

PHASE II REMEDIAL INVESTIGATION

**Sunnyside Yard
Queens, New York**

Volume V of V

February 15, 1995

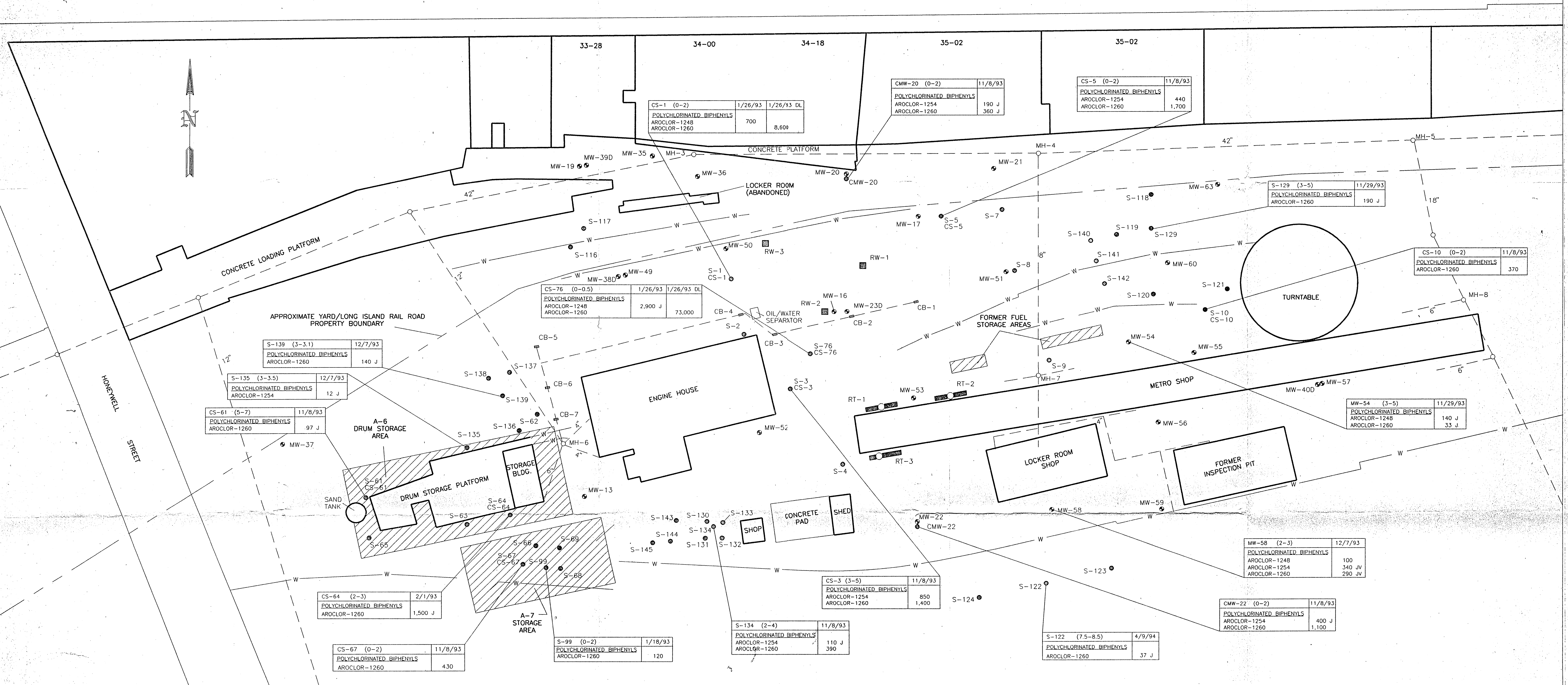
Prepared for:

**National Railroad Passenger Corporation
400 Capital Street, N.W.
Washington, D.C. 20001**

Prepared by:

**ROUX ASSOCIATES, INC.
1377 Motor Parkway
Islandia, New York 11788**

NORTHERN BOULEVARD



EXPLANATION

- MW-22 ● EXISTING MONITORING WELL LOCATION AND DESIGNATION
- RW-2 ■ EXISTING RECOVERY WELL LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- RT-1 ■ RECOVERY TRENCH LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- S-1 ● EXISTING SOIL BORING LOCATION AND DESIGNATION
- CS-1 ● APPROXIMATE LOCATION AND DIAMETER OF SEWER, TAKEN FROM ENGINEERING DIAGRAMS
- MH-6 ○ SEWER MANHOLE LOCATION AND DESIGNATION
- CB-2 ■ CATCH BASIN LOCATION AND DESIGNATION
- W ——— APPROXIMATE LOCATION OF RETAINING WALL
- ▨ AREAS OF CONCERN

BOREHOLE DESIGNATION		SAMPLE DATE
SAMPLE DEPTH		
MW-58 (2-3)	12/7/93	
POLYCHLORINATED BIPHENYLS		
AROCLOR-1248	100	
AROCLOR-1254	340 JV	
AROCLOR-1260	290 JV	

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLE 11
 ND - NOT DETECTED
 DL - INDICATES SECONDARY DILUTION; SEE TEXT FOR EXPLANATION
 CONCENTRATIONS ARE IN MICROGRAMS PER KILOGRAM (ug/kg)

