CH-1153 REV. 9-80

DUPONT

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E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
NIAGARA FALLS, N.Y. 14302

CHEMICALS AND PIGMENTS DEPARTMENT

January 8, 1986

Mr. Paul D. Eismann
Alternate Regional Permit Administrator
New York State Department of
Environmental Conservation - Region 9
600 Delaware Avenue
Buffalo, New York 14202-1073

Dear Mr. Eismann:

DU PONT/OLIN NIACHLOR PROJECT
GILL CREEK BRIDGE PERMIT APPLICATION

Please find enclosed Exhibits A and B that were inadvertently left off your copy of the December 19 subject letter to the U.S. Army Corps of Engineers. Also, as we discussed yesterday, the hydraulic flow study covering the construction period is nearing completion. Calculations are being conducted, as you requested in an earlier letter, to evaluate the 100-year flood flow rate case for the bridge construction sequence. During construction the coffer dams will present a temporary restriction of greater significance than the permanent bridges. This work is progressing on a priority basis.

Very truly yours,

T. B. Scarfe

T. B. Scarfe
Senior Engineer
NIACHLOR Task Force

TBS:maa
ATTACH.
0226v

cc: R. N. Knowles
E. I. du Pont de Nemours & Co.
P.O. Box 787
Niagara Falls, New York 14302

R. K. Diamond
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City of Niagara Falls
Waste Water Treatment Plant
1200 Buffalo Avenue
Niagara Falls, New York 14302

D. Brooks*
Office of Environmental Planning
City Hall
745 Main Street
Niagara Falls, New York 14302

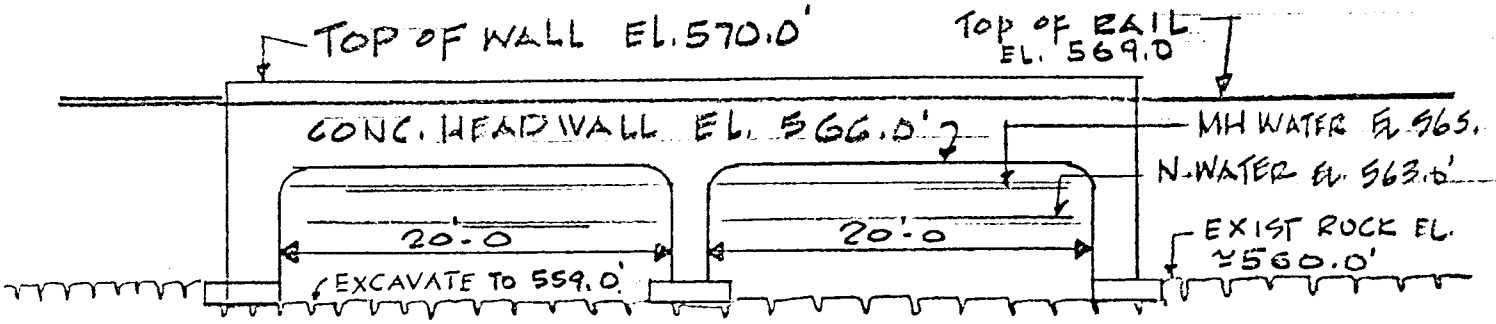
J. Kehoe/D. Devald*
Niagara County Health Department
10th and East Falls Street
Niagara Falls, New York 14302

