

PROYECTO : DISEÑO TRANSVASES CHONE-PORTOVIJEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIJEJO						SONDEO : S - 43 SOUNDING No:					
COORDENADAS : N 9889400 E 604560 COORDINATE :						FECHA : DATE :					
PROF. DEPTH	FORMA- CION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)					
						0	10	20	30	40	50
1.0	COLLUVIAL COLLUVIUM	COLLUVIAL COLLUVIUM		SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	CONSISTENTE STIFF						
				LIMO ARCILLOSO MARRON AMARILLENTO CON CLASTOS METEORIZADOS DE LIMOLITA YELLOWISH BROWN CLAYEY SILT WITH WEATHERED DEBRIS OF SILTSTONE							
				CLASTOS DE LIMOLITA METEORIZADA EN MATRIZ LIMO- ARCILLOSA MARRON AMARILLA WEATHERED DEBRIS OF SILTSTONE IN YELLOWISH BROWN CLAYEY-SILT MATRIX							
2.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA VERY WEATHERED YELLOWISH BROWN MUDSTONE	V						
3.0											
4.0				FIN : 3.15 m END : 3.15 m							

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIJO					SONDEO : S - 44 SOUNDING No.	
COORDENADAS : N 9889380 COORDINATE :			E 604365		FECHA : 13-01-94 DATE :	
PROF. DEPTH	FORMACION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30) 0 10 20 30 40 50
0.0 - 0.5	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	CONSISTENTE STIFF	
0.5 - 1.5				LIMO ARCILLOSO GRIS OSCURO DARK GRAY CLAYEY SILT		
1.5 - 2.5				LIMO ARCILLOSO MARRON AMARILLENTO CON ALGO DE CLASTOS METEORIZADOS YELLOWISH BROWN CLAYEY SILT WITH WEATHERED DEBRIS  BASTANTE CLASTOS WITH NUMEROUS DEBRIS		
2.5 - 3.5	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		CLASTOS METEORIZADOS DE LUTITA EN MATRIZ LIMO-ARCILLOSA MARRON AMARILLA WEATHERED DEBRIS OF MUDSTONE IN YELLOWISH BROWN CLAYEY MATRIX	CONSISTENTE STIFF	
3.5 - 4.0				LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE		
4.0 - 4.95	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE			V	



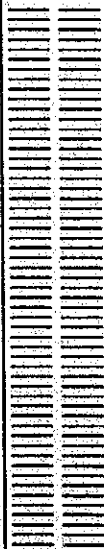
FIN: 4.95 m END: 4.95 m A5-44

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S - 45 SOUNDING No:				
COORDENADAS : N 9889320 E 604370 COORDINATE :						FECHA : 13-01-94 DATE :				
PROF. DEPTH	FORMA- CION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)				
						0	10	20	30	40
0.0				SUELO VEGETAL NEGRUZCO  BLACKISH VEGETAL SOIL	ALGO CONSISTENTE FIRM					
1.0				LIMO ARCILLOSO MARRON OSCURO CON ALGO DE CLASTOS OXIDADOS  DARK BROWN CLAYEY SILT WITH OXIDIZED DEBRIS						
2.0				CLASTOS METEORIZADOS Y OXIDADOS DE LUTITA EN MATRIZ LIMO-ARCILLOSA MARRON AMARILLA  WEATHERED AND OXIDIZED DEBRIS OF MUDSTONE IN YELLOWISH BROWN CLAYEY- SILTY MATRIX	CONSISTENTE STIFF					
3.0										
4.0	ONZOLE ONZOLE	LUTITA METEORIZADA  WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA  WEATHERED YELLOWISH BROWN MUDSTONE	V					
				FIN: 4.20 m END: 4.20 m						

A5-45

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S - 46 SOUNDING No.	
COORDENADAS : N 9889270 E 604280 COORDINATE				FECHA : 12-01-94 DATE			
PROF.	FORMACION	TIPO DE SUELO o ROCA	PERFIL	DESCRIPCION	CALIDAD DE SUELO o ROCA	SPT (N30)	
DEPTH	FORMATION	SOIL OR ROCK TYPE	COLUMN SECTION	DESCRIPTION	SOIL OR ROCK GRADE	0	10 20 30 40 50
0.0 1.0 2.0	COLUVAL COLLUMUM	COLUVAL COLLUMUM		SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	BLANDO SOFT		
				LIMO ARCILLOSO MARRON OSCURO DARK BROWN CLAYEY SILT			
				LIMO ARCILLOSO MARRON AMARILLENTO CON ALGO DE CLASTOS METEORIZADOS YELLOWISH BROWN CLAYEY SILT WITH SOME OF WEATHERED DEBRIS  CLASTOS: BASTANTE WITH NUMEROUS DEBRIS			
3.0				CLASTOS METEORIZADOS DE LUTITA EN MATRIZ LIMOSA MARRON AMARILLENTO WEATHERED DEBRIS OF MUDSTONE IN YELLOWISH BROWN SILTY MATRIX	CONSISTENTE Y DURO STIFF AND VERY STIFF		
4.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE			
				FIN: 4.50 m END: 4.50 m			


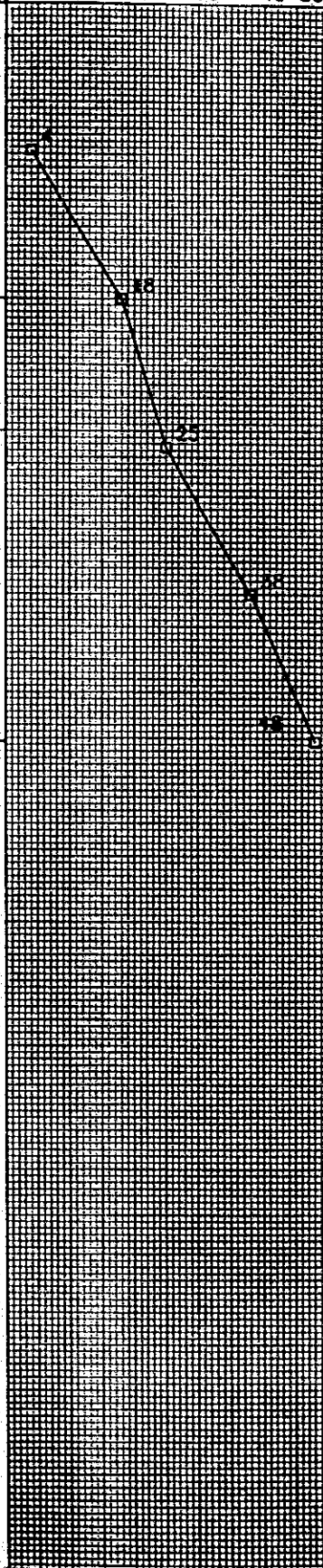
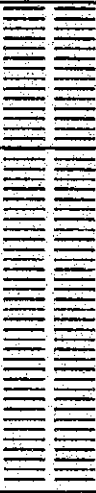
A5-46

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIJAO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIJAO						SONDEO : S - 47 SOUNDING No:					
COORDENADAS : N 9889220 E 604240						FECHA : 12-01-94 DATE :					
PROF. DEPTH	FORMA- CION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)					
						0	10	20	30	40	50
1.0	COLUVAL COLLUVIAL	COLUVAL COLLUVIAL		SUELO VEGETAL NEGROZCO BLACKISH VEGETAL SOIL	ALGO CONSISTENTE FIRM	0	0	0	0	0	0
				ARCILLA LIMOSA MARRON OSCURA CON ALGO DE CLASTOS DARK BROWN SILTY CLAY WITH SOME DEBRIS							
				LIMO ARCILLOSO MARRON AMARILLENTO CON ALGO DE CLASTOS METEORIZADOS YELLOWISH BROWN CLAYEY SILT WITH SOME WEATHERED DEBRIS							
2.0	COLUVAL COLLUVIAL	COLUVAL COLLUVIAL		CLASTOS METEORIZADOS DE LUTITA EN MATRIZ LIMO- ARCILLOSA MARRON AMARILLENTO WEATHERED DEBRIS OF MUDSTONE IN YELLOWISH BROWN CLAYEY-SILTY MATRIX	CONSISTENTE Y DURO STIFF AND VERY STIFF	0	0	0	0	0	0
				LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE							
4.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE			V	0	0	0	0	0	0

