Design Basis Submittal

for

Remedial Design
Site 1 and Site 2, Phase I
Naval Weapons Industrial Reserve Plant (NWIRP)

Bethpage, New York

Northern Division
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0212

April 1995

Halliburton NUS CORPORATION

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049512/P

DESIGN BASIS REPORT
REMEDIAL DESIGN
FOR
SITE 1 AND SITE 2, PHASE I
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Northern Division
Environmental Branch Code 18
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, Pennsylvania 19087-1710

Submitted by:
Halliburton NUS Corporation
993 Old Eagle School Road, Suite 415
Wayne, Pennsylvania 19087-1710

CONTRACT NUMBER N62472-90-D-1298
CONTRACT TASK ORDER 0212

APRIL 1995

PREPARED BY:

MARK P. SPERANZA, P.E.
PROJECT MANAGER
HALLIBURTON NUS CORPORATION
PITTSBURGH, PENNSYLVANIA

APPROVED BY:

JOHN J. TREPANOWSKI, P.E.
PROGRAM MANAGER
HALLIBURTON NUS CORPORATION
WAYNE, PENNSYLVANIA

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1.0 INTRODUCTION

Halliburton NUS Corporation (HNUS) has prepared this Design Basis Report in conjunction with the necessary plan drawings and specifications in response to the unilateral Contract Task Order (CTO) 212, a task order under the Comprehensive Long Term Environmental Action Navy-(CLEAN) contract number N 62472-90-D-1298. The scope of work for this CTO is the preparation of necessary plan drawings and specifications to perform the remedial action at the Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York. Halliburton NUS will also provide post-construction award services (PCAs) for the implementation of the remedial action. This Design Basis Report summarizes the information and methodologies used to prepare the plans and specifications.

1.1 SITE BACKGROUND

NWIRP Bethpage is located in Nassau County on Long Island, New York, approximately 30 miles east of New York City. This 108 acre site is bordered on the north, west, and south by the Grumman facilities which covers approximately 605 acres, and, on the east, by a residential neighborhood. The NWIRP is currently listed by NYSDEC as an "inactive hazardous waste site" (#1-30-003B) as is the Northrop Grumman Corporation (#1-30-300A) and the Hooker/RUCO site (#1-30-004) located less than 1/2 mile west of the NWIRP Bethpage.

The NWIRP was established in 1933 and is still active. Since its inception, the primary mission for the facility has been the research prototyping, testing, design engineering, fabrication, and primary assembly of military aircraft.

The facilities at NWIRP include four plants (Nos. 3, 5, and 20, used for assembly and prototype testing; and No. 10, which contains a group of quality control laboratories), two warehouse complexes (north and south), a salvage storage area, water recharge basins, an industrial wastewater treatment plant and several smaller support buildings.

CTO 212 involves providing design documents for the remediation of Site 1 and Site 2. A brief description of each site is presented below.

SITE 1 - FORMER DRUM MARSHALING AREA - This site is located in the middle third of the NWIRP facility and east of Plant 3. It consists of two concrete drum storage pads (no longer active) and an

abandoned cesspool leach field. In addition, this area has been used as a storage area for various types of equipment and heavy materials, including transformers.

SITE 2 - RECHARGE BASIN AREA - This area is located in the northeast corner of the Navy's property and north of Site 1. It contains three recharge basins which currently receive non-contact cooling water. Historically, these basins also received rinse waters from Grumman operations. Also located on this site are the former sludge drying beds which no longer exist and have been filled in. Sludge from the Plant 02 industrial waste treatment facility was dewatered in these beds before being disposed of off site.

1.2 PREVIOUS INVESTIGATION RESULTS

HNUS conducted the Remedial Investigation, dated May 1992, the Phase 2 Remedial Investigation dated October 1993, subsequent sampling follow-ups in 1993, and the Feasibility Study, dated March 1994, to determine if past industrial practices resulted in adverse impacts to human health or the environment.

The 1992 and 1993 Remedial Investigation Reports and the 1993 Feasibility Study and additional follow-up site sampling determined that PCBs were present at Site 1 and Site 2 above Toxic Substance Control Act (TSCA) action levels. Additionally it was determined that arsenic contamination at Site 1 exists at concentrations which may potentially exceed the Resource Conservation and Recovery Act (RCRA) (40 CFR 261) concentration for determining a characteristic waste. Attachment A contains an excerpt from the Feasibility Study displaying the areas of contamination.

Based on the RI/FS, Proposed Remedial Action Plan (Ref. 2), HNUS Feasibility Study Report March 1994, and the Record of Decision, the remedial action consists of excavation of contaminated soil and offsite disposal. PCB contaminated soils above 500 parts per million (ppm) will be removed and incinerated at an EPA approved facility. PCB contaminated soils at concentrations between 10 to 500 ppm will be landfilled. All arsenic contaminated soil at concentrations which result in exceedance of the toxicity characteristic criteria (5.0 mg/l) will be excavated, treated, and disposed.

1.3 REPORT OBJECTIVE AND ORGANIZATION

The objective of this report is to describe the issues that were considered during the preparation of the design documents. This design basis report is organized into four sections. Section 1.0 consists of this brief introduction. Section 2.0 describes the scope of work for the remedial action. Section 3.0 lists the design documents and Section 4.0 provides a summary of the design methodologies.

2.0 SCOPE OF WORK FOR THE REMEDIAL ACTION CONTRACTOR

2.1 SCOPE OF WORK

There are several areas of PCB contamination and one area of arsenic contamination that require excavation and disposal at an off site facility. The Remedial Action Contractor (RAC) will perform the following Scope of Work at Sites 1 and 2:

Site 1 Excavation and transportation to an off site facility of approximately 1,100 cubic yards of PCB contaminated soil (10 ppm to 500 ppm).
Excavation and incineration at an off site facility of approximately 300 cubic yards of PCB contaminated soil (greater than 500 ppm).
Excavation and transportation to an off site facility of approximately 600 cubic yards of arsenic contaminated soil (RCRA Characteristic Waste).

Site 2 Removal and transportation to an off site facility of approximately 2,600 cubic yards of PCB contaminated soil (10 ppm to 500 ppm).

The RAC will accomplish the above scope of work via the following procedures:

- Preparation of Planning Documents
- Pre-Investigation
- Site Preparation
- Excavation of Contaminated Soils
- Disposal of contaminated soil
- Site Restoration
- Permits

The above tasks are discussed in the following sections.

2.2 PLANNING DOCUMENTS

The RAC will prepare and submit for acceptance all required project planning documents and as a minimum include the following:

2.2.1 Work Plan

The contractor will prepare a work plan which includes a project description, project objectives, construction schedule, and construction procedures.

2.2.2 Quality Control Plan

The contractor will prepare a Quality Control Plan, which details procedures to be used and personnel responsible for the maintenance of project quality, documentation procedures, a list of subcontracts and a list of definable features of the work. This document will be used to maintain quality, in accordance with the specifications , throughout the duration of the remedial action.

2.2.3 Health And Safety Plan

The RAC will prepare a Heath and Safety Plan in accordance with the applicable local, state, and federal regulations and standard which include, but are not limited to , 29 CFR 1910 (Occupational Safety and Health Standards)/ 298 CFR 1926 (Safety and Health Regulations for construction), COE EM-385-1-1 (Corps of Engineers 1992 Safety and Health Requirements Manual), and NIOSH 85-115 (1985 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities).

2.2.4 Sampling and Analysis Plan

The RAC will prepare a sampling and analysis plan in order to determine the limits of the contamination of Site 1 and Site 2. The sampling and analysis plan will also include a quality assurance plan.

2.2.5 Pre-Investigation Report

The RAC will prepare a report which summarizes the results of the pre-investigation. This report will provide data summary tables, data interpretation, and conclusions. As part of the interpretation/conclusions, the RAC will determine revised remediation volumes.

2.2.6 Disposal Plan

The RAC will prepare a listing of disposal facilities which will receive the waste. The plan will describe the methods for handling and transporting the waste to the disposal facilities.

2.2.7 Environmental Protection Plan

The contractor will prepare an environmental protection plan. This plan will describe the necessary procedures that will be utilized to protect the environment.

2.3 PRE-INVESTIGATION

As per the sampling and analysis plan the RAC will conduct additional sampling at Site 1 and Site 2. Because the current remediation volumes are based on minimal data, further sampling is warranted to further refine the limits of contamination.

The purpose of the sampling at Site 1 will be to refine the volume of PCB contamination at the three areas determined to require remediation. Additionally, it is necessary to distinguish the quantity of soil contaminated with PCBs at concentrations greater than 500 ppm. Also, sampling and analysis is necessary to determine the quantity of soil that has arsenic at concentrations that result in the soil being classified as a RCRA characteristic waste.

The purpose of the sampling at Site 2 will be to refine the volume of PCB contamination that has been determined to require remediation.

2.4 SITE PREPARATION

Prior to the start of excavation activities, the RAC will mobilize his equipment and any required office trailers and support utilities to a location at the direction of the Navy. The RAC will initiate an Erosion and Sedimentation Control measures to minimize the runoff of any contaminated storm water. The RAC will initiate the construction of a soil collection staging area to collect the contaminated soil in one location for loading onto vehicles for transport to the appropriate disposal facility. The RAC will construct a decontamination area adjacent to the staging area for the purpose of removing site contaminants from the hauling vehicles prior to exiting the work area and entry onto public roadways. The RAC will secure the area through the installation of fencing, gates, locks etc. to protect the site from intrusion by the public.

2.5 EXCAVATION OF CONTAMINATED SOILS

The RAC will begin excavation activities upon completion of the mobilization activities, verification of the contamination limits and approval of the above mentioned activities plan.

The RAC will excavate the PCB contaminated soil in two separate operations to separate the soils into the two PCB action levels (i.e., greater than 500 ppm and between 10 ppm and 500 ppm). The arsenic contaminated soil will be excavated in a separate operation. The RAC will be directed to perform the excavation in order to minimize migration of fugitive dust from the site to the surrounding area. The RAC will be required to conduct an air monitoring program to verify that fugitive dust emissions remain within acceptable levels. Upon completion of the excavation, verification samples will be taken by HNUS in order to determine the effectiveness of the removal operations.

2.6 DISPOSAL OF CONTAMINATED SOILS

The contaminated soils will be transported to EPA approved off site disposal facilities for the following disposal/treatment:

Item	Action	Statute
PCB's greater than 500 ppm	Incineration -	40 CFR 761
PCB's greater than 10 ppm less than 500 ppm	Landfill -	40 CFR 176
Arsenic	Landfill -	40 CFR 262 - Federal
		6 NYCFR 372 - New York State

2.7 SITE RESTORATION

The site is currently covered by soil, aggregate and a mixture of aggregate, soil and debris. The excavated and disturbed areas will be restored to like conditions. Topsoil seed and mulch will not be installed.

2.8 PERMITS

The required permits for this work are discussed under a separate document. The requirement for an approved Erosion and Sedimentation Control Plan are not required as the area of disturbance is under 5 acres in accordance with promulgated rules of the State of New York.

TABLE 3-1

PROJECT DOCUMENTATION CHECKLIST, SITE 1 AND SITE 2

BETHPAGE, NEW YORK

Activity	Type of Permit/License/ Certification	Issuing Agency	Applicability	Reason
Hazardous Waste Generation	EPA Identification Number	State	Applicable	The generator site must obtain an EPA identification number prior to handling or transporting any TSCA or hazardous waste.
Waste Transport (PCB-contaminated waste)	Form 8700-22	EPA or State	Applicable	Offsite transport of PCB-contaminated soil is regulated under 40 CFR 761 and 6 NY CRR 371.
Waste Transport (Arsenic-contaminated waste)	Form 8700-22	State	Applicable	Offsite transport of arsenic-contaminated soil is regulated under 6 NY CRR 372.
Disposal of PCB- and arsenic-contaminated soil	Notification of Authorization of Disposal Certificationof Disposal	State	Applicable	Disposal of PCB- and arsenic-contaminated soil is regulated by 40 CFR 761 and 6 NY CRR 372.

3.0 DESIGN DOCUMENTS

The work described in Section 2.0 will be performed in accordance with the design package as approved by the Navy. The following is a listing of specifications and design drawings:

Specifications

Division 1 General Requirements

01010 General Paragraphs

Division 2 Site Work

02076 Removal and disposal of Polychlorinated Biphenyls

02095 Removal and Disposal of Arsenic Contaminated Soil

02220 General Excavation, Filling and Backfilling

Drawings

Sheet 1 Title Sheet

Sheet 2 Remedial Design - Sites 1 and 2 - Site Plan

Sheet 3 Existing Underground Utilities

Sheet 4 Construction Details and Erosion and Sedimentation Control Notes

4.0 DESIGN CALCULATIONS AND METHODOLOGY

This section discusses methodologies used to prepare the design documents.

4.1 LOCATION

The soil, ground water and surface sample locations identified in the Feasibility and Remedial Investigation Studies performed by HNUS were surveyed by a Professional Land Surveyor. The survey information was used to locate the sample points and prepare a site drawing for the project. The points are tied to an artificial coordinate system and two fixed monitoring well point coordinates established by the surveyor. The monitoring wells are numbered HN 27I 1 and HN 29S. The 1966 Grumman Quadrangle as-builts were used for the location of the background facilities shown on the plan sheets.

4.2 CONTAMINATION EXCAVATION LIMITS

The points of contamination were evaluated during the design by level of contamination and by proximity to each other. The limits of the action levels (greater than 500 ppm, greater than 10 less than 500 ppm) were estimated in order to establish soil volumes. Attachment B provides the calculations of the estimated soil volumes for each contaminant action level.

4.3 STAGING AREA

The staging area was located to accommodate the excavation and loading sequencing assumed to be used by the contractor. The excavation production was estimated to be greater than the removal and hauling production by a factor of two, therefore the staging area was sized to store more soil than may be deposited in one day. The staging area is designed to contain a 25 year 24 hour storm event per 40 CFR 264.251. The staging area will be pumped by the RAC and the runoff water will be disposed of in the on-site waste water treatment plant. Attachment C provides the calculation of the 25 year storm and the sizing of the staging area.

4.4 CONSTRUCTION COST ESTIMATE

A construction cost estimate is included under a separate report.

REFERENCES

HNUS (Halliburton NUS) 1992. Remedial Investigation Report, Comprehensive Long Term Environmental Action navy (CLEAN) Contract. Naval Weapons Industrial Reserve Plan (NWIRP), Bethpage, New York Contract N6472-90-D-1298, CTO 0003 May.

HNUS (Halliburton NUS) 1993. Phase 2 Remedial Investigation Report, Comprehensive Long Term Environmental Action Navy (CLEAN) Contract. Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York Contract N6472-90-D-1298, CTO 0089 July.

HNUS (Halliburton NUS) 1994. Feasibility Study Report, Comprehensive Long Term Environmental Action navy (CLEAN) Contract. Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York Contract N6472-90-D-1298, CTO 0089 March.

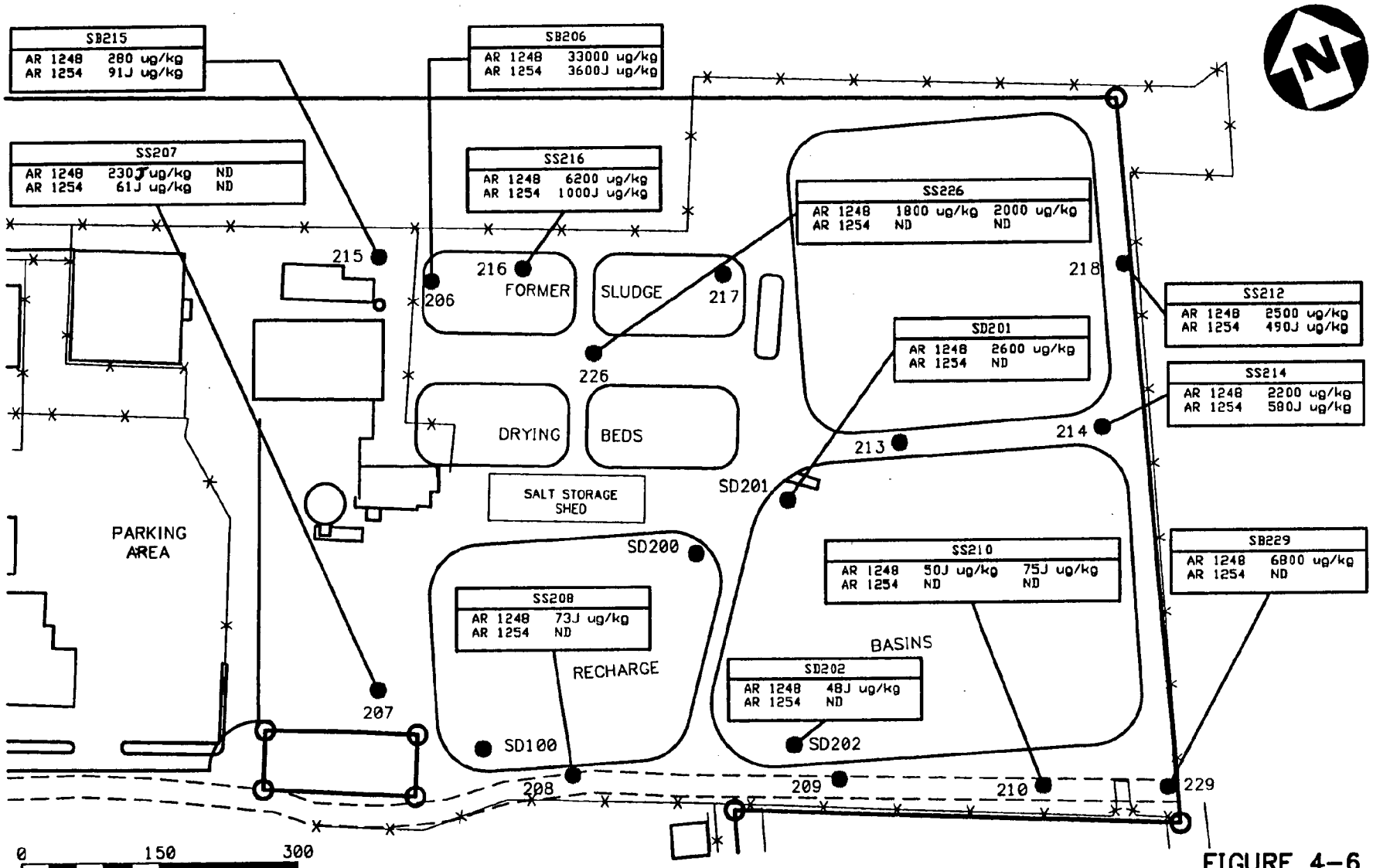
ATTACHMENT A

CONTAMINATION AREAS

ATTACHMENT B

SOIL VOLUMES

ACAD: 19[illegible]SITE2.DWG 06/06/93 MJJ



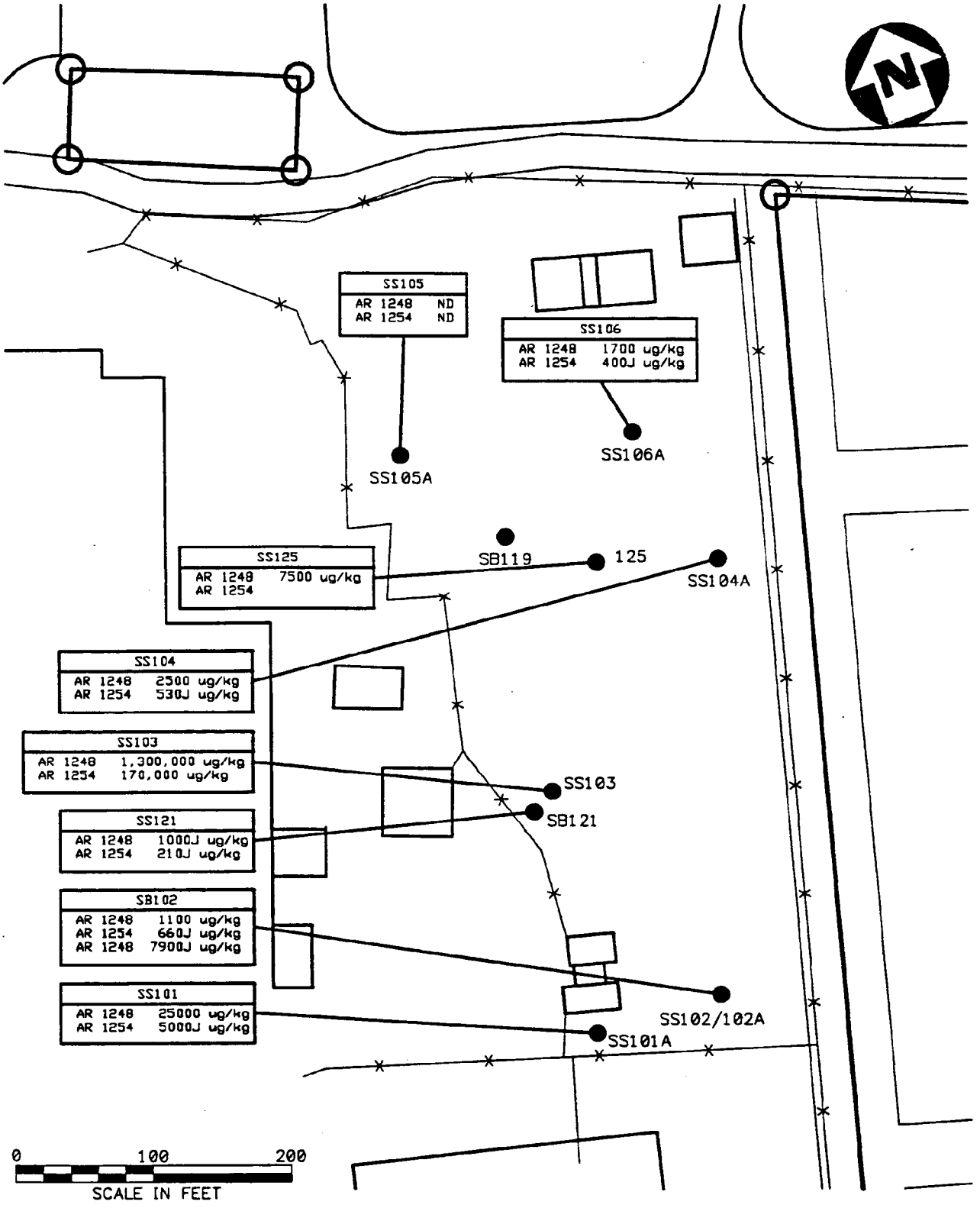
4-15

FIGURE 4-6

SITE 2 - PCB SOIL RESULTS
PHASE 2 - REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NWIRP, BETHPAGE, NY

HALLIBURTON NUS
Environmental Corporation

NYSDEC 055777



ACAD: 1953/SITE1.DWG 06/06/93 MJJ

FIGURE 4-1

SITE 1 - PCB SOIL RESULTS
PHASE 2
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NWIRP, BETHPAGE, NY

HALLIBURTON NUS
Environmental Corporation

CALCULATION WORKSHEET Order No. 19116 (01-91) PAGE 1 OF 7

CLIENT	JOB NUMBER
USN	5236
SUBJECT: NWIRP BETHPAGE	
BASED ON	DRAWING NUMBER

BY	CHECKED BY	APPROVED BY	DATE
ARB	CRN 4/10/95		6 APR 95

SOIL VOLUMES

SITE 1

ARSENIC 600 CY
PCB > 500 300 CY
PCB < 500 1,100 CY

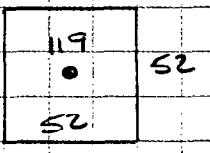
ARSENIC

FROM P4 10F29 SG 119 1-7' DEEP
FS REPORT AVE 6' DEEP (ASSUMPTION)
VOLUME II
MARCH 1994

$$600\ yd^3 \times \frac{27\ FT^3}{yd^3} = 16,200\ FT^3$$

$$16,200\ FT^3 \times \frac{1}{6\ FT} = 2700\ FT^2$$

$$\sqrt{2700} = 52 \text{ FEET SQUARE.}$$



CLIENT	JOB NUMBER		
USN			
SUBJECT	NWIRP SETHPAGE		
BASED ON		DRAWING NUMBER	
BY ARD	CHECKED BY CRN 4/10/95	APPROVED BY	DATE 6APR 95

SOIL VOLUMES (CONT)

SITE 1

PCB POINTS* SS3, SS1, SG121 SS5

FROM PG 27 OF 29 * AS SHOWN ON PAGE OF
FS REPORT
VOLUME II
MARCH 1994

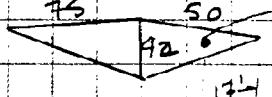
>500 PPM - SS3 - 300 CY

<500 PPM - 121, 1, 5 - 1,100 CY

SEE PLAN DRAWING FOR POINT LOCATION

AREA
SG121, SS3

FIELD MEASURED



AREA =
½bh ½bh
½(42)75 + ½(42)50
1575 + 1050
= 2625 FT²
= 2625' X 2' = 194 CY
27

AREA
SS1

FIELD MEASURED
APPROX 70' X 20'

DIST to SS1 → SS-2
15 ± 140' USE ½

70 X 20
= 1400 FT²
= 1400 X 2 = 104 CY
27

AREA
SS5

1,100 CY
- (A+B)
802 CY

0-2'
AVE 2'
802 X 27 = 21,654 CFT³
21,654 X ½ = 10,827 FT²
√10,827 = 104 FOOT □

CALCULATION WORKSHEET Order No. 19116 (01-91) PAGE 3 OF 7

CLIENT	JOB NUMBER		
USN	5236		
SUBJECT	NWIRP BETHPAGE		
BASED ON		DRAWING NUMBER	
BY ARB	CHECKED BY CRN 4/10/95	APPROVED BY	DATE 7 APR 95

SOIL VOLUMES

SITE 2

PCB

FROM PG. 22 OF 29
IS REPORT
VOLUME II
MARCH 1994

2589 CY → USE 2600 CY

0 - 7' DEPTH

USE AVE 6' DEPTH

$2600\ CY \times \frac{27\ FT^3}{CY} = 70{,}200\ FT^3$

$70{,}200\ FT^3 \times \frac{1}{6\ FT} = 11{,}700\ FT^2$

$\sqrt{11{,}700} = 108'$ USE 110' SQUARE AREA

SAMPLE LOG SHEET

4 of 7

Page ~~8~~ of ~~25~~

HALLIBURTON NUS
Environmental Corporation

VED BY CRN 4/10/95

- [x] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By TR

Project Site Name BETHPAGE Project Site ~~Number~~ 1953

NUS Source No. BP-55105-A Source Location In situ / Drum Pile

Sample Method: S S. TROWEL

Depth Sampled: 0-6"

Sample Date & Time: 12-15-92 0930 Hrs.

Sampled By: TR

Signature(s): Ty Hogal

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [ ] Grab
- [ ] Composite
- [ ] Grab - Composite

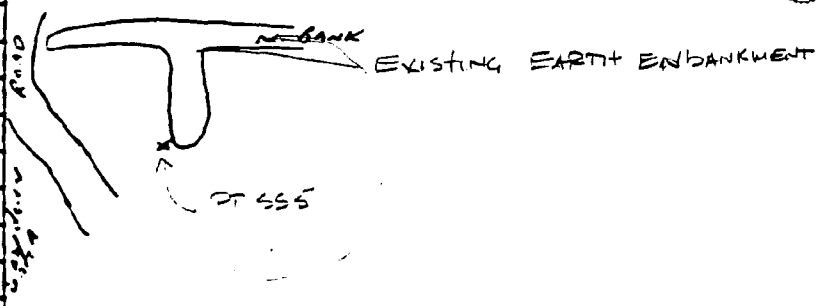
Composite Sample Data		
Sample	Time	Color · Description
	N/A	

Sample Data

Color: Brn - Dark Brn F.11 Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis	✓ If Taken	Preserv:
VOAs		Cool to 4°C
PCBs	X	↓
Metals		
As TCLP		
PEST	X	"

Observations / Notes



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

PAGE INSERTED FOR POINT LOCATION PURPOSES ONLY.

SS1 SS3 SS5 SB11 SB121

SITE 1 - FORMER DRUM MARSHALING AREA

CONDENSED SUMMARY OF ANALYTICAL DATA

	SS100	SS200	SS300	SS400	SS500	SS600	SS2500	SB103	SB104	SB110	SB111	SB112	SB113	SB115	SB119	SB121	SB123
VOLATILES																	
Trichloroethene		1	12,11			6	5								200/ ND	2.2,ND/ND	
Tetrachloroethene			58,44				12	2 / ND	/ 2.2	2 /	ND / 5	3 / 3	25 / 2	2 / 3	4800/12	26,9 / 3	7 / 1
Trans-1,2-dichloroethene															6 / ND		
1,1,1-Trichloroethane															72 / ND		
ORGANIC ACIDS																	
Benzoic Acid		170	99	130	64	120	370						35		140	84,72	
PHTHALATES																	
Bis(2-ethylhexyl) phthalate		80	105	130			72									130,ND	
Butyl benzyl phthalate			120		180	120						16					
Di-n-butyl phthalate																	
PESTICIDES																	
DDT		170,37															
DDE		270,27															
Chlordane		240														6.7	
Endrin																	
PCB's																	
Aroclor 1242					25000											1000	
Aroclor 1248	25000	7900,1100	1300000	2500		1700	7500									210	
Aroclor 1254	5000	ND, 660	170000	530		400											
PAH's																	
Naphthalene						51											
2-Methylnaphthalene			55			160											
Acenaphthene	41	53		51													
Anthracene	43	66		66													
Fluoranthene	740	740	190	1100	260	260	340										
Pyrene	710	830	200	950	240	270	280										
Phenanthrene	400	600	140	700	160	200	210										
Benzo(a)anthracene	430	380	130	550	150	170	190										
Chrysene	420	470	190	580	170	170	200										
Benzo(b)fluoranthene	670	380	250	680	230	270	230										
Benzo(k)fluoranthene	350	460		620	180	240	250										
Benzo(a)pyrene	500	440	190	620	190	200	180										
Indeno(1,2,3-c)pyrene	350	290	110	430	150	190	140										
Dibenzo(a,h)anthracene	150	130															
Benzo(g,h,i)perylene	350	310	130	420	150	190	150										
Fluorene		42		44													
INORGANICS																	
Aluminum	4750	10800	7180	4090	3370	7550	4680	3070		5140	3040	2330	2010	1940	1010	5530,17300	7940
Antimony															9.8		
Arsenic	8.9	18.6	14.9	6.8	3.4	55.8	5.6	1.9		1.8	2	2.7		0.9	3380	1.8,1.5	2
Barium	10.8	44.8	35.8	28.7	16.4	59	20.1	6.2		13.9	6.3	4.1	5.7	5.5	7.9	15,46.5	18
Cadmium								4.5							1.3		
Calcium	243	4490	5580	3660	2870	6190	1960	251		277	77.2	72.5	68.6		291	216,636	212
Chromium	25	18.8	61.1	40.3	20.8	46.8	31.4	5		7.8	5.6	3.2	3.1	2.7	11.7	5.6,16.3	10.7
Cobalt			5			5.3										ND,6.3	
Copper												7.9		3.1		3,8.5	
Iron	7330	14100	15900	7270	7820	15400	9890	4050		7310	8600	4040	3820	3420	2210	11400,14400	6110
Lead								5.5		3.4	1.7	1.7	1.6	1	2.8	2.3,8.5	4.9
Magnesium	544	1740	2970	1790	1450	3100	1210	533		807	341	328	465	291	178	695,2380	1330
Manganese								145		93.6	167	92.7	99.3	60.1	15.1	82.6,101	54.3
Mercury																ND,0.16	
Nickel	6.5	9.1	13.9	9.2	15.8	19.2	10.7									ND,9.4	5.3
Potassium	368	600	550	460	424	648	443	138		276	173	163	120	164		154,596	485
Silver	1.9		0.63	0.38	0.4	0.56	6.3										
Sodium	204	244	692	283	286	419	272	174		175	158	145	214	132	151	153,195	169
Thallium																ND,0.74	
Vanadium	16.5	22.8	39.3	13.7	16.4	27.5	20.1	5.9		11.2	7	6.4	4.3			12.3,21.6	13.6
Zinc								9.3		10.5	8.8		8.9		9.1		17.9
Cyanide						5.4		5.1							13.3		

NOTE: VALUES SHOWN AS PARTS PER billion (PPb)

VED BY CRN 4/10/95

SOIL GAS ANALYSES	SG103	SG104	SG105	SG106	SG110	SG111	SG112	SG113	SG115	SG117	SG119	SG120	SG121	SG122	SG123	SG124
1,1-Dichloroethene	44/192	ND/7.4	187/244	6.1/ND	ND/3.6	125/59	61/85	131/174	20/80	7.4/14	626/165	832/728	568/558	8.6/46	4.9/11	2.7/11
1,1-Dichloroethane	ND/2.7	ND/3.7					ND/1.7		ND/2.4		6.9/3.1	30/18	21/19		ND/3.9	
Cis-1,2-dichloroethene	3.6/1.6								ND/4.4		37/26	48/16	48/50			
1,1,1-Trichloroethane	5.6/18	.31/89	9.9/14	1.6/.22	ND/.11	8.8/6.4	9.4/9.0	8.3/15	9.5/8.8	10/26	70/24	122/107	125/101	6.4/19	39/78	2.4/13
Trichloroethene	13/15	.68/143	7.7/9.7	3.5/1.3		7.8/6.7	3.7/4.9	15/11	14/18	18/40	63/21	68/45	159/96	17/19	56/139	1.2/16
Tetrachloroethene	9.6/11	ND/5.7	19/27	3.5/.13	.65/.78	1.9/3.6	9.4/6.7	12/16	70/ND	14/21	138/70	479/174	765/617	35/77	14/19	4.8/20

