

N00213.AR.000327  
NAS KEY WEST  
5090.3a

REMEDIAL WORK PLAN FOR BASE REALIGNMENT AND CLOSURE PARCELS FAST  
TRACK SOIL REMOVALS NAS KEY WEST FL  
11/30/1998  
BECHTEL ENVIRONMENTAL INC

**REMEDIAL WORK PLAN  
DELIVERY ORDER NO.101  
BRAC PARCELS  
FAST TRACK SOIL REMOVALS  
AT**

**NAVAL AIR STATION  
KEY WEST, FLORIDA**

Prepared for

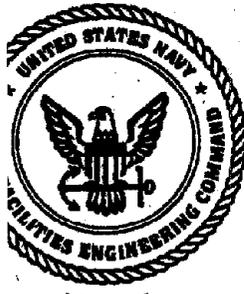
**DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND**

Under Contract No. N62467-93-D-0936



Prepared by

**BECHTEL ENVIRONMENTAL, INC.  
OAK RIDGE, TENNESSEE  
BECHTEL JOB NO. 22567**





327 = 00010

NOV 30 1998

Commanding Officer  
Southern Division  
Naval Facilities Engineering Command  
Attention: Dudley Patrick 1858  
2155 Eagle Drive  
North Charleston, SC 29406

SUBJECT: Bechtel Job No. 22567  
Department of the Navy Contract No. N62467-93-D-0936  
DO 0101, NAS KEY WEST, BRAC PARCELS – FAST TRACK SOIL REMOVALS – REMEDIAL  
WORK PLAN  
Subject Code: 5320

Dear Mr. Patrick:

Enclosed for your approval is the revised Remedial Work Plan for the upcoming work at the BRAC Parcels. I have revised the text to incorporate comments from you, Mark Ewing, and Chuck Bryan. Figure 9 has been revised to reflect the 4-foot excavation depth in front of Building 103. Included is a summary of the comments and responses. Please reuse the existing notebook and insert the revised pages.

Four complete copies are being forwarded to Phillip Williams for distribution to the RAB members.

If you have any questions, please feel free to give me a call at (423) 220-2271.

Sincerely,

Roy Hoekstra  
Project Engineer

REH:crh:Lr1747.doc  
Enclosures: As stated

cc: Martha Berry (EPA) w/1  
Chuck Bryan (TetraTech NUS) w/1  
Jorge Caspary (FDEP) w/1  
Ron Demes (NASKW) w/1  
Phillip Williams (NASKW) (replacement pages,  
plus 4 complete)  
M. Ewing (ROICC) w/1

REMEDIAL WORK PLAN  
DELIVERY ORDER NO. 101  
BRAC PARCELS  
FAST TRACK SOIL REMOVALS  
AT  
NAS KEY WEST, FLORIDA

Prepared for  
DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
Under Contract No. N62467-93-D-0936

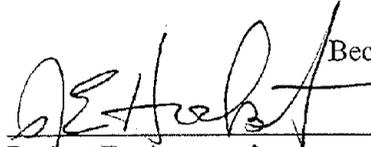
Prepared by  
BECHTEL ENVIRONMENTAL, INC.  
OAK RIDGE, TENNESSEE

November 1998

REVISION 1

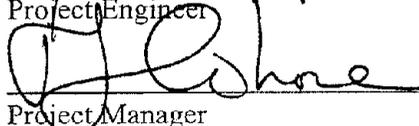
Bechtel Job No. 22567

Approved:

  
Project Engineer

11/30/98  
Date

Approved:

  
Project Manager

11/30/98  
Date

Approved:

\_\_\_\_\_  
Navy Contracting Officer

\_\_\_\_\_  
Date

# CONTENTS

Page

|   |           |
|---|-----------|
| <b>CONTENTS</b> .....   | <b>ii</b> |
| <b>CONTENTS</b> .....   | <b>II</b> |
| <b>1. INTRODUCTION</b> .....  | <b>1</b>  |
| 1.1 SITE DESCRIPTION .....  | 1         |
| 1.2 HAMACA HAWK MISSILE SITE .....  | 2         |
| 1.3 TRUMAN ANNEX .....  | 2         |
| 1.4 REGULATORY SETTING.....   | 2         |
| <b>2. SCOPE OF WORK</b> .....   | <b>2</b>  |
| 2.1 HAWK MISSILE SITE (PARCEL A) .....  | 3         |
| 2.1.1 BRAC Parcel A – Subzone 4 Sewage Lift Station.....                      | 3         |
| 2.1.2 BRAC Parcel A – Subzone 9 Wetland Area Adjacent to Government Road..... | 3         |
| 2.1.3 BRAC Parcel A – Subzone 9 Pond Sediments.....                           | 4         |
| 2.2 TRUMAN ANNEX DRMO WASTE STORAGE AREA (PARCEL C) .....                     | 5         |
| 2.2.1 BRAC Parcel C – Subzone 1 Building 261.....                             | 5         |
| 2.2.2 BRAC Parcel C – Subzone 3 and 4 DRMO Waste Storage Area .....           | 5         |
| 2.3 TRUMAN ANNEX SEMINOLE BATTERY (PARCEL D).....                             | 6         |
| 2.3.1 BRAC Parcel D – Subzone 1.....  | 6         |
| 2.4 TRUMAN ANNEX BUILDINGS 102, 103 AND 104 (PARCEL E).....                   | 6         |
| 2.4.1 BRAC Parcel E – Subzone 2 Former Location of Building 136.....          | 6         |
| 2.4.2 BRAC Parcel E – Subzones 3 and 9 – Buildings 102, 103 and 104 .....     | 6         |
| 2.5 TRUMAN ANNEX BUILDING 223 (PARCEL F).....                                 | 7         |
| 2.5.1 BRAC Parcel F – Subzone 1 Former Lube Area.....                         | 7         |
| 2.5.2 BRAC Parcel F – Subzone 3 Former Hazardous Waste Storage Area.....      | 7         |
| <b>3. REMEDIATION ACTIVITIES</b> .....  | <b>8</b>  |
| 3.1 MOBILIZATION .....  | 8         |
| 3.1.1 Preconstruction Meeting.....  | 8         |
| 3.1.2 Temporary Facilities.....   | 8         |
| 3.2 CIVIL SURVEYING.....  | 8         |
| 3.3 EARTHWORK CONSTRUCTION.....   | 8         |
| 3.3.1 Limits of Excavation .....  | 8         |
| 3.3.2 Method of Excavation .....  | 9         |
| 3.3.3 Contaminated Material Transport and Storage.....                        | 9         |
| 3.3.4 Backfill .....  | 9         |
| <b>4. WASTE MANAGEMENT</b> .....  | <b>9</b>  |
| 4.1 WASTE MINIMIZATION.....   | 10        |
| 4.2 HAZARDOUS WASTE .....   | 10        |
| 4.3 HAZARDOUS WASTE TRANSPORTATION .....                                      | 10        |
| 4.4 DECONTAMINATION WATER.....  | 10        |

|     |  |    |
|-----|--|----|
| 4.5 | NONHAZARDOUS SOLID WASTE DISPOSAL..... | 11 |
| 5.  | QUALITY CONTROL.....                   | 11 |
| 6.  | SAFETY AND HEALTH.....                 | 11 |
| 7.  | PROJECT MANAGEMENT.....                | 11 |

### ATTACHMENTS

|              |   |
|--------------|---|
| Attachment 1 | Figures   |
| Attachment 2 | Technical Specification for Contaminated Earthwork and Miscellaneous Demolition |
| Attachment 3 | Technical Specification for Uncontaminated Earthwork                            |
| Attachment 4 | Technical Specification for Transportation of Contaminated Materials            |
| Attachment 5 | Florida State Historic Preservation Officer Approval                            |

### ACRONYMS AND ABBREVIATIONS

|          |   |
|----------|---|
| BRAC     | Base Realignment and Closure                            |
| Bechtel  | Bechtel Environmental, Inc.                             |
| CFR      | Code of Federal Register                                |
| EPA      | Environmental Protection Agency                         |
| DOT      | Department of Transportation                            |
| DRMO     | Defense Reutilization and Marketing Office              |
| NAS      | Naval Air Station                                       |
| RAC      | Response Action Contractor                              |
| RCRA     | Resource and Conservation Recovery Act                  |
| ROICC    | Resident Officer in Charge of Construction              |
| RWP      | Remedial Work Plan                                      |
| SOUTHDIV | Naval Facilities Engineering Command, Southern Division |
| TSCA     | Toxic Substances Control Act                            |
| TSDF     | Treatment, Storage or Disposal Facility                 |

## 1. INTRODUCTION

Bechtel Environmental, Inc. (Bechtel) has been contracted by the Department of the Navy, Naval Facilities Engineering Command, Southern Division (SOUTHDIV), to provide remedial services as the Navy's Environmental Response Action Contractor (RAC). Under Delivery Order No. 0101 of Prime Contract N62467-93-D-0936, Bechtel has been contracted to prepare a Remedial Work Plan (RWP) and perform the field work for the "Fast Track Soil Removals" of contaminated soils at the Base Realignment and Closure (BRAC) Parcels at Naval Air Station (NAS) Key West.

The scope of these remedial actions includes excavation and disposal of soils from BRAC Parcels at NAS Key West. There are twelve separate locations where these remedial actions are required. Delineation sampling, confirmation sampling, and waste characterization will be performed by Tetra Tech NUS and are not in Bechtel's scope of work.

These remedial actions are based on the Report "Site Inspection Report for Nine BRAC Parcels" dated June 1998 that was prepared by TetraTech NUS (formerly Brown and Root Environmental) and supplemental data collected by TetraTech NUS and provided to Bechtel through the NAS Key West Partnering Team.

### 1.1 SITE DESCRIPTION

Several installations in various parts of the lower Florida Keys comprise NAS Key West. The U.S. Navy manages 6,323 acres of land divided into 20 separate tracts in the lower Florida Keys, concentrated around Key West and Boca Chica Key (Figure 1) in Southern Monroe County. The missions for NAS Key West are changing and the resulting realignment of aviation operations, a research laboratory, communications intelligence, and several other activities has resulted in properties that are no longer needed by NAS Key West to support its ongoing mission. Nine parcels were identified as surplus properties and have been investigated for environmental concerns. The results of these site investigations are contained in the Site Inspection Report for Nine BRAC Parcels prepared by TetraTech NUS. These properties include:

- Hamaca Hawk Missile Site (Parcel A)
- East Martello Battery (Parcel B)
- Truman Annex (Parcels C, D, E, F, and K)
- Trumbo Point (Parcels H and I)

Soil contamination was found at the Hamaca Hawk Missile Site (Parcel A) and at Truman Annex Parcels C, D, E, and F at levels that exceeded the screening action levels established for residential or industrial future land use scenarios. There are no soil removal actions to be performed under this RWP at East Martello Battery (Parcel B) or Trumbo Point (Parcels H and I).

## **1.2 HAMACA HAWK MISSILE SITE**

The Hamaca Hawk Missile Site (BRAC Parcel A) is located on Government Road to the northwest of Key West International Airport. This site is adjacent to salt ponds and mangrove wetlands. See Figure 2 for the location of this site. The filling of salt ponds by the U. S. Army in 1964 created the upland area of the Hawk Missile Site. This site was used as a defense site during the Cuban Missile Crisis. The site was transferred to the Navy in the early 1980's and has not been actively used for the Navy's mission at NAS Key West.

## **1.3 TRUMAN ANNEX**

The Truman Annex BRAC Parcels included in this RWP (Figure 2) are:

- Parcel C – Defense Reutilization and Marketing Office (DRMO) Waste Storage Area
- Parcel D – Seminole Battery
- Parcel E – Building 102, 103 and 104
- Parcel F – Building 223

The Navy has had a presence at Truman Annex since 1823. The Army used part of Truman Annex in 1845 to build Fort Zachary Taylor. Seminole Battery was built during the Civil War. From 1909 to 1919 the Army filled salt ponds in the Truman Annex area to enlarge the available space. From 1940 until 1970, the Navy berthed submarines at the turning basin at Truman Annex. Most of the buildings that were located along the turning basin were used to support the submarine operations. Most of these buildings have been demolished.

## **1.4 REGULATORY SETTING**

The actions described in this RWP are being implemented following the direction of the Key West Partnering Team. Tetra Tech NUS developed the action levels used for determining soil clean-up goals.

## **2. SCOPE OF WORK**

Remediation of the following sites will be accomplished based on BRAC funding availability. The site remediations will be completed in the following sequence:

1. Truman Annex DRMO Waste Storage Area Storage BRAC Parcel C – Subzone 3 and 4  
DRMO Waste Storage Area
2. Truman Annex DRMO Waste Storage Area Storage BRAC Parcel C – Subzone 1 Building  
261
3. Truman Annex Seminole Battery BRAC Parcel D – Subzone 1
4. Truman Annex Building 223 BRAC Parcel E – Subzone 1 Former Lube Area
5. Truman Annex Building 223 BRAC Parcel E – Subzone 3 Former Hazardous Waste Storage  
Area

6. Truman Annex Buildings 102, 103 And 104 BRAC Parcel E – Subzone 2 Former Location of Building 136
7. Truman Annex Buildings 102, 103 And 104 BRAC Parcel E – Subzones 3 and 9 – Buildings 102, 103 and 104
8. Hawk Missile Site BRAC Parcel A – Subzone 4 Sewage Lift Station
9. Hawk Missile Site BRAC Parcel A – Subzone 9 Wetland Area Adjacent to Government Road
10. Hawk Missile Site BRAC Parcel A – Subzone 9 Pond Sediments

## **2.1 HAWK MISSILE SITE (PARCEL A)**

Three locations at the Hawk Missile Site (Parcel A) are included in the BRAC Fast Track Soil Removals.

### **2.1.1 BRAC Parcel A – Subzone 4 Sewage Lift Station**

At sample locations SS-02, SS-03 and SS-04 surface soil samples exceeded the action level for arsenic. The following activities will be required to complete the soil removal actions at this site:

- A utility survey will be performed
- A 25 feet by 35 feet by 2-foot deep area will be excavated at this location. The excavation depth will be to 2 feet or until caprock is encountered. Figure 3 details the area of the excavation. If any archeological items are unearthed during excavation activities, the Station's Natural Resource Specialist, Arnim Schuetz (305) 293-2911, shall be notified. All excavation activities will cease in the area until clearance to resume is given by Mr. Schuetz. See Attachment 5 for further information.
- The excavated material will be disposed of as nonhazardous waste.
- Tetra Tech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- Excavated areas at this location will not be backfilled.

### **2.1.2 BRAC Parcel A – Subzone 9 Wetland Area Adjacent to Government Road**

At sample location SD-08, one sediment soil sample exceeded the action level for aluminum, lead, vanadium and DDE. The following activities will be required to complete the sediment removal at this site:

- A wetlands permit will be required prior to the start of work.
- A utility survey will be performed.
- A 25 feet by 25 feet by 2-foot deep area will be excavated at this location. The excavation depth will be to 2 feet deep or until caprock is encountered. Figure 4 details the area of the excavation. If any archeological items are unearthed during excavation activities, the Station's Natural Resource Specialist, Arnim Schuetz (305) 293-2911, shall

be notified. All excavation activities will cease in the area until clearance to resume is given by Mr. Schuetz. See Attachment 5 for further information.

- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated area will be backfilled in accordance with the wetlands permit and the site will be allowed to naturally revegetate.

### **2.1.3 BRAC Parcel A – Subzone 9 Pond Sediments**

At sample location SD-05, one sediment sample exceeded the action level for cadmium, lead, DDE, bis(2-ethylhexyl)phthalate and butyl benzyl phthalate. This sample is in a 30 feet by 40 feet pond that is surrounded by mangroves. Figure 4 shows the location of the pond. The following activities will be required to complete the sediment removal at this site:

- A wetlands permit will be required prior to the start of work.
- A utility survey will be performed.
- The cable trays and supports in the pond will be removed and disposed of.
- Some mangroves may need to be removed for access to the pond. This will be kept to a minimum.
- The sediments will be removed with a long reach excavator. Sediments will be placed on a drying bed constructed of straw bales and geotextile fabric and allowed to dry; then loaded into a truck for disposal. If any archeological items are unearthed during excavation activities, the Station's Natural Resource Specialist, Arnim Schuetz (305) 293-2911, shall be notified. All excavation activities will cease in the area until clearance to resume is given by Mr. Schuetz. See Attachment 5 for further information.
- Any remaining sediments in the pond will be removed by hydraulic dredging. A 4-inch diaphragm pump will be used to pump the sediments from the bottom of the pond. All of the sediments in the pond will be removed up to the edge of the mangrove roots. The pumped sediments will be placed into a "GEOTUBE" filtering tube. The water will drain from the GEOTUBE and back into the pond. The GEOTUBE will be allowed to dry and the sediments will be loaded into a truck for disposal.
- The sediments will be disposed of as a nonhazardous waste.
- The excavated area will not be surveyed or backfilled.

