

URS CONSULTANTS INC.

292 Delaware Avenue
Buffalo, New York 14202 (716)-856-5636 FAX: (716) 856-2545

S-28

Letter of Transmittal

To: KUBRICKY CONSTRUCTION
P O BOX 3202
GLENS FALLS NY 12801

Date: 11/17/98 Job No.: 35505.03
Attn: R. HUGHES
Re: FT. EDWARD LANDFILL

PLEASE REFER TO THE TRANSMITTAL NUMBER ON ALL FUTURE CORRESPONDENCE 02735-2
(REF. 02740-2)

We are sending you Attached Under Separate Cover the following items:

- Shop Drawings
- Prints
- Plans
- Specifications
- Copy of letter
- Change Order
- _____

COPIES	DRAWING NO.	DATE	DESCRIPTION
<u>2</u>			<u>MONITORING WELL & GAS</u>
			<u>MONITORING PIEZOMETER</u>
			<u>INSTALLATIONS</u>

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~~URS FIELD OEG-M. PACINO (1)~~
FILES: 35505 (02735)

[Signature]



FINAL DISTRIBUTION
URS CONSULTANTS, INC.

**MONITORING WELL AND
GAS MONITORING PIEZOMETER INSTALLATIONS
FORT EDWARD LANDFILL
FORT EDWARD, NEW YORK**

02735-2 (CROSS REF. UNDER)
02740-2

RECEIVED
URS Grainer Inc.
MAY 01 1998
JOB# 35505

SHOP DRAWING REVIEW
Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Approved
 Approved as Noted
 Resubmit with Revisions
 Disapproved

By [Signature] Date 10/28/98

URS Consultants, Inc.
BUFFALO, NEW YORK 14202

April 23, 1998

Mr. Robert Hughes
Kubricky Construction Corporation
237 Bay Street
Glens Falls, New York 12801

Re: 98001
Fort Edward Landfill
Fort Edward, New York
Job #9717

Dear Mr. Hughes:

Per sections 02735 and 02740, enclosed are the test boring logs for one groundwater monitoring well (NMW) and one gas monitoring piezometer. Also enclosed is a well completion diagram for each showing the required information.

Previously, we provided you with test boring logs for each of the three extraction wells. Soil samples from all borings will continue to be retained by Parratt-Wolff, Inc. until the conclusion of all field activities. At that point, they will be forwarded to you.

We look forward to completing the remaining field tasks shortly.

Very truly yours,

PARRATT - WOLFF, INC.



William Morrow
WHM/blo
encs:



Split barrel sampling

The following excerpts are from "Standard Method for penetration test and split-barrel sampling of soils."¹ (ASTM designation: D-1586-67 AASHO Designation: T-206-70.)

1. Scope

1.1 This method describes a procedure for using a split-barrel sampler to obtain representative samples of soil for identification purposes and other laboratory tests, and to obtain a measure of the resistance of the soil to penetration of the sampler.

