Figure 3.21

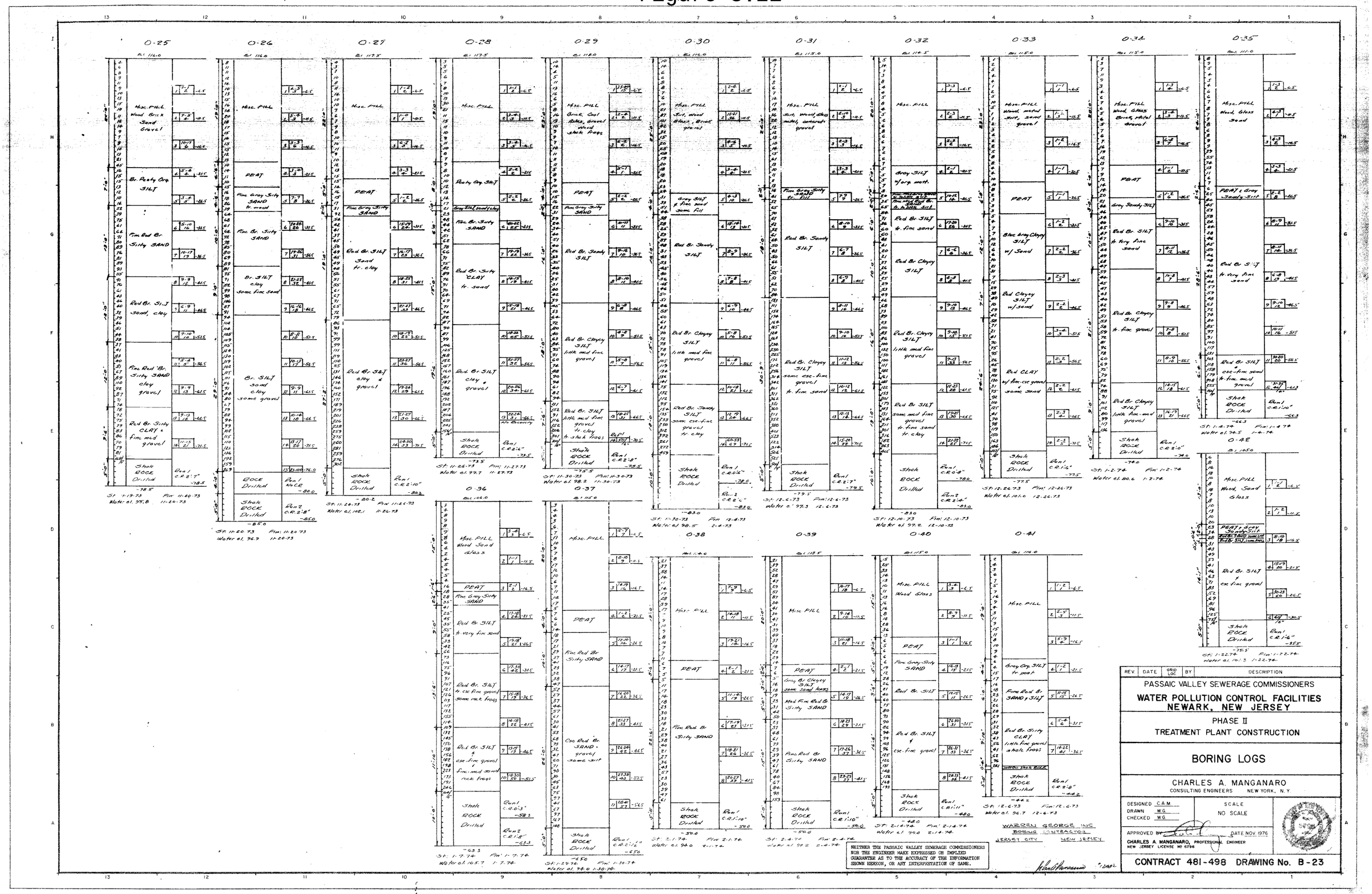
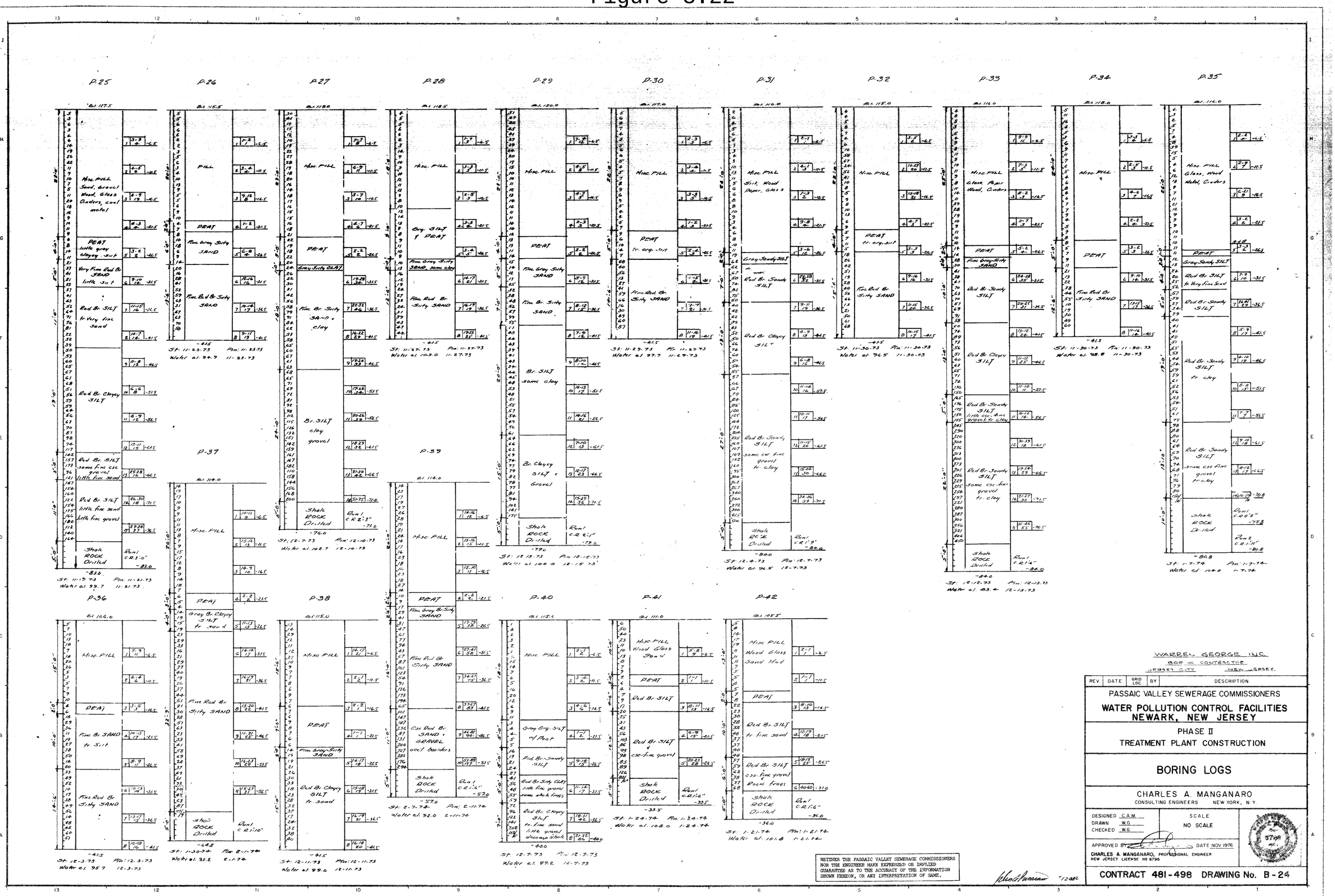

0-25
0-26
0-27
0-28
0-29
0-30
0-31
0-32
0-33
0-34
0-35
0-36
0-37
0-38
0-39
0-40
0-41
0-42
Misc. FILL
Wood, Brick
Sand
Gravel
Br. Peaty Org. SILT
Fine Red Br. Silty SAND
Red Br. Silt Sand, clay
Fine Red Br. Silty SAND clay gravel
Red Br. Silty CLAY & fine med gravel
Shale ROCK Drilled
PEAT
Fine Gray Silty SAND
Fine Br. Silty SAND
Br. SILT clay some fine sand
Br. SILT sand clay some gravel
ROCK Drilled
Red Br. SILT clay & gravel
Red Br. SILT sand clay
Peaty Org. SILT
Red Br. Silty CLAY tr. sand
Red Br. SILT clay & gravel
Red Br. Sandy SILT
Red Br. Clayey SILT little med fine gravel
Red Br. SILT little med fine gravel tr. clay tr. shale frags
Red Br. Sandy SILT some csc-fine gravel tr. clay
Red Br. Clayey SILT some csc-fine gravel tr. fine sand
Red Br. SILT some med fine gravel tr. fine sand tr. clay
Misc. FILL Wood Sand Glass
Fine Red Br. Silty SAND
Red Br. SILT tr. very fine sand
Red Br. SILT tr. csc fine gravel some rock frags
Red Br. SILT & csc-fine gravel & fine-med sand rock frags
Csc. Red Br. SAND, gravel, some silt
Misc. FILL Wood, Glass, Brick, Metal gravel
Red Br. SILT tr. very fine sand
Red Br. SILT & csc-fine sand tr. fine med gravel
Red Br. SILT & csc fine gravel
Red Br. Clayey SILT tr. fine gravel
Red Br. Clayey SILT little fine-med gravel
Misc. FILL Wood, Sand Glass
Red Br. SILT & csc-fine gravel
Misc. FILL Wood Glass
Fine Red Br. Silty SAND
Red Br. SILT & csc fine gravel
Red Br. SILT & csc-fine gravel shale frags
Misc. FILL Wood, Glass Sand
Red Br. SILT & csc fine gravel
Misc. FILL Wood Sand Glass
Fine Red Br. Silty SAND
Red Br. SILT tr. very fine sand
Red Br. SILT tr. csc fine gravel some rock frags
Red Br. SILT & csc-fine gravel & fine-med sand rock frags
Csc. Red Br. SAND, gravel, some silt
Misc. FILL Wood Glass
Fine Red Br. Silty SAND
Red Br. SILT & csc fine gravel
Red Br. SILT & csc-fine gravel shale frags
Misc. FILL Wood, Sand Glass
Red Br. SILT & csc fine gravel
Misc. FILL Wood Glass
PEAT
Fine Gray Silty SAND
Red Br. SILT
Red Br. SILT & csc-fine gravel
Shale ROCK Drilled
Misc. FILL
Gray Org. SILT tr. peat
Fine Red Br. SAND & SILT
Red Br. Silty CLAY little fine gravel shale frags
Within Shale ROCK
Run 1 C.R. 2'-8"
Run 2 C.R. 2'-8"
Run 1 C.R. 2'-10"
Run 1 C.R. 2'-14"
Run 1 C.R. 1'-10"
Run 1 C.R. 1'-11"
St: 1-22-74 Fin: 1-22-74
Water el. 101.3 1-22-74
St: 12-6-73 Fin: 12-6-73
Water el. 96.7 12-6-73
WARREN GEORGE INC
BORING CONTRACTOR
JERSEY CITY NEW JERSEY
NEITHER THE PASSAIC VALLEY SEWERAGE COMMISSIONERS NOR THE ENGINEER MAKE EXPRESSED OR IMPLIED GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HEREON, OR ANY INTERPRETATION OF SAME.
REV. DATE GRID LOC BY DESCRIPTION
PASSAIC VALLEY SEWERAGE COMMISSIONERS
WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY
PHASE II
TREATMENT PLANT CONSTRUCTION
BORING LOGS
CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N. Y.
DESIGNED C.A.M.
DRAWN W.G.
CHECKED W.G.
SCALE
NO SCALE
APPROVED BY
DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796
CONTRACT 481-498 DRAWING No. B-23

Figure 3.22



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WARREN GEORGE INC.
BOR'G CONTRACTOR
JERSEY CITY NEW JERSEY

REV.	DATE	GRID LOC	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.

DESIGNED C.A.M.
DRAWN W.G.
CHECKED W.G.
SCALE NO SCALE
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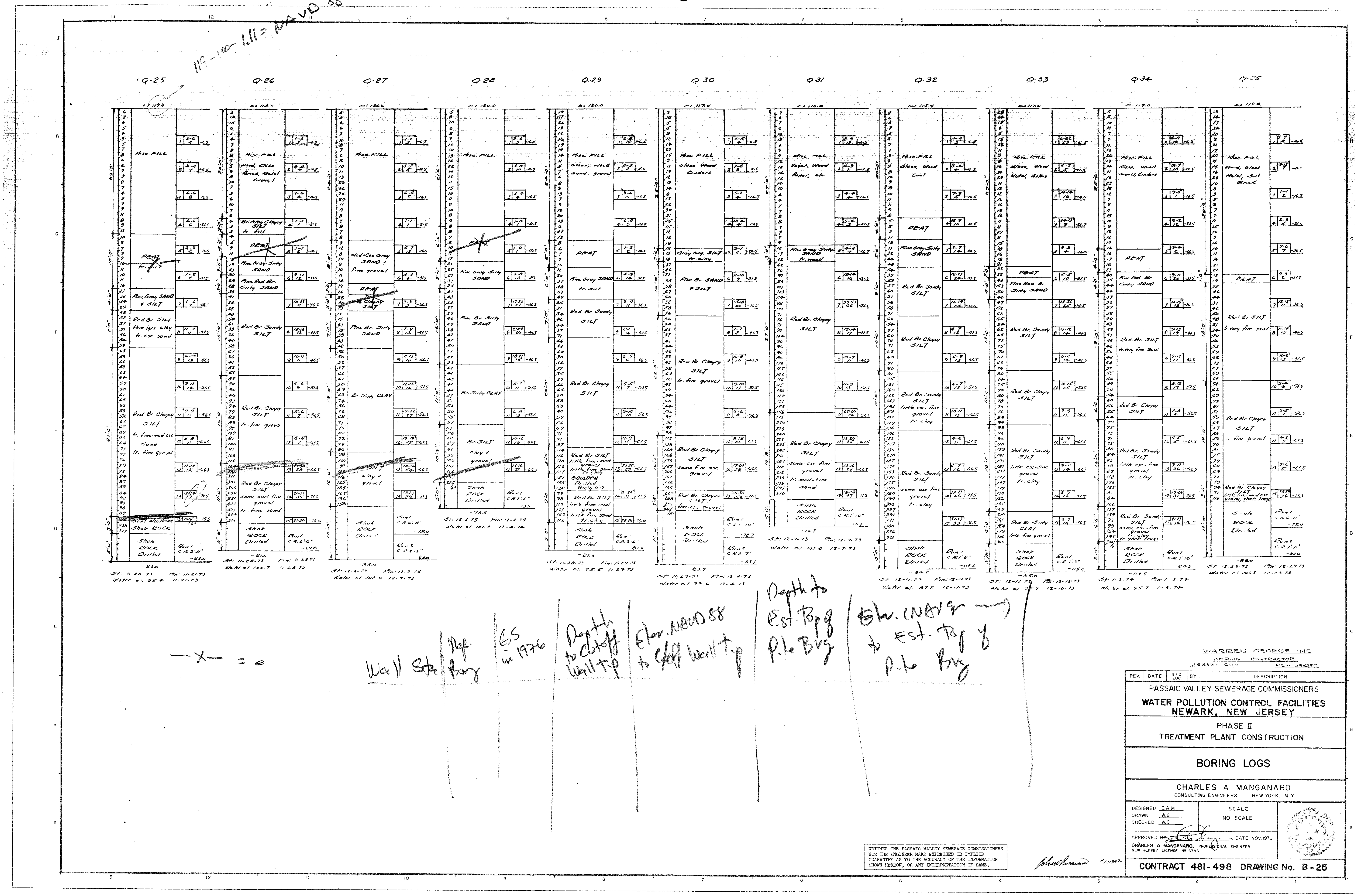
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-24

Figure 3.23



119-10-1.11 = NAVD 88
Q-25
Q-26
Q-27
Q-28
Q-29
Q-30
Q-31
Q-32
Q-33
Q-34
Q-35
—X— = e
Wall Sta
Ref. Borg
GS in 1976
Depth to Cutoff Wall Tip
Elev. NAVD 88 to Cutoff Wall Tip
Depth to Est. Top of Pile Brg
Elev. (NAVD 88) to Est. Top of Pile Brg
WARREN GEORGE INC
BORING CONTRACTOR
JERSEY CITY NEW JERSEY
REV. DATE GRID LOC. BY DESCRIPTION
PASSAIC VALLEY SEWERAGE COMMISSIONERS
WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY
PHASE II
TREATMENT PLANT CONSTRUCTION
BORING LOGS
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DESIGNED C.A.M.
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SCALE
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APPROVED BY
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CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No 6796
CONTRACT 481-498 DRAWING No. B-25
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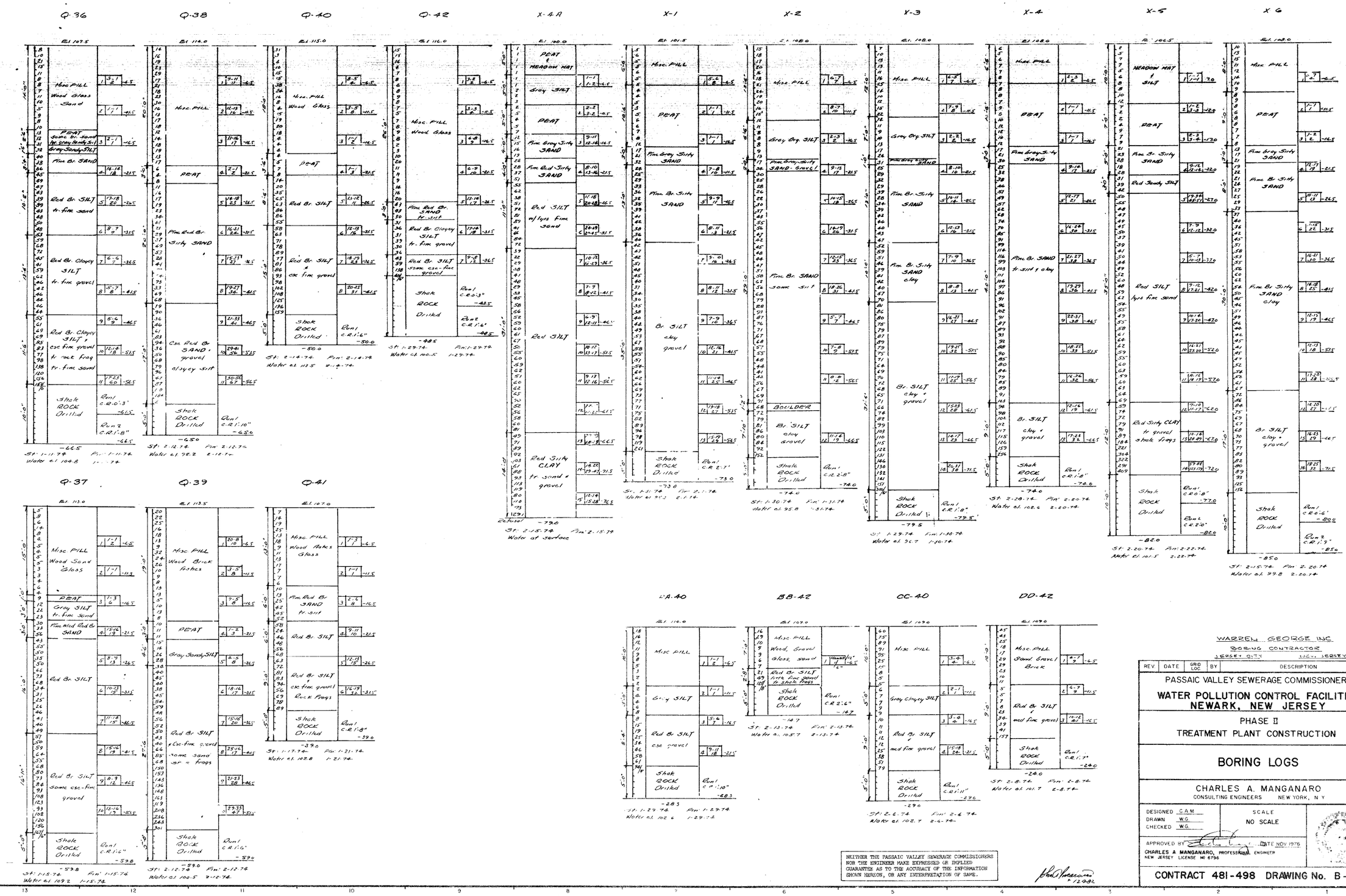
Figure 3.24



