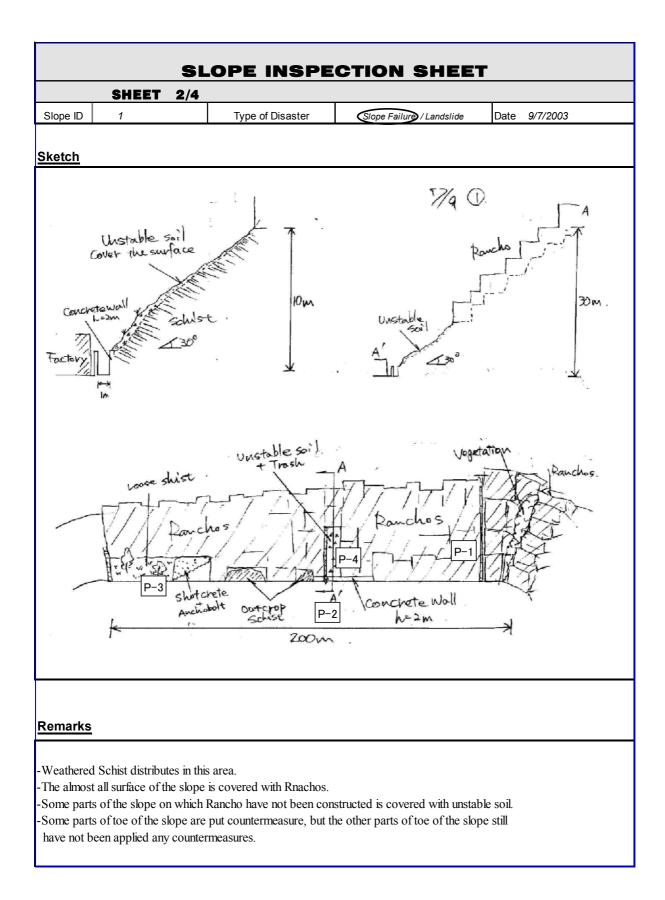
# Libro de Datos D

Hoja de Inspección de Pendientes

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

# Tabla DB-2.1 Lista de los Sitios Inspeccionados

	SLOPI SHEET 1		PECTION	SHEET	
General Slope Da		_			
Type of Disaster	Slope Failure / Lands	lide	Municipality	SUCRE (Lebru	n)
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 / G	irass Others		Barrio	
Target of Preservation	Residencian Hotel / Co Rancho	mmercial /Hos os, Factory	spite / Factory /School	ol / Others	
Disaster Record	No Records				
Existing Countermeasure	Nothing				
Hazard Score	54	Commen		Inface of the slope is is put some counten	covered with Ranchos. measure partially.
Proposed Countermeasure					
Cost Estimation	Quantity		Unit Rate		Amount
Location Map (1:	<u>5,000)</u>				
		Slope1			



		SL	OPE INSPE		r	
	SHEET	3/4				
Slope ID	1		Type of Disaster	Slope Failure / Landslide	Date 9/7/2003	



P-1 General View



P-2 The bare slope situation



P-3 Existing Countermeasure



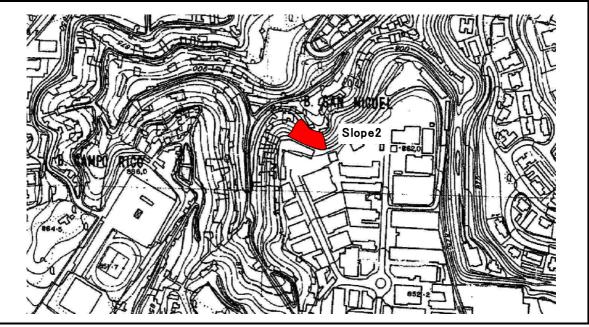
P-4 Closs view fo the bare slope

1       SLOPE       FAIL         Slope ID       1         Condition of Slope         Topography         Geometry	Type of Disaster	SHEET 4 / 4	V Landslide	Date	9/7/2003
Topography	Alluvium Slope				
Гороgraphy	Alluvium Slope			✓ <sup>1</sup>	Tick One
			Yes		2
Geometry	Trace of Collapse		No		0
Geometry	Trace of Collapse		Yes		1
Geometry			No	<b>~</b>	0
Geometry	Clear Knick Doint or Overhand		Yes		1
Geometry	Clear Knick Point or Overhang	}	No	<b>~</b>	0
Geometry	Concave Slope or Debris Slope	e	Yes		1
Geometry			No	~	0
	A : Soil Slope		30m		30
Select A or B	H : Height		i > 45 deg		24
	i : Angle of Slope		m, i ≦45 deg i ≦45 deg		20
	B : Rock Slope		ī ≧45 deg 50m		<u>10</u> 30
	H : Height		H < 50m		26
		<u> </u>	H < 30m	<b>~</b>	20
			:15m		10
Naterial	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
Select A and B			No Swelling Clay	<b>~</b>	0
	B : Rock Quality		Conspicuous		8
	Sheared Rock or Weath	nered Rock	Slightly	✓	4
			No Available		0
Geological	Dip Slope (Bedding, Weak Pla Soft Soil over Base Rock	ane)			8
Structure	Hard Rock over Weak Rock			~	6
	Others				4
Deformation	Slope Deformation		Clear		10
Jerormation	Gully Erosion, Rill Erosion, Mass Eros	sion. Fretting Erosion.	Obscure	~	8
	Rockfall, Exfoliation, Sw elling	, · ·;	No Slope Deformation	•	0
	Slope Deformation at adjacent	t slope	Clear		5
	Rockfall. Collapse, Crack, Swelling,	Other deformation	Obscure		3
	Rockiali. Collapse, Gack, Swelling,		No Slope Deformation	<b>~</b>	0
Surface Condition	Condition of Surface	Unstable			8
		Moderate		~	6
		Stable			0
	Ground Water	Natural water spring			8
		Water seepage Dry	~	4	
	Cover	No-vegetation, Grassla	and		04
		Complex (Grass, Stru		~	3
		Structure	• •	1	
	Surface Drainage	Available (Good)			0
	_	Available (Need Repai	r)		3
		Not Abailable	_	<b>~</b>	6
			Score		64
<u>Countermeasure</u>				<b>v</b>	Tick One
Effective					-20
Partially effective				~	-10
Not effective or nothin	ng				0
	-	Hazard Score		54	

