

GRAVEL		SAND		SILT AND CLAY
COARSE	FINE	COARSE	MEDIUM FINE	
U. S. STANDARD SIEVE SIZES				HYDROMETER

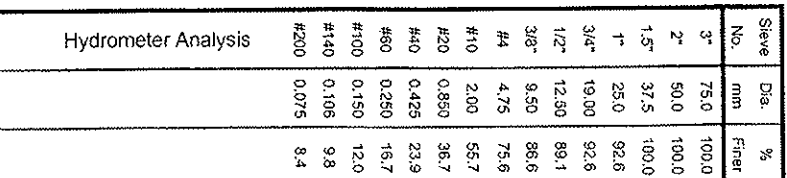
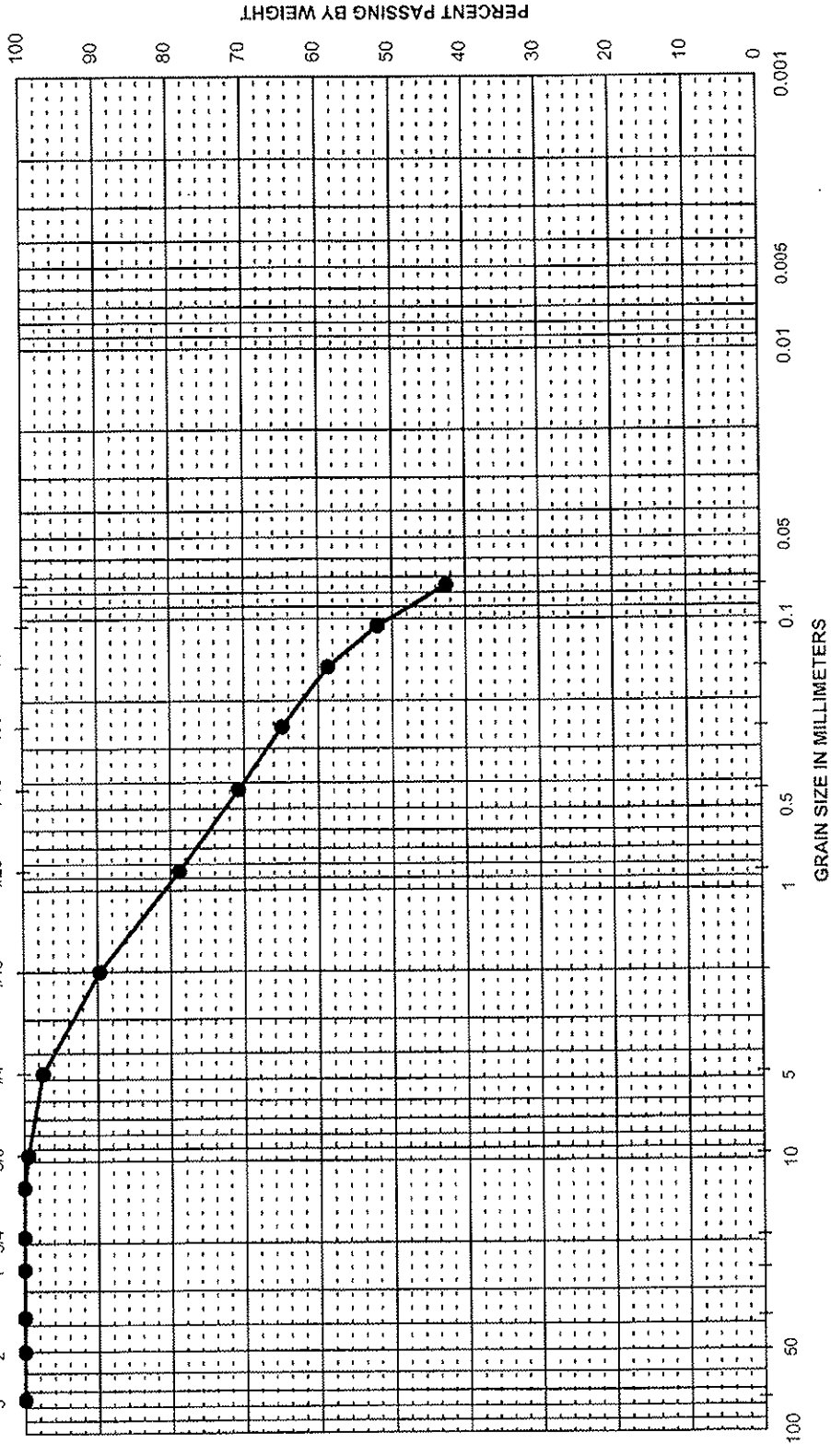


Figure: D-3

UNIFIED SOIL CLASSIFICATION

C	GRAVEL			SAND			SILT AND CLAY		
O	COARSE		FINE	COARSE	MEDIUM	FINE	HYDROMETER		
B									
B	U. S. STANDARD SIEVE SIZES								
B									



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	100.0
3/8"	9.5	99.4
#4	4.75	97.5
#10	2.00	89.7
#20	0.850	78.8
#40	0.425	70.7
#60	0.250	64.9
#100	0.150	58.7
#140	0.106	52.0
#200	0.075	42.6

% Cobbles	
% Gravel	2.5
% Sand	54.9
% Fines	42.6
D ₆₀	
D ₃₀	
D ₁₀	
C _u	
C _c	

Description and Classification

Reddish Brown Clayey SAND (SC)

PROJECT NAME: East County Substation

PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

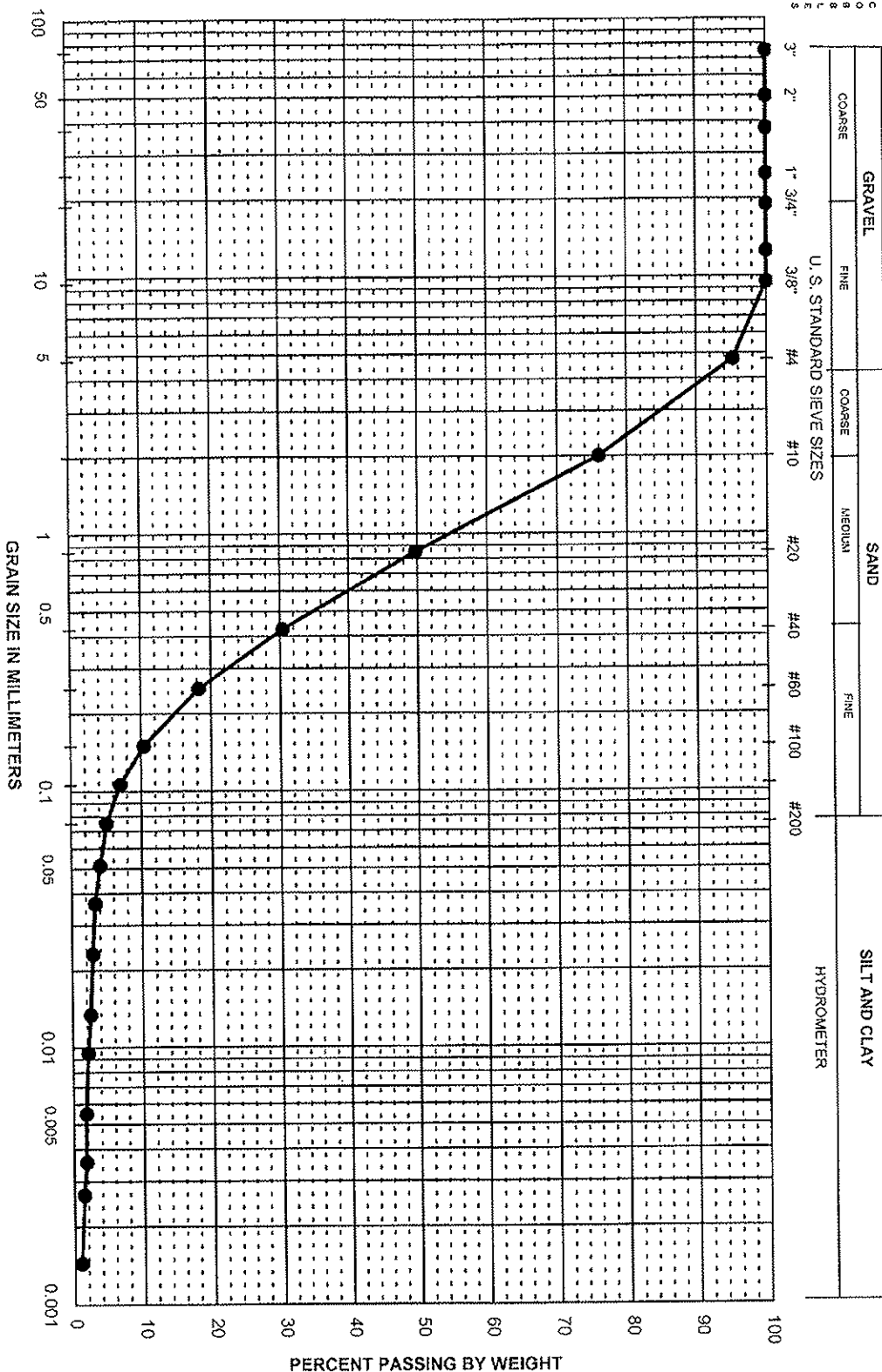
Figure: D-4

URS

Sieve ECSb04015

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1" 3/4"	3/8"	#4	#10	#20
					#40	#60
					#100	#200



Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification
B-7	3	15.0	•	2.3			1	Brown Well-Graded SAND with Silt (SW-SM)
PROJECT NAME: East County Substation								
PROJECT NUMBER: 27667021								
PARTICLE-SIZE DISTRIBUTION CURVES								
Figure: D-5								

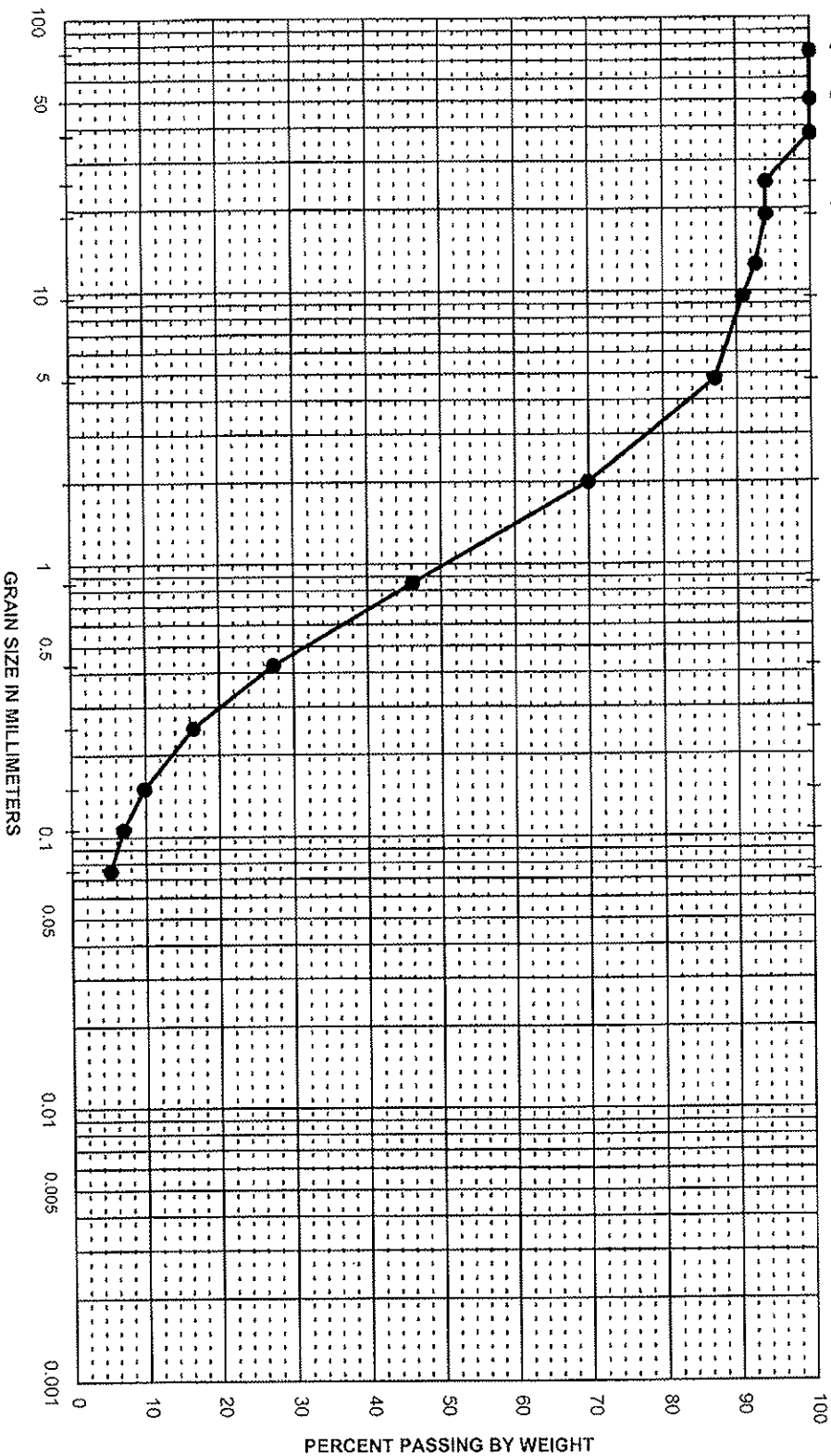
Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	98.2
#10	2.00	83.7
#20	0.850	57.1
#40	0.425	33.4
#60	0.250	18.8
#100	0.150	10.3
#140	0.106	6.6
#200	0.075	4.7

Figure: D-6

Sieve ECSh08030

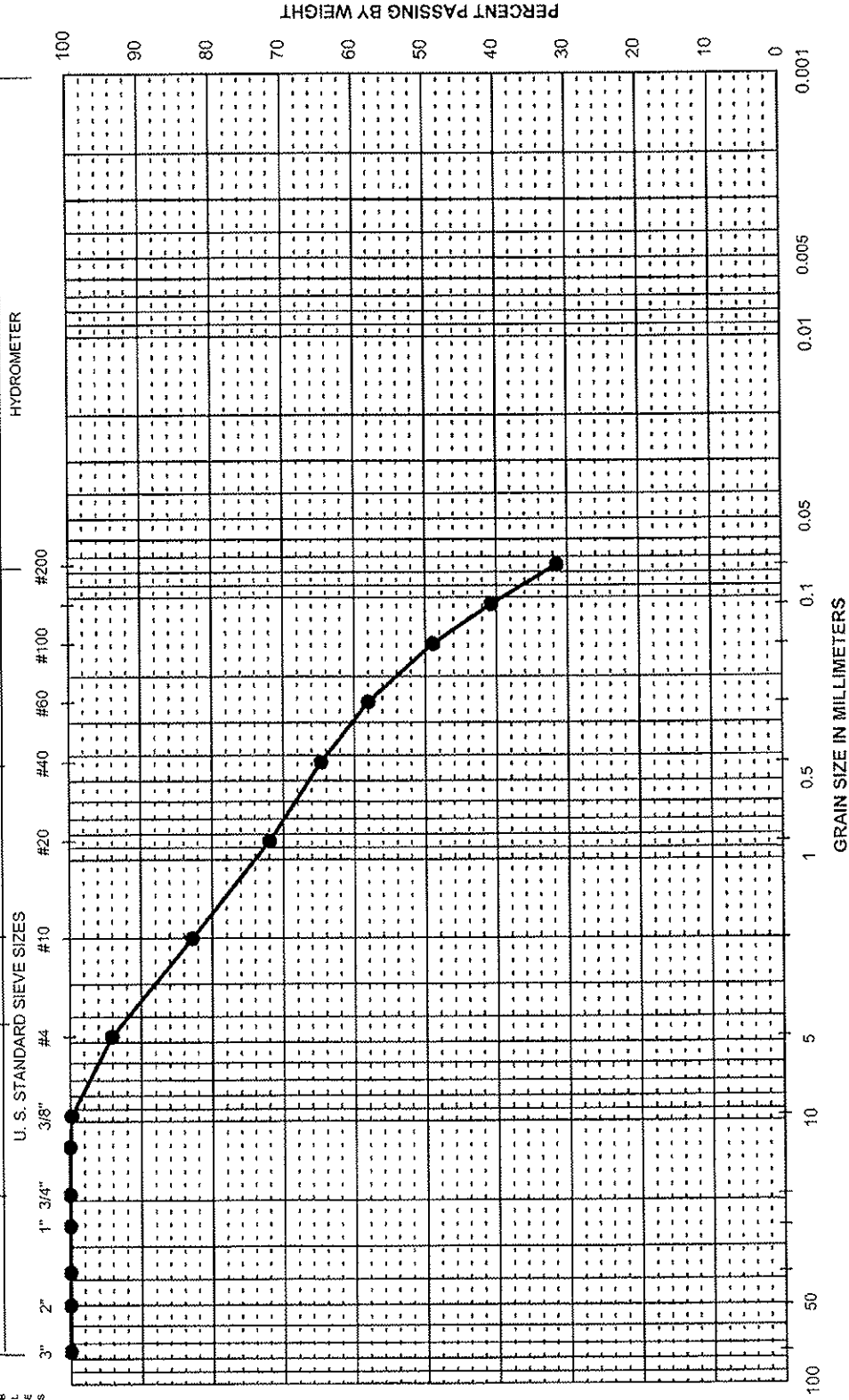
UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1" 3/4"	3/8"	#4	#10	#20
					#40	#60
					#100	#200



UNIFIED SOIL CLASSIFICATION

C	GRAVEL		SAND			SILT AND CLAY	
	COARSE	FINE	COARSE	MEDIUM	FINE		
O							
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Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	100.0
3/8"	9.5	99.7
#4	4.75	94.1
#10	2.0	82.8
#20	0.85	71.9
#40	0.425	64.7
#60	0.25	58.0
#100	0.15	48.9
#140	0.106	40.7
#200	0.075	31.4

