

CONSULTANTS, INC.
4405 South Clinton Avenue
South Plainfield, NJ 07080

Tel: (800) 545-ATUL
(908) 754-8383
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NJ EDA Approved Testing Laboratory • MBE/DBE Certified • NJ DEP Certified

Soil, Concrete, Masonry, Rebar, Asphalt, Structural Steel, Precast, Piles, Caissons, Fire-proofing, Roofing, Soil Boring, Concrete/Rock Coring, UST Removal, Environmental Testing & Reports

April 30, 2008

CEC, Inc
730 Boulevard Suite 10 A
Kenilworth, NJ 07033

Attn. : Mr. Jeff Ling, PE
Principal

Re : **Subsurface Soil Investigation and a Summary Report**
17 Crawford Street, Newark, NJ

Dear Mr. Ling :

Enclosed, please find three (3) copies of the Subsurface Soil Investigation & Foundation Recommendation report for the four (4) shallow depth soil borings performed on April 12, 2008 and April 19, 2008 at the project referenced above.

Soil samples collected during the subsurface soil investigation program will be discarded after thirty (30) days from the date of this report, if not requested in advance to do otherwise.

We thank you very much for providing us an opportunity to service you on this project.

Should you have any question or require additional information, please do not hesitate to contact the undersigned at (908) 754 - 8383.

Sincerely,
ANS CONSULTANTS, INC.

Atul Shah, PE
President
NJ PE License #24GE03443900
ANS/PP

Copy to : CEC Inc-3, File-1

File: ANS-2190_01.SB

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Re : **Subsurface Soil Investigation and a Summary Report**
17 Crawford Street, Newark, NJ

Dear Mr. Ling :

Enclosed, please find three (3) copies of the Subsurface Soil Investigation & Foundation Recommendation report for the four (4) shallow depth soil borings performed on April 12, 2008 and April 19, 2008 at the project referenced above. The soil boring work was performed as per our signed contract dated on March 27, 2008.

Our **Scope of Services** included the following :

1. Drilling and full time inspection of four (4) test borings, including recording of groundwater level and bedrock, if encountered in the contracted depth.
3. Performance of engineering evaluation to determine the stratification and physical properties of the subsurface materials and to develop and provide a soil bearing capacity recommendations.
4. Preparation of a written report summarizing all findings and recommendations.

PROPOSED CONSTRUCTION :

The Subject site is located at 17 Crawford Street, Newark, NJ. The project site is an existing building, previously used for commercial/ Industrial purpose. The floor slab is reinforced concrete. We understand that reuse of the building is planned and some modification are to be done for the subject site. Please see photographs in Appendix-C for more details.

SITE CONDITIONS :

The subject site is the interior of an existing building located towards south of Crawford street. The subject site is located at (approximate) Latitude N 40°43'39.75", Longitude W 74°10'45.25" on the USGS Digital Elevation Model. Please, see site location plan in Appendix-A and Photographs in Appendix-C for more details.

FIELD INVESTIGATIONS :

ANS drilling crew arrived at the site and marked proposed soil boring locations as per the accessibility. A total of four (4) soil borings, B-1 through B-4 were performed. Soil borings were performed at the locations shown in Soil Boring Location Plan included in Appendix-A. The soil boring work was performed under the direction and supervision of our field Engineer Mr. Syed Abbas. Soil borings were sampled using a drop hammer and a split spoon sampler. Soil encountered was sampled continuously down to four (6) feet depth. Soil samples were extracted using a 2" diameter split spoon sampler as the sampling procedure specified in ASTM 1586-99.

Samples were obtained by the Standard Penetration Test (SPT) Method (ASTM D 1586), which consists of driving a 2-inch outside-diameter split-spoon sampler into the soil with a 140-pound weight falling freely through a distance of 30 inches. The sampler is driven in four successive 6-inch increments using a 64 lb. manual drop hammer, with the number of blows per increment being recorded. The number of blows required to advance the sampler the middle 12 inches is termed the Standard Penetration Resistance (N-value) and is presented on the Field Test Boring Logs in Appendix-A.

During drilling operations, extracted soil samples were visually examined and classified by our Field Engineer. The soil sample description, Standard Penetration Resistance Test (SPT) blow counts and locations, strata changes, groundwater depth and other pertinent information were recorded on a detailed field log. Soil samples obtained at the SPT locations were visually classified according to the Unified Soil Classification System (USCS). Samples were later returned to our laboratory for further review and testing.

LABORATORY TESTING :

Six (6) soil samples, three soil samples from Boring B-2 and one each from borings B-1, B-3 and B-4, were tested in the laboratory as per Unified Soil Classification System ASTM-D2487-93. Details are included below.

Soil Boring Number	Soil Sample Number	Depth collected	% Moisture Content	Fines thru #200	USCS Classification Symbol
B-1	S-1	4' - 10" - 6' - 10"	11.0	38.9	GM
B-2	S-2	6" - 8"	16.9	14.4	SM
B-2	S-3	8" - 32"	17.7	37.3	SM
B-2	S-4	32" - 56"	16.5	50.9	ML
B-3	S-5	7' - 9'	22.9	53.9	ML
B-4	S-6	3' - 3" - 5' - 3"	20.1	27.3	SM

ML : Fine silt SM : Silty Sand

SUBSURFACE CONDITIONS :

Detailed descriptions of the soils encountered in the test boring is documented in the boring log which is presented in Appendix-A. The following gives a general description of the subsurface conditions encountered in each boring. While the borings may indicate that the subsurface conditions appeared to be relatively uniform across the site, it should be recognized that the size of boring was small compared to the size of the site, and that the existence of anomalies can not be precluded.

Based on the results of soil borings and our geotechnical laboratory testing, we estimate the general stratigraphy of the site consist of the following major units, in an increasing order of depth.

Stratum 1 : Sub-grade fill material containing gravels and silty sand was encountered down to 4 feet depth in all the borings B-1 to B-4.

Stratum 1 : Virgin Soil containing brown fine silt and sand was noted down to the end of borings in all the borings B-1 to B-4.

GROUNDWATER :

Since the boring depth was only 72 inches, static ground water was not encountered in any of the borings.

CONCLUSIONS :

1. Majority of the on-site soil in the top 36" depth consist of fine silty sands, which should be considered suitable for reuse as controlled compacted fill.

Boring Number	Depth in feet	Penetration Resistance N-Value	Recover (inch)	Soil Type	Soil Bearing Capacity (PSF)
B-1	0 - 0.83	--	--	FILL	---
B-1	0.83 - 2.83	--	--	FILL	---
B-1	2.83 - 4.83	23	21	SM-ML	+2000
B-1	4.83 - 6.83	48	21	SM-ML	4000
B-2	0 - 0.66	--	--	FILL	--
B-2	0.66 - 2.66	17	15	FILL	1500
B-2	2.66 - 4.66	25	12	SM	2500
B-3	0 - 0.83	--	--	FILL	--
B-3	0.83 - 5	--	--	FILL	--
B-3	5 - 7	33	6	SM	4000
B-3	7 - 9	21	10	SM	+2000

Boring Number	Depth in feet	Penetration Resistance N-Value	Recover (inch)	Soil Type	Soil Bearing Capacity (PSF)
B-4	0 - 0.83	--	--	FILL	--
B-4	0.83 - 3.25	--	--	FILL	--
B-4	3.25 - 5.25	31	10	SM	+4000
B-4	5.25 - 7.25	23	2	SM	+2000

2. Foundation for the proposed structure may be supported by conventional shallow foundations established on the undisturbed / virgin soil. Foundation should be designed to impose maximum allowable net bearing pressure of up to 4000 pounds per square foot. Any pockets of localized unsuitable soil encountered during foundation excavation should be completely removed. The over excavated area should be backfilled utilizing either controlled compacted fill or 3/4" size clean gravels.
3. The majority of the on-site soils consist of sub-grade fill material containing silty sand and gravels. The onsite soil from the top 36" will be suitable as controlled compacted fill. Depending upon the time of the year when the actual construction takes place, drying of excavated sandy soil and aeration may be required to reduce the moisture content. In-situ moisture content of soil varied between 11 % to 19 %, which is generally considered wet. The optimum moisture content of silty/sandy soils is usually 8 % to 10%.
4. Any fill used as backfill material within the pavement areas should consist of off-site granular soils which have been maintained at moisture contents suitable for compaction. All fill should be placed in lift in the order of twelve (12) inches in loose thickness and be uniformly compacted to at least 95% of its maximum dry density as determined by the modified proctor density values derived based upon ASTM D-1557-98 test procedure.

In addition, we recommend that backfill soil placed in confined areas, such as foundation or utility excavations, should be spread in lifts in the order of six(6) to eight (8) inches in loose thickness and it should be compacted to the same degree using manually operated vibratory compaction equipment. We recommend that temporary construction slopes be established at one vertical to two horizontal, or flatter, or as required by the governing safety codes.

RECOMMENDED SERVICES:

It is recommended that we should be retained to provide continuous observation and Soil Engineering services during the excavation and foundation construction phases of the work. This is to observe compliance with the design concepts, specifications and recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

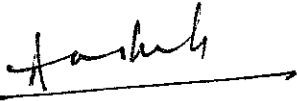
LIMITATIONS :

This report has been prepared in accordance with generally accepted Geotechnical Engineering

practices for the exclusive use of CEC Inc., and their designated representative (s). No other warranty, express or implied is made. Contractors wishes to use the soil boring information may do at their own risk. Unless specifically indicated to the contrary in this report, this report does not address environmental considerations which may effect the site development. The conclusions and recommendations of this report are not intended to supersede or overlook any NJDEP and Federal Environmental rules and regulations, which should be reflected in the site planning.