# SHEET 1/4

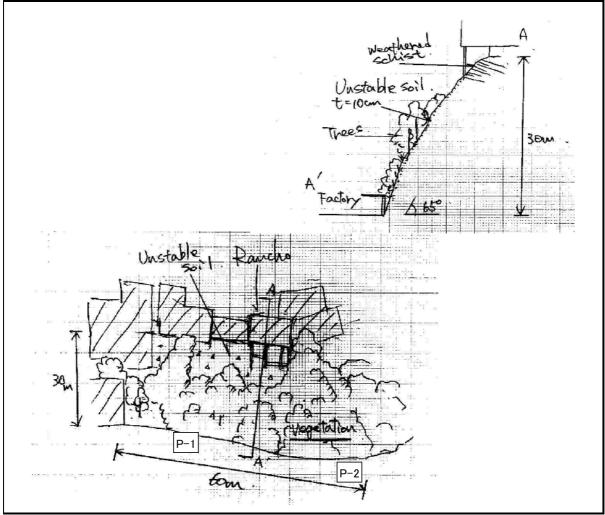
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	le	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 Fores Trees Gra	ss / Others			
Target of Preservation	Residencial Hotel / Com Ranchos,		bital Factory School	/ Others	
Disaster Record	No Records				
Existing Countermeasure	Shotcrete + Anchorwo	ork on toe c	of the slope partial	ly	
Hazard Score	63	Comment	: There is unstable	soil material on the step slope.	
Proposed Countermeasure					
Cost Estimation	Quantity		Unit Rate	Amount	



		SL	OPE INSPE	CTION SHEET	•	
	SHEET	2/4				
Slope ID	2		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003

<u>Sketch</u>



# <u>Remarks</u>

-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

		SL	OPE INSPE	CTION SHEET		
	SHEET	3/4				
Slope ID	2		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003



P-1 General View

P-2 General View

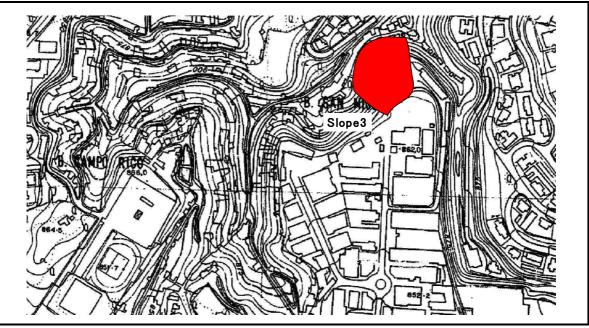
1 SLOPE FAIL	URE	SHEET 4/4			
Slope ID 2	Type of Disaster	Slope Failure.	✔ Landslide	Date	9/7/2003
Condition of Slop	e			~	Tick One
Fopography		Yes		2	
ropographiy	Alluvium Slope		No	~	0
	Trace of Colleges		Yes		1
	Trace of Collapse		No	<b>·</b>	0
	Clear Knick Beint ar Overhang		Yes		1
	Clear Knick Point or Overhang		No	<b>`</b>	0
	Concave Slope or Debris Slope		Yes		1
	Concave Slope of Debits Slope	;	No	<ul> <li></li> </ul>	0
Geometry	A : Soil Slope	H>:	30m		30
Select A or B	H : Height		i > 45 deg		24
	i : Angle of Slope		m, i ≦45 deg		20
			i ≦45 deg		10
	B : Rock Slope		H > 50m		30
	H : Height		H < 50m	~	26
			H < 30m		20
		H <	:15m		10
Material	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
			No Swelling Clay	✓	0
	B : Rock Quality	Conspicuous		8	
	Sheared Rock or Weathe	Slightly	✓	4	
-	Din Clana (Dadding, Wask Dia		No Available		0
Geological	Dip Slope (Bedding, Weak Plan Soft Soil over Base Rock	ne)			8
Structure	Hard Rock over Weak Rock	✓	6		
	Others		4		
	Slope Deformation		Clear		0
Deformation	Gully Erosion, Rill Erosion, Mass Eros	ion Frotting Franian	Obscure		10
	Rockfall, Exfoliation, Sw elling		No Slope Deformation	~	8
	Slope Deformation at adjacent	slone	Clear		0 5
	,	·	Obscure	<b>~</b>	3
	Rockfall. Collapse, Crack, Swelling, C	Other deformation	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, Grassla	and	~	4
		Complex (Grass, Stru		~	3
		Structure	,	Ť	1
	Surface Drainage	Available (Good)			0
		Available (Need Repai	r)		3
		Not Abailable			6

<u>Countermeasure</u>		~	Tick One
Effective			-20
Partially effective			-10
Not effective or nothing		>	0
	Hazard Score	63	

