Queensland Government

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C57
SHEET 1 of 3
REFERENCE No H11056

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C
LOCATION Cut 16 COORDINATES 470589.0 E; 7097380.4 N
PROJECT No FG5799 SURFACE R.L. 89.60m PLUNGE DATE STARTED 23/06/11 GRID DATUM MGA94
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING DATE COMPLETED 24/06/11 DRILLER Drillsure Pty Ltd

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
0	89.60				**TOPSOIL**									
	89.30				**Silty CLAY (Residual):** Brown, moist, firm, organics throuhgout. High plasticity. Becomming orange/brown with depth.		(CH)							
1	88.60			A	**SILTSTONE (XW):** Generally exhibits the engineering properties of a orange/brown, dry, hard, silty clay.		XW					19,19,30/140mm N>50		SPT
2				B								22,33/120mm N>50		SPT
3	86.10		(0) 55 (0) 100 (45) 100 (0) 100 (100) 100 (76) 100		**SILTSTONE (HW):** Pale brown, fine grained, subtly foliated, low to medium strength. Defects: -XW clay seams <300mm - Foliation partings at 60° (~5/m) - Joint at 30° (2/m) Defect spacing is generally close to medium. Defect surfaces are generally planar, open or tight, smooth, clay infilled.		HW					FP, 60°, P, T, FeSt; HW CLy seam; J, 50°, P, C, Clnf; FP, P, C, Clnf; FP, P, C, Clnf; FP, P, C, Clnf; Is(50) = 0.38MPa; Is(50) = 0.06MPa; *; Drilling-induced BZ; FP, P, C, 10mm Clnf; XW CLy seam; CLy BZ; CLy BZ; XW CLy seam; XW CLy seam	x o	
4														
5														
6														
7	82.19				**SILTSTONE (MW):** Grey mottled with brown, fine grained, subtly foliated, high strength, indurated and/or slightly metamorphosed. Defects: - Foliation partings at 60° (4-5/m) - Joints at 30-35° (3-4/m) Defect spacing is generally medium to wide. Defect surfaces are generally planar, open, iron stained.		MW					Is(50) = 0.74MPa; Is(50) = 3.13MPa; J, 35°, Ir, S, O, FeSt; J, 35°, P, S, O, FeSt; Is(50) = 3.47MPa; Is(50) = 2.70MPa; J, 55°, P, SR, FeSt; J, 20°, P, S, FeSt; BZ	x o; x o	
8														
9														
10	79.70													

REMARKS *Point load failed along existing defect

LOGGED BY JA/DC

QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5799 - BRUCE HWY UPGRADE SECTION C.GPJ DWG46352.GDW Datgel CPT Tool gINt Add-In 12/12/2011 16:30

Queensland Government

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C57
SHEET 2 of 3
REFERENCE No H11056

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C
LOCATION Cut 16 COORDINATES 470589.0 E; 7097380.4 N
PROJECT No FG5799 SURFACE R.L. 89.60m PLUNGE DATE STARTED 23/06/11 GRID DATUM MGA94
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING DATE COMPLETED 24/06/11 DRILLER Drillsure Pty Ltd

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
10	79.60		(45)		**SANDSTONE (SW):** Grey/brown, fine grained, massive, high to very high strength, indurated and/or slightly metamorphosed. Defects: -Joint at 40° (1-2/m) -Joint at 50° (3/m) Defect spacing is generally medium. Defect surfaces are generally planar, medium spaced, slightly rough, open, iron stained. Note: Petrographic analysis indicates a Volcaniclastic Sandstone.							QZ infill, 75-80°		
11			100 (67)									Is(50) = 0.44MPa Is(50) = 1.42MPa	x o	
12			100 (47)				SW					XW CLy seam High strength QZ VN DD = 2.50t/m³; MC = 0.6%; UCS=28.8MPa		UCS
13												Is(50) = 4.54MPa Is(50) = 2.18MPa	x o	
14	75.35		100 (74)									Is(50) = 1.96MPa Is(50) = 4.13MPa	x o	
15					**SILTSTONE (MW):** Grey mottled with brown, fine grained, subtly foliated, high to very high strength, indurated and/or slightly metamorphosed. Defects: - Foliation partings at 40-50° (4/m) - Joint at 20° (1/m) - Joint at 60° (1/m) Defect spacing is generally medium. Defect surfaces are generally planar, tight, smooth, clay infilled or iron stained.							Is(50) = 3.08MPa Is(50) = 2.59MPa	x o	
16			100 (74)											
17			100 (80)				MW					Is(50) = 4.03MPa Is(50) = 2.73MPa	x o	
18														
19			100 (74)									Is(50) = 2.70MPa Is(50) = 0.55MPa	x o	
20														

QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5799 - BRUCE HWY UPGRADE SECTION C.GPJ DWG46352.GDW Datgel CPT Tool gINt Add-In 12/12/2011 16:30

REMARKS *Point load failed along existing defect.

LOGGED BY JA/DC

ENGINEERING BOREHOLE LOG

Queensland Government

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C57
SHEET 3 of 3
REFERENCE No H11056

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C
LOCATION Cut 16 COORDINATES 470589.0 E; 7097380.4 N
PROJECT No FG5799 SURFACE R.L. 89.60m PLUNGE DATE STARTED 23/06/11 GRID DATUM MGA94
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING DATE COMPLETED 24/06/11 DRILLER Drillsure Pty Ltd

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
20	69.60		100 (67)		**SILTSTONE (MW):** Cont'd			MW				Is(50) = 4.61MPa Is(50) = 2.43MPa	x o	
21												Andesite dyke, contact at 35°.		
	67.90		100 (60)		**SILTSTONE (SW):** Dark grey, fine grained, subtly foliated, high to very high strength, indurated and/or slightly metamorphosed. Defects: - Foliation partings at 50° (4/m) - Joint at 70° (<1/m)							Is(50) = 1.57MPa Is(50) = 1.99MPa	x o	
22														
23			100 (6)		Defects are generally medium spaced. Defect surfaces are planar, smooth, tight, iron stained or with clay infill.							Is(50) = 6.88MPa	x	
24								SW						
												FP, 50°, C, Clnf		
25			100 (100)									Is(50) = 1.66MPa Is(50) = 2.26MPa DD = 2.69t/m^3; MC = 0.4%; UCS=19.0MPa	x o UCS	
26												QZ VN		
	63.20		100									Is(50) = 1.16MPa	x	
					Borehole terminated at 26.4m							Is(50) = 2.04MPa	o	
27														
28														
29														
30														

REMARKS *Point load failed along existing defect

LOGGED BY JA/DC

QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5799 - BRUCE HWY UPGRADE SECTION C.GPJ DWG46352.GDW Datgel CPT Tool gINt Add-In 12/12/2011 16:30

DEPARTMENT OF TRANSPORT & MAIN ROADS
Geotechnical Branch
35 Butterfield Street, HERSTON Qld 4006
Phone 07 3115 3035 Fax 07 3115 3011

Queensland Government

CORE PHOTO LOG - BH C57

Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	08/09/2011
Details:	Cut 16	Start Depth (m):	3.50
Reference No.:	H11056	Finish Depth (m):	26.40

SCALE 1:5

DEPARTMENT OF TRANSPORT & MAIN ROADS
Geotechnical Branch
35 Butterfield Street, HERSTON Qld 4006
Phone 07 3115 3035 Fax 07 3115 3011

Queensland Government

CORE PHOTO LOG - BH C57

Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	08/09/2011
Details:	Cut 16	Start Depth (m):	3.50
Reference No.:	H11056	Finish Depth (m):	26.40

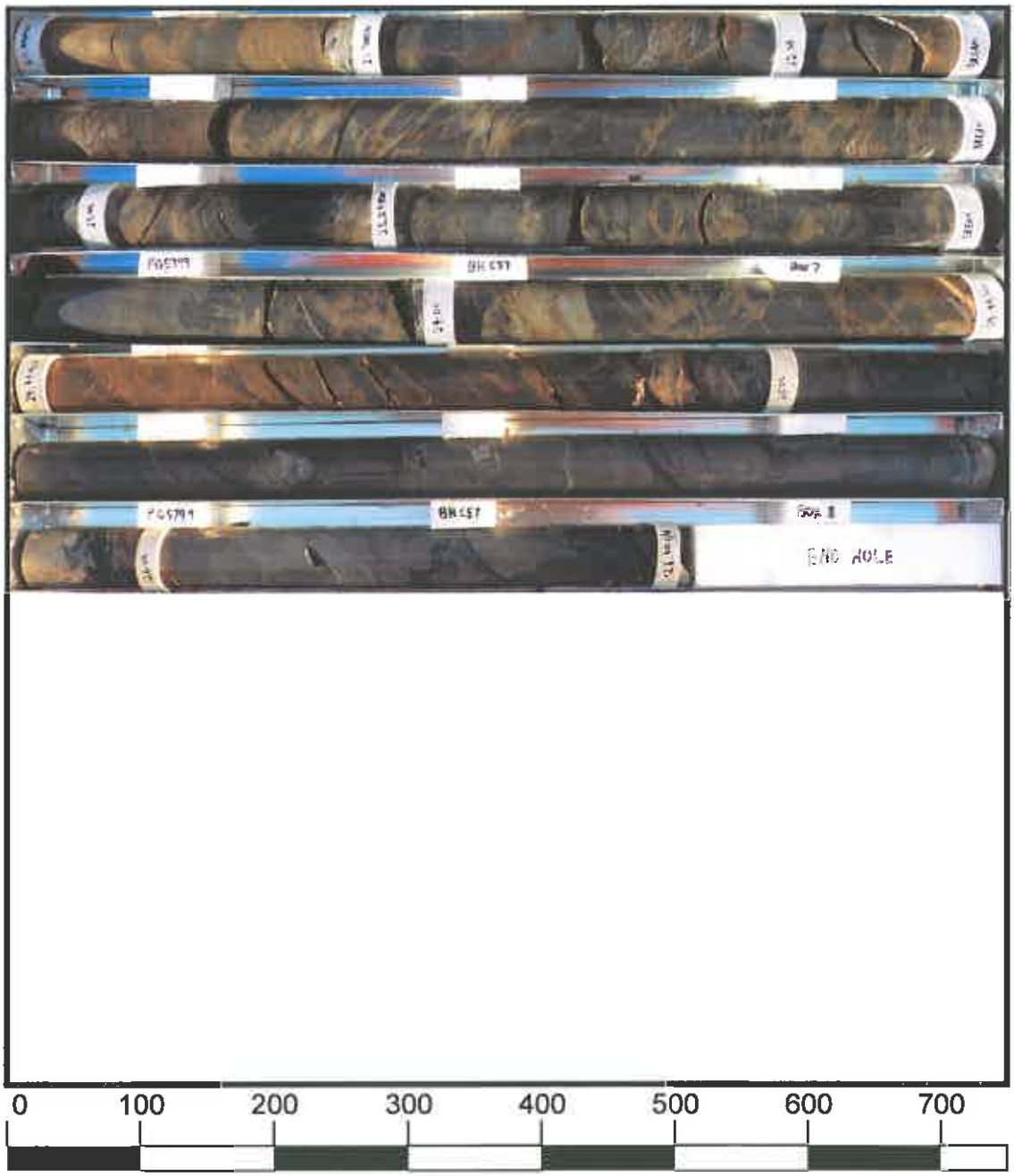
SCALE 1:5

DEPARTMENT OF TRANSPORT & MAIN ROADS
Geotechnical Branch
35 Butterfield Street, HERSTON Qld 4006
Phone 07 3115 3035 Fax 07 3115 3011

Queensland Government

CORE PHOTO LOG - BH C57

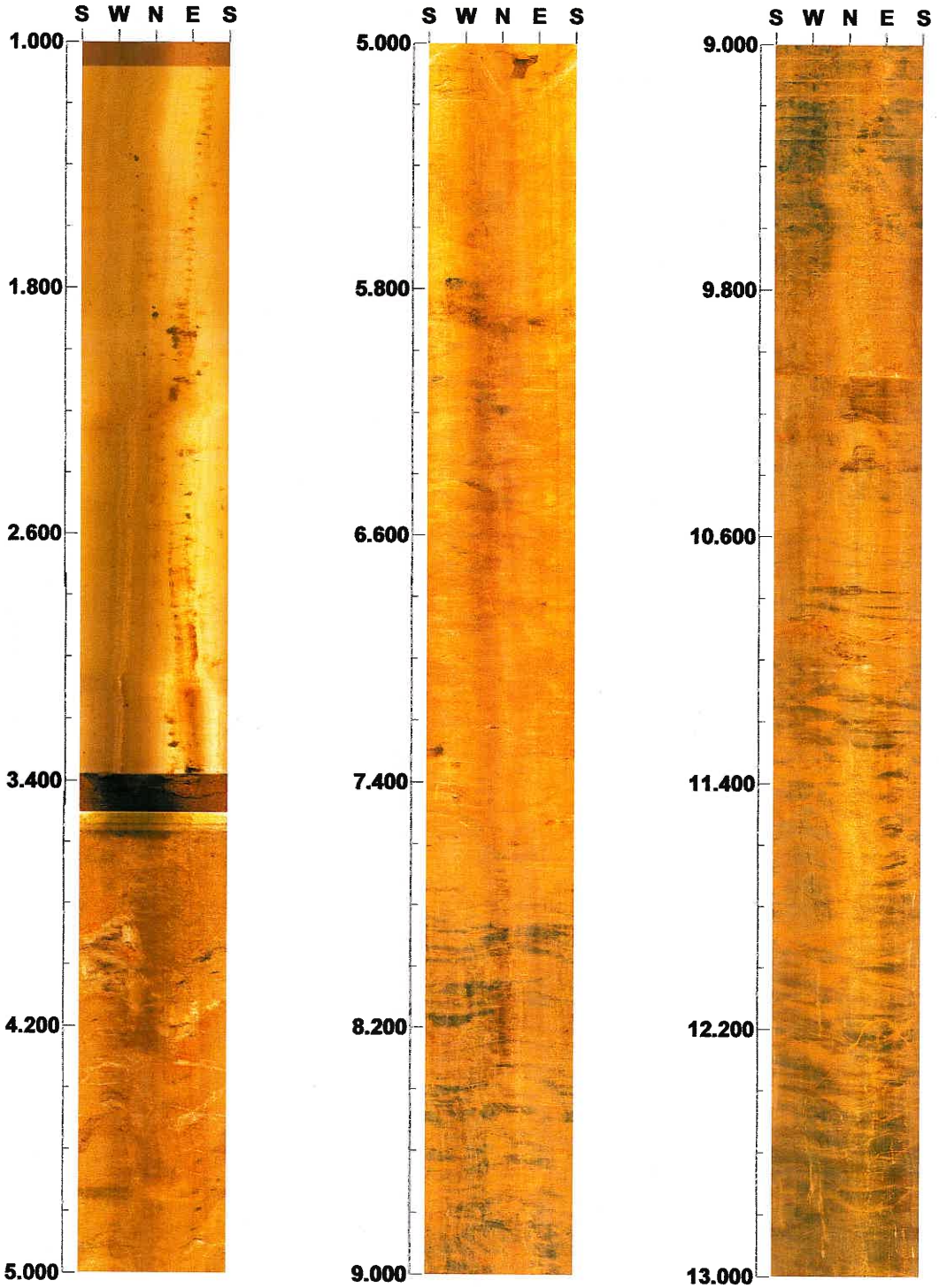
Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	08/09/2011
Details:	Cut 16	Start Depth (m):	3.50
Reference No.:	H11056	Finish Depth (m):	26.40