Hydrometer Analysis	
% Cobbles	
% Gravel	5.9
% Sand	62.7
% Fines	31.4

D ₆₀	
D ₃₀	
D ₁₀	
C _u	
C _c	

Description and Classification
Dark Yellowish Brown Clayey SAND (SC)

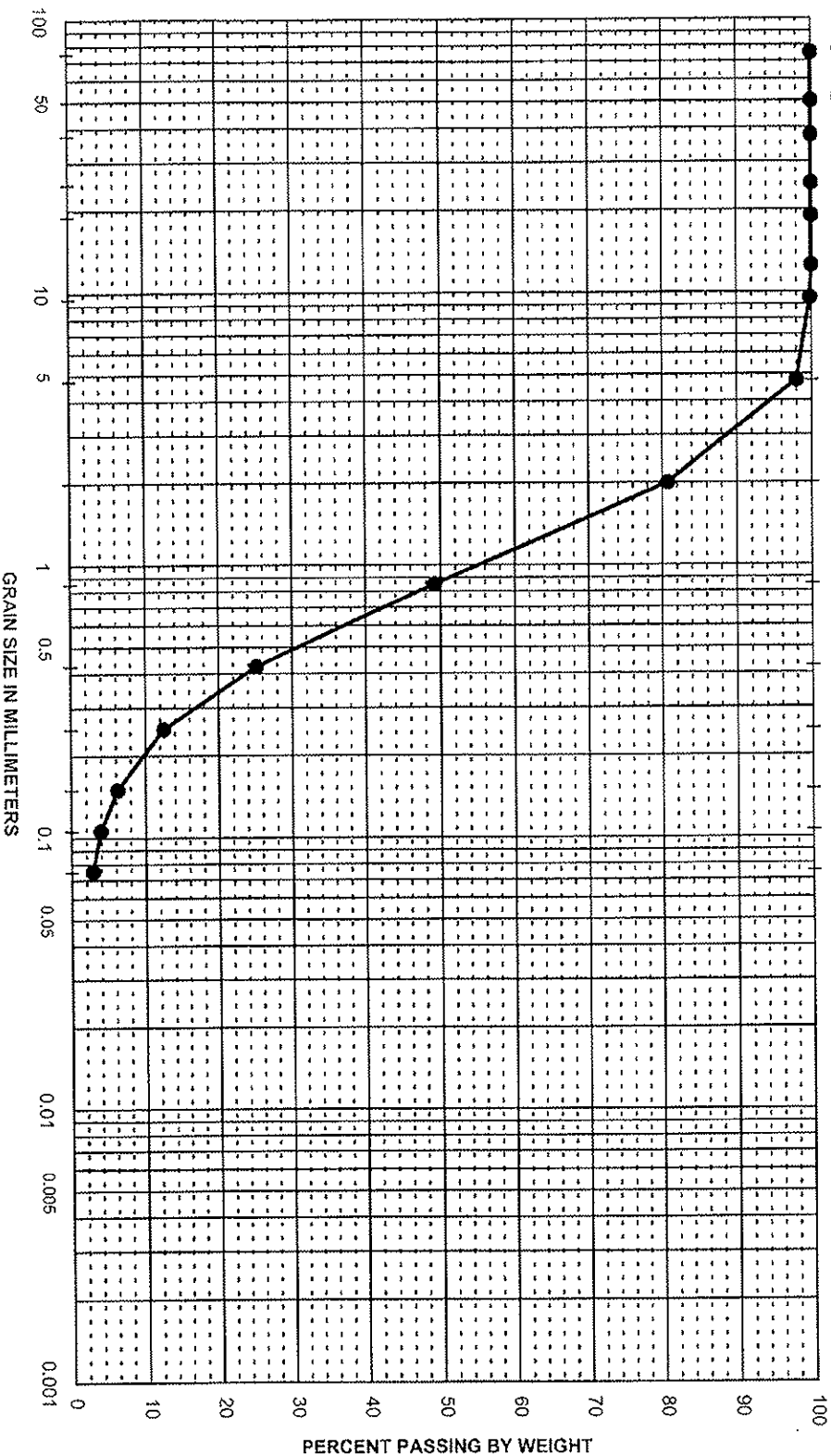
Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	PARTICLE-SIZE DISTRIBUTION CURVES	
B-10	8	40.0	•	7.1				PROJECT NAME: East County Substation	
								PROJECT NUMBER: 27667021	
								Figure: D-8	

URS

Sieve ECSb10040

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1" 3/4"	3/8"	#4	#10	#20
					#40	#60
					#100	#200



Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification
B-11	1	5.0	•					Light Gray Poorly Graded SAND (SP)
PROJECT NAME: East County Substation								
PROJECT NUMBER: 27667021								
PARTICLE-SIZE DISTRIBUTION CURVES								
Figure: D-9								

Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	100.0
3/8"	9.5	99.8
#4	4.75	97.9
#10	2.0	80.7
#20	0.85	49.2
#40	0.425	25.2
#60	0.25	12.4
#100	0.15	6.2
#140	0.106	3.9
#200	0.075	2.8

Hydrometer Analysis	
% Cobbles	
% Gravel	2.1
% Sand	95.1
% Fines	2.8

D ₆₀	1.140
D ₃₀	0.488
D ₁₀	0.205
C _u	5.6
C _c	1.0

GRAVEL				SAND				SILT AND CLAY					
COARSE		FINE		COARSE		MEDIUM		FINE					
3"	2"	1"	3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200		

Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification
R-11	5	25.0	●				4	Brown Silty SAND (SM)

U. S. STANDARD SIEVE SIZES		HYDROMETER	
3"	75.0	100.0	100.0
2"	50.0	100.0	100.0
1.5"	37.5	100.0	100.0
1"	25.0	100.0	100.0
3/4"	19.0	100.0	100.0
1/2"	12.5	100.0	100.0
3/8"	9.5	98.8	98.8
#4	4.75	96.8	96.8
#10	2.0	85.8	85.8
#20	0.85	68.8	68.8
#40	0.425	53.5	53.5
#60	0.25	39.0	39.0
#100	0.15	24.7	24.7
#140	0.106	16.9	16.9
#200	0.075	12.3	12.3
Hydrometer Analysis		0.0500	10.5
		0.0357	8.9
		0.0227	7.8
		0.0161	7.3
		0.0093	6.7
		0.0054	5.7
		0.0034	5.7
		0.0026	4.7
		0.0014	4.0
		0.0014	4.0
% Cobbles			
% Gravel			3.2
% Sand			84.5
% Fines			12.3
D ₆₀			
D ₃₀			
D ₁₀			
C _u			
C _c			

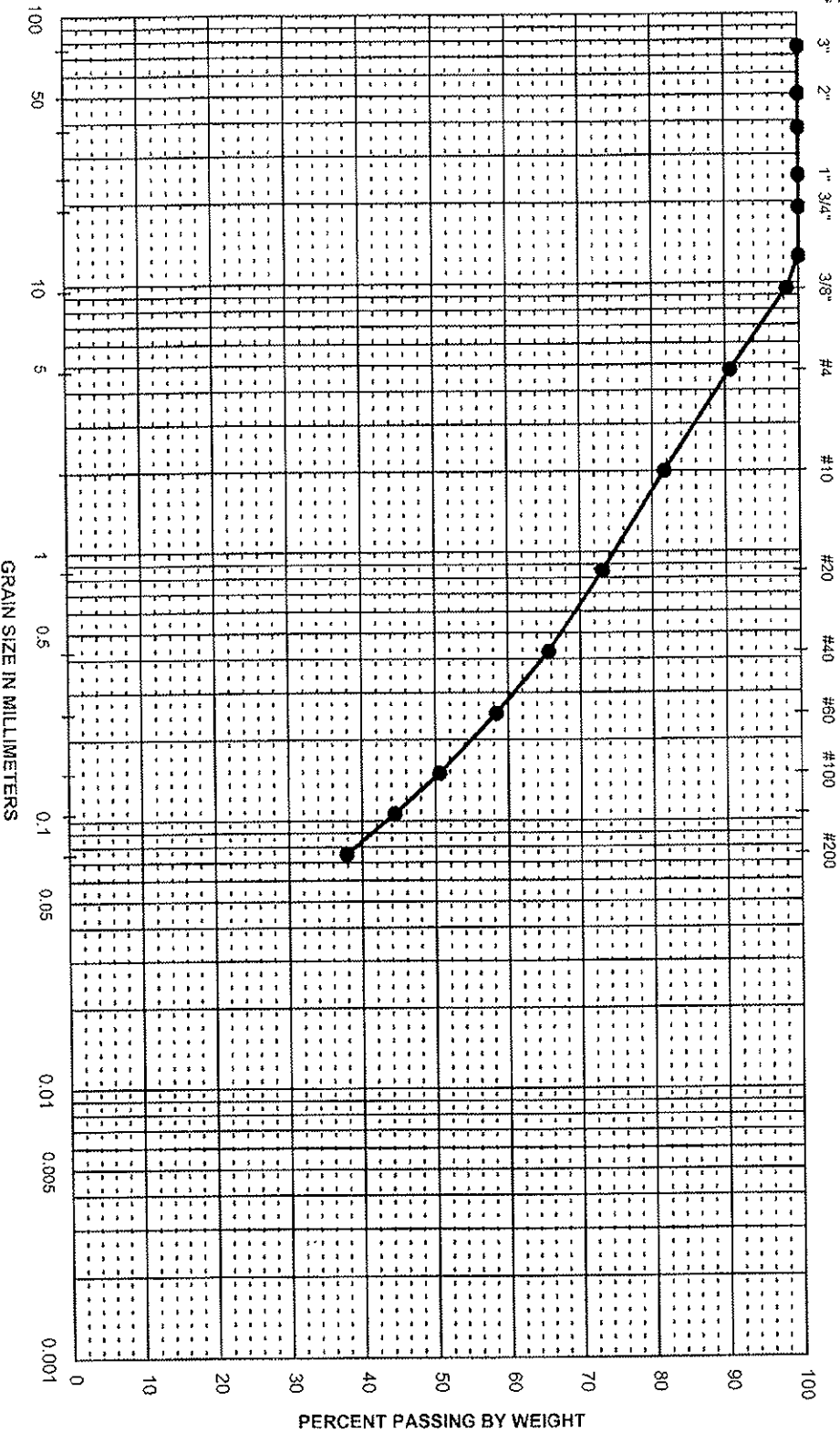
Figure: D-10

Hydrometer ECsb11025

URS

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1" 3/4"	3/8"	#4	#10	#20
					#40	#60
					#100	#200



Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification
B-11	10	50.0	•	3.5				Light Brownish Gray Clayey SAND (SC)
PROJECT NAME: East County Substation								
PROJECT NUMBER: 27667021								
PARTICLE-SIZE DISTRIBUTION CURVES								Figure: D-11

Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	100.0
3/8"	9.5	98.3
#4	4.75	90.6
#10	2.0	81.5
#20	0.85	73.1
#40	0.425	65.6
#60	0.25	58.4
#100	0.15	50.5
#140	0.106	44.4
#200	0.075	37.9

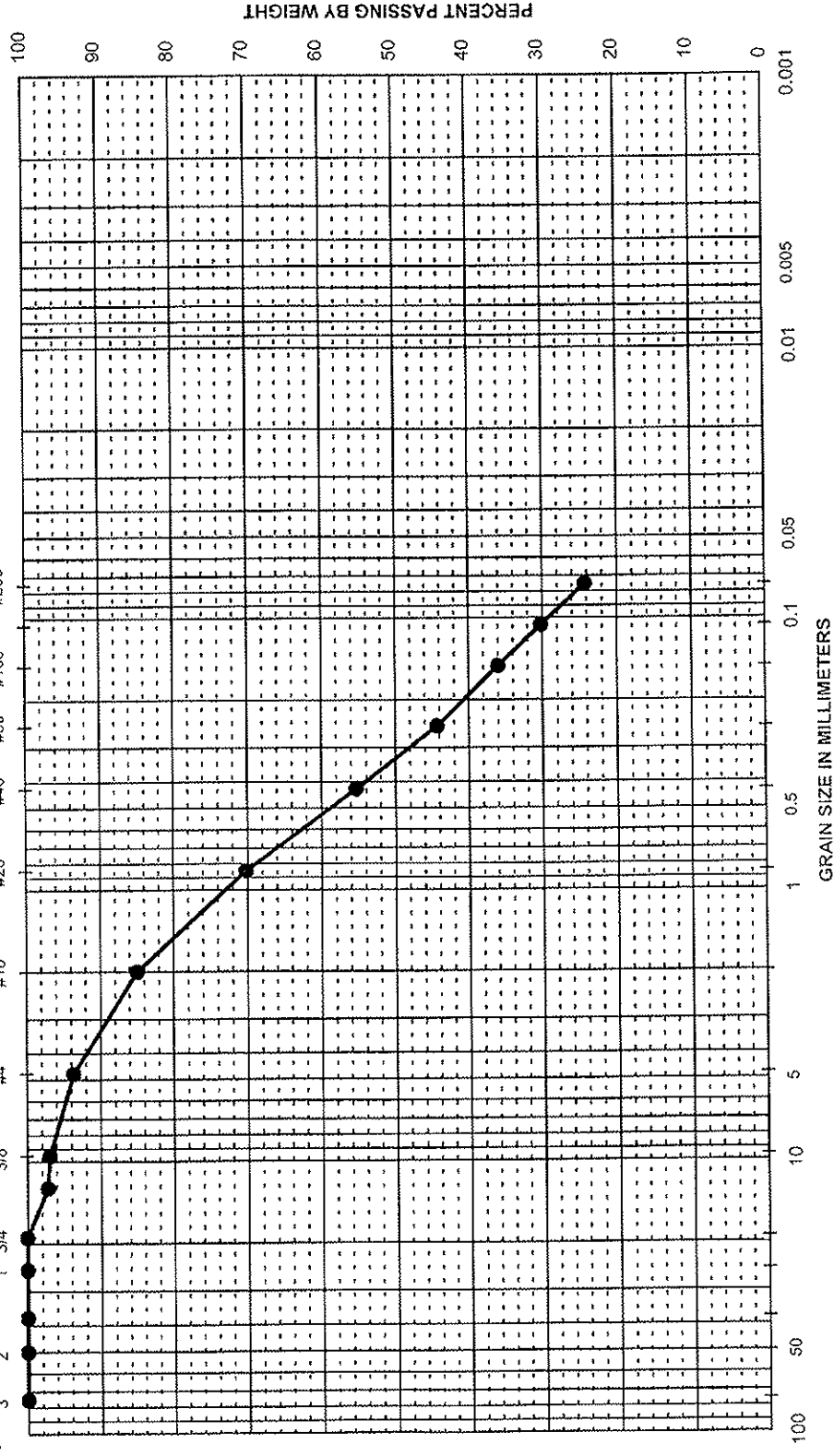
Hydrometer Analysis	
% Cobbles	
% Gravel	9.4
% Sand	52.7
% Fines	37.9

D ₆₀	
D ₃₀	
D ₁₀	

C _u	
C _c	

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	
U. S. STANDARD SIEVE SIZES					
HYDROMETER					



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	97.2
3/8"	9.5	96.9
#4	4.75	93.7
#10	2.00	84.9
#20	0.850	70.2
#40	0.425	55.3
#60	0.250	44.3
#100	0.150	36.0
#140	0.106	30.1
#200	0.075	24.2

Hydrometer Analysis	
% Cobbles	
% Gravel	6.3
% Sand	69.5
% Fines	24.2

D ₆₀	
D ₃₀	
D ₁₀	
C _u	
C _c	

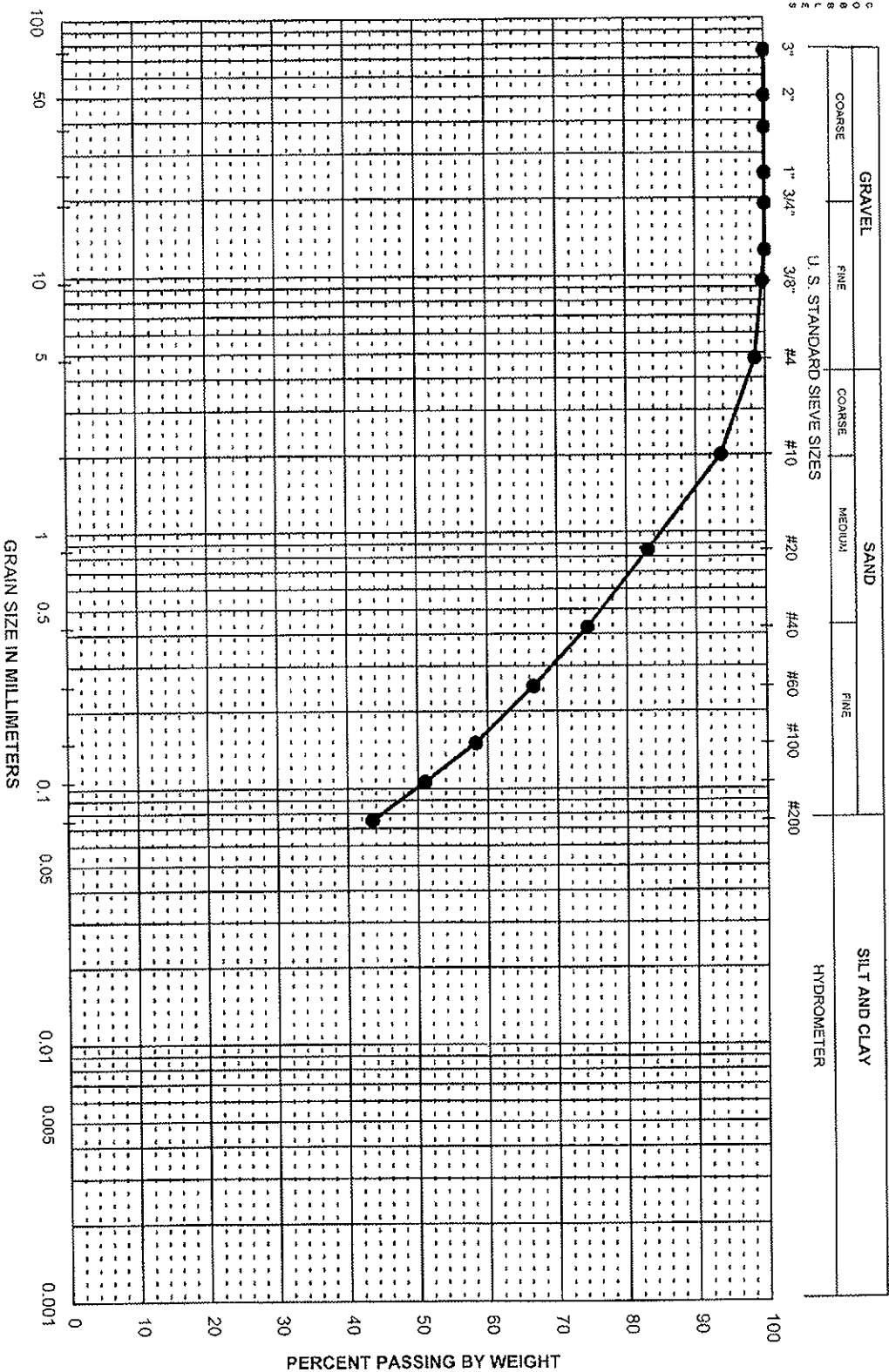
Exploration	Sample No.	Depth (ft)	SYMBOL	W _n (%)	LL	PI	% Clay	Description and Classification
B-12	6	25.0	•	4.6	33	7		Yellowish Brown Silty SAND (SM)