## **2.2 TRUMAN ANNEX DRMO WASTE STORAGE AREA (PARCEL C)**

Three locations at the DRMO Waste Storage Area (Parcel C) are included in the BRAC Fast Track Soil Removals.

### **2.2.1 BRAC Parcel C – Subzone 1 Building 261**

At sample locations SS-01 and SS-04 surface soil samples exceeded the action level for PCBs, lead and PAHs. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- Clearance for excavation next to the historic Fort Zachary Taylor has been obtained from the State Historical Preservation Officer. See Attachment 5 for details.
- The area indicated on Figure 5 will be excavated to a depth of 2-feet or until caprock is encountered.
- If any archeological items are unearthed during excavation activities, the Station's Natural Resource Specialist, Arnim Schuetz (305) 293-2911, shall be notified. All excavation activities will cease in the area until clearance to resume is given by Mr. Schuetz. See Attachment 5 for further information.
- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- This excavated area will be backfilled.

### **2.2.2 BRAC Parcel C – Subzone 3 and 4 DRMO Waste Storage Area**

At this site elevated levels of organics and inorganics were detected in the sampling results. The following activities will be required to complete the soil removals at this site:

- The remaining metal debris and trash will be collected and recycled or disposed of as nonhazardous waste.
- A utility survey will be performed.
- The areas indicated on Figure 6 will be excavated to a depth shown on the figure or until caprock or the water table is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated area will be backfilled.

## **2.3 TRUMAN ANNEX SEMINOLE BATTERY (PARCEL D)**

One location at the Seminole Battery (Parcel D) is included in the BRAC Fast Track Soil Removals.

### **2.3.1 BRAC Parcel D – Subzone 1**

At sample location SS-03 surface soil sample results exceeded the action levels for arsenic and PAHs. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- Clearance for excavation next to the historic Seminole Battery has been obtained from the State Historic Preservation Officer, see Attachment 5.
- A 25-foot by 25-foot area will be excavated to a depth of 2-feet or until caprock is encountered. See Figure 7 for the location of the excavation.
- If any archeological items are unearthed during excavation activities, the Station's Natural Resource Specialist, Arnim Schuetz (305) 293-2911, shall be notified. All excavation activities will cease in the area until clearance to resume is given by Mr. Schuetz. See Attachment 5 for details.
- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated area will be backfilled.

## **2.4 TRUMAN ANNEX BUILDINGS 102, 103 AND 104 (PARCEL E)**

### **2.4.1 BRAC Parcel E – Subzone 2 Former Location of Building 136**

At this site elevated levels of PAHs and inorganics were detected. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- The areas indicated on Figure 8 will be excavated to the depth indicated on the figure or until caprock or the water table is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated area will be backfilled.

### **2.4.2 BRAC Parcel E – Subzones 3 and 9 – Buildings 102, 103 and 104**

At this site elevated levels of PAHs were detected at several sample locations within these subzones. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.

- The areas indicated on Figure 9 will be excavated to the depth indicated on the figure or until caprock or the water table is encountered.
- Free product could be encountered at the southern end of building 103. Any free product encountered will be collected from the excavation with a vac truck.
- The excavated material and recovered free product will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated areas will be backfilled.

## **2.5 TRUMAN ANNEX BUILDING 223 (PARCEL F)**

### **2.5.1 BRAC Parcel F – Subzone 1 Former Lube Area**

At this site an elevated level of arsenic was detected at sample location SS-04. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- One 25-foot and 25-foot area indicated on Figure 11 will be excavated to a depth of 2-feet or until caprock is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated area will be backfilled.

### **2.5.2 BRAC Parcel F – Subzone 3 Former Hazardous Waste Storage Area**

At this site an elevated level of arsenic was detected at sample location SS-01. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- One 25-foot by 25-foot area indicated on Figure 12 will be excavated to a depth of 2-feet or until caprock is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- TetraTech NUS will collect confirmation samples after the excavation is complete.
- A civil survey will be performed to document the extent of the excavation and the location of the confirmation samples.
- The excavated area will be backfilled.

### **3. REMEDIATION ACTIVITIES**

#### **3.1 MOBILIZATION**

Once notice to proceed has been given to Bechtel by SOUTHDIV, Bechtel will mobilize a work force, support equipment, material, and subcontractors necessary to complete the work.

##### **3.1.1 Preconstruction Meeting**

Before the physical work begins, a preconstruction meeting will be held with the Resident Officer in Charge of Construction (ROICC). This meeting will discuss execution of the work, site access, staging areas, transportation haul routes, and contact personnel for fire, environmental, safety and health, security, and waste management.

##### **3.1.2 Temporary Facilities**

Bechtel will use Building 112 on Truman Annex for temporary offices.

#### **3.2 CIVIL SURVEYING**

Surveying services will consist of performing necessary surveys, such as construction and/or grid and preparing associated drawings and documentation as agreed upon with SOUTHDIV.

#### **3.3 EARTHWORK CONSTRUCTION**

Prior to beginning excavation, the designated areas will be checked for existing utilities and other potential interferences. The Bechtel Project Superintendent will obtain any necessary excavation permits from the Naval Air Station and the local utility companies. Bechtel will also perform a walkdown of the areas to be excavated to visually observe locations of manholes, hydrants, valves, open cuts, overhead obstructions, curbs, buildings, etc., and other unusual conditions. In addition, the Bechtel Project Superintendent will perform location surveys using standard field utility detection equipment. No excavation will be initiated until the subgrade interference survey is complete. Attachment 2 "Technical Specification for Contaminated Earthwork and Miscellaneous Demolition" and Attachment 3. "Technical Specification for Uncontaminated Earthwork" provide general guidance for excavation activities.

##### **3.3.1 Limits of Excavation**

Estimated limits of excavation are indicated on the individual site figures in Section 3.0 of this RWP. The need for additional excavation will be determined in the field based on analytical results of confirmation samples collected by TetraTech NUS.

Once all material has been excavated and the extent of contaminated material requiring removal has been confirmed by an offsite laboratory, a registered land shall provide the necessary survey information (coordinates, cross-sections, elevations, etc.) to prepare as-built drawings for the excavation.

### **3.3.2 Method of Excavation**

All excavation will be by backhoe and/or excavator where practical. In areas where interferences are present and preclude use of mechanized equipment, excavation will be by hand. All interferences such as existing utilities will be properly maintained while the excavation is in progress and remain protected until the excavation is backfilled.

### **3.3.3 Contaminated Material Transport and Storage**

As contaminated soil is excavated, the material will be temporarily stockpiled onsite or loaded into containers for temporary storage. All material will be stored, loaded, and transported in accordance with Section 4.0.

### **3.3.4 Backfill**

Backfill of excavated areas will be performed after the results of the confirmatory sampling of the excavation are received and reviewed. TetraTech NUS will collect the samples and have the analysis performed. The sample results will have a 48 hour turnaround time. In the interim, the area of excavation remaining open will be protected using temporary fencing to avoid inadvertent intrusion until the areas are backfilled. Backfill material will be from approved, offsite borrow areas. All material placed within the excavations will be field compacted with the tracks of earth moving equipment or roller compactors to a minimum of 85 percent compaction or no less than 4 passes of the earth moving equipment. Material shall be compacted in lifts of approximately 1 ft.

Prior to backfilling, an appropriate amount of crushed stone may be provided as a bottom layer in order to stabilize saturated material resulting from groundwater intrusion within the open excavation. Standing water in the excavation will not be removed prior to backfilling. If required, this layer of crushed stone will provide the means to achieve the desired compaction. Backfilling with a layer of gravel will be at the discretion of the Bechtel Site Superintendent.

## **4. WASTE MANAGEMENT**

General waste management practices used by Bechtel on this project will be as defined in the *Environmental Response Action Contract Waste Management Plan*. There are several waste management activities that are anticipated during this remedial action, including disposal of:

- Construction debris
- Decontamination water

- Nonhazardous waste disposal
- Hazardous waste disposal
- Personal protective equipment and other incidentally contaminated materials

#### **4.1 WASTE MINIMIZATION**

Construction activities at this site will be controlled to minimize the amount of waste materials that must eventually be disposed of. Waste minimization is an important goal and will be implemented during all site operations. These practices will include:

- Limiting extraneous materials taken into work areas
- Cleaning of equipment used to support onsite activities
- Use of consumable items that can be compacted or otherwise volume reduced.

#### **4.2 HAZARDOUS WASTE**

Hazardous waste will be identified and managed in accordance with RCRA (40 CFR Parts 260, 261, 262, 264, 265, 268, 270, and 271) and TSCA (40 CFR Part 761). In the event that hazardous waste is generated, an EPA identification number will be obtained from the Navy before treatment, storage, disposal, or transportation of hazardous waste. Hazardous waste will not be offered to any transporters or treatment, storage or disposal facilities (TSDFs) that does not have an EPA identification number.

#### **4.3 HAZARDOUS WASTE TRANSPORTATION**

The Technical Specification for Transportation of Contaminated Materials (Attachment 4.) provides guidance for loading transporting and manifesting of hazardous wastes and other contaminated materials.

Hazardous waste will be packaged, labeled, marked and transported offsite in accordance with applicable DOT hazardous material regulations (49 CFR Parts 171 through 179). In addition, all TSDF waste acceptance criteria will be adhered to, and the applicable manifests will be completed by Bechtel for signature by the Navy.

Contaminated materials transported from NAS Key West sites will be transported in accordance with the Department of Transportation (DOT) regulations Sections 100-177. After contaminated materials have been identified by BEI, these sections provide the information necessary to classify, contain, control, and communicate the material. BEI will prepare shipment manifests for signature by the Navy.

#### **4.4 DECONTAMINATION WATER**

Decontamination water will be containerized and sampled. Contaminated water will be treated and disposed of in accordance with applicable state and federal regulations.

#### **4.5 NONHAZARDOUS SOLID WASTE DISPOSAL**

Any nonhazardous solid waste that is generated as a result of the work in this RWP, will be properly disposed offsite at a municipal or industrial landfill. Any asphalt paving removed will be recycled.

#### **5. QUALITY CONTROL**

The Quality Control Program Plan (QCPP) defines policies for work on the Navy RAC Project. A Quality Control Plan Addendum (QCPA) has been prepared for NAS Key West, Florida. The QCPA defines site-specific requirements for these remediation efforts at NAS Key West.

#### **6. SAFETY AND HEALTH**

The Program Safety and Health Plan defines the policies for the Navy RAC project. A Site Safety and Health Plan has been prepared for each of the Navy RAC bases. The task specific Safety and Health Plan defines task-specific requirements for these remediation efforts at NAS Key West.

#### **7. PROJECT MANAGEMENT**

As the environmental RAC for the Navy, Bechtel provides management of the BRAC Parcels remedial activities, which includes all activities necessary to implement fieldwork delineated in the RWP. Typically, these activities include the development and procurement of subcontract services; the development, implementation, and overview of plans; the collection and review of data, including sampling results, quality control submittals, and sample tracking and custody; technical guidance to onsite personnel; report preparation; cost management; and schedule control.

