

APPENDIX A

Direct Shear Test Results



1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Joint samples taken from loose debris.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade III monzonite.
- High percentage (60-70%) of feldspars which are subhedral, tabular.
- High percentage of dark mineral, probably hornblende.
- Quartz relatively rare.
- Coarse grained, inequigranular.

3. DISCONTINUITY DESCRIPTION

- Surface is pseudo-planar, slightly undulating.
- Light/dark brown due to presence of iron oxides together with some clay.
- Surfaces washed off prior to testing.
- Oxides on surfaces, although quite hard, can be scratched by a pin to a depth of about 0.5 mm.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at $60 \text{ mm} \times 80 \text{ mm} = 4,800 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 1

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

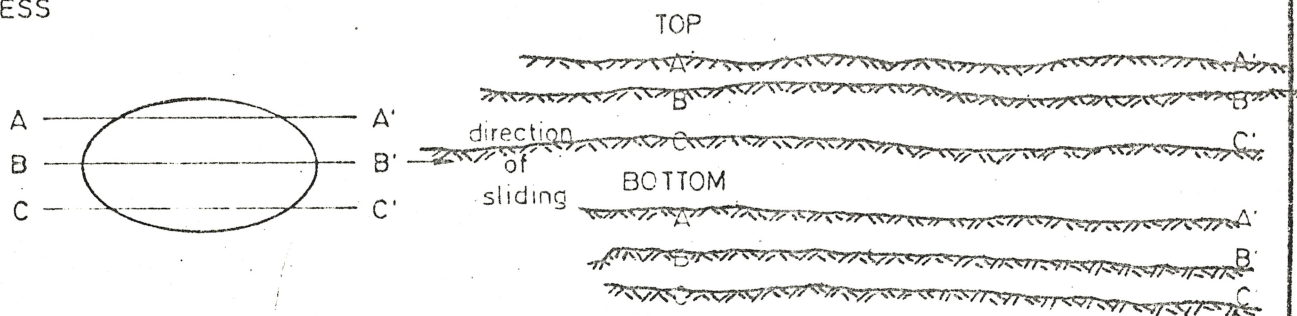


1. SAMPLE DETAILS

PRESLIDING / POST-SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



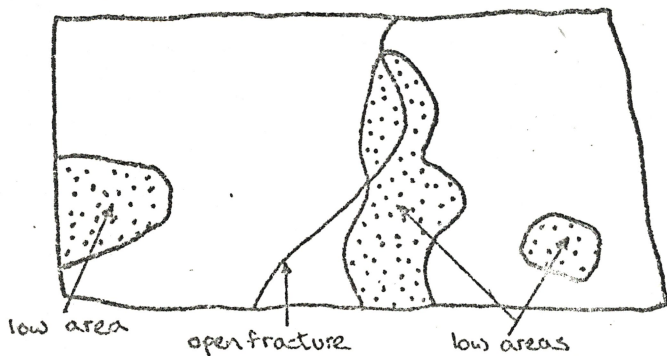
3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

surface has a uniform dark brown coating of iron oxides

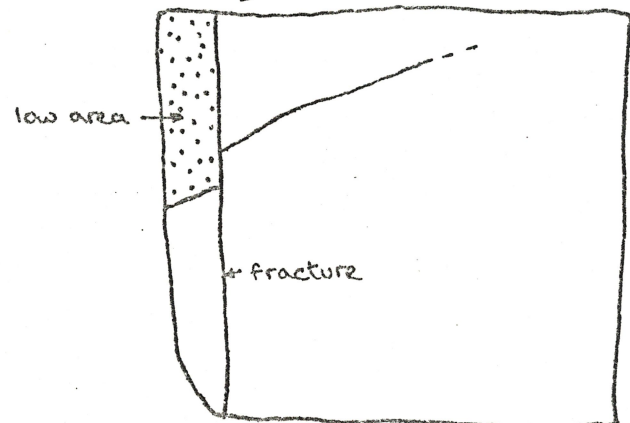


TOP



BOTTOM

light brown coating of iron oxides. locally some white feldspar



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS1

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

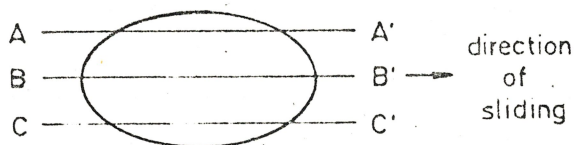


1. SAMPLE DETAILS

SAMPLE ILLUSTRATION SHEET

~~PRESIDING~~ POST SLIDING

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

A'

B'

C'

A'

B'

C'

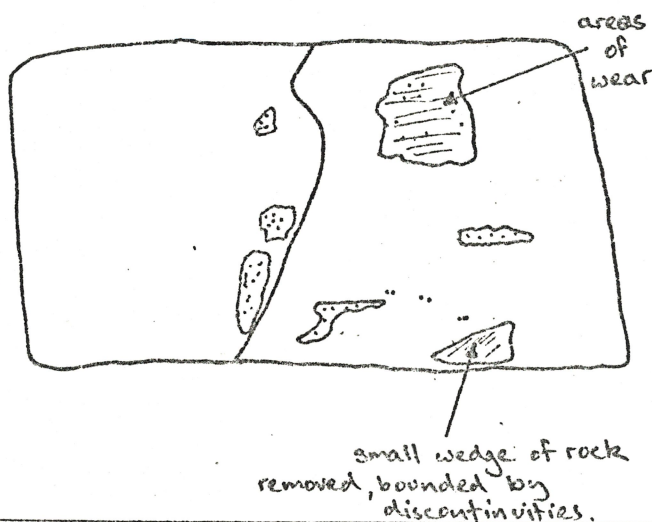
no significant changes in profiles

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

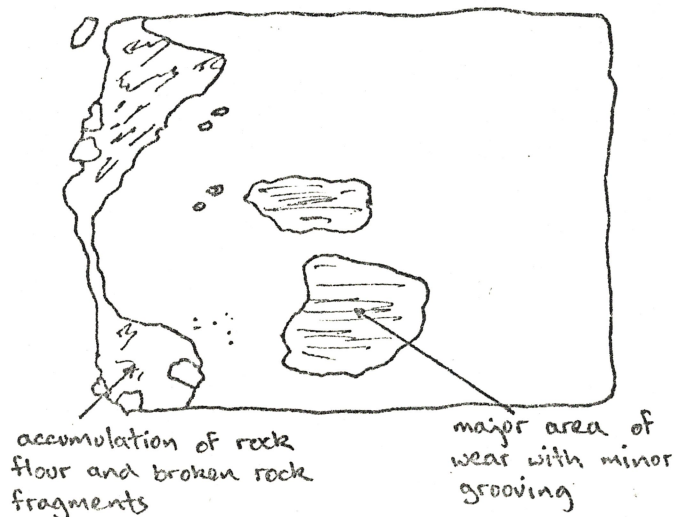
TOP wear: poorly developed striations. areas of compacted fine rock flour



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

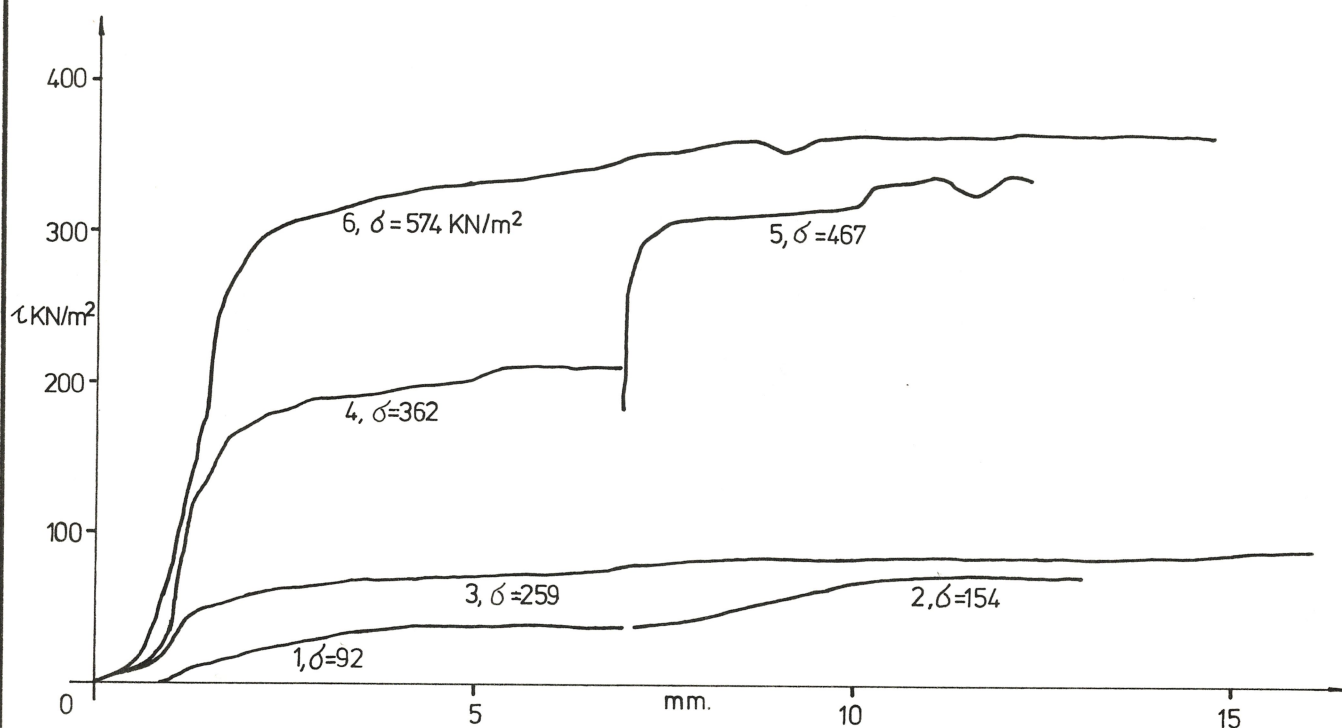
SAMPLE NUMBER YKS1

YIP KAN STREET ROCK SLOPE FAILURE

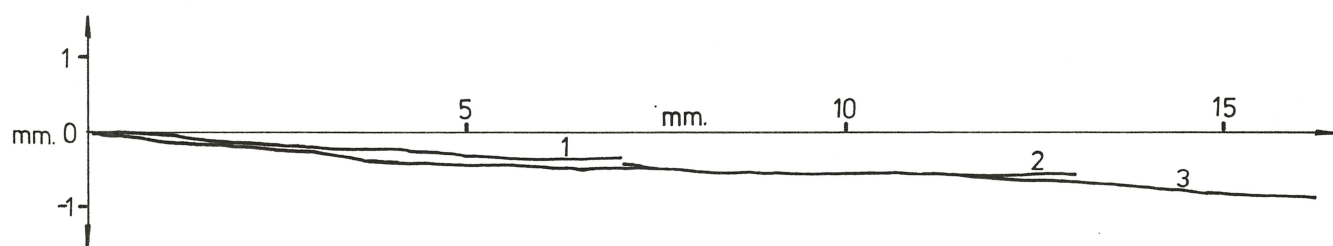
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 1

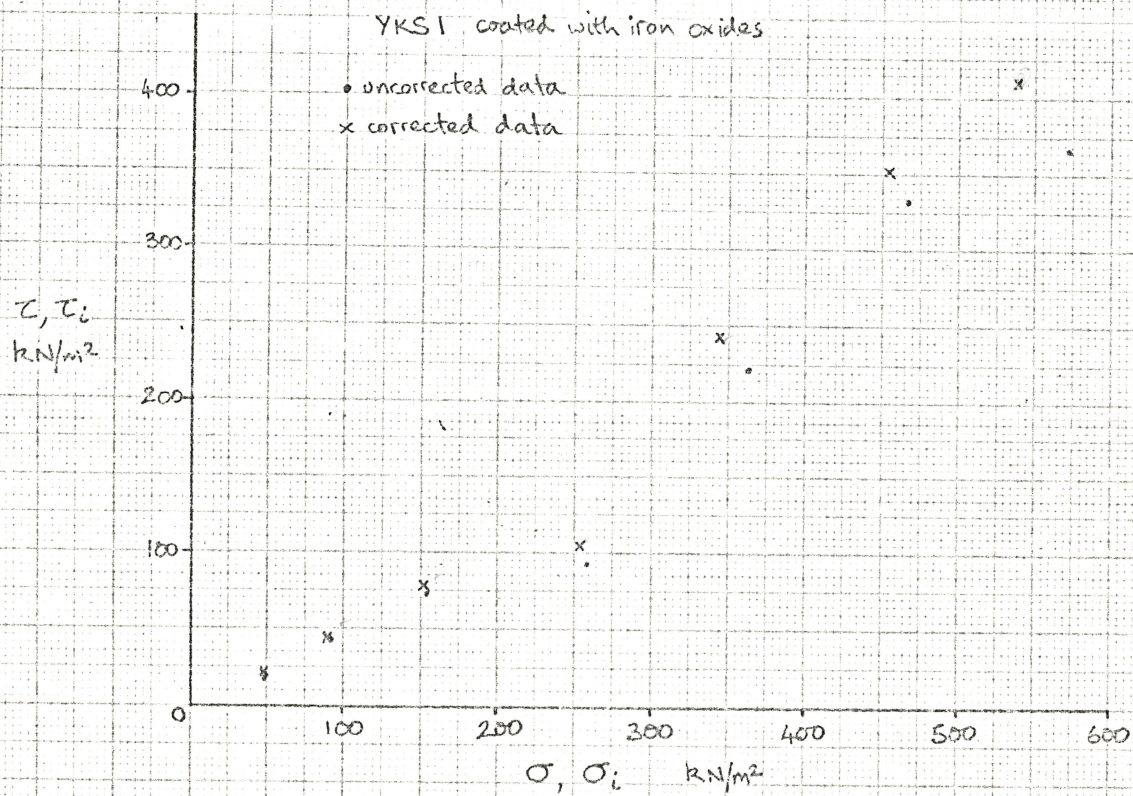


SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT





1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Joint samples taken from loose debris.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II monzonite.
- Porphyritic.
- 60% pink feldspars - tabular.
- Groundmass has a high percentage of dark minerals - hornblende and some biotite.
- Low percentage of quartz.
- Some feldspars are slightly irridescent.

3. DISCONTINUITY DESCRIPTION

- Surfaces are coated with green minerals, possibly chlorite.
- Surfaces are hard, although thick green deposits can be readily scratched and flaked from the surface with a pin.
- Surfaces are undulating and slightly pitted with occasional small ridges.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at $95 \text{ mm} \times 60 \text{ mm} = 5,700 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 2

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

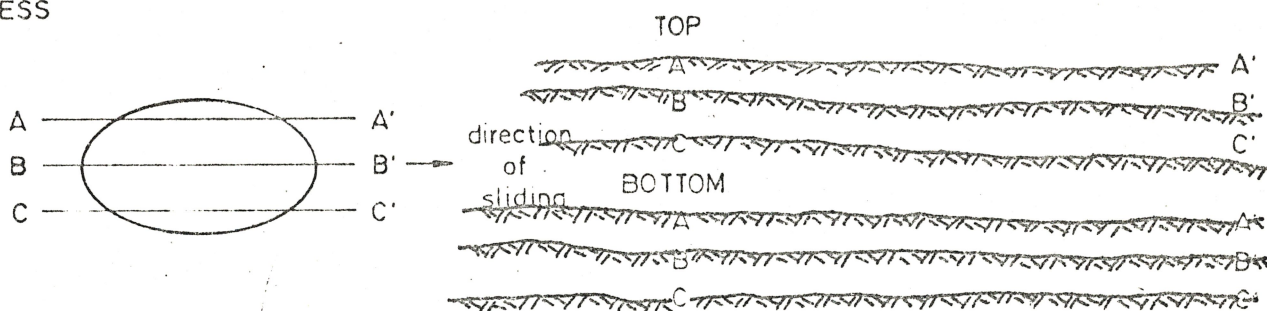


1. SAMPLE DETAILS

PRESLIDING / POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS

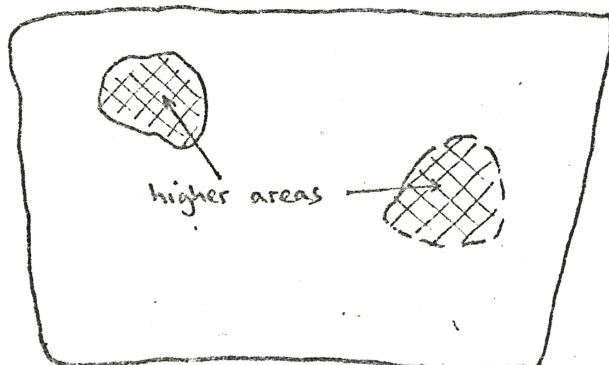


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

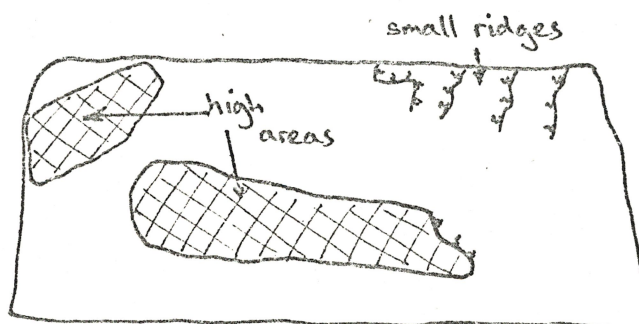
TOP surface slightly undulating, pitted. dark green and blue/grey. hard, but can be scratched with a pin.



TOP

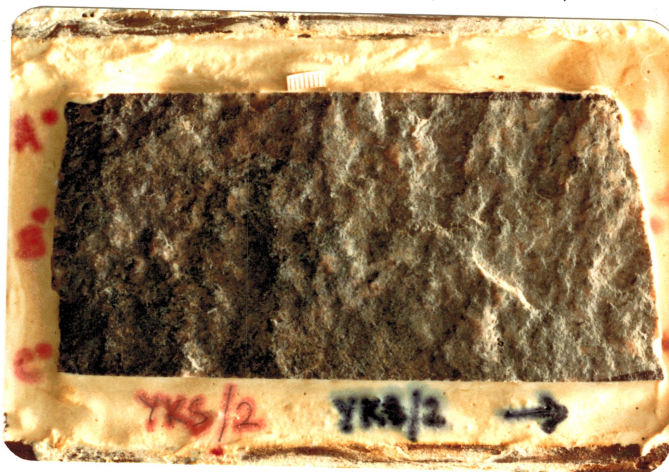


BOTTOM



dark and lighter green. high reflectance. some pale pink feldspars at surface.

BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 2

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

no significant changes in profiles

A'

B'

C'

A'

B'

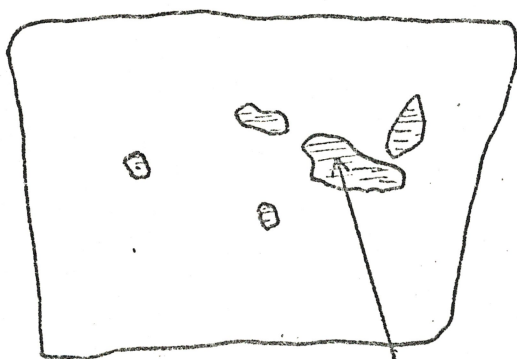
C'

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP



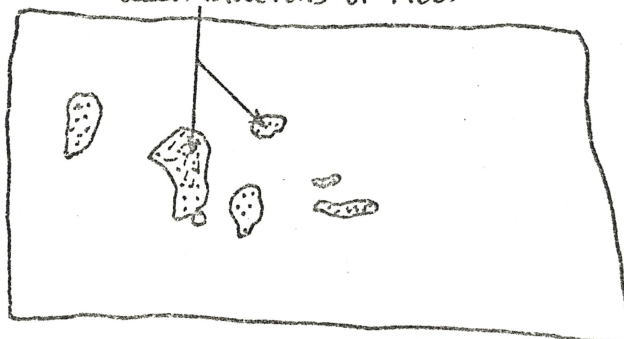
minor surface wear - shiny, grooved with flour.