PROJECT NAME: East County Substation							
PROJECT NUMBER: 27667021							
PARTICLE-SIZE DISTRIBUTION CURVES							
Figure: D-12							

URS

Sieve EC5b12025

UNIFIED SOIL CLASSIFICATION



GRAVEL			SAND			SILT AND CLAY		
COARSE			FINE			HYDROMETER		
			U. S. STANDARD SIEVE SIZES					

Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	18.0	100.0
1/2"	12.5	100.0
3/8"	9.5	99.6
#4	4.75	98.5
#10	2.0	93.6
#20	0.85	83.1
#40	0.425	74.4
#60	0.25	66.6
#100	0.15	58.3
#140	0.106	51.0
#200	0.075	43.5

Hydrometer Analysis		
% Cobbles		
% Gravel	1.5	
% Sand	55.0	
% Fines	43.5	

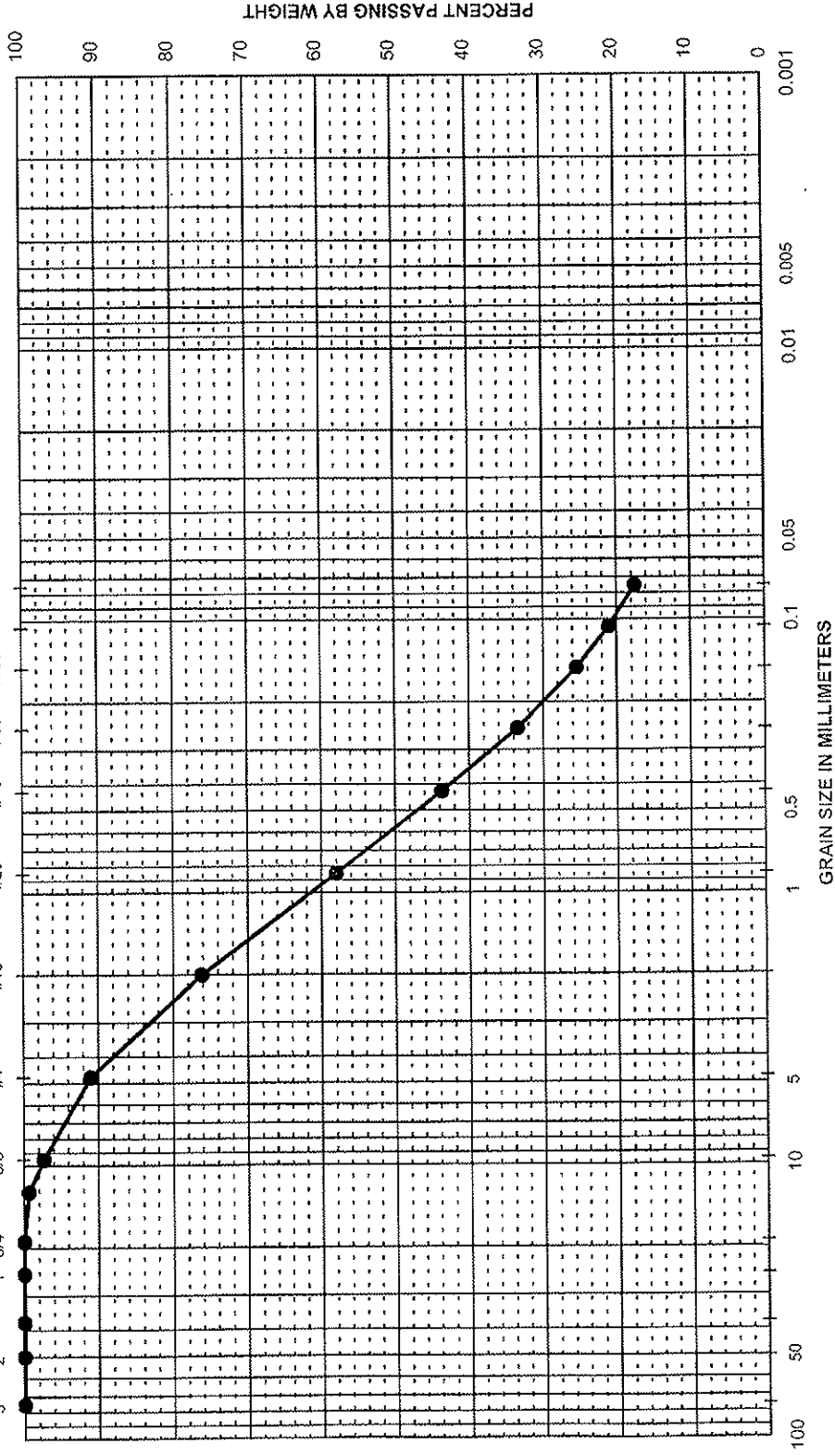
Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	Pl	% Clay	Description and Classification	Cu	Cc
B-13	3	10.0	•					Dark Yellowish Brown Clayey Sand (SC)		

PROJECT NAME: East County Substation
 PROJECT NUMBER: 27667021
 PARTICLE-SIZE DISTRIBUTION CURVES
 Figure: D-13

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						

C
O
B
B
L
E
S



Hydrometer Analysis

% Cobbles	
% Gravel	9.0
% Sand	73.5
% Fines	17.5

GRAIN SIZE IN MILLIMETERS

Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification
B-14	1	2.5	•					Dark Brown Clayey SAND (SC)

PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

Figure: D-14

URS

Sieve ECSb14002

UNIFIED SOIL CLASSIFICATION

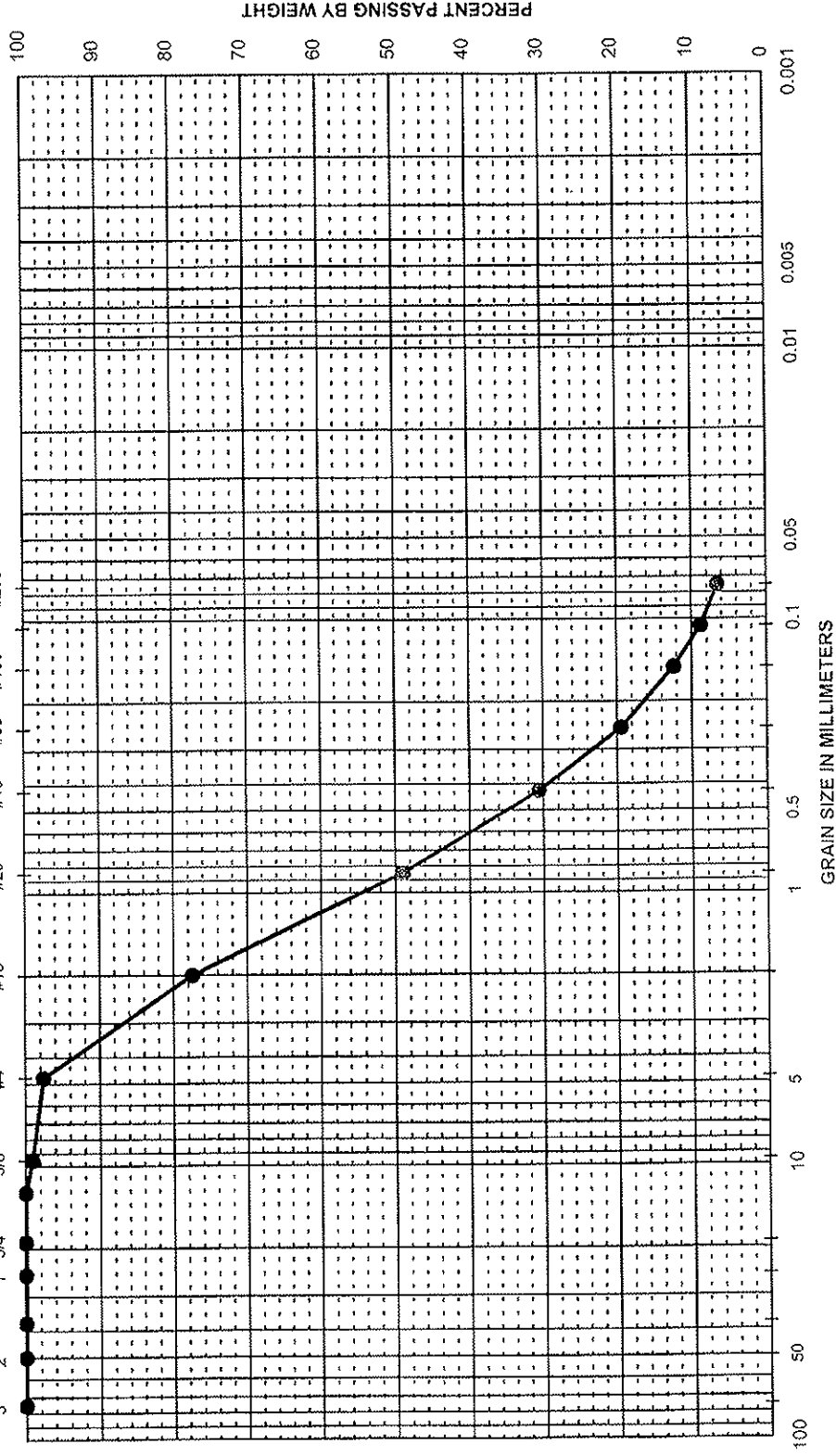
GRAVEL		SAND		SILT AND CLAY
COARSE	FINE	COARSE	FINE	
U. S. STANDARD SIEVE SIZES				
				HYDROMETER

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND				SILT AND CLAY			
COARSE	FINE	COARSE	MEDIUM	FINE					
3"	3/8"	#4	#10	#20	#40	#60	#100	#200	

U. S. STANDARD SIEVE SIZES

HYDROMETER



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
1/2"	12.5	100.0
3/8"	9.5	99.0
#4	4.75	97.6
#10	2.0	77.4
#20	0.85	49.0
#40	0.425	30.6
#60	0.25	19.4
#100	0.15	12.3
#140	0.106	8.8
#200	0.075	6.5

Hydrometer Analysis	
% Cobbles	
% Gravel	2.4
% Sand	91.1
% Fines	6.5
D ₆₀	1.183
D ₃₀	0.414
D ₁₀	0.119

Exploration	Sample No.	Depth (ft)	SYMBOL	W _n (%)	LL	PI	% Clay	Description and Classification
B-15	5	25.0	•	2.4				Brown Well-Graded SAND with Silt (SW-SM)

PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

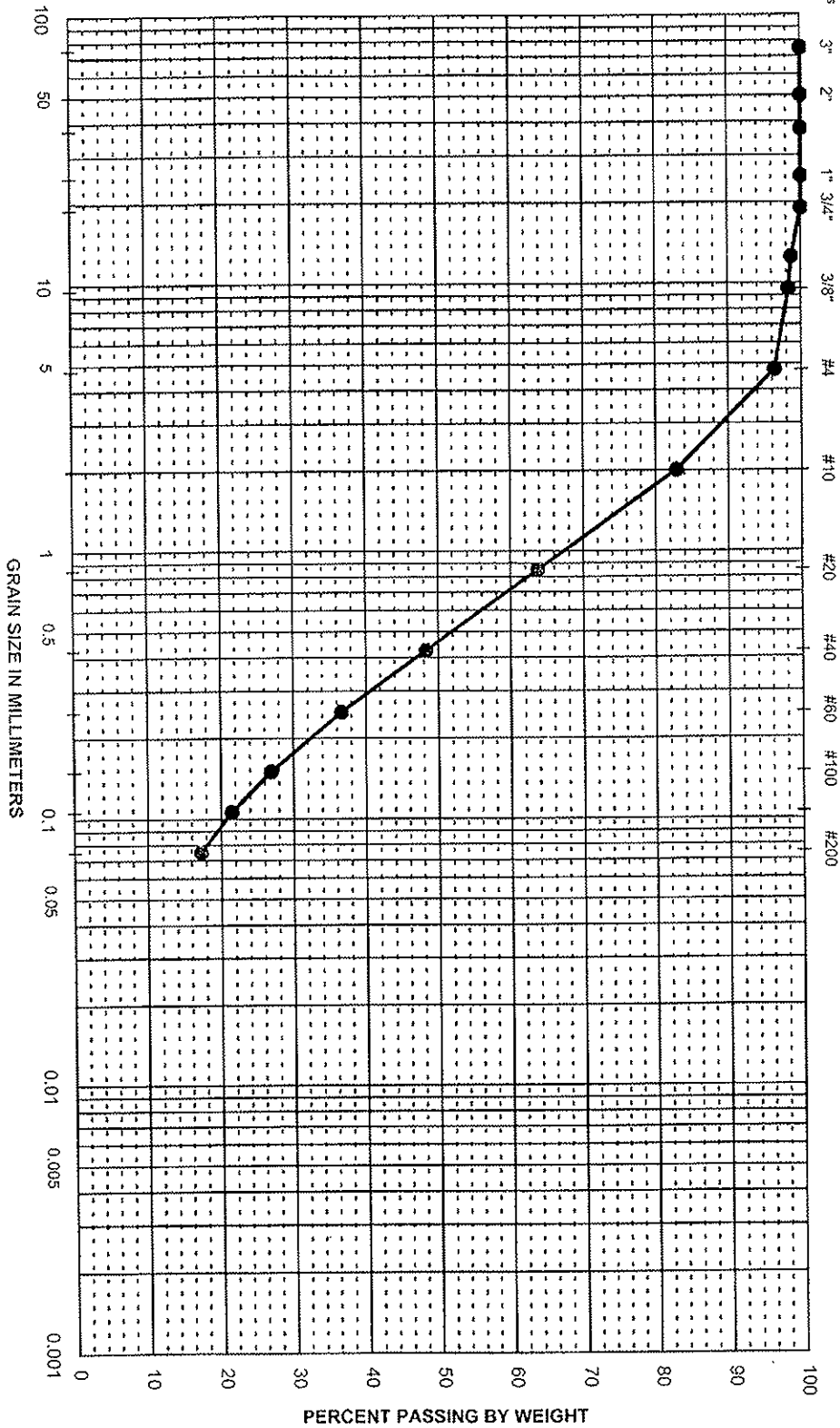
Figure: D-16

URS

Sieve ECSb15025

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1"	3/4"	3/8"	#4	#10
					#20	#40
					#60	#100
					#200	



Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	Cu	Cc
B-15	11	55.0	•	4.6				Strong Brown Clayey SAND (SC)		

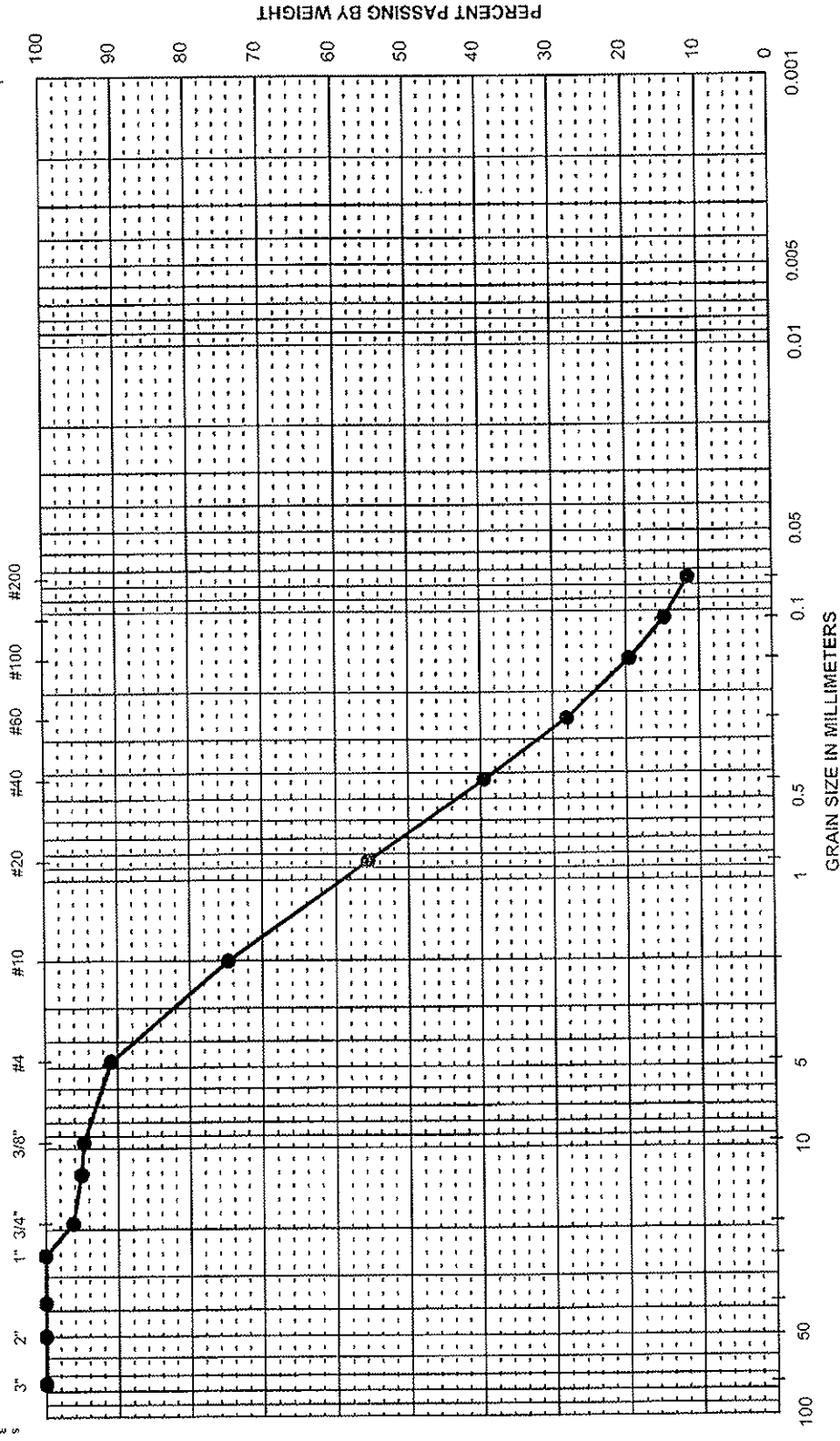
PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

