

Libro de Datos D

Hoja de Inspección de Pendientes

Tabla DB-2.1 Lista de los Sitios Inspeccionados

| Identificación de Pendientes | Tipo de Desastre | Municipio | Objetivo para Preservación | Anotación |
|------------------------------|------------------|------------|----------------------------|-----------|
| 1 | Derrumbe | Sucre | Residencial, Fábrica | 48 |
| 2 | Derrumbe | Sucre | Residencial, Fábrica | 58 |
| 3 | Derrumbe | Sucre | Residencial | 53 |
| 4 | Derrumbe | Sucre | Comercial | 33 |
| 5 | Derrumbe | Sucre | Comercial | 9 |
| 6 | Derrumbe | Sucre | Residencial | 51 |
| 7 | Derrumbe | Sucre | Residencial | 41 |
| 8 | Derrumbe | Sucre | Residencial | 17 |
| 9 | Derrumbe | Sucre | Residencial | 56 |
| 10 | Deslizamiento | Sucre | Residencial | 41 |
| 11 | Deslizamiento | Libertador | Residencial | 63 |

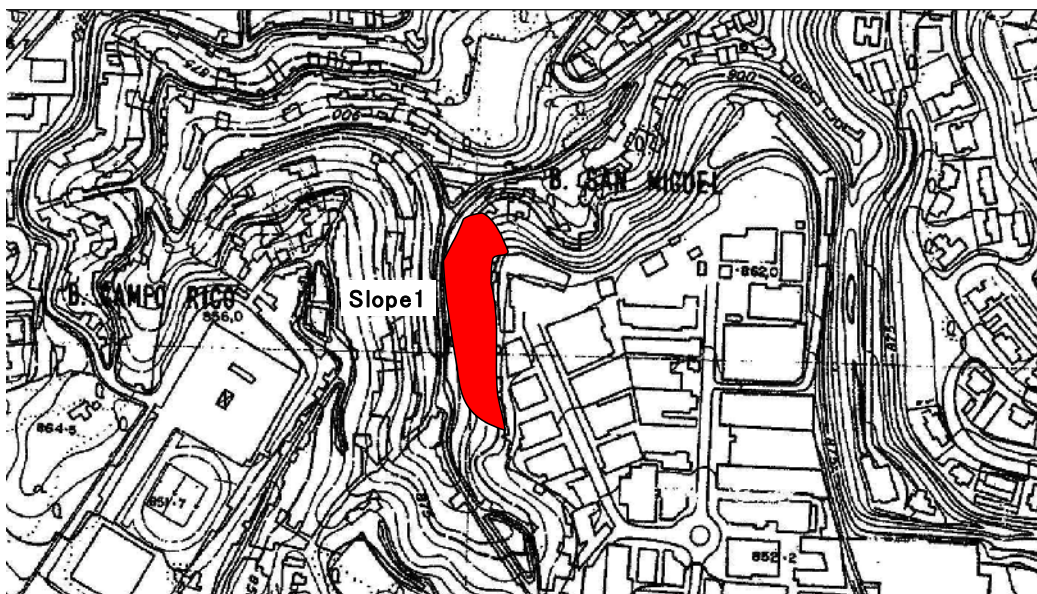
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|--|--|----------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (Lebrun) |
| Slope ID | 1 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest / Trees / Grass <u>Others</u> | Barrio | |
| Target of Preservation | <u>Residencial</u> / Hotel / Commercial /Hospital / Factory /School / Others Ranchos, Factory | | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Nothing | | |
| Hazard Score | 54 | Comment: The almost all surface of the slope is covered with Ranchos. Toe of the slope is put some countermeasure partially. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

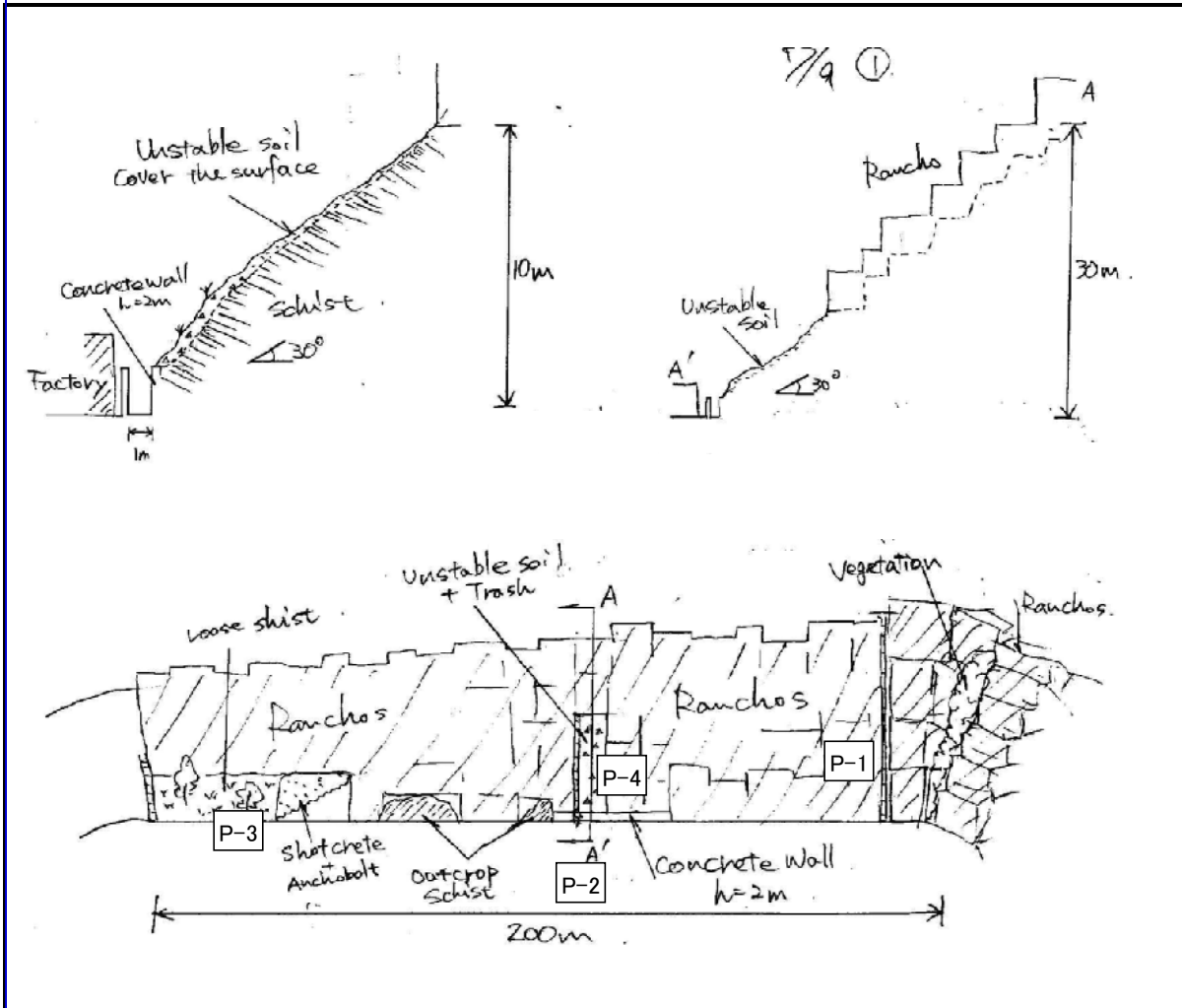


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|---------------------------|------|----------|
| Slope ID | 1 | Type of Disaster | Slope Failure / Landslide | Date | 9/7/2003 |
|----------|---|------------------|---------------------------|------|----------|

Sketch



Remarks

- Weathered Schist distributes in this area.
- The almost all surface of the slope is covered with Ranchos.
- Some parts of the slope on which Rancho have not been constructed is covered with unstable soil.
- Some parts of toe of the slope are put countermeasure, but the other parts of toe of the slope still have not been applied any countermeasures.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 1 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 General View