TOP

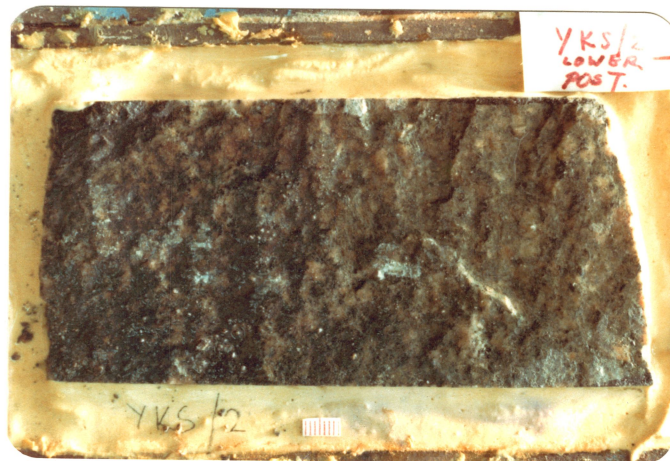


BOTTOM

areas of minor surface wear and accumulations of flour



BOTTOM



DIRECT SHEAR TESTS

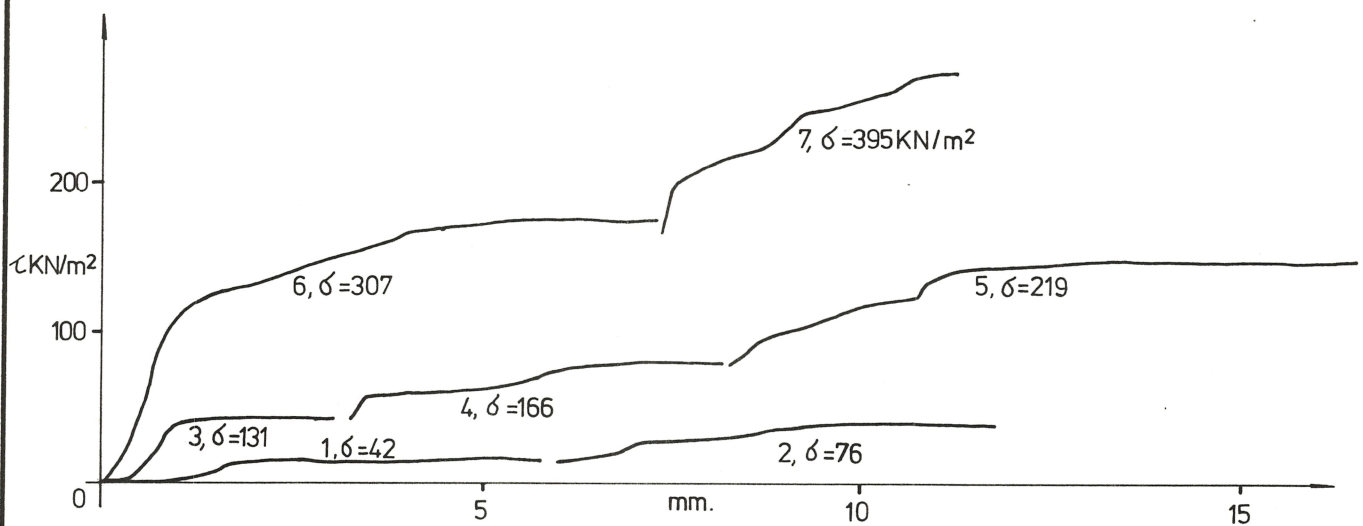
SAMPLE NUMBER YKS2

VIP KAN STREET ROCK SLOPE FAILURE

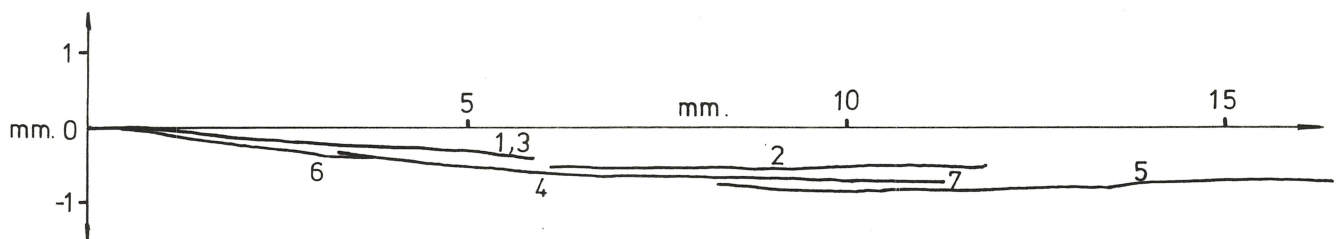
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



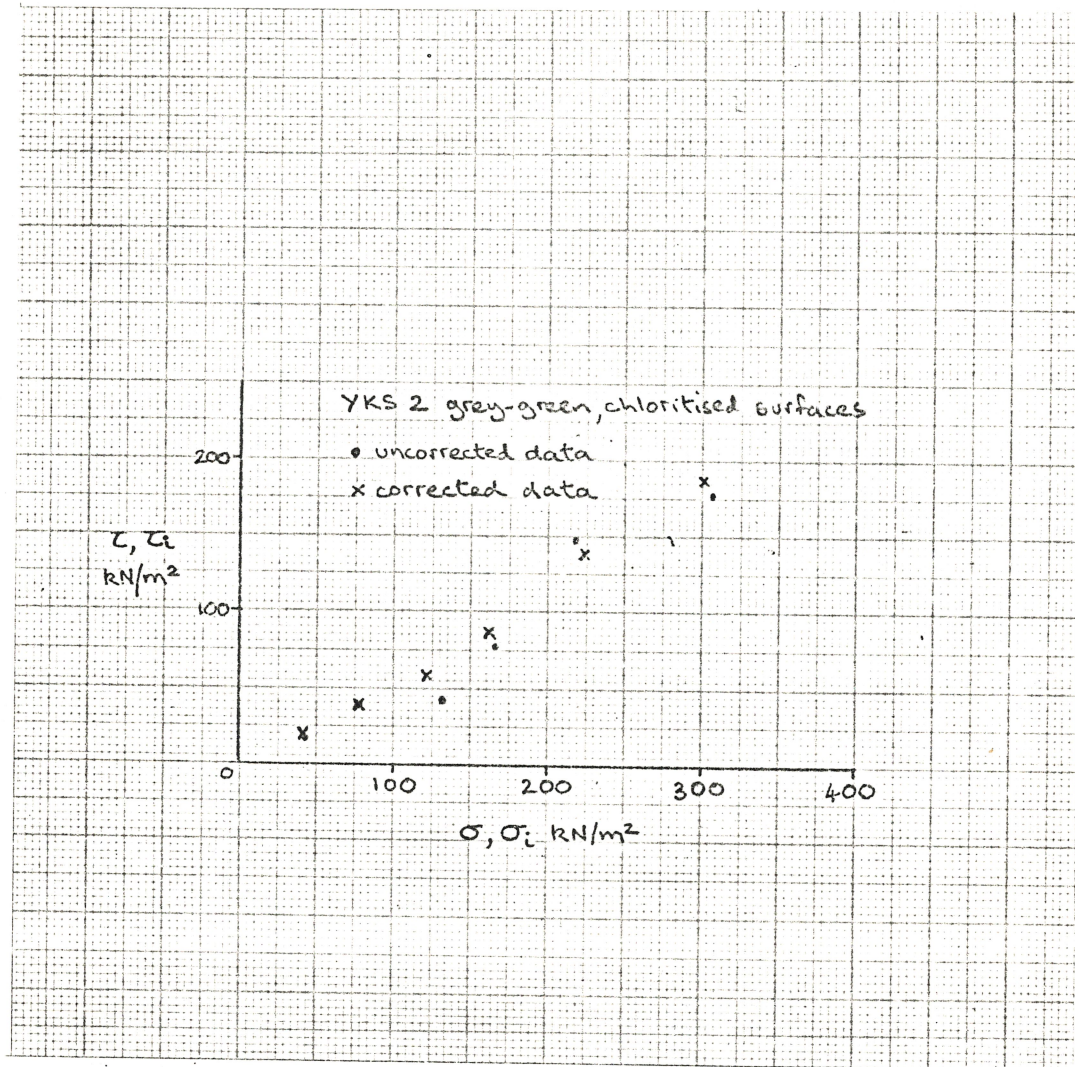
DIRECT SHEAR TEST YKS 2



SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT



1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Joint samples taken from loose debris.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II/III monzonite.

3. DISCONTINUITY DESCRIPTION

- Surfaces are grey-green, fairly rough, undulating.
- Chloritised.
- Hard.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
 $95 \text{ mm} \times 50 \text{ mm} = 4,750 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 3

YIP KAN STREET ROCK SLOPE FAILURE

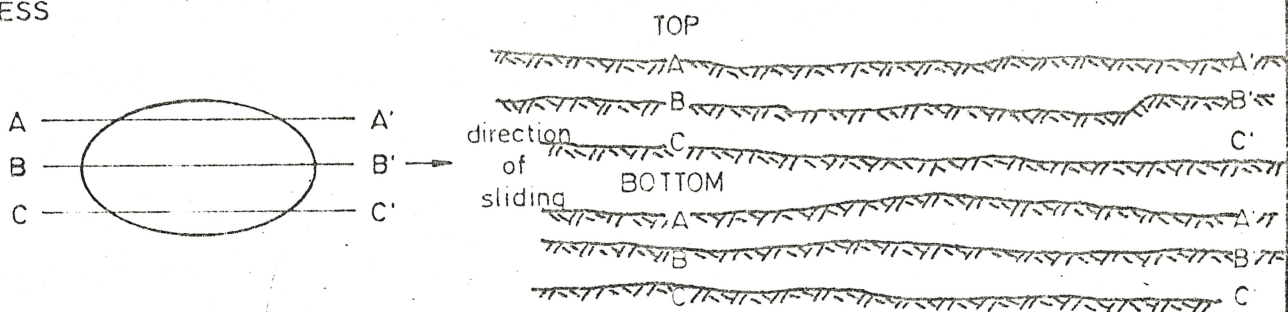
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

1. SAMPLE DETAILS

PRESLIDING/POST-SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS

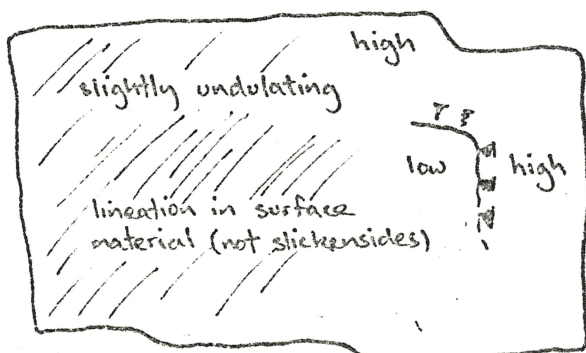


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

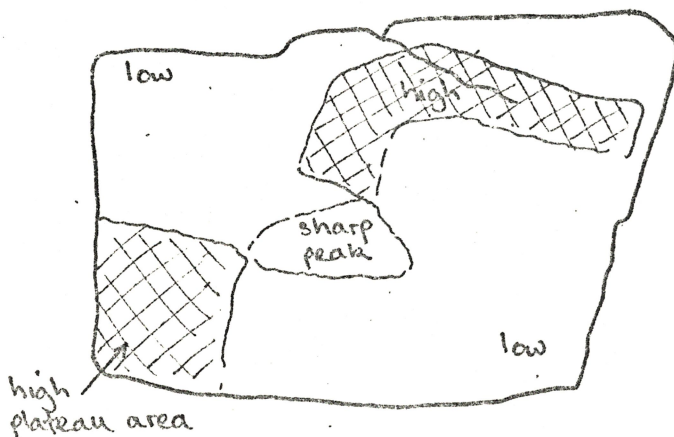


TOP



BOTTOM

dark green-grey and occasional pink feldspars at surface



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS3

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

no significant changes in profiles

A'

B'

C'

A'

B'

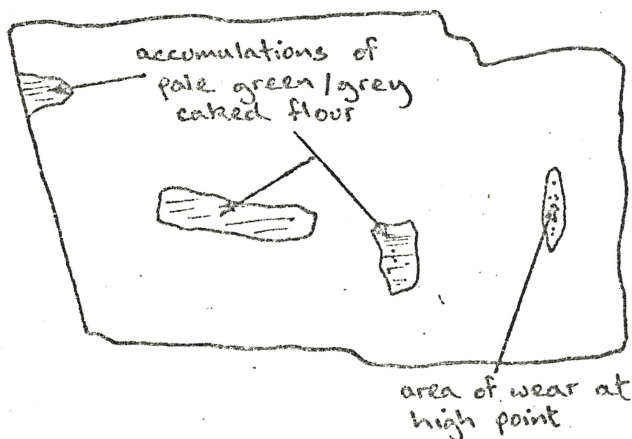
C'

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

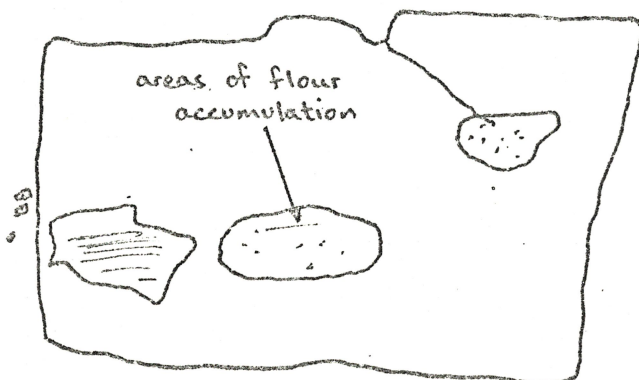
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

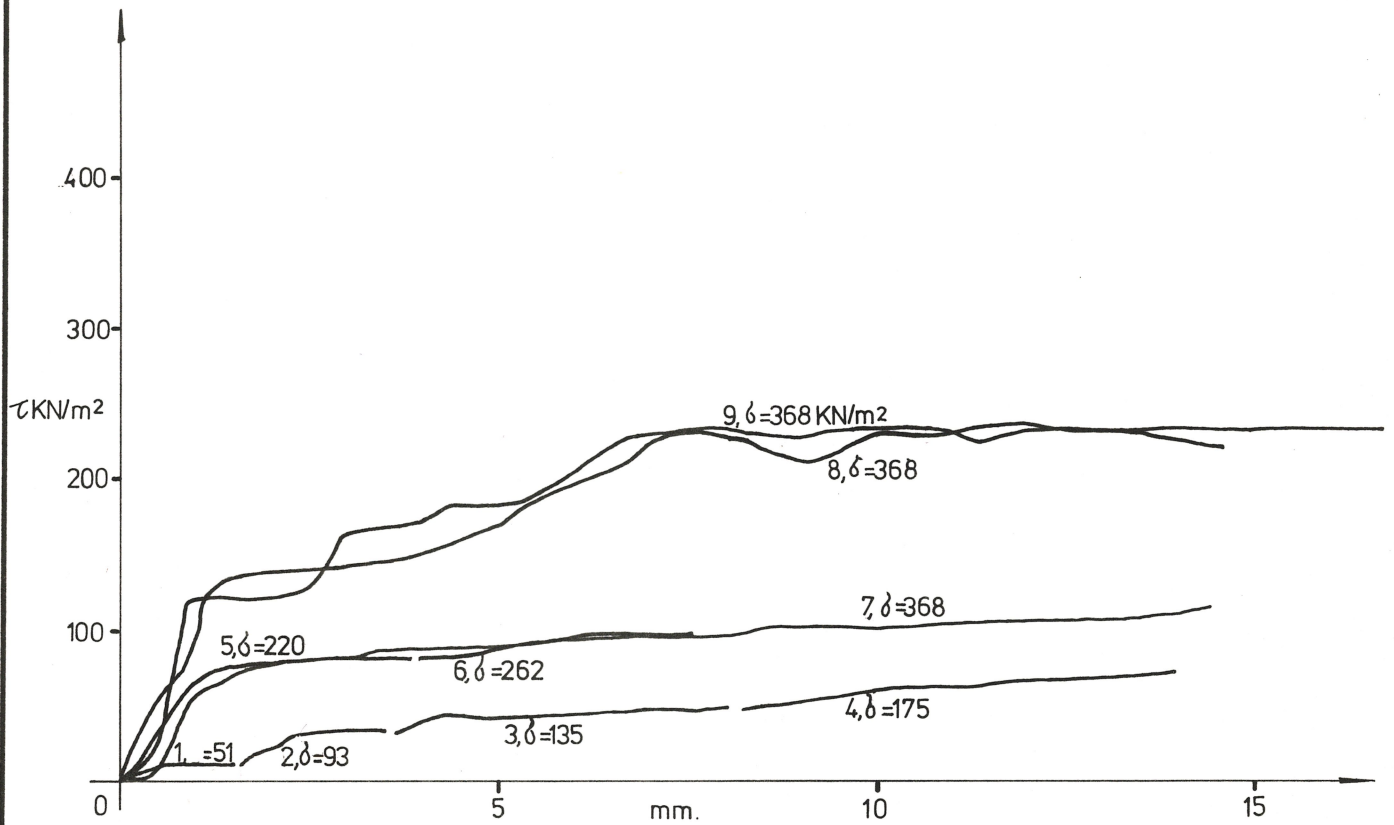
SAMPLE NUMBER YKS3

YIP KAN STREET ROCK SLOPE FAILURE

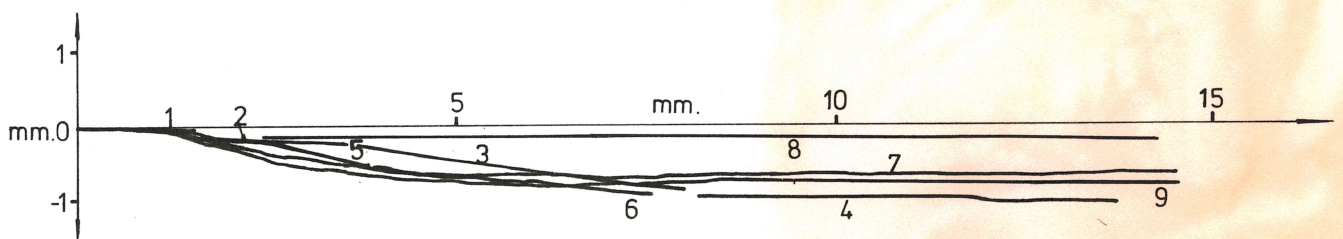
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 3

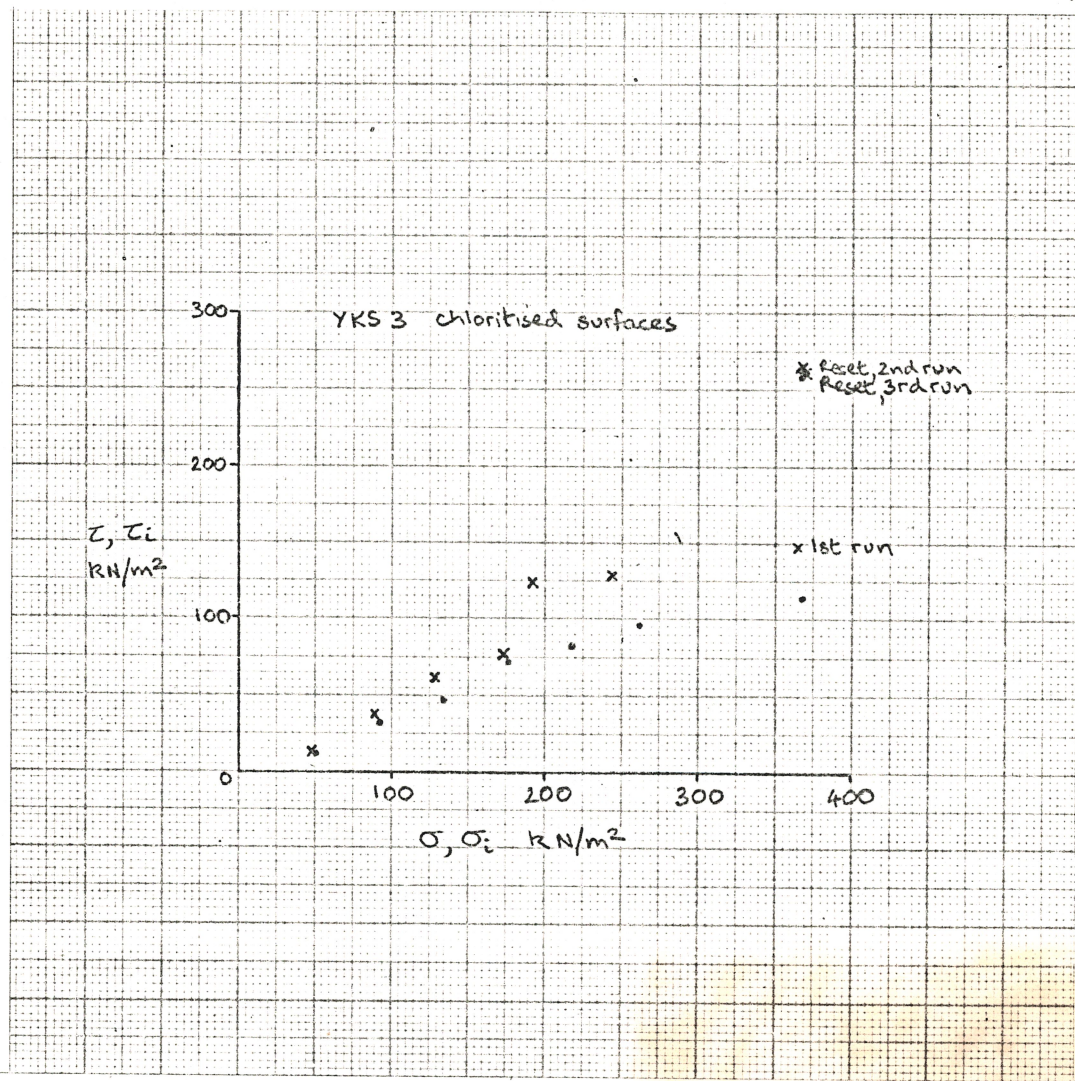


SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT





1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Joint samples taken from loose debris.
- Samples cut from same block as YKS 5 and YKS 6.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade III monzonite.