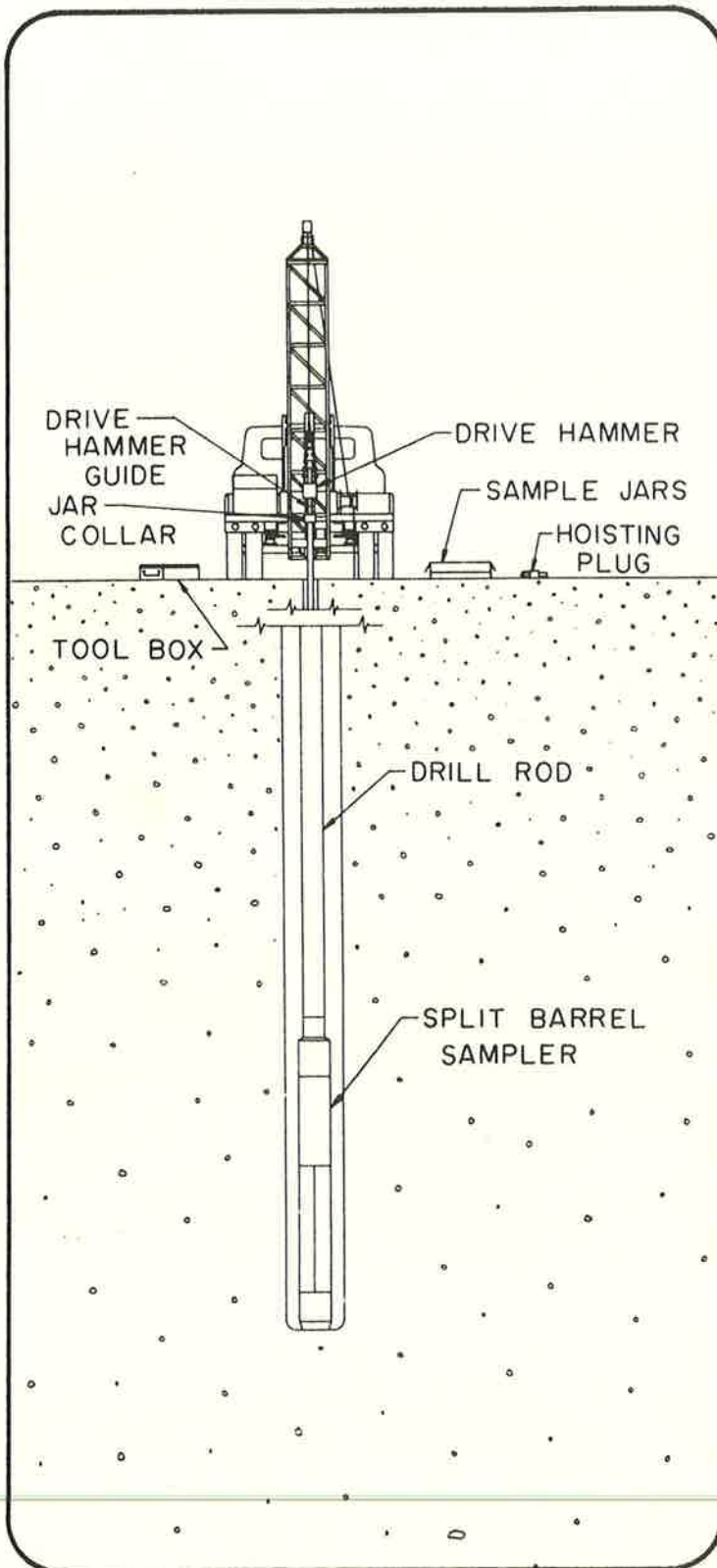
2. Apparatus

2.1 Drilling Equipment — Any drilling equipment shall be acceptable that provides a reasonably clean hole before insertion of the sampler to ensure that the penetration test is performed on undisturbed soil, and that will permit the driving of the sampler to obtain the sample and penetration record in accordance with the procedure described in 3. Procedure. To avoid "whips" under the blows of the hammer, it is recommended that the drill rod have stiffness equal to or greater than the A-rod. An "A" rod is a hollow drill rod or "steel" having an outside diameter of 1-5/8 in. or 41.2 mm and an inside diameter of 1-1/8 in. or 28.5 mm, through which the rotary motion of drilling is transferred from the drilling motor to the cutting bit. A stiffer drill rod is suggested for holes deeper than 50 ft (15m). The hole shall be limited in diameter to between 2-1/4 and 6 in. (57.2 and 152mm).

2.2 Split-Barrel Sampler — The sampler shall be constructed with the dimensions indicated (in Fig. 1.) The drive shoe shall be of hardened steel and shall be replaced or repaired when it becomes dented or distorted. The coupling head shall have four 1/2-in. (12.7-mm) (minimum diameter) vent ports and shall contain a ball check valve. If sizes other than the 2-in. (50.8-mm) sampler are permitted, the size shall be conspicuously noted on all penetration records.

