is an energy source, situation, object, substance, condition or activity with the potential to cause harm, injury or ill health (and damage).

2.5 Hazard Identification

Hazard identification is the process of recognizing hazards and defining its characteristics, in terms of identifying risks.

2.6 OHS

Occupational Health and Safety

2.7 OHS Act

Occupational Health and Safety Act, Act 85 of 1993

2.8 Risk

A risk is a combination of the likelihood/ probability of an occurrence of a hazard or exposure(s) and the severity/ consequence of injury, harm or ill health that can be caused by the hazard.

2.9 Risk Assessment

Risk assessment is the process of evaluating risk(s) arising from a hazard(s), taking into consideration the adequacy of any existing control measures, and deciding whether or not the risk(s) is acceptable.

3 RESPONSIBILITY

All designated Line Management.

4 REFERENCES

4.1 Section 8 – Occupational Health and Safety Act, Act 85 of 1993

4.2 Construction Regulation 9 – Occupational Health and Safety Act, Act 85 of 1993

5 PROCEDURE

5.1 All activities, products and services (including contractors), which may have an impact on operations and activities shall be evaluated. The following shall be considered as a minimum:

5.1.1 Routine, non-routine, abnormal and emergency scenarios/ activities

5.1.2 On and off-site activities, installations and impacts: design, infrastructure, equipment, materials, resources.

5.1.3 New projects, changes and/ or modifications to equipment, operations or systems

5.1.4 Human behaviours, safety culture

5.1.5 Management of change – changes in the organizational structure, activities and/ or operations (prior to such changes)

5.2 The following methodology shall be applied:

5.2.1 Formal identification and documentation of process flows for each department and designation – including activities, inputs and outputs, major installations, resources required, contractors used, legal responsibilities, etc. All processes prescribed shall be documented.

5.2.2 Identify and evaluate hazards and risks according to point 6 (Instructions) below.

5.2.3 Determine and document control measures according to the following order of hierarchy (Annexure 3):

- Elimination
- Substitution
- Engineering controls: maintenance, monitoring
- Administrative Controls: signage, warnings, training, safe work procedures
- PPE

5.2.4 Compile an OHS risk profile.

6 INSTRUCTIONS

6.1 Evaluate each health and safety risk, as applicable, (according to a worst case scenario) against the Risk Criteria descriptions in the Annexure 1 - Consequence and Likelihood.

Note: each hazard may have different risks impacting health and safety respectively.

6.2 Select the most appropriate description and record the corresponding numerical value against the specific health and safety risk.

6.3 From the allocated consequence level, follow the grid line down to where it meets the allocated likelihood grid line, to obtain a raw risk rating numerical value:

6.3.1 the maximum risk rating that can be derived is 25

6.3.2 the minimum risk rating that can be derived is 1

6.4 Record control measures developed and implemented to manage risks.

6.5 Sort health and safety risks according to the following ranges to develop a health and safety risk profile:

6.5.1	Low Risks	-	Values 1 - 5
6.5.2	Medium Risks	-	Values 6 - 12
6.5.3	High Risks	-	Value 13 – 20
6.5.4	Major Risks	-	Value 21 – 25

6.6 Identify and record additional control measures to reduce risks to an 'acceptable risk' level. Implement accordingly.

7 REVIEW

Assessments shall be documented and reviewed at least annually, and/ or after incidents, non-conformances, change of statutory requirements, audit results, surveys, and management of change.

8 RECORDS

8.1 OHS hazard identification and risk assessments

8.2 Occupational hygiene surveys

8.3 Management of change assessments/ evaluations

APPENDIX 1: RISK EVALUATION CRITERIA

RISK MATRIX		CONSEQUENCE				
Risk Type		1 Minor	2 Low	3 Medium	4 High	5 Major
Harm to People – Safety (S)		First aid injury	Medical treatment injury	Lost time injury	Permanent disability or single fatality	More than one permanent disability or multiple fatalities
Harm to People – Health (H)		Temporary discomfort	Temporary alterations / limitations (no lost time)	Reversible impact on health (lost time)	Irreversible impact on health with loss of quality of life or single fatality	Irreversible impact on health with loss of quality of life of more than one person or multiple fatalities
Environmental Impact (E)		Limited to small area (few meters); low sensitivity (industrial area)	Reduced area (hundreds of meters); no sensitive species/habitat	Impact on an extended area (kilometres); sensitive (scarce / valuable environment)	Environmentally sensitive area (endangered species / habitats)	Permanent impact; highly sensitive area (endangered species, wetlands, protected habitats)
LIKELIHOOD	Considering exposure to that hazard (number of people and frequency of the tasks)	RISK VALUE				
5 (Almost Certain)	The unwanted event is almost certain to happen once or more than once in a six month period.	Medium 11	High 16	High 20	[illegible] 23	[illegible] 25
4 (Likely)	There is a high probability that the unwanted event will occur. The unwanted event has occurred or is likely to occur once per year.	Medium 7	Medium 12	High 17	[illegible] 21	[illegible] 24
3 (Possible)	It is possible that the unwanted event can occur, less than once a year	[illegible] 4	Medium 8	High 13	High 18	[illegible] 22
2 (Unlikely)	There is a low probability for the unwanted event to occur. The unwanted event has occurred or is likely to occur not more than once every 1 to 5 years.	[illegible] 3	[illegible] 5	Medium 9	High 14	High 19
1 (Rare)	There is a very low probability for unwanted event to occur. There are no records of the event occurring or it is highly unlikely that it will occur within the next 5 to 10 years.	[illegible] 2	[illegible] 3	Medium 6	Medium 10	High 15