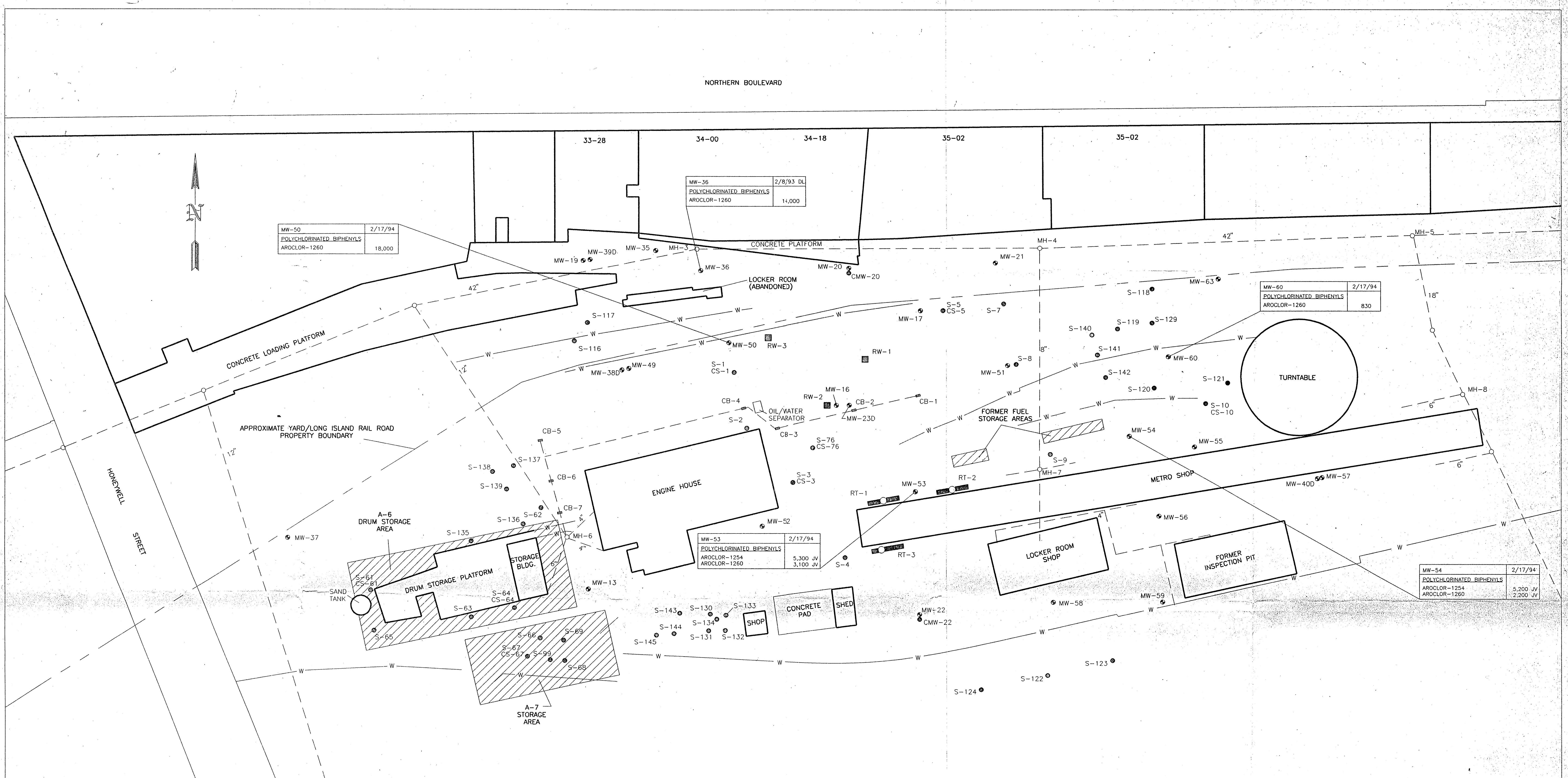
0 40 80 FEET

Title: AREA 1
 CONCENTRATIONS OF
 POLYCHLORINATED BIPHENYLS
 DETECTED IN SOIL DURING
 PHASE II REMEDIAL INVESTIGATION

Prepared For: SUNNYSIDE YARD, QUEENS, NEW YORK

ROUX ASSOCIATES INC
 Environmental Consulting & Management

Compiled by: H.G. Date: 12/94
 Prepared by: G.M. Scale: SHOWN
 Project Mgr: J.D.D. Revision: 13
 File No: AM526C08 Project: 05526/45Y

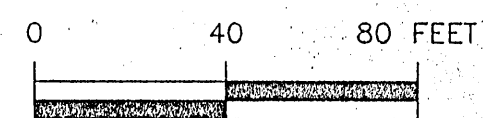


EXPLANATION

- MW-22 ● EXISTING MONITORING WELL LOCATION AND DESIGNATION
- RW-2 ■ EXISTING RECOVERY WELL LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- RT-1 ■ RECOVERY TRENCH LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- S-1 ● EXISTING SOIL BORING LOCATION AND DESIGNATION
- CS-1 ● EXISTING SOIL BORING LOCATION AND DESIGNATION
- 42" ○ APPROXIMATE LOCATION AND DIAMETER OF SEWER, TAKEN FROM ENGINEERING DIAGRAMS
- MH-6 ○ SEWER MANHOLE LOCATION AND DESIGNATION
- CB-2 ■ CATCH BASIN LOCATION AND DESIGNATION
- W ——— APPROXIMATE LOCATION OF RETAINING WALL
- ▨ AREAS OF CONCERN

MONITORING WELL DESIGNATION		SAMPLE DATE	
MW-54	2/17/94		
POLYCHLORINATED BIPHENYLS			
AROCLOR-1254	5,200 JV		
AROCLOR-1260	2,200 JV		

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLE 13
DL - INDICATES SECONDARY DILUTION; SEE TEXT FOR EXPLANATION
CONCENTRATIONS ARE IN MICROGRAMS PER KILOGRAM (ug/kg)



Title: AREA 1
CONCENTRATIONS OF
POLYCHLORINATED BIPHENYLS DETECTED IN
SEPARATE-PHASE PETROLEUM DURING
PHASE II REMEDIAL INVESTIGATION

Prepared For:
SUNNYSIDE YARD, QUEENS, NEW YORK

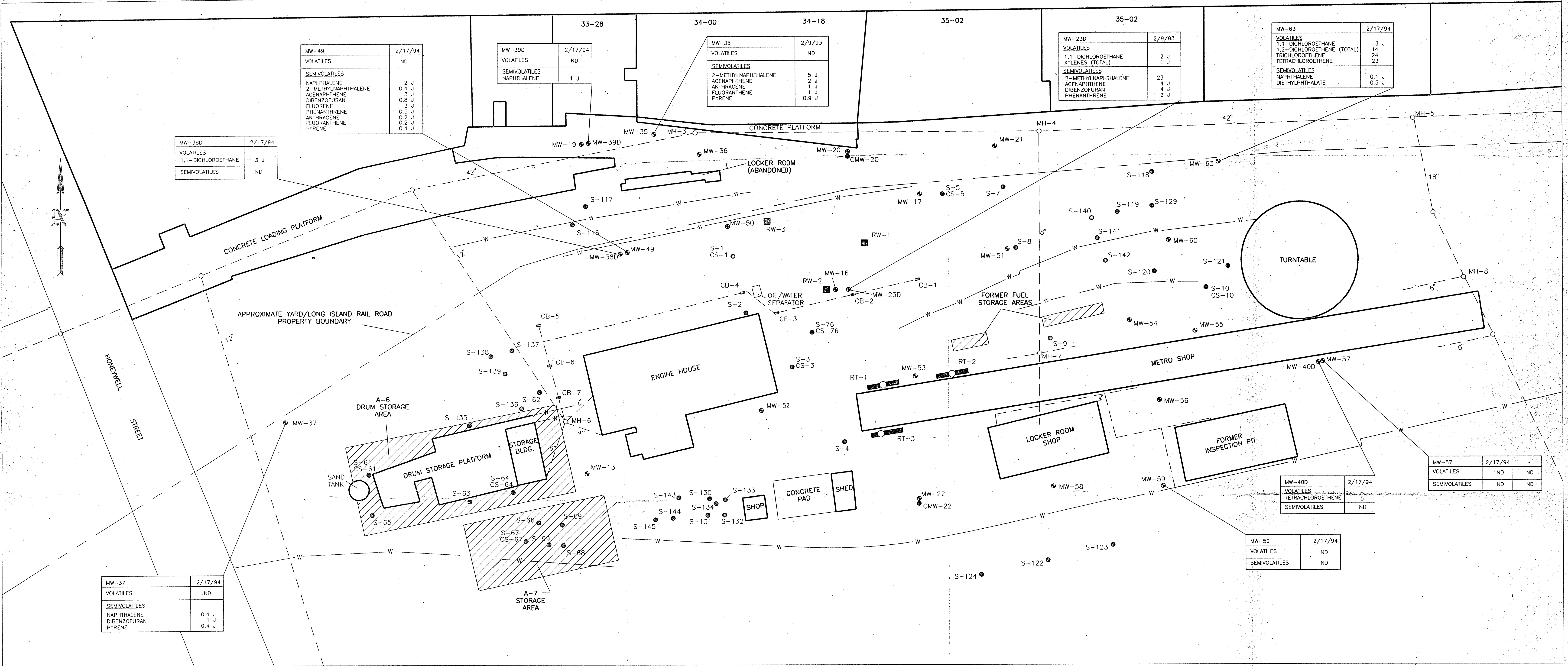
ROUX
Environmental Consulting
& Management