SB206

SITE 2 - RECHARGE BASINS

CONDENSED SUMMARY OF ANALYTICAL DATA

	SS700	SS800	SS900	SS1000	SS1100	SS1200	SS1300	SS1400	SS1500	SS1600	SS1700	SS1800	SS2600
VOLATILES													
Trichloroethene													2, ND
Tetrachloroethene													
Chloroform	1												
Toluene			2	6, ND	1					2			5, ND
ORGANIC ACIDS													
4-Methylphenol (p-Cresol)										75			
Benzoic Acid		45	40	110,110				110		61	105	240	420,390
PHTHALATES													
Bis(2-ethylhexyl) phthalate	41			69,75						300		49	65,65
Butyl benzyl phthalate					130		250			890			
Di-n-butyl phthalate													
PESTICIDES													
DDT	620,170			4.4,ND				13					
DDD	6.3,ND												
DDE	130,93												
Heptachlor Epoxide													
Dieldrin								7.2					
PCB's													
Aroclor 1242	ND,74												
Aroclor 1248	230,74	73		75,46		2500		2200		6200			1800,2000
Aroclor 1254	61,74					490		580		1000			
PAH's													
Naphthalene					210								
2-Methylnaphthalene					107								
Acenaphthene					610								38,ND
Anthracene					740								55,61
Fluoranthene	102	44		160,570	3500	340	104	160	510	370	52	120	1040,1000
Pyrene	83	40		104,410	2500	260	80	130	370	330	36	110	950,950
Phenanthrene	49			260,71	3700	200	43	79	220	190	340	66	550,560
Benzo(a)anthracene	56			260,60	1200	150			180	160			500,500
Chrysene	63			260,86	1100	160			220	180		64	600,570
Benzo(b)fluoranthene	103			310,ND	920	190	120		220	250		87	630,590
Benzo(k)fluoranthene	77			310,ND	1200	190			220	180		78	480,560
Benzo(a)pyrene				290,ND	1200	190			190	200		66	550,550
Indeno(1,2,3-c)pyrene				160,ND	690				106	150			380,380
Dibenzo(a,h)anthracene					310								
Benzo(g,h,i)perylene				170,ND	630					170			380,390
Fluorene					560								
Dibenzofuran					330								
INORGANICS													
Aluminum	5690	2810	1790	12000,11300	4390	4460	3800	11500	19500	7190	3900	9040	4940,5070
Arsenic	3.5	10	0.95	13.4,7.5	1.8	1.6	1.3	7.4	2.9	2.7	1.6	6.7	6.2,6.3
Barium	13.8	8	4.6	31.4,31.6	12	11.6	7.8	28.2	51.6	23.1	10.3	17.1	19.0,17.5
Beryllium									0.88				
Calcium	405	176		1020,1010	490	130	378	1470	11900	905	108	823	2610,2450
Chromium	10.5	19.5	4.2	20.2,17.8	98.2	20.2	97.8	25.6	10.9	419	20.1	19.4	18.1,17.8
Cobalt									15.2	3.3		7.1	ND,3.1
Copper													,61.2
Iron	8360	5590	4830	14200,13400	6960	6080	6340	14600	26600	7250	4810	8150	8760,8370
Lead													
Magnesium	739	486	223	1360,1240	729	771	703	1820	4040	933	484	839	1580,1530
Manganese													
Mercury										0.22			0.18,0.16
Nickel	7.4	9		10.0,10.1	7.1	6.5	7.4	9.9					
Potassium	421	393	294	652,584	403	389	405	662	2070	716	275	303	342,316
Silver		0.31		0.29,0.30	1.7								
Sodium	186	188	184	206,248	209	492	225	337					,1500
Vanadium	12.6	7.3	8.8	25.3,25.1	10.7	11	14	25.3	87.7	12.9	8	13	14.6,16.0
Zinc													
Cyanide										3.1			

	SB202	SB204	SB205	SB206	SB209	SB215	SB217	SB218	SB219	SB225	SB227	SB229
VOLATILES												
Trichloroethene		1 /		4,2 /		32 / ND	6 /					
Tetrachloroethene						1 / ND		3 /	3,9 /			
Chloroform												
Toluene												
ORGANIC ACIDS												
4-Methylphenol (p-Cresol)												
Benzoic Acid	150					380	160	108	430,69		58	
PHTHALATES												
Bis(2-ethylhexyl) phthalate				61,60			46					62
Butyl benzyl phthalate												
Di-n-butyl phthalate						36		39			40	
PESTICIDES												
DDT												
DDD												
DDE												
Heptachlor Epoxide												
Dieldrin												
PCB's												
Aroclor 1242												
Aroclor 1248				33000		270						6800
Aroclor 1254				3600		78						
PAH's												
Naphthalene							86					
2-Methylnaphthalene							52					
Acenaphthene							270					
Anthracene							220					
Fluoranthene				98,140		85	1900				60	330
Pyrene				79,120		77	1800				46	280
Phenanthrene				51,92		68	1300				37	170
Benzo(a)anthracene							740					109
Chrysene							910					150
Benzo(b)fluoranthene				57,84			980					130
Benzo(k)fluoranthene				55,55			730					120
Benzo(a)pyrene				43,53			810					96
Indeno(1,2,3-c)pyrene				ND,44								62
Dibenzo(a,h)anthracene												
Benzo(g,h,i)perylene				45,48			490					59
Fluorene							180					
Dibenzofuran							109					
INORGANICS												
Aluminum	6350	9370	2900	2690,1910	1600	4070	6190	7940	5970,7830	2050	3620	8250
Arsenic	1.5	2.9	3	2.7,1.1		1.4	3.3	6.3	4.6,3.3		1.4	10.7
Barium	14.9	29.9	6.2	5.3,2.5	3.1	14.8	22	15.6	13,14.2	3.8	10	21.1
Beryllium												
Calcium	80.1			207,82.2		355	4550	329	141,198		216	507
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium	1030	1560	522	279,139	227	644	1570	665	512,690	249	551	903
Manganese												
Mercury			0.14		0.11		0.16	0.32				0.17
Nickel												
Potassium	470	644	503	331,390	287	411	414	450	409,377	338	357	327
Silver				2.3,2.0			0.88		0.8,ND			1.2
Sodium												
Vanadium												
Zinc												
Cyanide												

Note All values shown are parts per billion (ppb)

SOIL GAS ANALYSES	SG202	SG203	SG204	SG205	SG206	SG207	SG208	SG209	SG210	SG211	SG213	SG214
1,1-Dichloroethene					1.2/6.3	20/3.8	4.3/1.4	1.6/1.0	1.3/1.6		3.1/5.1	
1,1,1-Trichloroethane	.39/ND				.19/ND		.17/ND				1.0/1.3	ND/.36
Trichloroethene					2.2/.12	.21/ND	.54/ND		ND/.12		.08/2.2	
Tetrachloroethene				/.07	.85/.05	.11/.60	.25/.41	.17/.06	.41/.23	.50/ND	.10/.42	

SOIL GAS ANALYSES	SG215	SG216	SG217	SG218	SG219	SG220	SG221	SG222	SG225	SG226	SG227	SG228	SG229
1,1-Dichloroethene	1.3/6.4	ND/1.3					ND/2.0				ND/14	ND/3.0	
1,1,1-Trichloroethane	.34/.46		ND/.33								ND/.59	ND/.11	
Trichloroethene	11/1.8		.12/1.8				ND/.15					ND/.18	
Tetrachloroethene	.22/.27	.28/.09	ND/.11									ND/.19	

VED BY CZN 4/10/95

~~Pg 1 of 7~~

1, 6 OF 7

CALCULATION WORKSHEET Order No. 19116 (01-91) PAGE 2 OF 7

CLIENT	JOB NUMBER		
USN	5236		
SUBJECT			
NWIRP BETHPAGE L.I.			
BASED ON	DRAWING NUMBER		
BY	CHECKED BY	APPROVED BY	DATE
ACTERRENBROK	CRN 4/10/95		7 APR 95

EROSION & SEDIMENTATION CONTROLS

DISTURBANCE AREA

1. SITE 1

FROM DRAWING APPROX SIZE OF AREA

$6 \times (250 \times 250)/43{,}560$ = 8.6 ACRES

DISTURBED AREA PT

119	52X52	=	2704 FT²
121		=	2625 FT²
SS1			1400 FT²
SS5			10,827 FT²
			17,556 FT²/43560
			= 0.4 AC.

DEKON/STAGING AREA

$(70 \times 80) + (60 \times 20)/43{,}560$ = .16 AC

TOTAL DISTURBED 0.56 AC

2. SITE 2

DISTURBED AREA $110 \times 110/43560$ = 0.28 AC

DEON/STAGING = 0.16 AC

TOTAL DISTURBED 0.44 AC

ATTACHMENT C

STAGING AREA

CALCULATION WORKSHEET Order No. 19118 (01-91) PAGE 1 OF 2

CLIENT	JOB NUMBER
USN	5236
SUBJECT	
NWIRP BETHPAGE N.Y	
BASED ON	**DRAWING NUMBER**

BY	CHECKED BY	APPROVED BY	DATE
ABB	CRN 4/10/95		4 APR 95

EARTH QUANTITY. FOR STAGING AREA SIZING

- ARSENIC 600 CY CONTAMINATED SOIL
- PCB 4000 CY CONTAMINATED SOIL

$$4000\ CY = 4000\ CY \times \frac{27\ FT^3}{CY} = 108{,}000\ FT^3$$

ASSUMPTION:

- LOADER EXCAVATES AND PLACES 200CY SOIL PER DAY
- TRUCKS REMOVE 100CY PERDAY

★ SOLVE FOR MAX PILE SIZE	DAY	PILE ON	TRUCK OFF	NET REMAINING END OF DAY
	1	200	−100	100
	2	200	−100	200
SITE 1 CONTAINS	3	200	−100	300
1,100 cy to be	4	200	−100	400
EXCAVATED	5	200	−100	500
	6	100	−100	500
		1,100 CY		↑ MAX VOLUME

DESIGN BASIS - SIZE AREA TO CONTAIN 500CY. SITE 1

$$500\ CY = 500\ CY \times \frac{27\ FT^3}{CY} = 13{,}500\ CFT$$

- IF SOIL IS:

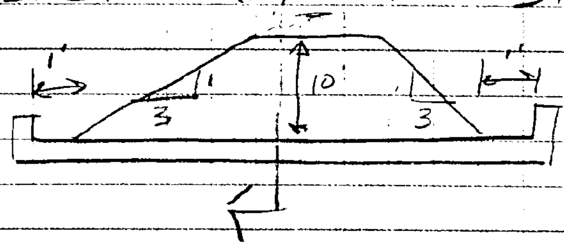
PILED 5' HIGH $= 13{,}500\ FT^3 \times \frac{1}{5\ FT} = 2700\ FT^2$

$\therefore \sqrt{2700} = 52'$ SQUARE AREA.

CLIENT USN	JOB NUMBER 5236
SUBJECT NWIRP BETHPAGE NY	
BASED ON	DRAWING NUMBER

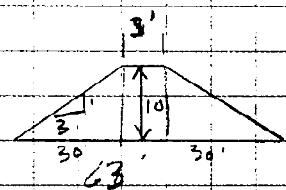
BY	CHECKED BY	APPROVED BY	DATE
ARB	CRN 4/10/95		9 APR

SANDY SOIL: STOCKPILE AT 3 to 1 SLOPE, MAX



SOLVE FOR EARTH QUANTITY
USE AVERAGE END AREA METHOD:

STATION	HEIGHT	
0+00	0	
0+30	10	TRAPEZOIDAL SAY 3' TOP
0+60	0	$\frac{63+3}{2} \times 10' = 330\ FT^2$

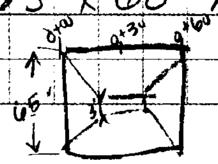


STATION	HEIGHT	AREA (FT²)	DISTANCE (FT)	AREA (FT³)
0+00	0	0		
			30/2	9900
0+30	10	330		
			30/2	9900
0+60	0	0		
				19,800 FT³ = ~~733~~ CY
				367 CY

For average area method, should be divided by 2

DESIGN STAGING AREA TO A MINIMUM 65' WIDE 60' DEEP

A 65' X 60' AREA WILL HOLD 733 CY AT A 10' HIGH PILE



CALCULATION WORKSHEET Order No. 19116 (01-91) PAGE 1 OF 7

CLIENT	JOB NUMBER		
USN	5236		
SUBJECT			
NWIRP CALVERTON N.Y.			
BASED ON	DRAWING NUMBER		
BY	CHECKED BY	APPROVED BY	DATE
ARDERENGOK			5 APR 95

SLOPE:

CALCULATE VOLUME OF RUNOFF THE STAGING AREA WOULD EXPERIENCE DURING A 25 YR 24 HOUR STORM EVENT. COLLECT & CONTROL 40 CFR SUBPART L PT 264.251 DESIGN AND OPERATING REQUIREMENTS SUBPARA (h)

METHOD:

RATIONAL EQUATION

$Q = C I A$ C = RUNOFF COEFFICIENT
I = EVENT INTENSITY
A = AREA

TR55 IS NOT APPROPRIATE FOR THIS SMALL AREA

DATA SOURCE:

STATE OF NEW YORK GUIDELINES FOR URBAN EROSION & SEDIMENT CONTROL OCT 1991

CALCULATION:

- AN IDF (INTENSITY DURATION FREQUENCY) TABLE WAS UNAVAILABLE AT THIS TIME. THEREFORE:
- A STANDARD NY. SCS TYPE II RAINFALL DISTRIBUTION WAS USED TO GENERATE THE FOLLOWING UNIT HYDROGRAPH

		UNIT HYDROGRAPGH FOR A 25 YEAR 24 HOUR STORM					
			BETHPAGE, NEW YORK				
			time of concentration (hours)		peak flow (cfs)		
			Tp		qp		
1	inch of rain unit hydrograph		0.0123		7.87	one inch of rain	
5.5	inches of rain 25 year 24 hour storm				43.28	5.5 inches of rain	
column 1	hours into the	column 2	column 3	column 4			
Time ratio	24 hour storm	unit tp (hours)	Discharge Ratio	Peak Discharge(cfs)			
t / Tp							
0	0	0	0	0			
0.1	0.48	0.00123	0.03	1.30			
0.2	0.96	0.00246	0.1	4.33			
0.3	1.44	0.00369	0.19	8.22			
0.4	1.92	0.00492	0.31	13.42			
0.5	2.4	0.00615	0.47	20.34			
0.6	2.88	0.00738	0.66	28.57			
0.7	3.36	0.00861	0.82	35.49			
0.8	3.84	0.00984	0.93	40.25			
0.9	4.32	0.01107	0.99	42.85			
1	4.8	0.0123	1	43.28	←	PEAK	
1.1	5.28	0.01353	0.99	42.85			
1.2	5.76	0.01476	0.93	40.25			
1.3	6.24	0.01599	0.86	37.22			
1.4	6.72	0.01722	0.78	33.76			
1.5	7.2	0.01845	0.68	29.43			
1.6	7.68	0.01968	0.56	24.24			
1.7	8.16	0.02091	0.46	19.91			
1.8	8.64	0.02214	0.39	16.88			
1.9	9.12	0.02337	0.33	14.28			
2	9.6	0.0246	0.28	12.12			
2.20	10.56	0.02706	0.21	8.96			
2.40	11.52	0.02952	0.15	6.36			
2.60	12.48	0.03198	0.11	4.63			
2.80	13.44	0.03444	0.08	3.33			
3.00	14.4	0.0369	0.06	2.38			
3.20	15.36	0.03936	0.04	1.73			
3.40	16.32	0.04182	0.03	1.26			
3.60	17.28	0.04428	0.02	0.91			
3.80	18.24	0.04674	0.02	0.65			
4.00	19.2	0.0492	0.01	0.48			
4.50	21.6	0.05535	0.01	0.22			
5.00	24	0.0615	0.00	0.00			
				25 year 24 hour storm			

CLIENT USN	JOB NUMBER 5236
SUBJECT NWIRP BETHPAGE N.Y	
BASED ON	DRAWING NUMBER

BY	CHECKED BY	APPROVED BY	DATE
AR DEREHBOK	CB		5 APR 95

(SEE REFERENCE FOR SOURCE OF EQUATIONS)

$\Delta D = .133(t_c)$ $A = 70 \times 80 = 5600\ FT^2$

ΔD = UNIT STORM DURATION

MY t_c = ESTIMATED to be 1.2 MIN (1 FPS, TRAVEL distance 70 FT L @ 1% SLOPE = 70 SEC = 1.2 MIN)

t_c = TIME OF CONCENTRATION

SOLVE.

$\Delta D = .133(1.2) = .16$ MIN

$T_p = \frac{\Delta D}{2} + L$

T_p = TIME to PEAK

$= \frac{.16}{2} + .6(1.1) = .74$ MIN.

$q_p = \frac{484\ A\ Q}{T_p} = \frac{484\ (5600\ FT^2)(1\ INCH)}{.74\ MIN}$

q_p = PEAK DISCHARGE

645 FACTOR CONVERTS ORIGINAL EQUATION $\frac{MILE^2 - IN}{HR}$ to CFS

$$q_p = \frac{\frac{484}{645}\left((5600\ FT^2) \times (1\ IN) \times \frac{FT}{12\ IN}\right)}{.74\ MIN \times \frac{60\ SEC}{1\ MIN}} = 7.88\ CFS$$

q_p = 7.88 CFS FOR A 1 INCH STORM

q_p = 43.28 CFS FOR A 5.5 INCH STORM

CLIENT	JOB NUMBER
USN	5236
SUBJECT	
NWIRP BETHPAGE N.Y.	
BASED ON	**DRAWING NUMBER**
BY / **CHECKED BY**	**APPROVED BY** / **DATE**
ARCEPENTROK / CK	5 APR 95

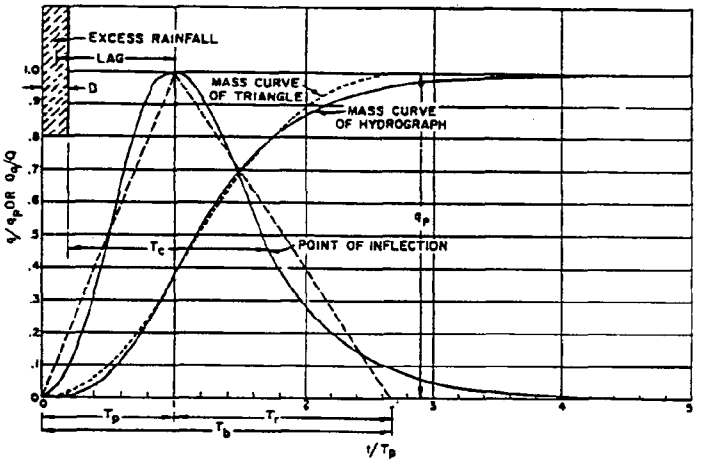
SOLVE FOR VOLUME RUNOFF

TOTAL VOLUME UNDER THE HYDROGRAPH

SOLVE BY TRIANGLE METHOD

Elements of a Unit Hydrograph

The dimensionless curvilinear unit hydrograph (figure 16.1) has 37.5% of the total volume in the rising side, which is represented by one unit or time and one unit of discharge. This dimensionless unit hydrograph also can be represented by an equivalent triangular hydrograph having the same units of time and discharge, thus having the same percent of volume in the rising side of the triangle (figure 16.2).



NEH 4

Figure 16.2 Dimensionless curvilinear unit hydrograph and equivalent triangular hydrograph

$t_b = 2.67\, t_p$

$t_R = t_b - t_p$

$t_p = .74$ MIN

$\therefore t_b = 2.67\, t_p = 2$ MIN

$\therefore t_R = 1.26$ MIN

SOLVE FOR AREA

t_p $\quad \frac{1}{2}(.74)(43.28) \times \frac{60 SEC}{MIN}$

$= 961\ FT^3$

t_R $\quad \frac{1}{2}(1.26)(43.28) \frac{60 SEC}{MIN}$

$= 1636\ FT^3$

$961\ FT^3$

$+\ 1636\ FT^3$

$2597\ FT^3$

USE $2600\ FT^3$ 2nd STORAGE

CLIENT USN		JOB NUMBER	
SUBJECT NWIRP BETHPAGE NY			
BASED ON		DRAWING NUMBER	
BY A BERENBRINK	CHECKED BY [illegible]	APPROVED BY	DATE 10 APR 95

VOLUME STORAGE CALCULATION

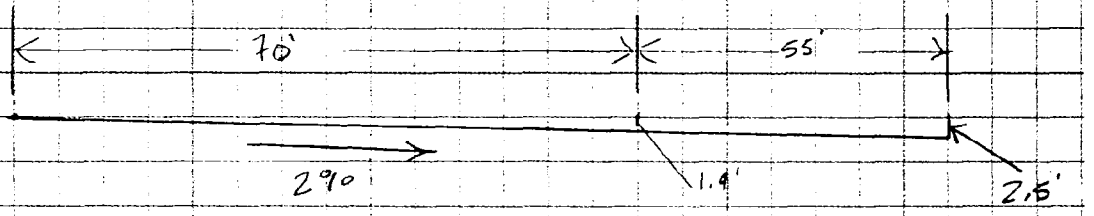
- TOTAL VOLUME STORAGE REQUIRED FROM SHEET 4 OF 7 IS 2,600 FT³

- STORAGE AREA total 60' x 70' = 4200 FT²
- SOIL STORAGE EST 30 X 30 = 900 FT²
- LOADER OPERATING AREA 40 X 30 = 1200 FT²

REMAINING AREA FOR RUNOFF STORAGE 2,100 FT²

- CHECK
  2600 FT³ / 2100 FT² = 1.23' DEEP ← NO RESIZE AREA

- EXPAND STAGING AREA BY 5.5'



105' x .02 = 2.1'

VOLUME PER L.F. OF 55' EXPANDED

$\frac{(1.4' + 2.5')55}{2} = 107.25\ FT^2$

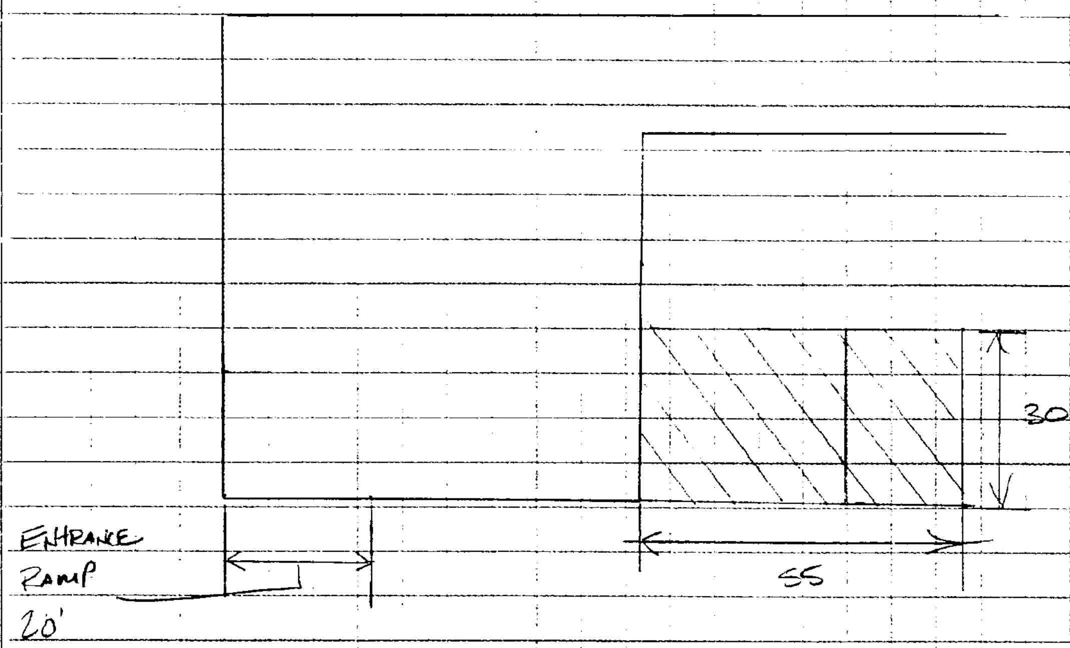
TRY 2600 / 107.25' = 24.3

CLIENT: USN	JOB NUMBER: 5236
SUBJECT: NWIRP BETHPAGE N.Y	
BASED ON:	DRAWING NUMBER:

BY	CHECKED BY	APPROVED BY	DATE
AEF SEPENBROK	[illegible]		10 APR 95

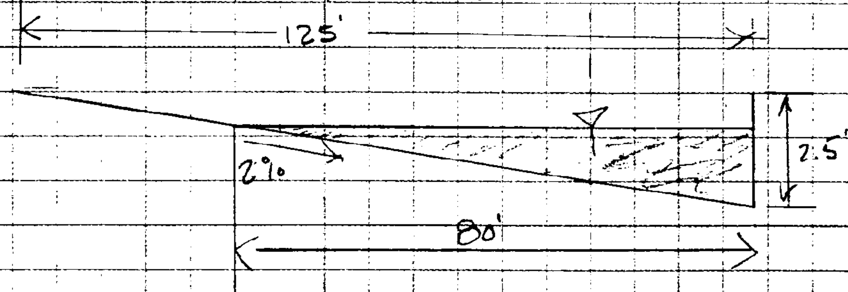
THEREFORE

EXPAND RUNOFF AREA to



VOLUME 55 X 30 = 1650 FT²

AVE DEPTH 1.60' FT TO CONTAIN 2600 FT³



EXTEND STRAW BALE dike to 85'

CLIENT	JOB NUMBER
USN	5236

SUBJECT: NWIRP BETHPAGE N.Y

BASED ON	DRAWING NUMBER

BY	CHECKED BY	APPROVED BY	DATE
ARBERENBROK			10 APR 95

Add Additional Paved Area to Calculation

of Volume Runoff

$55 \times 30 \times \frac{5.5''}{12} = 760 FT^3$

Add $2600 + 760 FT^3 = 3360 FT^3$ total Rqd Storage

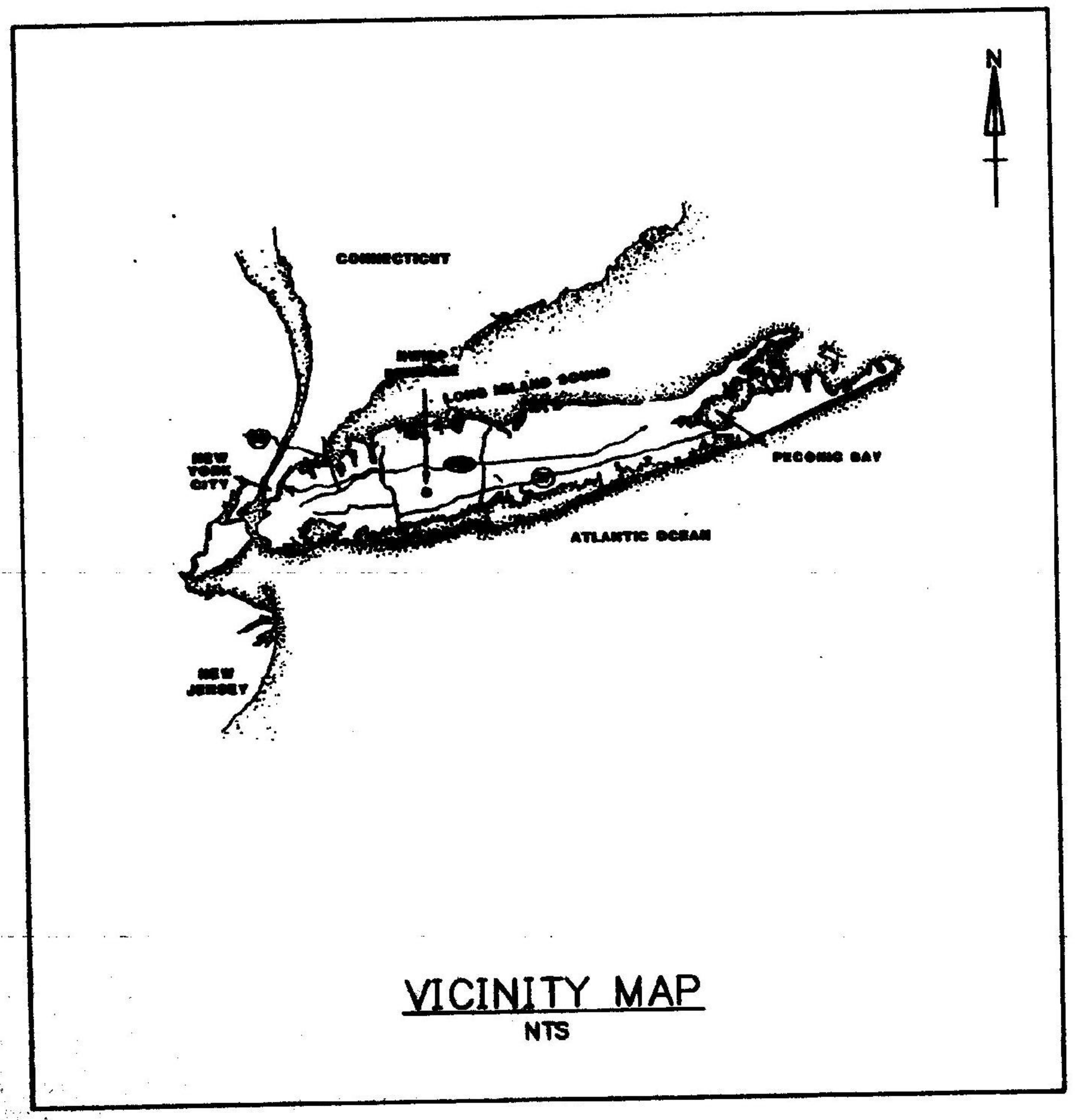
$3360 FT^3 / 1650 FT^2 = 2.0'$ depth

$2.0' / .02\% = 100'$ Extend straw bale dike to 100'

REFERENCES:

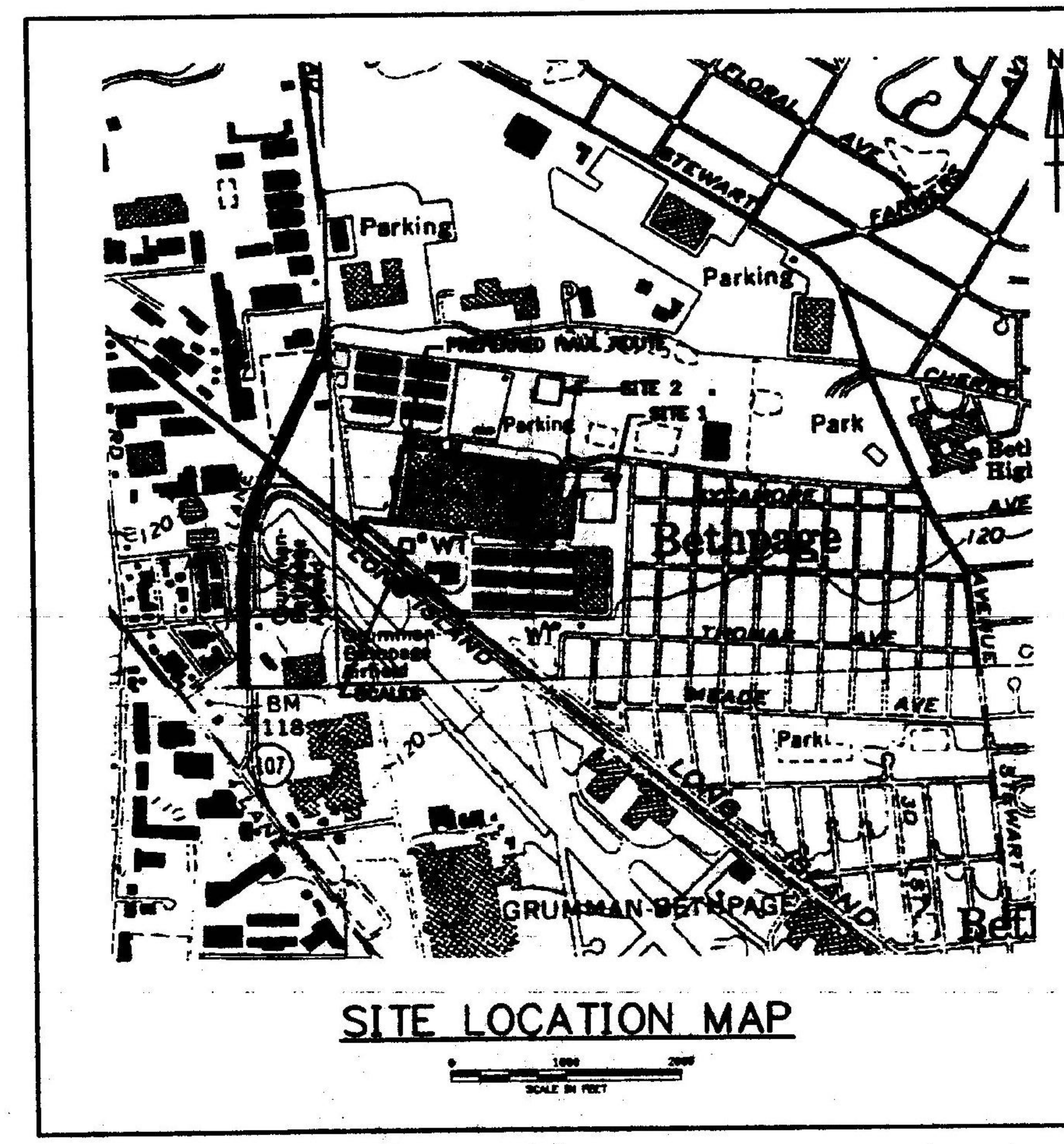
SCS National Engineering Handbook
Section 4, Hydrology

REMEDIAL DESIGN
SITES 1 AND 2, PHASE I
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK
CONSTRUCTION CONTRACT No. N62472-94-C-0398