*Exhibits A and B enclosed with letter

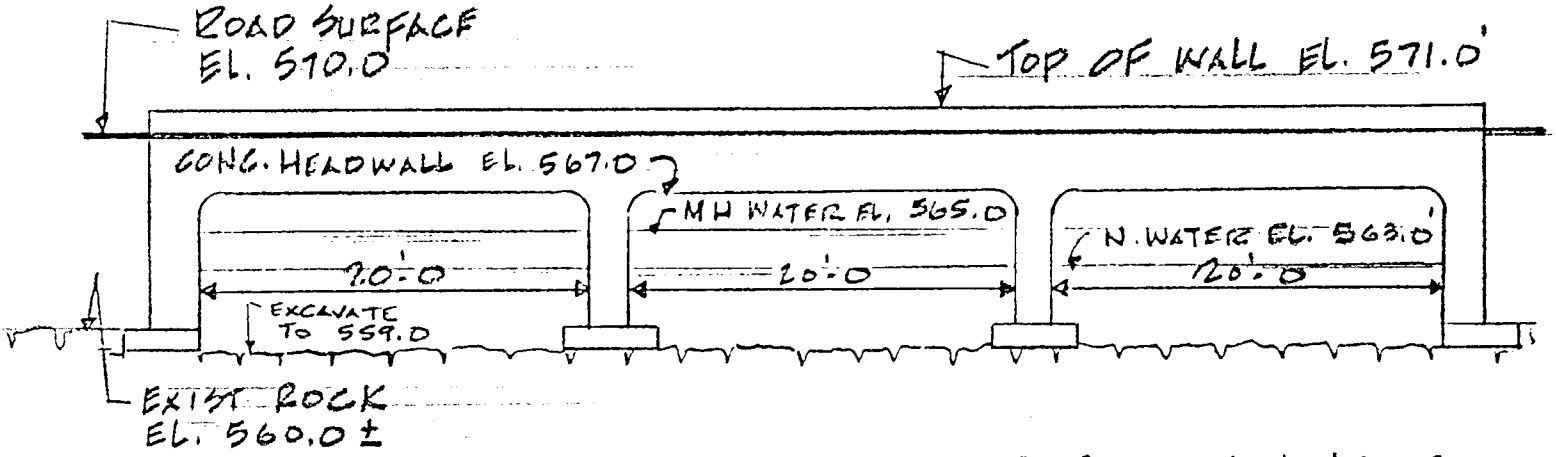
EXHIBIT A

DU PONT NIAGARA SITE MAP AND

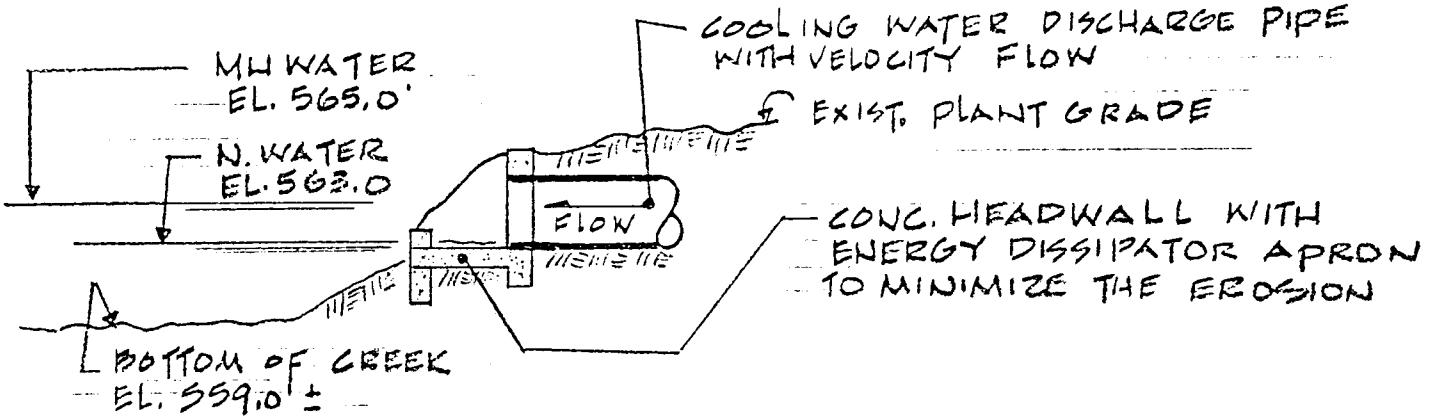
UPDATED FIGURES FOR PERMIT APPLICATION



LONGITUDINAL SECTION OF R.R. CULVERT



LONGITUDINAL SECTION OF ROAD CULVERT



SECTION OF COOLING WATER DISCH. PIPE

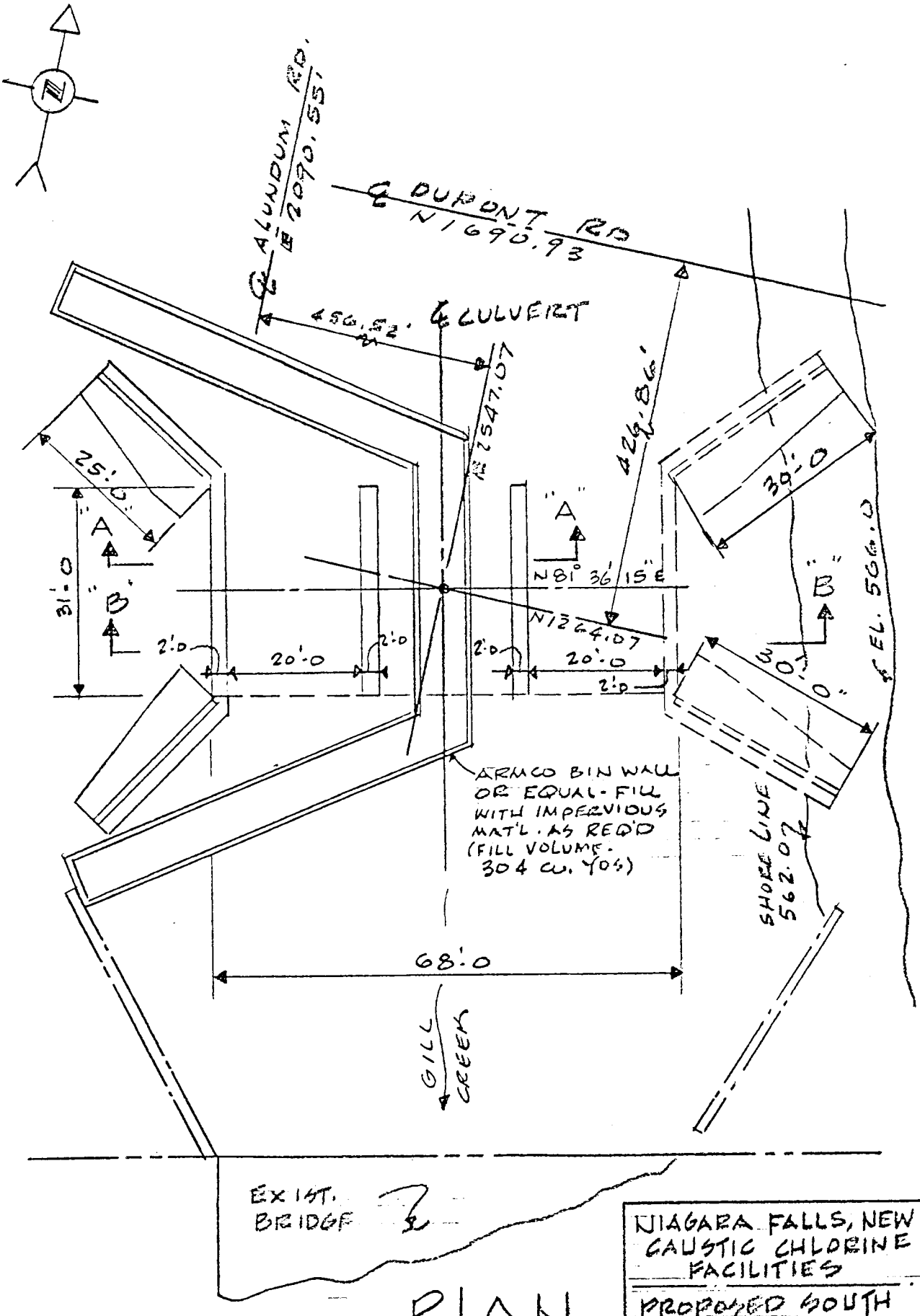
NOTES:

1. DATUM N.G.V.D. OF 1929
2. THE PROPOSED CULVERTS OPN. ARE EQUAL OR LARGER THAN THE EXISTING.
3. THE HIGHEST ELEVATION OF FLOOD RECORDED IS 566.7' ON U.S.C.&G.S. DATUM