3. DISCONTINUITY DESCRIPTION

- Surfaces are pseudo-planar, undulating.
- Brown and dark metallic grey - iron oxides and perhaps manganese.
- Surfaces hard, not easily scratched.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
 $80 \text{ mm} \times 67 \text{ mm} = 5,360 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 4

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

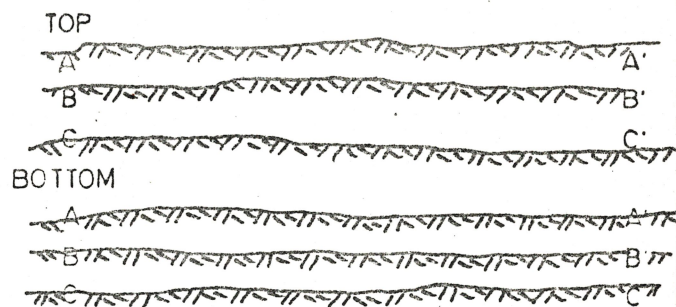
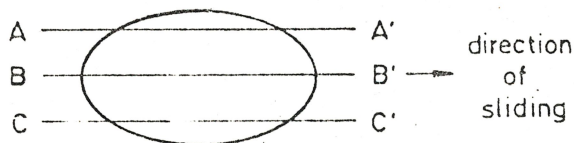


1. SAMPLE DETAILS

PRESLIDING / POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS

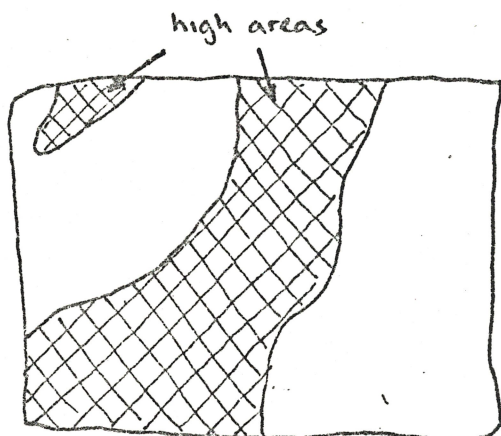


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

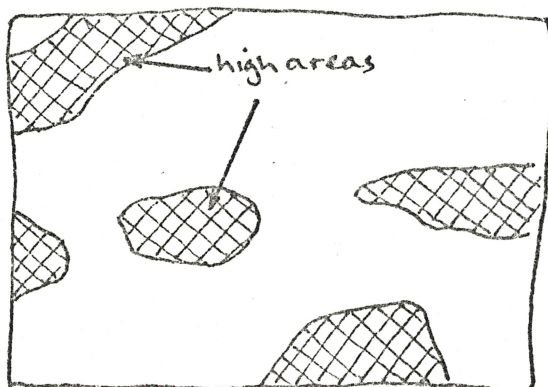


TOP



BOTTOM

surface gently undulating.
uniform, metallic brown/grey.



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS4

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

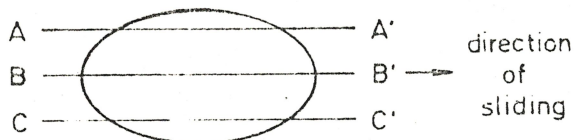


1. SAMPLE DETAILS

SAMPLE ILLUSTRATION SHEET

~~PRESLIDING~~ / POST SLIDING

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

A'

B'

C'

A'

B'

C'

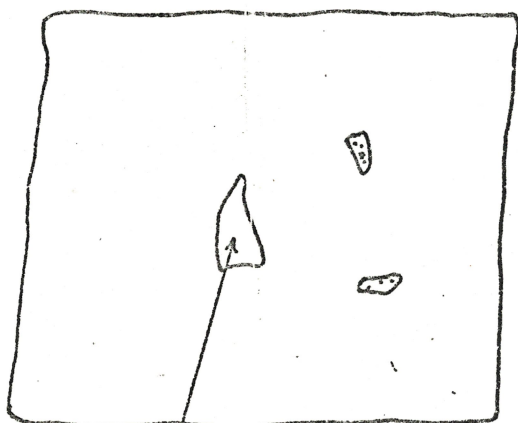
no significant changes in profiles

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

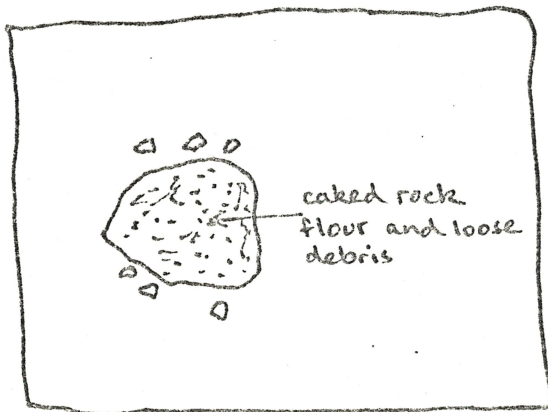


main area of damage. material flaked from surface.

TOP



BOTTOM



caked rock flour and loose debris

BOTTOM



DIRECT SHEAR TESTS

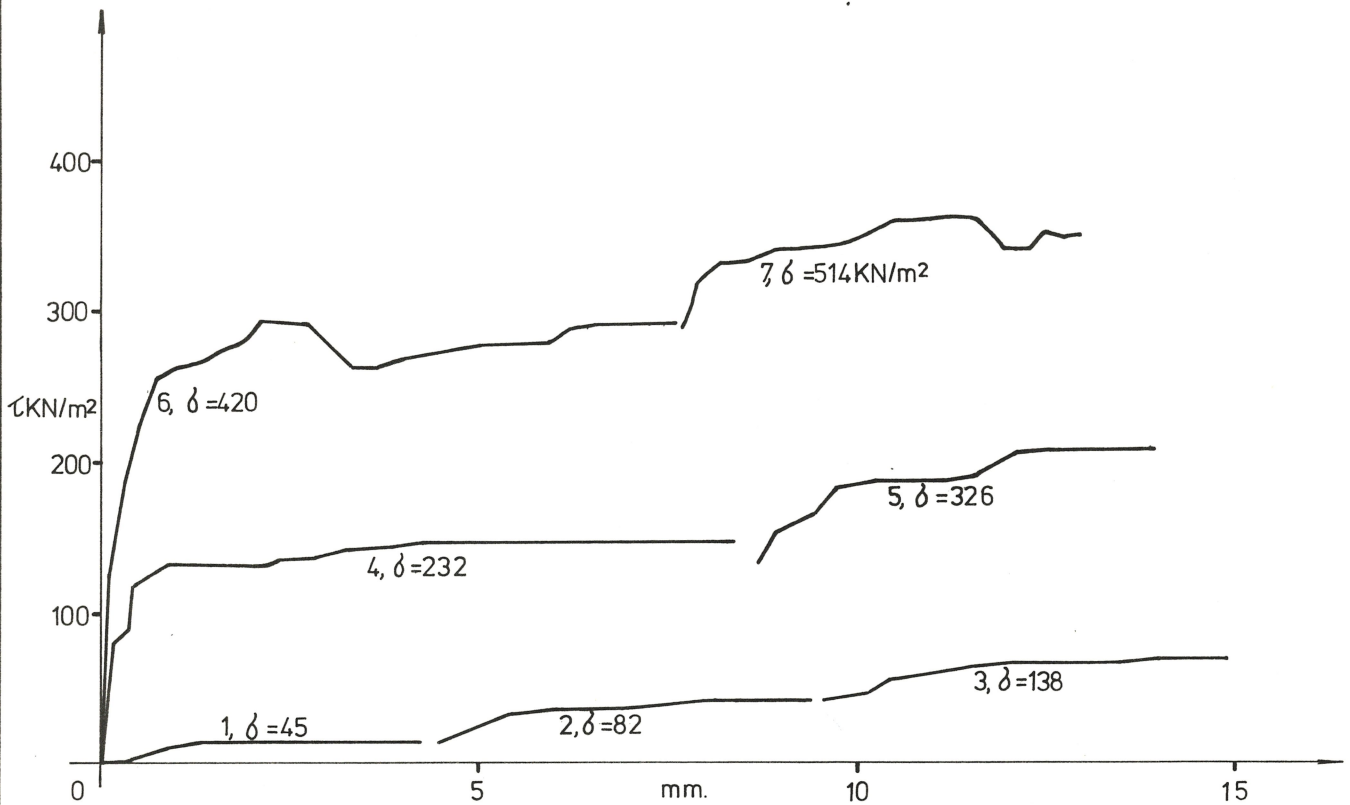
SAMPLE NUMBER YKS4

YIP KAN STREET ROCK SLOPE FAILURE

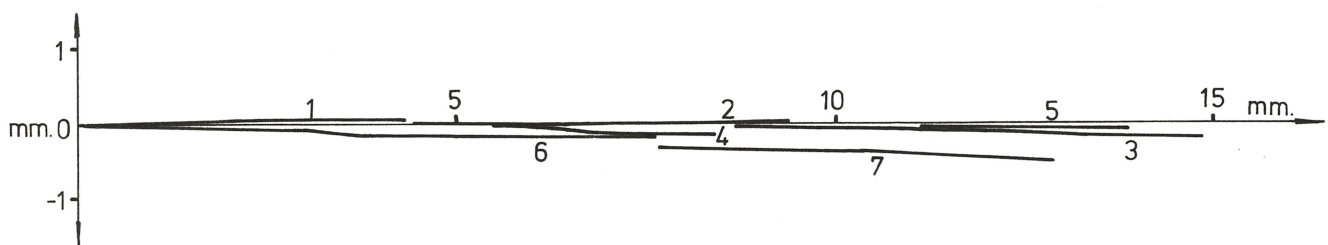
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



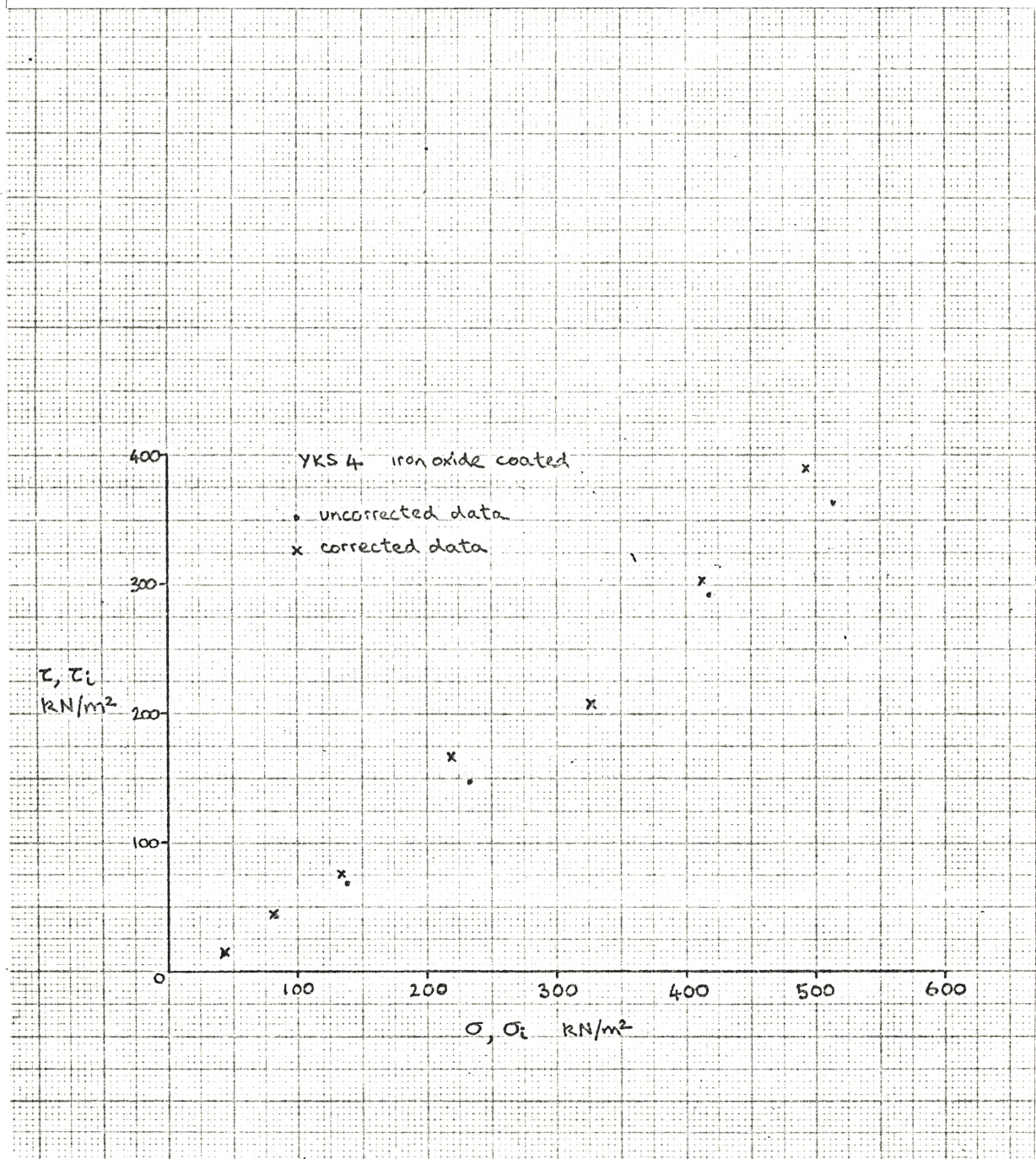
DIRECT SHEAR TEST YKS 4



SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT



1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

- 399 Yip Kan Street, Aberdeen.
- Joint samples from loose debris.
 - Samples cut from same block as YKS 4 and YKS 6.
 - Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II/III monzonite.

3. DISCONTINUITY DESCRIPTION

- Quite rough, undulating surfaces.
- Hard.
- Brown and metallic-grey due to covering of oxides.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
 $80 \text{ mm} \times 70 \text{ mm} = 5,600 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 5

YIP KAN STREET ROCK SLOPE FAILURE

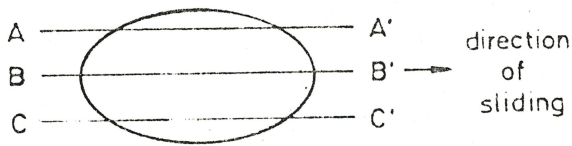
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

1. SAMPLE DETAILS

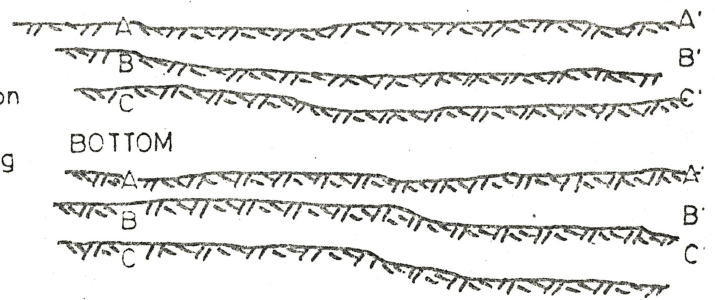
PRESLIDING/POST-SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP

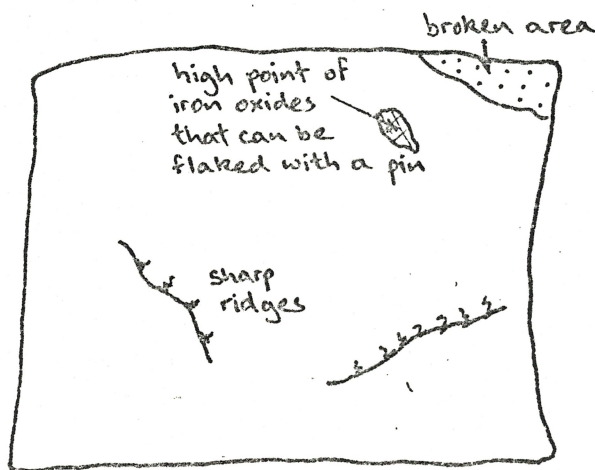


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

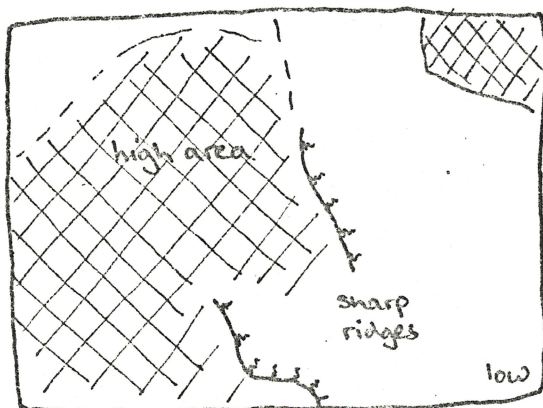
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 5

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

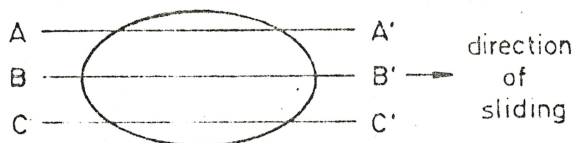


1. SAMPLE DETAILS

~~PRESLIDING~~ POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP
A
B
C
BOTTOM
A
B
C

no significant changes in profiles

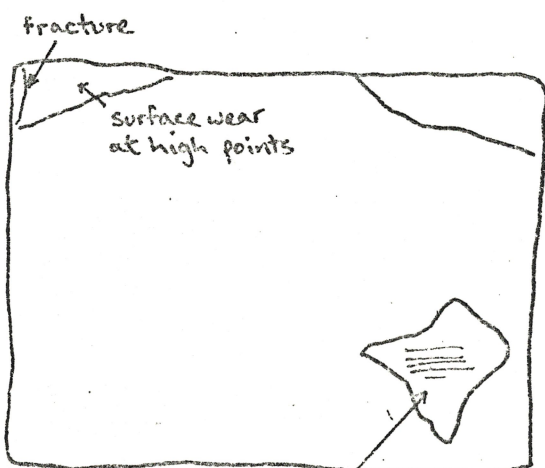
A'
B'
C'
A'
B'
C'

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

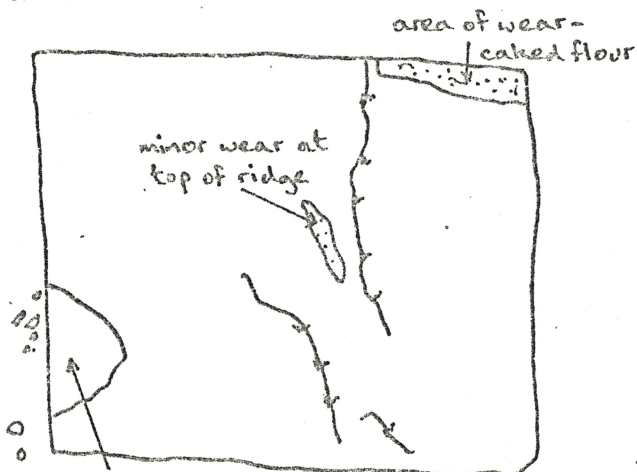


major area of wear with white caked flour and slickensides - removal of surface oxides

TOP



BOTTOM



rear of specimen fractured. area of loose debris and caked flour.