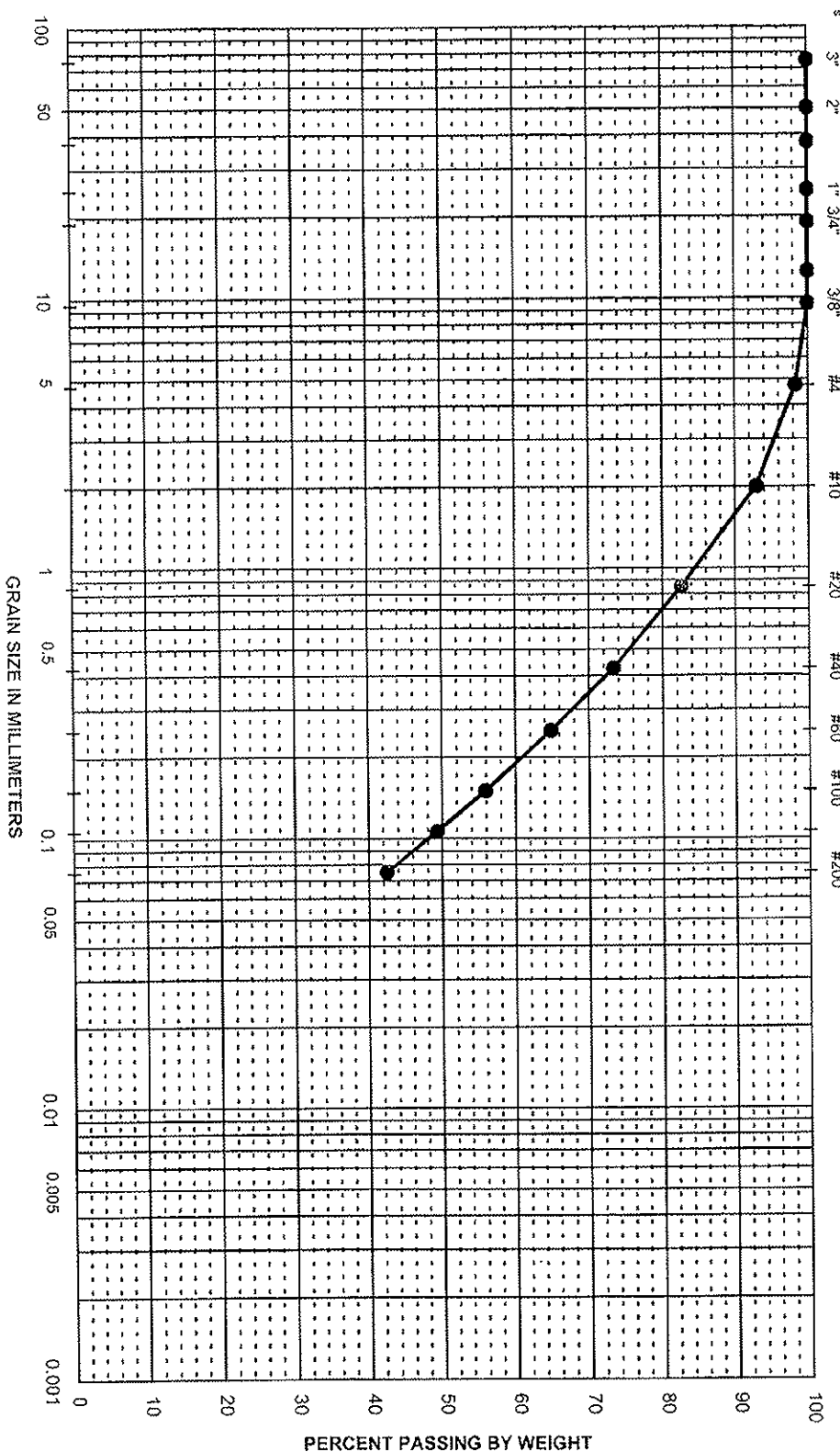
Figure: D-17

UNIFIED SOIL CLASSIFICATION

GRAVEL			SAND			SILT AND CLAY		
COARSE	1" 3/4"	3/8"	FINE	COARSE	MEDIUM	FINE	HYDROMETER	



GRAVEL		SAND		SILT AND CLAY
COARSE	FINE	COARSE	MEDIUM	
U. S. STANDARD SIEVE SIZES				HYDROMETER



Sieve No.	Dia. mm	% Finest
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	98.3
#10	2.00	92.8
#20	0.850	82.5
#40	0.425	73.3
#60	0.250	64.8
#100	0.150	55.9
#140	0.106	49.3
#200	0.075	42.5

Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	Cu
B-16	8	40.0	●	5.3	29	9		Grayish Brown Clayey SAND (SC)	C _c

PROJECT NAME: East County Substation

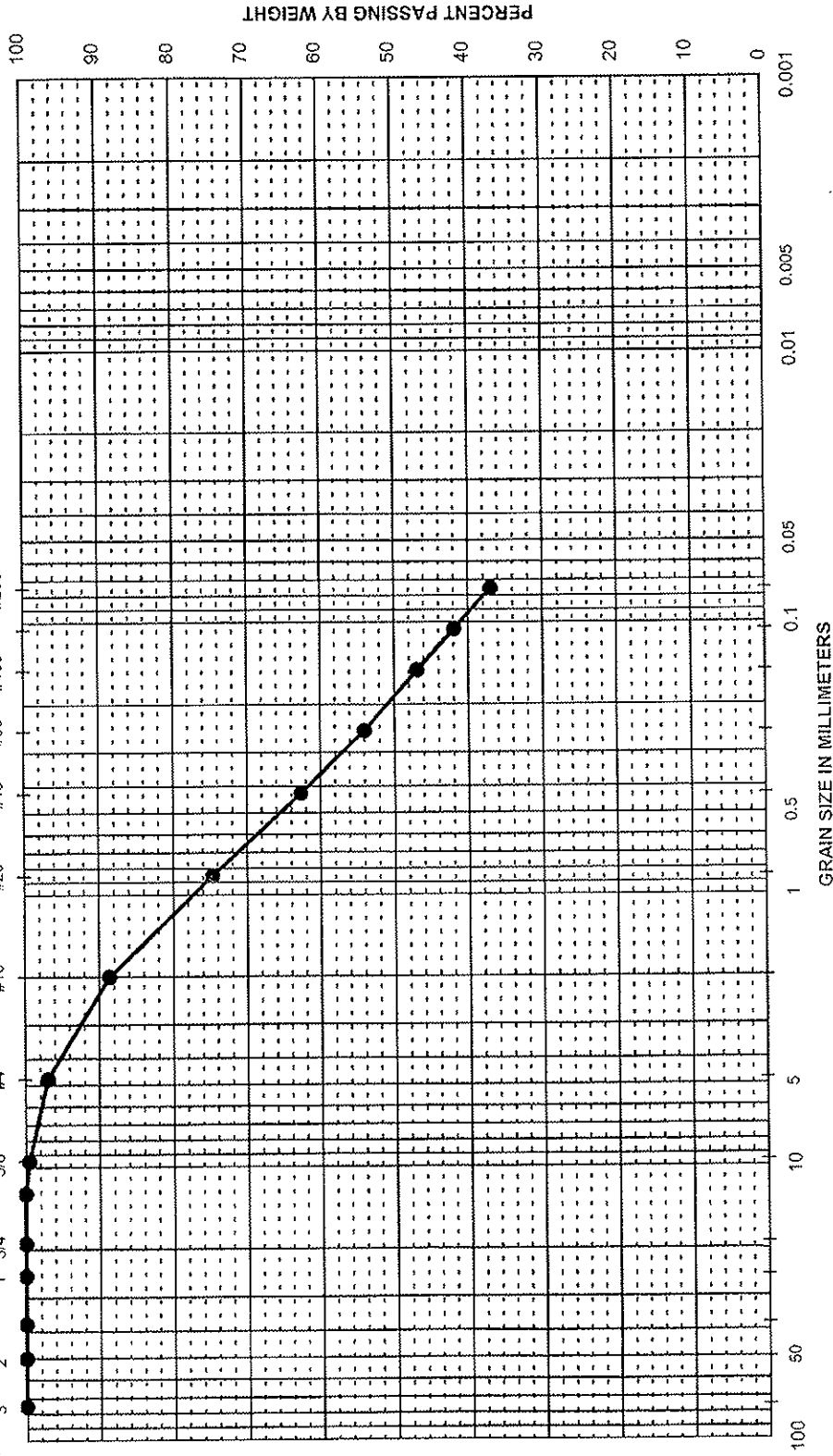
PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: D-19

UNIFIED SOIL CLASSIFICATION

C	GRAVEL			SAND			SILT AND CLAY		
D	COARSE		FINE	COARSE		MEDIUM	FINE		
E	U. S. STANDARD SIEVE SIZES						HYDROMETER		
F									
G									
H									
I									



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	18.75	100.0
1/2"	12.5	100.0
3/8"	9.5	99.5
#4	4.75	95.9
#10	2.0	88.6
#20	0.85	74.7
#40	0.425	62.6
#60	0.25	54.0
#100	0.15	46.9
#140	0.106	41.9
#200	0.075	37.0

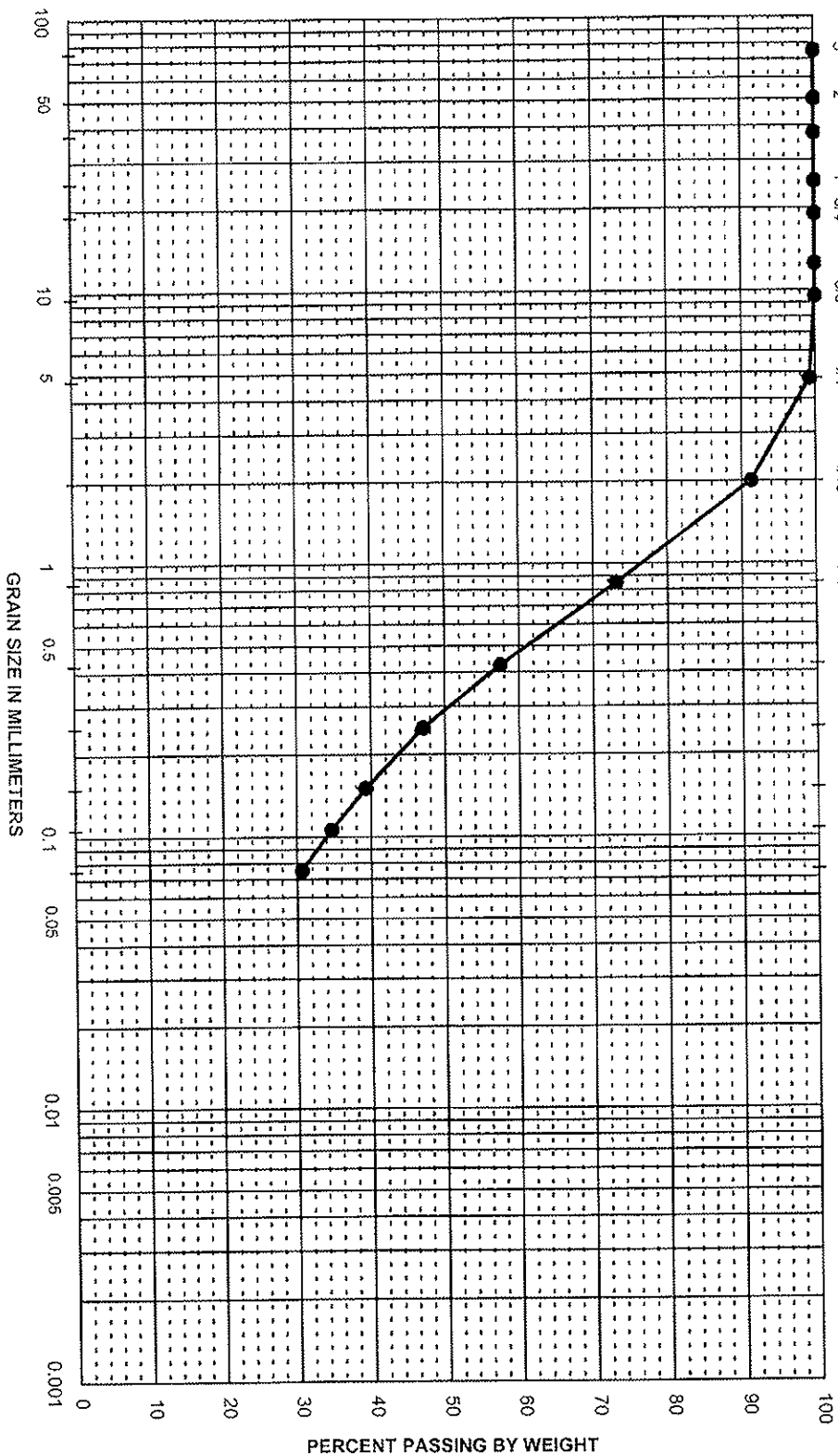
Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification
B-17	7	35.0	•	5.4	27	5		Dark Yellowish Brown Silty SAND (SM)

PROJECT NAME: East County Substation							
PROJECT NUMBER: 27667021							
PARTICLE-SIZE DISTRIBUTION CURVES							
Figure: D-20							

URS

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1" 3/4"	3/8"	#4	#10	#20
					#40	#60
					#100	#200



Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay
B-17	9	45.0	•				

Description and Classification
Brown Clayey SAND (SC)

PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: D-21

Hydrometer Analysis

Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.2
#10	2.00	91.2
#20	0.850	73.2
#40	0.425	57.5
#60	0.250	47.0
#100	0.150	39.3
#140	0.106	34.7
#200	0.075	30.6

% Cobbles	
% Gravel	0.8
% Sand	68.6
% Fines	30.6
D ₆₀	
D ₃₀	
D ₁₀	
C _u	
C _c	

Exploration	Sample No.	Depth (ft)	Description and Classification					
			SYMBOL	Wn (%)	LL	PI	% Clay	
P-18	4	15.0	●				7	Pale Brown Clayey SAND (SC)

GRAVEL				SAND				SILT AND CLAY			
COARSE		FINE		COARSE		MEDIUM		FINE			
3"	2"	1"	3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200
100	90	80	70	60	50	40	30	20	10	0	

U. S. STANDARD SIEVE SIZES											
HYDROMETER											
PERCENT PASSING BY WEIGHT											
100	90	80	70	60	50	40	30	20	10	0	

HYDROMETER ANALYSIS											
Sieve No.	Dia. mm	% Finer									
3"	75.0	100.0									
2"	50.0	100.0									
1.5"	37.5	100.0									
1"	25.0	100.0									
3/4"	19.0	100.0									
1/2"	12.5	100.0									
3/8"	9.5	99.3									
#4	4.75	96.8									
#10	2.00	90.4									
#20	0.850	77.5									
#40	0.425	66.9									
#60	0.250	59.5									
#100	0.150	53.1									
#140	0.106	48.0									
#200	0.075	41.9									
	0.0455	31.4									
	0.0332	25.2									
	0.0216	19.7									
	0.0155	16.6									
	0.0091	14.1									
	0.0053	11.1									
	0.0034	9.2									
	0.0026	7.3									
	0.0014	6.6									
	0.0014	6.6									

HYDROMETER ANALYSIS			
% Cobbles	% Gravel	% Sand	% Fines
	3.2	54.9	41.9

HYDROMETER ANALYSIS			
D ₆₀	D ₃₀	D ₁₀	C _u

HYDROMETER ANALYSIS			
C _u	C _c		

PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

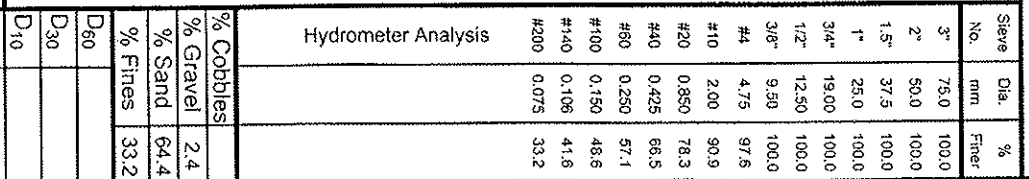
Figure: D-22

URS

(SNA) sieve only (04/2000)