P-2 The bare slope situation



P-3 Existing Countermeasure



P-4 Close view for the bare slope

| SLOPE INSPECTION SHEET | | | |
|-----------------------------------|--|---|-----------------------------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | |
| Slope ID | 1 | Type of Disaster | <u>Slope Failure.</u> / Landslide |
| | | Date | 9/7/2003 |
| Condition of Slope | | | ✓ Tick One |
| Topography | Alluvium Slope | Yes | 2 |
| | | No | 0 |
| | Trace of Collapse | Yes | 1 |
| | | No | 0 |
| | Clear Knick Point or Overhang | Yes | 1 |
| | | No | 0 |
| Concave Slope or Debris Slope | Yes | 1 | |
| | No | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | 10 |
| | B : Rock Slope H : Height | H > 50m | 30 |
| | | $30 m \leq H < 50m$ | 26 |
| $15 m \leq H < 30m$ | | 20 | |
| | H < 15m | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | 8 |
| | | Slightly | 4 |
| | | No Swelling Clay | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | 8 |
| | | Slightly | 4 |
| | | No Available | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | 8 |
| | Soft Soil over Base Rock | | 6 |
| | Hard Rock over Weak Rock | | 4 |
| | Others | | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | 10 |
| | | Obscure | 8 |
| | | No Slope Deformation | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | 5 |
| | | Obscure | 3 |
| | | No Slope Deformation | 0 |
| Surface Condition | Condition of Surface | Unstable | 8 |
| | | Moderate | 6 |
| | | Stable | 0 |
| | Ground Water | Natural water spring | 8 |
| | | Water seepage | 4 |
| | | Dry | 0 |
| | Cover | No-vegetation, Grassland | 4 |
| | | Complex (Grass, Structure) | 3 |
| | | Structure | 1 |
| | Surface Drainage | Available (Good) | 0 |
| | | Available (Need Repair) | 3 |
| | | Not Available | 6 |
| | | Score | 64 |
| Countermeasure | | | ✓ Tick One |
| Effective | | | -20 |
| Partially effective | | ✓ | -10 |
| Not effective or nothing | | | 0 |
| | | Hazard Score | 54 |

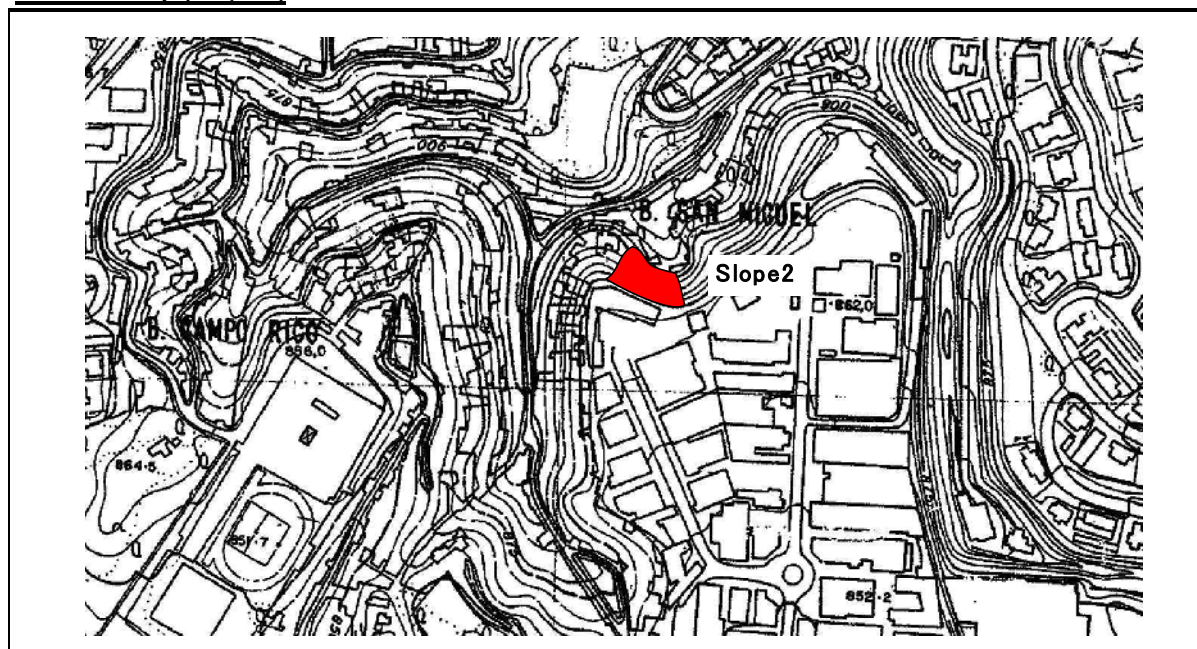
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|---|--|----------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (Lebrun) |
| Slope ID | 2 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest / <u>Trees</u> / Grass / Others | | |
| Target of Preservation | <u>Residencial</u> / Hotel / Commercial / Hospital / <u>Factory</u> / School / Others | | |
| | Ranchos, Factory | | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Shotcrete + Anchorwork on toe of the slope partially | | |
| Hazard Score | 63 | Comment : There is unstable soil material on the step slope. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

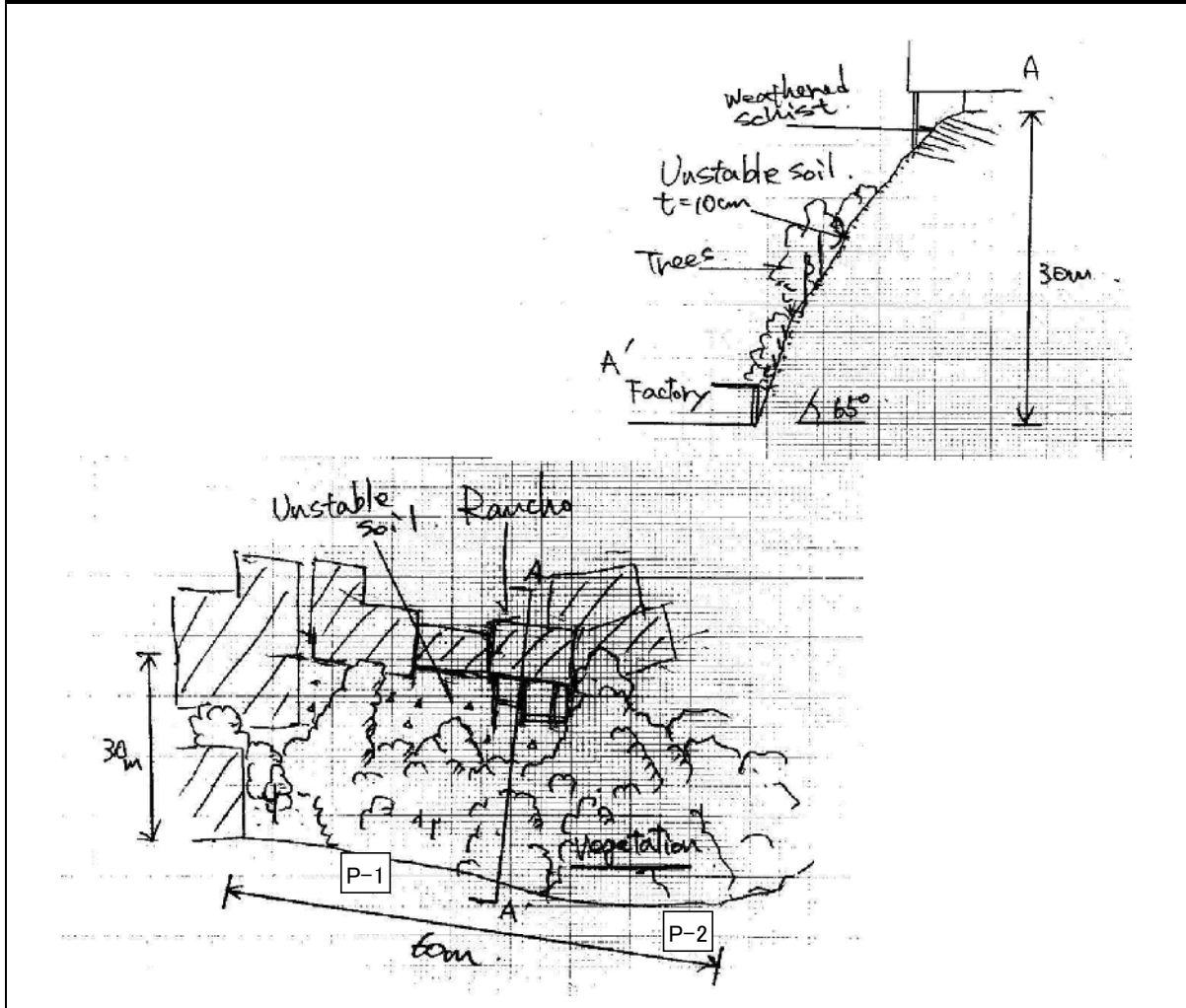


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|---------------------------|------|----------|
| Slope ID | 2 | Type of Disaster | Slope Failure / Landslide | Date | 9/7/2003 |
|----------|---|------------------|---------------------------|------|----------|

Sketch



Remarks

- Vegetation (tree and grass) cover almost all surface of the slope.
- Some traces of collapse are found on the slope.
- The surface of the slope is covered with unstable soil

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 2 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 General View