AIK-98-0245

1-20

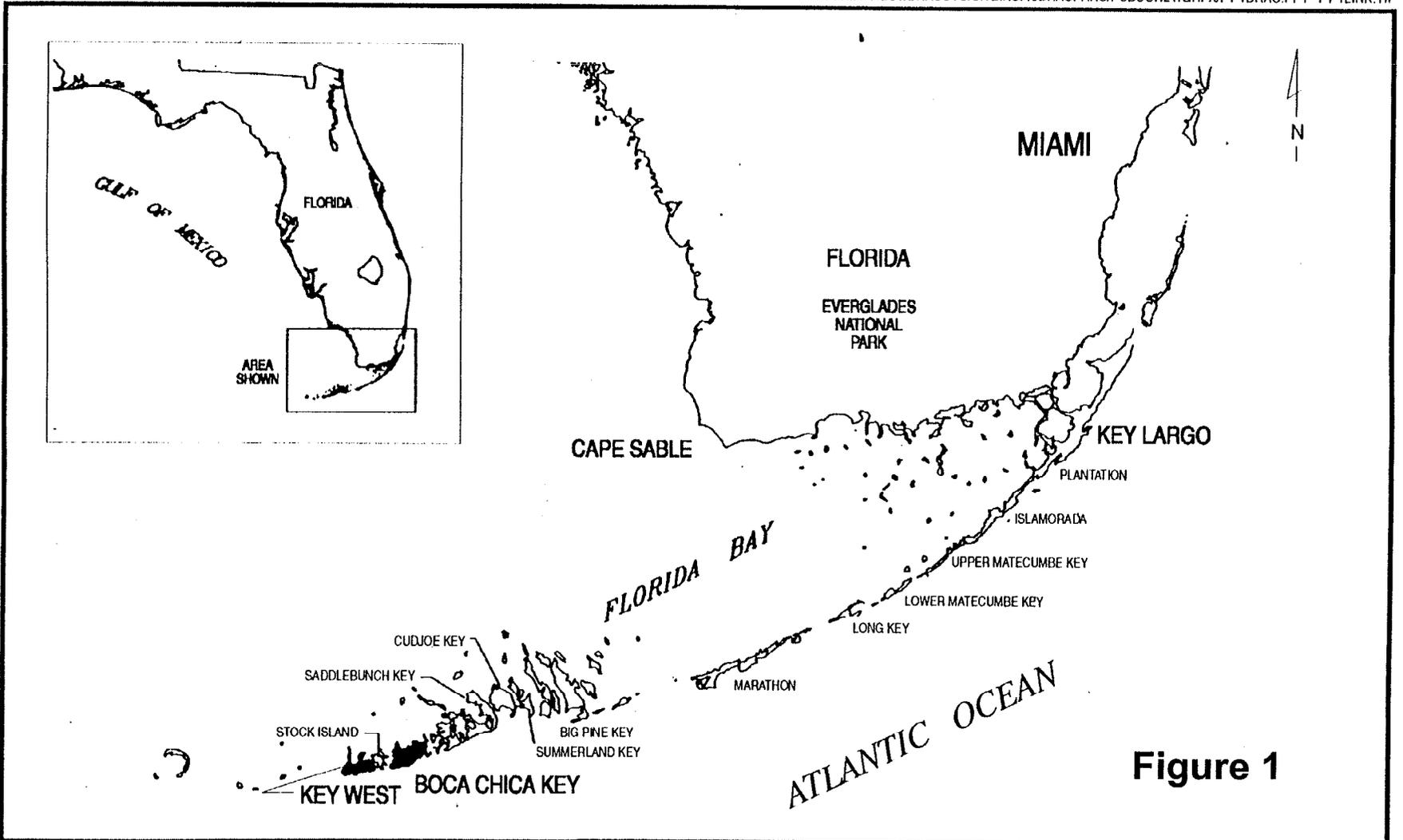


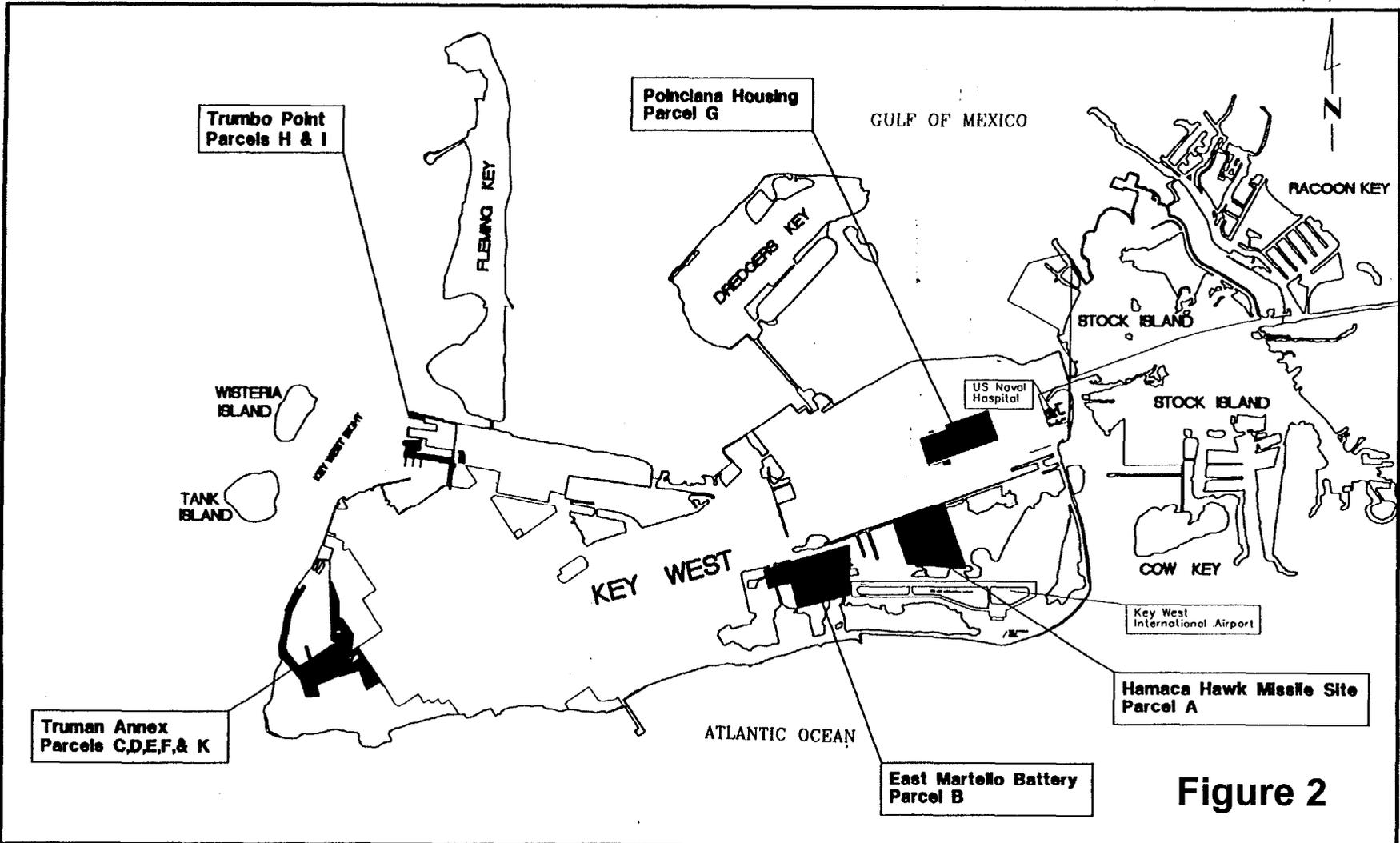
Figure 1

CTO 0032

|  |   |  |  |
|--|---|--|--|
| DRAWN BY<br>MDB<br>CHECKED BY<br>DSP<br>COST/SCHED-AREA<br>SCALE<br>N.T.S. | DATE<br>3/12/98<br>DATE<br>3/12/98<br> | SITE INSPECTION REPORT FOR<br>NINE BRAC PARCELS<br>LOCATION MAP<br>NAVAL AIR STATION KEY WEST<br>NAVY SOUTHERN DIVISION<br>NAS KEY WEST, FLORIDA | CONTRACT NO.<br>7593<br>APPROVED BY _____ DATE _____<br>APPROVED BY _____ DATE _____<br>DRAWING NO. F1-1BRAC.PPT**F1-1LINK.TIF<br>REV. 0 |
|--|---|--|--|

AIK-98-0245

1-21



**Figure 2**

|                 |                 |
|-----------------|-----------------|
| DRAWN BY<br>MDB | DATE<br>4/30/98 |
| CHECKED BY      | DATE            |
| COST/SCHED-AREA |                 |
| SCALE<br>N.T.S. |                 |



**SITE INSPECTION REPORT FOR NINE BRAC PARCELS  
LOCATION MAP  
BRAC PROPERTIES & PARCELS  
NAVY SOUTHERN DIVISION  
NAS KEY WEST, FLORIDA**

|                             |           |
|-----------------------------|-----------|
| CONTRACT NO.<br>7593        |           |
| APPROVED BY                 | DATE      |
| APPROVED BY                 | DATE      |
| DRAWING NO.<br>98031202.DWG | REV.<br>0 |

CTO 0032

Rev. 0  
6/3/98

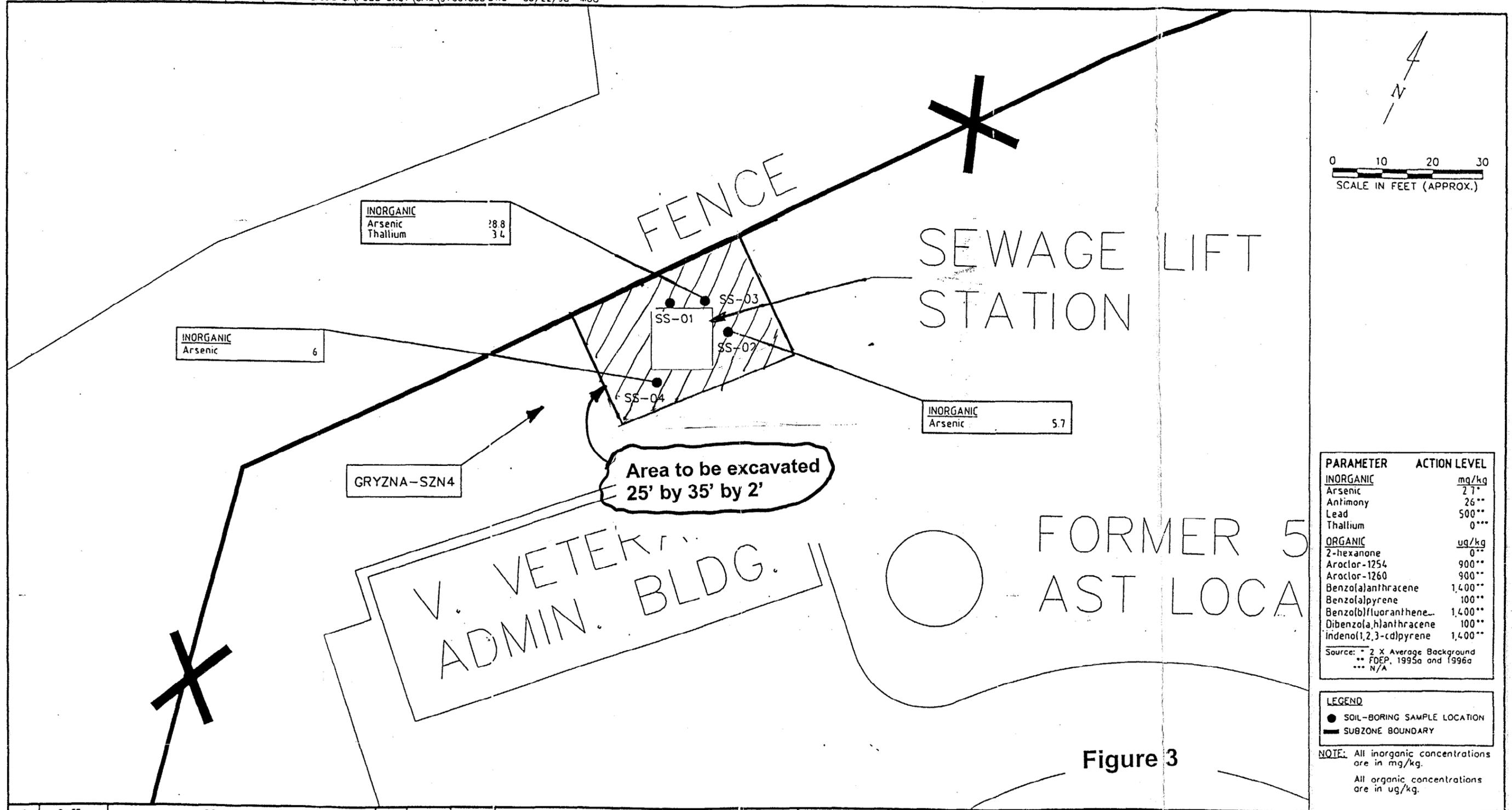


Figure 3

| NO. | DATE | REVISIONS | BY | CHKD. | APPD. | REFERENCES | DRAWN BY | DATE |
|-----|------|-----------|----|-------|-------|------------|----------|------|
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |
|     |      |           |    |       |       |            |          |      |

SCALE AS NOTED

**SITE INSPECTION REPORT FOR NINE BRAC PARCELS  
SUBZONE 4 SAMPLE LOCATIONS &  
CHEMICAL EXCEEDANCES  
BRAC PARCEL A - HAMACA HAWK MISSILE SITE  
NAVY SOUTHERN DIVISION  
NAS KEY WEST, FLORIDA**

CONTRACT NO.  
7593

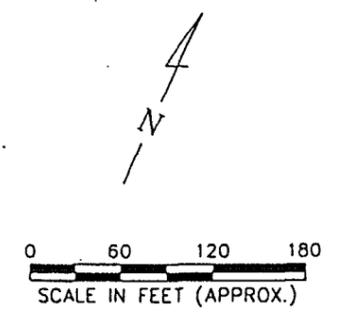
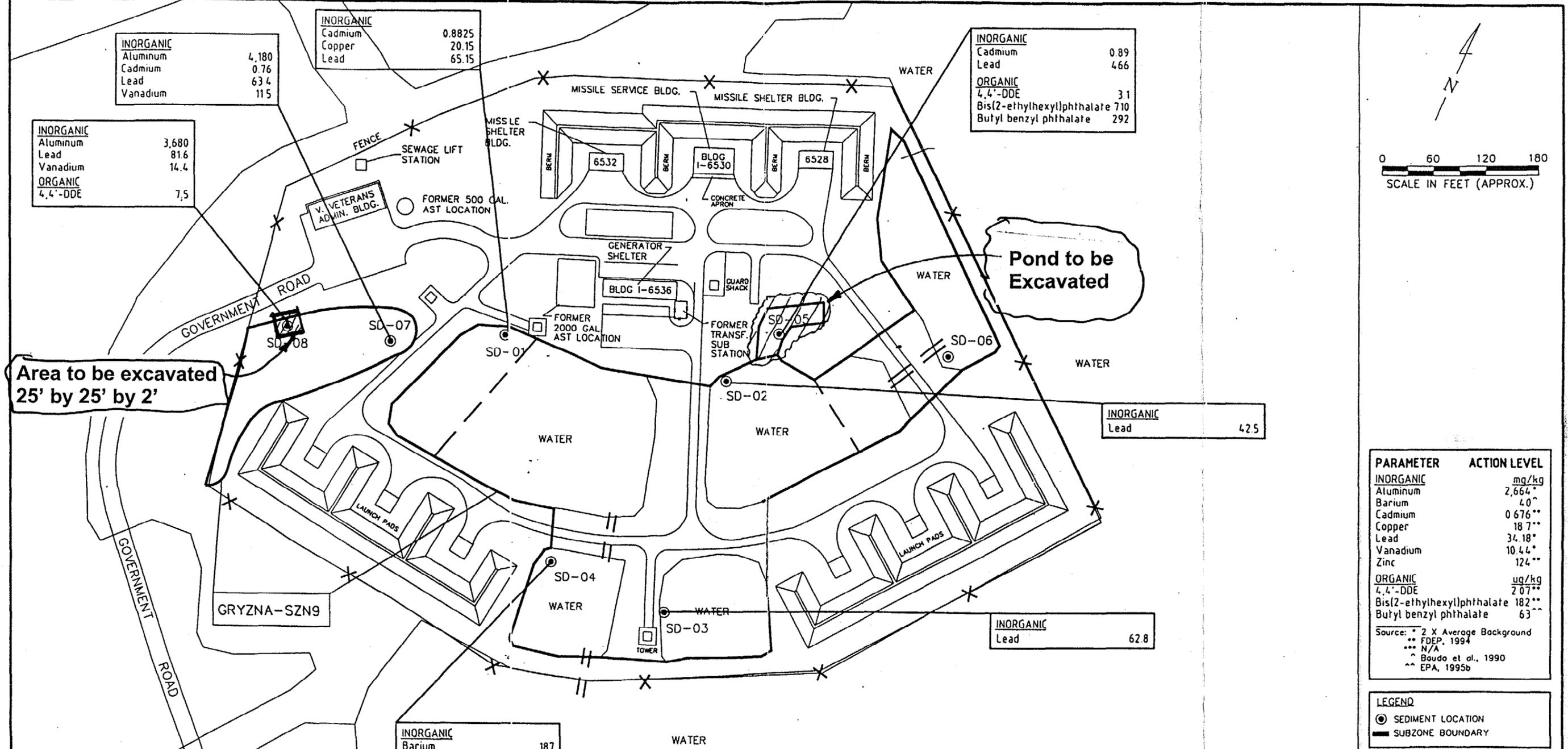
APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_

DRAWING NO.  
97061305.dwg

REV  
0

ACAD: P:\Key West\BRAC (CTO 032)\Site Inspection\9 BRAC Parcels SI\PUBS ONLY\Grfx\97061305.i\WG 05/22/98 MDB



| PARAMETER                  | ACTION LEVEL |
|----------------------------|--------------|
| <b>INORGANIC</b>           | <b>mg/kg</b> |
| Aluminum                   | 2,664*       |
| Barium                     | 4.0**        |
| Cadmium                    | 0.676**      |
| Copper                     | 18.7**       |
| Lead                       | 34.18*       |
| Vanadium                   | 10.44*       |
| Zinc                       | 124**        |
| <b>ORGANIC</b>             | <b>ug/kg</b> |
| 4,4'-DDE                   | 2.07**       |
| Bis(2-ethylhexyl)phthalate | 182**        |
| Butyl benzyl phthalate     | 63**         |

Source: \* 2 X Average Background  
 \*\* FDEP, 1994  
 \*\*\* N/A  
 ^ Baudo et al., 1990  
 ^^ EPA, 1995b

**LEGEND**  
 ● SEDIMENT LOCATION  
 — SUBZONE BOUNDARY

**NOTE:** All inorganic concentrations are in mg/kg.  
 All organic concentrations are in ug/kg.

Figure 4

| NO. | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES | DRAWN BY | DATE |
|-----|------|-----------|----|------|------|------------|----------|------|
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |
|     |      |           |    |      |      |            |          |      |

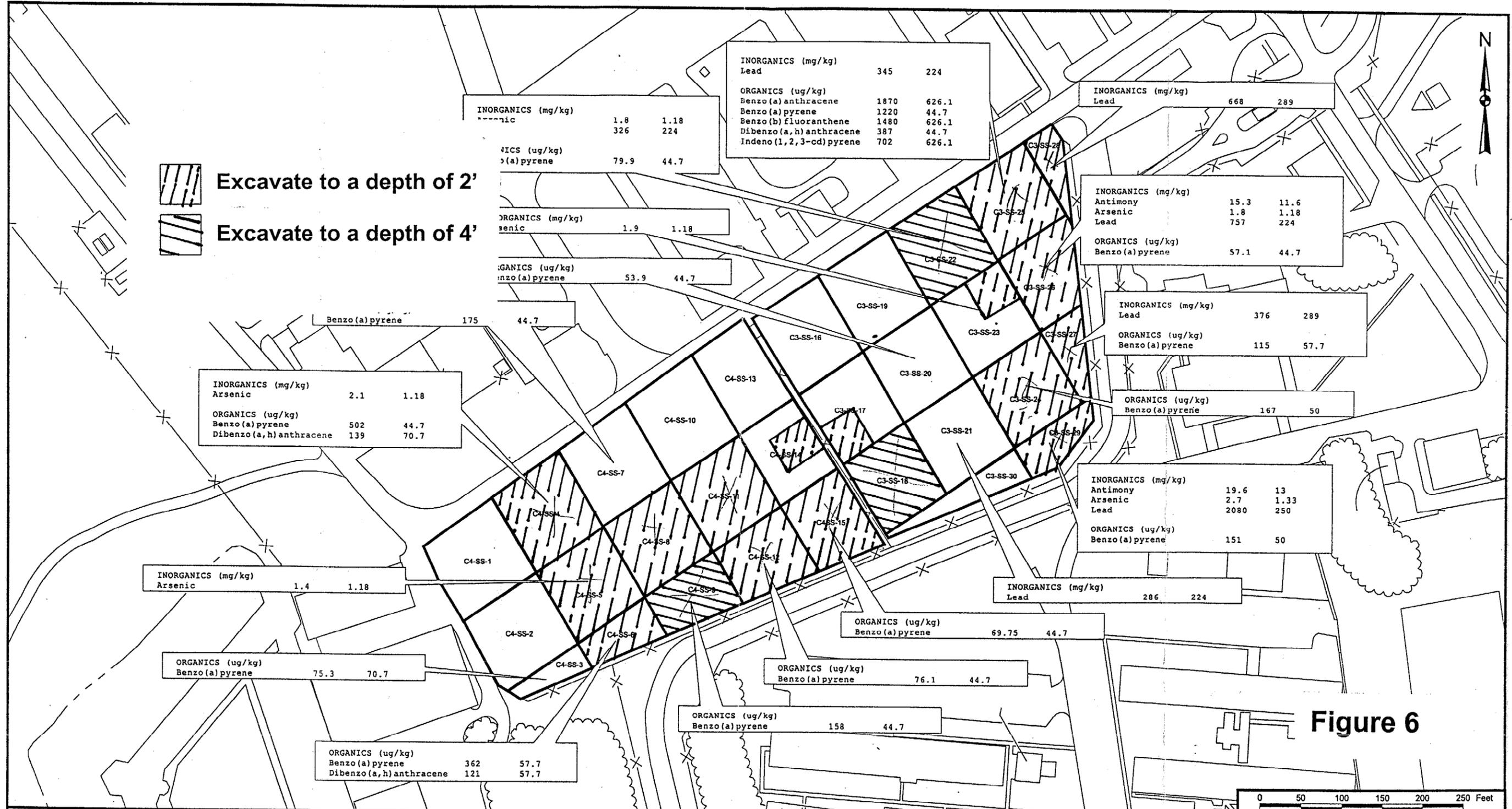


**SITE INSPECTION REPORT FOR NINE BRAC PARCELS  
 SUBZONE 9 SAMPLE LOCATIONS &  
 CHEMICAL EXCEEDANCES  
 BRAC PARCEL A - HAMACA HAWK MISSILE SITE  
 NAVY SOUTHERN DIVISION  
 NAS KEY WEST, FLORIDA**