APPENDIX 2: HAZARD IDENTIFICATION AND RISK ASSESSMENT

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM2										
No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
1.	Site establishment.	Blockade of services to the premises.. Public safety. Traffic impact.	Public injuries Vehicle Accidents Disruption of hospital services	2	3	9	• Maintenance manager to advise the contractor with site establishment. • Safety signage to be displayed on the parameters of the site. • Road safety signs to be displayed where required.	1	1	2
2.	Off-loading material and tools - manual	Heavy loads	Handling heavy loads may result in back and other injuries employees	2	3	9	• Correct manual handling techniques to be promoted through toolbox talks. • Mechanical lifting devices must be used where possible.	1	1	2
3.	Off-loading machinery	Heavy loads	Vehicles and machines may fall over or "run away" causing seve injuries	1	4	10	• Only an experienced operator may load and off-load machinery.	1	3	6
4.	Erecting fence/ Barricading construction area	Sharp wire, hand tools, manual labour	Performing manual labour with hand tools in the presence of sharp edges may result in han finger and possibly lower arm injuries.	1	2	3	• Sufficient hand protection must be worn when working with wire. • Hand tools must be inspected on a monthly basis and defective tools must be destroyed. • Hand tools risk assessment to be communicated with employees.	1	1	1

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM										
No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
5.	Stacking of material	Stacks	Stacks may collapse or fall over if not built and maintained correctly	2	3	9	• Building and breaking of stacks must be done under the supervision of an experienced person. • All stacking and storage activities must conform to CR 28.	2	2	5
6.		Stacking on upper level	Structure may collapse	2	5	19	• The designers must indicate the safe work load for upper levels and the supervisor must ensure that it is not exceeded.	2	4	14
7.	Operating mobile construction equipment/vehicles	Moving machinery	Machine may collide with other machines hit pedestrians resulting in severe injurie	3	3	13	• All construction vehicles must conform to CR 23.	4	2	8
8.			Fuel and oil spillages may result in ground pollution or polluting existing ground finshes.	4	1	7	• Pre-usedinspections must be conducted on all construction vehicles and any deviations must be rectified as soon as possible.	2	1	2
9.	Operating generators	Using a generator	Long exposure to noise may result in hearing loss.	1	3	6	• Generators must be placed in an area away from the labourers.	1	1	1
10.	Operating lifting machinery	Lifting Operations	Falling material Crushing by materials Hand Injuries Toppling Crane	3	4	18	• Competent persons (crane driver and banksmen). • Inspections and certificates to be in place for all equipment. • Materials properly packaged and slung. • Access to lifting area to be restricted.	2	3	9

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11.	Electrical extension cables, other portable electrical equipment and electrical installations	Electricity	Broken insulation, sub-standard connections and broken plugs may result in electrocution. Electric fire	2	4	14	• Regular inspections by an appointed person. • All electrical tools to be in a good condition. • Electrical installations register to be maintained by a competent person • All electrical installations to conform to CR 24.	2	2	5
12.	Bricklaying and plastering	Material, tools and manual labour	Hand and other body injuries, Contact with sharp bladed tools	3	2	8	• Work to be carried out under supervision of competent person. • PPE to be worn. • Safe means of access to be provided.	2	1	2
13.		Working with mortar	Caustic contamination with mortar .	3	2	8	• PPE for mortar to include gloves. • Safe working platforms required • Safe means of access to be provided.	1	2	3
14.	Using angle grinder, circular saw, mitre saw	Rotating disc/blade	Incorrect usage and using fractured dics may cause injuries. Noise Induced Hearing Loss	3	3	13	• The correct discs must be used. • Hearing protection must be worn. • Monthly inspections on all tools. • Trained personnel.	2	2	5
15.	Using portable electrical equipment/tools	High noise levels	Long exposure to noise may result in hearing loss.	2	2	5	• Hearing protection to be worn.	1	1	1
16.	Using electrical tools/equipment	Moving parts	Moving or damaged parts or incorrec usage may result in injuries	2	2	5	• Appropriate PPE. • Regular inspections on all equipment/tools.	2	2	5