P-2 General View

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 2 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|-----------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | | 1 |
| | | No | ✓ | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | | 1 | |
| | No | ✓ | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 m \leq H < 50m$ | ✓ | 26 |
| $15 m \leq H < 30m$ | | | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | | 8 |
| | Soft Soil over Base Rock | | ✓ | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | ✓ | 8 |
| | | No Slope Deformation | | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | ✓ | 3 |
| | | No Slope Deformation | | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | ✓ | 6 |
| | | Stable | | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | | 4 |
| | | Dry | ✓ | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | ✓ | 3 |
| | | Structure | | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 63 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | | -20 |
| Partially effective | | -10 |
| Not effective or nothing | ✓ | 0 |
| Hazard Score | | 63 |

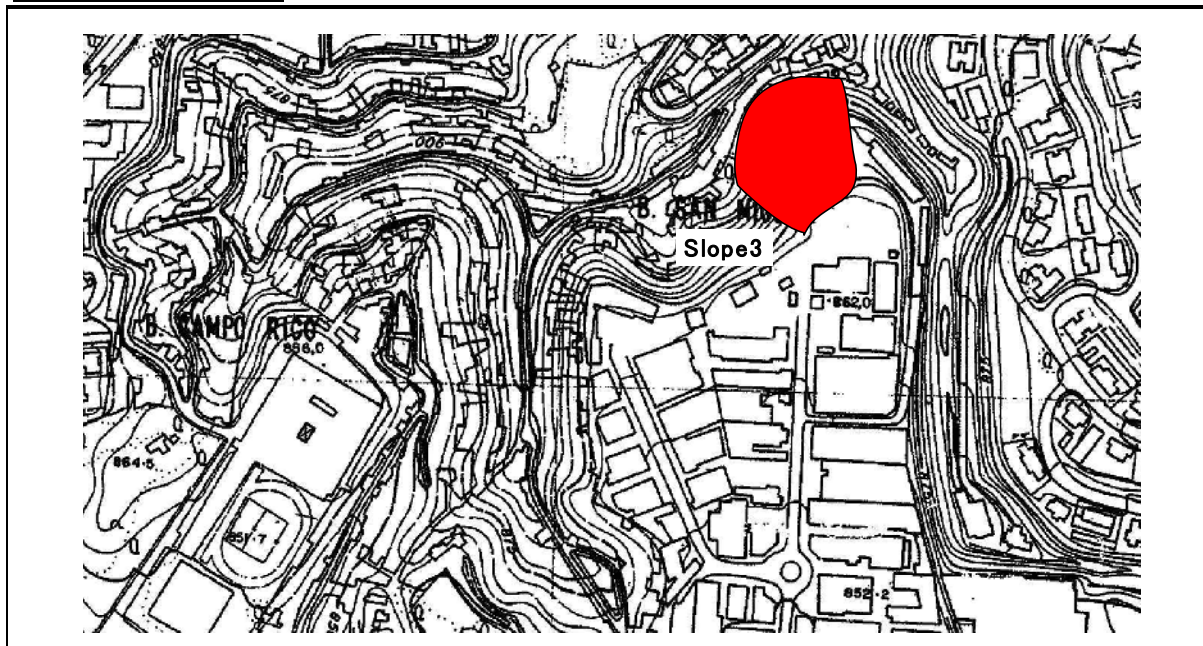
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|---|---|----------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (Lebrun) |
| Slope ID | 3 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest (<u>Trees</u>) Grass / Others | | |
| Target of Preservation | <u>Residencial</u> Hotel / Commercial /Hospital / Factory /School / Others Ranchos | | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Nothing | | |
| Hazard Score | 58 | Comment: There is the possibility that the trace of collapse extends more due to no countermeasure. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

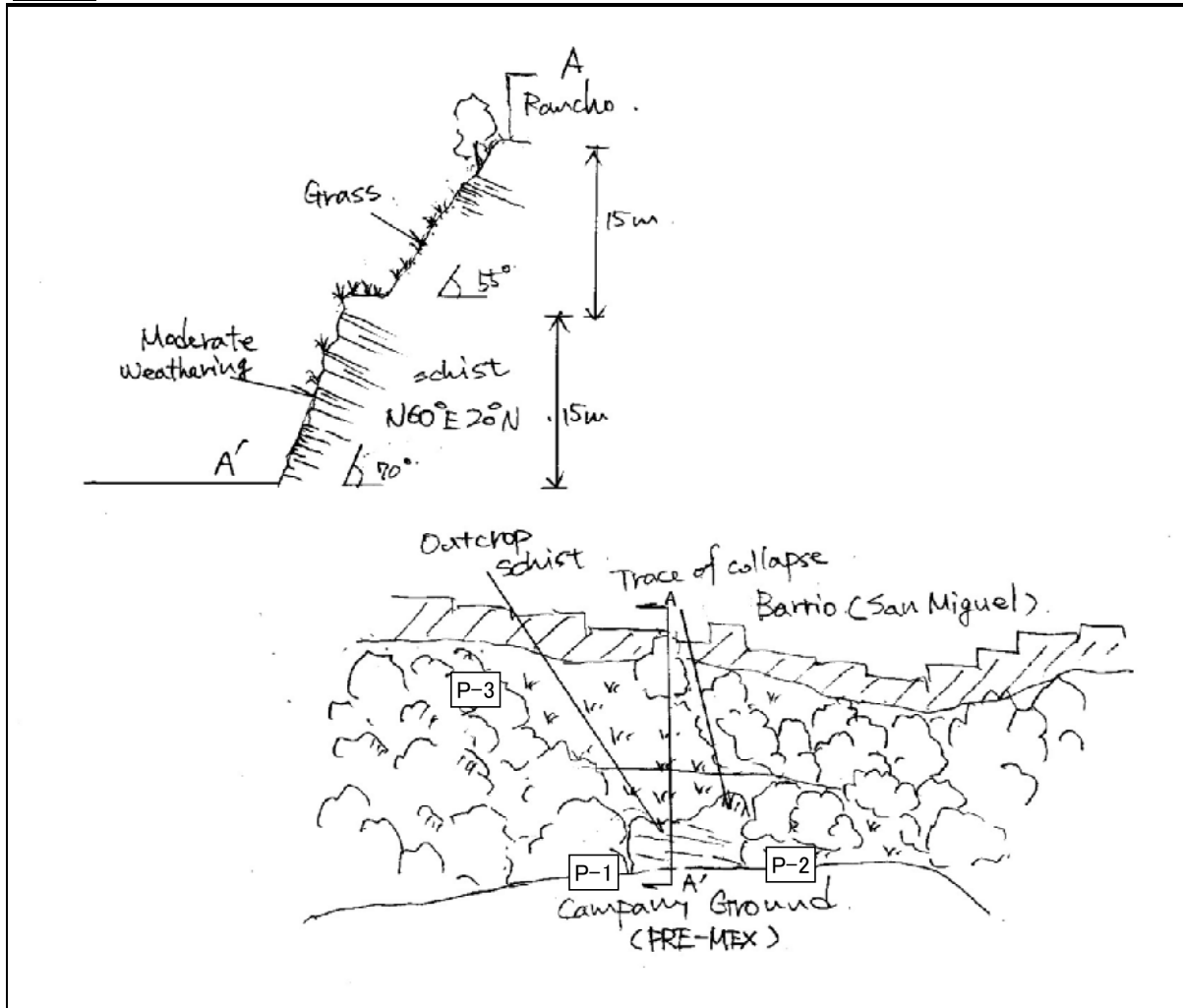


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|---------------------------|------|----------|
| Slope ID | 3 | Type of Disaster | Slope Failure / Landslide | Date | 9/7/2003 |
|----------|---|------------------|---------------------------|------|----------|

Sketch



Remarks

- The slope is consisted of moderate weathered schist
- The berm is made on middle of the slope. There is trace of collapse on the lower part of the slope.
- On the upper part of the slope, trace of collapse can not be found.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 3 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 General View



P-2 General View



P-3 Situation of Rancho on the slope

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 3 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|-----------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | | 1 |
| | | No | ✓ | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | ✓ | 1 | |
| | No | | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 m \leq H < 50m$ | ✓ | 26 |
| $15 m \leq H < 30m$ | | | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | | 8 |
| | Soft Soil over Base Rock | | | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | ✓ | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | ✓ | 8 |
| | | No Slope Deformation | | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | ✓ | 3 |
| | | No Slope Deformation | | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | ✓ | 6 |
| | | Stable | | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | | 4 |
| | | Dry | ✓ | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | ✓ | 3 |
| | | Structure | | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 58 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | | -20 |
| Partially effective | | -10 |
| Not effective or nothing | ✓ | 0 |
| Hazard Score | | 58 |