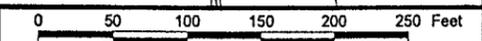
|                             |           |
|-----------------------------|-----------|
| CONTRACT NO.<br>7593        |           |
| APPROVED BY                 | DATE      |
| APPROVED BY                 | DATE      |
| DRAWING NO.<br>97061305.dwg | REV.<br>0 |

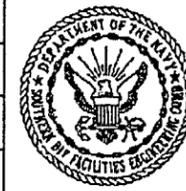
FORM C ADD NO SDV\_BH12 DGH - REV 0 - 1/20/98





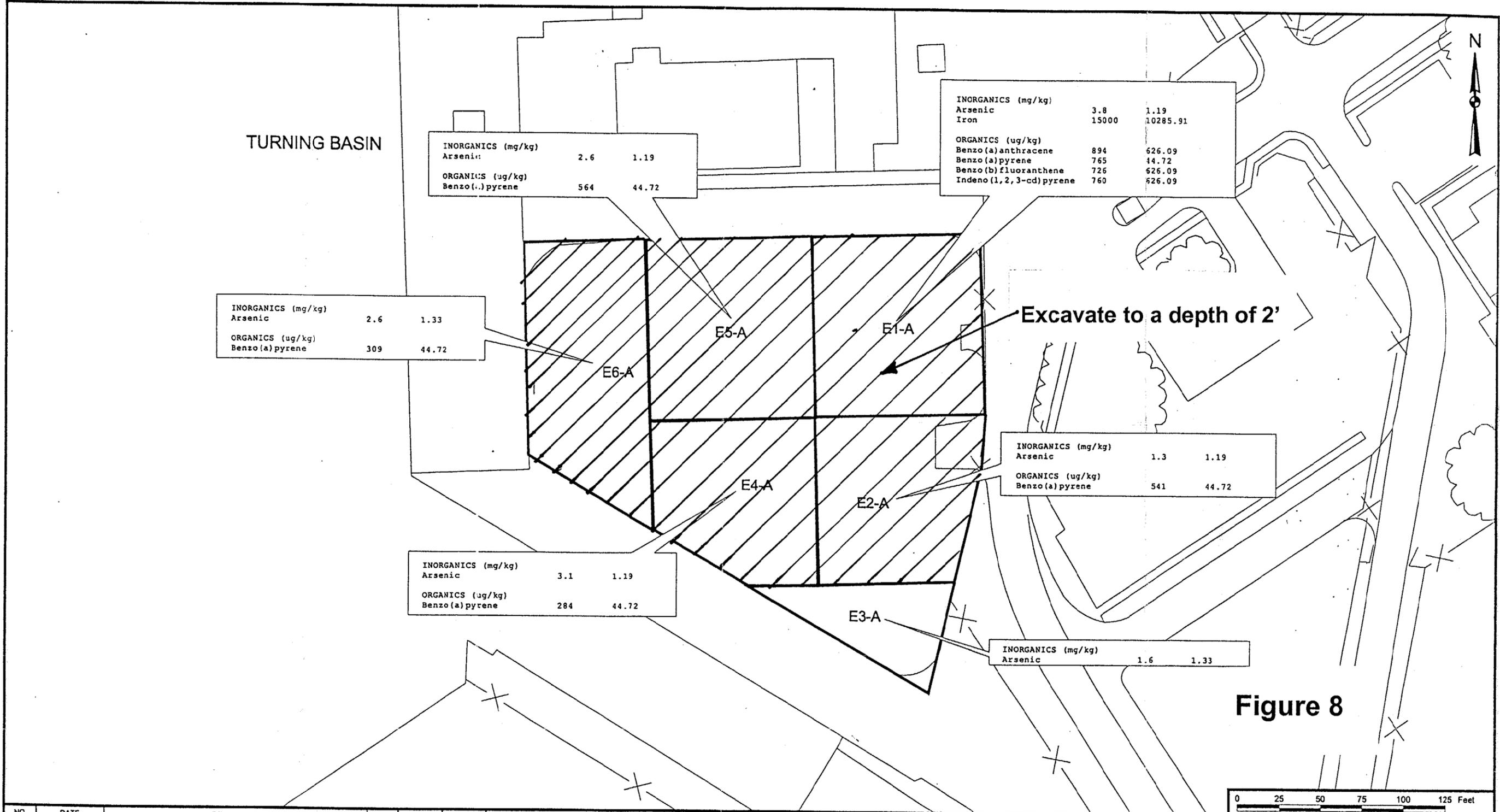
**Figure 6**



| NO. | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES | DRAWN BY                   | DATE      |   | CONTRACT NO. |             |      |
|-----|------|-----------|----|------|------|------------|----------------------------|-----------|--|--------------|-------------|------|
|     |      |           |    |      |      |            | TMH                        | 06-OCT-98 |  | 7593         | APPROVED BY | DATE |
|     |      |           |    |      |      |            | CHECKED BY                 | DATE      |  | APPROVED BY  | DATE        |      |
|     |      |           |    |      |      |            | COST/SCHED-AREA            |           |  | DRAWING NO.  | REV. 0      |      |
|     |      |           |    |      |      |            | SCALE                      |           | SUPPLEMENTAL SITE INSPECTION REPORT<br>LEVEL A SURFACE SOIL SAMPLE<br>LOCATIONS AND CHEMICAL EXCEEDANCES<br>SUBZONES 3 AND 4, BRAC FARCEL C - DRMO WASTE STORAGE AREA<br>NAVY SOUTHERN DIVISION<br>NAS KEY WEST, FLORIDA |              |             |      |
|     |      |           |    |      |      |            | APPROXIMATE SCALE AS NOTED |           |  |              |             |      |

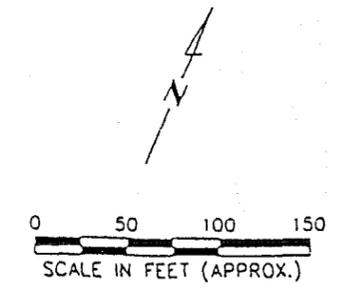
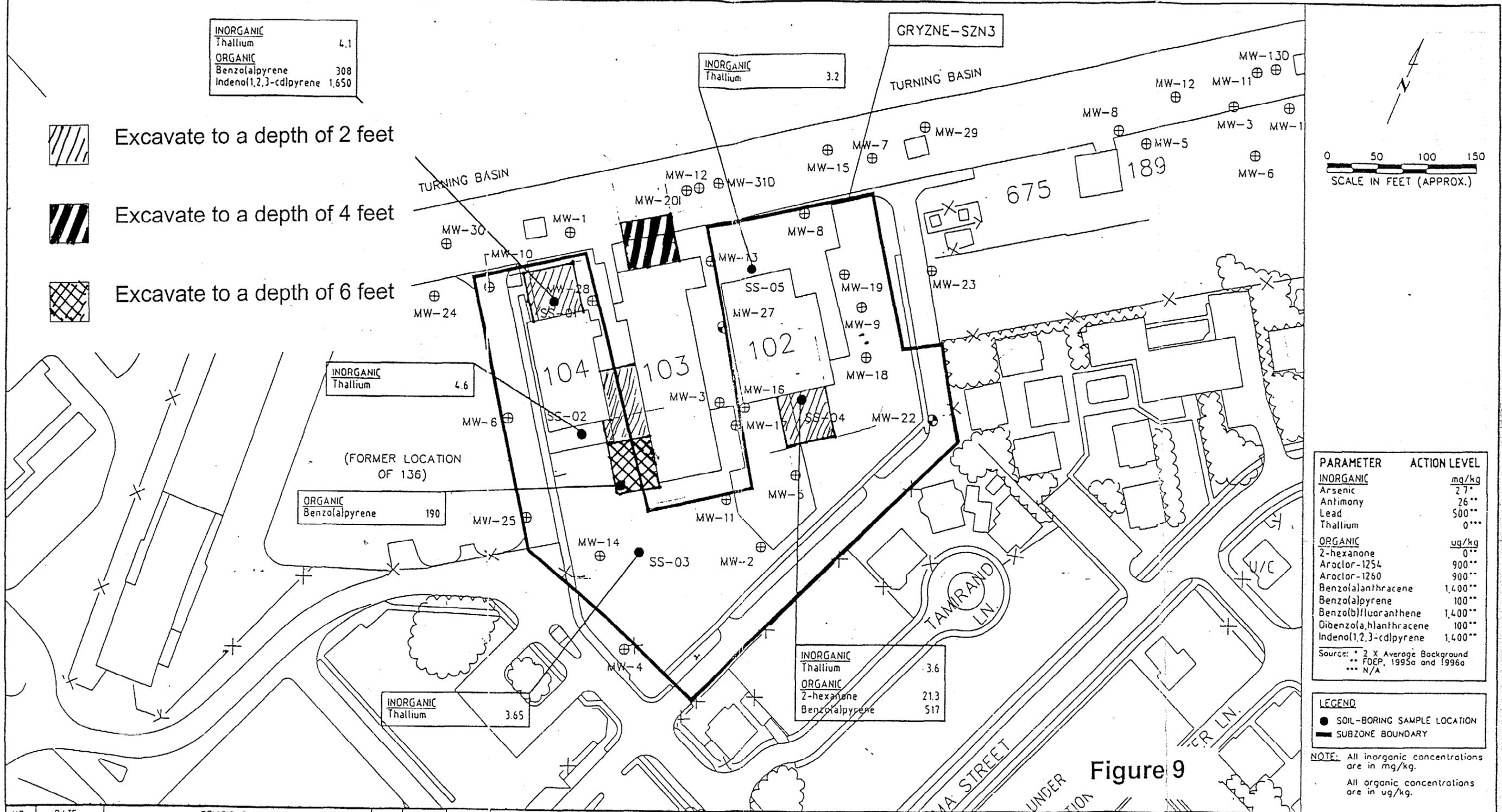
REH 10-21-98





| NO. | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES | DRAWN BY                   | DATE      |  | CONTRACT NO. |             |      |
|-----|------|-----------|----|------|------|------------|----------------------------|-----------|--|--------------|-------------|------|
|     |      |           |    |      |      |            | TMH                        | 06-OCT-98 |  | 7593         | APPROVED BY | DATE |
|     |      |           |    |      |      |            | CHECKED BY                 | DATE      |  | APPROVED BY  | DATE        |      |
|     |      |           |    |      |      |            | COST/SCHED-AREA            |           |  | DRAWING NO.  | REV.        |      |
|     |      |           |    |      |      |            | SCALE                      |           |  |              | 0           |      |
|     |      |           |    |      |      |            | APPROXIMATE SCALE AS NOTED |           | SUPPLEMENTAL SITE INSPECTION FOR BRAC PARCELS<br>LEVEL A CHEMICAL EXCEEDANCES<br>DELINEATION SAMPLE GRIDS AT PARCEL E, SUBZONE 2<br>BUILDINGS 102, 103, AND 104 - FORMER BUILDING 136<br>NAVY SOUTHERN DIVISION<br>NAS KEY WEST, FLORIDA |              |             |      |

REH 10-21-98



| PARAMETER              | ACTION LEVEL |
|------------------------|--------------|
| <b>INORGANIC</b>       |              |
| Arsenic                | 27**         |
| Antimony               | 26**         |
| Lead                   | 500**        |
| Thallium               | 0***         |
| <b>ORGANIC</b>         |              |
| ug/kg                  |              |
| 2-hexanone             | 0**          |
| Aroclor-1254           | 900**        |
| Aroclor-1260           | 900**        |
| Benzofluoranthene      | 1,400**      |
| Benzofluoranthene      | 1,400**      |
| Benzofluoranthene      | 1,400**      |
| Dibenzo(a,h)anthracene | 100**        |
| Indeno(1,2,3-cd)pyrene | 1,400**      |

Source: \* 2 X Average Background  
\*\* FOEP, 1995a and 1996a  
\*\*\* N/A

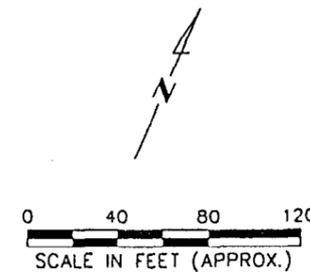
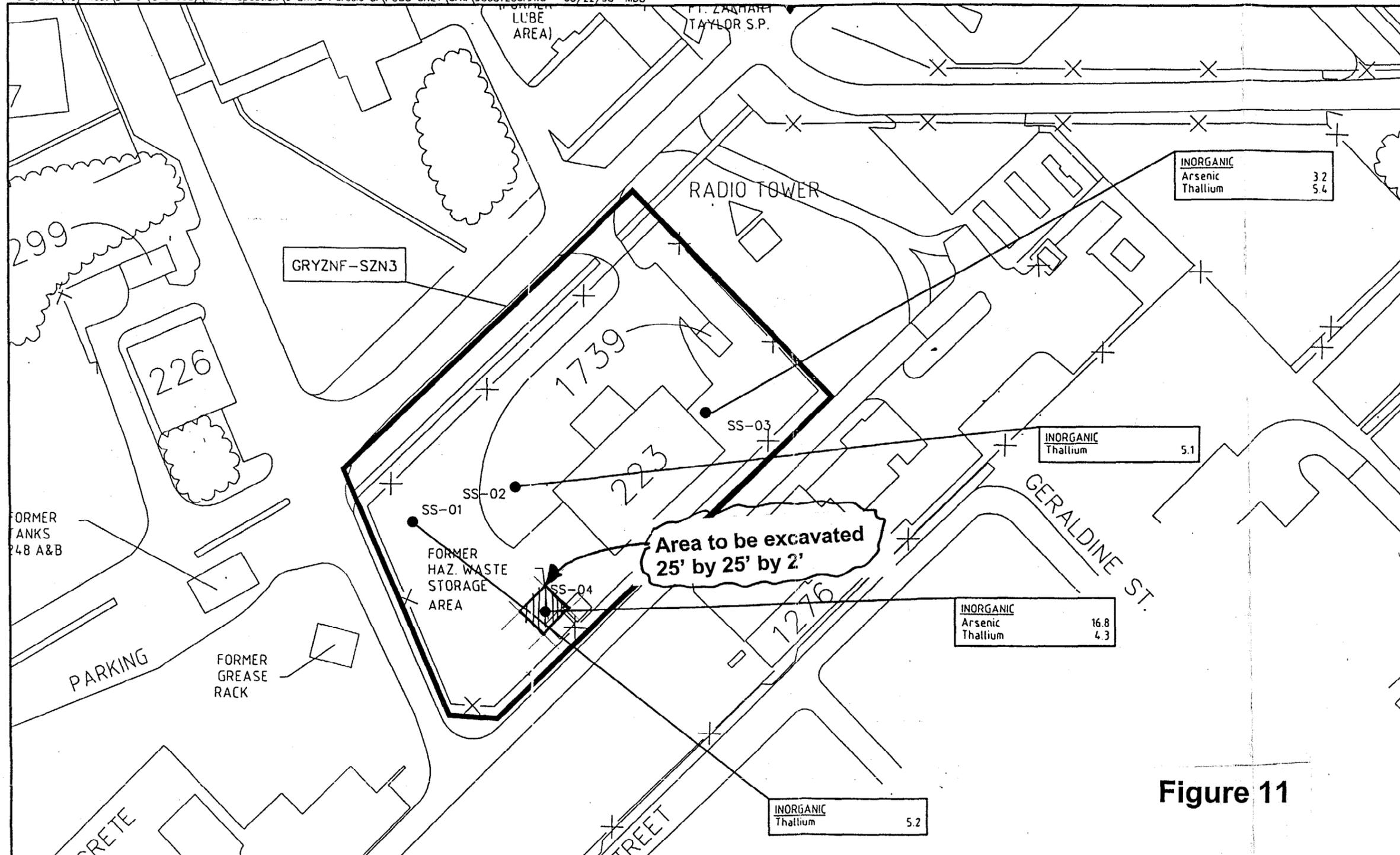
**LEGEND**  
 ● SOIL-BORING SAMPLE LOCATION  
 — SUBZONE BOUNDARY

