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PROJECT No: M20/3870 **17th December 2020**

DERICK PEACOCK ASSOCIATES
Resort and Leisure Planners
P.O. Box 11352
SILVER LAKES 0054

Attention: Mr. Derick Peacock

Dear Sir,

FACTUAL REPORT ON A PHASE 1 GEOTECHNICAL INVESTIGATION CARRIED OUT FOR THE PROPOSED RESORTT AND RESIDENTIAL DEVELOPMENT ON: *PORTIONS 2 AND 3 OF TENBOSCH 661-JU,* NKOMAZI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE

1. INTRODUCTION

This factual report supersedes our preliminary report dated 13th December 2020 and presents results and observations on a foundation investigation carried out during November 2020 for a proposed resort and residential development that is to be situated on Portions 2 and 3 of the farm Tenbosch 661-JU. The investigation was carried out at the request of Mr. Derick Peacock who is acting on behalf of his client, Bluegrass Trading 1028, the registered owner of the property who proposes to establish a resort and residential development on the property.

The development will comprise of a number of waterfront stands overlooking the Crocodile River to the north and east as well as a number of bush lodges. The investigation consisted of a detailed geotechnical investigation during which time a number of test pits were excavated across the site, combined with soil sampling and testing.

2. TERMS OF REFERENCE

The objectives of the desk study were to: -

- Determine the engineering properties of the site soils and bedrock including potentially expansive material, low bearing capacity soils and areas difficult to excavate.

- Present appropriate recommendations for residential township design and precautionary measures in accordance with the requirements of the National Home Builders Registration Council's guidelines.

The investigation was carried out in terms of written instructions received from Mr. Derick Peacock during October 2020.

3. INFORMATION CONSULTED

The following information was available and was consulted: -

- The 1: 50 000 Topographical Map 2531BD & 2532AC Komatipoort.

- The 1: 250 000 scale Geological Series Map Sheet Number 2530 Barberton.

- A site contour plan prepared to a scale of 1: 2 000 by Van Staden Land Surveyors showing existing roads and structures, the boundaries of the proposed development and surface contours at 0,5m intervals.

- A site layout plan prepared to a scale of 1: 10 000 by Derick Peacock Associates showing the proposed layout of the development.

- A colour aerial photograph of the property was obtained from Google Earth via the Internet.

- "Veld Types of South Africa" by J.P.H. Acocks. Third Edition 1988. Memoirs of the Botanical Survey of South Africa, No. 57.

- The publication "National Home Builders Registration Council's Home Building Manual, Part 1 & 2, February 1999.

4. SITE DESCRIPTION

The site for the proposed resort and residential development is located due north of Komatipoort, the study area is of irregular shape and covers a surface area of some 230 hectares. The study area is a nature estate containing several species of game, it contains a few private lodges located in the northern part of the estate where it overlooks the Crocodile River to the north. The study area is located on the southern limb of a broad valley that is flanked by the Crocodile River to the north and east and by agricultural activities to the south and west. Several non-perennial drainage features criss-cross the site and terminates in small earth dams of which some are supplied with water from the Crocodile River. Large portions of the site is densely covered by indigenous bush and the ground surface drains via sheetwash via the aforementioned drainage features towards the east and north in the direction of the Crocodile River at an average gradient ranging of some 5%.

5. SITE INVESTIGATION

Forty-five test pits were excavated across the site for the new development using a New Holland B90B backactor supplied by Corbi Construction from Malelane. The test pits were entered and inspected by the undersigned, a registered professional engineering geologist, who described the soil and bedrock formations in terms of the methods advocated by Jennings *et al* (1973) namely, moisture condition, colour, soil consistency, soil structure, soil type and origin (MCCSSO). During the test pit profiling, disturbed an undisturbed representative soil and a water sample were recovered from the test pits and submitted to Roadlab's commercial soils laboratory in Centurion for testing and identification. Detailed descriptions of the test pit profiles are provided on the Soil Profile Sheets in Appendix 1 of the report whilst the laboratory test results appear in Appendix 2. The location of the test pits is shown on the "Geotechnical Map", Drawing Number M20/3870 at the back of the report.

6. OBSERVATIONS

The study area is underlain by transported sandy, clayey and gravelly soils overlying granophyre and gabbro bedrock belonging to the Komatipoort Suite and by basalt bedrock belonging to the Letaba Formation, Lebombo Group, Karoo Supergroup. Most of the study area is characterised by an abundance of rock outcrops and has been apportioned into three prominent geotechnical soil zones, Soil Zones "A" to "C" as shown on the "Geotechnical Map", Drawing Number M20/3870 in the pocket at the back of the report.

Soil Zone "A" materials cover the *major portion* of the site and a generalized and simplified description of the typical soil profile that may be encountered here is as follows: -

0,0 – 0,3: Abundant small (50mm in diameter) rounded and sub-rounded QUARTZITE GRAVELS and PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker. Overall consistency is loose. Often covered by a veneer of clayey SAND up to 0,5m in thickness. The surface area in this soil zone contains numerous small and medium-sized corestones and abundant hard rock outcrops.
0,3 – 0,5: Dry, dark brown speckled yellow, loose, clayey GRAVELS; residual basalt.
0,5 – 1,0: Dry, dark olive green speckled white and orange, very dense, coarse SAND; residual basalt.
1,0+: Dark olive speckled orange, highly weathered, closely jointed, soft rock BASALT or occasionally GABBRO in western part of this soil zone.

Soil Zone "B" materials occupy the *northern portion* of the site and a generalized and simplified description of the typical soil profile that may be encountered here is as follows: -

0,0 – 1,5: ***Eastern part of zone****: Dry, dark red becoming dark orange red, very stiff, voided and slightly shattered, clayey sandy SILT containing tree roots and termite activity; colluvium.*
0,0 – 1,6: ***Western part of zone****: Dry, dark brown, yellowish brown and greyish brown, loose becoming dense, voided, clayey fine SAND containing tree roots; colluvium/alluvium.*

Soil Zone "C" occupies an area in the *south-western portion* of the site and a generalized and simplified description of the typical soil profile that may be encountered here is as follows: -

0,0 – 0,8: Dry, dark greyish brown, stiff becoming very stiff, shattered, sandy CLAY containing tree roots; colluvium. Thickness of this horizon ranges from 0,1m to 0,9m. The surface area around test pits in this soil zone contains numerous to abundant small and medium-sized corestones (small boulders) of mixed origin, abundant hard rock outcrops characterises this soil zone as well.
0,8 – 0,9: As above and containing numerous rounded GRAVELS and PEBBLES of assorted origin; pebble marker.
0,9 – 1,2: Dry, olive blotched orange and black, very dense, relict jointed, clayey coarse SAND; residual granophyre.

Slow excavation to abrupt refusal of the backactor was experienced from below an avergae depth of about 1,0m below surface in hard rock basalt and granophyre across Soil Zones "A" and "C", no refusal was experienced across Soil Zone "B" down to a depth of at least 1,6m below surface. The water table, whether perched or permanent, was not encountered in any pit during the investigation which was carried out during the latter part of the dry season.

7. GEOTECHNICAL CONSIDERATIONS

7.1 Compressible and Collapsible Soils

A number of undisturbed soil samples, representative of the colluvial soils that blanket Soil Zone "B", were tested to determine the collapse potential of the material according to the method advocated by Jennings (1974). A summary of the results of the laboratory tests appears below in Table 7.1.

TABLE 7.1: COLLAPSE POTENTIAL TEST RESULTS

HOLE NO	DEPTH (m)	DRY DENSITY (kg/m³)	COLLAPSE POTENTIAL (%)	COMPRESSI-BILITY (%)	TROUBLE RATING
TB/17	0,50	1 593	9,64	1,93	Trouble
TB/20	0,50	1 301	18,20	3,77	Severe Trouble
TB/20	1,20	1 529	12,50	0,28	Severe Trouble
TB/28	1,00	1 359	12,63	2,80	Severe Trouble

An analysis of the above results indicates that the colluvial sandy and silty soils which blanket Soil Zone "B", potentially moderately to highly collapsible and compressible with a collapse rating of "trouble" to "severe trouble" in terms of collapse settlement, according to Jennings. The upper sandy and gravelly horizons that extend down to some 0,1m to 0,8m below surface across Soil Zone "A" are considered to be potentially collapsible compressible, based on a visual appraisal of the soil structure i.e. a loose consistency and a voided texture. The gravelly soils were unfortunately too friable to take undisturbed soil samples, lab results will confirm the compressibility of the sandy and silty soils.

7.2 Expansive Soils

The site soils blanketing portions of Soil Zone "C" are generally clayey and are potentially "medium" in the degree of expansiveness, based on the results of the laboratory tests and according to the Van der Merwe (1964) method. A total surface heave value ranging from 7,5mm to possibly up to 20mm is predicted here, should the moisture condition of the soils change from a desiccated to saturated condition. Soil Zone "A" is occupied by soils that are potentially "low" in the degree of expansiveness and where total surface heave values of less than 7,5mm is predicted although pockets of Soil Zone "C" are present where heave values may exceed 15mm.

7.3 Excavation Characteristics

Very hard machine excavation, the use of jackhammers and probably "pop" blasting will be required to remove the hard rock basalt and granophyre that occupies large portions of the study area. Gradual to abrupt refusal of the backactor was generally experienced at a depth of about 1,0m below surface across Soil Zones "A" and "C" in either very dense residual soils or in bedrock where the test pits were excavated between rocky outcrops. No problems should be experienced in excavating the site soils down to a depth of at least 1,5m below surface using conventional earth-moving machines across Soil Zone "B". The sidewalls of deep excavations should remain stable during construction in the dry season, unstable sidewall conditions may occur in the upper portions of excavations during construction in the wet season.

7.4 Foundations

Soil Zone "A"

The major portion of the proposed development classifies as a NHBRC Site Class "C/S-S1/R" according to the guidelines of the NHBRC Standards and Guidelines of October 2014 and in view of the moderate horizon of potentially compressible soils which blanket this soil zone, one of the following foundation systems may be considered for rigid, residential masonry structures:-

Deep Strip Foundations

- Normal construction with drainage precautions and with mesh reinforced floor slabs.
- Founding on the dense residual basalt or granophyre or onto bedrock at depths ranging from 0,2m to 0,8m below surface and adopting a safe allowable bearing pressure ranging from 300 kPa to 1MPa, depending on the quality of the material exposed in the foundation trench and taking cognizance of an undulating foundation horizon.

Soil Raft

- Remove in situ material to 1m beyond perimeter of building to a depth of 1,5 times the widest foundation or to a competent horizon and replace with material compacted to 93% Mod AASHTO density at -1% to +2% of optimum moisture content.
- Normal construction with lightly reinforced strip footings.
- Light reinforcement in masonry.
- Site drainage and plumbing/service precautions to be taken.

Modified Normal Construction

- Reinforced strip footings
- Articulation joints at some internal and all external doors
- Light reinforcement in masonry
- Site drainage and plumbing precautions to be taken
- Foundation pressure not to exceed 50 kPa.

Soil Zone "B"

The central portion of the proposed development classifies as a NHBRC Site Class "C1-C2/S1/H1" according to the guidelines of the NHBRC Standards and Guidelines of October 2014 and in view of the moderate horizon of potentially collapsible, compressible and moderately expansive soils which blanket this soil zone, one of the following foundation systems may be considered for rigid, residential masonry structures: -

Soil Raft

- Remove in situ material to 1m beyond perimeter of building to a depth of 1,5 times the widest foundation or to a competent horizon and replace with material compacted to 93% Mod AASHTO density at -1% to +2% of optimum moisture content.
- Normal construction with lightly reinforced strip footings.
- Light reinforcement in masonry.
- Site drainage and plumbing/service precautions to be taken.

Stiffened or Cellular Raft

- Stiffened or cellular raft with articulation joints or solid lightly reinforced masonry
- Site drainage and plumbing/service precautions to be taken.
- Foundation Pressure not to exceed 50 kPa.

Piled or Pier Foundation

- Reinforced concrete ground beams or solid slabs on piled or pier foundations.
- Ground slabs with fabric reinforcement
- Site drainage and plumbing/service precautions to be taken.

Soil Zone "C"

The south-western portion of the proposed development classifies as a NHBRC Site Class "H1-H2/R" according to the guidelines of the NHBRC Standards and Guidelines of October 2014 and in view of the moderate horizon of potentially moderately expansive soils which blanket this soil zone, one of the following foundation systems may be considered for rigid, residential masonry structures: -

Soil Raft

- Remove all or part of the expansive horizon to 1m beyond the perimeter of the structure and replace with inert backfill compacted to 93% Mod AASHTO density at -1% to +2% of optimum moisture content.
- Normal construction with lightly reinforced strip footings and light reinforcement in masonry if residual movements are <7,5mm or construction type appropriate to residual movement.
- Site drainage and plumbing/service precautions to be taken.

Split construction

- Combination of reinforced brickwork/ blockwork and full movement joints;
- Suspended floors or fabric reinforced ground slabs acting independently from the structure;
- Site drainage and plumbing/service precautions to be taken.

Piled construction

- Piled foundations with suspended floor slabs with or without ground beams.
- Site drainage and plumbing/service precautions to be taken.

Stiffened or cellular raft

- Stiffened or cellular raft of articulated lightly reinforced masonry.
- Site drainage and plumbing/service precautions to be taken.

The design and construction of raft foundations (whether soil or concrete) should be carried out in accordance with and under supervision of a civil or structural engineer and the NHBRC a competent person should verify classification given here. The design of multi-storey structures should take cognizance of the potentially problematic conditions that prevail across the site. Areas of disturbed ground conditions may be encountered during construction and where present, these should be carefully reinstated.

7.5 Earthworks

Soil Zone "A" is covered by sandy and gravelly soils overlying gravelly and sany residual soils and these materials should be suitable for use as backfill underneath surface beds and in the construction of roads and paved areas after removal of the coarser than 60mm fraction (G6/G7 Quality). The blanketing sandy and silty soils covering Soil Zone "B" will probably qualify as G7/G8 quality material in terms of TRH14 and should likewise be suitable for use as backfill underneath surface beds as well as for use as pipe bedding material. The blanketing clayey soils occurring in Soil Zone "C" and in isolated pockets elsewhere are considered unsuitable for any use as a construction material and should be discarded during construction.

7.6 Ground Water and Soil Chemistry

No water seepages were encountered in the test pits during the investigation, however, the necessary damp-proofing precautions should therefore be taken underneath structures. The site soils are expected to be potentially chemically aggressive with regards to underground ferrous metal pipes (pH values ranging from 5,6 to 7,8 and electrical conductivity values ranging from 33 to 67 mS/m) and the use of non-ferrous metal pipes or plastic pipes are recommended for wet services, the foundation soils should be treated with an environmentally friendly insecticide to combat termites.

8. GENERAL

While every effort has been made to ensure that representative test pitting and sampling has been undertaken to probe the soils on-site, guaranteeing that isolated zones of either poor foundation material or hard rock excavation have not been identified, is impossible under the constraints of an investigation of this nature. The investigation has sought to highlight general areas of potential foundation and excavation problems, and to provide early warning to the design engineers and town planners. In view of the variability inherent in soils, a competent person must inspect all foundation excavations.

The placement of the engineered fills must be controlled with suitable field tests to ensure that the required densities are achieved during compaction, and that the quality of fill material is within specification.

Based on the results of the investigation, ***Portions 2 and 3 of the farm Tenbosch 661-JU*** is considered suitable for the proposed resort and residential development taking cognizance of the geotechnical factors mentioned in paragraph 7 above.

We trust that the above information will meet with your immediate requirements, please do not hesitate to call for any further information.

Yours faithfully,

JOHANN VAN DER MERWE (Pr. Sci. Nat.)
Engineering Geologist
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9. APPENDICES

Test Pit Profiles

Laboratory Soil Test Results

Geotechnical Map

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/10*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

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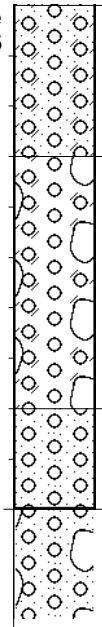

0.00 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES and coarse BASALT GRAVELS clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is medium dense.

0.30 *Dry, dark brown speckled yellow, loose, clayey GRAVELS containing numerous hard rock CORESTONES; residual basalt.*

0.80 *Dry, dark yellow speckled orange, very dense, sandy GRAVELS; residual basalt.*

1.00 *As above and containing numerous large, hard rock spheroids; residual basalt.*

NOTES

1) *Abrupt refusal of backactor at 1,0m in hard rock basalt boulders.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

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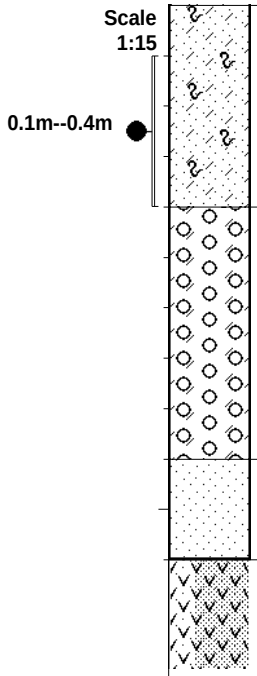
Y-COORD : *E31 58 10.7*

HOLE No: *TB/10*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/11*
Sheet 1 of 1

JOB NUMBER: *M20/3870*



0.00 *Dry, reddish brown, medium dense, intact, clayey SAND containing scattered rounded QUARTZITE PEBBLES and large tree roots; colluvium/pebble marker.*

0.40 *Dry, dark green blotched orange and red, dense, clayey GRAVELS; residual basalt.*

0.90 *Dry, dark olive green speckled white and orange, very dense, coarse SAND; residual basalt.*

1.10 *As above becoming borderline very soft rock BASALT.*

NOTES

1) *Gradual refusal of backactor at 1,1m in very soft rock basalt.*
2) *No water seepage encountered.*
3) *Disturbed indicator sample takn from 0,1m--0,4m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

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HOLE No: *TB/11*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/12*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

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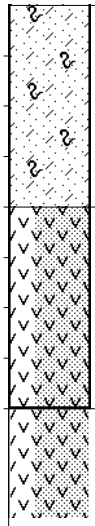

0.00 *Dry, reddish brown, medium dense, intact, clayey SAND containing scattered rounded QUARTZITE PEBBLES and large tree roots; colluvium/pebble marker.*

0.40 *Dark olive speckled orange, highly weathered, closely jointed, soft rock BASALT containing pockets of reddish brown, clayey SAND.*

0.80 *As above becoming hard rock BASALT.*

NOTES

1) *Abrupt refusal of backactor at 0,8m in hard rock basalt.*
2) *No water seepage encountered.*
3) *Rock excavates as coarse angular fragments (diameter up to 60mm) and also contains rounded spheroids up to 400mm diameter.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
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DATE : *11-12/11/2020*

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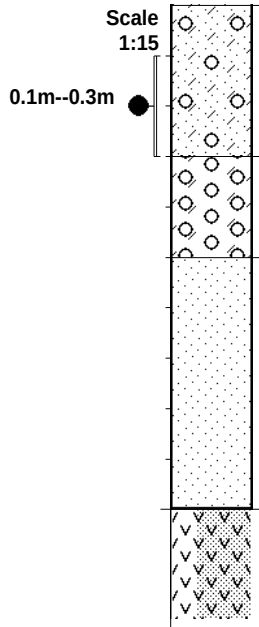
DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/13*
Sheet 1 of 1

JOB NUMBER: *M20/3870*



0.00 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is loose.

