- [x] City box number Materials Lab (VI)
- [x] Title/cover page w/the following info:
  - [x] Company (author) name
  - [x] Report Date
  - [x] Project name
  - [x] Company's job number
  - [ ] City DCLU project number (7-digit number)
  - [ ] City Permit number (6-digit number)
  - [ ] Kroll map index number (3-digit number, w?/E,W,N,S)
  - [ ] Green label
  - [ ] Site address (may be on 1st or 2nd page of text)
- [ ] Executive Summary and associated figures
- [x] Table of Contents
- [ ] Project Location Plan/Map or Vicinity Map
- [x] Site Plans, Boring Location Plans, or Exploration Plans
- [ ] Survey
- [ ] Geologic Maps
- [x] Cross Sections/Subsurface Profiles
- [ ] Fill or Peat Thickness Maps and Contour Maps
- [x] Boring Logs
- [ ] Geology Text (if no logs)
- [ ] Soil Classification Key/Boring Log Key
- [ ] Probe Logs
- [ ] Test Pit Logs
- [ ] Monitoring Well Logs
- [ ] Cone Penetrometer Logs
- [ ] Shear Wave Velocity Measurements
- [ ] Groundwater Maps
- [x] GW Elevation Tables/Data
- [ ] Soils Lab Testing (Geotechnical) Summary Tables
  - [x] Grain Size Analyses/Hydrometer Analyses
  - [ ] Atterberg Limits
  - [ ] Strength tests: Triaxial, Unconfined, Direct Shear
  - [ ] Organic Content
  - [ ] ^{14}C or Radiocarbon Testing
  - [ ] Other_____
- [x] Soil Chemical Analytical Testing Summary Tables
- [ ] Water/Groundwater Chemical Analytical Summary Tables
- [ ] Comments_____

3382

- [x] Date Copied 9/8/00 By Suzanne

2/9/99

Converse Consultants NW

Geotechnical Engineering and Applied Earth Sciences

May 24, 1988 87-35192-01

URS Consultants
3131 Elliott Avenue
Seattle, Washington 98121

Attention: Mr. Thomas F. DeLaat

Subject: **GEOTECHNICAL DESIGN REPORT**
Proposed Seventh Avenue South Storm Sewer
Seattle, Washington

Enclosed are twelve copies of our geotechnical report for the referenced project. The report describes our field explorations and laboratory testing and presents the results of engineering studies concerning design and construction of the proposed storm sewer. A draft of this report dated April 8, 1988 was submitted for your review.

We appreciate the opportunity to be of service to you on this project. If you have any questions, or if we can be of additional assistance, please feel free to contact us at your earliest convenience.

CONVERSE CONSULTANTS NW

Jon C. Bruton
Principal Engineer

GRF3/JCB/kpp

Converse Consultants NW
3131 Elliott Avenue
Suite 550
Seattle, Washington 98121
Telephone 206 285-5200

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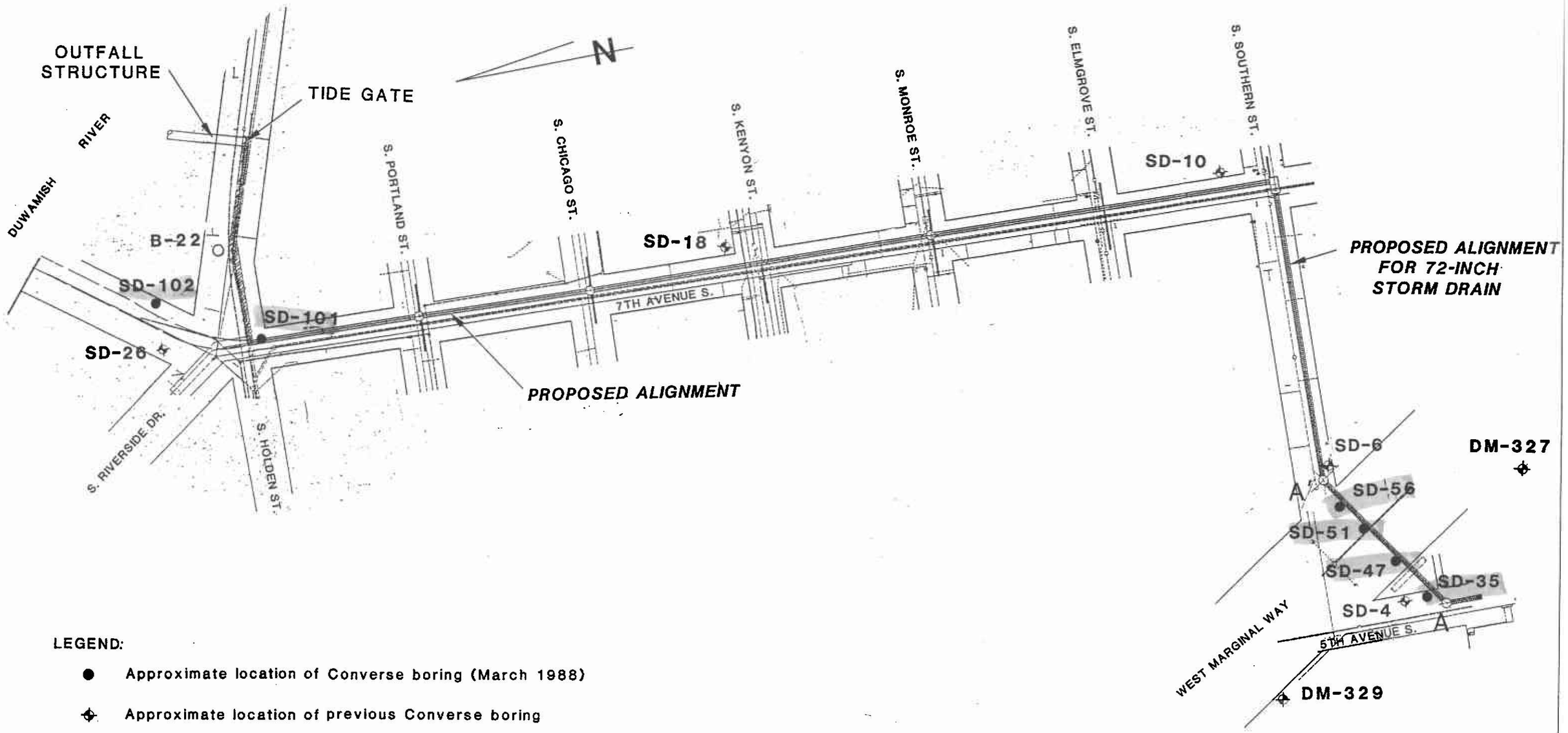


LEGEND:

- ● Approximate location of Converse boring (March 1988)
- ⌖ Approximate location of previous Converse boring
- ○ Approximate location of boring by others