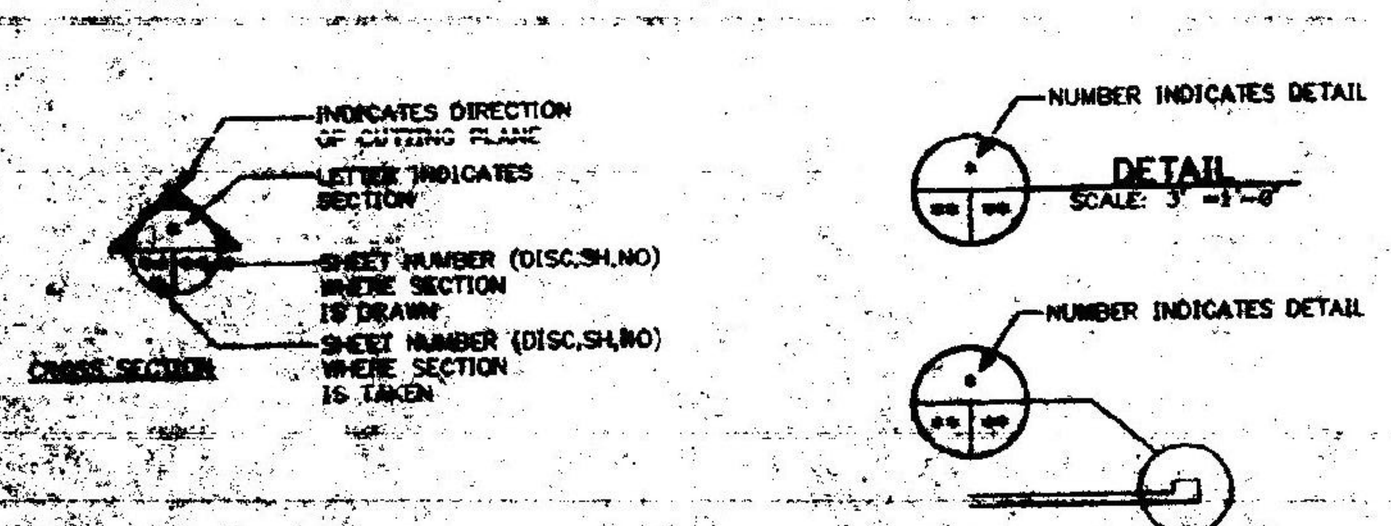
VICINITY MAP
NTS

DRAWING INDEX



SITE LOCATION MAP

REFRENCE SYMBOLS



GENERAL NOTES

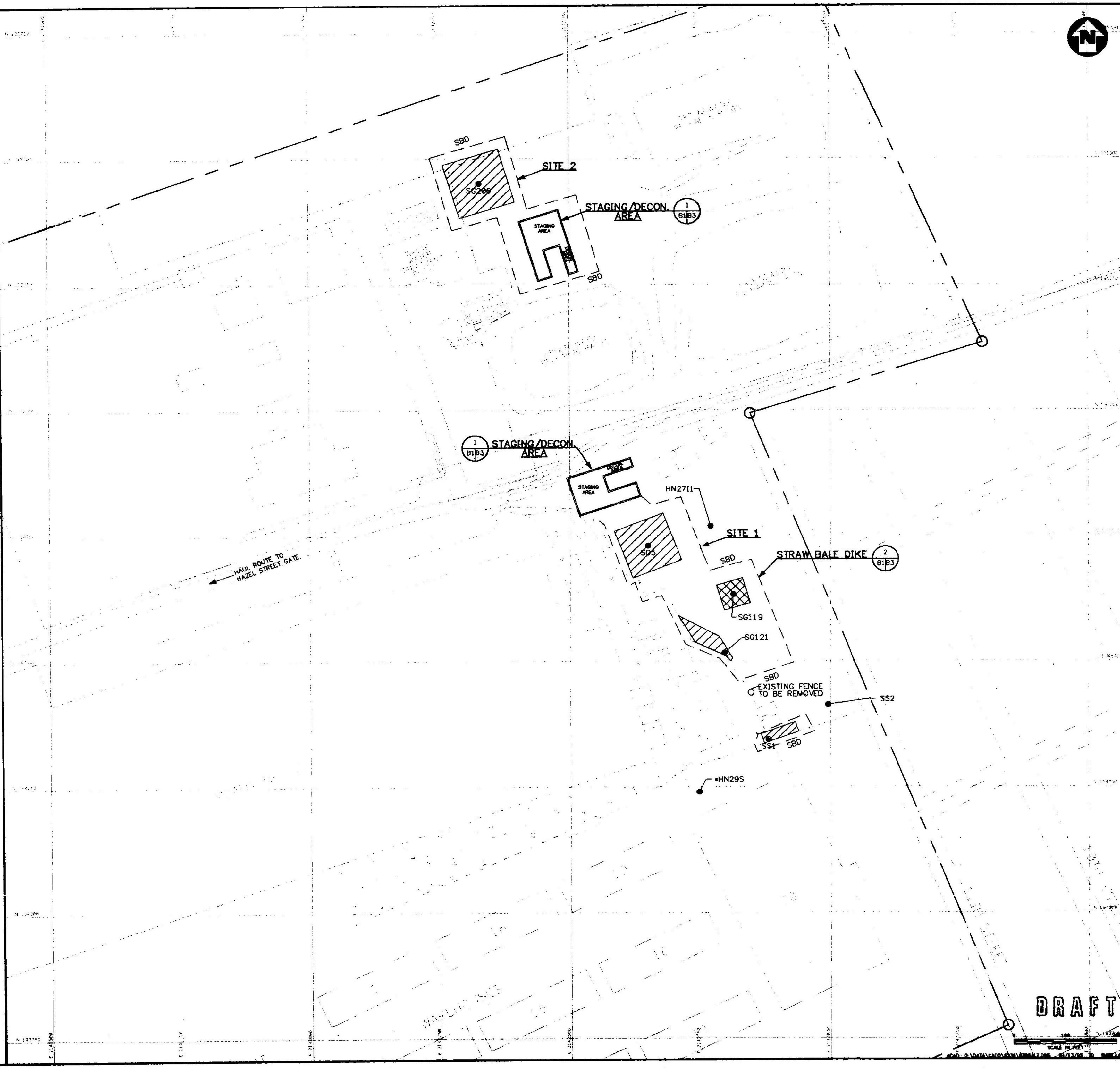
1. ALL WORK FOR THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE CONTRACT DRAWINGS AND S[SPECIFICATIONS. ALL METHODS OF WORK FOR THIS PROJECT SHALL ALSO COMPLY WITH FEDERAL, STATE OF NEW YORK AND LOCAL ORDINANCES. UNLESS OTHERWISE NOTED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ADEQUATE EROSION AND SEDIMENTATION CONTROL MEASURES DURING THE COURSE OF CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LIMITING ALL WORK TO THE IMMEDIATE PROJECT AREA. ALL AREAS DISTURBED BY THE CONTRACTOR THAT ARE OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGIN CONDITION AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
5. BACKGROUND TOPOGRAPHY DIGITIZED FROM 1'=100' NWIRP NOS TOPOGRAPHIC MAPS.
6. THE CONTRACTOR SHALL FIELD STAKE THE LOCATION OF ALL AREAS TO BE EXCAVATED OR DISTURBED PRIOR TO ACTUAL WORK. THE FIELD LOCATIONS MUST BE REVIEWED BY THE CONTRACTING OFFICER PRIOR TO EXCAVATION.
7. MAXIMUM PROTECTION SHALL BE PROVIDED FOR EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. CONTRACTOR SHALL PROVIDE ALL TEMPORARY SERVICE. THE CONTRACTOR SHALL COORDINATE WITH THE NWIRP PRIOR TO THE START OF EXCAVATION TO DETERMINE THE LOCATION OF UNDERGROUND UTILITIES.
8. THE CONTRACTOR SHALL THROUGHLY INSPECT THE SITE PRIOR TO CONSTRUCTION TO VERIFY EXISTING SITE CONDITIONS.
9. ALL AREAS SHALL BE GRADED TO DRAIN.
10. THE CONTRACTOR STAGING AND DECONTAMINATION AREAS ARE TO BE APPROVED BY THE CONTRACTING OFFICER AND SHALL BE LOCATED OUT OF THE WAY OF TRAFFIC AND/OR PEDESTRIAN FLOW.
11. VERIFICATION SAMPLING WILL BE PERFORMED BY THE GOVERNMENT AND SITE RECONSTRUCTION EFFORTS ARE NOT TO BE PERFORMED UNTIL CONFIRMATION OF REMOVAL HAS BEEN ACHIEVED.

DRAFT

REV.	DESCRIPTION	PREP BY	DATE	APPRVD

DSGN: A.BORENBROK DR: T.D'ALESSANDRIS CHK: A.BERENBROK
SUPV: M.SPERANZA CH ENG: S. HUGHES
SUBMITTED BY: J. TREPANOWSKI (TITLE) PROGRAM MANAGER (DATE)
NORTHDIV — CH: — FPE: — HD: — HD: — DIR: —
OFFICER IN CHARGE
APPROVED — DATE

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
NORTHERN DIVISION
LESTER, PENNSYLVANIA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NY
REMEDIAL DESIGN – SITES 1 AND 2, PHASE I
TITLE SHEET
APPROVED: — DATE — NORTHDIV FOR COMMANDER, NAVFAC
SEAL AREA



LEGEND

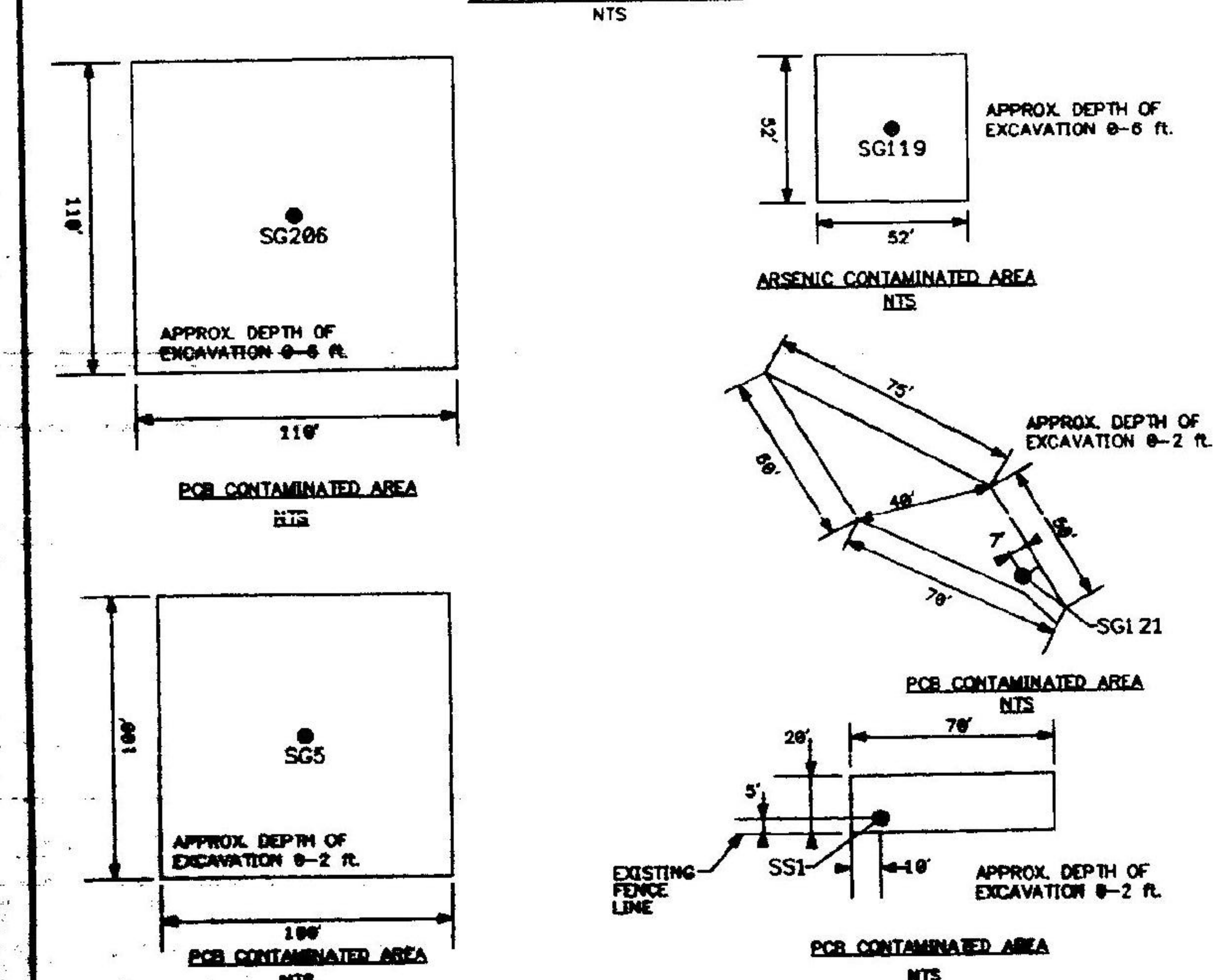
- PROPERTY LINE
- EXISTING FENCE
- PCB AREA
- ARSENIC AREA
- EXISTING CONCRETE
- S — STAGING AREA
- DECON — DECONTAMINATION AREA
- HN – MONITORING WELL
- SS – SURFACE SAMPLE
- SB – SOIL BORING
- SBD — STRAW BALE DIKE
- HN29S — MONITORING WELL LOCATION

NOTES:

1. STAGING AND DECONTAMINATION AREAS SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL ADJUST LOCATION BASED UPON APPLICABLE TRAFFIC PATTERNS.
2. REMOVE EXISTING FENCE ADJACENT TO EXCAVATION AREA. LIMIT OF FENCE REMOVAL TO BE DETERMINED BY NAVFAC.
3. INSTALL STRAW BALE DIKE SYSTEM IN THE APPROXIMATE LOCATIONS SHOWN. THE GROUNDWATER RECHARGE BASINS ARE TO BE DIKED WITH STRAW BALES AS APPLICABLE FOR PROTECTION FROM SURFACE RUNOFF. SEE SHEET No. B-3 FOR EROSION & SEDIMENT CONTROL NARRATIVE.
4. MONITORING WELLS HN29S AND HN27I1 ARE THE BENCHMARKS FOR THE REFERENCED COORDINATE SYSTEM. BOTH ARE WELL CASINGS ABOVE GROUND SURFACE.
5. ALL EXISTING STORM SEWER INLETS ARE TO BE DIKED PER THE DETAIL SHOWN ON SHEET No. B-3.

REFERENCE COORDINATES		
POINT NUMBER	NORTH	EAST
HN29S	194,240	2,142,747
HN27I1	194,769	2,142,770
SG206	195,451	2,142,328
SG121	194,517	2,142,796
SG119	194,633	2,142,813
SS1	194,344	2,142,880
SS2	194,413	2,142,995
SS5	194,730	2,142,650

EXCAVATION LOCATIONS
NTS



REV.	DESCRIPTION	PREP BY	DATE	APPRVD

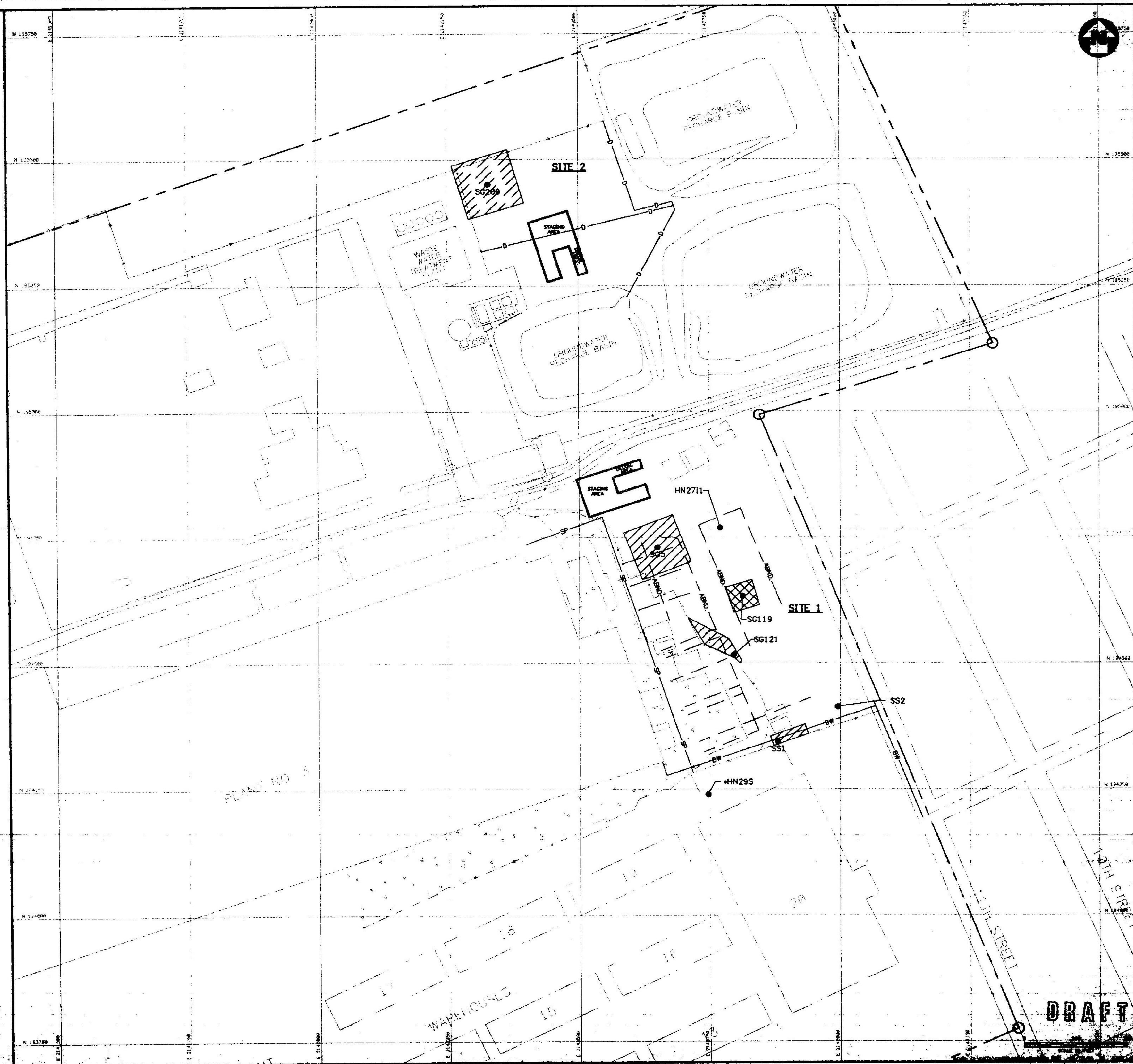
DSGN. A.BERENBROK DR. T.D'ALESSANDRIS CHK. A.BERENBROK
SUPV. M.SPERANZA CH ENG. S. HUGHES
SUBMITTED BY: PROGRAM MANAGER (TITLE)
OFFICER IN CHARGE
APPROVED

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
NORTHERN DIVISION
LESTER PENNSYLVANIA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NY
REMEDIAL DESIGN – SITES 1 AND 2, PHASE I
SITE PLAN

APPROVED — DATE — NORTHDIV FOR COMMANDER, NAVFAC

SAT TO / DATE
CODE I.D. NO.
SCALE: AS SHOWN
SPEC. NO. 04-93-0397
CONSTRN. CONTR. NO. N62472-93-C-0398
NAVFAC DRAWING NO. NA
SHEET 2 OF 4
SIZE: D DES. SK. NO. B-1

NYSDEC 055798



LEGEND

- PROPERTY LINE
- EXISTING FENCE
- PCB AREA
- ARSENIC AREA
- EXISTING CONCRETE
- STAGING AREA
- DECON — DECONTAMINATION AREA
- BW — BETHPAGE WATER
- D — DRAIN LINE
- SP — SPRINKLER LINE
- ABANDONED LEACH FIELD
- HN29S — MONITORING WELL LOCATION

NOTES:

1. STAGING AND DECONTAMINATION AREAS SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL ADJUST LOCATION BASED UPON APPLICABLE TRAFFIC PATTERNS.
2. REMOVE EXISTING FENCE ADJACENT TO EXCAVATION AREA. LIMIT OF FENCE REMOVAL TO BE DETERMINED BY NAVFAC.
3. INSTALL STRAW BALE DIKE SYSTEM IN THE APPROXIMATE LOCATIONS SHOWN. THE GROUNDWATER RECHARGE BASINS ARE TO BE DIKED WITH STRAW BALES AS APPLICABLE FOR PROTECTION FROM SURFACE RUNOFF. SEE SHEET No. B-3 FOR EROSION & SEDIMENT CONTROL NARRATIVE.
4. MONITORING WELLS HN29S AND HN27I1 ARE THE BENCHMARKS FOR THE REFERENCED COORDINATE SYSTEM. BOTH ARE WELL CASINGS ABOVE GROUND SURFACE.
5. ALL EXISTING STORM SEWER INLETS ARE TO BE DIKED PER THE DETAIL SHOWN ON SHEET No. B-3.

REV.	DESCRIPTION	PREP BY	DATE	APPRVD

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

NORTHERN DIVISION

LESTER, PENNSYLVANIA

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NY

REMEDIAL DESIGN – SITES 1 AND 2, PHASE I

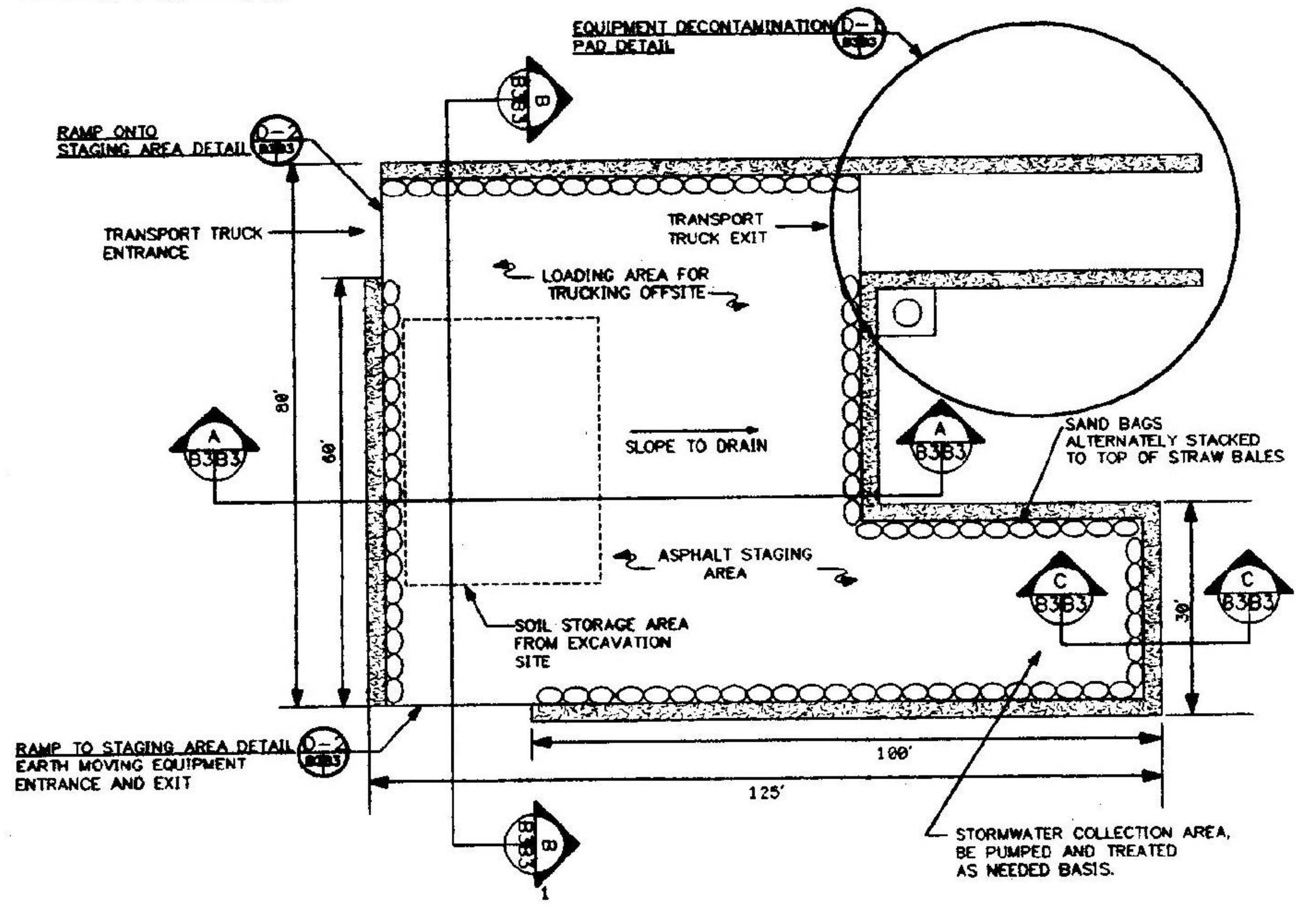
EXISTING UNDERGROUND UTILITIES

APPROVED: DATE: NORTHDIV FOR COMMANDER, NAVFAC

SEAL AREA

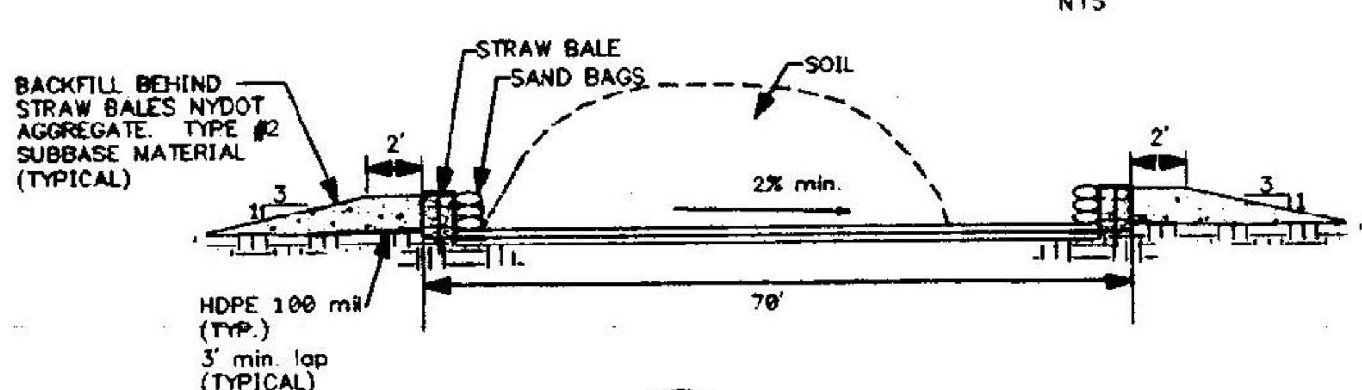
SAT TO / DATE

CODE I.D. NO.
SCALE: AS SHOWN
SPEC NO: 0404-93-0397
CONSTR. CONTR. NO. N62472-93-C-0396
NAVFAC DRAWING NO. NA
SHEET 3 OF 4
SIZE D — DRAWING NO. B-2

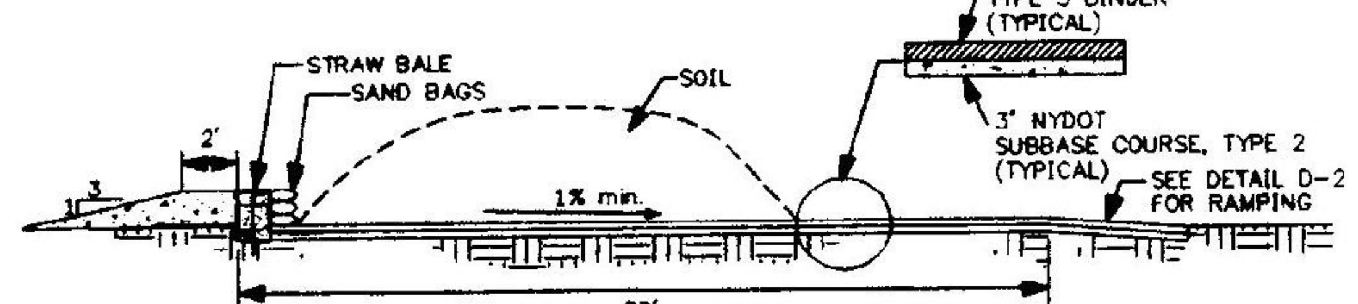


NOTE:
1. THIS PLAN DETAIL OUTLINES THE GENERAL SHAPE AND TRAFFIC PATTERN TO MINIMIZE CONTAMINATION OF AREAS BEYOND THE WORK AREA.
2. COVER SOIL STOCKPILE WITH PLASTIC SHEETING TO MINIMIZE WIND AND WATER EROSION.
3. THE LOADING AREA FOR TRANSPORT TRUCKS SHALL ACCOMODATE THE MOVEMENTS OF A WB-50 DESIGN VEHICLE.
4. THE ENTIRE STAGING AND DECONTAMINATION AREA SHALL BE EXCAVATED, DECONTAMINATED AND PROPERLY DISPOSED OF AFTER THE COMPLETION OF CONSTRUCTION ACTIVITIES.

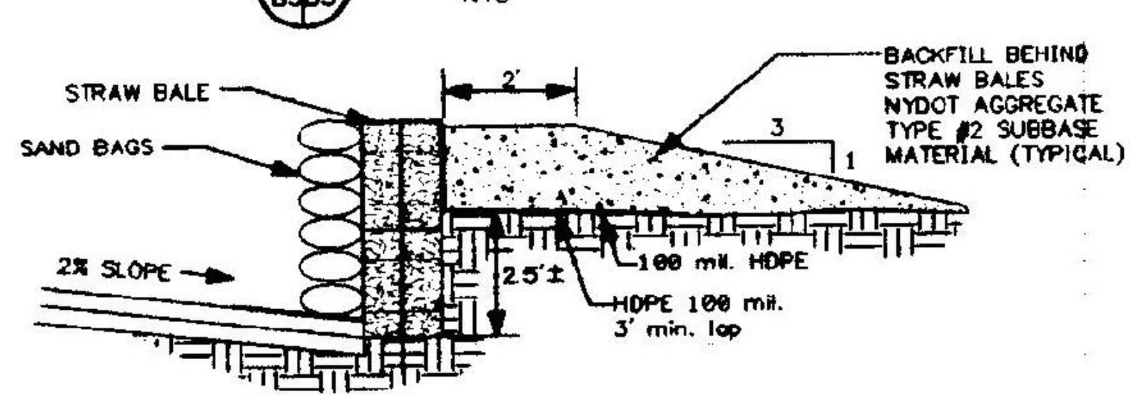
PLAN VIEW
NTS



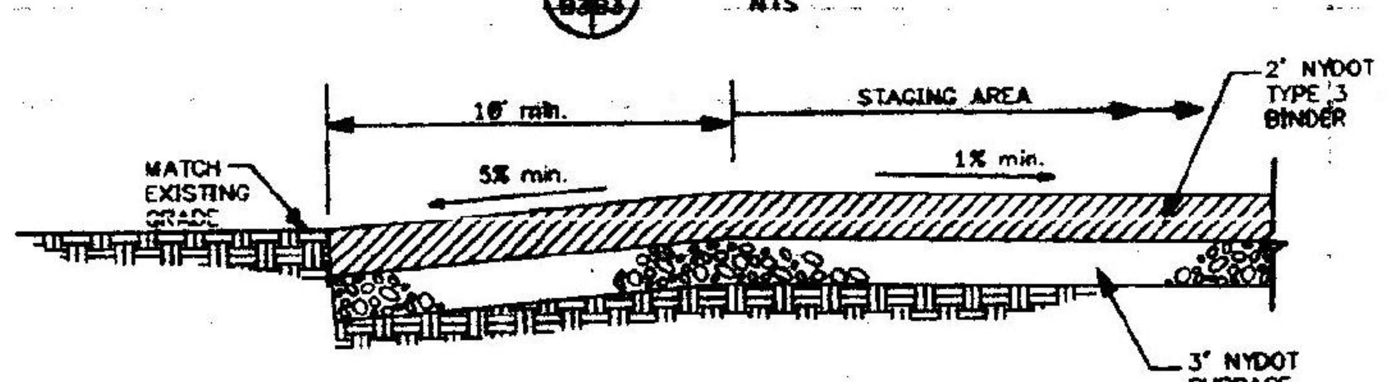
SECTION A-A
NTS



SECTION B-B
NTS



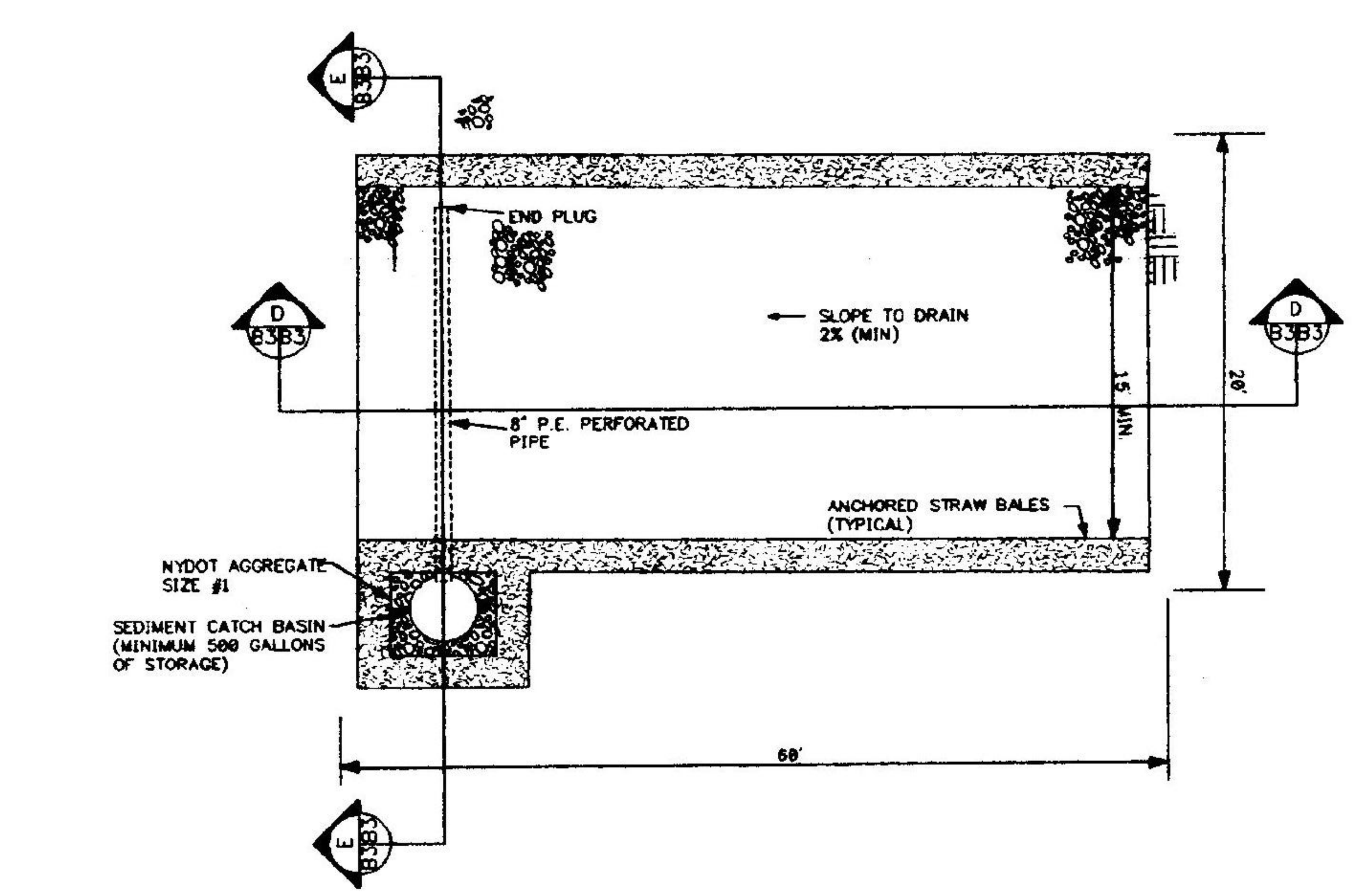
SECTION C-C
NTS



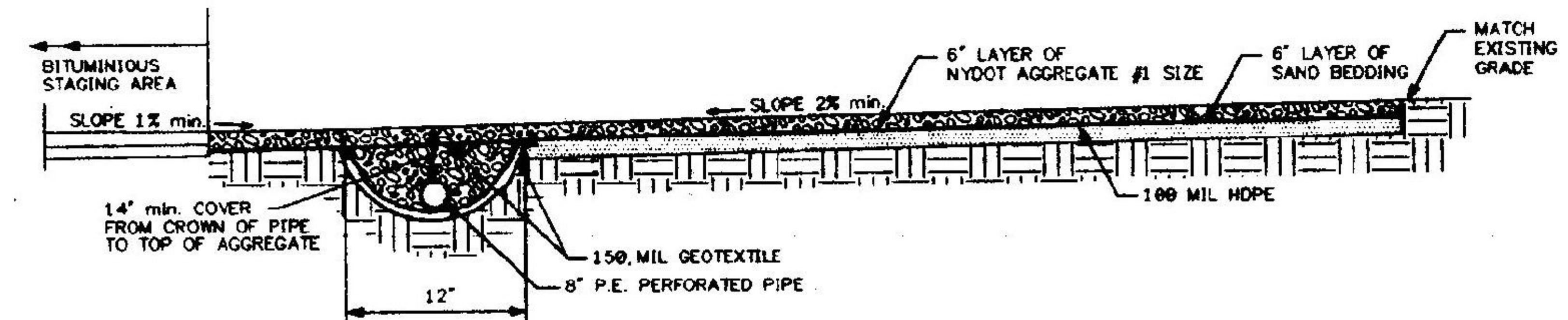
NOTE:
RAMP AREA SHALL BE SLOPED TO CONTAIN ALL RUNOFF WITHIN THE STAGING AREA.