PROPOSED CULVERTS FOR RAILROAD AND ROAD

PROPOSED COOLING WATER DISCHARGE AT GILL CREEK NIAGARA FALLS, NEW YORK

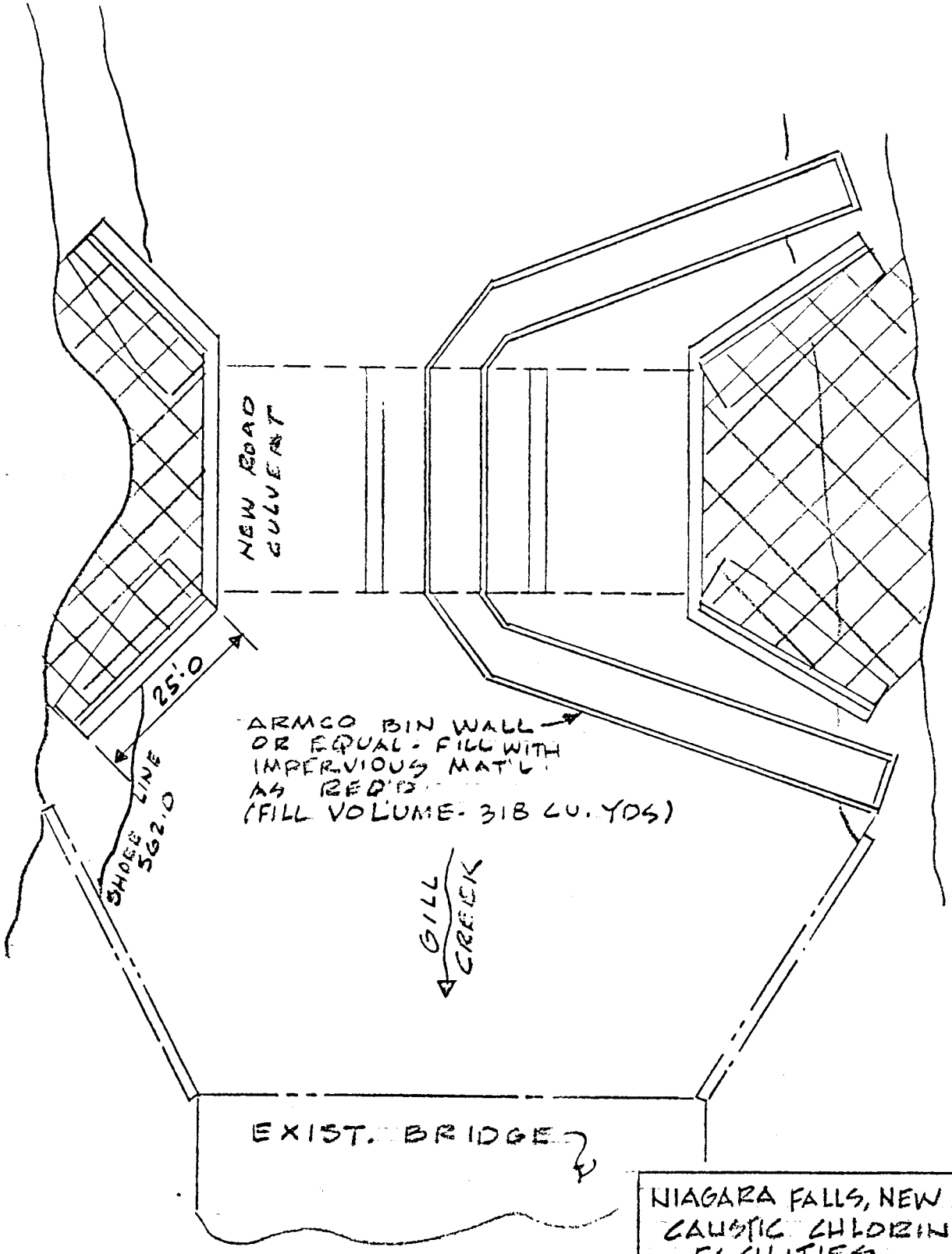
SHEET 2 OF 2



PLAN

NIAGARA FALLS, NEW YORK
CAUSTIC CHLORINE FACILITIES

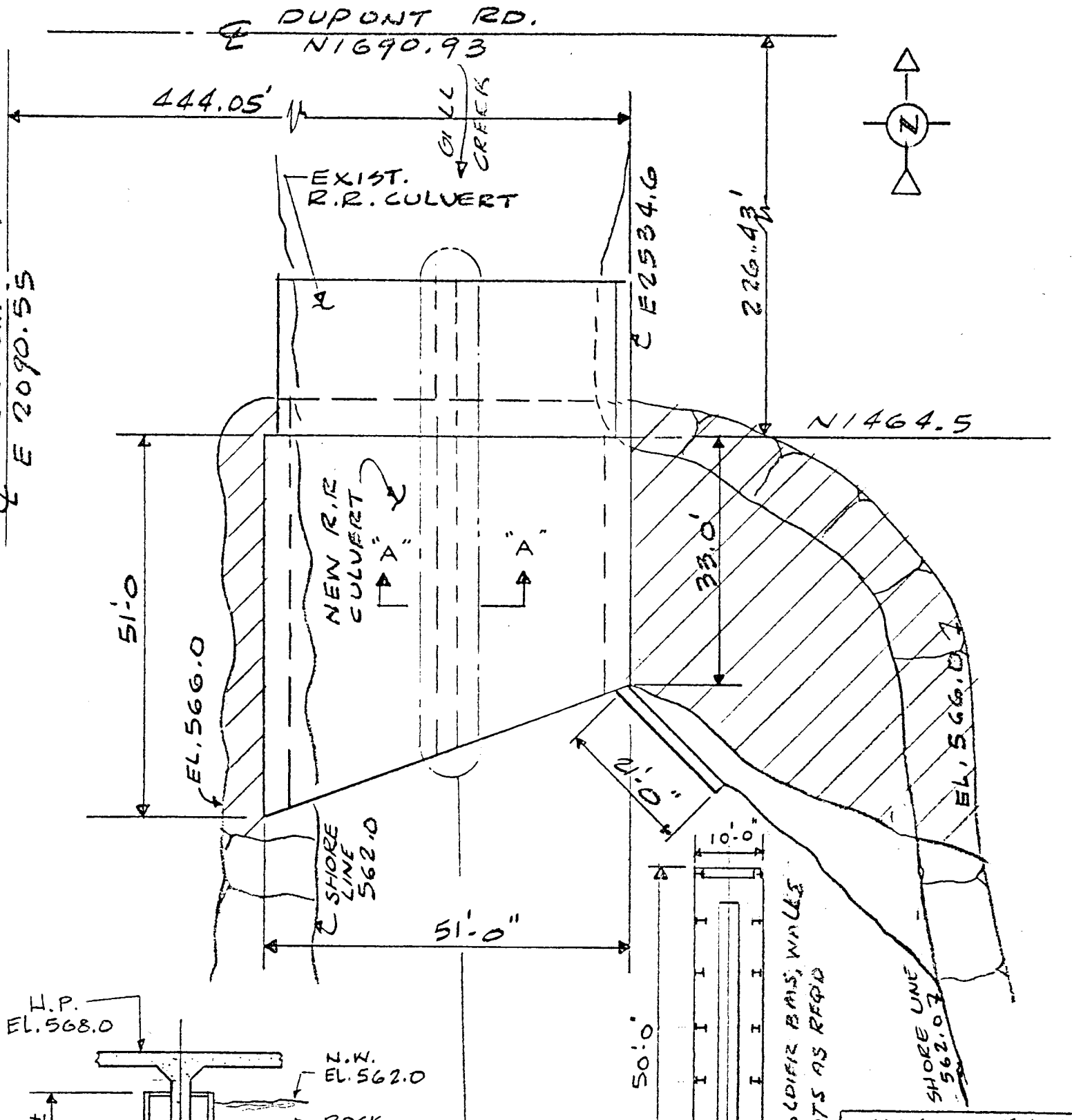