Hydrometer ECSb18015

GRAVEL		SAND		SILT AND CLAY
COARSE	FINE	COARSE	MEDIUM FINE	
U. S. STANDARD SIEVE SIZES				HYDROMETER



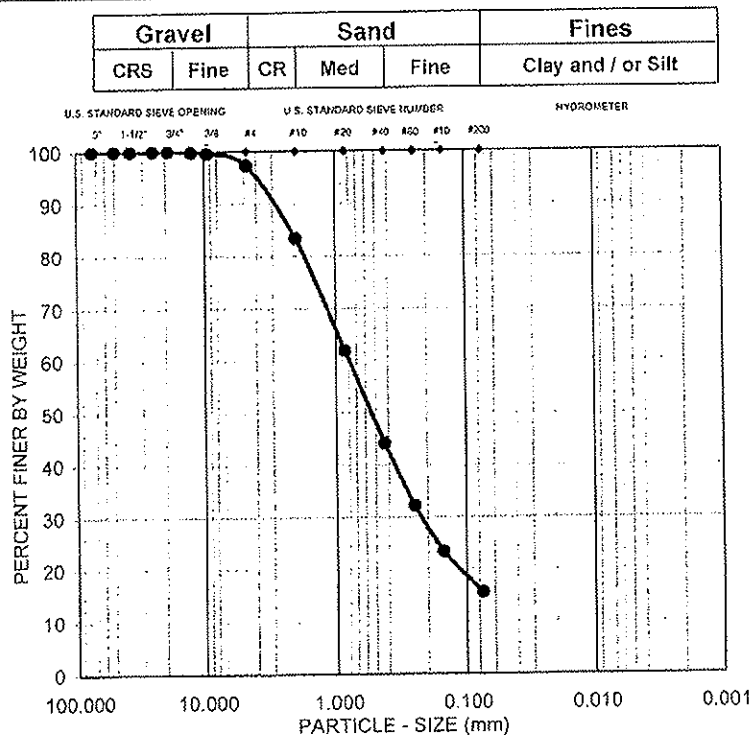
PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

Sieve Analysis

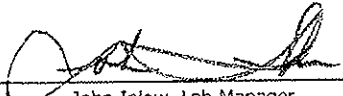
(ASTM C422)

G Force Lab No. 6205
Date Sampled: 5/14/2008 By: Client
Date Submitted: 5/14/2008 By: Client
Sample Location: B-24 @ 25' - 30'
Sample Description: Silty sand



Sieve Size	% Passing	Specification		X = Out of Spec
		Low	High	
3"	100			
2"	100			
1-1/2"	100			
1"	100			
3/4"	100			
1/2"	100			
3/8"	100			
#4	97			
#10	83			
#20	62			
#40	44			
#60	32			
#100	23			
#200	16			

Plasticity Index	N/A		
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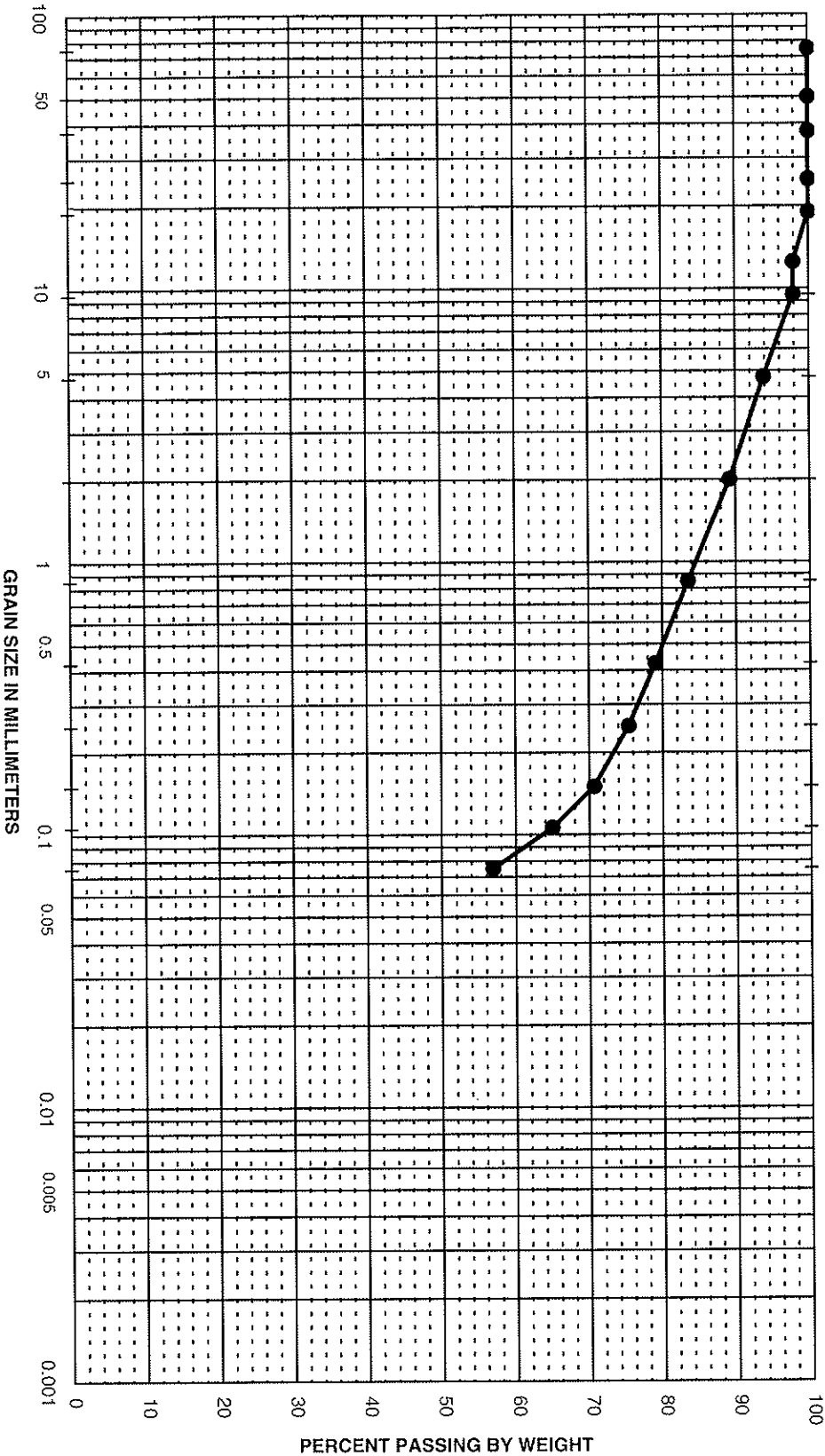
Checked by: 
John Inlow, Lab Manager



UNIFIED SOIL CLASSIFICATION

C
O
B
B
L
E
S
G
R
A
V
E
L
S
A
N
D
S
I
L
T
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N
D
C
L
A
Y

GRAVEL		SAND			SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE	HYDROMETER	
U. S. STANDARD SIEVE SIZES						
3"	2"	1" 3/4"	3/8"	#4	#10	#20
					#40	#60
					#100	#200



Hydrometer Analysis

% Cobbles	
% Gravel	6.2
% Sand	36.9
% Fines	56.9

D ₆₀	
D ₃₀	
D ₁₀	

C _u	
C _c	

Description and Classification

Light brown sandy Clay (CL)

Exploration	Sample No.	Depth (ft)	SYMBOL	W _n (%)	LL	PI	% Clay
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B-26	3	15.0	•				
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PROJECT NAME: East County Substation

PROJECT NUMBER: 27667021

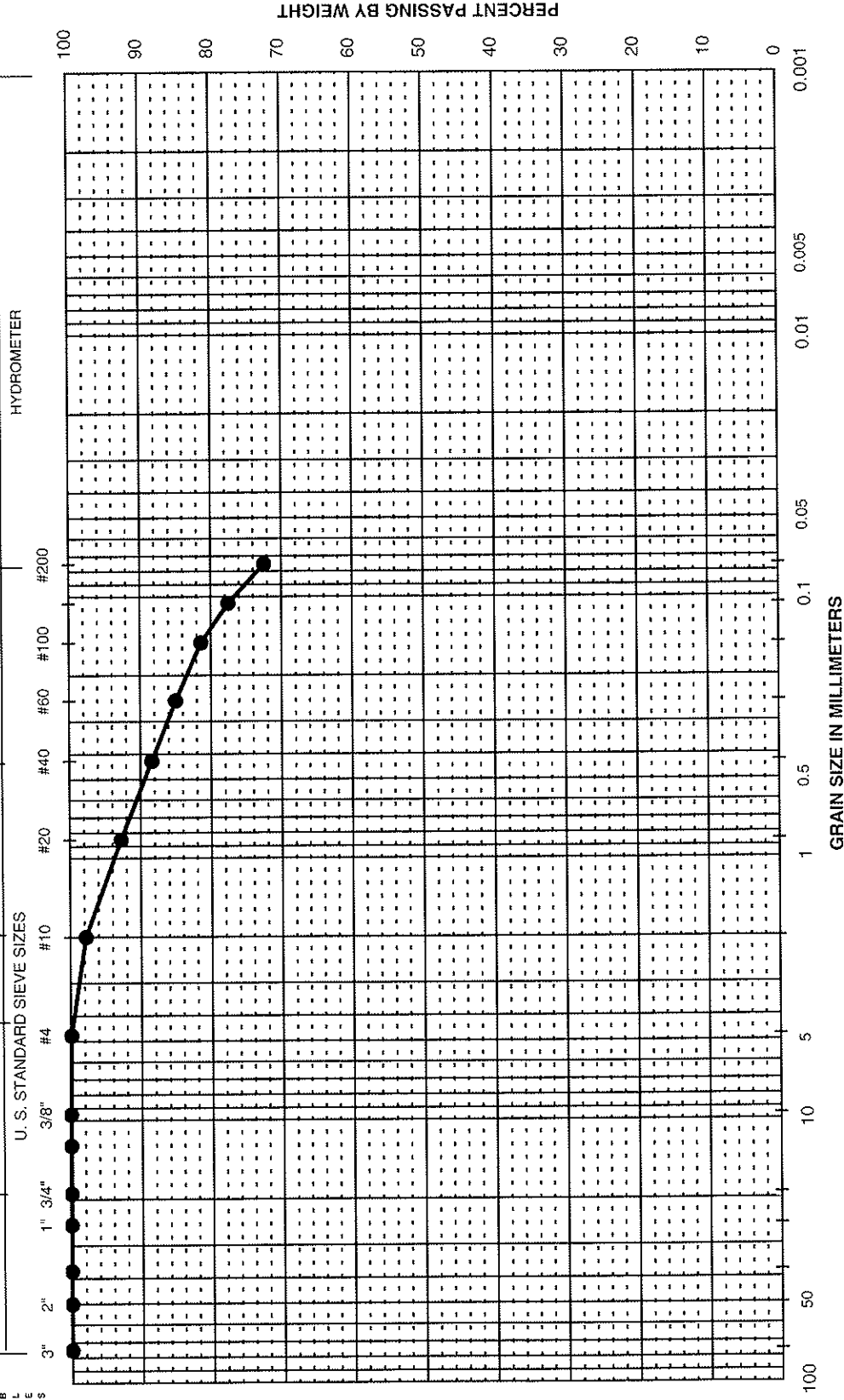
PARTICLE-SIZE DISTRIBUTION CURVES

Figure: D-25

UNIFIED SOIL CLASSIFICATION

GRAVEL			SAND			SILT AND CLAY		
COARSE	1"	3/4"	3/8"	#4	COARSE	#10	MEDIUM	FINE

U. S. STANDARD SIEVE SIZES



Hydrometer Analysis

% Cobbles	
% Gravel	0.1
% Sand	27.5
% Fines	72.4

D ₆₀	
D ₃₀	
D ₁₀	

C _u	
C _c	

Description and Classification

Light brown Clay with sand (CL)

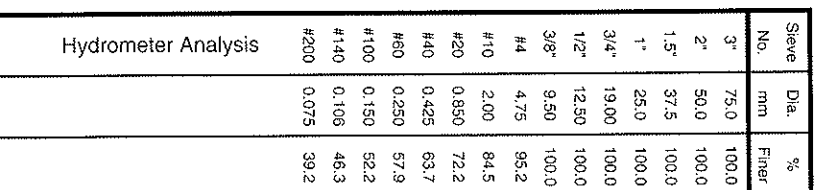
PROJECT NAME: East County Substation

PROJECT NUMBER: 27667021

Figure: D-26

URS

GRAVEL		SAND				SILT AND CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE			
U. S. STANDARD SIEVE SIZES							
3"	3"	3/8"	#4	#10	#20	#40	#60 #100 #200
HYDROMETER							



% Cobbles	
% Gravel	4.8
% Sand	56.0
% Fines	39.2
D ₆₀	
D ₃₀	
D ₁₀	
C _u	
C _c	

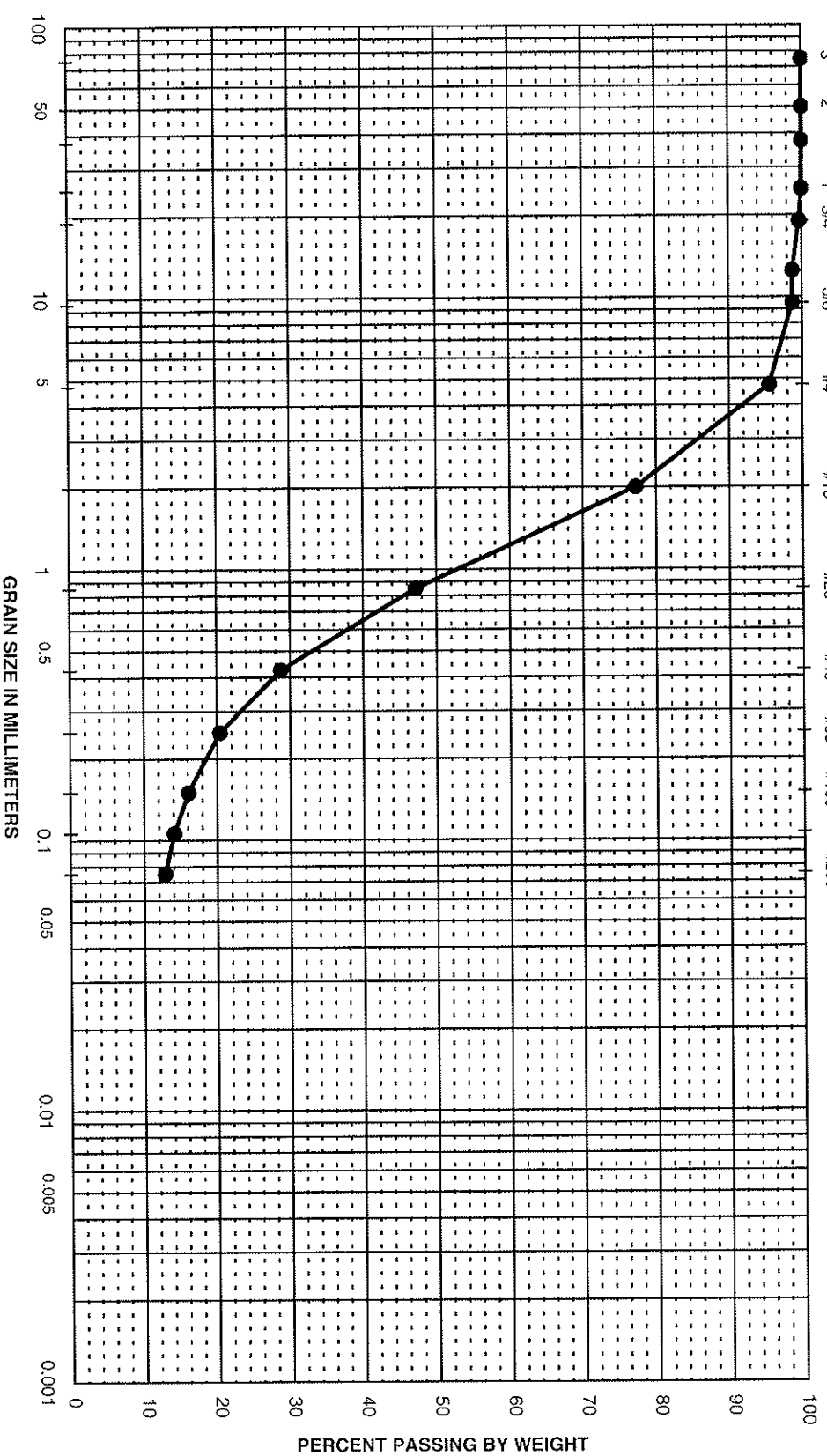
Figure: D-27

UNIFIED SOIL CLASSIFICATION

GRAVEL			SAND			SILT AND CLAY
COARSE	FINE		COARSE	MEDIUM	FINE	
U. S. STANDARD SIEVE SIZES			HYDROMETER			

UNIFIED SOIL CLASSIFICATION

C	GRAVEL				SAND				SILT AND CLAY			
D	COARSE		FINE		COARSE		MEDIUM		FINE			
E	U. S. STANDARD SIEVE SIZES											
3"	2"	1" 3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200	HYDROMETER	



Exploration	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	
TP-3		3.0	•					Brown Silty SAND (SM)	
								C _u	
								C _c	

PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

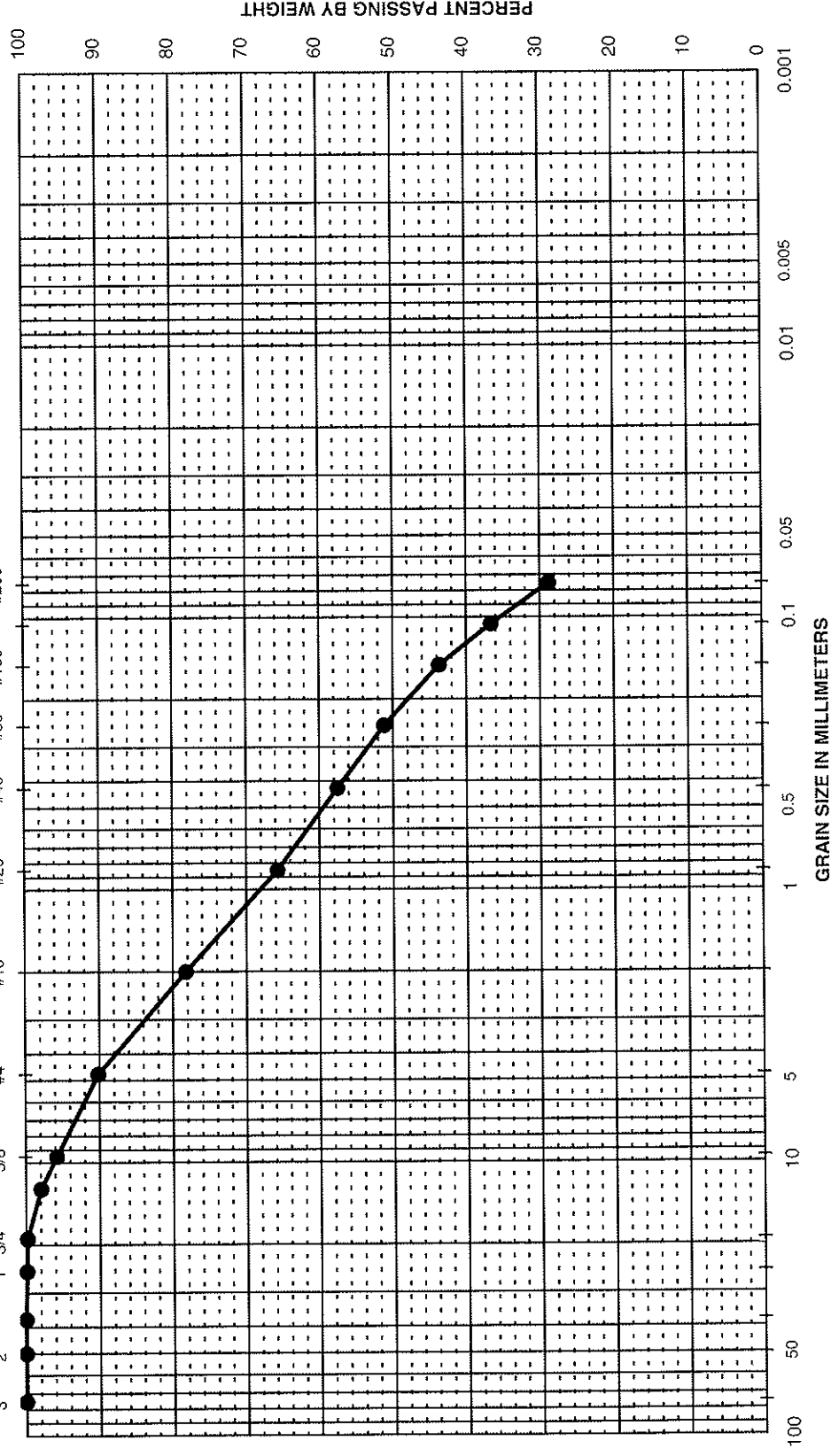
PARTICLE-SIZE DISTRIBUTION CURVES

Figure: D-29

UNIFIED SOIL CLASSIFICATION

GRAVEL			SAND			SILT AND CLAY
COARSE		FINE	COARSE	MEDIUM	FINE	
U. S. STANDARD SIEVE SIZES						HYDROMETER

U. S. STANDARD SIEVE SIZES



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	99.9
3/4"	19.00	99.8
1/2"	12.50	97.9
3/8"	9.50	95.8
#4	4.75	90.1
#10	2.00	78.2
#20	0.850	65.7
#40	0.425	57.5
#60	0.250	51.2
#100	0.150	43.7
#140	0.106	36.6
#200	0.075	28.8

Hydrometer Analysis	% Cobbles	% Gravel	% Sand	% Fines
		9.9	61.3	28.8
D ₆₀				
D ₃₀				
D ₁₀				
C _u				
C _c				

Description and Classification

Brown Silty SAND (SM)

PROJECT NAME: East County Substation

PROJECT NUMBER: 27667021

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: D-30

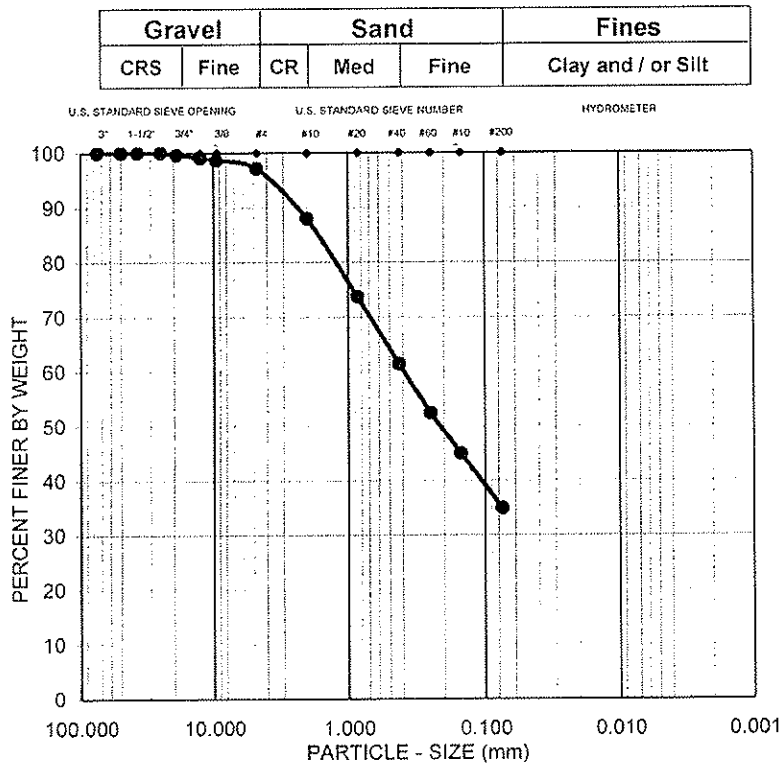
URS

Sieve ECS TP06005.xls

Sieve Analysis

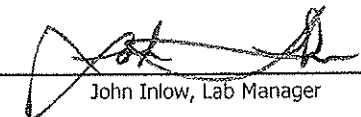
(ASTM C422)

G Force Lab No. 6206
Date Sampled: 5/14/2008 By: Client
Date Submitted: 5/14/2008 By: Client
Sample Location: TP-9 @ 6.7'
Sample Description: Clayey sand



Sieve Size	% Passing	Specification		X = Out of Spec
		Low	High	
3"	100			
2"	100			
1-1/2"	100			
1"	100			
3/4"	100			
1/2"	99			
3/8"	99			
#4	97			
#10	88			
#20	74			
#40	61			
#60	52			
#100	45			
#200	35			

Plasticity Index	N/A		
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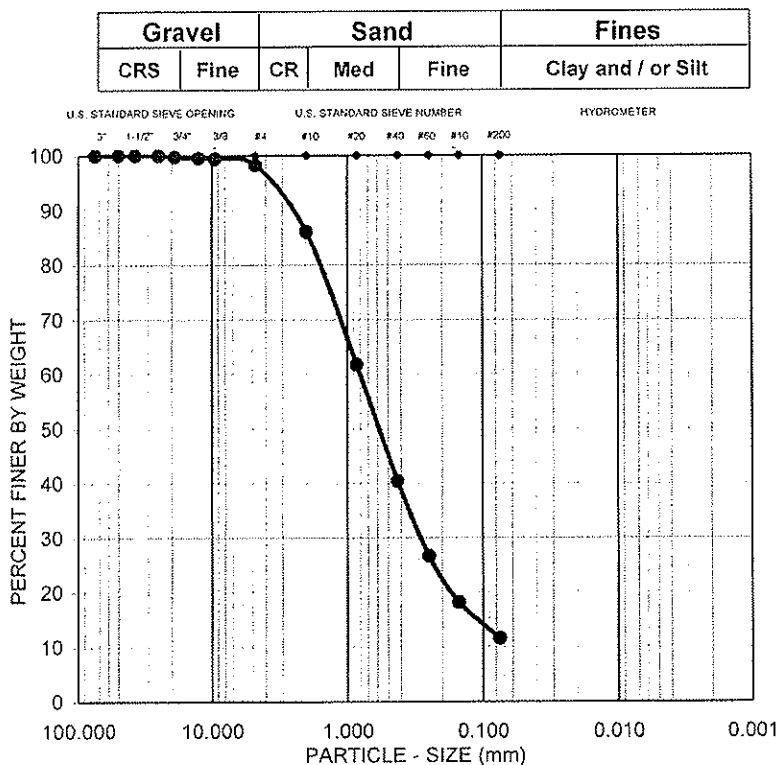
Checked by: 
John Inlow, Lab Manager



Sieve Analysis

(ASTM C422)

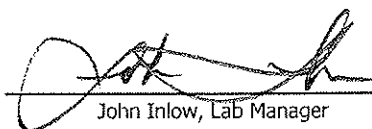
G Force Lab No. 6207
Date Sampled: 5/14/2008 By: Client
Date Submitted: 5/14/2008 By: Client
Sample Location: TP-19 @ 9.5'
Sample Description: Silty sand



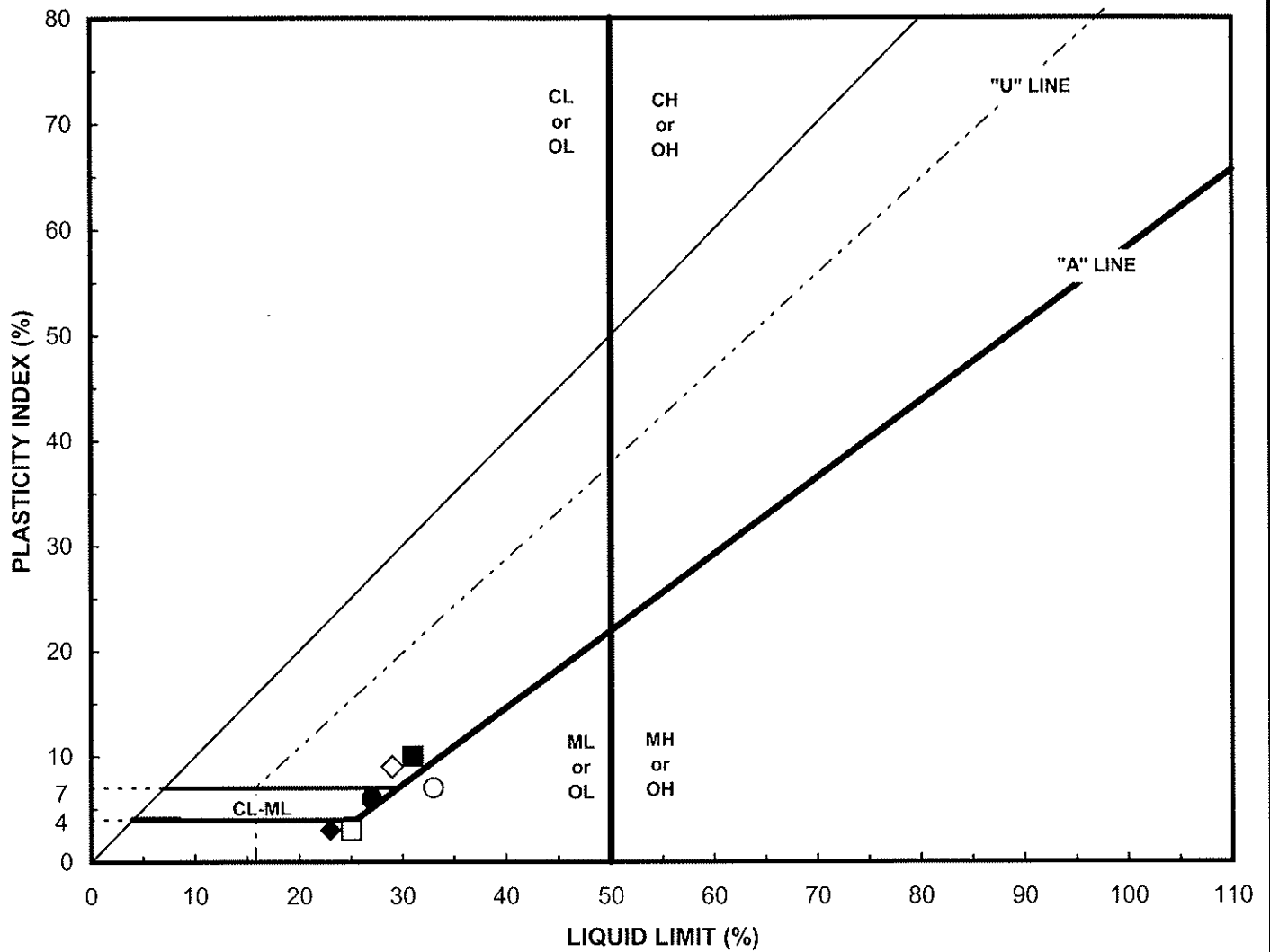
Sieve Size	% Passing	Specification		X = Out of Spec
		Low	High	
3"	100			
2"	100			
1-1/2"	100			
1"	100			
3/4"	100			
1/2"	99			
3/8"	99			
#4	98			
#10	86			
#20	62			
#40	40			
#60	27			
#100	18			
#200	12			

Plasticity Index	N/A		
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Checked by:


John Inlow, Lab Manager

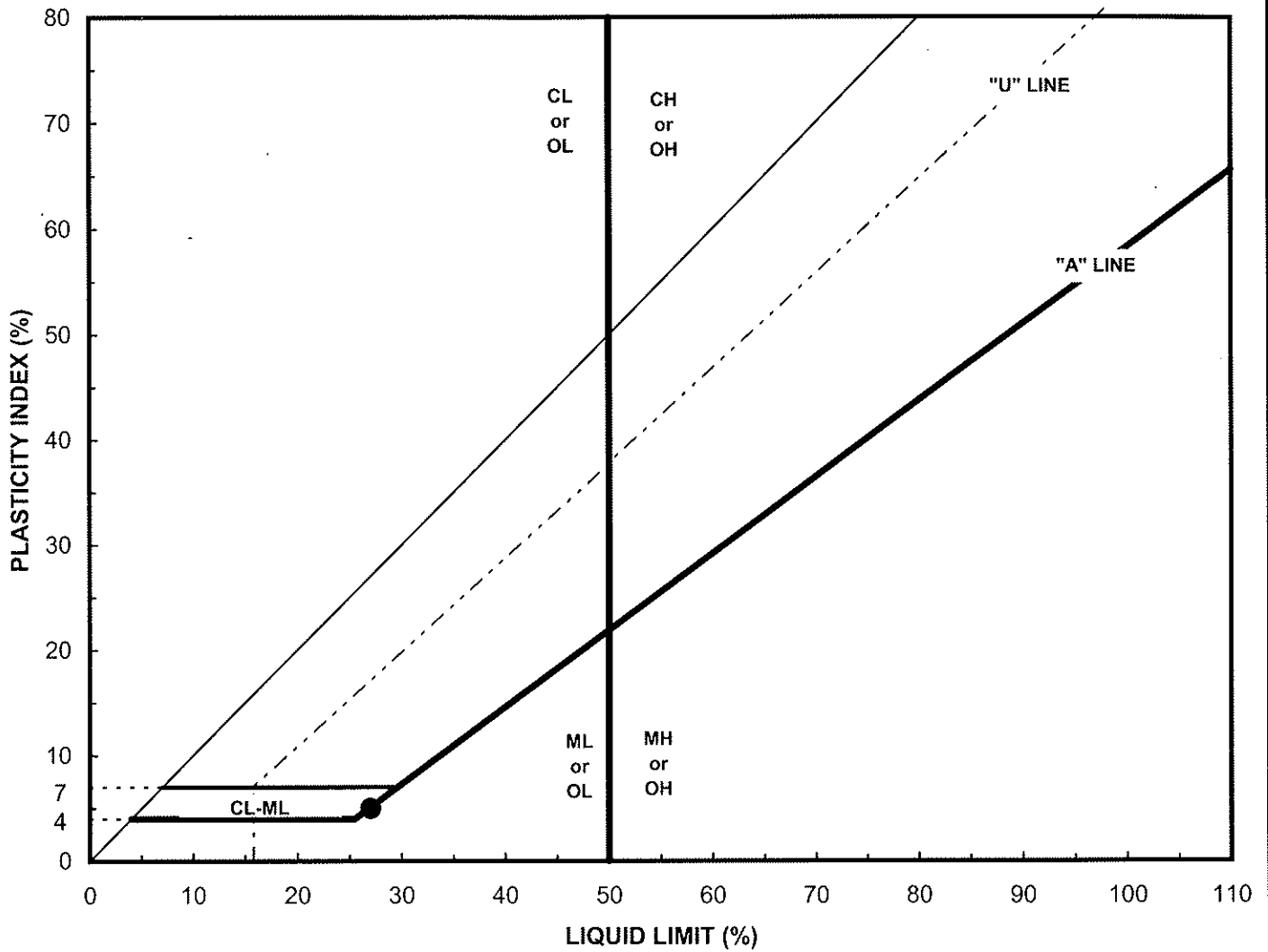




BORING / SAMPLE	DEPTH (feet)	TEST SYMBOL	WATER CONTENT (%)	LL	PI	DESCRIPTION / CLASSIFICATION
B-1	50.0	●	7.6	27	6	Gray Silty, Clayey SAND (SC-SM)
B-4	15.0	■	6.3	31	10	Reddish Brown Clayey SAND (SC)
B-6	5.0	◆		23	3	Dark Brown Silty SAND (SM)
B-12	25.0	○	4.6	33	7	Yellowish Brown Silty SAND (SM)
B-15	45.0	□	3.6	25	3	Dark Yellowish Brown Silty SAND (SM)
B-16	40.0	◇	29.0	29	9	Grayish Brown Clayey SAND (SC)