0.30 *Dry, dark brown speckled yellow, loose, clayey GRAVELS; residual basalt.*

0.50 *Dry, dark olive green speckled white and orange, very dense, coarse SAND; residual basalt.*

1.00 *Dark olive speckled orange, highly weathered, closely jointed, soft rock BASALT containing pockets of reddish brown, clayey SAND.*

NOTES

1) *Gradual refusal of backactor at 1,0m in soft rock basalt.*
2) *No water seepage encountered.*
3) *Disturbed indicator sample taken from 0,1m--0,3m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
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HOLE No: *TB/13*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/14*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

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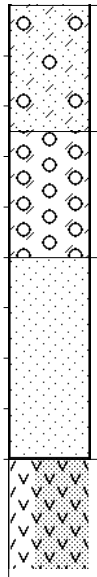

0.00 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is loose.

0.25 *Dry, dark brown speckled yellow, loose, clayey GRAVELS; residual basalt.*

0.50 *Dry, dark olive green speckled white and orange, dense becoming very dense, coarse SAND; residual basalt.*

0.90 *Dark olive speckled orange, highly weathered, closely jointed, soft rock BASALT containing pockets of reddish brown, clayey SAND.*

NOTES

1) *Gradual refusal of backactor at 0,9m in soft rock basalt.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

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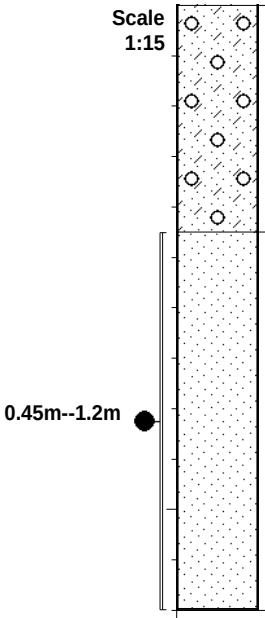
DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/15*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Abundant small (diameter = 10mm to 150mm), rounded and sub-rounded QUARTZITE PEBBLES clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is loose.
Note: 1. Horizon undulates.

0.45 *Dry, dark olive green speckled white and orange, dense becoming very dense, coarse SAND; residual basalt.*

1.20

NOTES

1) *Gradual refusal of backactor at 1,2m in very dense residual basalt.*
2) *No water seepage encountered.*
3) *Disturbed foundation indicator sample taken from 0,45m--1,2m.*
4) *Numerous small and medium-sized cobbles at surface.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

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HOLE No: *TB/15*

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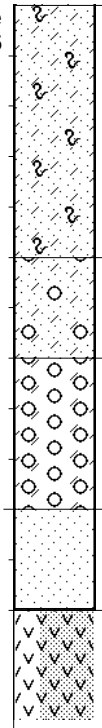
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/16*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brownish red, dense, shattered, clayey SAND containing tree roots; colluvium.*

0.50 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is very dense.

0.70 *Dry, dark brown speckled yellow, dense, clayey GRAVELS containing pockets of rock; residual basalt.*

1.00 *Dry, dark olive green speckled white and orange, very dense, coarse SAND; residual basalt.*

1.20 *Dark olive speckled orange, highly weathered, closely jointed, soft rock BASALT containing pockets of reddish brown, clayey SAND.*

NOTES

1) *Gradual refusal of backactor at 1,2m in soft rock basalt.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

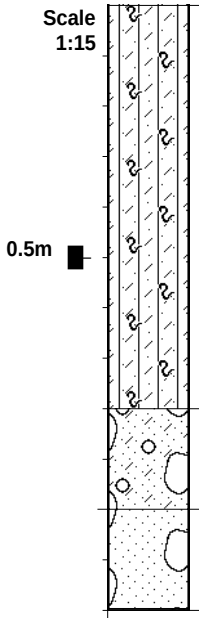
ELEVATION :
X-COORD : *S25 23 46.6*
Y-COORD : *E31 58 33.3*

HOLE No: *TB/16*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/17*
Sheet 1 of 1

JOB NUMBER: *M20/3870*



0.00 *Dry, dark red, very stiff, voided and shattered, clayey sandy SILT containing tree roots and termite activity; colluvium.*

0.80 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND and containing small BASALT BOULDERS; pebble marker.*
Overall consistency is loose.
Note: 1. Horizon undulates.

1.00 *Dry, dark olive green speckled white and orange, very dense, coarse SAND containing small rounded BASALT spheroids; residual basalt.*

1.20

NOTES

1) *Partial refusal of backactor at 1,2m in hard rock basalt spheroids (boulders).*

2) *No water seepage encountered.*

3) *Undisturbed block sample taken at 0,5m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 23 40.7*
Y-COORD : *E31 58 32.4*

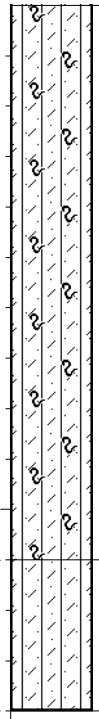
HOLE No: *TB/17*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/18*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark red, very stiff, voided and shattered, clayey sandy SILT containing tree roots and termite activity; colluvium.*

1.10

1.1m--1.4m

Dry, dark orange red blotched bluish black, very stiff, clayey sandy SILT; colluvium.

1.40

NOTES

1) *Slow excavation but no refusal of backactor at 1,4m.*
2) *No water seepage encountered.*
3) *Disturbed foundation indicator sample taken from 1,1m--1,4m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 23 33.1*
Y-COORD : *E31 58 14.8*

HOLE No: *TB/18*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

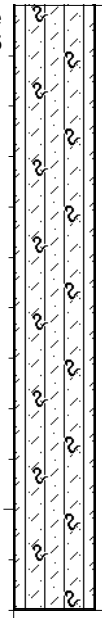
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/19*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark red, very stiff, voided and shattered, clayey sandy SILT containing tree roots and termite activity; colluvium.*

1.20

NOTES

1) *Slow excavation to gradual refusal of backactor at 1,2m.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 23 34.8*
Y-COORD : *E31 58 07.1*

HOLE No: *TB/19*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

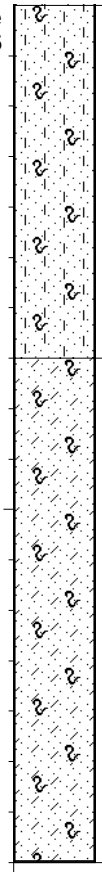
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/20*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.5m

1.2m

0.00 *Dry, dark brown, dense, voided, silty SAND containing roots; colluvium.*

0.70 *Dry, dark red, dense, voided, clayey fine SAND containing roots; colluvium.*

1.70

NOTES

1) *No refusal of backactor at 1,7m.*
2) *No water seepage encountered.*
3) *Undisturbed block samples taken at 0,5m and 1,2m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 23 38.3*
Y-COORD : *E31 58 00.8*

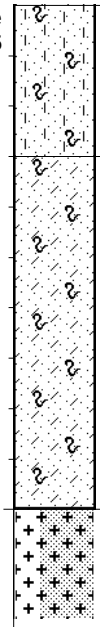
HOLE No: *TB/20*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/21*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, dense, voided, silty SAND containing roots; colluvium.*

0.30 *Dry, dark red, dense becoming very dense, voided, clayey fine SAND containing roots; colluvium.*

1.00 *Dark green blotched black, moderately weathered, hard rock GABBRO.*

NOTES

1) *Abrupt refusal of backactor at 1,0m in hard rock GABBRO.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 23 42.5*
Y-COORD : *E31 57 55.2*

HOLE No: *TB/21*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

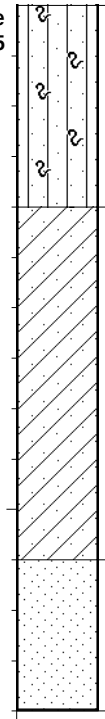
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/22*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, reddish dark brown, very stiff, shattered, sandy SILT containing tree roots; colluvium.*

0.40 *Dry, dark red, very stiff, shattered, sandy CLAY; colluvium.*

1.10 *Dry, orange blotched black, very dense, relict jointed, coarse SAND; residual gabbro.*

1.40

NOTES

1) *Gradual refusal of backactor at 1,4m in very dense residual gabbro.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 23 48.0*
Y-COORD : *E31 57 58.9*

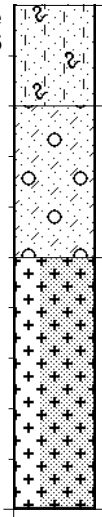
HOLE No: *TB/22*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/23*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, dense, voided, silty SAND containing roots; colluvium.*

0.20 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is dense.

0.50 *Bluish grey stained yellow on joints, highly weathered, very closely jointed, soft rock GABBRO containing pockets of reddish brown, clayey GRAVELS.*
Note: 1. Contains a band of very hard rock on southern side of test pit.

1.00

NOTES

1) *Abrupt refusal of backactor at 1,0m in soft rock gabbro.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 23 51.5*
Y-COORD : *E31 57 59.8*

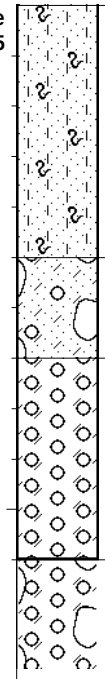
HOLE No: *TB/23*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/24*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, dense, voided, silty SAND containing roots; colluvium.*

0.50 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES and isolated BOULDERS clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker. Overall consistency is loose.*

0.70 *Dry, dark yellow blotched brown, dense becoming very dense, clayey GRAVELS containing zones of hard rock; residual gabbro.*

1.10 *As above and containing abundant hard rock CORESTONES; residual gabbro.*

NOTES

1) *Gradual refusal of backactor at 1,1m in hard rock boulders.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 23 57.2*
Y-COORD : *E31 58 00.9*

HOLE No: *TB/24*

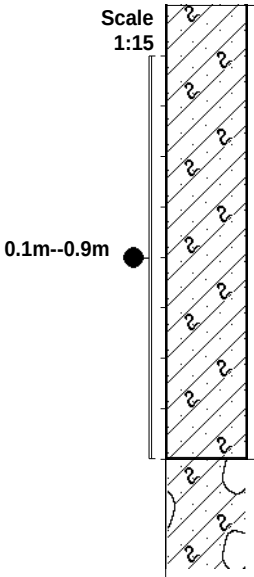
TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/25*
Sheet 1 of 1

JOB NUMBER: *M20/3870*



0.00

Dry, dark brown, <u>very stiff</u>, shattered, sandy CLAY containing tree roots; colluvium.

0.90

Abundant small and medium-sized, rounded, hard rock SPHEROIDS and small BOULDERS clast supported in a matrix as above; pebble marker.
Overall consistency is <u>very dense.</u>

NOTES

1) *Gradual refusal of backactor at 0,9m in boulder horizon.*

2) *No water seepage encountered.*

3) *Disturbed indicator sample taken from 0,1m--0,9m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 03.2*
Y-COORD : *E31 57 58.4*

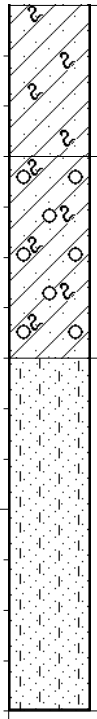
HOLE No: *TB/25*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/26*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.7m--1.4m

0.00 *Dry, dark chocolate brown, very stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.30 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a subordinate matrix as above; pebble marker.*
Overall consistency is dense.

0.70 *Dry, dark yellow speckled orange stained black on joints, very dense, relict jointed, slightly silty coarse SAND; residual basalt.*

1.40

NOTES

1) *Gradual refusal of backactor at 1,4m in very dense residual basalt.*
2) *No water seepage encountered.*
3) *Disturbed foundation indicator sample taken from 0,7m--1,4m.*
4) *Massive outcrop south of test pit, numerous small boulders at surface.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 23 53.6*
Y-COORD : *E31 57 45.8*

HOLE No: *TB/26*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

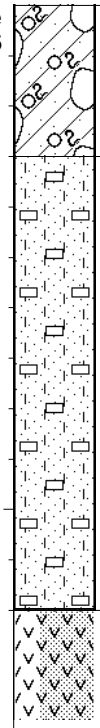
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/27*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a matrix of dark grey, sandy CLAY and containing abundant tree roots; pebble marker.*
Overall consistency is dense.

0.30 *Dry, dark yellow speckled orange stained black on joints, very dense, relict jointed, slightly silty coarse SAND containing numerous angular and platy rock fragments; residual basalt.*

1.20 *Greenish grey stained orange on joints, moderately weathered, closely jointed, soft rock BASALT.*

NOTES

1) *Gradual refusal of backactor at 1,2m in soft rock basalt.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 00.4*
Y-COORD : *E31 57 43.4*

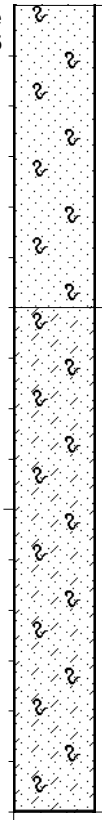
HOLE No: *TB/27*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/28*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, yellowish brown, loose, fine SAND containing abundant tree roots; alluvium.*

0.60 *Dry, dark brown, dense, voided, clayey fine SAND containing tree roots; alluvium.*

1.60

NOTES

1) *No refusal of backactor at 1,6m.*
2) *No water seepage encountered.*
3) *Undisturbed block sample taken at 1,0m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 01.3*
Y-COORD : *E31 57 36.1*

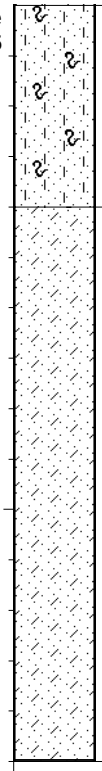
HOLE No: *TB/28*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/29*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark greyish brown, medium dense, voided, silty fine SAND containing tree roots; alluvium.*

0.40 *Dry, dark greyish brown becoming orange brown towards the base, very dense, voided, clayey fine SAND; alluvium.*

1.50

NOTES

1) *Slow excavation but no refusal of backactor at 1,5m.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 00.7*
Y-COORD : *E31 57 28.4*

HOLE No: *TB/29*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

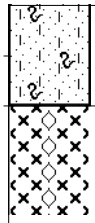
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/30*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, loose, silty SAND containing tree roots; alluvium.*

0.20 *Dark grey speckled and striated white, slightly weathered, widely jointed, very hard rock GRANOPHYRE.*

NOTES

1) *Abrupt refusal of backactor at 0,2m in very hard rock granophyre.*
2) *No water seepage encountered.*
3) *Scattered hard rock outcrops at surface.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 09.9*
Y-COORD : *E31 57 32.8*

HOLE No: *TB/30*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

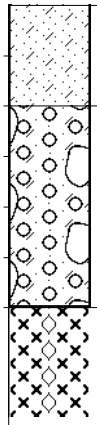
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/31*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, loose, clayey SAND containing scattered sub-angular QUARTZITE PEBBLES; colluvium/pebble marker.*

0.20 *Dry, dark brown speckled orange, loose, clayey sandy GRAVELS containing numerous, small and medium-sized BOULDERS (diameter up to 0,2m); residual granophyre.*

0.60 *Dark yellow speckled orange and green, highly weathered, closely jointed, soft rock GRANOPHYRE.*

NOTES

1) *Abrupt refusal of backactor at 0,6m.*
2) *No water seepage encountered.*
3) *Scattered hard rock outcrops in vicinity of test pit.*
4) *Abundant small, sub-rounded boulders at surface.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 15.2*
Y-COORD : *E31 57 34.9*

HOLE No: *TB/31*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/32*
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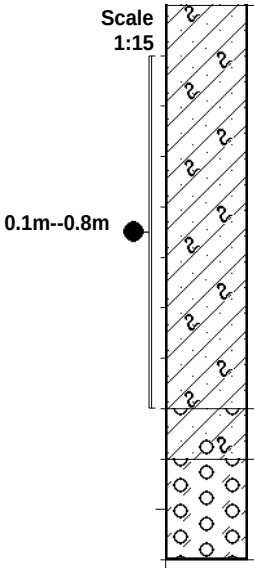
JOB NUMBER: *M20/3870*



0.00 *Dry, dark greyish brown, stiff becoming very stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.80 *Numerous rounded GRAVELS and PEBBLES of assorted origin clast supported in a matrix as above; pebble marker.*
Overall consistency is dense.

0.90 *Dry, dark brown speckled yellow and black, very dense, clayey GRAVELS; residual granophyre.*

1.10

NOTES

1) *Slow excavation but no refusal of backactor at 1,1m.*

2) *No water seepage encountered.*

3) *Disturbed foundation indicater sample taken from 0,1m--0,8m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 18.9*
Y-COORD : *E31 57 39.5*

HOLE No: *TB/32*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

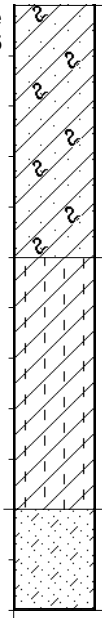
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/33*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark grey, very stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.50 *Slightly moist, dark olive speckled white, very stiff, shattered, silty CLAY containing fine GRAVELS; colluvium.*

1.00 *Dry, olive blotched orange and black, very dense, relict jointed, coarse clayey SAND; residual granophyre.*

1.20

NOTES

1) *Gradual refusal of backactor at 1,2m in very dense residual granophyre.*
2) *No water seepage encountered.*
3) *Massive outcrops on either side of test pit.*
4) *Numerous small boulders at surface.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 25.7*
Y-COORD : *E31 57 39.4*

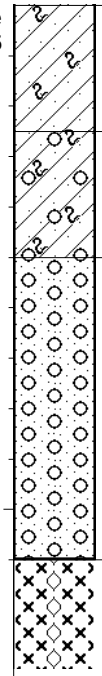
HOLE No: *TB/33*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/34*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark grey, stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.25 *Abundant small and medium-sized (diameter up to 150mm), rounded and sub-angular QUARTZITE and other COBBLES clast supported in a subordinate matrix as above; pebble marker.*
Overall consistency is dense.

0.50 *Dry, dark yellow stained orange brown on joints, very dense, sandy GRAVELS containing FRAGMENTS of soft rock; residual granophyre.*

1.10 *Dark olive stained orange and black on joints, highly weathered, very closely jointed, soft rock GRANOPHYRE.*

NOTES

1) *Gradual refusal of backactor at 1,1m.*
2) *No water seepage encountered.*
3) *Massive hard rock outcrops south-east of test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 32.2*
Y-COORD : *E31 57 39.6*

HOLE No: *TB/34*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/35*
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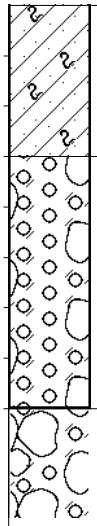
JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark grey, stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.30 *Slightly moist, dark grey speckled yellow, dense, clayey GRAVELS containing numerous small BOULDERS (diameter up to 0,3m); colluvium.*

0.80 *As above and containing abundant BOULDERS; colluvium.*

NOTES

1) *Gradual refusal of backactor at 0,8m in hard rock boulders.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 38.8*
Y-COORD : *E31 57 40.9*

HOLE No: *TB/35*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/36*
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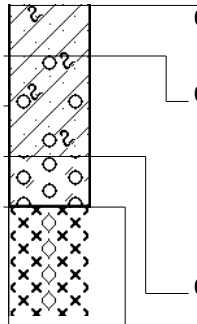
Scale 1:15



0.00 *Dry, dark grey, stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.10 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a subordinate matrix as above; pebble marker.*
Overall consistency is dense.