Should you have any questions or require additional information, please, do not hesitate to contact the undersigned at (908) 754-8383.

Sincerely,
ANS CONSULTANTS, INC.



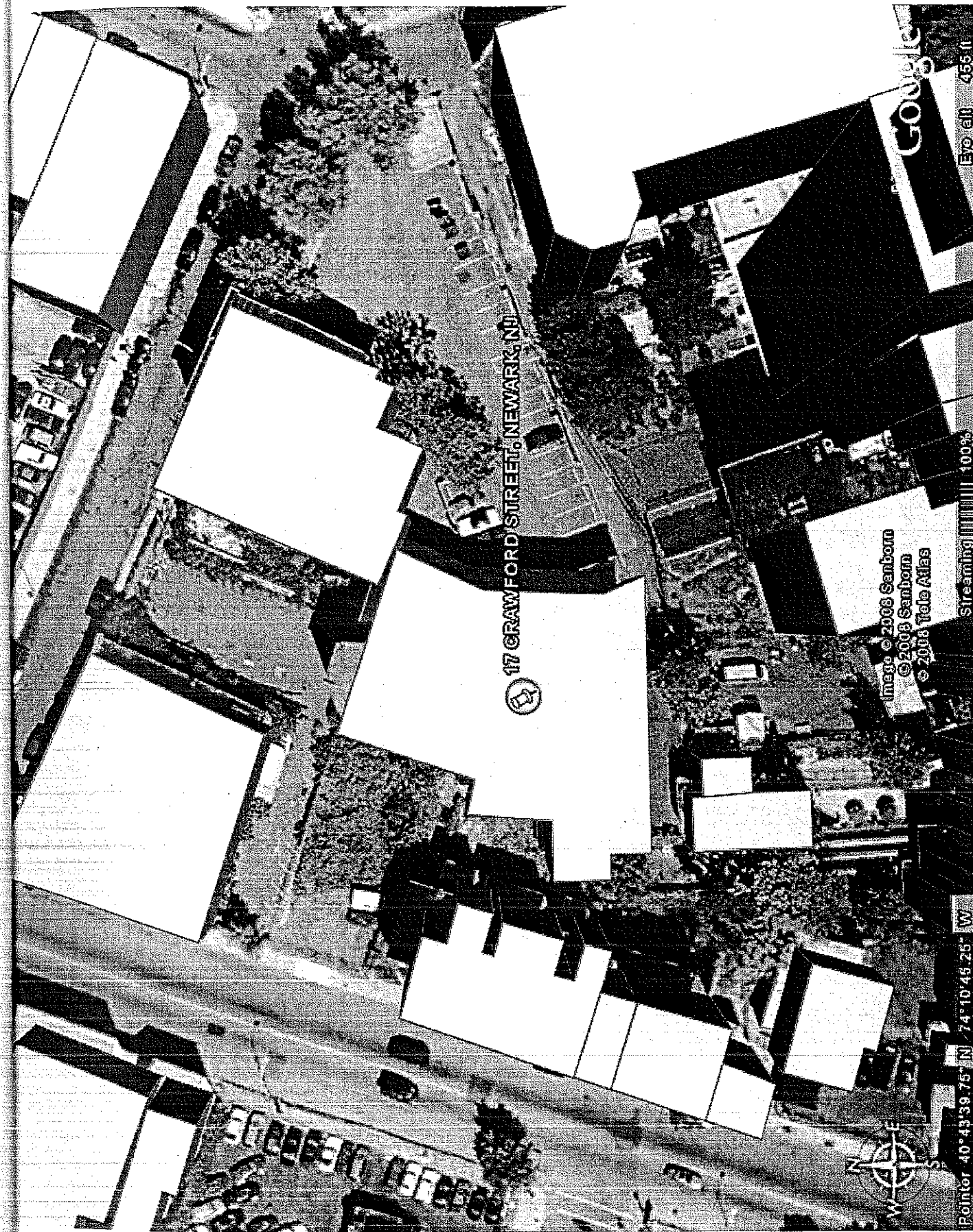
Atul Shah, PE
President
NJ PE License #24GE03443900
ANS/PP

- Copy to :
- (1) CEC Inc-2
 - (2) Mikesell & Associates
17 Academy Street, Suite 800
Newark, NJ 07102

Attn.: Edgar J. Amato

Ph# 973-624-3000
Fax# 973-624-5308
 - (3) Peter Santos
E.mail: artcocontracting@aol.com
 - (4) File-1