PROPOSED SOUTH PERIMETER ROAD CULVERT CONSTRUCTION SEQUENCE



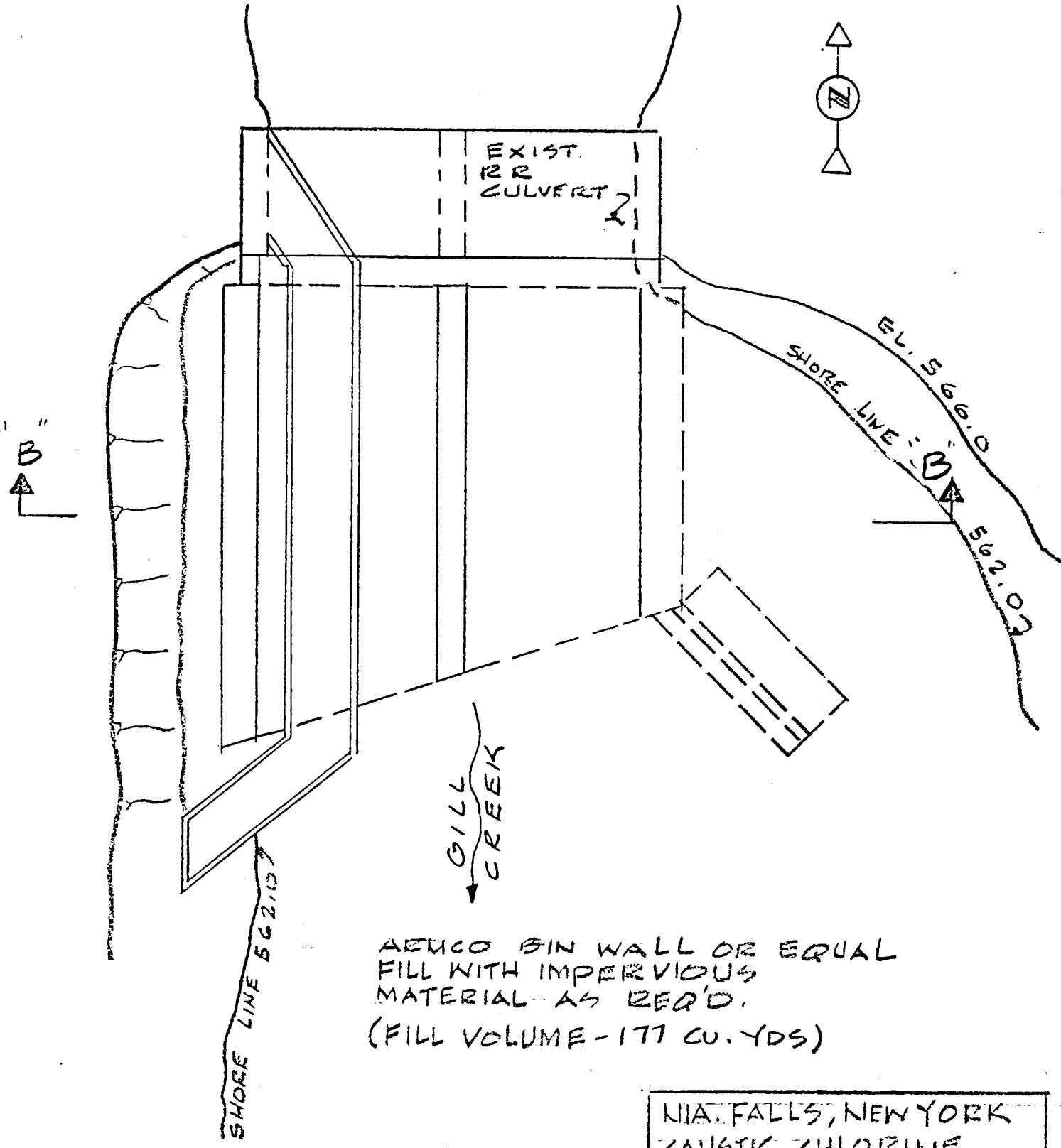
PLAN

NIAGARA FALLS, NEW YORK
CAUSTIC CHLORINE FACILITIES

PROPOSED SOUTH PERIMETER ROAD CULVERT CONSTRUCTION SEQUENCE