0.30 *Slightly moist, dark brown speckled yellow, dense, clayey fine GRAVELS; colluvium.*

0.40 *Dark greenish grey speckled off white, unweathered, widely jointed, very hard rock GRANOPHYRE.*

NOTES

1) *Abrupt refusal of backactor at 0,4m in very hard rock granophyre.*
2) *No water seepage encountered.*
3) *Massive outcrop close to test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 42.6*
Y-COORD : *E31 57 31.9*

HOLE No: *TB/36*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/37*
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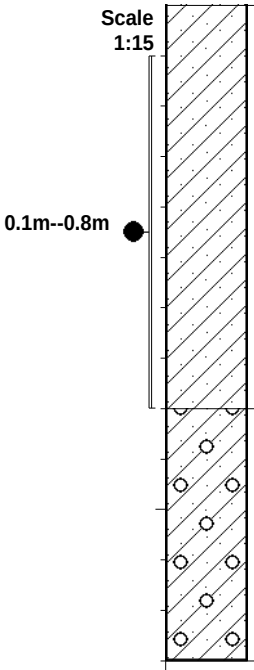


0.00 *Slightly moist, dark grey, very stiff, shattered, sandy CLAY containing abundant fine GRAVELS below 0,6m; colluvium.*

0.80 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a subordinate matrix as above; pebble marker.*
Overall consistency is very dense.

1.30

NOTES

1) *Gradual refusal of backactor at 1,3m in very dense pebble marker horizon.*

2) *No water seepage encountered.*

3) *Disturbed foundation indicater sample taken from 0,1m--0,8m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 37.0*
Y-COORD : *E31 57 34.3*

HOLE No: *TB/37*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

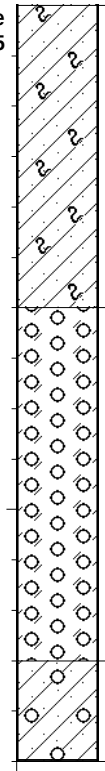
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/38*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00

Dry, dark grey, stiff, shattered, sandy CLAY containing tree roots; colluvium.

0.60

Slightly moist, dark brown speckled yellow, very dense, clayey fine GRAVELS; colluvium.

1.30

Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a matrix of yellowish brown, sandy CLAY; pebble marker.
Overall consistency is very dense.

1.50

NOTES

1) *Gradual refusal of backactor at 1,5m in very dense pebble marker horizon.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 30.8*
Y-COORD : *E31 57 33.8*

HOLE No: *TB/38*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/39*
Sheet 1 of 1

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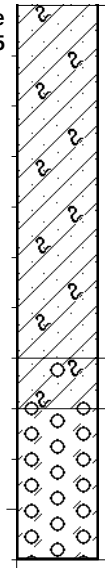
Scale 1:15



0.00 *Dry, dark grey, very stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.70 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a subordinate matrix as above; pebble marker.*
Overall consistency is dense.

0.80 *Slightly moist, grey speckled yellow, very dense, intact, clayey GRAVELS containing small hard rock SPHEROIDS; residual granophyre.*

1.10

NOTES

1) *Gradual refusal of backactor at 1,1m in hard rock boulders.*

2) *No water seepage encountered.*

3) *Massive outcrop adjacent and to the east and to the north of test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 24.0*
Y-COORD : *E31 57 33.0*

HOLE No: *TB/39*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/40*
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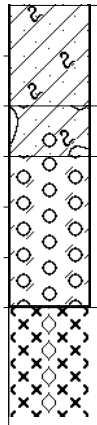
JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark grey, stiff, shattered, sandy CLAY containing tree roots; colluvium.*

0.20 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a subordinate matrix as above and with small angular and sub-rounded BOULDERS of GRANOPHYRE; pebble marker.*
Overall consistency is dense.

0.30 *Dry, dark yellow speckled brown, dense, intact, clayey GRAVELS containing isolated small CORESTONES; residual granophyre.*

0.60 *Unweathered, widely bedded, very hard rock GRANOPHYRE.*

NOTES

1) *Abrupt refusal of backactor at 0,6m in very hard rock granophyre.*
2) *No water seepage encountered.*
3) *Scattered outcrops in vicinity of test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 19.8*
Y-COORD : *E31 57 32.0*

HOLE No: *TB/40*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

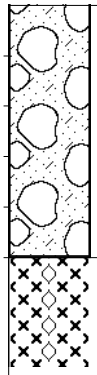
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/41*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00

Abundant small, medium and large (diameter = 50mm to 300mm), angular, hard rock GRANOPHYRE SPHEROIDS in a subordiante matrix of dry, dark brown, clayey SAND; residual granophyre. Overall consistency is very dense.

0.50

Unweathered, very hard rock GRANOPHYRE.

NOTES

1) *Abrupt refusal of backactor at 0,5m in very hard rock granophyre.*
2) *No water seepage encountered.*
3) *Numerous hard rock outcrops in vicinity of test pit.*
4) *Small and medium-sized boulders at surface.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 16.8*
Y-COORD : *E31 57 30.2*

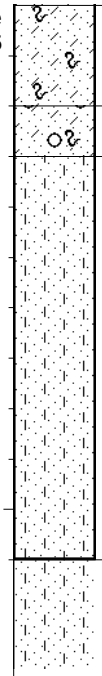
HOLE No: *TB/41*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/42*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, loose, clayey SAND containing tree roots; colluvium.*

0.20 *Abundant medium-sized COBBLES of mixed origin clast supported in a subordinate matrix as above; pebble marker.*
Overall consistency is dense.

0.30 *Dry, dark yellowish orange speckled green and stained black on joints, very dense, slightly silty coarse SAND; residual granophyre.*

1.10 *As above becoming borderline very soft rock GRANOPHYRE.*

NOTES

1) *Gradual refusal of backactor at 1,1m in very soft rock granophyre.*
2) *No water seepage encountered.*
3) *Massive outcrop in road near to test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 46.4*
Y-COORD : *E31 57 26.2*

HOLE No: *TB/42*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/43*
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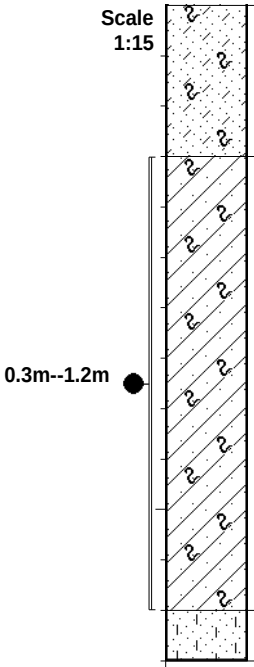
Scale 1:15



0.00 *Dry, dark brown, loose, clayey SAND containing tree roots; colluvium.*

0.30 *Slightly moist, dark brown, very stiff, shattered, sandy CLAY containing tree roots; colluvium.*

1.20 *Dry, dark yellowish orange speckled green and stained black on joints, very dense, slightly silty coarse SAND; residual granophyre.*

1.30

NOTES

1) *Gradual refusal of backactor at 1,3m in very dense residual granophyre.*
2) *No water seepage encountered.*
3) *Disturbed foundation indicator sample taken from 0,3m--1,2m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 52.5*
Y-COORD : *E31 57 26.3*

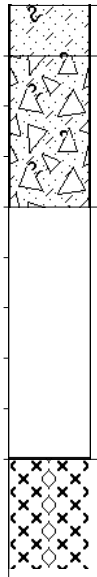
HOLE No: *TB/43*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/44*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00	*Dry, dark brown, loose, clayey SAND containing tree roots; colluvium.*
0.10	*Abundant coarse, yellow and brown ROCK FRAGMENTS clast supported in a subordinate matrix as above; residual granophyre. Overall consistency is loose.*
0.40	*Pale green stained brown on joints, highly weathered, very closely jointed, very soft rock GRANOPHYRE.*
0.90	*As above becoming hard rock GRANOPHYRE.*

NOTES

1) *Gradual refusal of backactor at 0,9m in hard rock granophyre.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 57.0*
Y-COORD : *E31 57 33.0*

HOLE No: *TB/44*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

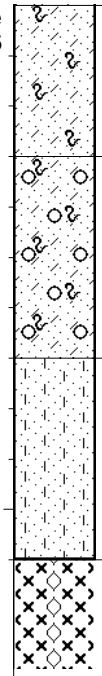
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/45*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, loose, clayey SAND containing tree roots; colluvium.*

0.30 *Abundant small and medium-sized (diameter = 20mm to 100mm), rounded and sub-angular QUARTZITE and other PEBBLES and COBBLES clast supported in a subordinate matrix as above and containing scattered small SPHEROIDS; pebble marker.*
Overall consistency is dense.

0.70 *Dry, dark yellowish orange speckled green and stained black on joints, very dense, slightly silty coarse SAND; residual granophyre.*

1.10 *Dark green stained orange on joints, highly weathered, closely jointed, soft rock GRANOPHYRE.*

NOTES

1) *Abrupt refusal of backactor at 1,1m in soft rock granophyre.*
2) *No water seepage encountered.*
3) *Scattered hard rock outcrops in vicinity of test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 25 01.2*
Y-COORD : *E31 57 34.1*

HOLE No: *TB/45*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

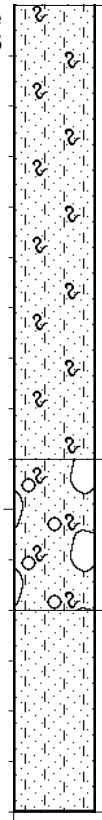
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/1*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Moist, dark brown, very loose, silty fine SAND containing tree roots; colluvium.*

0.90 *Numerous angular BASALT COBBLES and BOULDERS in a matrix as above; pebble marker.*
Overall consistency is loose.

1.20 *Slightly moist, dark yellow, medium dense, generally silty SAND; residual basalt.*

1.60

NOTES

1) *No refusal of backactor at 1,6m.*
2) *No water seepage encountered.*
3) *Rocky outcrops in vicinity of test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION : *Vertical*
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 25 09.9*
Y-COORD : *E31 57 36.7*

HOLE No: *TB/1*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

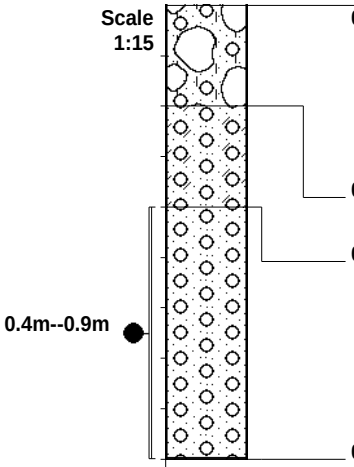
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/2*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Abundant small, medium and large (diameter up to 0,5m), rounded and sub-rounded GRAVELS, COBBLES and BOULDERS of mixed origin clast supported in a subordinate matrix of dark brown, silty SAND; pebble marker.*
Overall consistency is loose.

0.20 *Dry, dark brown, loose, clayey sandy GRAVELS; residual basalt.*

0.40 *Dry, dark yellow speckled orange, dense becoming very dense, sandy GRAVELS; residual basalt.*

0.90

NOTES

1) *Slow excavation to gradual refusal of backactor at 0,9m in very dense residual basalt.*

2) *No water seepage encountered.*

3) *Disturbed foundation indicator sample taken from 0,4m--0,9m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 25 02.5*
Y-COORD : *E31 57 36.7*

HOLE No: *TB/2*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

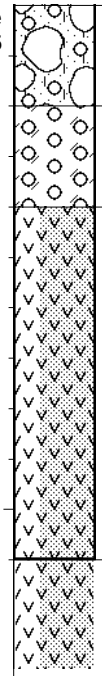
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/3*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Abundant small, medium and large (diameter up to 0,25m), rounded and sub-rounded GRAVELS, COBBLES and BOULDERS of mixed origin clast supported in a subordinate matrix of dark brown, silty SAND; pebble marker.*
Overall consistency is loose.

0.20 *Dry, dark bown, dense, clayey GRAVELS containing small, rounded BASALT spheroids; residual basalt.*

0.40 *Dark yellow blotched orange, highly weathered, soft rock BASALT containing infill of dark brown, sandy CLAY on joints.*
Note: 1. Material breaks out as small, rounded spheroids (average diameter = 50mm).

1.10 *As above becoming hard rock.*

NOTES

1) *Gradual refusal of backactor at 1,1m in hard rock basalt.*

2) *No water seepage encountered.*

3) *Surface area covered by small, medium and large (diameter up to 0,4m) boulders of mixed origin.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 56.1*
Y-COORD : *E31 57 39.3*

HOLE No: *TB/3*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

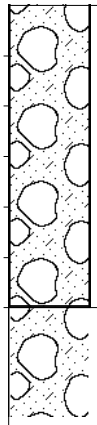
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/4*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Abundant medium and large BASALT BOULDERS in a matrix of dark brown, clayey SAND; residual basalt.*
Overall consistency is loose.

0.60 *As above becoming very dense; residual basalt..*

NOTES

1) *Abrupt refusal of backactor at 0,6m in basalt boulders.*
2) *No water seepage encountered.*
3) *Scattered outcrops of very hard rock basalt in vicinity of test pit.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 55.9*
Y-COORD : *E31 57 41.6*

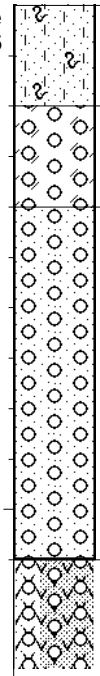
HOLE No: *TB/4*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/5*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, dense, intact, silty SAND containing tree roots; colluvium.*

0.20 *Dry, dark brown speckled yellow, medium dense, clayey GRAVELS; residual basalt.*

0.40 *Dry, pale yellow stained brown and orange on joints, very dense, relict jointed, sandy GRAVELS; residual basalt.*
Note: 1. Material excavates as coarse, angular gravel (average diameter = 20mm).

1.10 *As above becoming soft rock BASALT.*

NOTES

1) *Gradual refusal of backactor at 1,1m in soft rock basalt.*

2) *No water seepage encountered.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 46.9*
Y-COORD : *E31 57 46.0*

HOLE No: *TB/5*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

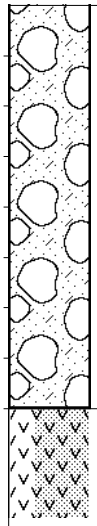
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/6*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00

Abundant small, medium and large, angular BOULDERS of soft rock and hard rock BASALT clast supported in a subordinate matrix of dry, dark brown, clayey SAND; residual basalt.
Overall consistency is medium dense.

0.80

Bluish grey stained brown and orange on joints, highly weathered, very closely jointed, hard rock BASALT.

NOTES

1) *Abrupt refusal of backactor at 0,8m in hard rock basalt.*

2) *No water seepage encountered.*

3) *Surface area covered by scattered small and medium-sized boulders of mixed origin.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ELEVATION :
X-COORD : *S25 24 41.3*
Y-COORD : *E31 57 51.1*

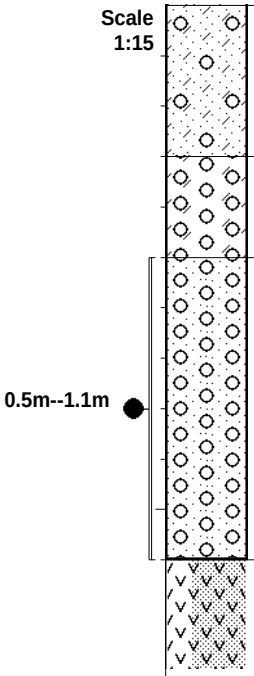
HOLE No: *TB/6*

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/7*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Dry, dark brown, clayey SAND containing numerous small and medium-sized COBBLES of QUARTZITE and BASALT; pebble marker.*
Overall consistency is loose.

0.30 *Dry, dark brown, loose, clayey GRAVELS; residual basalt.*

0.50 *Dry, dark yellow speckled orange, dense becoming very dense, sandy GRAVELS; residual basalt.*

1.10 *Dark olive stained red on joints, highly weathered, soft rock BASALT.*

NOTES

1) *Abrupt refusal of backactor at 1,1m in soft rock basalt.*
2) *No water seepage encountered.*
3) *Disturbed foundation indicator sample taken from 0,5m--1,1m.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 35.5*
Y-COORD : *E31 57 55.1*

HOLE No: *TB/7*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

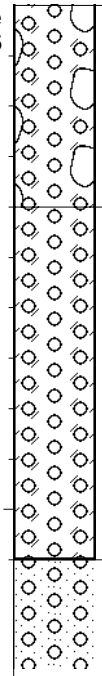
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/8*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Numerous small and large (diameter up to 0,5m), sub-rounded and sub-angular BOULDERS clast supported in a matrix of dry, dark brown, clayey GRAVELS; residual basalt.*
Overall consistency is medium dense.

0.40 *Dry, dark brown speckled orange, dense, relict jointed, clayey GRAVELS; residual basalt.*

1.10 *Dry, green speckled orange, very dense, sandy GRAVELS; residual basalt.*

NOTES

1) *Gradual refusal of backactor at 1,1m in very dense residul basalt.*
2) *No water seepage encountered.*
3) *Surface area covered by scattered small boulders of mixed origin.*
4) *Large hard rock boulders outcropping in road.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 31.7*
Y-COORD : *E31 58 00.3*

HOLE No: *TB/8*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

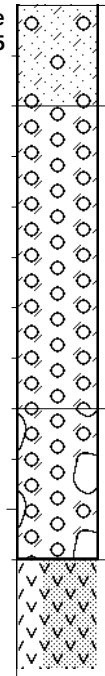
DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

DERICK PEACOCK ASSOCIATES
Portions 2 & 3 of Tenbosch 661-JU, Mpumalanga Province
GEOTECHNICAL INVESTIGATION CARRIED OUT FOR:
PROPOSED RESORT AND RESIDENTIAL DEVELOPMENT

HOLE No: *TB/9*
Sheet 1 of 1

JOB NUMBER: *M20/3870*

Scale 1:15



0.00 *Abundant small (diameter = 50mm), rounded and sub-rounded QUARTZITE PEBBLES, clast supported in a matrix of dry, dark brown, clayey SAND; pebble marker.*
Overall consistency is loose.