SPT Data Points (approximate):

Depth (m)	SPT (N30)
0.0	0
0.3	4
0.6	7
1.0	10
1.5	15
2.0	20
2.5	25
3.0	30

Fm: 4.95 m    FMO: 4.95 m    AS-47

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S - 48 SOUNDING No:					
COORDENADAS : N 9889160 E 604260 COORDINATE :						FECHA : 12-01-94 DATE :					
PROF. DEPTH	FORMA- CION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)					
						0	10	20	30	40	50
	COLLUVIAL COLLUVIUM	COLLUVIAL COLLUVIUM		SUELO VEGETAL NEGRO BLACKISH VEGETAL SOIL	CONSISTENTE STIFF						
				LIMO ARCILLOSO MARRON AMARILLO CON BASTANTES CLASTOS METEORIZADOS YELLOWISH BROWN CLAYEY SILT WITH NUMEROUS WEATHERED DEBRIS							
1.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE	V						
				LUTITA MARRON AMARILLENTO MUY METEORIZADA VERY WEATHERED YELLOWISH BROWN MUDSTONE	IV						
2.0				FIN: 2.25 m END: 2.25 m							
3.0											
4.0											

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIJO						SONDEO : S - 49 SOUNDING No.:	
COORDENADAS : N 9889050 E 604190						FECHA : 12-01-94 DATE :	
PROF. DEPTH	FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
1.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM	---	SUELO VEGETAL NEGRO BLACKISH VEGETAL SOIL	CONSISTENTE STIFF	7	10
				ARCILLA LIMOSA MARRON AMARILLENTA CON ALGO DE CLASTOS METEORIZADOS YELLOWISH BROWN SILTY CLAY WITH SOME WEATHERED DEBRIS			
2.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTA COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE	V	28	39
				MUY METEORIZADA VERY WEATHERED	IV		
3.0				FIN: 2.25 m END: 2.25 m		38	
4.0							

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIJEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIJEJO					SONDEO : SOUNDING No: S - 50	
COORDENADAS : COORDINATE : N 9889030 E 604090					FECHA : DATE : 11-01-94	
PROF. DEPTH	FORMA- CION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)
						0 10 20 30 40 50
1.0	COLLUVIAL COLLUVIUM	COLLUVIAL COLLUVIUM	—V—V	LIMO NEGRIZCO BLACKISH SILT	CONSISTENTE STIFF	
			— — — — —	LIMO ARENOSO MARRON AMARILLENTO CON ALGO DE CLASTOS METEORIZADOS  YELLOWISH BROWN SANDY SILT WITH SOME WEATHERED DEBRIS		
	ONZOLE ONZOLE	LUTITA SANA SOUND MUDSTONE	===== ===== =====	LUTITA GRIS CON INDICIOS DE CONCHAS MUDSTONE WITH TRACES OF SHELLS	III	
				FIN: 1.20 m END: 1.20 m		
2.0						
3.0						
4.0						



PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-51 SOUNDING No:	
COORDENADAS : N 9889010 E 604010						FECHA : 11-01-94 DATE :	
PROF. DEPTH	FORMACION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
1.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		SUELO VEGETAL NEGRO BLACKISH VEGETAL SOIL	ALGO CONSISTENTE FIRM		
				ARCILLA LIMOSA MARRON AMARILLENTO CON ALGO DE CLASTOS OXIDADOS YELLOWISH BROWN SILTY CLAY WITH SOME OXIDIZED DEBRIS			
				CLASTOS : BASTANTE WITH NUMEROUS DEBRIS	DURO VERY STIFF		
2.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE	V		
				MUY METEORIZADA VERY WEATHERED	IV		
3.0				FIN: 2.70 m END: 2.70 m			
4.0							

PROYECTO : DISEÑO TRASFASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-52 SOUNDING No:					
COORDENADAS : N 9888930 E 603975 COORDINATE :				FECHA : 11-01-94 DATE :							
PROF.	FORMACION	TIPO DE SUELO o ROCA	PERFIL	DESCRIPCION	CALIDAD DE SUELO o ROCA	SPT (N30)					
DEPTH	FORMA-TION	SOIL OR ROCK TYPE	COLUMN SECTION	DESCRIPTION	SOIL OR ROCK GRADE	0	10	20	30	40	50
0.0 - 0.5				SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	ALGO CONSISTENTE FIRM						
0.5 - 3.0	COLLUVIAL COLLUVIUM	COLLUVIAL COLLUVIUM		ARCILLA LIMOSA MARRON AMARILLENTO CON ALGO DE CLASTOS OXIDADOS YELLOWISH BROWN SILTY CLAY WITH SOME OXIDIZED DEBRIS  CLASTOS: BASTANTE WITH NUMEROUS DEBRIS	DURO VERY STIFF						
3.0 - 4.05	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE	V						
4.05 - 4.05				FIN: 4.05 m END: 4.05 m							

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE--PORTOVIEJO						SONDEO : S-53 SOUNDING No:	
COORDENADAS : N 9888960 E 603950 COORDINATE :						FECHA : 11-01-94 DATE :	
PROF. DEPTH	FORMA- CION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
				SUELO VEGETAL NEGRUZCO  BLACKISH VEGETAL SOIL	BLANDO SOFT		
1.0				ARCILLA LIMOSA MARRON AMARILLENTA CON ALGO DE CLASTOS METEORIZADOS  YELLOWISH BROWN SILTY CLAY WITH SOME OF WEATHERED DEBRIS	ALGO CONSISTENTE FIRM - STIFF		
2.0				CLASTOS METEORIZADOS DE LUTITA EN MATRIZ LIMOSA MARRON AMARILLENTA  WEATHERED DEBRIS OF MUDSTONE IN YELLOWISH BROWN MATRIX	CONSISTENTE VERY STIFF		
3.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE		LUTITA MARRON GRISACEA COMPLETAMENTE METEORIZADA  WEATHERED GRAYISH BROWN MUDSTONE	V IV		
				FIN: 3.20 m END: 3.20 m			
4.0							

PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-54 SOUNDING No:									
COORDENADAS : N 9888810 E 603810 COORDINATE :				FECHA : 11-01-94 DATE :											
PROF. DEPTH	FORMA- TION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)									
						0	10	20	30	40	50				
				SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	BLANDO SOFT										
				LIMO ARENOSO MARRON CON CLASTOS OXIDADOS  BROWN SANDY SILT WITH OXIDIZED DEBRIS											
1.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		ARCILLA LIMOSA MARRON AMARILLENTO CON ALGO DE CLASTOS METEORIZADOS  YELLOWISH BROWN SILTY CLAY WITH SOME OF WEATHERED DEBRIS	CONSISTENTE STIFF										
2.0				CLASTOS METEORIZADOS DE LUTITA EN MATRIZ LIMO ARCI- LLOSA MARRON AMARILLENTO  WEATHERED DEBRIS OF MUDSTONE IN YELLOWISH BROWN SILTY CLAYEY MATRIX											
3.0				LUTITA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN MUDSTONE							V				
4.0	ONZOLE ONZOLE	LUTITA METEORIZADA WEATHERED MUDSTONE													
				FIN: 4.05 m END: 4.05 m											

A5-54

PROYECTO : DISEÑO TRASFASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-55 SOUNDING No:	
COORDENADAS : N 9892320 E 608650 COORDINATE :						FECHA : 11-01-94 DATE :	
PROF. DEPTH	FORMA- CION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
1.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	BLANDO SOFT		
				ARCILLA MARRON GRISACEA CON ALGO DE ARENA GRAYISH BROWN SILTY CLAY WITH SOME OF SAND			
				CLASTOS OXIDADOS DE ARENISCA FINA EN MATRIZ LIMO ARENOSA MARRON AMARILLENTO OXIDIZED DEBRIS OF FINE GRAINED SANDSTONE IN YELLOWISH BROWN SILTY SANDY MATRIX	CONSISTENTE STIFF		
2.0	ARENISCA SANDSTONE	ARENISCA GRANO FINO MARRON AMARILLENTO, COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN FINE GRAINED SANDSTONE	V				
3.0				FIN : 2.25 m END : 2.25 m			
4.0							