SCALE 1:5

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

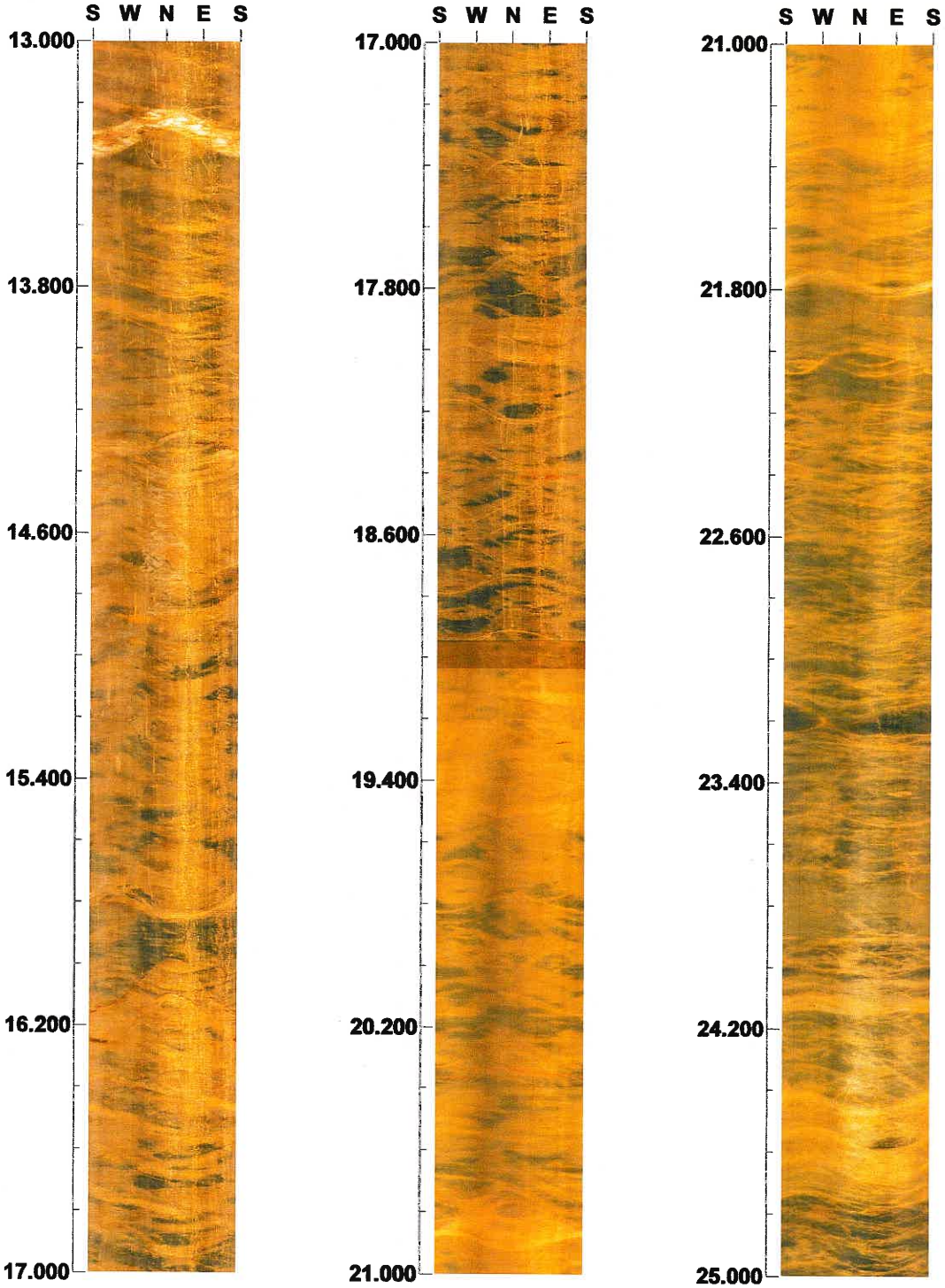
Depth range: 1.000 - 13.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

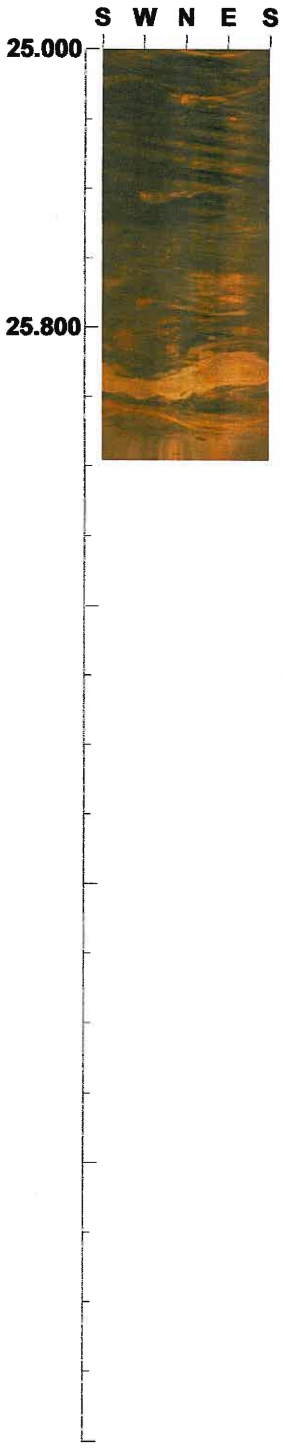
Depth range: 13.000 - 25.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

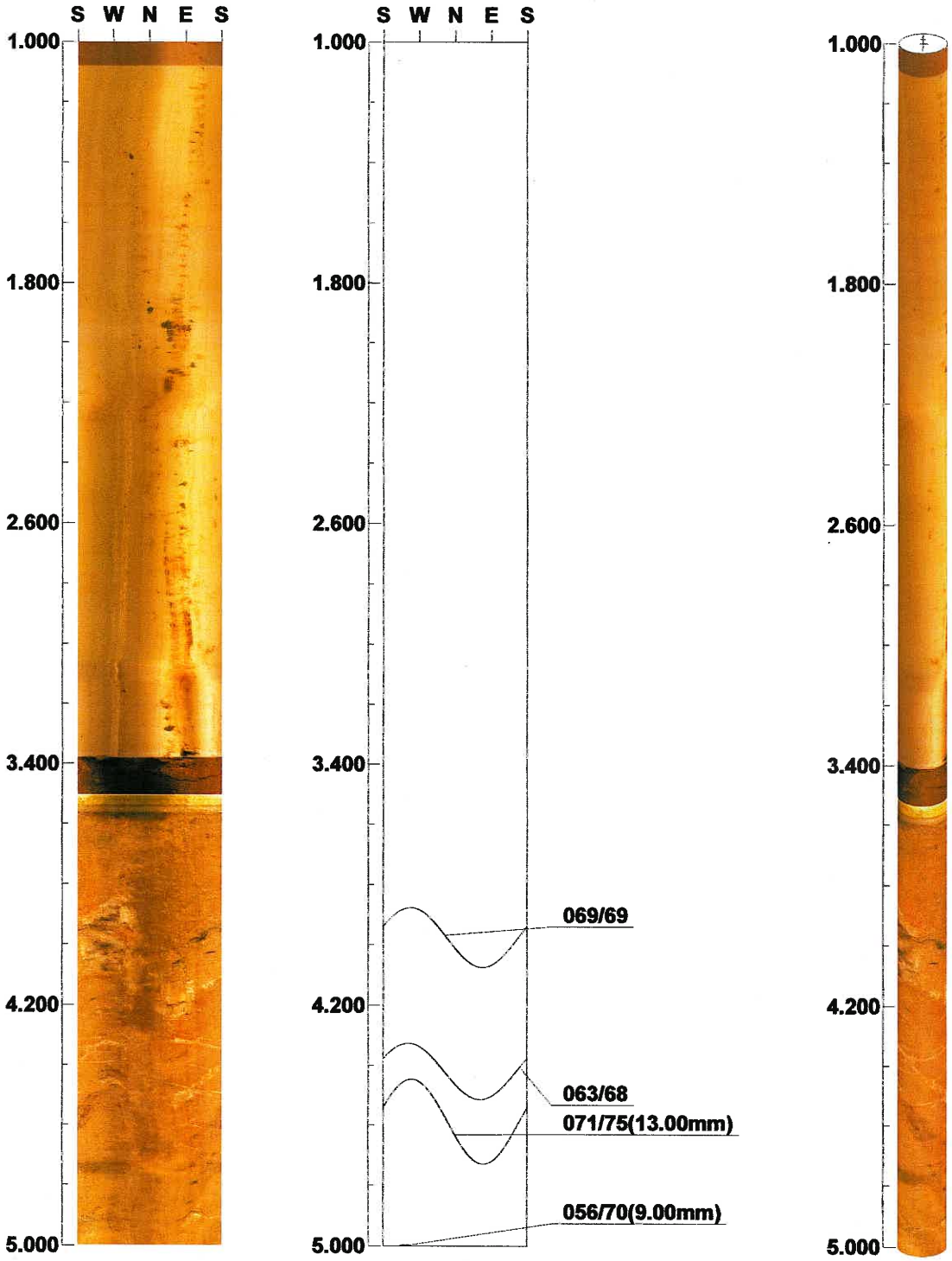
Depth range: 25.000 - 26.183 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

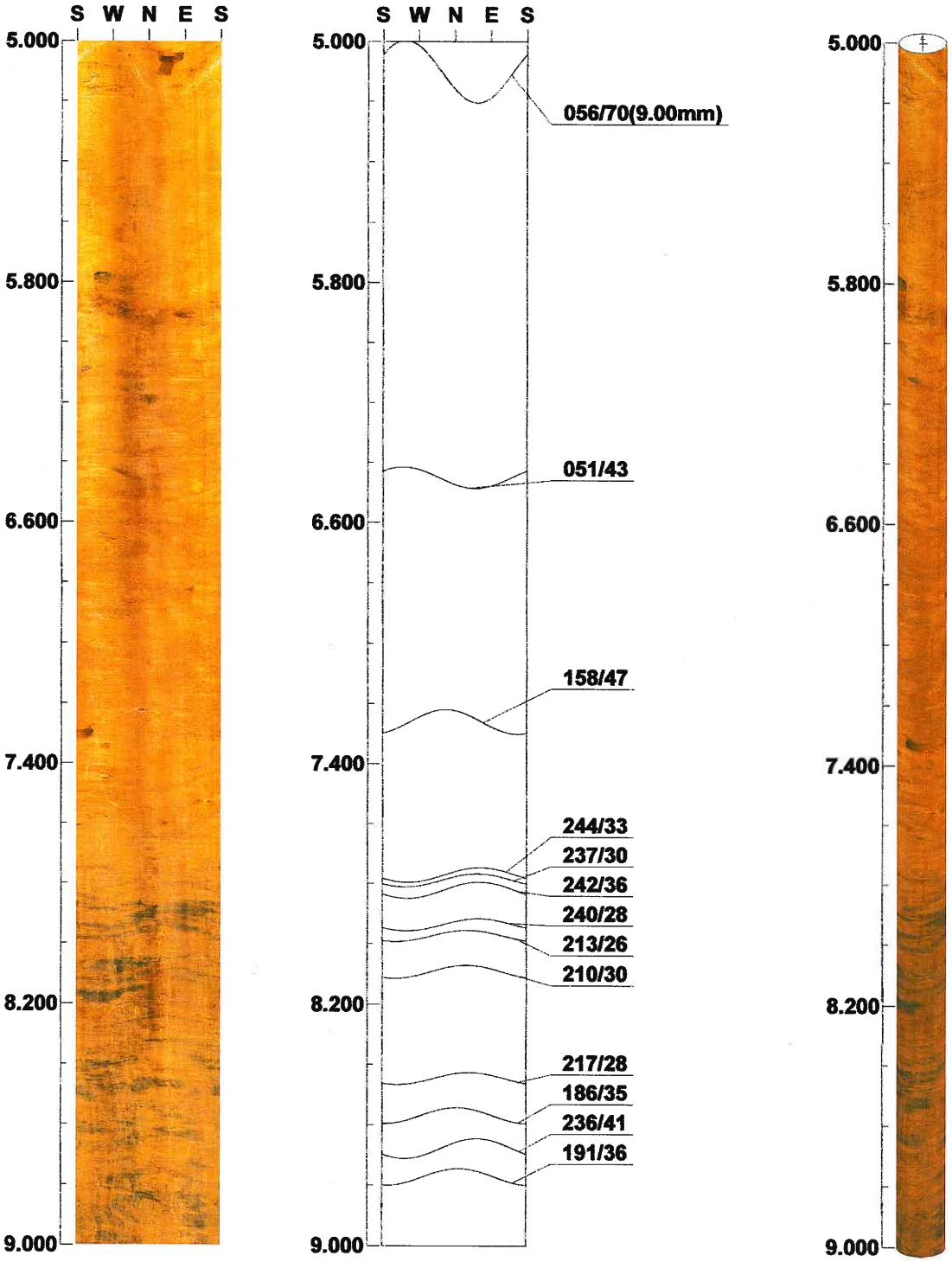
Depth range: 1.000 - 5.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

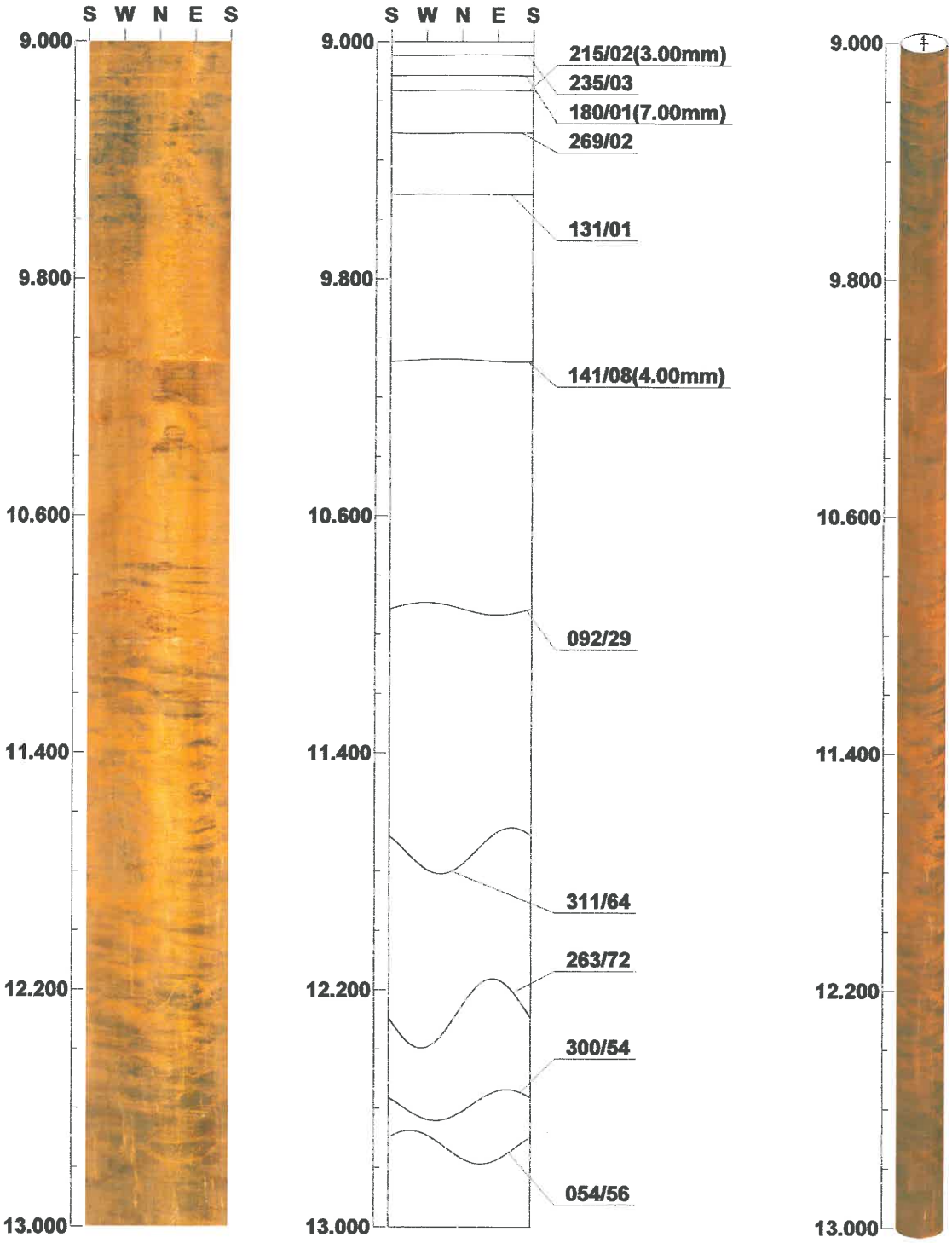
Depth range: 5.000 - 9.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