0.20 *Dry, dark brown speckled yellow, medium dense, clayey GRAVELS; residual basalt.*

0.80 *As above becoming dense and containing numerous small, rounded BASALT spheroids; residual basalt.*

1.10 *Bluish grey, moderately weathered, closely jointed, hard rock BASALT.*

NOTES

1) *Abrupt refusal of backactor at 1,1m in hard rock basalt.*
2) *No water seepage encountered.*
3) *Prominent hard rock outcrops next to road and in road.*

CONTRACTOR : *Corbi Construction*
MACHINE : *New Holland B90B Backactor*
DRILLED BY :
PROFILED BY : *jovdm*

INCLINATION :
DIAM : *Trench*
DATE :
DATE : *11-12/11/2020*

ELEVATION :
X-COORD : *S25 24 25.6*
Y-COORD : *E31 58 05.0*

HOLE No: *TB/9*

TYPE SET BY : Bernhard Crafford
SETUP FILE : STANDARD.SET

DATE : 18/12/2020 13:32
TEXT : ..top\ARCHIVE\TENBOSCH.txt

ROADLAB

Roadlab Centurion

121 Ellman Street, Sunderland Ridge

0157

Tel: 012 666 7092 Fax: 012 666 7267

Email: centurion@roadlab.co.za

Web: www.roadlab.co.za

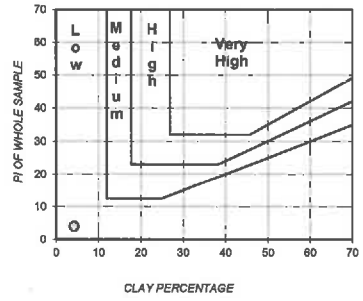
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/2
LAYER : 400-900mm
SAMPLE No. : 10718
SAMPLE DESCRIPTION : Dark Brown Sandy Gravel

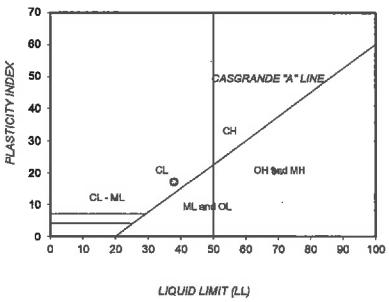
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**3.9**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	100
	14.0	100
	5.00	65
	2.000	33
	0.425	23
	0.250	19
	0.150	16
	0.075	13
	50 µm	12
	5 µm	7
	2 µm	4.3
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	30
	0.425 - 0.250	12
	0.250 - 0.150	10
	0.150 - 0.075	7
	< 0.075	41
Effective size		0.030
Uniformity Coefficient		148.0
Curvature Coefficient		18.0
Oversize Index		0.0
Shrinkage Product		204.7
Grading Coefficient		44.0
Grading modulus		2.32
Atter-berg Limits	Liquid Limit	38
	Plasticity Index	17
	Linear Shrinkage	9.0
	PI < 0.075	-
Unified Soil Classification		SC
U.S. Highway Classification		A-2-6 (0)

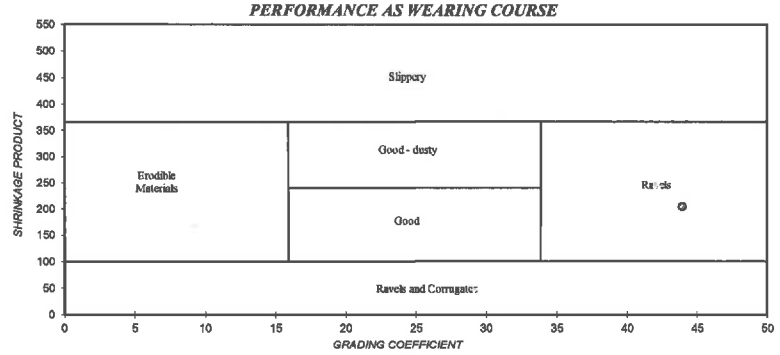
POTENTIAL EXPANSIVENES



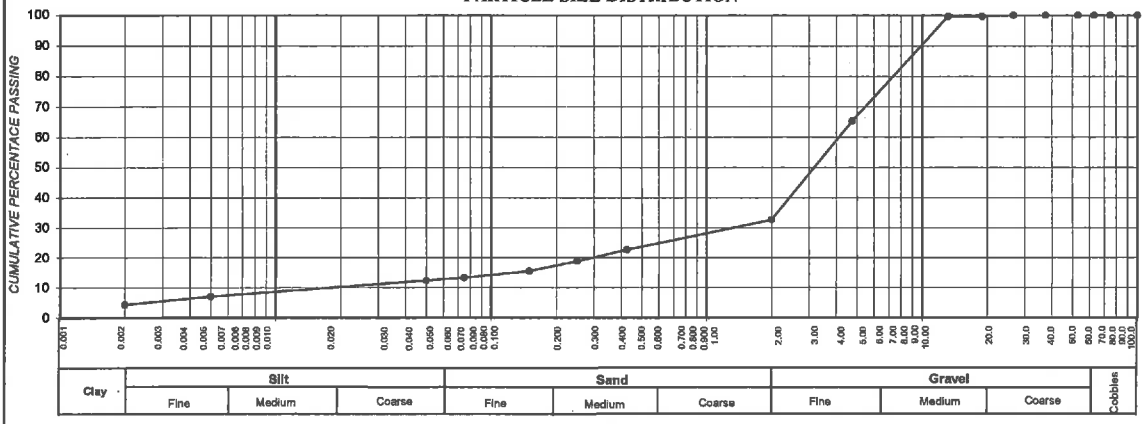
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
4.3	8.0	20.4	67.3

Roadlab Centurion

121 Ellman Street, Sunderland Ridge

0157

Tel: 012 666 7092 Fax: 012 666 7267

Email: centurion@roadlab.co.za

Web: www.roadlab.co.za

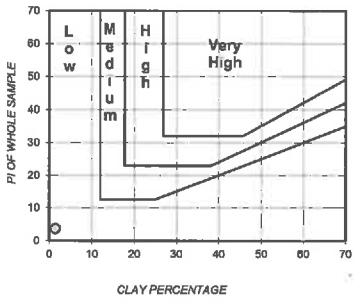
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/7
LAYER : 500-1100mm
SAMPLE No. : 10719
SAMPLE DESCRIPTION : Dark Red Brown Sandy Gravel

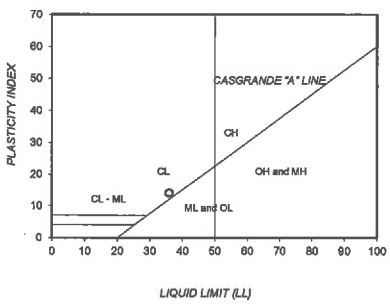
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**3.6**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	98
	20.0	97
	14.0	93
	5.00	69
	2.000	46
	0.425	26
	0.250	20
	0.150	15
	0.075	12
	50 µm	11
	5 µm	4
	2 µm	1.5
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	43
	0.425 - 0.250	14
	0.250 - 0.150	10
	0.150 - 0.075	6
	< 0.075	26
Effective size		0.042
Uniformity Coefficient		90.1
Curvature Coefficient		3.4
Oversize Index		0.0
Shrinkage Product		182.3
Grading Coefficient		36.2
Grading modulus		2.16
Atter-berg Limits	Liquid Limit	36
	Plasticity Index	14
	Linear Shrinkage	7.0
	PI < 0.075	-
Unified Soil Classification		SC
U.S. Highway Classification		A-2-6 (0)

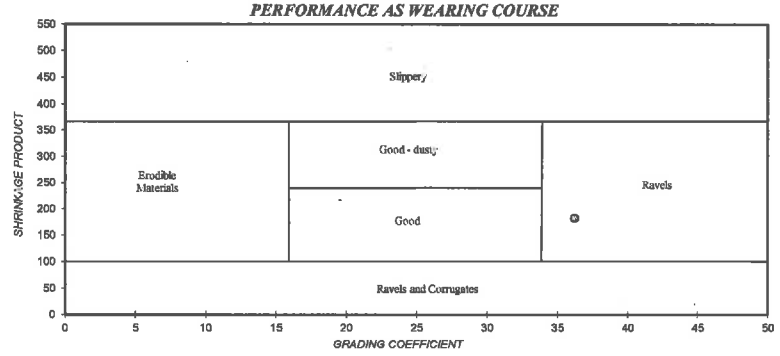
POTENTIAL EXPANSIVENES



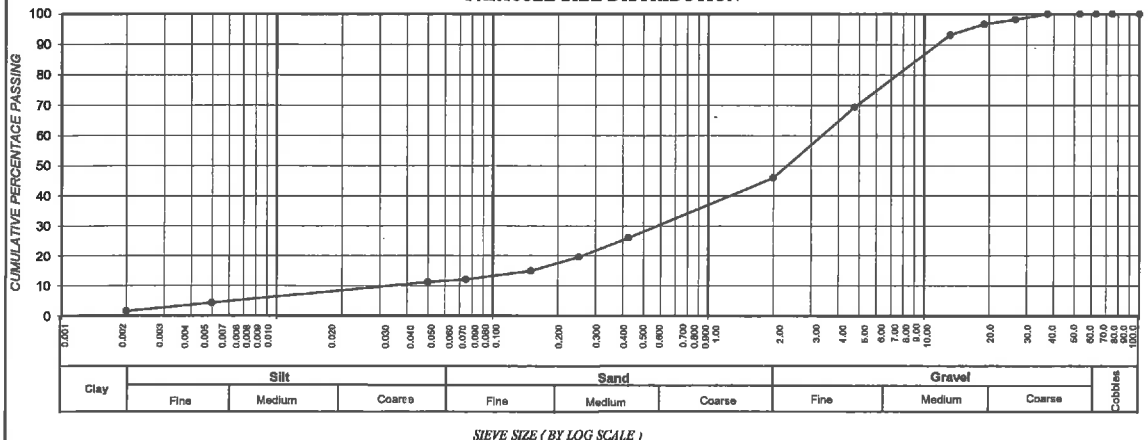
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
1.5	9.9	34.6	54.0

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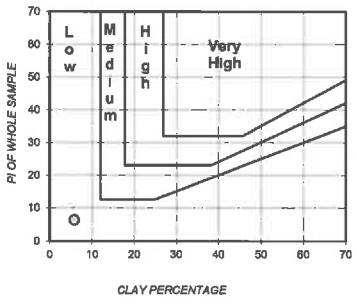
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/11
LAYER : 100-400mm
SAMPLE No. : 10720
SAMPLE DESCRIPTION : Dark Brown Gravelly Silty Sand

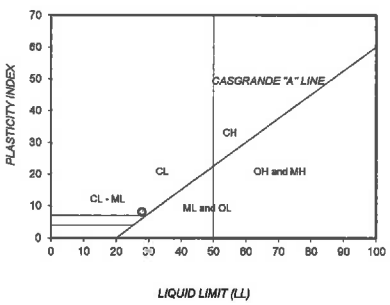
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		6.3
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	94
	50.0	94
	37.5	90
	28.0	87
	20.0	85
	14.0	85
	5.00	83
	2.000	81
	0.425	78
	0.250	69
	0.150	47
	0.075	33
	50 µm	31
	5 µm	14
	2 µm	5.9
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	4
	0.425 - 0.250	12
	0.250 - 0.150	26
	0.150 - 0.075	17
	< 0.075	41
Effective size		0.004
Uniformity Coefficient		59.0
Curvature Coefficient		2.9
Oversize Index		10.4
Shrinkage Product		352.4
Grading Coefficient		4.8
Grading modulus		1.07
Atter-berg Limits	Liquid Limit	28
	Plasticity Index	8
	Linear Shrinkage	4.5
	PI < 0.075	-
Unified Soil Classification		SC
U.S. Highway Classification		A-2-4 (0)

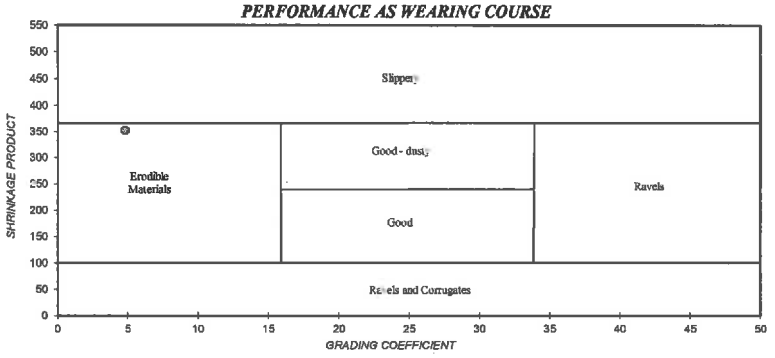
POTENTIAL EXPANSIVENES



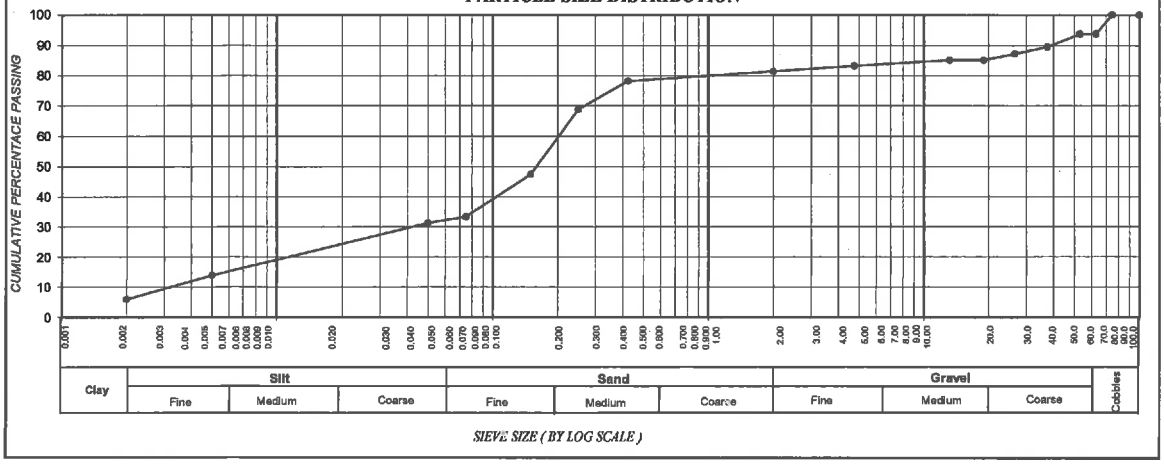
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
5.9	26.2	49.4	18.6

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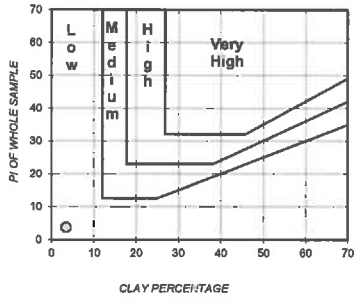
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/13
LAYER : 100-300mm
SAMPLE No. : 10721
SAMPLE DESCRIPTION : Dark Brown Sandy Gravel

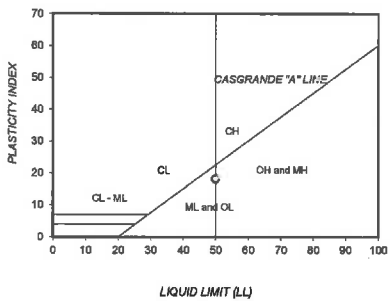
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**3.7**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	86
	28.0	72
	20.0	61
	14.0	43
	5.00	23
	2.000	22
	0.425	21
	0.250	17
	0.150	14
	0.075	12
	50 µm	11
	5 µm	6
	2 µm	3.5
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	5
	0.425 - 0.250	18
	0.250 - 0.150	13
	0.150 - 0.075	7
	< 0.075	57
Effective size		0.043
Uniformity Coefficient		454.2
Curvature Coefficient		77.3
Oversize Index		14.2
Shrinkage Product		185.9
Grading Coefficient		11.7
Grading modulus		2.46
Atter-berg Limits	Liquid Limit	50
	Plasticity Index	18
	Linear Shrinkage	9.0
	PI < 0.075	-
Unified Soil Classification		GM
U.S. Highway Classification		A-2-7 (0)

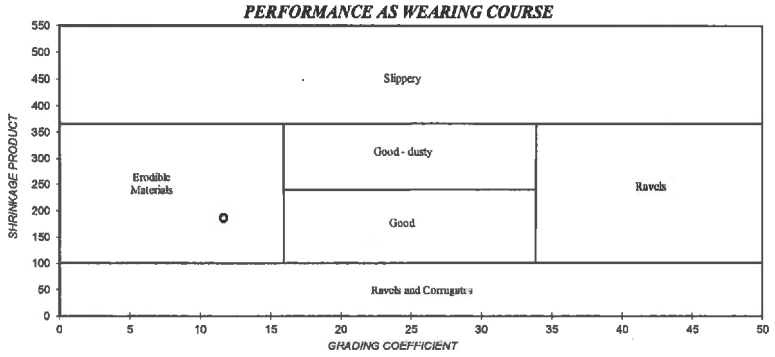
POTENTIAL EXPANSIVENES



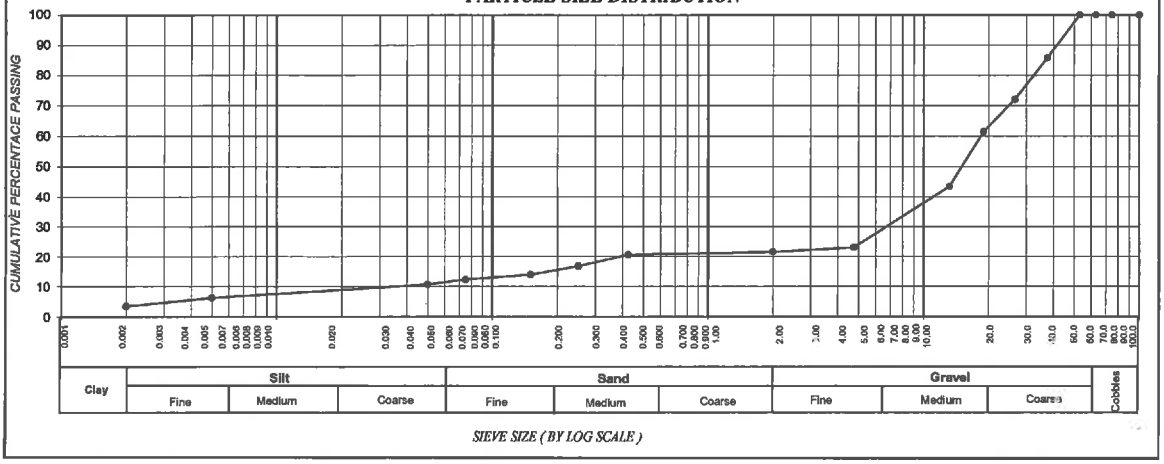
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
3.5	7.2	10.9	78.4

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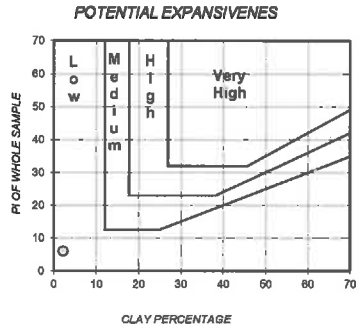
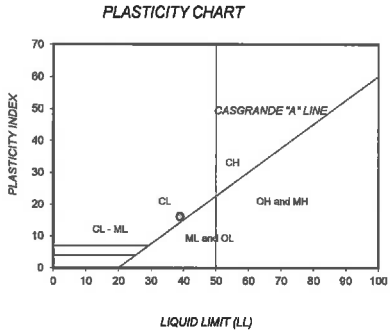
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

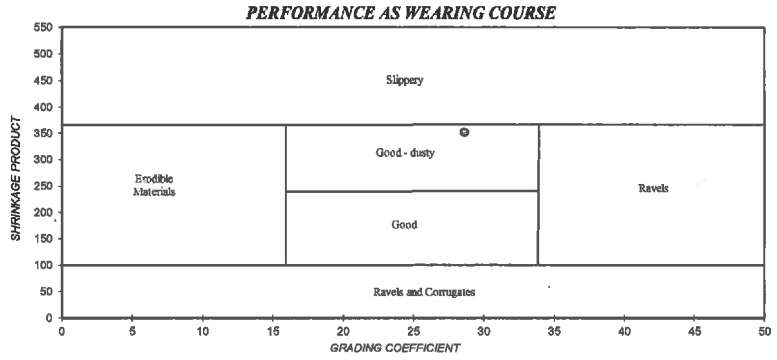
DATE RECEIVED : 25/11/2020
POSITION : TB/15
LAYER : 450-1200mm
SAMPLE No. : 10722
SAMPLE DESCRIPTION : Dark Red Silty Gravelly Sand