PROYECTO : DISEÑO TRASVASES CHONE-PORTOMEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOMEJO						SONDEO : S-56 SOUNDING No:							
COORDENADAS : N 9892380 E 611650						FECHA : 27-12-93 DATE :							
PROF.	FORMACION	TIPO DE SUELO o ROCA	PERFIL	DESCRIPCION	CALIDAD DE SUELO o ROCA	SPT (N30)							
DEPTH	FORMA-TION	SOIL OR ROCK TYPE	COLUMN SECTION	DESCRIPTION	SOIL OR ROCK GRADE	0	10 20 30 40 50						
0.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		CLASTOS METEORIZADOS Y OXIDADOS DE LIMOLITA EN MATRIZ LIMOSA MARRON AMARILLENTO  WEATHERED AND OXIDIZED DEBRIS OF SILTSTONE IN YELLOWISH BROWN SILTY MATRIX	CONSISTENTE STIFF								
1.0													
2.0								ONZOLE ONZOLE	LIMOLITA ARENOSA SANDY SILTSTONE		LIMOLITA ARENOSA MARRON CLARO, COMPLETAMENTE METEORIZADA  WEATHERED LIGHT BROWN SANDY SILTSTONE	V	
2.25								FIN : 2.25 m		END : 2.25 m			
3.0													
4.0													

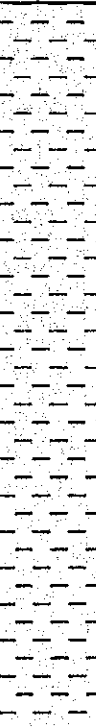
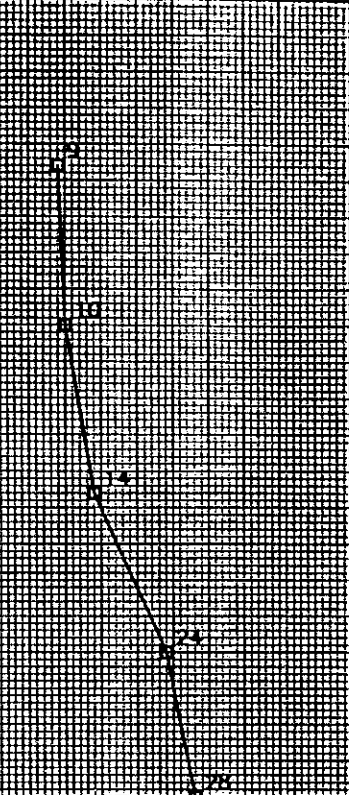
PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-57 SOUNDING No.					
COORDENADAS : N 9895885 E 627480 COORDINATE						FECHA : 28-12-93 DATE					
PROF. DEPTH	FORMACION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)					
						0	10	20	30	40	50
	COLUMIAL COLLUVIUM	COLUMIAL COLLUVIUM		SUELO VEGETAL NEGROZCO BLACKISH VEGETAL SOIL	CONSISTENTE STIFF						
				LIMO MARRON GRISACEO GRAYISH BROWN SILT							
	ONZOLE ONZOLE	ARENISCA SANDSTONE		ARENISCA GRANO FINO LIMOSA MARRON CLARO LIGHT BROWN SILTY FINE GRAINED SANDSTONE	IV						
1.0				FIN : 0.40 m END : 0.40 m							
2.0											
3.0											
4.0											

A5-57

PROYECTO : DISEÑO TRASVASES CHONE-PORTOMEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOMEJO						SONDEO : S-57' SOUNDING No:	
COORDENADAS : N E COORDINATE :				FECHA : 28-12-93 DATE :			
PROF. DEPTH	FORMA- CION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
1.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM		LIMO NEGRUZCO BLACKISH SILT	CONSISTENTE STIFF		
				ARCILLA MARRON GRISACEA  GRAYISH BROWN CLAY			
2.0				ARCILLA GRIS CON NODULOS MARRON ROJIZO  GRAY CLAY WITH REDISH NODULES			
3.0	ARENISCA FINA			ARENISCA FINA, LIMOSA MARRON GRISACEA	IV		
4.0	FINE GRAINED SANDSTONE			GRAYISH BROWN SILTY FINE GRAINED SANDSTONE  FIN: 3.10 m END: 3.10 m			



PROYECTO : DISEÑO TRASVASES CHONE-PORTOMEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOMEJO						SONDEO : S-58 SOUNDING No:	
COORDENADAS : N POZA HONDA EST. GUAJABE E						FECHA : 29-12-93 DATE :	
PROF. DEPTH	FORMA- CION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
1.0	ALUVIAL ALLUVIUM	ALUVIAL ARENAS Y LIMOS  ALLUVIUM SAND AND SILT	---	LIMO GRIS OSCURO CON ALGO DE ARENA FINA  DARK GRAY SILT WITH SOME OF FINE SAND	MUY BLANDO VERY SOFT		
NA			▽	ARENA FINA LIMOSA MARRON CON GRAVAS BLANDAS DE ARENISCA METEORIZADA  BROWN SILTY FINE GRAINED SAND WITH SOFT GRAVEL OF WEATHERED SANDSTONE	SUELTO LOOSE		
2.0			---	LIMO ARCILLOSO NEGRUZCO CON ALGO DE ARENA FINA  BLACKISH CLAYEY SILT WITH SOME OF FINE GRAINED SAND	BLANDO SOFT		
			▽	NIVEL DE GRAVAS BLANDAS LEVEL OF OCCURRENCE OF SOFT GRAVEL			
3.0			...	ARENA FINA Y MEDIA LIMOSA MARRON AMARILLENTO CON GRAVAS BLANDAS DE ARENISCA FINA  YELLOWISH BROWN SILTY FINE AND MEDIUM GRAINED SAND WITH SOFT GRAVEL OF SANDSTONE	SUELTO LOOSE		
4.0			---	NIVEL DE LIMO NEGRUZCO LEVEL OF BLACKISH SILT			
			---	LIMO NEGRUZCO CON ALGO DE ARENA FINA  BLACKISH SILT WITH SOME FINE GRAINED SAND	BLANDO SOFT		
5.0	ONZOLE ONZOLE	ARENISCA WEATHERED SANDSTONE	...	ARENISCA MARRON AMARILLA COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN FINE GRAINED SANDSTONE	V		

PROYECTO : DISEÑO TRASFASES CHONE-PORTOMEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOMEJO						SONDEO : S-58 SOUNDING No:				
COORDENADAS : N POZA HONDA EST. GUAJABE E COORDINATE :						FECHA : 29-12-93 DATE :				
PROF. DEPTH	FORMA- CION FORMA- TION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)				
						0	10	20	30	40
6.0	ONZOLE ONZOLE	LUTITA METEORIZADA  WEATHERED MUDSTONE		LUTITA MARRON AMARILLEN- TA COMPLETAMENTE METEORIZADA Y OXIDADA  WEATHERED AND OXIDIZED YELLOWISH BROWN MUDSTONE	V  V					
7.0						FIN: 7.20 m    END: 7.20 m				
8.0										
9.0										
10.0										