Compiled by: H.G.
Prepared by: G.M.
Project Mgr: J.D.D.
File No: AM526C21

Date: 12/94
Scale: SHOWN
Revisions:
Project: 05526/45V

PLATE
14

NORTHERN BOULEVARD

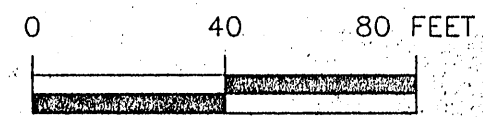


EXPLANATION

MONITORING WELL DESIGNATION		
SAMPLE DATE		
MW-57	2/17/94	•
VOLATILES	ND	ND
SEMIVOLATILES	ND	ND

- MW-22 • EXISTING MONITORING WELL LOCATION AND DESIGNATION
- RW-2 ■ EXISTING RECOVERY WELL LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- RT-1 ■ RECOVERY TRENCH LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- S-1 • EXISTING SOIL BORING LOCATION AND DESIGNATION
- CS-1 • EXISTING SOIL BORING LOCATION AND DESIGNATION
- 42" ○ APPROXIMATE LOCATION AND DIAMETER OF SEWER, TAKEN FROM ENGINEERING DIAGRAMS
- MH-6 ○ SEWER MANHOLE LOCATION AND DESIGNATION
- CB-2 ■ CATCH BASIN LOCATION AND DESIGNATION
- W — APPROXIMATE LOCATION OF RETAINING WALL
- ▨ AREAS OF CONCERN

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLES 15 AND 16
ND - NOT DETECTED
CONCENTRATIONS ARE IN MICROGRAMS PER LITER (µg/L)



Title: AREA 1
CONCENTRATIONS OF
VOLATILE ORGANIC COMPOUNDS AND
SEMIVOLATILE ORGANIC COMPOUNDS
DETECTED IN GROUND WATER
DURING PHASE II
REMEDIAL INVESTIGATION

Prepared For: SUNNYSIDE YARD, QUEENS, NEW YORK

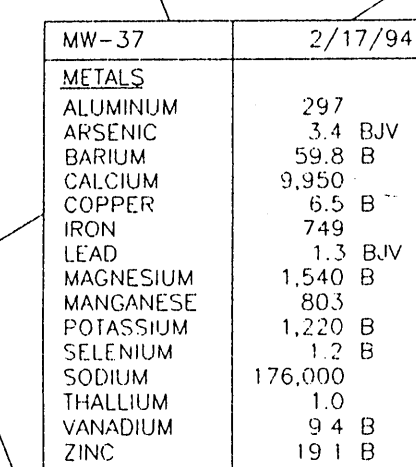
ROUX ASSOCIATES INC.
Environmental Consulting
& Management

Compiled by: H.G. Date: 12/94
Prepared by: G.M. Scale: SHOWN
Project Mgr: J.D.D. Revision:
File No: AM526C10 Project:05526/45V

PLATE 15

MW-49	2/17/94
METALS	
ALUMINUM	86.2 B
ARSENIC	7.4 B
BARIUM	330
CALCIUM	24,400
COBALT	15.5 B
COPPER	13.8 B
IRON	118,000
LEAD	1.0 BJV
MAGNESIUM	5,340
MANGANESE	3,030
POTASSIUM	2,630 B
SELENIUM	1.6 BJV
SODIUM	13,700
ZINC	76.5

MW-63	2/17/94
<u>METALS</u>	
ALUMINUM	823
BARIUM	176 B
CALCIUM	128,000
COBALT	3.4 B
COPPER	10.5 B
IRON	1,900
LEAD	1.4 BJV
MAGNESIUM	30,900
MANGANESE	2,120
POTASSIUM	5,140
SELENIUM	1.4 BJV
SODIUM	77,200
ZINC	25.9

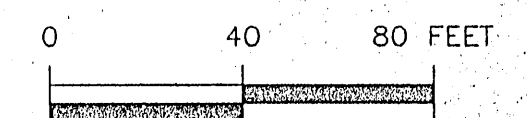



MW-57	2/17/94	*
METALS		
ALUMINUM	470	371
ANTIMONY	ND	45.5 B
ARSENIC	1.0 B	ND
BARIUM	47.0 B	34.7 B
CADMIUM	27,300	27,500
COBALT	ND	3.5 B
COPPER	31.2	28.7
IRON	874	689
LEAD	5.7	4.9
MAGNESIUM	5,760	5,760
MANGANESE	1,700	1,700
POTASSIUM	2,890 B	2,980 B
SILICON	1.1 BU*	0.9 B
SODIUM	71,500	71,400
ZINC	41.5	39.8

MW-59	2/17/94
METALS	
ALUMINUM	614
ARSENIC	3.0 B
BARIUM	18.1 B
CALCIUM	26,800
COPPER	9.6 B
IRON	966
LEAD	3.2 JV
MAGNESIUM	1,750 B
MANGANESE	85.2
POTASSIUM	4,370 B
SELENIUM	3.0 BVJ
SODIUM	54,300
VANADIUM	10.9 B
ZINC	25.2

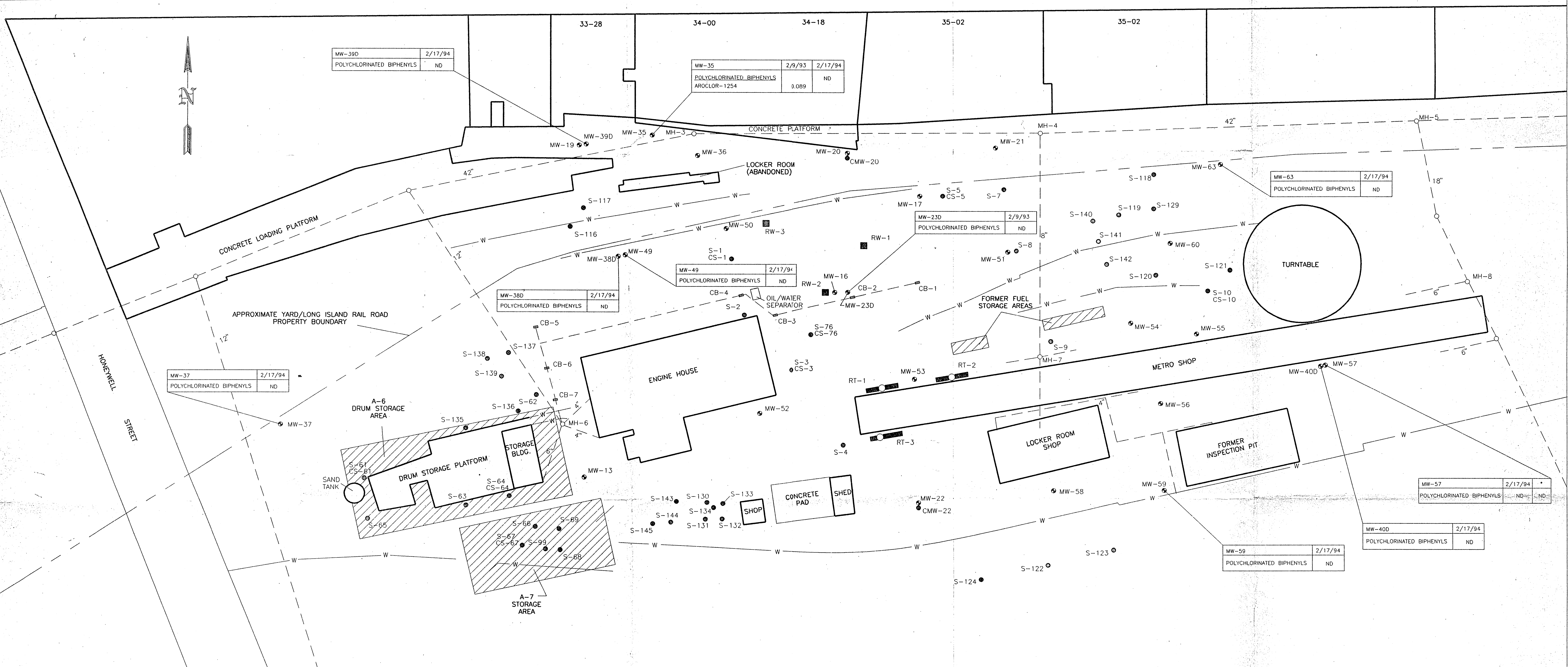
MONITORING WELL DESIGNATION		SAMPLE DATE		REPLICATE SAMPLE
MW-57	2/17/94			
METALS				
ALUMINUM	470		371	
ANTIMONY	ND		45.5 B	
ARSENIC	1.0 B		ND	
BARIUM	47.0 B		34.7 B	
CALCIUM	27,300		27,500	
COBALT	ND		3.5 B	
COPPER	31.2		28.7	
IRON	874		689	
LEAD	5.7		4.9	
MAGNESIUM	5,700		5,760	
MANGANESE	1,700		1,700	
POTASSIUM	2,890 B		2,980 B	
SELENIUM	BUV		1.9 B	
SODIUM	71,500		71,400	
ZINC	41.5		39.8	

- NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLE 17
CONCENTRATIONS ARE IN MICROGRAMS PER LITER (ug/L)



Title:		AREA 1 CONCENTRATIONS OF METALS DETECTED IN GROUND WATER DURING PHASE II REMEDIAL INVESTIGATION		
Prepared For:		SUNNYSIDE YARD, QUEENS, NEW YORK		
 ROUX ASSOCIATES INC Environmental Consulting & Management	Compiled by:	H.G.	Date: 12/94	
	Prepared by:	G.M.	Scale: SHOWN	
	Project Mgr:	J.D.D.	Revision:	
	File No:	AM526C19	Project:	Q5526/45Y
		PLATE:	16.	

NORTHERN BOULEVARD

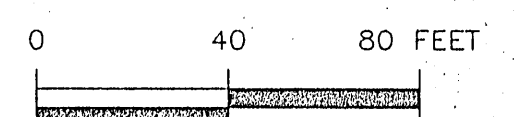


EXPLANATION

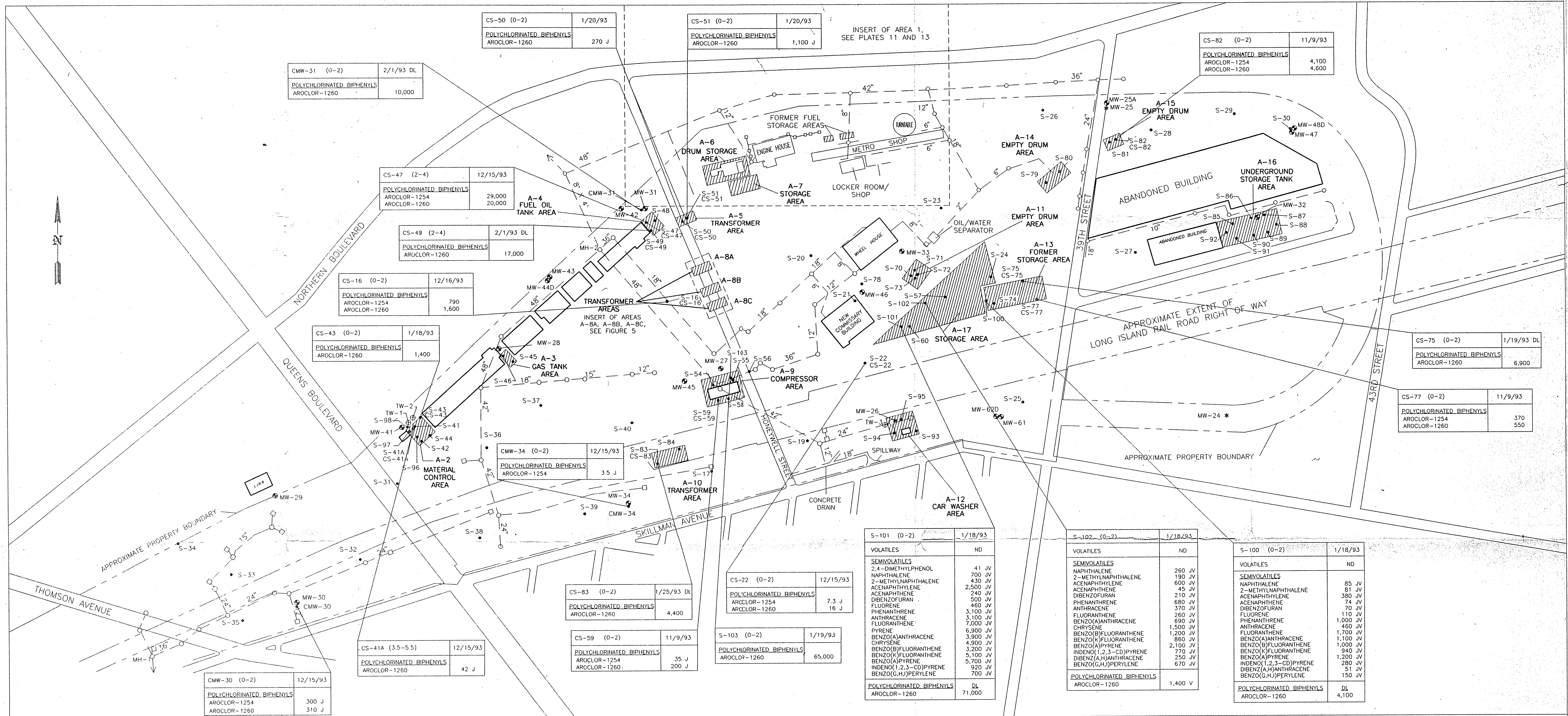
- MW-22 ● EXISTING MONITORING WELL LOCATION AND DESIGNATION
- RW-2 ■ EXISTING RECOVERY WELL LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- RT-1 — RECOVERY TRENCH LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- S-1 ● EXISTING SOIL BORING LOCATION AND DESIGNATION
- CS-1 ● EXISTING SOIL BORING LOCATION AND DESIGNATION
- — ○ APPROXIMATE LOCATION AND DIAMETER OF SEWER, TAKEN FROM ENGINEERING DIAGRAMS
- MH-6 ○ SEWER MANHOLE LOCATION AND DESIGNATION
- CB-2 ■ CATCH BASIN LOCATION AND DESIGNATION
- W — APPROXIMATE LOCATION OF RETAINING WALL
- ▨ AREAS OF CONCERN