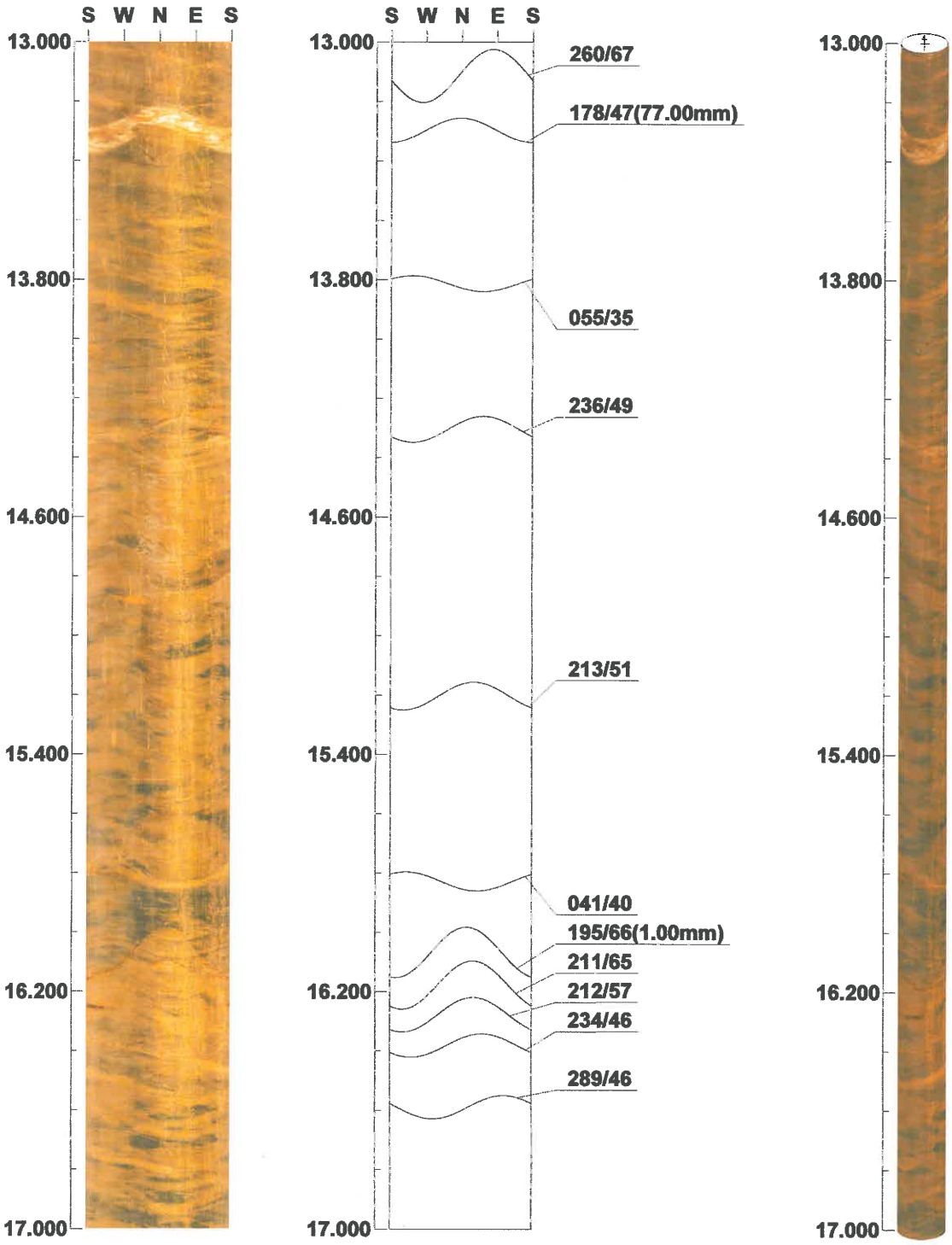
Depth range: 9.000 - 13.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

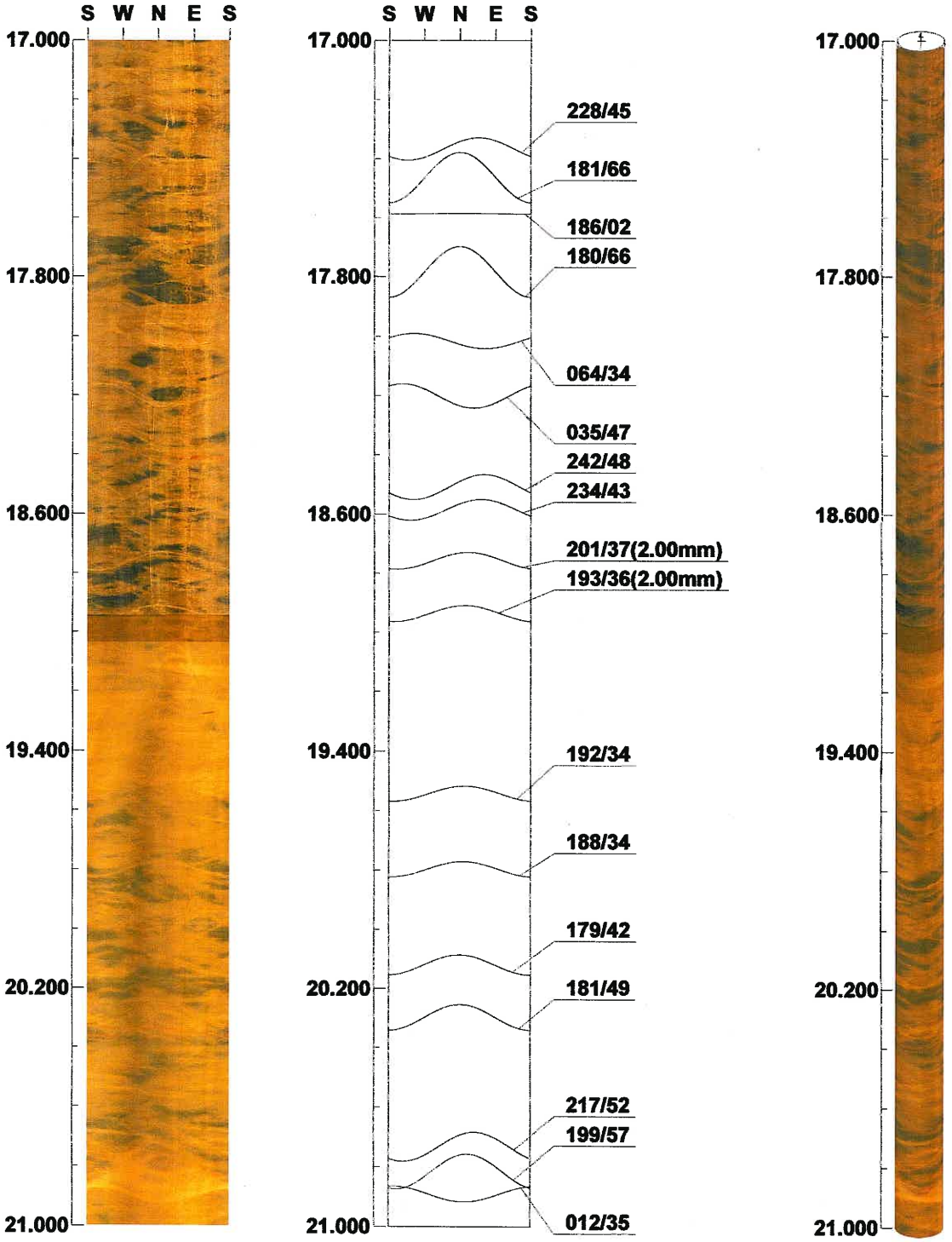
Depth range: 13.000 - 17.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

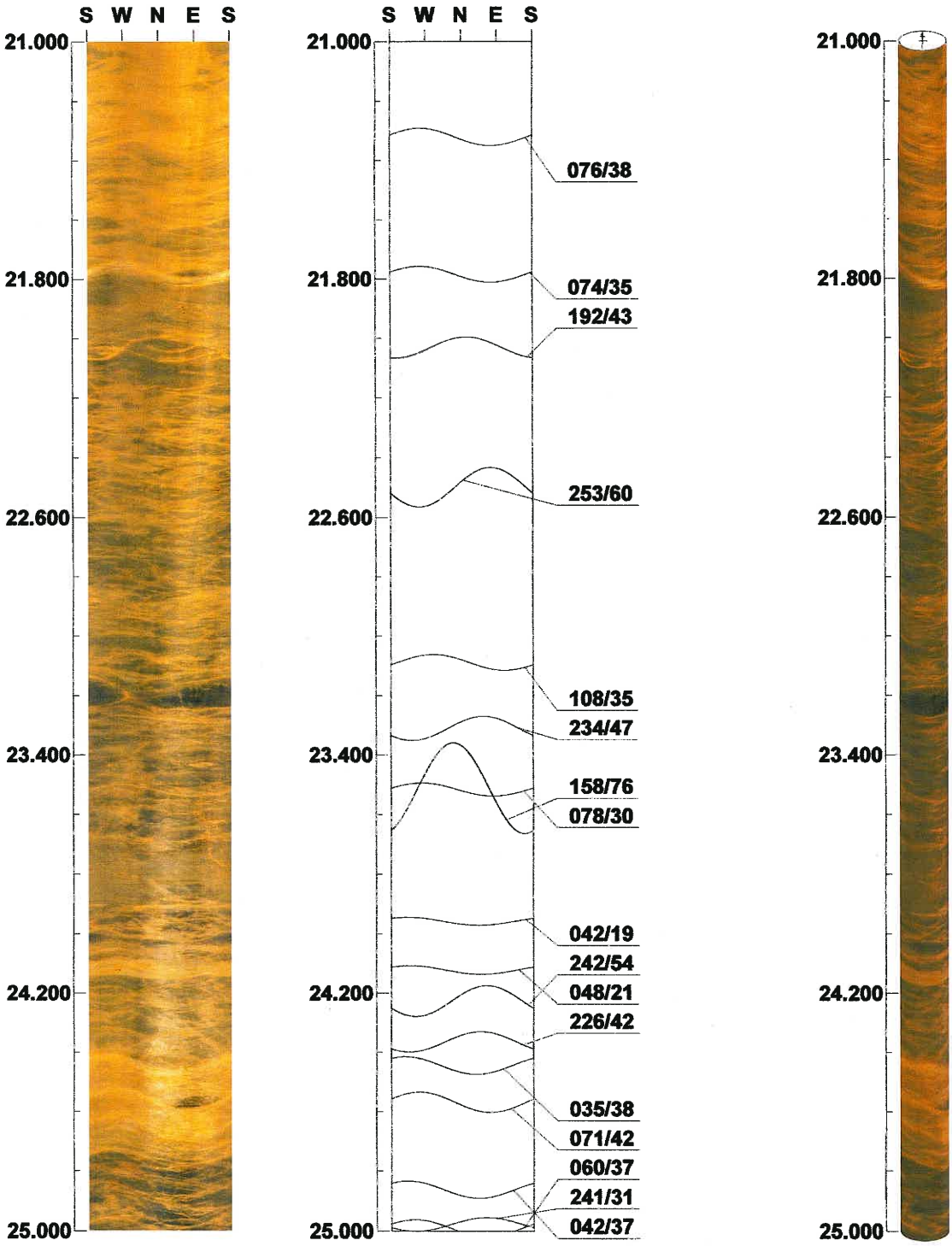
Depth range: 17.000 - 21.000 m



Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C
Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

Depth range: 21.000 - 25.000 m

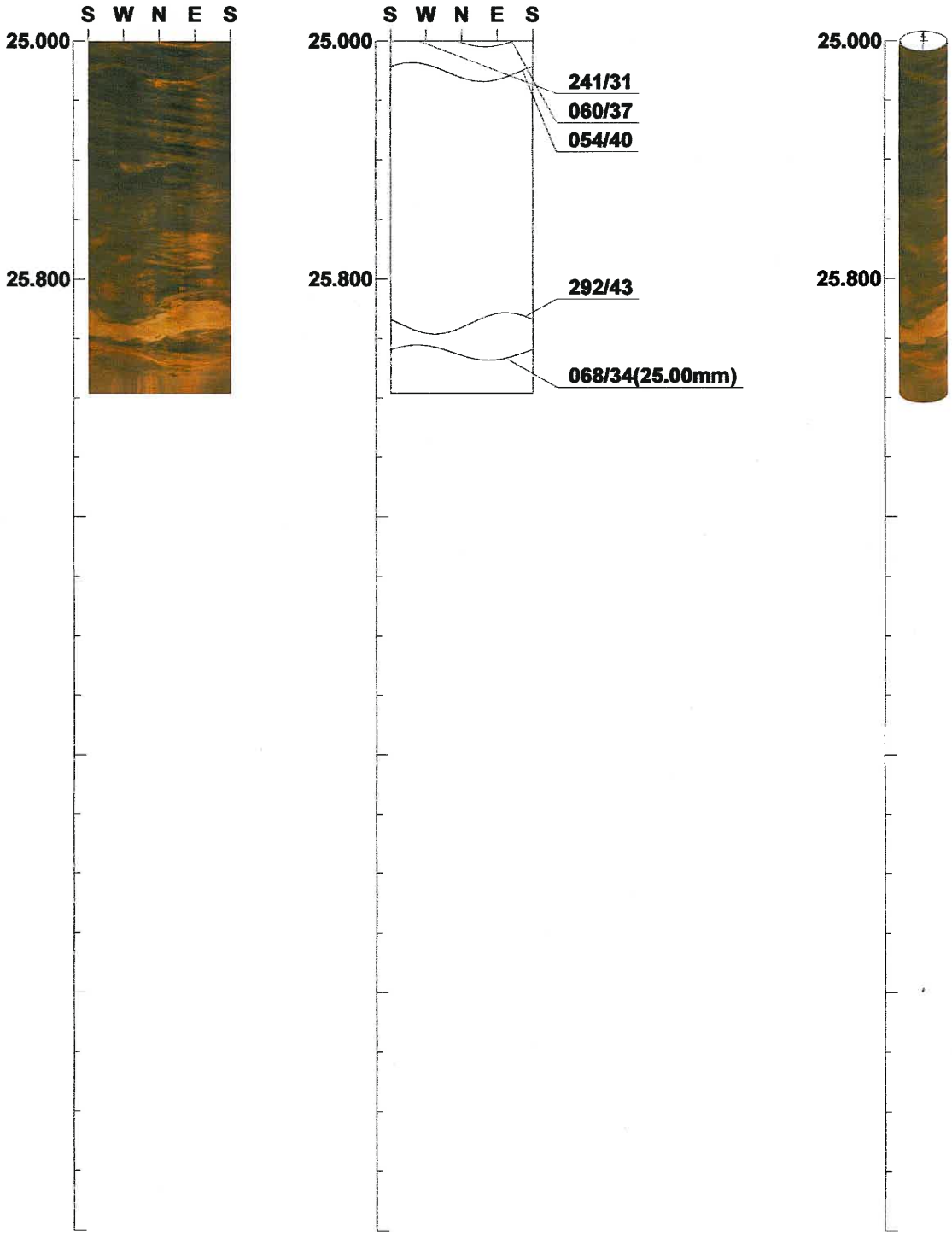


Scale: 1/20 **Aspect ratio: 200 %**

Project name: BRUCE HIGHWAY UPGRADE SECTION C

Bore hole No.: C-57 **Azimuth: 0** **Inclination: -90**

Depth range: 25.000 - 26.183 m



Scale: 1/20 **Aspect ratio: 200 %**

Tab. Table of Discontinuity (1 / 2)

File name: C-57.STR
[ ]