# SHEET 1/4

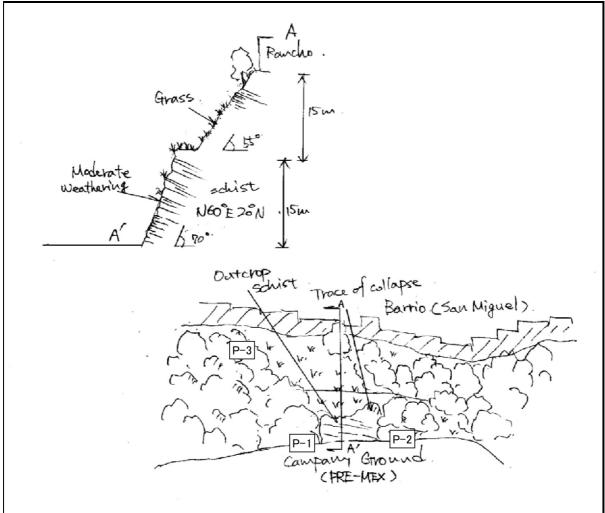
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	le	Municipality	SUCRE (Lebru	n)
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 Trees Gra	ss / Others			
Target of Preservation	Residenciary Hotel / Com Rancho		pital / Factory /School	/ Others	
Disaster Record	No Records				
Existing Countermeasure	Nothing				
Hazard Score	58	Comment	There is the possil more due to no cou	-	of collapse extends
Proposed Countermeasure					
Cost Estimation	Quantity		Unit Rate		Amount



		SL	OPE INSPE	CTION SHEET		
	SHEET	2/4				
Slope ID	3		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003

<u>Sketch</u>



### <u>Remarks</u>

-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.

		SL	OPE INSPE	CTION SHEET		
	SHEET	3/4				
Slope ID	3		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003



P-1 General View



P-2 General View



P-3 Situation of Rancho on the slope

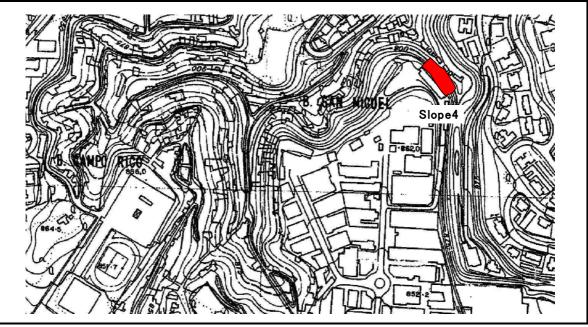
1 SLOPE FAIL	URE	SHEET 4/4			
Slope ID 3	Type of Disaster	Slope Failure.	Y Landslide	Date	9/7/2003
Condition of Slop	e			~	Tick One
Fopography			Yes		2
ropography	Alluvium Slope		No	~	0
			Yes		1
	Trace of Collapse		No	<b>·</b>	0
	Clear Knick Daint or Overhand		Yes		1
	Clear Knick Point or Overhang		No	~	0
	Concave Slope or Debris Slope		Yes	<b>`</b>	1
	Concave Slope of Debits Slope	;	No		0
Geometry	A : Soil Slope	H>3	30m		30
Select A or B	H : Height	H≦30m,			24
	i : Angle of Slope	15m ≦H<30r			20
		H<15m, i	$\leq$ 45 deg		10
	B : Rock Slope	H>	50m		30
	H : Height	30 m ≦ H < 50m		<b>~</b>	26
		15 m ≦	H < 30m		20
		H <	15m		10
Material	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
			No Swelling Clay	<b>~</b>	0
	B : Rock Quality	Conspicuous		8	
	Sheared Rock or Weathe	Slightly	<b>~</b>	4	
			No Available		0
Geological	Dip Slope (Bedding, Weak Plan	ne)			8
Structure	Soft Soil over Base Rock		6		
	Hard Rock over Weak Rock				4
	Others			<b>~</b>	0
Deformation	Slope Deformation		Clear		10
	Gully Erosion, Rill Erosion, Mass Eros	ion, Fretting Erosion,	Obscure	<b>~</b>	8
	Rockfall, Exfoliation, Sw elling		No Slope Deformation		0
	Slope Deformation at adjacent	slope	Clear		5
	Rockfall. Collapse, Crack, Swelling, C	Other deformation	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, Grassla			4
		Complex (Grass, Strue	cture)	✓	3
		Structure			1
	Surface Drainage	Available (Good)	<u>,</u>		0
	1	Available (Need Repair			3
		Not Abailable			6

<u>Countermeasure</u>			~	Tick One		
Effective				-20		
Partially effective		-10				
Not effective or nothing	Not effective or nothing					
	Hazard Score		58			

# SHEET 1/4

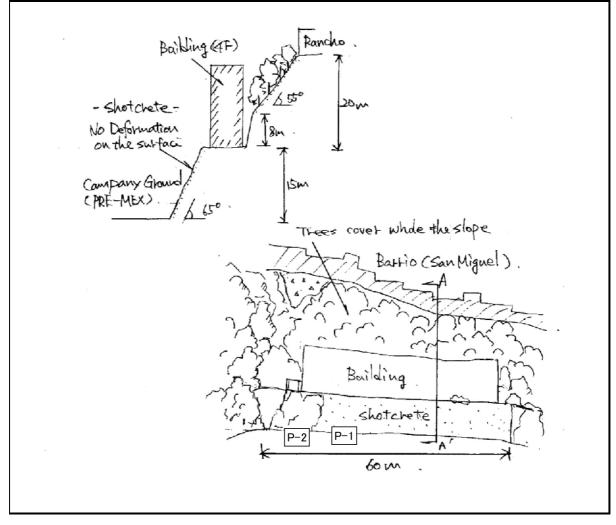
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	le	Municipality	SUCRE (Lebrui	n)
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 Trees Gra	ss / Others			
Target of Preservation	Residencial / Hotel Com Building	mercia /Hos	pital / Factory /School .	/ Others	
Disaster Record	No Records				
Existing Countermeasure	Shotcrete				
Hazard Score	39	Comment	The lower part of the possible that some	-	table. There is the ccure behind the building.
Proposed Countermeasure					
Cost Estimation	Quantity		Unit Rate		Amount



		SL	OPE INSPE	CTION SHEET	I	
	SHEET	2/4				
Slope ID	4		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003

<u>Sketch</u>



# <u>Remarks</u>

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

		SL	OPE INSPE	CTION SHEET		
	SHEET	3/4				
Slope ID	4		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003