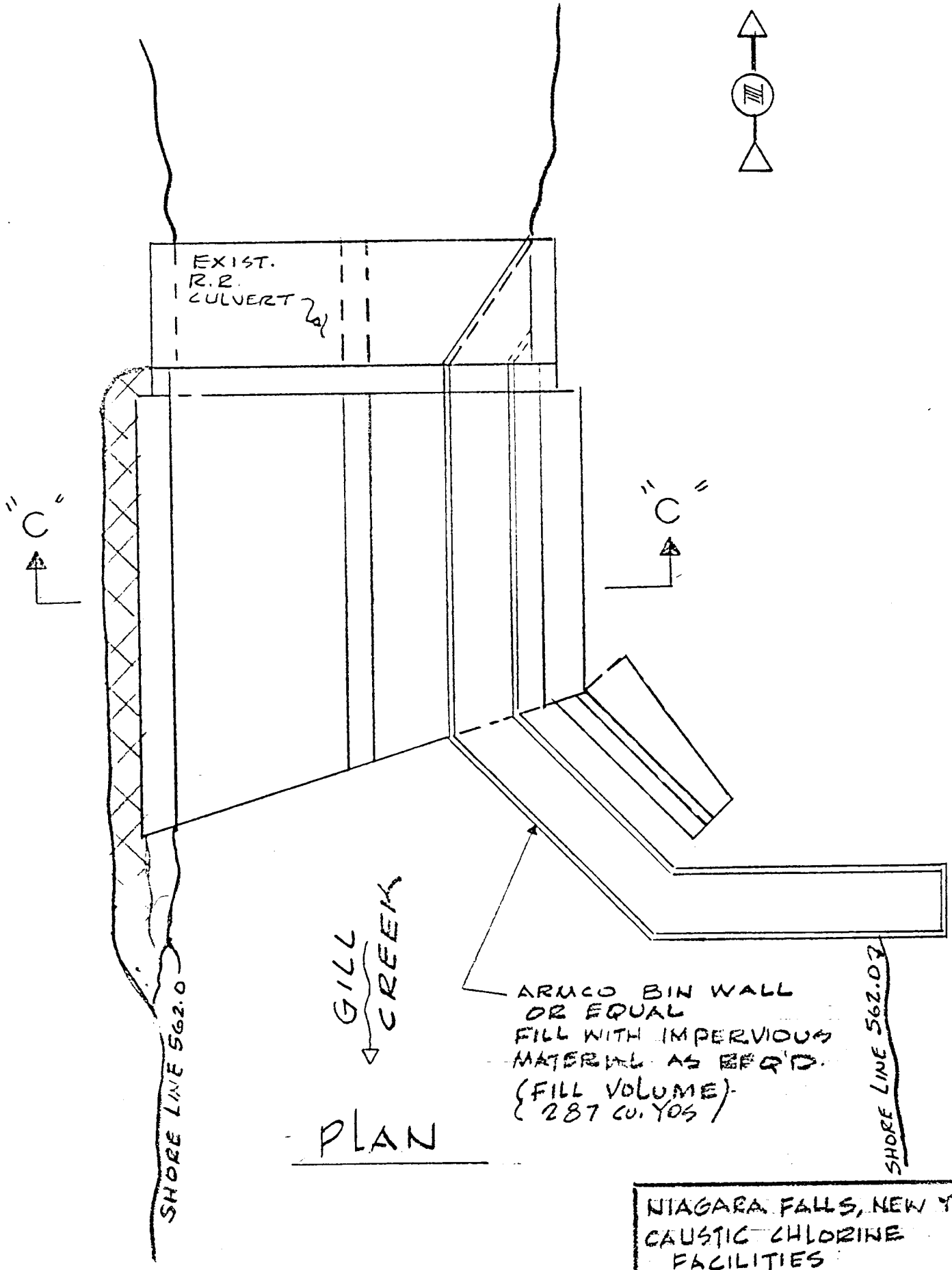


NIAGARA FALLS
NEW YORK STATE
CAUSTIC-CHLORINE
FACILITIES
PROPOSED
R.R. CULVERT
CONST. SEQUENCE



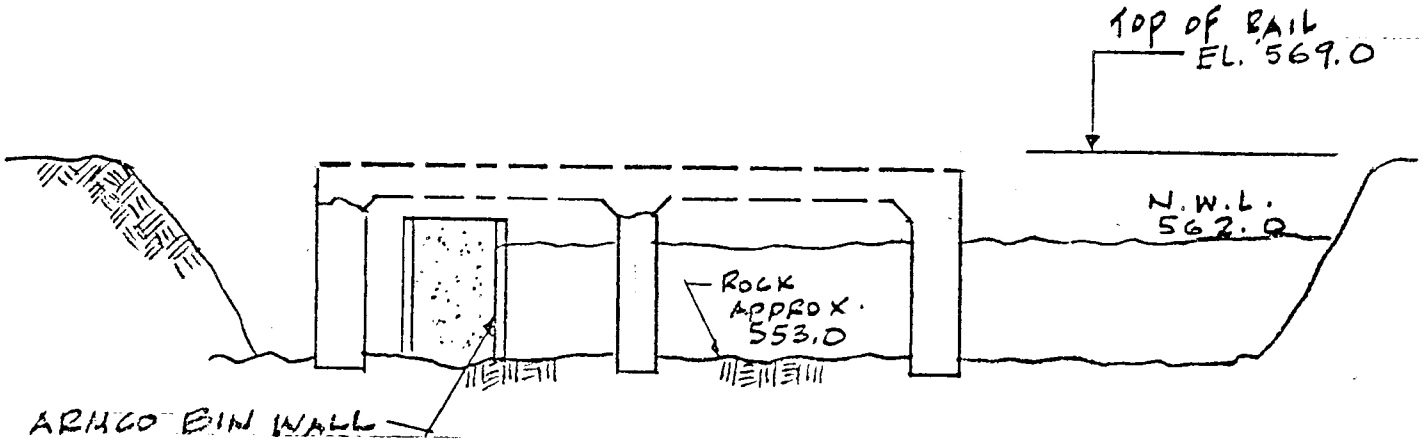
AEMCO BIN WALL OR EQUAL
FILL WITH IMPERVIOUS
MATERIAL AS REQ'D.
(FILL VOLUME - 177 CU. YDS)