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WARREN GEORGE INC.
BORING CONTRACTOR
JERSEY CITY, NEW JERSEY

REV.	DATE	GRID LOC	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
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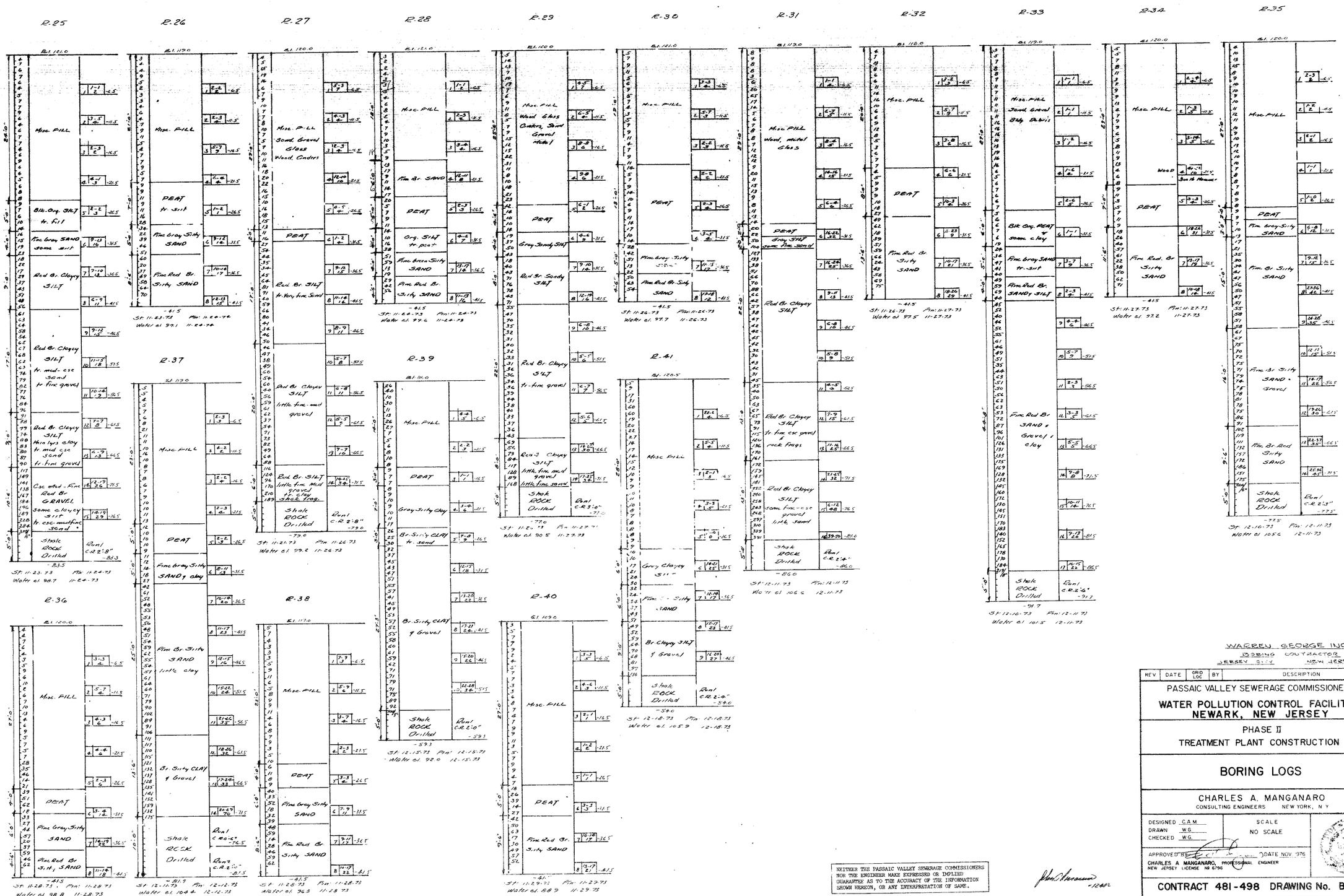
DESIGNED C.A.M.
DRAWN W.G.
CHECKED W.G.

SCALE
NO SCALE

APPROVED BY DATE NOV 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-26

Figure 3.25



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JERSEY CITY NEW JERSEY

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PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

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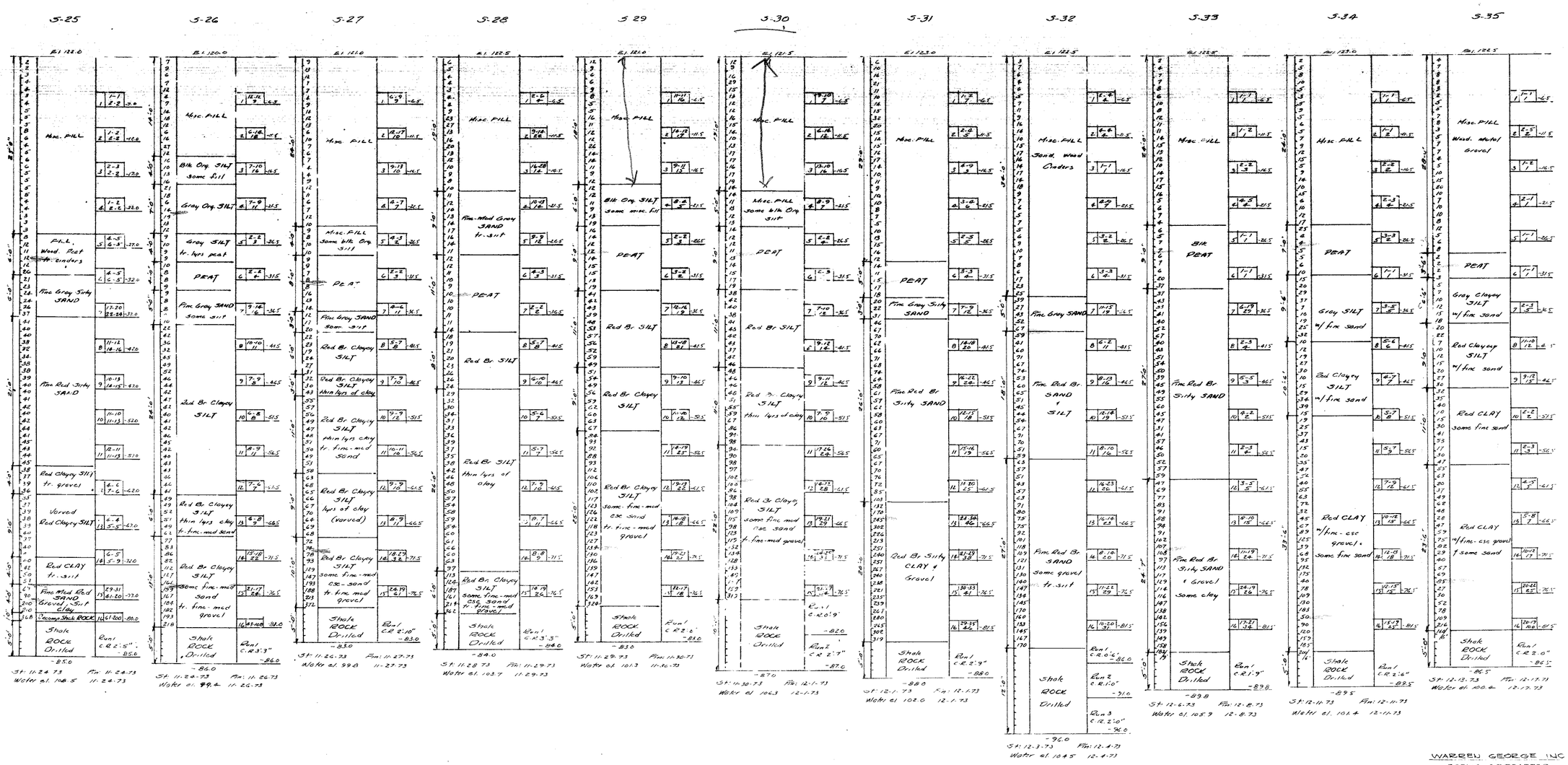
NEW JERSEY LICENSE No 6796

CONTRACT 481-498 DRAWING No. B-27

Figure 3.26



WARREN GEORGE INC
BORING CONTRACTOR
JERSEY CITY NEW JERSEY

REV	DATE	GRID LOC	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
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NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-28

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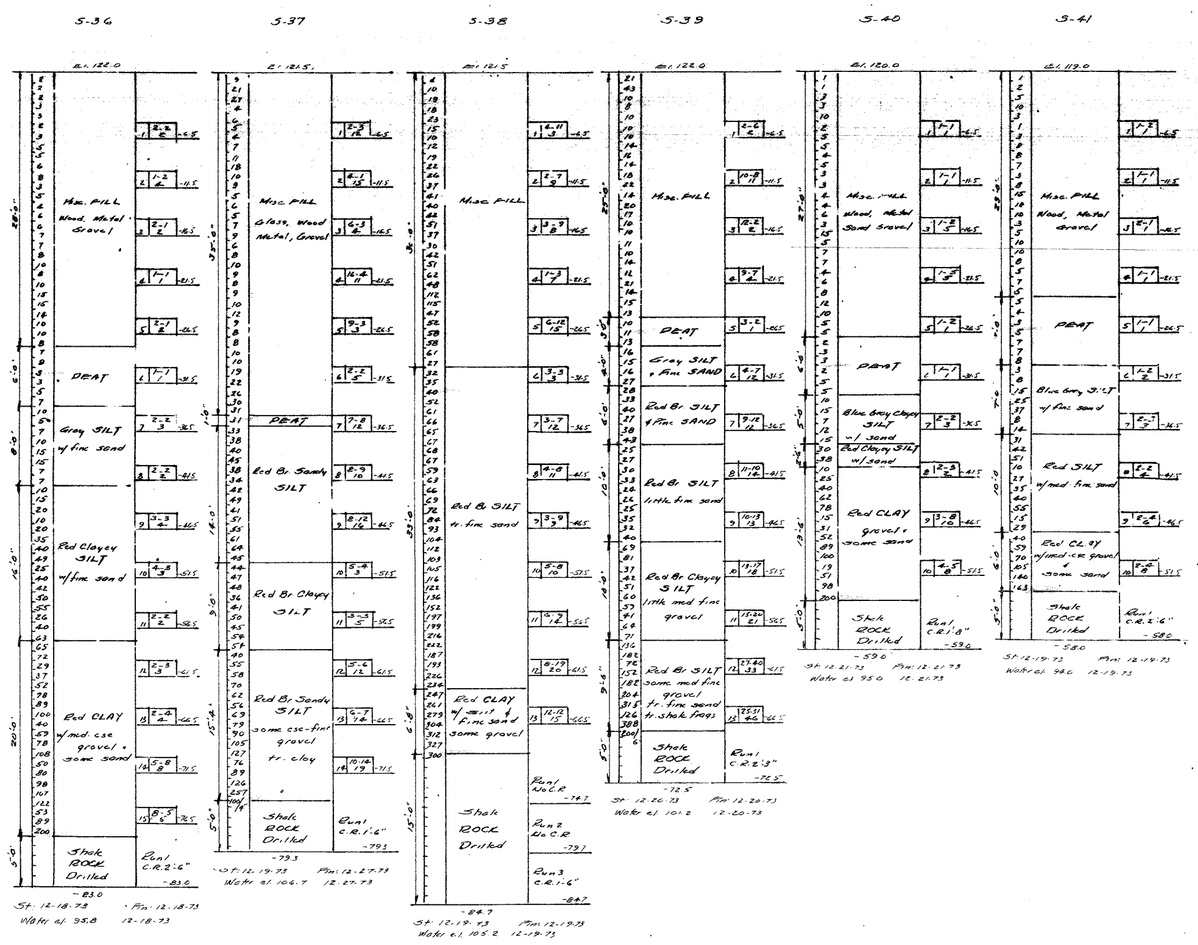
Figure 3.27



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WARREN GEORGE INC
BORING CONTRACTOR
JERSEY CITY NEW JERSEY

REV	DATE	GRID LOC	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N. Y.

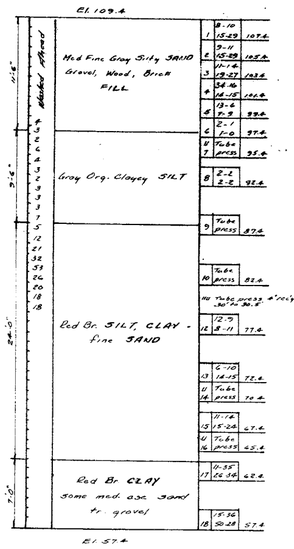
DESIGNED C.A.M.
DRAWN W.G.
CHECKED W.G.

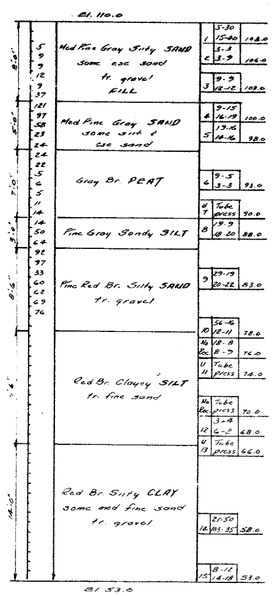
SCALE
NO SCALE

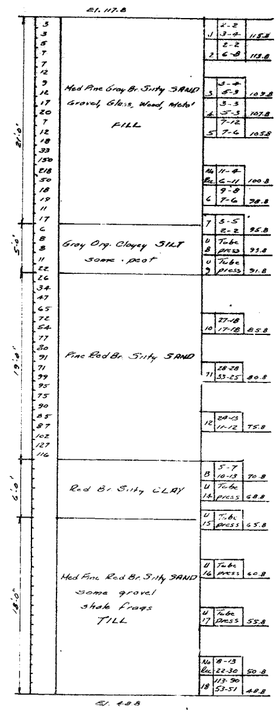
APPROVED BY _____ DATE NOV 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796

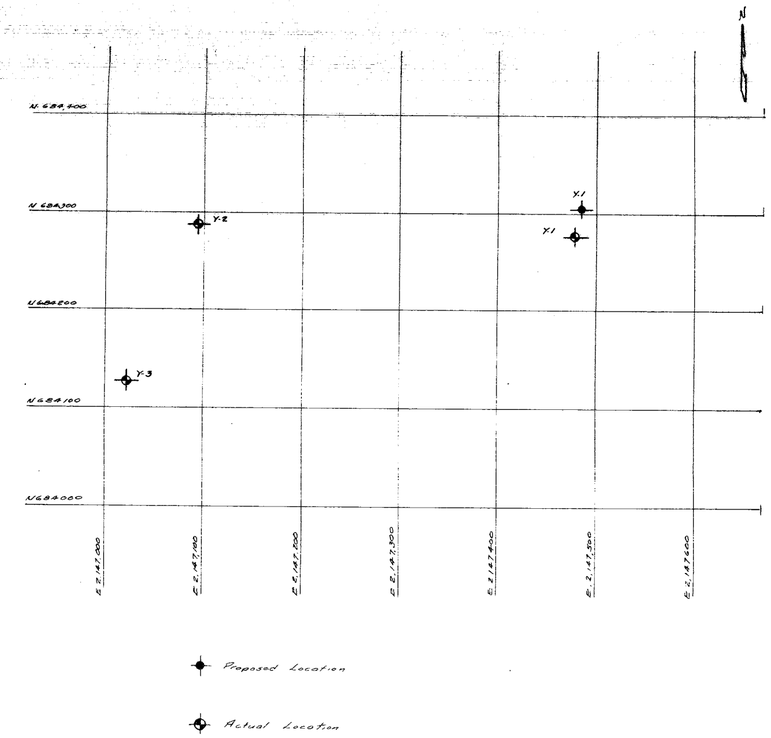
CONTRACT 481-498 DRAWING No. B-23

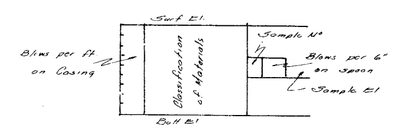
Figure 4











LEGEND

1. Elevations refer to the plant datum, on which elev. +100.0 equals mean sea level at Sandy Hook, N.J.
2. 300 lb hammer with 24" drop used to drive 4" ø casing
3. 140 lb hammer with 30" drop used to drive 2" ø spoon
4. "U" indicates undisturbed tube sample
5. Driller: H. Chandler

TEST BORINGS
AT
SECONDARY FACILITIES AT NEWARK PUMPING STATION
FOR
PASSAIC VALLEY SEWERAGE COMMISSIONERS
NEWARK, NEW JERSEY

WARREN GEORGE INC.
BORING CONTRACTOR
JERSEY CITY, NEW JERSEY

SCALE:
PLANT 1" = 60'
SECTIONS: 1" = 6'

DATE: 3-26-75
DWN BY: RC
CHKD BY:

NEITHER THE PASSAIC VALLEY SEWERAGE COMMISSIONERS NOR THE ENGINEER MAKE EXPRESSED OR IMPLIED GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HEREON, OR ANY INTERPRETATION OF SAME.