DETAIL 2
RAMP ONTO STAGING AREA
NTS

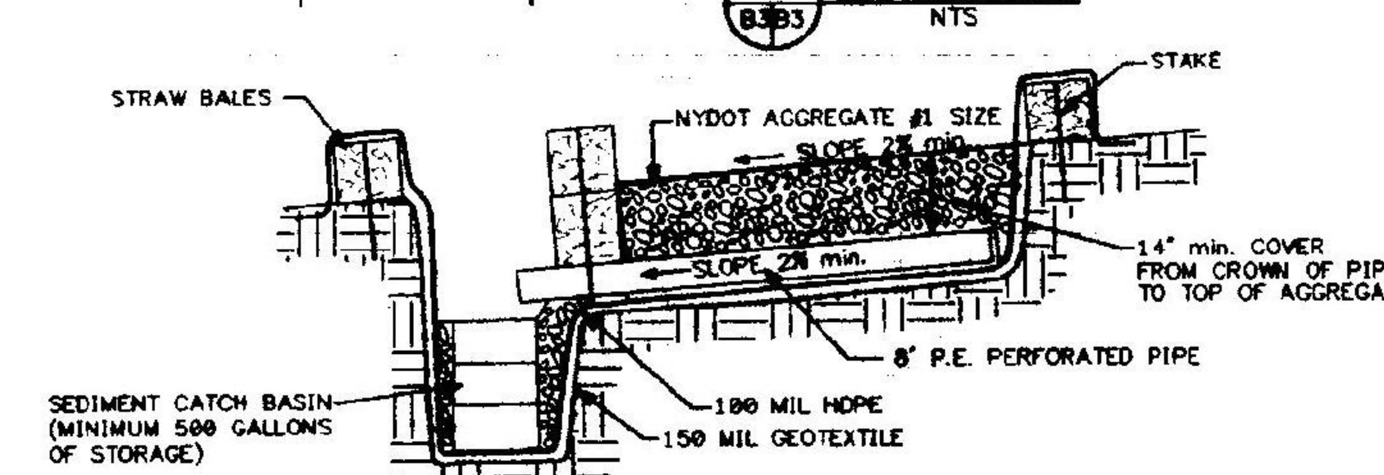
STAGING AREA
NTS



PLAN VIEW
NTS



SECTION D-D
NTS



SECTION E-E
NTS

DETAIL 1
EQUIPMENT DECONTAMINATION PAD
NTS

EROSION & SEDIMENTATION CONTROL PLAN NOTES

1. THE RAC SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THERE EROSION AND SEDIMENT CONTROL NOTES AND CONSTRUCTION SEQUENCE PRIOR TO BEGINNING ANY OTHER EARTH DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD. THE RAC SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE NAVFAC.

2. THE RAC SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DISPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIAL DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

3. THE RAC SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY THE EFFECTIVE OPERATING CONDITION OF ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE NAVFAC.

4. THE RAC SHALL APPLY ANCHORED STRAW MULCH OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN FOURTEEN (14) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO SEVEN (7) DAYS FOR SENSITIVE AREAS.)

5. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE RAC SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTARY DISTURBED AREAS USING AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS.

6. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED; AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

7. TEMPORARY SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.

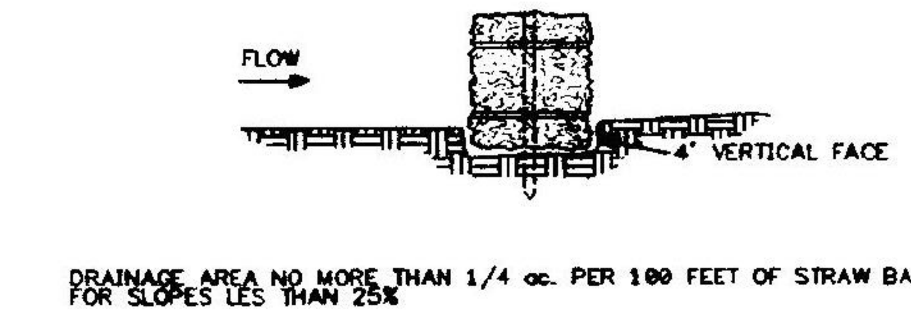
8. SITE 2 IS LOCATED NEAR INFILTRATION DEVICES (RECHARGE BASINS) WHICH ARE USED FOR THE CONTROL OF STORMWATER. EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS ENTERING THE RECHARGE BASINS DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST BE PLACED TO DIRECT ANY RUNOFF FROM THE EXCAVATED AREA AWAY FROM THE INFILTRATION DEVICE.

9. TOTAL AREA: SITE 1: 5.6 AC SITE 2: 2.0AC
AREA DISTURBED: SITE 1: .56 AC SITE 2: .44AC
AREA TO BE ROOFED OR PAVED: 0.0 AC
TOTAL CUT: SITE 1: 2,600 CUBIC YARDS SITE 2: 2,600 CUBIC YARDS
TOTAL FILL: SITE 1: 2,600 CUBIC YARDS SITE 2: 2,600 CUBIC YARDS
OFFSITE BORROW LOCATION: TO BE DETERMINED

10. THE TIME TO PERFORM THE REQUIRED CONSTRUCTION IS ESTIMATED TO BE APPOXIMATELY 15 WEEKS
STEP 1 – INSTALL EROSION AND SEDIMENT CONTROL DEVICES. INSTALL STRAW BALE DIKES.
STEP 2 – INSTALL STAGING AREA AND DECON. PAD. STOCKPILE CLEAN EXCAVATED MATERIAL TO BE REINSTALLED AFTER REMOVAL OF STAGING AREA.
STEP 3 – EXCAVATE CONTAMINATED SEDIMENT SOIL. EXCAVATE AND HAUL PCB AND ARSENIC CONTAMINATED SOIL FROM SITES 1 AND 2 TO THE STAGING AREA.
STEP 4 – CONTAMININATED STAGING AREA. PLACE CONTAMINATED SOIL AS DIRECTED, COVER AND ANCHOR WITH 100 mil PLASTIC TO STOP WIND & WATER EROSION OF STAGED MATERIAL.
STEP 5 – BACKFILL DISTURBED AREAS. BACKFILL AND GRADE ALL AREAS DISTURBED BY CONSTRUCTION WITH CLEAN BORROW MATERIAL. GRADE TO DRAIN.

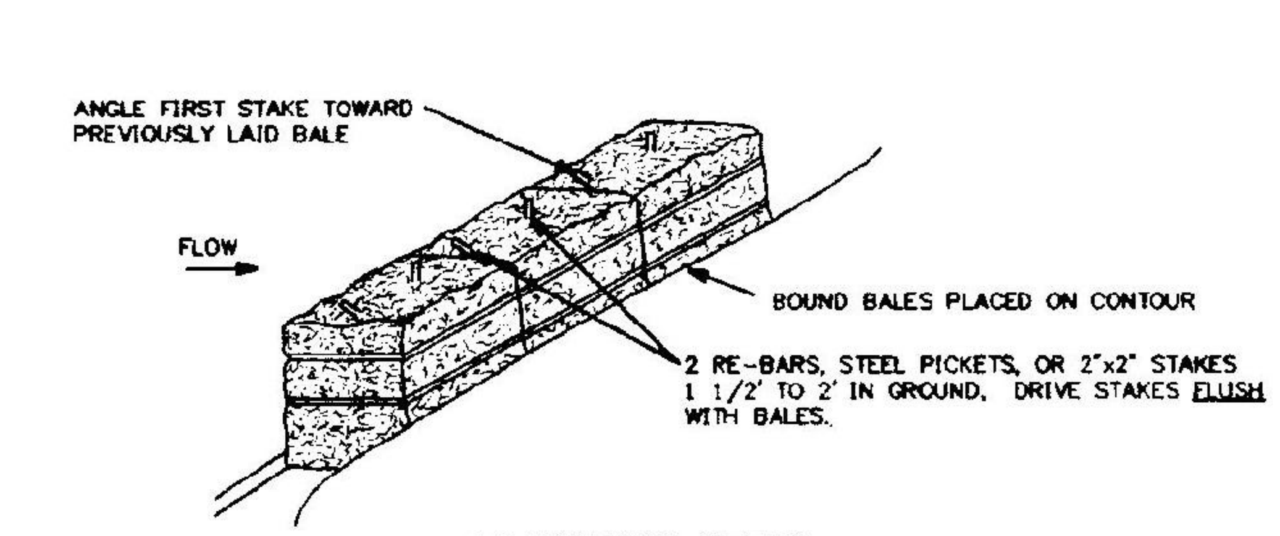
STEP 6 – REMOVE EROSION AND SEDIMENT CONTROL DEVICES. AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED, PERMANENT STABILIZATION HAS BEEN ESTABLISHED, AND WITH THE PERMISSION OF THE NAVFAC, REMOVE EROSION AND SEDIMENT CONTROL DIVICES.

11. WARNING: EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE STRICTLY ENFORCED.



DRAINAGE AREA NO MORE THAN 1/4 ac. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LES THAN 25%

BEDDING
NTS

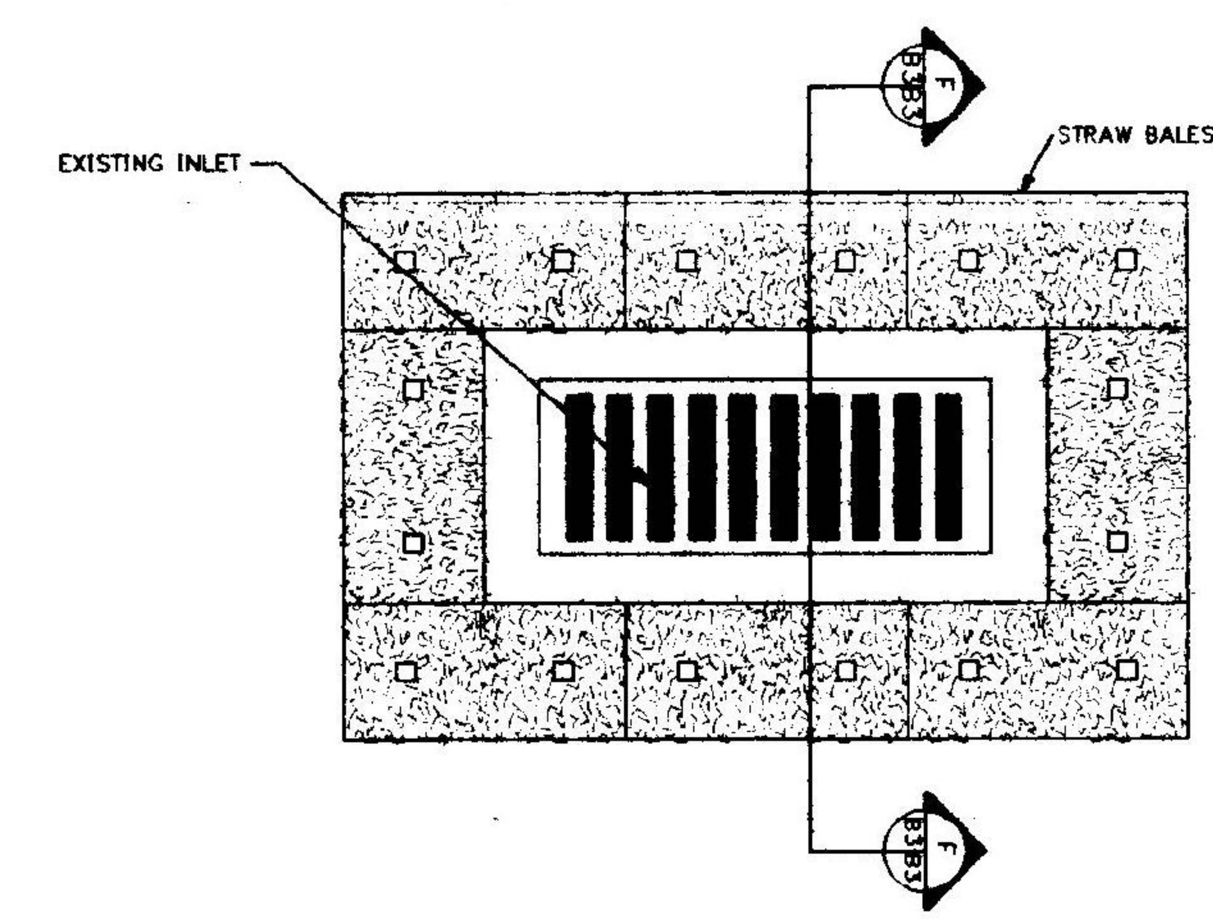


ANCHORING DETAIL
NTS

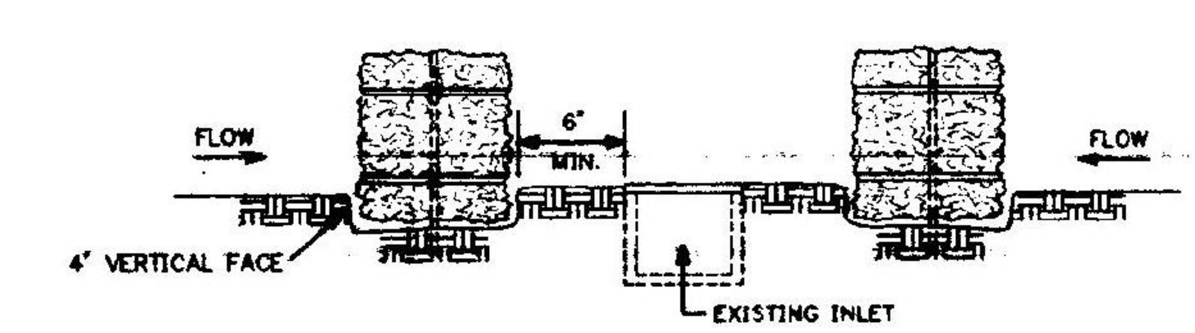
CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STRAW BALE DIKE
NTS



PLAN VIEW
NTS



NOTE:
INLET MAY BE ROUND OR RECTANGULAR

SECTION F-F
NTS

INLET PROTECTION
NTS

DRAFT

REV.	DESCRIPTION / PREP BY / DATE / APPRVD
DSGN: A. BERENBROK DR: T.D'ALESSANDRIS CHK: A. BERENBROK	SUPV: M. SPERANZA CH ENG: S. HUGHES
SUBMITTED BY: J. TREPANOWSKI (FIRM MEMBER)	PROGRAM MANAGER (TITLE) (DATE)
NORTHDIV	OFFICER IN CHARGE / APPROVED / DATE

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
NORTHERN DIVISION
LESTER, PENNSYLVANIA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NY
REMEDIAL DESIGN – SITES 1 AND 2, PHASE 1
CONSTRUCTION DETAILS AND EROSION SEDIMENT CONTROL NOTES
APPROVED: DATE NORTHDIV FOR COMMANDER, NAVFAC

SEAL AREA

SAT TO	DATE
CODE I.D. NO.	
SCALE:	AS SHOWN
SPEC. NO.	04-94-93-0397
CONSTRN. CONTR. NO.	N62472-93-C-0398
NAVFAC DRAWING NO.	NA
SHEET 4 OF 4	
SIZE: D	DES. SH. NO: B-3

PROJECT TABLE OF CONTENTS

SECTION 01010

GENERAL PARAGRAPHS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CORPS OF ENGINEERS (COE)

COE EM-385-1-1	1992 Safety and Health Requirements Manual

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 230/02-89-042	1989 Methods for Evaluating the Attainment of Cleanup Standards Vol. I: Soils and Soil Media

MILITARY STANDARDS (MIL-STD)

MIL STD 461	(Rev C) (Notice 2) Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference
MIL STD 462	(Notice 6) Measurement of Electromagnetic Interference Characteristics

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241	1989 Safeguarding Construction

1.2 PRECONSTRUCTION SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.2.1 SD-18, Records

a. Work Plan G

b. Pre-Excavation Sampling Plan G

c. Pre-Construction Investigation Report G

1.2.1.1 Work Plan

Within 45 days of issuance of the delivery order, submit a work plan consisting of the following elements.

a. Narrative

Provide a brief description of the project objectives, construction schedule, and construction procedures.

b. Technical Specifications

Provide, in an amendment format, any additions and modifications to the Contract Specifications required to accurately describe the materials and work procedures envisioned to satisfy the requirements of the delivery order. Contact Code 4023, Specifications Branch, Engineering and Design Division, NORTHNAVFACENGCOM, 610-595-0590 for availability of guide specification sections for those sections required, but not included in the contract documents.

c. Shop Drawings

Shop drawings shall detail and describe all components of the project not currently indicated on the contract drawings such that the shop drawings and the contract drawings, when taken together, provide a complete representation of the project requirements.

d. Environmental Protection Plan

Within 15 days of issuance of the delivery order, meet with the Navy's Technical Representative (NTR) to discuss environmental protection requirements for the project. After meeting with the NTR, prepare, and submit an environmental protection plan in accordance with Section C, Part 4.0, of the Basic Contract.

e. QC Plan

Provide a QC Plan in accordance with Section C, Part 6.0, of the Basic Contract.

(1) Submittal Register

As part of the QC Plan, submit a completed Submittal Register to document quality control for materials, inspection, and testing in accordance with Section C, Part 7.0 of the Basic Contract.

(2) Testing Laboratory Qualifications

As part of the QC Plan, submit qualifications for each laboratory that will be used in accordance with Section C, Part 6.0 of the Basic Contract.

1.2.2 Pre-Excavation Sampling Plan

Provide a Pre-Excavation Sampling Plan outlining the extent of contamination of base soils in the work areas. This plan shall be based on EPA 230/02-89-042 for PCBs and arsenic. The findings of the plan shall determine the excavation boundaries for removal. Also include for sampling, [4] drums of cuttings and decontamination waste (liquids and

solids) collected during previous base investigations.

1.2.3 Pre-ConstructionInvestigation Report

Provide a report which summarizes the results of the pre-excavation sampling plan. Including summaries of the data, data interpretation and conclusions. As part of the interpretations/conclusions, remediation volumes shall be determined and shown on drawings.

1.2.4 Forwarding Preconstruction Submittals

Within 45 days of issuance of the delivery order, and before procurement, fabrication, or mobilization, submit to Resident Officer in Charge of Construction, Naval Weapons Industrial Reserve Plant, Bethpage, New York, and to distribution as directed, the preconstruction submittals required in this specification. The Engineer for this project will review the work plan for the NTR to determine compliance of the Contractor's work plan with the requirements of the contract documents for this delivery order.

1.2.5 Review Comments

Contractor's work plan will be reviewed. The Engineer will compile and coordinate all Government review comments and forward consolidated review comments to the Contractor. Review comments on the work plan shall be resolved, and submittals modified as required. After the correction of the submittals, submit one corrected final copy of the work plan to Resident Officer in Charge of Construction, Naval Weapons Industrial Reserve Plant, Bethpage, New York for final review. The work shall be approved prior to commencement of any other work associated with this delivery order.

1.3 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.3.1 SD-18, Records

a. As Built Records G

b. Environmental Conditions Report G

c. Network Analysis Diagram G

d. Status Reports G

e. QC Meeting Minutes G

f. Test Results Summary Report G

g. Contractor Production Report G

h. QC Report G

i. Rework Items List G

j. Permits G

k. Contractor's Closeout Report G

1.3.1.1 As Built Records

Maintain two sets of full-size contract drawings and two sets of full-size, approved shop drawings marked to show any deviations that have occurred, including buried or concealed construction and utility features revealed during the course of construction. Record horizontal and vertical location of buried utilities that differ from the contract drawings. Show the size manufacturer's name, model number, capacity, and electrical power characteristics of the equipment installed. These drawings shall be available for review by the NTR at any time. At the completion of the work, deliver marked sets of the contract drawings to the NTR. Contractor shall incorporate all shop drawings deviations, and deliver on complete set of reproducible sepias of the shop drawings to the NTR.

1.3.1.2 Environmental Conditions Report

Prior to starting work, perform a preconstruction survey with the NTR. Take photographs showing existing environmental conditions on and adjacent to the site. Prior to starting work, submit the results of the survey to the NTR.

1.3.1.3 MIS Required Sorts

The MIS system shall be a system able to provide as a minimum the activities in sorts or groups as specified in the Basic Contract and any subsequent Delivery Orders.

a. Network Analysis Diagram

Within 30 days of approval of the Contractor's work plan, submit a network analysis diagram in accordance with the Basic Contract and any subsequent Delivery Orders.

b. Status Reports

All status reports shall comply with the Basic Contract and any subsequent Deliver Orders. Submit a Technical Progress Report, Cost Performance Report, Modification Log, Time-Scaled Logic Diagram, Government Materials Tracking Report, Variance Analysis Report, and Waste Materials Report. Submit the first delivery order status report approximately 30 days after approval of the Contractor's work plan. Thereafter, submit status reports every 30 days. Status report periods shall be consistent with the invoice reporting periods.

1.3.1.4 QC Meeting Minutes

The QC Representative shall document all QC meetings by delivering copies of the minutes to the NTR within 3 calendar days after each QC meeting. The submittals shall comply with Section C, Part 6.0, of the Basic Contract.

1.3.1.5 Test Results Summary Report

A summary report of all field tests containing both "required" and "actual" results plus "passed" or "failed" for conforming, non-conforming, and repeated test results shall be submitted to the NTR at the end of each 1 month in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.6 Contractor Production Report

The CPR shall be prepared and submitted daily to the QC Representative in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.7 QC Report

The QC Report shall be submitted by the QC Representative to the NTR every day work is performed, material is delivered, direction is pending, or a labor force is present in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.8 Rework Items List

The QC Representative shall deliver a copy of the rework items list to the NTR on a monthly basis in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.9 Permits

Fifteen days prior to beginning excavation work, submit draft copies of the following permits required for on-site activities.

a. Excavation Permit; from the Public Works Officer, Utilities Division.

1.3.1.10 Contractor's Closeout Report

Submit upon completion of the project. This report shall include: Introduction, Summary of Action, Summary of Record Documents, Field Changes and Contract Modifications, Final Documents, and QC Summary Report.

1.3.2 Forwarding Submittals

As soon as practicable after award of the contract and before procurement or fabrication, submit, except as specified otherwise, to Officer in Charge of Construction, Naval Weapons Industrial Reserve Plant, Bethpage, New York, the submittals required in this specification. The Engineer for this project will review and provide surveillance for the NTR to determine if Contractor-approved submittals comply with the contract requirements, and will review and approve for the NTR those submittals not permitted to be Contractor approved to determine if submittals comply with the contract requirements. At each "Submittal" paragraph in the individual specification sections, a notation "G," following a submittal item, indicates the NTR is the approving authority for that submittal item. One copy of the transmittal form for submittals shall be forwarded to the NTR.

1.4 GENERAL INTENTION

It is the declared and acknowledged intention and meaning to provide and secure the removal of PCB and arsenic contaminated soils at the Naval Weapons Industrial Reserve Plant, Bethpage, New York complete and ready for use.

1.5 GENERAL DESCRIPTION

The scope of this project will include the following activities:

a. Pre-Excavation PCB and arsenic sampling plan and report by the Contractor.

b. Installation of erosion and sedimentation control devices and installation of a staging area and decontamination pad.

c. Site 1

(1) Excavation of approximately 300 cubic yards PCB contaminated soil greater than 500 ppm and disposal at an incinerator.

(2) Excavation of approximately 1,100 cubic yards of PCB contaminated soil greater than 10 ppm and less than 500 ppm and disposal at a landfill.

(3) Excavation of approximately 600 cubic yards of arsenic contaminated soil and treatment/disposal at a landfill.

d. Site 2

(1) Excavation of approximately 2,600 cubic yards of PCB contaminated soil greater than 10 ppm and less than 500 ppm and disposal at a landfill.

e. Remove and dispose of approximately [30] drums left from previous base investigations.

f. Backfilling and regrading of Sites 1 and 2.

g. Obtaining all necessary permits to excavate, haul and dispose of the waste materials.

h. Monitoring air conditions within the construction zone and the perimeters of the work zone for airborne particulate, PCB and arsenic concentrations.

1.6 DESCRIPTION OF CONTAMINANTS PRESENT

Identified contaminants at the site consist primarily of soils contaminated with PCBs and arsenic. Additional, volatic organics are present at the site.

1.7 LOCATION

The work shall be located at the Naval Weapons Industrial Reserve Plant, Bethpage, New York, approximately as shown. The exact location will be indicated by the Contracting Officer.

1.8 PROJECT INFORMATION

1.8.1 Drawings, Maps, and Specifications

Five sets of contract drawings, maps, and specifications will be furnished to the Contractor without charge, except applicable publications incorporated into the technical provisions by reference. Additional sets will be furnished on request at no charge. The work shall conform to the following contract drawings and maps, all of which form a part of these specifications and are available in the office of the NTR.

NAVFAC DRAWING NO.	TITLE
A-1	Title Sheet
B-1	Phase 1 Site Plan
B-2	Existing Underground Utilities
B-3	Construction Details and Erosion Sediment Control Notes

1.9 PROJECT SCHEDULE AND TIME CONSTRAINTS

1.9.1 Commencement, Prosecution, and Completion of Work

The Contractor shall be required to:

a. Commence work under this contract within 15 calendar days after the date the Contractor receives the notice to proceed.

b. Prosecute the work diligently.

c. Complete the entire work ready for use not later than 125 calendar days after the required commencement of work. The time stated for completion shall include final cleanup of the premises.

1.10 SAFETY PROGRAM

In addition to safety requirements in the Basic Contract, the Contractor shall implement a safety program conforming to the requirements of Federal, state, and local laws, rules, and regulations as specifically related to contaminated soil removal and treatment operations. The program shall include, but is not limited to, the following:

a. Occupational Safety and Health Standards

b. COE EM-385-1-1

c. NFPA 241

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 FACILITIES AND SERVICES

3.1.1 Availability of Utilities Services

Government utilities will be made available without charge. The Contractor will be responsible for making connections, providing transformers and meters, and making disconnections; and for providing backflow preventer devices on connections to domestic water lines. Under no circumstances will taps to base fire hydrants be allowed for obtaining domestic water.

3.1.2 Storage in Existing Buildings

Storage in existing buildings will not be allowed.

3.1.2.1 Open Site Storage Site and Location

The open site available for storage shall be confined to the areas indicated on the Contract Drawings.

3.1.3 Trailers, Storage, and Temporary Buildings

Locate these where directed. Trailers or storage buildings will be permitted, where space is available subject to the approval of the NTR. The trailers or buildings shall be in good condition, free from visible damage rust and deterioration, and meet all applicable safety requirements. Trailers shall comply with all appropriate state and local vehicle requirements. Failure of the Contractor to maintain the trailers or storage buildings in good condition will be considered sufficient reason to require their removal. A sign not smaller than 24 inches by 24 inches shall be conspicuously placed on the trailer depicting the company name, business telephone number, and emergency telephone number. Trailers shall be anchored to resist high winds and must meet applicable state or local standards for anchoring mobile trailers.

3.1.3.1 Storage and Office Trailers

Provide a trailer of sufficient size for an office trailer work area and floor area for the exclusive use of the Quality Control Representative. Also provide room in the same trailer for the Quality Control Records. Provide the Quality Control representative with a 4-foot by 8-foot plan table, a standard size office desk and chair, and available at all times to the Government.

a. Trailers must meet station requirements and must be in good condition.

b. Trailers shall be lockable and shall be locked when not in use.

c. Trailers shall have a sign in lower left hand corner of left door

of trailer with the following information: company name, address, registration number of trailer or vehicle identification number, location on base, duration of contract or stay on base, contract number, local on-base telephone number, off-base telephone number of main office, and emergency recall person and telephone number.

3.1.4 Parking

Parking space in certain areas of the station is limited; the Contractor shall furnish transportation for this employees from assigned parking areas to the job site. A limited number of supervisory personnel may be permitted to drive automobiles into the job site upon compliance with regulations governing the operation of an automobile in the area.

3.2 RESTRICTIONS ON OPERATIONS

3.2.1 Scheduling

3.2.1.1 General Scheduling Requirements

Permission to interrupt facility roads shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption. Notify the NTR 48 hours prior to starting work.

3.2.1.2 Regular Work Hours

The regular work hours for Naval Weapons Industrial Reserve Plant, Bethpage, New York, are 0700 to 1600, Monday through Friday.

3.2.1.3 Work Outside Regular Hours

If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, the Contractor shall submit an application to the NTR. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, the Contractor shall light the different parts of the work in an approved manner.

3.2.2 Security Requirements

Contractor shall comply with general security requirements in accordance with Section C of the Basic Contract. No employee or representative of the Contractor will be admitted to the work site without satisfactory proof of United States citizenship or is specifically authorized admittance to the work site by the NTR.

3.2.2.1 Identification Badges

All Contractor personnel working at the Naval Weapons Industrial Reserve Plant will be required to obtain a badge to enter the base. The badge must be displayed at all times by the individual while on the base.

a. The prime Contractor is required to sponsor individuals including subcontractor personnel who will require access for performance. The following is required:

- Contract number and title
- Firm name and telephone number (group subcontractor lists separately)
- Individuals (list) full name and social security number
- Lists suppliers that will possibly be making deliveries

Submit the required information to Security Officer, Naval Weapons Industrial Reserve Plant, Bethpage, New York at least seven 7 days prior to the date you require access. Security will prepare badges that must be picked up and signed for by each contractor employee. The job superintendent is authorized to update the list at the security building as changes occur. Individuals who are not listed as sponsored cannot be admitted. Badges will be issued at the security building during normal working hours (7:30a.m.-9:30a.m., Monday through Friday). It will be possible to replace lost badges or issue temporary badges when forgotten; however, this will only be done during normal working hours and may require 15 to 30 minutes. Badges will be prepared and held until needed. They may be returned and will be held if use is not required for extended periods.

3.2.3 Restrictions on Equipment

3.2.3.1 Electromagnetic Interference Suppression

Electric motors shall comply with MIL STD 461 relative to radiated and conducted electromagnetic interference. A test for electromagnetic interference will not be required for motors that are identical physically and electrically to those that have previously met the requirements of MIL STD 461. An electromagnetic interference suppression test will not be required for electric motors without commutation or slip rings having no more than one starting contact and operated at 3600 revolutions per minute or less.

Devices other than electric motors used by the Contractor shall comply with MIL STD 461 for devices capable of producing radiated or conducted interference.