NIA. FALLS, NEW YORK
CAUSTIC CHLORINE
FACILITIES
PROPOSED R.R.
CULVERT
CONSTRUCTION SEQUENCE

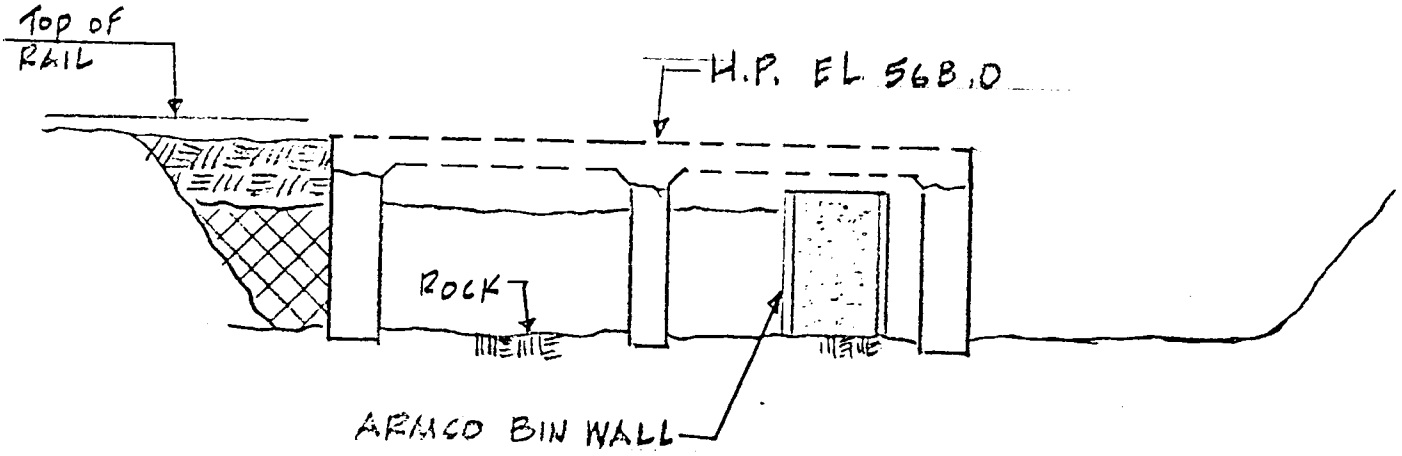


PLAN

NIAGARA FALLS, NEW YORK
CAUSTIC CHLORINE
FACILITIES
PROPOSED R.R. CULVERT
CONSTRUCTION SEQUENCE



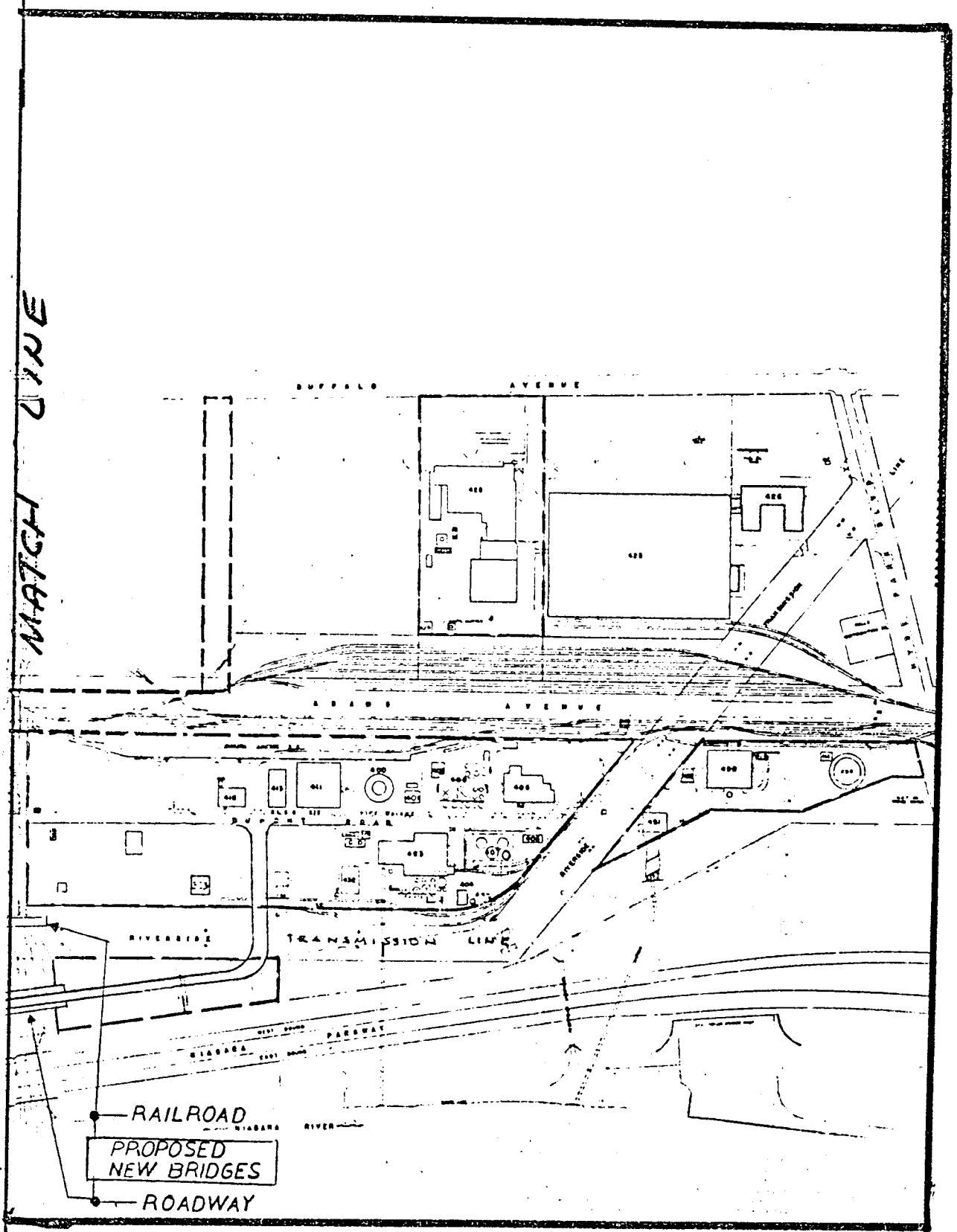
SECTION "B-B"



SECTION "C-C"

NIAGARA FALLS, NEW YORK
CAUSTIC CHLORINE FACILITIES

PROPOSED R.R. CULVERT CONSTRUCTION SEQUENCE


BUFFALO AVENUE
ADAMS AVENUE
TRANSMISSION LINES
RAILROAD
PROPOSED NEW BRIDGES
ROADWAY

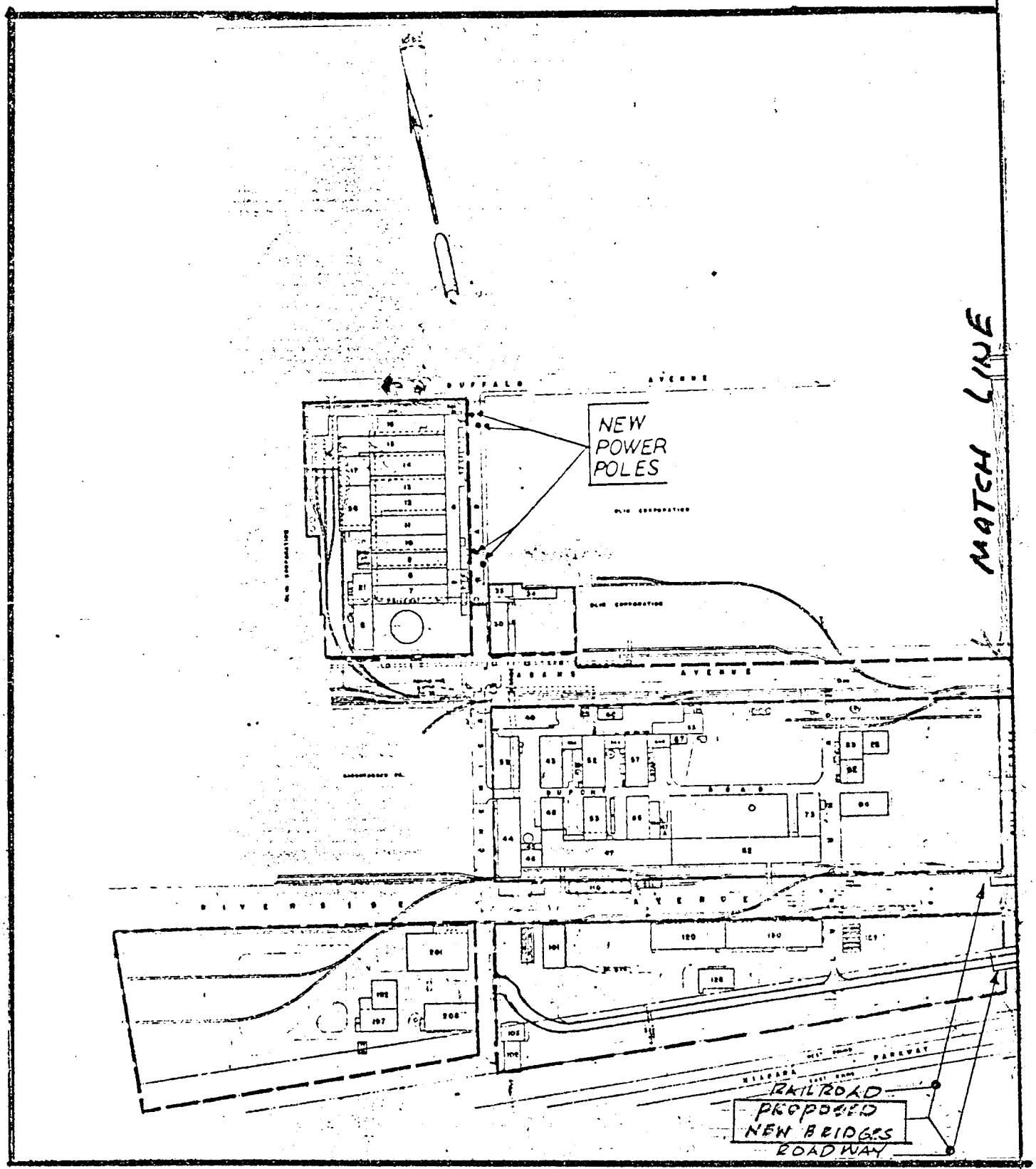

MATCH LINE
NEW POWER POLES
RAILROAD
PROPOSED NEW BRIDGES
ROADWAY

EXHIBIT B

CHEMICAL CHARACTERIZATION OF EXCAVATED MATERIAL

Soil to be excavated for the NIACHLOR project is being characterized for chemical contamination to determine disposition of excess excavated material (secure or sanitary landfill) and handling procedures. Soil for construction of Gill Creek bridges has been evaluated. Sample locations are shown in Figure 1.