No.	Depth (m)	Dir/Dip	Sort	Aperture (mm)	Form	Condition	Remark
1	3.975	069/69	Joint	1.0	Planar	Weathered	Open
2	4.419	063/68	Joint	3.0	Planar	Weathered	Open
3	4.587	071/75	Joint	13.0	Planar	Weathered	Open
4	5.101	056/70	Joint	9.0	Planar	Weathered	Open
5	6.451	051/43	Parting	0.3	Planar	Smooth	Tight
6	7.260	158/47	Joint	0.3	Planar	Smooth	Tight/fil'd
7	7.771	244/33	Joint	0.3	Planar	Smooth	Open
8	7.789	237/30	Joint	0.3	Planar	Smooth	Open
9	7.822	242/36	Joint	0.3	Planar	Smooth	Open
10	7.937	240/28	Joint	0.3	Planar	Smooth	Open
11	7.974	213/26	Joint	0.3	Planar	Smooth	Open
12	8.092	210/30	Joint	0.3	Planar	Smooth	Open
13	8.446	217/28	Joint	0.3	Planar	Smooth	Open
14	8.569	186/35	Joint	0.5	Planar	Smooth	Open/fil'd
15	8.678	236/41	Joint	0.5	Planar	Smooth	Tight/fil'd
16	8.772	191/36	Joint	0.5	Planar	Smooth	Tight/fil'd
17	9.046	055/03	Joint	1.0	Planar	Smooth	Tight/fil'd
18	9.114	180/01	Joint	7.0	Planar	Smooth	Open/fil'd
19	9.164	215/02	Joint	3.0	Planar	Smooth	Tight/fil'd
20	9.308	270/02	Joint	3.0	Planar	Smooth	Tight/fil'd
21	9.515	131/01	Joint	4.0	Planar	Smooth	Tight/fil'd
22	10.075	141/08	Joint	4.0	Planar	Smooth	Tight/fil'd
23	10.913	092/29	ShearZone	10.0	Planar	Brec/crus'd	Open/loose
24	11.730	311/64	Joint	0.3	Planar	Smooth	Tight
25	12.279	263/72	Joint	0.5	Undulating	Smooth	Tight
26	12.589	300/54	Joint	0.5	Planar	Rough	Tight
27	12.731	054/56	Joint	0.5	Planar	Rough	Open
28	13.114	260/67	Joint	0.3	Planar	Smooth	Tight/fil'd
29	13.297	178/47	Vein	77.0	Planar	Brec/crus'd	Open
30	13.813	055/35	Foliation	0.0	Planar	Smooth	Tight
31	14.304	236/49	Joint	0.5	Planar	Smooth	Open
32	15.203	213/51	Joint	0.3	Planar	Rough	Tight
33	15.828	041/40	ShearZone	11.0	Planar	Brec/crus'd	Open
34	16.067	195/66	Joint	1.0	Planar	Smooth	Open/loose
35	16.177	211/65	Joint	0.5	Planar	Smooth	Open
36	16.277	212/57	Joint	0.3	Planar	Rough	Open
37	16.381	234/46	Joint	0.5	Planar	Smooth	Open
38	16.589	289/46	Joint	0.3	Planar	Rough	Tight/fil'd
39	17.367	228/45	Joint	0.5	Planar	Smooth	Tight/fil'd
40	17.464	181/65	Joint	0.3	Planar	Smooth	Tight
41	17.587	186/02	Joint	1.0	Planar	Smooth	Tight/fil'd
42	17.784	180/66	Joint	0.5	Planar	Smooth	Tight/fil'd
43	18.016	064/34	Parting	1.0	Planar	Smooth	Tight/fil'd
44	18.201	035/47	Parting	2.0	Planar	Smooth	Tight/fil'd
45	18.508	242/48	Joint	1.0	Planar	Smooth	Tight/fil'd
46	18.585	234/43	Joint	1.0	Planar	Smooth	Tight/fil'd
47	18.757	201/37	Joint	2.0	Planar	Smooth	Tight/fil'd
48	18.936	193/36	Joint	2.0	Planar	Smooth	Tight/fil'd
49	19.542	192/34	Joint	2.0	Planar	Smooth	Tight/fil'd
50	19.796	188/34	Joint	4.0	Planar	Smooth	Tight/fil'd

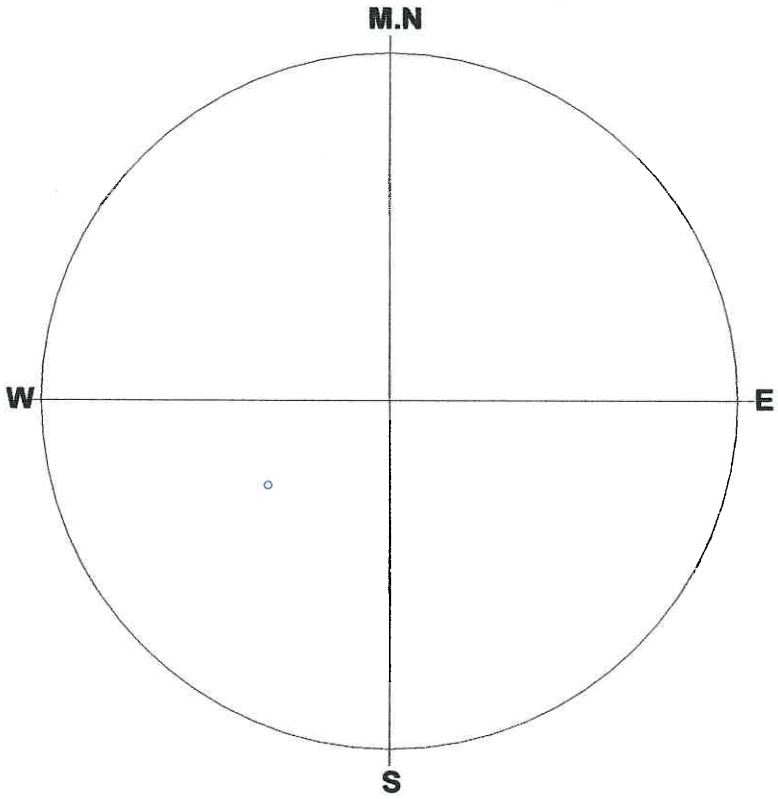
Tab. Table of Discontinuity (2 / 2)

File name: C-57.STR
[ ]

No.	Depth (m)	Dir/Dip	Sort	Aperture (mm)	Form	Condition	Remark
51	20.119	180/42	Joint	7.0	Planar	Rough	Open
52	20.297	180/49	Joint	1.0	Planar	Smooth	Open
53	20.732	217/52	Joint	2.0	Planar	Smooth	Tight/fil'd
54	20.815	199/57	Joint	0.5	Planar	Rough	Open
55	20.891	012/35	ShearZone	12.0	Planar	Brec/crus'd	Open
56	21.320	076/38	Parting	6.0	Planar	Brec/crus'd	Open
57	21.784	074/35	ShearZone	32.0	Planar	Brec/crus'd	Open
58	22.031	192/43	Joint	1.0	Planar	Rough	Open
59	22.498	253/60	Joint	0.3	Planar	Smooth	Tight
60	23.088	108/35	Joint	2.0	Planar	Smooth	Open
61	23.310	234/47	Joint	0.3	Planar	Smooth	Tight
62	23.511	158/76	Joint	0.3	Planar	Rough	Tight
63	23.516	078/30	ShearZone	31.0	Planar	Brec/crus'd	Open
64	23.957	042/19	ShearZone	106.0	Planar	Brec/crus'd	Open/loose
65	24.121	048/21	ShearZone	26.0	Planar	Brec/crus'd	Open
66	24.226	242/54	Joint	0.3	Planar	Rough	Tight
67	24.364	226/42	Joint	0.3	Planar	Smooth	Open
68	24.444	035/38	ShearZone	29.0	Planar	Brec/crus'd	Open
69	24.568	071/42	ShearZone	12.0	Planar	Brec/crus'd	Open
70	24.862	042/37	ShearZone	22.0	Planar	Brec/crus'd	Open
71	24.978	241/31	Joint	0.3	Planar	Smooth	Tight
72	24.991	060/37	ShearZone	4.0	Planar	Brec/crus'd	Open
73	25.105	054/40	ShearZone	7.0	Planar	Brec/crus'd	Open
74	25.949	292/43	ShearZone	46.0	Undulating	Brec/crus'd	Open
75	26.047	068/34	ShearZone	25.0	Planar	Brec/crus'd	Open

C-57.STR

<<FOLIATION>>



Number of Data : 1/75

<Legend>

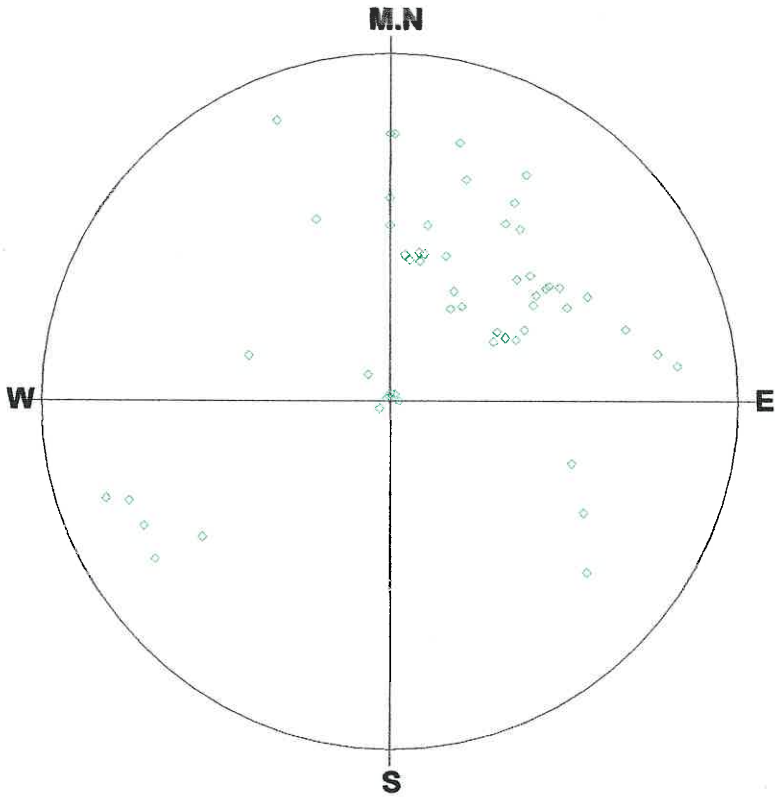
○	:Foliation	1	+	:Mineralban-	0
◇	:Joint	0			
□	:Parting	0			
△	:Fault	0			
▽	:ShearZone-	0			
×	:Vein	0			

Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR
<<JOINT>>



Number of Data : 55/75

<Legend>

○ :Foliation	-- 0	+ :Mineralban-	0
◇ :Joint	-- 55		
□ :Parting	-- 0		
△ :Fault	-- 0		
▽ :ShearZone-	0		
× :Vein	-- 0		

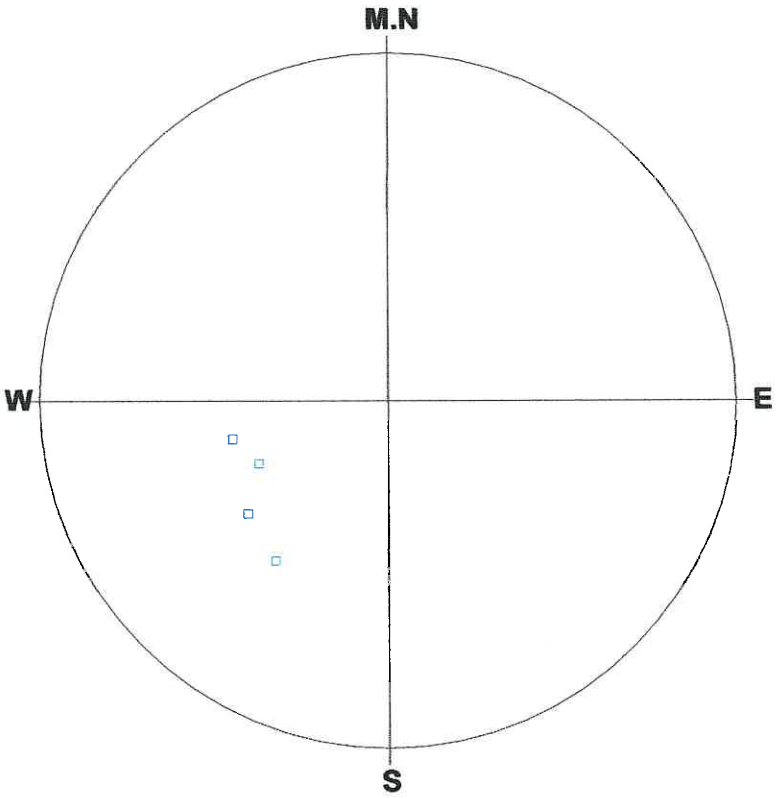
Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<PARTING>>



Number of Data : 4/75

<Legend>

○:Foliation	-- 0	+:Mineralban-	0
◇:Joint	-- 0		
□:Parting	-- 4		
△:Fault	-- 0		
▽:ShearZone-	0		
×:Vein	-- 0		

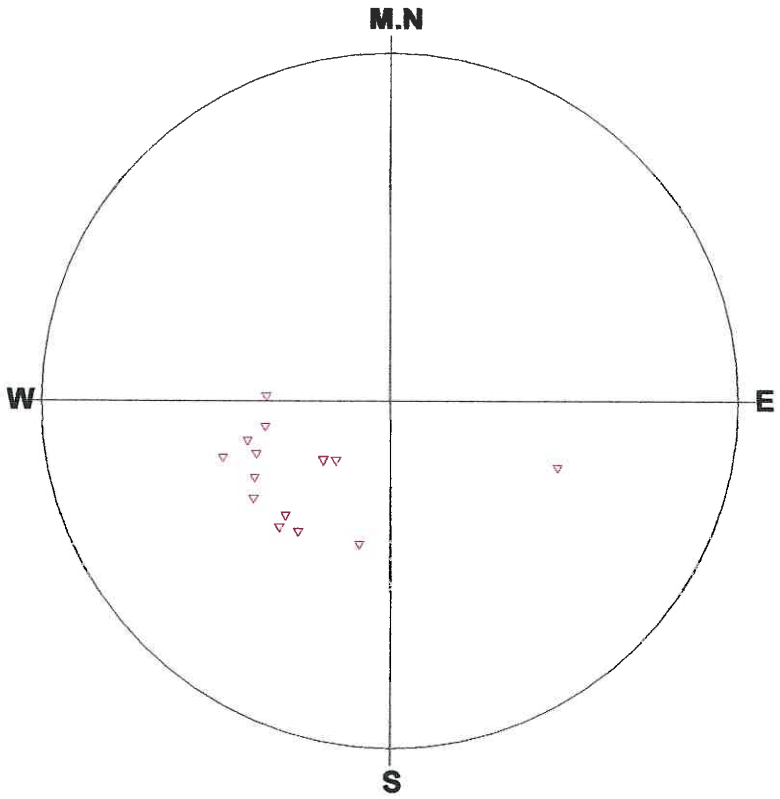
Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<SHEAR ZONE>>



Number of Data : 14/75

<Legend>

○ :Foliation	-- 0	+ :Mineralban-	0
◇ :Joint	-- 0		
□ :Parting	-- 0		
△ :Fault	-- 0		
▽ :ShearZone-	14		
× :Vein	-- 0		

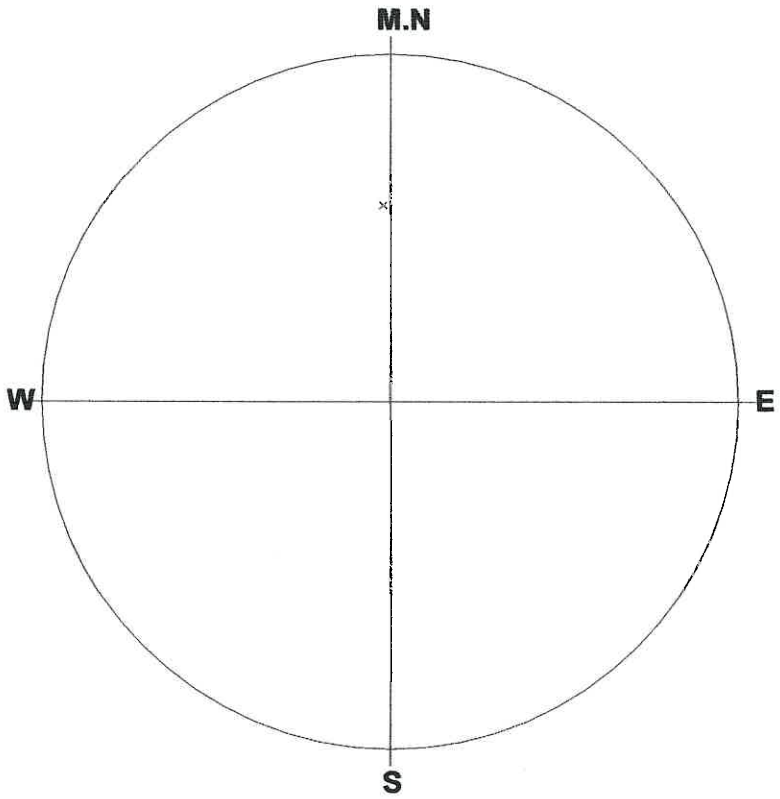
Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<VEIN>>



Number of Data : 1/75

<Legend>

○:Foliation	-- 0	+:Mineralban-	0
◇:Joint	-- 0		
□:Parting	-- 0		
△:Fault	-- 0		
▽:ShearZone-	0		
×:Vein	-- 1		