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM										
No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENC	RISK VALUE	CONTROLS	LIKEHOOD	CONSEQUENCE	RISK VALUE
17.	Noise and dust from site activity	Noise and dust	Long-term exposure to high levels of dust can result in lung disease; Long-term exposure to high levels of noise may result in hearing loss; Damage to property and equipment nuisance to surrounding property users	1	3	6	• Hearing protection to be worn where applicable. • Respiratory protection must be warn where there is a high level of dust and/or when working with tools creating dust. • Areas to be dampened down to minimize dust. • Property and equipment to be removed from construction areas • Noise to be kept to acceptable levels	1	1	1
18.	Using ladders	Working at heights	Ladder may collapse or person may fall resulting in injuries	2	3	9	• Ladders to be inspected regularly. • Correct usage of ladders to be promoted.	1	1	1
19.	Using hand tools	Hand tools	Improper usage or unsafe condition of tools may result in injuries	3	1	4	• Regular inspections of tools. • Tools to be maintained in a good condition. • Awareness of the correct usage of tools to be promoted.	1	1	1
20.	Welding	Bright light, hot surfaces, fumes,	Exposure to bright light may result in damage to the eyes, Hot surfaces may result in burn wounds, and Inhalation of fumes may cause health problems	3	2	8	• Welder and assistants to wear appropriate PPE (eye, skin and hearing protection). • Respiratory protection to be worn where necessary. • Good ventilation to be ensured.	2	2	5

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM										
No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
21.	Hot work	Heat and flammable substances	Hot surfaces may cause burn wounds and flammable substances may cause fire	2	4	14	• Appropriate PPE to be worn. • Fire extinguishers always kept in close proximity to hot work being performed.	2	1	2
22.	Installing floor tiles	Floor tiles, manual labour and tools	Back and knee injuries, Hand injuries	2	2	8	• Knee pads/kneelers must be worn. • Appropriate PPE to be worn.	1	2	3
23.	Glazing	Glass	Hand and other injuries	3	2	8	• Hand protection. • Appropriate PPE to be worn.	2	1	2
24.	Painting	Paint fumes, contact with paint	Dizziness resulting in fainting and/or falling from heights	3	2	8	• Respiratory protection must be worn. • Areas to be well ventilated. • Always refer to MSDS for instructions on usage, hazards and precautions.	2	1	2
25.	Handling Hazardous Chemical Substances (HCS)	Hazardous chemicals	Flammable and combustible chemicals may cause fires, Chemicals may be consumed if kept in unlabeled containers.	3	3	13	• Always refer to MSDS for instructions on usage, hazards and precautions. • Appropriate PPE to be worn. • Create awareness through toolbox talks. • Labelling all Hazardous Chemical Substance containers.	2	2	5

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM										
No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
26.	Re-fueling plant and motorized equipment	Flammable fumes	Source of ignition may result in fire	2	3	9	• Flammable liquids to be stored safely. • Smoking rules to be enforced on site.	1	2	3
27.	Noise and dust from site activity	Nosie and dust	Long-term exposure to high levels of dust can result in lung disease; Long-term exposure to high levels of noise may result in hearing loss.	1	3	6	• Hearing protection to be worn where applicable. • Respiratory protection must be warn where there is a high level of dust and/or when working with tools creating dust. • Areas to be dampened down to minimize dust.	2	1	2
28.	Working at heights	Working at heights	Person may fall off resulting in major injuries	2	3	9	• Working at heights to be carried out according to specifications of the fall protection plan. • Appropriate PPE to be worn. • Access equipment to be properly constructed – inspection records to be maitained. • Trained personnel construct, dismantle, inspect and control the access equipment.	2	2	5
29.		Material and tools	Material and tools may fall injuring persons below	3	2	8	• Working at heights to be carried out according to specifications of the fall protection plan. • Appropriate PPE to be worn.	1	2	3
30.	Scaffolding and Formwork	Scaffold Formwork	Scaffold may collapse, Formwork may collapse	3	3	13	• Scaffolding and formwork to be erected, inspected, used and maintained in accordance with legal requirements by competent persons.	2	2	5