A5-60

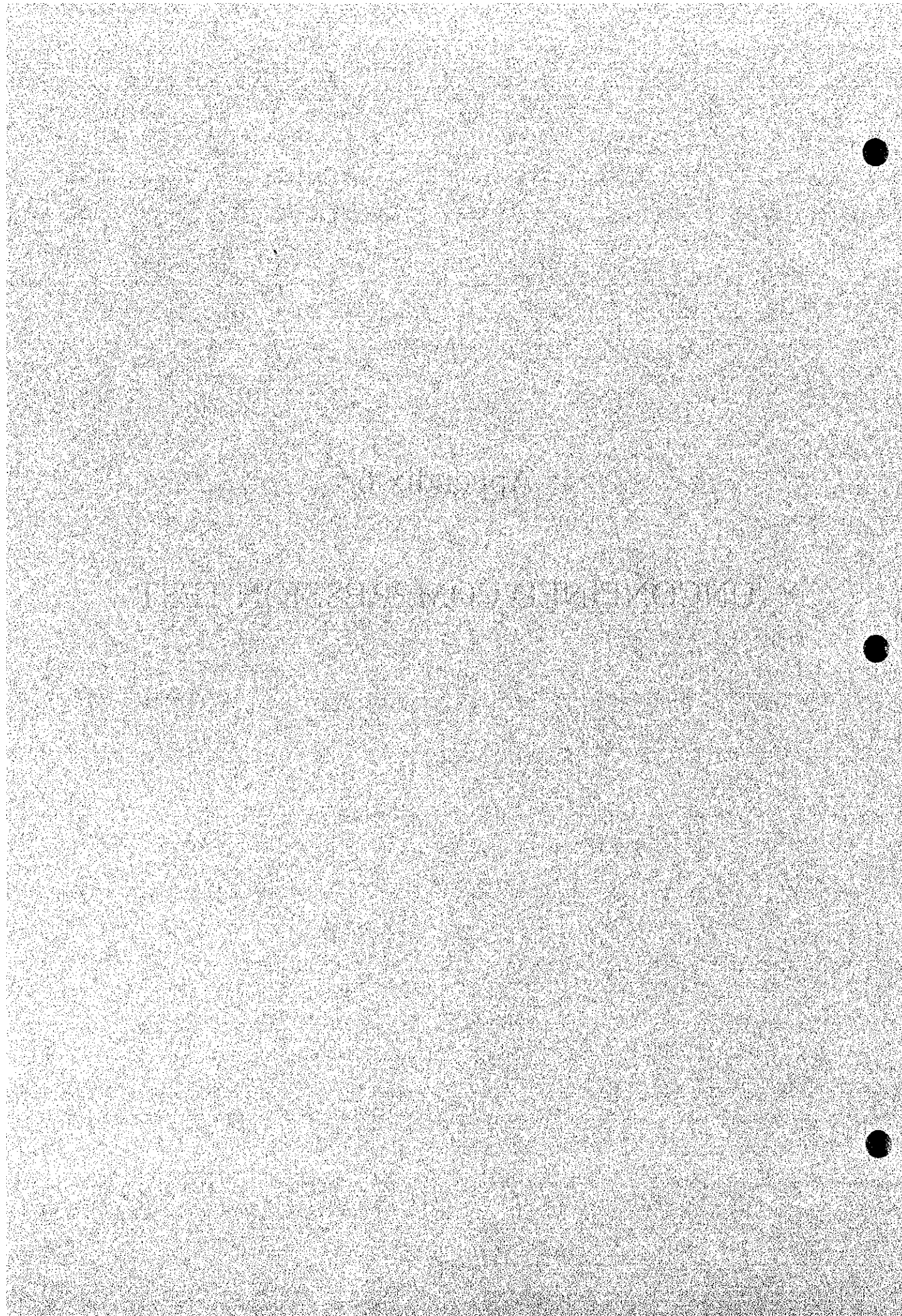
PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-59 SOUNDING No:	
COORDENADAS : N POZA HONDA ESTERO GUAJABE E COORDINATE :						FECHA : 29-12-93 DATE :	
PROF. DEPTH	FORMACION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)	
						0	10 20 30 40 50
0.0 - 1.0	COLUVIAL COLLUVIUM	COLUVIAL COLLUVIUM	---	LIMO GRIS OSCURO CON BASTANTE ARENA FINA Y ALGO DE CLASTOS METEORIZADOS  DARK GRAY SILT WITH NUMEROUS FINE SAND AND WEATHERED DEBRIS	ALGO CONSISTENTE FIRM	0 10 20 30 40 50	0 10 20 30 40 50
1.0 - 2.0			▽	CLASTOS METEORIZADOS DE DE LUTITA EN MATRIZ ARCILLOSA MARRON AMARILLENTA  WEATHERED MUDSTONE DEBRIS IN YELLOWISH BROWN CLAYEY MATRIX			
2.0 - 3.0			---	ARCILLA MARRON GRISACEA CON ALGO DE CLASTOS METEORIZADOS  GRAYISH BROWN CLAY WITH SOME OF WEATHERED DEBRIS	CONSISTENTE STIFF		
3.0 - 4.0	ONZOLE ONZOLE	LUTITA METEORIZADA  WEATHERED MUDSTONE	---	LUTITA MARRON AMARILLENTA COMPLETAMENTE METEORIZADA  WEATHERED YELLOWISH BROWN MUDSTONE	V	0 10 20 30 40 50	0 10 20 30 40 50
4.0				FIN : 4.00 m END : 4.00 m			

AS-61

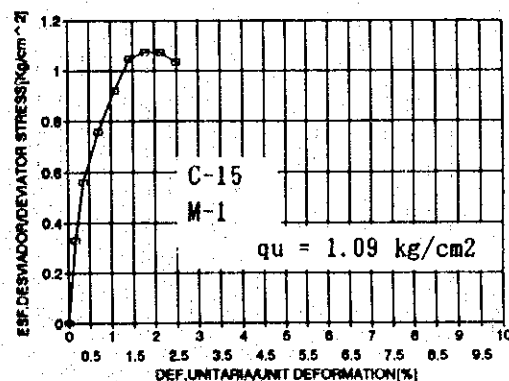
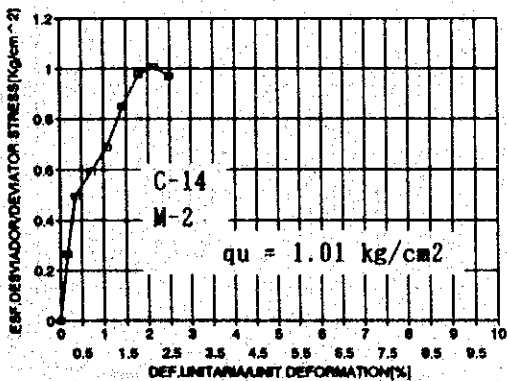
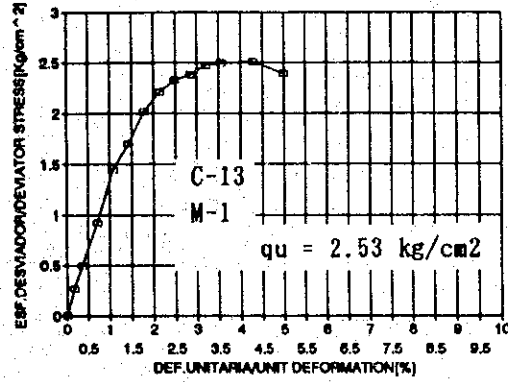
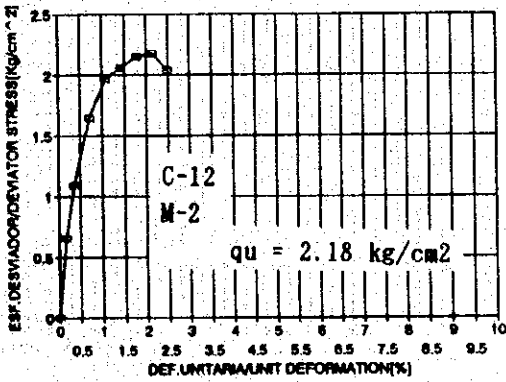
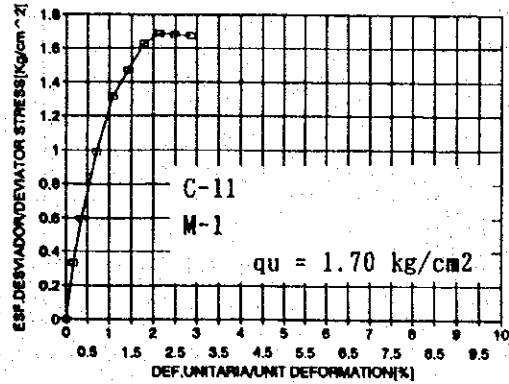
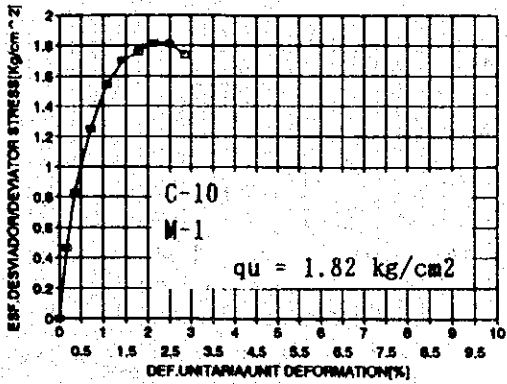
PROYECTO : DISEÑO TRASVASES CHONE-PORTOVIEJO PROJECT : THE DETAILING DESIGN ON TRANSBASIN CHONE-PORTOVIEJO						SONDEO : S-60 SOUNDING No:						
COORDENADAS : N POZA HONDA EST. PATA DE PAJARO E COORDINATE :						FECHA : 30-12-93 DATE :						
PROF. DEPTH	FORMA- CION FORMATION	TIPO DE SUELO o ROCA SOIL OR ROCK TYPE	PERFIL COLUMN SECTION	DESCRIPCION DESCRIPTION	CALIDAD DE SUELO o ROCA SOIL OR ROCK GRADE	SPT (N30)						
						0	10	20	30	40	50	
1.0	COLLUVIAL COLLUVIUM	COLLUVIAL COLLUVIUM		SUELO VEGETAL NEGRUZCO BLACKISH VEGETAL SOIL	DURO STIFF							
				CLASTOS METEORIZADOS DE LIMOLITA EN MATRIZ ARCILLO- LIMOSA MARRON AMARILLENTO WEATHERED DEBRIS OF SILTSTONE IN YELLOWISH BROWN SILTY-CLAYEY MATRIX								
				LIMOLITA ARENISCOSA MARRON AMARILLENTO COMPLETAMENTE METEORIZADA WEATHERED YELLOWISH BROWN SANDY SILTSTONE								
2.0	ONZOLE ONZOLE	ARENISCA MUY FINA FINE GRAINED SANDSTONE		ARENISCA DE GRANO MUY FINO, LIMOSA MARRON OSCURO COMPLETAMENTE METEORIZADA WEATHERED DARK BROWN SILTY FINE GRAINED SANDSTONE	V							
3.0				FIN : 2.25 m END : 2.25 m								