BOTTOM



DIRECT SHEAR TESTS

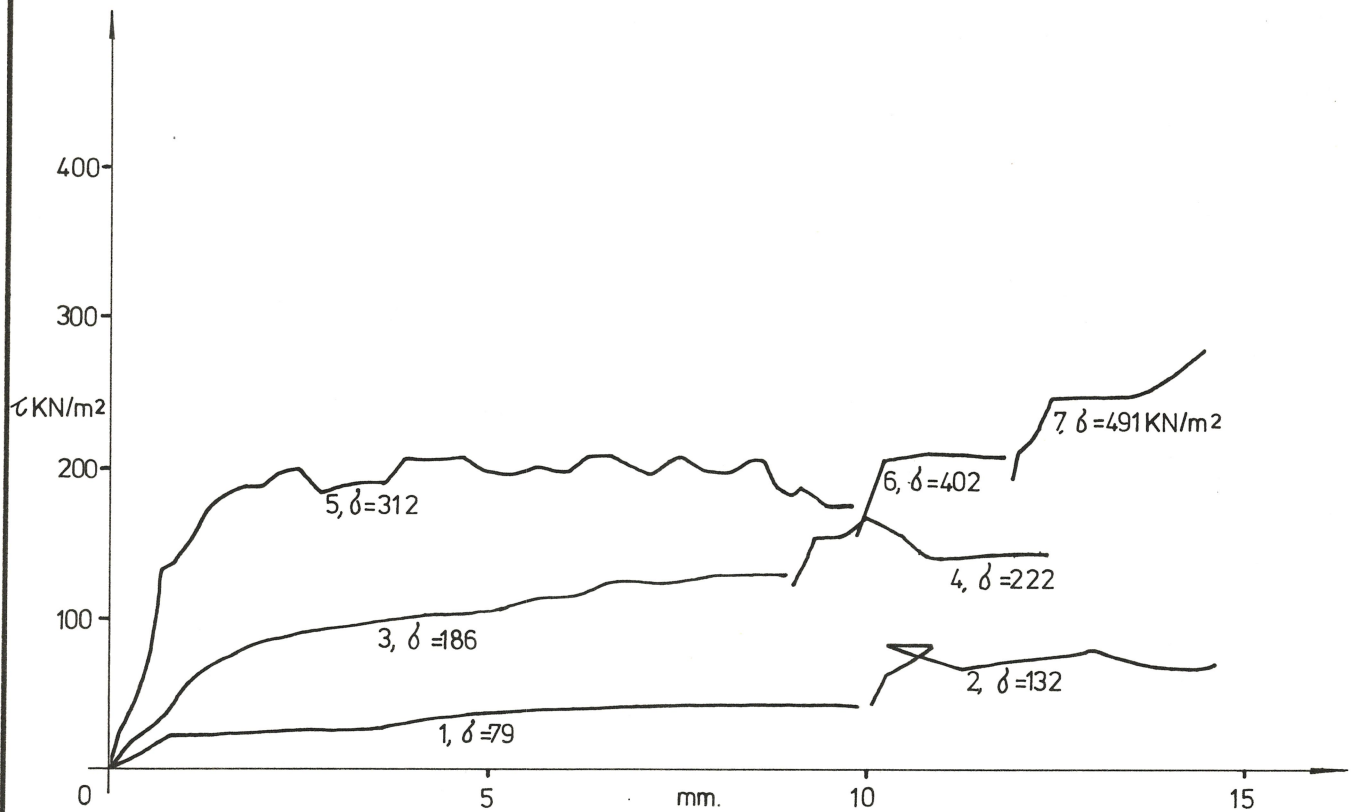
SAMPLE NUMBER YKS 5

YIP KAN STREET ROCK SLOPE FAILURE

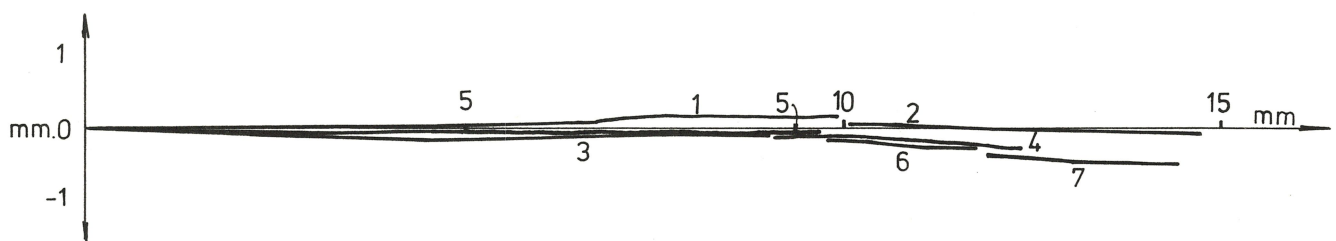
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 5

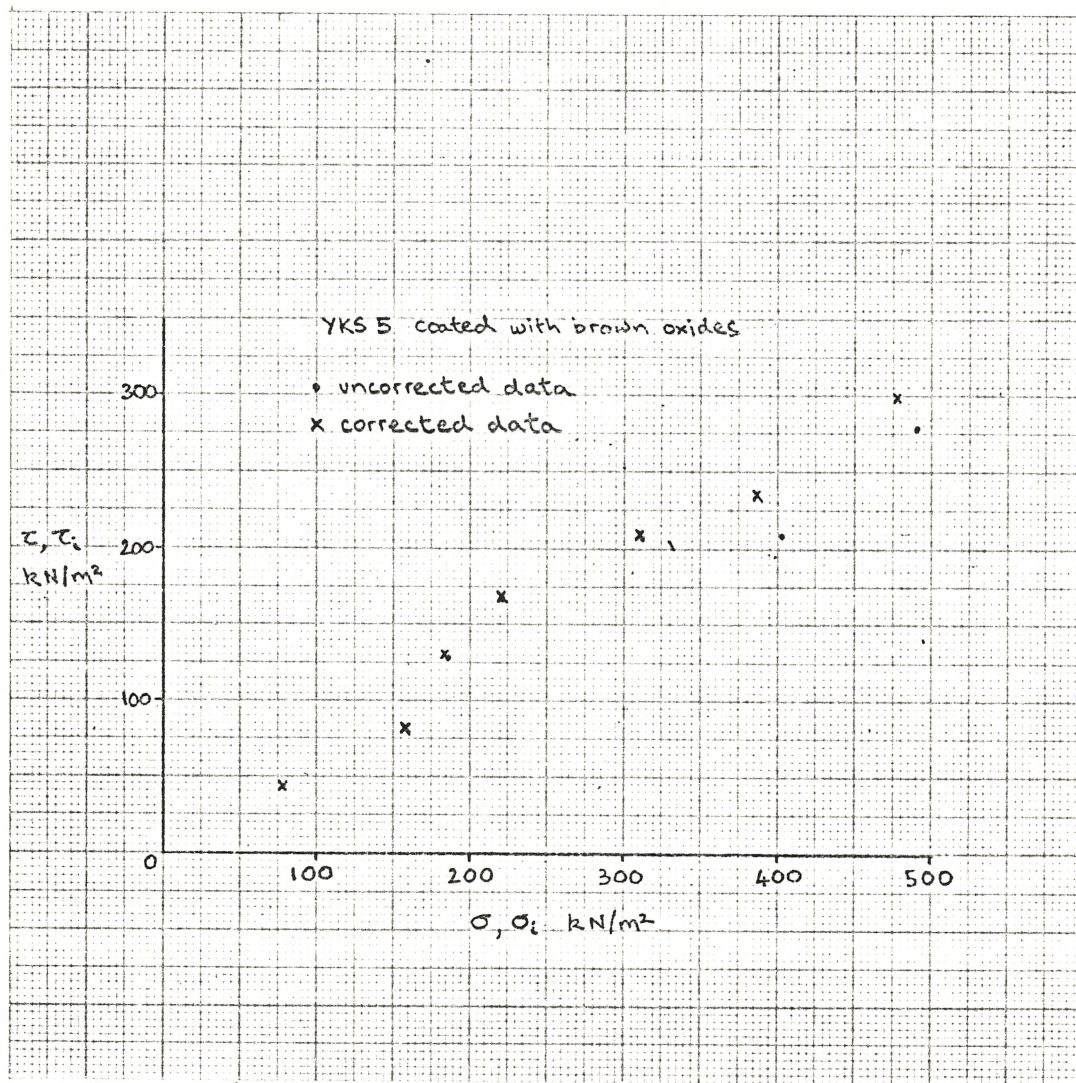


SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT





1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Joint samples from loose debris.
- Samples cut from same block as YKS 4 and YKS 5.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II/III monzonite.

3. DISCONTINUITY DESCRIPTION

- Rough textured, undulating surfaces with a number of small ridges.
- Hard.
- Brown and metallic grey covering of iron oxides.
- Localised thick accumulations of oxides can be flaked.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
70 mm x 80 mm = 5,600 mm².

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 6

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

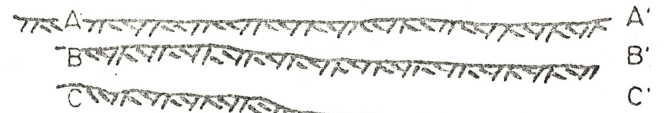
PRESLIDING/POST-SLIDING

SAMPLE ILLUSTRATION SHEET

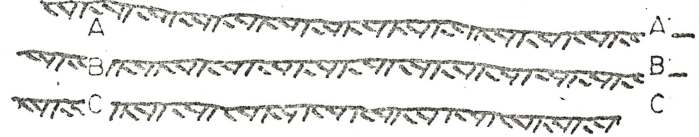
2. ROUGHNESS



TOP



BOTTOM

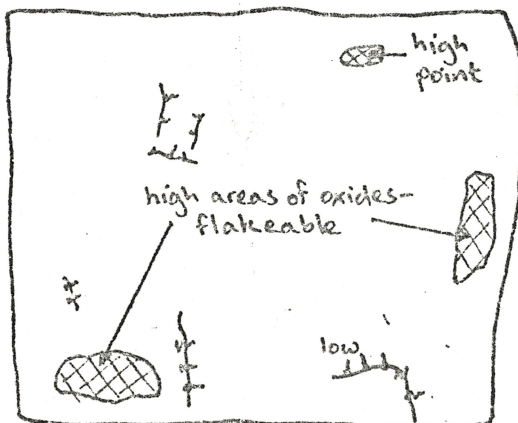


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

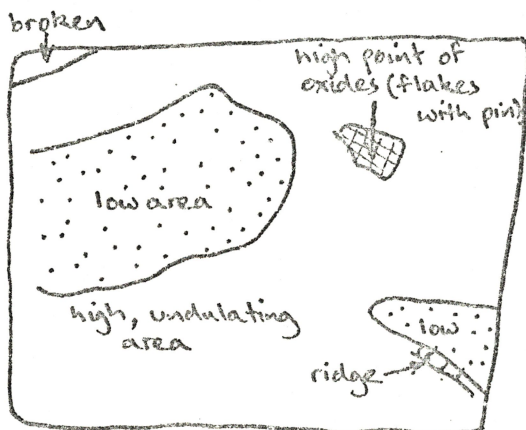
TOP



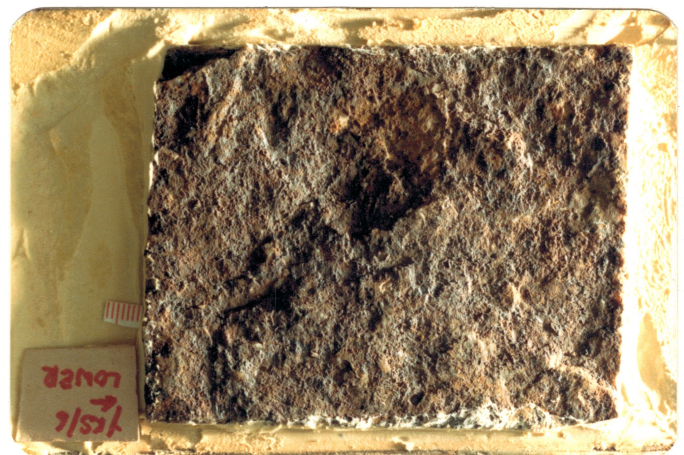
TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 6

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

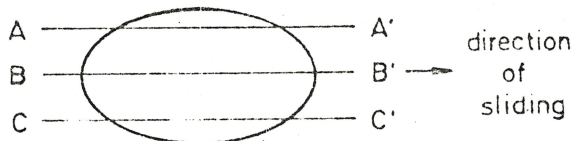


1. SAMPLE DETAILS

SAMPLE ILLUSTRATION SHEET

PRESIDING/POST SLIDING

2. ROUGHNESS



TOP
A
B
C
BOTTOM
A
B
C

no significant changes in profiles

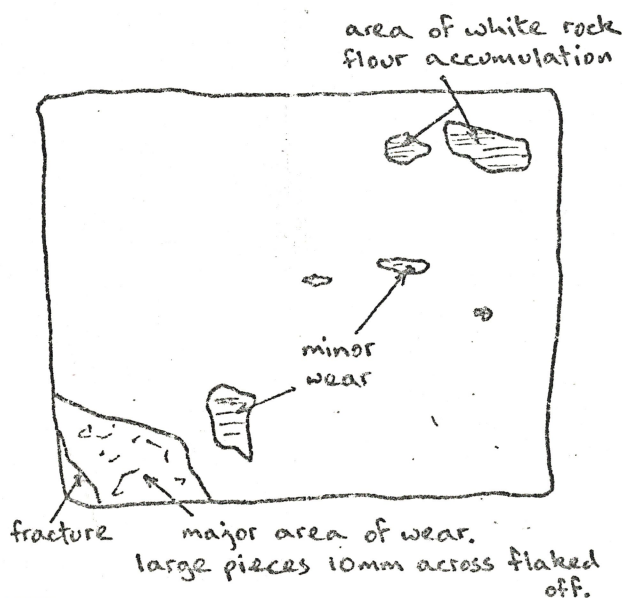
A'
B'
C'
A'
B'
C'

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

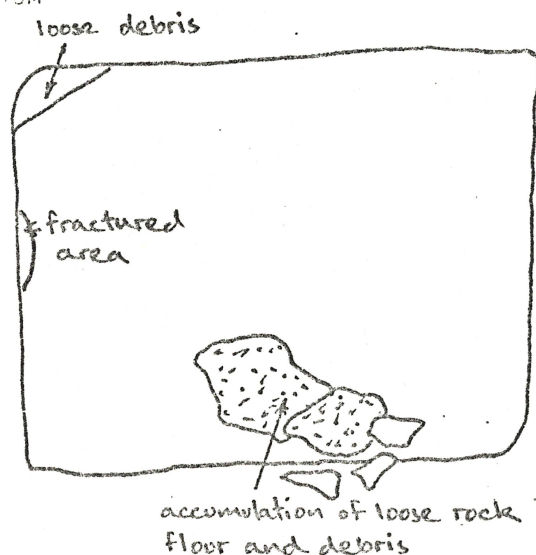
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

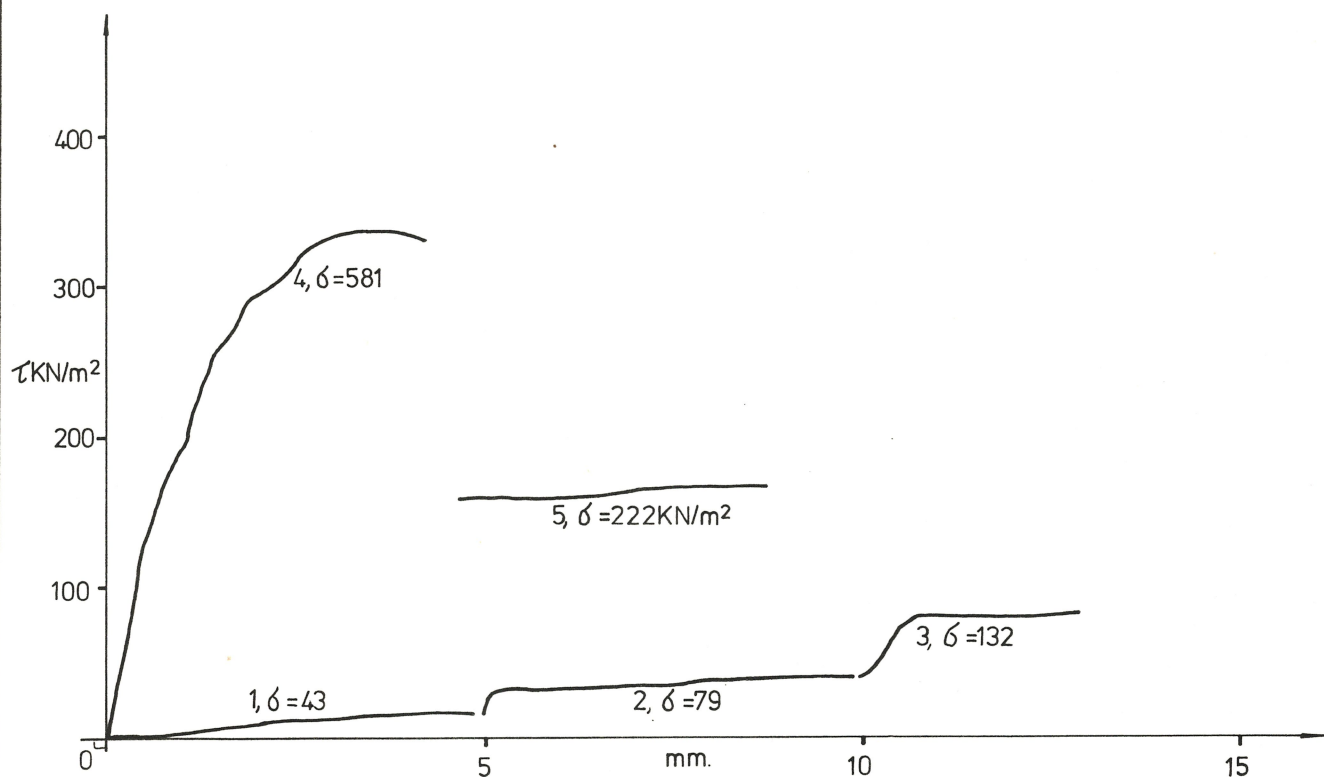
SAMPLE NUMBER YKS 6

YIP KAN STREET ROCK SLOPE FAILURE

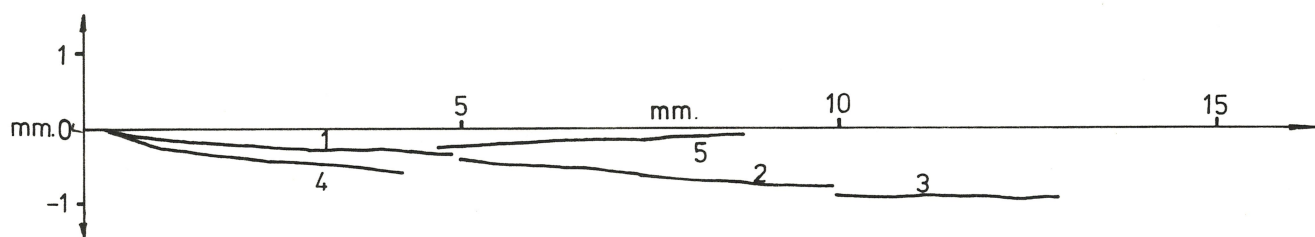
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



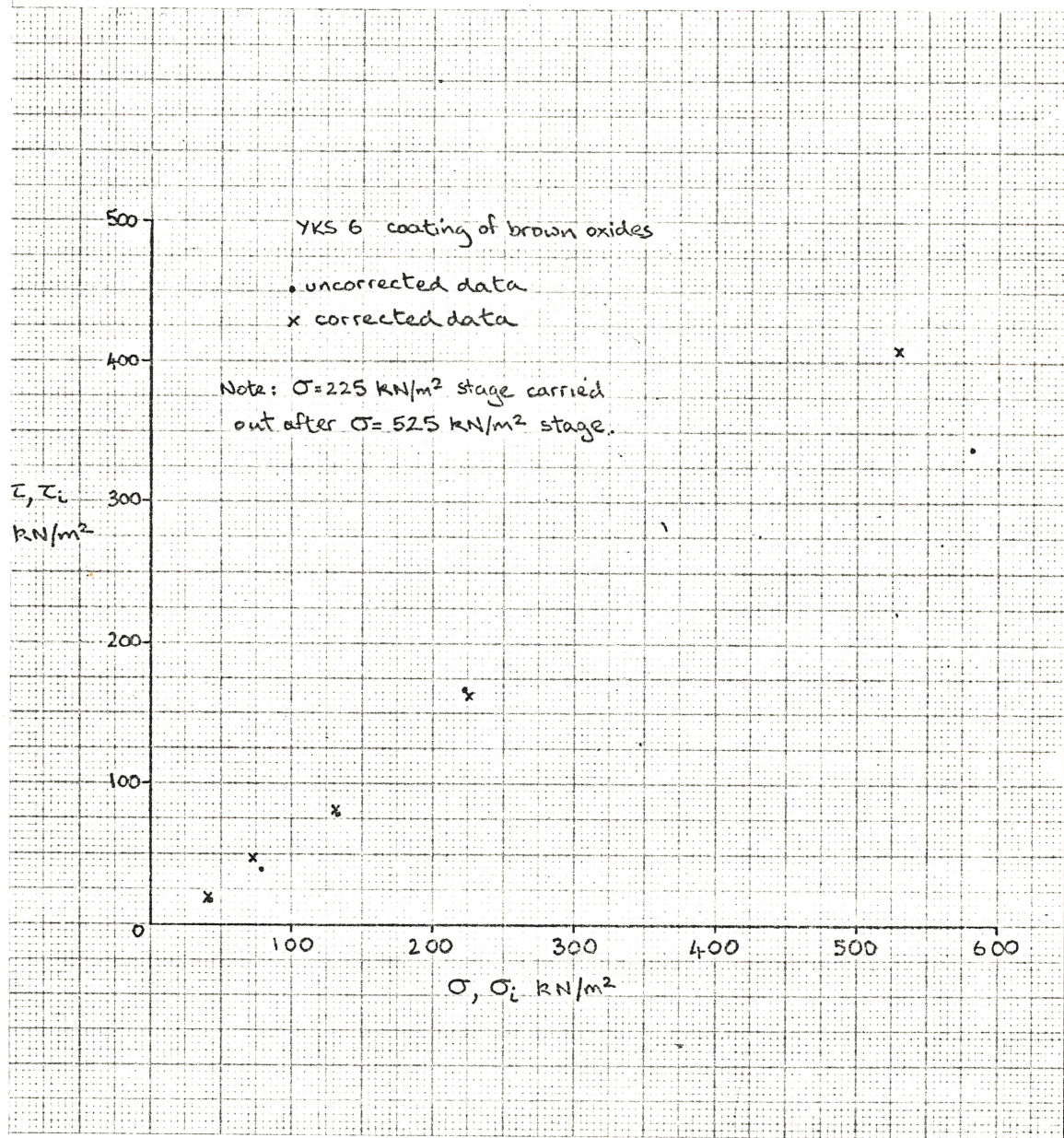
DIRECT SHEAR TEST YKS 6



SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT



1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Samples from loose debris.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II-III monzonite
- Large feldspars cannot be scratched with pin.