MONITORING WELL DESIGNATION		SAMPLE DATE		REPLICATE SAMPLE
MW-57	2/17/94	ND	ND	
POLYCHLORINATED BIPHENYLS				

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLE 18
 ND - NOT DETECTED
 CONCENTRATIONS ARE IN MICROGRAMS PER LITER (ug/L)

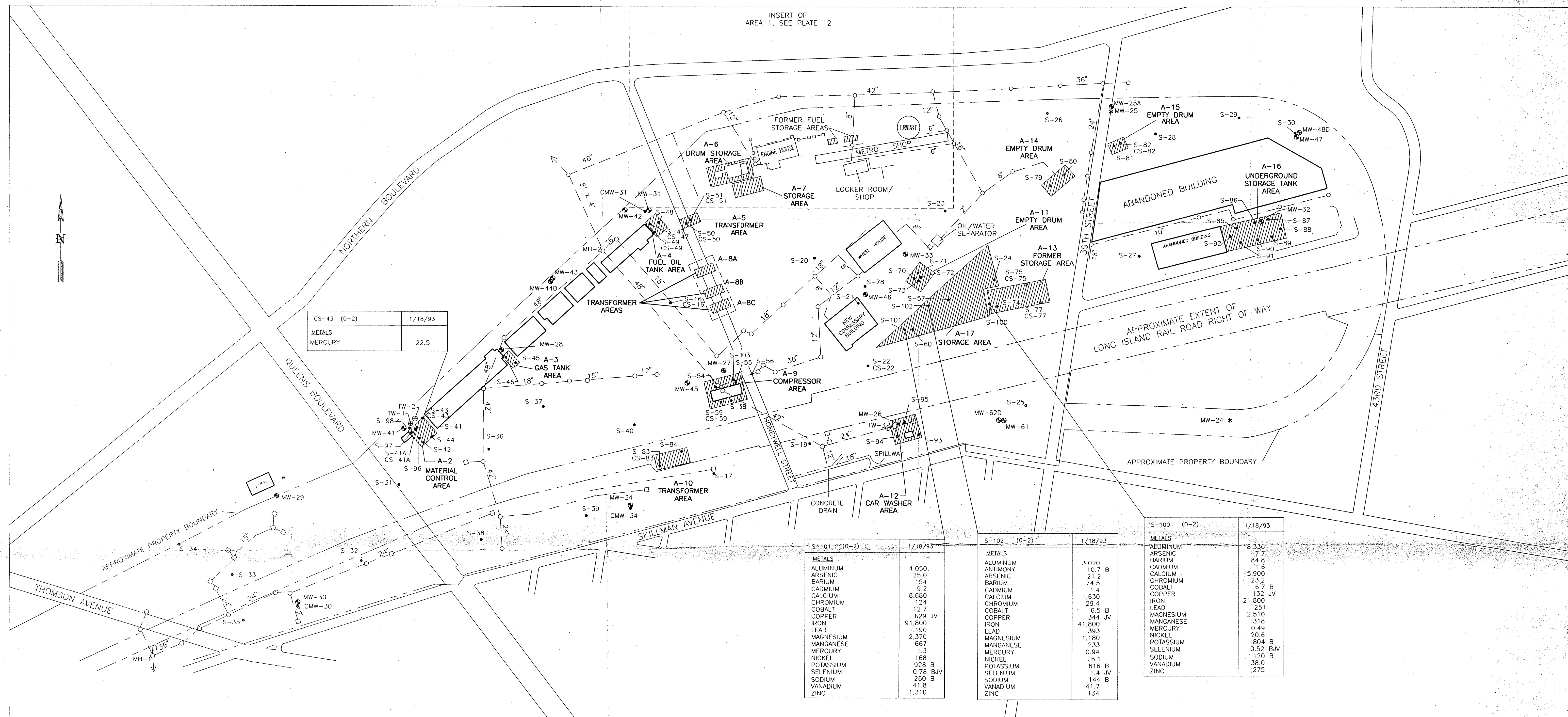


Title			
AREA 1			
CONCENTRATIONS OF POLYCHLORINATED BIPHENYLS DETECTED IN GROUND WATER DURING PHASE II REMEDIAL INVESTIGATION			
Prepared For: SUNNYSIDE YARD, QUEENS NEW YORK			
Prepared by: H.C.	Date: 12/94	Scale: SHOWN	PLATE
Project Mgr: J.D.B.	Revision:		17
File No: AMS26C12	Project: 05526/451		



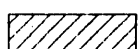
NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLES 8, 9 AND 11
ND - NOT DETECTED
DL - INDICATES SECONDARY DILUTION; SEE TEXT FOR EXPLANATION
CONCENTRATIONS ARE IN MICROGRAMS PER KILOGRAM (ug/kg)

- EXPLANATION
- MW-27 • EXISTING MONITORING WELL LOCATION AND DESIGNATION
 - CS-83 • EXISTING SOIL BORING LOCATION AND DESIGNATION
 - MW-26 * ABANDONED MONITORING WELL LOCATION AND DESIGNATION
 - TW-3 ⊕ TEMPORARY WELLPOINT LOCATION AND DESIGNATION
 - 12" - - - - - APPROXIMATE LOCATION AND DIAMETER OF SEWER, TAKEN FROM ENGINEERING DIAGRAMS
 - MH-1 ○ MANHOLE LOCATION AND DESIGNATION
 - CATCH BASIN LOCATION
 - ▨ AREAS OF CONCERN

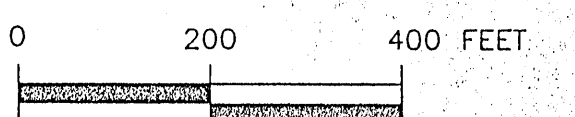


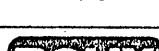
BOREHOLE DESIGNATION		SAMPLE DEPTH	SAMPLE DATE
S-101	(0-2)		
METALS			
ALUMINIUM		4,050	
ARSENIC		25.0	
BARIUM		154	
CADMIUM		9.2	
CALCIUM		8,680	
CHROMIUM		124	
COBALT		12.7	
COPPER		629 JV	
IRON		91,800	
LEAD		1,190	
MAGNESIUM		2,370	
MANGANESE		667	
MERCURY		1.3	
NICKEL		168	
POTASSIUM		928 B	
SELENIUM		0.78 BJV	
SODIUM		260 B	
VANADIUM		41.8	
ZINC		1,310	

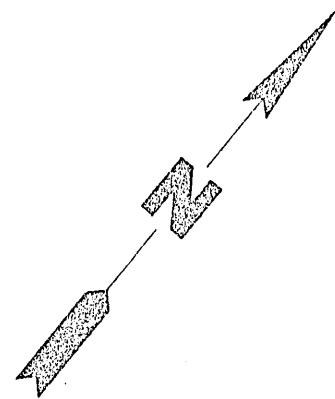
EXPLANATION

- | | |
|---|---|
| MW-27 | EXISTING MONITORING WELL LOCATION AND DESIGNATION |
| CS-83 | EXISTING SOIL BORING LOCATION AND DESIGNATION |
| MW-26 * | ABANDONED MONITORING WELL LOCATION AND DESIGNATION |
| TW-3 | TEMPORARY WELLPOINT LOCATION AND DESIGNATION |
| — 12 — | APPROXIMATE LOCATION AND DIAMETER OF SEWER, TAKEN FROM ENGINEERING DIAGRAMS |
| MH-1 | MANHOLE LOCATION AND DESIGNATION |
| □ | CATCH BASIN LOCATION |
|  | AREAS OF CONCERN |