2.3 Drive Weight Assembly — The assembly shall consist of a 140-lb (63.5-kg) weight, a driving head, and a guide permitting a free fall of 30 in. (0.76 m). Special precautions shall be taken to ensure that the energy of the falling weight is not reduced by friction between the drive weight and the guides.

2.4 Accessory Equipment — Labels, data sheets, sample jars, paraffin, and other necessary supplies should accompany the sampling equipment.



SOIL SAMPLING - METHODS

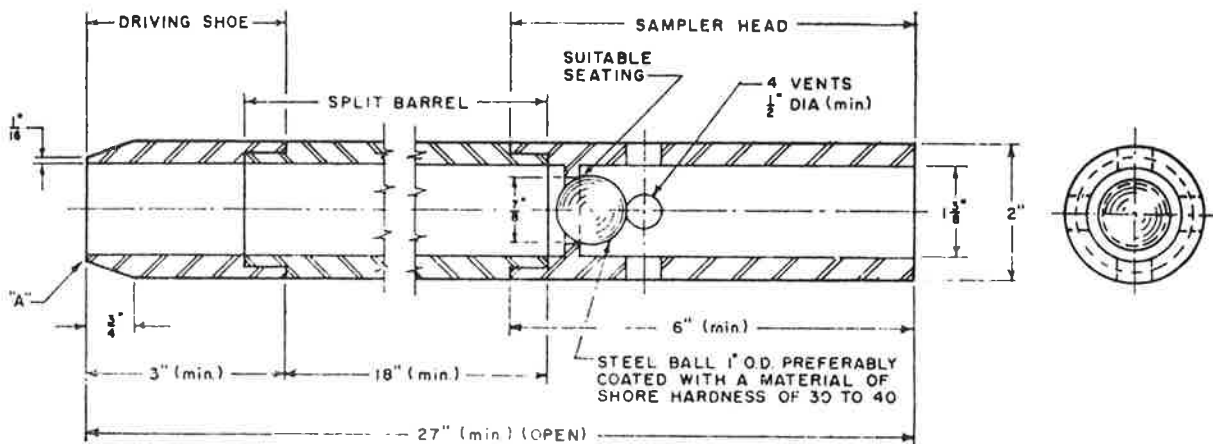


Table of Metric Equivalents.

In.	Mm	Cm	In.	Mm	Cm
1/16 (16 gage)	1.5	...	2	...	5.08
1/2	12.7	...	3	...	7.62
3/4	19.0	1.90	6	...	15.24
7/8	22.2	2.22	18	...	45.72
1-3/8	34.9	3.49	27	68.58	
1-1/2	38.1	3.81			

Fig. 1 — Standard Split Barrel Sampler Assembly

Note 1 — Split barrel may be 1-1/2 in. inside diameter provided it contains a liner of 16-gage wall thickness.

Note 2 — Core retainers in the driving shoe to prevent loss of sample are permitted.

Note 3 — The corners at A may be slightly rounded.

3. Procedure

3.1 Clear out the hole to sampling elevation using equipment that will ensure that the material to be sampled is not disturbed by the operation. In saturated sands and silts withdraw the drill bit slowly to prevent loosening of the soil around the hole. Maintain the water level in the hole at or above ground water level.

3.2 In no case shall a bottom-discharge bit be permitted. (Side-discharge bits are permissible.) The process of jetting through an open-tube sampler and then sampling when the desired depth is reached shall not be permitted. Where casing is used, it may not be driven below sampling elevation. Record any loss of circulation or excess pressure in drilling fluid during advancing of holes.

3.3 With the sampler resting on the bottom of the hole, drive the sampler with blows from the 140-lb (63.5 kg) hammer falling 30 in. (0.76 m) until either 18 in. (0.45 m) have been penetrated or 100 blows have been applied.