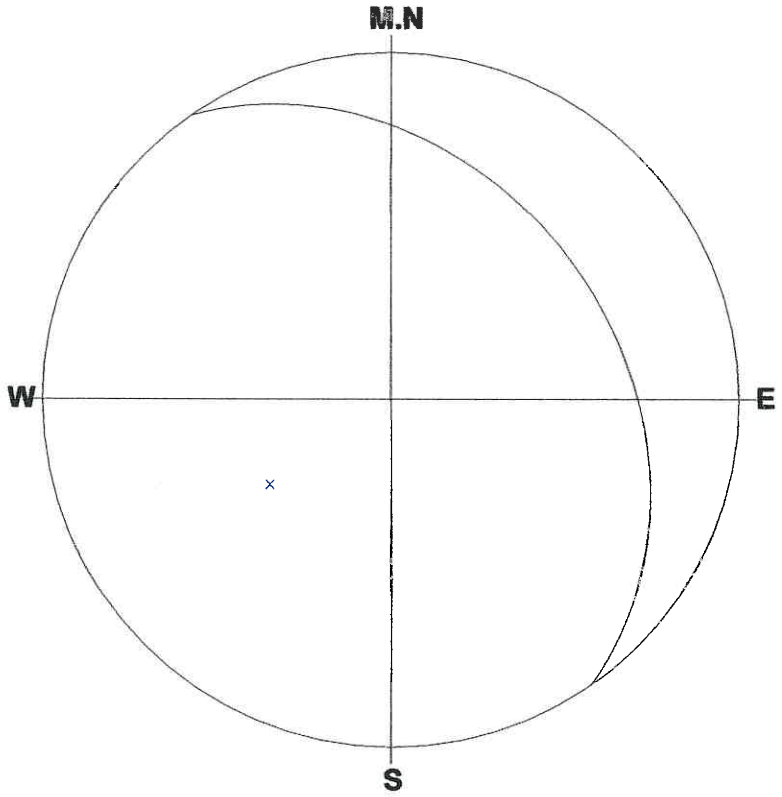
Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<FOLIATION>>



Number of Data:1/75

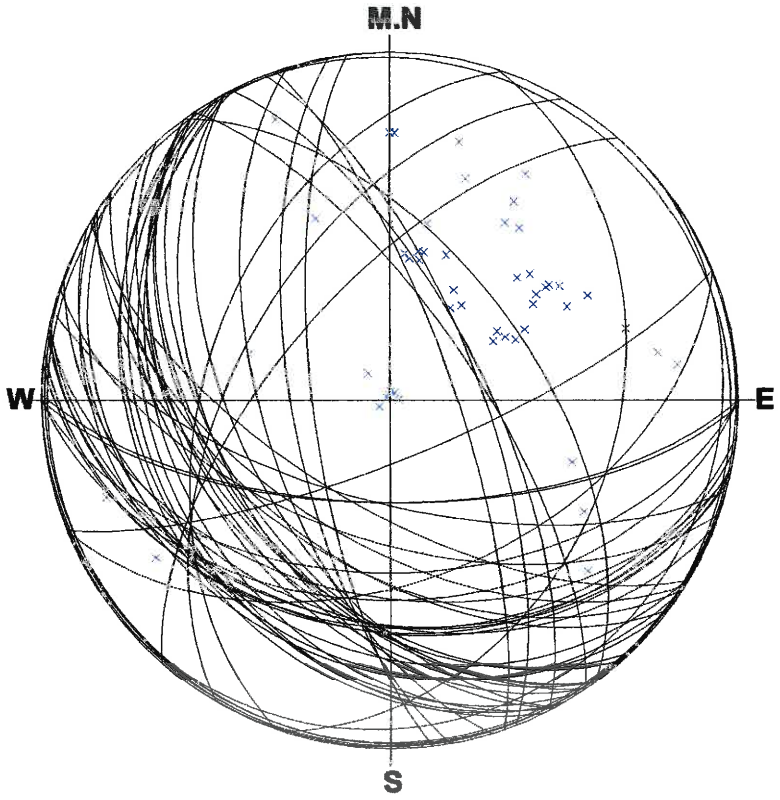
1 : 055/35(30)

Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR
<<JOINT>>



Number of Data:55/75

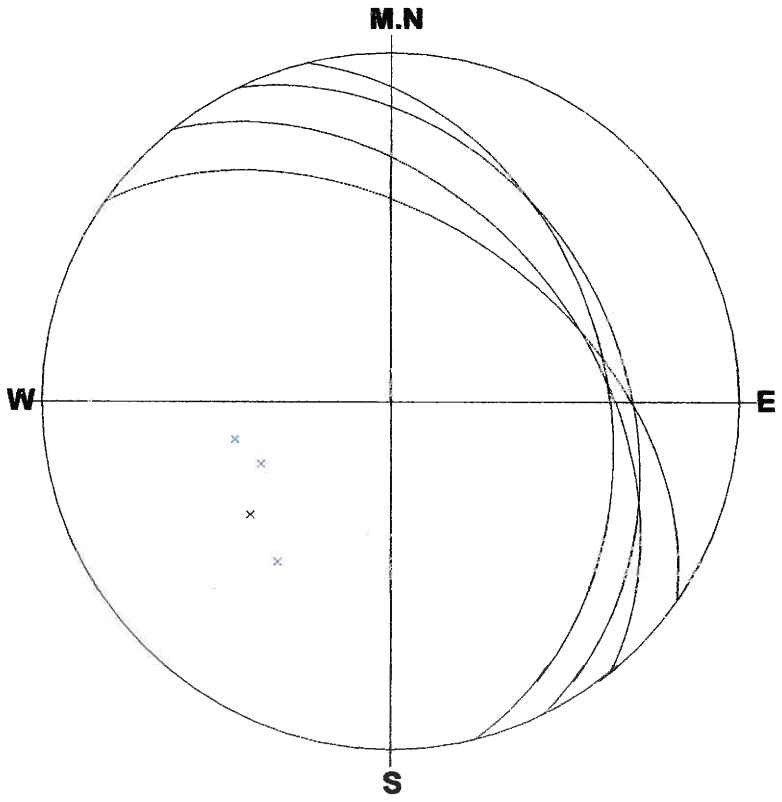
1 : 069/69(1)	**6 : 244/33(7)**
2 : 063/68(2)	**7 : 237/30(8)**
3 : 071/75(3)	**8 : 242/36(9)**
4 : 056/70(4)	**9 : 240/28(10)**
5 : 158/47(6)	**10 : 213/26(11)**

Schmidt (L.H)

Depth : 3.975 - 26.047 m
Aperture : 0.0 - 106.0 mm

C-57.STR

<<PARTING>>



Number of Data:4/75

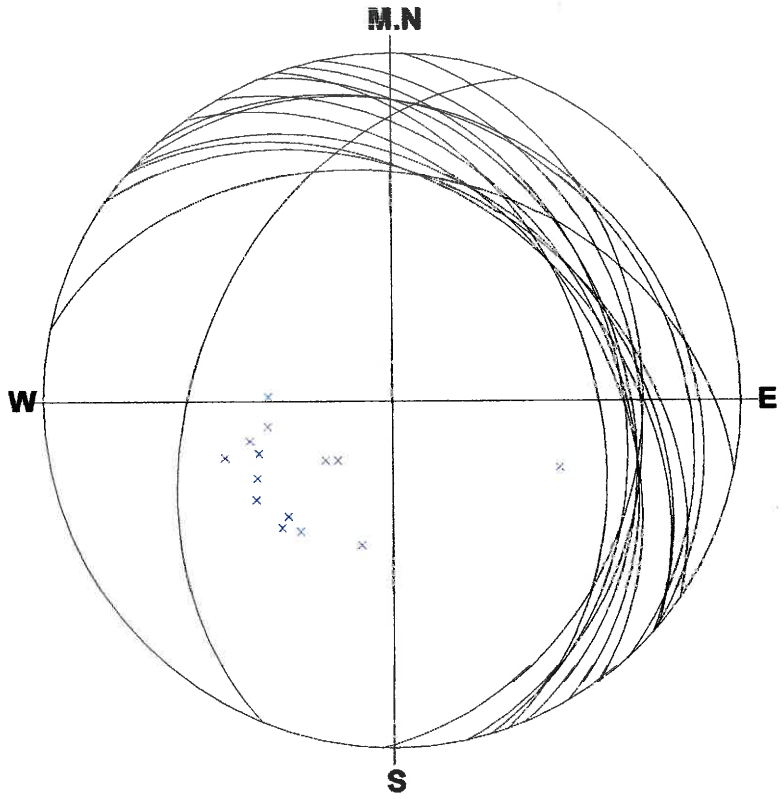
1 : 051/43(5)
2 : 064/34(43)
3 : 035/47(44)
4 : 076/38(56)

Schmidt (L.H)

Depth : 3.975 - 26.047 m
Aperture : 0.0 - 106.0 mm

C-57.STR

<<SHEAR ZONE>>



Number of Data:14/75

1 : 092/29(23)	**6 : 042/19(64)**
2 : 041/40(33)	**7 : 048/21(65)**
3 : 012/35(55)	**8 : 035/38(68)**
4 : 074/35(57)	**9 : 071/42(69)**
5 : 078/30(63)	**10 : 042/37(70)**

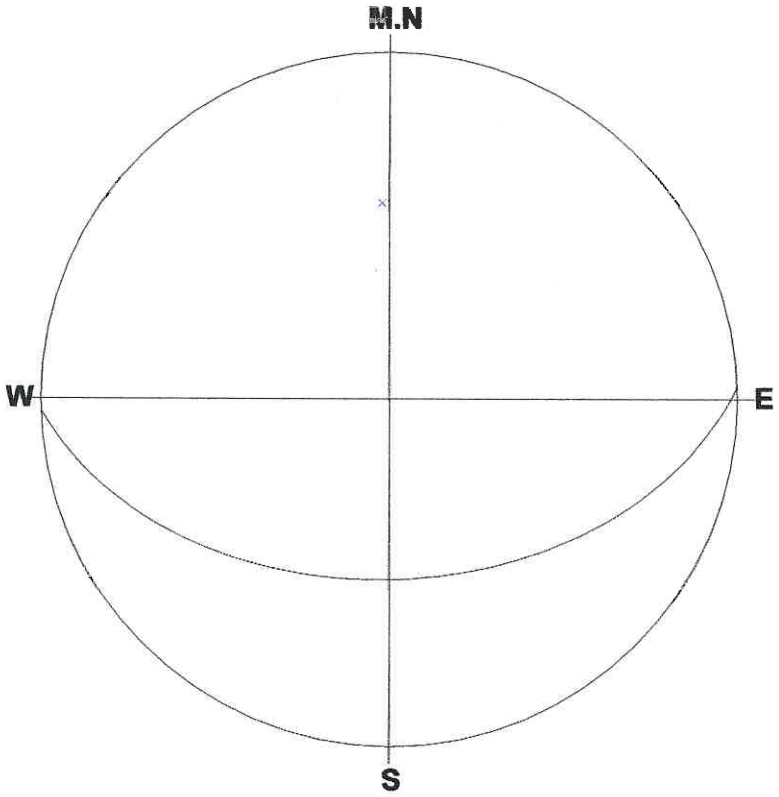
Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<VEIN>>



Number of Data:1/75

1 : 178/47(29)

Schmidt (L.H)

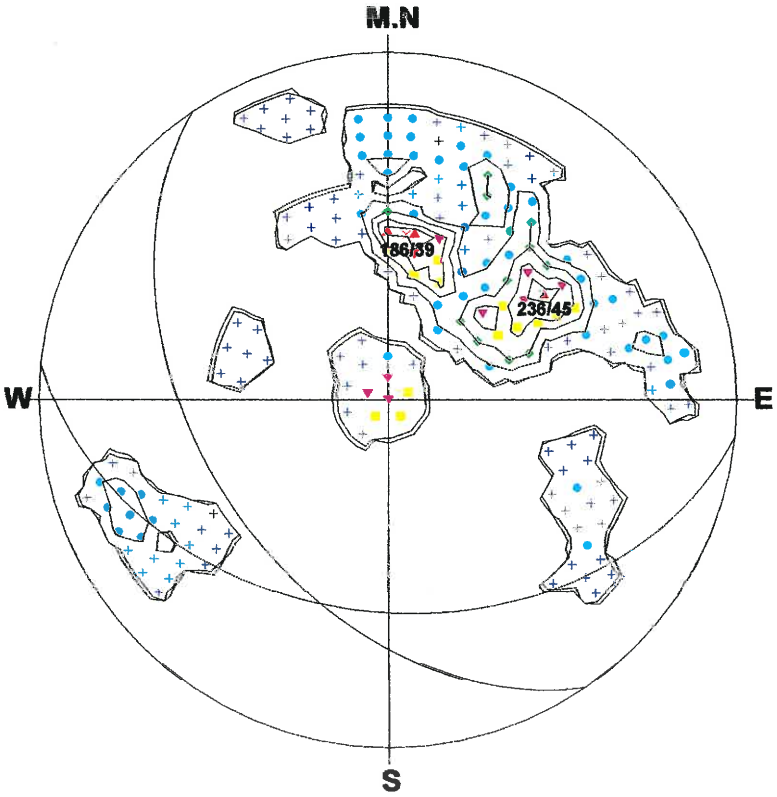
Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<JOINT>>

******** % Diagram ********



Number of Data : 55

<Legend> Sym. (%)	Contour Value (%)
▲ : 14	Contour 1 : 0
▼ : 11 - 14	Contour 2 : 2
■ : 8 - 11	Contour 3 : 5
◆ : 5 - 8	Contour 4 : 8
● : 2 - 5	Contour 5 : 11
+ : 0 - 2	Contour 6 : 14

Schmidt (L.H)

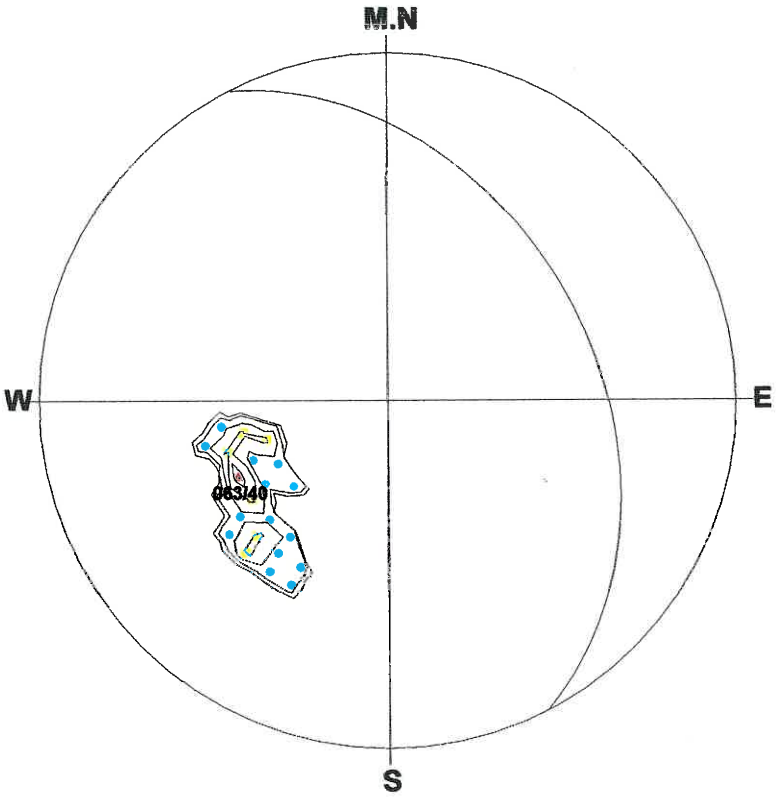
Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<PARTING>>

******** % Diagram ********



Number of Data : 4

<Legend> Sym. (%)	
▲	: 75
▼	: 60 - 75
■	: 45 - 60
◆	: 30 - 45
●	: 15 - 30
+	: 0 - 15

Contour Value (%)	
Contour 1 :	0
Contour 2 :	15
Contour 3 :	30
Contour 4 :	45
Contour 5 :	60
Contour 6 :	75

Schmidt (L.H)