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLE 10
CONCENTRATIONS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg)



Title:					
CONCENTRATIONS OF METALS DETECTED IN SOIL DURING PHASE II REMEDIAL INVESTIGATION					
Prepared For: SUNNYSIDE YARD, QUEENS, NEW YORK					
 ROUX ASSOCIATES INC. <i>Environmental Consulting & Management</i>	Compiled by: H.G.		Date: 12/94	PLATE	
	Prepared by: J.R.		Scale: SHOWN		
	Project Mgr: J.D.D.		Revision: 0		
	File No: AM526C05		Plot: 05526/45Y		
					19

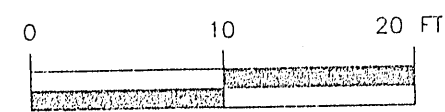


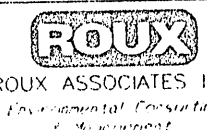
EXPLANATION

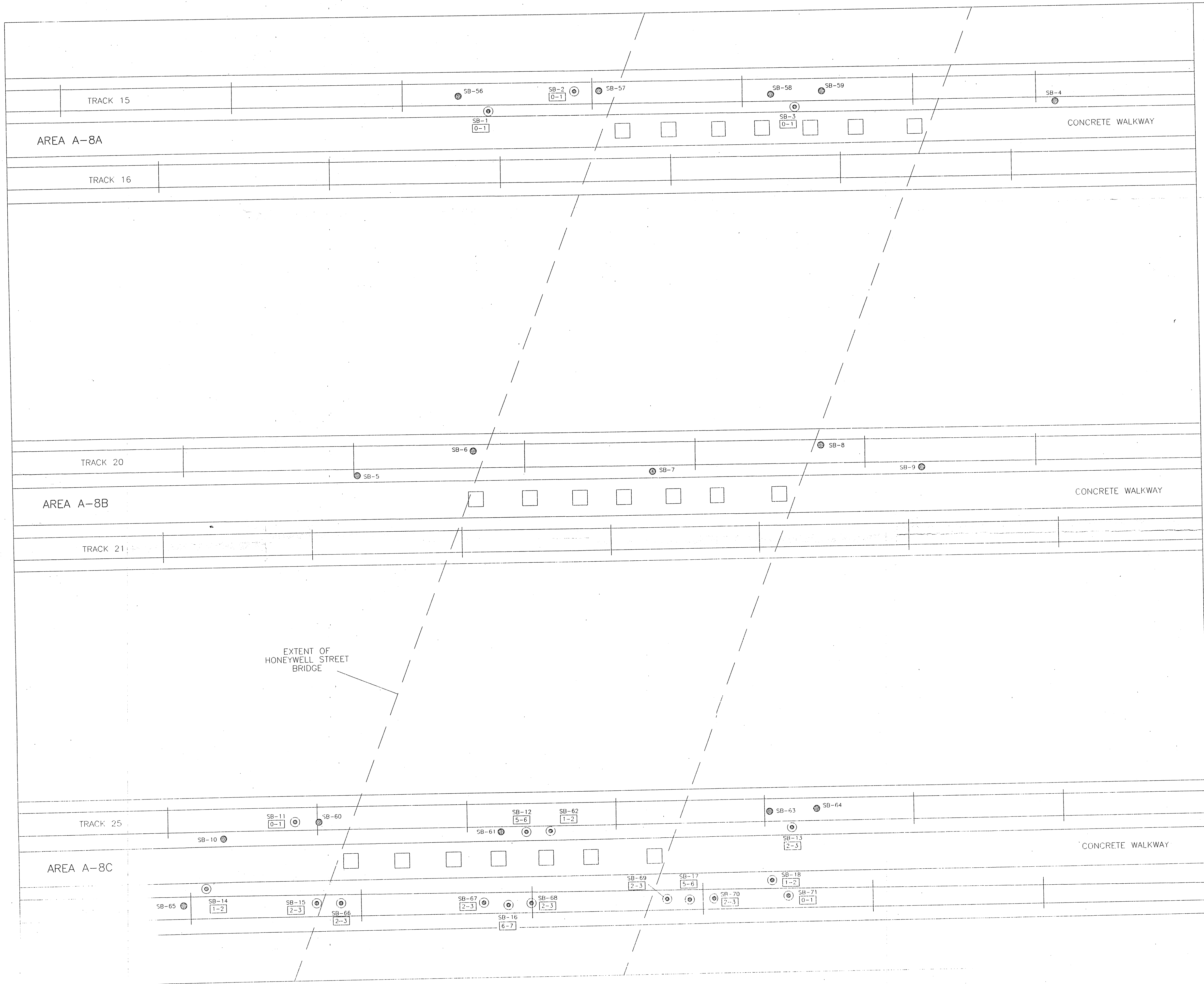
□ HONEYWELL STREET BRIDGE SUPPORT

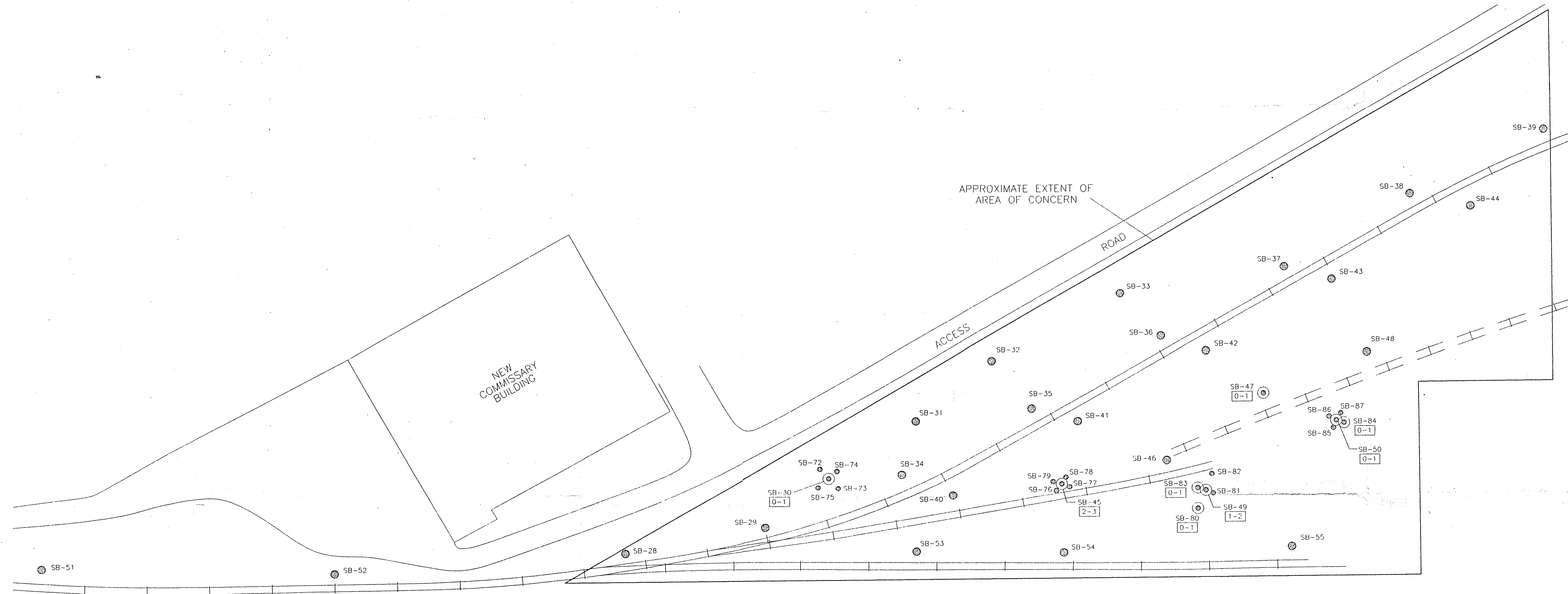
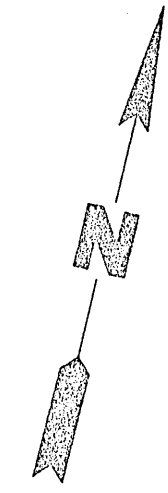
● SOIL BORING LOCATION AND DESIGNATION, NO PCBS DETECTED AT CONCENTRATIONS GREATER THAN 25 ppm (PARTS PER MILLION).