0 150 300
APPROX. SCALE IN FEET

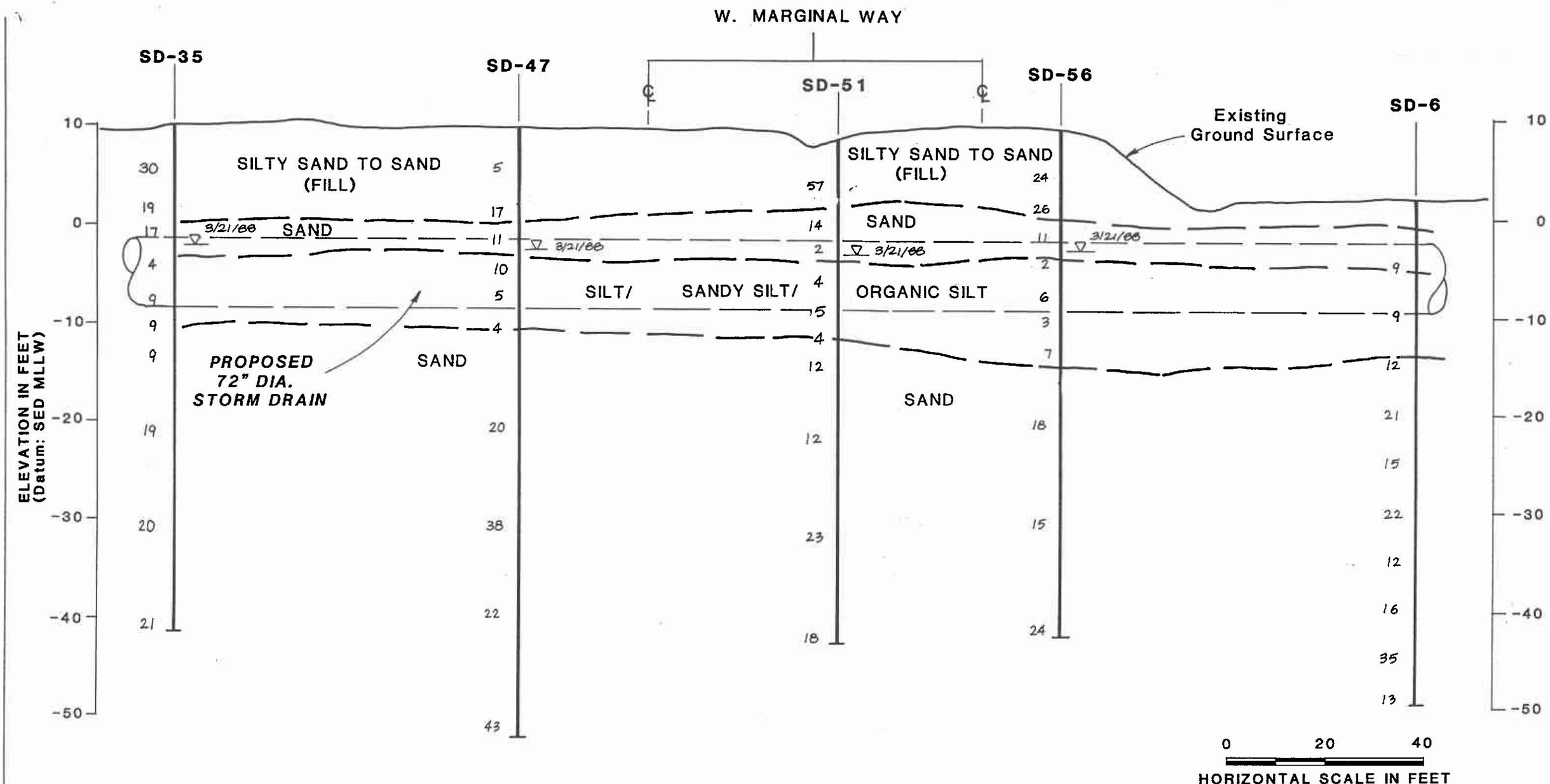
SITE AND EXPLORATION PLAN

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Converse Consultants NW Geotechnical Engineering and Applied Earth Sciences

Scale	NOTED	Project No.	87-35192
Date	APR. 1988		
Prepared by	JM	Drawing No	1
Checked by	GRF		
Approved By	JCB		

BRUNING 40-107



LEGEND:

▽ Measured groundwater level (March 21, 1988)

24 'N Blows' standard penetration test

NOTE: THE STRATUM LINES ARE BASED ON INTERPOLATION BETWEEN BORINGS AND MAY DIFFER FROM ACTUAL FIELD CONDITIONS.

GENERALIZED SUBSURFACE PROFILE A-A'

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Converse Consultants NW Geotechnical Engineering and Applied Earth Sciences

Scale	NOTED	Project No.	87-35192
Date	APR. 1988		
Prepared by	JM	Drawing No.	2
Checked by	GRF		
Approved By	JCB		

BRUNING 40-107

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-35

ELEVATION: 10

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1A		12 10 20				**FILL** SAND; gray, fine to medium, trace gravel, trace silt, scattered concrete fragments, bedded with irregular silty sand	SP	moist	medium dense
5	2C		13 10 12		18	113	SILTY SAND; dark brown, fine to coarse, little gravel and cinders	SM	moist	medium dense
	3A		10 12 7				charcoal, glass & cinder fragments			
	4C		14 12 16		37	77	**RECENT ALLUVIUM** SAND; gray, fine to medium, trace silt	SP	moist	medium dense
10	5A		9 8 9	G			grades with wood fragments and sandy silt			
	6C		5 12 12		49	71				
	7A		3 2 2				no recovery, cuttings of silt and wood debris in sampler			loose
15	8C		5 4 4							
	9A		3 4 5				SAND; gray, fine to medium, little silt, laminated with sandy silt and silt	SM	wet	loose
	10C		4 5 5		31	90				
	11A		1 3 6	G						
20										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-1

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-35 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	12C		5 7 10		20	91	**RECENT ALLUVIUM** SAND; gray, fine to medium, trace silt with scattered laminations of silt	SP	wet	loose to medium dense
	13A		2 4 5							
25	14C		7 9 12		18	96	grades with trace to scattered gravel			
30	15A		7 9 10							
35	16C		16 19 24							
							SAND; gray, fine to medium, trace silt, scattered gravel & scattered laminations of low plasticity clay	SP	wet	medium dense
40							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-2

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-35 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	17A		8 11 9				**RECENT ALLUVIUM** SAND (continued)	SP	wet	medium dense
							grades with laminations of silty sand			
45	18C		17 20 29		26	98				
							SILTY SAND; gray, fine, bedded to laminated with sand	SM	wet	medium dense
50	19A		7 9 12							
							Bottom of boring at depth 51.5 feet. 3" PVC monitoring well installed. Slotted screen from 40' to 50', backfilled to 2' with pea gravel, bentonite seal at surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-3

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-47

ELEVATION: 10

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1A		4 3 2				**FILL** SILTY SAND; brown, fine to medium, little gravel, trace roots and wood	SM	wet	loose
5	2C		8 13 13		15	128	SILTY SAND WITH GRAVEL; brown, fine to coarse sand, trace organics and brick fragments	SM	wet	medium dense
	3A		5 8 9							
	4C		12 12 12		12	105	**RECENT ALLUVIUM** SAND; gray-brown, fine to medium, trace silt	SP	moist	medium dense
10	5A		6 6 5				grades to wet		wet	
	6C		6 4 4		28	85				
	7A		1 5 5		46		ORGANIC SILT; dark brown, streaked black, trace wood and organic fragments, layered with sand	OL	wet	medium stiff
	8C		4 4 2		32	86	SANDY SILT; gray, fine, trace organics, very thinly bedded with silty sand and silt	ML	wet	very loose to loose
	9A		2 3 2	G						
	10C		3 3 3		42	77	grades with layers of low plasticity clay and laminations of peat			
	11A		2 2 2							
20							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-4

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-47 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	12B		push				**RECENT ALLUVIUM**			
							SAND; gray, fine to medium, trace silt	SP	wet	medium dense
25	13C		7 8 9		26	91				
30	14A		8 8 12	G			grades with scattered gravel			
35	15C		30 45 45							dense
							SAND; gray, fine to coarse, trace silt, scattered gravel	SW	wet	dense
40							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-5

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-47 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	16A		12 17 21				**RECENT ALLUVIUM** SAND (continued)	SW	wet	dense
45	17C		15 14 19							
							SAND; gray, fine to medium, trace silt, thinly bedded with silty sand	SP	wet	medium dense
50	18A		6 10 12							
55	19C		5 14 19				SILTY SAND; gray, fine, laminated with fine to medium, sandy silt and sand	SM	wet	medium dense to dense
60							grades with thin beds of fine sand (continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-6

DATE DRILLED: 3/15/88

SUMMARY: BORING NO. SD-47 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
60	20A		10 20 23				**RECENT ALLUVIUM** SILTY SAND (continued)	SM	wet	medium dense to dense
							Bottom of boring at depth 61.5 feet. 3" PVC monitoring well installed. Slotted screen from 50' to 60', backfilled to 10' with pea gravel, bentonite seal at surface.			
65										

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-7

DATE DRILLED: 3/17/88

SUMMARY: BORING NO. SD-51

ELEVATION: 8

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0							**FILL** SILTY SAND; gray-brown mottled, fine to medium, little gravel, layered with sand	SM	moist	dense
	1A		16 21 36							
5	2C		12 11 10							
	3A		7 7 7				**RECENT ALLUVIUM** SAND; gray-brown, fine to medium, trace silt	SP	moist	medium dense
	4C		9 7 5		12	118				
10	5A		1 1 1				becomes wet and very loose	SP	wet	very loose
	6C		3 2 3				SILTY SAND; gray, fine, very thinly laminated with sandy silt, silt, and organic silt	SM	wet	loose
	7A		1 3 3							
15	8C		6 6 5							
	9A		2 2 3	G						
	10C		3 3 4		30		grades to very thinly laminated with silt and sandy silt			
20	11A		2 2 2							