APPENDIX - A



17 CRAWFORD STREET, NEWARK, NJ



Image © 2008 Sanborn
© 2008 Sanborn
© 2008 Tele Atlas

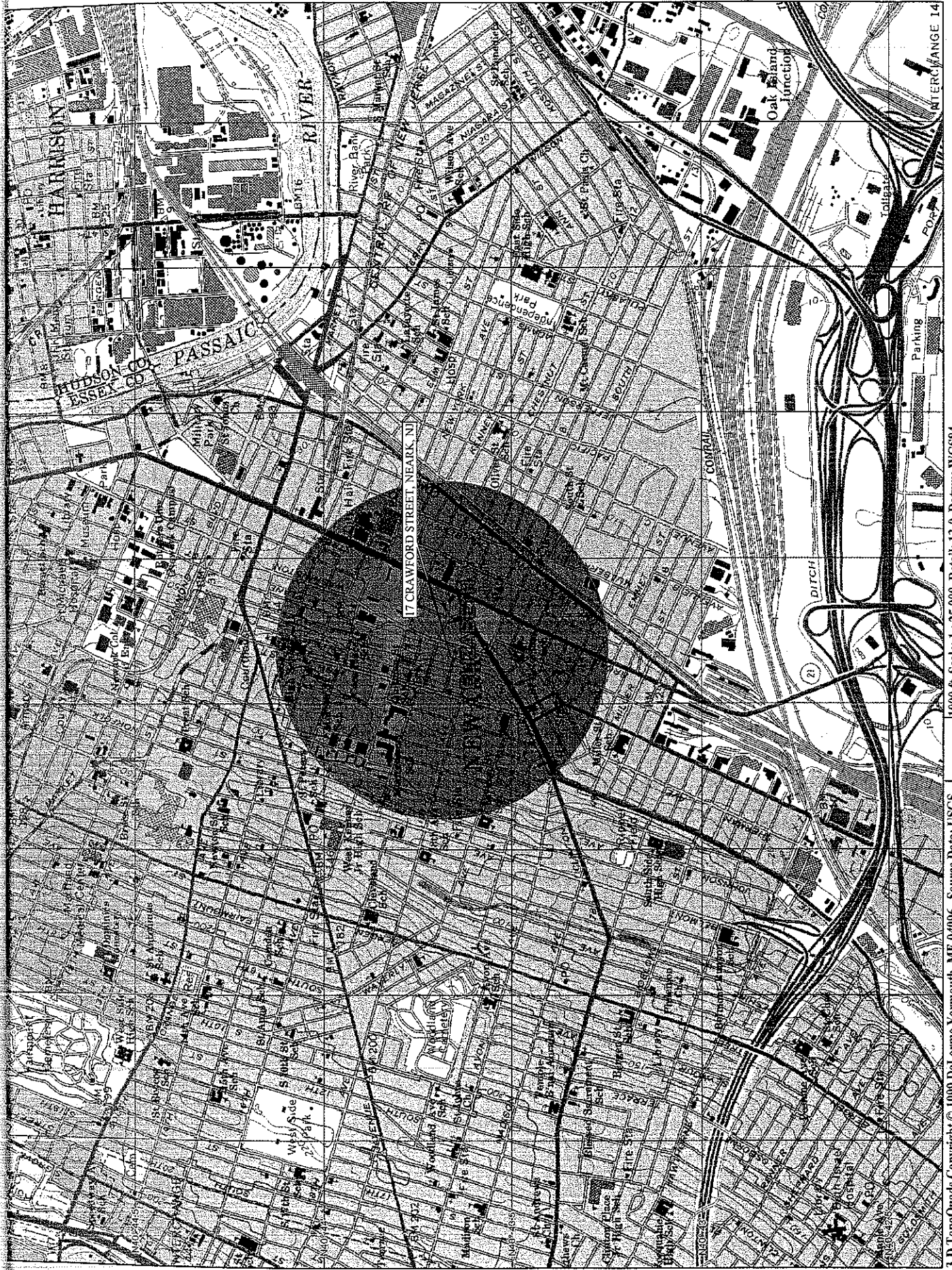


Pointer 40°43'39.75" N 74°10'45.25" W

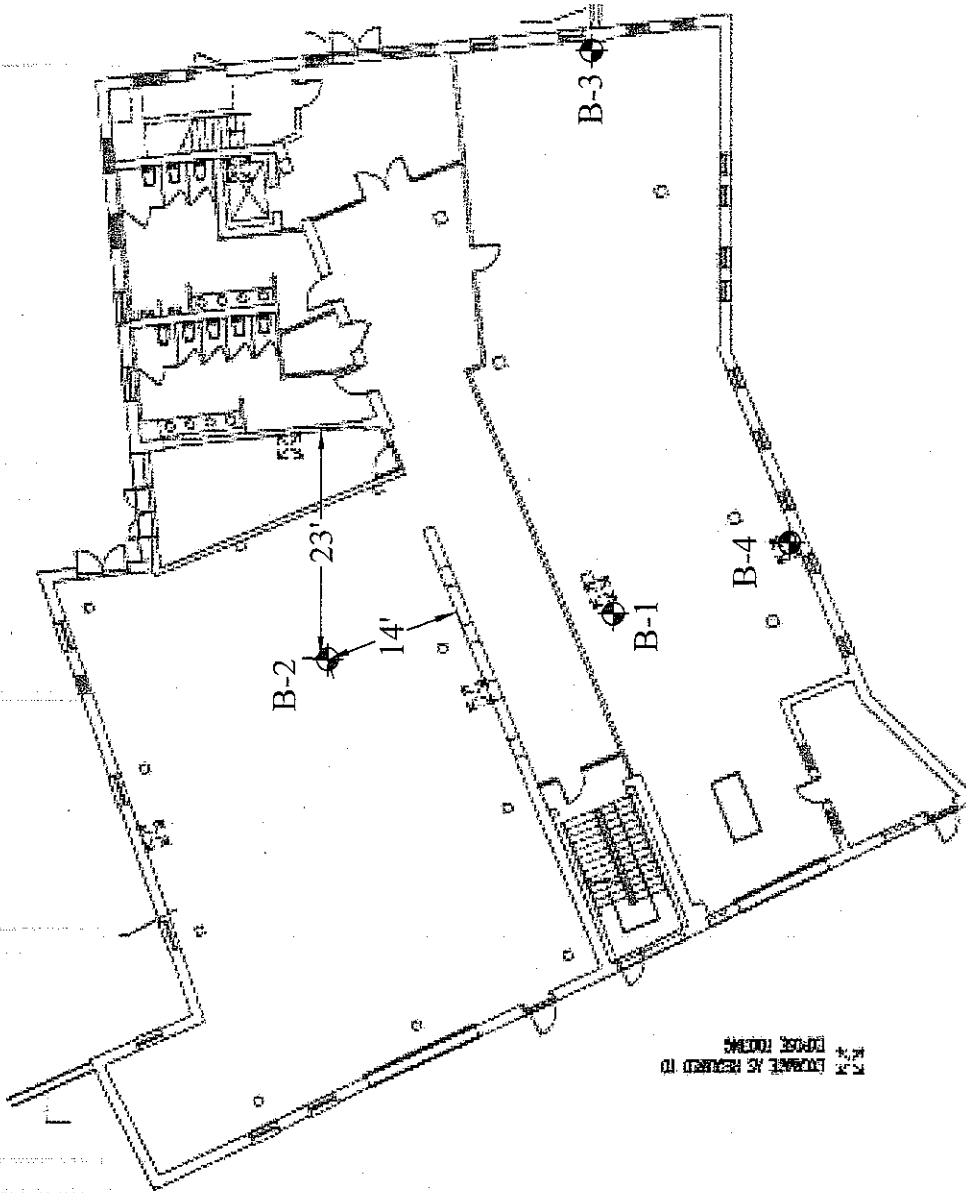
Streaming 100%

Eye alt 455 ft

Google



17 CRAWFORD STREET, NEARK, NJ



Not to scale (All dimensions are in ft)

CLIENT: CEC, Inc

PROJECT: 17 Crawford Street, Newark, NJ

ANS CONSULTANTS, INC.
4405 SOUTH CLINTON AVE,
SO. PLAINFIELD NJ 07080
PHONE: (908) 754 8383

BY: Priyanka

DATE: 4/28/2008

Project No : ANS-2190

SOIL BORING LOCATION PLAN

Legend :
Soil Boring Location



LOG OF BORING No. B-1

PROJECT: 17 CRAWFORD STREET, NEWARK, NJ
 CLIENT: CEC INC., 730 BLVD-SUITE 10 A, KENILWORTH, NJ
 PROJECT NO.: ANS-2190 ELEVATION: N/A
 LOCATION: 17 CRAWFORD STREET, NEWARK, NJ
 DRILLER: JESUS, EDWIN & A. SHAH LOGGED BY: PPP
 DRILLING METHOD: Hand Drop Hammer
 DEPTH TO - WATER: N/A DATE: 04/19/08

Depth (feet)	Sample No.	Blow Counts	N VALUE	RECOVERY (in.)	Soil Classification (USCS)	Description
0		-	-	-		
	S-1	-	-	-	FILL	Top 10"- Concrete slab on grade.
		-0				
		-				
2		-	-	-	FILL	Fill material containing Black fine silty sand with trace of M- F gravels, trace of crushed concrete, moist.
		-0				
4	S-1	8 9 14 17	23	21	SM-ML	Virgin soil : Brown silt and M-F sand with trace of M-f gravels, moist, medium dense.
6	S-2	22 21 25 17	46	21	SM-ML	Brown silt with M-F sand and trace of gravels, moist, medium dense.
						Boring End @ 6.83ft.
8						
10						
12						
14						

Notes:



LOG OF BORING No. B-2

PROJECT: 17 CRAWFORD STREET, NEWARK, NJ
 CLIENT: CEC INC., 730 BLVD-SUITE 10 A, KENILWORTH, NJ
 PROJECT NO.: ANS-2190 ELEVATION: N/A
 LOCATION: 17 CRAWFORD STREET, NEWARK, NJ
 DRILLER: JESUS, EDWIN & A. SHAH LOGGED BY: PPP
 DRILLING METHOD: Hand Drop Hammer
 DEPTH TO - WATER: N/A DATE: 04/12/08

Depth (feet)	Sample No.	Blow Counts	N VALUE	RECOVERY (in.)	Soil Classification (USCS)	Description
0		-	-	--	FILL	Top 4" - Asphalt Pavement layer. 5" of concrete.
		-				2" of Black silty M-F sand with some fine gravels, moist. Below slab fill material containing C-M gravels, very dense.
		-0				
		10				
		9				
2	S-1	8	17	15	FILL	Fill material containing tan silty M-F sand with some fine gravels and trace of asphalt, moist.
		14				
		9				
		11				
4	S-2	14	25	12	SM	Tan brown silty sand with trace of gravel, wet.
		8				
6						Boring refusal @ 4.66ft.
8						
10						
12						
14						

Notes:

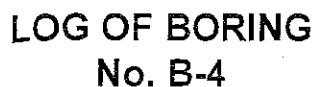


LOG OF BORING No. B-3

PROJECT: 17 CRAWFORD STREET, NEWARK, NJ
 CLIENT: CEC INC., 730 BLVD-SUITE 10 A, KENILWORTH, NJ
 PROJECT NO.: ANS-2190 ELEVATION: N/A
 LOCATION: 17 CRAWFORD STREET, NEWARK, NJ
 DRILLER: JESUS, EDWIN & A. SHAH LOGGED BY: PPP
 DRILLING METHOD: Hand Drop Hammer
 DEPTH TO - WATER: \approx N/A DATE: 04/19/08

Depth (feet)	Sample No.	Blow Counts	N VALUE	RECOVERY (in.)	Soil Classification (USCS)	Description
0		-	-		FILL	Top 10"-Concrete slab on grade.
2		-			FILL	Fil material containing black silty M-F sand with trace of M-F gravels, trace of concrete, moist.
4		-				
6	S-1	17 16 17 17	33	6	SM	Virgin Soil : Brown silty M-F sand with trace of M-F gravels, wet, dense.
8	S-2	10 11 10 12	21	10	SM-ML	Brown clayey silt with little M-F sand and trace of M-F gravels, wet, stiff.
10						Boring refusal @ 9ft.
12						
14						

Notes:

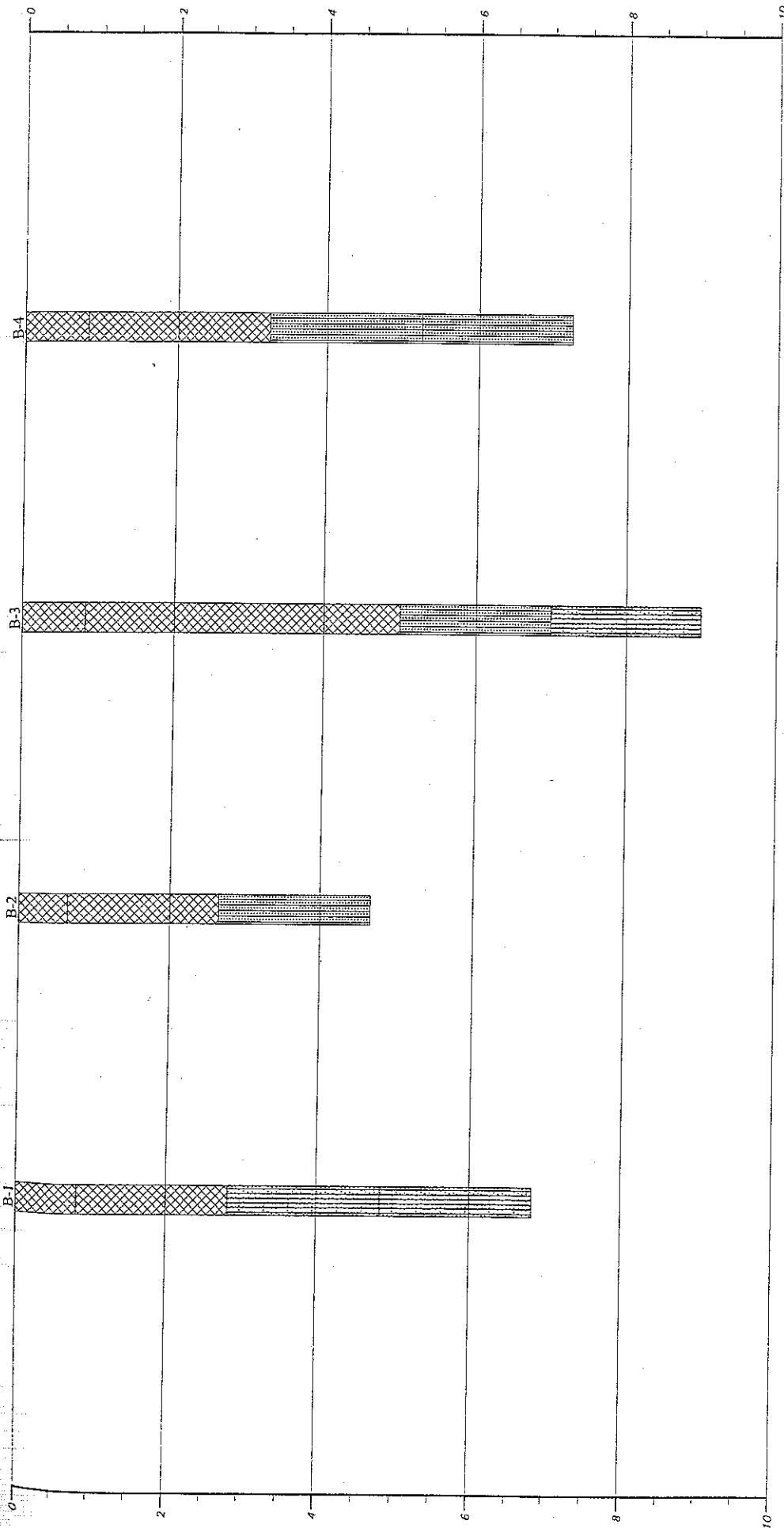


DATE: 04/19/08

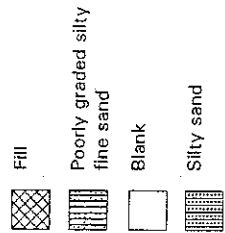
Notes:

Depth in Feet

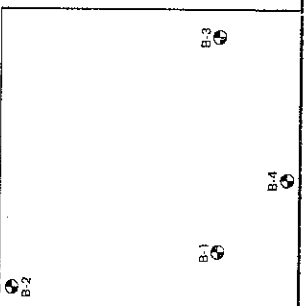
Depth in Feet



Strata symbols



Plan View



ANS CONSULTANTS, INC.
GENERALIZED SOIL PROFILE

HORIZONTAL SCALE: 1"=2'	DRAWN BY/APPROVED BY	DATE DRAWN
VERTICAL SCALE: 1"=2'		4/29/2008

17 CRAWFORD STREET, NEWARK, NJ

PROJECT NO. ANS-2190

FIGURE NUMBER



KEY TO SYMBOLS

Symbol Description

Strata symbols



Fill



Poorly graded silty
fine sand



Blank

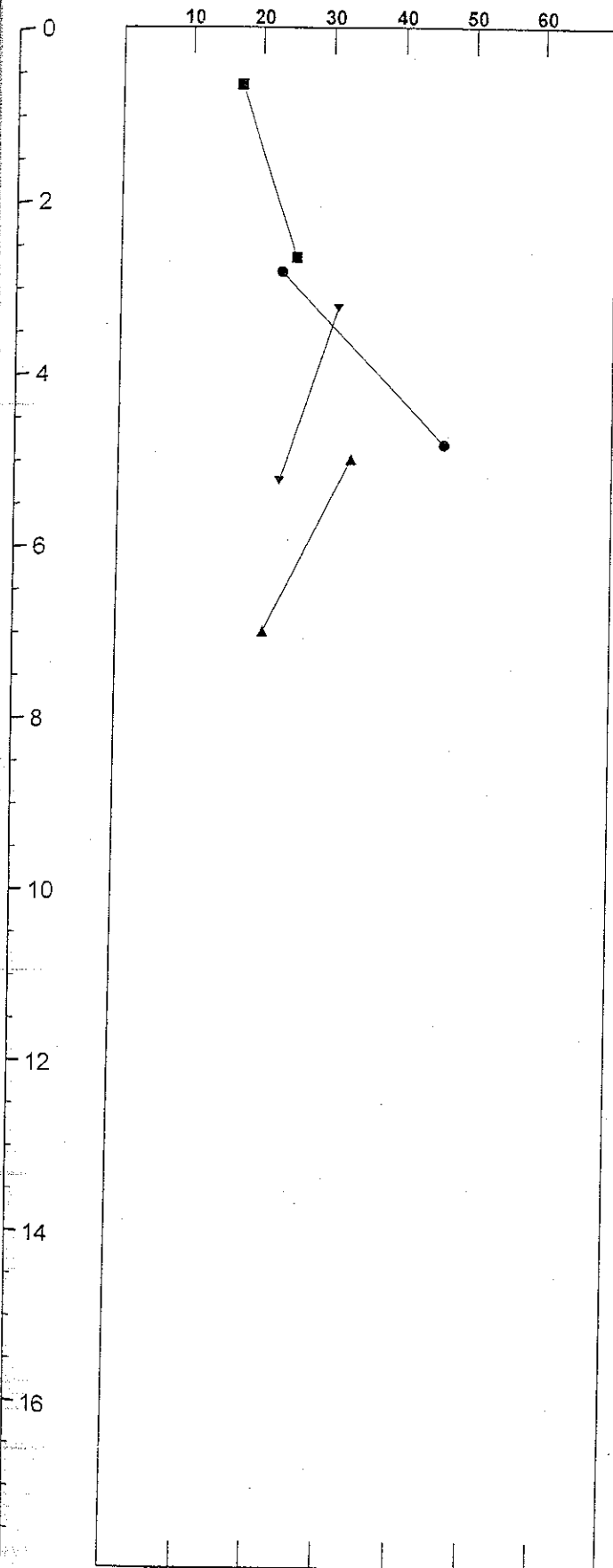


Silty sand

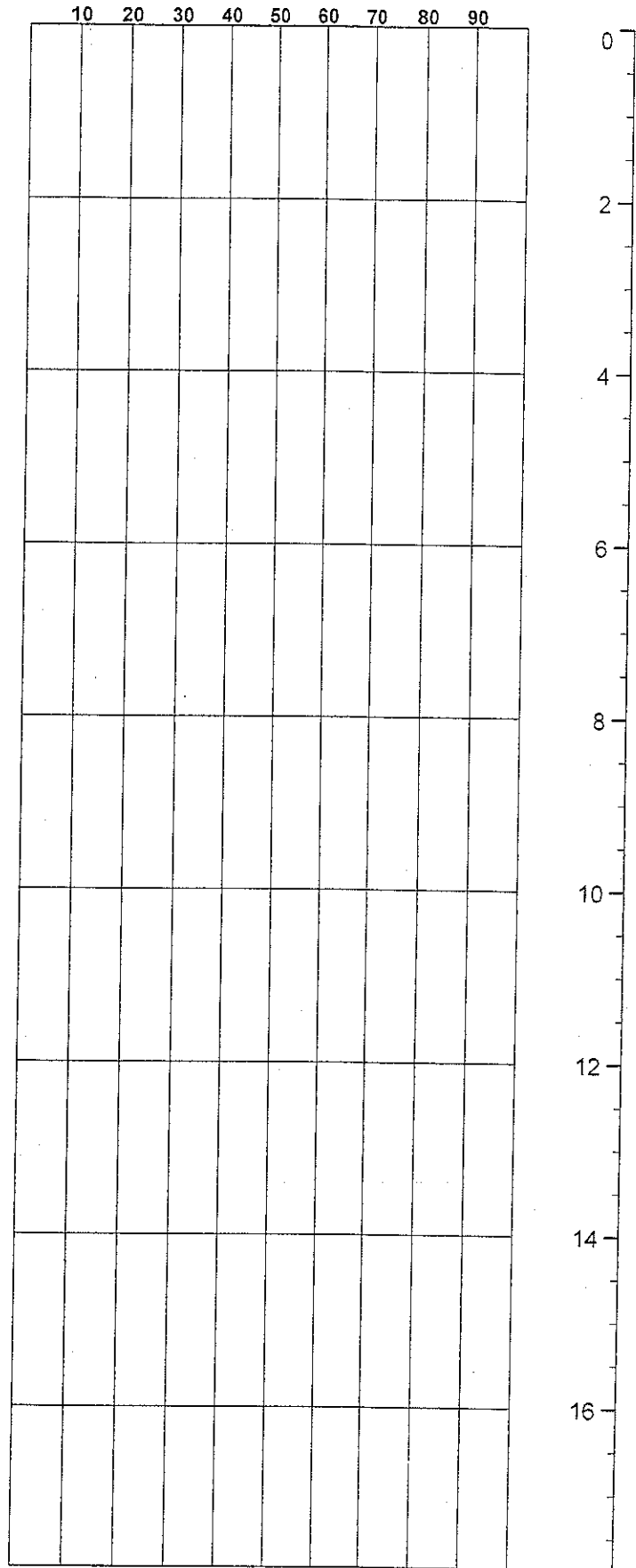
Notes:

1. Exploratory borings were drilled on 04/19/08 using a 4-inch diameter continuous flight power auger.
2. No free water was encountered at the time of drilling or when re-checked the following day.
3. Boring locations were taped from existing features and elevations extrapolated from the final design schematic plan.
4. These logs are subject to the limitations, conclusions, and recommendations in this report.
5. Results of tests conducted on samples recovered are reported on the logs.