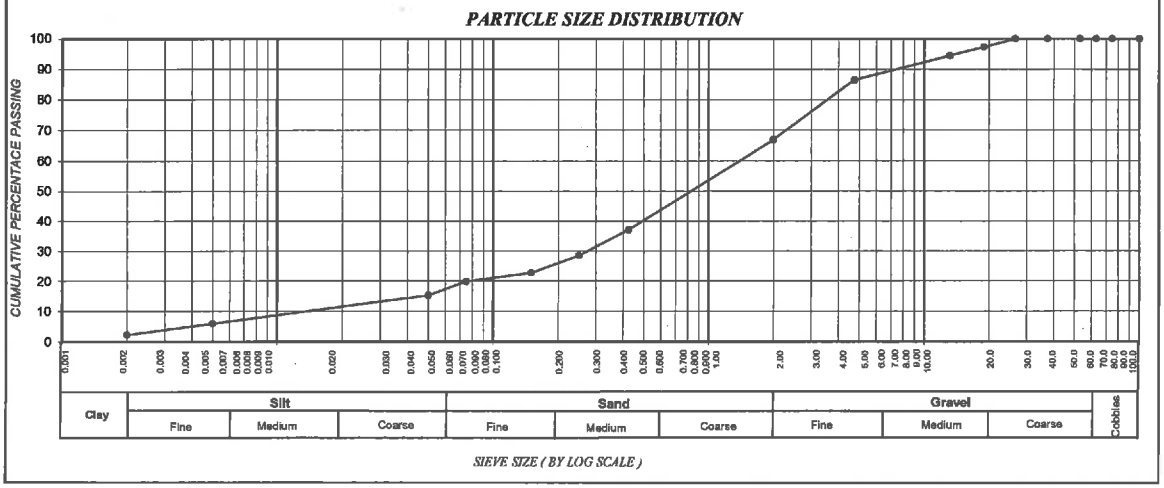
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**5.9**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	97
	14.0	94
	5.00	86
	2.000	67
	0.425	37
	0.250	28
	0.150	23
	0.075	20
	50 µm	15
	5 µm	6
	2 µm	2.2
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	45
	0.425 - 0.250	13
	0.250 - 0.150	9
	0.150 - 0.075	4
	< 0.075	30
Effective size		0.025
Uniformity Coefficient		65.9
Curvature Coefficient		1.9
Oversize Index		0.0
Shrinkage Product		352.0
Grading Coefficient		28.6
Grading modulus		1.76
Atter-berg Limits	Liquid Limit	39
	Plasticity Index	16
	Linear Shrinkage	9.5
	PI < 0.075	-
Unified Soil Classification		SC
U.S. Highway Classification		A-2-6 (0)









CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
2.2	14.4	50.2	33.1

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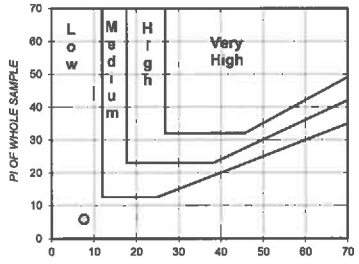
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/18
LAYER : 1100-1400mm
SAMPLE No. : 10723
SAMPLE DESCRIPTION : Dark Red Silty Sand

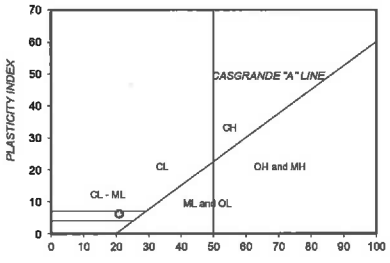
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		5.8
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	100
	14.0	100
	5.00	100
	2.000	100
	0.425	97
	0.250	88
	0.150	67
	0.075	54
	50 µm	39
	5 µm	17
	2 µm	7.7
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	3
	0.425 - 0.250	9
	0.250 - 0.150	21
	0.150 - 0.075	13
	< 0.075	54
Effective size		0.003
Uniformity Coefficient		40.3
Curvature Coefficient		3.3
Oversize Index		0.0
Shrinkage Product		243.2
Grading Coefficient		0.1
Grading modulus		0.49
Atter-berg Limits	Liquid Limit	21
	Plasticity Index	6
	Linear Shrinkage	2.5
	PI < 0.075	-
Unified Soil Classification		CL & ML
U.S. Highway Classification		A-4 (0)

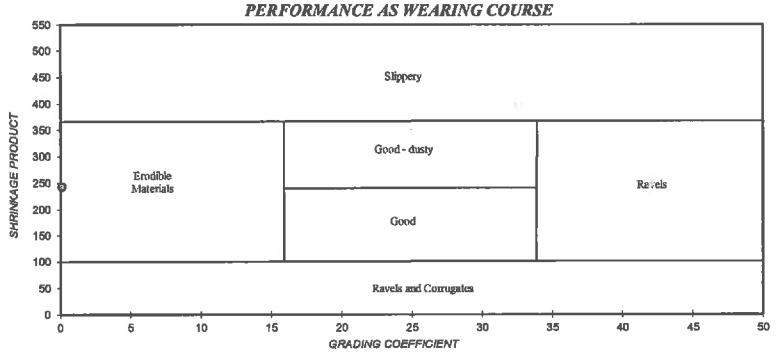
POTENTIAL EXPANSIVENES



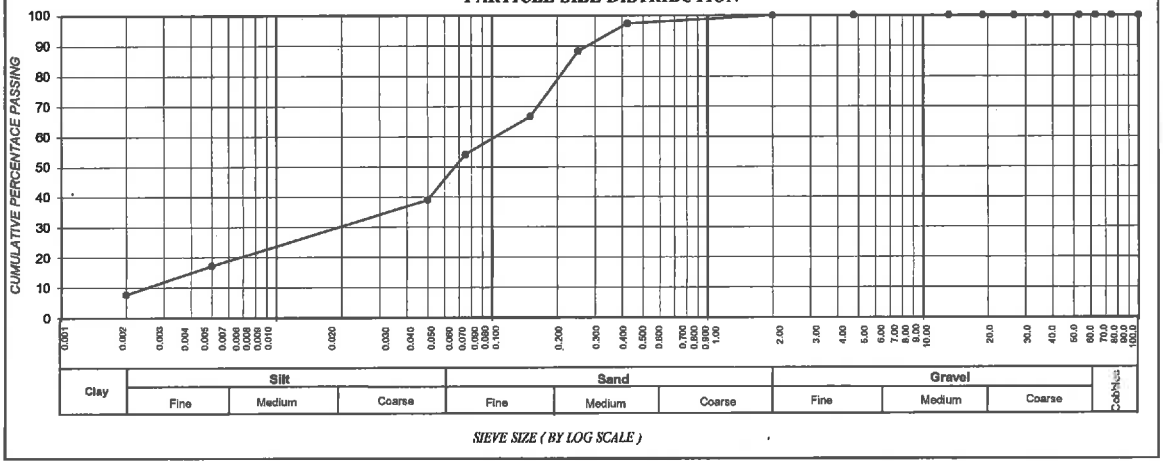
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
7.7	36.0	56.2	0.1

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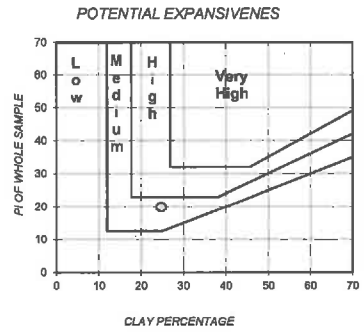
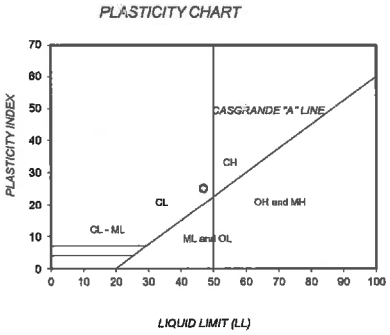
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

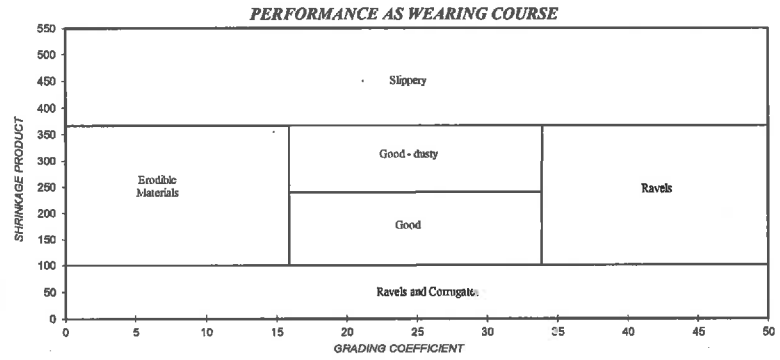
DATE RECEIVED : 25/11/2020
POSITION : TB/25
LAYER : 100-900mm
SAMPLE No. : 10724
SAMPLE DESCRIPTION : Dark Brown Silty Clayey Sand

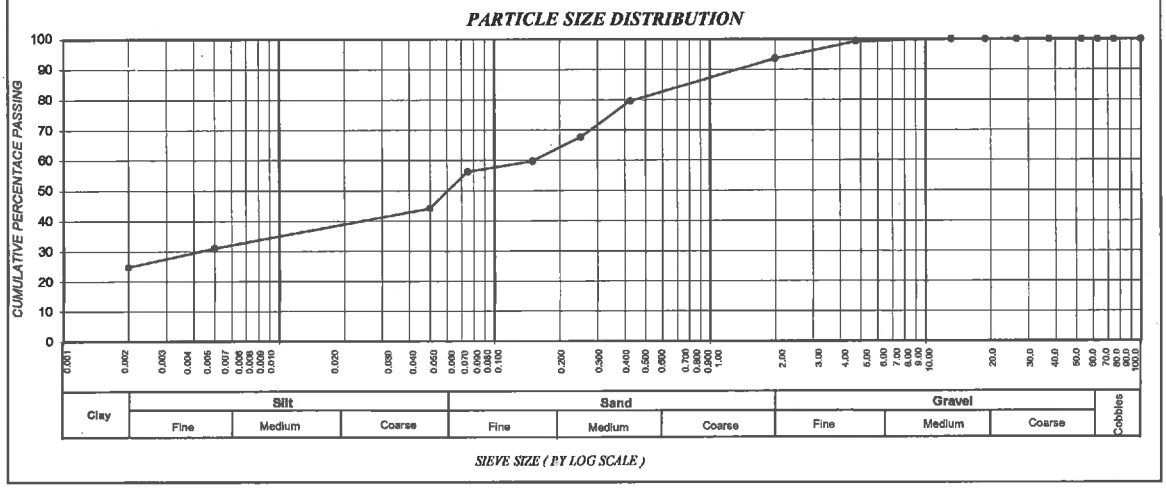
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**19.9**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	100
	14.0	100
	5.00	99
	2.000	94
	0.425	80
	0.250	68
	0.150	60
	0.075	56
	50 µm	44
	5 µm	31
	2 µm	24.8
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	15
	0.425 - 0.250	13
	0.250 - 0.150	9
	0.150 - 0.075	4
	< 0.075	60
Effective size		0.002
Uniformity Coefficient		76.9
Curvature Coefficient		0.1
Oversize Index		0.0
Shrinkage Product		1114.2
Grading Coefficient		6.3
Grading modulus		0.71
Atter-berg Limits	Liquid Limit	47
	Plasticity Index	25
	Linear Shrinkage	14.0
	PI < 0.075	-
Unified Soil Classification		CL
U.S. Highway Classification		A-7-6 (11)









CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
24.8	22.0	46.8	6.4

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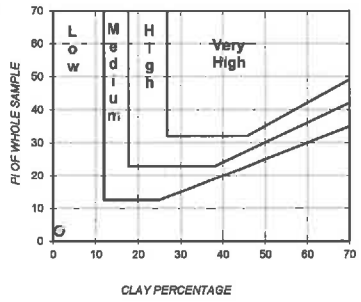
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/26
LAYER : 700-1400mm
SAMPLE No. : 10725
SAMPLE DESCRIPTION : Dark Yellow Gravelly Sand

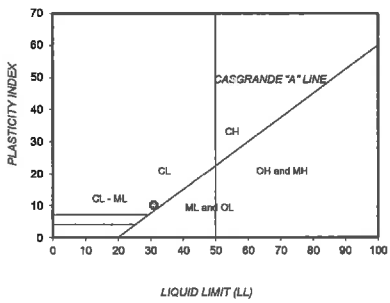
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**3.1**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	98
	20.0	98
	14.0	98
	5.00	95
	2.000	76
	0.425	31
	0.250	22
	0.150	17
	0.075	14
	50 µm	10
	5 µm	4
	2 µm	1.5
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	59
	0.425 - 0.250	12
	0.250 - 0.150	7
	0.150 - 0.075	4
	< 0.075	18
Effective size		0.049
Uniformity Coefficient		29.4
Curvature Coefficient		2.3
Oversize Index		0.0
Shrinkage Product		155.2
Grading Coefficient		21.8
Grading modulus		1.79
Atter-berg Limits	Liquid Limit	31
	Plasticity Index	10
	Linear Shrinkage	5.0
	PI < 0.075	-
Unified Soil Classification		SC
U.S. Highway Classification		A-2-4 (0)

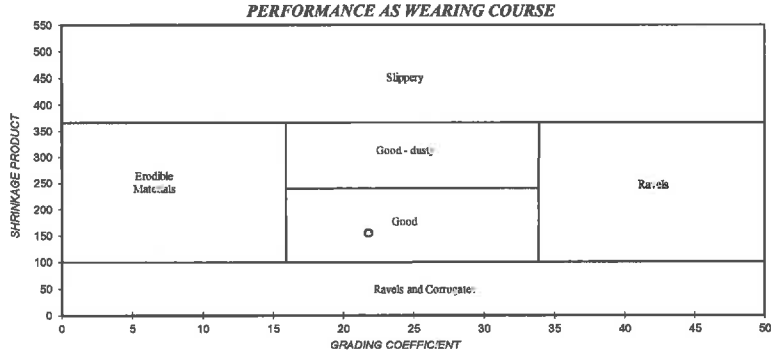
POTENTIAL EXPANSIVENES



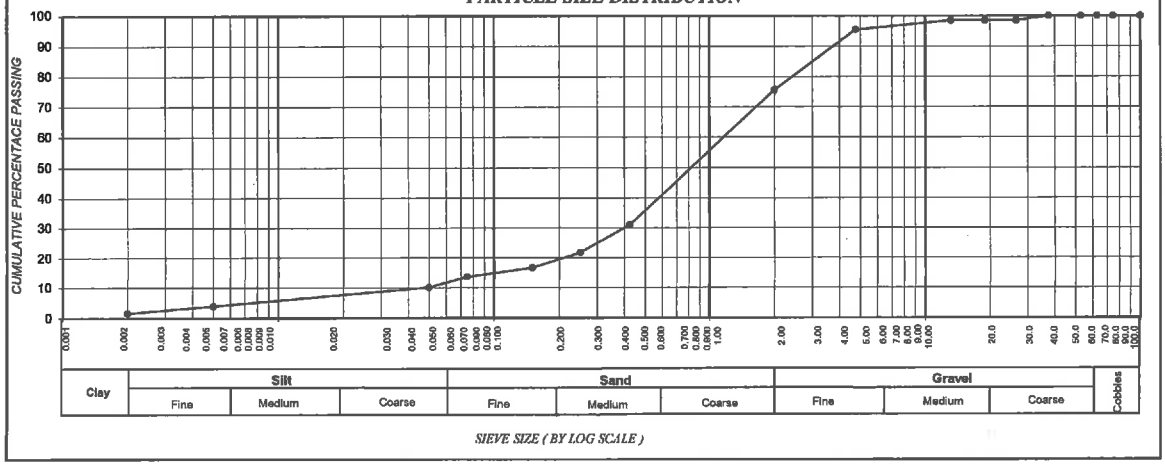
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
1.5	10.0	64.1	24.4

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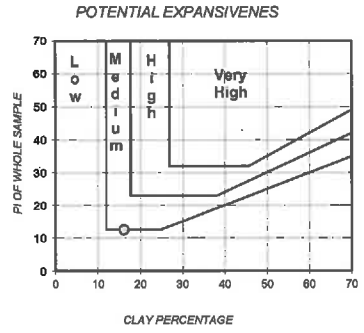
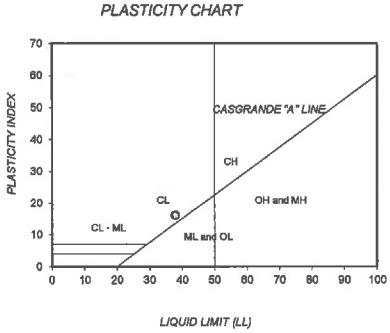
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

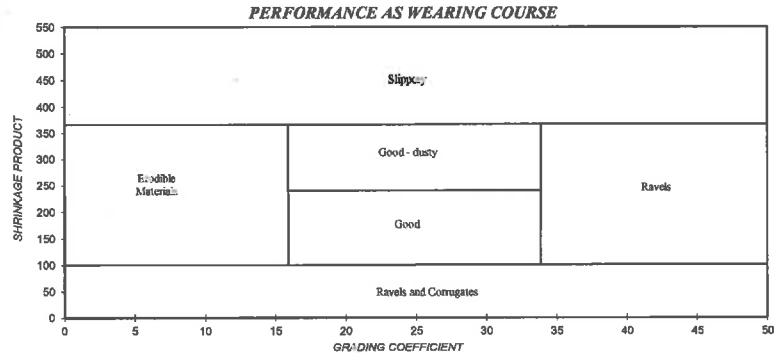
DATE RECEIVED : 25/11/2020
POSITION : TB/32
LAYER : 100--800mm
SAMPLE No. : 10726
SAMPLE DESCRIPTION : Dark Brown Clayey Silty Sand

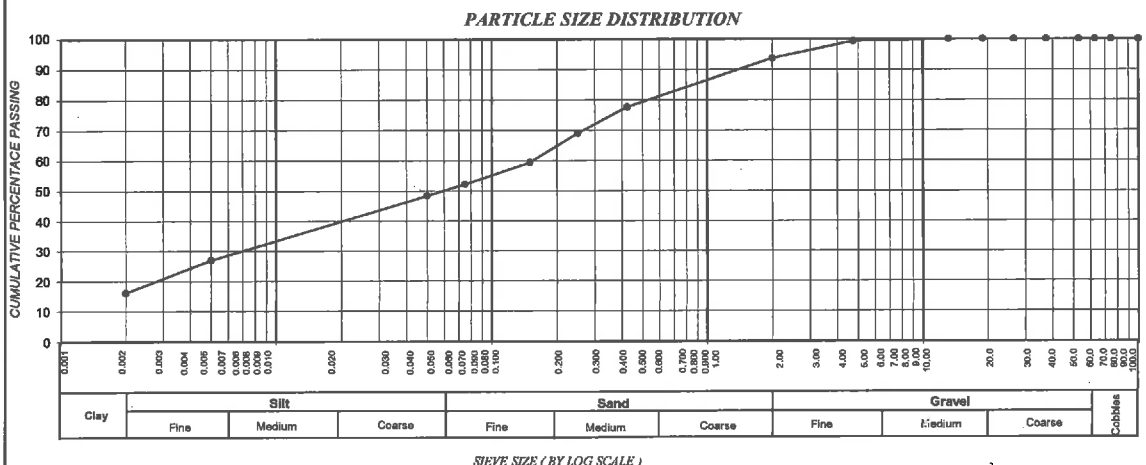
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**12.4**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	100
	14.0	100
	5.00	99
	2.000	94
	0.425	78
	0.250	69
	0.150	59
	0.075	52
	50 µm	48
	5 µm	27
	2 µm	16.2
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	17
	0.425 - 0.250	9
	0.250 - 0.150	10
	0.150 - 0.075	8
	< 0.075	56
Effective size		0.002
Uniformity Coefficient		78.0
Curvature Coefficient		0.4
Oversize Index		0.0
Shrinkage Product		660.3
Grading Coefficient		6.3
Grading modulus		0.77
Atter-berg Limits	Liquid Limit	38
	Plasticity Index	16
	Linear Shrinkage	8.5
	PI < 0.075	-
Unified Soil Classification		CL
U.S. Highway Classification		A-6 (5)









CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
16.2	31.4	46.1	6.3

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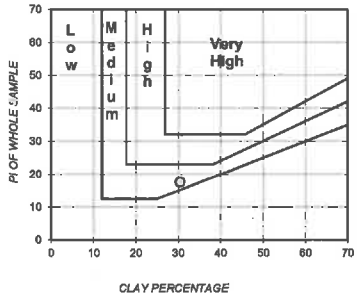
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/37
LAYER : 100-800mm
SAMPLE No. : 10727
SAMPLE DESCRIPTION : Dark Brown Silty Gravelly Clayey Sand