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-8

DATE DRILLED: 3/17/88

SUMMARY: BORING NO. SD-51 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	12C		3 4 4		41		**RECENT ALLUVIUM** SAND; gray, fine to medium, trace silt and wood fragments, thinly bedded with sandy silt and silt	SP	wet	loose to medium dense
	13A		3 4 8							
25	14C		8 9 11				SAND; gray, fine to coarse, trace silt	SW	wet	medium dense
30	15A		5 6 6	G						
35	16C		13 15 18				SAND; gray, fine to medium, trace silt, thinly bedded with sandy silt and silt, scattered organics	SP	wet	medium dense
40							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-9

DATE DRILLED: 3/17/88

SUMMARY: BORING NO. SD-51 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	17A		4 10 13				**RECENT ALLUVIUM** SAND (continued)	SP	wet	medium dense
45	18C		10 14 19							
							SILTY SAND; gray, fine to medium, laminated with sand and sandy silt	SM	wet	medium dense
50	19A		15 10 8							
55							Bottom of boring at depth 51.5 feet. 3" PVC monitoring well installed. Slotted screen from 40' to 50', backfilled with pea gravel to 8', bentonite seal to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

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water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-10

DATE DRILLED: 3/17/88

SUMMARY: BORING NO. SD-56

ELEVATION: 9

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0							FILL 5" asphalt GRAVEL base, 5/8-inch minus crushed			
	1A		10 11 13				SILTY SAND; brown, fine to medium, trace gravel	SM	moist	medium dense
5	2C		11 21 35				SAND; dark gray, fine to medium, trace organics and silt grades to brown in color	SP	moist	medium dense
	3A		11 13 13							
	4C		14 19 20		12	93				
10	5A		8 7 4				**RECENT ALLUVIUM** SAND; gray, fine to medium, trace silt	SP	moist	medium dense
	6C		4 4 11		43	77	ORGANIC SILT; dark brown mottled black, fine, laminated with silty sand and peat	OL	wet	medium stiff
	7A		2 1 1				SILTY SAND; gray, fine, laminated with silt and sandy silt	SM	wet	very loose
15	8C		3 1 3							
	9A		3 2 4	G			SANDY SILT; gray, very fine, laminated with silt and irregular organics layers	ML	wet	very loose
	10C		2 3 2							
	11A		2 1 2							
20										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Drawing No. A-11

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED: 3/17/88

SUMMARY: BORING NO. SD-56

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	12C		3 3 4				**RECENT ALLUVIUM** SILTY SAND; gray, fine, laminated with sandy silt and fine to medium sand	SM	wet	loose
	13A		1 2 5	G						
							SAND; gray, fine to coarse, trace silt	SP	wet	medium dense
25	14C		7 10 14							
30	15A		7 9 9							
35	16C		14 20 27							
							SAND (description next page)			
40										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-12

DATE DRILLED: 3/17/88

SUMMARY: BORING NO. SD-56 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	17A		3 7 8				**RECENT ALLUVIUM** SAND; gray, fine to medium, thinly bedded with low plasticity silt and clay	SP	wet	medium dense
45	18C		9 9 14				SILTY SAND; gray, fine, thinly bedded with sandy silt and silty sand laminations, scattered organics	SM	wet	medium dense
50	19A		3 8 16							
55							Bottom of boring at depth 51.5 feet. 3" PVC monitoring well installed. Slotted screen from 40' to 50', backfilled to 4' with pea gravel, bentonite seal to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-13

DATE DRILLED: 3/18/88

SUMMARY: BORING NO. SD-101

ELEVATION: 3

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0							FILL 5" asphalt SAND; gray-brown, fine to coarse, trace silt	SP	moist	medium dense
	1C		10 11 9		4	96	RECENT ALLUVIUM SAND; gray-brown, fine to coarse, grades to fine to medium, trace silt	SP	moist	medium dense
5	2A		5 6 4	G			becomes wet		wet	
	3C		2 1 3		65	64	ORGANIC SILT; gray- brown, fine, trace peat and wood fragments, laminated with silty sand	OL	wet	very soft
10	4B		push							
							SAND; gray, fine to medium, trace silt	SP	wet	loose
	5C		2 2 4							
15	6A		5 10 10	G			grades to medium dense			medium dense
	7A		11 12 16				SAND; gray, fine to medium, trace silt	SP	wet	medium dense
20										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-14

DATE DRILLED: 3/18/88

SUMMARY: BORING NO. SD-101 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	8A		5 6 7				**RECENT ALLUVIUM** SAND (continued) grades to trace coarse sand	SP	wet	medium dense
25	9C		12 29 19							
30	10A		12 18 16							
35	11C		12 16 20				grades with scattered pumice fragments and silt laminations			
40							Bottom of boring at depth 36.5 feet. 3" PVC monitoring well installed. Slotted screen from 25' to 35', backfilled to 7' with pea gravel, bentonite seal to the surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-15

DATE DRILLED: 3/16/88

SUMMARY: BORING NO. SD-102

ELEVATION: 3

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C		2 3 3				**FILL** SAND; gray-brown, fine, thinly bedded with sandy silt, trace wood debris and wire	SP	moist	loose
5	2C		1 1 1		58	61	**RECENT ALLUVIUM** CLAY, gray-brown mottled, trace organics and root holes, laminated with peat	CL	moist	very soft
	3B		push				SILTY SAND; gray-brown, fine to medium	SM	wet	very loose
10	4C		1 3 4				SAND; gray, fine to medium, trace to little silt, with laminations of wood debris	SP	wet	loose
	5A		2 4 6	G						
15	6C		6 9 12							
	7A		5 5 5							
20							SAND (description next page) (continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-16

DATE DRILLED: 3/16/88

SUMMARY: BORING NO. SD-102 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	8C		10 12 14				**RECENT ALLUVIUM** SAND; gray, fine to coarse, trace silt, scattered gravel	SW	wet	medium dense
25	9A		7 9 12	G			grades with scattered wood fragments			
30	10C		19 23 34							dense
35	11A		12 15 27							
40							SAND (description next page)			

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-17

DATE DRILLED: 3/16/88

SUMMARY: BORING NO. SD-102 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	12C		17 22 27				**RECENT ALLUVIUM** SAND; gray, fine to medium, trace silt, and scattered pumice fragments, thinly bedded with laminations of silt, sandy silt with trace wood fragments and scattered gravel grades with scattered layers of low plasticity clay	SP	wet	medium dense to dense
45	13A		5 6 8							
							Bottom of boring at depth 46.5 feet. 3" PVC monitoring well installed. Slotted screen from 35' to 45', backfilled with pea gravel to 4' and bentonite seal to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. A-18

DATE DRILLED: 6/30/85

SUMMARY: BORING NO. SD-4

ELEVATION: 10

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0							**FILL** SAND; brown, fine, trace medium to coarse, trace roots		moist	
	1C		10 20 30/2"				SAND; dark brown, fine to medium, little silt, trace to little gravel, brick & glass fragments		moist	dense to very dense
5	2A		6 13 25/1"				trace wood chips,		wet	
	3C		15 18 21				SAND; black, fine to medium, trace coarse sand, trace fine gravel, trace to little silt			
10	4A		4 5 8				**ALLUVIUM** SAND; dark gray to black, fine, trace to little silt, trace medium trace fine gravel, angular to sub-rounded		wet	medium dense
	5C		3 10 10							
15	6A		6 6 9				SILTY SAND; dark gray, fine, trace medium, scattered very thin laminations of light brown sandy silt and silt		wet	medium dense
	CX									
	7C		16 50/5"				SAND; description on following page			
20							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" Ner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-1

DATE DRILLED:

SUMMARY: BORING NO. SD-4 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20							SAND; dark gray, fine, trace medium, little silt		wet	dense
	8A		2 4 4							
							SAND; dark gray, fine to medium, occ. coarse sand, trace silt, occ. thin laminations of sandy silt		wet	medium dense
25	9A		6 5 13							
30	10A		5 6 11							
35	CX		5 5 8				indistinct bedding			
	11A		6 13 18							
40							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-2

DATE DRILLED:

SUMMARY: BORING NO. SD-4 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	12A		11 15 27				**ALLUVIUM** SAND (continued)		wet	medium dense
							Bottom of boring at depth 41.5 feet. 4" PVC monitoring well installed. Slotted screen from 17' to 37', bentonite seal 10' to 15', backfilled to surface with pea gravel.			
45										