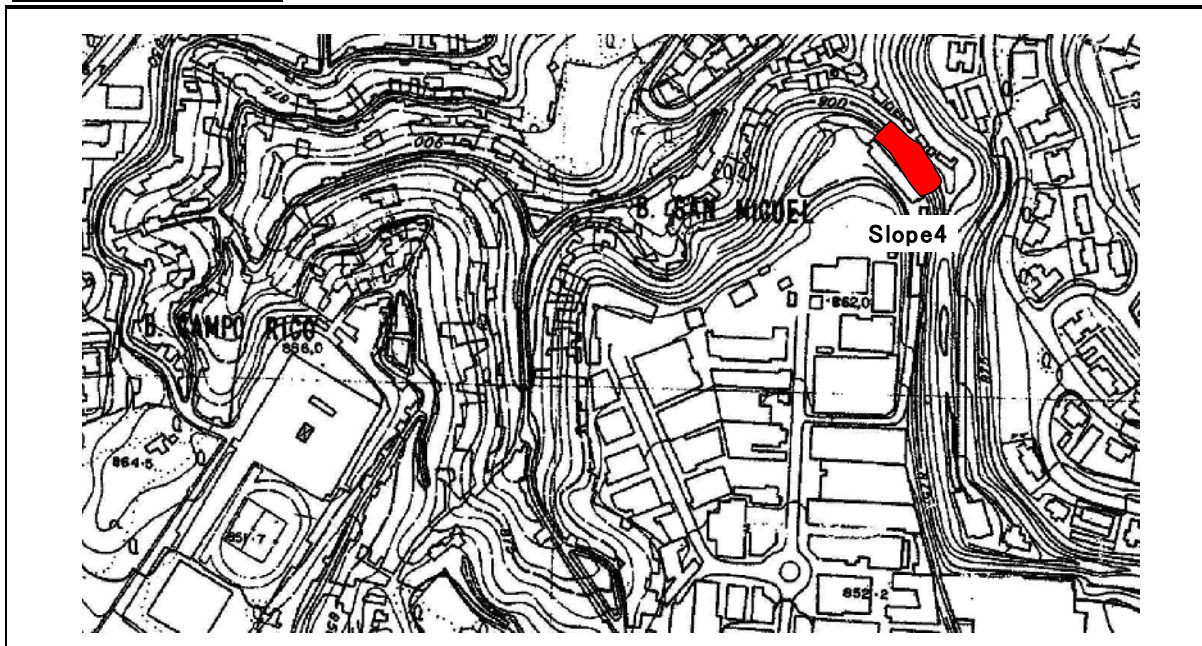
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|--|---|----------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (Lebrun) |
| Slope ID | 4 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest (<u>Trees</u>) Grass / Others | | |
| Target of Preservation | Residencial / Hotel (<u>Commercial</u>) /Hospital / Factory /School / Others | | |
| | Building | | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Shotcrete | | |
| Hazard Score | 39 | Comment: The lower part of the slope shall be stable. There is the possible that some small collapses occure behind the building. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

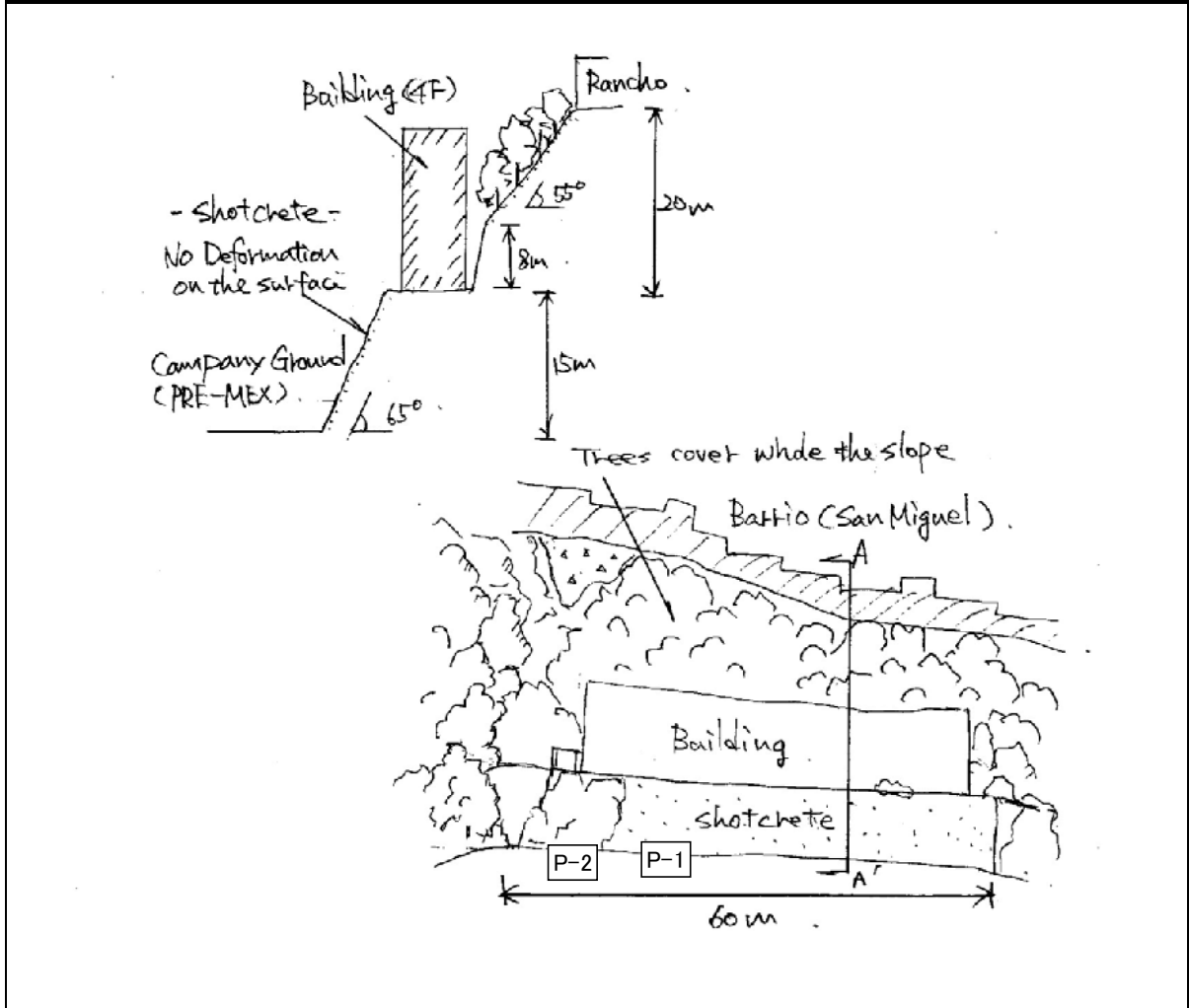


SOLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|---------------------------|------|----------|
| Slope ID | 4 | Type of Disaster | Slope Failure / Landslide | Date | 9/7/2003 |
|----------|---|------------------|---------------------------|------|----------|

Sketch



Remarks

-Any deformations are not found on the surface of the lower part of the slope.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 4 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 General View



P-2 General View

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 4 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|-----------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | | 1 |
| | | No | ✓ | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | | 1 | |
| | No | ✓ | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 m \leq H < 50m$ | | 26 |
| $15 m \leq H < 30m$ | | ✓ | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | | 8 |
| | Soft Soil over Base Rock | | ✓ | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | | 8 |
| | | No Slope Deformation | ✓ | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | | 3 |
| | | No Slope Deformation | ✓ | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | ✓ | 6 |
| | | Stable | | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | ✓ | 4 |
| | | Dry | | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | ✓ | 3 |
| | | Structure | | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 49 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | | -20 |
| Partially effective | ✓ | -10 |
| Not effective or nothing | | 0 |
| Hazard Score | | 39 |