SPT N-VALUE



Water Content, %



Key to Borings

- B-1 ▲ B-3
- B-2 ▼ B-4

ANS CONSULTANTS, INC.

17 CRAWFORD STREET, NEWARK, NJ

Vertical Scale: 1 to 2

Figure:

FIELD SOIL CLASSIFICATION SYSTEM

PARTICLE SIZE IDENTIFICATION

Boulders. 8 inch diameter or greater
Cobbles. 3 to 8 inch diameter
Gravel. Coarse -- 1 to 3 inch
Medium -- ½ to 1 inch
Fine -- 4.75 mm to ½ inch
Sand. Coarse -- 2.0 mm to 4.75 mm
(dia. of pencil lead)
Medium -- 0.425 mm to 2.0 mm
(dia. of broom straw)
Fine -- 0.075 mm to 0.425 mm
(dia. of human hair)
Silt & Clay. Smaller than 0.075 mm

RELATIVE PORTIONS

Descriptive Term	Percent
Trace - tr	1 - 10
Some - sm	11 - 20
Adjective - ly	21 - 35
And - &	36 - 50

ABBREVIATIONS

Bn - Brown	
Gy - Gray	
Blk - Black	
Rd - Red	
Or - Orange	
Bl - Blue	
Lt - Light	Coarse grained - c
Dk - Dark	Medium grained - m
Multi - Multi colored	Fine grained - f

COHESIONLESS SOIL

(Gravel, Sand, Silt and Combinations)

DENSITY

Very Loose 05 blows / ft or less
Loose 06 to 10 blows / ft
Medium Dense 11 to 30 blows / ft
Dense 31 to 50 blows / ft
Very Dense 51 blows / ft or more

COHESIVE SOIL

(Clay Silt and Combinations)

CONSISTENCY

Very Soft 01 blow / ft or less
Soft 02 to 4 blows / ft
Medium Stiff 05 to 8 blows / ft
Stiff 09 to 15 blows / ft
Very Stiff 16 to 30 blows / ft
Hard 31 blows / ft or greater

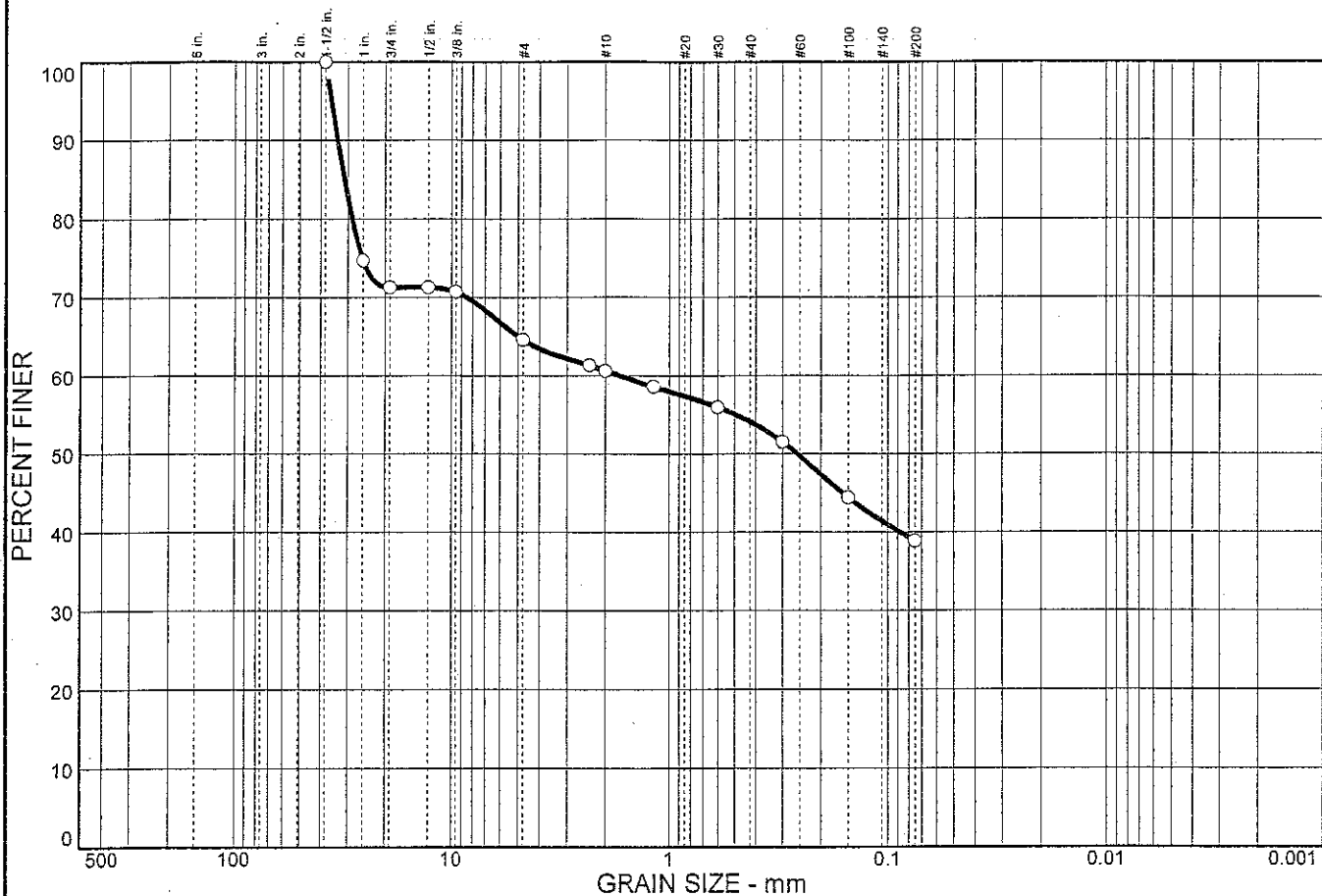
ROCK

R.Q.D.	Rock Quality
00 - 25%	Very Poor
25 - 50%	Poor
50 - 75%	Fair
75 - 90%	Good
90 - 100%	Excellent

HSA - Hollow Stem Auger
SS - Split Spoon Sampler
WOR - Weight of Rods
WOH - Weight of Hammer
NR - No Recovery of Sample

APPENDIX - B

Particle Size Distribution Report ASTM D-422-00, D-1140-00



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	28.7	6.7	4.0	6.5	15.2	38.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	74.7		
3/4 in.	71.3		
1/2 in.	71.3		
3/8 in.	70.7		
#004	64.6		
#008	61.3		
#010	60.6		
#016	58.6		
#030	56.0		
#050	51.5		
#100	44.4		
#200	38.9		

* (no specification provided)

Material Description

Reddish brown in color. Silty gravel with sand

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₈₅= 31.1

D₆₀= 1.73

D₅₀= 0.257

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= GM

AASHTO= A-4(0)

Remarks

Sample was collected by Mr. Syed Abbas & Jesus on 04/19/08 and tested by Mr. Jayanti on 04/29/08. In-Situ %MC=11.0 F.M.=3.22

Sample No.: S-1

Source of Sample: Boring

Date: 04/30/2008

Location: B-1, 4'-10" to 6'-10"

Elev./Depth: 4'-10" to 6'-10"