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear,
G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No.
87-35192

Drawing No.
B-3

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED: 6/27/85

SUMMARY: BORING NO. SD-6

ELEVATION: 3

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C		8 7 18				**FILL** SAND; gray-brown, fine to medium, trace silt, scattered subrounded coarse gravel to brown, medium, trace fine sand, trace silt, trace medium gravel		very moist	medium dense
5	2A		3 4 5				**ALLUVIUM** SAND; brown, fine to medium, trace to little silt		very moist	loose
	3C		6 5 8				SILTY SAND; brown, fine to medium, occ. scattered wood chips, occ. 1/4" beds of light brown silt, trace fine sand		wet	loose
10	4A		3 4 5				to gray-brown, fine to medium, scattered wood chips, scattered small gravel			
	5C		3 7 11							
15	6A		5 4 8				SAND; black, medium, trace silt, trace fine sand		wet	loose to medium dense
	7C		3 8 16				1/2" zone silty sand; gray, fine to medium at 18.5'			
20										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-4

DATE DRILLED:

SUMMARY: BORING NO. SD-6 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	8A		5 8 13				SAND; dark gray/black, medium, trace fine sand, trace silt, occ. coarse sand		wet	medium dense
25	9A		3 7 8				to black, medium to coarse, trace fine, trace silt		wet	medium dense
30	10A		5 17 15				fine to medium, trace silt		very moist	
							SILTY SAND; dark gray, fine, with 1/2" layers of sandy silt; gray-brown, fine		very moist	dense
35	11A		4 5 7				SAND; dark gray, fine to medium, trace silt, scattered coarse sand		wet	medium dense
40										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Drawing No. B-5

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED:

SUMMARY: BORING NO. SD-6 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	12A		4 6 10				SAND; dark gray, fine to medium, trace silt, scattered coarse sand		wet	medium dense
45	13A		10 15 20				SAND; dark gray, fine, some silt, trace medium sand, occasional thin laminations of silty sand		wet	medium dense
50	14A		5 4 9				grades to 'some' to 'and' silt, occasional thin to very thin laminations of sandy silt or silt			
55							Bottom of boring at depth 51.5 feet. 4" PVC monitoring well installed. Slotted screen from 15' to 35'; bentonite seal at surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No.
87-35192

Drawing No.
B-6

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED: 6/28/85

SUMMARY: BORING NO. SD-10

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C		7 20 22				**FILL** SAND & GRAVEL; brown, fine gravel, fine to coarse sand, trace to little silt		very moist	dense
5	2A		5 3 4				**ALLUVIUM** SAND; dark brownish-gray, coarse to medium, trace coarse, trace silt grades to dark gray, fine to medium, trace coarse		wet	dense
	3C		1 1 1				ORGANIC SILT; brown, trace roots, and wood chips laminations of organic fibrous material grades to gray-brown, thin laminations of wood chips		moist to v. moist	loose
10	4A		5 8 7				SANDY SILT; brownish-gray, fine to medium, occ. wood chips, occ. thin to very thin laminations of silt		wet	medium dense
	5C		5 8 10							
15	6A		8 16 20				SAND; dark gray, with red flecks, fine to medium, trace coarse, trace silt		wet	dense
20	7A		4 12 31							

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-7

DATE DRILLED:

SUMMARY: BORING NO. SD-10 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20							SAND; dark gray, with red flecks, fine to medium, trace coarse, trace silt		wet	dense
25	8A		5 4 3							loose
30	9A		10 12 16							dense
35	10C		5 5 5							loose
40	11A		6 6 4							loose to medium dense

Bottom of boring at depth 40.5 feet.
4" PVC monitoring well installed.
Slotted screen from 15' to 35';
bentonite seal at surface.

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-8

DATE DRILLED: 6/27/85

SUMMARY: BORING NO. SD-18

ELEVATION: 4

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0							**FILL** SAND & GRAVEL; brown, fine, trace wood splinters		dry	dense to v. dense
	1C		17 24 26							
5	2A		3 3 4				**ALLUVIUM** SAND; mottled gray and brown, fine to med., occ. thin lens of gray fine silty sand, trace charcoal		moist	loose
							SANDY SILT; grayish-brown, trace coarse sand, occ. fine gravel, tr. occ. wood chips, v. thinly lam.		wet	loose
	3C		1 2 6				ORGANIC SILT; mottled gray & brown, occ. laminations or pockets of fine to medium sand		very moist	soft to medium stiff
10	4A		1 2 6				SAND; gray, fine, trace medium to coarse, little to some silt, with thin to very thin laminations of sandy silt, trace wood chips		wet	loose
	5C		6 3 3							
15	6A		4 3 4							
20										

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-9

DATE DRILLED:

SUMMARY: BORING NO. SD-18 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	7A		8 9 11				**ALLUVIUM** (continued) SAND; dark gray, fine to medium, trace coarse sand		wet	medium dense
25	8A		6 6 9							
30	9A		6 8 23							
35	10A		7 9 15				3" bed of clayey silt; gray-black			
							SAND; dark gray, fine, trace med., little to some silt		wet	medium dense
							grades to fine to medium, trace coarse sand, trace silt, occ. thin to very thin laminations or pockets of silty sand			
40							(continued)			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No.
87-35192

Drawing No.
B-10

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED:

SUMMARY: BORING NO. SD-18 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	11A		6 12 14				**ALLUVIUM** SAND (continued)		wet	medium dense
							Bottom of boring at depth 41.5 feet. 4" PVC monitoring well installed. Slotted screen from 15' to 35'; bentonite seal at 10' to 15'.			
45										

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Drawing No. B-11

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED: 7/1/85

SUMMARY: BORING NO. SD-26

ELEVATION: 3

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C		18 25 18				SAND; mottled gray & brown, fine to medium, little silt, trace coarse, trace roots, thin to very thin laminations of fine sand, sandy silt and medium dense sand		very moist	dense
5	2A		5 6 7				**ALLUVIUM** SANDY SILT; mottled gray & brown, fine, trace medium sand, trace roots, thin to very thin laminations of fine sand, medium dense silt		wet	medium dense
	3C		6 8 7				abundant wood chips, trace coarse sand & laminations of clayey silt			
10	4A		1 1 3				SAND; mottled gray & brown, fine, trace wood chips, thin to very thin laminations of silty sand		wet	loose
	5C		8 9 13				grades to "little" to "some" silt, trace medium sand			medium dense
15	6A		12 14 16				grades to dark gray, fine to medium, trace coarse, trace silt, occ. laminations of silty sand			
20	7C		5 11 15							

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-12

DATE DRILLED:

SUMMARY: BORING NO. SD-26 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
20	8A		6 14 21				SAND; dark gray, fine to medium, trace coarse sand, trace silt, occasional wood chips		wet	medium dense to dense
25	9C		6 11 14							
30	10A		16 34 42				grades to fine, little to some silt, occ. very thin to thin laminations of silty sand			
35	11A		11 13 17							
40							trace medium sand, occ. coarse			

(continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-13

DATE DRILLED:

SUMMARY: BORING NO. SD-26 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40	12A		13 26 50/6"				SAND (continued)		wet	medium dense to dense
							Bottom of boring at depth 41.5 feet. 4" PVC monitoring well installed. Slotted screen from 15' to 35'; bentonite seal from 10' to 13'.			
45										

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

PROPOSED 7TH AVENUE STORM DRAIN
Seattle, Washington
for URS Consultants

Project No. 87-35192

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B-14

SUMMARY: BORING NO. DM-327

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED ARE A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DATE DRILLED: 1/17-22/85

APPROX. ELEV. (MSL)	DEPTH (FT.)	SAMPLE TYPE / SAMPLE NO.	GRAPHIC SYMBOL		PIEZOMETER	BLOWS/6 IN.	LAB TESTS	DRY DENSITY	MOISTURE	ATTERBERG LIMITS
17	0			FILL SILTY SAND (loose) — brown; fine to coarse; little fine to coarse gravel; scattered brick and wood fragments; no bedding evident; moist; (SM)			NA			
		SS 1								
	5	SS 2		with oily substance			NA			
10		SS 3		ALLUVIUM SAND (loose) — brown; fine to medium; little silt; occasional thin beds of clayey silt; moist to wet; (SM)			NA			
	10	SS 4					NA			
		SS 5		4/25/85 ▽			NA			
	15	SS 6		SILTY SAND (medium dense) — gray-brown; fine; scattered roots and organic fibers; thinly laminated with silt, and fine sand, occasional thin beds of clayey silt; wet; (SM/ML)			NA			
0										
	20									