⊙ SOIL BORING LOCATION AND DESIGNATION, PCBS DETECTED AT CONCENTRATIONS GREATER THAN 25 ppm TO SAMPLE INTERVAL INDICATED (FEET BELOW LAND SURFACE).



Title:		AREA 8	
RESULTS OF ADDITIONAL DELINEATION OF POLYCHLORINATED BIPHENYLS IN SOIL			
Prepared For: SUNNYSIDE YARD, QUEENS, NEW YORK			
 ROUX ASSOCIATES INC. <small>Environmental Consulting & Engineering</small>	Compiled by: H.G.	Date: 12/94	PLATE
	Prepared by: R.R.	Scale: SHOWN	22
	Project Mgr: J.D.D.	Revision:	Project 05526/45Y

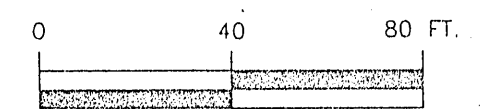





EXPLANATION

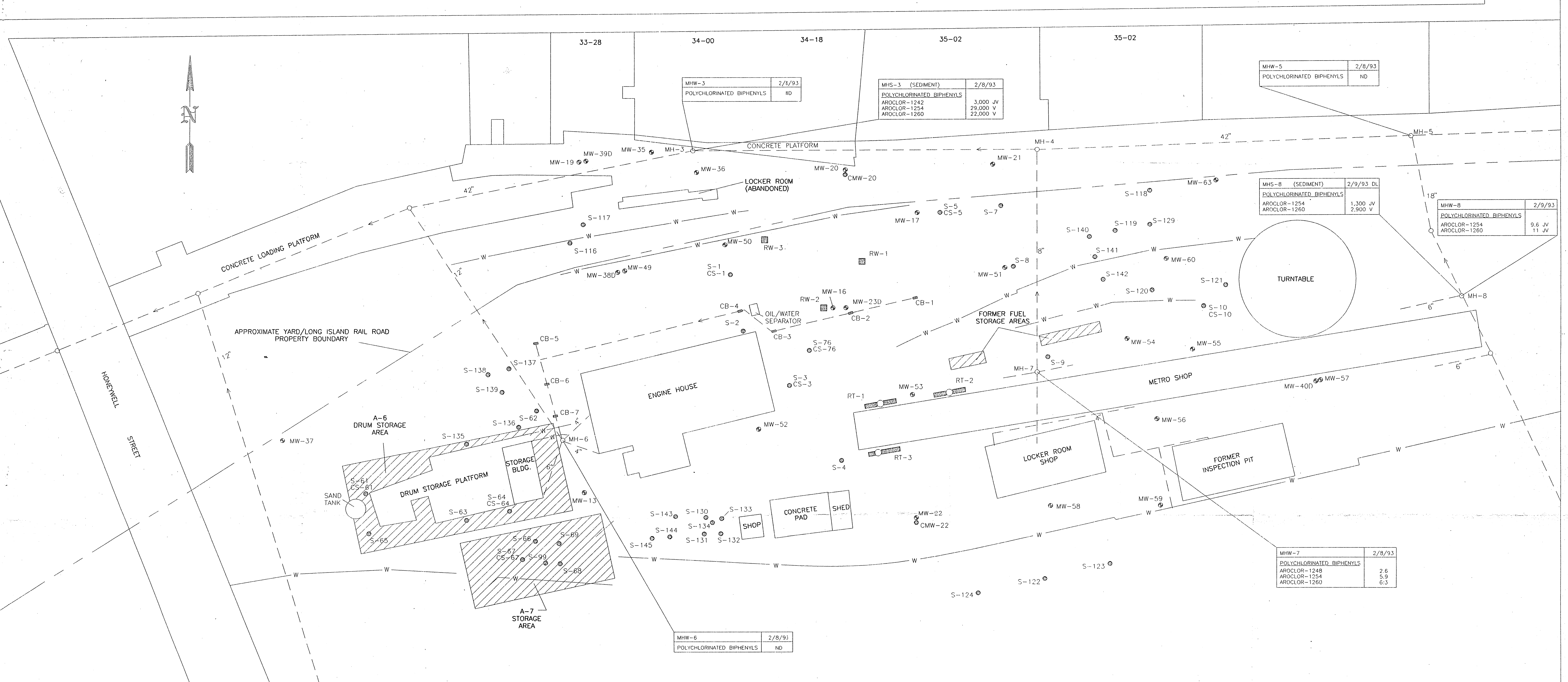
SB-28 ● SOIL BORING LOCATION AND DESIGNATION, NO PCBS
DETECTED AT CONCENTRATIONS GREATER THAN 25 PPM (PARTS PER MILLION).

SB-50 [0-1] ● SOIL BORING LOCATION AND DESIGNATION, PCBS DETECTED
AT CONCENTRATIONS GREATER THAN 25 PPM TO SAMPLE
INTERVAL INDICATED (FEET BELOW LAND SURFACE).



Title: AREA 17			
RESULTS OF ADDITIONAL DELINEATION OF POLYCHLORINATED BIPHENYLS IN SOIL			
Prepared For: SUNNYSIDE YARD, QUEENS, NEW YORK			
 ROUX ASSOCIATES INC. Environmental Consulting & Management	Compiled by: H.G.	Date: 12/94	PLATE 23
	Prepared by: G.M.	Scale: SHOWN	
	Project Mgr: J.D.D.	Revision:	
	File No: 05526010	Project: 05546/45	

NORTHERN BOULEVARD



EXPLANATION

- MW-22 EXISTING MONITORING WELL LOCATION AND DESIGNATION
- RW-2 EXISTING RECOVERY WELL LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- RT-1 RECOVERY TRENCH LOCATION AND DESIGNATION (INTERIM REMEDIAL MEASURE)
- S-1 EXISTING SOIL BORING LOCATION AND DESIGNATION
- CS-1 CATCH BASIN LOCATION AND DESIGNATION
- MH-6 SEWER MANHOLE LOCATION AND DESIGNATION
- CB-2 CATCH BASIN LOCATION AND DESIGNATION
- W APPROXIMATE LOCATION OF RETAINING WALL
- AREAS OF CONCERN