**NOTE:** All inorganic concentrations are in mg/kg.  
 All organic concentrations are in ug/kg.

| NO. | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES | DRAWN BY          | DATE |  | SITE INSPECTION REPORT FOR NINE BRAC PARCELS<br>SUBZONE 3 SAMPLE LOCATIONS &<br>CHEMICAL EXCEEDANCES<br>BRAC PARCEL E - BUILDINGS 102, 103, & 104<br>NAVY SOUTHERN DIVISION<br>NAS KEY WEST, FLORIDA | CONTRACT NO.<br>7593        |           |
|-----|------|-----------|----|------|------|------------|-------------------|------|---|--|-----------------------------|-----------|
|     |      |           |    |      |      |            | CHECKED BY        | DATE |   |  | APPROVED BY                 | DATE      |
|     |      |           |    |      |      |            | COST/SCHED-AREA   |      |   |  | APPROVED BY                 | DATE      |
|     |      |           |    |      |      |            | SCALE<br>AS NOTED |      |   |  | DRAWING NO.<br>98031200.dwg | REV.<br>0 |



ACAD: P:\Key West\BRAC (CTO 032)\Site Inspection\9 BRAC Parcels SI\PUBS ONLY\Grfx\98031200.dwg 05/22/98 MDB

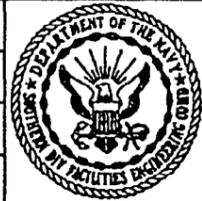


| PARAMETER                        | ACTION LEVEL |
|----------------------------------|--------------|
| <b>INORGANIC</b>                 | mg/kg        |
| Arsenic                          | 3.7**        |
| Antimony                         | 26**         |
| Lead                             | 500**        |
| Thallium                         | 0***         |
| <b>ORGANIC</b>                   | ug/kg        |
| 2-hexanone                       | 0**          |
| Aroclor-1254                     | 900**        |
| Aroclor-1260                     | 900**        |
| Benzo(a)anthracene               | 1,400**      |
| Benzo(a)pyrene                   | 100**        |
| Benzo(b)fluoranthene             | 1,400**      |
| Dibenzo(a,h)anthracene           | 100**        |
| Indeno(1,2,3-cd)pyrene           | 1,400**      |
| Source: * 2 X Average Background |              |
| ** FDEP, 1995a and 1996a         |              |
| *** N/A                          |              |

**LEGEND**  
 ● SOIL-BORING SAMPLE LOCATION  
 ▬ SUBZONE BOUNDARY

**NOTE:** All inorganic concentrations are in mg/kg.  
 All organic concentrations are in ug/kg.

Figure 11

|     |      |           |    |      |      |            |                   |      |  |                             |           |
|-----|------|-----------|----|------|------|------------|-------------------|------|--|-----------------------------|-----------|
| NO. | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES | DRAWN BY          | DATE |  <p>SITE INSPECTION REPORT FOR NINE BRAC PARCELS<br/>         SUBZONE 3 SAMPLE LOCATIONS &amp;<br/>         CHEMICAL EXCEEDANCES<br/>         BRAC PARCEL F - BUILDING 223<br/>         NAVY SOUTHERN DIVISION<br/>         NAS KEY WEST, FLORIDA</p> | CONTRACT NO.<br>7593        |           |
|     |      |           |    |      |      |            | CHECKED BY        | DATE |  | APPROVED BY                 | DATE      |
|     |      |           |    |      |      |            | COST/SCHED-AREA   |      |  | APPROVED BY                 | DATE      |
|     |      |           |    |      |      |            | SCALE<br>AS NOTED |      |  | DRAWING NO.<br>98031200.dwg | REV.<br>0 |

FORM CADD NO. 50V\_BH12 DGN - REV 0 - 1/20/98

DEPARTMENT OF THE NAVY  
 SOUTHERN DIVISION  
 TECHNICAL SPECIFICATION  
 FOR  
 CONTAMINATED EARTHWORK AND MISCELLANEOUS DEMOLITION

| NO.   | DATE    | REVISION                              | BY                      | CHECK | SUPV | PE  |
|---|---------|---------------------------------------|-------------------------|-------|------|-----|
| 1   | 1/9/95  | Revised to CSI format and Section 3.8 | KK                      | GAC   | ABE  | JRM |
| 0   | 7/21/94 | Issued for use                        | KK                      | RTJ   | PH   | RBB |
| ORIGIN  |         | Contaminated Earthwork                | NO. 22567               |       |      |     |
|  |         |                                       | TECHNICAL SPECIFICATION |       |      | REV |
|   |         |                                       | 001-SP000-005           |       |      | 1   |
|   |         |                                       | SHEET 1 OF 10           |       |      |     |

## CONTENTS

|   | Page |
|---|------|
| PART 1 GENERAL .....                                  | 3    |
| 1.1 SCOPE .....                                       | 3    |
| 1.2 WORK INCLUDED .....                               | 3    |
| 1.3 WORK NOT INCLUDED .....                           | 3    |
| 1.4 REFERENCED CODES AND STANDARDS .....              | 4    |
| 1.5 SUBMITTALS .....                                  | 4    |
| 1.6 QUALITY STANDARDS .....                           | 6    |
| PART 2 PRODUCTS .....                                 | 6    |
| 2.1 SEDIMENT BARRIERS .....                           | 6    |
| 2.2 EROSION CONTROL BLANKETS .....                    | 6    |
| PART 3 EXECUTION .....                                | 6    |
| 3.1 PRE-EARTHWORK EVALUATION .....                    | 6    |
| 3.2 EROSION AND SEDIMENT CONTROL .....                | 6    |
| 3.3 DUST CONTROL .....                                | 7    |
| 3.4 DRAINAGE, DEWATERING, AND STREAM DIVERSION .....  | 7    |
| 3.5 BLASTING .....                                    | 8    |
| 3.6 EXCAVATION .....                                  | 8    |
| 3.7 DEMOLITION OF CONCRETE AND ASPHALT SURFACES ..... | 9    |
| 3.8 EQUIPMENT DECONTAMINATION .....                   | 10   |
| 3.9 PROTECTION OF WORK .....                          | 10   |
| 3.10 SECURITY .....                                   | 10   |

## **PART 1 GENERAL**

### **1.1 SCOPE**

This Specification provides the technical requirements for the excavation of contaminated material and miscellaneous demolition. Not all work defined herein is necessarily required; reference is directed to the Scope of Work and engineering drawings for specific services required.

### **1.2 WORK INCLUDED**

- 1.2.1 Furnishing labor, materials, tools and equipment.
- 1.2.2 Installing and maintaining dust, sediment and erosion control.
- 1.2.3 Demolishing existing concrete and asphalt surfaces.
- 1.2.4 Providing shoring as needed.
- 1.2.5 Securing area (temporary barriers) as needed.
- 1.2.6 Excavating contaminated material.
- 1.2.7 Decontaminating subcontractor-supplied equipment.

### **1.3 WORK NOT INCLUDED**

- 1.3.1 Establishing limits of excavation.
- 1.3.2 Sampling and testing excavated material.
- 1.3.3 Backfilling
- 1.3.4 Treating contaminated material.
- 1.3.5 Loading and transporting contaminated material.
- 1.3.6 Clearing and grubbing is included in Technical Specification 001-SP000-002.
- 1.3.7 Operations of decontamination facility, other than that required for subcontractor equipment decontamination.

**1.3.8** Temporary storage/placement of contaminated material.

**1.3.9** Disposal of decontamination water.

#### **1.4 REFERENCED CODES AND STANDARDS**

Unless otherwise specified or shown, the latest edition at the time of bid of the following Codes and Standards shall apply to the extent indicated herein:

##### **OCCUPATIONAL SAFETY AND HEALTH (OSHA)**

29 CFR 1910 Occupational Safety and Health Regulations for General Industry

29 CFR 1926 Occupational Safety and Health Regulations for Construction

The Subcontractor shall comply with all federal, state, local, and facility codes and standards applicable to the propose work.

#### **1.5 SUBMITTALS**

Not all submittals defined herein may be required. Only engineering document requirements as summarized in Exhibit F (Attachment A), "Subcontractor Submittal Requirements Summary" (SSRS), shall apply. Submittals identified shall meet the detailed requirements defined herein. Bechtel will determine if documentation is complete as submitted and reserves the right to require the resubmittal of any submittals that do not meet specified requirements.

##### **1.5.1 Equipment List**

Submit list of equipment for use in contaminated earthwork. The list shall include the type, size, and rated capacity of the equipment proposed.

##### **1.5.2 Drainage, Dewatering, and Stream Diversion Design**

Submit proposed drainage, dewatering, and stream diversion design prior to construction not indicated on engineering drawings. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

### **1.5.3 Shoring Design and Calculations**

Submit proposed shoring design and engineering calculations or alternate slope protection measures in accordance with Subpart P, OSHA 29 CFR 1926. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

### **1.5.4 Excavation Daily Inspections**

Submit daily inspections of the excavation areas in accordance with OSHA 29 CFR 1910 and 1926 prior to commencing work each day.

### **1.5.5 Shoring Inspector**

Submit name and resume of the shoring inspector to be provided for bid evaluation. Inspector shall be qualified in accordance with OSHA 29 CFR 1926, Subpart P.

### **1.5.6 Professional Engineer's License**

Submit copy of Professional Engineer's license for bid evaluation (for the state where work is performed) of Professional Engineer(s) used for the shoring and drainage designs.

### **1.5.7 Alternate Methods**

Submit copy of alternate shoring method when applicable at least one week prior to use. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

### **1.5.8 Temporary Decontamination Facility Plan**

Submit plans for a temporary decontamination facility at least one week prior to mobilization.

### **1.5.9 Sediment Barriers**

Submit copy of materials and plan for sediment barriers prior to use.

### **1.5.10 Erosion Control Blankets**

Submit product data sheet for erosion control blankets prior to use.

## **1.6 QUALITY STANDARDS**

Perform the work and control the quality of items and services to meet the requirements of this specification, subcontract documents, and applicable codes and standards.

## **PART 2 PRODUCTS**

### **2.1 SEDIMENT BARRIERS**

Materials used for sediment barriers shall consist of straw bales, hay bales, geotextile filter fabric made expressly for use as a silt screen, or other materials approved by Bechtel prior to their use. Straw and hay bales shall not be used for permanent sediment barriers unless approved by Bechtel.

- 2.1.1** Baled hay or straw shall be laid end to end such that no gap exists between bales. Reinforcing bars shall be #4 bar and a minimum of 2½ feet long.
- 2.1.2** Filter fabric shall be a material made expressly for the purpose of sediment control such as Exxon GTF 101S Silt Screen or approved equal.

### **2.2 EROSION CONTROL BLANKETS**

Erosion control blankets shall be Curlex Blankets manufactured by American Excelsior Company or approved equal.

## **PART 3 EXECUTION**

### **3.1 PRE-EARTHWORK EVALUATION**

Prior to performing any earthwork, examine the work area if possible depending on the site conditions as determined by Bechtel, to identify pre-existing conditions (e.g. overhead power lines, access, etc.) that could impact the performance and completion of work. Bechtel will provide available information on the location of underground utilities. Verify these locations, provide structural support to utility lines, and coordinate inspection with and provide support to utility companies. Unless directed otherwise, the services of all underground utilities encountered during any earthwork shall be restored to their original condition. Applicable permits shall be obtained prior to commencing work unless directed otherwise.

### **3.2 EROSION AND SEDIMENT CONTROL**

- 3.2.1** Potentially contaminated material shall be prevented from being eroded or transported into an uncontaminated area or an area with a lower level of contamination.

**3.2.2** Temporary sediment barriers shall be installed in accordance with the subcontract documents and maintained during construction until permanent sediment barriers are in place.

**3.2.3** Erosion and sediment shall be controlled by the following techniques subject to Bechtel review on a case-by-case basis:

- covering with synthetic liner material
- covering with uncontaminated soil material
- sediment barriers

### **3.3 DUST CONTROL**

Dust shall be controlled by the following techniques subject to Bechtel review on a case-by-case basis:

- wetting with water
- wetting with a synthetic dust suppressant
- establishing temporary vegetative cover compaction
- sealing by rolling with a smooth drum
- maintaining slopes of exposed surfaces within defined limits

### **3.4 DRAINAGE, DEWATERING, AND STREAM DIVERSION**

#### **3.4.1 Drainage**

Surface water shall be directed away from excavation and construction areas. Diversion ditches, check dams, dikes, and/or grading shall be developed and maintained during construction.

Excavated slopes and backfill surfaces shall have a minimum 3 percent slope to promote runoff and shall be protected from erosion and sloughing. Excavation slopes shall conform to Subpart P, "Excavation, Trenching, and Shoring," of OSHA 29 CFR 1926.

#### **3.4.2 Dewatering**

Unless noted otherwise, all excavations shall be kept in a dewatered condition. 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 any interference with excavation progress. Water, which has come in contact with contaminated material, shall be collected and transported to an offsite location, which is not within the scope of this specification.

### **3.4.3 Stream Diversion**

Stream diversion(s) shall be developed as shown on the engineering drawings or Scope of Work, and maintained to prevent the spread of contamination.

## **3.5 BLASTING**

Blasting is not permitted.

## **3.6 EXCAVATION**

### **3.6.1 General**

Excavation shall conform to the lines, grades, and depths identified on the engineering drawings or Scope of Work, and field-verified by Bechtel. Excavated areas shall be maintained in a clean condition, free from leaves, brush, trash and other debris. They shall be inspected and documented daily in accordance with OSHA 29 CFR 1910 and 1926 prior to commencing work.

Rocks, 6 inches or greater in any dimension, shall be separated from the soil and cleaned of most soil material by scrapers, brushes, etc. These rocks shall be left in the excavation area.

### **3.6.2 Contamination Control**

Excavation shall be performed such that the spread of contamination is prevented. Unless indicated otherwise, the cutting edge of the excavator(s) shall be toothless and the excavation performed in the direction of surface run-off (i.e., from high to lower elevation). Contamination spread through the improper execution of the subcontract documents shall be cleaned up to the satisfaction of Bechtel at no expense to Bechtel.

### **3.6.3 Shoring**

Shoring, including temporary sheet piling, shall be furnished and installed as necessary to protect workers, slopes, adjacent paving, structures, and utilities. Shoring, bracing, and sheeting shall be removed as excavations are backfilled to prevent cave-ins. Alternate methods (e.g. benching, sloping, trench boxes, etc.) may be used where applicable. They shall be developed in accordance with OSHA 29 CFR 1926, Subpart P.

Care shall be taken to minimize exposure of shoring or other slope protection devices to contamination. These items shall not be released from the site until they have been decontaminated in accordance with this specification.

### **3.6.4 Excavation Sequence**

The sequence for the excavation of contaminated material shall be as follows:

- (1) Define and isolate exclusion zones identified on the engineering drawings, Scope of Work, or as directed by Bechtel.
- (2) Construct haul road identified on the engineering drawings, Scope of Work or as directed by Bechtel.
- (3) Perform initial excavation to the lines and grades identified on the engineering drawings, Scope of Work or as directed by Bechtel.
- (4) Allow excavated area to be sampled to determine if the area meets remedial cleanup standards.
- (5) Continue excavation as directed by Bechtel. Allow area to be resampled after each lift of material is removed.
- (6) Cease excavation upon direction by Bechtel.

### **3.7 DEMOLITION OF CONCRETE AND ASPHALT SURFACES**

- 3.7.1** Demolition shall consist of demolishing, rubblizing, scabbling and/or disposing of asphalt, concrete, or bituminous concrete surfaces within the limits to be excavated as identified on the engineering drawings, Scope of Work and/or as directed by Bechtel.
- 3.7.2** Construction joints shall be saw cut in existing concrete or asphalt, where new concrete or asphalt will be placed.
- 3.7.3** Reinforcing bars encountered during concrete removal shall be cut with a method approved by Bechtel.
- 3.7.4** Daily inspections shall be performed in accordance with OSHA 29 CFR 1910 and 1926 when fuel powered tools are used indoors. Inspections shall include the review and documentation of administrative and engineering controls and measurement of air quality in confined spaces. No personnel shall enter the work area until required corrective measures are completed.