SAMPLE TYPES

- B — GRAB SAMPLE - HAND COLLECTED FROM AUGER OR BIT
- M — BAILER SAMPLE - MIXED AND HAND COLLECTED
- C — CUTTING SAMPLE - HAND COLLECTED FROM DRILL FLUID RETURN
- RD — 3"O.D. SPLIT BARREL RING SAMPLER - DRIVEN WITH 300 LB. DOWN HOLE SLIP-JAR HAMMER
- SPT — 2"O.D. SPLIT SPOON SAMPLER - DRIVEN WITH 140 LB. SURFACE HAMMER WITH 30" DROP
- SS — SPT. EXCEPT DRIVEN WITH 300 LB. DOWN HOLE SLIP-JAR HAMMER WITH 18" DROP
- P — PITCHER SAMPLER - 3"O.D. THIN WALLED SHELBY TUBE PUSHED WITH ROTATING CUTTING BARREL
- SH — 3"O.D. THIN WALLED SHELBY TUBE - PUSHED WITH HYDRAULICS

MOISTURE CONTENT - PERCENT OF DRY WEIGHT
DRY DENSITY - POUNDS PER CUBIC FOOT

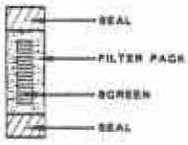
LABORATORY TESTS

- G — GRAIN SIZE DISTRIBUTION
- A — ATTERBERG LIMITS
- V — MINI VANE SHEAR
- C — CONSOLIDATION
- UU — UNCONSOLIDATED-UNDRAINED TRIAXIAL
- CU — CONSOLIDATED-UNDRAINED TRIAXIAL
- PP — POCKET PENETROMETER
- T — PETROGRAPHIC THIN SECTION

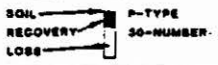
ATTERBERG LIMITS

- LL — LIQUID LIMIT
- PL — PLASTIC LIMIT
- PI — PLASTICITY INDEX

PIEZOMETER DETAIL



SAMPLE DETAIL



RENTON EFFLUENT TRANSFER SYSTEM DUWAMISH ALIGNMENT
King County, Washington
for METRO

Project No. 84-5226

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No. B-15

SUMMARY: BORING NO. DM-327

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED ARE A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DATE DRILLED: 1/17-22/85

APPROX. ELEV. (MSL)	DEPTH (FT.)	SAMPLE TYPE / SAMPLE NO.	GRAPHIC SYMBOL		PIEZOMETER	BLOWS/6 IN	LAB TESTS	DRY DENSITY	MOISTURE	ATTERBERG LIMITS
	20	SS 7		ALLUVIUM **SILTY SAND** (medium dense)			NA			
	25	SS 8		**SAND** (medium dense) dark gray; fine to medium; trace to little silt; no bedding evident; wet; (SP)			NA			
-10										
	30	SS 9		grades finer			NA			
	35	SS 10					NA			
-20				Total depth, 36.5' Piezometer: 4" dia. PVC Screen depth: 10' to 30' Seal depth: 0' to 5'						

SAMPLE TYPES

B	GRAB SAMPLE - HAND COLLECTED FROM AUGER OR BIT
M	BAILER SAMPLE - MIXED AND HAND COLLECTED
C	CUTTING SAMPLE - HAND COLLECTED FROM DRILL FLUID RETURN
RD	3"O.D. SPLIT BARREL RING SAMPLER - DRIVEN WITH 300 LB. DOWN HOLE SLIP-JAR HAMMER
SPT	2"O.D. SPLIT SPOON SAMPLER - DRIVEN WITH 140 LB. SURFACE HAMMER WITH 30" DROP
SS	SPT, EXCEPT DRIVEN WITH 300 LB. DOWN HOLE SLIP-JAR HAMMER WITH 18" DROP
P	PITCHER SAMPLER - 3"O.D. THIN WALLED SHELBY TUBE PUSHED WITH ROTATING CUTTING BARREL
SH	3"O.D. THIN WALLED SHELBY TUBE - PUSHED WITH HYDRAULICS

MOISTURE CONTENT - PERCENT OF DRY WEIGHT
DRY DENSITY - POUNDS PER CUBIC FOOT

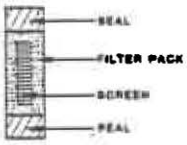
LABORATORY TESTS

G	GRAIN SIZE DISTRIBUTION
A	ATTERBERG LIMITS
V	MINI VANE SHEAR
C	CONSOLIDATION
UU	UNCONSOLIDATED-UNDRAINED TRIAXIAL
CU	CONSOLIDATED-UNDRAINED TRIAXIAL
PP	POCKET PENETROMETER
T	PETROGRAPHIC THIN SECTION

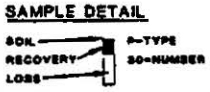
ATTERBERG LIMITS

LL	LIQUID LIMIT
PL	PLASTIC LIMIT
PI	PLASTICITY INDEX

PIEZOMETER DETAIL



SAMPLE DETAIL



RENTON EFFLUENT TRANSFER SYSTEM DUWAMISH ALIGNMENT
King County, Washington
for METRO

Project No. 84-5226

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No. B-16

SUMMARY: BORING NO. DM-329

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED ARE A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DATE DRILLED: 7-5-84

ELEV. (FT)	DEPTH (FT)	SAMPLE TYPE / SAMPLE NO.	GRAPHIC SYMBOL		PIEZOMETER	BLOWS/6 IN	LAB TESTS	DRY DENSITY	MOISTURE	ATTERBERG LIMITS
17				**FILL SAND** (Loose)						
		SS 1		brown; fine to medium; little silt; little fine gravel, sub-angular to rounded; scattered pieces of glass, brick, metal, timber, and porcelain; no bedding evident; moist (SM)			NA			
		SS 2					NA			
	5									
		C 4								
10				grades to trace silt						
				grades to trace gravel						
	10	SS 4					NA			
		SS 5		4-25-85			NA			
				ALLUVIUM SAND (Loose)	8-1-84					
				gray; fine to medium; trace silt; occasional thin beds of sandy silt; very moist to wet (SP)						
	15	SS 6					NA			
0										
	20	SS 7					NA			

continued

RENTON EFFLUENT TRANSFER SYSTEM DUWAMISH ALIGNMENT
King County, Washington
for METRO

Project No. 84-5164

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No. B-17

SUMMARY: BORING NO. DM-329

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED ARE A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DATE DRILLED: 7-5-84

ELEV. (FT)	DEPTH (FT)	SAMPLE TYPE	SAMPLE NO.	GRAPHIC SYMBOL		PIEZOMETER	BLOWS/6 IN	LAB TESTS	DRY DENSITY	MOISTURE	ATTERBERG LIMITS
					ALLUVIUM SAND (Medium dense) scattered fine gravel; no bedding evident						
	25	SS	8				NA				
	10										
	30	SS	9		(Dense)		NA				
		C	10		occasional thin beds of brown, sandy silt						
	35										
	20										
	40	SS	11		gray; fine; little silt; medium bedded with fine sandy silt; wet (SM/ML)		NA				
	45				Total depth, 41.5' Piezometer: 4-inch diameter PVC Screen depth: 15.3 to 35.3' Seal depth: 0.0 to 9.1'						

RENTON EFFLUENT TRANSFER SYSTEM DUWAMISH ALIGNMENT
King County, Washington
for METRO