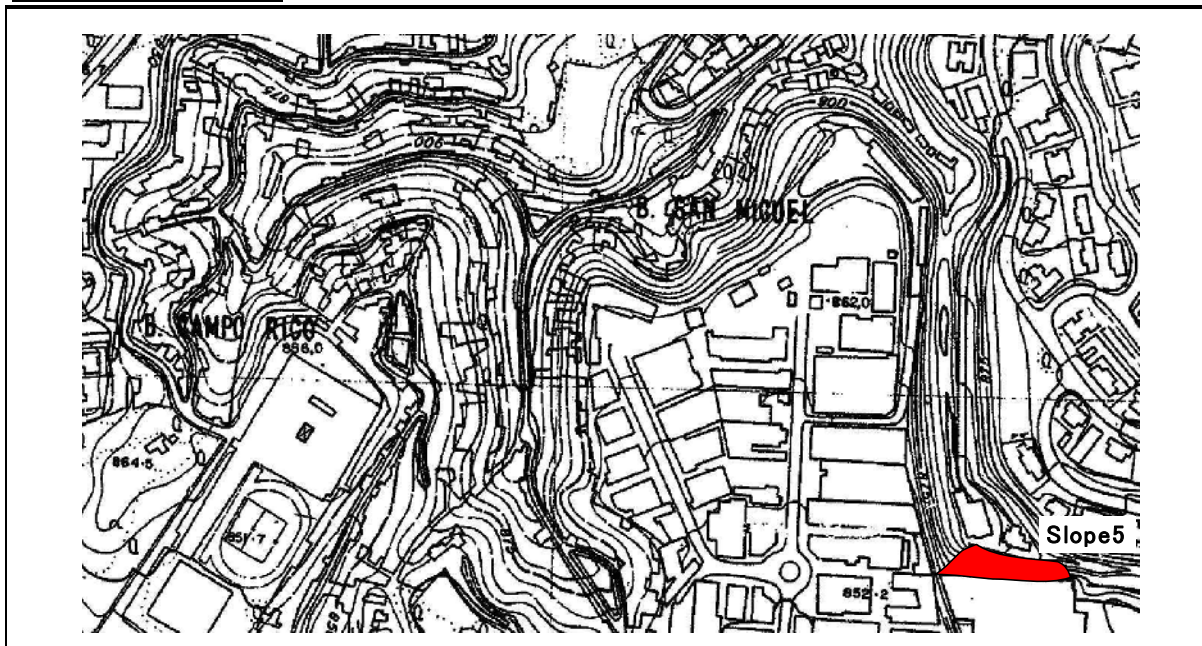
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|--|---|----------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (Lebrun) |
| Slope ID | 5 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest / Trees / Grass / <u>Others</u> | No Vegetation | |
| Target of Preservation | Residencial / Hotel / <u>Commercial</u> / Hospital / Factory / School / Others | Building (Electricida Caracas) | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Shotcrete | | |
| Hazard Score | 15 | Comment: This cut slope is put shotcrete work and there are no deformations on the surface. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

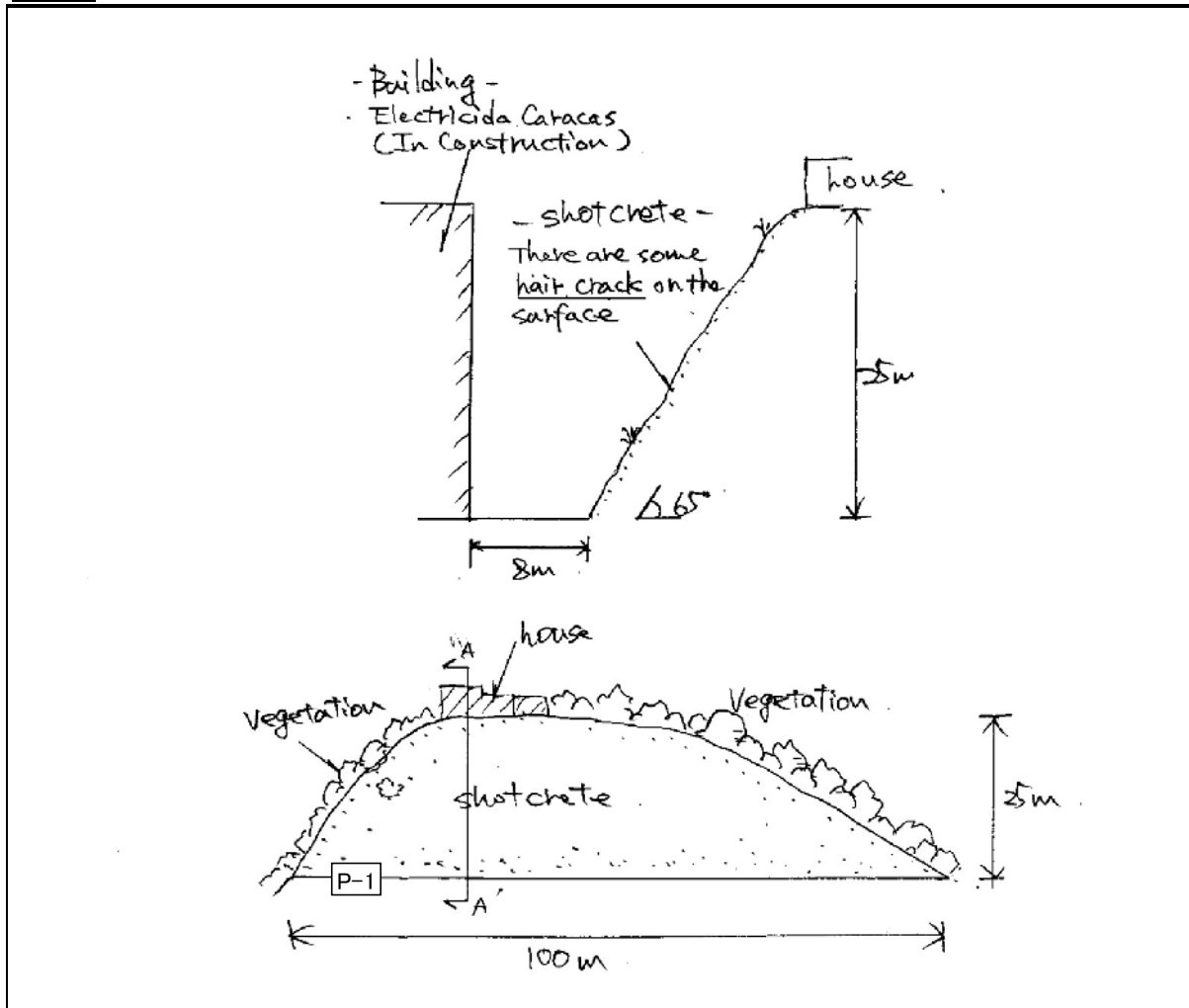


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 5 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Sketch



Remarks

- The Building that is the target of preservation is in construction. Nobody work in this building so far.
- The slope is put the shotcrete work.
- Any deformations are not recognized on surface of the slope.
- In this time, we could not enter the building site due to no permission.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 5 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 General View

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 5 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|-----------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | | 1 |
| | | No | ✓ | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | | 1 | |
| | No | ✓ | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 m \leq H < 50m$ | | 26 |
| $15 m \leq H < 30m$ | | ✓ | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | | 8 |
| | Soft Soil over Base Rock | | | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | ✓ | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | | 8 |
| | | No Slope Deformation | ✓ | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | | 3 |
| | | No Slope Deformation | ✓ | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | | 6 |
| | | Stable | ✓ | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | ✓ | 4 |
| | | Dry | | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | | 3 |
| | | Structure | ✓ | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 35 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | ✓ | -20 |
| Partially effective | | -10 |
| Not effective or nothing | | 0 |
| Hazard Score | | 15 |

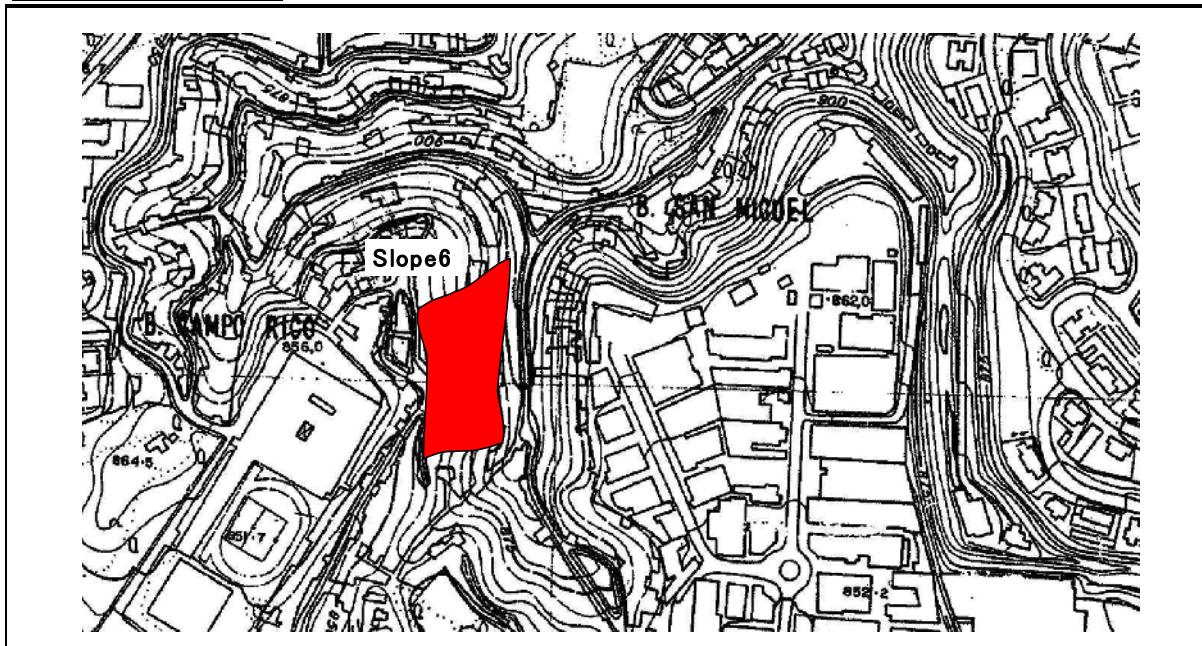
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|--|--|--------------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (San Miguel) |
| Slope ID | 6 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest / Trees / Grass / <u>Others</u> | | |
| Target of Preservation | <u>Residencial</u> / Hotel / Commercial / Hospital / Factory / School / Others <i>Ranchos</i> | | |
| Disaster Record | <i>No Records</i> | | |
| Existing Countermeasure | <i>Nothing</i> | | |
| Hazard Score | 57 | Comment: <i>Ranchos are constructed by cutting the slope. Therefore, it is necessary to take notice for the condition of the slope behind ranchos.</i> | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