### **3.8 EQUIPMENT DECONTAMINATION**

- 3.8.1** The equipment decontamination facility shall have a 30-mil plastic liner and be bermed to provide containment of decontamination water.
- 3.8.2** All equipment and tools used in contaminated areas shall be decontaminated to remove all adhering dirt and mud.
- 3.8.3** Authorization shall be obtained from Bechtel before entering or exiting the decontamination facility.
- 3.8.4** Bechtel is not responsible for the operations of the decontamination facility.
- 3.8.5** Equipment that has been in contaminated areas shall be decontaminated. The decontamination facility shall be used only for light and final decontamination and not for operations that would require gross decontamination (i.e., removal of most visible materials by scrapers, brushes, etc). Gross decontamination, if required, shall be performed as part of the specified earthwork at the area where trucks are loaded or unloaded. Decontamination shall be repeated as required. Following decontamination, all equipment shall be made available for inspection by Bechtel. Equipment shall be cleaned to the satisfaction of Bechtel.
- 3.8.6** Written approval from Bechtel shall be obtained prior to removing equipment from the site.
- 3.8.7** The decontamination water shall be containerized in 55-gallon drums, which is not within the scope of this specification.

### **3.9 PROTECTION OF WORK**

Settlement or erosion that occurs in compacted materials prior to acceptance of the work shall be repaired to required conditions at no expense to Bechtel.

### **3.10 SECURITY**

Work areas shall be secured using barriers (e.g., rope, snow fence) to prevent inadvertent entry to work areas as determined by Bechtel.

DEPARTMENT OF THE NAVY  
 SOUTHERN DIVISION  
 STANDARD SPECIFICATION  
 FOR  
 UNCONTAMINATED EARTHWORK

|   |         |                                      |                        |       |      |     |
|---|---------|--------------------------------------|------------------------|-------|------|-----|
|   |         |                                      |                        |       |      |     |
| 1   | 1-31-95 | Revised throughout and to CSI format | KK                     | STB   | FAC  | JRM |
| 0   | 7/21/94 | Issued for use                       | KK                     | RTJ   | PH   | RBB |
| NO.   | DATE    | REVISION                             | BY                     | CHECK | SUPV | PE  |
| ORIGIN  |         | Uncontaminated Earthwork             | NO. 22567              |       |      |     |
|  |         |                                      | STANDARD SPECIFICATION |       |      | Rev |
|   |         |                                      | 001-SP000-006          |       |      | 1   |
|   |         |                                      | SHEET 1 OF 17          |       |      |     |

## CONTENTS

|  | Page |
|--|------|
| PART 1.0 GENERAL . . . . .   | 4    |
| 1.1 SCOPE . . . . .  | 4    |
| 1.2 WORK INCLUDED . . . . .  | 4    |
| 1.3 RELATED WORK NOT INCLUDED . . . . .                              | 4    |
| 1.4 REFERENCED CODES AND STANDARDS . . . . .                         | 4    |
| 1.4.1 American Society for Testing and Materials (ASTM) . . . . .    | 4    |
| 1.4.2 Occupational Safety and Health (OSHA) . . . . .                | 5    |
| 1.5 SUBMITTALS . . . . .   | 5    |
| 1.5.1 Testing Reports . . . . .                                      | 5    |
| 1.5.2 Testing Laboratory Certifications and Qualifications . . . . . | 5    |
| 1.5.3 List of Equipment . . . . .                                    | 5    |
| 1.5.4 Onsite Borrow Pit Operations . . . . .                         | 5    |
| 1.5.5 Offsite Borrow Pit Operations . . . . .                        | 6    |
| 1.5.6 Aggregate Source . . . . .                                     | 6    |
| 1.5.7 Protection of Existing Foundations . . . . .                   | 6    |
| 1.5.8 Shoring Design and Calculations . . . . .                      | 6    |
| 1.5.9 Soils Laboratory Test Results . . . . .                        | 6    |
| 1.5.10 Drainage Design . . . . .                                     | 6    |
| 1.5.11 Excavation Daily Inspections . . . . .                        | 6    |
| 1.5.12 Shoring Inspector . . . . .                                   | 6    |
| 1.5.13 Professional Engineer's License . . . . .                     | 7    |
| 1.6 QUALITY STANDARDS . . . . .                                      | 7    |
| 1.7 DEFINITIONS . . . . .  | 7    |
| 1.7.1 Unstable Material . . . . .                                    | 7    |
| 1.7.2 Rock . . . . .   | 7    |
| PART 2.0 PRODUCTS . . . . .  | 7    |
| 2.1 BACKFILL . . . . .   | 7    |
| 2.1.1 General . . . . .  | 7    |
| 2.1.2 Structural . . . . .   | 7    |
| 2.2 BEDDING MATERIALS . . . . .                                      | 7    |
| 2.3 AGGREGATE BASE . . . . .   | 8    |
| 2.4 TEMPORARY SEDIMENT BARRIERS . . . . .                            | 8    |
| 2.5 EROSION CONTROL BLANKETS . . . . .                               | 8    |
| 2.6 PLASTIC MARKING TAPE . . . . .                                   | 8    |
| PART 3.0 EXECUTION . . . . .   | 9    |
| 3.1 PRE-EARTHWORK EVALUATION . . . . .                               | 9    |
| 3.2 EROSION AND SEDIMENT CONTROL . . . . .                           | 9    |
| 3.3 DUST CONTROL . . . . .   | 9    |

**CONTENTS**  
 (continued)

|  | <b>Page</b> |
|--|-------------|
| 3.4 DRAINAGE, DEWATERING, AND STREAM DIVERSION . . . . . | 10          |
| 3.4.1 Drainage . . . . .                                 | 10          |
| 3.4.2 Dewatering . . . . .                               | 10          |
| 3.4.3 Stream Diversion . . . . .                         | 10          |
| 3.5 BLASTING . . . . .                                   | 10          |
| 3.6 EXCAVATION . . . . .                                 | 10          |
| 3.6.1 General . . . . .                                  | 10          |
| 3.6.2 Shoring . . . . .                                  | 10          |
| 3.6.3 Foundation Excavation . . . . .                    | 11          |
| 3.6.4 Utility Excavation . . . . .                       | 11          |
| 3.7 OVEREXCAVATION . . . . .                             | 12          |
| 3.8 DITCHES, GUTTERS, AND CHANNELS . . . . .             | 12          |
| 3.9 STOCKPILING . . . . .                                | 12          |
| 3.10 SUBGRADE PREPARATION . . . . .                      | 12          |
| 3.11 BORROW AND AGGREGATE SOURCES . . . . .              | 13          |
| 3.12 BACKFILLING . . . . .                               | 13          |
| 3.12.1 General . . . . .                                 | 13          |
| 3.12.2 Placement and Compaction Requirements . . . . .   | 13          |
| 3.13 AGGREGATE BASES . . . . .                           | 14          |
| 3.14 FINISH GRADING . . . . .                            | 14          |
| 3.15 PROTECTION OF WORK . . . . .                        | 14          |
| 3.16 SECURITY . . . . .                                  | 15          |
| 3.17 QUALITY CONTROL AND VERIFICATION . . . . .          | 15          |

**TABLE**

| <b>Table</b> | <b>Title</b>                              | <b>Page</b> |
|--------------|---|-------------|
| 3-1          | Backfill Testing Specifications . . . . . | 16          |

## **PART 1.0 GENERAL**

### **1.1 SCOPE**

Perform excavation of uncontaminated materials.

### **1.2 WORK INCLUDED**

- 1.2.1 Furnishing labor, materials, tools and equipment.
- 1.2.2 Installing and maintaining dust, sediment and erosion control.
- 1.2.3 Performing soil testing
- 1.2.4 Providing shoring as needed.
- 1.2.5 Securing area (temporary barriers) as needed.
- 1.2.6 Excavating and backfilling uncontaminated material.

### **1.3 RELATED WORK NOT INCLUDED**

- 1.3.1 Establishing limits of excavation and backfill.
- 1.3.2 Clearing and grubbing is included in Technical Specification 001-SP000-002.

### **1.4 REFERENCED CODES AND STANDARDS**

Unless otherwise specified or shown, the latest edition of the following Codes and Standards at the time of bid shall apply to the extent indicated herein.

#### **1.4.1 American Society for Testing and Materials (ASTM)**

- ASTM D 1556 Density of Soil In-Place by the Sand-Cone Method
- ASTM D 1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop
- ASTM D 2167 Density and Unit Weight of Soils In-Place by the Rubber Balloon Method
- ASTM D 2216 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
- ASTM D 2487 Classification of Soils for Engineering Purposes
- ASTM D 2922 Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)

- ASTM D 3017 Water Content of Soil and Rock In-Place by Nuclear Methods (Shallow Depth)
- ASTM D 4253 Maximum Index Density of Soils Using a Vibratory Table
- ASTM D 4254 Minimum Index Density of Soils and Calculation of Relative Density
- ASTM D 4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

#### **1.4.2 Occupational Safety and Health (OSHA)**

- 29 CFR 1910 Occupational Safety and Health Regulations for General Industry
- 29 CFR 1926 Occupational Safety and Health Regulations for Construction

### **1.5 SUBMITTALS**

Not all submittals defined herein may be required. Only engineering document requirements as summarized in Exhibit F (Attachment A), "Subcontractor Submittal Requirements Summary" (SSRS), shall apply. Submittals identified shall meet the detailed requirements herein. Bechtel will determine if documentation is complete as submitted and reserves the right to require the resubmittal of any submittals that do not meet specified requirements.

#### **1.5.1 Testing Reports**

Submit two unbound copies of testing results, including calibration curves and calibration results within 24 hours of conclusion of physical tests.

#### **1.5.2 Testing Laboratory Certifications and Qualifications**

Submit qualifications and requested certifications of the commercial testing laboratory. Include resumes of key personnel, client references from previous work of similar scope and laboratory capabilities.

#### **1.5.3 List of Equipment**

Submit a list of equipment proposed for use. Include type, size, and rating of equipment proposed to be used. For compactive rollers, include the weight, drum, or wheel size and cleat size, if any.

#### **1.5.4 Onsite Borrow Pit Operations**

Submit proposed operations plans for any onsite borrow pit(s). Include proposed procedures and plans for control of water, erosion and dust, access road construction and maintenance, and borrow excavation. Bechtel will provide the information on onsite borrow pit location and available test reports on the borrow material.

### **1.5.5 Offsite Borrow Pit Operations**

Submit proposed offsite borrow information to include: borrow pit location and address, owner's name and state permit/licensing number, and the ASTM test reports required to satisfy the requirements listed in the "2.0 PRODUCTS" section of this specification.

### **1.5.6 Aggregate Source**

Submit proposed offsite aggregate source information to include aggregate source location and address, owner's name and state permit/licensing number, and ASTM test reports required to satisfy the requirements listed in the "2.0 PRODUCTS" section of this specification.

### **1.5.7 Protection of Existing Foundations**

Submit proposed modifications to protect existing foundations in accordance with this specification.

### **1.5.8 Shoring Design and Calculations**

Submit proposed shoring design and engineering calculations or alternate slope protection measures in accordance with Subpart P, OSHA 29 CFR 1926. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

### **1.5.9 Soils Laboratory Test Results**

Submit soil classification test results and relative density or compaction curve test results, as appropriate.

### **1.5.10 Drainage Design**

Submit proposed drainage design prior to drainage system construction not indicated on engineering drawings. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

### **1.5.11 Excavation Daily Inspections**

Submit daily inspections of the excavation areas in accordance with OSHA 29 CFR 1910 and 1926 prior to commencing work each day.

### **1.5.12 Shoring Inspector**

Submit resume of the shoring inspector to be provided for bid evaluation. Inspector shall be qualified in accordance with Subpart P, OSHA 29 CFR 1926.

### **1.5.13 Professional Engineer's License**

Submit copy of Professional Engineer's license for bid evaluation (for the state where work is performed) for Professional Engineer(s) used for the shoring and drainage designs.

## **1.6 QUALITY STANDARDS**

Perform the work and control the quality of items and services to meet the requirements of this specification, subcontract documents, and applicable codes and standards.

## **1.7 DEFINITIONS**

### **1.7.1 Unstable Material**

Materials too weak, as determined by Bechtel, to properly support the utility pipe, conduit or appurtenant structure.

### **1.7.2 Rock**

Material that (1) measures approximately 1/2 cubic yard or more and cannot be removed without systematic drilling and blasting, such as rock material in ledges, bedded deposits, unstratified masses, and conglomerate deposits or (2) is below-grade concrete or masonry structures, exceeding 1/2 cubic yard in volume and greater than 9 in. in thickness. Asphaltic or portland cement pavements is not considered rock.

## **PART 2.0 PRODUCTS**

### **2.1 BACKFILL**

#### **2.1.1 General**

Cohesive or cohesionless well-graded materials free of contamination, trash, debris, roots or other organic matter, frozen material, stones, or other material larger than 3 in. in any dimension, with a plasticity index (PI)  $\leq$  20.

#### **2.1.2 Structural**

Structural fill shall meet the requirements of general fill (Section 2.1.1) but shall have a PI of  $\leq$  15.

### **2.2 BEDDING MATERIALS**

Bedding material shall consist of well-graded sand, gravel, or slag composed of hard, tough, and durable particles and shall contain not more than 10 percent by weight of material passing a No. 200 sieve and no less than 95 percent by weight, passing the 1-in. sieve or the maximum size recommended by the pipe manufacturer, whichever is smaller.

Bedding materials shall be free from rocks 2 in. or larger in any dimension or free from rocks of such size as recommended by the pipe manufacturer, whichever is smaller. Bedding material, for pipes coated or wrapped for corrosion protection, shall be free of stones larger than 1 in. in any dimension, or as recommended by the pipe manufacturer, whichever is smaller.

### 2.3 AGGREGATE BASE

Aggregate base shall be in accordance with state transportation requirements.

### 2.4 TEMPORARY SEDIMENT BARRIERS

Materials used for sediment barriers shall consist of straw bales, hay bales, geotextile filter fabric made expressly for use as a silt screen, or other materials approved by Bechtel prior to their use. Straw and hay bales shall not be used for permanent sediment barriers unless approved by Bechtel.

2.4.1 Baled hay or straw shall be laid end to end such that no gap exists between bales. Reinforcing bars shall be #4 bar and a minimum of 2½ ft long.

2.4.2 Filter fabric shall be a material made expressly for the purpose of sediment control such as Exxon GTF 101S Silt Screen or approved equal.

### 2.5 EROSION CONTROL BLANKETS

Erosion control blankets shall be Curlex Blankets manufactured by American Excelsior Company or approved equal.

### 2.6 PLASTIC MARKING TAPE

Plastic marking tape shall be of a type specifically manufactured for marking and locating underground utilities. It shall contain acid- and alkali-resistant polyethylene film and integral wires, foil backing, or other means to enable detection by a metal detector when the tape is buried in soil up to 3 ft deep. The metallic core of the tape shall be encased in a protective jacket or provided with other metallic core type to protect it from corrosion. The plastic marking tape shall have the following properties:

| <u>Properties</u> | <u>Value</u> |
|-------------------|--------------|
| Thickness (min.)  | 0.004-in.    |
| Width             | 6-in.        |
| Strength (min.)   |              |
| lengthwise        | 1750 psi     |
| crosswise         | 1500 psi     |

| <u>Properties</u> | <u>Value</u>  |
|-------------------|---|
| Color             | Utility line type   |
| Red               | Electric  |
| Yellow            | Gas, Oil, Dangerous materials                                 |
| Orange            | Telephone, Telegraph, Television, Police, Fire, Communication |
| Blue              | Water   |
| Green             | Sewer   |

## **PART 3.0 EXECUTION**

### **3.1 PRE-EARTHWORK EVALUATION**

Prior to performing any earthwork, examine the work area to identify pre-existing conditions (e.g. overhead power lines, access, etc.) that could impact the performance and completion of work. Bechtel will provide available information on the location of underground utilities. Verify these locations, provide structural support to utility lines, and coordinate inspection with and provide support to utility companies. Unless directed otherwise, the services of all underground utilities encountered during any earthwork shall be restored to their original condition. Applicable permits shall be obtained prior to commencing work unless directed otherwise.

### **3.2 EROSION AND SEDIMENT CONTROL**

Temporary sediment barriers shall be installed in accordance with the subcontract documents and maintained during construction until permanent sediment barriers are in place.