HAZARD IDENTIFICATION AND RISK ASSESSMENT FORM											
No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
31.	Scaffolding Erection/Dismantling	Scaffold erection and/or dismantling	Person falling from heights, Items of scaffolding falling onto persons, scaffolding collapsing onto others below	4	3	17	• Scaffolding should be designed to take the imposed loads. • Appropriate PPE to be worn, including fall arrest PPE. • Scaffolding and formwork to be erected, inspected, used and maintained in accordance with legal requirements by competent persons.	3	2	8
32.	Ceiling and insulation	Material, tools and manual labour	Material and tools may fall injuring persons below	2	2	5	• No person may work underneath people working on a scaffold or ladders.	2	1	2
33.	Tiling walls and floors	Tiles, manual labour and tools	Back and knee injuries, Hand injuries	2	2	8	• Knee pads must be worn. • Tilers must take regular beaks. • Appropriate PPE to be worn.	1	2	3
34.	Installing cupboards	Manual labour and tools	Hand and other injuries	2	2	5	• Appropriate gloves to be worn where necessary.	2	1	2
35.	Plumbing	Lifting and installing geysers and pipes	Back sprains, property damage from burst pipes	1	2	3	• Enough personnel to assist with lifting. • All plumbing to be carried out by competent persons.	1	1	1
36.	Plumbing	Plumbing	Falling material, falling from heights, fire, burns, exposure to lead fumes.	2	2	9	• Appropriate PPE to be worn. • Trained and competent personnel. • Safe means of access and egress. • Emergency procedures must be in place.	2	1	2

No.	TASK / ACTIVITY	HAZARD/ ENERGY	UNWANTED EVENT/ RISK	LIKELIHOOD	CONSEQUENCE	RISK VALUE	CONTROLS	LIKELIHOOD	CONSEQUENCE	RISK VALUE
37.	Manual labour and ergonomics	Heavy loads and uncomfortable positions.	Muscle and other injuries	3	2	8	• Safe manual handling techniques to be applied. • Create awareness for safe manual handling through tool box talks. • Appropriate PPE to be worn.	1	1	1
38.	Supply of welfare facilities	Dirty facilities, Unhygienic conditions	Illness and disease may be contracted	4	2	12	• Regular inspections to be conducted. • Rules to keep facilities hygienic to be enforced. • Awareness through toolbox talks.	2	1	2
39.	Underground services.	Key services disrupted to the facilility. Delay to project. Loss of amenity.	Disruption of key services to hospital. Personal injury	3	5	22	• Underground services to be identified on the drawing. • Dig/work permit to be obtained from the facilities maintenance manager. • Appropriate PPE to be worn. • Trained and competent personnel.	3	4	18
40.	Excavations	Employee/Plant falling into the excavations. Employees working close to mobile plant. Interuptions of underground	Head injuries Back injuries Disabling injuries Foot injuries Electrocution Property damage	4	4	21	• Personnel to be competent. • Excavations to be inspected by the competent person • Ensure all emergency procedures are in place. • Safety signage to be displayed where required. • Appropriate PPE to be worn	3	3	13

41.	Vehicular access to the work site	Height restrictions	Possible damage to vehicles and entrance tunnels	3	3	13	• Height restriction requirements signage must be clearly displayed at all entrance points and where overhead heights are altered. • Vehicle operators entering to observe and adhere to overhead restrictions.	2	2	5
42.	Vehicle movement and interfacing	Haulage vehicles	Vehicle collision Pedestrian collision Damage to property	3	3	13	• Vehicle operators to observe a speed limit of 20 at all entrance and exit points. • Operators to observe lanes provided and all directional signage. • Vehicles to be parked only at designated parking areas. No parking at exit and entrance points	2	2	5
43.	Working at heights, including roof work	Working at heights	Person may fall off resulting in major injuries	2	3	9	• Working at heights to be carried out according to the CR 10 of the fall protection plan CR 10. • Roof works to conform with CR 10 (5). • Appropriate PPE to be worn. • A Method Statement to be compiled	2	2	5
44.	Public Safety	Unauthorized entry	The public accessing the site without authorization, exposing them to dangerous activities on site.	4	3	13	• Security personnel to control access on site. • All safety signs to be visible and to be monitored continuously. • Appropriate hoarding, netting, barriers to be installed as necessary to protect the public. • Overhead gantries and platforms to protect walkways from falling objects.	2	2	5

STRUCTURAL DRAWINGS

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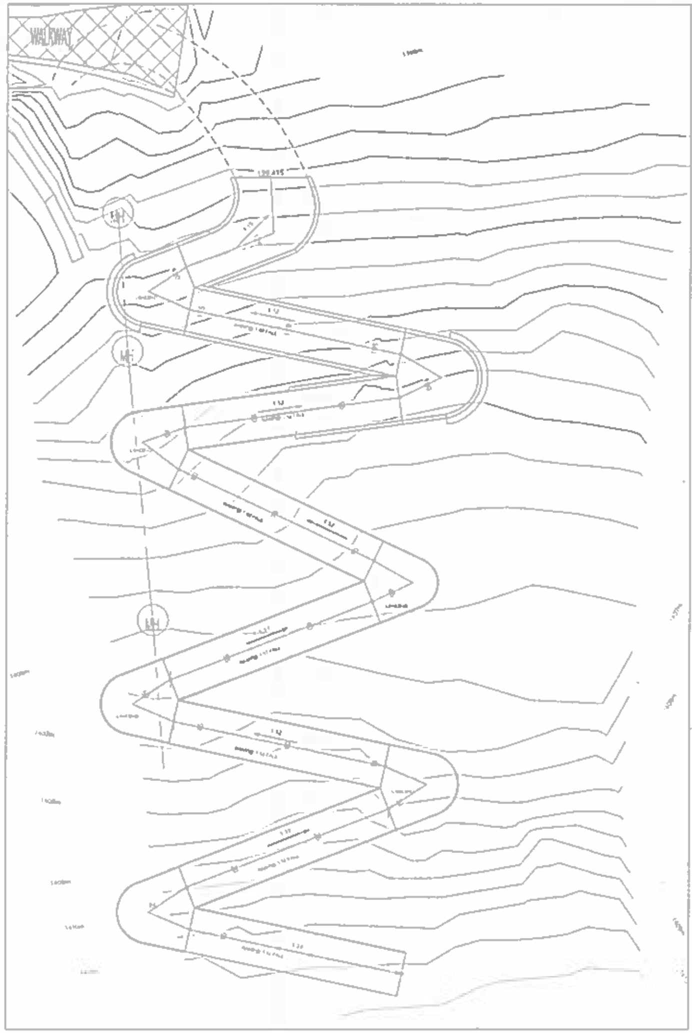