Project No. 84-5164

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No. B-18

CALCULATION SHEET

METROPOLITAN ENGINEERS

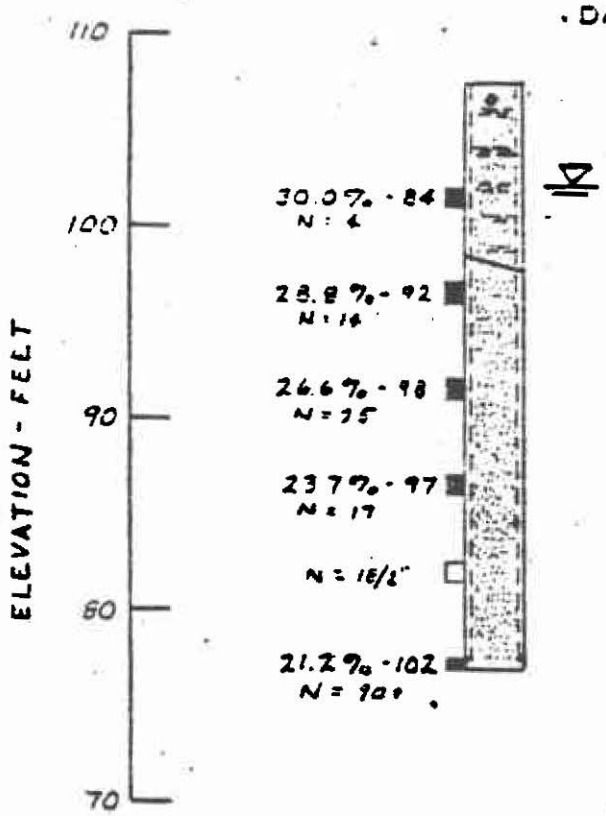
SEATTLE, WASHINGTON

BORING 22

LOCATION: STATION 47+44 (18' left); Section 3

ELEVATION: 107.4

DATE DRILLED: 9-3-64



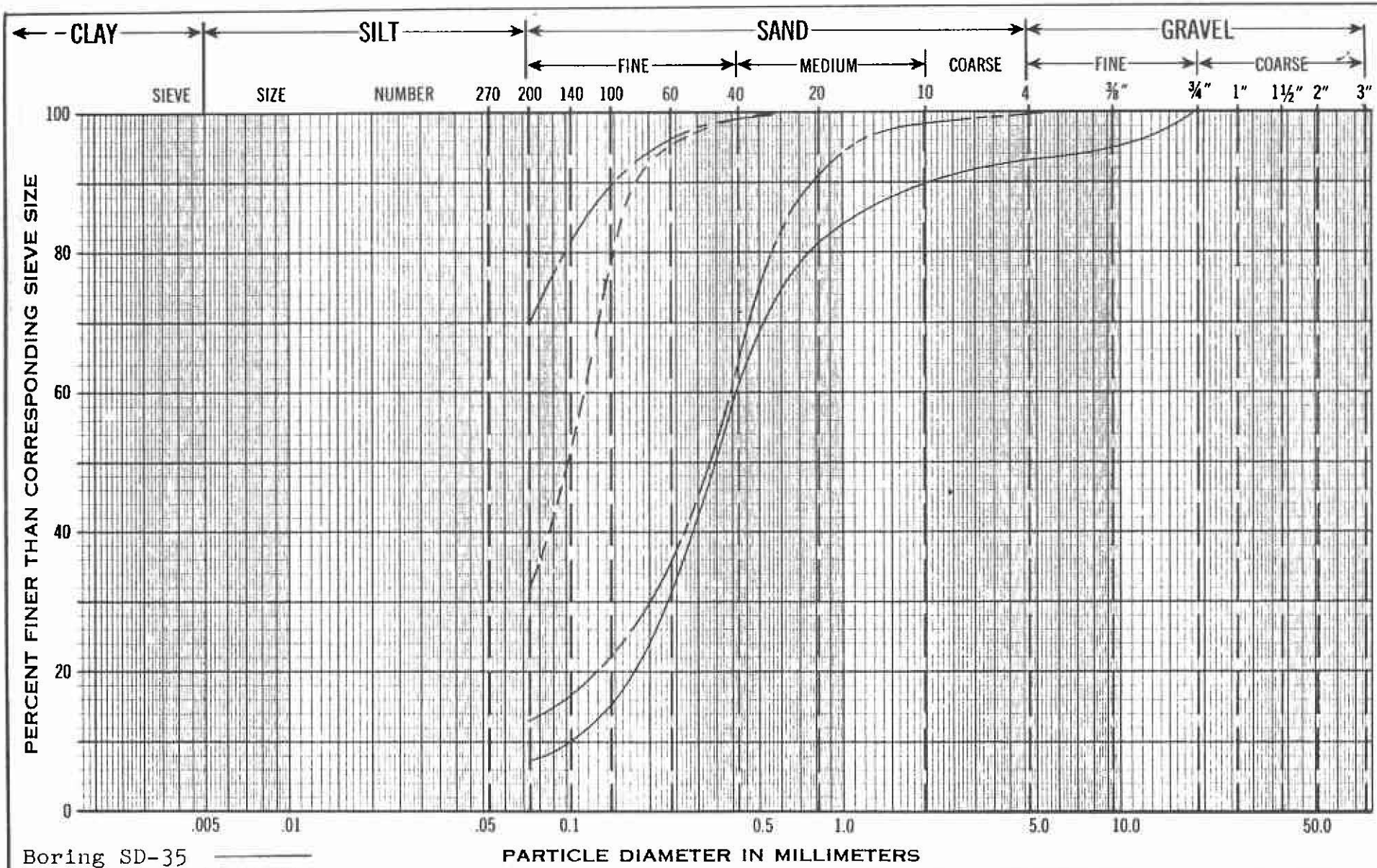
Dark Brown Fine Sand with silty very fine sand & soft Brown-gray silt layers

Black Fine Sand (Clean, Medium dense)