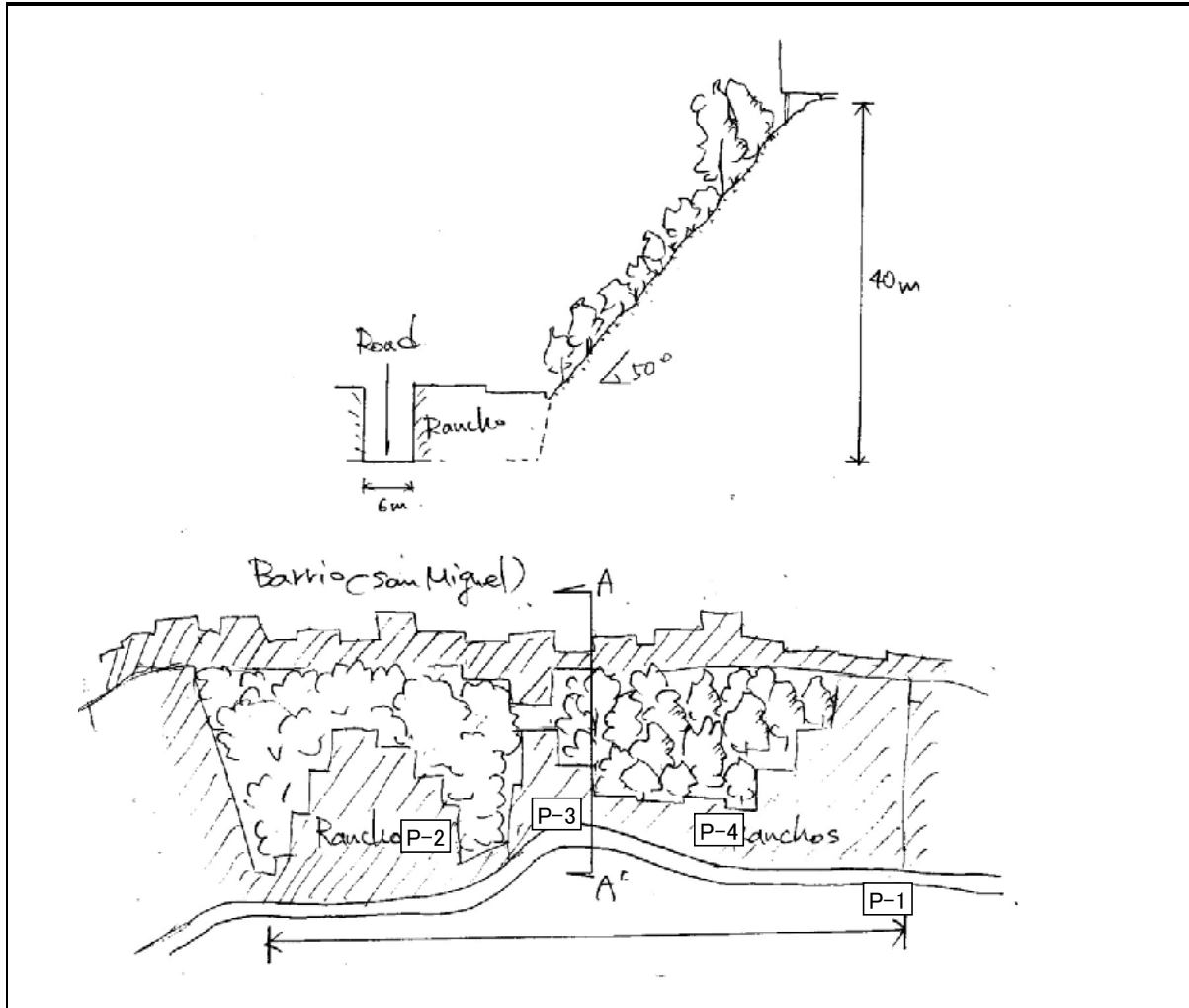


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|---------------------------|------|----------|
| Slope ID | 6 | Type of Disaster | Slope Failure / Landslide | Date | 9/7/2003 |
|----------|---|------------------|---------------------------|------|----------|

Sketch



Remarks

-Any traces of collapse are not found on the slope.
-There are some drainage system in the barrio.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 6 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 View of South part of the slope



P-2 View of North part of the slope



P-3 View of the center of the slope



P-4 View of South part of the slope

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 6 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|-----------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | | 1 |
| | | No | ✓ | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | | 1 | |
| | No | ✓ | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 m \leq H < 50m$ | ✓ | 26 |
| $15 m \leq H < 30m$ | | | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | | 8 |
| | Soft Soil over Base Rock | | | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | ✓ | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | ✓ | 8 |
| | | No Slope Deformation | | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | | 3 |
| | | No Slope Deformation | ✓ | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | ✓ | 6 |
| | | Stable | | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | ✓ | 4 |
| | | Dry | | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | ✓ | 3 |
| | | Structure | | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 57 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | | -20 |
| Partially effective | | -10 |
| Not effective or nothing | ✓ | 0 |
| Hazard Score | | 57 |

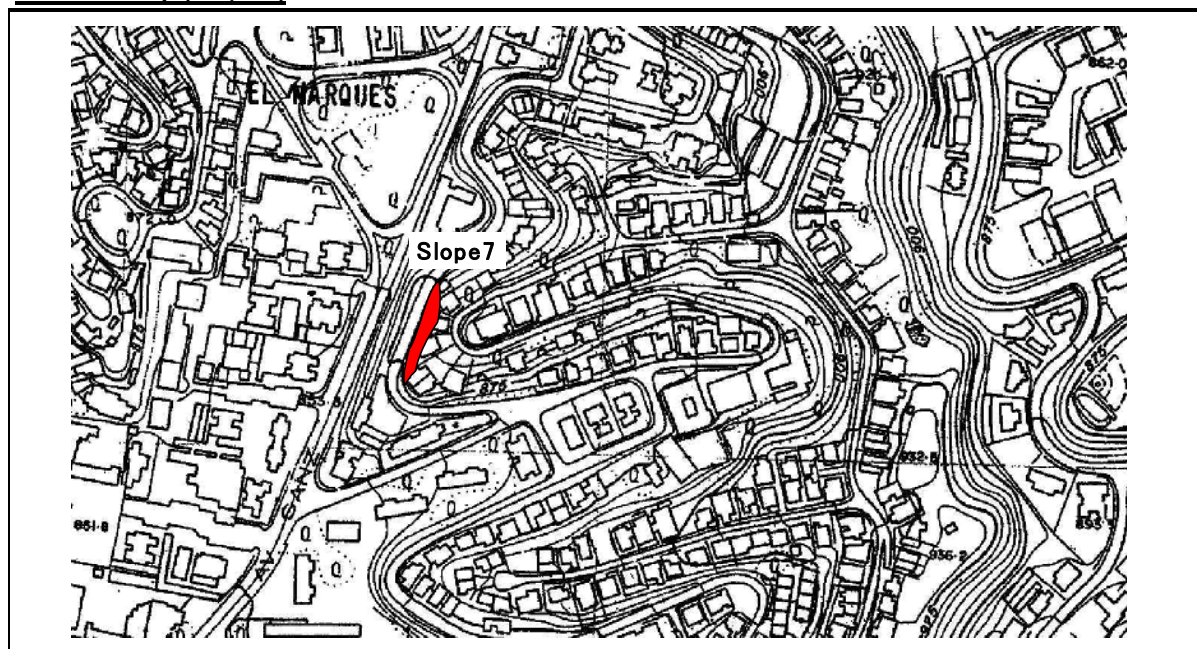
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|--|--|--------------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (El Marques) |
| Slope ID | 7 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest/ <u>Trees</u> /Grass / Others | Partically Trees | |
| Target of Preservation | <u>Residencial</u> / Hotel / Commercial /Hospital / Factory /School / Others | | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Shotcrete work + Concrete Wall | | |
| Hazard Score | 46 | Comment: The slope that is put some countermeasure is stable. There is the possible that small collapse occur on the outcrops slope. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