3. DISCONTINUITY DESCRIPTION

- Slightly undulating surfaces, lower specimen rougher.
- Surfaces are covered in a thin layer (less than 0.5mm) of iron oxides and granular material.
- The granular material is partially cemented to surface - can be plucked with a pin with difficulty (dry).
- Lower specimen has thicker covering of oxides but less granular material.
- In several places, there are parallel discontinuities meaning that flaking can occur easily with the production of debris.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at 85 mm x 60 mm = 5,100mm².

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 7

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

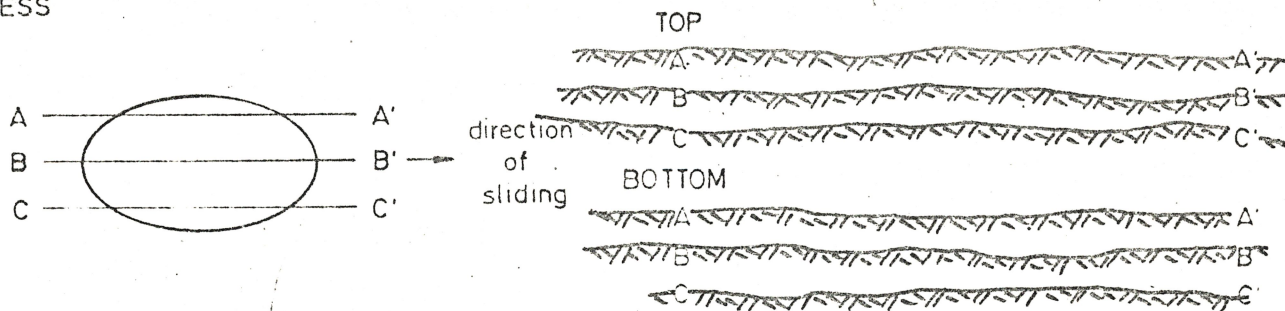


1. SAMPLE DETAILS

PRESLIDING/POST-SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS

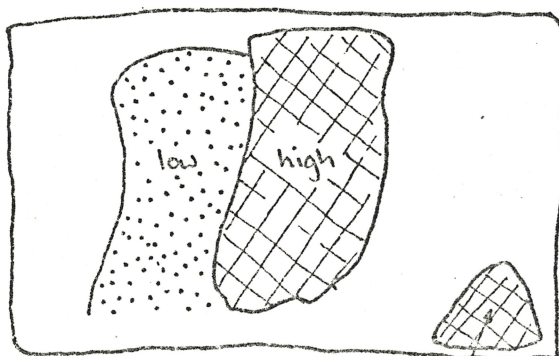


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

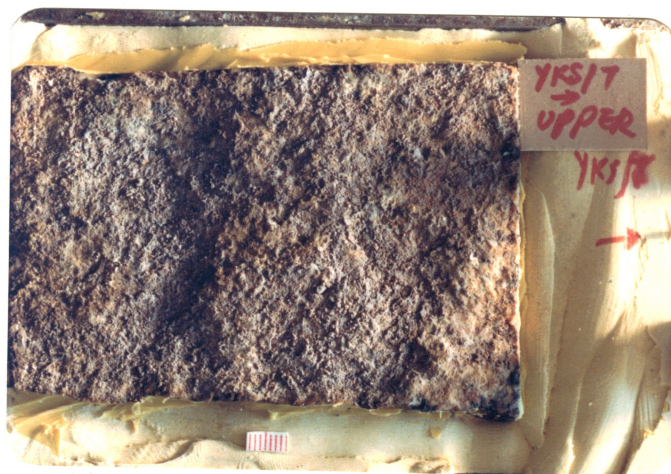
PHOTOGRAPHS

TOP

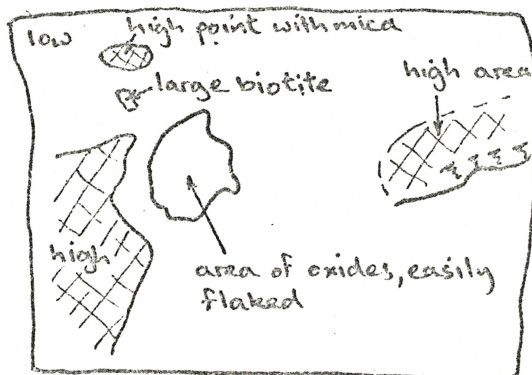


high point with thin covering of oxides

TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 7

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



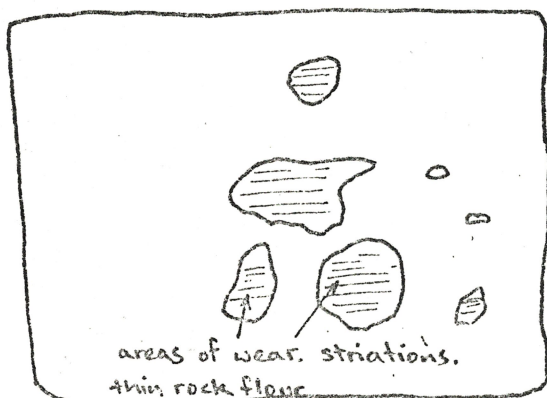
TOP
A
B no significant changes in profiles
C
BOTTOM
A
B
C

3. SURFACE DESCRIPTION

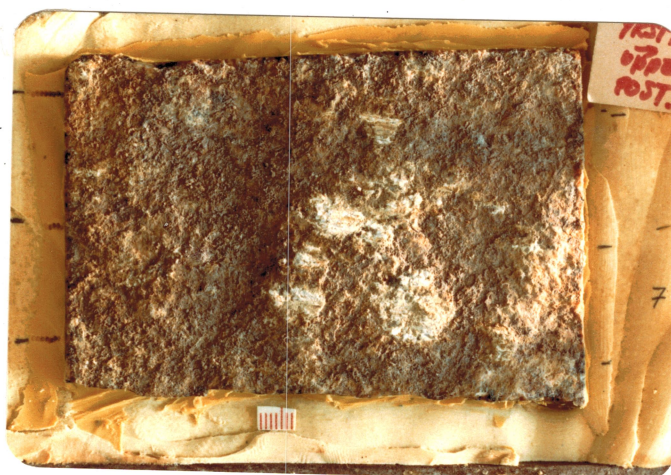
ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

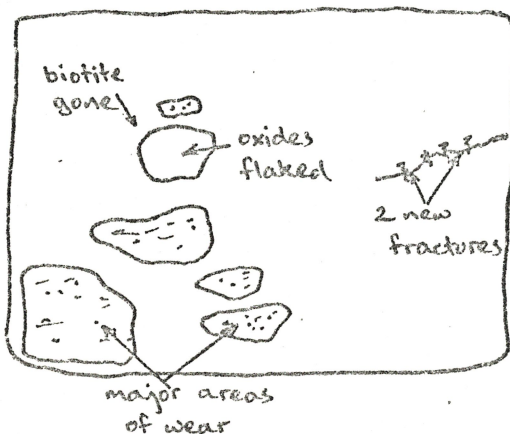


TOP



BOTTOM

loose debris over much of specimen,
especially towards rear



BOTTOM



DIRECT SHEAR TESTS

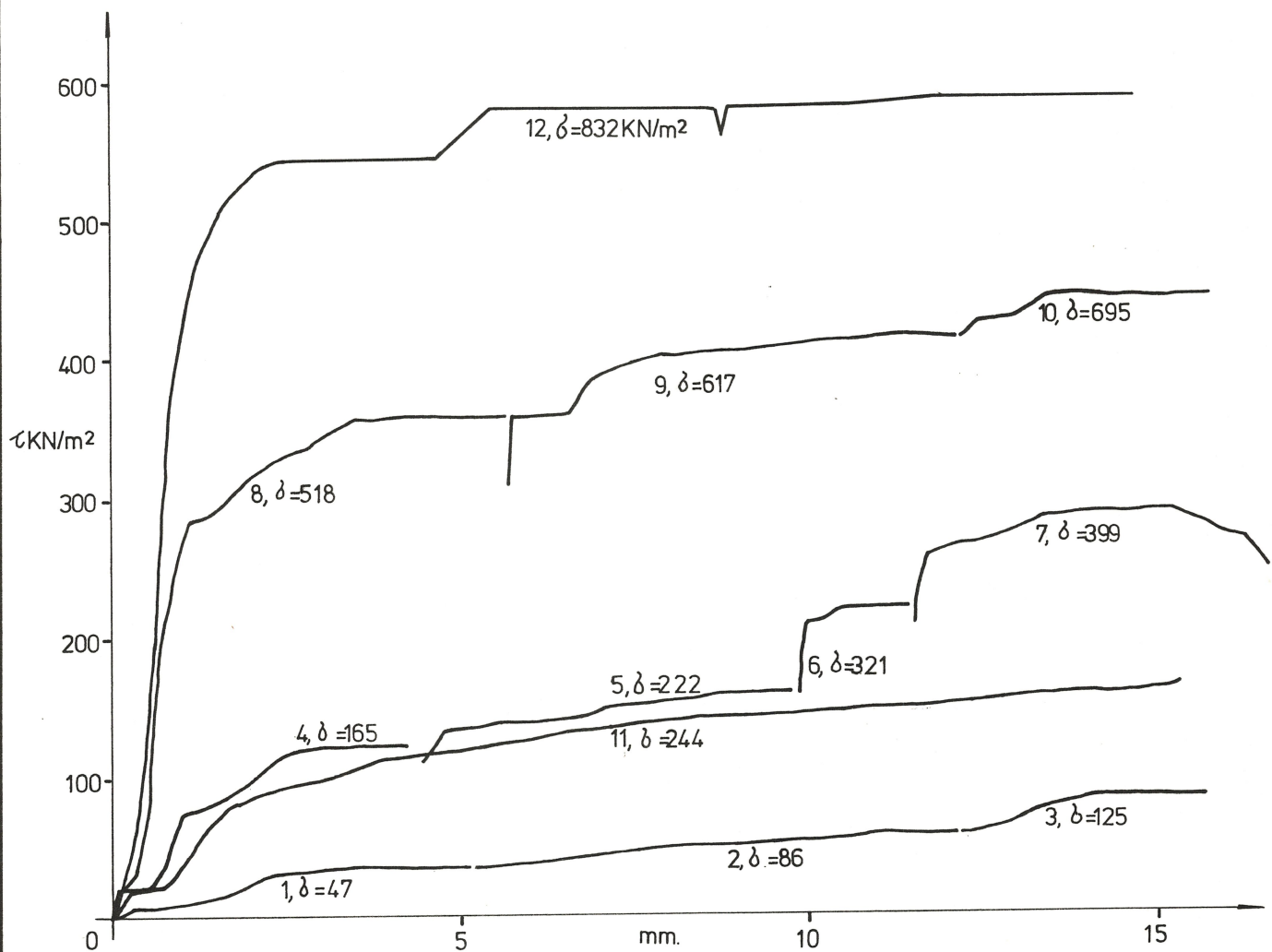
SAMPLE NUMBER YKS 7

YIP KAN STREET ROCK SLOPE FAILURE

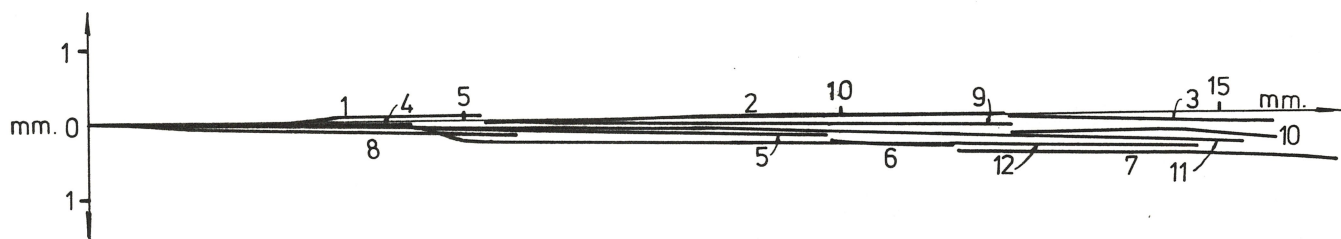
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 7



SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT



1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Samples from loose debris.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II monzonite.

3. DISCONTINUITY DESCRIPTION

- Slightly undulating, mostly smooth (lower specimen has one major high area).
- Surfaces are covered by approximately 0.5mm of dark green chlorite.
- Deposit is in layers and can be flaked where thick. Where thinner, the deposit is quite hard but can be scratched with a pin.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
 $50 \text{ mm} \times 80 \text{ mm} = 4,000 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 8

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

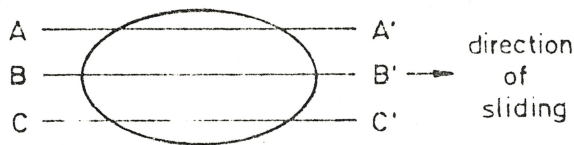


1. SAMPLE DETAILS

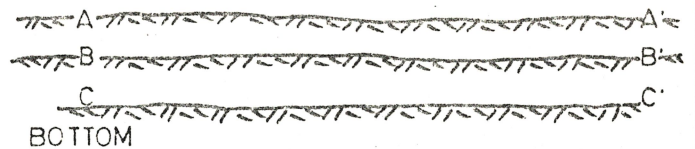
PRESLIDING / POST SLIDING

SAMPLE ILLUSTRATION SHEET

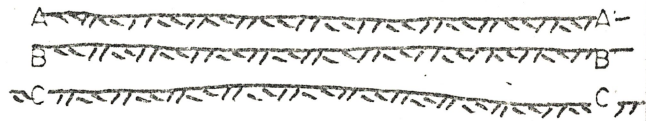
2. ROUGHNESS



TOP



BOTTOM



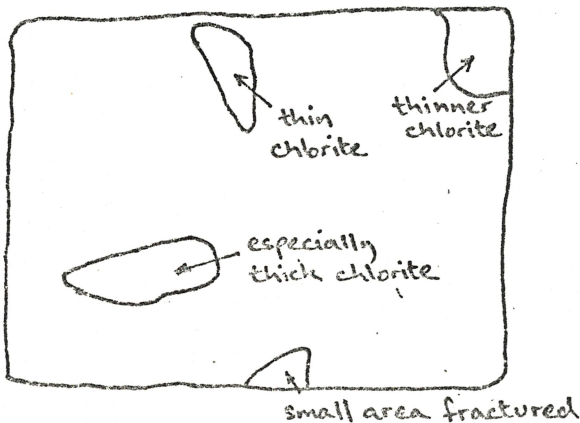
3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

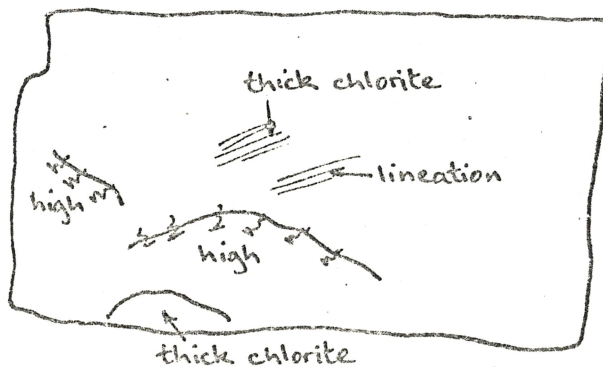
smooth, thick covering of green chlorite.



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS8

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

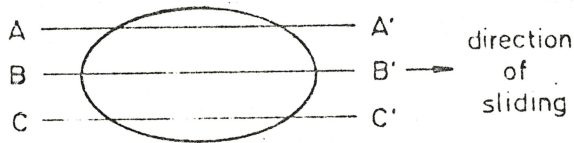


1. SAMPLE DETAILS

PRESIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

no significant changes in profiles

A'

B'

C'

A

B

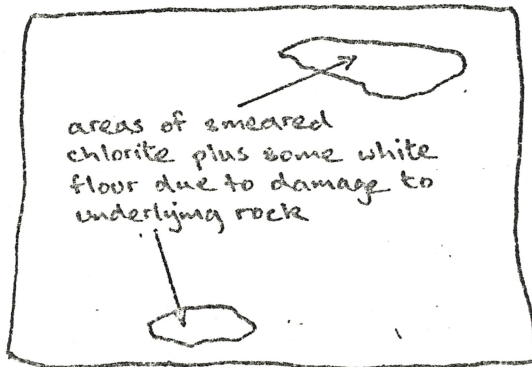
C

3. SURFACE DESCRIPTION

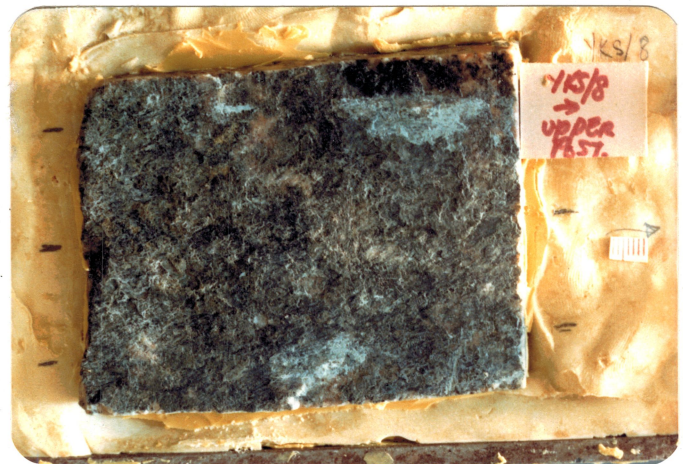
ANNOTATED DIAGRAMS

PHOTOGRAPHS

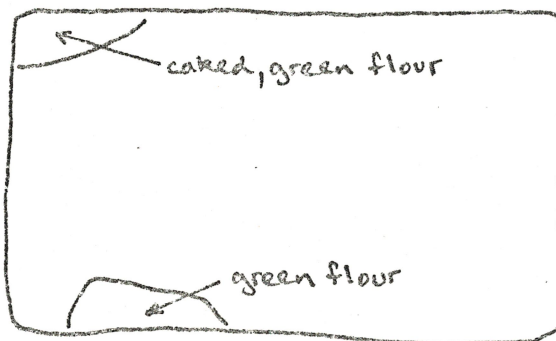
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