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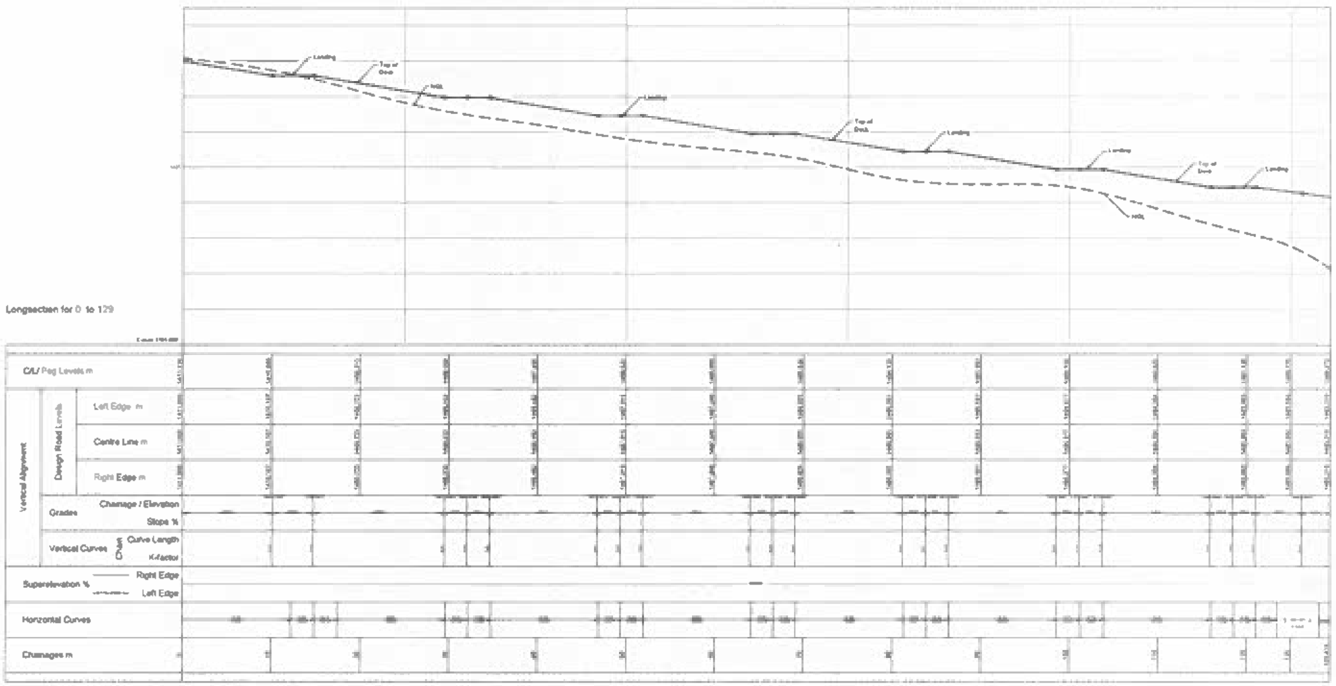

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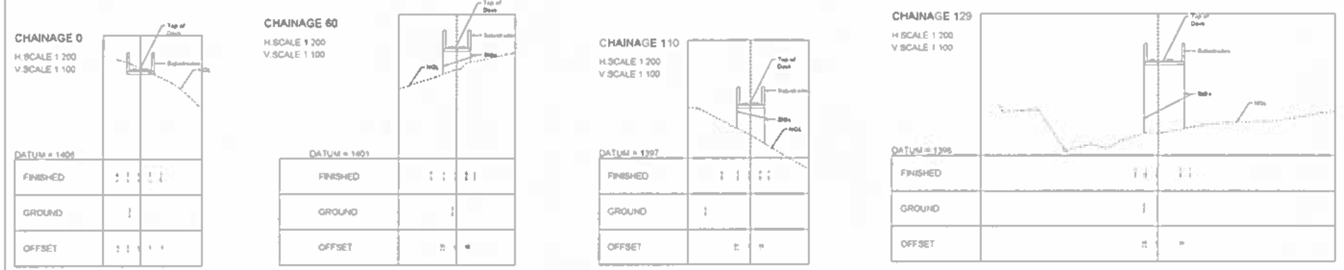