3.4 Repeat this operation at intervals not longer than 5 ft (1.5 m) in homogeneous strata and at every change of strata.

3.5 Record the number of blows required to effect each 6 in. (0.15 m) of penetration or fractions thereof. The first 6 in. (0.15 m) is considered to be a seating drive. The number of blows required for the second and third 6 in. (0.15 m) of penetration added is termed the penetration resistance, *N*. If the sampler is driven less than 18 in. (0.45 m), the penetration resistance is that for the last 1 ft (0.30 m) of penetration (if less than 1 ft (0.30 m) is penetrated, the logs shall state the number of blows and the fraction of 1 ft (0.30 m) penetrated).

3.6 Bring the sampler to the surface and open. Describe carefully typical samples of soils recovered as to composition, structure, consistency, color, and condition; then put into jars without ramming. Seal them with wax or hermetically seal to prevent evaporation of the soil moisture. Affix labels to the jar

or make notations on the covers (or both) bearing job designation, boring number, sample number, depth penetration record, and length of recovery. Protect samples against extreme temperature changes.

4. Report

4.1 Data obtained in borings shall be recorded in the field and shall include the following:

- 4.1.1 Name and location of job,
- 4.1.2 Date of boring — start, finish,
- 4.1.3 Boring number and coordinate, if available,
- 4.1.4 Surface elevation, if available,
- 4.1.5 Sample number and depth,
- 4.1.6 Method of advancing sampler, penetration and recovery lengths,
- 4.1.7 Type and size of sampler,
- 4.1.8 Description of soil,
- 4.1.9 Thickness of layer,
- 4.1.10 Depth to water surface; to loss of water; to artesian head; time at which reading was made,
- 4.1.11 Type and make of machine,
- 4.1.12 Size of casing, depth of cased hole,
- 4.1.13 Number of blows per 6 in. (0.15 m)
- 4.1.14 Names of crewmen, and
- 4.1.15 Weather, remarks.

¹Under the standardization procedure of the Society, this method is under the jurisdiction of the ASTM Committee D-18 on Soil and Rock for Engineering Purposes. A list of members may be found in the ASTM Year Book.

Current edition accepted October 20, 1967. Originally issued, 1958. Replaces D-1586-64T.

GENERAL NOTES

1. Soil boring logs, notes and other data shown are the results of personal observations and interpretations made by Parratt-Wolff, Inc.

Exploration records prepared by our drilling foreman in the field form the basis of all logs, and samples of subsurface materials retained by the driller are observed by technical personnel in our laboratory to check field classifications.

2. Explanation of the classifications and terms:

a. **Bedrock** — Natural solid mineral matter occurring in great thickness and extent in its natural location. It is classified according to geological type and structure (joints, bedding, etc.) and described as solid, weathered, broken or fragmented depending on its condition.

b. **Soils** — Sediments or other unconsolidated accumulations of particles produced by the physical and chemical disintegration of rocks and which may or may not contain organic matter.

PENETRATION RESISTANCE

<i>COHESIONLESS SOILS</i>		<i>COHESIVE SOILS</i>	
Blows Per Ft.	Relative Density	Blows Per Ft.	Consistency
0 to 4	Very Loose	0 to 2	Very Soft
4 to 10	Loose	2 to 4	Soft
10 to 30	Medium Dense	4 to 8	Medium Stiff
30 to 50	Dense	8 to 15	Stiff
Over 50	Very Dense	15 to 30	Very Stiff
		Over 30	Hard

Size Component Terms

Boulder	Larger than 8 inches	
Cobble	8 inches to 3 inches	
Gravel — coarse	3 inches to 1 inch	
— medium	1 inch to 3/8 inch	
— fine	3/8 inch to 4.76 mm	
Sand — coarse	4.76 mm to 2.00 mm	(#10 sieve)
— medium	2.00 mm to 0.42 mm	(#40 sieve)
— fine	0.42 mm to 0.074 mm	(#200 sieve)
Silt and Clay	Finer than 0.074 mm	

Proportion By Weight

Major component is shown with all letters capitalized.