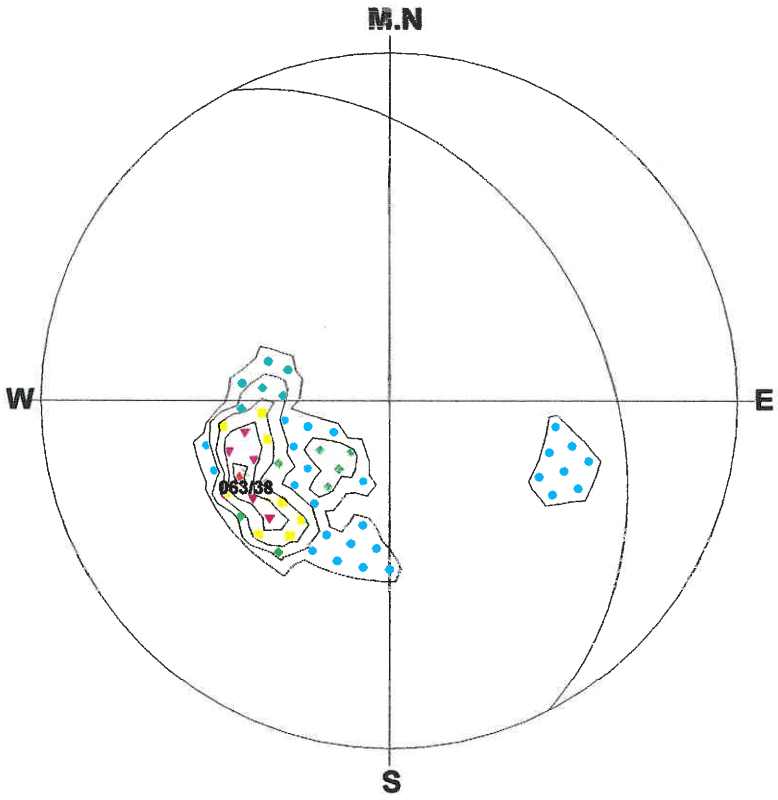
Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<SHEAR ZONE>>

******** % Diagram ********



Number of Data : 14

<Legend> Sym. (%)	Contour Value (%)
▲ : 35	Contour 1 : 0
▼ : 28 - 35	Contour 2 : 7
■ : 21 - 28	Contour 3 : 14
◆ : 14 - 21	Contour 4 : 21
● : 7 - 14	Contour 5 : 28
+ : 0 - 7	Contour 6 : 35

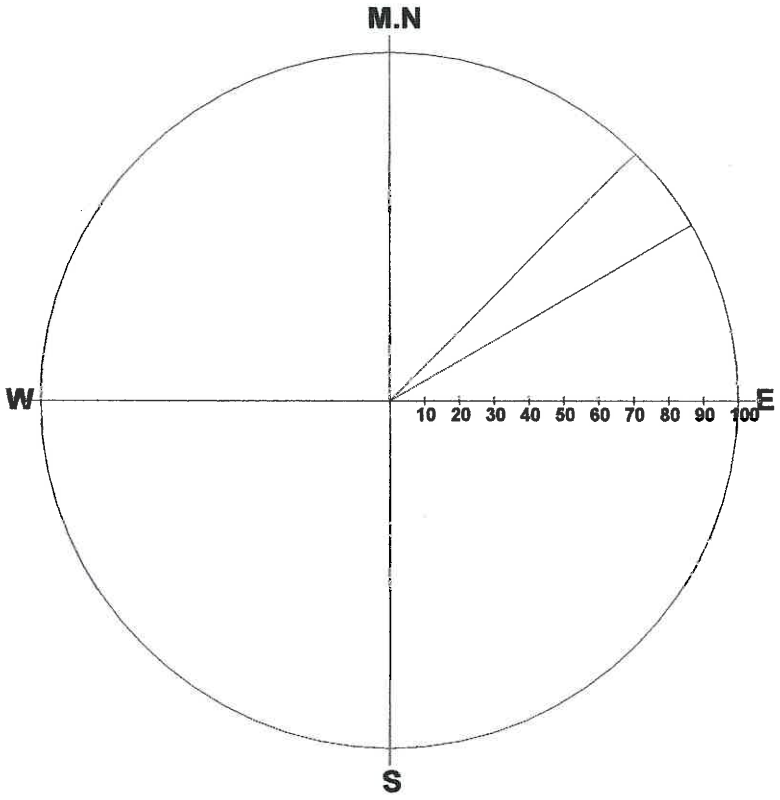
Schmidt (L.H)

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<FOLIATION>>



Number of Data : 1/75

Max : 100.0% **Grouping Angle : 15 deg**

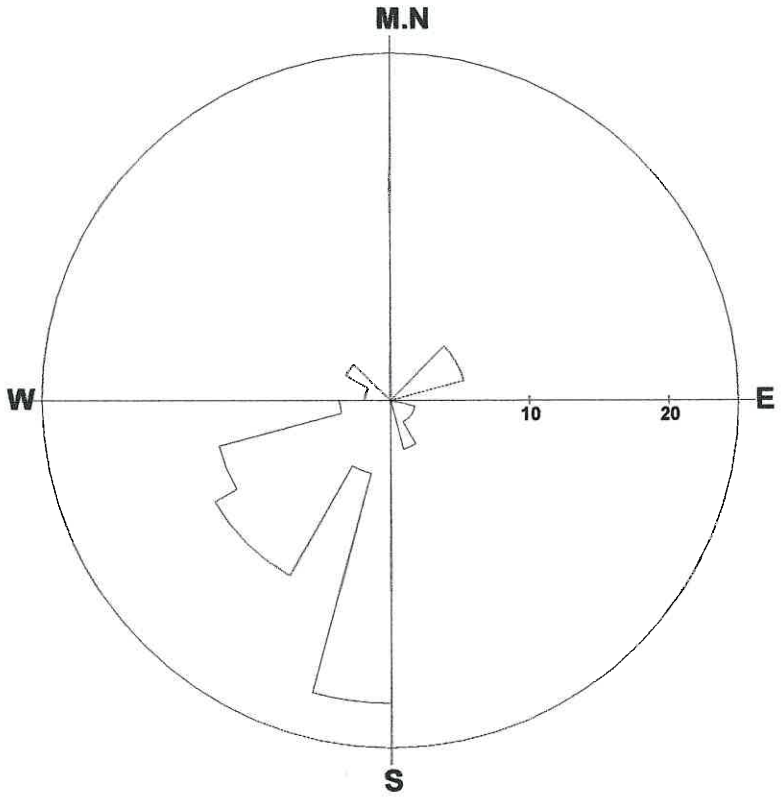
Dir	%	Dir	%	Dir	%
0-	0	135-	0	270-	0
15-	0	150-	0	285-	0
30-	0	165-	0	300-	0
45-	100	180-	0	315-	0
60-	0	195-	0	330-	0
75-	0	210-	0	345-	0
90-	0	225-	0		
105-	0	240-	0		
120-	0	255-	0		

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<JOINT>>



Number of Data : 55/75

Max : 21.8% **Grouping Angle : 15 deg**

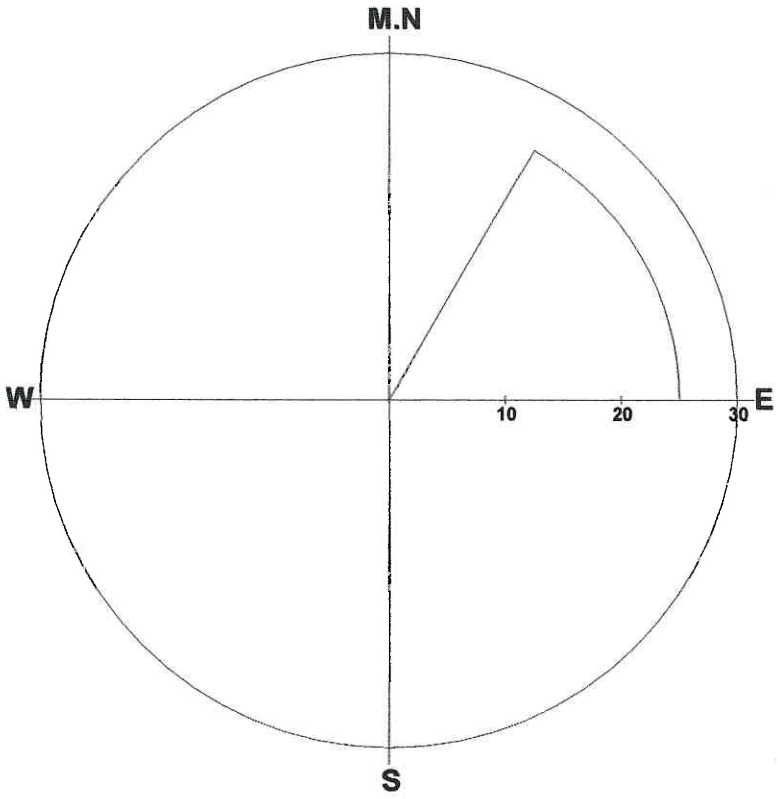
Dir	%	Dir	%	Dir	%
0-	0	135-	2	270-	2
15-	0	150-	4	285-	2
30-	0	165-	0	300-	4
45-	5	180-	22	315-	0
60-	5	195-	5	330-	0
75-	0	210-	15	345-	0
90-	0	225-	15		
105-	2	240-	13		
120-	2	255-	4		

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<PARTING>>



Number of Data : 4/75

Max : 25.0%

Grouping Angle : 15 deg

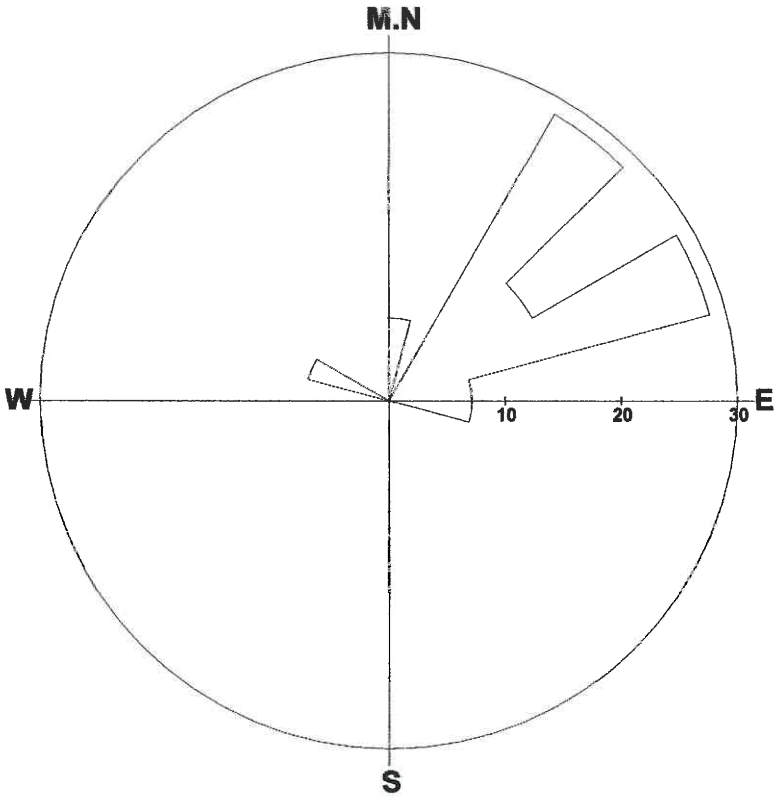
Dir	%	Dir	%	Dir	%
0-	0	135-	0	270-	0
15-	0	150-	0	285-	0
30-	25	165-	0	300-	0
45-	25	180-	0	315-	0
60-	25	195-	0	330-	0
75-	25	210-	0	345-	0
90-	0	225-	0		
105-	0	240-	0		
120-	0	255-	0		

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<SHEAR ZONE>>



Number of Data : 14/75

Max : 28.6%

Grouping Angle : 15 deg

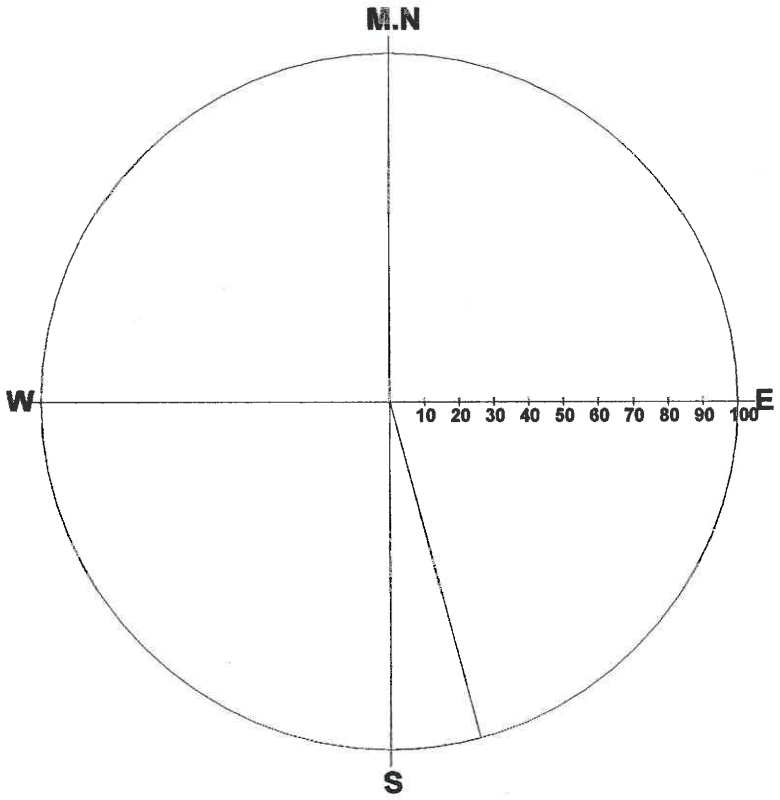
Dir	%	Dir	%	Dir	%
0-	7	135-	0	270-	0
15-	0	150-	0	285-	7
30-	29	165-	0	300-	0
45-	14	180-	0	315-	0
60-	29	195-	0	330-	0
75-	7	210-	0	345-	0
90-	7	225-	0		
105-	0	240-	0		
120-	0	255-	0		

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

C-57.STR

<<VEIN>>



Number of Data : 1/75

Max : 100.0% **Grouping Angle : 15 deg**

Dir	%	Dir	%	Dir	%
0-	0	135-	0	270-	0
15-	0	150-	0	285-	0
30-	0	165-	100	300-	0
45-	0	180-	0	315-	0
60-	0	195-	0	330-	0
75-	0	210-	0	345-	0
90-	0	225-	0		
105-	0	240-	0		
120-	0	255-	0		

Depth : 3.975 - 26.047 m

Aperture : 0.0 - 106.0 mm

Title: C-57.STR
Comment: JOINT
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

2011/ 8/ 30

Elevation: 0.000m
Water Level: 18.945m

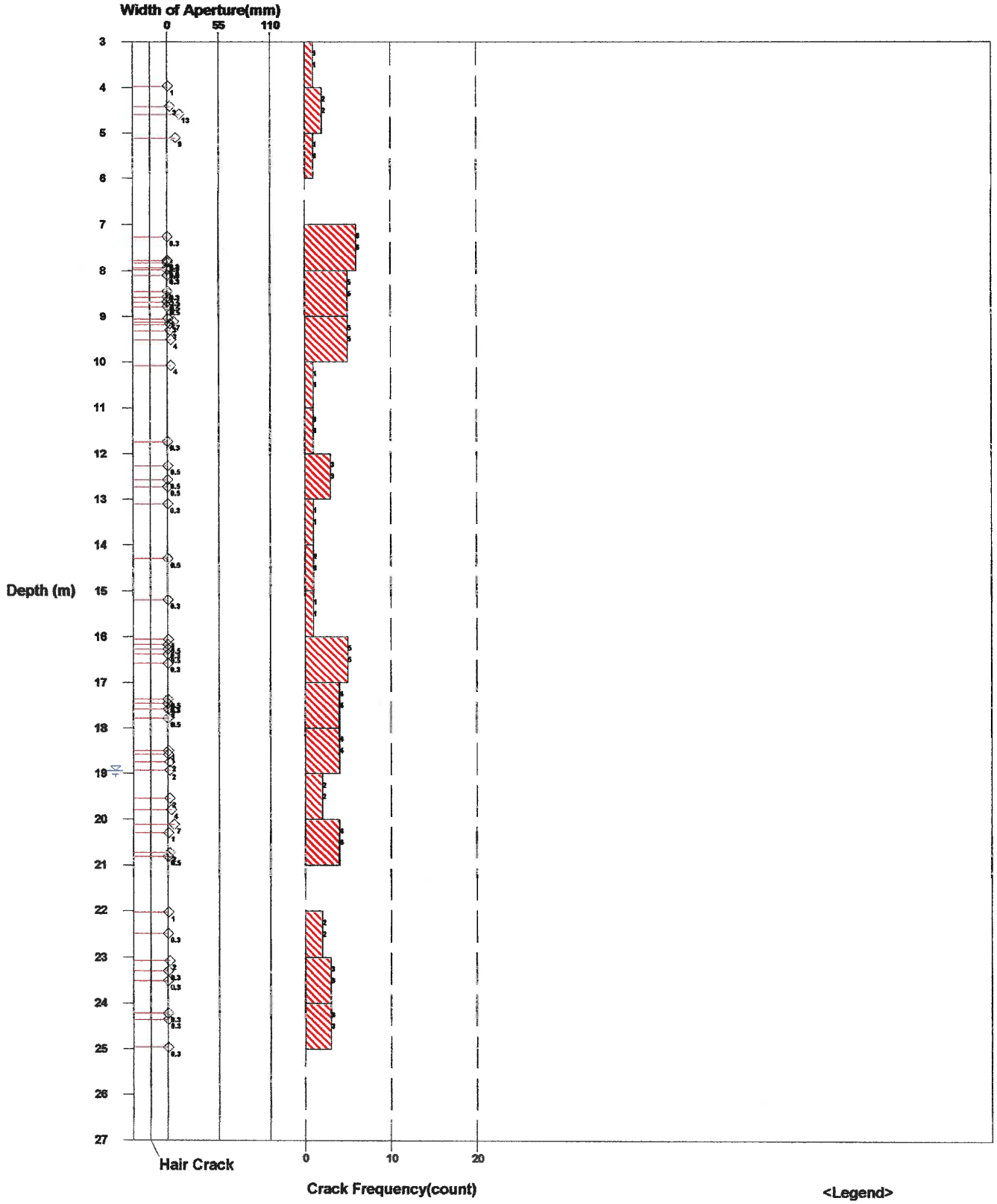


Fig. Rock Mass Condition Graph

Title: C-57.STR
Comment: PARTING
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