REV	DATE	GRID LOC	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOCATION PLAN AND BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.

DESIGNED C.A.M.
DRAWN W.G.
CHECKED W.G.

SCALE
AS NOTED

APPROVED BY
DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-30

Figure 5

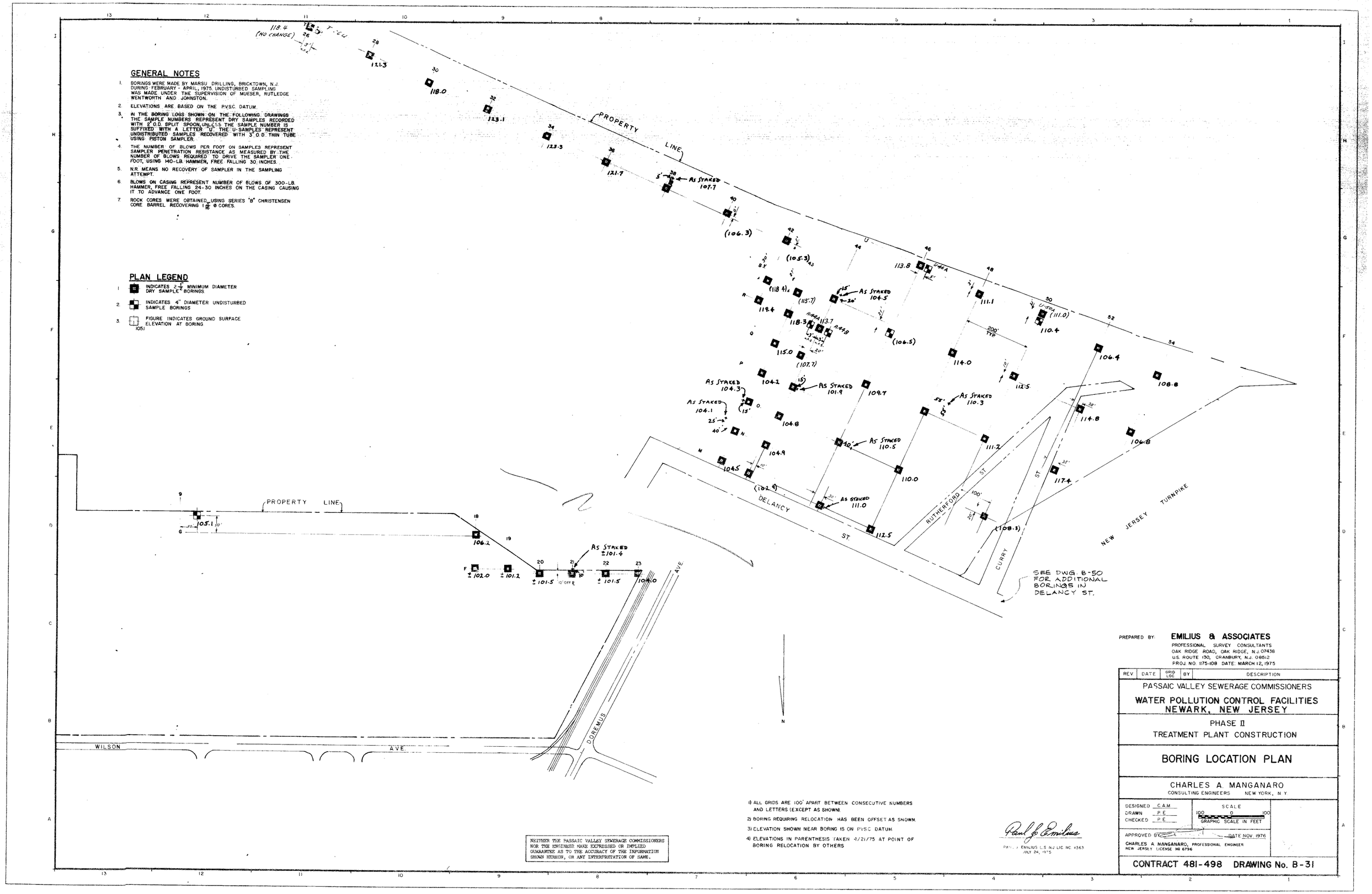

GENERAL NOTES
1. BORINGS WERE MADE BY MARSU DRILLING, BRICKTOWN, N.J. DURING FEBRUARY - APRIL, 1975. UNDISTURBED SAMPLING WAS MADE UNDER THE SUPERVISION OF MUESER, RUTLEDGE WENTWORTH AND JOHNSTON.
2. ELEVATIONS ARE BASED ON THE P.V.S.C. DATUM.
3. IN THE BORING LOGS SHOWN ON THE FOLLOWING DRAWINGS THE SAMPLE NUMBERS REPRESENT DRY SAMPLES RECORDED WITH 2" O.D. SPLIT SPOON, UNLESS THE SAMPLE NUMBER IS SUFFIXED WITH A LETTER "U". THE U-SAMPLES REPRESENT UNDISTRIBUTED SAMPLES RECOVERED WITH 3" O.D. THIN TUBE USING PISTON SAMPLER.
4. THE NUMBER OF BLOWS PER FOOT ON SAMPLES REPRESENT SAMPLER PENETRATION RESISTANCE AS MEASURED BY THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER ONE FOOT, USING 140-LB. HAMMER, FREE FALLING 30 INCHES.
5. N.R. MEANS NO RECOVERY OF SAMPLER IN THE SAMPLING ATTEMPT.
6. BLOWS ON CASING REPRESENT NUMBER OF BLOWS OF 300-LB. HAMMER, FREE FALLING 24-30 INCHES ON THE CASING CAUSING IT TO ADVANCE ONE FOOT.
7. ROCK CORES WERE OBTAINED USING SERIES "B" CHRISTENSEN CORE BARREL RECOVERING 1 5/16" Ø CORES.
PLAN LEGEND
1. INDICATES 2 1/2" MINIMUM DIAMETER DRY SAMPLE BORINGS.
2. INDICATES 4" DIAMETER UNDISTURBED SAMPLE BORINGS
3. FIGURE INDICATES GROUND SURFACE ELEVATION AT BORING (105)
PROPERTY LINE
DELANCY ST
RUTHERFORD ST
CURRY ST
NEW JERSEY TURNPIKE
WILSON AVE
DOREMUS AVE
SEE DWG. B-50 FOR ADDITIONAL BORINGS IN DELANCY ST.
NEITHER THE PASSAIC VALLEY SEWERAGE COMMISSIONERS NOR THE ENGINEER MAKE EXPRESSED OR IMPLIED GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HEREON, OR ANY INTERPRETATION OF SAME.
1) ALL GRIDS ARE 100' APART BETWEEN CONSECUTIVE NUMBERS AND LETTERS (EXCEPT AS SHOWN).
2) BORING REQUIRING RELOCATION HAS BEEN OFFSET AS SHOWN.
3) ELEVATION SHOWN NEAR BORING IS ON P.V.S.C. DATUM
4) ELEVATIONS IN PARENTHESIS TAKEN 3/21/75 AT POINT OF BORING RELOCATION BY OTHERS
PREPARED BY: EMILIUS & ASSOCIATES
PROFESSIONAL SURVEY CONSULTANTS
OAK RIDGE ROAD, OAK RIDGE, N.J. 07438
U.S. ROUTE 130, CRANBURY, N.J. 08512
PROJ. NO. 1175-108 DATE: MARCH 12, 1975
REV | DATE | GRID LOC | BY | DESCRIPTION
PASSAIC VALLEY SEWERAGE COMMISSIONERS
WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY
PHASE II
TREATMENT PLANT CONSTRUCTION
BORING LOCATION PLAN
CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.
DESIGNED C.A.M
DRAWN P.E.
CHECKED P.E.
SCALE 100 0 100 GRAPHIC SCALE IN FEET
APPROVED BY
DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796
CONTRACT 481-498 DRAWING No. B-31

Figure 6.1

HOLE NO. HG-9U — DATE From 3/25 To 3/26 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–6'	MISC FILL	1	0–2	2 2 / 2 2		
		2	2–4	2 8 / 9 4		
6'–24'	GRAY DARK SILT	3	4–6	7 8 / 3 3		
		4U	6–8	Push		Full Push 24"; Rec 21"
24'–25'	GRAY FINE SAND TRACE SILT	5U	8–10	Push		Full Push 24"; Rec 20"
		6	10–12	WH/24		
		7U	12–14	Push		Full Push 24" Rec 22"
		8U	15–17	Push		Full Push 24" Rec 23"
		9U	20–22	Push		Full Push 24" Rec 23"
		10	23–25	3 3 / 13 20		

Blows on casing:

0-1	6	1-2	7	2-3	11	3-4	19	4-5	7
5-6	4	6-7	4	7-8	4	8-9	4	9-10	7
10-11	6	11-12	7	12-13	4	13-14	4	14-15	7
15-16	9	16-17	10	17-18	10	18-19	11	19-20	13
20-21	28	21-22	15	22-23	15				

GROUND WATER 3'7" AT 1200 ON 3/26/75

HOLE NO. F-20 — DATE From 3/18 To 3/20 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–8'6"	MISC FILL & ORG. SILT TR ROOTS	1	0–2	1 1 / 1 1		
		2	2–4	2 2 / 3 2		
8'6"–19'	GREY FINE SAND TR SILT	3	4–6	3 2 / 3 3		
		4	6–8	3 3 / 2 4		
19'–48'	REDISH SILTY SAND TR CLAY	5	8–10	7 18 / 9 20		
		6	15–17	11 28 / 29 33		
48'–65'9"	REDISH SILTY CLAY AND SAND	7	20–22	16 28 / 31 33		
		8	25–27	11 19 / 21 23		
65'9"–70'9"	SHALE WITH LOT OF RED CLAY	9	30–32	23 29 / 30 33		
		10	35–37	20 28 / 31 30		
		11	40–42	19 24 / 29 34		
		12	45–47	23 25 / 31 30		
		13	50–52	19 26 / 29 31		
		14	55–57	20 28 / 30 35		
		15	60–62	21 27 / 33 40		
		16	65–9"	30 75/3		
		C1	65'9"–70'9"		3'	CORED WITH D.T.C.B HC 200

Blows on casing:

0-1	3	1-2	4	2-3	4	3-4	3	4-5	4
5-6	2	6-7	3	7-8	3	8-9	4	9-10	4
10-11	17	11-12	20	12-13	29	13-14	38	14-15	34
15-16	21	16-17	34	17-18	38	18-19	43	19-20	51
20-21	19	21-22	30	22-23	37	23-24	40	24-25	47
25-26	42	26-27	34	27-28	48	28-29	54	29-30	61
30-31	43	31-32	39	32-33	50	33-34	54	34-35	59
35-36	30	36-37	34	37-38	49	38-39	50	39-40	63
40-41	72	41-42	49	42-43	63	43-44	70	44-45	72
45-46	40	46-47	41	47-48	62	48-49	69	49-50	73
50-51	40	51-52	52	52-53	61	53-54	69	54-55	79
55-56	40	56-57	52	57-58	59	58-59	76	59-60	83
60-61	70	61-62	93	62-63	102	63-64	109	64-65	200

GROUND WATER 2'3" AT 8:00 AM ON 3/20/75

HOLE NO. T26 — DATE From 2/24 To 2/25 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–24'	MISC FILL	1	5–7	9 5 / 13 30		OPEN HOLE FROM 35'
		2	10–12	4 6 / 5 4		
24'–30'	ORG. GREY SILT	3	15–17	6 6 / 8 2		
		4	20–22	2 2 / 2 3		
30'–31'	ORG PEAT	5	25–27	2 2 / 2 2		
		6	30–32	20 25 / 31 40		
31'–34'	FINE BR SAND TR OF SILT	7	35–37	30 37 / 37 53		
		8	40–42	30 28 / 28 30		
34'–70'	RED CLAY SILT W/TR OF FINE SAND	9	45–47	26 17 / 15 [illegible]		
		10	50–52	20 19		
70'–74'	RED CLAY W/SOME TILL	11	55–57	9 11 / 17 17		
		12	60–62	10 11 / 14 16		
74'–77'	TILL	13	65–67	8 9 / 11 11		
		14	70–72	18 16 / 23 30		
77'–80'3"	SOFT RED SHALE	15	75–76'6"	31 62 / 74		
		16	80–80'3"	100/3"		
80'3"–82'	TILL & SHALE					DRILLED WITH CONST BIT
82'–87'		C1			9½"	CORED WITH HC 200 D.T.C.B.

Blows on casing:

0-1	10	1-2	6	2-3	8	3-4	6	4-5	5
5-6	6	6-7	8	7-8	10	8-9	12	9-10	11
10-11	11	11-12	13	12-13	14	13-14	14	14-15	17
15-16	18	16-17	16	17-18	19	18-19	19	19-20	11
20-21	12	21-22	12	22-23	12	23-24	10	24-25	10
25-26	10	26-27	12	27-28	14	28-29	20	29-30	24
30-31	22	31-32	30	32-33	39	33-34	45	34-35	51

GROUND WATER 6'6" AT 1:00 PM ON 2/24/75

HOLE NO. G18 — DATE From 3/22 To 3/22 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–9'	FILL, GRAY SAND TR. SILT	1	0–2	1 3 / 2 3		
		2	2–4	3 4 / 1 3		
9'–13'	ORG. SILT, PEAT	3	4–6	8 6 / 2 1		
		4	6–8	1 1		
13'–20'6"	GREY SILTY SAND TR. ORG. SILT	5	8–10	WH/24		
		6	15–17	7 11 / 11 16		
20'6"–49'	REDISH FINE SILTY SAND TR. CLAY	7	20–22	10 19 / 21 23		
		8	25–27	13 17 / 19 20		
49'–60'	REDISH SILTY CLAY TR SAND	9	30–32	24 26 / 31 33		
		10	35–37	19 23 / 34 31		
60'–71'3"	RED CLAY H. GRAVEL	11	40–42	12 28 / 32 35		
		12	45–47	20 23 / 27 38		
71'3"–76'3"	RED SHALE	13	50–52	14 16 / 13 15		
		14	55–57	10 12 / 16 20		
	5' of ROCK CORE	15	60–62	11 23 / 17 36		
		16	65–67	22 30 / 36 49		
		17	70–71'3"	29 43 / 75/3"		
		C1	71'3"–76'3"			CORED WITH D.T.C.B. HC200

Blows on casing:

0-1	5	1-2	11	2-3	13	3-4	4	4-5	9
5-6	10	6-7	14	7-8	12	8-9	17	9-10	3
10-11	3	11-12	4	12-13	3	13-14	10	14-15	23
15-16	9	16-17	13	17-18	9	18-19	24	19-20	35
20-21	14	21-22	19	22-23	34	23-24	37	24-25	48
25-26	38	26-27	43	27-28	52	28-29	69	29-30	73
30-31	40	31-32	49	32-33	62	33-34	68	34-35	75
35-36	43	36-37	59	37-38	66	38-39	78	39-40	84
40-41	33	41-42	52	42-43	60	43-44	61	44-45	73
45-46	30	46-47	39	47-48	46	48-49	66	49-50	72
50-51	29	51-52	34	52-53	40	53-54	57	54-55	62
55-56	70	56-57	81	57-58	94	58-59	99	59-60	103
60-61	79	61-62	90	62-63	97	63-64	108	64-65	123
65-66	213	66-67	275	67-68	301	68-69	376		

GROUND WATER 5'3" AT 3:00 PM ON 3/22/75

HOLE NO. F21 — DATE From 3/17 To 3/17 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–4'	ORG. MAT. TR SILT TR ROOTS	1	0–2	1/12"		
		2	2–4	1 1 / 1 1		
4'–6'6"	GREY FINE SILTY SAND TRACE ORG MATERIAL	3	4–6	1 1 / 1 1		
		4	6–8	1/24"		
6'6"–8'	DARK GREY SILTY SAND TR. ORG PEAT	5	8–10	1 1 / 2 3		
		6	15–17	4 4 / 6 7		
8'–14'	DARK GREY FINE SAND TR. SILT	7	20–22	24 22 / 29 30		
		8	25–27	19 22 / 24 30		
14'–18'	GREY FINE SILTY SAND	9	30–32	11 19 / 22 27		
		10	35–37	18 21 / 26 30		
18'–66'	REDISH SILTY CLAY.	11	40–42	21 27 / 30 31		
		12	45–47	17 20 / 24 23		
66'–70'	DRILLED WITH CONST BIT	13	50–52	19 23 / 26 26		
		14	55–57	11 17 / 20 23		
	RED SHALE	15	60–62	20 24 / 27 32		
		16	65–67	18 37 / 75/2"		
			70'–70'	70/6"		

Blows on casing:

0-1	1	1-2	2	2-3	1	3-4	1	4-5	1
5-6	3	6-7	2	7-8	2	8-9	4	9-10	3
10-11	7	11-12	9	12-13	9	13-14	11	14-15	11
15-16	28	16-17	39	17-18	43	18-19	59	19-20	65
20-21	33	21-22	36	22-23	41	23-24	47	24-25	23
25-26	29	26-27	29	27-28	30	28-29	50	29-30	59
30-31	30	31-32	43	32-33	49	33-34	52	34-35	57
35-36	20	36-37	24	37-38	34	38-39	36	39-40	40
40-41	26	41-42	43	42-43	49	43-44	53	44-45	55
45-46	28	46-47	34	47-48	40	48-49	49	49-50	56
50-51	58								