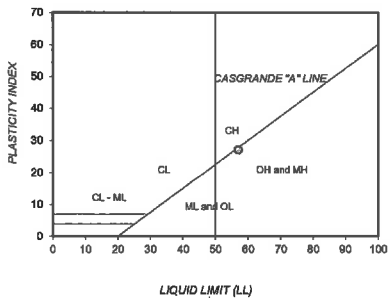
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**17.6**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	100
	14.0	100
	5.00	99
	2.000	85
	0.425	65
	0.250	55
	0.150	46
	0.075	42
	50 µm	39
	5 µm	38
	2 µm	30.4
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	23
	0.425 - 0.250	12
	0.250 - 0.150	11
	0.150 - 0.075	4
	< 0.075	50
Effective size		0.002
Uniformity Coefficient		170.3
Curvature Coefficient		0.0
Oversize Index		0.0
Shrinkage Product		942.7
Grading Coefficient		15.2
Grading modulus		1.08
Atter-berg Limits	Liquid Limit	57
	Plasticity Index	27
	Linear Shrinkage	14.5
	PI < 0.075	-
Unified Soil Classification		SM
U.S. Highway Classification		A-7-5 (7)

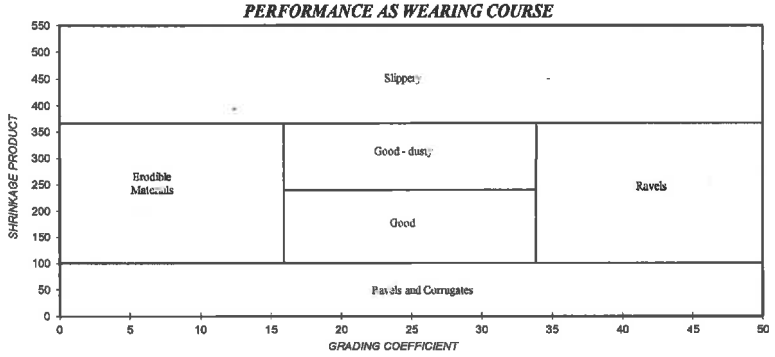
POTENTIAL EXPANSIVENES



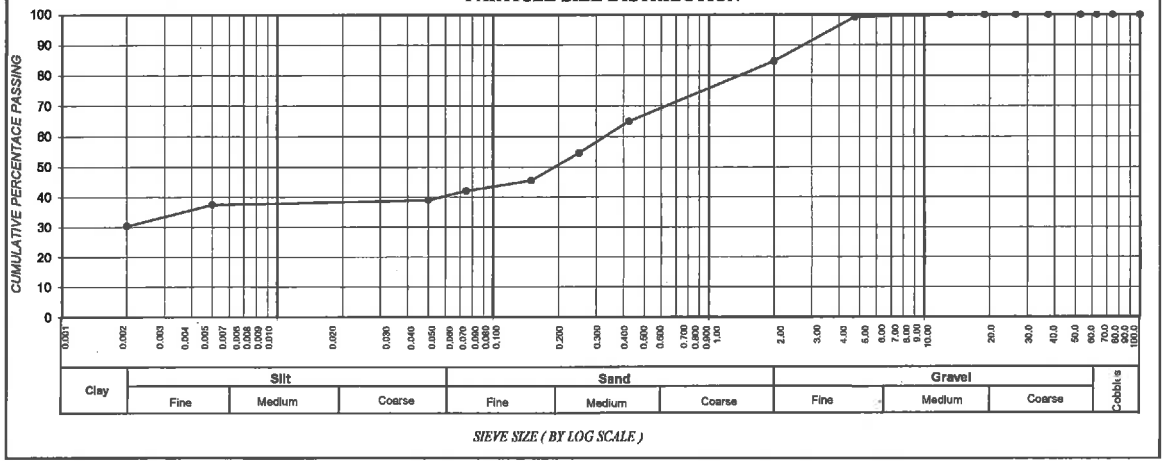
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
30.4	10.1	44.2	15.3

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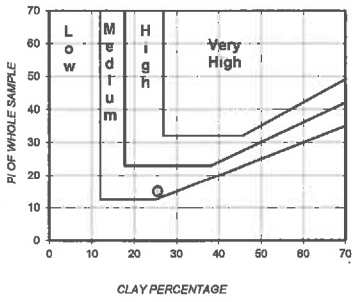
OUR REF : 91823
CLIENT : Johann vd Merwe
PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU M20/3870

DATE RECEIVED : 25/11/2020
POSITION : TB/43
LAYER : 300-1200mm
SAMPLE No. : 10728
SAMPLE DESCRIPTION : Dark Red Silty Clayey Sand

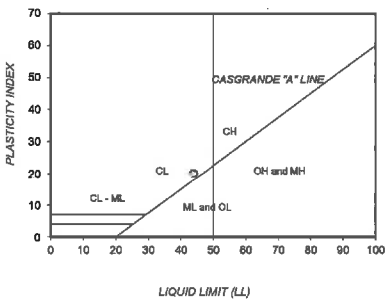
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		**15.0**
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	100
	28.0	100
	20.0	100
	14.0	100
	5.00	100
	2.000	96
	0.425	75
	0.250	67
	0.150	62
	0.075	58
	50 µm	46
	5 µm	35
	2 µm	25.6
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	22
	0.425 - 0.250	8
	0.250 - 0.150	6
	0.150 - 0.075	4
	< 0.075	61
Effective size		0.002
Uniformity Coefficient		58.6
Curvature Coefficient		0.0
Oversize Index		0.0
Shrinkage Product		860.5
Grading Coefficient		4.1
Grading modulus		0.71
Atter-berg Limits	Liquid Limit	44
	Plasticity Index	20
	Linear Shrinkage	11.5
	PI < 0.075	-
Unified Soil Classification		CL
U.S. Highway Classification		A-7-6 (9)

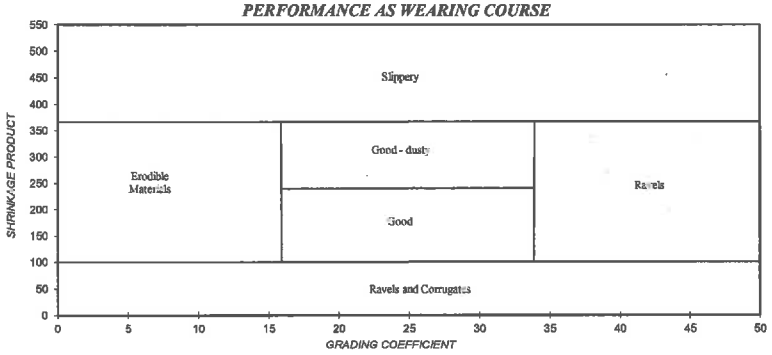
POTENTIAL EXPANSIVENES



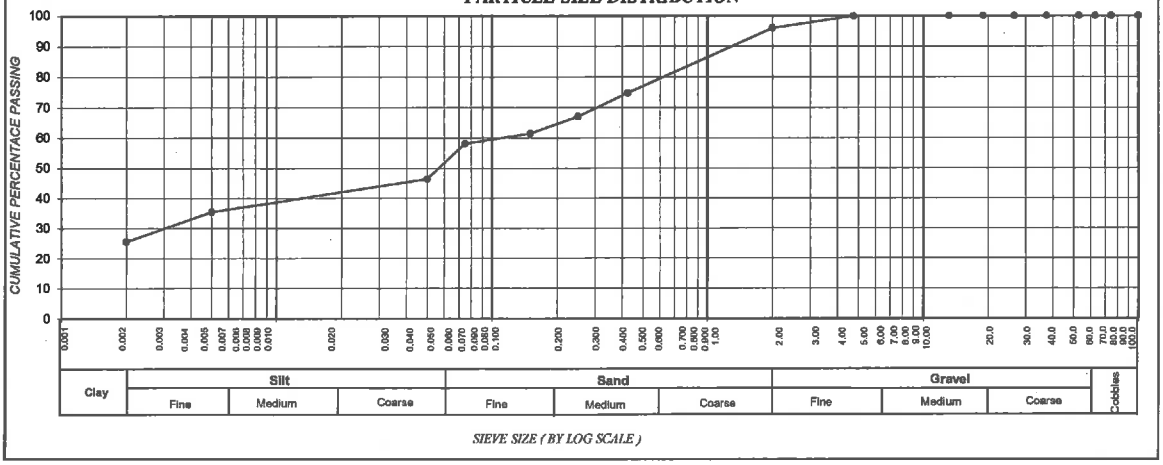
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



SIEVE SIZE (BY LOG SCALE)

CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
25.6	24.4	46.0	4.1

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OUR REF : 91823 **DATE RECEIVED:** 04/12/2020

CLIENT : Johann vd Merwe

PROJECT : Materials Investigation Portion 2 of Tenbosch 661-JU (M20/3870)

ATTENTION: Johann vd Merwe

pH & CONDUCTIVITY TEST RESULTS (TMH 1 A20 & A21T)

Sample Number	Layer / Road	Temperature (°C) : Conductivity	Conductivity (mS/m)	Temperature (°C) : pH	pH Value
10718	TB/2 (400-900mm)	24.4	48	24.4	6.6
10719	TB/7 (500-1100mm)	24.4	37	24.4	6.5
10721	TB/13 (100-300mm)	24.4	38	24.4	5.9
10722	TB/15 (450-1200mm)	24.4	67	24.4	5.7
10724	TB/25 (100-900mm)	24.5	34	24.5	5.6
10726	TB/32 (100-800mm)	24.4	33	24.4	5.8
10727	TB/37 (100-800mm)	24.4	65	24.4	7.8

Remarks :
The samples were subjected to analysis according to TMH 1
The results reported relate only to the sample tested

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CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

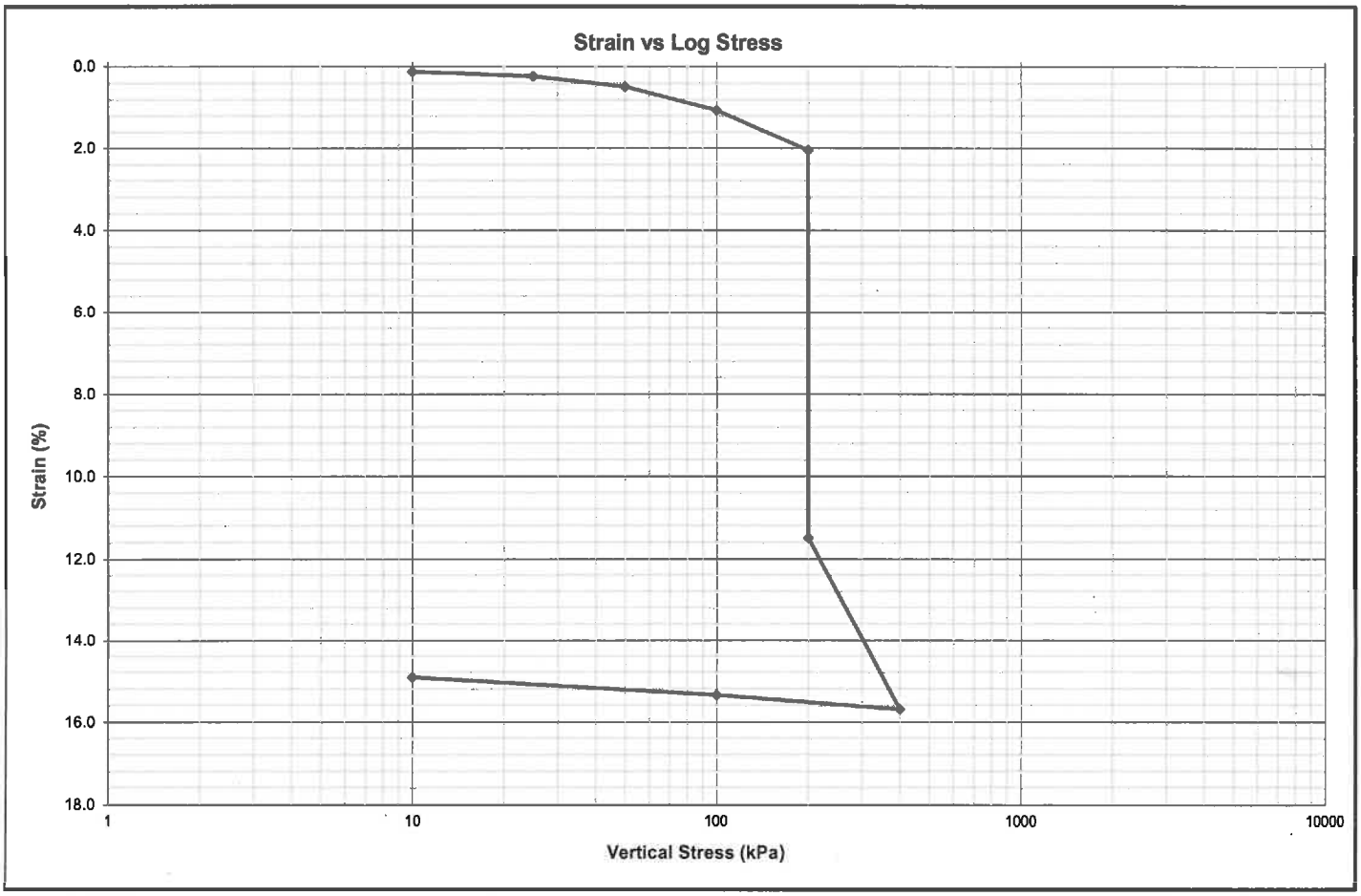
Client : JOHAN VD MERWE **Project :** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no :** 22554

Sample no : TB/17 **Date :** 17/12/2020

Lab no : G20-0474 **Depth (m) :** 0.5

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	6.5	Complete test specimen	Undisturbed sample
	After Test	%	21.0	Complete test specimen	Collapse Potential : 9.64%
Dry Density		Kg/m³	1593		
Void Ratio		-	0.707		
Degree of Saturation		%	25.1		
Initial Specimen Height		mm	20.0		
Relative Density (SG)		-	2.719	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	19.975	19.952	19.902	19.786	19.590	17.701	16.862	16.931	17.018				
Strain	%	0.124	0.239	0.492	1.068	2.052	11.497	15.689	15.343	14.912				
Void Ratio	-	0.705	0.703	0.698	0.689	0.672	0.511	0.439	0.445	0.452				
Mv (1/Mpa)	-	-	0.0769	0.1013	0.1157	0.0995	-	0.2368	0.0137	0.0566				



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CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

Client : JOHAN VD MERWE **Project :** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no :** 22554

Sample no : TB/17 **Date :** 17/12/2020

Lab no : G20-0474 **Depth (m) :** 0.5

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	6.5	Complete test specimen	Undisturbed sample
	After Test	%	21.0	Complete test specimen	Collapse Potential: 9.64%
Dry Density		Kg/m³	1593		
Void Ratio		-	0.707		
Degree of Saturation		%	25.1		
Initial Specimen Height		mm	20.0		
Relative Density (SG)		-	2.719	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	19.975	19.952	19.902	19.786	19.590	17.701	16.862	16.931	17.018				
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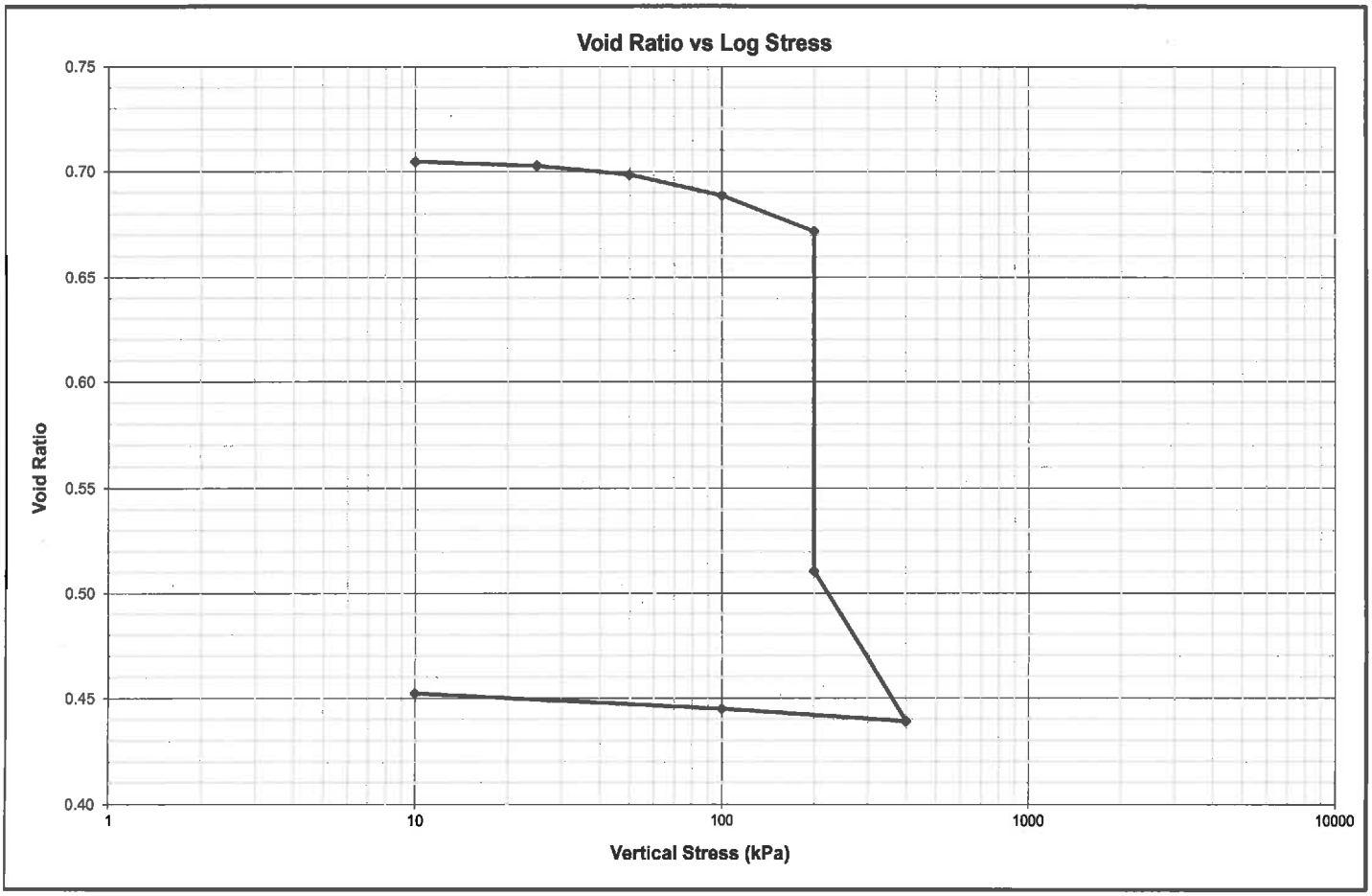
Void Ratio	-	0.705	0.703	0.698	0.689	0.672	0.511	0.439	0.445	0.452				
Mv (1/Mpa)	-	-	0.0769	0.1013	0.1157	0.0995	-	0.2368	0.0137	0.0566				



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CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