Minor component percentage terms of total sample are:

and . . . 35 to 50 percent
 some . . 20 to 35 percent
 little . . 10 to 20 percent
 trace . . 1 to 10 percent

c. **Gradation Terms** — The terms coarse, medium and fine are used to describe gradation of Sand and Gravel.

d. The terms used to describe the various soil components and proportions are arrived at by visual estimates of the recovered soil samples. Other terms are used when the recovered samples are not truly representative of the natural materials, such as soil containing numerous cobbles and boulders which cannot be sampled, thinly stratified soils, organic soils, and fills.

e. **Ground water** — The measurement was made during exploration work or immediately after completion, unless otherwise noted. The depth recorded is influenced by exploration methods, soil type and weather conditions during exploration. Where no water was observed it is so indicated. It is anticipated that the ground water will rise during periods of wet weather. In addition, perched ground water above the water levels indicated (or above the bottom of the hole where no ground water is indicated) may be encountered at changes in soil strata or top of rock.



TEST BORING LOG



PROJECT Fort Edward Landfill

LOCATION Fort Edward, New York

GROUNDWATER DEPTH
WHILE DRILLING 12.0'

BEFORE CASING
REMOVED

AFTER CASING Installed
REMOVED Well

CASING TYPE HOLLOW STEM AUGER

HOLE NO. G.P. - C
JOB NUMBER: 98001

DATE STARTED 2/24/98
DATE COMPLETED 2/24/98

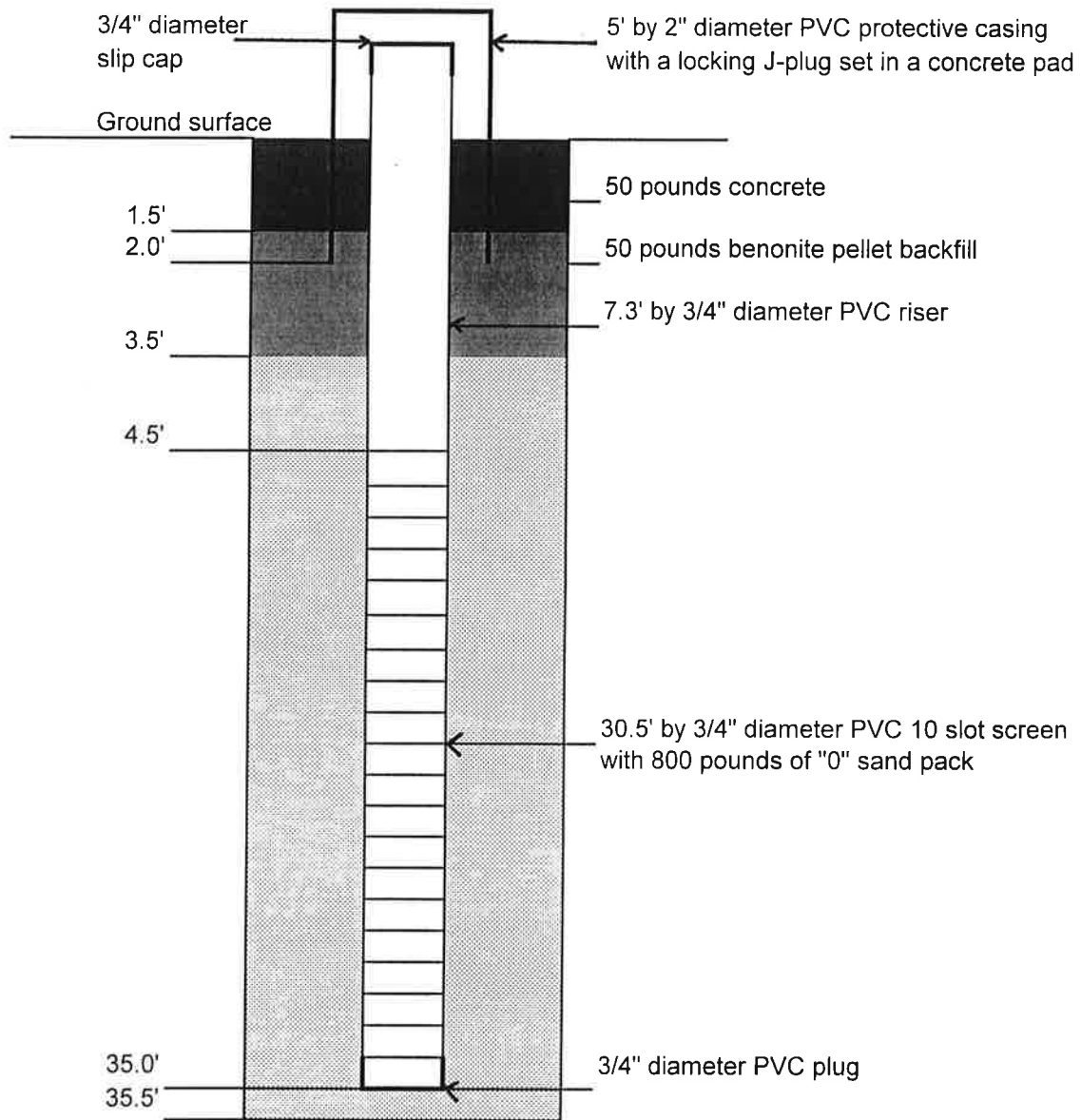
N - NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER
FALLING 30" - ASTM D-1586 STANDARD PENETRATION TEST

C - NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER
FALLING "/ OR PERCENT CORE RECOVERY

SHEET 1 OF 2

DEPTH	SAMPLE DEPTH	SAMPLE NO.	Rec	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
5.0	1.0'-	1		3 6		Brown moist medium dense fine SAND, trace to little silt, trace clay	5.0'
	2.5'			7	13		
10.0	5.0'-	2		4 5		Light brown moist medium dense fine SAND, trace silt	
	7.0'			5 5	10		
WL _____	10.0'-	3		3 5		Light brown wet medium dense to dense fine SAND, little to trace silt	12.0'
	12.0'			6 7	11		
15.0						Light brown moist medium dense to dense fine SAND, trace silt	14.0'
20.0	15.0'-	4		3 7			
	17.0'			5 7	12		
25.0	20.0'-	5		2 10			
	22.0'			10 10	20		
30.0	25.0'-	6		2 5			
	27.0'			7 10	12		
35.0	30.0'-	7		14 18			35.0'
	32.0'			19 26	37		





PARRATT WOLFF INC.	
GAS MONITORING POINT GP-C	
FORT EDWARD LANDFILL	
FORT EDWARD, NEW YORK	
NOT TO SCALE	FEBRUARY 1997

TEST BORING LOG



PROJECT Fort Edward Landfill

LOCATION Fort Edward, New York

GROUNDWATER DEPTH
WHILE DRILLING

BEFORE CASING