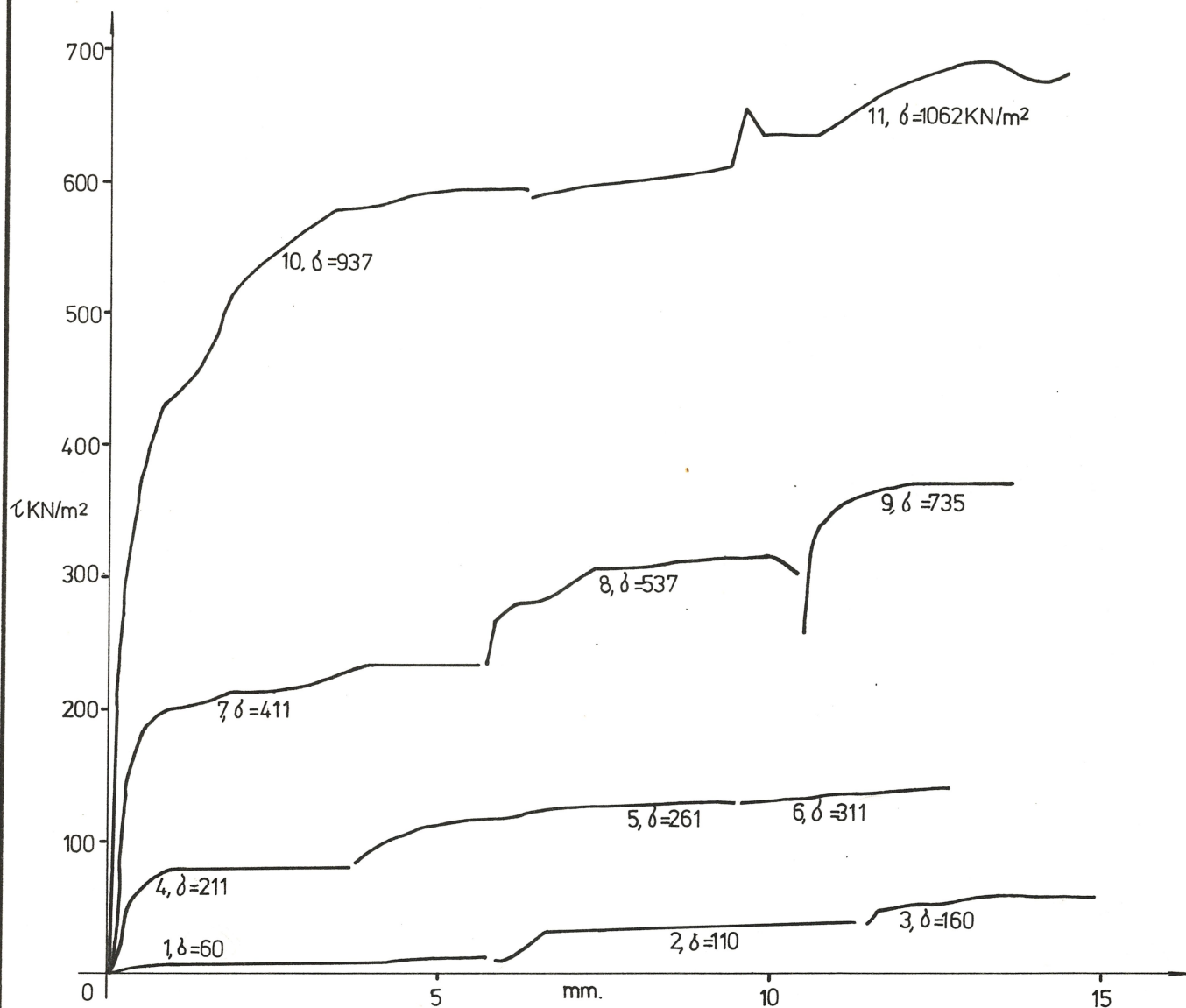
SAMPLE NUMBER YKS 8

YIP KAN STREET ROCK SLOPE FAILURE

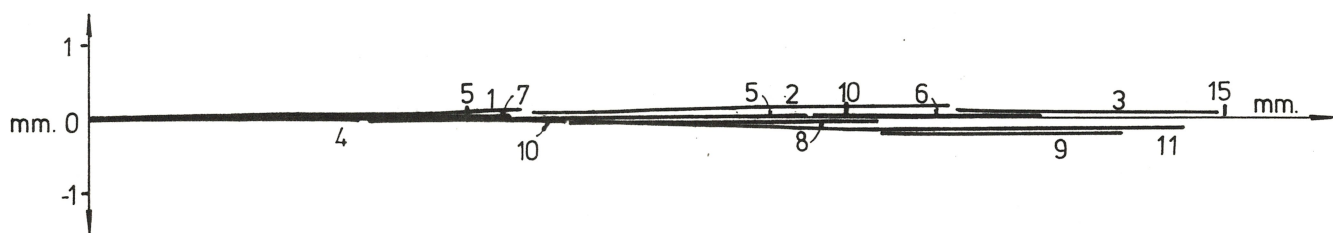
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 8

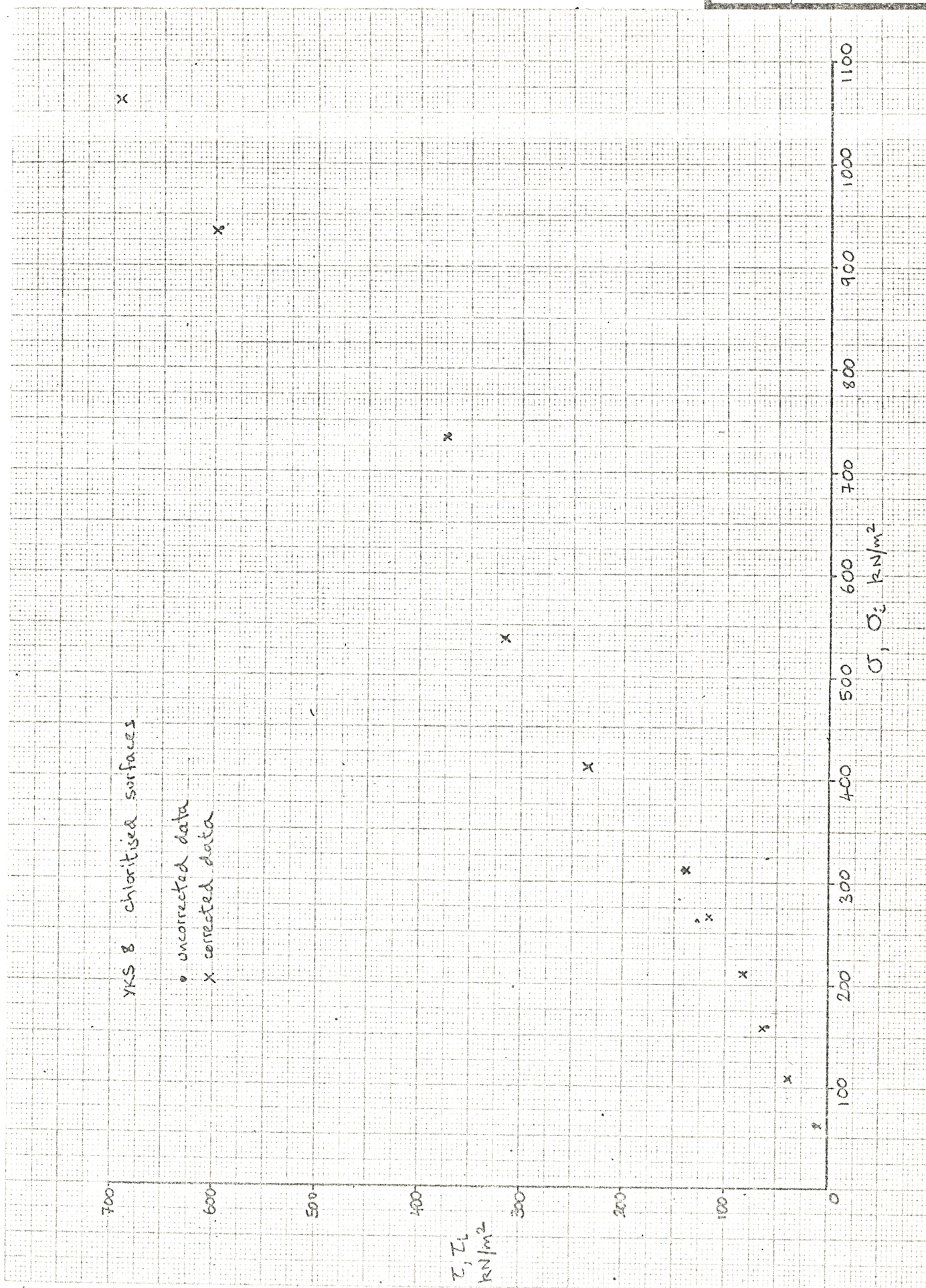


SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT





1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

- 399 Yip Kan Street, Aberdeen.
- Samples from loose debris.
 - Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II monzonite.

3. DISCONTINUITY DESCRIPTION

- Undulating, slightly rough.
- High areas have only a thin covering of chlorite with many pink feldspars visible.
- Thick green chlorites especially in low areas.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
 $75 \text{ mm} \times 65 \text{ mm} = 4,875 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 9

YIP KAN STREET ROCK SLOPE FAILURE

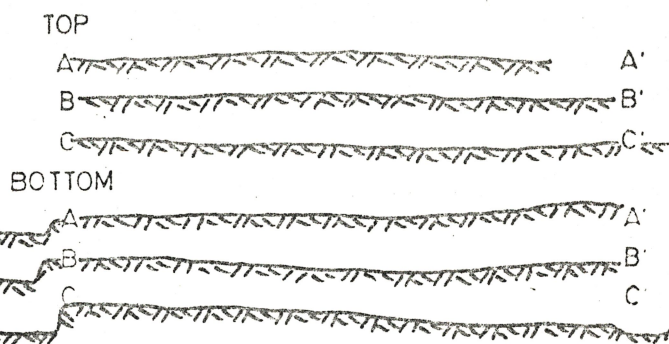
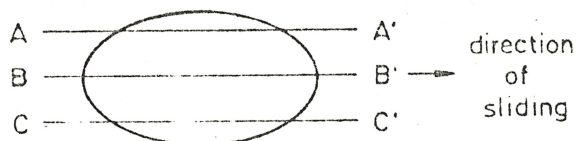
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

1. SAMPLE DETAILS

PRESLIDING / ~~POST SLIDING~~

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS

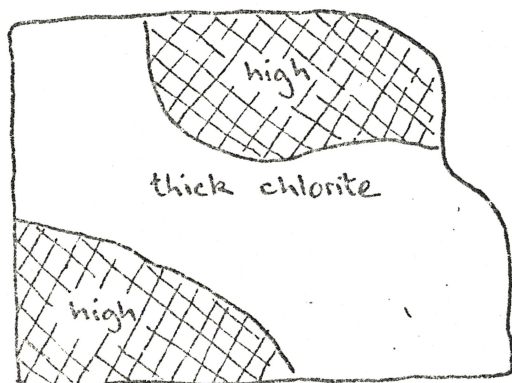


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

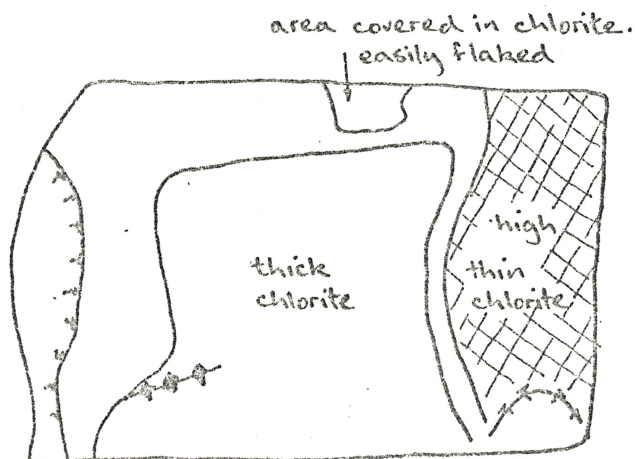
TOP



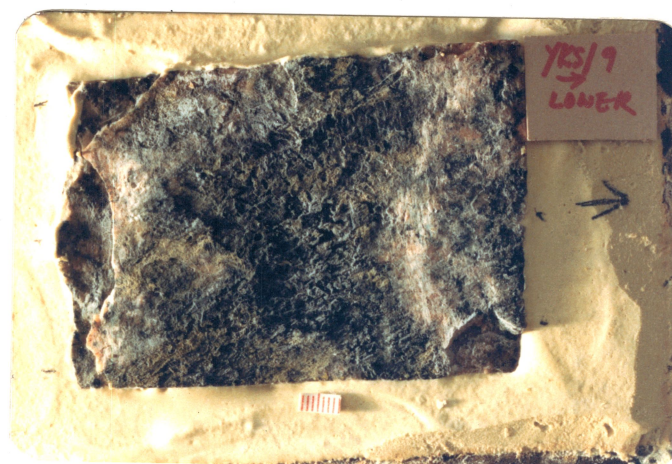
TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 9

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

PRESLIDING / POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

A'

B'

C'

A'

B'

C'

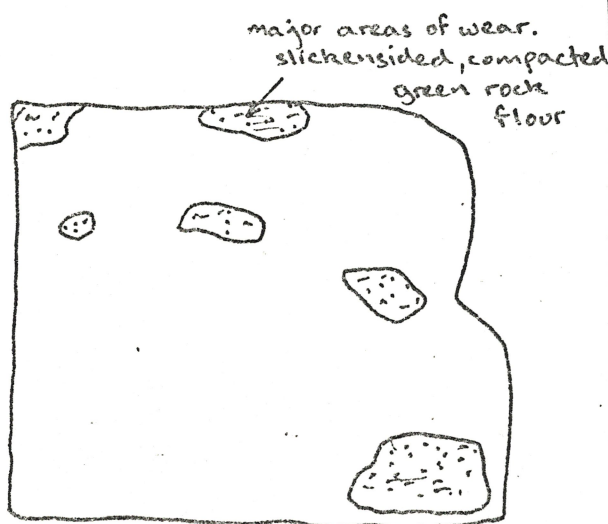
no significant changes in profiles

3. SURFACE DESCRIPTION

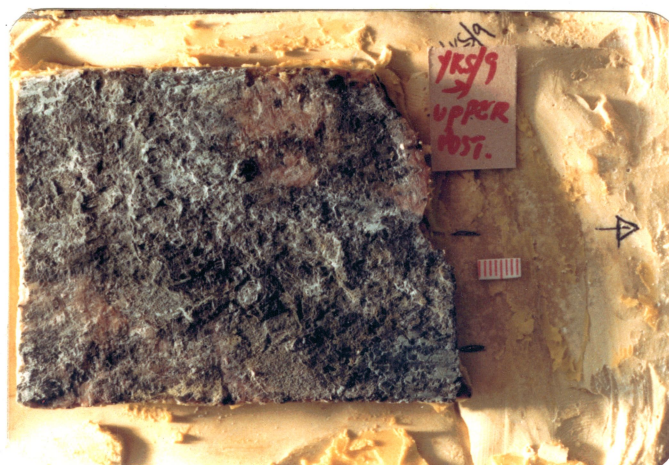
ANNOTATED DIAGRAMS

PHOTOGRAPHS

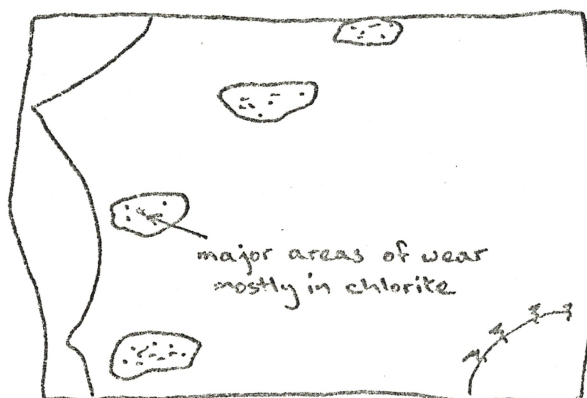
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

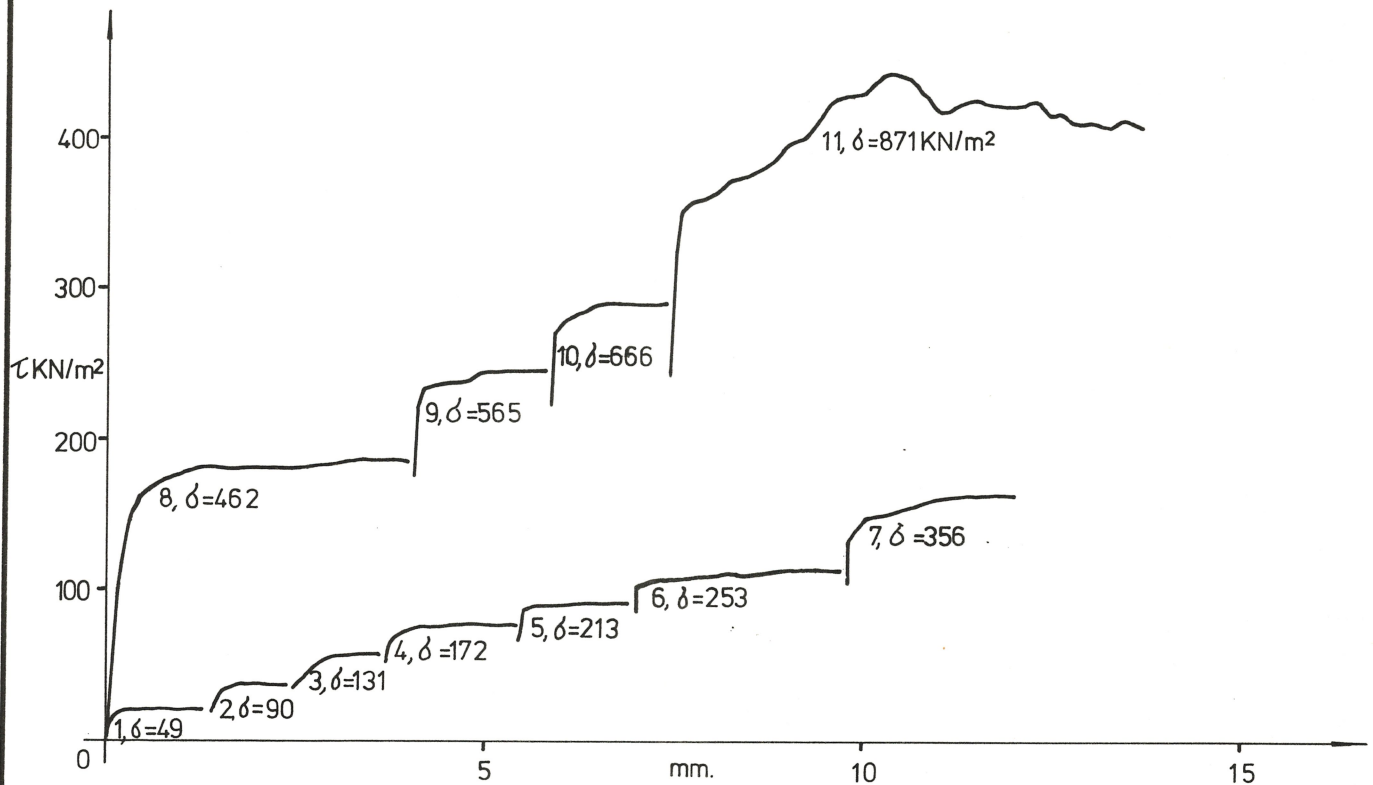
SAMPLE NUMBER YKS 9

YIP KAN STREET ROCK SLOPE FAILURE

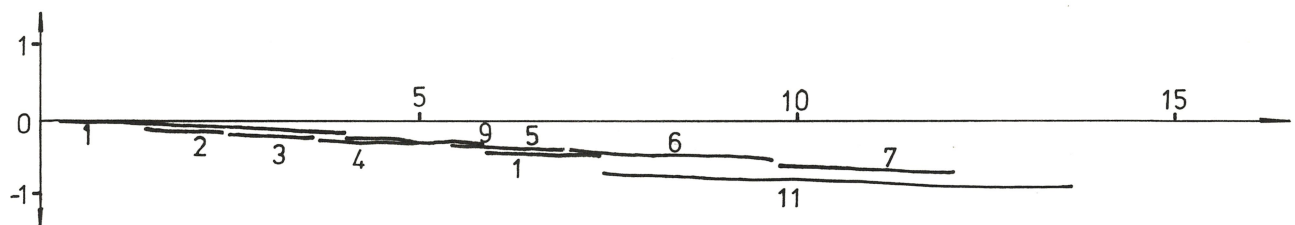
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 9



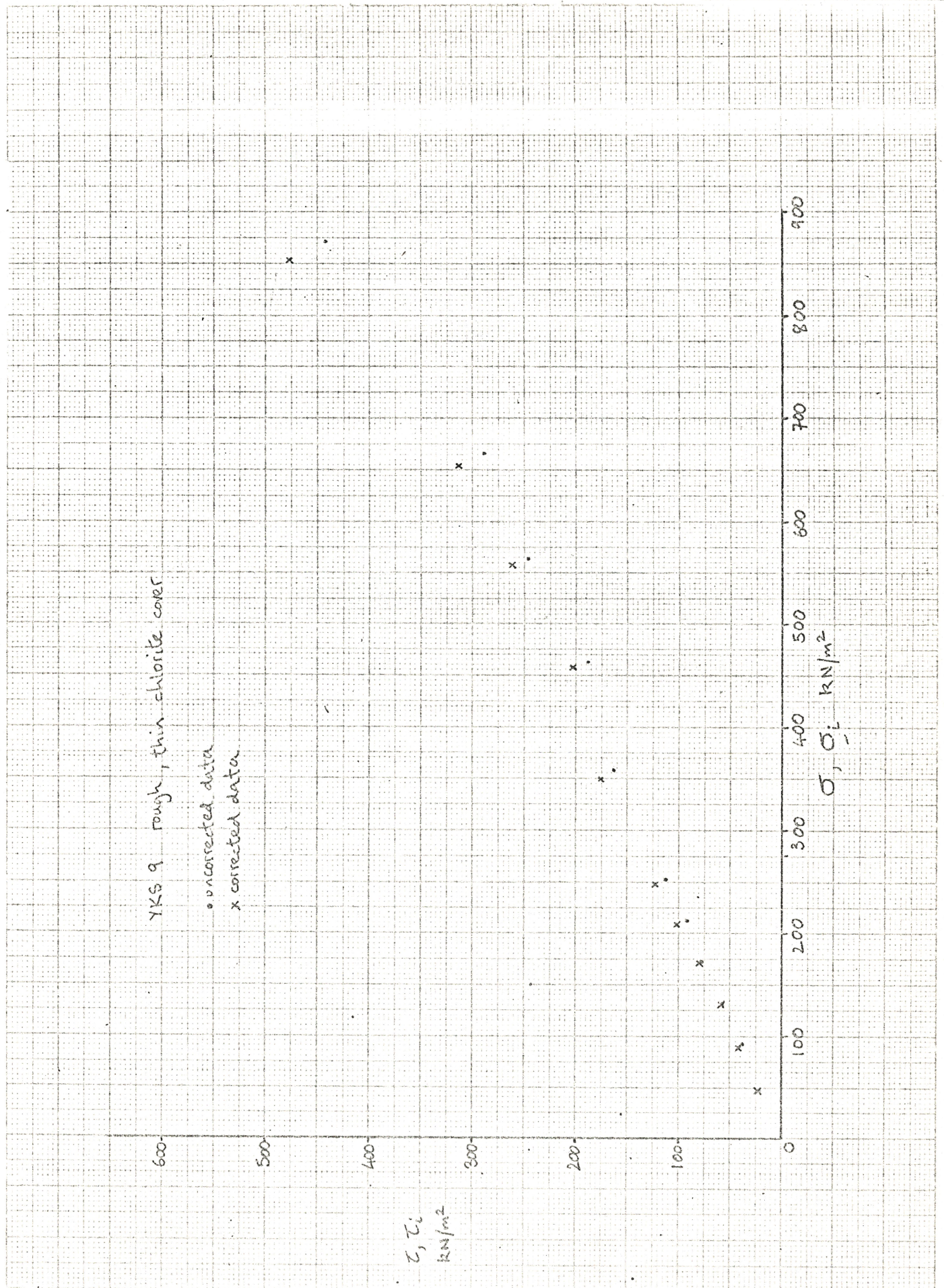
SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT



FIGURE



1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

399 Yip Kan Street, Aberdeen.

- Joint intact before cutting to size - then split but still matching.
- Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II monzonite.