Erosion and sediment shall be controlled by the following techniques subject to Bechtel review on a case-by-case basis:

- covering with synthetic liner material
- covering with uncontaminated soil material
- sediment barriers

### **3.3 DUST CONTROL**

Dust shall be controlled by the following techniques subject to Bechtel review on a case-by-case basis:

- wetting with water
- wetting with a synthetic dust suppressant
- establishing temporary vegetative cover
- compaction
- sealing by rolling with a smooth drum

### **3.4 DRAINAGE, DEWATERING, AND STREAM DIVERSION**

#### **3.4.1 Drainage**

Surface water shall be directed away from excavation and construction areas. Diversion ditches, check dams, dikes, and/or grading shall be developed and maintained during construction.

Excavated slopes and backfill surfaces shall have a minimum 3% slope to promote runoff and shall be protected from erosion and sloughing. Excavation slopes shall conform to Subpart P, "Excavation, Trenching, and Shoring," of OSHA 29 CFR 1926.

#### **3.4.2 Dewatering**

Unless noted otherwise, all excavations shall be kept in a dewatered condition. 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 any interference with excavation progress.

#### **3.4.3 Stream Diversion**

Stream diversion(s) shall be developed as shown on the engineering drawings or Scope of Work.

### **3.5 BLASTING**

Blasting is not permitted.

### **3.6 EXCAVATION**

#### **3.6.1 General**

Excavation shall conform to the lines, grades, and depths identified on the engineering drawings or Scope of Work, and field-verified by Bechtel in accordance with OSHA regulations. Excavated areas shall be maintained in a clean condition, free from leaves, brush, trash and other debris. They shall be inspected and documented daily, prior to commencing work, in accordance with OSHA 29 CFR 1910 and 1926.

#### **3.6.2 Shoring**

Shoring, including temporary sheet piling, shall be furnished and installed as necessary to protect workers, slopes, adjacent paving, structures, and utilities. Shoring, bracing, and sheeting shall be removed as excavations are backfilled to prevent cave-ins. Alternate methods (e.g. benching, sloping, trench boxes, etc.) may be used where applicable. They shall be developed in accordance with Subpart P, OSHA 29 CFR 1926.

### **3.6.3 Foundation Excavation**

Excavations shall extend a sufficient distance from walls and footings to allow for placement and removal of forms. Excavation to final grade shall be performed within 48 hours of subsequent concrete placement. Only excavation methods that will leave the foundation soils in a solid condition shall be used. Excavation shall be inspected and approved by Bechtel prior to placement of rebar.

### **3.6.4 Utility Excavation**

#### **Trench Excavation**

Trench walls below the top of utility lines (pipe or conduit) shall be sloped or made vertical as recommended by the manufacturer. Installation shall be in accordance with OSHA 2207. Trench walls more than five ft deep shall be shored, cut back to a stable slope at least equal to the angle of repose, or provided with equivalent means of protection for employees who may be exposed to moving ground or cave-in. Special considerations shall be given to slopes that may be adversely affected by construction erosion or sloughing. Remove and handle any additional material caused by erosion or sloughing.

#### **Excavation Widths**

The trench width below the top of pipe shall not exceed 24 in. plus pipe or conduit outside diameter (O.D.) for pipes or conduits of less than 24 in. inside diameter (I.D.), and 36 in. plus pipe O.D. for pipes larger than 24 in. I.D. Where recommended trench widths are exceeded, redesign a stronger pipe or conduit, or utilize special installation procedures.

#### **Rock**

Rock in either ledge or boulder formation shall be replaced with suitable materials to provide a compacted earth cushion having a thickness between unremoved rock and the pipe or conduit of at least 9 in. Where bell-and-spigot pipe or slip-jointed conduit is used, the cushion shall be maintained under the joint as well as under the straight portion of the pipe or conduit. Rock faces shall be cleaned of loose debris and cut to a firm surface either level, stepped, or serrated, as shown on the engineering drawings or as directed by Bechtel. Loose disintegrated rock and thin strata shall be removed.

#### **Appurtenances**

Excavation for manholes, catch basins, inlets or similar structures shall be sufficient to leave at least 12 in. clear between outer structure surfaces and the face of the excavation or support members. Removal of unstable/unyielding material (e.g., loose disintegrated rock and thin strata, etc.) shall be removed as specified herein. When concrete or masonry is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation.

## **Trench Bottoms**

Trench bottoms shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of pipe.

## **Replacement of Unstable/Unyielding Material**

Where unstable and/or unyielding material is encountered in the trench bottom, such material shall be removed as required herein or as directed by Bechtel and replaced with bedding material.

## **3.7 OVEREXCAVATION**

Overexcavation shall be backfilled to design grade with general backfill and compacted to a density equal to or greater than that required for the subsequent fill material.

## **3.8 DITCHES, GUTTERS, AND CHANNELS**

Ditches, gutters, and channel changes shall be cut accurately to the cross sections and grades indicated on the engineering drawings or as directed by Bechtel. All roots, stumps, rock, and foreign matter in the sides and/or bottom of ditches, gutters, and channel changes shall be trimmed and dressed or removed to conform to the slope, grade and shape of the section indicated.

## **3.9 STOCKPILING**

Excavated material satisfying the requirements for backfill in this specification shall be either transported and placed in designated fills or stockpiled at onsite locations as determined by Bechtel. All materials to be stockpiled shall be placed in areas that have been cleared and grubbed.

Stockpiles shall be kept in a neat and well-drained condition. Excavated backfill material and unsatisfactory materials shall be stockpiled separately. Stockpiles of satisfactory materials shall be protected from contamination. If the material in the stockpile becomes unsatisfactory for use as backfill such material shall be removed and replaced with satisfactory material from sources approved by Bechtel.

## **3.10 SUBGRADE PREPARATION**

Subgrades in structural areas shall be proof-rolled prior to placement of fill. Unsatisfactory material identified by proof-rolling shall be removed and replaced with general backfill and compacted in accordance with this specification.

Subgrades and compacted lifts for backfills shall be either scarified 2 in. prior to placement of the subsequent lift or compacted by sheepsfoot roller or similar equipment designed to compact the lift from the bottom to the top.

### **3.11 BORROW AND AGGREGATE SOURCES**

Unless directed otherwise, borrow material shall be obtained from onsite areas designated by Bechtel. Borrow areas shall be cleared, grubbed, disposed of debris, and surface water flow and erosion controlled. This work shall be considered operation related to onsite borrow excavation and shall be performed in accordance with this specification. If directed by Bechtel, the borrow and/or aggregate sources shall be identified and certification provided to Bechtel that the borrow/aggregate materials meets the requirements of this specification and transport material to the fill area. No offsite borrow and/or aggregate shall be brought onsite without prior written approval by Bechtel.

### **3.12 BACKFILLING**

#### **3.12.1 General**

General backfill shall be used for bringing fill and excavations to the lines and grades identified by Bechtel, and for replacing unsatisfactory subgrade materials. Compaction shall be accomplished by rollers and other equipment accepted by Bechtel suited to the type of material being compacted. Backfill shall be placed in horizontal layers not exceeding 8 in. in loose thickness when using conventional compaction equipment or 6 in. when using hand-operated compaction equipment. Backfill shall not be placed on unsatisfactory materials.

#### **3.12.2 Placement and Compaction Requirements**

Compacted subgrades damaged during performance or work shall be repaired to the required density prior to further construction at no expense to Bechtel. Each lift shall be moisture conditioned or aerated as necessary and compacted to not less than the percentage of maximum density specified below:

- The relative compaction (RC) and relative density (RD) of pipe or conduit bedding material shall be 90 percent and 70 percent respectively.
- In unpaved areas, general backfill shall be used and compacted to 85 percent RC and 50 percent RD.
- In areas to receive structures, general backfill shall be placed to 2 ft below footing depth and compacted to 90 percent RC, 70 percent RD. Structural fill, placed at 95 percent RC, 80 percent RD shall be used in the top 2 ft.
- In areas to receive paving, general backfill shall be placed to 6 in. below subgrade elevation, and compacted to 90 percent RC, 70 percent RD. Structural fill, placed at 95 percent RC, 80 percent RD shall be used in the top 6 in.

Backfilling adjacent to structures shall be placed and compacted uniformly to prevent wedging action or eccentric loading upon or against the structure. Backfill shall not be placed against concrete or masonry foundation wall prior to 7 days after completion of the walls.

### **Additional Requirements for Trench Backfilling**

Damaged pipes, conduits, culverts, or storm drains damaged from the performance of work shall be repaired or replaced at no expense to Bechtel.

Bedding material shall be in accordance with Part 2, "Products." Care shall be taken to ensure the bedding under the haunches of the pipe or conduit are compacted. The bedding shall be placed and compacted with approved tampers to a height of 1 ft above the utility line or as specified on the engineering drawings or as directed by Bechtel. The bedding surface for the line shall provide a firm foundation of uniform density throughout the entire length of the line. The joints and/or couplings shall be left uncovered during pressure tests.

Final backfill shall not be placed above the top of the pipe or conduit until all tests are satisfactorily performed. The remainder of the trench shall be filled with general or structural backfill and compacted to grade in accordance with this specification.

Manholes, catch basins, inlets, or similar structures shall be placed in such a manner that the structure will not be damaged by the shock of falling earth while backfilling. Backfill material shall be deposited and compacted as specified for final backfill and shall be brought up evenly, as practical, on all sides of the structure to prevent eccentric loading and stress.

Plastic marking tape as specified in Part 2, "Products," shall be installed 18 in. directly above the utility line.

### **3.13 AGGREGATE BASES**

Aggregate bases shall be constructed under pavements and placed directly on the subgrade. The aggregate base shall be placed in 4-in. lifts and compacted with a minimum of two passes of a hand-operated plate-type vibratory compactor or equivalent compactive effort. The material shall be compacted to 95 percent RC.

### **3.14 FINISH GRADING**

Graded areas shall be constructed true-to-grade, shaped to drain, and maintained free of trash and debris until final inspection is completed and the work is accepted. The embankment and excavation surfaces shall be finished to a smooth and compact surface in accordance with the lines, cross-sections or elevations and grades shown on the engineering drawings. Unless indicated otherwise, tolerances for graded areas shall be  $\pm 0.1$  ft.

### **3.15 PROTECTION OF WORK**

Settlement or erosion that occurs in backfilled, filled, graded, or topsoiled areas prior to acceptance of the work shall be repaired to the required conditions at no expense to Bechtel.

### **3.16 SECURITY**

When necessary and practical, as determined by Bechtel, work areas shall be secured using barriers (e.g., rope, snow fence) to prevent inadvertent entry to work areas.

### **3.17 QUALITY CONTROL AND VERIFICATION**

- 3.17.1** Testing shall be performed by a commercial testing laboratory approved by Bechtel. Verification that the placement of backfill meets the requirements of this specification shall be submitted via testing reports. Testing shall be considered part of earthwork.
- 3.17.2** Test results shall be submitted for review prior to placement of the next lift above that area.
- 3.17.3** Table 3-1 shows the tests to be performed, test specifications, and test frequencies to verify that the backfill meets specification requirements. Additional tests shall be performed if the material or compaction requirements of this specification are not met.

Table 3-1  
Backfill Testing Specifications

| <u>Test Name</u>                     | <u>Test Specification</u>                       | <u>Test Application</u>   | <u>Test Frequency</u>   |
|--------------------------------------|---|---|---|
| Moisture-Density Relation            | ASTM D 1557<br>or ASTM D4253<br>and ASTM D 4254 | Each type of material or source of material to determine optimum moisture and laboratory maximum density values   | a) one representative test per 2,000 cy of fill and backfill or when any change in material occurs that may affect the optimum moisture content or laboratory maximum density.  |
| In-Place Moisture Content<br><br>and | ASTM D 3017<br>ASTM D 2216                      | ASTM D 3017 is for determining moisture content of soil backfill. ASTM D 2216 is for checking accuracy of ASTM D 3017   | a) one test per 20,000 sf or one test per lift, whichever is greater, for general backfill areas compacted by other than hand or hand-operated machines.<br><br>b) one test per 10,000 sf or minimum of one test per lift, whichever is greater, for general backfill areas compacted by hand or hand-operated machines.  |
| In-place Density                     | ASTM D 2922<br>ASTM D 1556<br>or ASTM D 2167    | ASTM D 2922 is for determining field in-place density (see Note 1 under "Test Frequency"). ASTM D 1556 or ASTM D 2167 are for checking accuracy or ASTM D 2922. | c) one test per 2,000 sf or minimum of two tests per lift, whichever is greater, for structural backfill areas compacted by other than hand-operated machines.<br><br>d) one test per 1,000 sf or minimum of two tests per lift, whichever is greater, for structural backfill areas compacted hand-operated machines.<br><br>e) one test per each area less than 1,000 sf or one test for each 100 lf of length, whichever is greater, for trenches, pits, building perimeters, or other structures or areas less than 10 ft in width and compacted by hand-operated machines. |

Table 3-1  
Backfill Testing Specifications (continued)

| <u>Test Name</u> | <u>Test Specification</u> | <u>Test Application</u> | <u>Test Frequency</u>  |
|------------------|---------------------------|-------------------------|--|
| Accuracy Tests   |                           |                         | <p>Accuracy Test: One ASTM D 2216 test for every ten ASTM D 3017 tests performed.</p> <p>Accuracy Test: One ASTM D 1556 of ASTM D 2167 test for every 20 ASTM D 2922 tests performed.</p> <p>Note 1: The calibration curves for ASTM D 2922 shall be checked and adjusted per ASTM D 2922, "Adjusting Calibration Curve". Both the calibration curves furnished with the moisture gauges and density calibration curves shall also be checked per ASTM D 3017. Calibration checks of the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at the beginning and end of each day that the equipment is used.</p> |

DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

TECHNICAL SPECIFICATION

FOR

TRANSPORTATION OF CONTAMINATED MATERIALS

| No.   | Date    | REASON FOR REVISION                                | BY                      | CHECK          | SUPV           | PE             |
|---|---------|--|-------------------------|----------------|----------------|----------------|
| 2   | 4/12/95 | Revised to reduce submittals                       | TD <i>TD</i>            | TLP <i>TLP</i> | TRW <i>TRW</i> | JRM <i>JRM</i> |
| 1   | 10/6/94 | Revised notice to transporter concerning lead time | TD                      | KCN            | KCN            | JRM            |
| 0   | 8/2/94  | Issued for use                                     | KCN                     | TLP            | TRW            | JRM            |
| ORIGIN  |         | Transportation of Contaminated Material            | TECHNICAL SPECIFICATION |                |                |                |
|  |         |  | 001-SP000-003           |                | REV. 2         |                |
|   |         |  | SHEET 1 OF 20           |                |                |                |

## CONTENTS

|   | Page |
|---|------|
| 1.0 GENERAL.....  | 4    |
| 1.1 PURPOSE.....  | 4    |
| 1.2 ABBREVIATIONS .....                                       | 4    |
| 1.3 QUALITY STANDARDS.....                                    | 5    |
| 1.4 EQUIPMENT, MATERIAL, AND PERSONNEL REQUIRED.....          | 6    |
| 1.4.1 Transportation by Highway .....                         | 6    |
| 1.4.2 Roll-On/Roll-Off Bimodal Containers .....               | 7    |
| 1.4.3 Rail Freight Cars and Siding Requirements .....         | 8    |
| 1.5 PACKAGING, LABELING, MARKING, AND PLACARDING .....        | 9    |
| 1.5.1 Transportation by Highway .....                         | 9    |
| 1.5.2 Roll-On/Roll-Off Bimodal Containers .....               | 9    |
| 1.5.3 Rail Freight Cars.....                                  | 9    |
| 2.0 MOTOR VEHICLE REQUIREMENTS .....                          | 10   |
| 2.1 GENERAL.....  | 10   |
| 2.2 MOTOR VEHICLE INSPECTIONS .....                           | 10   |
| 3.0 MOTOR VEHICLE OPERATOR REQUIREMENTS .....                 | 11   |
| 3.1 QUALIFICATION OF MOTOR VEHICLE REQUIREMENTS.....          | 11   |
| 3.2 MOTOR VEHICLE OPERATORS NOT QUALIFIED .....               | 11   |
| 4.0 OTHER REQUIREMENTS .....                                  | 12   |
| 4.1 MOTOR VEHICLE WEIGHT REQUIREMENTS .....                   | 12   |
| 4.2 TRANSPORTATION SAFETY RATING .....                        | 12   |
| 4.3 TRANSPORTER EPA ID NUMBER.....                            | 12   |
| 4.4 CARRIER SURETY BOND OR POLICIES OF INSURANCE.....         | 13   |
| 4.5 TRANSPORTATION REPRESENTATIVE .....                       | 13   |
| 4.6 REQUIRED PERMITS AND LICENSES.....                        | 13   |
| 4.7 DOCUMENTATION .....                                       | 13   |
| 4.8 TRANSPORTATION ROUTES AND EMERGENCY RESPONSE PLAN .....   | 13   |
| 4.8.1 Transportation by Highway .....                         | 13   |
| 4.8.2 Railroad Routing Map .....                              | 14   |
| 4.9 TRACKING AND NOTIFICATION.....                            | 14   |
| 4.9.1 Transportation by Highway .....                         | 14   |
| 4.9.2 Transportation by Rail .....                            | 15   |
| 4.10 ADDITIONAL REQUIREMENTS FOR LOOSE CONVEYANCE LOADS ..... | 16   |
| 5.0 MOTOR VEHICLE LOADING AND UNLOADING OPERATIONS .....      | 16   |

**CONTENTS**  
(continued)

|  |    |
|--|----|
| 6.0 ACCIDENTS INVOLVING TRANSPORT VEHICLES ..... | 17 |
| 7.0 SUBMITTALS .....                             | 18 |
| 8.0 TRANSPORTATION WORK RELEASE .....            | 19 |

**TECHNICAL SPECIFICATION  
FOR  
TRANSPORTATION OF CONTAMINATED MATERIALS**

**1.0 GENERAL**

**1.1 PURPOSE**

This Specification addresses requirements and conditions that apply to transportation of hazardous material(s) (HM), hazardous waste(s) (HW), and contaminated material(s) (CM) at various project and construction job sites. The Subcontractor, Common Motor Carrier (if different), and motor vehicle operator(s) shall be knowledgeable of and comply with Federal Department of Transportation (DOT) regulations (49 CFR), and Environmental Protection Agency (EPA) regulations (40 CFR). Not all transport operations defined herein may be required. Reference is directed to applicable Subcontract Scope of Work and Design Drawings for specific services required.