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ISSUED FOR INFORMATION

FREEDOM PARK
7TH AVENUE SALVOKOP
PRETORIA

WALKWAY LAYOUT AND DETAILS

AS SHOWN
NOVEMBER 2022
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INFORMATION

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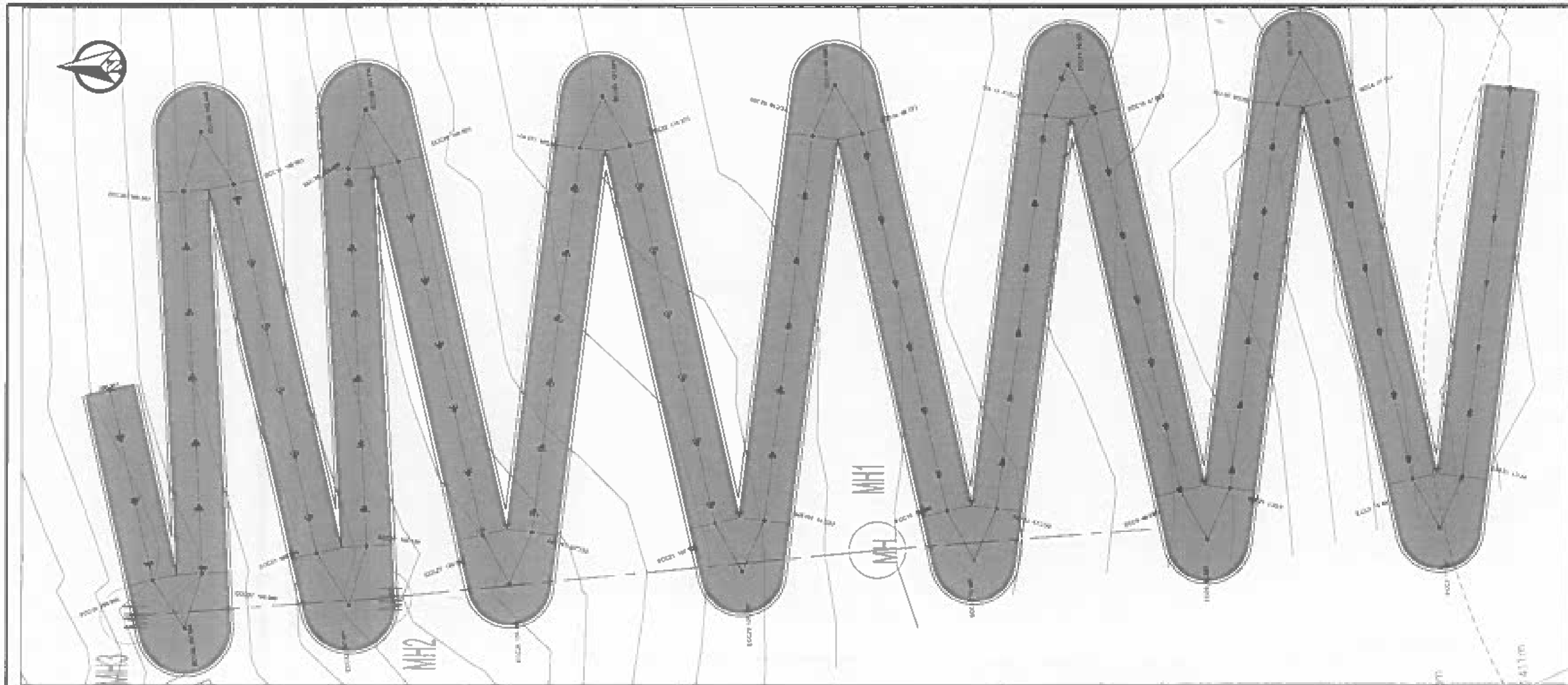