Conduct tests on electric motors and the Contractor's construction equipment in accordance with MIL STD 461 and MIL STD 462. The test location shall be reasonable free from radiated and conducted interference. Furnish the testing equipment, instruments, and personnel for making the tests; a test location; and other necessary facilities.

3.2.3.2 Radio Transmitter and Mobile Telephone Restrictions

Conform to the restrictions and procedures for the use of radio transmitting equipment and mobile telephones, as directed. Do not use transmitters without prior approval.

3.2.3.3 Vehicles and Equipment

In addition to other conditions and requirements set forth in this specification, attention is invited to the fact that vehicles and equipment admitted to NWIRP, Bethpage, New York, will be required to meet standards established by the Base Safety Department. The vehicular and/or equipment conditions shall satisfactorily meet the following provisions:

a. Steering mechanism must be in satisfactory and safe condition.

b. Horns and warning devices must be operable.

c. Windshield wipers must be satisfactorily in place, clean, and unbroken.

d. Rear view mirrors must be satisfactorily in place, clean and unbroken.

e. General body conditions: Body must be satisfactorily tight including fenders, bumpers, doors and latches thereto, and other parts that might become dislocated during travel.

f. Lights: All lights required by the type of vehicle/equipment in use shall be functional with satisfactory bulbs and lenses.

g. Exhaust systems: Exhaust systems shall be completely functional with no leaks.

h. Fuel systems must be free of leaks and show no evidence of loss of fuel or fumes.

i. Breaks: All brakes shall be functional and give evidence of the ability to halt the loaded vehicles within safe distances.

j. Tires need not be new but shall contain sufficient tread to indicate safety at operating speed with vehicle loaded.

k. Electric wiring: All wiring shall be completely insulated as required and in cased considered appropriate waterproofing of wiring shall be required.

l. Motors shall be reasonably clean from excess grease, dust, and dirt, and if required shall be steam cleaned to the satisfaction of the inspection personnel.

m. Where applicable, inspection will include other such items as gauges, thermometers, controls, relief valves, piping, mechanical locks, limit switches, connectors, and other safety related devices associated with vehicles and equipment admitted to the Base.

3.3 ACTIONS REQUIRED OF THE CONTRACTOR

Contractor shall comply with all requirements stated in Section C of the Basic Contract.

3.3.1 Plant Permits

Permits are required for, but not necessarily limited to, welding, digging, and burning. Allow 7 calendar days for processing of the application. One copy of all applicable permits shall be posted at the job site.

3.4 PUBLIC RELEASE OF INFORMATION

Contractor shall comply with all requirements stipulated in Section C of the Basic Contract.

3.5 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined in Section C of the Basic Contract with additional requirements as follows.

3.6 REQUIRED INSURANCE

Insurance requirements from Section H of the Basic Contract are enforced in their entirety.

3.7 AIR MONITORING

Supply equipment and personnel for onsite monitoring of airborne concentrations of particulates, PCBs and arsenic, and basic meteorological parameters such as wind direction, wind speed and temperature. Provide analytical services for air samples.

-- End of Section --

SECTION 02076

REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs)

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.145	Accident Prevention Signs and Tags
29 CFR 1910.1000	Air Contaminants
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Tables and Hazardous Materials Communications Regulations
49 CFR 173	Shipments and Packagings
49 CFR 174	Carriage by Rail
49 CFR 175	Carriage by Aircraft
49 CFR 176	Carriage by Vessel
49 CFR 177	Carriage by Public Highway
49 CFR 178	Shipping Container Specification
49 CFR 179	Tank Cars

1.2 REQUIREMENTS

The work includes the removal and disposal of PCB-contaminated soil. Perform work in accordance with 40 CFR 761 and the requirements specified herein.

1.3 DEFINITIONS

1.3.1 PCBs

PCBs as used in this specification shall mean the same as PCBs, PCB Article, PCB Article Container, PCB Container, PCB Equipment, PCB Item, PCB Transformer, PCB-Contaminated Electrical Equipment, as defined in 40 CFR

761, Section 3, Definitions.

1.3.2 PCB Contaminated Soil

PCB contaminated soil is defined in 40 CFR 761, Subpart G. For this work, soil having 10 ppm or greater of PCBs by weight are considered "contaminated" and require appropriate removal and disposal. PCB contaminated soil having 500 ppm or greater require disposal by incineration.

1.4 QUALITY ASSURANCE

1.4.1 Training

Instruct employees on the dangers of PCB exposure, on respirator use, decontamination, and applicable OSHA and EPA regulations.

1.4.2 Certified Industrial Hygienist (CIH)

Obtain the services of an industrial hygienist certified by the American Board of Industrial Hygiene to certify training, review and approve the PCB removal plan, including determination of the need for personnel protective equipment (PPE) in performing PCB removal work.

1.4.3 Regulation Documents

Maintain at all times one copy each at the office and one copy each in view at the job site 29 CFR 1910.1000, 40 CFR 761, and Contractor work practices for removal, storage and disposal of PCBs.

1.4.4 Surveillance Personnel

Surveillance personnel may enter PCB control areas for brief periods of time provided they wear disposable polyethylene gloves and disposal polyethylene foot covers, as a minimum. Additional protective equipment may be required if respiratory hazard is involved or if skin contact with PCB is involved.

1.5 SUBMITTALS

Submit the following in accordance with Section C of Basic Contract.

1.5.1 SD-08, Statements

a. Training certification

b. Qualifications of CIH

c. PCB removal work plan

d. PCB disposal plan G

e. Notification

f. Transporter certification of notification to EPA of their PCB

waste activities and EPA ID numbers

g. Certificate of disposal G

1.5.1.1 Training Certification

Submit certificates signed and dated by the CIH and by each employee stating that the employee has received training.

1.5.1.2 Qualifications of CIH

Submit the name, address, and telephone number of the Industrial Hygienist selected to perform the duties in paragraph entitled "Certified Industrial Hygienist." Submit proper documentation that the Industrial Hygienist is certified, including certification number and date of certification/recertification.

1.5.1.3 PCB Removal Work Plan

Submit a detailed job-specific plan of the work procedures to be used in the removal of PCB-containing materials. The plan shall include a sketch showing the location, size, and details of PCB control areas. Include in the plan, eating, drinking, smoking and restroom procedures, interface of trades, sequencing of PCB related work, PCB disposal plan, respirators, protective equipment, and a detailed description of the method of containment of the operation to ensure that PCB contamination is not spread or carried outside of the control area. Include provisions to ensure that airborne PCB concentrations of 6.24 E-11 pound per cubic feet (1.0 x E-1 microgram per cubic meter) of air are not exceeded outside of the PCB control area. Include air sampling, training and strategy, sampling methodology, frequency, duration of sampling, and qualifications of air monitoring personnel in the air sampling portion of the plan. Obtain approval of the plan prior to the start of PCB removal work.

1.5.1.4 PCB Disposal Plan

Submit a PCB Disposal Plan within 45 calendar days after award of contract for Contracting Officer's approval. The PCB Disposal Plan shall comply with applicable requirements of federal, state, and local PCB waste regulations and address:

a. Identification of PCB wastes associated with the work.

b. Estimated quantities of wastes to be generated and disposed of.

c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish two copies of EPA and state PCB waste permits and EPA Identification numbers.

d. Names and qualifications (experience and training) of personnel who will be working on-site with PCB wastes.

e. List of waste handling equipment to be used in performing the work,

to include cleaning, volume reduction, and transport equipment.

f. Work plan and schedule for PCB waste containment, removal and disposal. Wastes shall be cleaned up and placed in the staging area daily.

1.5.1.5 Notification

Notify the Contracting Officer 20 days prior to the start of PCB removal work.

1.6 EQUIPMENT

1.6.1 Special Clothing

Work clothes shall consist of PPE as required by OSHA regulations, including, but not limited to the following:

a. Disposable coveralls

b. Gloves (Disposable rubber gloves may be worn under these)

c. Disposable foot covers (polyethylene)

d. Chemical safety goggles

e. Half mask cartridge respirator.

1.6.2 Special Clothing for Government Personnel

Provide PPE specified in paragraph entitled "Special Clothing" to the Contracting Officer as required for inspection of the work.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 PCB Control Area

Isolate PCB control area by physical boundaries to prevent unauthorized entry of personnel. Food, drink and smoking materials shall not be permitted in areas where PCBs are handled or PCB items are stored.

3.1.2 Personnel Protection

Workers shall wear and use PPE, as recommended by the Industrial Hygienist, upon entering a PCB control area. If PPE is not required per the CIH, specify in the PCB removal work plan.

3.1.3 Footwear

Work footwear shall remain inside work area until completion of the job.

3.1.4 Permissible Exposure Limits (PEL)

PEL for PCBs is 1.0×10^{-1} ug/m^3 on a 1 hour time interval at the NWIRP fenceline.

3.1.5 Special Hazards

a. PCBs shall not be exposed to open flames or other high temperature sources since toxic decomposition by-products may be produced.

b. PCBs shall not be heated to temperatures of 135 degrees F or
b. higher without Contracting Officer's concurrence.

3.1.6 PCB Caution Label

40 CFR 761, Subpart C. Affix labels to PCB waste containers and other PCB-contaminated items. Provide label with sufficient print size to be clearly legible, with bold print on a contrasting background, displaying the following: CAUTION: Contains PCBs (Polychlorinated Biphenyls).

3.1.7 PCB Caution Sign

29 CFR 1910.145. Provide signs at approaches to PCB control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area.

3.2 WORK PROCEDURE

Furnish labor, materials, services, and equipment necessary for the complete removal of PCBs located at the site as indicated or specified in accordance with local, state, or federal regulations including 49 CFR 171 and 49 CFR 172, and as specified herein. Package and mark PCB as required by EPA and DOT regulations including 49 CFR 173, 49 CFR 174, 49 CFR 175, 49 CFR 176, 49 CFR 177, 49 CFR 178, and 49 CFR 179, Subchapter C and as specified herein and dispose of off Government property in accordance with EPA, DOT, and local regulations at a permitted site.

3.2.1 No Smoking

Smoking is not permitted within 50 feet of the PCB control area. Provide "No Smoking" signs as directed by the Contracting Officer.

3.2.2 Work Operations

Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with 40 CFR 761 and the applicable requirements of this section, including but not limited to:

a. Notifying Contracting Officer prior to commencing the operation.

b. Maintaining an access log of employees working in a PCB control area and providing a copy to the Contracting Officer upon completion of the operation.

c. Maintaining inspection, inventory and spill records.

3.3 PCB REMOVAL

Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs. PCB removal process should be described in the work plan.

3.3.1 Control Area

Establish a PCB control area around the PCB item as specified in paragraph entitled "PCB Control Area." Only personnel briefed on the elements in the paragraph entitled, "Training" and on the handling precautions shall be allowed into the area.

3.3.2 Temperatures

As feasible, handle PCBs at ambient temperatures and not at elevated temperatures.

3.3.3 Evacuation Procedures

Procedures shall be written for evacuation of injured workers. Aid for a seriously injured worker shall not be delayed for reasons of decontamination.

3.3.4 PCB Drum Wastes

Remove and dispose of all drums from previous base investigations containing PCBs (liquids and solids) sampled during pre-excavation sampling.

3.4 STORAGE FOR DISPOSAL

3.4.1 Storage Containers for PCBs

49 CFR 178. Store liquid PCBs in Department of Transportation (DOT) Specification 17E containers. Store nonliquid PCB mixtures, articles, or equipment in DOT Specification 5, 5B, or 17C containers with removable heads.

3.4.2 Waste Containers

Label with the following:

a. "Solid (or Liquid) Waste Polychlorinated Biphenyls"

b. The PCB Caution Label, paragraph entitled "PCB Caution Label"

c. The date the item was placed in storage and the name of the site.

3.4.3 PCB Articles and PCB-Contaminated Items

Label with items b. through c. above.

3.4.4 Storage Site

Place contaminated materials in the staging area prior to disposal.

3.5 CLEANUP

Maintain surfaces of the PCB control area free of accumulations of PCBs. Restrict the spread of dust and debris; keep waste from being distributed over work area.

a. Do not remove the PCB control area and warning signs prior to the Contracting Officer's approval. Reclean areas showing residual PCBs.

3.6 DISPOSAL

Comply with disposal requirements and procedures outlined in 40 CFR 761. Do not accept PCB waste unless it is accompanied by a manifest signed by the Government. Before transporting the PCB waste, sign and date the manifest acknowledging acceptance of the PCB waste from the Government. Return a signed copy to the Government before leaving the job site. Ensure that the manifest accompanies the PCB waste at all times. Submit transporter certification of notification to EPA of their PCB waste activities.

3.6.1 Certificate of Disposal

40 CFR 761. Submit to the Government within 30 days of the date that the disposal of the PCB waste identified on the manifest was completed. Certificate for the PCBs and PCB items disposed shall include:

a. The identity of the disposal facility, by name, address, and EPA identification number.

b. The identity of the PCB waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.

c. A statement certifying the fact of disposal of the identified PCB waste, including the date(s) of disposal, and identifying the disposal process used.

d. A certification as defined in 40 CFR 761, Section 3.

3.6.1.1 Payment Upon Furnishing Certificate of Disposal of PCBs

Payment will not be made until the certificate of disposal has been furnished to the Contracting Officer.

-- End of Section --

SECTION 02077

REMOVAL AND DISPOSAL OF ARSENIC CONTAMINATED SOIL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 260	Hazardous Waste Management Systems: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities

STATE OF NEW YORK (SNY)

Subchapter B	Title 6, Department of Environmental Conservation; Chapter IV Quality Services, Subchapter B, Solid Waste

1.2 DEFINITIONS

1.2.1 Contaminated Soil

Soil contaminated with arsenic as defined in Section 02220, "General Excavation, Filling, and Backfilling."

1.3 SUBMITTALS

Submit the following in accordance with Section C of Basic Contract.

1.3.1 SD-18, Records

a. Hazardous Waste Plan G

b. Hazardous Waste Permits G

c. Regulatory Requirements G

d Shipment Manifest G

e. Delivery Manifest G

1.3.1.1 Hazardous Waste Plan

Submit a Hazardous Waste Plan within 45 days after contract award. The plan shall include the following elements.

a. Names and qualifications of the Contractor and each subcontractor that will be transporting, treating, and disposing of the hazardous wastes. Include the disposal facility location and a 24-hour point of contact. Furnish two copies of EPA, state and local hazardous waste permits and EPA and state Identification numbers.

b. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous waste.

c. List of waste handling equipment to be used in performing the work, to include work connected with excavation, cleaning, decontamination, volume reduction, and transport equipment.

d. Provisions for the temporary storage of hazardous materials during the period between excavation/generation/collection and legal transportation and disposal including the identification of the location of the temporary facilities and the steps to be taken to protect the environment from contaminant migration.

e. Provisions for decontamination of personnel, major equipment, confining and collecting decontamination materials and wastes as well as the disposal of those materials. Include drawings illustrating decontamination area layout as well as catalog cuts of the equipment to be utilized.

f. Provisions to confine and control traffic flow in and around the work area so as to minimize the potential for contamination migration.

g. Spill prevention, containment, and cleanup contingency measures to be implemented.

h. Implementation plan and schedule for waste removal and disposal.

1.3.1.2 Hazardous Waste Permits

As required under "Hazardous Waste Plan" submit copies of EPA, state and local hazardous waste permits and EPA and state Identification numbers of the transporter, treatment and disposal facility that will be accepting hazardous waste. Include the facility location and a 24-hour point of contact.

1.3.1.3 Regulatory Requirements

a. Obtain permits required to comply with local, state, and Federal regulations.

b. Hazardous wastes, such as soil, debris, water, sediment, and sludge, shall be packaged, labeled, stored, transported, treated and disposed of in accordance with Federal, State and local regulations to include 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and Subchapter B. Transporters, sorters, treaters and disposers must be certified and have EPA ID numbers. Payment for disposal of hazardous waste will not be made until a completed hazardous waste manifest from the treatment or disposal facility is returned, and a copy furnished to the Government.

1.3.1.4 Shipment Manifest

Shipment Manifests shall be provided to the Contracting Officer as required by the paragraph titled, "Disposal Hazardous of Wastes."

1.3.1.5 Delivery Manifest

Delivery Manifests shall be provided to the Contracting Officer as required by the paragraph titled, "Disposal Hazardous of Wastes."

1.4 TITLE TO MATERIALS

All materials resulting from removal action work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and federal regulations and herein.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 HANDLING AND DISPOSAL OF WASTES

All residual materials, soil and debris, substances, or materials requiring disposal shall be stored, contained, transported and disposed of in accordance with applicable Federal, state and local hazardous waste regulations. Federal regulations are contained in the Code of Federal Regulations 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265 and 40 CFR 266. The Contractor shall:

a. Obtain all required permits.

b. Provide all required containers, vehicles, equipment, labor, signs, labels, and manifests.

c. Report spills of hazardous waste immediately to the Contracting Officer and take immediate effective containment and cleanup actions as required.

d. Obtain waste acceptance criteria necessary of disposal facility.

3.1.1 Storage of Wastes

Store contaminated materials in staging area.

3.1.2 Disposal of Hazardous Wastes

The Contractor shall comply with the following:

a. Properly identify all wastes using the criteria established by the disposal regulations.

b. Utilize a manifest approved by the Environmental Protection Agency and the affected state(s). The manifest must comply with all of the provisions of the Federal and state disposal regulations. The signature of the Contracting Officer's representative must be on the generator portion of the manifest before each shipment leaves the Naval Weapons Industrial Reserve Plant, Bethpage, New York.

c. A copy of each completed and signed manifest, the Shipment Manifest, shall be submitted to the Contracting Officer at the time each shipment leaves the Naval Weapons Industrial Reserve Plant. Within 4 days after delivery of the shipment to the disposal facility, a copy of the manifest with a signature from the disposal facility, the Delivery Manifest, shall be delivered to the Contracting Officer.

d. All of the pre-transport requirements of the disposal regulations must be complied with before the transportation of the hazardous wastes begins.

e. All waste shipments must be transported by the Environmental Protection Agency (EPA) or State permitted hauler. The hauler must have an appropriate EPA or State identification number. Containers approved by the EPA or the state must be used. All transportation of wastes shall be in compliance with the disposal regulations.

f. Each hazardous waste shipment shall be taken to a treatment or disposal facility which is EPA or state permitted. The facility must have the proper permits and identification number and comply with all provisions of the disposal

regulations.

-- End of Section --

SECTION 02220

GENERAL EXCAVATION, FILLING, AND BACKFILLING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136	1993 Sieve Analysis of Fine and Coarse Aggregates
ASTM D 698	1991 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft (600 kN-m/m))
ASTM D 1140	1992 Amount of Material in Soils Finer Than the No. 200 (75-Micrometer) Sieve
ASTM D 1556	1990 Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	1991 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft (2,700 kN-m/m))
ASTM D 2487	1993 Classification of Soils for Engineering Purposes
ASTM D 2922	1991 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	1988 (R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	1993 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 261	Identification and Listing of Hazardous Waste

CORPS OF ENGINEERS (COE)

COE EM-385-1-1 1992 Safety and Health Requirements Manual

1.2 DEFINITIONS

1.2.1 Hard Materials

Weathered rock, dense consolidated deposits, or conglomerate materials which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

1.2.2 Rock

Solid homogeneous interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe-mounted pneumatic hole punchers or rock breakers; also large boulders, buried masonry, or concrete other than pavement exceeding 1/2 cubic yard in volume Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

1.2.3 Cohesive Materials

Materials ASTM D 2487 classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesive only when the fines have a plasticity index greater than zero.

1.2.4 Cohesionless Materials

Materials ASTM D 2487 classified as GW, GP, SW, and SP. Materials classified as GM and SM will be identified as cohesionless only when the fines have a plasticity index of zero.

1.2.5 Contaminated Soil

1.2.5.1 PCB Contaminated Soil

Soils which exhibit contamination of PCBs greater than 10 ppm in accordance with 40 CFR 761. Soils which exhibit contamination of PCBs greater than 500 ppm are to be excavated and incinerated. Section 02076, "Removal and Disposal of Polychlorinated Biphenyls (PCBs)" outlines handling and disposal requirements of all PCB contaminated soils.

1.2.5.2 Arsenic Contaminated Soil

Soils which exhibit contamination of arsenic greater than that which results in exceedance of RCRA characteristics of toxicity in accordance with 49 CFR 261. Section 02077 "Removal and Disposal of Arsenic Contaminated Soil" outlining handling and disposal requirements.

1.3 SUBMITTALS

Submit the following in accordance with Section C of the basic contract.

1.3.1 SD-12, Field Test Reports

a. Fill and backfill test

b. Density tests

1.4 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials.

1.5 CRITERIA FOR BIDDING

Base bids on the following criteria:

a. Surface elevations are as indicated.

b. Depth of excavation shown is approximate. Actual depth of removal will be based upon the Pre-Construction Investigation Report.

c. Pipes or other artificial obstructions, except those indicated, may be encountered. The contractor is hereby notified to perform subsurface utility verification prior to the start of work.

d. Site 1 is located within an abandoned sanitary leach field. Excavation will encounter this field. The Contractor is not required to repair leach field.

d. Ground water elevation is approximatley 50 feet below the surface.

e. Material character is indicated by the boring logs. Fine to medium sand 0' to 10' deep and gravelly sand 10' to 40' deep.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

Free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, and frozen, deleterious, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

2.1.1 Backfill and Fill Material

ASTM D 2487, classification GW, GP, GM, GC, SW, SP, SM, SC with a maximum ASTM D 4318 liquid limit of 35, maximum ASTM D 4318 plasticity index of 12, and a maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve.

2.2 BORROW

Obtain borrow materials required in excess of those furnished from excavations from sources outside of Government property.

PART 3 EXECUTION

3.1 PRE-EXCAVATION PLANS

Conduct Pre-Excavation Sampling Plan and Pre-Construction Investigation Report prior to start of excavation in accordance with Section 01010, "General Paragraphs."

3.2 SURFACE PREPARATION

3.2.1 Fence Removal

Where required for contaminated soil removal, remove existing wood fence and dispose in accordance with paragraph "Disposition of Surplus Material." Where required for Site 2 contaminated soil removal, remove and reinstall existing chain link fence and posts.

3.3 PROTECTION

3.3.1 Protection Systems

Provide shoring, bracing, and sheeting in accordance with COE EM-385-1-1, except that banks may be sloped only when approved by the Contracting Officer.

3.3.2 Drainage and Dewatering

Provide for the collection and disposal of surface and subsurface water encountered during construction.

3.3.2.1 Drainage

So that construction operations progress successfully, completely drain construction site during periods of construction to keep soil materials sufficiently dry. Provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein.

3.3.3 Underground Utilities

Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. The Contractor shall contact the ROICC, Bethpage for assistance in locating existing utilities.

3.3.4 Machinery and Equipment

Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

3.4 EXCAVATION

Excavate to contours, elevation, and dimensions for removal of contaminated as determined during Pre-Construction Investigation Report. Reuse of excavated materials is not permitted. Storage of contaminated materials is not permitted beyond 30 days. Dispose of all excavated materials as contaminated soil in accordance with Section 02076, "Removal and Disposal of Polychlorinated Biphenyls (PCBs) and Section 02077, "Removal and Disposal of Arsenic Contaminated Soil." Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather.

3.4.1 PCB Contaminated Soils

Excavate, stage, dispose of contaminated soils with 500 ppb or greater PCBs separate from those soils contaminated with less than 500 ppm PCBs.

3.5 FILLING AND BACKFILLING

Fill and backfill to match existing adjacent elevations to the dimensions indicated. Compact each lift before placing overlaying lift.

3.5.1 Backfill and Fill Material Placement

Place in 12-inch lifts. Place backfill material adjacent to structures as the structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against the structure.

3.6 COMPACTION

Expressed as a percentage of maximum density. Determine in-place density of existing subgrade; if required density exists, no compaction of existing subgrade will be required.

3.6.1 General Site

Compact underneath areas designated for vegetation and areas outside the 5-foot line of the structure to 85 percent of ASTM D 1557.

3.7 FINISH OPERATIONS

3.7.1 Grading

Grade areas to drain water away from structures. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

3.7.2 Protection of Surfaces

Protect newly graded areas from traffic, erosion, and settlements that may occur. Repair or reestablish damaged grades, elevations, or slopes.

3.8 DISPOSITION OF SURPLUS MATERIAL

Remove from Government property refuse, wood fencing, and approximately [20] empty drums.

3.9 FIELD QUALITY CONTROL

3.9.1 Sampling

Take the number and size of samples required to perform the following tests.

3.9.2 Testing

Perform one of each of the following tests for each material used. Provide additional tests for each source change.

3.9.2.1 Fill and Backfill Material Testing

Test fill and backfill material in accordance with ASTM C 136 for conformance to ASTM D 2487 gradation limits; ASTM D 1140 for material finer than the No. 200 sieve; ASTM D 4318 for liquid limit and for plastic limit; ASTM D 698 or ASTM D 1557 for moisture density relations, as applicable.

3.9.2.2 Density Tests

Test density in accordance with ASTM D 1556, or ASTM D 2922 and ASTM D 3017. When ASTM D 2922 and ASTM D 3017 density tests are used, verify density test results by performing an ASTM D 1556 density test at a location already ASTM D 2922 and ASTM D 3017 tested as specified herein. Perform an ASTM D 1556 density test at the start of the job, and for every 10 ASTM D 2922 and ASTM D 3017 density tests thereafter. Test each lift at randomly selected locations every 2000 square feet of existing grade in fills for structures and concrete slabs.

-- End of Section --

SUBMITTAL REGISTER (PART A)

Contract Number: | Project Title: REMOVAL OF CONTAMINATED SOIL, NWIRP, BETHP

SPEC SECTION NO.	SD NO, AND TYPE OF SUBMITTAL MATERIAL OR PRODUCT	SPEC PARA NO.	CLASSIF/ APPR BY CO *	GOVT OR A/E REVIEWER	TRANS CONTROL NO.	PLANNED SUBMITTAL DATE
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1) 01010	SD-18, Records	1.2.1				
2)	Work Plan	1.2.1.1	G			
3)	Pre-Excavation Sampling Plan	1.2.2	G			
4)	Investigation Report	1.2.3	G			
5) 01010	SD-18, Records	1.3.1				
6)	As Built Records	1.3.1.1	G			
7)	Environmental Conditions Report	1.3.1.2	G			
8)	Network Analysis Diagram	1.3.1.3	G			
9)	Status Reports	1.3.1.3	G			
10)	QC Meeting Minutes	1.3.1.4	G			
11)	Test Results Summary Report	1.3.1.5	G			
12)	Contractor Production Report	1.3.1.6	G			
13)	QC Report	1.3.1.7	G			
14)	Rework Items List	1.3.1.8	G			
15)	Permits	1.3.1.9	G			
16)	Permits	3.3.1	G			
17)	Contractor's Closeout Report	1.3.1.10	G			
18) 02076	SD-08, Statements	1.5.1				
19)	Training certification	1.5.1.1				
20)	Qualifications of CIH	1.5.1.2				

* Navy Notes:
Approved by:
G: Contracting Officer
Blank: CQC Manager

* NASA Notes:
Approved by:
Blank: Contracting Officer

* Army Notes:
Classification:
GA: Gov't Approval
FIO: For Information Only

Contract Number: | Project Title: REMOVAL OF CONTAMINATED SOIL, NWIRP, BETHP

SPEC SECTION NO.	SD NO, AND TYPE OF SUBMITTAL MATERIAL OR PRODUCT	SPEC PARA NO.	CLASSIF/ APPR BY CO *	GOVT OR A/E REVIEWER	TRANS CONTROL NO.	PLANNED SUBMITTAL DATE
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1)	PCB removal work plan	1.5.1.3				
2)	PCB disposal plan	1.5.1.4	G			
3)	Notification	1.5.1.5				
4)	Transporter certification	3.6				
5)	Certificate of disposal	3.6.1	G			
6) 02077	SD-18, Records	1.3.1				
7)	Hazardous Waste Plan	1.3.1.1	G			
8)	Hazardous Waste Permits	1.3.1.2	G			
9)	Regulatory Requirements	1.3.1.3	G			
10)	Shipment Manifest	1.3.1.4	G			
11)	Delivery Manifest	1.3.1.5	G			
12) 02220	SD-12, Field Test Reports	1.3.1				
13)	Fill and backfill	3.9.2.1				
14)	Density tests	3.9.2.2				

* Navy Notes:
Approved by:
G: Contracting Officer
Blank: CQC Manager

* NASA Notes:
Approved by:
Blank: Contracting Officer

* Army Notes:
Classification:
GA: Gov't Approval
FIO: For Information Only

(PART B) SUBMITTAL REGISTER Page ____ of ____

Location: | Contractor:

CONTRACTOR ACTION			APPROVING AUTHORITY ACTION				CONTR	
ACT. CODE	DATE OF ACTION	DATE FWD TO APPR AUTH / DATE RECD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RECD FROM OTH REVIEWER	ACT. CODE	DATE OF ACTION	MAILED TO CONTR / RECD FROM APPR AUTH	REMARKS
(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
								1)
								2)
								3)
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								11)
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								14)
								15)
								16)
								17)
								18)
								19)
								20)

ACTION CODES: NR: Not Reviewed AN: Approved as Noted
A: Approved RR: Disapproved; Revise and Resubmit
(Others may be prescribed by the Transmittal Form)

PROJECT TABLE OF CONTENTS

-- End of Project Table of Contents --

SECTION 01010

GENERAL PARAGRAPHS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CORPS OF ENGINEERS (COE)

COE EM-385-1-1	1992 Safety and Health Requirements Manual

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 230/02-89-042	1989 Methods for Evaluating the Attainment of Cleanup Standards Vol. I: Soils and Soil Media

MILITARY STANDARDS (MIL-STD)

MIL STD 461	(Rev C) (Notice 2) Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference
MIL STD 462	(Notice 6) Measurement of Electromagnetic Interference Characteristics

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241	1989 Safeguarding Construction

1.2 PRECONSTRUCTION SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.2.1 SD-18, Records

a. Work Plan G

b. Pre-Excavation Sampling Plan G

c. Pre-Construction Investigation Report G

1.2.1.1 Work Plan

Within 45 days of issuance of the delivery order, submit a work plan consisting of the following elements.

a. Narrative

Provide a brief description of the project objectives, construction schedule, and construction procedures.

b. Technical Specifications

Provide, in an amendment format, any additions and modifications to the Contract Specifications required to accurately describe the materials and work procedures envisioned to satisfy the requirements of the delivery order. Contact Code 4023, Specifications Branch, Engineering and Design Division, NORTHNAVFACENGCOM, 610-595-0590 for availability of guide specification sections for those sections required, but not included in the contract documents.

c. Shop Drawings

Shop drawings shall detail and describe all components of the project not currently indicated on the contract drawings such that the shop drawings and the contract drawings, when taken together, provide a complete representation of the project requirements.

d. Environmental Protection Plan

Within 15 days of issuance of the delivery order, meet with the Navy's Technical Representative (NTR) to discuss environmental protection requirements for the project. After meeting with the NTR, prepare, and submit an environmental protection plan in accordance with Section C, Part 4.0, of the Basic Contract.

e. QC Plan

Provide a QC Plan in accordance with Section C, Part 6.0, of the Basic Contract.

(1) Submittal Register

As part of the QC Plan, submit a completed Submittal Register to document quality control for materials, inspection, and testing in accordance with Section C, Part 7.0 of the Basic Contract.

(2) Testing Laboratory Qualifications

As part of the QC Plan, submit qualifications for each laboratory that will be used in accordance with Section C, Part 6.0 of the Basic Contract.

1.2.2 Pre-Excavation Sampling Plan

Provide a Pre-Excavation Sampling Plan outlining the extent of contamination of base soils in the work areas. This plan shall be based on EPA 230/02-89-042 for PCBs and arsenic. The findings of the plan shall determine the excavation boundaries for removal. Also include for sampling, [4] drums of cuttings and decontamination waste (liquids and

solids) collected during previous base investigations.

1.2.3 Pre-ConstructionInvestigation Report

Provide a report which summarizes the results of the pre-excavation sampling plan. Including summaries of the data, data interpretation and conclusions. As part of the interpretations/conclusions, remediation volumes shall be determined and shown on drawings.

1.2.4 Forwarding Preconstruction Submittals

Within 45 days of issuance of the delivery order, and before procurement, fabrication, or mobilization, submit to Resident Officer in Charge of Construction, Naval Weapons Industrial Reserve Plant, Bethpage, New York, and to distribution as directed, the preconstruction submittals required in this specification. The Engineer for this project will review the work plan for the NTR to determine compliance of the Contractor's work plan with the requirements of the contract documents for this delivery order.

1.2.5 Review Comments

Contractor's work plan will be reviewed. The Engineer will compile and coordinate all Government review comments and forward consolidated review comments to the Contractor. Review comments on the work plan shall be resolved, and submittals modified as required. After the correction of the submittals, submit one corrected final copy of the work plan to Resident Officer in Charge of Construction, Naval Weapons Industrial Reserve Plant, Bethpage, New York for final review. The work shall be approved prior to commencement of any other work associated with this delivery order.

1.3 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.3.1 SD-18, Records

a. As Built Records G

b. Environmental Conditions Report G

c. Network Analysis Diagram G

d. Status Reports G

e. QC Meeting Minutes G

f. Test Results Summary Report G

g. Contractor Production Report G

h. QC Report G

i. Rework Items List G

j. Permits G

k. Contractor's Closeout Report G

1.3.1.1 As Built Records

Maintain two sets of full-size contract drawings and two sets of full-size, approved shop drawings marked to show any deviations that have occurred, including buried or concealed construction and utility features revealed during the course of construction. Record horizontal and vertical location of buried utilities that differ from the contract drawings. Show the size manufacturer's name, model number, capacity, and electrical power characteristics of the equipment installed. These drawings shall be available for review by the NTR at any time. At the completion of the work, deliver marked sets of the contract drawings to the NTR. Contractor shall incorporate all shop drawings deviations, and deliver on complete set of reproducible sepias of the shop drawings to the NTR.