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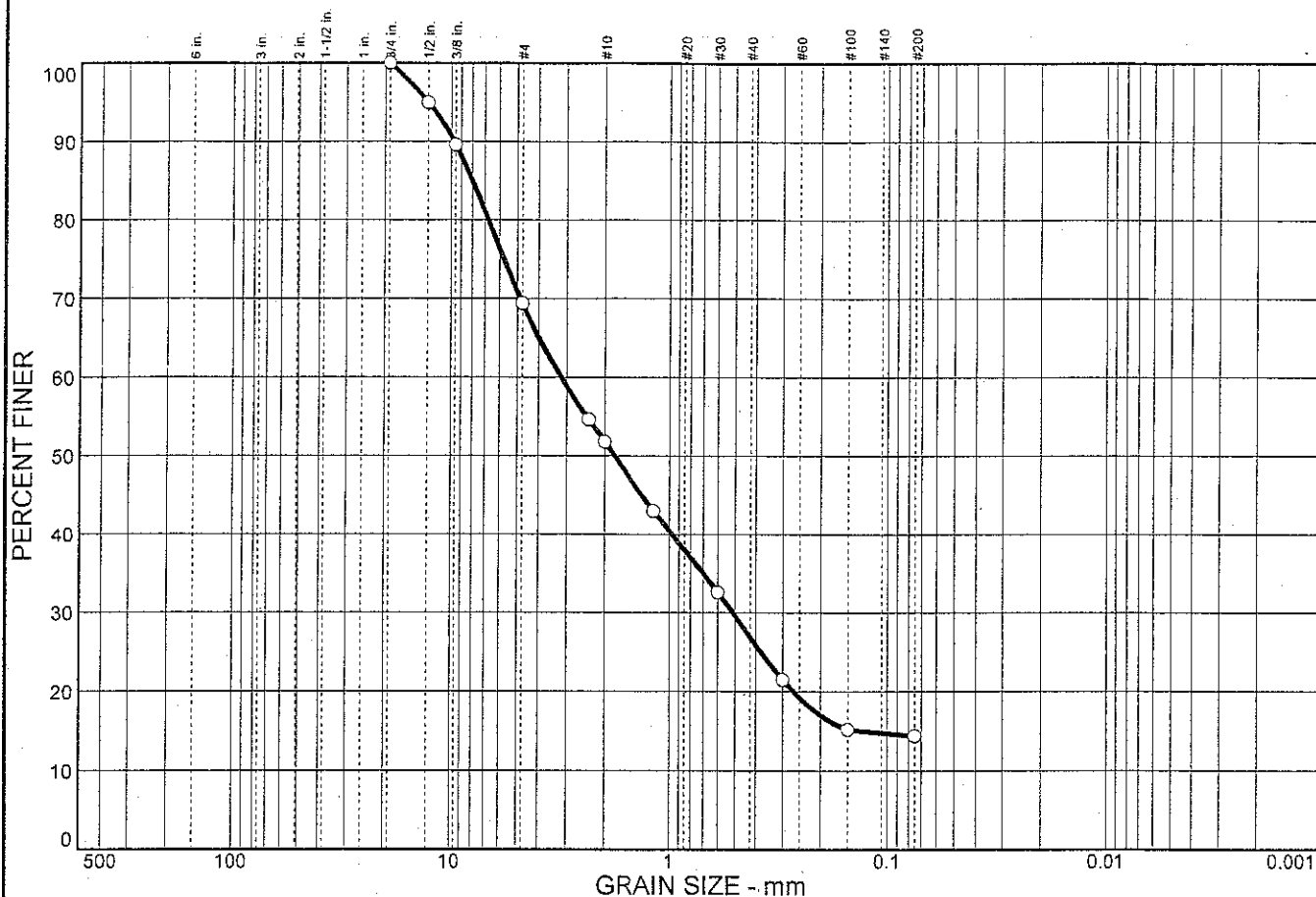
Client: CEC Inc.

Project: 17 Crawford Street, Newark, NJ

Project No: ANS-2190

Plate 1 F 1

Particle Size Distribution Report ASTM D-422-00, D-1140-00



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	30.6	17.6	24.9	12.5	14.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
1/2 in.	95.0		
3/8 in.	89.6		
#004	69.4		
#008	54.6		
#010	51.8		
#016	43.0		
#030	32.6		
#050	21.5		
#100	15.2		
#200	14.4		

* (no specification provided)

Material Description

Dark gray in color. Silty sand with gravel

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₈₅= 7.99

D₆₀= 3.17

D₅₀= 1.80

D₃₀= 0.512

D₁₅= 0.126

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample was collected by Mr. Syed Abbas & Jesus on 04/ 12/ 08 and tested by Mr. Hashmi on 04/15/08. In- Situ %MC=16.9 F.M.=3.74

Sample No.: S-2

Source of Sample: Boring

Date: 04/15/2008

Location: B-2, 6"-8"

Elev./Depth: 6"-8"

ANS CONSULTANTS, INC.

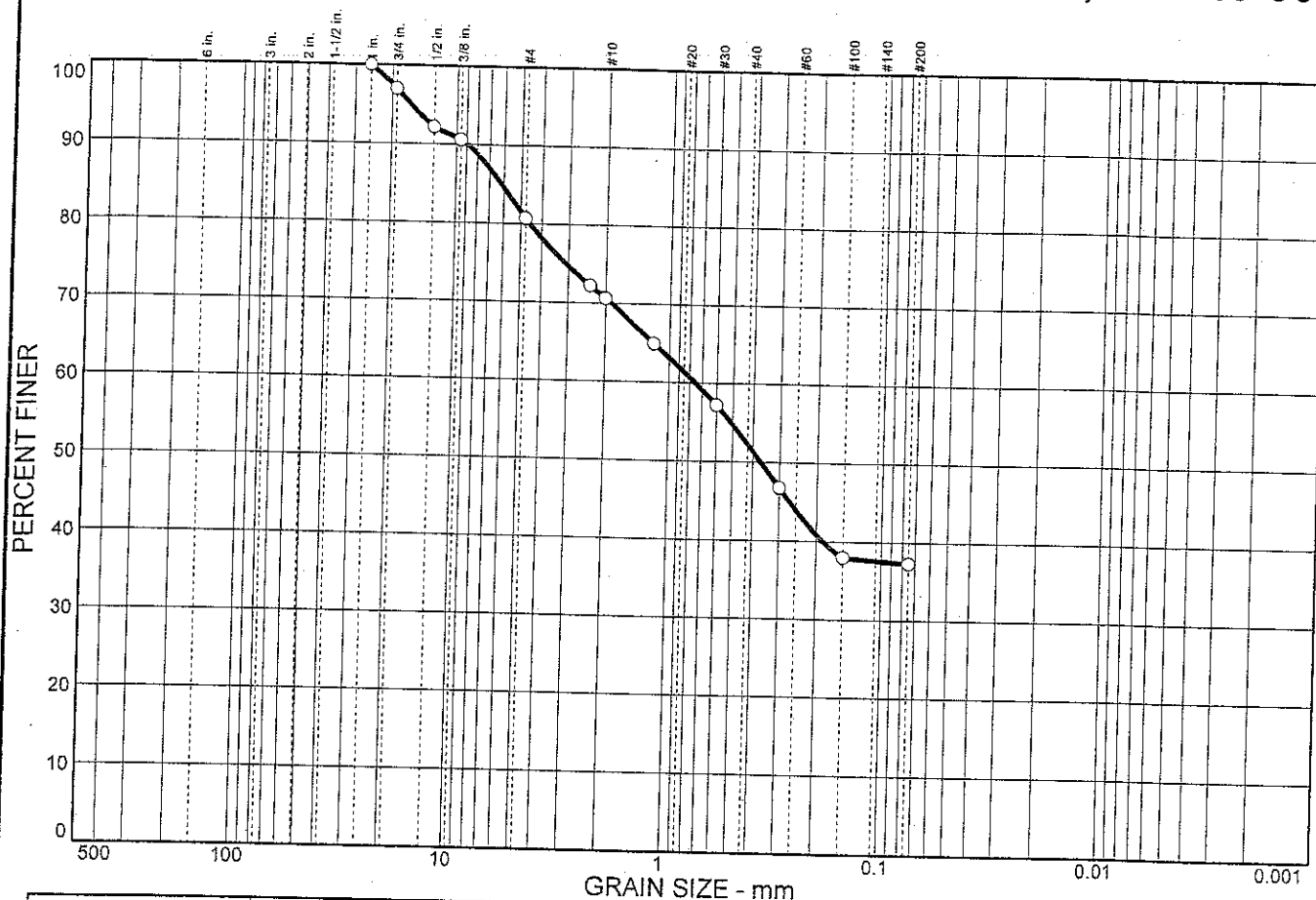
Client: CEC Inc.

Project: 17 Crawford Street, Newark, NJ

Project No: ANS-2190

Plate 2 F 1

Particle Size Distribution Report ASTM D-422-00, D-1140-00



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	3.0	16.3	10.1	18.3	15.0	37.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	97.0		
1/2 in.	92.2		
3/8 in.	90.6		
#004	80.7		
#008	72.2		
#010	70.6		
#016	64.9		
#030	57.2		
#050	46.8		
#100	38.0		
#200	37.3		

* (no specification provided)

Material Description
Dark brown in color. Silty sand with gravel

Atterberg Limits
PL= LL= PI=

Coefficients
D₈₅= 6.17 D₆₀= 0.754 D₅₀= 0.367
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification
USCS= SM AASHTO= A-4(0)

Remarks
Sample was collected by Mr. Syed Abbas & Jesus on 04/12/08 and tested by Mr. Hashmi on 04/15/08. In- Situ %MC=17.7
F.M.=2.53

Sample No.: S-3
Location: B-2, 8"-32"

Source of Sample: Boring

Date: 04/15/2008
Elev./Depth: 8"-32"