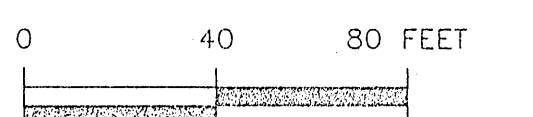
MANHOLE/CATCH BASIN SAMPLE DESIGNATION	
MHW-7	2/8/93 - SAMPLE DATE
POLYCHLORINATED BIPHENYLS	
AROCLOR-1248	2.6
AROCLOR-1254	5.9
AROCLOR-1260	6.3

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLES 27 AND 28

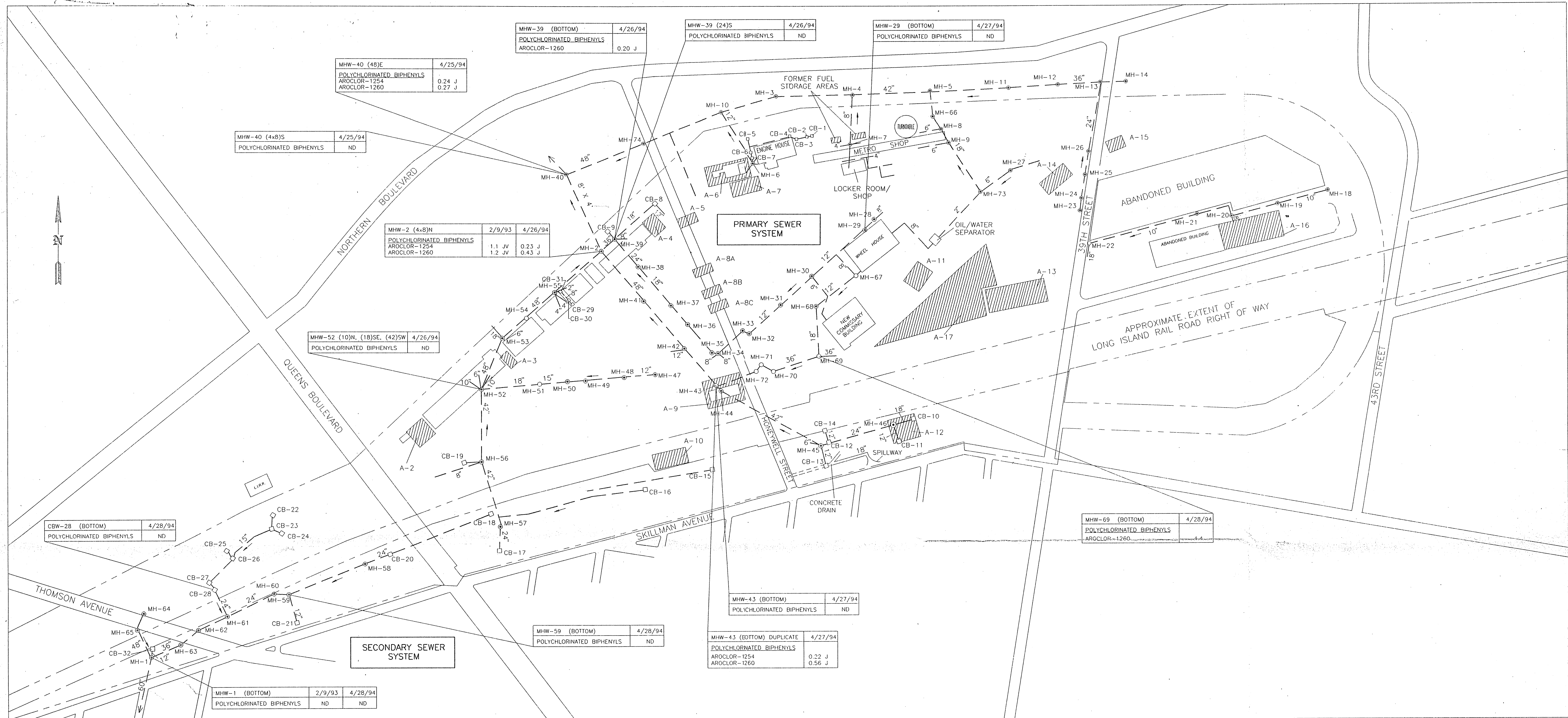
ND - NOT DETECTED

DL - INDICATES SECONDARY DILUTION; SEE TEXT FOR EXPLANATION

CONCENTRATIONS ARE IN MICROGRAMS PER LITER (ug/L) FOR SEWER-WATER SAMPLES (MHW OR CBW) AND MICROGRAMS PER KILOGRAM (ug/kg) FOR SEWER-SEDIMENT SAMPLES (MHS OR CBS).



Title			
AREA 1			
CONCENTRATIONS OF POLYCHLORINATED BIPHENYLS DETECTED IN SEWER WATER AND SEWER SEDIMENT DURING PHASE II REMEDIAL INVESTIGATION			
Prepared For: SUNNYSIDE YARD, QUEENS, NEW YORK			
ROUX	Compiled by: H.G.	Date: 12/94	PLATE
ROUX ASSOCIATES INC	Prepared by: G.M.	Scale: SHOWN	24
Environmental Consulting & Management	Project Mgr: J.D.D.	Revision:	
	File No: AM526C20	Project: 05526/45Y	

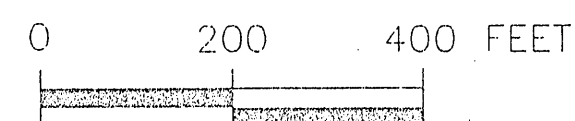


DIAMETER OF PIPE (IN INCHES)		LOCATION OF PIPE ENTERING MANHOLE (EAST)		SAMPLING DATE	
MANHOLE SAMPLE DESIGNATION					
MHW-40 (48)E		4/25/94			
POLYCHLORINATED BIPHENYLS					
AROCLOR-1254		0.24 J			
AROCLOR-1260		0.27 J			

NOTES: FOR EXPLANATION OF DATA QUALIFIERS REFER TO TABLE 22.
ND - NOT DETECTED
CONCENTRATIONS ARE IN MICROGRAMS PER LITER (ug/L)

- EXPLANATION
- > DIRECTION OF SEWER FLOW
 - 12" ○ APPROXIMATE LOCATION AND DIAMETER OF SEWER
 - MH-1 ○ SOLID COVER MANHOLE LOCATION AND DESIGNATION
 - MH-22 ○ GRATE COVER MANHOLE LOCATION AND DESIGNATION
 - CB-1 □ GRATE COVER CATCH BASIN LOCATION AND DESIGNATION
 - A-2 ▨ LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN
 - - - - - APPROXIMATE PROPERTY BOUNDARY

NOTE: LOCATIONS AND DIAMETERS OF SEWER COMPONENTS BASED UPON A REVIEW OF ATRAK SUPPLIED ENGINEERING DIAGRAMS AND LIMITED FIELD SURVEY.



Title:			
CONCENTRATIONS OF POLYCHLORINATED BIPHENYLS DETECTED IN SEWER WATER DURING PHASE II REMEDIAL INVESTIGATION			
Prepared For:			
SUNNYSIDE YARD, QUEENS, NEW YORK			
ROUX ASSOCIATES INC. Environmental Consulting & Management			
Compiled by: J.Y.	Date: 12/94	Scale: SHOWN	PLATE
Prepared by: J.R.	Project Mgr: J.D.D.	Revision: 0	25
File No: 05526007	Project: 05526/45		