P-1 General View

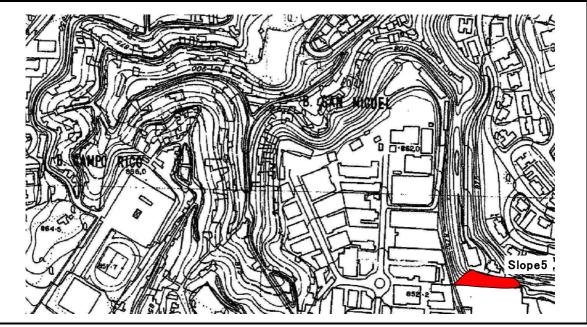
1 SLOPE FAIL	URE	SHEET 4/4			
Slope ID 4	Type of Disaster	Slope Failure.	💙 Landslide	Date	9/7/2003
Condition of Slop	e			~	Tick One
Fopography			Yes		2
ropography	Alluvium Slope		No	~	0
			Yes	Ť	1
	Trace of Collapse		No	<b>~</b>	0
	Clear Knick Baint or Overhand		Yes		1
	Clear Knick Point or Overhang		No	<b>~</b>	0
	Concave Slope or Debris Slope		Yes		1
	Concave Slope of Debits Slope	;	No	<ul> <li>✓</li> </ul>	0
Geometry	A : Soil Slope	H>:	30m		30
Select A or B	H : Height		i > 45 deg		24
	i : Angle of Slope		n, i ≦45 deg		20
			i ≦45 deg		10
	B : Rock Slope		50m		30
	H : Height		H < 50m		26
			H < 30m	~	20
		H <	15m		10
/laterial	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
			No Swelling Clay	✓	0
	B : Rock Quality	Conspicuous		8	
	Sheared Rock or Weathe	Slightly	✓	4	
-	Din Clana (Dadding, Maak Dla		No Available		0
Geological	Dip Slope (Bedding, Weak Plan	ne)		~	8
Structure	Soft Soil over Base Rock Hard Rock over Weak Rock				6
	Others				4
	Slope Deformation		Clear		0
Deformation	Gully Erosion, Rill Erosion, Mass Eros	ion Frotting Fracion	Obscure	_	10
	Rockfall, Exfoliation, Sw elling		No Slope Deformation	_	8
	Slope Deformation at adjacent	slope	Clear	<b>~</b>	0 5
			Obscure		3
	Rockfall. Collapse, Crack, Swelling, C	Other deformation	No Slope Deformation		0
Surface Condition	Condition of Surface	Unstable	1.15 Ciopo Derormation	<b>~</b>	8
		Moderate		~	6
		Stable		•	0
	Ground Water	Natural water spring			8
		Water seepage		<b>~</b>	4
		Dry	· · ·		0
	Cover	No-vegetation, Grassla	and		4
		Complex (Grass, Stru		~	3
		Structure	,	<b>†</b>	1
	Surface Drainage	Available (Good)			0
	Ŭ	Available (Need Repair	r)		3
		Not Abailable			

<u>Countermeasure</u>			~	Tick One
Effective				-20
Partially effective	~	-10		
Not effective or nothing				0
	Hazard Score		39	

# SHEET 1/4

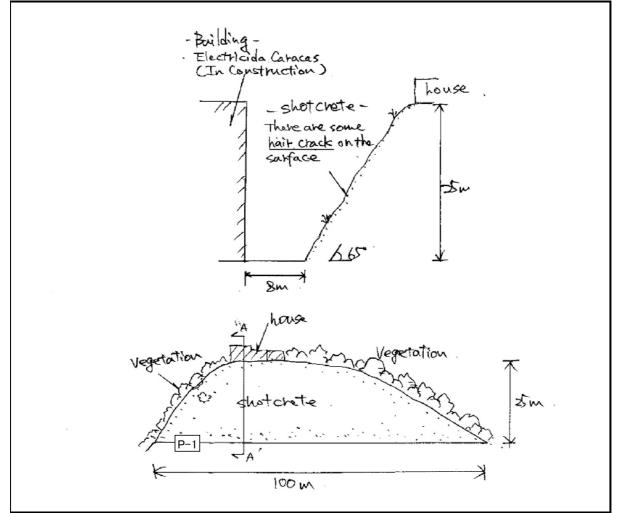
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	le	Municipality	SUCRE (Lebru	n)
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 / Gra	ss Others	No Vegetation		
Target of Preservation	Residencial / Hotel Com BL		pital / Factory /School . ctricida Caracas)	/ Others	
Disaster Record	No Records				
Existing Countermeasure	Shotcrete				
Hazard Score	15	Comment	: This cut slope is po deformations on the		and there are no
Proposed Countermeasure					
Cost Estimation	Quantity		Unit Rate		Amount



		SL	OPE INSPE	CTION SHEET		
	SHEET	2/4				
Slope ID	5		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003

Sketch



#### **Remarks**

- -The Building that is the target of preservation is in construction. Nobady 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.