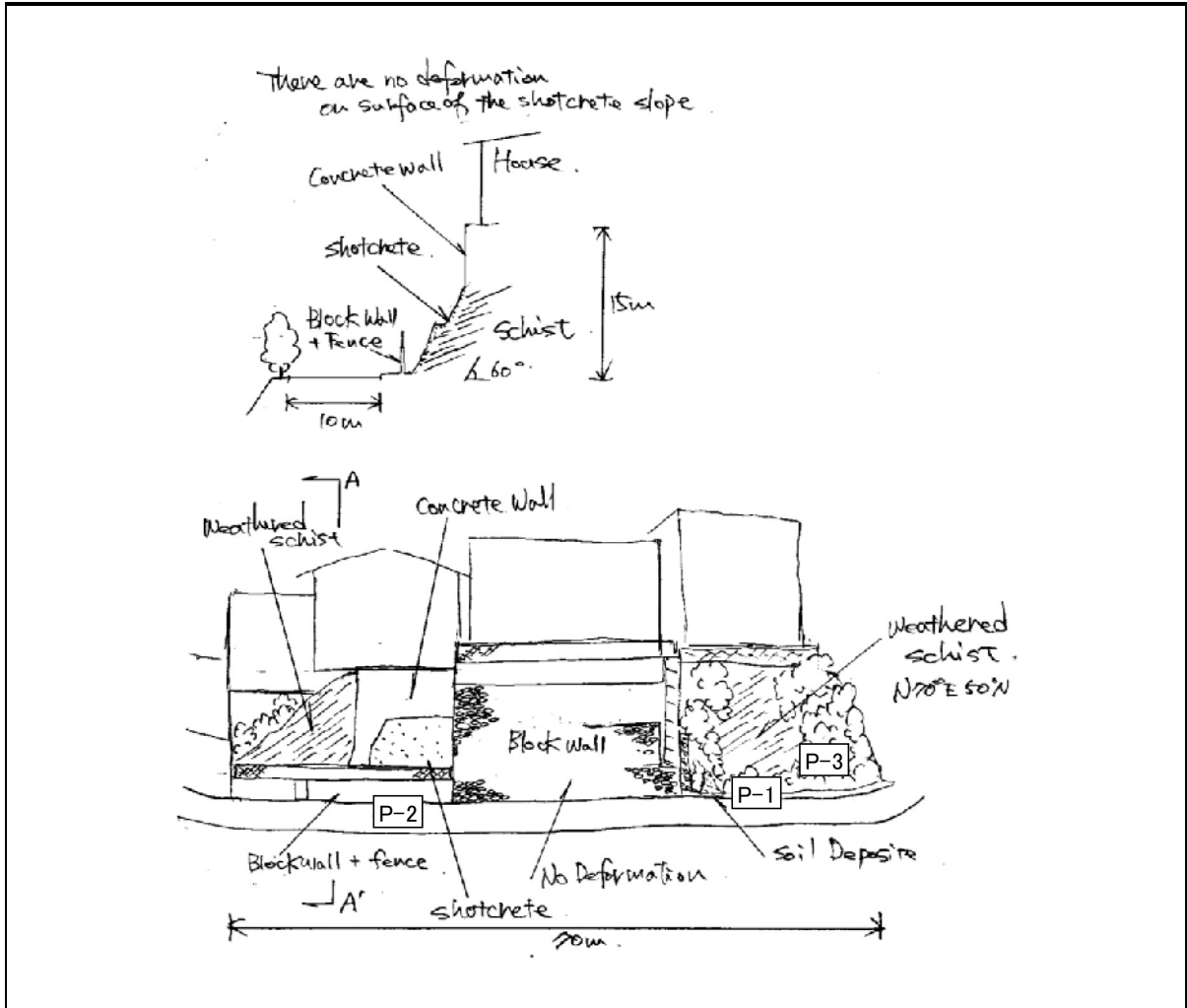


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 7 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Sketch



Remarks

- The slope is consisted of weathered schist.
- There are no deformation on the existing countermeasures and road.
- Small collapses are found on the surface of the cut slope.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 7 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 Situation of the cut slope (South part of the slope)



P-2 Existing Countermeasure



P-3 Outcrops (Weathered Shisit)

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 7 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|-----------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | ✓ | 1 |
| | | No | | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | | 1 | |
| | No | ✓ | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 m \leq H < 50m$ | | 26 |
| $15 m \leq H < 30m$ | | ✓ | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | ✓ | 8 |
| | Soft Soil over Base Rock | | | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | | 8 |
| | | No Slope Deformation | | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | | 3 |
| | | No Slope Deformation | ✓ | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | ✓ | 6 |
| | | Stable | | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | | 4 |
| | | Dry | ✓ | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | ✓ | 3 |
| | | Structure | | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 56 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | | -20 |
| Partially effective | ✓ | -10 |
| Not effective or nothing | | 0 |
| Hazard Score | | 46 |

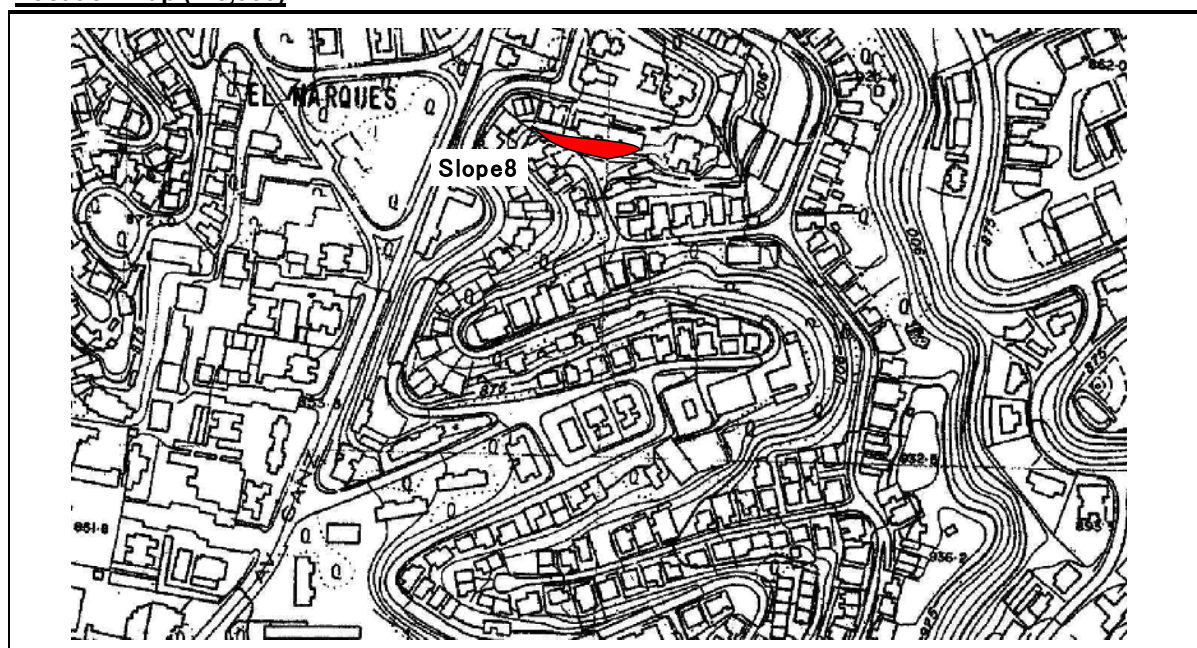
SLOPE INSPECTION SHEET

SHEET 1 / 4

General Slope Data

| | | | |
|-------------------------|--|--|--------------------|
| Type of Disaster | <u>Slope Failure</u> / Landslide | Municipality | SUCRE (El Marques) |
| Slope ID | 8 | | |
| Date Checked | 28/7/2003 | Data Inspected | 9/7/2003 |
| Checked by | Fumihiko Yokoo | Inspected by | Takashi Hara |
| Vegetation /Cultivation | Primary Forest / Trees <u>Grass</u> <u>Others</u> | | |
| Target of Preservation | <u>Residencial</u> / Hotel / Commercial /Hospital / Factory /School / Others | | |
| Disaster Record | No Records | | |
| Existing Countermeasure | Concrete Wall + Anchor work | | |
| Hazard Score | 23 | Comment: Almost all slope behind houses are put some countermeasures, and any deformations are not found on the slope. | |
| Proposed Countermeasure | | | |
| Cost Estimation | Quantity | Unit Rate | Amount |