Appendix 6

**UNCONFINED COMPRESSION TEST**

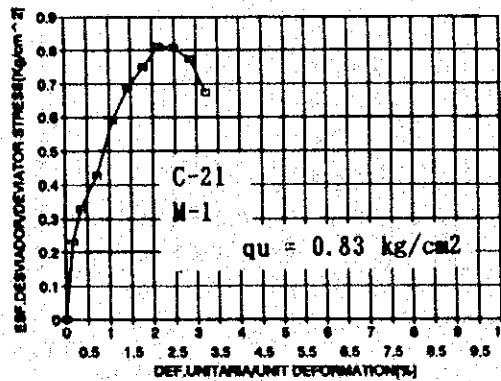
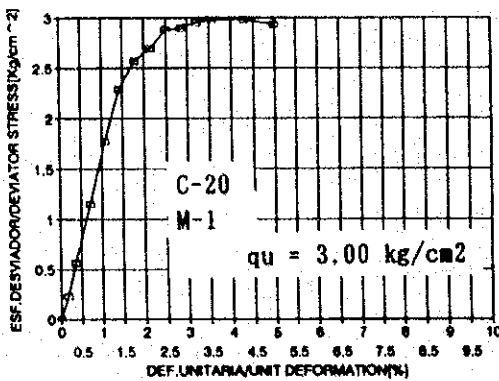
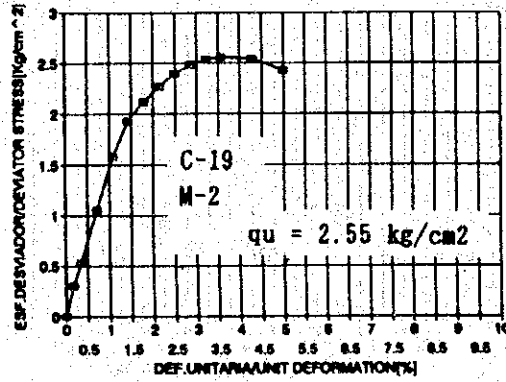
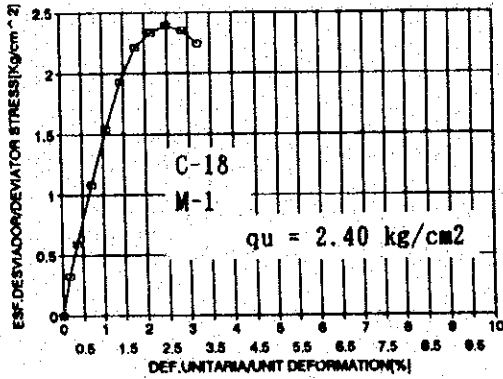
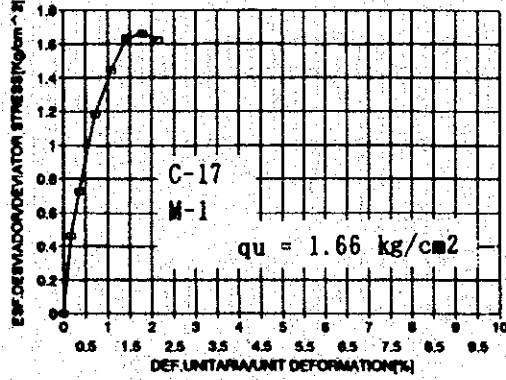
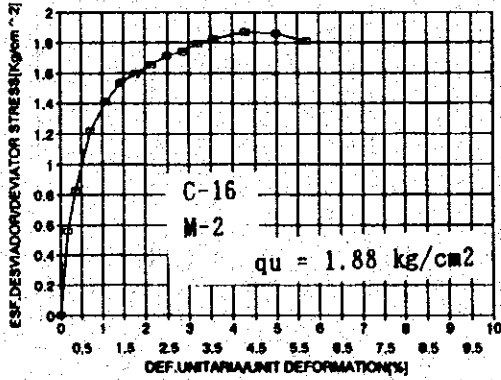


**DISTURBED SAMPLE**



GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIJEJO RIVER BASINS  
JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE  
UNCONFINED COMPRESSION - 1  
DISTURBED SAMPLE



GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

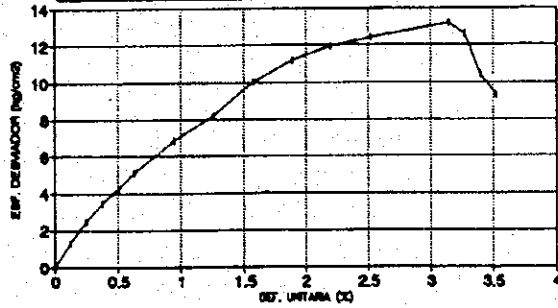
TITLE

UNCONFINED COMPRESSION - 2  
DISTURBED SAMPLE



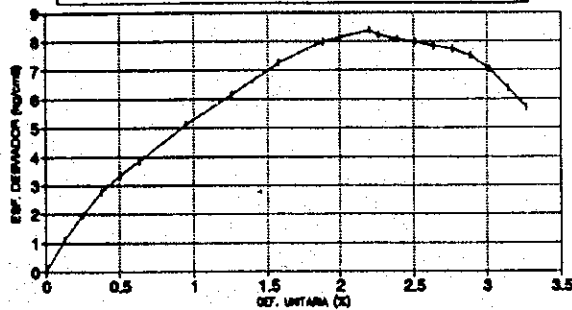
UNDISTURBED SAMPLE

ESF. DESVIADOR - DEF. UNITARIA  
MUESTRA: C-22 ; M-1



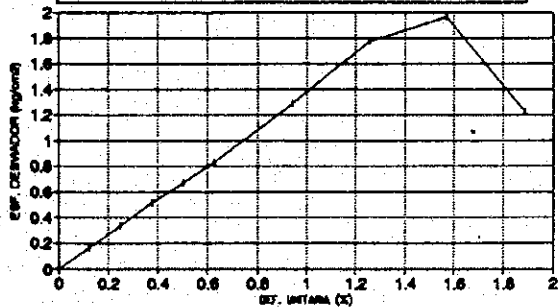
→ COMPRESION SIMPLE

ESF. DESVIADOR - DEF. UNITARIA  
MUESTRA: C-23 ; M-1



→ COMPRESION SIMPLE

ESF. DESVIADOR - DEF. UNITARIA  
MUESTRA: C-24 ; M-1



→ COMPRESION SIMPLE

GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASINS

JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE

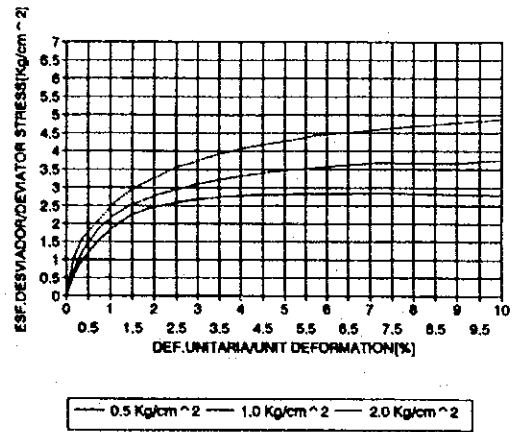
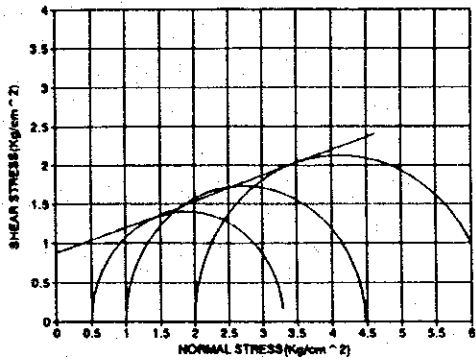
UNCONFINED COMPRESSION - 3  
UNDISTURBED SAMPLE

Appendix 7

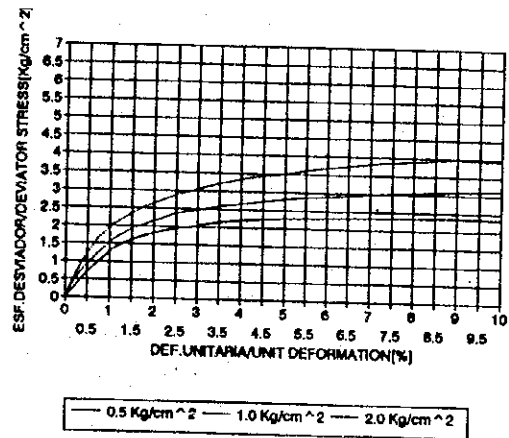
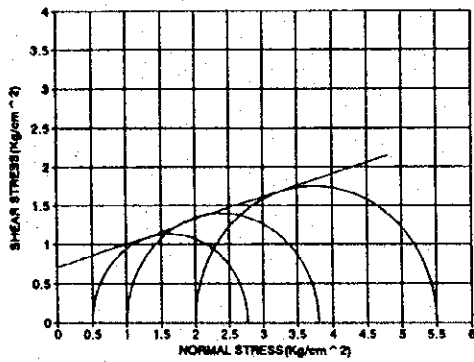
**TRIAXIAL COMPRESSION TEST**

# DISTURBED SAMPLE

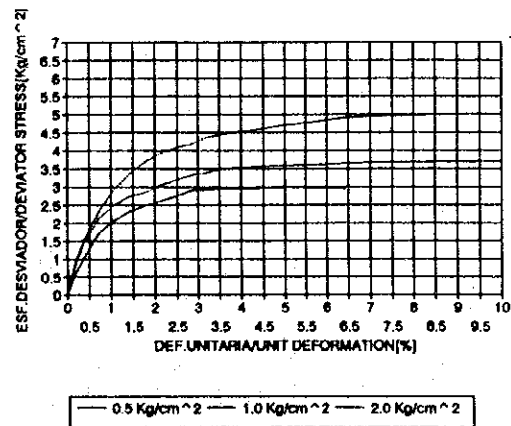
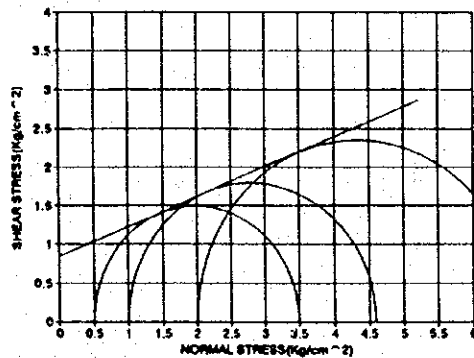
C-10 M-1 Cohesion: 0.90 kg/cm<sup>2</sup>  
Friction Angle: 20°



C-11 M-1 Cohesion: 0.70 kg/cm<sup>2</sup>  
Friction Angle: 16°



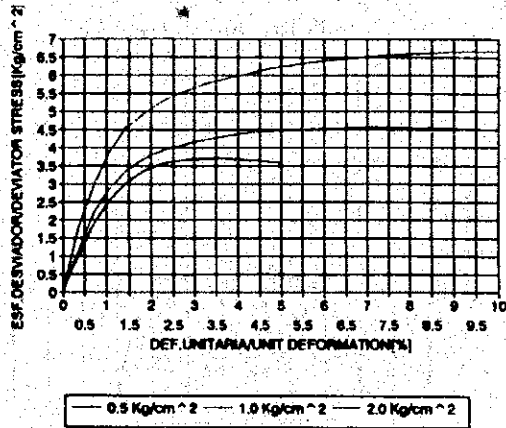
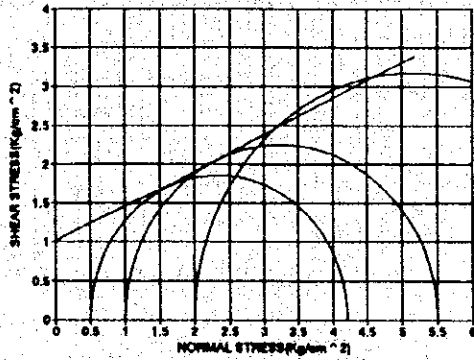
C-12 M-2 Cohesion: 0.85 kg/cm<sup>2</sup>  
Friction Angle: 20°



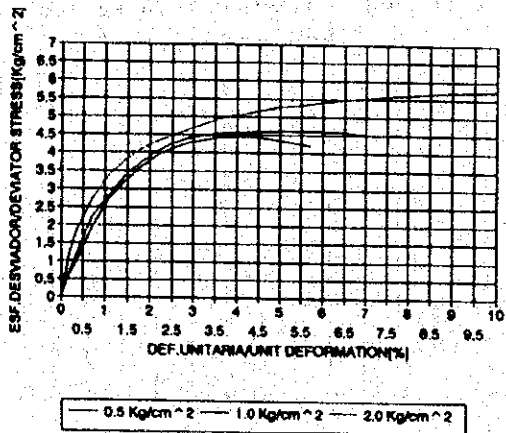
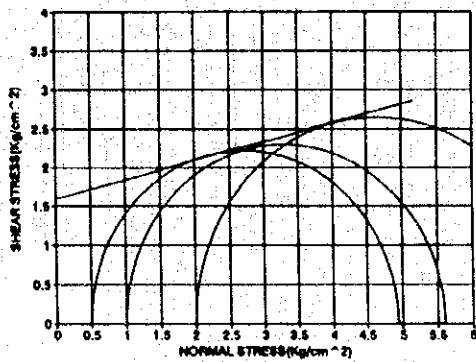
GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASINS  
JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE  
TRIAXIAL COMPRESSION - 1  
U - U TEST DISTURBED