2011/ 8/ 30

Elevation: 0.000m
Water Level: 18.945m

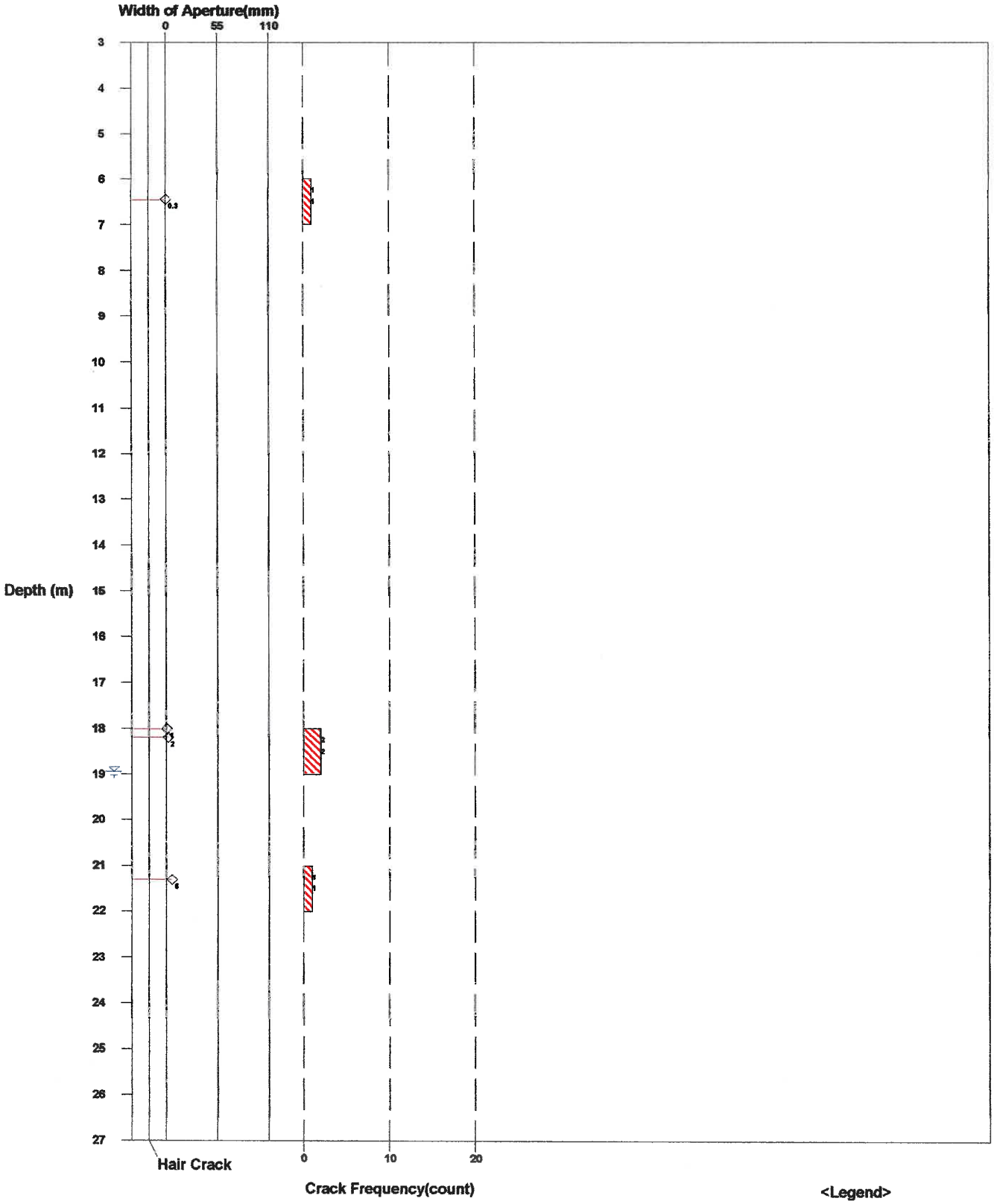


Fig. Rock Mass Condition Graph

Title: C-57.STR
Comment: SHEAR ZONE
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

2011/ 8/ 30

Elevation: 0.000m
Water Level: 18.945m

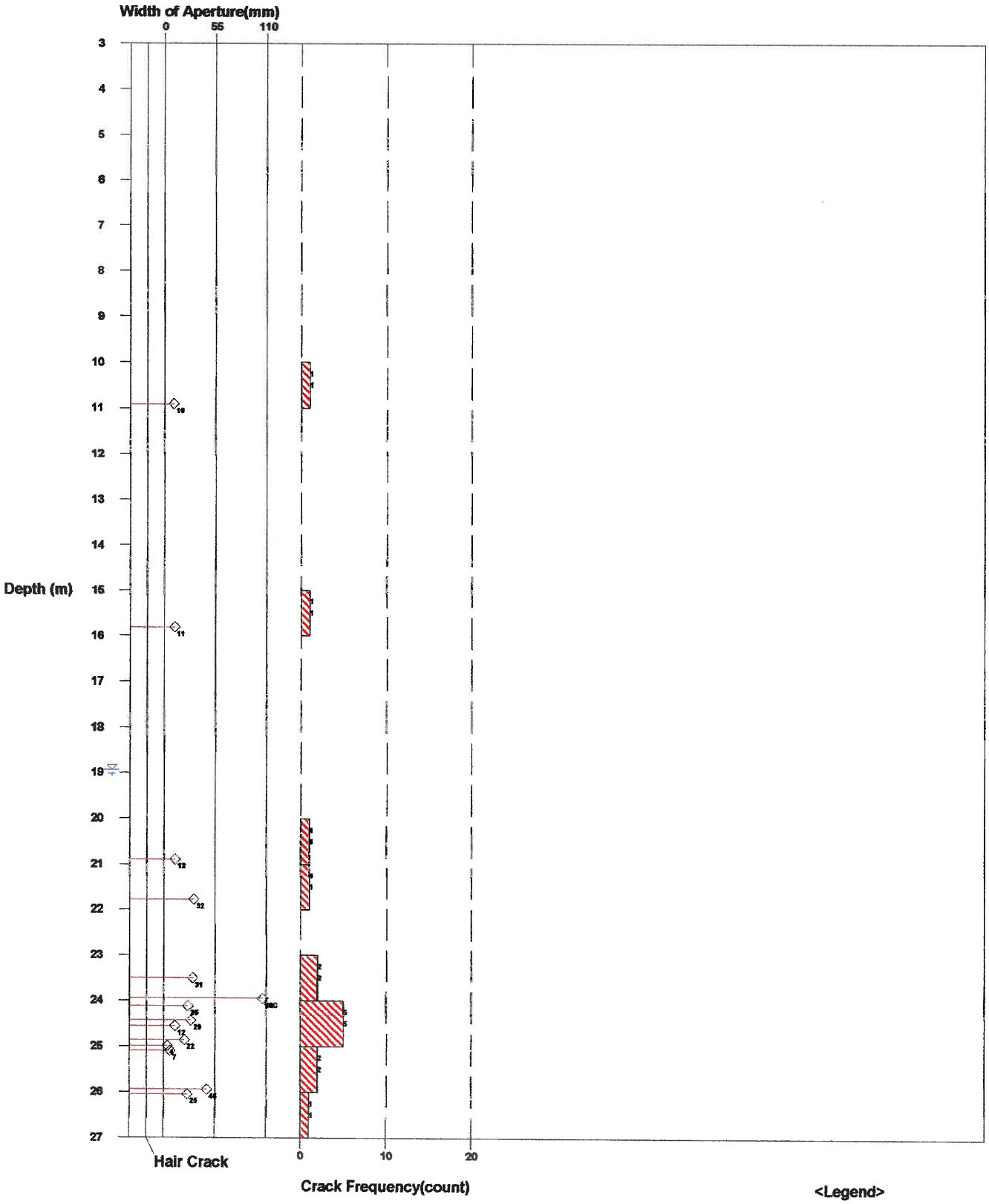


Fig. Rock Mass Condition Graph

Title: C-57.STR
Comment: VEIN
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

2011/ 8/ 30

Elevation: 0.000m
Water Level: 18.945m

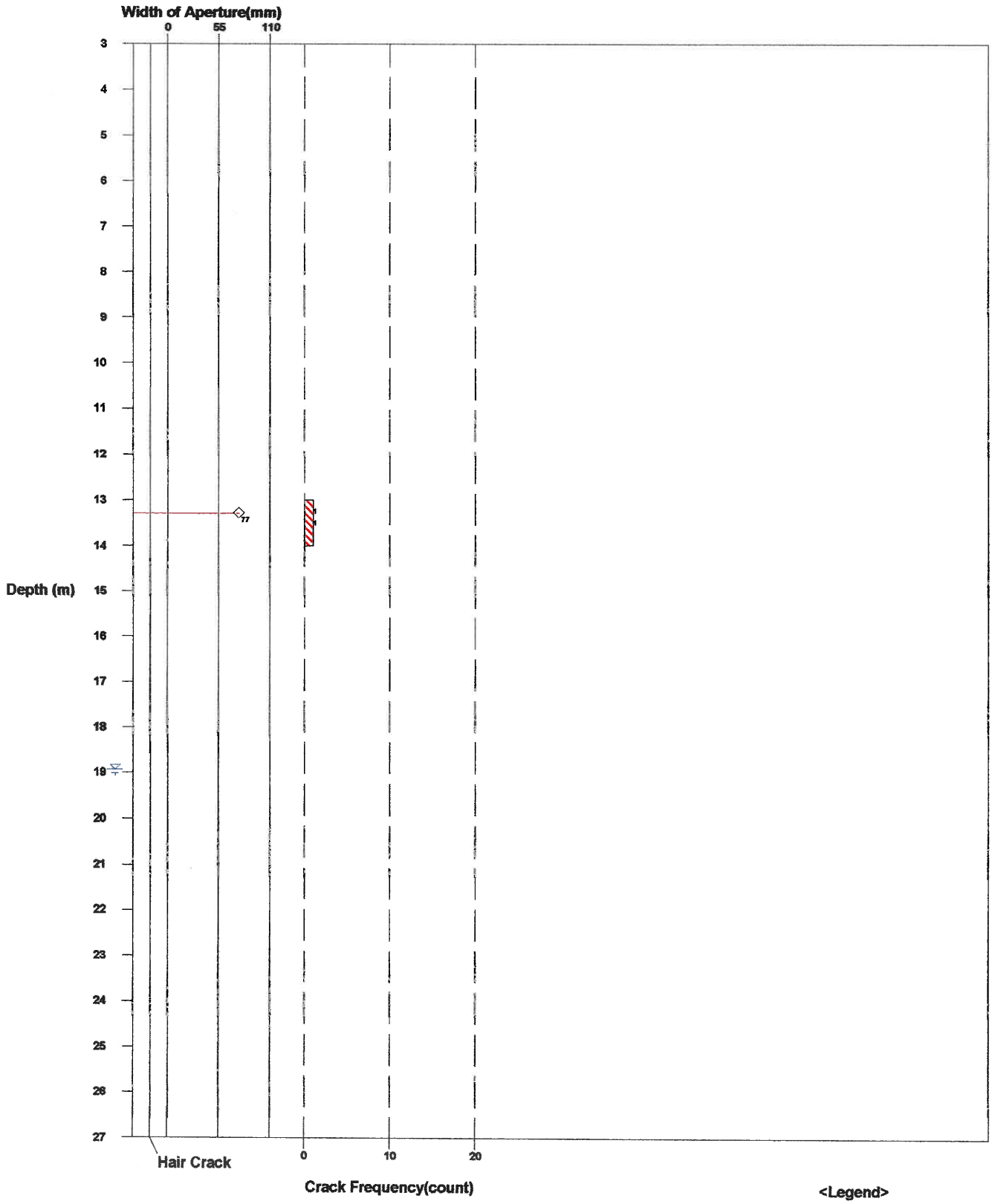


Fig. Rock Mass Condition Graph

Title: C-57.STR
Comment: FOLIATION
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

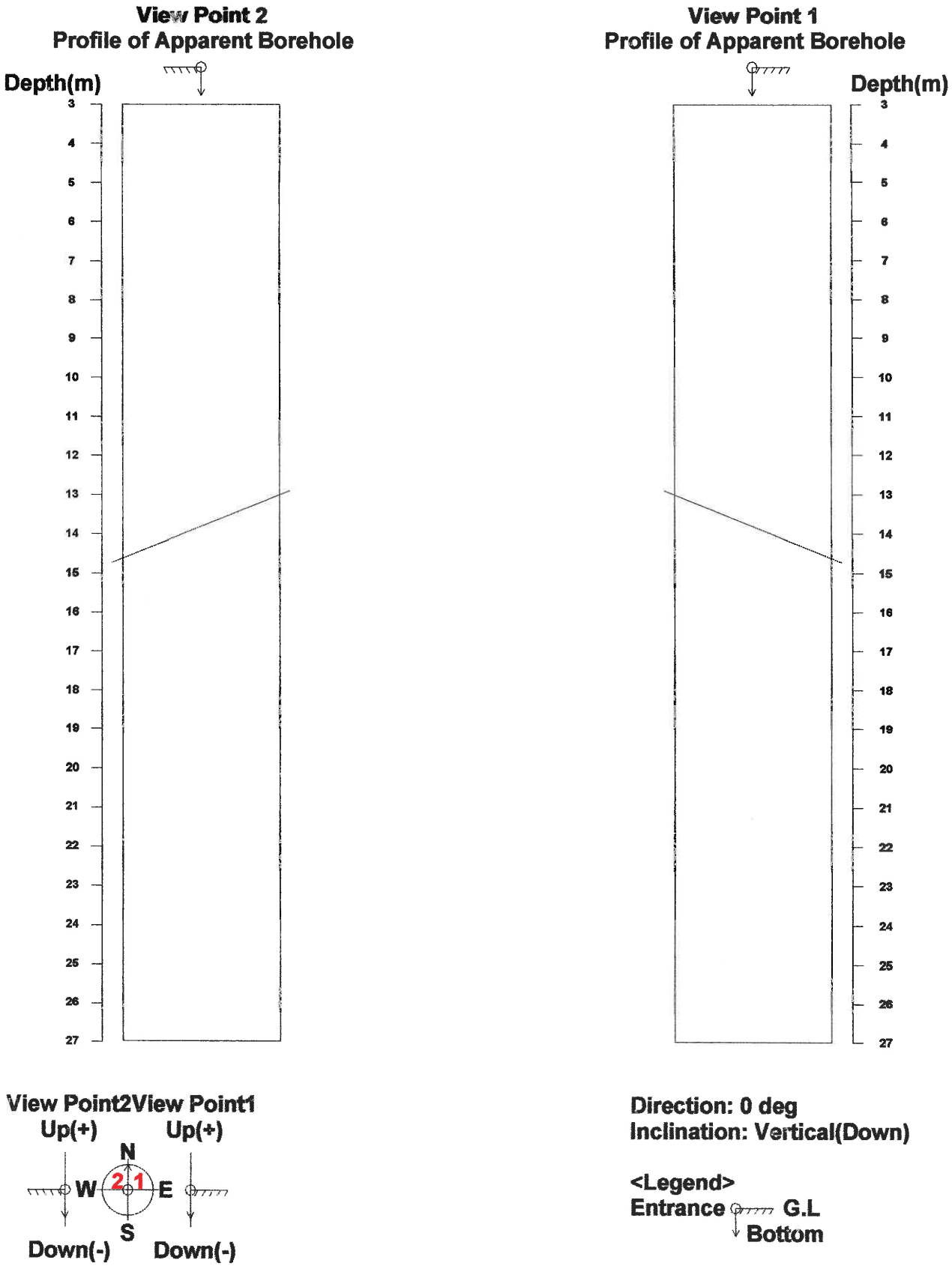
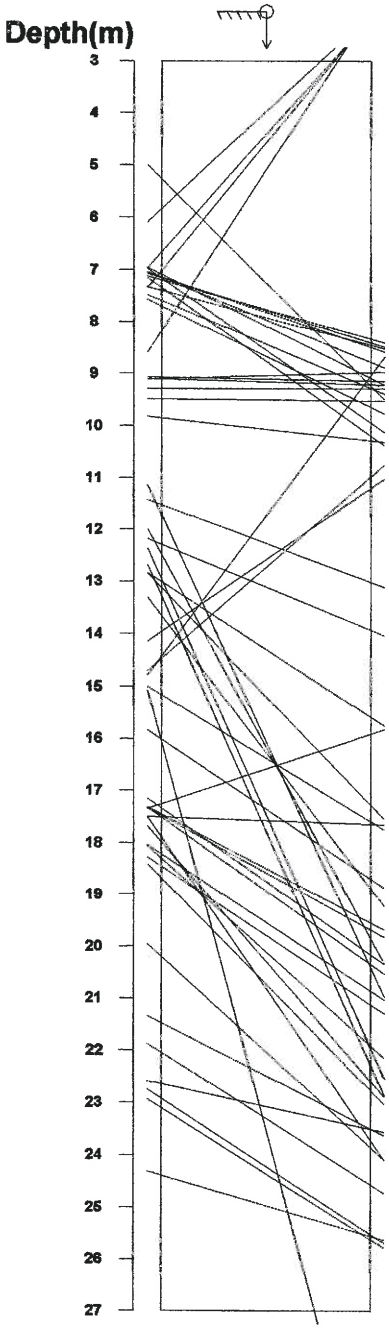