		SLO	OPE INSPE	CTION SHEET		
	SHEET	3/4				
Slope ID	5		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003



P-1 General View

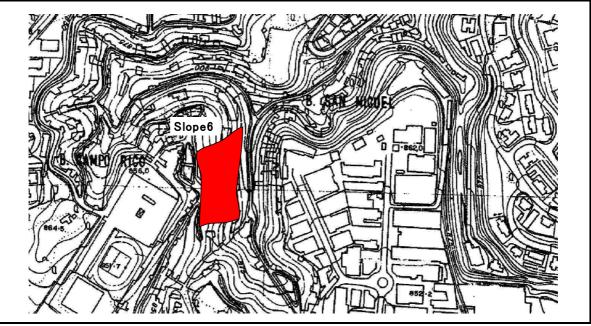
1 SLOPE FAIL	URE	SHEET 4/4			
Slope ID 5	Type of Disaster	Slope Failure.	V Landslide	Date	9/7/2003
Condition of Slop	~	Tick One			
Fopography			Yes		2
ropograpny	Alluvium Slope		No	~	0
			Yes	· ·	1
	Trace of Collapse		No	~	0
			Yes	· ·	1
	Clear Knick Point or Overhang		No	~	0
	Canadia Clana an Dahria Clana		Yes		1
	Concave Slope or Debris Slope	;	No	<b>~</b>	0
Geometry	A : Soil Slope	H>3	0m		30
Select A or B	H : Height	H≦30m,			24
	i : Angle of Slope	15m ≦H<30n			20
		H<15m, i			10
	B : Rock Slope	H>:			30
	H : Height		n ≦ H < 50m		26
		$15 \text{ m} \leq \text{H} < 30 \text{m}$		<b>~</b>	20
		H <	-		10
Material	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
			No Swelling Clay	<b>~</b>	0
	B : Rock Quality		Conspicuous		8
	Sheared Rock or Weathe	Slightly	✓	4	
	Die Olare (Daddier, Maale Die		No Available		0
Geological	Dip Slope (Bedding, Weak Plan Soft Soil over Base Rock	ne)			8
Structure	Hard Rock over Weak Rock		6		
	Others				4
	Slope Deformation		Clear	✓	0
Deformation	Gully Erosion, Rill Erosion, Mass Eros	ion Frotting Francian	Clear Obscure		10 8
	Rockfall, Exfoliation, Sw elling		No Slope Deformation		0
	Slope Deformation at adjacent	slopo	Clear	<b>~</b>	5
	Slope Delomation at adjacent	siope	Obscure		3
	Rockfall. Collapse, Crack, Swelling, C	Other deformation	No Slope Deformation		0
Surface Condition	Condition of Surface	Unstable		<b>~</b>	8
Surface Condition		Moderate			6
		Stable		~	0
	Ground Water	Natural water spring		<b>•</b>	8
		Water seepage		~	4
		Dry			0
	Cover	No-vegetation, Grassla	ind		4
		Complex (Grass, Struc			3
		Structure	,	~	1
	Surface Drainage	Available (Good)		Ť	0
	Ĭ	Available (Need Repair	)		3
		Not Available		✓	6

<u>Countermeasure</u>	~	Tick One		
Effective	~	-20		
Partially effective		-10		
Not effective or nothing				0
	Hazard Score		15	

# SHEET 1/4

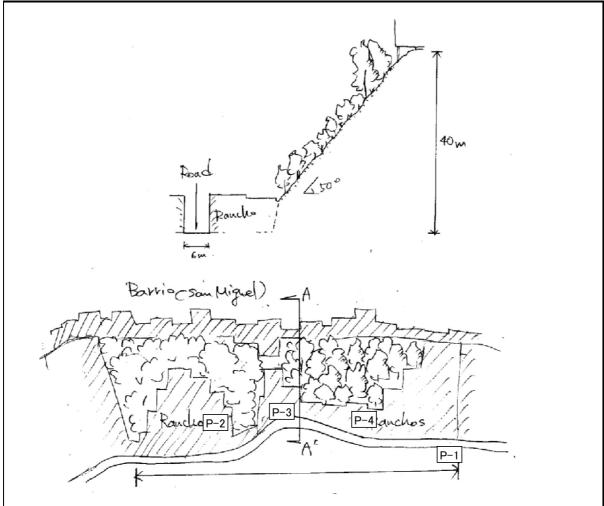
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	е	Municipality	SUCRE (San N	liguel)	
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 / Gras	ss Others				
Target of Preservation	Residencia) Hotel / Comr Ra	mercial /Hosp Inchos	pital / Factory /School /	/ Others		
Disaster Record	No Records					
Existing Countermeasure	Nothing					
Hazard Score	57	Comment: Ranchos are constructed by cutting the slope. Therefore, it is necessary to take notice for the condition of the slope behind ranchos.				
Proposed Countermeasure						
Cost Estimation	Quantity		Unit Rate		Amount	



		SL	OPE INSPE	CTION SHEET		
	SHEET	2/4				
Slope ID	6		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003

<u>Sketch</u>



#### <u>Remarks</u>

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

		SL	OPE INSPE	CTION SHEET		
	SHEET	3/4				
Slope ID	6		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003



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

1 SLOPE FAIL	URE	SHEET 4/4			
Slope ID 6	Type of Disaster	Slope Failure.	V Landslide	Date	9/7/2003
Condition of Slop	e			~	Tick One
Fopography			Yes		2
ropograpny	Alluvium Slope	No	~	0	
			Yes	- <b>*</b>	1
	Trace of Collapse		No	~	0
			Yes	Ť	1
	Clear Knick Point or Overhang		No	<b>~</b>	0
	Canadia Clana an Dahria Clana		Yes		1
	Concave Slope or Debris Slope		No	<b>~</b>	0
Geometry	A : Soil Slope	H>3	30m		30
Select A or B	H : Height	H≦30m,			24
	i : Angle of Slope	15m ≦H<30r			20
		H<15m, i			10
	B : Rock Slope	H>			30
	H : Height	30 m ≦		<b>~</b>	26
		15 m ≦			20
		H <	-		10
Material	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
			No Swelling Clay	<b>~</b>	0
	B : Rock Quality		Conspicuous		8
	Sheared Rock or Weathe	ered Rock	Slightly	✓	4
			No Available		0
Geological	Dip Slope (Bedding, Weak Plan	ne)			8
Structure	Soft Soil over Base Rock Hard Rock over Weak Rock				6
	Others				4
			Clear	✓	0
Deformation	Slope Deformation	ion Frotting Francian	Clear		10
	Gully Erosion, Rill Erosion, Mass Eros Rockfall, Exfoliation, Sw elling		Obscure No Slope Deformation	✓	8
	Slope Deformation at adjacent	slopo	Clear		0 5
	Slope Delomation at adjacent	siope	Obscure		3
	Rockfall. Collapse, Crack, Swelling, C	Other deformation	No Slope Deformation		0
Surface Condition	Condition of Surface	Unstable	No clope Derormation	~	8
		Moderate			6
		Stable		~	0
	Ground Water	Natural water spring			8
		Water seepage		~	4
	1	Dry		-	0
	Cover	No-vegetation, Grassla	and		4
	1	Complex (Grass, Strue		~	3
	1	Structure	,	Ť	1
	Surface Drainage	Available (Good)			0
	Ĭ	Available (Need Repair	~)		3
	1				6
		Not Available		✓	0