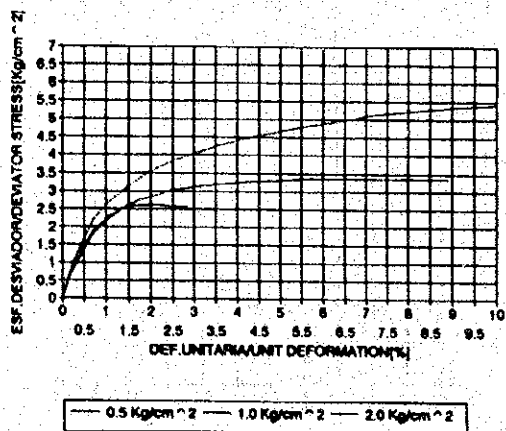
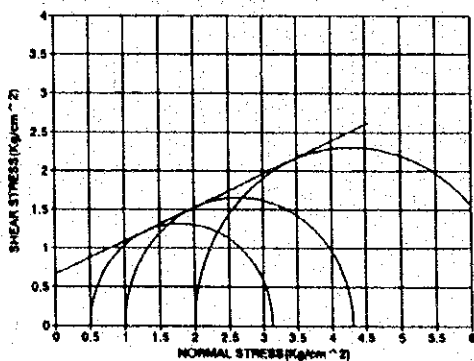
C-13 M-1 Cohesion: 1.00 kg/cm<sup>2</sup>  
Friction Angle: 26°



C-14 M-2 Cohesion: 1.60 kg/cm<sup>2</sup>  
Friction Angle: 14°



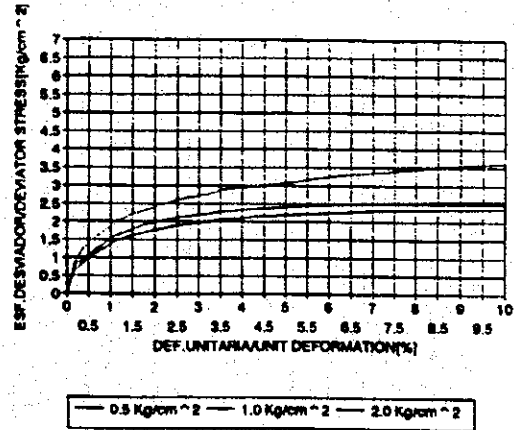
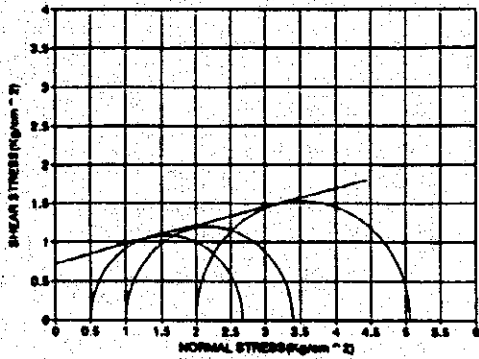
C-15 M-1 Cohesion: 0.70 kg/cm<sup>2</sup>  
Friction Angle: 22°



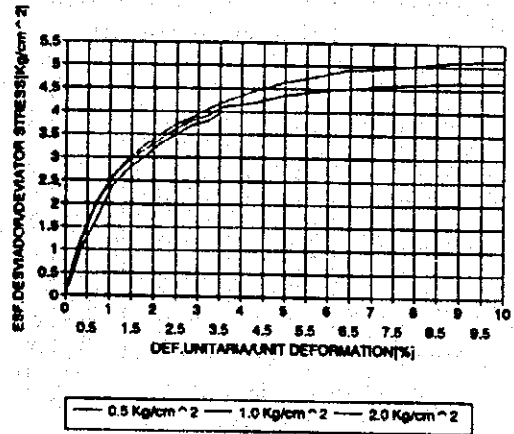
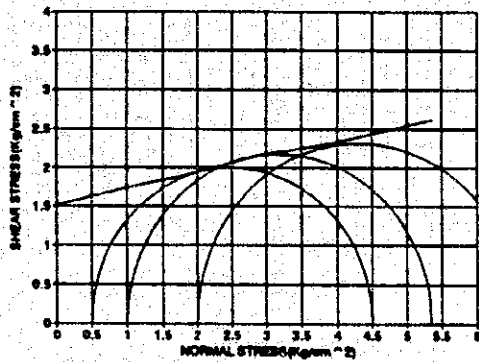
GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASINS  
JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE  
TRIAxIAL COMPRESSION - 2  
U - U TEST DISTURBED

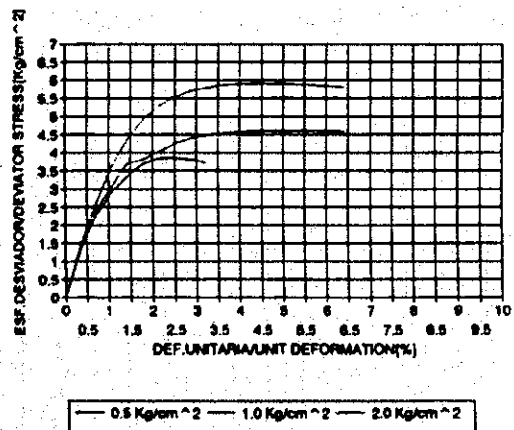
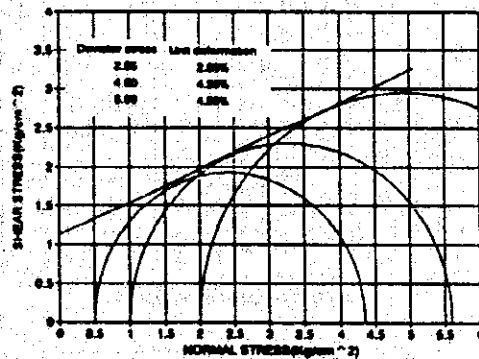
C-16 M-2 Cohesion: 0.70 kg/cm<sup>2</sup>  
Friction Angle: 12°



C-17 M-1 Cohesion: 1.50 kg/cm<sup>2</sup>  
Friction Angle: 11°



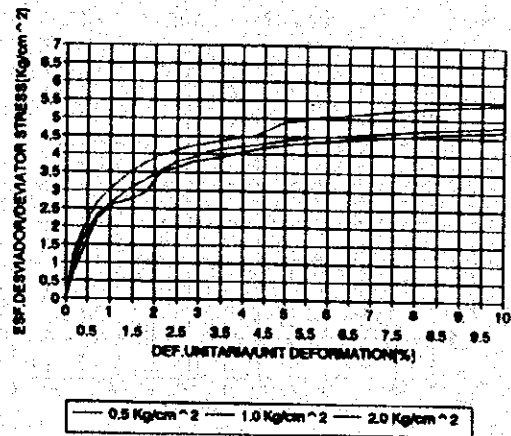
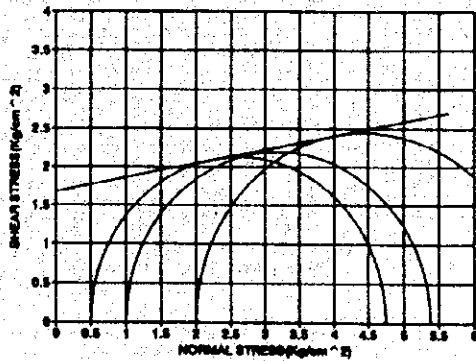
C-18 M-1 Cohesion: 1.20 kg/cm<sup>2</sup>  
Friction Angle: 22°