Each of the samples from locations 8, 9, 17 and 19 were analyzed in accordance with the analytical schedule presented in Table 1. These samples were collected in November 1984. Based on plant wide results more limited testing was conducted in certain areas and this includes sample locations 134 and 118 on the east side of Gill Creek. The results for all positive (ie, greater than the limit of detection) analyses are presented in Tables 2 through 7. The area east of Gill Creek will be discussed separately. The locations of samples are shown in Sketch 1.

TABLE I

CHEMICAL PARAMETERS
NIACHLOR SOIL SAMPLING

Metals

Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver

Total Halogenated Organics (THO) Scan

THO

Pesticides-Benzene Hexachloride (BHC)

BHC (Alpha)
BHC (Beta)
BHC (Delta)
BHC (Gamma)

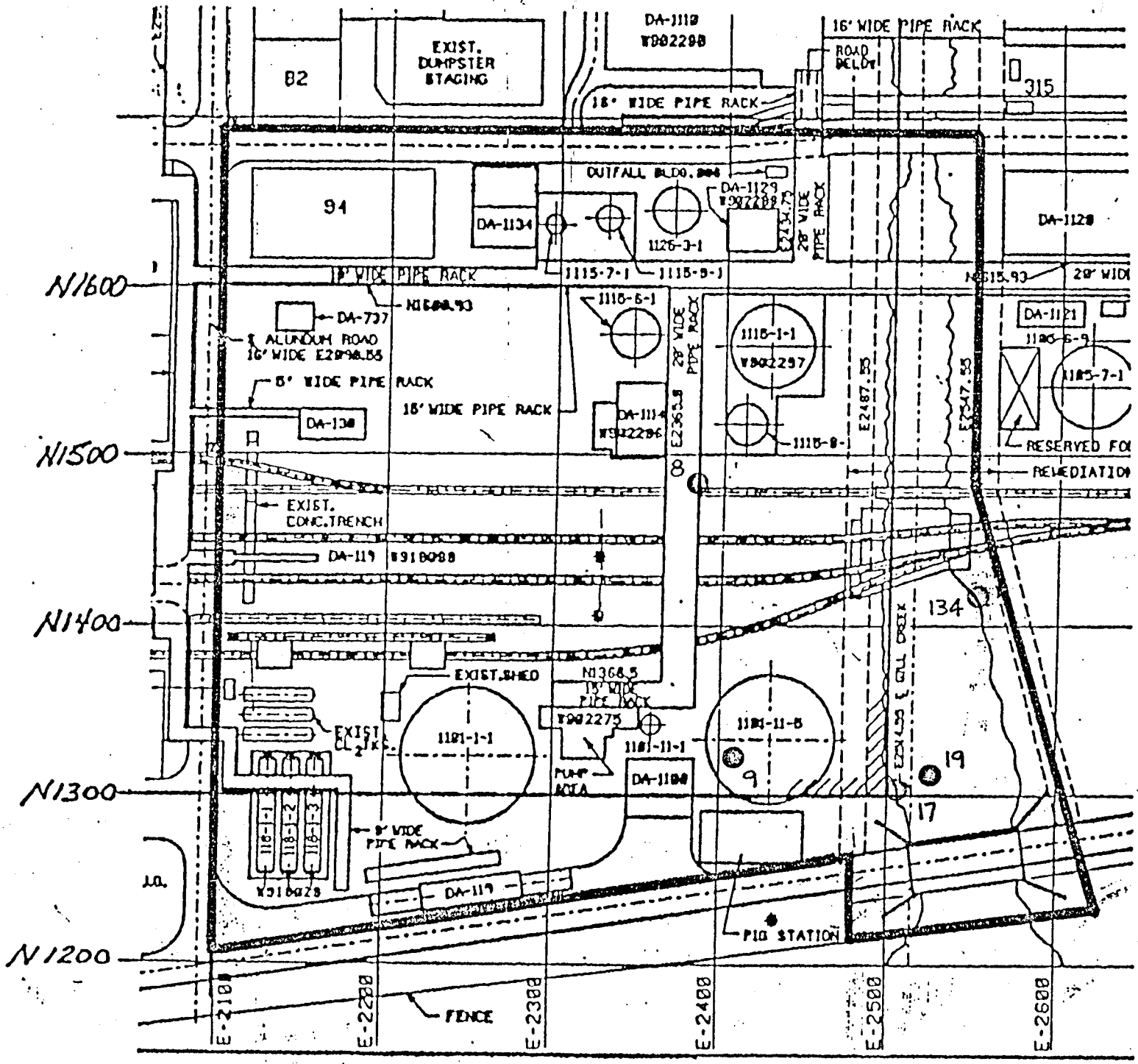
Polychlorinated Biphenyl (PCB)

PCB-1242
PCB-1248
PCB-1254

Cyanide & Sulfide Reactivity

Volatile Organics

Benzene
Toluene
Ethylbenzene
Chlorobenzene
Chloromethane
Bromomethane
Dichlorodifluoromethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Trichlorofluoromethane
1,1-Dichloroethylene
1,1-Dichloroethane
Trans-1,2-Dichloroethylene
Chloroform
1,2-Dichloroethane
1,1,1-Trichloroethane
Carbon Tetrachloride
Bromodichloromethane
1,2-Dichloropropane
Trans-1,3-Dichloropropene
Trichloroethylene
CIS-1,3-Dichloroporpene
1-Chloro Ethyl Vinyl Ether
1,1,2-Trichloroethane
Dibromochloromethane
Bromoform
Tetrachloroethylene
1,1,2,2-Tetrachloroethane
Dichlorobenzenes (all isomers)



SKETCH Nº 1
AREA 4 BOUNDARIES

Volatile Organic Compounds

Trichloroethylene, tetrachloroethylene and 1,1,2,2-tetrachloroethane were consistently detected at Locations 8, 9, and 17. Trichloroethylene concentrations in the shallow samples ranged from 8.8-210 mg/kg; tetrachloroethylene concentrations from 69-220 mg/kg; and 1,1,2,2-tetrachloroethane concentrations from 3-76 mg/kg. Traces of benzene were indicated at location 17.

Analysis of the river sediment sample indicated the presence of 25 mg/kg of carbon tetrachloride, 1.9 mg/kg of trichloroethylene, and 4.2 mg/kg of tetrachloroethylene. While concentrations of tri- and tetrachloroethylene were found in samples adjacent to the creek.

RCRA Metals

Five samples were analyzed for the eight RCRA metals by the extraction procedure. The extract concentration was below the hazardous waste criteria in all cases.

PCBs

Samples were analyzed for the presence of Arochlors 1242, 1248 and 1254. PCBs were detected only in the sediment sample from Location 19. Arochlor 1248 was found at Location 19 at a concentration of 14 mg/kg, which is below both the New York State and U.S. EPA criteria for PCB waste disposal.