<u>Countermeasure</u>			~	Tick One
Effective				-20
Partially effective		-10		
Not effective or nothing	>	0		
	Hazard Score		57	

# SHEET 1/4

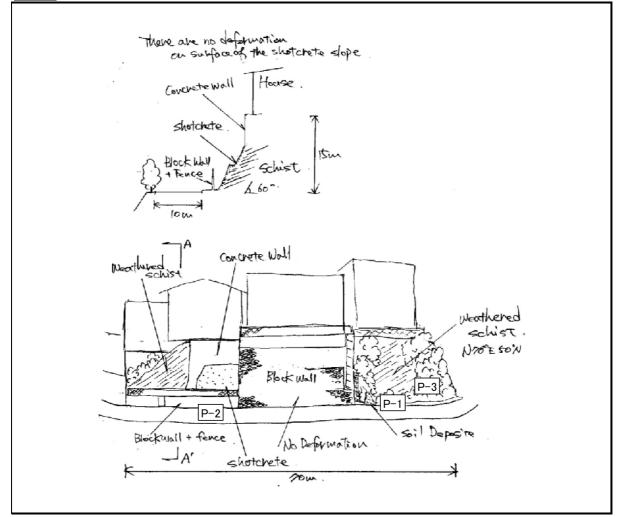
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	le	Municipality	SUCRE (El Ma	rques)	
Slope ID	7					
Date Checked	28/7/2003		Data Inspected	9/7/2003		
Checked by	Fumihiko Yokoo		Inspected by	Takashi Hara		
Vegetation /Cultivation	Primary Fores Trees Gra	ss / Others	Partically Trees			
Target of Preservation	Residencia) Hotel / Com	mercial /Hos		/ Others		
Disaster Record	No Records					
Existing Countermeasure	Shotcrete work + Con	ocrete 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	

DE MARQUES O	
Slope7	

		SL	OPE INSPE	CTION SHEET		
	SHEET	2/4				
Slope ID	7		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003

Sketch



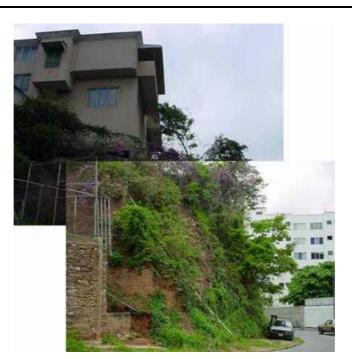
#### **Remarks**

-The slope is consisted of weathered schist.

-There are no deformation on the existing countermaesures and road.

-Small collapses are found on the surface of the cut slope.

		SL	OPE INSPE	CTION SHEET	•	
	SHEET	3/4				
Slope ID	7		Type of Disaster	Slope Failure / Landslide	Date	9/7/2003



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



P-2 Existing Countermeasure



P-3 Outcrops (Weathered Shisit)