Project Name: East County Substation
Project Number: 27667021

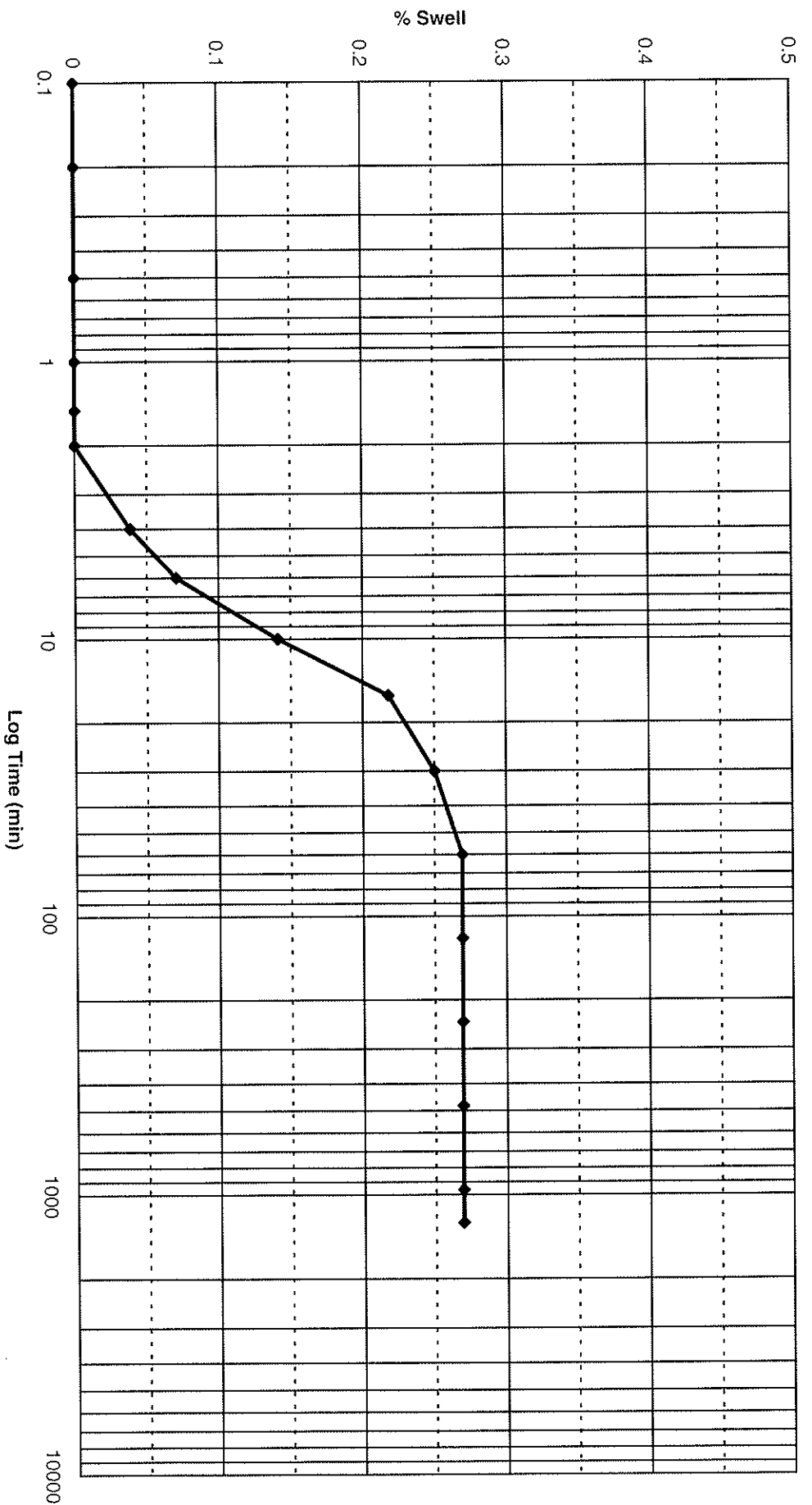
PLASTICITY CHART
Figure: D-33



BORING / SAMPLE	DEPTH (feet)	TEST SYMBOL	WATER CONTENT (%)	LL	PI	DESCRIPTION / CLASSIFICATION
B-17	35.0	●	5.4	27	5	Dark Yellowish Brown Silty SAND (SM)

Project Name: East County Substation
Project Number: 27667021

PLASTICITY CHART
Figure: D-34



Expansion Index, EI @ S=50%:	0 to 20	21 to 50	51 to 90	91 to 130	> 130
Potential Expansion:	Very Low	Low	Medium	High	Very High

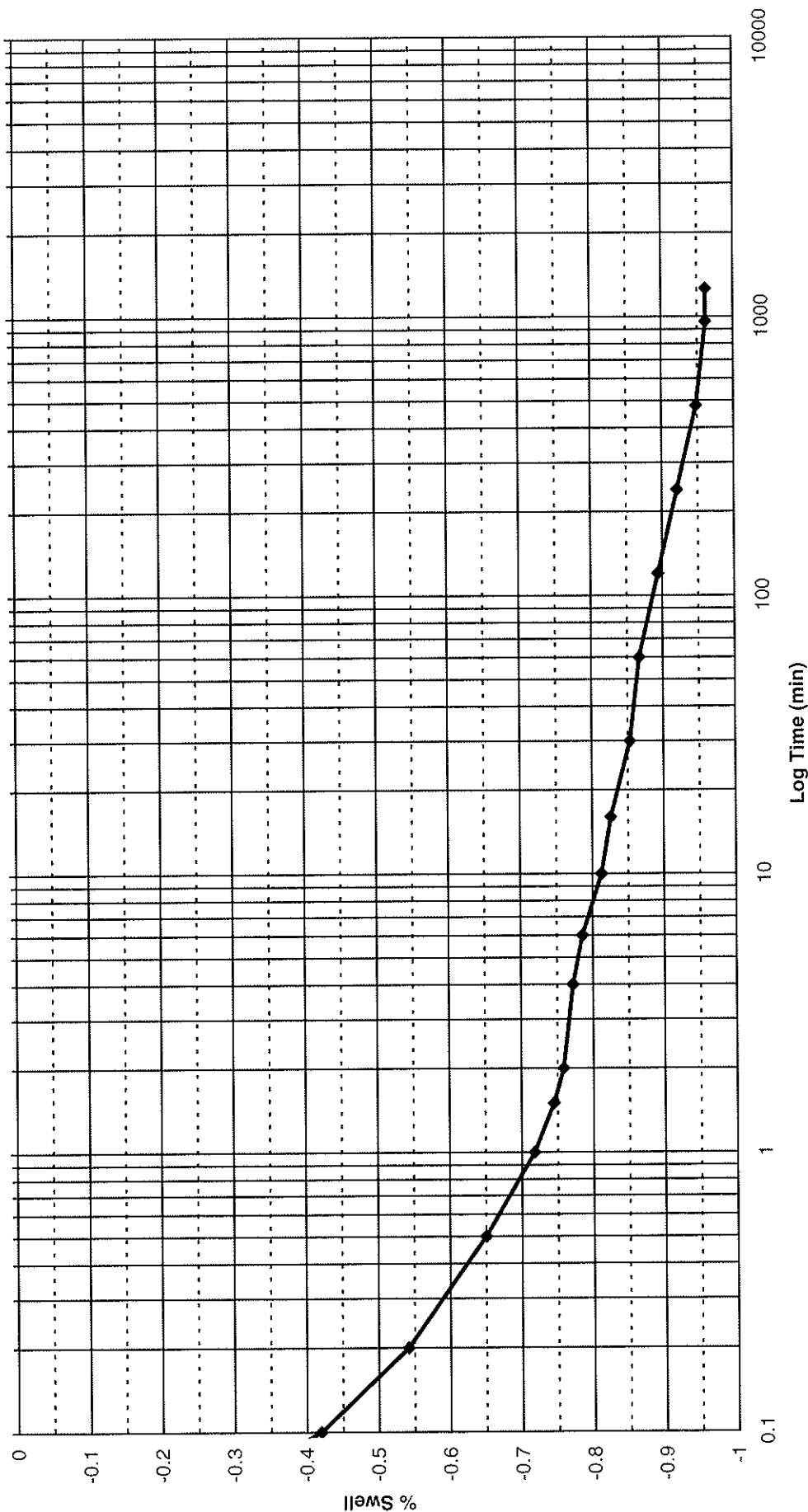
Exploration No.	Sample No.	Depth (ft)	WC (%)	DUW (pcf)	Saturation (%)	EI S meas.	EI S=50%	Description and/or Classification	
B-13	1, 2	2.5	8.7	111.4	44	3	0	Brown Clayey SAND (SC)	

PROJECT NAME: East County Substation
PROJECT NUMBER: 27667021

EXPANSION INDEX TEST

ASTM D 4829

Figure: D-35



Expansion Index, EI @ S=50%:			
Potential Expansion:			
0 to 20	21 to 50	51 to 90	91 to 130
Very Low	Low	Medium	High
> 130	Very High		

Exploration No.	Sample No.	Depth (ft)	WC (%)	DUW (pcf)	Saturation (%)	EI S meas.	EI S=50%	Description and/or Classification
B-15	1, 2	5.0	6.6	110.6	35	0	0	Grayish Brown Silty SAND (SM)
PROJECT NAME: East County Substation						EXPANSION INDEX TEST		
PROJECT NUMBER: 27667021						ASTM D 4829		
Figure: D-36								

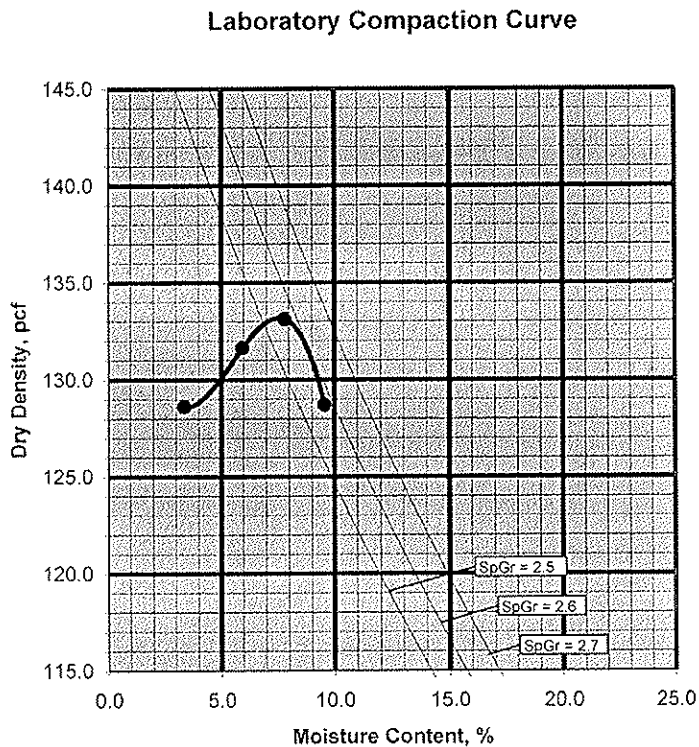
LABORATORY COMPACTION CURVE

G Force Lab No.: **6205**
Sample Location: **B-24**
Soil Description: **Light brown silty sand**
Source of Soil: **Not submitted**

Depth, ft.: **25' - 30'**

Test Designation: **ASTM D1557** Method **A**
% +3/4" **0** % +3/8" **0** % + #4 **3**
Oversize Correction Applied? **No**
Method of Sample Preparation: **Wet**
Type of Rammer Used: **Manual**

M/D Curve No. 1



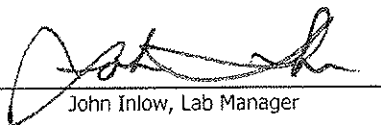
Test Results

Maximum Density, pcf	133.0
Optimum Moisture, %	7.5

Oversize Corrected Results

Maximum Density, pcf	
Optimum Moisture, %	

Checked by:


John Inlow, Lab Manager



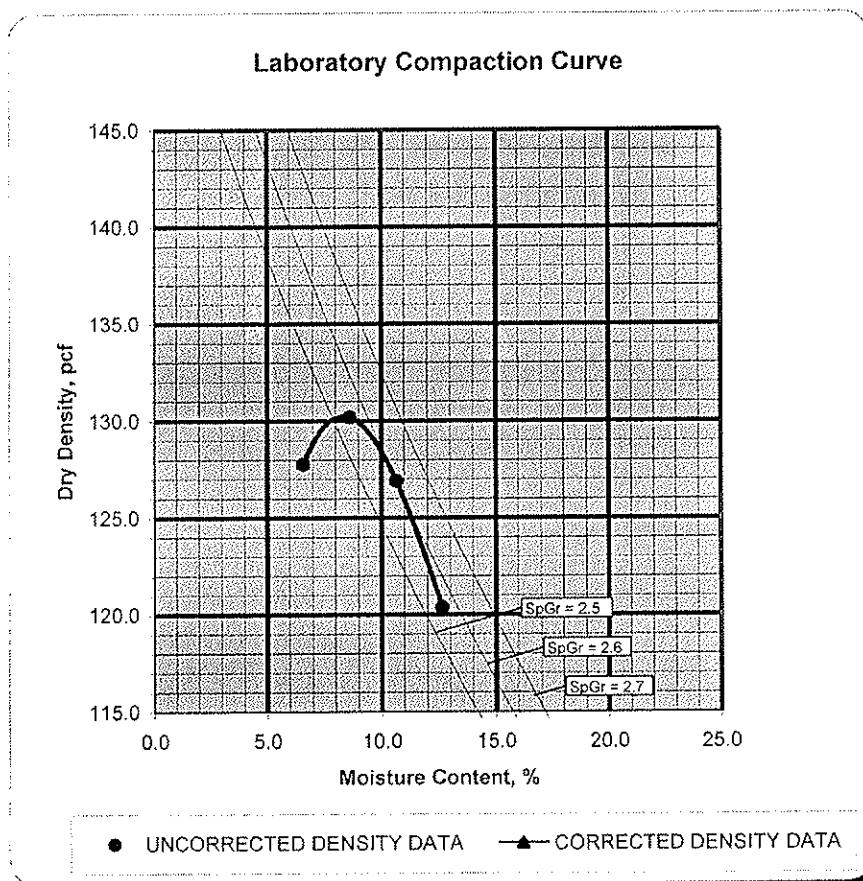
LABORATORY COMPACTION CURVE

G Force Lab No.: 6206
Sample Location: TP-9
Soil Description: Light brown clayey sand
Source of Soil: Not submitted

Depth, ft.: 6.7'

Test Designation: ASTM D1557 Method A
% +3/4" 0 % +3/8" 1 % + #4 3
Oversize Correction Applied? No
Method of Sample Preparation: Wet
Type of Rammer Used: Manual

M/D Curve No. 2



Test Results

Maximum Density, pcf	130.0
Optimum Moisture, %	8.5

Oversize Corrected Results

Maximum Density, pcf	
Optimum Moisture, %	

Checked by:

John Inlow
John Inlow, Lab Manager



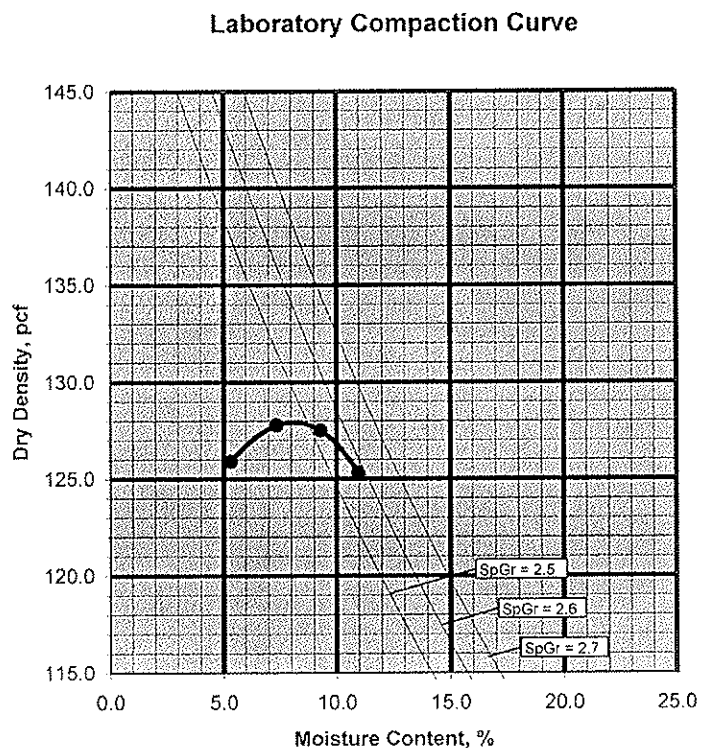
LABORATORY COMPACTION CURVE

G Force Lab No.: **6207**
Sample Location: **TP-19**
Soil Description: **Light brown silty sand**
Source of Soil: **Not submitted**

Depth, ft.: **9.5'**

Test Designation: **ASTM D1557** Method **A**
% +3/4" **0** % +3/8" **1** % + #4 **2**
Oversize Correction Applied? **No**
Method of Sample Preparation: **Wet**
Type of Rammer Used: **Manual**

M/D Curve No. 3



Test Results

Maximum Density, pcf	128.0
Optimum Moisture, %	8.0

Oversize Corrected Results

Maximum Density, pcf	
Optimum Moisture, %	

Checked by:

John Inlow
John Inlow, Lab Manager

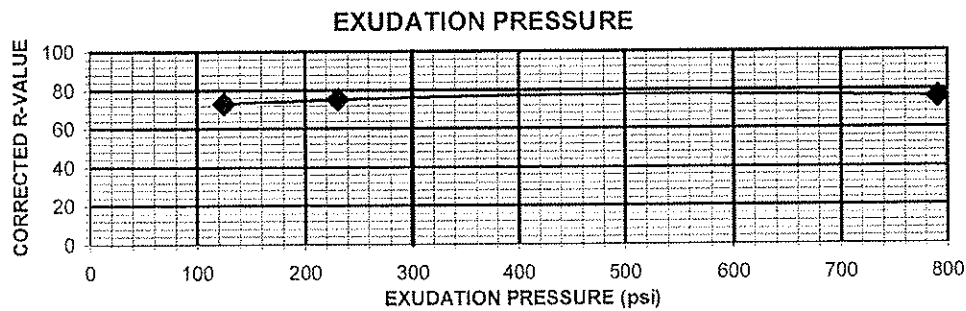
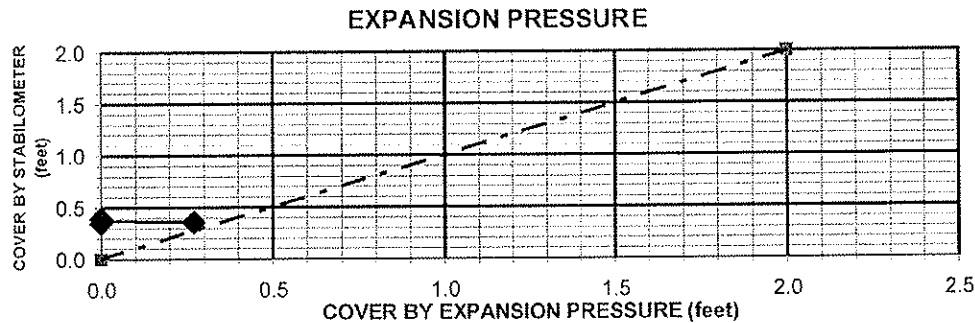




R-VALUE TEST REPORT

DEM PROJECT NO.	13-01.01	DATE RECEIVED	5/19/2008
CLIENT	G Force	LAB NUMBER	855
CLIENT REFERENCE	GF12555, G Force Lab No. 6205	REPORT DATE	5/21/2008
CLIENT'S PROJECT OR WORK ORDER NUMBER	SDG&E East County Substation; P.O. # 2453		
SAMPLE LOCATION	B-24 @ 25-30'		
SAMPLE DESCRIPTION	Yellowish Brown Sand with Silt (SP-SM)		
SAMPLED BY	Client		

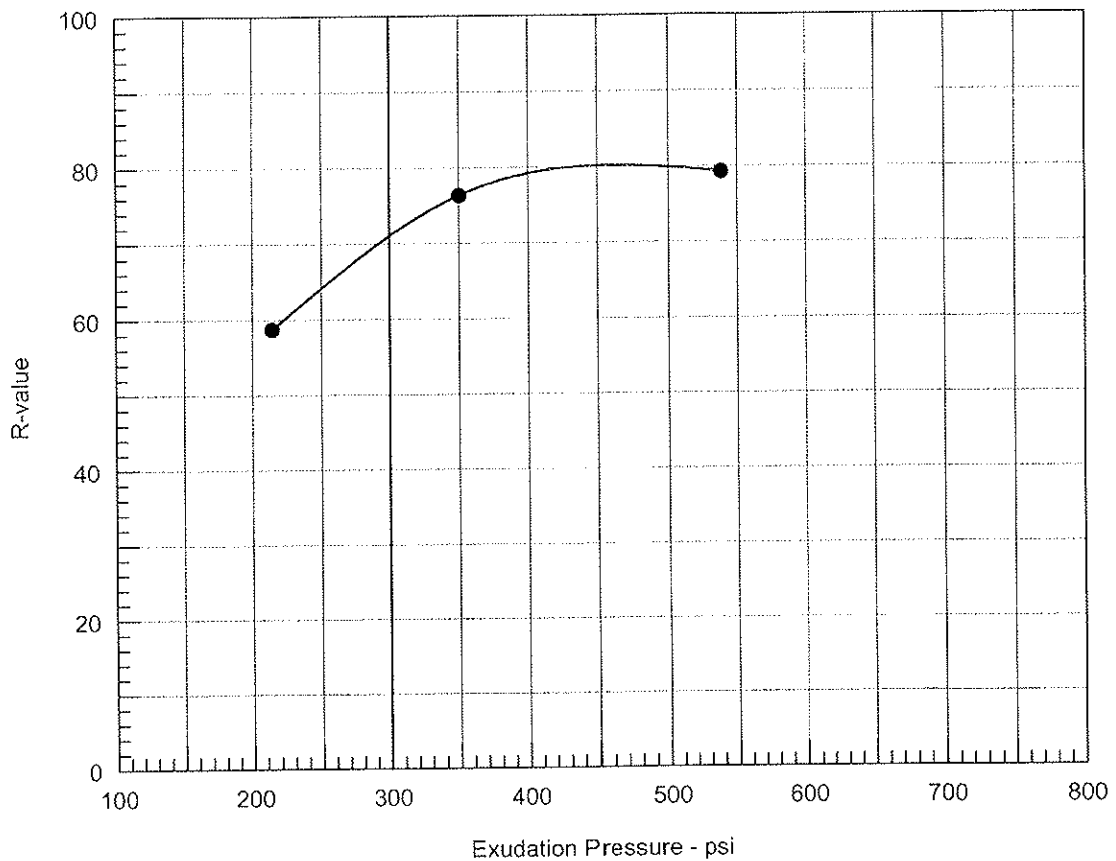
LABORATORY TEST DATA	1	2	3
Compactor Pressure (psi)	350	350	350
Moisture at Compaction (%)	8.3	9.6	10.5
Compacted Dry Density (pcf)	131.1	128.6	128.4
Cover Thickness by Expansion Pressure (feet)	0.27	0.00	0.00
Cover Thickness by Stabilometer (feet)	0.36	0.35	0.39
Exudation Pressure (psi)	791	231	125
R-Value (corrected)	76	75	73



ASSUMED TRAFFIC INDEX	4.5
R-VALUE BY EXUDATION	76
R-VALUE BY EXPANSION	-
R-VALUE AT EQUILIBRIUM	76

ENGINEER: CHAD M. DAVIS, RCE

R-VALUE TEST REPORT

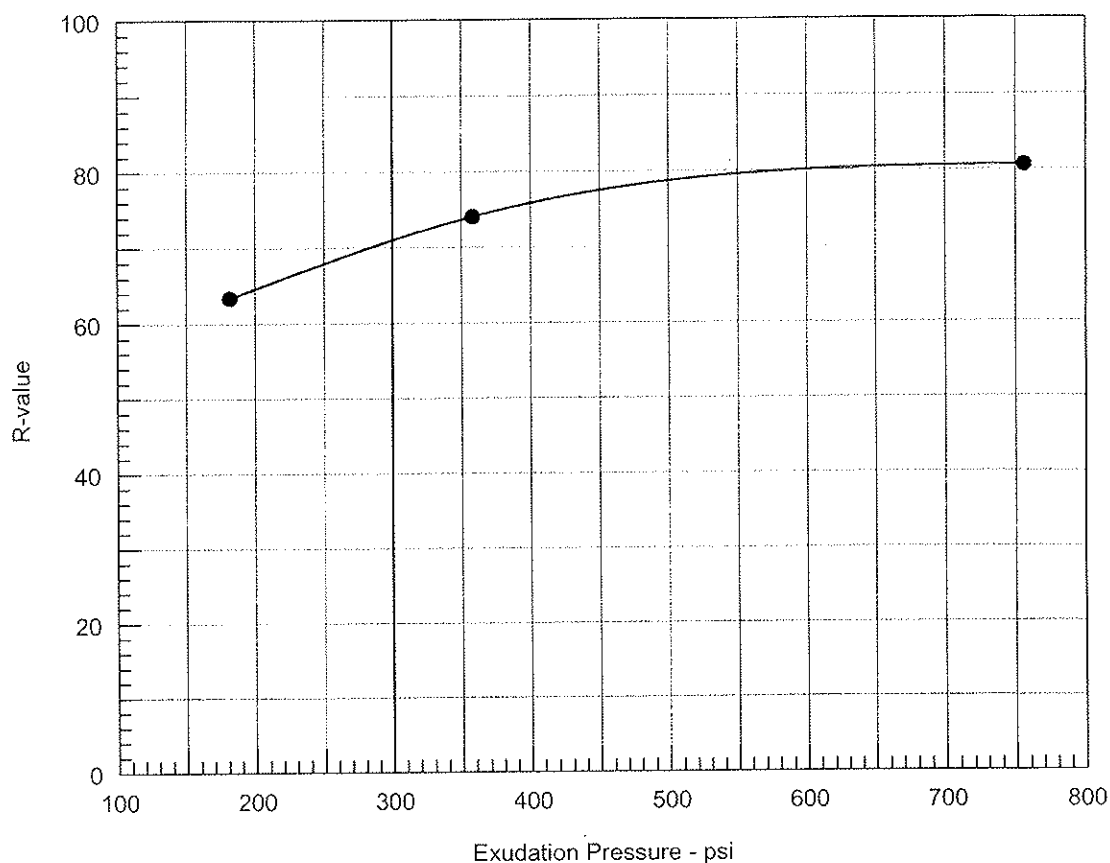


Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	117.9	11.3	0	25	2.48	350	76	76
2	350	109.0	12.4	0	53	2.68	214	54	59
3	350	112.7	10.8	0	25	2.61	539	78	79

Test Results	Material Description
R-value at 300 psi exudation pressure = 71	Tan Clayey Silty Sand with aggregate
Project No.: 15659 Project: URS Lab Testing Location: TP-2-3.5' Sample Number: 1 Depth: 2'-3.5' Date: 5/28/2008	Tested by: L. Fukushima Checked by: M. Fakharpour Remarks: S12503
R-VALUE TEST REPORT SIGNET TESTING LABS, INC.	Figure D-41

R-VALUE TEST REPORT

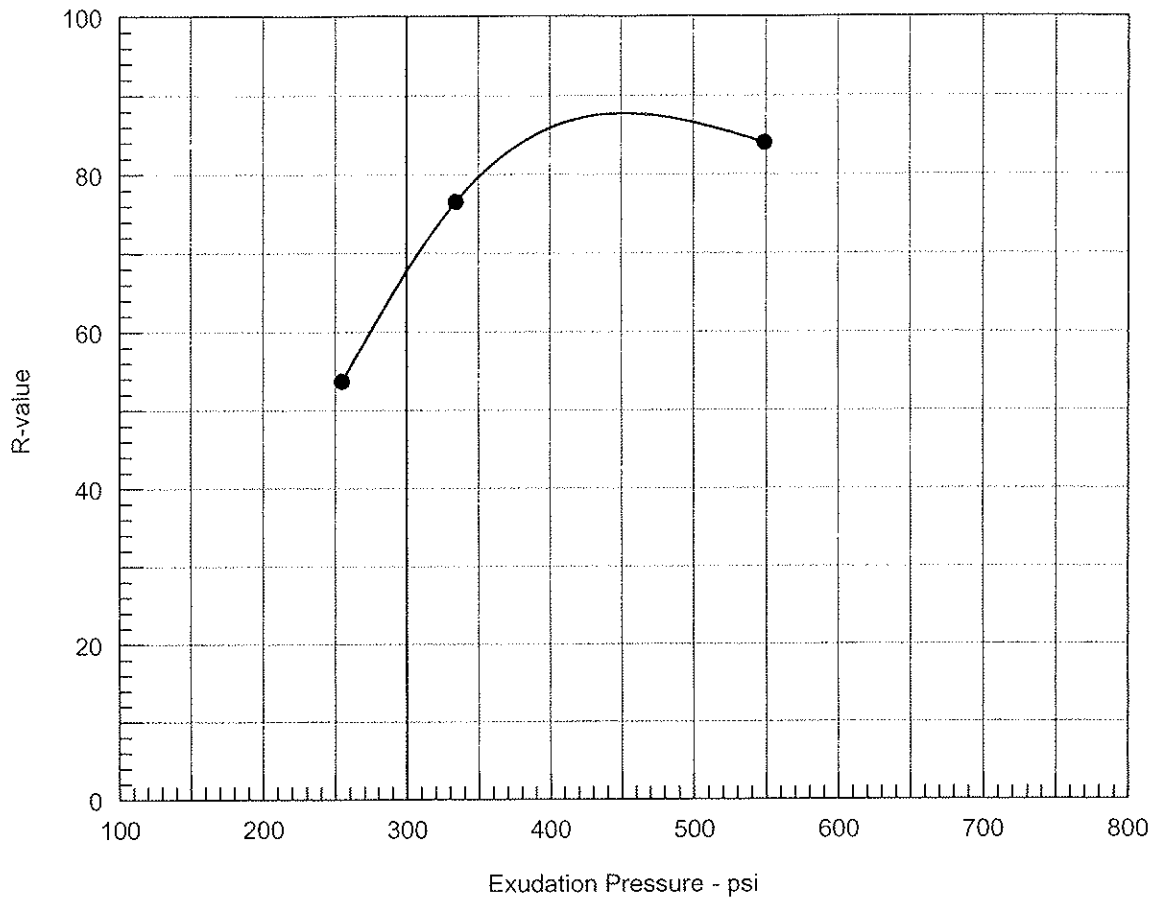


Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	105.0	14.6	0	23	2.70	756	78	81
2	350	99.2	16.8	0	40	2.57	181	62	63
3	350	100.3	16.3	0	28	2.60	358	72	74

Test Results	Material Description
R-value at 300 psi exudation pressure = 71	Brown Silty Sand with aggregate
Project No.: 15659 Project: URS Lab Testing Location: TP-3-3' Sample Number: 3 Depth: 3-3' Date: 5/28/2008	Tested by: L. Fukushima Checked by: M. Fakharpour Remarks: East County Substation
R-VALUE TEST REPORT SIGNET TESTING LABS, INC.	Figure D-42

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	128.0	9.1	0	14	2.30	549	86	84
2	350	119.1	9.9	0	28	2.70	334	73	77
3	350	120.6	11.1	0	53	2.43	255	56	54

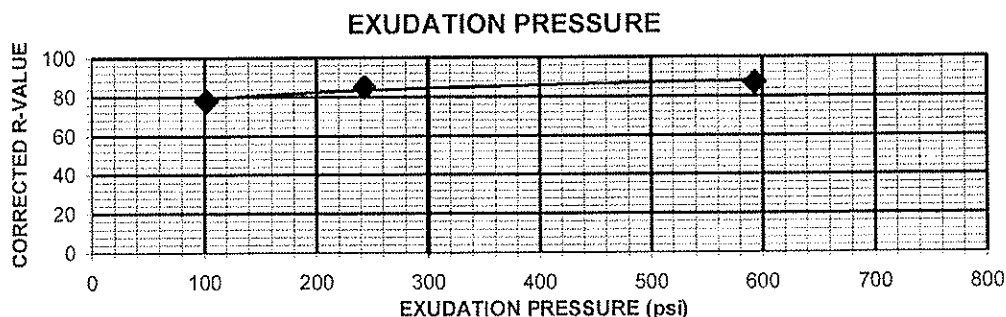
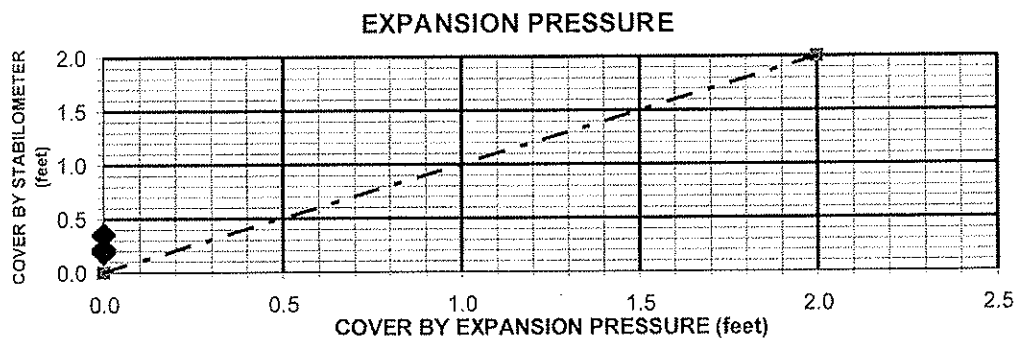
Test Results	Material Description
R-value at 300 psi exudation pressure = 68	Brown Silty Sand with Aggregate
Project No.: 15659 Project: URS Lab Testing Location: TP-6 @3', East county substation Sample Number: 2 Depth: 3' Date: 5/28/2008	Tested by: L. Fukushima Checked by: M. Fakharpour Remarks: East County Substation
R-VALUE TEST REPORT SIGNET TESTING LABS, INC.	Figure D-43



R-VALUE TEST REPORT

DEM PROJECT NO.	13-01.01	DATE RECEIVED	5/19/2008
CLIENT	G Force	LAB NUMBER	856
CLIENT REFERENCE	GF12555, G Force Lab No. 6207	REPORT DATE	5/21/2008
CLIENT'S PROJECT OR WORK ORDER NUMBER	SDG&E East County Substation; P.O. # 2453		
SAMPLE LOCATION	TP-19 @ 9.5'		
SAMPLE DESCRIPTION	Light Yellowish Brown Sand with Silt (SP-SM)		
SAMPLED BY	Client		

LABORATORY TEST DATA	1	2	3
Compactor Pressure (psi)	350	350	350
Moisture at Compaction (%)	9.9	10.7	11.1
Compacted Dry Density (pcf)	123.9	122.6	122.5
Cover Thickness by Expansion Pressure (feet)	0.00	0.00	0.00
Cover Thickness by Stabilometer (feet)	0.19	0.22	0.35
Exudation Pressure (psi)	593	243	102
R-Value (corrected)	87	85	78



ASSUMED TRAFFIC INDEX	4.5
R-VALUE BY EXUDATION	86
R-VALUE BY EXPANSION	-
R-VALUE AT EQUILIBRIUM	86

ENGINEER: CHAD M. DAVIS, RCE