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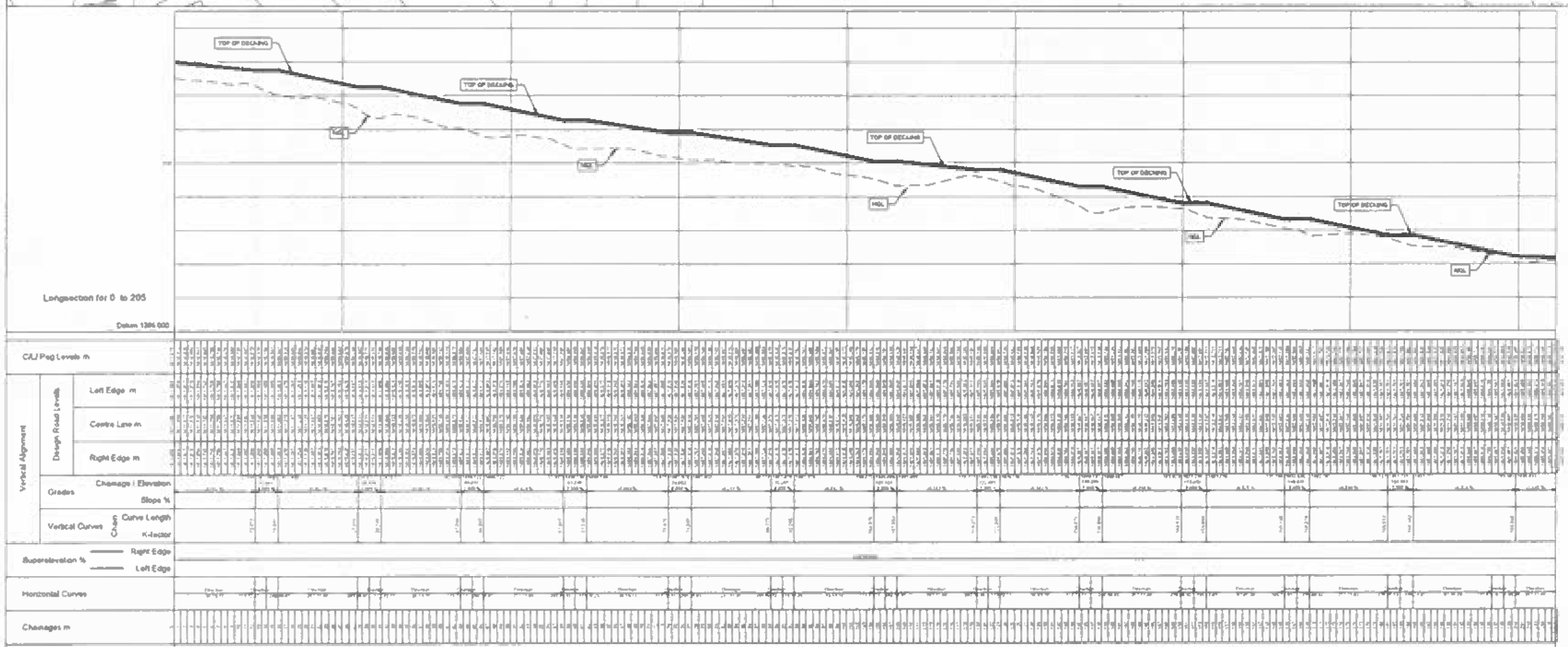

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ISSUED FOR INFORMATION

FREEDOM PARK
7TH AVENUE SALVOKOP
PRETORIA

WALKWAY LAYOUT AND DETAILS

AS SHOWN
NOVEMBER 2022
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WALKWAY CROSS SECTIONS
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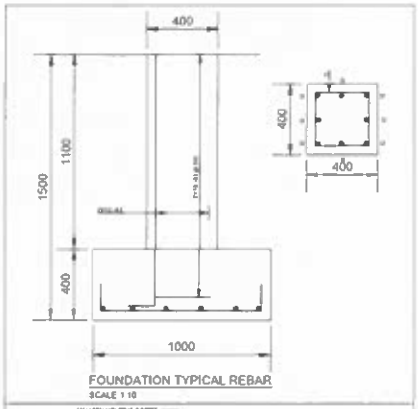

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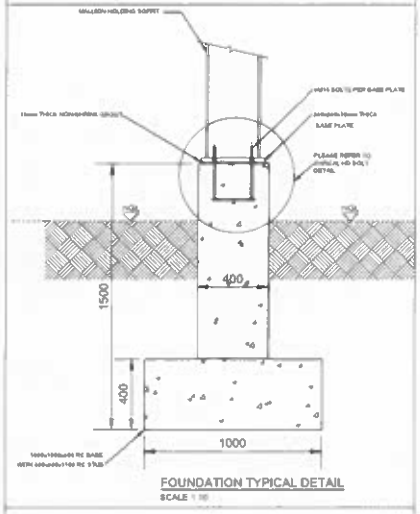

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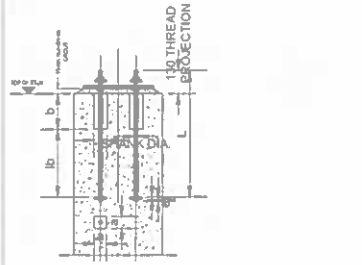