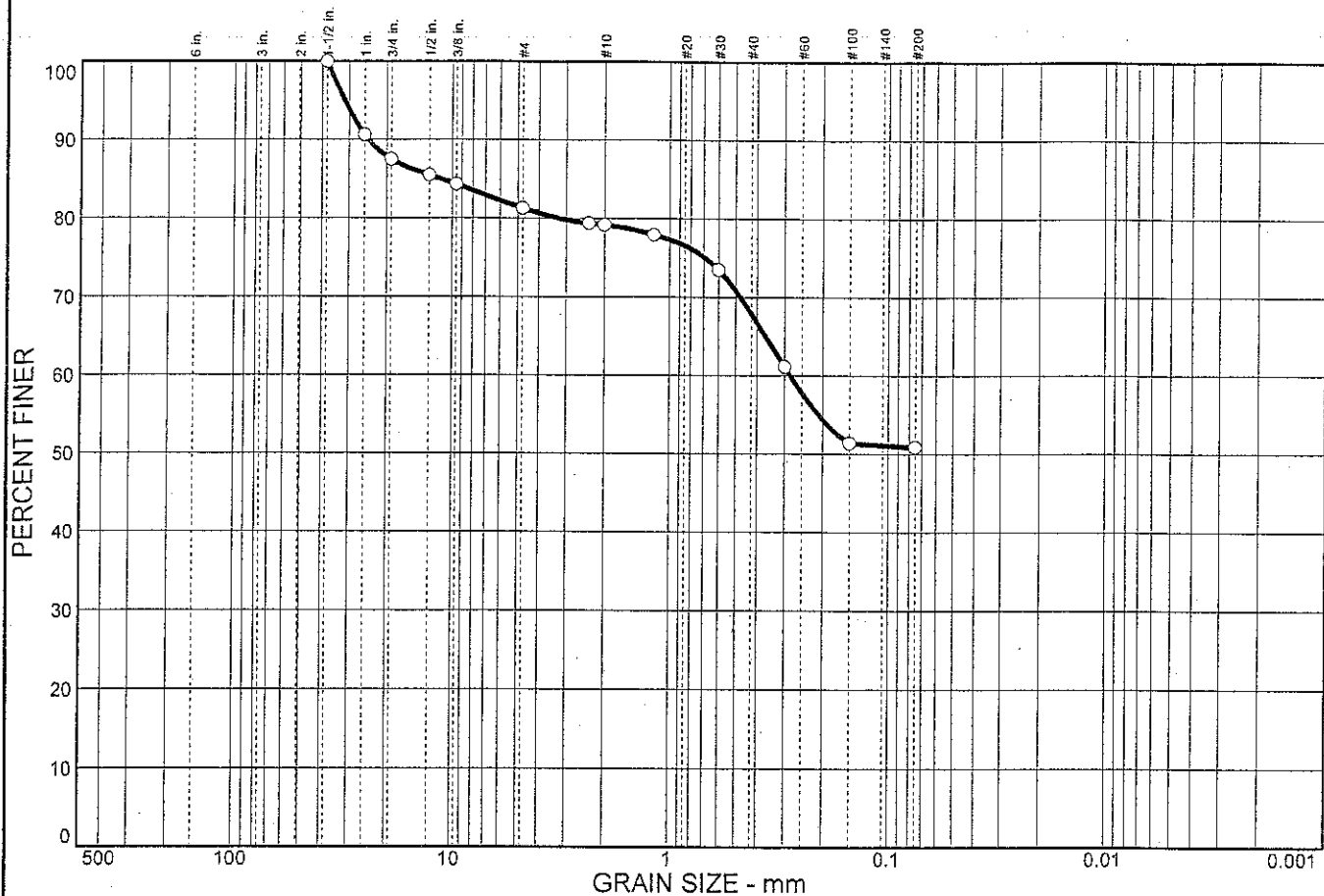
ANS CONSULTANTS, INC.

Client: CEC Inc.
Project: 17 Crawford Street, Newark, NJ

Project No: ANS-2190

Plate 3 F 1

Particle Size Distribution Report ASTM D-422-00, D-1140-00



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	12.5	6.2	2.1	11.3	17.0	50.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	90.6		
3/4 in.	87.5		
1/2 in.	85.5		
3/8 in.	84.3		
#004	81.3		
#008	79.4		
#010	79.2		
#016	77.9		
#030	73.5		
#050	61.1		
#100	51.4		
#200	50.9		

Material Description
Brown in color. Sandy silt with gravel

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₈₅= 11.2 D₆₀= 0.283 D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= ML AASHTO= A-4(0)

Remarks
 Sample was collected by Mr. Sayed Abbas & Jesus on 04/12/08 and tested by Mr. Hashmi on 04/15/08. In-Situ %MC=16.5
 F.M.=2.04

* (no specification provided)

Sample No.: S-4
Location: B-2, 32"-56"

Source of Sample: Boring

Date: 04/15/2008
Elev./Depth: 32"-56"

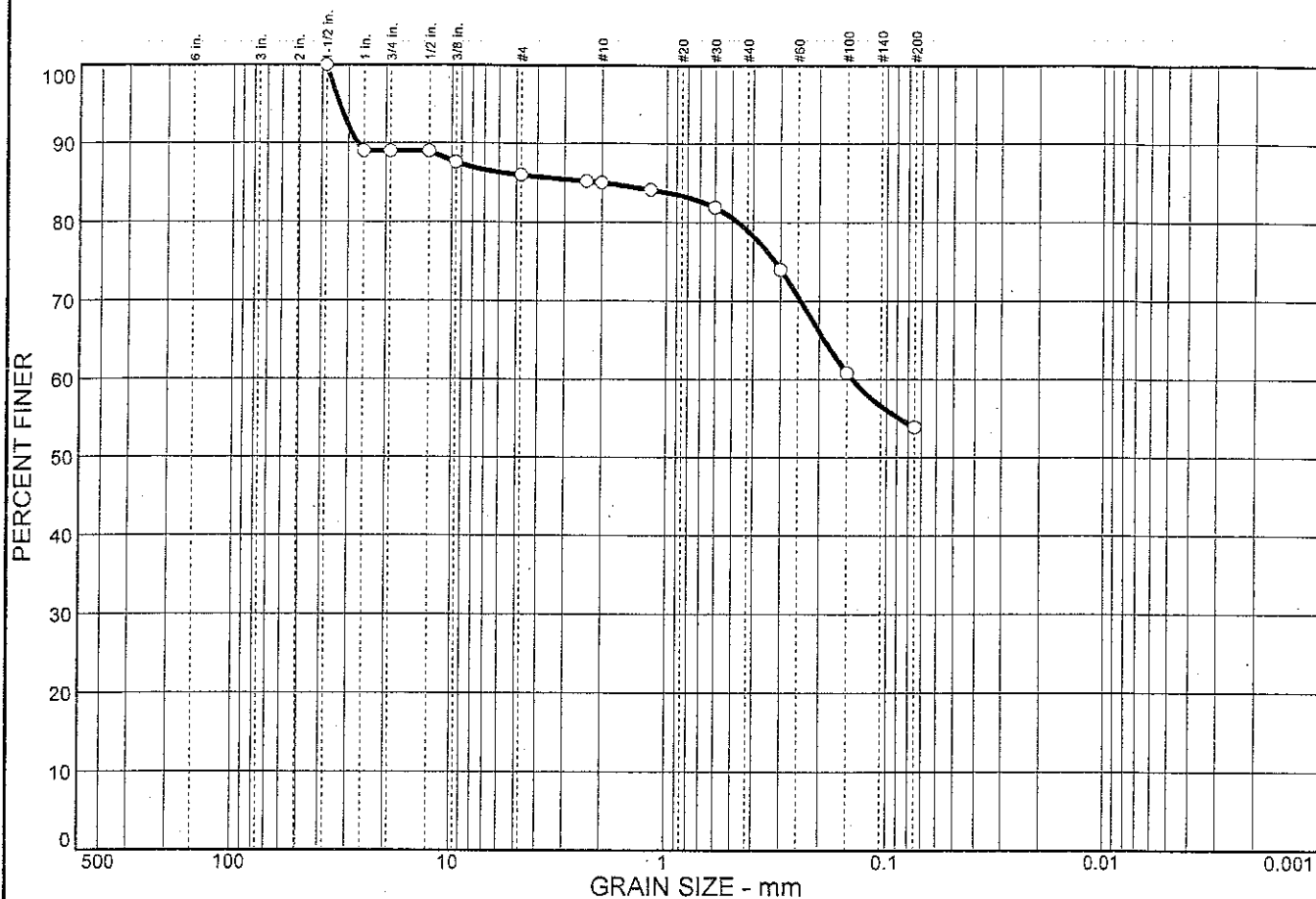
ANS CONSULTANTS, INC.

Client: CEC Inc.
Project: 17 Crawford Street, Newark, NJ

Project No: ANS-2190

Plate 4 F 1

Particle Size Distribution Report ASTM D-422-00, D-1140-00



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	11.0	3.0	1.0	6.1	25.0	53.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	89.0		
3/4 in.	89.0		
1/2 in.	89.0		
3/8 in.	87.6		
#004	86.0		
#008	85.2		
#010	85.0		
#016	84.1		
#030	81.9		
#050	74.0		
#100	60.8		
#200	53.9		

* (no specification provided)

Material Description

Dark brown in color. Sandy silt

Atterberg Limits

PL= LL= PI=

Coefficients

D₈₅= 2.00 D₆₀= 0.142 D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sample was collected by Mr. Syed Abbas & Jesus on 04/19/08 and tested by Mr. Hashmi on 04/29/08. In- Situ %MC=22.9 F.M.=1.51

Sample No.: S-5
Location: B-3, 7'-9'

Source of Sample: Boring

Date: 04/30/2008
Elev./Depth: 7'-9'