GROUND WATER 7' AT 3:30 PM ON 3/17/75

HOLE NO. F19 — DATE From 3/21/75 To 3/21/75

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–12'	SOFT GREY ORG. SILT	NR	0–2	WH/24		
		1	2–4	WH/24		NO RECOVERY
12'–19'	GREY FINE SAND TRACE SILT	2	4–6	WH/24		
		3	6–7	WH/24		
19'–55'	REDISH SILTY SAND TR CLAY	4	8–10	WH/24		
		5	15–17	16 29 / 23 15		
55'–66'	REDISH CLAY WITH VERY H. GRAVEL	6	20–22	13 26 / 31 34		
		7	25–27	12 23 / 29 34		
66'–67'	REDISH CLAY H. GRAVEL AND SHALE	8	30–32	6 9 / 19 11		
		9	35–37	16 11 / 12 16		
67'	SHALE	10	40–42	7 10 / 14 18		
		11	45–47	16 10 / 16 20		
		12	50–52	8 13 / 18 20		
		13	55–57	6 9 / 9 13		
		14	60–62	5 6 / 9 18		
		15	65–67	13 20 / 30 36		
		NR	67–67'1"	75/1"		NO RECOVERY

Blows on casing:

0-1	1	1-2	1	2-3	1	3-4	1	4-5	1
5-6	1	6-7	2	7-8	1	8-9	4	9-10	4
10-11	4	11-12	4	12-13	6	13-14	6	14-15	6
15-16	6	16-17	2	17-18	13	18-19	16	19-20	18
20-21	30	21-22	42	22-23	53	23-24	69	24-25	73

GROUND WATER 2'3" AT 3:30 PM ON 3/21/75

HOLE NO. F22 — DATE From 3/7 To 3/10 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–2'	TOP SOIL	1	0–2	WH/24"		
		2	2–4	2 3 / 7 7		
2'–4'	DARK FINE SAND TR. ORG MATERIAL	3	4–6	2 3 / 3 4		
		4	6–8	2 2 / 3 4		
4'–11'	DARK GRAY SILT (PEAT)	5	5–10	2 2 / 2 4		
		6	15–17	11 10 / 11 17		
11'–23'	GREY FINE SAND TR. SILT	7	20–22	13 17 / 17 20		
		8	25–27	30 29 / 29 29		
23'–33'	REDISH CLAY TRACE SILT	9	30–32	25 29 / 29 33		
		10	35–37	29 27 / 30 22		
33'–42'	RED FINE SAND TR SILT	11	40–42	20 27 / 30 33		
		12	45–47	17 20 / 23 28		
42'–54'	RED SILTY CLAY AND SAND	13	50–52	13 19 / 24 28		
		14	55–57	14 19 / 28 30		
54'–68'	RED CLAY VERY H. GRAVEL	15	60–62	19 27 / 29 33		
		16	65–67	29 40 / 53 72		
68'–71'2"	RED SHALE	17	70–71'2"	30 70 / 100/2"		DRILLED WITH CONST. BIT

Blows on casing:

0-1	2	1-2	3	2-3	3	3-4	4	4-5	5
5-6	2	6-7	4	7-8	4	8-9	6	9-10	7
10-11	3	11-12	9	12-13	11	13-14	17	14-15	14
15-16	13	16-17	14	17-18	14	18-19	17	19-20	14
20-21	10	21-22	14	22-23	19	23-24	23	24-25	27
25-26	27	26-27	34	27-28	47	28-29	53	29-30	54
30-31	30	31-32	43	32-33	41	33-34	54	34-35	62
35-36	14	36-37	23	37-38	33	38-39	37	39-40	42
40-41	28	41-42	40	42-43	43	43-44	49	44-45	50
45-46	33	46-47	39	47-48	44	48-49	49	49-50	59

GROUND WATER AT 7' AT 2:10 PM ON 3/10/75

HOLE NO. T-28 — DATE From 2/25 To 2/26 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–24'	MISC FILL	1	0–2	4 6 / 4 6		OPEN HOLE FROM 35' TO 80'
		2	2–4	5 6 / 6 8		
24'–30'	FINE GREY SAND AND SILT	3	4–6	5 9 / 11 4		
		4	6–8	4 11 / 7 10		
30'–32'	PEAT	5	[illegible]–10	7 7 / 5 6		
		6	15–17	3 6 / 5 6		
32'–34'	GREY SILT	7	20–22	5 7 / 5 [illegible]		
		8	25–27	5 10 / 4 7		
34'–45'	RED CLAY SILT AND FINE SAND	9	30–32	4 5 / 6 5		
		10	35–37	26 37 / 27 30		
45'–47'	FINE-MED SAND TR OF SILT	11	40–42	18 24 / 24 80		
		12	45–47	40 51 / 30 18		
47'–53'	RED CLAY SILT W/TR OF FINE SAND	13	50–52	16 18 / 21 21		
		14	55–59	4 7 / 9 7		
53'–72'	RED CLAY	15	[illegible]–62	4 6 / 9 9		
		16	65–67	5 8 / 8 9		
72'–78'	RED CLAY SILT WITH TR OF RED SHALE FRAGMENTS + TILL	17	70–72	11 19 / 21 21		
		18	75–76'6"	27 40 / 51		
78'–80'	SOFT RED SHALE ROCK	19	78'–80'	41 60 / 74		300 LB. HAMMER

Blows on casing:

0-1	6	1-2	7	2-3	9	3-4	9	4-5	10
5-6	5	6-7	9	7-8	11	8-9	12	9-10	14
10-11	16	11-12	15	12-13	15	13-14	16	14-15	17
15-16	17	16-17	18	17-18	20	18-19	21	19-20	21
20-21	20	21-22	23	22-23	24	23-24	24	24-25	10
25-26	9	26-27	10	27-28	8	28-29	11	29-30	11
30-31	14	31-32	21	32-33	26	33-34	30	34-35	32

GROUND WATER 11'

HOLE NO. F19 — DATE From 3/21 To 3/21 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–3'	MISC. FILL & ORG. SILT	1	0–2	1 1/12"		
		2	2–4	2/24"		
3'–12'	PEAT	3	4–6	1 1		
		4	6–8	WH/24"		
12'–19'	VERY FINE GRAY SANDY SILT	5	8–10	1 1/18"		
		6	15–17	3 19 / 22 23		
19'–39'	REDISH SILTY FINE SAND	7	20–22	20 24 / 28 31		
		8	25–27	19 21 / 24 29		
39'–65'7"	RED SILTY FINE SAND TR CLAY	9	30–32	20 24 / 27 30		
		10	35–37	22 26 / 30 31		
		11	40–42	9 13 / 19 20		
		12	45–47	13 17 / 21 24		
		13	50–52	21 49 / 30 33		
		14	55–57	23 27 / 29 31		
		15	60–62	19 23 / 24 29		
		16	65–65'7"	30 70/1"		

Blows on casing:

0-1	1	1-2	1	2-3	1	3-4	2	4-5	1
5-6	3	6-7	4	7-8	4	8-9	3	9-10	4
10-11	7	11-12	11	12-13	22	13-14	29	14-15	30
15-16	17	16-17	23	17-18	34	18-19	34	19-20	43
20-21	29	21-22	33	22-23	36	23-24	41	24-25	46
25-26	29	26-27	39	27-28	47	28-29	49	29-30	52
30-31	32	31-32	47	32-33	57	33-34	68	34-35	83
35-36	49	36-37	57	37-38	83	38-39	92	39-40	101

GROUND WATER 1'4" AT 3PM ON 3/20/75

HOLE NO. F23 — From 3/11 To 3/12 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–12	MISC. FILL	1	0–2	3 7 / 13 20		
		2	2–4	4 4 / 7 13		
12–19	DARK GRAY SILTY SAND TRACE ORG MATERIAL	3	4–6	1 1 / 2 3		
		4	6–9	2 2 / 2 1		
19–43	REDISH FINE SANDY SILT TR. CLAY	5	8–10	2 2 / 1 7		
		6	15–17	4 7 / 7 11		
43–53	BROWN-RED SILTY FINE SAND	7	20–22	11 15 / 17 19		
		8	25–27	19 20 / 24 28		
53–59	REDISH CLAY TR. SHALE	9	30–32	19 3 / 3 5		
		10	35–37	3 4 / 4 6		
59–65'7"	REDISH CLAY AND LAYERS OF RED SHALE	11	40–42	7 6 / 6 9		
		12	45–47	19 19 / 23 38		
65'7"–70'6"	RED SHALE	13	50–52	19 23 / 27 29		
		14	55–57	9 11 / 15 19		
		15	60–62	12 15 / 19 19		
			65–65'6"	100/½		
			65–70	→	12"	CORED WITH 200 HC DTCB

Blows on casing:

0-1	1	1-2	1	2-3	1	3-4	1	4-5	1
5-6	1	6-7	1	7-8	1	8-9	1	9-10	2
10-11	3	11-12	9	12-13	13	13-14	17	14-15	23
15-16	11	16-17	19	17-18	29	18-19	33	19-20	36
20-21	19	21-22	30	22-23	34	23-24	41	24-25	44
25-26	23	26-27	29	27-28	30	28-29	16	29-30	11
30-31	8	31-32	9	32-33	11	33-34	14	34-35	12
35-36	27	36-37	38	37-38	42	38-39	47	39-40	49
40-41	29	41-42	35	42-43	34	43-44	37	44-45	39
45-46	36	46-47	34	47-48	31	48-49	34	49-50	36
50-51	43	51-52	50	52-53	44	53-54	50	54-55	64
55-56	60	56-57	67	57-58	75	58-59	80	59-60	70
60-61	46	61-62	90	62-63	94	63-64	275	64-65	325

GROUND WATER AT 2' AT 12:00 NOON ON 3/13/75

NOTE
FOR LEGEND AND GENERAL NOTES SEE DRAWING B-31

NEITHER THE PASSAIC VALLEY SEWERAGE COMMISSIONERS NOR THE ENGINEER MAKE EXPRESSED OR IMPLIED GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HEREON, OR ANY INTERPRETATION OF SAME.

WILCOX, GRAVATT & HACUNDA INC.
– ENGINEERS – LAND SURVEYORS –
– PROFESSIONAL PLANNERS –
NEW JERSEY STATE HIGHWAY ROUTE 9
LACEY TOWNSHIP N J
08731
Walter F. Wilcox L.S. No. 9573
John C. Gravatt L.S. No. 16196
Paul J. Hacunda P.P. No. 1086, P.E. No. 21330
Paul J. Hacunda
New Jersey License Number 21330

REV.	DATE	GRID LOC.	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.

DESIGNED C.A.M.
DRAWN P.H.
CHECKED P.H.
SCALE: NO SCALE
APPROVED BY [signature] DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No 6796

CONTRACT 481-498 DRAWING No. B-32

Figure 6.2

HOLE NO. N-43 — From 3/13 To 3/13 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 7'	BROWN M.F. SAND w/ TR. OF SILT	1 2	2-4 4-6	2 2, 1 2 2 2, 1 2		Cored 60" Recovered 12"
7' – 9'	MED COMP GREY SILTY FINE - MED SAND	3 4	6-8 8-10	1 2, 2 3 6 5, 9 9		
9' – 14'8"	MED COMP. RED BROWN SILTY MED-FINE SAND	5	15-17	20 19, 20 24		
15 – 17	TILL					
17 – 20	MODERATELY SOFT RED-BROWN SHALE	C1				
20 – 22	MODERATELY SOFT RED-BROWN SHALE				12"	CORED WITH D.T.C.B. 200

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
	5	6	3	2	1	5	6	5	9	10	16	25	31	34	42	95	176

GROUND WATER 11" ON 3/13/75

HOLE NO. M 44 — DATE: From 3/16 To 3/16 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 6	FILL	1 2	0'-2' 2'-4'	2 1, 2 2 3 2, 3 3		OPEN HOLE FROM 10' TO 20'6"
6 – 10	RED BROWN SANDEY SILT	3 4	4'-6' 6'-8'	4 3, 3 4 7 8, 7 6		10' of 2½" "Casing LEFT IN HOLE
10 – 14	RED-BR. CLAY & SAND	5 6	8'-10' 10'-12	6 6, 7 9 13 14, 18 20		
14 – 20'6"	TILL & SOFT SHALE	7 8	15'-17' 20-20'6"	21 23, 28 30 60/6"		REFUSAL AT 20'6"

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
	1	2	1	3	2	5	9	10	12	14

GROUND WATER 3' AT 1:00 PM ON 3/16/75

HOLE NO. M46 — DATE: From 3/5 To 3/6 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 4'	MISC FILL	1 2	0'-2' 2'-4'	10 14, 17 22 8 11, 9 8		OPEN HOLE FROM 10' TO 20'1"
4' – 8'	MED-FINE RED-BR SAND TR OF FILL	3 4	4'-6 6'-8'	8 9, 11 14 12 19, 21 26		
8' – 15'6"	RED-BR. FINE SAND CLAY SOME SILT + GRAVEL TILL	5 6	10'-12' 15'-15'9"	16 12, 10 13 33 25/1"		
15'6" – 20'1"	DRILLED RED SHALE ROCK W/ CONST BIT	7	20'-20'1"	25/1"		300 lb Hammer

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
	8	10	11	12	14	14	17	20	22	26

GROUND WATER AT 4'8" ON 3/5/75

HOLE NO. M-48 — DATE: From 3/6 To 3/6 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 3'6"	Fill	1 2	0-2 2-4	4 4, 11 13 3 5, 7 13		OPEN HOLE FROM 15' TO 25'6"
3'6" – 10'	MED-FINE RED-BROWN SAND SOME SILT	3 4	4-6 6-8	7 41, 40 47 18 31, 39 29		
10' – 23'	MED-COARSE RED-BROWN SAND SOME SILT & GRAVEL "TILL"	5 6	8-10 15-17	11 4, 19 14 6 8, 14 11		
23' – 25'6"	SOFT RED SHALE	7 8	20-22 25-25'6"	18 23, 23 23 100/6"		

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
	13	13	12	15	35	52	97	90	31	22	41	37	21	21	28

GROUND WATER 6' ON 3/6/75

HOLE NO. N44 — DATE: From 3/3 To 3/3 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 6'5"	FILL	1 2	0-2 2-4	4 16, 21 30 24 20, 25 13	NR	OPEN HOLE From 15'
6'5" – 8'0"	RED-BRN SILTY F. SAND	2 3	5-6 6-8	6 3, 4 6 5 3, 5 9		
8'0" – 16'10"	RED-BRN GRAVEL (TILL)	4 5	8-10 15-17	3 15, 15 21 10 19, 75/3"		
16'10" – 20'	RED-BROWN SILTY SHALE	NR	20-20	75/3"		NO RECOVERY

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
	12	22	25	17	7	4	7	15	17	14	18	25	53	107	75

GROUND WATER 3'1" ON 3/3/75

HOLE NO. O-44 — DATE: From 3/17 To 3/17 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 10	FILL	1 2	0-2 2-4	3 4, 2 2 6 7, 5 5		OPEN HOLE FROM 10' TO 20'4"
10 – 18	RED-BR. SILTY CLAY TR. OF SAND	3 4	4-6 6-8	5 4, 4 6 8 7, 8 10		
18 – 20'4"	TILL & SOFT SHALE	5 6	8-10 10-12	9 6, 7 5 6 8, 8 9		
		7 8	15-17 20-20'4"	10 9, 7 7 60/4"		REFUSAL AT 20'4"

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
	4	4	3	6	6	8	12	11	14	16

GROUND WATER 3' AT 1:00 PM ON 3/17/75

HOLE NO. O-46 — DATE: From 3/6 To 3/6 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 1'	BLACK TOP & CEMENT	1 2	1-2 5-7	41 65, 4 3 3 5		OPEN HOLE FROM 10' TO 20'
1' – 10'	MISC. FILL	3 4	7-9 10-12	5 5, 10 17 14 18, 20 22		
10 – 16'6"	RED BR. CLAY SILT FINE SAND GRAVEL TILL	5 6	15-17 20-20'1"	13 19, 28 83 25/1" 300 LB.	N.R.	HAMMER
16'6" – 20	DRILLED SOFT SHALE w/ CONST BIT. REFUSAL AT 20'1"					

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
	1	36	48	74	85	20	27	29	36	41

GROUND WATER AT 6' ON 3/6/75

HOLE NO. O-48 — DATE: From 3/4 To 3/4 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 6'	CINDER FILL	1 2	0-2 2-4	2 3, 5 4 3 4, 5 5		OPEN HOLE FROM 15' TO 25'1"
6' – 22'	RED-BROWN Med-FINE SAND TR OF COARSE SAND, GR & TILL	3 4	4-6 6-8	5 8, 11 17 8 11, 14 18		
22' – 25'1"	RED SOFT SHALE	5 6	8-10 15-17	17 21, 23 23 23 32, 33 28		
		7 8	20-22 25-25'1"	82 13, 22 32 50/1"		300 LB HAMMER ON LAST 1"

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
	5	2	5	15	18	27	35	33	13	21	31	22	28	38	55

GROUND WATER 4' ON 3/4/75

HOLE NO. O-51 — DATE: From 3/13 To 3/13 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 6	FILL	1 2	0-2 2-4	12 12, 12 10 8 8, 10 10		OPEN HOLE FROM 10' TO 30'
6 – 10	MED. TO FINE BR. SAND SOME SILT	3 4	4-6 6-8	8 19, 23 30 13 17, 28 36		
10 – 24	RED BROWN CLAYEE SILT SOME FINE SAND	5 6	10-12 15-17	14 14, 18 19 12 17, 19 23		
24 – 27	RED-BR SILT. CLAY SOME SAND. RED SHALE FRAGMENTS "TILL"	7 8	20-22 25-27	18 12, 19 20 19 26, 31 33		
27 – 30	SOFT RED SHALE ROCK	9	30-30'1"	65/1"	N.R.	