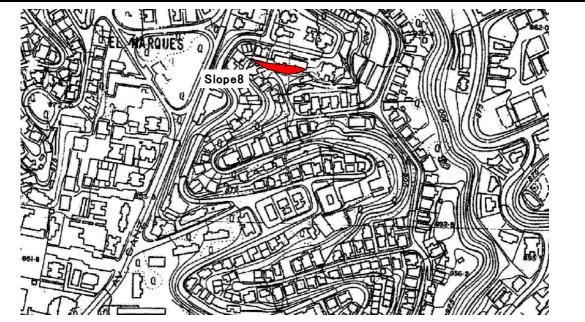
Geometry       A : S         Select A or B       B : F         Material       A : S         Select A and B       B : F         Geological       B : F         Structure       Soft         Deformation       Slop	Type of Disaster ium Slope e of Collapse r Knick Point or Overhang cave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope H : Height H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	Landslide Yes No Yes No Yes No Yes No Solution Yes No Solution Yes No Yes No Solution Yes No Yes No Solution Yes No Yes Yes No Yes Yes No Yes Yes Yes No Yes Yes Yes Yes Yes Yes Yes Yes	Date	9/7/2003 <u>Tick One</u> 2 0 1 0 1 0 1 0 30 24 20
Topography       Alluv         Track       Clea         Clea       Conc         Geometry       A : S         Select A or B       B : F         Material       A : S         Select A and B       B : F         Geological       Dip S         Structure       Soft         Deformation       Slop	e of Collapse r Knick Point or Overhang cave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	No Yes No Yes No Yes No >30m $i \ge 45 \text{ deg}$ $i \le 45 \text{ deg}$ $i \le 45 \text{ deg}$ $i \le 45 \text{ deg}$ > 50m $\subseteq H < 50m$	> > >	2 0 1 0 1 0 1 0 30 24
Topography       Alluv         Track       Clea         Clea       Conc         Geometry       A : S         Select A or B       B : F         Material       A : S         Select A and B       B : F         Geological       Dip S         Structure       Soft         Hard       Othe         Deformation       Slop	e of Collapse r Knick Point or Overhang cave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	No Yes No Yes No Yes No >30m $i \ge 45 \text{ deg}$ $i \le 45 \text{ deg}$ $i \le 45 \text{ deg}$ $i \le 45 \text{ deg}$ > 50m $\subseteq H < 50m$	> > >	2 0 1 0 1 0 1 0 30 24
Geometry     A : S       Select A or B     B : F       Material     A : S       Select A and B     B : F       Geological     Dip S       Structure     Soft       Deformation     Slop	e of Collapse r Knick Point or Overhang cave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	No Yes No Yes No Yes No >30m $i \ge 45 \text{ deg}$ $i \le 45 \text{ deg}$ $i \le 45 \text{ deg}$ $i \le 45 \text{ deg}$ > 50m $\subseteq H < 50m$	> >	0 1 0 1 0 1 0 30 24
Geometry Select A or B B : F Material Select A and B B : F Geological Structure Deformation Slop Gully Rockf	r Knick Point or Overhang ave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	$\begin{tabular}{ c c c c } \hline Yes & & & \\ \hline No & & & \\ \hline Yes & & \\ \hline No & & \\ \hline Yes & & \\ \hline No & & \\ \hline S30m & & \\ \hline i > 45 deg & & \\ \hline 0m, i \le 45 deg & & \\ \hline i \le 45 deg & & \\ \hline 50m & & \\ \le H < 50m & & \\ \hline \end{tabular}$	> >	1 0 1 0 1 0 30 24
Geometry Select A or B B : F Material Select A and B B : F Geological Structure Deformation Slop Gully Rockf	r Knick Point or Overhang ave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	Yes           No           Yes           No           >30m           i > 45 deg           0m, i ≤ 45 deg           i ≤ 45 deg           > 50m           ≤ H < 50m	~	0 1 0 1 0 30 24
Geometry Select A or B B : F Material Select A and B B : F Geological Structure Deformation Slop Gully Rockd	cave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	No           Yes           No           >30m           i ≥ 45 deg           0m, i ≤ 45 deg           i ≤ 45 deg           > 50m           ≤ H < 50m		1 0 1 0 30 24
Geometry Select A or B B : F Material Select A and B B : F Geological Structure Deformation Slop Gully Rockd	cave Slope or Debris Slop Goil Slope H : Height i : Angle of Slope Rock Slope H : Height	be H≥30m, 15m ≦H<30 H<15m, H<15m, 30 m ≦ 15 m ≦	Yes No >30m i > 45 deg 0m, i ≤45 deg i ≤45 deg > 50m ≤ H < 50m		0 1 0 30 24
Geometry Select A or B B : F Material Select A and B B : F Geological Structure Deformation Slop Gully Rockf	Soil Slope H : Height i : Angle of Slope Rock Slope H : Height	H≥ H≦30m, 15m ≦H<30 H<15m, H≥ 30 m ≦ 15 m ≦	No           >30m           , i > 45 deg           0m, i ≤ 45 deg           i ≤ 45 deg           > 50m           ≤ H < 50m		1 0 30 24
Geometry       A : S         Select A or B       B : F         Material       A : S         Select A and B       B : F         Geological       Dip S         Structure       Soft         Deformation       Slop         Gully       Rockd	Soil Slope H : Height i : Angle of Slope Rock Slope H : Height	H≥ H≦30m, 15m ≦H<30 H<15m, H≥ 30 m ≦ 15 m ≦	>30m , i > 45 deg 0m, i ≦45 deg i ≦45 deg > 50m ≨ H < 50m		30 24
Select A or B B : F Material Select A and B B : F Select A and B B : F Geological Structure Deformation Slop Gully Rock/ Slop	H : Height i : Angle of Slope Rock Slope H : Height	H≦30m, 15m ≦H<30 H<15m, H<20 H<25m, H<20 H<25m ≦ 15 m ≦	, i > 45 deg 0m, i ≦45 deg i ≦45 deg > 50m ≨ H < 50m		24
Select A or B B : F Material Select A and B B : F Select A and B B : F Geological Structure Deformation Slop Gully Rockf Slop	i : Angle of Slope Rock Slope H : Height	15m ≦H<30	0m, i ≦45 deg i ≦45 deg > 50m ≦ H < 50m		24
Material     A : S       Select A and B     B : F       Geological     Dip S       Structure     Soft       Deformation     Slop       Gully     Rockd	Rock Slope H : Height	15m ≦H<30	0m, i ≦45 deg i ≦45 deg > 50m ≦ H < 50m		
Material       A : S         Select A and B       B : F         Geological       Dip S         Structure       Soft         Deformation       Slop         Gully       Rock/         Slop       Slop	H : Height	H<15m, H ≥ 30 m ≦ 15 m ≦	i ≦45 deg > 50m ≦ H < 50m		
Material       A : S         Select A and B       B : F         Geological       Dip S         Structure       Soft         Deformation       Slop         Gully       Rock/         Slop       Slop	H : Height	30 m ≦ 15 m ≦	≦ H < 50m		10
Select A and B B : F Geological Structure Deformation Slop Gully Rock Slop	J	15 m ≦			30
Select A and B B : F Geological Structure Deformation Slop Gully Rock Slop					26
Select A and B B : F Geological Structure Deformation Slop Gully Rock Slop		Н	≦H< 30m	<b>~</b>	20
Select A and B B : F Geological Structure Deformation Slop Gully Rock Slop			<15m		10
Geological     Dip S       Structure     Soft       Hard     Othe       Deformation     Slop       Slop     Slop	Soil Character		Conspicuous		8
Geological     Dip S       Structure     Soft       Hard     Othe       Deformation     Slop       Slop     Slop	Swelling Clay Contents		Slightly		4
Geological Structure Deformation Dip S Soft Hard Othe Slop Gully Rockf Slop			No Swelling Clay		0
Structure Deformation Slop	Rock Quality		Conspicuous		8
Structure Deformation Slop	Sheared Rock or Weath	Slightly	<ul> <li>Image: A second s</li></ul>	4	
Structure Deformation Slop		No Available		0	
Structure Soft Hard Othe Deformation Slop Gully Rockf Slop	Slope (Bedding, Weak Pla	ane)		✓	8
Hard Othe Deformation Gully Rockf Slop	Soil over Base Rock				6
Deformation Slop Gully Rockf Slop	Rock over Weak Rock				4
Gully Rockf Slop	rs				0
Rockf Slop	e Deformation		Clear		10
Slop	Erosion, Rill Erosion, Mass Ero	Obscure		8	
	all, Exfoliation, Sw elling		No Slope Deformation		0
Rockf	e Deformation at adjacent	t slope	Clear		5
1.0014	all. Collapse, Crack, Swelling,	Other deformation	Obscure		3
	1 , , , 3,		No Slope Deformation	~	0
Surface Condition Cond	lition of Surface	Unstable			8
		Moderate		✓	6
		Stable			0
Grou	nd Water	Natural water spring			8
		Water seepage			4
		Dry	Dry		0
Cove	r	No-vegetation, Grass			4
		Complex (Grass, Str	ucture)	✓	3
		Structure			1
Surfa		Available (Good)			0
	ace Drainage	Available (Need Repa	air)		3
	ace Drainage	Not Available	-	✓	6