HD BOLT SCHEDULE - COMMERCIAL QUALITY						ANCHOR PLATE					POCKET
30mm dia.	Thd 3mt c	Tensile capacity kN	Bolt length	Bend length	Projection	Size	Plate thick	Hole dia	Weld size Under-side	Top bolt	kNom	Dia.
		324	L	dL	e							
16	M16	96.5	350	105	30	60	10	18	4	5	100	75

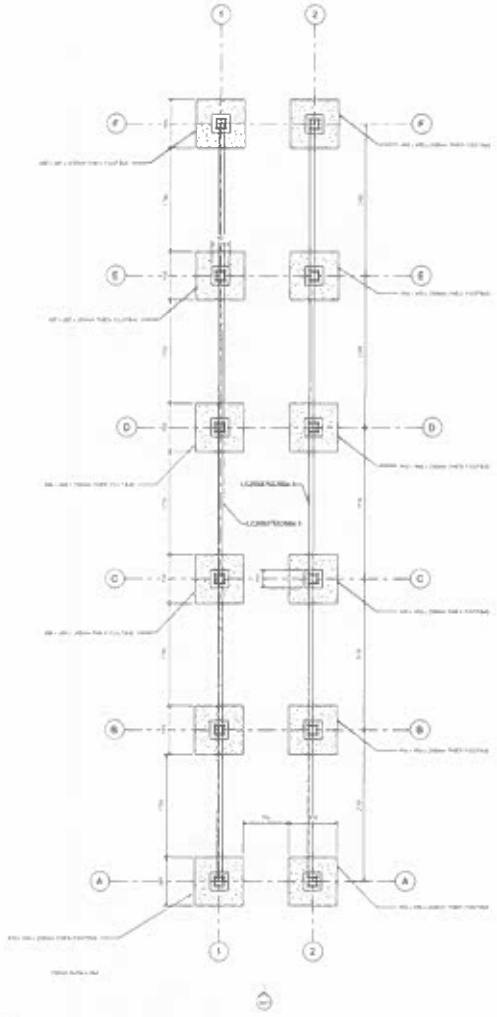
TYPICAL HD BOLT DETAIL
SCALE 1:10

ISSUED FOR INFORMATION

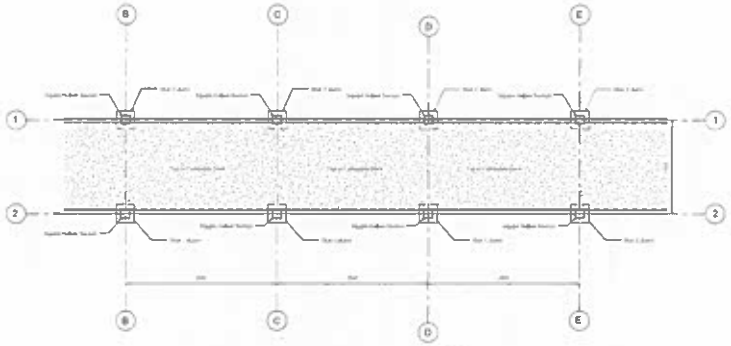
FREEDOM PARK
7TH AVENUE SALVOKOP
PRETORIA

WALKWAY CROSS SECTIONS AND FOUNDATION DETAILS

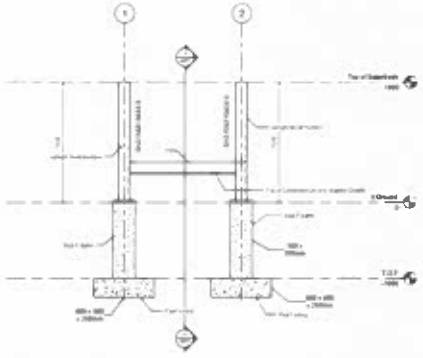
AS SHOWN	PG	INFORMATION	
NOVEMBER 2022	LF	A0	
21007-RDM-ST5-305		00	



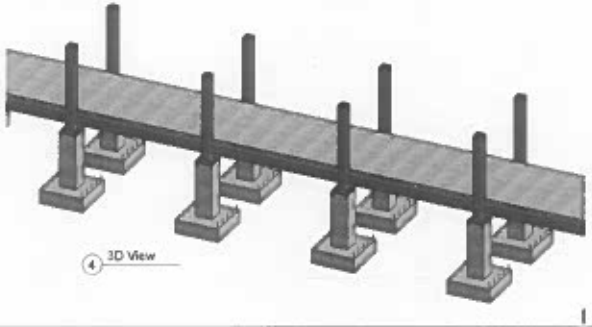
2 Foundation Layout



3 Top of Deck View



1 Typical Cross Section



4 3D View

Rev	Description	Date

STATUS

PURPOSE OF ISSUE

PROJECT

Freedom Park

TITLE

Proposed Walkway

CLIENT

DRAWN BY
Author

CHECKED BY

DATE

SCALE @ A0
As indicated

PROJECT NUMBER

DRAWING NUMBER
S001

REV