1.3.1.2 Environmental Conditions Report

Prior to starting work, perform a preconstruction survey with the NTR. Take photographs showing existing environmental conditions on and adjacent to the site. Prior to starting work, submit the results of the survey to the NTR.

1.3.1.3 MIS Required Sorts

The MIS system shall be a system able to provide as a minimum the activities in sorts or groups as specified in the Basic Contract and any subsequent Delivery Orders.

a. Network Analysis Diagram

Within 30 days of approval of the Contractor's work plan, submit a network analysis diagram in accordance with the Basic Contract and any subsequent Delivery Orders.

b. Status Reports

All status reports shall comply with the Basic Contract and any subsequent Deliver Orders. Submit a Technical Progress Report, Cost Performance Report, Modification Log, Time-Scaled Logic Diagram, Government Materials Tracking Report, Variance Analysis Report, and Waste Materials Report. Submit the first delivery order status report approximately 30 days after approval of the Contractor's work plan. Thereafter, submit status reports every 30 days. Status report periods shall be consistent with the invoice reporting periods.

1.3.1.4 QC Meeting Minutes

The QC Representative shall document all QC meetings by delivering copies of the minutes to the NTR within 3 calendar days after each QC meeting. The submittals shall comply with Section C, Part 6.0, of the Basic Contract.

1.3.1.5 Test Results Summary Report

A summary report of all field tests containing both "required" and "actual" results plus "passed" or "failed" for conforming, non-conforming, and repeated test results shall be submitted to the NTR at the end of each 1 month in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.6 Contractor Production Report

The CPR shall be prepared and submitted daily to the QC Representative in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.7 QC Report

The QC Report shall be submitted by the QC Representative to the NTR every day work is performed, material is delivered, direction is pending, or a labor force is present in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.8 Rework Items List

The QC Representative shall deliver a copy of the rework items list to the NTR on a monthly basis in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.9 Permits

Fifteen days prior to beginning excavation work, submit draft copies of the following permits required for on-site activities.

a. Excavation Permit; from the Public Works Officer, Utilities Division.

1.3.1.10 Contractor's Closeout Report

Submit upon completion of the project. This report shall include: Introduction, Summary of Action, Summary of Record Documents, Field Changes and Contract Modifications, Final Documents, and QC Summary Report.

1.3.2 Forwarding Submittals

As soon as practicable after award of the contract and before procurement or fabrication, submit, except as specified otherwise, to Officer in Charge of Construction, Naval Weapons Industrial Reserve Plant, Bethpage, New York, the submittals required in this specification. The Engineer for this project will review and provide surveillance for the NTR to determine if Contractor-approved submittals comply with the contract requirements, and will review and approve for the NTR those submittals not permitted to be Contractor approved to determine if submittals comply with the contract requirements. At each "Submittal" paragraph in the individual specification sections, a notation "G," following a submittal item, indicates the NTR is the approving authority for that submittal item. One copy of the transmittal form for submittals shall be forwarded to the NTR.

1.4 GENERAL INTENTION

It is the declared and acknowledged intention and meaning to provide and secure the removal of PCB and arsenic contaminated soils at the Naval Weapons Industrial Reserve Plant, Bethpage, New York complete and ready for use.

1.5 GENERAL DESCRIPTION

The scope of this project will include the following activities:

a. Pre-Excavation PCB and arsenic sampling plan and report by the Contractor.

b. Installation of erosion and sedimentation control devices and installation of a staging area and decontamination pad.

c. Site 1

(1) Excavation of approximately 300 cubic yards PCB contaminated soil greater than 500 ppm and disposal at an incinerator.

(2) Excavation of approximately 1,100 cubic yards of PCB contaminated soil greater than 10 ppm and less than 500 ppm and disposal at a landfill.

(3) Excavation of approximately 600 cubic yards of arsenic contaminated soil and treatment/disposal at a landfill.

d. Site 2

(1) Excavation of approximately 2,600 cubic yards of PCB contaminated soil greater than 10 ppm and less than 500 ppm and disposal at a landfill.

e. Remove and dispose of approximately [30] drums left from previous base investigations.

f. Backfilling and regrading of Sites 1 and 2.

g. Obtaining all necessary permits to excavate, haul and dispose of the waste materials.

h. Monitoring air conditions within the construction zone and the perimeters of the work zone for airborne particulate, PCB and arsenic concentrations.

1.6 DESCRIPTION OF CONTAMINANTS PRESENT

Identified contaminants at the site consist primarily of soils contaminated with PCBs and arsenic. Additional, volatic organics are present at the site.

1.7 LOCATION

The work shall be located at the Naval Weapons Industrial Reserve Plant, Bethpage, New York, approximately as shown. The exact location will be indicated by the Contracting Officer.

1.8 PROJECT INFORMATION

1.8.1 Drawings, Maps, and Specifications

Five sets of contract drawings, maps, and specifications will be furnished to the Contractor without charge, except applicable publications incorporated into the technical provisions by reference. Additional sets will be furnished on request at no charge. The work shall conform to the following contract drawings and maps, all of which form a part of these specifications and are available in the office of the NTR.

NAVFAC DRAWING NO.	TITLE
A-1	Title Sheet
B-1	Phase 1 Site Plan
B-2	Existing Underground Utilities
B-3	Construction Details and Erosion Sediment Control Notes

1.9 PROJECT SCHEDULE AND TIME CONSTRAINTS

1.9.1 Commencement, Prosecution, and Completion of Work

The Contractor shall be required to:

a. Commence work under this contract within 15 calendar days after the date the Contractor receives the notice to proceed.

b. Prosecute the work diligently.

c. Complete the entire work ready for use not later than 125 calendar days after the required commencement of work. The time stated for completion shall include final cleanup of the premises.

1.10 SAFETY PROGRAM

In addition to safety requirements in the Basic Contract, the Contractor shall implement a safety program conforming to the requirements of Federal, state, and local laws, rules, and regulations as specifically related to contaminated soil removal and treatment operations. The program shall include, but is not limited to, the following:

a. Occupational Safety and Health Standards

b. COE EM-385-1-1

c. NFPA 241

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 FACILITIES AND SERVICES

3.1.1 Availability of Utilities Services

Government utilities will be made available without charge. The Contractor will be responsible for making connections, providing transformers and meters, and making disconnections; and for providing backflow preventer devices on connections to domestic water lines. Under no circumstances will taps to base fire hydrants be allowed for obtaining domestic water.

3.1.2 Storage in Existing Buildings

Storage in existing buildings will not be allowed.

3.1.2.1 Open Site Storage Site and Location

The open site available for storage shall be confined to the areas indicated on the Contract Drawings.

3.1.3 Trailers, Storage, and Temporary Buildings

Locate these where directed. Trailers or storage buildings will be permitted, where space is available subject to the approval of the NTR. The trailers or buildings shall be in good condition, free from visible damage rust and deterioration, and meet all applicable safety requirements. Trailers shall comply with all appropriate state and local vehicle requirements. Failure of the Contractor to maintain the trailers or storage buildings in good condition will be considered sufficient reason to require their removal. A sign not smaller than 24 inches by 24 inches shall be conspicuously placed on the trailer depicting the company name, business telephone number, and emergency telephone number. Trailers shall be anchored to resist high winds and must meet applicable state or local standards for anchoring mobile trailers.

3.1.3.1 Storage and Office Trailers

Provide a trailer of sufficient size for an office trailer work area and floor area for the exclusive use of the Quality Control Representative. Also provide room in the same trailer for the Quality Control Records. Provide the Quality Control representative with a 4-foot by 8-foot plan table, a standard size office desk and chair, and available at all times to the Government.

a. Trailers must meet station requirements and must be in good condition.

b. Trailers shall be lockable and shall be locked when not in use.

c. Trailers shall have a sign in lower left hand corner of left door

of trailer with the following information: company name, address, registration number of trailer or vehicle identification number, location on base, duration of contract or stay on base, contract number, local on-base telephone number, off-base telephone number of main office, and emergency recall person and telephone number.

3.1.4 Parking

Parking space in certain areas of the station is limited; the Contractor shall furnish transportation for this employees from assigned parking areas to the job site. A limited number of supervisory personnel may be permitted to drive automobiles into the job site upon compliance with regulations governing the operation of an automobile in the area.

3.2 RESTRICTIONS ON OPERATIONS

3.2.1 Scheduling

3.2.1.1 General Scheduling Requirements

Permission to interrupt facility roads shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption. Notify the NTR 48 hours prior to starting work.

3.2.1.2 Regular Work Hours

The regular work hours for Naval Weapons Industrial Reserve Plant, Bethpage, New York, are 0700 to 1600, Monday through Friday.

3.2.1.3 Work Outside Regular Hours

If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, the Contractor shall submit an application to the NTR. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, the Contractor shall light the different parts of the work in an approved manner.

3.2.2 Security Requirements

Contractor shall comply with general security requirements in accordance with Section C of the Basic Contract. No employee or representative of the Contractor will be admitted to the work site without satisfactory proof of United States citizenship or is specifically authorized admittance to the work site by the NTR.

3.2.2.1 Identification Badges

All Contractor personnel working at the Naval Weapons Industrial Reserve Plant will be required to obtain a badge to enter the base. The badge must be displayed at all times by the individual while on the base.

a. The prime Contractor is required to sponsor individuals including subcontractor personnel who will require access for performance. The following is required:

- Contract number and title
- Firm name and telephone number (group subcontractor lists separately)
- Individuals (list) full name and social security number
- Lists suppliers that will possibly be making deliveries

Submit the required information to Security Officer, Naval Weapons Industrial Reserve Plant, Bethpage, New York at least seven 7 days prior to the date you require access. Security will prepare badges that must be picked up and signed for by each contractor employee. The job superintendent is authorized to update the list at the security building as changes occur. Individuals who are not listed as sponsored cannot be admitted. Badges will be issued at the security building during normal working hours (7:30a.m.-9:30a.m., Monday through Friday). It will be possible to replace lost badges or issue temporary badges when forgotten; however, this will only be done during normal working hours and may require 15 to 30 minutes. Badges will be prepared and held until needed. They may be returned and will be held if use is not required for extended periods.

3.2.3 Restrictions on Equipment

3.2.3.1 Electromagnetic Interference Suppression

Electric motors shall comply with MIL STD 461 relative to radiated and conducted electromagnetic interference. A test for electromagnetic interference will not be required for motors that are identical physically and electrically to those that have previously met the requirements of MIL STD 461. An electromagnetic interference suppression test will not be required for electric motors without commutation or slip rings having no more than one starting contact and operated at 3600 revolutions per minute or less.

Devices other than electric motors used by the Contractor shall comply with MIL STD 461 for devices capable of producing radiated or conducted interference.

Conduct tests on electric motors and the Contractor's construction equipment in accordance with MIL STD 461 and MIL STD 462. The test location shall be reasonable free from radiated and conducted interference. Furnish the testing equipment, instruments, and personnel for making the tests; a test location; and other necessary facilities.

3.2.3.2 Radio Transmitter and Mobile Telephone Restrictions

Conform to the restrictions and procedures for the use of radio transmitting equipment and mobile telephones, as directed. Do not use transmitters without prior approval.

3.2.3.3 Vehicles and Equipment

In addition to other conditions and requirements set forth in this specification, attention is invited to the fact that vehicles and equipment admitted to NWIRP, Bethpage, New York, will be required to meet standards established by the Base Safety Department. The vehicular and/or equipment conditions shall satisfactorily meet the following provisions:

a. Steering mechanism must be in satisfactory and safe condition.

b. Horns and warning devices must be operable.

c. Windshield wipers must be satisfactorily in place, clean, and unbroken.

d. Rear view mirrors must be satisfactorily in place, clean and unbroken.

e. General body conditions: Body must be satisfactorily tight including fenders, bumpers, doors and latches thereto, and other parts that might become dislocated during travel.

f. Lights: All lights required by the type of vehicle/equipment in use shall be functional with satisfactory bulbs and lenses.

g. Exhaust systems: Exhaust systems shall be completely functional with no leaks.

h. Fuel systems must be free of leaks and show no evidence of loss of fuel or fumes.

i. Breaks: All brakes shall be functional and give evidence of the ability to halt the loaded vehicles within safe distances.

j. Tires need not be new but shall contain sufficient tread to indicate safety at operating speed with vehicle loaded.

k. Electric wiring: All wiring shall be completely insulated as required and in cased considered appropriate waterproofing of wiring shall be required.

l. Motors shall be reasonably clean from excess grease, dust, and dirt, and if required shall be steam cleaned to the satisfaction of the inspection personnel.

m. Where applicable, inspection will include other such items as gauges, thermometers, controls, relief valves, piping, mechanical locks, limit switches, connectors, and other safety related devices associated with vehicles and equipment admitted to the Base.

3.3 ACTIONS REQUIRED OF THE CONTRACTOR

Contractor shall comply with all requirements stated in Section C of the Basic Contract.

3.3.1 Plant Permits

Permits are required for, but not necessarily limited to, welding, digging, and burning. Allow 7 calendar days for processing of the application. One copy of all applicable permits shall be posted at the job site.

3.4 PUBLIC RELEASE OF INFORMATION

Contractor shall comply with all requirements stipulated in Section C of the Basic Contract.

3.5 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined in Section C of the Basic Contract with additional requirements as follows.

3.6 REQUIRED INSURANCE

Insurance requirements from Section H of the Basic Contract are enforced in their entirety.

3.7 AIR MONITORING

Supply equipment and personnel for onsite monitoring of airborne concentrations of particulates, PCBs and arsenic, and basic meteorological parameters such as wind direction, wind speed and temperature. Provide analytical services for air samples.

-- End of Section --

DEPARTMENT OF THE NAVY
NAVAL FACILITIES
ENGINEERING COMMAND
GUIDE SPECIFICATION

NFGS-02076C
31 December 1994
Superseding NFGS-02076B (09/94)

NFGS-02076C

REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs)

Preparing Activity: PACNAVFACENGCOM

	Typed Name & Reg.	Signature	Date
Prepared by:	G. T. Aoki, P.E.	/s/	07/19/94
Approved by:	W. T. Takushi, P.E. Branch Manager	/s/	07/25/94
Approved by:	E. T. Takai, P.E. Division Director	/s/	07/26/94
Approved for NAVFAC:	Carl E. Kersten, R.A.	/s/	09/30/94

Any changes or revisions to this document since the date of the original approval for NAVFAC, have been performed by the Guide Specifications Division (Code 15G).

Changes or Revisions
Approved for NAVFAC: /s/ Carl E. Kersten, R.A. 12/31/94

AMSC N/A AREA FACR

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES
ENGINEERING COMMAND
GUIDE SPECIFICATION

NFGS-02076C
31 December 1994
Superseding NFGS-02076B (09/94)

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SECTION 02076

REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs)
12/94

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NOTE: This guide specification covers the requirements for \@the removal and disposal of polychlorinated biphenyls (PCBs) and the handling of PCB containing materials. It is intended for use in projects where PCBs or materials containing PCB at concentrations of 50 parts per million (ppm) and above are to be removed and disposed of@\.

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NOTE: This revision "C" to NFGS-02076 amends the issue dated 30 September 1994 by updating references, combining metric and English measurements.

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NOTE: See Note A located at end of text.

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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

\-29 CFR 1910.145-\	Accident Prevention Signs and Tags
\-29 CFR 1910.1000-\	Air Contaminants
\-40 CFR 761-\	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
\-49 CFR 171-\	General Information, Regulations, and Definitions
\-49 CFR 172-\	Hazardous Materials Tables and Hazardous

Materials Communications Regulations

\-49 CFR 173-\	Shipments and Packagings
\-49 CFR 174-\	Carriage by Rail
\-49 CFR 175-\	Carriage by Aircraft
\-49 CFR 176-\	Carriage by Vessel
\-49 CFR 177-\	Carriage by Public Highway
\-49 CFR 178-\	Shipping Container Specification
\-49 CFR 179-\	Tank Cars

1.2 REQUIREMENTS

The work includes the removal and disposal of [PCB-contaminated soil]. Perform work in accordance with \-40 CFR 761-\ and the requirements specified herein.

1.3 DEFINITIONS

~~1.3.1 Leak~~

~~Leak or leaking means any instance in which a PCB Article, PCB Container, or PCB Equipment has any PCBs on any portion of its external surface.~~

1.3.2 PCBs

PCBs as used in this specification shall mean the same as PCBs, PCB Article, PCB Article Container, PCB Container, PCB Equipment, PCB Item, PCB Transformer, PCB-Contaminated Electrical Equipment, as defined in \-40 CFR 761-\, Section 3, Definitions.

~~1.3.3 Spill~~

Move A here →

~~Spill means both intentional and unintentional spills, leaks, and other uncontrolled discharges when the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases.~~

1.4 QUALITY ASSURANCE

1.4.1 Training

Instruct employees on the dangers of PCB exposure, on respirator use, decontamination, and applicable OSHA and EPA regulations.

1.4.2 Certified Industrial Hygienist (CIH)

Obtain the services of an industrial hygienist certified by the American Board of Industrial Hygiene to certify training, review and approve the PCB removal plan, including determination of the need for personnel protective

761, Section 3, Definitions.

1.3.2 PCB Contaminated Soil

PCB contaminated soil is defined in 40 CFR 761, Subpart G. For this work, soil having 10 ppm or greater of PCBs by weight are considered "contaminated" and require appropriate removal and disposal. PCB contaminated soil having 500 ppm or greater require disposal by incineration.

1.4 QUALITY ASSURANCE

1.4.1 Training

Instruct employees on the dangers of PCB exposure, on respirator use, decontamination, and applicable OSHA and EPA regulations.

1.4.2 Certified Industrial Hygienist (CIH)

Obtain the services of an industrial hygienist certified by the American Board of Industrial Hygiene to certify training, review and approve the PCB removal plan, including determination of the need for personnel protective equipment (PPE) in performing PCB removal work.

1.4.3 Regulation Documents

Maintain at all times one copy each at the office and one copy each in view at the job site 29 CFR 1910.1000, 40 CFR 761, and Contractor work practices for removal, storage and disposal of PCBs.

1.4.4 Surveillance Personnel

Surveillance personnel may enter PCB control areas for brief periods of time provided they wear disposable polyethylene gloves and disposal polyethylene foot covers, as a minimum. Additional protective equipment may be required if respiratory hazard is involved or if skin contact with PCB is involved.

1.5 SUBMITTALS

Submit the following in accordance with Section C of Basic Contract.

1.5.1 SD-08, Statements

a. Training certification

b. Qualifications of CIH

c. PCB removal work plan

d. PCB disposal plan G

e. Notification

f. Transporter certification of notification to EPA of their PCB

equipment (PPE) in performing PCB removal work.

1.4.3 Regulation Documents

Maintain at all times one copy each at the office and one copy each in view at the job site \-29 CFR 1910.1000-\, \-40 CFR 761-\, and Contractor work practices for removal, storage and disposal of PCBs.

1.4.4 Surveillance Personnel

Surveillance personnel may enter PCB control areas for brief periods of time provided they wear disposable polyethylene gloves and disposal polyethylene foot covers, as a minimum. Additional protective equipment may be required if respiratory hazard is involved or if skin contact with PCB is involved.

1.5 SUBMITTALS

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NOTE: Where a "G" in asterisk tokens follows a submittal item, it indicates Government approval for that item. Add "G" in asterisk tokens following any added or existing submittal items deemed sufficiently critical, complex, or aesthetically significant to merit approval by the Government. Submittal items not designated with a "G" will be approved by the QC organization.

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Submit the following in accordance with Section ~~\-01300-\, "Submittals."~~ of the Basic Contract

1.5.1 *SD-08, Statements*\

a. *Training certification*\

b. *Qualifications of CIH*\

c. *PCB removal work plan*\

d. *PCB disposal plan*\ *G*\

e. *Notification*\

f. *Transporter certification*\ of notification to EPA of their PCB waste activities and EPA ID numbers

~~[g. *Certification of Decontamination*\ for PCB Spill]~~

~~[h. *Post cleanup sampling*\ data]~~

g. *Certificate of disposal*\ *G*\

1.5.1.1 *Training Certification*\

Submit certificates signed and dated by the CIH and by each employee stating that the employee has received training.

1.5.1.2 *Qualifications of CIH*\

Submit the name, address, and telephone number of the Industrial Hygienist selected to perform the duties in paragraph entitled "Certified Industrial Hygienist." Submit proper documentation that the Industrial Hygienist is certified, including certification number and date of certification/recertification.

1.5.1.3 *PCB Removal Work Plan*\

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NOTE: Edit removal plan requirements to suit the project. Modify or delete decon and change rooms, showers, and ventilation. Delete air sampling requirements except for work at elevated temperatures sufficient to vaporize PCB or for work involving PCB contaminated dust or particulate generation such as grinding, sawing, or sweeping.

****

Submit a detailed job-specific plan of the work procedures to be used in the removal of PCB-containing materials. The plan shall include a sketch showing the location, size, and details of PCB control areas ~~[, location and details of decontamination rooms, change rooms, shower facilities, and mechanical ventilation system]~~. Include in the plan, eating, drinking, smoking and restroom procedures, interface of trades, sequencing of PCB related work, PCB disposal plan, respirators, protective equipment, and a detailed description of the method of containment of the operation to ensure that PCB contamination is not spread or carried outside of the control area. Include provisions to ensure that \&airborne PCB concentrations of \~~3.10 E-08~~ pound per cubic feet~\~~of air~~ are not exceeded outside of the PCB control area&\. Include air sampling, training and strategy, sampling methodology, frequency, duration of sampling, and qualifications of air monitoring personnel in the air sampling portion of the plan. Obtain approval of the plan prior to the start of PCB removal work.

(1.0 x E-1 micrograms per cubic meter)

1.5.1.4 *PCB Disposal Plan*\

****

NOTE: Delete this paragraph if the Government is to dispose of PCB waste. Verify that Government disposal is available and make arrangements if so.

****

Submit a PCB Disposal Plan within 45 calendar days after award of contract for Contracting Officer's approval. The PCB Disposal Plan shall comply with applicable requirements of federal, state, and local PCB waste regulations and address:

a. Identification of PCB wastes associated with the work.

b. Estimated quantities of wastes to be generated and disposed of.

c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish two copies of [EPA] [state] [and] ~~[local]~~ PCB waste ~~[permit applications] [permits]~~ [and] [EPA Identification numbers].

d. Names and qualifications (experience and training) of personnel who will be working on-site with PCB wastes.

e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

~~f. Spill prevention, containment, and cleanup contingency measures to be implemented.~~

g. Work plan and schedule for PCB waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.

1.5.1.5 *Notification*\

Notify the Contracting Officer 20 days prior to the start of PCB removal work.

1.6 EQUIPMENT

1.6.1 Special Clothing

Work clothes shall consist of PPE as required by OSHA regulations, including, but not limited to the following:

a. Disposable coveralls

b. Gloves (Disposable rubber gloves may be worn under these)

c. Disposable foot covers (polyethylene)

d. Chemical safety goggles

e. Half mask cartridge respirator.

1.6.2 Special Clothing for Government Personnel

Provide PPE specified in paragraph entitled "Special Clothing" to the Contracting Officer as required for inspection of the work.

~~1.6.3 PCB Spill Kit~~

~~Assemble a spill kit to include the following items:~~

	ITEM	MINIMUM QUANTITY
1.	Disposable gloves (polyethylene)	6 prs
2.	Gloves with a high degree of impermeability to PCB	6 prs
3.	Disposable coveralls with permeation resistance to PCB	4 ea
4.	Chemical safety goggles	2 ea
5.	Disposable foot covers (polyethylene)	6 prs
6.	PCB Caution Sign: "PCB Spill--Authorized Personnel Only"	2 ea
7.	Banner guard or equivalent banner material	\~100 feet~\
8.	Absorbent material	
9.	Blue polyethylene waste bags	5 bags
10.	Cloth backed tape	5 ea
11.	Area access logs, blank	1 roll
12.	Brattice cloth, \~6' x 6'~\	10 ea
13.	Rags	1 piece
14.	Ball point pens	20 ea
15.	Herculite, \~4' x 4'~\ and	2 ea
	\~8' x 8'~\	1 ea
16.	Blank metal signs and grease pencils	
17.	Waste containers \~55-gallon~\	2 ea
	drum, may be used as container for kit)	[1] [_____] ea

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Decontamination Room, Clean Room and Shower Facilities

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NOTE: Include this paragraph only if work involves cleanup of large PCB spills or if airborne contamination exists. Consult cognizant Industrial Hygienist for recommendations.

****

a. Provide material and labor for construction of a decontamination room, a clean room, and shower facilities. Provide rooms with doors and attach to the exit ways of PCB work areas. Rooms shall be of sufficient size to accommodate the Contractor's operation within. [Existing facilities with water closets, urinals, wash basins and showers may be used if available to the Contractor.] [Provide portable toilet and shower facilities. Locate shower facilities between the clean room and decontamination room.] Provide separate clothing lockers or containers in each room to prevent contamination of street and work clothes.

b. Remove PCB-contaminated PPE in the decontamination room. Workers

shall then proceed to showers. Workers shall shower before lunch and at the end of each day's work. Hot water, towels, soap, and hygienic conditions are the responsibility of the Contractor.

3.1.2 PCB Control Area

Isolate PCB control area by physical boundaries to prevent unauthorized entry of personnel. Food, drink and smoking materials shall not be permitted in areas where PCBs are handled or PCB items are stored.

3.1.3 Personnel Protection

Workers shall wear and use PPE, as recommended by the Industrial Hygienist, upon entering a PCB control area. If PPE is not required per the CIH, specify in the PCB removal work plan.

3.1.4 Footwear

Work footwear shall remain inside work area until completion of the job.

3.1.5 Permissible Exposure Limits (PEL)

\&PEL for PCBs is \~3.1 E - 08 lb/cubic foot~\ on an 8-hour time&\ weighted average basis.

3.1.6 Special Hazards

a. PCBs shall not be exposed to open flames or other high temperature sources since toxic decomposition by-products may be produced.

b. PCBs shall not be heated to \&temperatures of \~135 degrees F~\ or
b. higher&\ without Contracting Officer's concurrence.

3.1.7 PCB Caution Label

\-40 CFR 761-\, Subpart C. Affix labels to PCB waste containers and other PCB-contaminated items. Provide label with sufficient print size to be clearly legible, with bold print on a contrasting background, displaying the following: CAUTION: Contains PCBs (Polychlorinated Biphenyls).

3.1.8 PCB Caution Sign

\-29 CFR 1910.145-\. Provide signs at approaches to PCB control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area.

3.2 WORK PROCEDURE

Furnish labor, materials, services, and equipment necessary for the complete removal of PCBs located at the site as indicated or specified in accordance with local, state, or federal regulations. Package and mark PCB as required by EPA and DOT regulations and dispose of off Government property in accordance with EPA, DOT, and local regulations at a permitted site.

3.1.3 Footwear

Work footwear shall remain inside work area until completion of the job.

3.1.4 Permissible Exposure Limits (PEL)

PEL for PCBs is 1.0×10^{-1} ug/m^3 on a 1 hour time interval at the NWIRP fenceline.

3.1.5 Special Hazards

a. PCBs shall not be exposed to open flames or other high temperature sources since toxic decomposition by-products may be produced.

b. PCBs shall not be heated to temperatures of 135 degrees F or
b. higher without Contracting Officer's concurrence.

3.1.6 PCB Caution Label

40 CFR 761, Subpart C. Affix labels to PCB waste containers and other PCB-contaminated items. Provide label with sufficient print size to be clearly legible, with bold print on a contrasting background, displaying the following: CAUTION: Contains PCBs (Polychlorinated Biphenyls).

3.1.7 PCB Caution Sign

29 CFR 1910.145. Provide signs at approaches to PCB control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area.

3.2 WORK PROCEDURE

B

Furnish labor, materials, services, and equipment necessary for the complete removal of PCBs located at the site as indicated or specified in accordance with local, state, or federal regulations including 49 CFR 171 and 49 CFR 172, and as specified herein. Package and mark PCB as required by EPA and DOT regulations including 49 CFR 173, 49 CFR 174, 49 CFR 175, 49 CFR 176, 49 CFR 177, 49 CFR 178, and 49 CFR 179, Subchapter C and as specified herein and dispose of off Government property in accordance with EPA, DOT, and local regulations at a permitted site.

3.2.1 No Smoking

Smoking is not permitted within 50 feet of the PCB control area. Provide "No Smoking" signs as directed by the Contracting Officer.

3.2.2 Work Operations

Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with 40 CFR 761 and the applicable requirements of this section, including but not limited to:

a. Notifying Contracting Officer prior to commencing the operation.

3.2.1 No Smoking

Smoking is not permitted within \~50 feet~\ of the PCB control area. Provide "No Smoking" signs as directed by the Contracting Officer.

3.2.2 Work Operations

Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with \-40 CFR 761-\ and the applicable requirements of this section, including but not limited to:

~~a. Obtaining advance approval of PCB storage sites.~~

b. Notifying Contracting Officer prior to commencing the operation.

~~c. Reporting leaks and spills to the Contracting Officer.~~

~~d. Cleaning~~ up spills.

e. Maintaining an access log of employees working in a PCB control area and providing a copy to the Contracting Officer upon completion of the operation.

~~f. Inspecting PCB and PCB-contaminated items and waste containers for leaks and forwarding copies of inspection reports to the Contracting Officer.~~

~~g. Maintaining a spill kit as specified in paragraph entitled "PCB Spill Kit."~~

h. Maintaining inspection, inventory and spill records.

~~3.3 PCB TRANSFORMERS~~

~~3.3.1 Draining of Transformer Liquid~~

~~Perform work in accordance with \-49 CFR 171-\, \-49 CFR 172-\, \-49 CFR 173-\, \-49 CFR 174-\, \-49 CFR 175-\, \-49 CFR 176-\, \-49 CFR 177-\, \-49 CFR 178-\, and \-49 CFR 179-\, Subchapter C and as specified herein. Drain the transformer, switches, and regulators of free flowing liquid prior to transportation. Place the drained liquids in DOT Spec 17E drums. The drums shall not contain \&more than \~50 gallons~\ of oil&\. If the equipment cannot be drained, then place it in DOT Spec 17C drums.~~

~~**********~~
~~**NOTE: Choose this option and subparagraphs if the Contractor is to dispose of PCB waste.**~~
~~**********~~

~~3.3.2 Markings~~

~~Provide drums and drained PCB-contaminated electrical equipment with caution label markings as specified in paragraph entitled, "PCB Caution Label."~~

****

NOTE: Choose this option and subparagraphs if PCB waste transportation and disposal has been arranged with PWD/PWC (DRMO-Hawaii).

****

3.3.3 Laboratory Analysis

All transformers shall have a laboratory analysis for turn-in. DRMO-Hawaii prefers a gas chromotograph test. The only two exceptions to this rule are:

a. The transformer is hermetically sealed (solder sealed or fusion sealed. No access ports or openings).

b. The name plate states that the transformer contains pyranol, interteen, etc.

Attach a copy of the lab analysis to both the DD 1348-1 and the transformer itself.

3.3.4 Markings

3.3.4.1 Transformers, Less Than 50 ppm

Add absorbent material to absorb residue oil remaining after draining. Write the date drained on the transformer. Turn in transformers to the DRMO Scrapyard. Telephone 471-3636 to schedule appointment for turn-in.

3.3.4.2 Transformers, 50-499 ppm

Same procedure as transformers in the less than 50 ppm range.

3.3.4.3 Transformers, Greater Than 500 ppm

Stencil date drained on the transformer. Turn in transformer to DRMO-Hawaii, Building #26, Manana Storage Area.

3.3.4.4 Drums

Stencil on \&DOT-approved \~55 gallon~\ drums&\ containing PCB liquid the following:

a. ppm

b. Date drum filled

c. Serial number of transformer liquid came from

d. National Stock Number

(1) "9999-00-OIL" for <50 ppm

(2) "9999-00-CONPCB" for 50-499 ppm

(3) "9999-00-PCBOIL" for >500 ppm

Do not mix different ppms in the same drum. \&Drums must have a \~2-inch~\ ullage space&\ from the top of the drum.

3.4 PCB REMOVAL

Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs. PCB removal process should be described in the work plan.

3.4.1 Confined Spaces

As feasible, do not carry out PCB handling operations in confined spaces. A confined space shall mean a space having limited means of egress and inadequate cross ventilation.

3.4.2 Control Area

Establish a PCB control area around the PCB item as specified in paragraph entitled "PCB Control Area." Only personnel briefed on the elements in the paragraph entitled, "Training" and on the handling precautions shall be allowed into the area.

3.4.3 Exhaust Ventilation

If used, exhaust ventilation for PCB operations shall discharge to the outside and away from personnel.

3.4.4 Temperatures

As feasible, handle PCBs at ambient temperatures and not at elevated temperatures.

3.4.5 Solvent Cleaning

Clean contaminated tools, containers, etc., after use by rinsing three times with an appropriate solvent or by wiping down three times with a solvent wetted rag. Suggested solvents are stoddard solvent or hexane.

3.4.6 Drip Pans

Drip pans are required under portable PCB transformers and rectifiers in use or stored for use. The pans shall have a containment volume of at least one and one-half times the internal volume of PCBs in the item.

3.4.7 Evacuation Procedures

Procedures shall be written for evacuation of injured workers. Aid for a seriously injured worker shall not be delayed for reasons of decontamination.

b. Maintaining an access log of employees working in a PCB control area and providing a copy to the Contracting Officer upon completion of the operation.

c. Maintaining inspection, inventory and spill records.

3.3 PCB REMOVAL

Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs. PCB removal process should be described in the work plan.

3.3.1 Control Area

Establish a PCB control area around the PCB item as specified in paragraph entitled "PCB Control Area." Only personnel briefed on the elements in the paragraph entitled, "Training" and on the handling precautions shall be allowed into the area.

3.3.2 Temperatures

As feasible, handle PCBs at ambient temperatures and not at elevated temperatures.

3.3.3 Evacuation Procedures

Procedures shall be written for evacuation of injured workers. Aid for a seriously injured worker shall not be delayed for reasons of decontamination.

3.3.4 PCB Drum Wastes

Remove and dispose of all drums from previous base investigations containing PCBs (liquids and solids) sampled during pre-excavation sampling.