Grades coarser

Boring @ El. 87.4, casing @ El. 87.4, overnight water level @ El. 102.1

DATE	BY	JOB NO.	TITLE	FIG.
12-14-64	JCN	W214F	BORING LOG	A-



Boring SD-35 ———
Sample 5, Depth 5-6½

Boring SD-35 – – – – –
Sample 11, Depth 18½-20

Boring SD-47 —— - ——
Sample 9, Depth 15½-17

Boring SD-47 —— -- ——
Sample 14, Depth 30-31½

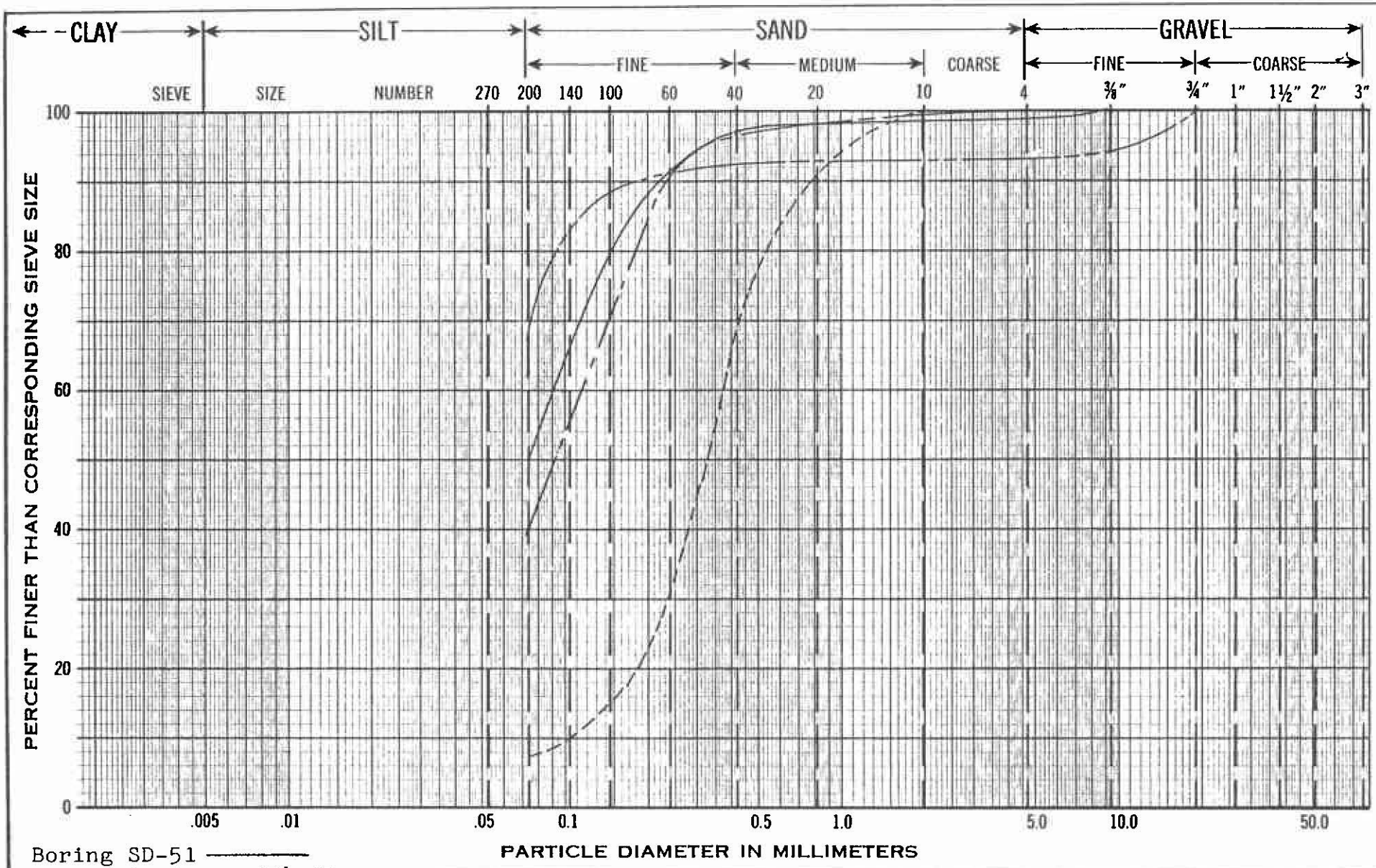
GRAIN-SIZE DISTRIBUTION CHART

7th Avenue South Storm Sewer
for URS Consultants

Project No.
87-35192-01

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No.
C-1



Boring SD-51 ———
Sample 9, Depth 15½-17

Boring SD-51 - - - - - -
Sample 15, Depth 30-31½

Boring SD-56 ——— - ———
Sample 9, Depth 15½-17

Boring SD-56 ——— - - ———
Sample 13, Depth 21½-23

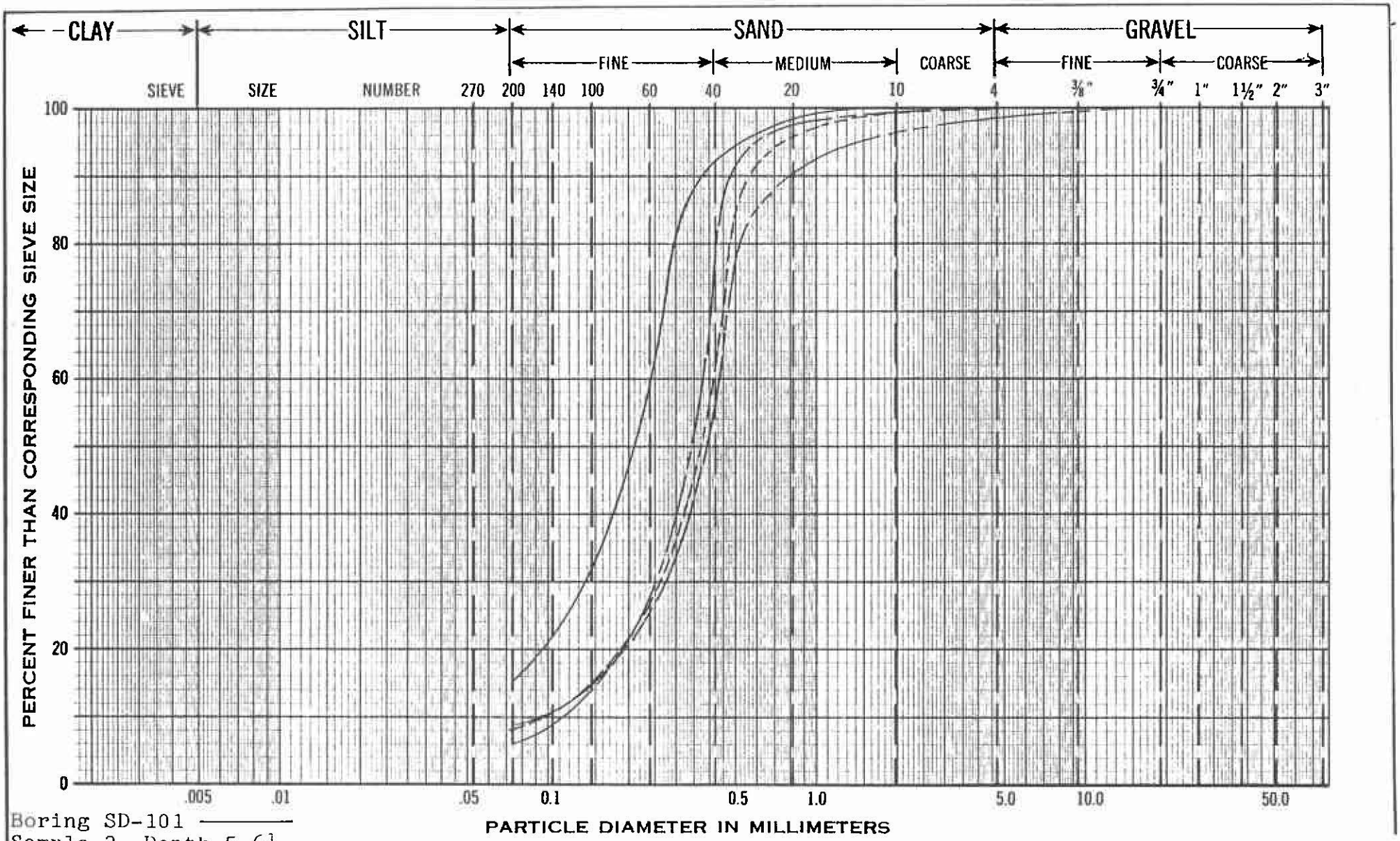
GRAIN-SIZE DISTRIBUTION CHART

7th Avenue South Storm Sewer
for URS Consultants

Project No.
87-35192-01

Drawing No.
C-2

Converse Consultants Geotechnical Engineering and Applied Sciences



Boring SD-101 ———
Sample 2, Depth 5-6½

Boring SD-101 - - - - - -
Sample 6, Depth 15-16½

Boring SD-102 — - — - —
Sample 5, Depth 12½-14

Boring SD-102 — - - — - —
Sample 9, Depth 25-26½

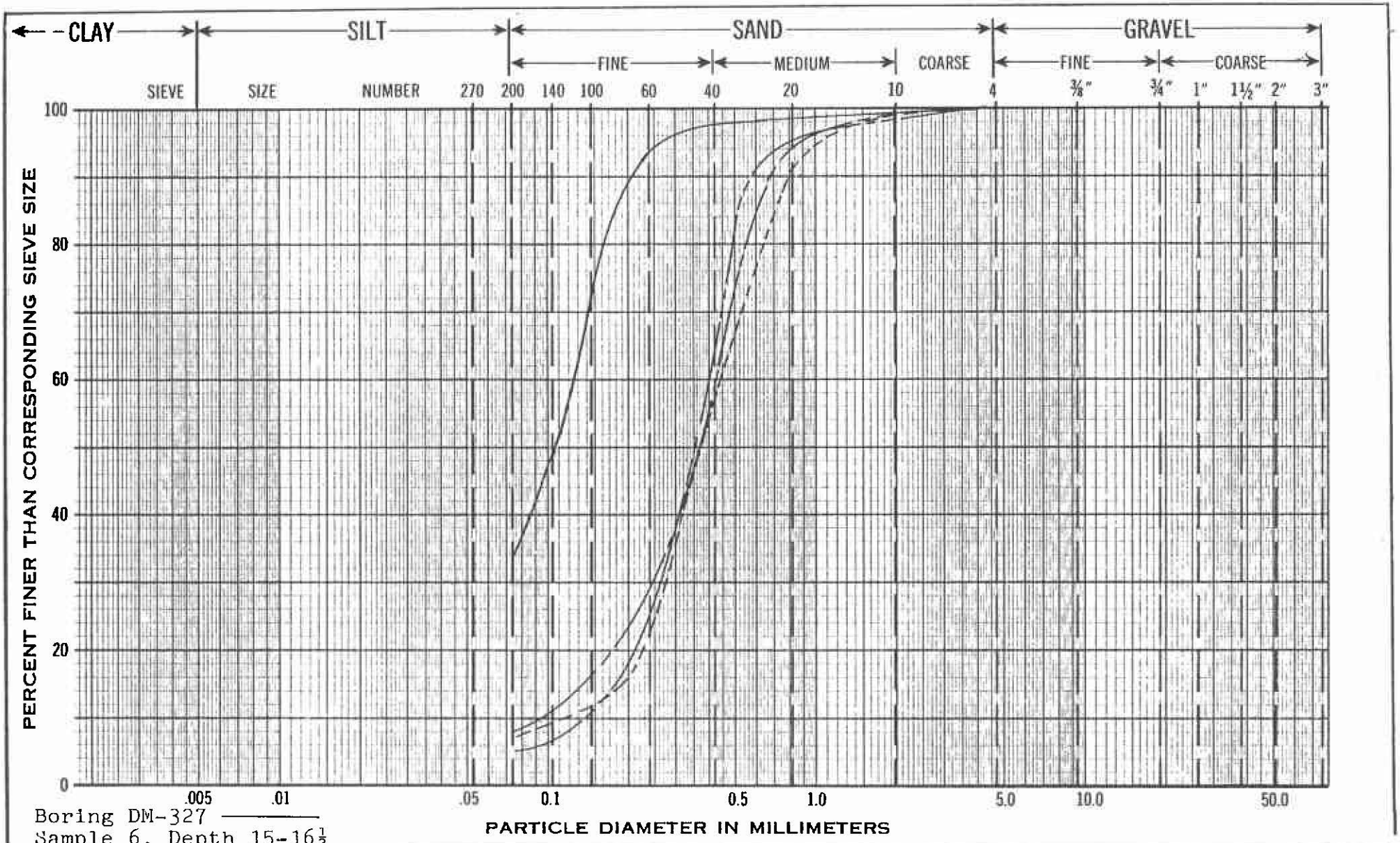
GRAIN-SIZE DISTRIBUTION CHART

7th Avenue South Storm Sewer
for URS Consultants

Project No.
87-35192-01

Drawing No.
C-3

Converse Consultants Geotechnical Engineering and Applied Sciences



Boring DM-327 ———
Sample 6, Depth 15-16½

Boring DM-327 — — — — —
Sample 8, Depth 25-26½

Boring DM-327 ——— - ———
Sample 9, Depth 30-31½

Boring DM-329 ——— - - ———
Sample 8, Depth 25-26½

GRAIN-SIZE DISTRIBUTION CHART

7th Avenue South Storm Sewer
for URS Consultants

Project No.
87-35192-01

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No.
C-4

TABLE D-1

SUMMARY OF OBSERVATION WELL READINGS

Boring Number	Depth to Water Below Ground Surface (feet)	Water Elevation City of Seattle Datum (feet)	Measurement Date	Measurement Time
SD-18	6.2	-2	3/31/88	(1040)
SD-26	6.4	-3	3/23/88	(1144)
	8.3	-5	3/31/88	(0940)
SD-35	12.2	-2	3/21/88	(1400)
	12.2	-2	3/22/88	(1600)
	11.9	-2	3/31/88	(1048)
SD-47	11.9	-2	3/21/88	(1035)
SD-51	10.6	-3	3/21/88	(1200)
	10.3	-3	3/22/88	(1315)
	10.0	-2	3/31/88	(1102)
SD-56	11.9	-3	3/21/88	(1300)
	11.3	-2	3/22/88	(1120)
	11.0	-2	3/31/88	(1100)
SD-101	8.9	-6	3/21/88	(1545)
	7.9	-5	3/23/88	(1334)
	7.8	-5	3/31/88	(1002)
SD-102	10.0	-7	3/21/88	(1445)
	6.7	-4	3/23/88	(1045)
	8.5	-5	3/31/88	(1000)

TABLE D-2

GROUNDWATER DATA - 7TH AVENUE SOUTH STORM SEWER

BORING NUMBER	GROUND SURFACE ELEV (FT)1	APPROX WATER ELEV (FT)1	MATERIAL TESTED	SCREEN INTERVAL DEPTH (FT)	PERMEABLE THICKNESS (FT)	T (FT2/MIN)	K (FT/MIN)	OBSERVATION WELL DISTANCE (FEET)	SAMPLE NO.	DEPTH (FEET)	SIEVE ANALYSES D85 (mm)	D50 (mm)	D15 (mm)	D10 (mm)	<NO. 200 SIEVE (%)	Cu
SD-35	10	-2	Sa,f-c,ts	40-50	23.5	2.9	0.12		5	10	1.00	0.33	0.14	0.10	7	4
SD-51	8	-3	Sa,f-m,ts/ss	40-50	28.7	0.3	0.01		15	31	0.72	0.30	0.15	0.10	7	4
SD-56	10	-2	Sa,f-c,ts/ss	40-50	21.5	0.6	0.03									
SD-101	3	-5	Sa,f-m,ts	25-35	13.3	1.0	0.08	150	6	16	0.50	0.38	0.15	0.10	8	4
SD-102	3	-6	Sa,f-m/c,ts	35-45	26.3	0.5	0.02	50	5	13	0.39	0.35	0.15	0.11	6	4