REMOVED

AFTER CASING Installed
REMOVED Well

CASING TYPE HOLLOW STEM AUGER

HOLE NO. NMW
JOB NUMBER: 98001

DATE STARTED 2/25/98
DATE COMPLETED 2/25/98

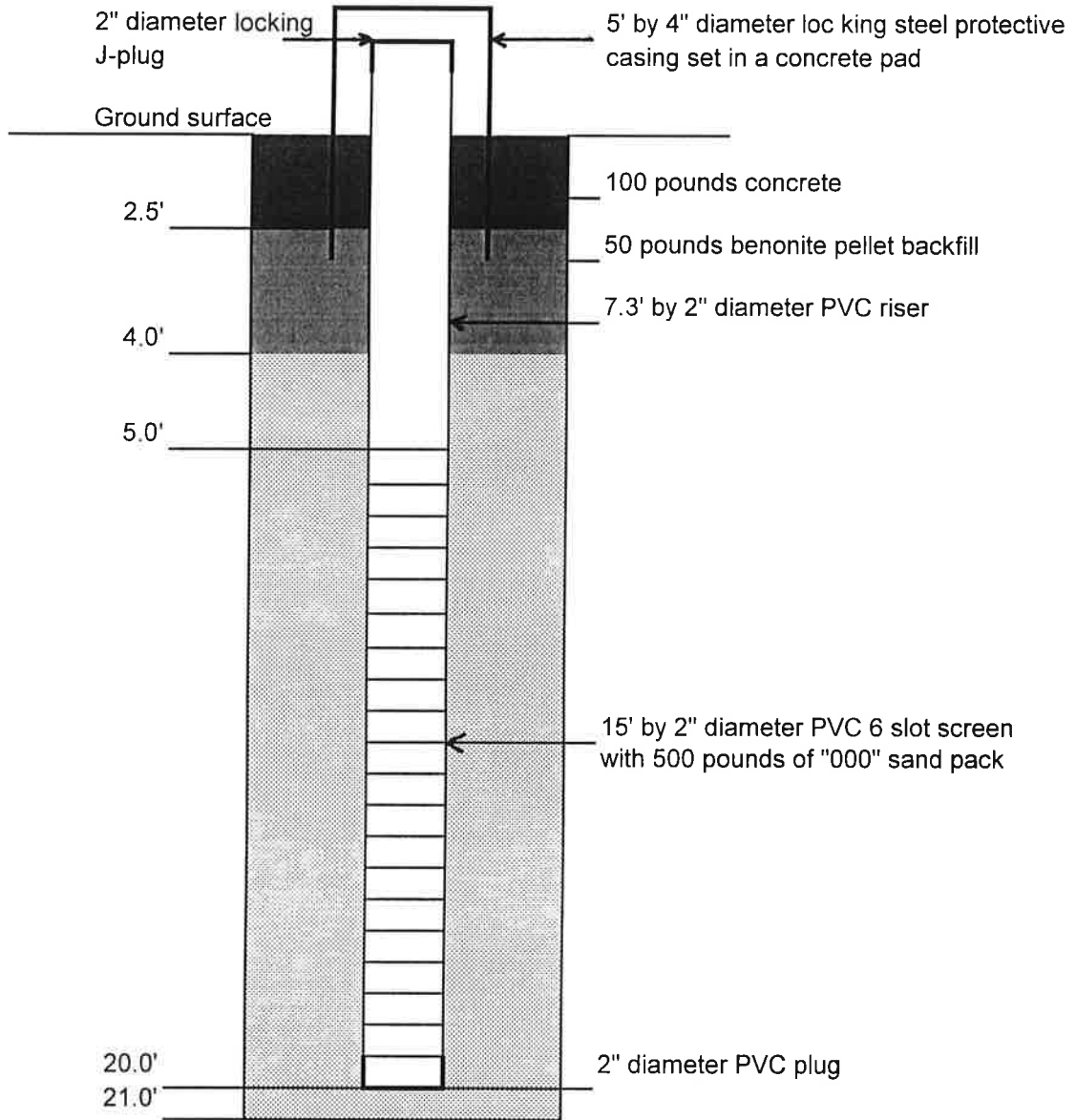
N - NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER
FALLING 30" - ASTM D-1586 STANDARD PENETRATION TEST

C - NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER
FALLING "/ OR PERCENT CORE RECOVERY

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NO.	Rec	SAMPLE DRIVE RECORD PER 6"		N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
5.0	1.0'-	1		3	5		Light brown moist loose SILT, little clay	5.0'
	2.5'			5		10		
	5.0'-	2		5	5			
7.0'			6	7	11			
10.0	10.0'-	3		3	3		Gray moist stiff to medium stiff CLAY, trace silt	
	12.0'			4	5	7		
15.0	15.0'-	4		2	2			
	17.0'			4	5	6		
20.0	19.0'-	5		2	2			
	21.0'			4	4	6		
25.0							Bottom of Boring	21.0'
							Note: 2" PVC well installed.	





PARRATT WOLFF INC.	
MONITORING WELL NMW	
FORT EDWARD LANDFILL	
FORT EDWARD, NEW YORK	
NOT TO SCALE	FEBRUARY 1997