3. DISCONTINUITY DESCRIPTION

- Rough tension joint with large ridge across centre.
- Surface has greenish tinge and areas of bladed crystals.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
75 mm x 95 mm = 7,125 mm².

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 10

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

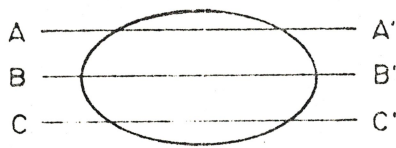


1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

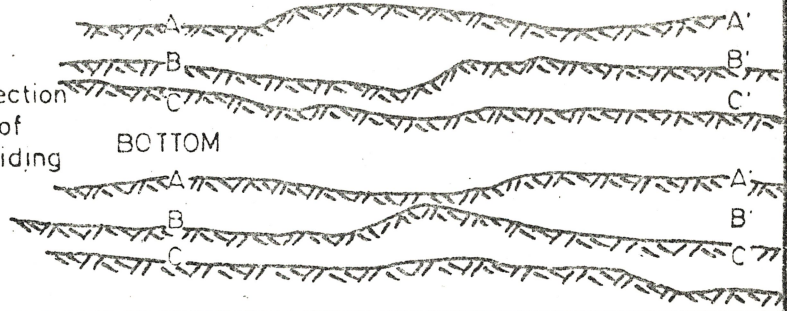
2. ROUGHNESS



direction
of
sliding

TOP

BOTTOM



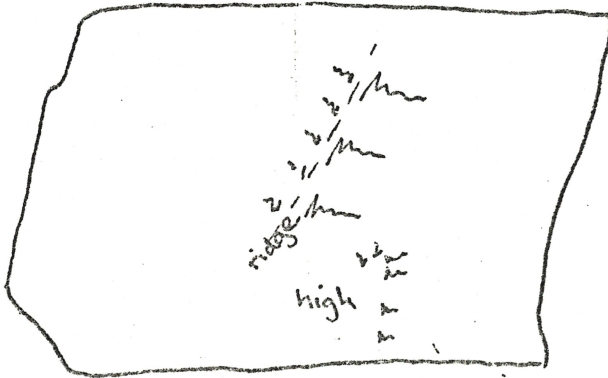
3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

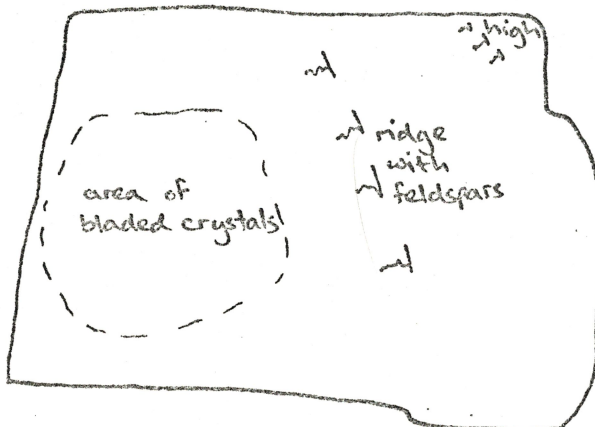
surface hard generally but local
accumulations of soft oxides etc.



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 10

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP

A

B

C

BOTTOM

A

B

C

no significant changes to profiles.

A'

B'

C'

A'

B'

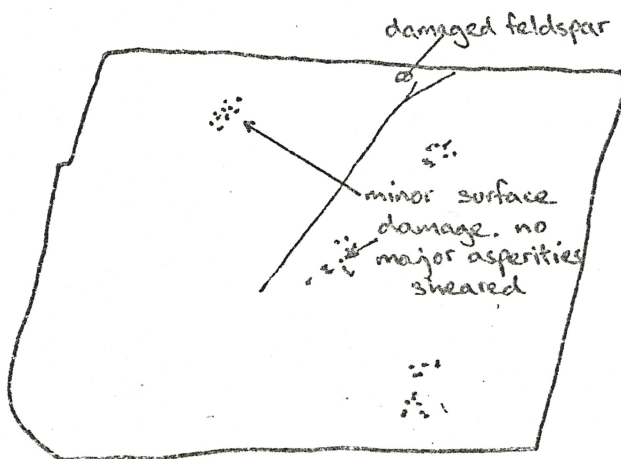
C'

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

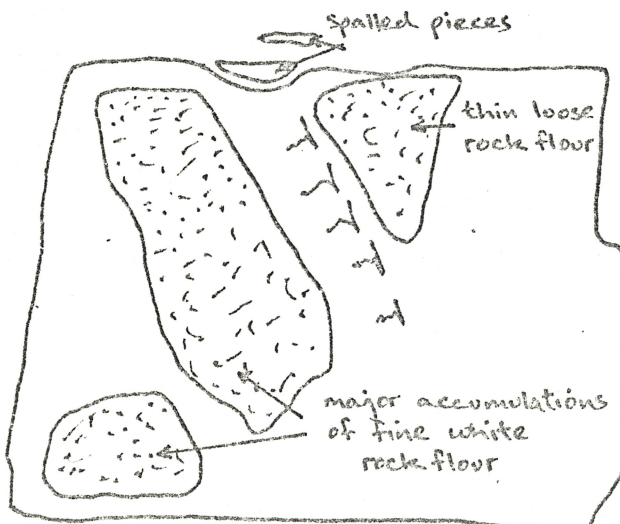
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

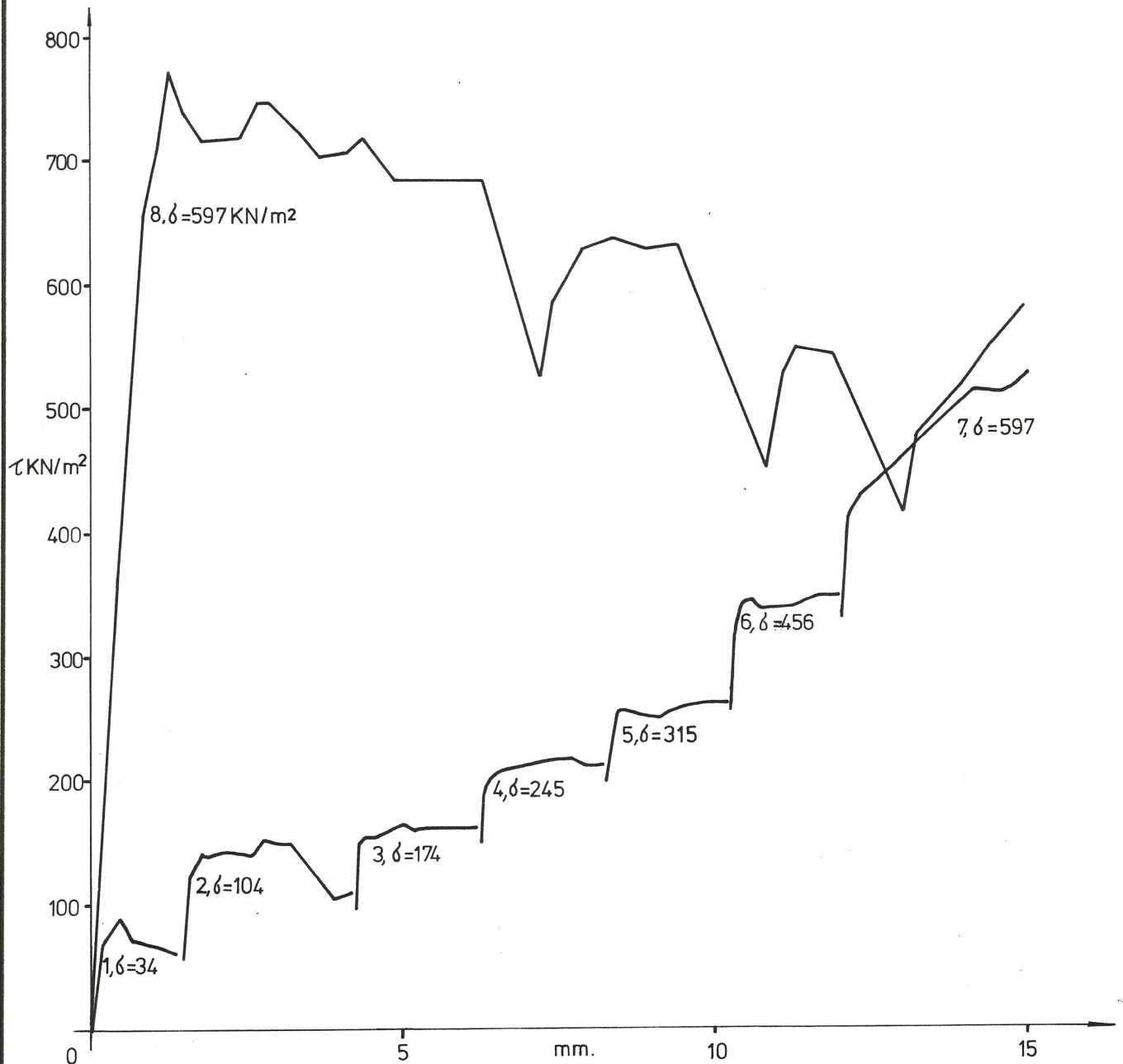
SAMPLE NUMBER YKS 10

YIP KAN STREET ROCK SLOPE FAILURE

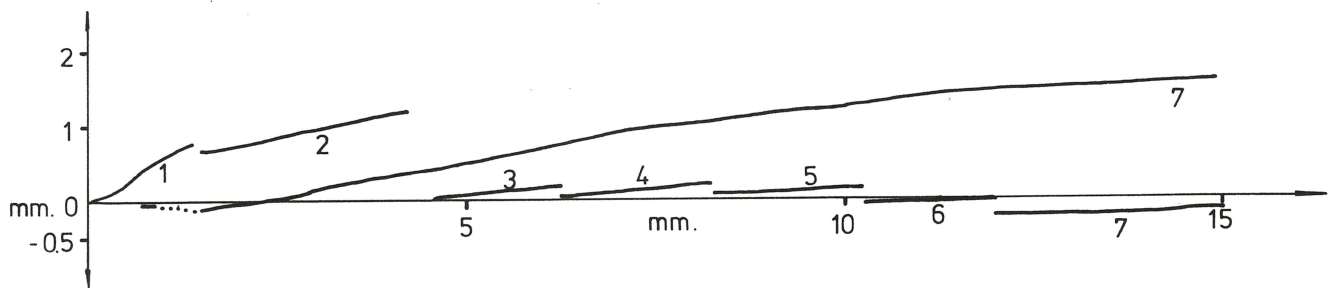
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 10

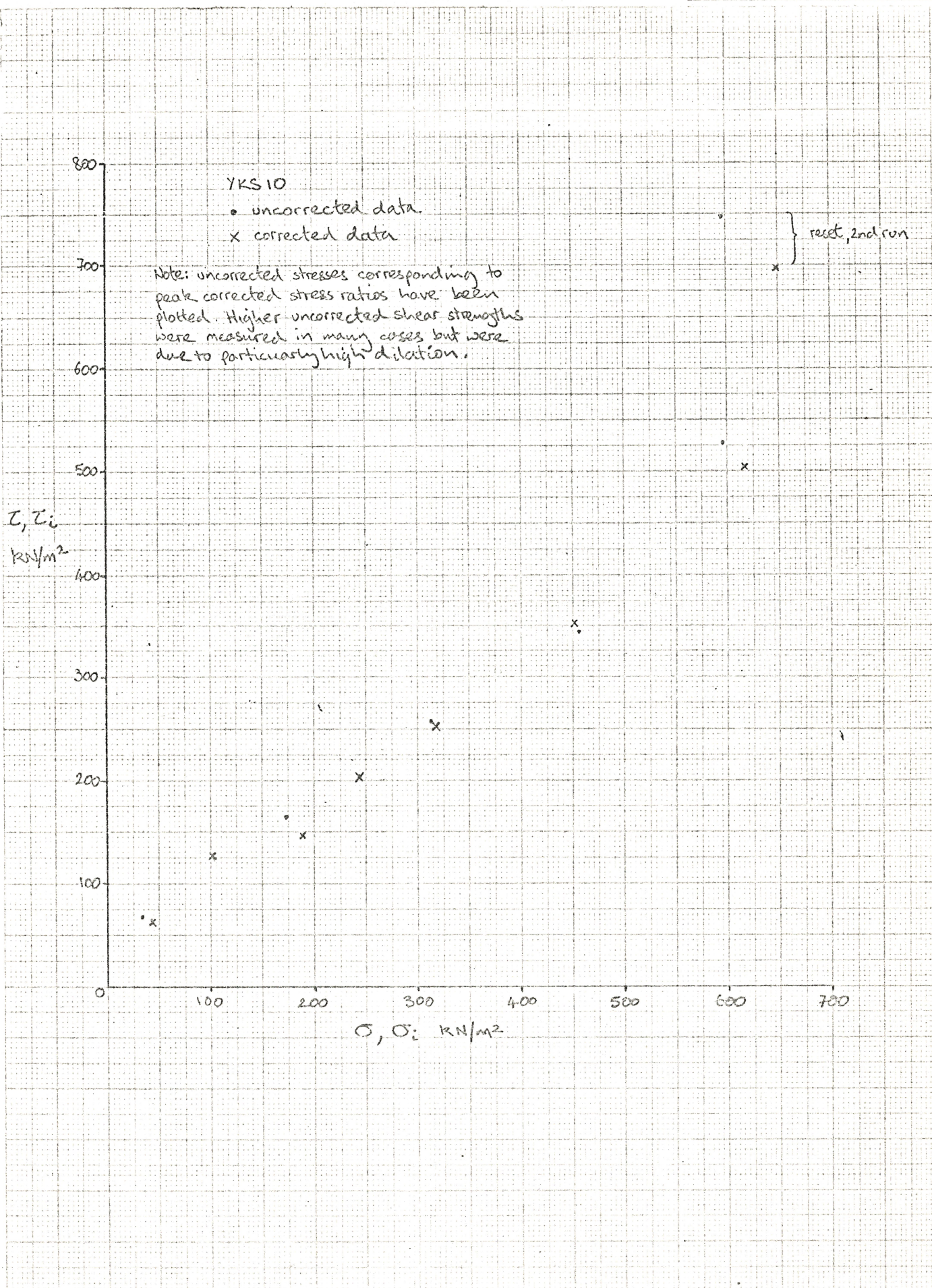


SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT





1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

- 399 Yip Kan Street, Aberdeen.
- Samples from loose debris.
 - Golder Associates direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II-III monzonite.

3. DISCONTINUITY DESCRIPTION

- Undulating, slightly rough.
- Covered with layer of brown, hard, iron oxides.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
 $80 \text{ mm} \times 60 \text{ mm} = 4,800 \text{ mm}^2$.

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 11

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

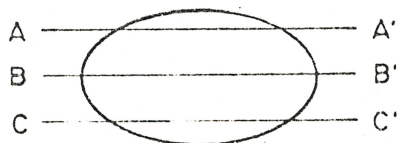


1. SAMPLE DETAILS

PRESLIDING / ~~POST SLIDING~~

SAMPLE ILLUSTRATION SHEET

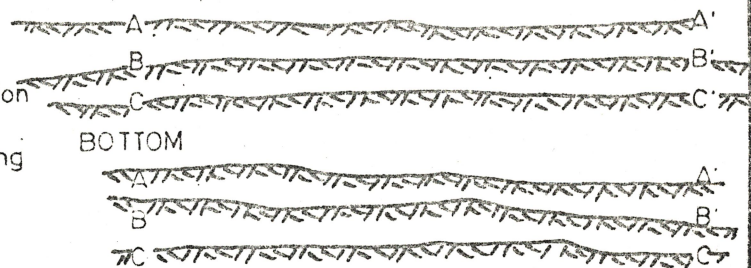
2. ROUGHNESS



direction
of
sliding

TOP

BOTTOM



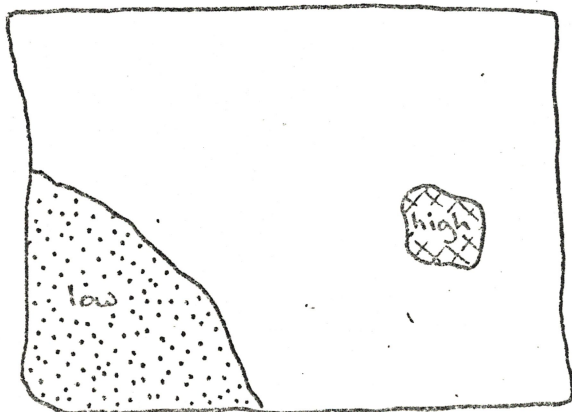
3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP

gently undulating. dark brown
cover of hard oxides - difficult
to scratch or flake with pin

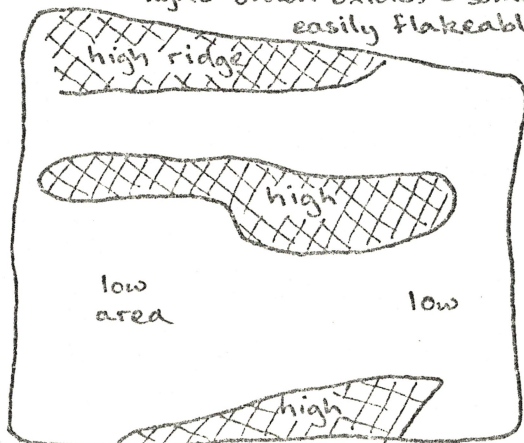


TOP



BOTTOM

gently undulating. dark and
light brown oxides - some
easily flakeable



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER **YKS II**

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



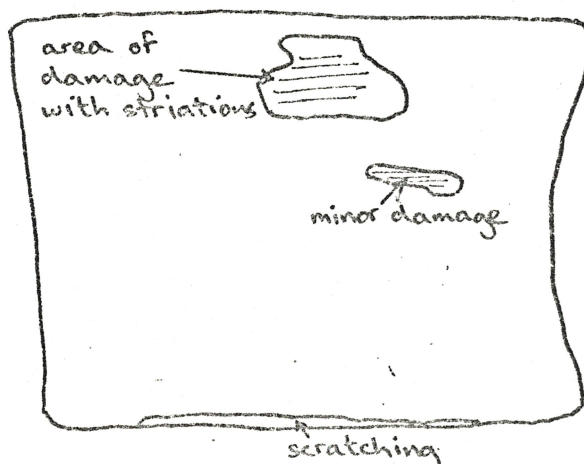
TOP
A
B
C
no significant changes to profiles
BOTTOM
A
B
C