Location Map (1:5,000)

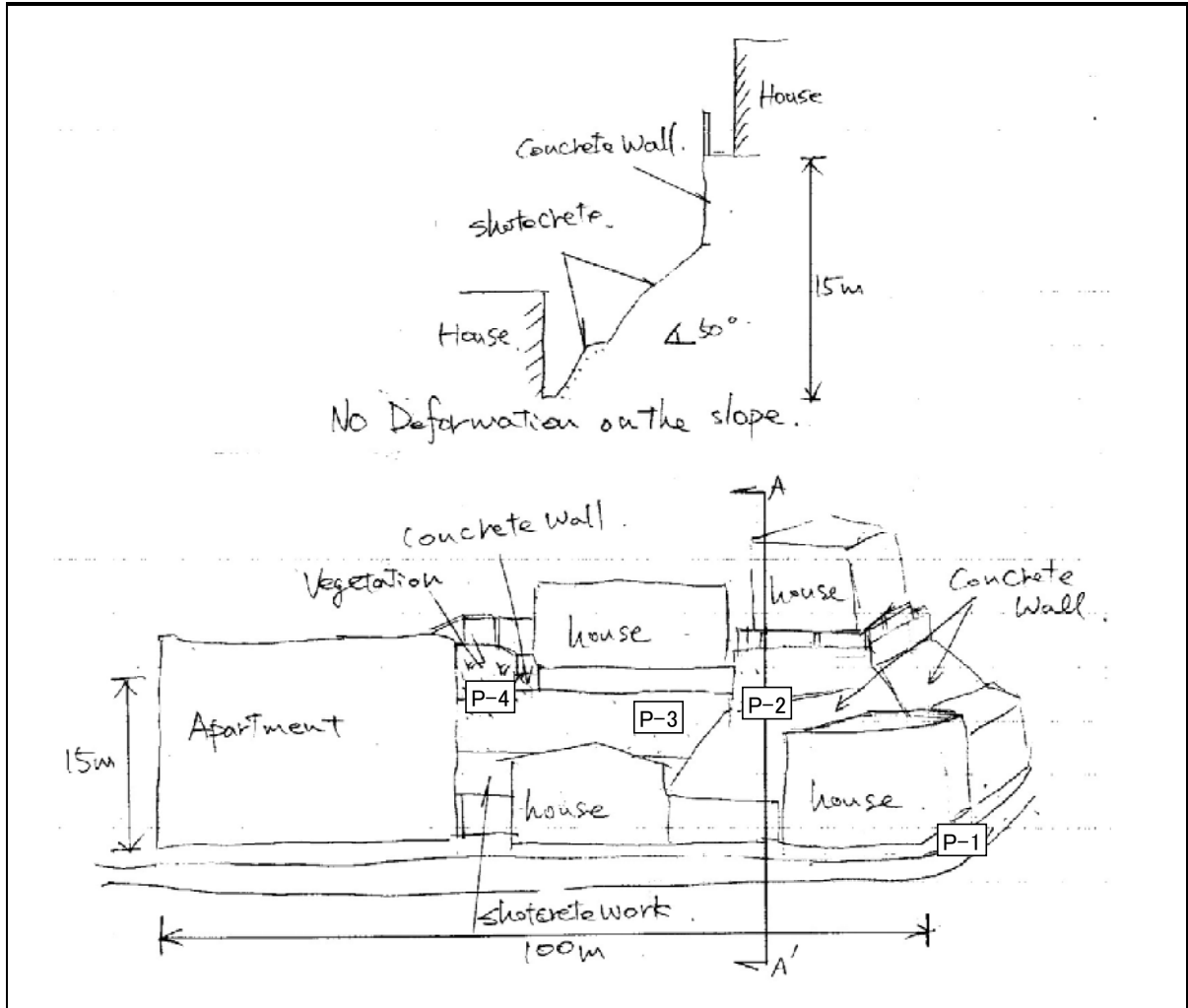


SLOPE INSPECTION SHEET

SHEET 2/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 8 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Sketch



Remarks

- Almost all slope behind the houses are put some countermeasures.
- Any deformations are not found on these countermeasures.

SLOPE INSPECTION SHEET

SHEET 3/4

| | | | | | |
|----------|---|------------------|----------------------------------|------|----------|
| Slope ID | 8 | Type of Disaster | <u>Slope Failure</u> / Landslide | Date | 9/7/2003 |
|----------|---|------------------|----------------------------------|------|----------|

Photograph



P-1 View of West part of the slope



P-2 Existing Countermeasure (Concrete Wall)



P-3 Existing Countermeasure (Concrete Wall)



P-4 Existing Countermeasure
(Concrete Wall+Anchor work)

| SLOPE INSPECTION SHEET | | | | |
|-------------------------------|---|--------------------|-----------------------------------|---------------|
| 1 SLOPE FAILURE | | SHEET 4 / 4 | | |
| Slope ID | 8 | Type of Disaster | <u>Slope Failure.</u> / Landslide | Date 9/7/2003 |

Condition of Slope

✓ Tick One

| | | | | |
|------------------------------------|--|---|-------|-----------|
| Topography | Alluvium Slope | Yes | | 2 |
| | | No | ✓ | 0 |
| | Trace of Collapse | Yes | | 1 |
| | | No | ✓ | 0 |
| | Clear Knick Point or Overhang | Yes | | 1 |
| | | No | ✓ | 0 |
| Concave Slope or Debris Slope | Yes | | 1 | |
| | No | ✓ | 0 | |
| Geometry Select A or B | A : Soil Slope H : Height i : Angle of Slope | H > 30m | | 30 |
| | | $H \leq 30m, i > 45 \text{ deg}$ | | 24 |
| | | $15m \leq H < 30m, i \leq 45 \text{ deg}$ | | 20 |
| | | $H < 15m, i \leq 45 \text{ deg}$ | | 10 |
| | B : Rock Slope H : Height | H > 50m | | 30 |
| | | $30 \text{ m} \leq H < 50\text{m}$ | | 26 |
| $15 \text{ m} \leq H < 30\text{m}$ | | ✓ | 20 | |
| | H < 15m | | 10 | |
| Material Select A and B | A : Soil Character Swelling Clay Contents | Conspicuous | | 8 |
| | | Slightly | | 4 |
| | | No Swelling Clay | ✓ | 0 |
| | B : Rock Quality Sheared Rock or Weathered Rock | Conspicuous | | 8 |
| | | Slightly | ✓ | 4 |
| | | No Available | | 0 |
| Geological Structure | Dip Slope (Bedding, Weak Plane) | | ✓ | 8 |
| | Soft Soil over Base Rock | | | 6 |
| | Hard Rock over Weak Rock | | | 4 |
| | Others | | | 0 |
| Deformation | Slope Deformation Gully Erosion, Rill Erosion, Mass Erosion, Fretting Erosion, Rockfall, Exfoliation, Swelling | Clear | | 10 |
| | | Obscure | | 8 |
| | | No Slope Deformation | ✓ | 0 |
| | Slope Deformation at adjacent slope Rockfall, Collapse, Crack, Swelling, Other deformation | Clear | | 5 |
| | | Obscure | | 3 |
| | | No Slope Deformation | ✓ | 0 |
| Surface Condition | Condition of Surface | Unstable | | 8 |
| | | Moderate | | 6 |
| | | Stable | ✓ | 0 |
| | Ground Water | Natural water spring | | 8 |
| | | Water seepage | ✓ | 4 |
| | | Dry | | 0 |
| | Cover | No-vegetation, Grassland | | 4 |
| | | Complex (Grass, Structure) | | 3 |
| | | Structure | ✓ | 1 |
| | Surface Drainage | Available (Good) | | 0 |
| | | Available (Need Repair) | | 3 |
| | | Not Available | ✓ | 6 |
| | | | Score | 43 |

Countermeasure

✓ Tick One

| | | |
|--------------------------|---|-----------|
| Effective | ✓ | -20 |
| Partially effective | | -10 |
| Not effective or nothing | | 0 |
| Hazard Score | | 23 |