<u>Countermeasure</u>			✓	Tick One
Effective				-20
Partially effective	>	-10		
Not effective or nothing		0		
	Hazard Score		46	

# SHEET 1/4

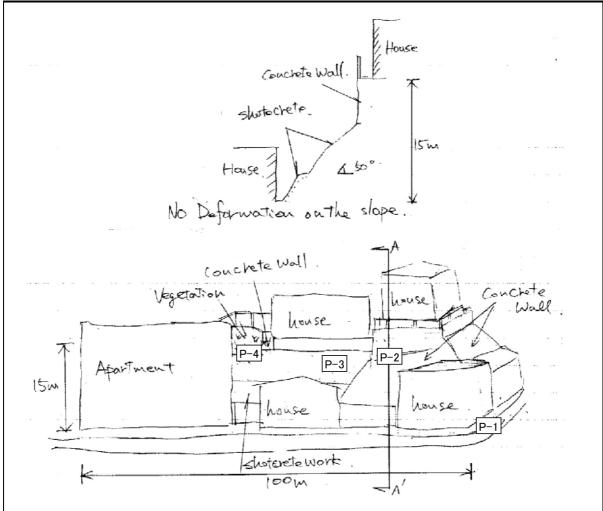
#### General Slope Data

Type of Disaster	Slope Failure / Landslid	le	Municipality	SUCRE (El Mai	rques)	
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 Gras	ss Others				
Target of Preservation	Residencia) Hotel / Com	mercial /Hos	pital / Factory /School	/ Others		
Disaster Record	No Records					
Existing Countermeasure	Concrete Wall + Anc	hor work				
Hazard Score	23	Comment: A Imost 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	



SLOPE INSPECTION SHEET									
	SHEET	2/4							
Slope ID	8		Type of Disaster	Slope Failure / 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	Slope Failure / Landslide	Date	9/7/2003			





P-3 Existing Countermeasure (Concrete Wall)



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

1 SLOPE FAIL	URE	SHEET 4/4			
Slope ID 8	Type of Disaster	Slope Failure.	💙 Landslide	Date	9/7/2003
Condition of Slop	e			~	Tick One
Fopography			Yes		2
ropography	Alluvium Slope	No	~	0	
	Trans of Osliness	Yes	<b>•</b>	1	
	Trace of Collapse	No		0	
	Clear Knick Daint or Overhand		Yes		1
	Clear Knick Point or Overhang		No	<ul> <li>✓</li> </ul>	0
	Concave Slope or Debris Slope		Yes		1
	Concave Slope of Debits Slope	;	No	~	0
Geometry	A : Soil Slope	H>30m			30
Select A or B	H : Height	H≦30m, i > 45 deg			24
	i : Angle of Slope	$15m \leq H < 30m, i \leq 45 \text{ deg}$			20
		H<15m, i ≦45 deg			10
	B : Rock Slope	H > 50m			30
	H : Height	$30 \text{ m} \leq \text{H} < 50 \text{m}$			26
		15 m ≦ H < 30m		<b>~</b>	20
		H <	15m		10
/laterial	A : Soil Character		Conspicuous		8
Select A and B	Swelling Clay Contents		Slightly		4
		No Swelling Clay	<b>~</b>	0	
	B : Rock Quality	Conspicuous		8	
	Sheared Rock or Weathe	Slightly	✓	4	
	Din Slong (Dodding, Week Die	no)	No Available		0
Geological	Dip Slope (Bedding, Weak Plan Soft Soil over Base Rock	✓	8		
Structure	Hard Rock over Weak Rock		6		
	Others		4		
	Slope Deformation		Clear		0
Deformation	Gully Erosion, Rill Erosion, Mass Eros	Obscure	_	10	
	Rockfall, Exfoliation, Sw elling		No Slope Deformation		8
	Slope Deformation at adjacent	slope	Clear	<b>~</b>	0 5
			Obscure		3
	Rockfall. Collapse, Crack, Swelling, C	Other deformation	No Slope Deformation		0
Surface Condition	Condition of Surface	Unstable		<b>~</b>	8
		Moderate			6
		Stable		<b>~</b>	0
	Ground Water	Natural water spring		•	8
		Water seepage		~	4
		Dry		Ť	0
	Cover	No-vegetation, Grassla	egetation, Grassland		4
		Complex (Grass, Structure)			3
		Structure		<b>~</b>	1
	Surface Drainage		Ť	0	
	l ř	Available (Good) Available (Need Repair	r)		3
		Not Available		6	

<u>Countermeasure</u>	~	Tick One			
Effective			~	-20	
Partially effective		-10			
Not effective or nothing			0		
	Hazard Score		23		