Isomers of Benzene Hexachloride (BHC)

Soil samples were analyzed for the four isomers of BHC. The samples from Locations 8, 9, 17, and 19 were analyzed using EPA Procedure 608 and represent whole soil concentrations. Total BHC isomer concentrations at these locations ranged from below detectable to 0.126 mg/kg. The latter concentration corresponds to a maximum EP Tox extract concentration of 0.010 to 0.015 mg/l -- well below the Soil and Ground Water Plan criteria of 0.4 mg/l.

Total Chlorination Hydrocarbons

Each sample was analyzed for total chlorinated hydrocarbons (TCH) using Procedure 310-17. Samples from Locations 8, 9, 17, and 19 contained substantial TCH, in rough agreement with the total volatile content of the samples.

Cyanide and Cyanide/Sulfide Reactivity

Sampled from locations 8, 9, 17, 19 and 134 were analyzed for cyanide and sulfide reactivity and did not produce a positive response.

RCRA Hazardous Wastes

The analytical results described previously were compared to the New York State criteria for hazardous wastes. None of these criteria were exceeded. Therefore, excavated soil from the east or west side of Gill Creek for bridge construction will not be classified as hazardous waste.

Contaminated Soils

The Niagara Plant "Plan for Management of Soil and Ground Water Resulting from Excavation Work" (The Soil Plan) establishes criteria for classifying soil as "contaminated" and requiring disposal in a secure landfill - when disposed off-site. The Soil Plan establishes criteria for volatile organics, cyanide, BHC isomers, and TCH. The volatile organic criteria was exceeded in samples from Locations 8, 9, 17, and 19. Based on these analyses, all soil to be excavated within the creek bed or west bank exceeds the Soil Plan criteria for volatile organics. Consequently, if disposal of excess soil is required, disposal shall be to a secure landfill.

Analyses of samples from the Gill Creek banks and sediments indicate that the soil in the western bank of the creek and in the bottom sediments will exceed the soil plan criteria for volatile organics. On the other hand, eastern bank material is substantially clean. Therefore, materials excavated from the creek bed or west bank will be accumulated on the west side of Gill Creek prior to disposal or use as fill. Material excavated from the east bank will be accumulated on the east side of Gill Creek prior to disposal or use as fill.

A vehicle/equipment decontamination area will be located on the west side of Gill Creek. Any contaminated soils remaining on the body or tires of vehicles or mobile equipment shall be removed using a brush and/or broom. Entry and exit of all vehicles/equipment will be controlled.

Soil on the East Side of Gill Creek Near Bank

Three samples were collected and analyzed (134S, 34D and 118). The only volatile organic priority pollutant found was .09 ppm 1,2-transdichloroethylene in sample 134D. Neither East Plant organics (2-methylfuran, tetrahydrothiophene, and 1,4-dichlorobutane) nor phenols were found. TCH scan results were below detectable limits. PCB 1248 was analyzed for in two samples (134S and 134D) which was closest to the area where soil contaminated with PCB 1248 was voluntarily removed in 1981. No PCB 1248 was found. Excavation material poses no potential to expose workers or the community to PCB or volatile organic priority pollutants. Excess material not structurally suitable for backfill will be disposed of in a sanitary landfill.

TABLE 2

COMPARISON OF ORGANIC CONTAMINANT TESTING TECHNIQUE

TEST PIT NO.	DEPTH (FT)	OVA JAR HEAD SPACE (PPM)	TCH NYS METHOD 310-17 (PPM)	TOTAL VOLATILE ORGANICS LAB ANALYSIS (PPM)
8	3-4	3	110	470
9	3.5-4.5	60	620	130
17S	2-4	380	330	140
17D	8-10	1000	290	350
19 (Stream Sediment)	N/A*	N/A	150	31
118	.5-4	-**	-	-
134S	3-4	-	-	-
134D	7-8	-	-	.09

* Not applicable

** "-" Below Detectable Limits

7925E (305A)

TABLE 3

METALS ANALYTICAL RESULTS (PPM)

TEST PIT NUMBERS	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
8	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--
17S	--	--	--	--	--	--	--	--
17D	--	--	--	--	--	--	--	--
19	--	--	--	--	--	--	--	--
Stream Sediment								
118	NA	NA	NA	NA	NA	NA	NA	NA
134S	NA	NA	NA	NA	NA	NA	NA	NA
134D	NA	NA	NA	NA	NA	NA	NA	NA

"--" = Below Detectable Limits

NA = Not Analyzed

TABLE 4

SUMMARY OF POSITIVE RESULTS
VOLATILE ORGANIC ANALYTICAL RESULTS (PPM)

TEST PIT NO.	CARBON TETRA-CHLORIDE	TRI CHLORO-ETHYLENE	TETRA-CHLORO-ETHYLENE	1,1,2,2-TETRA-CHLORO-ETHANE	1,2 TRANS DICHLORO-ETHYLENE	BENZENE
8	--	210	210	50	--	--
9	--	27	69	30	--	--
17S	--	8.8	130	3.0	--	--
17D	--	60	220	76	--	.02
19	25	1.9	4.9	--	--	--
118	--	--	--	--	--	--
134S	--	--	--	--	--	--
134D	--	--	--	--	.09	--

"--" Below Detectable Limits

TABLE 5

EAST PLANT ORGANICS AND PHENOLS (PPM)

TEST PIT NUMBER	TCH NYS METHOD 310-17	TOTAL RECOVERABLE PHENOLS	TETRA-HYDRO THIOPHENE	1,4 DICHLORO BUTANE	2 METHYL FURAN
8	110	NR**	NR	NR	NR
9	620	NR	NR	NR	NR
17S	330	NR	NR	NR	NR
17D	290	NR	NR	NR	NR
19	150	NR	NR	NR	NR
Stream Sediment					
118	--*	--	--	--	--
134S	--	--	--	--	--
134D	--	--	--	--	--

* "--" Means Below Detectable Limits

** Not Requested

TABLE 6

NONVOLATILE PRIORITY POLLUTANTS

TEST PIT NUMBER	PPM PCB 1242	PPM PCB 1248	PPM PCB 1254	PPB TOTAL BHC ISOMERS
8	--*	--	--	--
9	--	--	--	.81
17S	--	--	--	126
17D	--	--	--	88
19	--	14	--	17
Stream Sediments				
118	NR**	NR	NR	NR
134S	NR	--	NR	NR
134D	NR	--	NR	NR

* "--" Below Detectable Limits

** NR Not Requested

7925E (305A)

TABLE 7

CYANIDE EVALUATION

TEST PIT NUMBER	TOTAL CYANIDE	SULFIDE AND CYANIDE REACTIVITY
8	NR*	Negative
9	NR	Negative
17S	NR	Negative
17D	NR	Negative
19	NR	Negative
Stream Sediments		
118	NR	NR
134S	--**	Negative
134D	--	Negative

* Not Requested

** "--" Below Detectable Limits