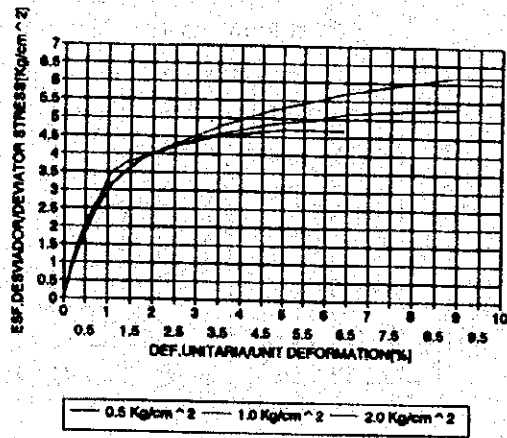
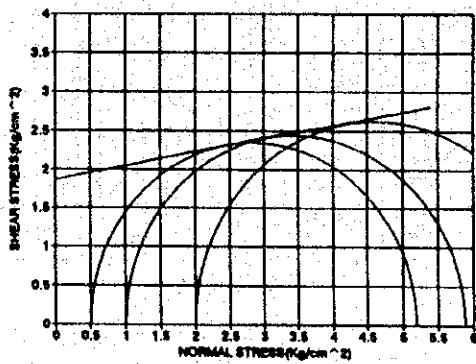
GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSFER  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASINS  
JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE  
TRIAXIAL COMPRESSION - 3  
U - U TEST DISTURBED

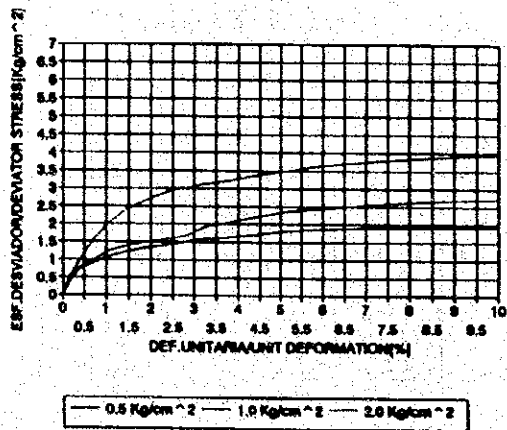
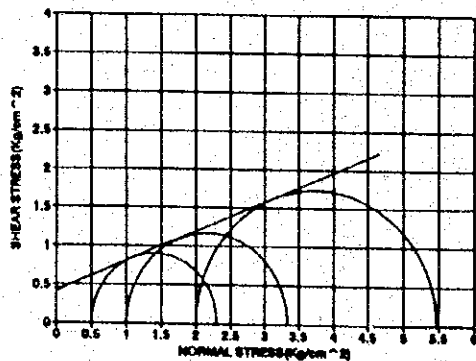
C-19 M-12 Cohesion: 1.65 kg/cm<sup>2</sup>  
Friction Angle: 10°



C-20 M-1 Cohesion: 1.60 kg/cm<sup>2</sup>  
Friction Angle: 10°



C-21 M-1 Cohesion: 0.40 kg/cm<sup>2</sup>  
Friction Angle: 20°



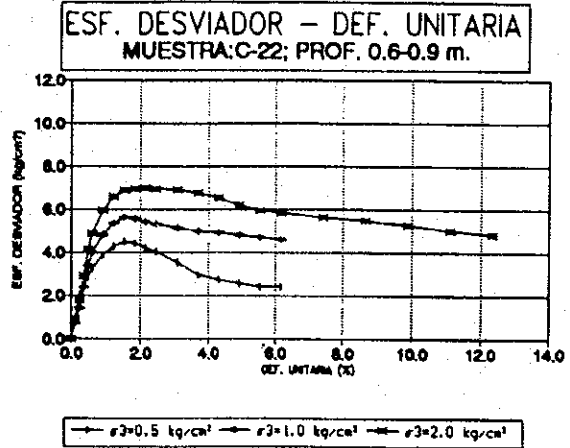
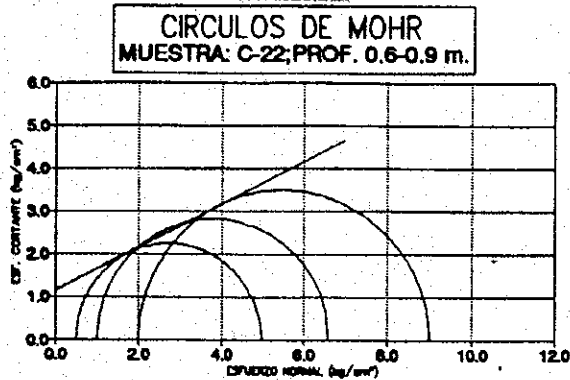
GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASINS  
JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE

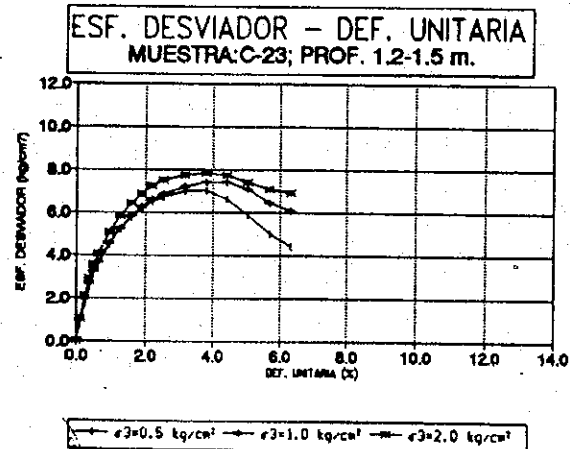
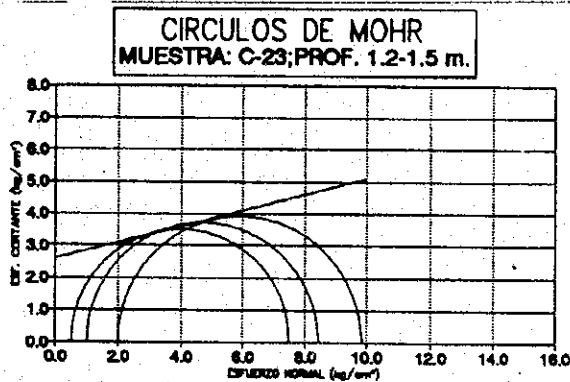
TRIAxIAL COMPRESSION - 4  
U - U TEST DISTURBED

# UNDISTURBED SAMPLE

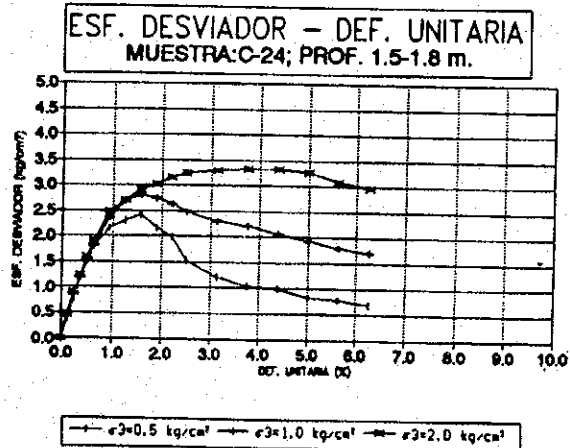
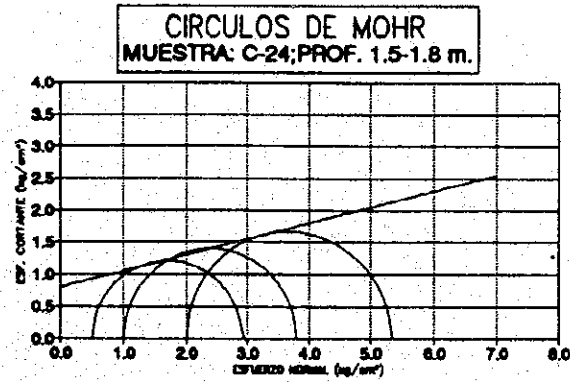
C-22 M-1 Cohesion: 1.10 kg/cm<sup>2</sup>  
Friction Angle: 26°



C-23 M-1 Cohesion: 2.60 kg/cm<sup>2</sup>  
Friction Angle: 14°



C-24 M-1 Cohesion: 0.80 kg/cm<sup>2</sup>  
Friction Angle: 14°



GOVERNMENT OF THE REPUBLIC OF ECUADOR  
CENTRO DE REHABILITACION DE MANABI (CRM)  
THE DETAILED DESIGN STUDY ON THE WATER TRANSBASIN  
SCHEMES FOR CHONE-PORTOVIEJO RIVER BASINS  
JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE  
TRIAXIAL COMPRESSION - 5  
U - U TEST UNDISTURBED