Fig. Apparent Dip

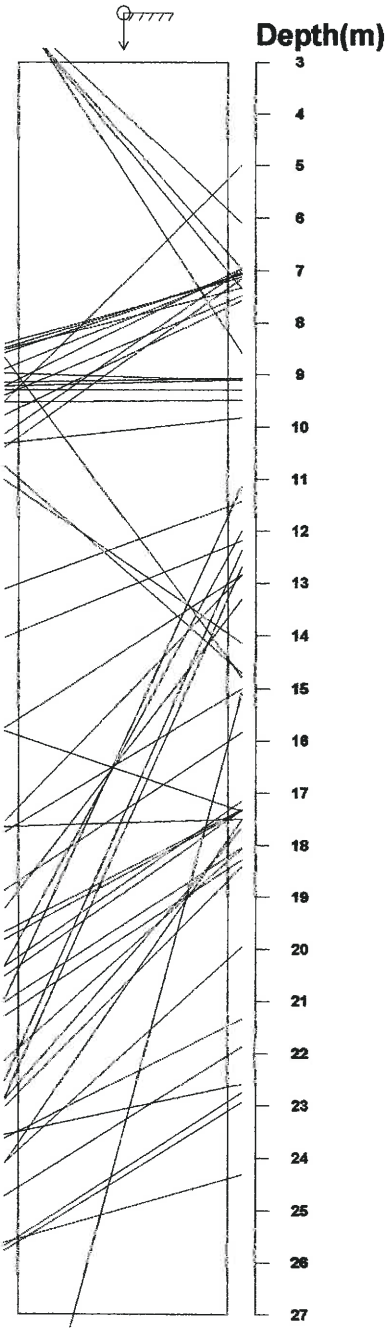
Title: C-57.STR
Comment: JOINT
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

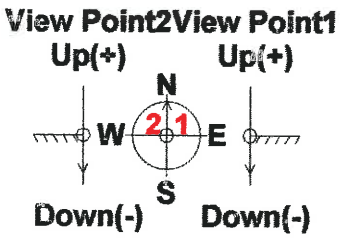
Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

View Point 2
Profile of Apparent Borehole



View Point 1
Profile of Apparent Borehole





Direction: 0 deg
Inclination: Vertical(Down)

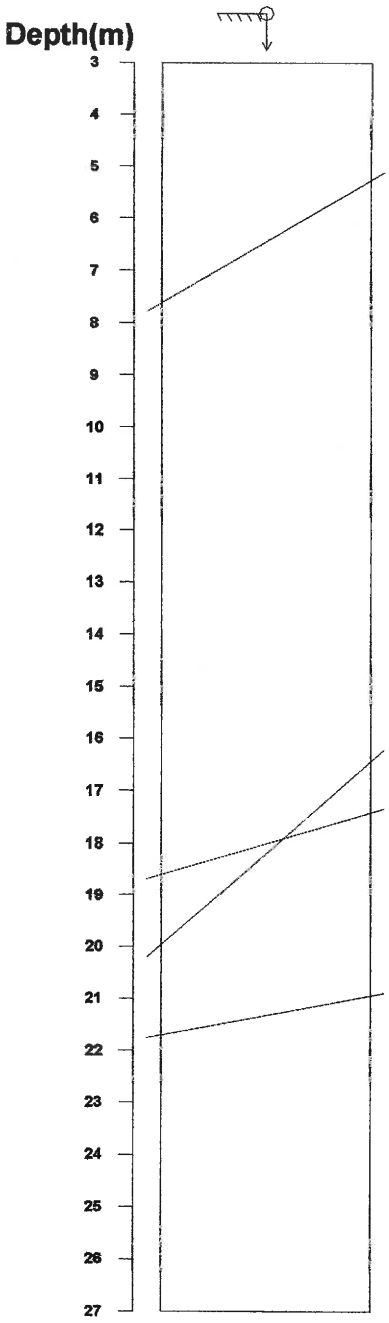
<Legend>
Entrance G.L
Bottom

Fig. Apparent Dip

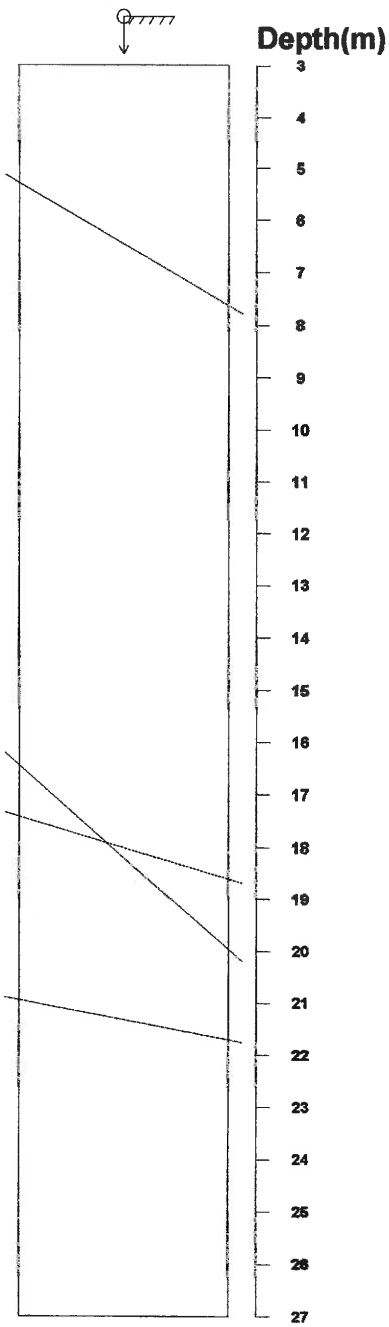
Title: C-57.STR
Comment: PARTING
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

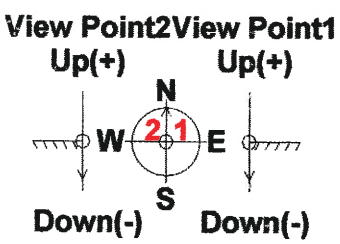
Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

View Point 2
Profile of Apparent Borehole



View Point 1
Profile of Apparent Borehole





Direction: 0 deg
Inclination: Vertical(Down)

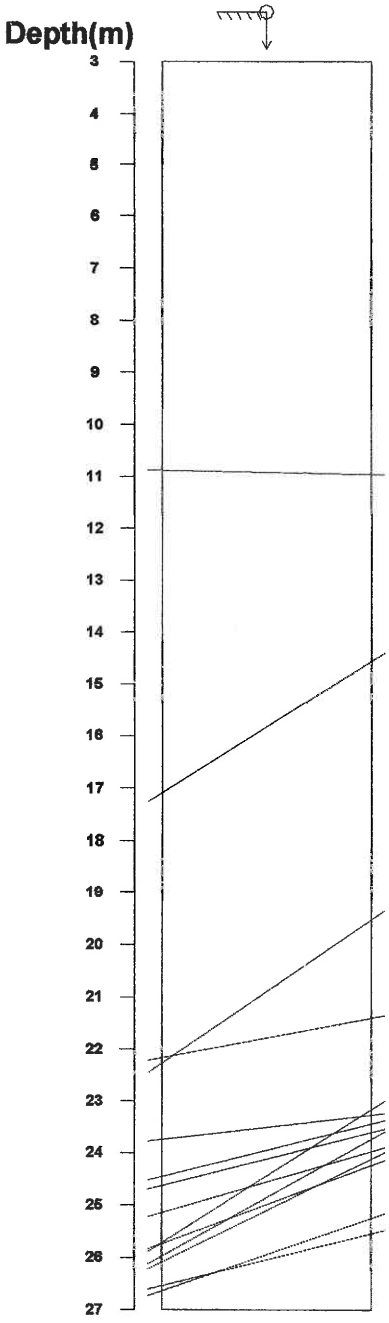
<Legend>
Entrance G.L
Bottom

Fig. Apparent Dip

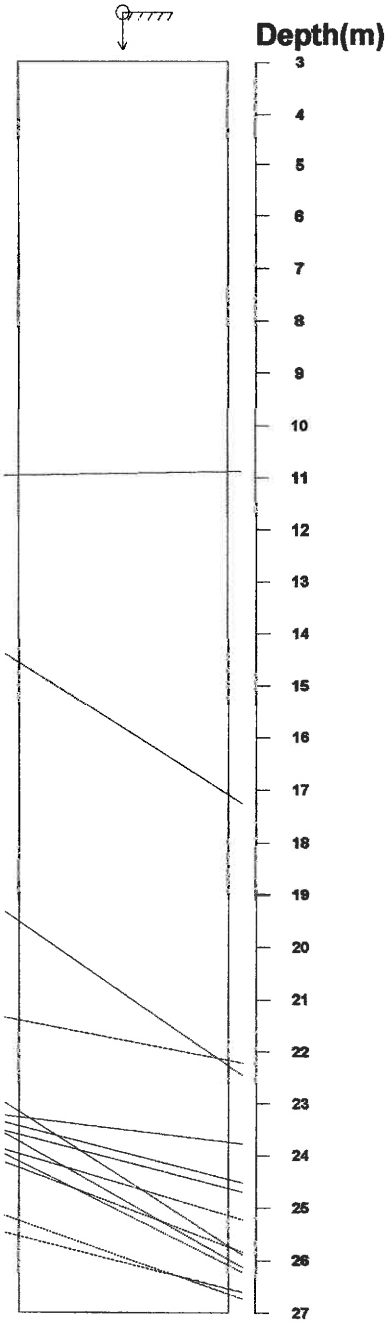
Title: C-57.STR
Comment: SHEAR ZONE
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

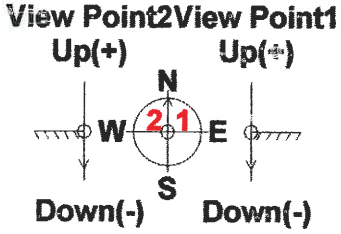
Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

View Point 2
Profile of Apparent Borehole



View Point 1
Profile of Apparent Borehole





Direction: 0 deg
Inclination: Vertical(Down)

<Legend>
Entrance G.L
Bottom

Fig. Apparent Dip

Title: C-57.STR
Comment: VEIN
Depth: 3.975 - 26.047 m
Aperture: 0.0 - 106.0 mm

Sort: 1/ 7
Form: 5/ 5
Condition: 11/11
Remark: 9/ 9

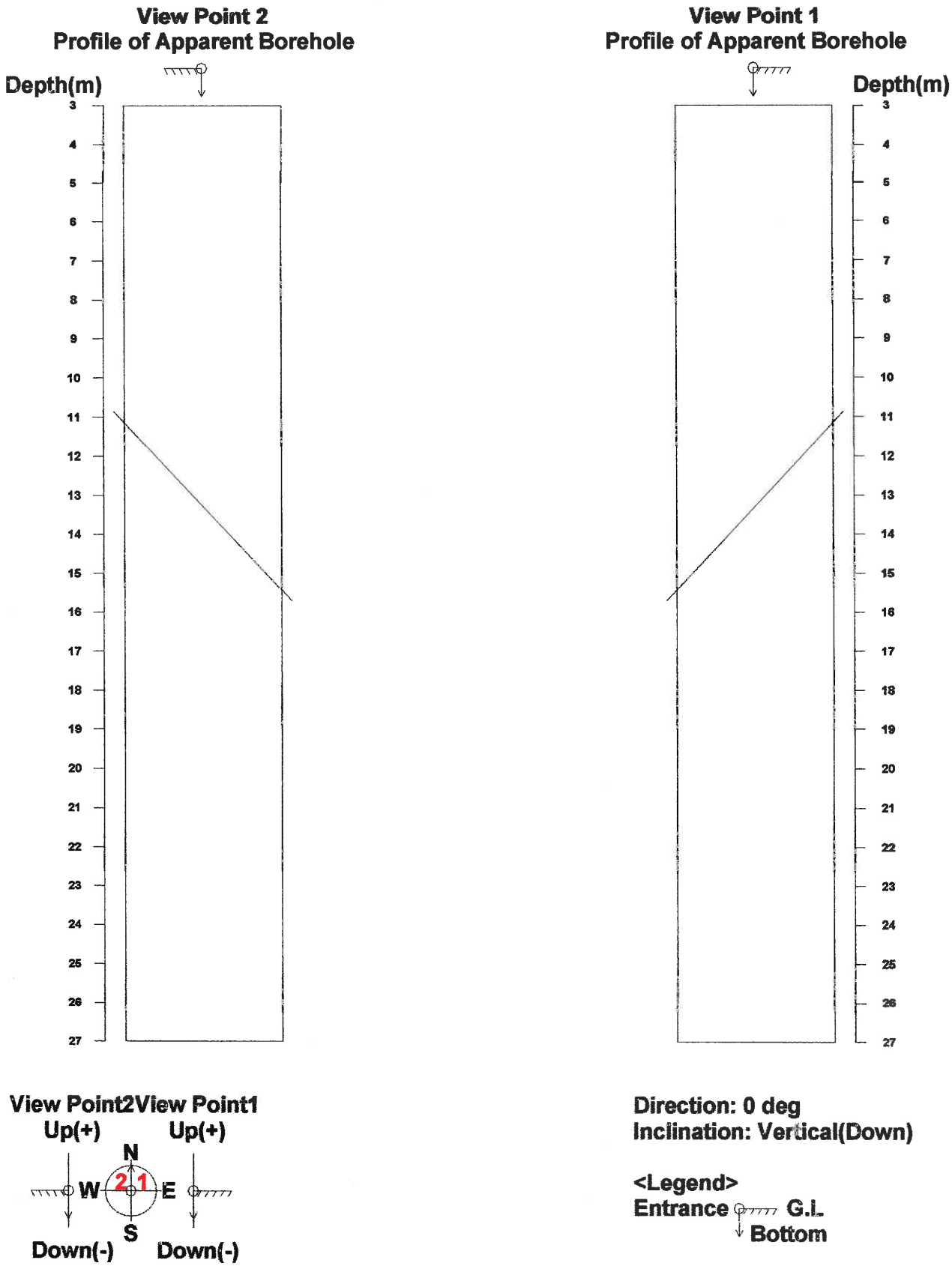


Fig. Apparent Dip