3.4 STORAGE FOR DISPOSAL

3.4.1 Storage Containers for PCBs

49 CFR 178. Store liquid PCBs in Department of Transportation (DOT) Specification 17E containers. Store nonliquid PCB mixtures, articles, or equipment in DOT Specification 5, 5B, or 17C containers with removable heads.

3.4.2 Waste Containers

Label with the following:

a. "Solid (or Liquid) Waste Polychlorinated Biphenyls"

b. The PCB Caution Label, paragraph entitled "PCB Caution Label"

c. The date the item was placed in storage and the name of the site.

3.5 PCB SPILL CLEANUP REQUIREMENTS

3.5.1 PCB Spills

Immediately report to the Contracting Officer any PCB spills on the ground or in the water, PCB spills in drip pans, or PCB leaks.

3.5.2 PCB Spill Control Area

Rope off an area around the edges of a PCB leak or spill and post a "PCB Spill Authorized Personnel Only" caution sign. Immediately transfer leaking items to a drip pan or other container.

3.5.3 PCB Spill Cleanup

\-40 CFR 761-\, Subpart G. Initiate cleanup of spills as soon as possible, but no later than 48 hours of its discovery. [To clean up spills, personnel shall wear the PPE prescribed in paragraph entitled "Special Clothing" of this section.] If misting, elevated temperatures or open flames are present, or if the spill is situated in a confined space, notify the Contracting Officer. Mop up the liquid with rags or other conventional absorbent. The spent absorbent shall be properly contained and disposed of as solid PCB waste.

3.5.4 Records and Certification

Document the cleanup with records of decontamination in accordance with \-40 CFR 761-\, Section 125, Requirements for PCB Spill Cleanup. Provide *certification of decontamination*\.

3.5.5 Sampling Requirements

Perform *post cleanup sampling*\ as required by \-40 CFR 761-\, Section 130, Sampling Requirements. Do not remove boundaries of the PCB control area until site is determined satisfactorily clean by the Contracting Officer.

3.6 STORAGE FOR DISPOSAL

3.6.1 Storage Containers for PCBs

\-49 CFR 178-\. Store liquid PCBs in Department of Transportation (DOT) Specification 17E containers. Store nonliquid PCB mixtures, articles, or equipment in DOT Specification 5, 5B, or 17C containers with removable heads.

3.6.2 Waste Containers

Label with the following:

a. "Solid (or Liquid) Waste Polychlorinated Biphenyls"

b. The PCB Caution Label, paragraph entitled "PCB Caution Label"

c. The date the item was placed in storage and the name of the site.

~~cognizant activity/building~~.

3.6.3 PCB Articles and PCB-Contaminated Items

Label with items b. through c. above.

3.6.4 ~~Approval of~~ Storage Site

Obtain in advance Contracting Officer approval using the following criteria without exception.

a. Adequate roof and walls to prevent rainwater from reaching the stored PCBs.

b. An adequate floor which has continuous curbing with a \&minimum \~6-inch~\ high&\ curb. Such floor and curbing shall provide a containment volume equal to at least two times the internal volume of the largest PCB article or PCB container stored therein or 25 percent of the total internal volume of all PCB equipment or containers stored therein, whichever is greater.

c. No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area.

d. Floors and curbing constructed of continuous smooth and impervious materials such as portland cement, concrete or steel to prevent or minimize penetrations of PCBs.

e. Not located at a site which is below the 100-year flood water elevation.

f. Each storage site shall be posted with the PCB Caution Sign, paragraph entitled "PCB Caution Sign."

3.7 CLEANUP

Maintain surfaces of the PCB control area free of accumulations of PCBs. Restrict the spread of dust and debris; keep waste from being distributed over work area.

a. Do not remove the PCB control area and warning signs prior to the Contracting Officer's approval. Reclean areas showing residual PCBs.

3.8 DISPOSAL

****

NOTE: Federal regulations (40 CFR 761) require that generators, transporters, commercial storers, and disposers of PCB waste possess U.S. EPA identification numbers. Verify that the activity has a U.S. EPA generator identification number for use on the Uniform Hazardous Waste Manifest. If not, the activity must file and obtain an I.D.

number with EPA prior to commencement of removal work.

****

****

NOTE: Choose this option and subparagraphs if the Contractor is to dispose of PCB waste.

****

****

NOTE: Specifier shall research state, regional, and local laws, regulations, and statutes.

****

Comply with disposal requirements and procedures outlined in \-40 CFR 761-\. Do not accept PCB waste unless it is accompanied by a manifest signed by the Government. Before transporting the PCB waste, sign and date the manifest acknowledging acceptance of the PCB waste from the Government. Return a signed copy to the Government before leaving the job site. Ensure that the manifest accompanies the PCB waste at all times. Submit *transporter certification*\ of notification to EPA of their PCB waste activities.

3.8.1 *Certificate of Disposal*\

\-40 CFR 761-\. Submit to the Government within 30 days of the date that the disposal of the PCB waste identified on the manifest was completed. Certificate for the PCBs and PCB items disposed shall include:

a. The identity of the disposal facility, by name, address, and EPA identification number.

b. The identity of the PCB waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.

c. A statement certifying the fact of disposal of the identified PCB waste, including the date(s) of disposal, and identifying the disposal process used.

d. A certification as defined in \-40 CFR 761-\, Section 3.

3.8.1.1 Payment Upon Furnishing Certificate of Disposal of PCBs

Payment will not be made until the certificate of disposal has been furnished to the Contracting Officer.

3.8.2 Disposal by the Government

****

NOTE: Choose this option and subparagraphs if PCB waste transportation and disposal has been arranged with PWD/PWC and PCB waste is to be delivered to suitable storage site. Verify procedures with PWD/PWC. Omit paragraph when the Government will

pick up PCB waste at the project site.

****

Load and haul PCBs to the storage site at [_____], operated by the Defense Reutilization and Marketing Office (DRMO) [_____]. If the primary [_____] site is filled to capacity, contact the Public Works Center Hazardous Waste Branch Environmental Engineer at [_____] to determine an alternate storage site. The transport distance to any storage site shall not exceed the distance between the project site and the DRMO storage site at [_____].

3.8.2.1 [Delivery] [Government Pick Up]

****

NOTE: Choose the option for Government pick up if arrangements have been made for the Government to pick up the PCB waste at the project site. This will be required when DRMO does not have a suitable storage site and the PCB waste must be picked up by the Government's PCB disposal contractor.

****

Contact DRMO at least 5 working days in advance to make arrangements for [delivery of the PCBs to the storage site.] [pick up of PCB waste by the Government.] Phone: [_____] or write to:

Defense Reutilization and Marketing Office
[_____]
[_____]

3.8.2.2 DD Form 1348-1

Prepare DD Form 1348-1 Turn-in Document (TID), which will accompany the PCBs to the storage site. Ensure that a responsible person from the activity that owns the PCBs signs the DD Form 1348-1.

3.8.2.3 Payment Upon Furnishing DD Form 1348-1

Payment will not be made until a completed DD Form 1348-1 has been furnished to the Contracting Officer.

-- End of Section --

CRITERIA NOTES

NOTE A: A generator of PCB wastes who relinquishes control over the wastes by transporting, or offering for transport by his own vehicle or by a vehicle owned by another person, or relinquishing for commercial off-site storage or off-site disposal shall prepare a manifest on EPA Form 8700-22 in accordance with 40 CFR 761, Part 207. The generator shall specify on the manifest:

1. For each bulk load of PCBs, the identity of the PCB waste, the earliest date of removal from service for disposal, and the weight in kilograms of the PCB waste.

2. For each PCB Article Container or PCB Container, the unique identifying number, type of PCB waste (e.g., soil, debris, small capacitors), earliest date of removal from service for disposal, and weight in kilograms of the PCB waste contained.

3. For each PCB Article not in a PCB Container or PCB Article Container, the serial number if available, or other identification if there is no serial number, the date of removal from service for disposal, and weight in kilograms of the PCB waste in each PCB Article.

4. One off-site commercial storage or disposal facility approved for the commercial storage or disposal of the PCBs and PCB Items described on the manifest.

It is recommended that 40 CFR 761, Subpart K be read prior to the removal of PCB waste. Note: Contractor will not accept PCB waste for storage or disposal unless it is accompanied by a signed manifest by the generator.

NOTE B: Suggestions for improvement of this specification will be welcomed using the "Agency Response Form" located in SPECSINTACT under "System Directory" or DD Form 1426. Suggestions should be forwarded to:

Commanding Officer
Naval Construction Battalion Center
NAVFAC 15G/CES0 158
1000 23rd Avenue
Port Hueneme, CA 93043-4301

-- End --

SECTION 02077

REMOVAL AND DISPOSAL OF ARSENIC CONTAMINATED SOIL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 260	Hazardous Waste Management Systems: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities

STATE OF NEW YORK (SNY)

Subchapter B	Title 6, Department of Environmental Conservation; Chapter IV Quality Services, Subchapter B, Solid Waste

1.2 DEFINITIONS

1.2.1 Contaminated Soil

Soil contaminated with arsenic as defined in Section 02220, "General Excavation, Filling, and Backfilling."

1.3 SUBMITTALS

Submit the following in accordance with Section C of Basic Contract.

1.3.1 SD-18, Records

a. Hazardous Waste Plan G

b. Hazardous Waste Permits G

c. Regulatory Requirements G

d Shipment Manifest G

e. Delivery Manifest G

1.3.1.1 Hazardous Waste Plan

Submit a Hazardous Waste Plan within 45 days after contract award. The plan shall include the following elements.

a. Names and qualifications of the Contractor and each subcontractor that will be transporting, treating, and disposing of the hazardous wastes. Include the disposal facility location and a 24-hour point of contact. Furnish two copies of EPA, state and local hazardous waste permits and EPA and state Identification numbers.

b. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous waste.

c. List of waste handling equipment to be used in performing the work, to include work connected with excavation, cleaning, decontamination, volume reduction, and transport equipment.

d. Provisions for the temporary storage of hazardous materials during the period between excavation/generation/collection and legal transportation and disposal including the identification of the location of the temporary facilities and the steps to be taken to protect the environment from contaminant migration.

e. Provisions for decontamination of personnel, major equipment, confining and collecting decontamination materials and wastes as well as the disposal of those materials. Include drawings illustrating decontamination area layout as well as catalog cuts of the equipment to be utilized.

f. Provisions to confine and control traffic flow in and around the work area so as to minimize the potential for contamination migration.

g. Spill prevention, containment, and cleanup contingency measures to be implemented.

h. Implementation plan and schedule for waste removal and disposal.

1.3.1.2 Hazardous Waste Permits

As required under "Hazardous Waste Plan" submit copies of EPA, state and local hazardous waste permits and EPA and state Identification numbers of the transporter, treatment and disposal facility that will be accepting hazardous waste. Include the facility location and a 24-hour point of contact.

1.3.1.3 Regulatory Requirements

a. Obtain permits required to comply with local, state, and Federal regulations.

b. Hazardous wastes, such as soil, debris, water, sediment, and sludge, shall be packaged, labeled, stored, transported, treated and disposed of in accordance with Federal, State and local regulations to include 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and Subchapter B. Transporters, sorters, treaters and disposers must be certified and have EPA ID numbers. Payment for disposal of hazardous waste will not be made until a completed hazardous waste manifest from the treatment or disposal facility is returned, and a copy furnished to the Government.

1.3.1.4 Shipment Manifest

Shipment Manifests shall be provided to the Contracting Officer as required by the paragraph titled, "Disposal Hazardous of Wastes."

1.3.1.5 Delivery Manifest

Delivery Manifests shall be provided to the Contracting Officer as required by the paragraph titled, "Disposal Hazardous of Wastes."

1.4 TITLE TO MATERIALS

All materials resulting from removal action work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and federal regulations and herein.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 HANDLING AND DISPOSAL OF WASTES

All residual materials, soil and debris, substances, or materials requiring disposal shall be stored, contained, transported and disposed of in accordance with applicable Federal, state and local hazardous waste regulations. Federal regulations are contained in the Code of Federal Regulations 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265 and 40 CFR 266. The Contractor shall:

a. Obtain all required permits.

b. Provide all required containers, vehicles, equipment, labor, signs, labels, and manifests.

c. Report spills of hazardous waste immediately to the Contracting Officer and take immediate effective containment and cleanup actions as required.

d. Obtain waste acceptance criteria necessary of disposal facility.

3.1.1 Storage of Wastes

Store contaminated materials in staging area.

3.1.2 Disposal of Hazardous Wastes

The Contractor shall comply with the following:

a. Properly identify all wastes using the criteria established by the disposal regulations.

b. Utilize a manifest approved by the Environmental Protection Agency and the affected state(s). The manifest must comply with all of the provisions of the Federal and state disposal regulations. The signature of the Contracting Officer's representative must be on the generator portion of the manifest before each shipment leaves the Naval Weapons Industrial Reserve Plant, Bethpage, New York.

c. A copy of each completed and signed manifest, the Shipment Manifest, shall be submitted to the Contracting Officer at the time each shipment leaves the Naval Weapons Industrial Reserve Plant. Within 4 days after delivery of the shipment to the disposal facility, a copy of the manifest with a signature from the disposal facility, the Delivery Manifest, shall be delivered to the Contracting Officer.

d. All of the pre-transport requirements of the disposal regulations must be complied with before the transportation of the hazardous wastes begins.

e. All waste shipments must be transported by the Environmental Protection Agency (EPA) or State permitted hauler. The hauler must have an appropriate EPA or State identification number. Containers approved by the EPA or the state must be used. All transportation of wastes shall be in compliance with the disposal regulations.

f. Each hazardous waste shipment shall be taken to a treatment or disposal facility which is EPA or state permitted. The facility must have the proper permits and identification number and comply with all provisions of the disposal

regulations.

-- End of Section --

****

DEPARTMENT OF THE NAVY
NAVAL FACILITIES
ENGINEERING COMMAND
GUIDE SPECIFICATION

NFGS-02220J
31 December 1994

Superseding NFGS-02220H (06/94)

****

NFGS-02220J

GENERAL EXCAVATION, FILLING, AND BACKFILLING

****

Preparing Activity: LANTNAVFACENGCOM

	Typed Name & Reg.	Signature	Date
Prepared by:	R. G. Schirmer, P.E.	/s/	05/26/94
Approved by:	M. D. Mutter, P.E. Branch Manager	/s/	05/26/94
Approved by:	W. H. Crone, P.E. Division Director	/s/	05/27/94
Approved for NAVFAC:	Carl E. Kersten, R.A.	/s/	06/30/94

Any changes or revisions to this document since the date of the original approval for NAVFAC, have been performed by the Guide Specifications Division (Code 15G).

Changes or Revisions Approved for NAVFAC:	Carl E. Kersten, R.A.	/s/ 12/31/94

****

AMSC N/A AREA FACR

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES
ENGINEERING COMMAND
GUIDE SPECIFICATION

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****

SECTION 02220

GENERAL EXCAVATION, FILLING, AND BACKFILLING
12/94

****

NOTE: This guide specification covers \@earthwork requirements for buildings, roads, and utilities for normal, routine construction@\. If unusual soil conditions are anticipated, or extensive earthwork, excavation, or utility excavations are required, consider editing Sections 02221, "Earthwork for Structures and Pavements," and 02225, "Excavation, Backfilling, and Compacting for Utilities." Consult with a soils engineer while editing this section to determine specific requirements for each job.

****

****

NOTE: This revision "J" to NFGS-02220 amends the issue dated 30 June 1994 by updating references, and combining metric and English measurements.

****

****

NOTE: See Note A located at rear of text.

****

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

~~\-ASTM C 33-\ 1993 Concrete Aggregates~~

~~\-ASTM C 136-\ 1993 Sieve Analysis of Fine and Coarse Aggregates~~

\-ASTM D 698-\ 1991 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft (600 kN-m/m))

\-ASTM D 1140-\ 1992 Amount of Material in Soils Finer

	Than the \~No. 200~\ (75-Micrometer) Sieve
\-ASTM D 1556-\	1990 Density and Unit Weight of Soil in Place by the Sand-Cone Method
\-ASTM D 1557-\	1991 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft (2,700 kN-m/m))
~~\-ASTM D 2321-\~~	~~1989 Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications~~
\-ASTM D 2487-\	1993 Classification of Soils for Engineering Purposes
\-ASTM D 2922-\	1991 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
\-ASTM D 3017-\	1988 (R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
\-ASTM D 4318-\	1993 Liquid Limit, Plastic Limit, and Plasticity Index of Soils
~~AMERICAN WATER WORKS ASSOCIATION (AWWA)~~	
\-AWWA C600-\	1993 Installation of Ductile-Iron Water Mains and Their Appurtenances
COMMERCIAL ITEM DESCRIPTIONS (CID)	
\-CID A-A-1909-\	Fertilizer
CORPS OF ENGINEERS (COE)	
\-COE EM-385-1-1-\	1992 Safety and Health Requirements Manual

1.2 DEFINITIONS

****
NOTE: Delete definitions that will not be used in the specification text for a specific project.
****

1.2.1 Hard Materials

Weathered rock, dense consolidated deposits, or conglomerate materials which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

SECTION 02220

GENERAL EXCAVATION, FILLING, AND BACKFILLING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136	1993 Sieve Analysis of Fine and Coarse Aggregates
ASTM D 698	1991 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft (600 kN-m/m))
ASTM D 1140	1992 Amount of Material in Soils Finer Than the No. 200 (75-Micrometer) Sieve
ASTM D 1556	1990 Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	1991 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft (2,700 kN-m/m))
ASTM D 2487	1993 Classification of Soils for Engineering Purposes
ASTM D 2922	1991 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	1988 (R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	1993 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 261	Identification and Listing of Hazardous Waste

A

~~CORPS OF ENGINEERS (COE)~~

1.2.2 Rock

Solid homogeneous interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe-mounted pneumatic hole punchers or rock breakers; also large boulders, buried masonry, or concrete other than pavement \&exceeding \~[1/2] [____] cubic yard~\ in volume&\ Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

1.2.3 Cohesive Materials

Materials \-ASTM D 2487-\ classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesive only when the fines have a plasticity index greater than zero.

1.2.4 Cohesionless Materials

Materials \-ASTM D 2487-\ classified as GW, GP, SW, and SP. Materials classified as GM and SM will be identified as cohesionless only when the fines have a plasticity index of zero.

1.2.5 [Pile Supported Structure

As used herein, a structure where both the foundation and floor slab are pile supported.]

1.3 SUBMITTALS

****
NOTE: Where a "G" in asterisk tokens follows a submittal item, it indicates Government approval for that item. Add "G" in asterisk tokens following any added or existing submittal items deemed sufficiently critical, complex, or aesthetically significantly to merit approval by the Government. Submittal items not designated with a "G" will be approved by the QC organization.
****

Submit the following in accordance with Section ~~\=01300=\, "Submittals."~~ C of the Basic Contract

~~1.3.1 [*SD-04, Drawings*\~~

****
NOTE: Include the following paragraph when excavations are deep, or excavation will be near adjacent structures or roads.
****

~~a. Supporting system *drawings*\~~

COE EM-385-1-1 1992 Safety and Health Requirements Manual

1.2 DEFINITIONS

1.2.1 Hard Materials

Weathered rock, dense consolidated deposits, or conglomerate materials which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

1.2.2 Rock

Solid homogeneous interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe-mounted pneumatic hole punchers or rock breakers; also large boulders, buried masonry, or concrete other than pavement exceeding 1/2 cubic yard in volume Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

1.2.3 Cohesive Materials

Materials ASTM D 2487 classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesive only when the fines have a plasticity index greater than zero.

1.2.4 Cohesionless Materials

Materials ASTM D 2487 classified as GW, GP, SW, and SP. Materials classified as GM and SM will be identified as cohesionless only when the fines have a plasticity index of zero.

1.2.5 Contaminated Soil

1.2.5.1 PCB Contaminated Soil

Soils which exhibit contamination of PCBs greater than 10 ppm in accordance with 40 CFR 761. Soils which exhibit contamination of PCBs greater than 500 ppm are to be excavated and incinerated. Section 02076, "Removal and Disposal of Polychlorinated Biphenyls (PCBs)" outlines handling and disposal requirements of all PCB contaminated soils.

B

1.2.5.2 Arsenic Contaminated Soil

Soils which exhibit contamination of arsenic greater than that which results in exceedance of RCRA characteristics of toxicity in accordance with 49 CFR 261. Section 02077 "Removal and Disposal of Arsenic Contaminated Soil" outlining handling and disposal requirements.

1.3.1.1 Required Drawings

Submit *drawings*\ and calculations by a registered professional engineer. Drawings shall include material sizes and types, arrangement of members, and the sequence and method of installation and removal.]

1.3.2 [*SD-05, Design Data*\

****
NOTE: Include the following paragraph when excavations are deep, or excavation will be near adjacent structures or roads.
****

a. Supporting system *calculations*\

1.3.2.1 Required Data

Submit drawings and *calculations*\ by a registered professional engineer. Calculations shall include data and references used.]

1.3.3 *SD-08, Statements*\

[a. *Supporting systems*\ work plan]

[b. *Dewatering*\ work plan]

[c. *Blasting*\ work plan]

Submit 15 days prior to starting work.

1.3.4 *SD-12, Field Test Reports*\

a. *Fill and backfill*\ test

~~b. *Select material*\ test~~

~~c. *Porous fill*\ test for capillary water barrier~~

b d. *Density tests*\

1.4 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials.

1.5 CRITERIA FOR BIDDING

****
NOTE: For most projects, the scope of earthwork can accurately be determined. However, if it is known that large quantities of unsuitable material are to be removed, specify those quantities herein.
****

Base bids on the following criteria:

a. Surface elevations are as indicated.

b. Pipes or other artificial obstructions, except those indicated, will not be encountered.

****
NOTE: At the text below, anytime excavation work is required, obtain boring logs from new investigation work, or from previous projects on file in the Geotechnical and Paving Branch. If no specific subsurface information is available, specify a ground water depth representative of the area; for LANTNAVFACENGCOM jobs, \&specify a \~5-foot~\ ground&\ water depth.
****

****
NOTE: Choose one between the two following bracketed options.
****

[c. Ground water elevations indicated by the boring log were those existing at the time subsurface investigations were made and do not necessarily represent ground water elevation at the time of construction.]

[d. Ground water \&elevation is [____] \~feet~\ below&\ existing
[d. surface elevation.]

[e. Material character is indicated by the boring logs.]

****
NOTE: Choose one of the following three bracketed options if no boring information is available, or if the boring information is insufficient to permit a bidder to develop an accurate estimate of hard material or rock to be encountered. If hard material or rock is to be encountered, the following option should be modified to include a percent figure or an approximate depth at which hard material or rock will be encountered.
****

****
NOTE: For LANTNAVFACENGCOM jobs, hard materials and rock will generally be found in certain areas of Puerto Rico and the Azores.
****

[f. Bermuda limestone and coral will be encountered in most excavations.]

[g. Guantanamo Bay limestone and coral will be encountered in some excavations.]

1.3 SUBMITTALS

Submit the following in accordance with Section C of the basic contract.

1.3.1 SD-12, Field Test Reports

a. Fill and backfill test

b. Density tests

1.4 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials.

1.5 CRITERIA FOR BIDDING

Base bids on the following criteria:

a. Surface elevations are as indicated.

b. Depth of excavation shown is approximate. Actual depth of removal will be based upon the Pre-Construction Investigation Report.

c. Pipes or other artificial obstructions, except those indicated, may be encountered. The contractor is hereby notified to perform subsurface utility verification prior to the start of work.

d. Site 1 is located within an abandoned sanitary leach field. Excavation will encounter this field. The Contractor is not required to repair leach field.

d. Ground water elevation is approximatley 50 feet below the surface.

e. Material character is indicated by the boring logs. Fine to medium sand 0' to 10' deep and gravelly sand 10' to 40' deep.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

Free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, and frozen, deleterious, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

2.1.1 Backfill and Fill Material

ASTM D 2487, classification GW, GP, GM, GC, SW, SP, SM, SC with a maximum ASTM D 4318 liquid limit of 35, maximum ASTM D 4318 plasticity index of 12, and a maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve.

[h. Hard materials [and rock] [will not] [will] be encountered [in [_____] percent of the excavations] [at \&[_____] \~feet~\ below&\ existing surface elevations]].

****
NOTE: At the option below, for LANTNAVFACENGCOM jobs, blasting will generally not be allowed, except in Puerto Rico and the Azores.
****

****
NOTE: Choose one between the two following bracketed options.
****

i. [Blasting will not be permitted. Remove material in an approved manner.]

[j. *Blasting*\ will be permitted. Blasting shall be conducted in accordance with \-COE EM-385-1-1-\, and Federal, State, and local safety regulations. Submit for approval a blasting plan, including calculations for overpressure and debris hazard, prepared and sealed by a registered professional engineer. Blasting mats shall be provided, and non-electric blasting caps shall be used. Notify the Contracting Officer 24 hours prior to blasting.]

PART 2 PRODUCTS

2.1 SOIL MATERIALS

Free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, and /frozen,/ deleterious, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

2.1.1 Common Fill

Approved, unclassified soil material with the characteristics required to compact to the soil density specified for the intended location.

2.1.2 Backfill and Fill Material

\-ASTM D 2487-\, classification GW, GP, GM, /GC,/ SW, SP, SM, /SC/ with a maximum \-ASTM D 4318-\ liquid limit of /35/ [_____], maximum \-ASTM D 4318-\ plasticity index of /12/ [_____], and a maximum of 25 percent by weight \&passing \-ASTM D 1140-\, \~No. 200~\ sieve.&\

2.1.3 Topsoil

****
NOTE: Choose one of the following options.
****

****

NOTE: If seeding is minor, use requirements specified herein. Otherwise, edit Section 02930, "Turf," and cover requirements therein.

****

[Provide as specified in Section \=02930=\, "Turf."]

[Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth. Amend topsoil pH range to obtain a pH of 5.5 to 7.]

2.1.4 Select Material

\-ASTM D 2487-\, classification GW, GP, SW, SP with a maximum of 10 percent by weight \&passing \-ASTM D 1140-\, \~No. 200~\ sieve.&\

2.2 POROUS FILL FOR CAPILLARY WATER BARRIER

\-ASTM C 33-\ fine aggregate grading with a maximum of 3 percent by weight \&passing \-ASTM D 1140-\, \~No. 200~\ sieve,&\ or coarse aggregate Size 57, 67, or 77 and conforming to the general soil material requirements specified in paragraph entitled "Soil Materials."

2.3 BORROW

****

NOTE: Choose one of the following options. Choose the first option when borrow material has to come from off site. Choose the second option when use of a Government borrow pit is available. Edit paragraph to suit requirements for use of a Government borrow pit.

****

[Obtain borrow materials required in excess of those furnished from excavations from sources outside of Government property.]

[Obtain borrow materials required in excess of those furnished from excavations from sources outside of Government property, except that borrow materials conforming to [common fill] [and] [fill and backfill material] [_____] may be obtained from the Government borrow pit. The Government borrow pit is located [as indicated] [within a haul \&distance of [_____] \~miles~\ from&\ the work site]. If the Government borrow pit is used, the Contractor shall perform clearing, grubbing, and stripping required for providing access to suitable borrow material. Dispose of materials from clearing and grubbing operations [off Government property] [at the Government landfill indicated]. \&Strip top \~12 inches~\ of soil&\ material from borrow area and stockpile. After removal of borrow material, regrade borrow pit using stockpiled soil material to contours which will blend in with adjacent topography. Maximum side slopes shall be two horizontal to one vertical. Excavation and backfilling of borrow pit shall ensure proper drainage.]

****

NOTE: For LANTNAVFACENGCOM jobs only. Include the following paragraph when working at Guantanamo Bay, Cuba.

****

[Borrow material obtained from the Government borrow pit shall be pit site crushed. Provide equipment to excavate, crush to the specified size, and transport.]

2.4 BURIED WARNING AND IDENTIFICATION TAPE

****

NOTE: See Note D located at rear of text.

****

[Polyethylene plastic] [and] [metallic core or metallic faced, acid- and alkali-resistant, polyethylene plastic] warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on \&rolls, \~[3] [_____] -inch~\ minimum width,&\ color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (intended service) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

Warning Tape Color Codes

[Yellow:]	[Electric]
[Yellow:]	[Gas, Oil; Dangerous Materials]
[Orange:]	[Telephone and Other Communications]
[Blue:]	[Water Systems]
[Green:]	[Sewer Systems]
[White:]	[Steam Systems]
[Gray:]	[Compressed Air]

2.4.1 [Warning Tape for Metallic Piping

Acid and alkali-resistant polyethylene plastic tape conforming to the width, color, and printing requirements specified above. \&Minimum thickness of tape shall be \~0.003 inch~\. Tape shall have a minimum strength of \~1500 psi~\ otherwise, and \~1250 psi~\ crosswise,&\ with a maximum 350 percent elongation.]

2.4.2 [Detectable Warning Tape for Non-Metallic Piping

Polyethylene plastic tape conforming to the width, color, and printing requirements specified above. \&Minimum thickness of the tape shall be \~0.004 inch~\. Tape shall have a minimum strength of \~1500 psi~\ lengthwise and \~1250 psi~\ crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to \~3 feet~\ deep.&\ Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.]

2.5 DETECTION WIRE FOR NON-METALLIC PIPING

Detection wire shall be insulated single strand, solid copper with a minimum of 12 AWG.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

****
NOTE: If special site preparation notes are indicated, they should be referenced here.
****

3.1.1 Clearing and Grubbing

****
NOTE: If selective clearing is required, the maximum or minimum tree diameter should be specified, \&measured at \~4 1/2 feet~\ from the existing ground.&\ If merchantable timber is requested by the station, insert and edit the following paragraph:

"Cut merchantable timber into (logs) (cord wood) and store on site where directed. Merchantable timber will remain the property of the Government."
****

Unless indicated otherwise, remove trees, stumps, logs, shrubs, and brush within the [clearing limits] [_____]. Remove stumps entirely. Grub out matted roots and roots \&over \~2 inches~\ in diameter to at least \~18 inches~\ below&\ existing surface.

3.1.2 Stripping

Strip existing topsoil to a \&depth of \~[4] [_____] inches~\ without&\ contamination by subsoil material. Stockpile topsoil separately from other excavated material and locate convenient to finish grading area.

3.1.3 Unsuitable Material

Remove vegetation, debris, decayed vegetable matter, sod, mulch, and rubbish underneath paved areas or concrete slabs.

3.1.3.1 Proof Rolling

****
NOTE: Specify proof rolling when the quality of the existing subgrade is questionable. Proof rolling can be used to verify that no unsatisfactory material is present (no bid quantity required, location shown or specified) or to locate suspected unsatisfactory material (indicate a bid quantity to be removed).

2.2 BORROW

Obtain borrow materials required in excess of those furnished from excavations from sources outside of Government property.

PART 3 EXECUTION

3.1 PRE-EXCAVATION PLANS

Conduct Pre-Excavation Sampling Plan and Pre-Construction Investigation Report prior to start of excavation in accordance with Section 01010, "General Paragraphs."

3.2 SURFACE PREPARATION

3.2.1 Fence Removal

Where required for contaminated soil removal, remove existing wood fence and dispose in accordance with paragraph "Disposition of Surplus Material." Where required for Site 2 contaminated soil removal, remove and reinstall existing chain link fence and posts.

3.3 PROTECTION

3.3.1 Protection Systems

Provide shoring, bracing, and sheeting in accordance with COE EM-385-1-1, except that banks may be sloped only when approved by the Contracting Officer.

3.3.2 Drainage and Dewatering

Provide for the collection and disposal of surface and subsurface water encountered during construction.

3.3.2.1 Drainage

So that construction operations progress successfully, completely drain construction site during periods of construction to keep soil materials sufficiently dry. Provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein.

3.3.3 Underground Utilities

Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. The Contractor shall contact the ROICC, Bethpage for assistance in locating existing utilities.

Proof rolling shall be done on an exposed subgrade free of surface water (wet conditions resulting from rainfall) which would promote degradation of an otherwise acceptable subgrade. \&[After stripping,] proof roll the existing subgrade of the [building] [_____] with six passes of a \~15-ton~\, pneumatic-tired roller. Operate the roller in a systematic manner to ensure the number of passes over all areas, and at speeds between \~2 1/2 to 3 1/2 miles per hour~\. [When proof rolling under buildings, the building subgrade shall be considered to extend \~5 feet~\ beyond the building lines, and one-half of the passes made with the roller shall be in a direction perpendicular to the other passes.] Notify the Contracting Officer a minimum of 3 days prior to proof rolling. Proof rolling shall be performed in the presence of the Contracting Officer. Rutting or pumping of material shall be undercut [as directed by the Contracting Officer] [to a depth of [_____] \~inches~\] and replaced with [fill and backfill] [select] material. [Bids shall be based on replacing approximately [_____] \~square yards~\, with an average depth of [_____] \~inches~\ at various locations.]&\

3.2 PROTECTION

3.2.1 Protection Systems

NOTE: See Note B located at rear of text.

Provide shoring, bracing, ~~[cribbing,] [underpinning,]~~ and sheeting in accordance with \-COE EM-385-1-1-\ /, except that banks may be sloped only when approved by the Contracting Officer/. ~~[Provide additional *supporting systems*\ where indicated.]~~

3.2.2 Drainage and Dewatering

Provide for the collection and disposal of surface and subsurface water encountered during construction.

3.2.2.1 Drainage

So that construction operations progress successfully, completely drain construction site during periods of construction to keep soil materials sufficiently dry. Provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein.

~~3.2.2.2 Dewatering~~

NOTE: Check depth of proposed utilities and foundations relative to the existing ground water elevation prior to editing.

Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. French drains, sumps, ditches or trenches will not be permitted \&within \~3 feet~\ of the foundation&\ of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made. Control measures shall be taken by the time the excavation reaches the water level in order to maintain the integrity of the in situ material. While the excavation is open, the water level shall be maintained continuously, \&at least [_____] \~feet~\ below the working level&\.