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
	12	14	14	16	17	21	28	31	37	40

GROUND WATER 8' AT 12:00 NOON ON 3/13/75

HOLE NO. P44 — DATE: From 3/24 To 3/24 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 9'6"	MISC FILL & DARK GREY SILT	1 2	0-2 2-4	3 2, 1 1 WH/24		
9'6" – 20'	RED CLAY WITH H. GRAVEL	3 4	4-6 6-8	1 1, 1 1 2 3, 4 4		
20' – 20'7"	L. of Red SHALE	5 6	8-10 15-17	2 4, 3 11 19 20, 22 26		
		7	20-20'7"	19, 50/1		

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
	3	2	1	1	6	1	1	3	9	13	28	39	52	59	69

HOLE NO. Q44 — DATE: From 3/10 To 3/10 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 10'	MISC FILL	1 2	0-2 2-4	3 4, 2 4 4 3, 5 4		OPEN HOLE FROM 15' TO 27
10' – 12'	PEAT	3 4	4-6 6-8	2 5, 2 4 4 4, 6 4		15' of 2½" CASING LEFT IN HOLE
12' – 23'	RED-BR MED-FINE SAND TR. OF SILT	5 6	8-10 10-12	4 3, 2 3 1 2, 2 1		
23 – 27	TILL REFUSAL AT 27'	7 8 9	15-17 20-22 25-27	20 11, 8 9 15 14, 10 15 36 48, 48 80		

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
	3	4	4	5	6	12	9	8	8	10	11	11	15	28	27

GROUND WATER 5'6" AT 1:00 PM ON 3/10/75

HOLE NO. Q-46 — DATE: From 3/3 To 3/3 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 8'	MISC. FILL	1 2	0-2 2-4	2 3, 5 4 3 5, 5 7		OPEN HOLE FROM 13' TO 20'
8' – 17'	RED TILL TR. OF SILT & CLAY	3 4	4-6 6-8	7 6, 2 1 2 4, 4 3		
17' – 20'	DRILLED WITH CONST. BIT RED SHALE ROCK	5 6	8-10 15'-15'2"	6 8, 11 13 86		
		7	20'-20'1"	75/1"		

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
	4	7	7	8	9	4	5	6	10	14	66	107	210

GROUND WATER 6' ON 3/3/75

HOLE NO. Q-48 — DATE: From 3/5 To 3/5 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 6	Fill, SAND, GRAVEL	1 2	0-2 2-4	53 40, 11 9 12 16, 12 13		OPEN HOLE FROM 5' TO 25'
6 – 10	MED TO FINE GREY-BROWN COMPACTED SAND	3 4	4-6 6-8	12 4, 12 16 24 36, 51 60		
10' – 22	REDBR. SILT SOME FINE SAND	5 6	10-12 15-17	4 6, 7 8 6 7, 7 9		
22 – 25'	DRILLE THROUGH HARD RE SHALE ROCK W/CONST. BIT	7 8	20-22 25'	11 13, 17 59 25/- 300 LB		REFUSAL

Blows on Casing	0-1	1-2	2-3	3-4	4-5
	12	14	16	36	58

GROUND WATER 4' ON 3/5/75

HOLE NO. Q-50 — DATE: From 3/5 To 3/5 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0' – 9'	FILL	1 2	1-2 2-4	4 5, 4 4 3 4, 6 29		OPEN HOLE FROM 15' TO 22'
9' – 13'	RED BROWN SILTY FINE SAND	3 4	4-6 6-8	31 20, 18 9 10 17, 21 28		
13' – 22'	RED FINE SILT, SMALL GRAVEL / (TILL)	5 6	10-12 15-16	27 17, 17 16 13 15, 13 16		
		7	20-22	18 40, 30 28		

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
	4	3	7	11	18	9	9	33	36	36	20	18	15	27	16

GROUND WATER 3' ON 3/5/75

HOLE NO. Q-52 — DATE: From 4/4 To 4/4 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per Ft. on Samples	Rock Core Recov'd	Remarks
0 – 14	Misc Fill WOOD. CONCRETE BRICKS. METAL	1 2	0-2 2-4	3 25, 30 40 63, 70/-		
14 – 19	GRAY SANDY SILT TRACE OF ORG. MATERIAL	3 4	4-6 6-8	4 17, 17 36 4 20, 69 5		
19 – 26	REDISH CLAY SILTY + SAND.	5 6	8-10 10-12	70/- 80/2		Boulder Boulder
26 – 39'4"	REDISH CLAY TRACE SILT LAYER OF SHALE (TILL)	7 8	15-17 20-22	7 7, 3 3 13 14, 12 17		
39'4" – 40'2"	SHALE	9 10	22-27 30-32	14 16, 16 10 39 39, 43 41		
		11 12	35-37 40-40'2"	28 32, 40 53 100/2"		NO RECOV.

Blows on Casing	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
	3	70	93	30	17	84	62	93	30	101	20	30	27	33	39	21	28	32	36	44

GROUND WATER AT 15' ON 4/4/75

NOTES
FOR LEGEND AND GENERAL NOTES SEE DRAWING B-31

NEITHER THE PASSAIC VALLEY SEWERAGE COMMISSIONERS NOR THE ENGINEER MAKE EXPRESSED OR IMPLIED GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HEREON, OR ANY INTERPRETATION OF SAME.

REV.	DATE	GRID LOC.	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS
WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

WILCOX, GRAVATT & HACUNDA INC.
— ENGINEERS — LAND SURVEYORS —
— PROFESSIONAL PLANNERS —
NEW JERSEY STATE HIGHWAY ROUTE 9
LACEY TOWNSHIP N. J. 08731
Walter F. Wilcox L.S. No. 9573
John C. Gravatt L.S. No. 16196
P.P. No. 1086
Paul J. Hacunda P.E. No. 21330
PAUL J. HACUNDA
New Jersey License Number 21330

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N. Y.

DESIGNED C.A.M.
DRAWN P.H.
CHECKED P.H.

SCALE
NO SCALE

APPROVED BY ____ DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE № 6796

CONTRACT 481-498 DRAWING No. B-33

Figure 6.3

HOLE NO. T-30 — DATE: From 2/27 To 2/27 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–28'	MISC FILL	1	0-2	4 6 / 5 5		OPEN HOLE FROM 35' to 75'
		2	2-4	3 8 / 2 4		
28'–30'	PEAT	3	4-6	5 9 / 10 7		
		4	6-8	6 6 / 7 9		
30'–39'	FINE RED SILTY SAND	5	8-10	9 9 / 7 8		
		6	15-17	7 11 / 7 10		
39–58	RED CLAYEE SILT W/TR OF FINE SAND	7	20-22	6 9 / 8 11		
		8	25-27	8 8 / 8 8		
58–75	RED CLAYEE SILT FINE SAND & RED SHALE FRAGMENTS	9	30-32	25 43 / 48 22		
		10	35-37	17 24 / 20 21		
	REFUSAL AT 75'	11	40-42	13 17 / 14 15		
		12	45-47	10 11 / 11 13		
		13	50-52	9 8 / 10 13		
		14	55-57	8 9 / 8 9		
		15	60-62	9 14 / 12 17		
		16	65-67	14 19 / 21 29		
		17	70-71'6"	31 48 / 62		
		18	75'	50/1"	NO REC.	

Blows on casing:

Depth	Blows
0-1	11
1-2	8
2-3	5
3-4	3
4-5	3
5-6	2
6-7	6
7-8	8
8-9	10
9-10	11
10-11	10
11-12	12
12-13	12
13-14	11
14-15	10
15-16	9
16-17	12
17-18	14
18-19	15
19-20	16
20-21	18
21-22	18
22-23	19
23-24	24
24-25	26
25-26	16
26-27	27
27-28	27
28-29	31
29-30	30

GROUND WATER 18' ON 2/27/75

HOLE NO. T-32 — DATE: From 2/27 To 2/27 1975

Depth From-To	Description of Materials	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–27'	MISC FILL	1	0-2	4 4 / 4 4		OPEN HOLE FROM 35' TO 71'
		2	2-4	3 6 / 8 16		
27'–28'	PEAT	3	4-6	8 11 / 12 13		
		4	6-8	14 25 / 34 51		
28'–33'	FILL	5	8-10	19 20 / 5 12		
		6	15-17	6 8 / 9 8		
33'–37'	GRAY TO BROWN FINE SAND & SILT	7	20-22	10 12 / 3 6		
		8	25-27	17 9 / 7 8		
37'–35'	FINE RED SILTY SAND WITH TRACE OF CLAY	9	30-32	12 7 / 6 5		
		10	35-37	36 40 / 38 40		
35'–61'6"	RED CLAY + SILT W/SOME FINE SAND	11	40-42	40 14 / 16 17		
		12	45-47	13 19 / 20 20		
61'6"–67'	RED CLAY, SILT, AND TILL	13	50-52	16 19 / 10 18		
		14	55-57	8 12 / 13 15		
67'–71'	RED CLAY, SILT, TILL & RED SHALE FRAGMENTS	15	60-62	4 10 / 10 25		
		16	65 66'	12 27 / 48		
	REFUSAL AT 71'	17	70-71'	97 85		

Blows on casing:

Depth	Blows
0-1	4
1-2	7
2-3	8
3-4	10
4-5	16
5-6	20
6-7	29
7-8	68
8-9	74
9-10	31
10-11	28
11-12	22
12-13	22
13-14	18
14-15	20
15-16	16
16-17	17
17-18	14
18-19	12
19-20	13
20-21	14
21-22	17
22-23	20
23-24	22
24-25	26
25-26	13
26-27	14
27-28	17
28-29	15
29-30	15
30-31	10
31-32	14
32-33	19
33-34	36
34-35	51

GROUND WATER 16'10" ON 2/27/75

HOLE NO. T-34 — DATE: From 3/4 To 3/5 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–28'	MISC FILL	1	0-2	4 3 / 3 2		OPEN HOLE FROM 40'
		2	2-4	8 6 / 4 4		
28'–32'	GREY SILTY SAND	3	4-6	5 4 / 3 3		
		4	6-8	5 2 / 3 3		
32'–61'5"	Red Brown Silt & SILTY Fine Sand	5	8-10	5 6 / 9 3		
		6	10-12	3 3 / 6 4		
61'5"–85'	TILL	7	15-17	3 2 / 4 5		
		8	20-22	5 7 / 6 4		
85'–90'	5' OF ROCK	9	25-27	4 9 / 5 4	45"	25" R + Frags
		10	30-32	8 8 / 6 4		
		11	35-37	16 17 / 16 18		
		12	40' 40	27 22 / 19 18		
		13	45' 47	19 22 / 17 19		
		14	50' 52	12 13 / 12 15		
		15	55' 57	14 14 / 13 42		
		16	60 62	16 13 / 15 15		
		17	65 67	18 26 / 28 24		
		18	70 72	30 22 / 21 24	21	84'-85' 49-100
		19	75 77	19 24 / 23 27	C_1	CORED REC 43"
		20	80 82	18 25 / 24 27		25 Pieces & Fragments

Blows on casing:

Depth	Blows
0-1	5
1-2	4
2-3	6
3-4	6
4-5	4
5-6	8
6-7	10
7-8	9
8-9	8
9-10	8
10-11	12
11-12	9
12-13	10
13-14	7
14-15	12
15-16	8
16-17	15
17-18	17
18-19	16
19-20	15
20-21	17
21-22	21
22-23	18
23-24	18
24-25	23
25-26	17
26-27	15
27-28	18
28-29	21
29-30	26
30-31	19
31-32	19
32-33	26
33-34	32
34-35	36
35-36	62
36-37	72
37-38	59
38-39	56
39-40	48

GROUND WATER 17' AT 1:00 PM ON 3/7/75

HOLE NO. T-36 — DATE: From 3/3 To 3/3 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–27	FILL	1	0 0' / 2 0'	6 18 / 24 16		40' OF 2½" CASING LEFT IN HOLE
		2	2 0' / 4 0'	6 12 / 4 6		
27–32	ORGANIC Silt	3	4 0' / 6 0'	4 5 / 8 3		OPEN HOLE FROM 40'
		4	6 0' / 8 0'	4 6 / 5 3		
32–59	SILT & SAND	5	8 0' / 10 0'	19 8 / 6 7		
		6	10 0' / 12 0'	6 5 / 6 8		
59–80'5"	TILL	7	15 0' / 17 0'	4 3 / 6 6		
		8	20 0' / 22 0'	8 7 / 7 4		REFUSAL 80'5"
		9	25 0' / 27 0'	6 8 / 4 5		
		10	30 0' / 32 0'	7 8 / 9 8		
		11	35 0' / 32 0'	17 12 / 21 25		
		12	40 0' / 42 0'	5 11 / 16 14		
		13	45 0' / 47 0'	17 16 / 16 19		
		14	50 0' / 52 0'	14 14 / 12 25		
		15	55 0' / 57 0'	12 15 / 13 17		
		16	60 0' / 62 0'	22 15 / 14 18		
		17	65 0' / 67 0'	18 19 / 16 20		
		18	70 0' / 72 0'	16 18 / 13 18		
		19	75 0' / 77 0'	20 18 / 18 25		
		20	80 0' / 80 5'	50/6"		

Blows on casing:

Depth	Blows
0-1	4
1-2	6
2-3	4
3-4	8
4-5	7
5-6	5
6-7	5
7-8	10
8-9	12
9-10	8
10-11	10
11-12	15
12-13	11
13-14	9
14-15	12
15-16	9
16-17	7
17-18	10
18-19	14
19-20	15
20-21	6
21-22	10
22-23	15
23-24	11
24-25	14
25-26	9
26-27	10
27-28	7
28-29	12
29-30	14
30-31	24
31-32	36
32-33	41
33-34	38
34-35	42
35-36	71
36-37	60
37-38	55
38-39	61
39-40	48

GROUND WATER 20' AT 12:00 NOON ON 3/6/75

HOLE NO. T-38 — DATE: From 3/26 To 3/26 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–18	MISC. FILL	1	0 2	3 3 / 4 3		
		2	2 4	4 4 / 3 1		
18'–19'6"	GREY CLAYEE SILT	3	4 6	1 2 / 2 1		
		4	6 8	1 2 / 1 1		
19'6"–23	RED CLAY & SILTY SAND	5	9 10	2 1 / 1 1		
		6	15 17	3 4 / 4 5		
23–29	REDISH SILTY CLAY TR. FINE SAND	7	20 22	11 12 / 12 11		
		8	25 27	10 11 / 14 21		
29–59	REDISH CLAY TRACE SILT, SAND & GRAVEL	9	30 32	12 10 / 15 22		
		10	35 37	8 6 / 5 4		
59–61'6"	REDISH CLAY H. GRAVEL	11	40 42	10 12 / 9 14		
		12	45 47	4 4 / 4 8		
61'6"–61'6"	SHALE	13	50 52	5 7 / 9 12		
		14	55 57	17 20 / 23 27		
		15	60 61'6"	33 37 / 74/6"		

Blows on casing:

Depth	Blows
0-1	2
1-2	4
2-3	5
3-4	2
4-5	1
5-6	3
6-7	6
7-8	5
8-9	3
9-10	2
10-11	3
11-12	5
12-13	5
13-14	7
14-15	6
15-16	15
16-17	5
17-18	24
18-19	28
19-20	20
20-21	21
21-22	15
22-23	15
23-24	10
24-25	11
25-26	
26-27	
27-28	
28-29	
29-30	
30-31	
31-32	
32-33	
33-34	
34-35	

GROUND WATER 3' AT 3:00 PM ON 3/26/75

HOLE NO. T-40 — DATE: FROM 3/3 TO 3/3 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–8'4"	Misc Fill	1	0 2	5 4 / 4 3		
		2	2 4	3 4 / 5 4		
8'4"–14'	Fill TRACE ORG SILT	3	4 6	4 6 / 5 4		
		4	6 8	6 5 / 5 4		
14'–17'3"	GREY SILTY FINE SAND TRACE CLAY	5	9 10	6 5 / 2 2		
		6	15 17	5 10 / 13 12		
17'3"–23	REDISH SILTY CLAY TR OF FINE SAND	7	20 22	5 8 / 13 17		
		NR	25 27	9 21 / 31 39	NO	
23'–37	RED CLAY TRACE H. GRAVEL	8	27 29	14 19 / 23 18		
		9	30 32	17 23 / 29 26		
		NR	35 37	58 42 / 61 73	NO	

Blows on casing:

Depth	Blows
0-1	7
1-2	8
2-3	6
3-4	4
4-5	12
5-6	10
6-7	5
7-8	9
8-9	6
9-10	4
10-11	6
11-12	5
12-13	5
13-14	6
14-15	7
15-16	10
16-17	9
17-18	13
18-19	17
19-20	15
20-21	16
21-22	13
22-23	21
23-24	25
24-25	29

GROUND WATER 4'10" AT 4:25 ON 3/3/75

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HOLE NO. T-42 — DATE: FROM 3/31 TO 3/31 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–8'	FILL	1	0 2	3 4 / 6 6		
		2	2 4	14 6 / 14 30		
8'–11'	FILL TRACE FINE SAND TR SILT & CINDERS	3	4 6	24 16 / 14 8		
		4	6 8	5 5 / 5 2		
11'–16'	GREY SAND, SILT, FILL	5	8 10	3 1 / 1 1		
		6	15 17	8 11 / 14 13		
16'–19'	GREY SILTY FINE SAND TRACE RED CLAY	7	20 22	9 12 / 16 15		
		8	25 27	8 14 / 16 19		
19'–28'	RED CLAYEE SILT	9	28 30'9" / 30 37	16 33 / 43 39/6"		CORED WITH 200HC PT CR
28'–32'	TILL					
32'–37'	RED SHALE					

Blows on casing:

Depth	Blows
0-1	2
1-2	9
2-3	13
3-4	32
4-5	14
5-6	5
6-7	6
7-8	5
8-9	3
9-10	2
10-11	5
11-12	6
12-13	8
13-14	8
14-15	9
15-16	22
16-17	23
17-18	36
18-19	28
19-20	40
20-21	35
21-22	24
22-23	22
23-24	18
24-25	11
25-26	15
26-27	17
27-28	32
28-29	28
29-30	28

GROUND WATER 6" AT 11:0 AM ON 3/31/75

HOLE NO. R-42 — DATE: From 3/6 To 3/7 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks*
0–28	FILL	1	0'-2'	4 4 / 3 4		25' OF FLUSH CASING LEFT IN HOLE
		2	2'-4'	2 4 / 4 5		
28–34	RED-BROWN Silt & Sand	3	4'-6'	6 6 / 4 3		
		4	6-8'	6 7 / 6 8		
34–40	TILL	5	8'-10'	12 8 / 9 8		
		6	10'-12'	6 8 / 8 9		REFUSAL AT 40'2"
40–40'2"	Soft Red Shale	7	15'-17'	5 4 / 5 6		
		8	20'-22'	7 6 / 4 8		
		9	25-27	8 7 / 7 8		
		10	30 32	9 10 / 10 7		
		11	35 37	26 36 / 38 90		
		12	40-40½"	88/2	NO	REC.