									9	26	0.60	0.38	0.16	0.10	8	4

Notes:

Sa = sand
f = fine
m = medium
c = coarse
ts = trace silt
ls = little silt
ss = some silt

T = transmissivity
K = permeability
Cu = uniformity coefficient

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Certificate

Chemistry, Microbiology, and Technical Services

CLIENT: Converse Consultants
3131 Elliott Ave. Suite 550
Seattle, WA 98121
ATTN: David A. Yonemitsl

LABORATORY NO. 8892

DATE: April 1, 1988

PO# 87-35192

REPORT ON: SOIL

SAMPLE IDENTIFICATION: Submitted 03/18/88 and identified as shown below:

1)	1/2.5'	SD-102	Day	3/16	14:00	
2)	2/5.0'	SD-102	Day	3/16	14:10	Converse
3)	SA4/10'	SD-102	Day	3/16	14:30	Converse
4)	6/15.0'	SD-102		3/16	14:50	Converse
5)	SA8/20'	SD-102	Day	3/16	15:00	Converse
6)	SA2/5.0'	SD-51	Day	3/17	14:20	Converse
7)	1/2.5'	SD-51	Day	3/17	14:10	Converse
8)	SA4/8.0'	SD-51		3/17	14:30	Converse
9)	SA8/14.0'	SD-51		3/17	14:45	Converse
10)	SA10/17'	SD-51		3/17	15:00	Converse
11)	SA12/20'	SD-51	Day	3/17	15:10	Converse
12)	SA1/2.5'	SD-101	Day	3/18	09:15	Converse
13)	SA3/7.5'	SD-101	Day	3/18	09:30	Converse
14)	SA5/12'	SD-101	Day	3/18	09:50	Converse
15)	SA7/17'	SD-101	Day	3/18	10:00	Converse

Samples were composited on an equal weight basis according to the following scheme:

Composite 1000 = Samples 1 - 5
Composite 1001 = Samples 6 - 11
Composite 1002 = Samples 12 -15

TESTS PERFORMED AND RESULTS:

Samples were passed through a No. 10 sieve, with percent retained and description of retained matter shown below. Only material passing the sieve was analyzed.

Sample No.	% Retained	Major Description
1000	<2.	---
1001	20.	Rocks
1002	<2.	---

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	1000	1001	1002
pH, glass electrode at 25°C	6.2	6.6	6.3
Specific Conductivity, micromhos/cm at 25°C	1300.	220.	120.
Total Solids, %	72.7	75.2	76.8

	parts per million (mg/kg), dry basis		
Phenol	1.9	5.9	<0.5
Cyanide	0.5	<0.5	<0.5

Samples were analyzed for Halogenated Hydrocarbons in accordance with Washington State Department of Ecology WAC 173-303 with results as follows:

Halogenated Hydrocarbons# parts per million (mg/kg), as received basis	1000	1001	1002
	<15.	<15.	<15.

reported as the sum of the halogens bromide, chloride, fluoride and iodide. A value of less than 100 mg/kg is classified as undesignated waste.

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Samples were analyzed for E.P. Toxicity in accordance with Test Methods for Evaluating Solid Waste (SW 846), U.S.E.P.A, November, 1986. Extraction was performed using Method 1310. Mercury was determined using Method 7470, other metals were performed by ICAP, Method 6010.

parts per million (mg/L)

	1000	1001	1002	MCL
Arsenic	<0.2	<0.2	<0.2	5.0
Barium	0.1	<0.1	<0.1	100.
Cadmium	<0.01	<0.01	<0.01	1.0
Chromium	<0.1	<0.1	<0.1	5.0
Lead	<0.1	<0.1	<0.1	5.0
Mercury	<0.005	<0.005	<0.005	0.2
Selenium	<0.2	<0.2	<0.2	1.0
Silver	<0.1	<0.1	<0.1	5.0

Key

MCL = Maximum Contamination Level allowed per regulation.
< = Less than

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens

J. M. Owens

JMO:emt

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