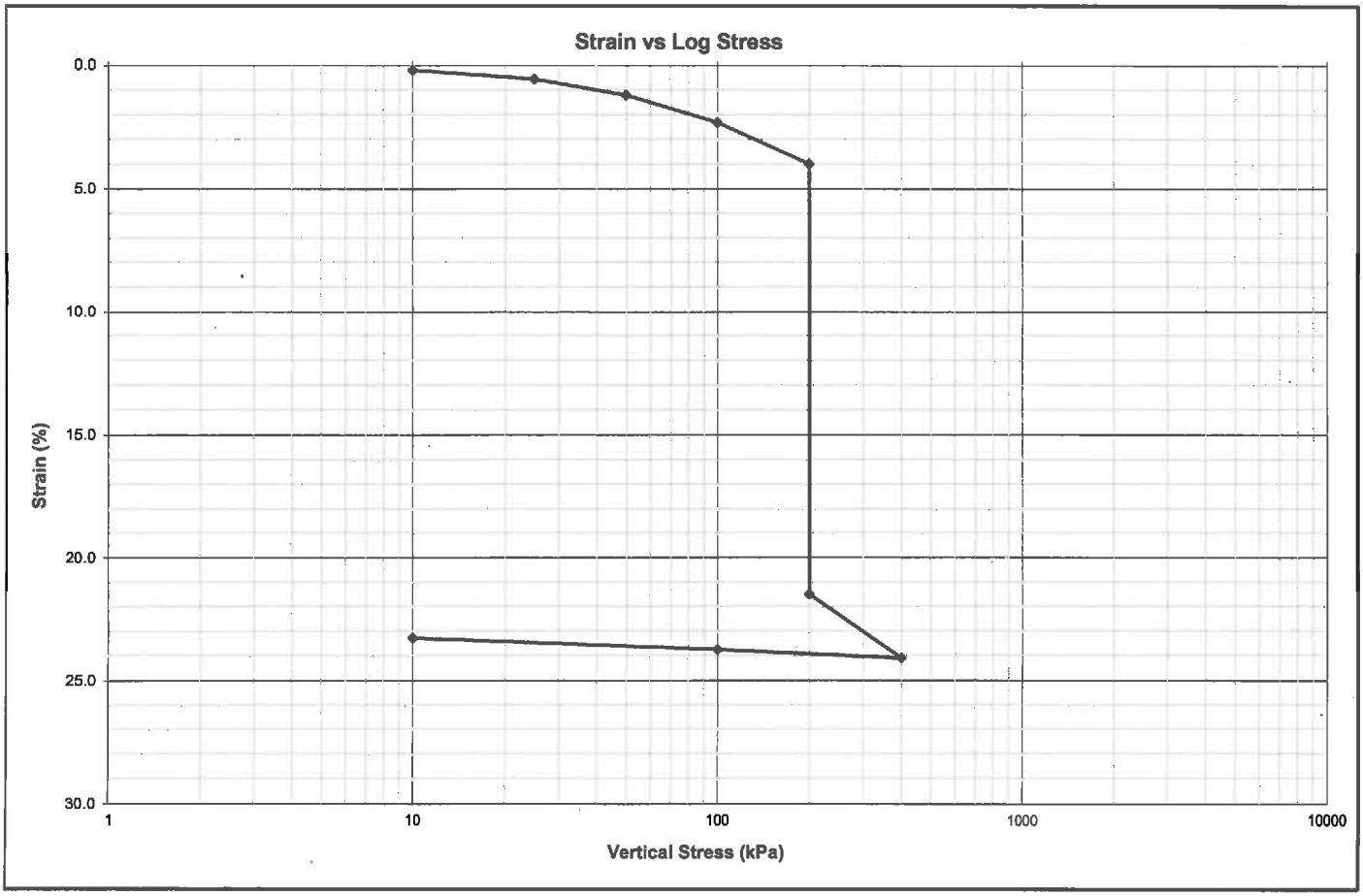
Client : JOHAN VD MERWE **Project :** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no :** 22554

Sample no : TB/20 **Date :** 17/12/2020

Lab no : G20-0475 **Depth (m) :** 0.5

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	3.8	Complete test specimen	Undisturbed sample
	After Test	%	22.0	Complete test specimen	Collapse Potential : 18.2%
Dry Density		Kg/m³	1301		
Void Ratio		-	1.069		
Degree of Saturation		%	9.5		
Initial Specimen Height		mm	20.0		
Relative Density (SG)		-	2.692	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	19.961	19.886	19.757	19.536	19.202	15.702	15.182	15.252	15.347				
Strain	%	0.195	0.570	1.217	2.319	3.989	21.488	24.090	23.740	23.264				
Void Ratio	-	1.065	1.057	1.044	1.021	0.987	0.625	0.571	0.578	0.588				
Mv (1/Mpa)	-	-	0.2503	0.2604	0.223	0.171	-	0.1657	0.0153	0.0694				



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CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

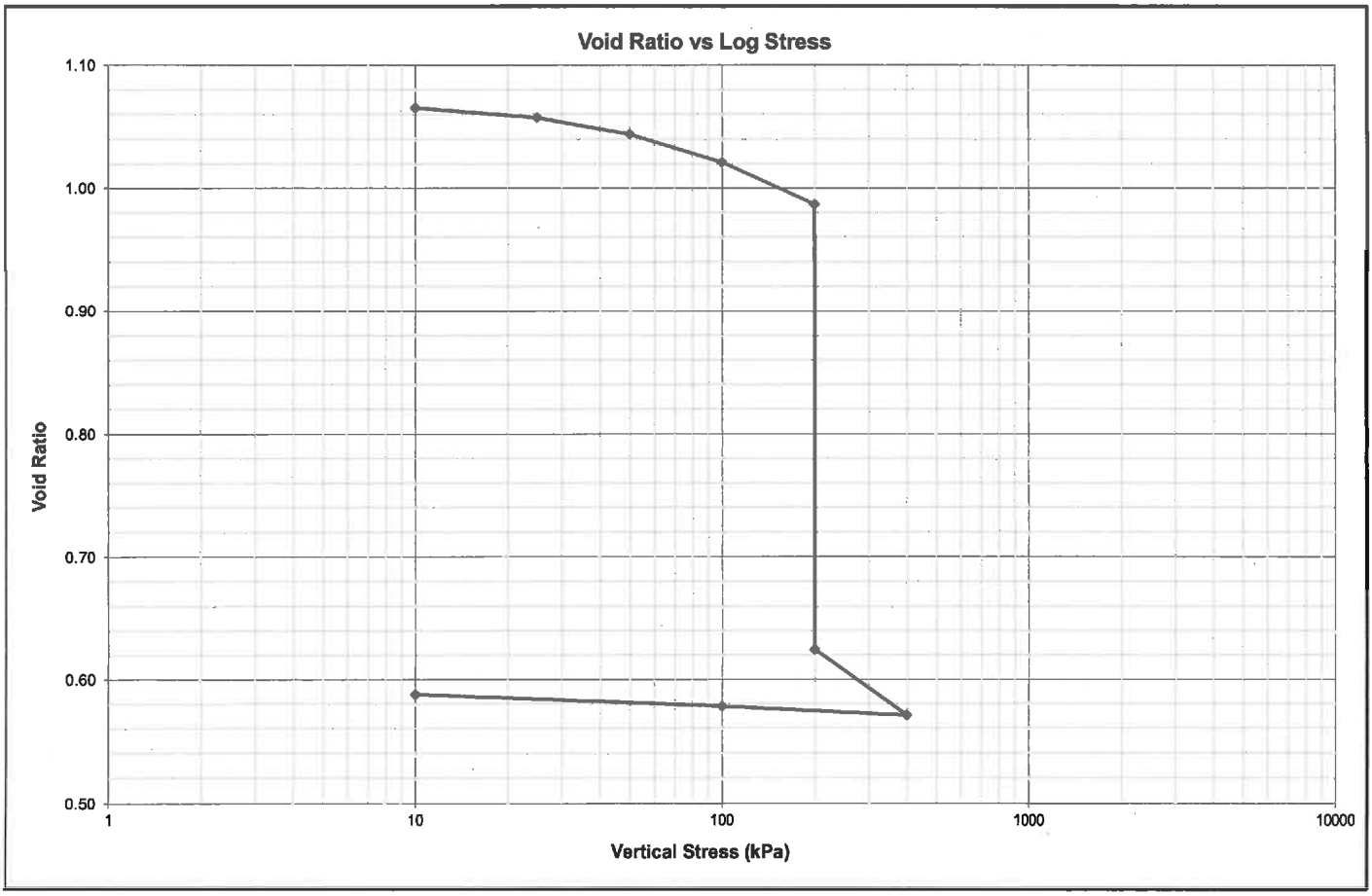
Client : JOHAN VD MERWE **Project :** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no :** 22554

Sample no : TB/20 **Date :** 17/12/2020

Lab no : G20-0475 **Depth (m) :** 0.5

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	3.8	Complete test specimen	Undisturbed sample
	After Test	%	22.0	Complete test specimen	Collapse Potential: 18.2%
Dry Density		Kg/m³	1301		
Void Ratio		-	1.069		
Degree of Saturation		%	9.5		
Initial Specimen Height		mm	20.0		
Relative Density (SG)		-	2.692	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	19.961	19.886	19.757	19.536	19.202	15.702	15.182	15.252	15.347				
Strain	%	0.195	0.570	1.217	2.319	3.989	21.488	24.090	23.740	23.264				
Void Ratio	-	1.065	1.057	1.044	1.021	0.987	0.625	0.571	0.578	0.588				
Mv (1/Mpa)	-	-	0.2503	0.2604	0.223	0.171	-	0.1657	0.0153	0.0694				



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CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

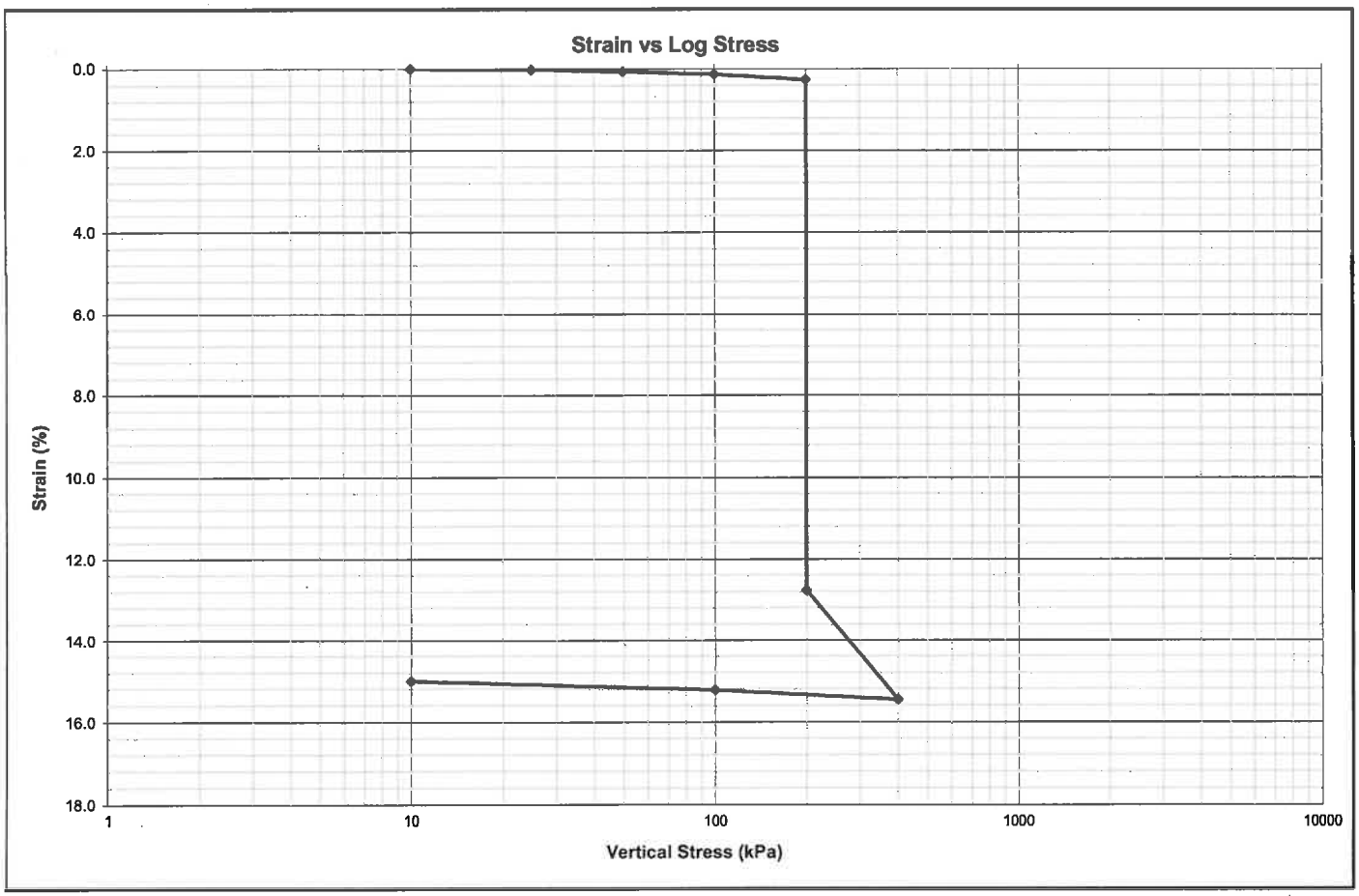
Client : JOHAN VD MERWE **Project :** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no :** 22554

Sample no : TB/20 **Date :** 17/12/2020

Lab no : G20-0476 **Depth (m) :** 1.2

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	3.3	Complete test specimen	Undisturbed sample
	After Test	%	19.8	Complete test specimen	Collapse Potential : 12.5%
Dry Density		Kg/m³	1529		
Void Ratio		-	0.767		
Degree of Saturation		%	11.7		
Initial Specimen Height		mm	20.0		
Relative Density (SG)		-	2.702	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	20.000	19.995	19.986	19.972	19.947	17.448	16.909	16.956	17.000				
Strain	%	0.001	0.025	0.068	0.139	0.266	12.760	15.456	15.219	15.002				
Void Ratio	-	0.767	0.766	0.765	0.764	0.762	0.541	0.494	0.498	0.502				
Mv (1/Mpa)	-	-	0.0161	0.0172	0.0142	0.0127	-	0.1545	0.0093	0.0284				



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CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

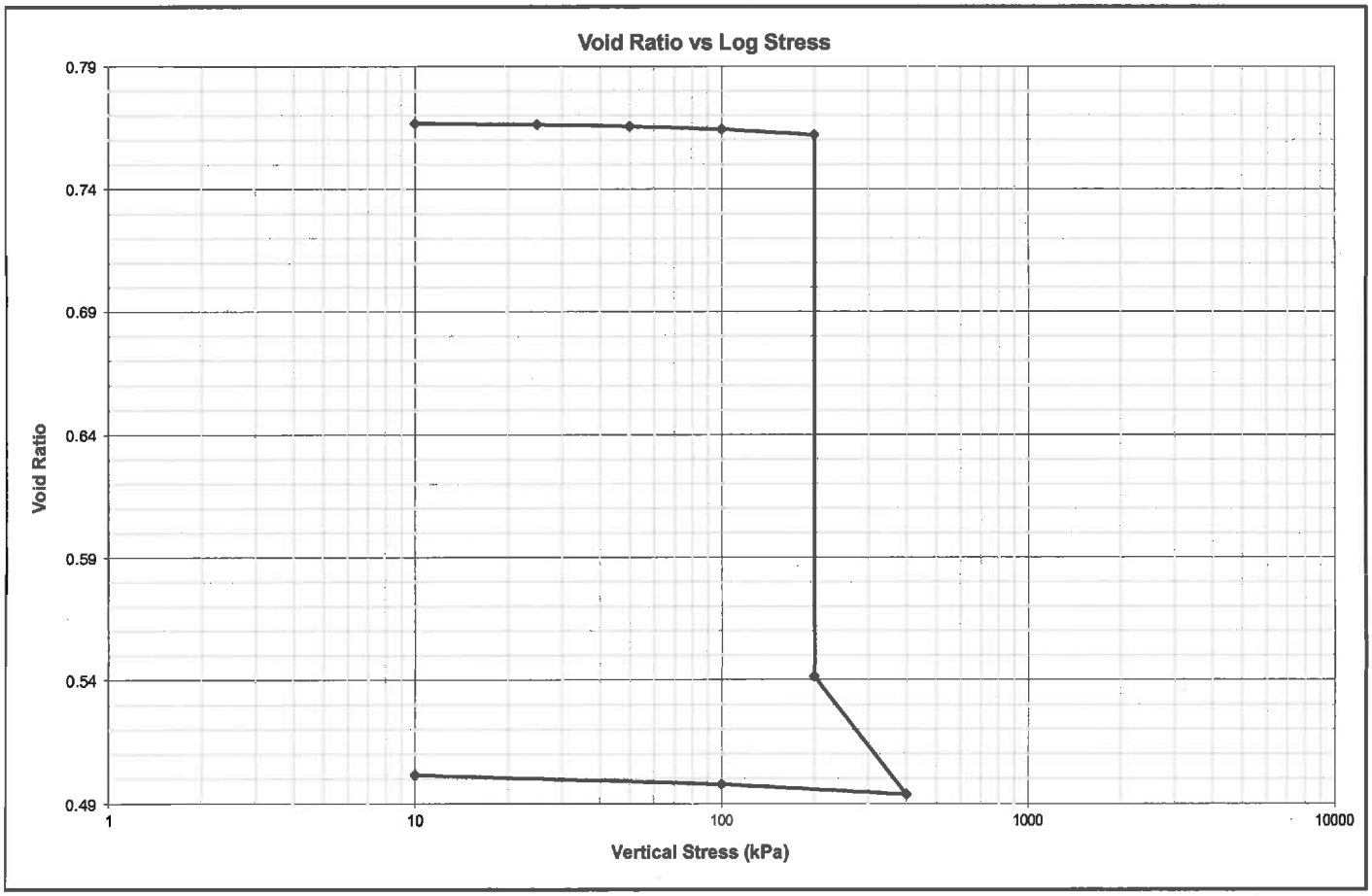
Client : JOHAN VD MERWE **Project :** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no :** 22554

Sample no : TB/20 **Date :** 17/12/2020

Lab no : G20-0476 **Depth (m) :** 1.2

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	3.3	Complete test specimen	Undisturbed sample
	After Test	%	19.8	Complete test specimen	Collapse Potential: 12.5%
Dry Density		Kg/m³	1529		
Void Ratio		-	0.767		
Degree of Saturation		%	11.7		
Initial Specimen Height		mm	20.0		
Relative Density (SG)		-	2.702	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	20.000	19.995	19.986	19.972	19.947	17.448	16.909	16.956	17.000				
Strain	%	0.001	0.025	0.068	0.139	0.266	12.760	15.456	15.219	15.002				
Void Ratio	-	0.767	0.766	0.765	0.764	0.762	0.541	0.494	0.498	0.502				
Mv (1/Mpa)	-	-	0.0161	0.0172	0.0142	0.0127	-	0.1545	0.0093	0.0284				