Blows on casing:

Depth	Blows
0-1	6
1-2	4
2-3	7
3-4	7
4-5	60
5-6	12
6-7	5
7-8	7
8-9	13
9-10	9
10-11	10
11-12	8
12-13	8
13-14	15
14-15	16
15-16	14
16-17	12
17-18	18
18-19	11
19-20	13
20-21	18
21-22	14
22-23	21
23-24	18
24-25	28

GROUND WATER 18' AT 1:00 ON 3/7/75

HOLE NO. S-42 — DATE: FROM 3/11 TO 3/12 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–20	MISC FILL	1	0 2	5 8 / 3 4		25'-2½" CASING LEFT IN HOLE
		2	2 4	4 4 / 8 5		
20–23	ORGANIC + PEAT	3	4 6	6 4 / 4 5		
		4	6 8	5 2 / 6 7		
23–39	RED BROWN SILT & SAND	5	8 10	6 6 / 5 7		
		6	10 12	4 5 / 6 8		
39–45	SOFT SHALE & TILL	7	15 17	15 8 / 12 8		
		8	20 22	3 2 / 3 2		
45–46	RED SHALE DRILL ROCK	9	22 23	9 12 / 13 14		
		10	30 32	12 13 / 10 14	10"	REC. 9 pieces AND FRAGMENTS
		11	35 37	13 18 / 15 21		1' OF CORE
		12	40 42	24 20 / 34 31		

Blows on casing:

Depth	Blows
0-1	5
1-2	2
2-3	3
3-4	4
4-5	8
5-6	11
6-7	18
7-8	4
8-9	5
9-10	7
10-11	5
11-12	7
12-13	8
13-14	7
14-15	8
15-16	13
16-17	9
17-18	8
18-19	8
19-20	6
20-21	
21-22	
22-23	
23-24	17
24-25	[illegible]

GROUND WATER AT 18' AT 12:00 NOON ON 3/12/75

HOLE NO. R-43 — From 3/6 To 3/6 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–28	MISC FILL	1	0-2	3 6 / 7 6		25' OF 2½" CASING LEFT IN HOLE
		2	2-4	5 6 / 5 8		
28–38	RED-BROWN SILT & SAND	3	4-6	8 5 / 7 7		
		4	6-8	6 4 / 8 6		
38–42	TILL - REFUSAL	5	8-10	4 8 / 6 7		
		6	10-12	6 8 / 6 5		
		7	15-17	4 4 / 6 8		
		8	20-22	6 5 / 4 4		
		9	25-27	8 7 / 6 5		
		10	30-32	8 9 / 7 8		
		11	35-37	9 7 / 8 8		
		12	40-42	23 36 / 48 50		

Blows on casing:

Depth	Blows
0-1	5
1-2	8
2-3	6
3-4	4
4-5	9
5-6	6
6-7	5
7-8	6
8-9	10
9-10	12
10-11	8
11-12	15
12-13	14
13-14	10
14-15	25
15-16	17
16-17	14
17-18	19
18-19	15
19-20	16
20-21	9
21-22	14
22-23	14
23-24	18
24-25	22

GROUND WATER 12' AT 1:00 PM ON 3/6/75

HOLE NO. O43 — DATE: FROM 3/10 TO 3/10 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–11'6"	MISC. FILL	1	0-2	2 2 / 3 2		25' OF 2½" CASING LEFT IN HOLE
		2	2-4	5 4 / 4 6		
11'6"–18	ORGANIC PEAT	3	4-6	6 4 / 8 4		OPEN HOLE FROM 25'
		4	6-8	7 5 / 5 4		
18'–38'	RED-BROWN SANDY SILT	5	8-10	6 5 / 6 5		
		6	10 12	3 4 / 5 4		
38'–41'	REFUSAL 41' SOFT SHALE TILL	7	15 17	2 3 / 2 2		
		8	20 22	3 1 / 3 2		
41'–46'	CORE SOFT SHALE	9	25 27	10 12 / 17 18		
		10	30 32	8 9 / 8 10		
	5' OF CORE	11	35 37	11 7 / 8 9		
		12	40 41	39 80		REFUSAL
			41 46		16"	7 Pieces + Fragm

Blows on casing:

Depth	Blows
0-1	5
1-2	6
2-3	4
3-4	8
4-5	10
5-6	11
6-7	7
7-8	6
8-9	15
9-10	14
10-11	19
11-12	17
12-13	18
13-14	16
14-15	20
15-16	5
16-17	5
17-18	5
18-19	5
19-20	5
20-21	13
21-22	10
22-23	28
23-24	25
24-25	30

GROUND WATER AT 1:00 PM ON 3/10/75

HOLE NO. P-43 — DATE: From 3/12 To 3/12 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks*
0'–6'	MISC FILL	1	0 2	4 4 / 3 4		OPEN HOLE FROM 10'
		2	2 4	3 3 / 4 4		
6'–10'6"	ORGANIC + PEAT	3	4 6	5 6 / 3 4		10' of 2½" CASING LEFT IN HOLE
		4	6 8	2 2 / 3 2		
10'6"–23'	RED BROWN SILT & SAND	5	8 10	2 7 / 2 2		
		6	10 12	3 11 / 10 14		
23'–27'	SOFT DECOMPOSED SHALE & TILL	7	15 17	8 12 / 12 12		
		8	20 22	9 9 / 8 11		
	REFUSAL AT 27'	9	25 27	39 33 / 48 60		

Blows on casing:

Depth	Blows
0-1	4
1-2	3
2-3	4
3-4	5
4-5	5
5-6	6
6-7	4
7-8	7
8-9	8
9-10	8
10-11	
11-12	
12-13	
13-14	
14-15	
15-16	

GROUND WATER 3' AT 1:00 PM ON 3/12/75

HOLE NO. S-43 — DATE: From 3/10 To 3/11 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–20	MISC. FILL	1	0.2	8 5 / 6 7		
		2	2-4	16 23 / 26 18		
20–22	ORGANIC PEAT	3	4-6	8 8 / 7 7		
		4	6-8	9 10 / 12 8		
22–39	RED BROWN SILT + SAND	5	10-12	8 14 / 19 12		
		6	15-17	13 8 / 6 9		
39–46	DECOMPOSED SHALE AND TILL	7	20-22	2 2 / 3 2		REFUSAL AT 46'
		8	25-27	8 8 / 7 10		
		9	30-32	8 7 / 10 12		
		10	35-37	9 8 / 11 11		
		11	40-42	23 38 / 40 44		20' OF 2½" CASING LEFT IN HOLE
		12	45-46	51-80		

Blows on casing:

Depth	Blows
0-1	5
1-2	8
2-3	15
3-4	8
4-5	8
5-6	6
6-7	4
7-8	9
8-9	5
9-10	12
10-11	8
11-12	7
12-13	7
13-14	13
14-15	12
15-16	13
16-17	12
17-18	9
18-19	9
19-20	15
	OPEN HOLE

GROUND WATER 9' AT 1:00 PM ON 3/11/75

HOLE NO. O43 — DATE: From 3/13 To 3/13 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0'–6'	MISC. FILL	1	0-2	2 3 / 2 2		OPEN HOLE FROM 10'
		2	2-4	2 1 / 3 2		
6'–10'	GREY BROWN MED TO FINE SAND TRACE SILT	3	4-6	3 2 / 4 2		10' of 2½" CASING LEFT IN HOLE
		4	6-8	4 6 / 6 4		
10'–22'	RED BROWN SILT & SAND	5	8-10	5 7 / 5 4		
		6	10-12	11 10 / 9 12		
22'–27'	TILL & DECOMPOSED SHALE	7	15-17	8 9 / 9 12		
		8	20-22	18 25 / 20 30		
		9	25-27	34 40 / 48 68		REFUSAL 27'

Blows on casing:

Depth	Blows
0-1	4
1-2	2
2-3	3
3-4	4
4-5	3
5-6	6
6-7	10
7-8	9
8-9	12
9-10	11

GROUND WATER 3' AT 1:00 PM ON 3/13/75

HOLE NO. M-43 — DATE: From 2/28 To 2/28 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on Samples	Rock Core Recov'd	Remarks
0–8	MISC FILL	1	0 2	4 5 / 6 7		OPEN HOLE FROM 10'
		2	2 4	7 11 / 18 2		
8–21	FINE RED SAND SOME CLAY, RED SHALE FRAGMENTS	3	4 6	17 20 / 15 21		
		4	6 8	27 25		
		5	8 10	22 14 / 17 22		
		6	15 17	19 26 / 23 35		
		7	20 21	43-61		

Blows on casing:

Depth	Blows
0-1	12
1-2	14
2-3	17
3-4	20
4-5	22
5-6	18
6-7	17
7-8	27
8-9	51
9-10	70
10-11	
11-12	
12-13	
13-14	
14-15	
15-16	
16-17	
17-18	
18-19	

GROUND WATER 4' ON 2/28/75

NOTES
FOR LEGEND AND GENERAL NOTES SEE DRAWING B-31

WILCOX, GRAVATT & HACUNDA INC.
— ENGINEERS — LAND SURVEYORS —
— PROFESSIONAL PLANNERS —
NEW JERSEY STATE HIGHWAY ROUTE 9
LACEY TOWNSHIP N. J. 08731
Walter F. Wilcox L.S. No. 9573
John C. Gravatt L.S. No. 16196
P.P. No. 1086
Paul J. Hacunda P.E. No. 21330
Paul J. Hacunda
PAUL J. HACUNDA
New Jersey License Number 21330

REV.	DATE	GRID LOC.	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS
WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.

DESIGNED C.A.M.
DRAWN P.H.
CHECKED P.H.

SCALE
NO SCALE

APPROVED BY _______ DATE NOV 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No 6796

CONTRACT 481-498 DRAWING No. B-34

Figure 6.4

HOLE NO. R44 — DATE: From 3/7 To 3/7 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–10'	FILL	1	0-2	6 3 / 2 4		OPEN HOLE FROM 25' TO 42'
		2	2-4	4 2 / 2 3		
10'–22'	ORGANIC SILT & PEAT	3	4-6	4 6 / 3 3		25' OF 2½" CASING LEFT IN HOLE
		4	6-8	3 3 / 5 6		
22'–37'	RED-BR. SILT & SAND	5	8-10	4 5 / 4 6		
		6	10-12	7 15 / 3 10		
37'–42'	SOFT DECOMPOSED SHALE "TILL"	7	15-17	4 2 / 2 5		
		8	20-22	3 5 / 4 4		
	REFUSAL 42'	9	25-27	7 7 / 6 5		
		10	30-32	8 8 / 6 7		
		11	35-37	9 8 / 9 8		
		12	40-42	26 35 / 46 60		

Blows on casing (depth)	Blows
0-1	4
1-2	3
2-3	4
3-4	4
4-5	6
5-6	5
6-7	8
7-8	10
8-9	6
9-10	8
10-11	12
11-12	9
12-13	10
13-14	18
14-15	16
15-16	12
16-17	27
17-18	18
18-19	17
19-20	16
20-21	23
21-22	26
22-23	28
23-24	23
24-25	74

GROUND WATER 17' AT 1:00 PM ON 3/7/75

HOLE NO. S-44 — DATE: From 3/31 To 3/31 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0–6'	Misc. Fill	1	0-2	4 5 / 5 4		
		2	2-4	1 1 / 1 1		
6'–7'9"	FILL TRACE ORG. SILT		4-6	WH/24	NO	
		3	6-8	1 1 / 1 3		
7'9"–14'8"	GREY SILTY FINE SAND	4	8-10	6 14		
		5	15-17	6 10 / 11 14		
14'8"–23'2"	RED SILTY FINE SAND TRACE OF CLAY	6	20 32	10 17 / 23 25		
		7	25-26'5"	15 30 / 60		
23'2"–26'5"	TILL					

Blows on casing (depth)	Blows
0-1	3
1-2	5
2-3	2
3-4	2
4-5	3
5-6	2
6-7	1
7-8	4
8-9	7
9-10	9
10-11	13
11-12	12
12-13	15
13-14	11
14-15	12

GROUND WATER 2'6" AT 1:45 PM ON 3/31/75

HOLE NO. S-46 — DATE: From 3/27 To 3/27 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–5'	BOULDERS	1	3-5	29 31 / 14 3		
		2	5-7	9 11 / 3 3		
5'–7'	GRAY DARK FINE SAND, SOME CLAY ORGANIC SILT	3	7-9	4 8 / 5 12		
		4	10-10'8"	57 62/4"		
7'–10'	REDISH CLAY AND GRAVEL		10'8"-13'8"			DRILLED WITH CONST. BIT
10'–10'8"	SHALE					
10'8"–13'8"	SHALE					

Blows on casing (depth labels illegible; values in order): 3, 22, 62, 70

GROUND WATER 2' 7" AT 3:30 ON 3/27/75

HOLE NO. S-48 — DATE: From 3/6 To 3/6 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–13'	FILL	1	0-2	4 7 / 7 5		OPEN HOLE FROM 20' TO 30'6"
		2	2-4	3 9 / 12 [illegible]		
13'–27'	RED-BROWN CLAYEE SILT FINE SILT TRACE "TILL"	3	4-6	6 6 / 8 10		
		4	6-8	10 6 / 4 9		
27'–30'6"	RED SHALE ROCK SOFT	5	8-10	6 7 / 7 9		
		6	15-17	4 7 / 11 13		
		7	20-22	11 15 / 21 22		
		8	25-27	11 39 / 42 51		
		9	30-30'6"	61/6"		300 LB HAMMER

Blows on casing (depth)	Blows
0-1	4
1-2	6
2-3	6
3-4	5
4-5	7
5-6	11
6-7	17
7-8	21
8-9	43
9-10	9
10-11	10
11-12	14
12-13	17
13-14	20
14-15	24
15-16	18
16-17	21
17-18	23
18-19	57
19-20	17

GROUND WATER 12' ON 3/6/75

HOLE NO. S-50 — DATE: From 3/11 To 3/12 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–8'	AUGERED THROUGH VERY HEAVY FILL	1	8-10'	4 29 / 19 17		OPEN HOLE FROM 20' TO 30'
		2	10'-12'	12 13 / 20 20		
8'–12'	MED-COARSE BROWN SAND & GRAVEL w/ TR OF SILT	3	15'-17'	8 7 / 8 10		
		4	20'-22'	4 7 / 14 15		
12'–23'	RED-BR CLAYEE SILT & FINE SAND.	5	25'-27'	21 30 / 30 37		
		6	30'-30'1"	75/1"	N.R.	
23'–28'	RED-BROWN SILT SOME CLAY & RED SHALE FRAGMENTS					
28'–30'	SOFT RED SHALE REFUSAL AT 30'					

Blows on casing (depth)	Blows
0-1 to 8-9	AUGERED
8-9	27
9-10	31
10-11	29
11-12	27
12-13	25
13-14	28
14-15	31
15-16	30
16-17	27
17-18	27
18-19	29
19-20	30
20-21	

GROUND WATER 6' ON 3/12/75

HOLE NO. S-52 — DATE: From 3/10 To 3/11 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–10'	DRILLED THROUGH HEAVY FILL WITH AUGERS	1	0-2	10 12 / 18 48		OPEN HOLE FROM 20' TO 41'
		2	10-12	4 12 / 16 11		
10'–13'	FILL W/ SOME ORGANIC SILT	3	15-17	6 17 / 21 31		
		4	20-22	12 14 / 19 23		
13'–18'	MED. TO FINE BROWN SAND SOME SILT	5	25-27	11 10 / 12 21		
		6	30-32	14 17 / 26 24		
18'–23'	RED-BROWN FINE SAND TR. OF SILT	7	35-37	10 11 / 12 16		
		8	40-41	27 31		
23'–39'	RED-BROWN FINE SAND & RED SHALE FRAGMENTS					
39'–41'	SOFT RED SHALE					

Blows on casing (depth)	Blows
0-1	10
1-2	17
2-3	68
3-4	110
4-5	50
5-6	15
6-7	21
7-8	11
8-9	11
9-10	10
10-11	9
11-12	12
12-13	14
13-14	17
14-15	17
15-16	27
16-17	41
17-18	48
18-19	53
19-20	20

GROUND WATER 8' ON 3/11/75

HOLE NO. S-54 — DATE: From 3/11 To 3/11 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0–5	Fill	1	5-7	4 4 / 5 7		OPEN HOLE FROM 21' TO 45'
		2	7-9	4 7 / 21 26		
5–8	PEAT & ORGANIC SILT	3	10-12	11 12 / 13 13		
		4	15-17	9 13 / 13 14		
8–10	MED-FINE BROWN SAND	5	20-22	9 11 / 11 14		
		6	25-27	8 12 / 14 18		
10–14	FINE RED TO BROWN SAND & SILT	7	30-32	9 11 / 13 17		
		8	35-37	11 13 / 19 19		
14–36	RED-BROWN CLAYEE SILTY FINE SAND	9	40-42	19 27 / 39 44		
		10	45-45'1"	75/1"	N.R.	
36–43	RED BROWN SILT & FINE SAND w/RED SHALE FRAGMENTS					
43–45	SOFT RED SHALE ROCK					

Blows on casing (depth)	Blows
0-1	4
1-2	8
2-3	12
3-4	16
4-5	8
5-6	7
6-7	6
7-8	10
8-9	12
9-10	14
10-11	22
11-12	16
12-13	17
13-14	26
14-15	22
15-16	28
16-17	28
17-18	28
18-19	29
19-20	10

GROUND WATER AT 6' ON 3/11/75

HOLE NO. U-46 — DATE: From 3/13 To 3/16 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0–2	FILL	1	0-2	4 4 / 10 [illegible]		25' OF 2½" CASING LEFT IN HOLE
		2	8-10	21 [illegible] / 26 25		
2–8	DRILLED THROUGH VERY HEAVY FILL WITH AUGERS	3	10-12	3 4 / 3 3		
		4	15-17	3 3 / 3 2		
8–10	Fill	5	20-22	8 4 / 5 7		
		6	25-27	5 8 / 11 11		
10–12	Fill	7	30-32	21 26 / 30 17		
		8	35-36'6"	38 40 / 60		REFUSAL AT 36'6"
12–18	Peat, Some Organic Silt					
18–21'6"	GRAY SILTY SAND TRACE OF CLAY					
21'6"–30'	RED-BROWN CLAY TRACE OF SAND					
30'–36'6"	TILL ? SOFT SHALE					