[Operate *dewatering*\ system continuously until construction work below existing water levels is complete. Submit performance records weekly.] [Measure and record performance of dewatering system at same time each day by use of observation wells or piezometers installed in conjunction with the dewatering system.] [Relieve hydrostatic head in previous zones below subgrade elevation in layered soils to prevent uplift.]

3.2.3 Underground Utilities

****
NOTE: Select the second bracketed sentence for LANTNAVFACENGCOM projects.
****

Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. [The ROICC, Bethpage Contractor shall contact the ~~[Public Works Department]~~ [_____] for assistance in locating existing utilities.] ~~[The Contractor shall scan the construction site with electromagnetic and sonic equipment and mark the surface of the ground where existing underground utilities are discovered.]~~

3.2.4 Machinery and Equipment

Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

3.3 EXCAVATION

Insert E Here →

Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Refill with [backfill and fill material] [select material] [porous fill] and compact to [95] [_____] percent of [\-ASTM D 698-\] [\-ASTM D 1557-\] maximum density. Unless specified otherwise, refill excavations cut below indicated depth with [backfill and fill material] [select material] [porous fill] and compact to [95] [_____] percent of [\-ASTM D 698-\] [\-ASTM D 1557-\] maximum density.

3.3.4 Machinery and Equipment

Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

3.4 EXCAVATION

Excavate to contours, elevation, and dimensions for removal of contaminated as determined during Pre-Construction Investigation Report. Reuse of excavated materials is not permitted. Storage of contaminated materials is not permitted beyond 30 days. Dispose of all excavated materials as contaminated soil in accordance with Section 02076, "Removal and Disposal of Polychlorinated Biphenyls (PCBs) and Section 02077, "Removal and Disposal of Arsenic Contaminated Soil." Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather.

3.4.1 PCB Contaminated Soils

Excavate, stage, dispose of contaminated soils with 500 ppb or greater PCBs separate from those soils contaminated with less than 500 ppm PCBs.

3.5 FILLING AND BACKFILLING

Fill and backfill to match existing adjacent elevations to the dimensions indicated. Compact each lift before placing overlaying lift.

3.5.1 Backfill and Fill Material Placement

Place in 12-inch lifts. Place backfill material adjacent to structures as the structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against the structure.

3.6 COMPACTION

Expressed as a percentage of maximum density. Determine in-place density of existing subgrade; if required density exists, no compaction of existing subgrade will be required.

3.6.1 General Site

Compact underneath areas designated for vegetation and areas outside the 5-foot line of the structure to 85 percent of ASTM D 1557.

3.7 FINISH OPERATIONS

3.7.1 Grading

Grade areas to drain water away from structures. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

3.3.1 Structures With Spread Footings

\+Ensure that footing subgrades have been inspected and approved by the Contracting Officer prior to concrete placement.+\ Fill overexcavations with concrete during foundation placement.

3.3.2 Pile Cap Excavation and Backfilling

\+Excavate to bottom of pile cap prior to placing or driving piles, unless authorized otherwise by the Contracting Officer.+\ Backfill and compact overexcavations and changes in grade due to pile driving operations to 95 percent of \-ASTM D 698-\ maximum density.

3.3.3 Pipe Trenches

Excavate to the dimension indicated. Grade bottom of trenches to provide uniform support for each section of pipe after pipe bedding placement.

3.3.4 [Hard Material [and Rock] Excavation

****

NOTE: Where rock excavation is planned, foundation section details or typical grading or trench cross sections on plans should show the required limits of rock excavation and any special refill or bedding requirements.

****

Remove hard material [and rock] to elevations indicated in a manner that will leave foundation material in an unshattered and solid condition. Roughen level surfaces and cut sloped surfaces into benches for bond with concrete. Protect shale from conditions causing decomposition along joints or cleavage planes and other types of erosion. \+Removal of hard material [and rock] beyond lines and grades indicated unless previously authorized by the Contracting Officer will not be grounds for a claim for additional payment.+\]

3.4 FILLING AND BACKFILLING

Fill and backfill to contours, elevations, and dimensions indicated. Compact each lift before placing overlaying lift.

~~3.4.1 Common Fill Placement~~

****

NOTE: Delete bracketed item when a pile-supported structure is not in the job.

****

Provide for general site [and under [porous fill of] pile-supported structures]. \&Place in \~[6] [_____]-inch~\ lifts.&\ Compact areas not accessible to rollers or compactors with mechanical hand tampers. Aerate material excessively moistened by rain to a satisfactory moisture content. Finish to a smooth surface by blading, rolling with a smooth roller, or

~~both.~~

3.4.2 Backfill and Fill Material Placement

Provide for paved areas and under concrete slabs, except where select material is provided. \&Place in \~~[6]~~ [12]]-inch~\ lifts.&\ Place backfill material adjacent to structures as the structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against the structure.

3.4.3 Select Material Placement

Provide under [porous fill of] structures not pile supported. \&Place in \~[6] [_____]-inch~\ lifts.&\ Backfill adjacent to structures shall be placed as structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against structure.

3.4.4 Porous Fill Placement

Provide under floor slab on a compacted subgrade. \&Place in \~[4] [_____]-inch~\ lifts.&\

3.4.5 Trench Backfilling

Backfill as rapidly as construction, testing, and acceptance of work permits. Place and compact backfill under structures and \&paved areas in \~[6] [_____]-inch~\ lifts to top of trench and in \~[6] [_____]-inch~\ lifts to \~one foot~\ over pipe&\ outside structures and paved areas.

3.4.5.1 Bedding Requirements

Except as specified otherwise in the individual piping section, provide bedding for buried piping in accordance with \-AWWA C600-\, Type 4, except as specified herein. Backfill to top of pipe shall be compacted to 95 percent of \-ASTM D 698-\ maximum density. Plastic piping shall have bedding to spring line of pipe. Provide \-ASTM D 2321-\ materials as follows:

a. Class I: \&Angular, \~0.25 to 1.5 inches~\, graded stone,&\ a. including a number of fill materials that have regional a. significance such as coral, slag, cinders, crushed stone, and a. crushed shells.

b. Class II: Coarse sands and gravels with maximum particle \&size of \~1.5 inches~\,&\ including various graded sands and gravels containing small percentages of fines, generally granular and noncohesive, either wet or dry. Soil Types GW, GP, SW, and SP are included in this class as specified in \-ASTM D 2487-\.

3.5 BURIED WARNING AND IDENTIFICATION TAPE

Provide buried utility lines with utility identification tape. \&Bury tape \~[12] inches~\ below finished grade; under pavements and slabs, bury tape

\~[6] inches~\ below&\ top of subgrade.

3.6 BURIED DETECTION WIRE

\&Bury detection wire directly above non-metallic piping at a distance not to exceed \~12 inches~\ above the top of pipe. The wire shall extend continuously and unbroken, from manhole to manhole. The ends of the wire shall terminate inside the manholes at each end of the pipe, with a minimum of \~3 feet~\ of wire, coiled, remaining accessible in each manhole.&\ The wire shall remain insulated over it's entire length. The wire shall enter manholes between the top of the corbel and the frame, and extend up through the chimney seal between the frame and the chimney seal. For force mains, the wire shall terminate in the valve pit at the pump station end of the pipe.

3.7 COMPACTION

****

NOTE: Delete bracketed sentences concerning cohesive and cohesionless material if only cohesionless material will be encountered. Delete these sentences for LANTNAVFACENGCOM jobs.

****

****

NOTE: Specify most jobs using ASTM D 698 compaction, except for roads, airfields, and other heavily loaded areas, which should use ASTM D 1557 compaction. Specify compaction in terms of one compaction effort (ASTM D 698 or ASTM D 1557), if possible.

****

Expressed as a percentage of maximum density. Determine in-place density of existing subgrade; if required density exists, no compaction of existing subgrade will be required. [Density requirements specified herein are for cohesionless materials. When cohesive materials are encountered or used, density requirements may be reduced by 5 percent.]

3.7.1 General Site

Compact underneath areas designated for vegetation and \&areas outside the \~5-foot~\ line of the structure&\ to (85) [_____] percent of [\-ASTM D 698-\] (\-ASTM D 1557-\).

3.7.2 Structures, Spread Footings, and Concrete Slabs

\&Compact top \~12 inches~\ of subgrades&\ to [95] [_____] percent of [\-ASTM D 698-\] [\-ASTM D 1557-\]. Compact [common fill] [fill and backfill material] [select material] to [95] [_____] percent of [\-ASTM D 698-\] [\-ASTM D 1557-\].

3.7.3 Porous Fill for Capillary Water Barrier

Compact with two passes of a hand-operated, plate type vibratory compactor.

3.7.4 Adjacent Area

Compact areas \&within \~5 feet~\ of structures&\ to [90] [_____] percent of [\-ASTM D 698-\] [\-ASTM D 1557-\].

3.7.5 Paved Areas

\&Compact top \~12 inches~\ of subgrades&\ to [95] [_____] percent of [\-ASTM D 698-\] [\-ASTM D 1557-\]. Compact fill and backfill materials to 95 percent of [\-ASTM D 698-\] [\-ASTM D 1557-\].

3.7.6 Airfield Pavements

\&Compact top \~24 inches~\ below finished pavement or top \~12 inches~\ of subgrades,&\ whichever is greater, to [100] [_____] percent of \-ASTM D 1557-\, compact fill and backfill material to [100] [_____] percent of \-ASTM D 1557-\.

3.8 FINISH OPERATIONS

3.8.1 Grading

\&Finish grades as indicated within \~one tenth of one foot~\.&\ Grade areas to drain water away from structures. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

3.8.2 Seed

****
NOTE: Choose one of the following options.
****

****
NOTE: If seeding is minor, use requirements specified herein. Otherwise, edit Section 02930, "Turf," and cover requirements therein.
****

[Provide as specified in Section \=02930=\, "Turf."]

[Scarify existing subgrade. \&Provide \~4 inches~\ of topsoil for newly graded finish earth surfaces and areas disturbed by the Contractor. [Additional topsoil will not be required if work is performed in compliance with stripping and stockpiling requirements.] [If there is insufficient on-site topsoil meeting specified requirements for topsoil, provide topsoil required in excess of that available.] Seed shall match existing vegetation. Provide seed at \~5 pounds per 1000 square feet~\. Provide \-CID A-A-1909-\, Type I, Class 2, 10-10-10 analysis fertilizer at \~25 pounds per 1000 square feet~\. [Provide commercial agricultural limestone of 94-80-14 analysis at \~70 pounds per 1000 square feet~\.]&\ Provide

~~mulch and water to establish an acceptable stand of grass.]~~

3.8.3 Protection of Surfaces

Protect newly graded areas from traffic, erosion, and settlements that may occur. Repair or reestablish damaged grades, elevations, or slopes.

3.9 DISPOSITION OF SURPLUS MATERIAL

~~[Waste in Government disposal area [indicated] \&[which is located within a haul distance of [_____] \~miles~\.]&\~~ [Remove from Government property] ~~surplus or other soil material not required or suitable for filling or backfilling, and brush~~, refuse, ~~stumps, roots, and timber.~~]

→ wood fencing, and approximately [20] drums empty

3.10 FIELD QUALITY CONTROL

3.10.1 Sampling

\+Take the number and size of samples required to perform the following tests.+\

3.10.2 Testing

\+Perform one of each of the following tests for each material used. Provide additional tests for each source change.+\

3.10.2.1 *Fill and Backfill*\ Material Testing

\+Test fill and backfill material in accordance with \-ASTM C 136-\ for conformance to \-ASTM D 2487-\ gradation limits; \-ASTM D 1140-\ for material \&finer than the \~No. 200~\ sieve;&\ \-ASTM D 4318-\ for liquid limit and for plastic limit; \-ASTM D 698-\ or \-ASTM D 1557-\ for moisture density relations, as applicable.+\

~~3.10.2.2 *Select Material*\ Testing~~

~~\+Test select material in accordance with \-ASTM C 136-\ for conformance to \-ASTM D 2487-\ gradation limits; \-ASTM D 1140-\ for material \&finer than the \~No. 200~\ sieve;&\ \-ASTM D 698-\ or \-ASTM D 1557-\ for moisture density relations, as applicable.+\~

~~3.10.2.3 *Porous Fill*\ Testing~~

~~\+Test porous fill in accordance with \-ASTM C 136-\ for conformance to gradation specified in \-ASTM C 33-\.+\~

3.10.2.4 *Density Tests*\

****

NOTE: See Note C located at rear of text.

****

\+Test density in accordance with \-ASTM D 1556-\, or \-ASTM D 2922-\ and \-ASTM D 3017-\. When \-ASTM D 2922-\ and \-ASTM D 3017-\ density tests are used, verify density test results by performing an \-ASTM D 1556-\

density test at a location already \-ASTM D 2922-\ and \-ASTM D 3017-\ tested as specified herein. Perform an \-ASTM D 1556-\ density test at the start of the job, and for every 10 \-ASTM D 2922-\ and \-ASTM D 3017-\ density tests thereafter. \&Test each lift at randomly selected locations every \~[2000] [_____] square feet~\ of existing grade in fills for structures and concrete slabs, ~~and every \~[2500] [_____] square feet~\ for other fill areas and every \~[2000] [_____] square feet~\ of subgrade in cut&\.!\~~

-- End of Section --

CRITERIA NOTES

NOTE A: The following information shall be indicated on the project drawings:

1. Surface elevations, existing and new;

2. Location of underground obstructions and existing utilities;

3. Location and record of soil borings and test pits. Include ground water observations and topsoil thickness encountered in boring, soil classifications, and properties such as moisture content and Atterberg limit determinations;

4. Location of borrow and disposal area if located on Government property;

5. Clearing stripping and grubbing limits, if different from clearing limits;

6. Areas to be seeded;

7. Hydrological data where available;

8. Shoring and sheeting required (trench protection is specified in Corps of Engineers Manual EM 385-1-1); and

9. Pipe trench excavation details.

NOTE B: The Contractor should not be given the opportunity to slope the faces of excavations in lieu of providing shoring unless the following conditions are met:

1. The excavation is \&less than \~20 feet~\ in depth&\;

2. Adjacent structures, roads, or pavements will not affect the excavation;

3. Equipment or stored material will not affect the excavation;

4. Vibration from equipment, traffic, or blasting will not affect the excavation;

5. There will be no ground water problems;

6. Surcharges will not affect the excavation; and

7. Station operational considerations allow laying back the slopes of the excavation.

NOTE C: \&Density test frequency can vary from one test per \~100 square feet~\ for small areas up to one test per \~10,000 square feet~\.&\ The following table will also help establish test frequency for various situations:

Material Type	Location of Material	Test Frequency
Undisturbed native soil	Structures	Two random tests in building footings and two tests on subgrade within building line.
Fills and backfills	Structures (adjacent to)	One test per structure per \~2,000 sq. ft~\ taken \~12 inches~\ below finished grade.
Subgrades	Site (except airfields)	One test per lift per \~2,500 sq. ft~\
Embankments	Any	One test per lift per \~500 cubic yds~\ placed.
Native soil other than structures and parking	Any	One test or one test per \~10,000 sq. ft~\ whichever is greater.
Borrow	Any	One test per lift per \~500 cubic yds~\ placed.

NOTE D: Delete paragraph if tape is not required in the project. The use of a plastic warning tape for identification is mandatory for buried hazardous utilities such as electrical conduit, gas lines, fuel lines, high pressure nitrogen, high pressure water and steam lines, domestic sewage force mains, industrial waste force mains and industrial sewers carrying hazardous, explosive, or toxic waste. Coordinate color codes with other specification sections and conform, if possible, to local practice for identifying buried utilities.

NOTE E: Suggestions for improvement of this specification will be welcomed using the "Agency Response Form" located in SPECSINTACT under "System Directory" or DD Form 1426. Suggestions should be forwarded to:

Commanding Officer
Naval Construction Battalion Center
NAVFAC 15G/CESO 158
1000 23rd Avenue
Port Hueneme, CA 93043-4301

-- End --

Environmental Permits Report

for

Remedial Design
Site 1, Site 2, Phase I
Naval Weapons Industrial Reserve Plant (NWIRP)

Bethpage, New York

Northern Division
Naval Facilities Engineering Command
Contract Number N62472-90-D-1298
Contract Task Order 0212

April 1995

039516/P

ENVIRONMENTAL PERMITS REPORT
FOR
REMEDIAL DESIGN
SITE 1 AND SITE 2, PHASE I
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP)
BETHPAGE, NEW YORK

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Northern Division
Environmental Branch Code 18
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, Pennsylvania 19087-1710

Submitted by:
Halliburton NUS Corporation
993 Old Eagle School Road, Suite 415
Wayne, Pennsylvania 19087-1710

CONTRACT NUMBER N62472-90-D-1298
CONTRACT TASK ORDER 0212

APRIL 1995

PREPARED BY:

MARK P. SPERANZA, P.E.
PROJECT MANAGER
HALLIBURTON NUS CORPORATION
PITTSBURGH, PENNSYLVANIA

APPROVED BY:

JOHN J. TREPANOWSKI, P.E.
PROGRAM MANAGER
HALLIBURTON NUS CORPORATION
WAYNE, PENNSYLVANIA

TABLE OF CONTENTS

TABLES

1.0 INTRODUCTION

This Environmental Permits Report (Report) was prepared under Contract Task Order (CTO) 0212, under the Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract Number N62472-90-D-1298. Under CTO 0212 Halliburton NUS is performing engineering, design, and post construction award services for a remedial action at Site 1 - Former Drum Marshaling Area and for Site 2 - Recharge Basin Area at the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York.

1.1 BACKGROUND INFORMATION

1.1.1 Site 1 - Former Drum Marshaling Area

Site 1, the Former Drum Marshaling Area, is a 4-acre plot, adjacent to the eastern side of Plant No. 3. Between the early 1950's and the late 1970's, approximately 200 to 300 drums containing cadmium, cyanide, and halogenated and nonhalogenated liquid compounds were stored at this site.

Analytical results for soil samples collected from various locations at Site 1 indicated widespread surface soil contamination by arsenic, chlorinated solvents and polychlorinated biphenyls (PCBs). The higher concentrations of chlorinated solvents as well as concentrations of volatile organic compounds were detected is subsurface soil samples collected between depths of 3 feet and 5 feet. It was estimated that approximately 600 cy of surface soil was contaminated by arsenic, approximately 1400 cy of surface and subsurface soils were contaminated by PCBs (300 cy greater than 500 mg/kg, 1,100 cy less than 500 mg/kg).

Surface soil collected from one sample point on Site 1 contained an elevated arsenic concentration of 3,380 mg/kg. The soil removed during drilling (i.e., drill cuttings) at this sample point was drummed and a composite sample of the drummed material was analyzed for TCLP characteristics. The arsenic concentration of this leachate sample was 0.855 mg/L. While this concentration is below the RCRA characteristic level for arsenic of 5.0 mg/L, it is possible that discrete portions of the soil collected from this sample location may generate leachate concentrations for arsenic in excess of 5.0 mg/L. For this reason, it is currently estimated that approximately 600 cy of soil from this boring location on Site 1 will be classified as hazardous waste due to TCLP concentrations of arsenic. TCLP analysis of field samples collected during soil excavation will be used to more accurately identify the value of excavated soil to be treated as hazardous waste.

1.1.2 Site 2 - Recharge Basin Area

Site 2, the Recharge Basin Area, occupies approximately 16 acres. Site 2 lies in the northeast corner of the base. Prior to 1984, production-line rinse waters from Plant No. 3 were discharged to the recharge basins. Between the late 1970's and early 1980's, noncontact cooling water was also discharged into these recharge basins. Also, sludge from the Plant No. 2 Industrial Waste Treatment Facility was dewatered in the Site 2 drying beds before offsite disposal. All these disposal activities have been terminated at Site 2.

PCBs were found in both surface and near surface (depths of 3 to 5 feet) soils throughout Site 2. PCB soil contamination was found in soil boring SB206 at a concentration of 33 ppm. This boring is located in the northwest corner of Site 2. It is estimated that approximately 2,600 cy of soil are contaminated with PCBs at concentrations between 10 mg/kg and 500 mg/kg.

1.2 PURPOSE

This report identifies the applicable permits, filing procedures, and filing costs required to complete the remedial action outlined in Section 2.0.

2.0 PROPOSED REMEDIAL ACTION

2.1 REMOVAL ACTION OBJECTIVE

The objective of the proposed removal action for Site 1 is to excavate arsenic- and PCB-contaminated soils. The objective of the proposed removal action for Site 2 is to excavate PCB-contaminated soils. The action level for PCBs at Site 1 and Site 2 is 10 mg/kg; the action level for arsenic at Site 1 is 5.4 mg/kg.

2.2 REMOVAL ACTION DESCRIPTION

2.2.1 Site 1

The following steps shall be taken to remove and decharacterize arsenic- and PCB-contaminated soils from Site 1.

- **General Site Preparation**. Grading will be required to access the work area and to implement the removal action. However, the disturbed area will be restricted to only those area necessary to perform work.

- **Excavation and Stabilization of Arsenic-Contaminated Soil**. Approximately 600 cy of Site 1 soil containing arsenic at concentrations that cause exceedance of the RCRA criteria for toxicity shall be excavated at Site 1 and stabilized off-site using an appropriate soil stabilization process. The soil will be stabalized to reduce the concentrations of arsenic in the leachate to below 5.0 mg/L. The stabilized soil will then be deposited in an offsite solid waste landfill.

- **Excavation and Incineration of PCB-Contaminated Soil**. Approximately 300 cy of surface and subsurface soils at Site 1 contain PCBs at concentrations exceeding 500 mg/kg. This soil shall be excavated and transported to a TSCA-permitted waste incinerator.

- **Excavation and Off-Base Landfill of PCB-Contaminated Soil**. Approximately 1,100 cy of PCB-contaminated surface and subsurface soils at Site 1 contain PCBs at concentrations between 10 mg/kg and 500 mg/kg. This soil shall be excavated and transported to a TSCA-permitted landfill.

- **Restoration of the Site**. Following post-removal verification sampling and analysis to ensure removal action goals have been achieved, the excavated site will be backfilled with clean soil. The site will be regraded to its pre-existing condition.

2.2.2 Site 2

The following steps shall be taken to remove PCB-contaminated soil from Site 2:

- **General Site Preparation**. Grading will be required to access the work area and to implement the removal action. The disturbed area will be restricted to only those areas necessary to perform the work.

- **Off-Base Landfill of PCB-Contaminated Soil**. Approximately 2,600 cy of PCB-contaminated surface and subsurface soils at Site 2 contain PCBs at concentrations between 10 mg/kg and 500 mg/kg. This soil shall be excavated and transported to a TSCA-approved landfill.

- **Restoration of the Site**. Following post-removal verification sampling to ensure removal action goals have been met, the excavated site will be backfilled with clean soil. The site will be regraded to its pre-existing condition.

3.0 REQUIRED DOCUMENTATION

Table 3-1 presents a project documentation checklist to determine which documents will be required in order to assure regulatory compliance. This table lists the type of permits/license/certification that are required by government agencies for specific types of projects.

No filing fees or monitoring requirements will be associated with any of the required documentation.

3.1 FEDERAL REGULATIONS

The offsite transport and onsite storage of PCB-contaminated soil is regulated by the Toxic Substances Control Act (TSCA) 40 CFR 761. The offsite transport and onsite storage of arsenic-contaminated soil is regulated by the Resource Conservation and Recovery Act (RCRA) 40 CFR 262.

3.2 STATE REGULATIONS

The offsite transport of PCB-contaminated soil and arsenic-contaminated soil is regulated by the State of New York (6 NY CRR 372).

3.3 LOCAL REGULATIONS

No local regulations were found to apply to the proposed soil removal activities.

TABLE 3-1

PROJECT DOCUMENTATION CHECKLIST, SITE 1 AND SITE 2
BETHPAGE, NEW YORK

Activity	Type of Permit/License/ Certification	Issuing Agency	Applicability	Reason
Stationary Air Emission Source	Permit to Construct/Permit-to-Operate	State	Not Applicable	No air emission sources are being constructed or operated.
Hazardous Air Pollutant (HAP) Emission Source	HAP Emission Statement	State	Not Applicable	Hazardous air pollutants will not be emitted.
Floodplain Management Regulations Development	Development Permit	State	Not Applicable	Excavation will not occur in the 100-year floodplain. A permit is not required.
Wastewater Discharge to "Waters of the U.S."	Permit-to-Discharge (SPDES or NPDES)	State or EPA	Not Applicable	NPDES or SPDES permits will not be required. Wastewaters will not be discharged.
Wastewater Discharge to Sewer	Sewer-Use Permit	State or Local	Not Applicable	No wastewater discharges to a public sewer system will occur.
Potable Water Treatment	Permit-to-Operate	State	Not Applicable	Water is not being treated for potable use.
Underground Injection for Waste Disposal	Permit-to-Operate	State or EPA	Not Applicable	Underground Injection will not be performed.
Ocean Dumping	Permit-to-Dump	EPA	Not Applicable	Ocean Dumping will not be performed.
Dredging	Dredge-Fill Permit Ocean Disposal Permit State Water Quality Cert.	COE COE State	Not Applicable	Dredging is not being performed.
Structure In Navigable Waters	Section 10 Permit	COE	Not Applicable	Structures are not being built in navigable waters.

TABLE 3-1 (Continued)
PROJECT DOCUMENTATION CHECKLIST, SITE 1 AND SITE 2
BETHPAGE, NEW YORK

Activity	Type of Permit/License/ Certification	Issuing Agency	Applicability	Reason
Stormwater Discharge to "Waters of the U.S."	Permit-to-Construct/Modify Source	State	Not Applicable	No stormwater will be discharged to "Waters of the U.S."
Earth-Moving Operations	Permit to Construct/Erosion and Sediment Control Plan	State	Not Applicable	Site 1 and Site 2 construction will disturb less than the 5-acre limit specified by New York regulations.
Fill Wetlands	Dredge/Fill Permit State Water Quality Cert. State Wetland Permit	COE State	Not Applicable	The project is not proposing to fill in a wetlands area.
Hazardous and Non-Hazardous Waste Landfills	Permit-to-Operate	State	Not Applicable	A hazardous waste landfill is not being constructed or operated.
Hazardous Waste Generation	**EPA Identification Number**	**State**	**Applicable**	**The generator site must obtain an EPA identification number prior to handling or transporting any TSCA or hazardous waste.**
Waste Transport (PCB-contaminated waste)	**Form 8700-22**	**EPA or State**	**Applicable**	**Offsite transport of PCB-contaminated soil is regulated under 40 CFR 761 and 6 NY CRR 372.**
Waste Transport (Arsenic-contaminated waste)	**Form 8700-22**	**State**	**Applicable**	**Offsite transport of arsenic-contaminated soil is regulated under 40 CFR 262, and 6 NY CRR 372.**
Disposal of PCB- and arsenic-contaminated soil	**Notification of Authorization of Disposal Certification of Disposal**	**State**	**Applicable**	**Disposal of PCB- and arsenic-contaminated soil is regulated by 40 CFR 761, 40 CFR 262, and 6 NY CRR 372.**

TABLE 3-1 (Continued)
PROJECT DOCUMENTATION CHECKLIST, SITE 1 AND SITE 2
BETHPAGE, NEW YORK

Activity	Type of Permit/License/ Certification	Issuing Agency	Applicability	Reason
Onsite storage of PCB-contaminated soil	Notification of PCB Activity\ Form 7710-53	EPA	Not Applicable	Excavated soil containing PCBs will not be stored on site for more than 30 days.
Transport of PCB- and arsenic-contaminated soil through New York City limits.	Waste Transporter Permit	State	Not Applicable	Permit is required for transport of flammable materials through New York City limits. Soils are not flammable by New York City definition.
Hazardous Waste Treatment, Storage, Disposal	Permit-to-Construct Permit-to-Operate (Part B Permit)	State or EPA	Not Applicable	The generator is not operating a treatment, storage, or disposal facility.
Underground Storage Tanks	Permit-to-Construct Permit-to-Operate	State or EPA	Not Applicable	No underground tanks exist within this project.
Pesticide Application	Applicator Certification	DOD	Not Applicable	Pesticides will not be used.

4.0 COMPLIANCE PROCEDURES

4.1 WASTE GENERATION DOCUMENTATION

4.1.1 EPA Identification Number

An EPA waste identification number for the generator is required for all soil excavated from Site 1 and Site 2 that contain PCBs at concentrations exceeding the Federal limit of 50 mg/kg. An EPA waste identification number for the generator is required for all soil excavated from Site 1 that contains arsenic at concentrations which generate TCLP concentrations for arsenic in excess of the 5.0 mg/L action level. Because the NWIRP is registered as a RCRA facility, the existing Base EPA ID number can be applied to excavated soil containing PCBs and arsenic for both Site 1 and Site 2.

4.2 WASTE TRANSPORT DOCUMENTATION

Prior to excavation and transport of soils containing PCBs or arsenic, the waste generator must receive and retain written confirmation from the selected waste transporter/transporters that each transporter is authorized to transport the designated type and quantity of soil in the particular states entered during waste transport.

The transport of soil containing concentrations of PCBs is regulated by TSCA (40 CFR 761) and the State of New York (6 NY CRR 372). Soil containing concentrations of PCBs less than 50 mg/kg are reported by a waste manifest procedure that is different than for soils containing PCBs at concentrations greater than 50 mg/kg. Each procedure is reviewed below.

4.2.1 PCB-Contaminated Soils Less Than 50 mg/kg (Site 1 and Site 2)

Prior to shipping the PCB-contaminated soil, the waste generator must complete the Federal Uniform Hazardous Waste Manifest 8700-22 (4-page version), and distribute the copies according to the instructions printed on the form.

Copies of Form 8700-22 must be filed with the designated departments within 5 days of the start of waste transport.

4.2.2 PCB-Contaminated Soils Greater Than 50 mg/kg (Site 1 and Site 2) and Arsenic-Contaminated Soil with TCLP Greater Than 5.0 mg/L (Site 1)

Prior to shipping the PCB-contaminated soil, the waste generator must complete the State of New York Uniform Hazardous Waste Manifest 8700-22 (8-page version), including information required by TSCA in Section J, and distribute the copies according to the instructions printed on the form. Since soil containing concentrations of PCBs less than 500 mg/kg and all soil containing concentrations of arsenic shall be disposed at the Model City, New York facility, copies of form 8077-22 to be filed with the Disposer State office and the Generator State office should be mailed to:

State of New York
Department of Environmental Conservation
Division of Hazardous Substances Regulation
Hazardous Waste Manifest
P.O. Box 12820
Albany, New York 12212

Soil containing concentrations of PCBs greater than 500 mg/kg will be incinerated. Design has been based on incineration of the waste at the Aptus facility in Coffeyville, Kansas. According to State of Kansas regulations, a copy of form 8077-22 does not have to be filed with the State of Kansas for incineration of soil containing concentrations of PCBs.

Additional copies of the waste manifest will be distributed by the waste disposer and waste transporter according to guidelines printed on the form. One copy of the form is carried by the transporting vehicle.

Copies of Form 8700-22 must be filed with the designated departments within 5 days of the start of waste transport.

4.3 WASTE DISPOSAL

Disposal of soils containing concentrations of PCBs and arsenic are regulated by TSCA (40 CFR 761) and by the State of New York (6 NY CRR 372). Disposal of soils containing concentrations of arsenic are regulated by RCRA (40 CFR 262) and the State of New York (6 NY CRR 372).

4.3.1 Disposal of PCB- and Arsenic-Contaminated Soils

To dispose of soils containing PCBs or arsenic, the waste generator must satisfy the following requirements for each waste stream:

- Prior to shipment, obtain written communication from the disposal facility that it is authorized to accept the waste, has the capacity, and will assure that the proper disposal method is applied to the waste.

- The generator must receive a Certificate of Disposal that will be prepared by the owner or operator of the disposal facility for each shipment the facility accepts. The Certificate of Disposal must be sent to the generator within 30 days of the date that disposal was completed. A letter on facility letterhead with the signed manifest as the Certificate of Disposal is acceptable.

- When the generator has employed an independent transporter to transport the waste to a commercial disposer, the generator shall confirm by telephone, or by other means of confirmation agreed to by both parties, that the disposer actually received the manifested waste.

- The generator shall confirm receipt of the waste by close of business the day after he receives the manifest hand-signed by the commercial disposer.

- State of New York Time Limit. A generator must immediately contact the transporter and/or disposal facility to determine the status of the shipment if a copy of the manifest with a handwritten signature of the owner or operator of the facility was not received within 15 days from the date of shipment. If a copy is not received within 20 days from the date of shipment, an Exception Report must be submitted to the State of New York Department, and include the information specified in 6 NY CRR 372.2(c)(3).

- Federal Time Limit. If the generator has not received the manifest within 35 days after the transporter accepted the waste, the generator shall telephone the disposer to determine if the waste was actually received. If it was not received, the generator shall contact the transporter to determine the location of the waste.

- Federal Time Limit. If the generator has still not received the manifest within 45 days after the transporter accepted the waste, the generator shall submit an Exception Report to the EPA Regional Administrator (Region 2) as specified in 40 CFR 761 and 40 CFR 262.

- An Annual Report must be submitted to the State of New York Commissioner of Environmental Conservation by the generator who ships any hazardous waste for disposal no later than March 1 for the previous year and must include the information specified by 6 NY CRR 372.2(c)(2).

- A Biennial Report must be submitted to the Regional Administrator by the generator who ships any hazardous waste for disposal no later than March 1 for the previous year and must include the information specified by 40 CFR 262.41.

- As specified in 40 CFR 761.180, all documents pertaining to PCB waste shipments occurring between January 1st and December 31st of a particular year must be organized by the waste generator into an Annual Document Log. The Log must be organized by July 1st of the following year.

- The generator shall retain a written record of all telephone or other communications to be included in the Annual Document Log.

- The generator must keep a copy of each of the following for at least 3 years:

  - Manifests signed by the disposing facility (from the date the waste is accepted by the initial transporter).
  - Annual Reports, Biennial Reports, Annual Document Logs, and Exception Reports (from the due date of the report).
  - Records of any test, waste analyses, or other determinations.
  - Certificates of Disposal (from the date received from the disposer).