SGS MATROLAB

CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

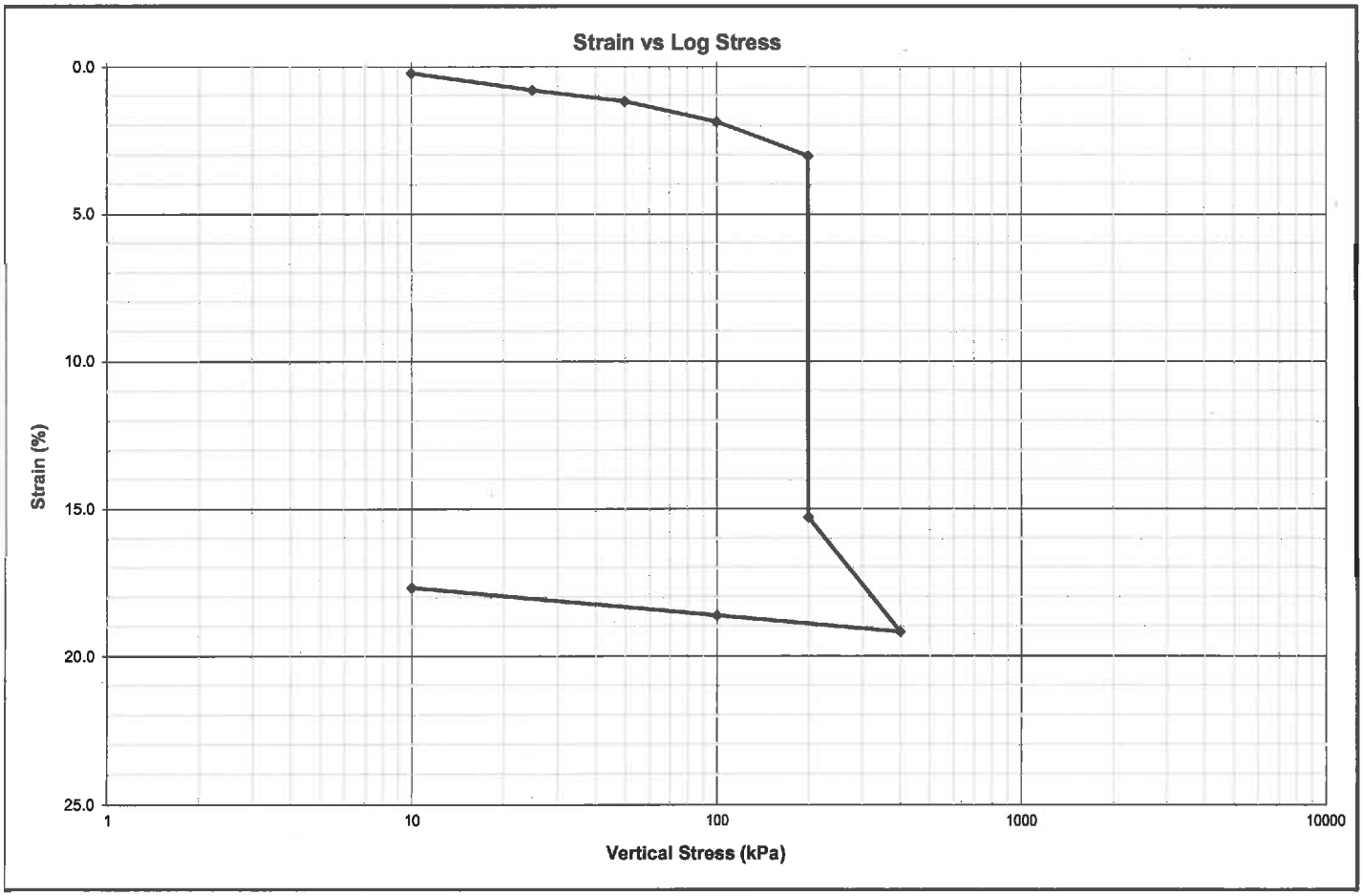
Client JOHAN VD MERWE **Project:** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no:** 22554

Sample no TB/28 **Date** 17/12/2020

Lab no G20-0478 **Depth (m):** 1

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	2.8	Complete test specimen	Undisturbed sample
	After Test	%	2.7	Complete test specimen	Collapse Potential: 12.63%
Dry Density		Kg/m³	1359		
Void Ratio		-	0.965		
Degree of Saturation		%	7.7		
Initial Specimen Height		mm	25.4		
Relative Density (SG)		-	2.670	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	25.342	25.194	25.097	24.921	24.628	21.517	20.528	20.671	20.909				
Strain	%	0.229	0.810	1.194	1.887	3.041	15.289	19.181	18.620	17.680				
Void Ratio	-	0.960	0.949	0.941	0.928	0.905	0.664	0.588	0.599	0.617				
Mv (1/Mpa)	-	-	0.3883	0.1551	0.1401	0.1177	-	0.2297	0.0231	0.1284				



SGS MATROLAB

CONSOLIDATION TESTS: COLLAPSE POTENTIAL

BS 1377 Part 5

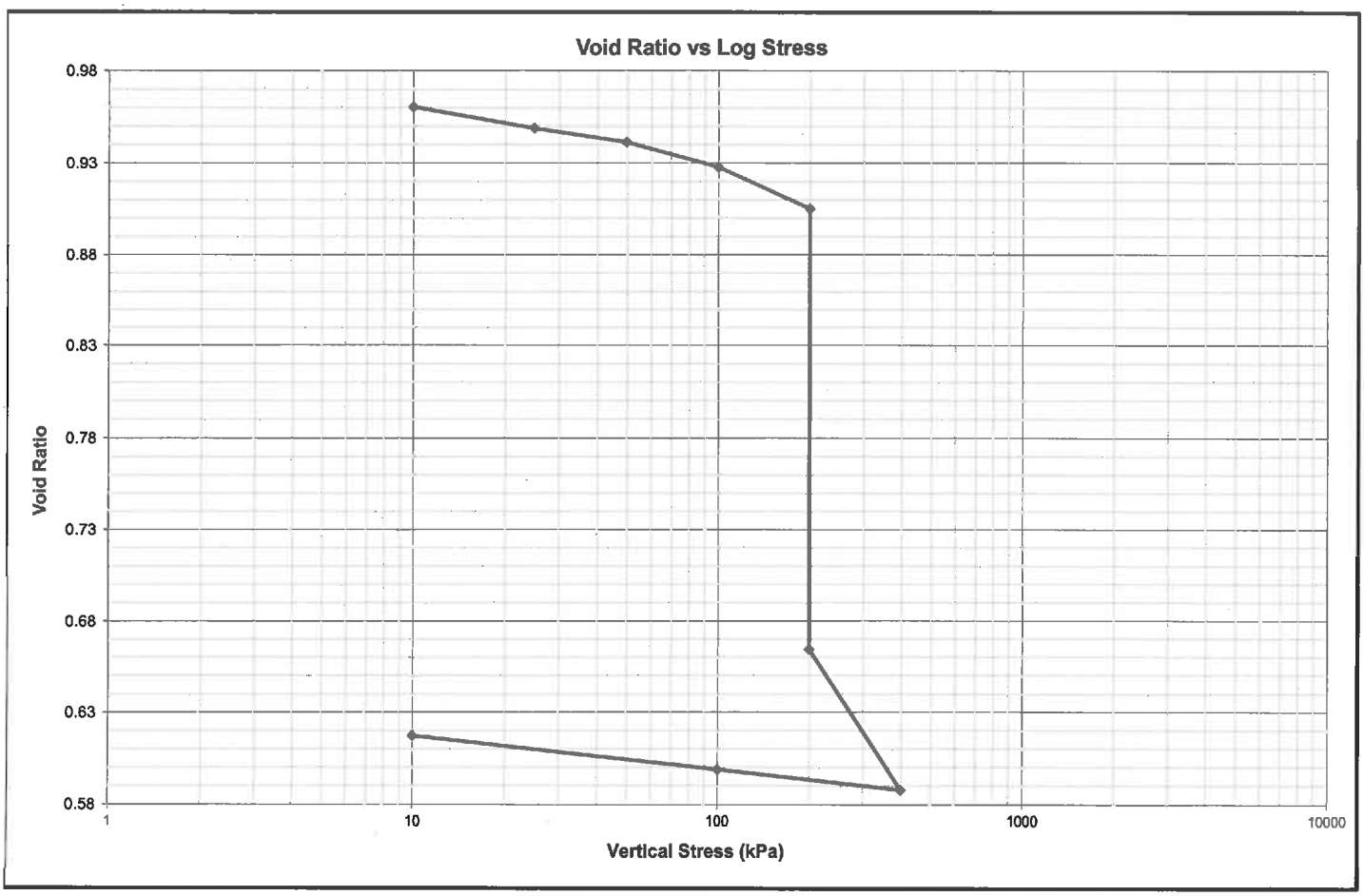
Client JOHAN VD MERWE **Project:** MATERIALS INVESTIGATION PORTION 2 OF TENBOSCH 661-JU **Job no:** 22554

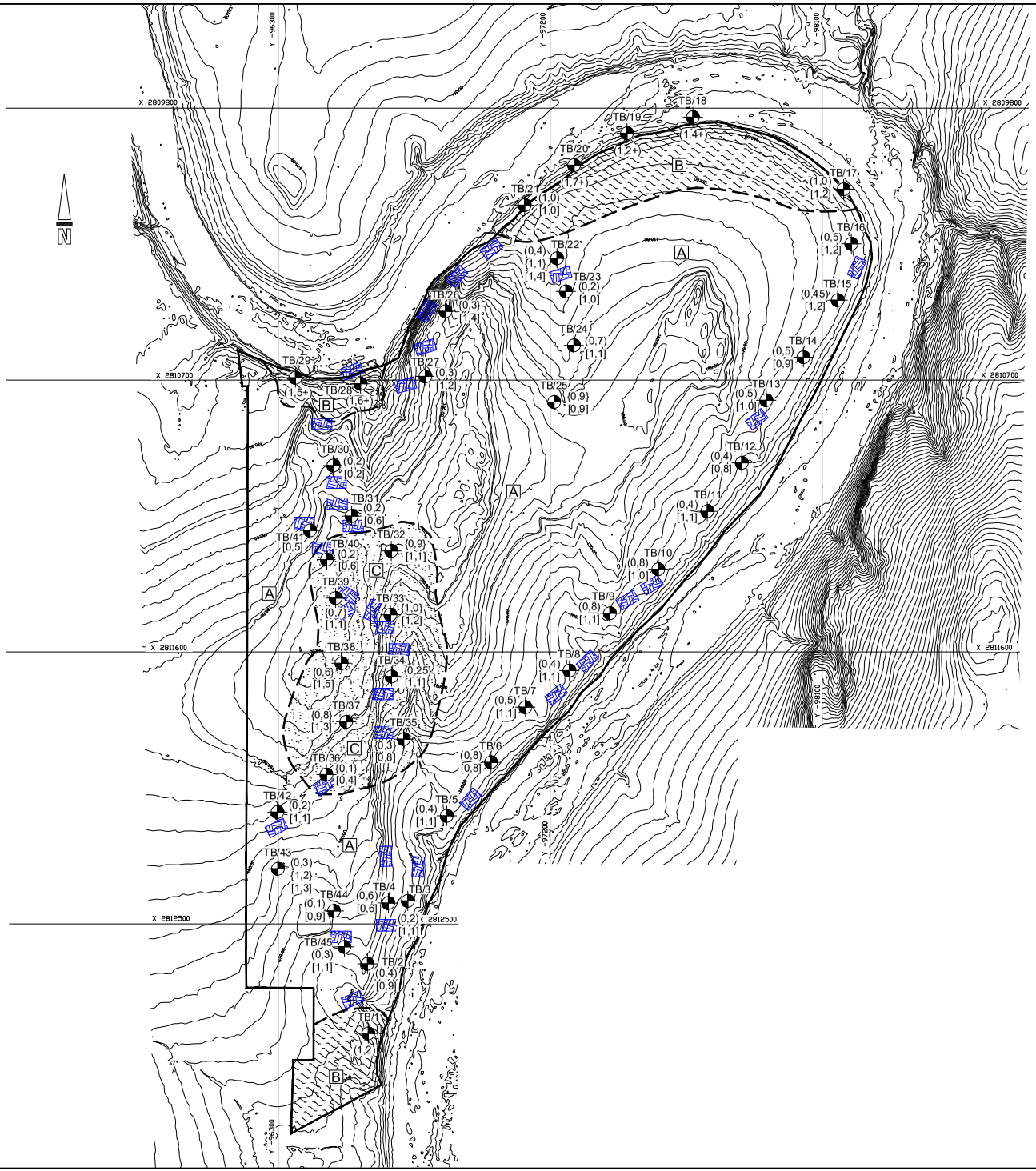
Sample no TB/28 **Date** 17/12/2020

Lab no G20-0478 **Depth (m):** 1

Sample Parameters		Unit	Value	Remarks	Test Remarks
Moisture Content	Before Test	%	2.8	Complete test specimen	Undisturbed sample
	After Test	%	2.7	Complete test specimen	Collapse Potential: 12.63%
Dry Density		Kg/m³	1359		
Void Ratio		-	0.965		
Degree of Saturation		%	7.7		
Initial Specimen Height		mm	25.4		
Relative Density (SG)		-	2.670	Determined	Soaked @200kPa

Test Parameters														
Vertical Stress	kPa	10	25	50	100	200	200	400	100	10				
Time Elapsed	hr	1	1	1	1	1	24	1	1	1				
H_{100}	mm	25.342	25.194	25.097	24.921	24.628	21.517	20.528	20.671	20.909				
Strain	%	0.229	0.810	1.194	1.887	3.041	15.289	19.181	18.620	17.680				
Void Ratio	-	0.960	0.949	0.941	0.928	0.905	0.664	0.588	0.599	0.617				
Mv (1/Mpa)	-	-	0.3883	0.1551	0.1401	0.1177	-	0.2297	0.0231	0.1284				





LEGEND:

TB/22 — TEST PIT BY BACKACTOR, POSITION AND NUMBER SHOWING

(0,4) — THICKNESS OF POTENTIALLY COLLAPSIBLE AND COMPRESSIBLE HORIZON IN METRES

{1,1} — DEPTH OF BASE OF CLAY HORIZON

[1,4] — OUTCROP AND SUB-OUTCROP OF VERY HARD ROCK BASALT AND GRANOPHYRE OBSERVED IN AND AROUND GRAVEL ROADS AND NEAR TEST PITS

MATERIAL BOUNDARY **

SOIL ZONE	MATERIAL DESCRIPTION & GEOTECHNICAL CONSIDERATIONS	NHBRC* SITE CLASS
A	Thin to moderate horizon (0,1m to 0,8m thick) of *loose* to *medium dense*, sandy, gravelly and bouldery COLLUVIUM overlying a *dense* to *very dense* gravelly PEBBLE MARKER overlying *dense* to *very dense* residual soils and basalt and granophyre bedrock. Scattered to numerous outcrop and sub-outcrop of *hard rock* BASALT and GRANOPHYRE occur throughout this soil zone. Contains isolated pockets of Soil Zone "C" material. ⇨ *Very hard excavation and possibly blasting will be required for the installation of service and foundation trenches across large areas* ⇨ *Undulating bedrock and foundation horizon can be expected* ⇨ *Upper colluvial horizon is potentially compressible*	C/S-S1/R
B	Thin to prominent horizon (1,0m to 1,6m+ thick) of *dense* voided, silty sand clayey fine SAND and *very stiff*, voided and shattered sandy SILT of colluvial and alluvial origin overlying Soil Zone "A" materials. ⇨ *Upper soil horizon is potentially collapsible and compressible* ⇨ *Occasional hard hand tool excavation can be expected in shale bedrock*	C1-C2/S1/H
C	Thin to moderate (0,1m to 1,0m) of *very stiff* shattered, sandy CLAY of colluvial origin overlying a *dense*, gravelly PEBBLE MARKER horizon over *very dense* residual soils and *very hard rock* GRANOPHYRE. Scattered to numerous outcrop and sub-outcrop of *very hard rock* GRANOPHYRE occur throughout this soil zone. ⇨ *Upper soil horizon is potentially expansive* ⇨ *Undulating bedrock and foundation horizon can be expected* ⇨ *Very hard excavation and possibly blasting will be required for the installation of service and foundation trenches across large areas*	H1-H2/R

NOTE :

* = *National Home Builders Registration Council. NHBRC site classes to be verified during installation of underground services by a competent person since variations to the site classes shown may be present.*

** = *Soil boundaries are inferred and are not to be scaled and should be considered as a gradual change from one soil zone to the next, to be determined more accurately during installation of service trenches.* ***Drainage features and earth dams are not shown on the map, cognizance should be taken of areas than may possibly be affected by a flood line.***

Adapted from Project : Proposed Wildlife Estate, Portion 2 Tenbosch 661 JU, dated November 2020.

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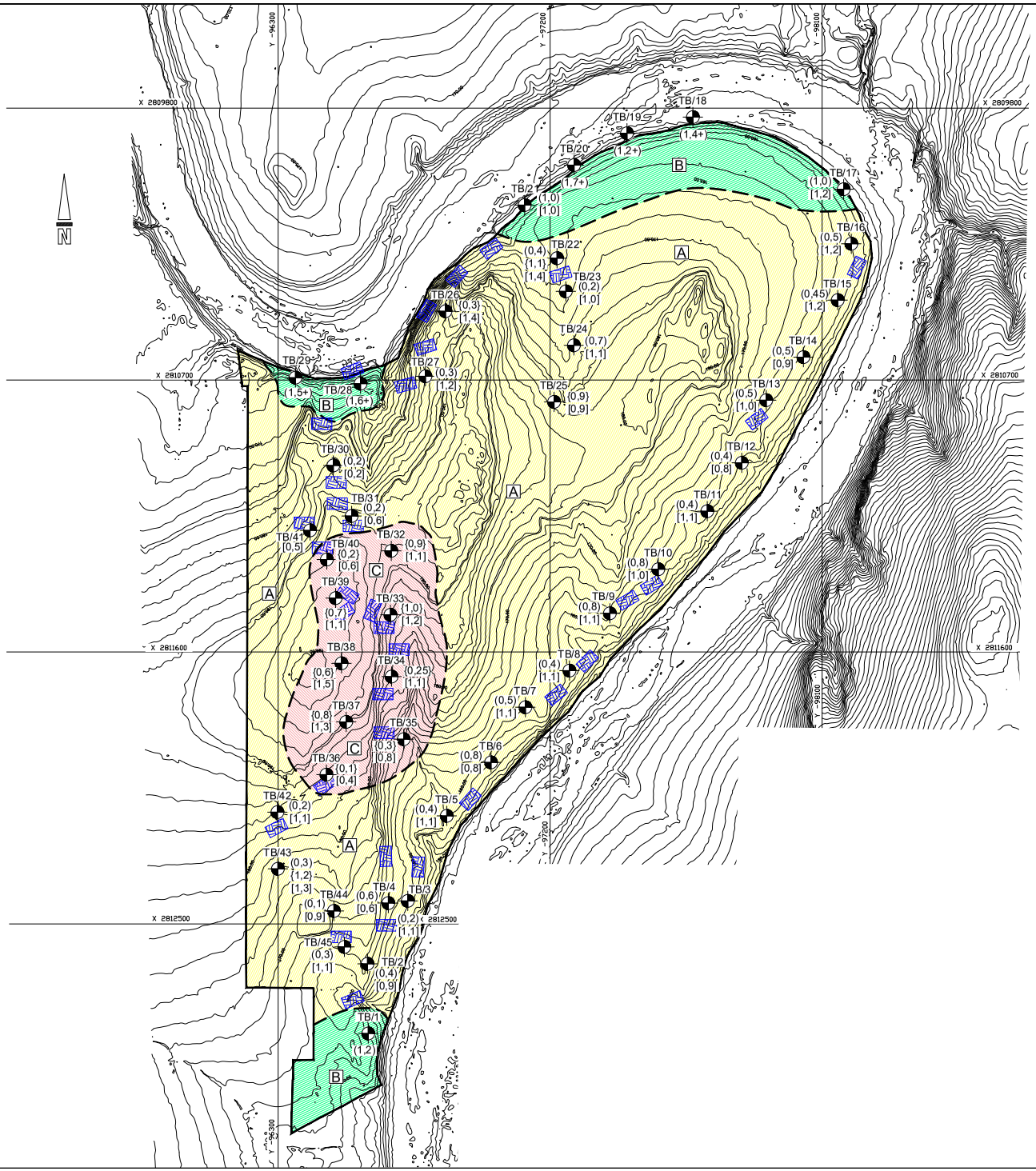
TITLE / TITLE GEOTECHNICAL MAP	TEK / DRG NO M20/3870
LIGGING / LOCALITY PORTION 2 AND 3 OF THE FARM TENBOSCH 661-JU	DATUM / DATE DECEMBER 2020
KLIËNT / CLIENT DERICK PEACOCK ASSOCIATES	SKAAL / SCALE ~1 : 10 000 ON A2



LEGEND:

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