Blows on casing (depth)	Blows
0 to 9	AUGERED
9-10	12
10-11	9
11-12	8
12-13	7
13-14	4
14-15	6
15-16	6
16-17	7
17-18	8
18-19	10
19-20	11
20-21	10
21-22	14
22-23	18
23-24	25
24-25	21

GROUND WATER 15'6" AT 1:00 PM ON 3/16/75

HOLE NO. U-48 — DATE: From 4/1/75 To 4/1/75 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–10'6"	FILL CONCRETE WOOD, BRICK, WHITE REFRIGERATOR	1	0-2	3 38 / 4 11		
		2	5-7	11 32 / 3 6		
10'6"–19'6"	GRAY DARK-FINE-MED SAND, SOME CLAY TRACE OIL	3	10-12	7 13 / 13 20		
		4	15-17	11 14 / 14 20		
19'6"–23'	REDISH SAND TRACE CLAY	5	20-22	14 8 / 17 16		
		6	25-27	6 9 / 13 13		
23'–29'	REDISH SILTY CLAY & FINE SAND	7	30-32	12 20 / 23 27		
		8	35-35'8"	30 75/2"		
29'–35'	RED TILL LAYERS OF SHALE					
35'–35'8"	SHALE					

Blows on casing (depth)	Blows
0-1	29
1-2	30
2-3	11
3-4	60
4-5	20
5-6	9
6-7	17
7-8	17
8-9	23
9-10	30
10-11	10
11-12	13
12-13	19
13-14	22
14-15	27
15-16	13
16-17	20
17-18	38
18-19	60
19-20	72
20-21	11
21-22	20
22-23	13
23-24	19
24-25	24

GROUND WATER 13' AT 3:00 PM ON 4/1/75

HOLE NO. U-50A — DATE: From 4/2 To 4/2 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
11'–15'	DARK GREY ORGANIC SILT (PEAT)	1	10-11	17 21		
15'–15'6"	GRAY FINE SAND LAYERS OF SILT	2	11-13	1 1 / 1 1		
		3	14-15	3-4		
15'6"–21'	REDISH FINE SILTY SAND	4	15-17	5 13 / 14 19		
		NR	20-22	22 17 / 19 21		NO RECOVERY
21'–30'	REDISH CLAY S. OF FINE SAND	5	23-24	15 10 / 13 16		
		6	25-27	14 17 / 19 19		
30'–31'2"	TILL & S. OF SHALE	7	30-31'2"	6 50 / 100/2		

Blows on casing (depth)	Blows
0-1	29
1-2	75
2-3	30
3-4	11
4-5	96
5-6	17
6-7	30
7-8	33
8-9	40
9-10	20
10-11	11
11-12	12
12-13	11
13-14	10
14-15	10
15-16	8
16-17	15
17-18	25
18-19	33
19-20	22

GROUND WATER 13' AT 1:00 PM ON 4/2/75

NOTE:
FOR STRATA DESCRIPTION FROM 0 TO 11' DEPTH SEE HOLE No U-50, DRAWING B-36

HOLE NO. U-52 — DATE: From 3/7 To 3/7 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–8'	FILL	1	0-2	3 2 / 4 8		OPEN HOLE FROM 15' TO 40'
		2	2-4	3 6 / 6 7		
8'–33'	RED-BR FINE SILTY SAND	3	4-6	9 9 / 5 5		
		4	6-8	4 7 / 5 4		
33'–37'	RED-BR. SILTY SAND & RED SHALE FRAGMENTS	5	8-10	0 4 / 4 5		
		6	15-17	11 11 / 12 13		
37'–40'	DRILLED SOFT RED SHALE WITH CONST. BIT	7	20-22	[illegible] / 13 13		
		8	25-27	4 10 / 14 16		
		9	30-32	10 13 / 16 17		
	REFUSAL ON SPOON 40'	10	35-37	26 41 / 41 45		
		11	40-40'1"	50/1"		300 LB HAMMER

Blows on casing (depth)	Blows
0-1	12
1-2	14
2-3	14
3-4	17
4-5	6
5-6	6
6-7	8
7-8	7
8-9	4
9-10	5
10-11	12
11-12	14
12-13	16
13-14	17
14-15	17

GROUND WATER 6' ON 3/7/75

HOLE NO. U 54 — DATE: From 3/16 To 3/16 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–10'	DRILLED THROUGH HEAVY FILL WITH AUGERS.	1	10-12	48 17 / 11 12		OPEN HOLE FROM 20' TO 51'
		2	15-17	10 12 / 19 19		
10'–13	Fill	3	20-22	7 11 / 14 16		
		4	25-27	8 14 / 17 21		
13–18'	MED TO FINE BR. SAND TR. OF SILT	5	30-32	11 11 / 14 7		
		6	35-37	7 9 / 11 16		
18'–48'	RED-BROWN CLAYEE SILTY SAND, THIN LAYER OF FINE SAND	7	40-42	8 10 / 13 15		
		8	45-47	11 14 / 15 19		
48'–51'	RED-BR. FINE SAND & SHALE FRAGMENTS	9	50-51	47 91		REFUSAL AT 51'

Blows on casing (depth)	Blows
0-1 to 9-10	AUGERED
10-11	7
11-12	8
12-13	9
13-14	9
14-15	9
15-16	11
16-17	12
17-18	29
18-19	21
19-20	23

GROUND WATER 13' ON 3/16/75

HOLE NO. T-26U — DATE: From 3/31 To 3/31 1975

Depth From-To	Description of Materials	Sample Number	Depth From-To	Blows per ft. on sample	Rock core recov'd	Remarks
0'–19'6"	MISC. FILL	1	0-2	1 20 / 1 1		
		2	2-4	1 1 / 1 1		
19'6"–29'7"	GRAY DARK ORGANIC SILT	3	4-6	1 2 / 2 3		
		4	6-8	3 7 / 2 9		
29'7"–30'	GRAY DARK FINE SAND TR. OF SILT	X	8-10	2 13 / 3 3	NO	
		5	15-17	9 20 / 3 7		
		6	20-22	WH/24		
		7	23-25	U#1	FULL	
		8	25-27	U#2	FULL	
		9	28-30	U#3	FULL	

Blows on casing (depth)	Blows
0-1	3
1-2	10
2-3	11
3-4	13
4-5	13
5-6	9
6-7	9
7-8	6
8-9	11
9-10	4
10-11	9
11-12	13
12-13	4
13-14	6
14-15	9
15-16	37
16-17	32
17-18	28
18-19	20
19-20	13
20-21	17
21-22	21
22-23	23
23-24	17
24-25	18
25-26	31
26-27	19
27-28	23
28-29	

GROUND WATER 6' AT 10:00 AM ON 4/1/75

HOLE NO. R44A — DATE: From 3/19 To 3/24 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0–5	LOOSE TO MED GREY SILTY SAND MISC. FILL		5'	6-9		EAST 3' FROM BORING # R-44
		1	7'	10-12		
5–10	LOOSE TO MED. GREY SILTY SAND MISC. FILL		10'	2-2		
		2	12'	2-2		NO RECOVERY
10–15	LOOSE TO MED. GREY SILTY SAND & MISC. FILL		12'	4-5		
		3	13'			
15–19	SOFT GREY PEAT		13'	5-6		
		4	15'	14-6		
19–20	BOULDER		15'	PUSH		
		5	17'			NO RECOVERY
			18'	3-2		
		6	20'	2-10		

Blows on casing (depth)	Blows
0-1	8
1-2	14
2-3	16
3-4	17
4-5	15
5-6	12
6-7	10
7-8	14
8-9	17
9-10	13
10-11	9
11-12	11
12-13	17
13-14	9
14-15	10
15-16	8
16-17	8
17-18	14

* NOTE: SAMPLE MARKED FOR BORING R-44U SHOULD BE FOR BORING R-44A

HOLE NO. R44B — DATE: From 4/7 To 4/7 1975

Depth From-To	Description of Material	Sample Number	Depth From-To	Blows per ft. on samples	Rock core recov'd	Remarks
0'–5'	Fill	1	10-12	8 5 / 3 8		3' WEST OF BORING R-44
		2	13-14.5	8 5 / 77/6"		
5'–10'	SANDY SILT					Piece of Board Stuck in Casing
10'–14'5"	MISC FILL, SANDY SILT					

Blows on casing (depth)	Blows
0-1	59
1-2	39
2-3	35
3-4	29
4-5	35
5-6	29
6-7	20
7-8	15
8-9	15
9-10	12
10-11	27
11-12	34
12-13	30
13-14	27
14-15	29

GROUND WATER 13' ON 1/7/75
NOTE. Sample marked for boring R-44UA Should Be For Boring R-44B

NOTES
FOR LEGEND AND GENERAL NOTES SEE DRAWING B-31

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— ENGINEERS — LAND SURVEYORS —
— PROFESSIONAL PLANNERS —
NEW JERSEY STATE HIGHWAY ROUTE 9
LACEY TOWNSHIP N. J.
08731
Walter F. Wilcox L.S. No. 9573
John C. Gravatt L.S. No. 16196
Paul J. Hacunda P.P. No. 1086, P.E. No. 21330
Paul J. Hacunda
PAUL J. HACUNDA
N.J. License Number 21330

REV.	DATE	GRID LOC.	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.

DESIGNED C.A.M.
DRAWN P.H.
CHECKED P.H.

SCALE
NO SCALE

APPROVED BY [signature] DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No 6796

CONTRACT 481-498 DRAWING No. B-35

Figure 6.5

HOLE NO. U-50 SURFACE ELEVATION 111.0 DATE: From 3/18 To 3/18 1975

BORING LOG			SPOON SAMPLE AND CORE DATA				BLOWS ON CASING	
DEPTH FROM-TO	DESCRIPTION OF MATERIAL	SAMPLE NUMBER	DEPTH FROM-TO	BLOWS PER FT. ON SAMPLES	ROCK CORE RECORD	REMARKS	0-1 1-2 2-3 3-4 4-5	30 43 98 170 14
0' 11'	COMPACT GREY-BROWN MEDIUM-FINE SAND. SW SILT TR. BRICK FRAG. MISC. FILL	1 2	0-2 2-4	2 9 10 3 4 75 3 28		Driller Could Not Get Through Fill-	5-6 6-7 7-8 8-9	34 94 175 128
11' 14'	SOFT DARK GREY PEAT	3 4	4 6 6 8	7 14 10 29 9 3 7 3		Had To ABANDON The HOLE	9-10 10-11 11-12 12-13	26 21 20 20
		5 6	8 10 10 12	4 24 38 3 39 5 4 2		Driller Could not get thru wood at Bottom of	13-14	23
		7	12 14	2 2 1 3				

HOLE NO. U-46A 13' WEST OF BORING U-46 DATE FROM 4/7/75 TO 4/7/75

BORING LOG			SPOON SAMPLE AND CORE DATA				BLOWS ON CASING	
DEPTH FROM-TO	DESCRIPTION OF MATERIAL	SAMPLE NUMBER	DEPTH FROM-TO	BLOWS PER FT. ON SAMPLES	ROCK CORE RECORD	REMARKS	0-1 1-2 2-3 3-4 4-5	29 85 96 125 289* BOULD HAMMER
0' 5'	HEAVY MISC. FILL					Driller Could Not Advance The Casing Due To Heavy Fill		

3½" Dia Hole

NOTES
FOR LEGEND AND GENERAL NOTES SEE DRAWING B-51

REV.	DATE	GRID LOC.	BY	DESCRIPTION

PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

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SCALE
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NEW JERSEY LICENSE NO 6796

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- PROFESSIONAL PLANNERS -
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New Jersey License Number 21330

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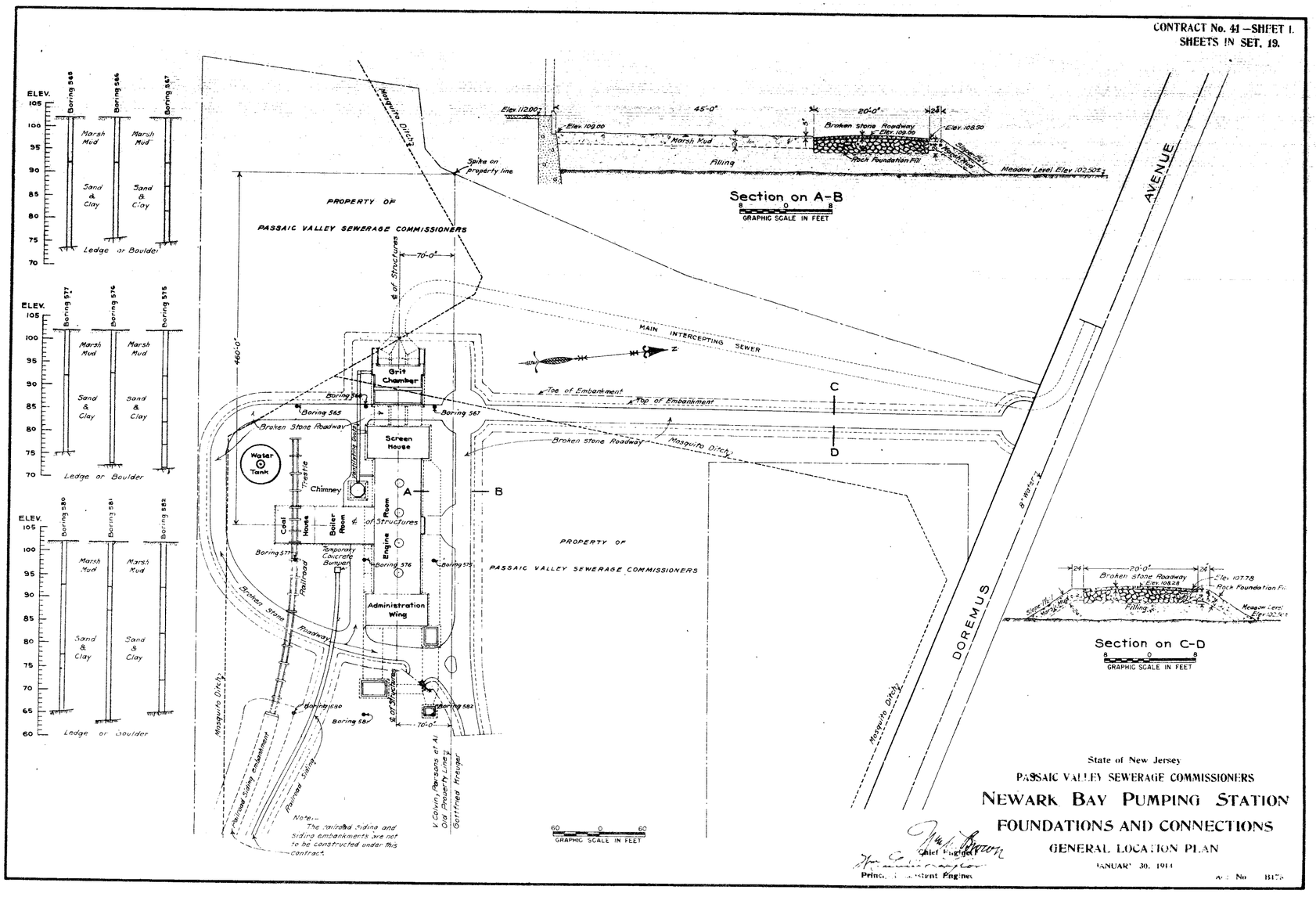
Figure 7.1



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WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
CONSULTING ENGINEERS NEW YORK, N.Y.

DESIGNED B.O.
DRAWN B.O.
CHECKED B.O.

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AS NOTED

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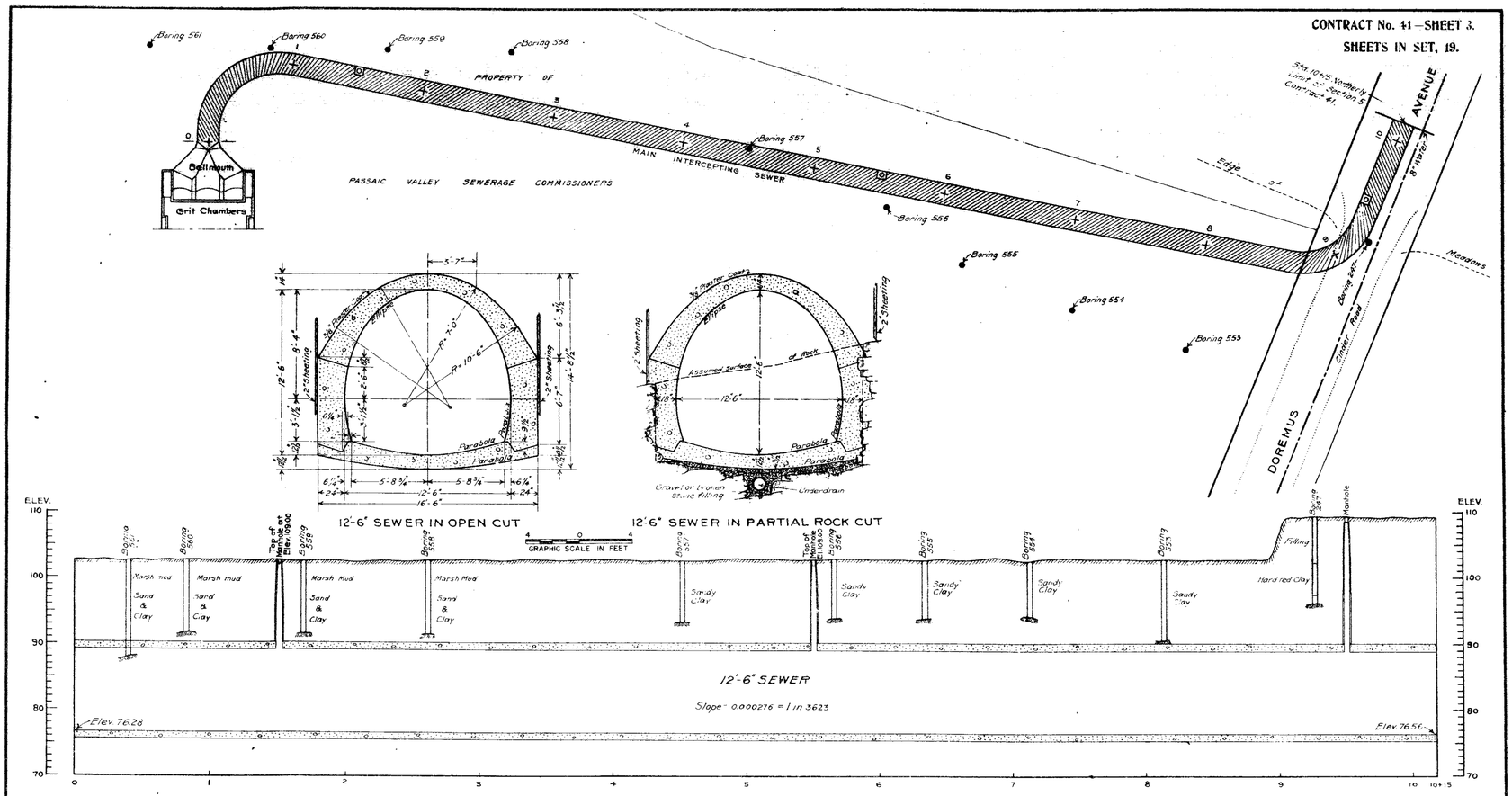
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-37

Figure 7.2



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NOTE: The borings and indications of pipes and other underground structures are supposed to be approximately correct, but should they be found to be otherwise the Contractor shall have no claim on that account, it being expressly understood that the Commissioners do not warrant the plot to be approximately correct.