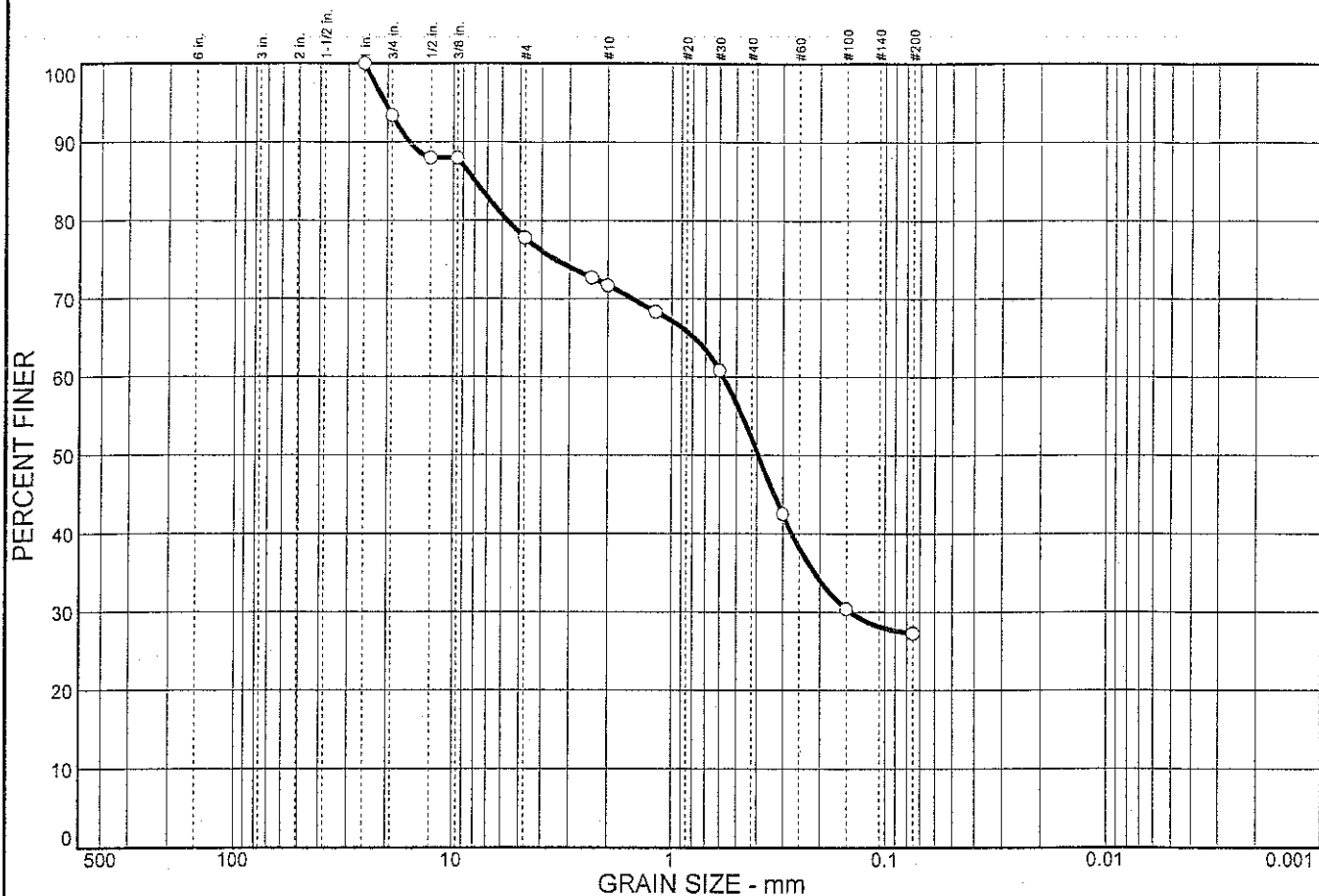
ANS CONSULTANTS, INC.

Client: CEC Inc.
Project: 17 Crawford Street, Newark, NJ

Project No: ANS-2190

Plate 5 F 1

Particle Size Distribution Report ASTM D-422-00, D-1140-00



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	6.6	15.6	6.1	19.5	24.9	27.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	93.4		
1/2 in.	88.0		
3/8 in.	88.0		
#004	77.8		
#008	72.7		
#010	71.7		
#016	68.3		
#030	60.8		
#050	42.5		
#100	30.4		
#200	27.3		

* (no specification provided)

Material Description

Dark brown in color. Silty sand with gravel

Atterberg Limits

$$P_L = \frac{\text{Revenue} - \text{Variable Costs}}{\text{LL}} = P_L =$$

Coefficients

D ₈₅ = 7.94	D ₆₀ = 0.577	D ₅₀ = 0.394
D ₃₀ = 0.144	D ₁₅ =	D ₁₀ =
C _u =	C _c =	

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Sample was collected by Mr. Syed Abbas & Jesus on 04/ 19/ 08 and tested by Mr. Hashmi on 04/29/08. In- Situ %MC=20.1 F.M.=2.66

Sample No.: S-6
Location: B-4, 3'-3" to 5'-3"

Source of Sample: Boring

Date: 04/30/2008
Elev./Depth: 3'-3" to 5'-3"

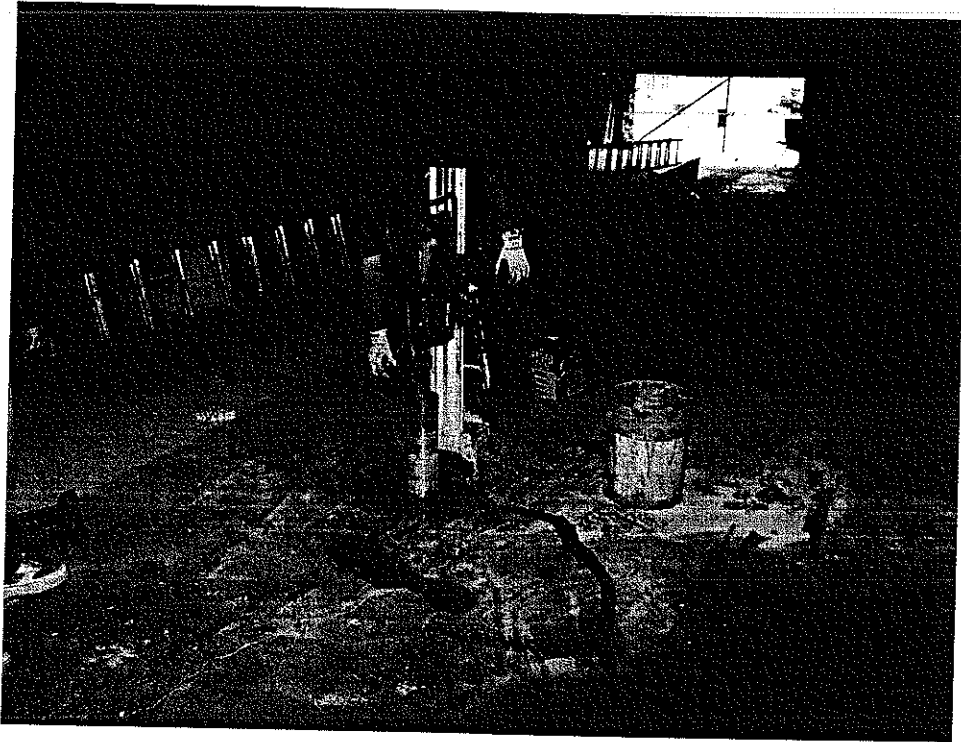
ANS CONSULTANTS, INC.

Client: CEC Inc.
Project: 17 Crawford Street, Newark, NJ

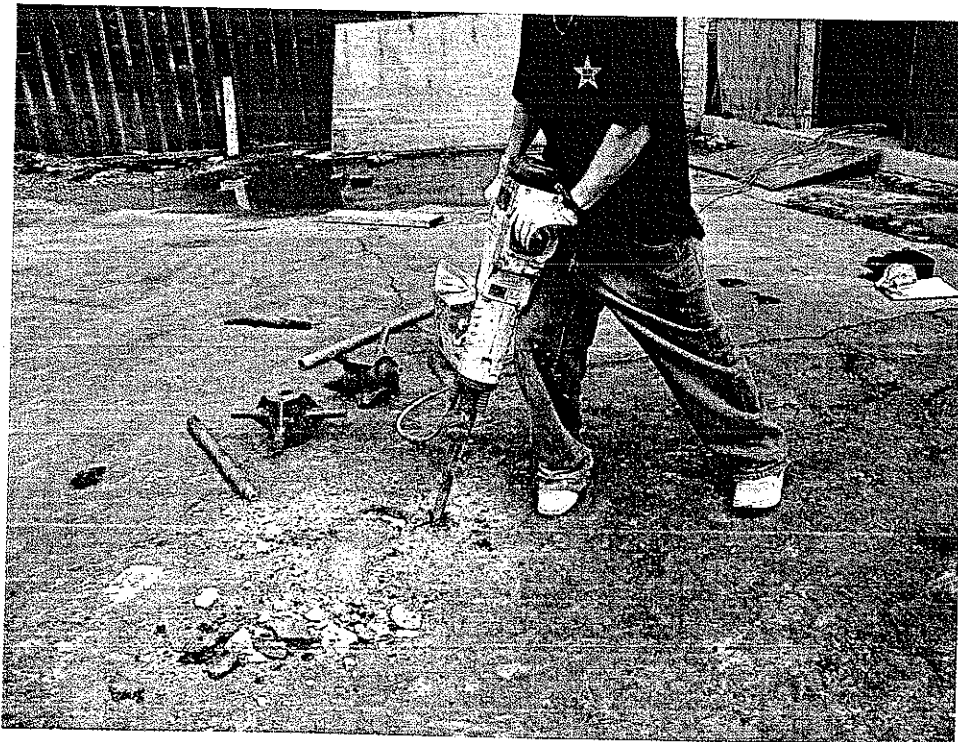
Project No: ANS-2190

Plate 6 F 1

APPENDIX - C



Sample Procurement using Hand Drop Hammer at proposed Boring Location





Sample Procurement using Hand Drop Hammer at proposed Boring Location