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

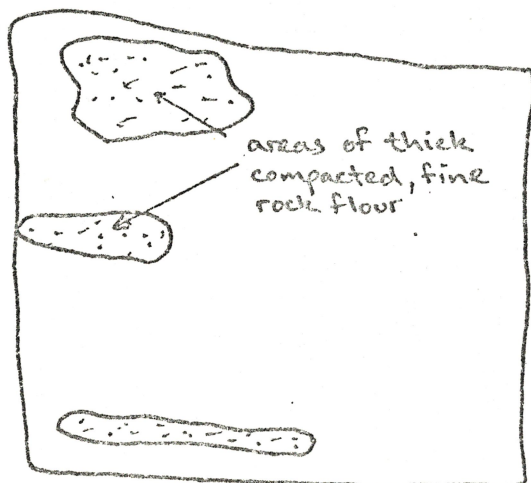
TOP



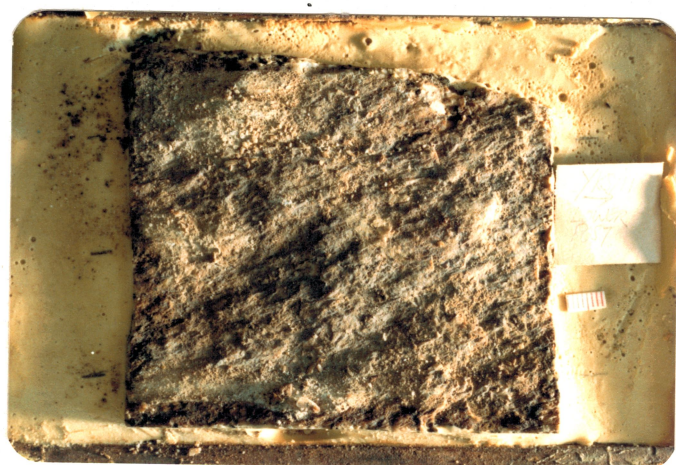
TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

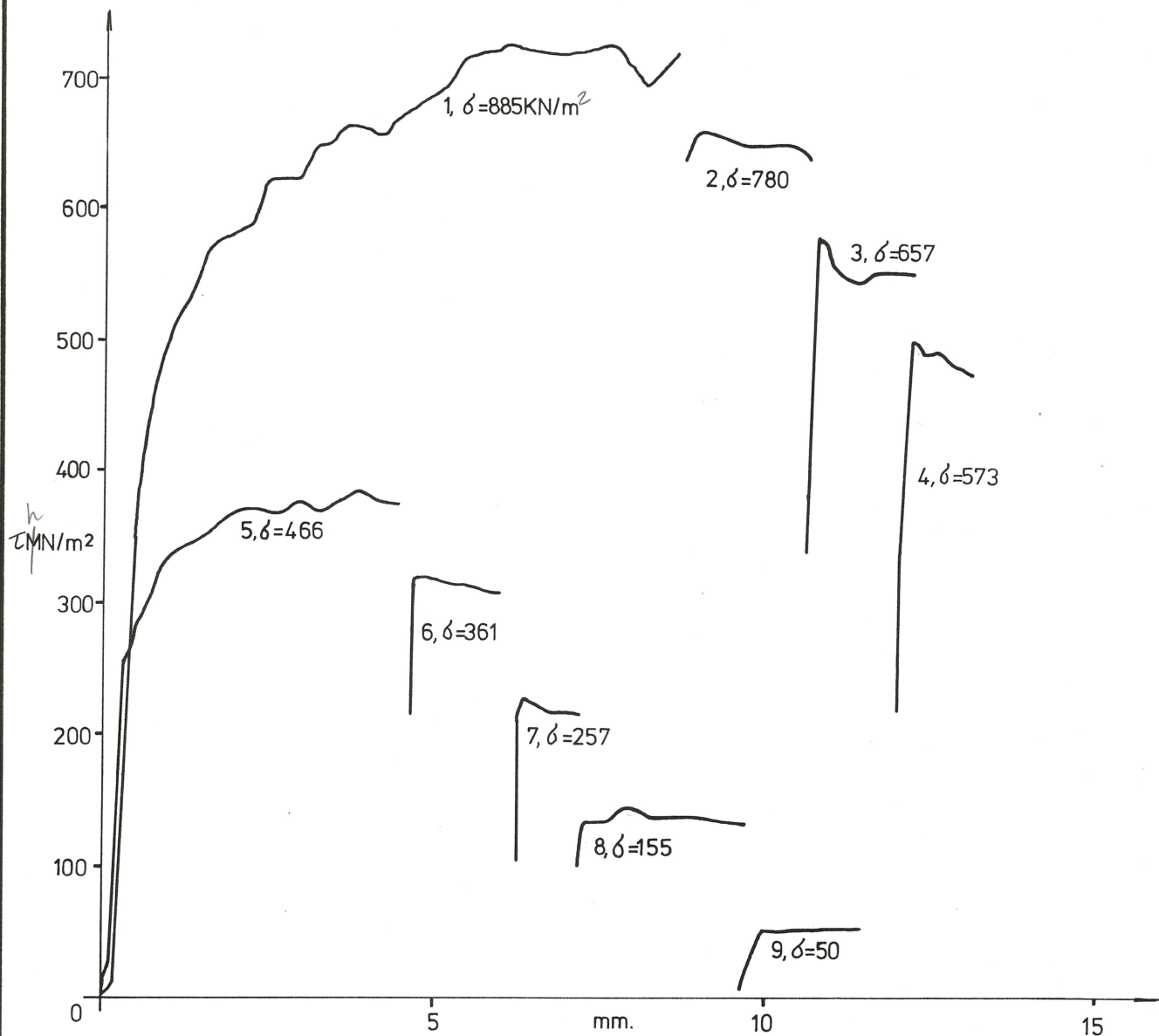
SAMPLE NUMBER YKS 11

YIP KAN STREET ROCK SLOPE FAILURE

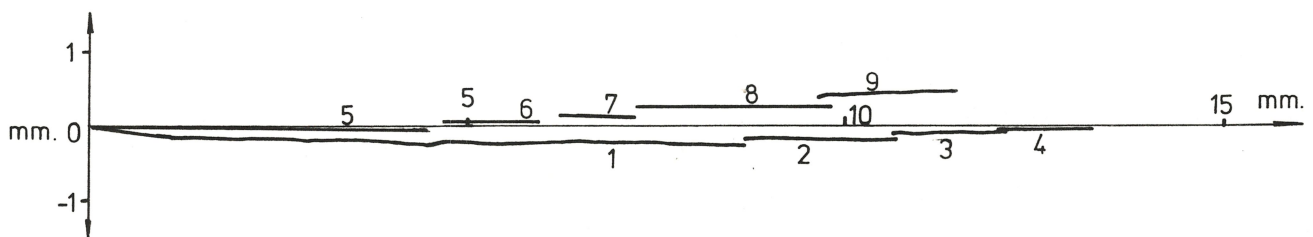
GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



DIRECT SHEAR TEST YKS 11

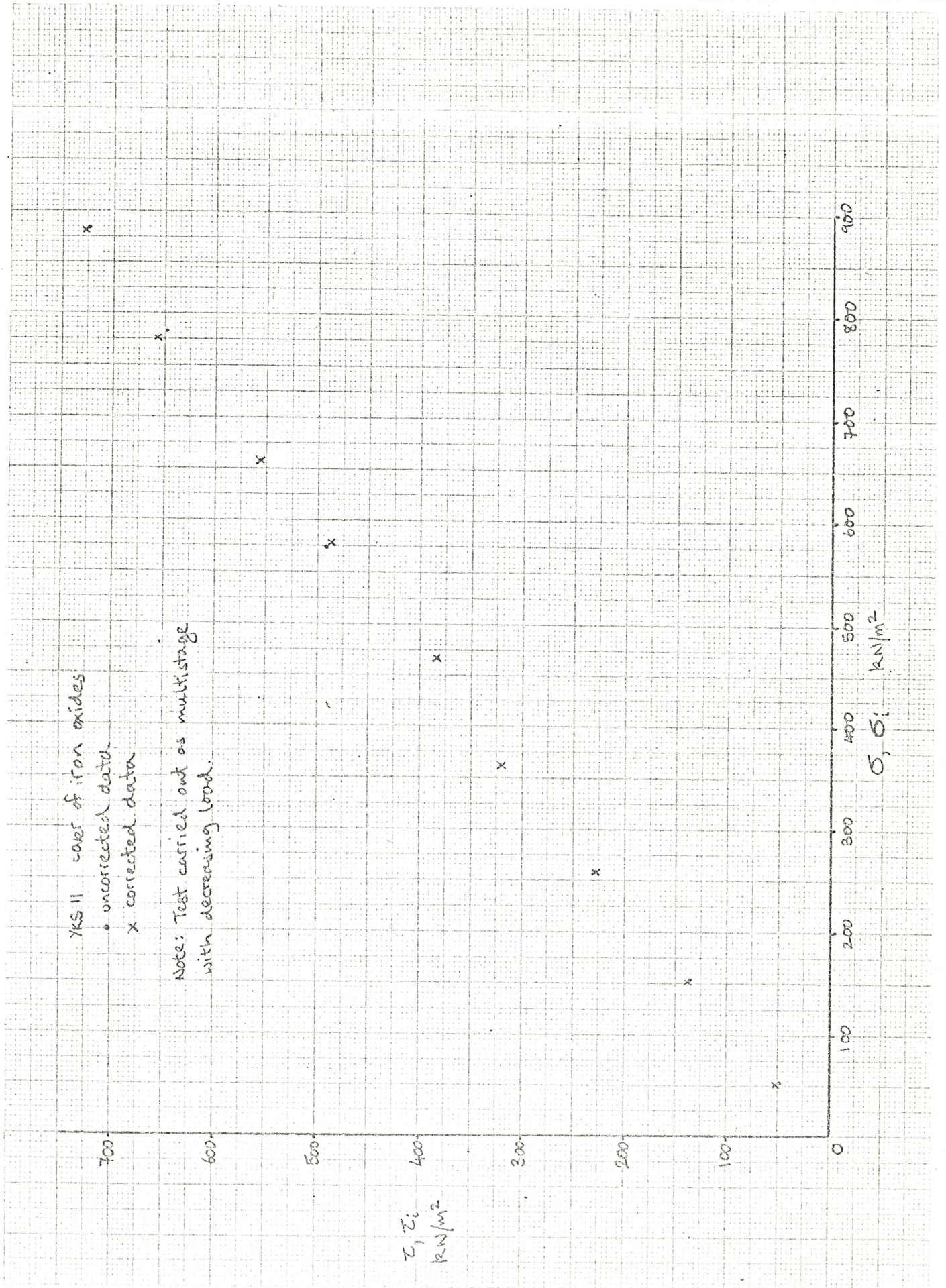


SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT





1. SAMPLE DETAILS

SAMPLE DESCRIPTION SHEET

- 399 Yip Kan Street, Aberdeen.
- Samples from loose debris.
 - Robertson Research Ltd. direct shear box.

2. ROCK DESCRIPTION - HAND SPECIMEN

- Grade II/III monzonite.

3. DISCONTINUITY DESCRIPTION

- Undulating, slightly rough.
- Samples are not a very good match.
- Iron oxides cover is approximately 0.5mm thick.

4. SAMPLE DIMENSIONS

- Gross area of contact taken as constant at
90 mm x 70 mm = 6,300mm².

DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 12

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT

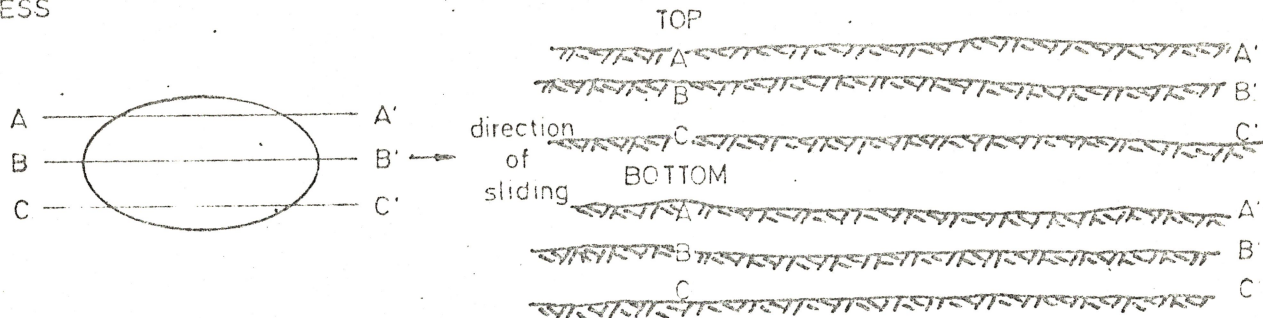


1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS

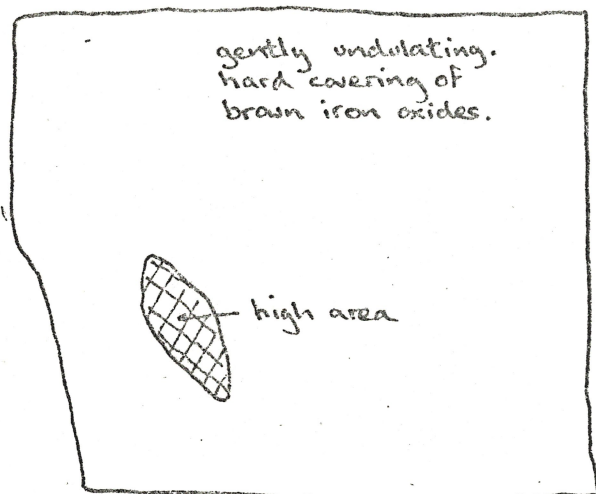


3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

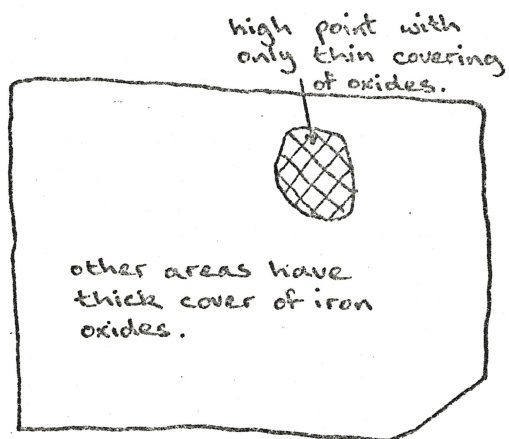
TOP



TOP



BOTTOM



BOTTOM



DIRECT SHEAR TESTS

SAMPLE NUMBER YKS 12

YIP KAN STREET ROCK SLOPE FAILURE

GEOTECHNICAL CONTROL OFFICE
PUBLIC WORKS DEPARTMENT



1. SAMPLE DETAILS

PRESLIDING/POST SLIDING

SAMPLE ILLUSTRATION SHEET

2. ROUGHNESS



TOP
A
B
C
BOTTOM
A
B
C

no significant changes to profiles

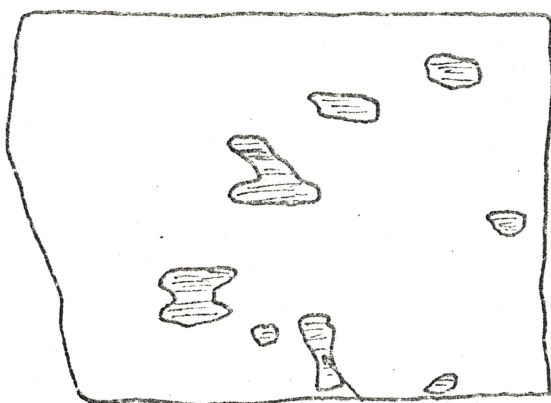
A'
B'
C'
A'
B'
C'

3. SURFACE DESCRIPTION

ANNOTATED DIAGRAMS

PHOTOGRAPHS

TOP



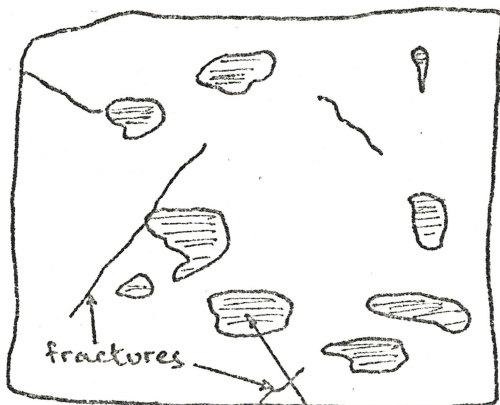
areas of damage
striations in compacted floor,
many through oxides to rock.

TOP



BOTTOM

plaster split in several places
and sample fractured also.



fractures

areas of wear
with striations

BOTTOM



DIRECT SHEAR TESTS

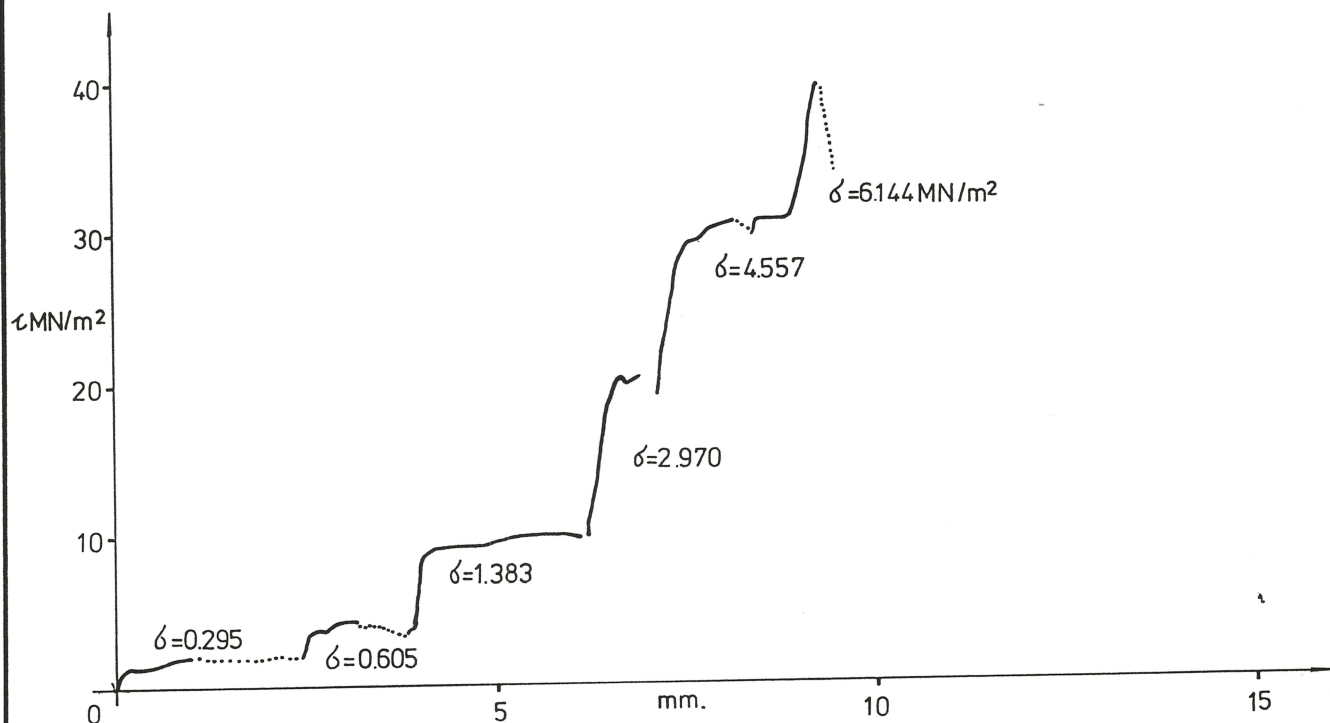
SAMPLE NUMBER YKS 12

YIP KAN STREET ROCK SLOPE FAILURE

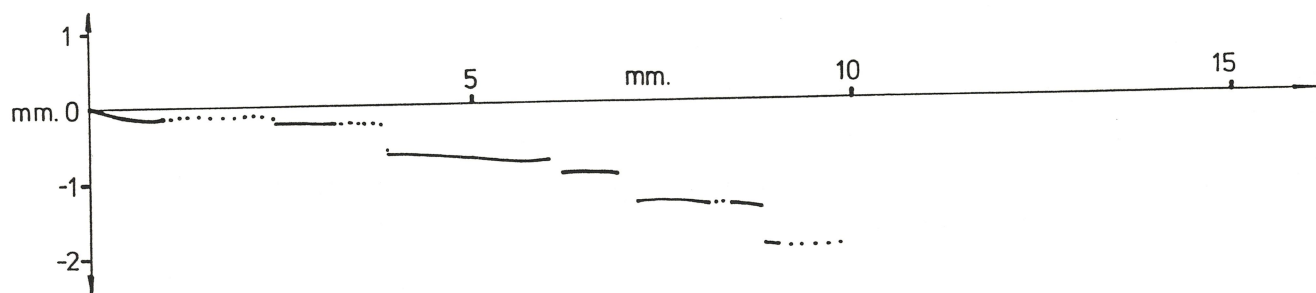
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DIRECT SHEAR TEST YKS 12



SHEARSTRESS(τ) Vs HORIZONTAL DISPLACEMENT



VERTICAL DISPLACEMENT Vs HORIZONTAL DISPLACEMENT