The precise character of the foundation and the section at any given point cannot be determined in advance but will be decided upon by the Engineer as occasion demands.

The sewer line may be moved within the limits of the street and takings wherever thought best by the Engineer.

SCALES
Horizontal – 40 0 40 GRAPHIC SCALE IN FEET
Vertical – 8 0 8 GRAPHIC SCALE IN FEET

Chief Engineer
Principal Assistant Engineer

State of New Jersey
PASSAIC VALLEY SEWERAGE COMMISSIONERS
NEWARK BAY PUMPING STATION
FOUNDATIONS AND CONNECTIONS
SEWER – PLAN AND PROFILE
STATION 0 TO STATION 10+15
JANUARY 30, 1914
Acc. No. 11783

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WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY
PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

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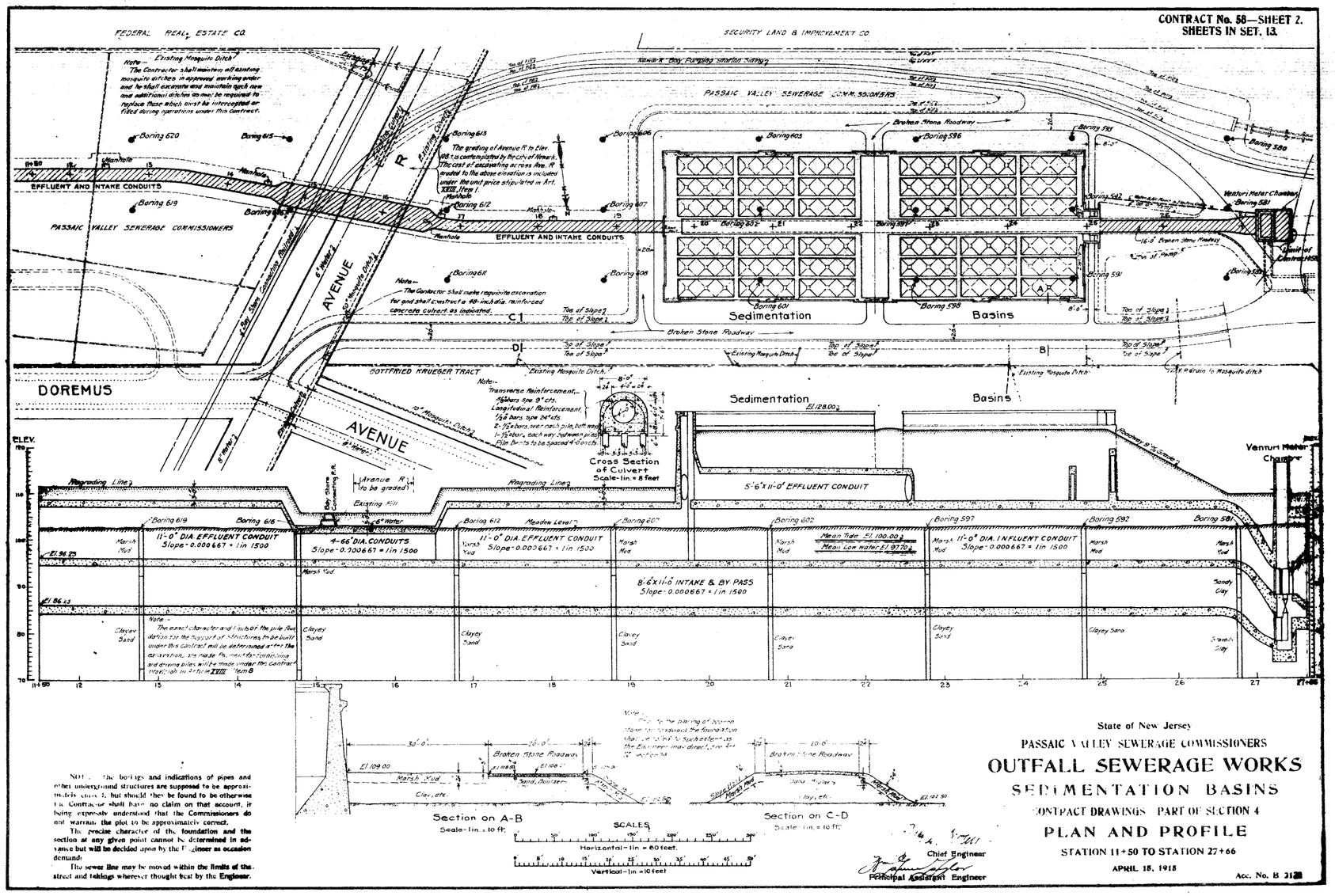
DRAWN B.O.
CHECKED B.O.
SCALE AS NOTED
APPROVED BY DATE NOV. 1976
CHARLES A. MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No 6796

CONTRACT 481-498 DRAWING No. B-38

Figure 7.3



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PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

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Figure 7.4

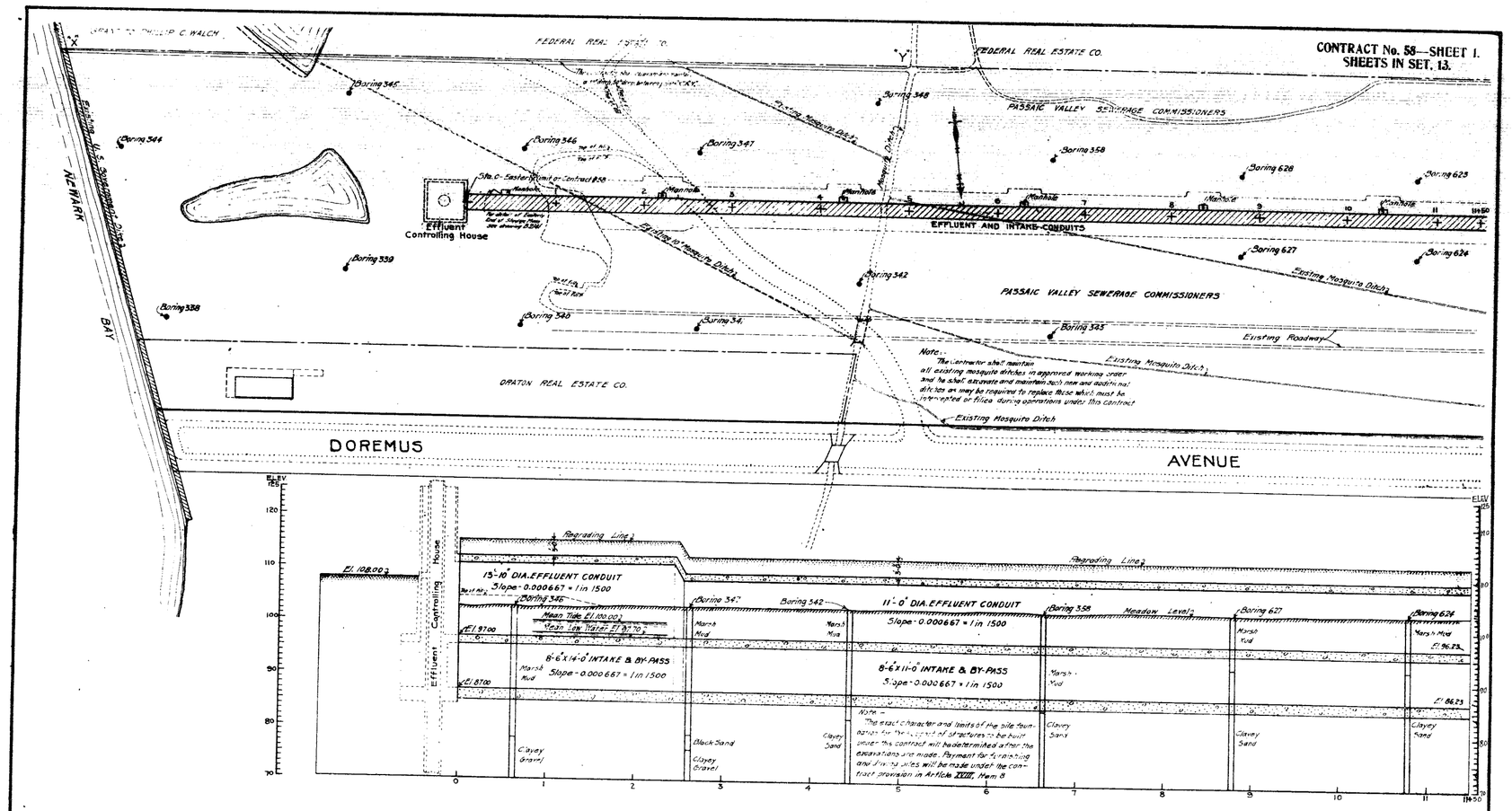

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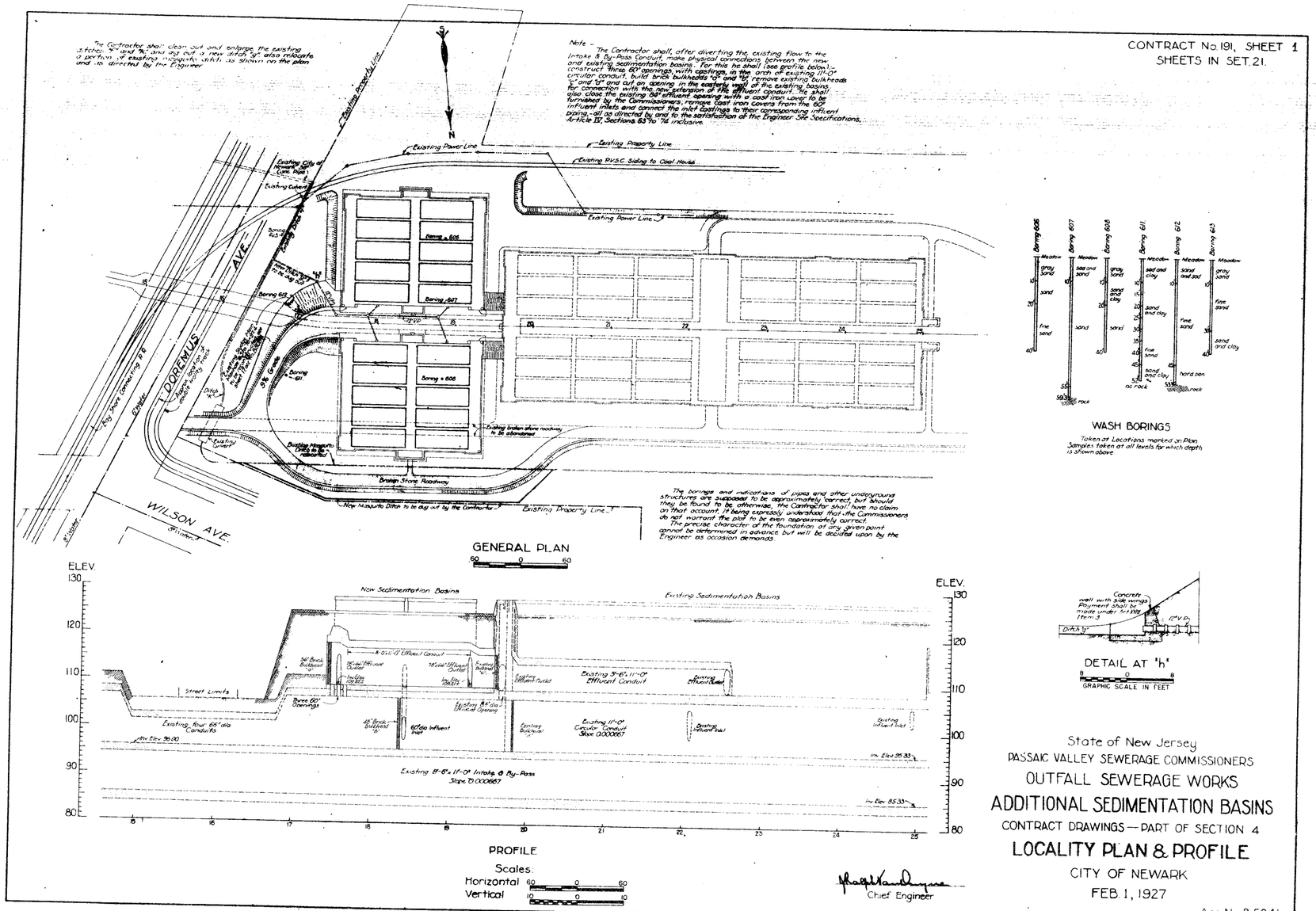
Figure 7.5



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WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

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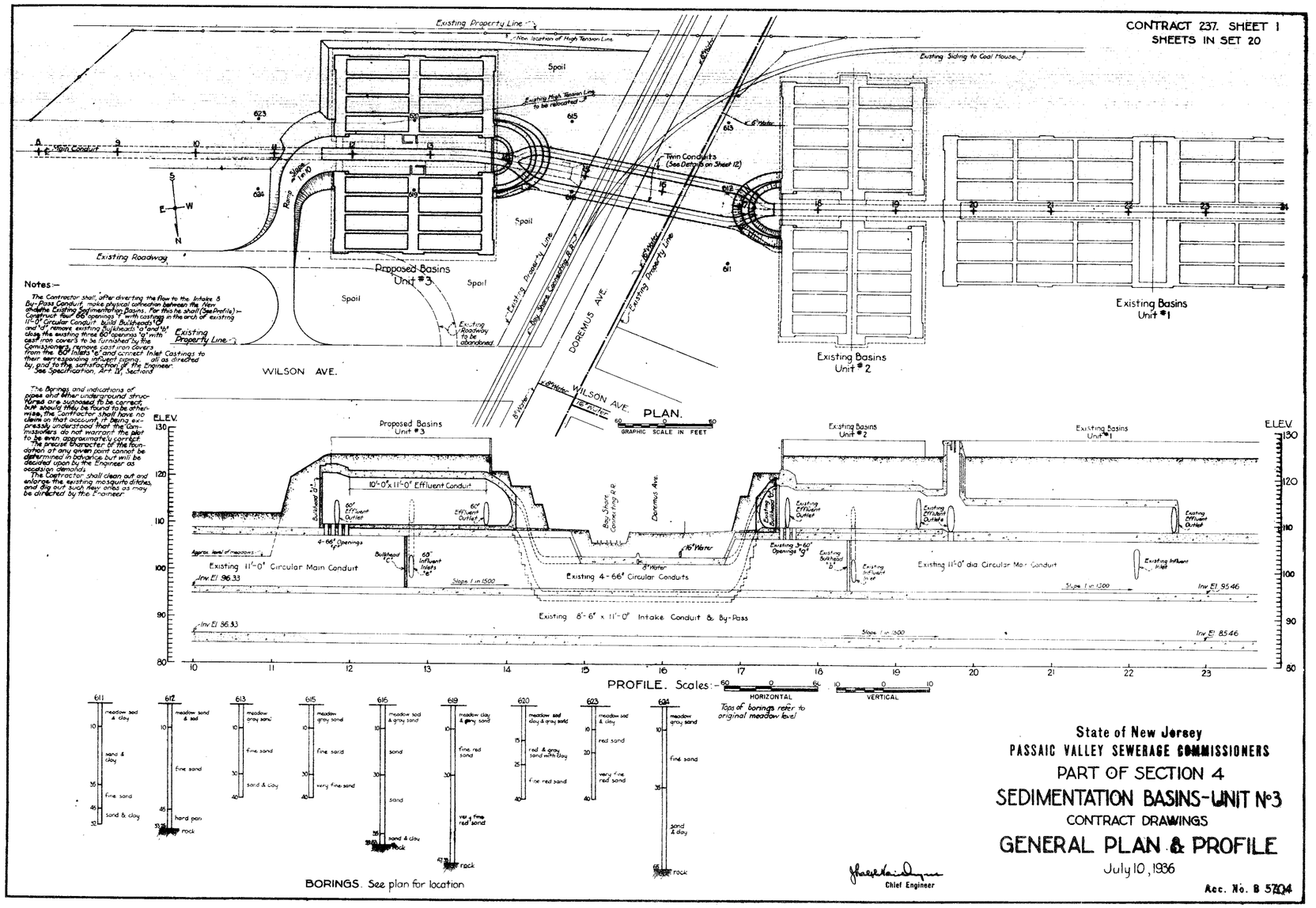
NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-41

Figure 7.6



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PASSAIC VALLEY SEWERAGE COMMISSIONERS

WATER POLLUTION CONTROL FACILITIES
NEWARK, NEW JERSEY

PHASE II
TREATMENT PLANT CONSTRUCTION

BORING LOGS

CHARLES A. MANGANARO
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CHARLES A MANGANARO, PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO 6796

CONTRACT 481-498 DRAWING No. B-42