**1.2 ABBREVIATIONS**

The abbreviations listed below, when used in this Specification, have the following meanings:

|      |  |
|------|--|
| AAR  | Association of American Railroads                    |
| BEI  | Bechtel Environmental, Inc.                          |
| CDL  | Commercial Driver's License                          |
| CFR  | Code of Federal Regulations                          |
| CM   | Contaminated Material                                |
| COFC | Container on flat car                                |
| DOT  | Department of Transportation                         |
| EPA  | Environmental Protection Agency                      |
| FHWA | Federal Highway Administration                       |
| HM   | Hazardous Material                                   |
| HW   | Hazardous Waste                                      |
| ICC  | Interstate Commerce Commission                       |
| ISO  | International Standards Organization                 |
| LSA  | Low Specific Activity                                |
| OSHA | Occupational Safety and Health Administration        |
| PCB  | Polychlorinated Biphenyl                             |
| RCRA | Resource Conservation and Recovery Act               |
| RQ   | Reportable quantity TSCA Toxic Substance Control Act |
| TSDF | Treatment, Storage, and Disposal Facility            |

### 1.3 QUALITY STANDARDS

The quality standards, as defined by Bechtel Environmental, Inc. (BEI) and Federal DOT and EPA regulations [i.e., Code of Federal Regulations (CFRs)] applicable to this Specification are identified herein and are applicable directly or indirectly to:

- roll-on/roll-off bimodal containers
- transporting vehicle (also referred to as motor vehicle)
- rail cars (flat, box, gondola)
- equipment and material
- packaging, labeling, marking, placarding, handling, and transporting of HM, HW, and CM
- qualifications of Subcontractor provided personnel.

The following CFRs, which are a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government, are identified in this Specification for the purpose of quality standards. Failure to identify an applicable CFR does not imply elimination of required Subcontractor knowledge and compliance.

| <b>Title</b> | <b>No.</b> | <b>CFR Regulations Title</b>  |
|--------------|------------|---|
| 40           | 262        | "Standards Applicable to Generators of Hazardous Waste"   |
| 40           | 263        | "Standards Applicable to Transporters of Hazardous Waste"   |
| 40           | 761        | "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"              |
| 49           | 171        | "General Information, Regulations and Definitions"  |
| 49           | 172        | "Hazardous Materials Table, Special Provisions, Communications, Emergency Response Information and Training Requirements" |
| 49           | 173        | "Shippers - General Requirements for Shipments and Packagings"  |
| 49           | 177        | "Carriage by Public Highway"  |
| 49           | 178        | "Specifications for Packagings"   |
| 49           | 383        | "Commercial Driver's License Standards; Requirements and Penalties"   |
| 49           | 385        | "Safety and Fitness"  |
| 49           | 387        | "Minimum Levels of Financial Responsibility for Motor Carriers"   |
| 49           | 391        | "Qualifications of Drivers"   |
| 49           | 392        | "Driving of Motor Vehicles"   |
| 49           | 393        | "Parts and Accessories Necessary for Safe Operation"  |

| <b>Title</b> | <b>No.</b> | <b>CFR Regulations Title</b>   |
|--------------|------------|--|
| 49           | 395        | "Hours of Service of Drivers"  |
| 49           | 396        | "Inspection, Repair, and Maintenance"  |
| 49           | 397        | "Transportation of Hazardous Materials; Driving and Parking Rules"   |
| 49           | 1300       | "Passenger and Freight Tariffs and Schedules (of Subtitle B, "Other Regulations Relating to Transportation"; Subchapter D, "Tariffs and Schedules")" |

Quality, where standards are not identified in this Specification, will be reviewed by BEI for approval on a case-by-case basis. Replacement of material, equipment, or personnel (including time lost) due to failure to meet the Subcontract specified quality standards, or BEI approval when standards are not identified, shall be at the Subcontractor's expense. When requested, and at no cost to BEI, the Subcontractor shall provide material samples, manufacturer specifications, and documentation in support of quality standards.

#### **1.4 EQUIPMENT, MATERIAL, AND PERSONNEL REQUIRED**

Equipment, material, and personnel provided to BEI by the Subcontractor shall be as follows:

##### **1.4.1 Transportation by Highway**

- Transport vehicles (e.g., dry van, flatbed, roll-off, lowboy, and ocean style trailers; truck tractors; and roll-off and ocean style containers) that meet the requirements of 49 CFR 393 and 396. Bulk liquids shall be transported in DOT Specification 311 and 312 transport vehicles.
- Securement systems, especially tiedown assemblies (e.g., chains, cables, steel straps, and fiber webbing); load binders and hardware (e.g., hooks, bolts, welds, or other connectors); and winches or other fastening devices that are without visual damage from wear or misuse and that meet the requirements of 49 CFR 393, Subpart I.
- Weatherproof tarpaulins that are without visual damage from wear or misuse and of a quality highly resistant to tears, rips, snags, punctures, abrasion, cracking, peeling, and weathering, and that are suitable for use as an external cargo wrap.
- Side boards that are suitable as a frame for use with tarpaulins to form a closed transport vehicle.
- Motor vehicle operators who meet the requirements of 49 CFR 383, 391, 392, 395, 397, and 172 Subpart H, and 177. A signed affidavit stating that all vehicle operators handling hazardous waste are HAZMAT trained in accordance with 49 CFR Part 172, Subpart H will be made available on request for inspection by BEI at the job site.

## **1.4.2 Roll-On/Roll-Off Bimodal Containers**

### **Delivery**

The Subcontractor shall deliver to project job sites roll-on/roll-off bimodal containers for BEI use. BEI will order containers through work releases which identify the job site, delivery rate (e.g., two per day), and the date of the first delivery. Every effort will be made by BEI to give at least 10 work days notice to the Subcontractor; however, some instances may occur where only 2 days notice will be provided. Other delivery specific details will be shown in the work release.

### **Design, Construction, and Testing**

All Subcontractor roll-on/roll-off bimodal containers provided for BEI use shall be designed, constructed, and tested in accordance with the Association of American Railroads (AAR) Specification M-930-90 and shall be capable of meeting the DOT requirements as a strong-tight container. Each container offered to BEI shall be identified with a certification plate as prescribed in Section 6.13 of AAR Specification M-930-90. The Subcontractor shall have available on request details the materials of construction, door closure and fasteners, and hold down and lifting pads for the roll-on/roll-off bimodal containers.

### **Size of Roll-On/Roll-Off Bimodal Containers**

The roll-on/roll-off bimodal container to be provided by the Subcontractor shall be approximately 20 cubic yard or 25.5 cubic yard capacity or as noted in the work release. The Subcontractor shall provide BEI, the external and internal dimensions and the tare weight and gross weight rating of the container.

### **Condition of Containers**

At the time of delivery, the Subcontractor shall provide containers janitorially clean (broom clean), free of extraneous debris, holes, and free of excess scale and corrosion which could be an impediment to decontamination in the event the containers should become contaminated.

### **Liners**

The Subcontractor shall provide polyethylene liners that have a polyethylene nominal thickness of at least 6 mils. The liner shall be fabricated to fit squarely in the corners to virtually eliminate tearing on filling and shall be watertight. Alternate materials and thicknesses for the liner may be offered by the Subcontractor, but the proposed change must be approved in advance by BEI as an equivalent liner.

The Subcontractor shall install or provide written procedures for the bag liner installation and proper assembly of roll-on/roll-off bimodal containers to meet DOT requirements as strong-tight and sift-proof containers during transport.

### **1.4.3 Rail Freight Cars and Siding Requirements**

#### **Defects and Restrictions**

The Subcontractor shall provide BEI with rail freight cars as specified in the work release. All rail freight shall be in good order and shall contain no defects in accordance with 49 CFR Part 215, Subpart B, or any restrictions at time of delivery as defined in 49 CFR Part 215, Subpart C.

#### **Freight Car Load Ratings**

The Subcontractor shall provide rail freight cars having a load capacity of not less than 75 tons nor more than 100 tons. The ratings of the rail gondola cars shall be mainly 95- and 100-ton cars. Written approval, in advance, shall be obtained from BEI in order to supply rail gondola cars having a load capacity rating of less than 90 tons.

#### **Qualification of Rail Transportation Crew**

All Subcontractor personnel who handle and process BEI loaded rail freight cars and intermodal packages shall be HAZMAT trained in accordance with 49 CFR 172.700, Subpart H.

#### **Freight Car Cleanliness**

The rail freight cars provided by the Subcontractor shall be free of loose debris and be janitorially clean (broom clean).

#### **Rail Gondola Car**

The Subcontractor shall provide to BEI rail gondola cars that are free of internal appurtenances which could affect the integrity of sift-proof liners that BEI will provide and install.

The Subcontractor-provided rail gondola cars shall have an internal height of not less than 4.5 feet nor greater than 5.75 feet or as specified in the work release.

The Subcontractor shall provide cars whose internal surfaces, in BEI's opinion, are free of major rust or scale which could affect the ability to easily decontaminate the car in the event it became contaminated.

#### **Rail Siding Maintenance**

Subcontractor-provided rail sidings (i.e., frogs, switches, ballast, crossties, rails, fastenings) shall be maintained to at least a Class 1 standard throughout any shipping campaign in accordance with 49 CFR Part 213.

## **1.5 PACKAGING, LABELING, MARKING, AND PLACARDING**

### **1.5.1 Transportation by Highway**

Packaging, labeling, marking, and placarding will be in compliance with 49 CFR 172, 173, 178, and 40 CFR 262, 263, and 761. The motor vehicle operator(s) shall perform an inspection to verify, based on their training in accordance with 49 CFR 172, Subpart H, and experience, the packaging, labeling, marking, and placarding are in accordance with the requirements listed above and the accompanying shipping documents. Upon acceptance of the load for transport, the Subcontractor shall be responsible for maintaining the integrity of packaging, labeling, marking, placarding, and the accompanying shipping documents in compliance with 49 CFR 177.800, Subpart A. BEI shall be notified immediately (see Section 6.0, "Accidents Involving Transport Vehicles," for notification procedures) upon the Subcontractor's discovery of a change in the condition of packaging, labeling, marking, or placarding (e.g., changes due to equipment failure, packaging failure, accident, adverse weather conditions, vandalism, or theft). Concerns or questions related to the inspection, maintenance, or notification procedures are to be addressed to the BEI site manager or his designee prior to the motor vehicle operator's load acceptance.

### **1.5.2 Roll-On/Roll-Off Bimodal Containers**

BEI will inspect the roll-on/roll-off bimodal container in accordance with the Specification at the time of Subcontractor delivery and, upon acceptance, will direct where to place the container.

BEI may elect to survey the roll-on/roll-off bimodal container at the time of delivery for the presence of hazardous materials. BEI will install the Subcontractor provided liner, fill the container, and seal it for shipment in accordance with Subcontract provided packaging procedures.

BEI will mark, label, placard, certify the packaging, and prepare required shipping documents in accordance with DOT requirements.

### **1.5.3 Rail Freight Cars**

BEI will offer strong-tight packages to be used for packaging of some waste. These packages will be designed to meet AAR Specification M-930-90, "Closed Van-Type Dry Cargo Containers for Domestic Container-on-Flat-Car (COFC) Service." BEI will mark, label, certify, and provide shipping papers describing the packaged container contents in full compliance with 49 CFR Parts 171, 172, and 173. These containers will be turned over to the Subcontractor for loading and shipment.

Schedule adjustments shall be made by BEI, when needed, that result from weather conditions that prevent loading of transport materials into or onto rail freight cars. The BEI Site Superintendent or designee will notify the Subcontractor of all necessary schedule adjustments due to inclement weather.

The Subcontractor shall provide equipment, such as but not limited to, clevis, slings, cranes and bridges, lifting and handling procedures, training of workers and supervision in order to transfer BEI packages to rail flat cars and to provide blocking, bracing, and load securement for the packages such that the packages will not move or fall during conditions normally incident to transportation.

BEI shall placard the rail freight cars and intermodal packages in accordance with 49 CFR Part 172, Subpart F. Subcontractor rail crew members shall replace placards and car certificates that become lost in transit at the next inspection point in accordance with 49 CFR Part 174.59.

## **2.0 MOTOR VEHICLE REQUIREMENTS**

### **2.1 GENERAL**

The Subcontractor shall provide equipment that is appropriate to accomplish successful transportation of HM, HW, or CM either from project sites or to or from the TSDF. Motor vehicles shall be maintained and operated in accordance with the manufacturer's recommendations, Occupational Safety and Health Administration (OSHA) requirements, federal regulations as specified in 49 CFR 393, 396, and 397, and applicable state and local regulations. The Subcontractor shall take all precautions necessary for safe operation of his equipment/vehicle and to safeguard the public and the environment from injury or accidental release of HM, HW, or CM.

The Subcontractor shall provide to BEI a list of the transport vehicles to be used, identification number, type, and size. These transport vehicles shall meet the requirements of the transportation work release (example work release is Section 8.0).

### **2.2 MOTOR VEHICLE INSPECTIONS**

All vehicles shall be inspected by the Subcontractor in accordance to 49 CFR 393, "Parts and Accessories Necessary for Safe Operation," and shall conform to all applicable local, state, and federal requirements for registration, insurance, inspection, certification, and performance.

All motor vehicle inspections shall be performed by qualified inspectors as required by 49 CFR 396.19, "Inspector Qualifications." The Subcontractor shall have available for inspection by the BEI site representative a copy of the current certificate of commercial motor vehicle inspection prior to any transportation activities (or a statement certifying that all motor vehicles supplied to BEI have been inspected in accordance with the requirements of 49 CFR 396.17, 396.19, and 396.23). Brake inspections shall be performed by a certified brake inspector for commercial motor vehicles as described in 49 CFR 396.25, "Qualifications of Brake Inspectors."

Prior to being placed into use, and at least once each day, in accordance with the requirements of 49 CFR 396.11, "Driver Vehicle Inspection Report," and 396.13, "Driver Inspection," the motor vehicle operator shall perform a safety inspection of the motor vehicle.

All motor vehicles (and equipment) provided shall be subject to a quality surveillance by BEI prior to loading to determine that the motor vehicle (and equipment) in accordance with 49 CFR 393 and 396. Such inspection and approval shall not relieve the Subcontractor of responsibility for the use of proper equipment. **INSPECTION OF VEHICLES BY BEI DOES NOT IMPLY CERTIFICATION.**

Motor vehicles determined by BEI or the Subcontractor to be potentially unsafe and/or unsuitable for their intended use shall be removed from the site until repaired by the Subcontractor at his expense or replaced with a different motor vehicle. Repaired or replaced motor vehicles will receive new inspections to determine if repairs are correct and meet inspection standards. Time lost due to reinspection shall be at the Subcontractor's expense.

### **3.0 MOTOR VEHICLE OPERATOR REQUIREMENTS**

#### **3.1 QUALIFICATION OF MOTOR VEHICLE REQUIREMENTS**

Before transportation services are rendered, motor vehicle operators (drivers) shall meet the requirements, including all required endorsements (and shall provide evidence of such) specified in 49 CFR 383, "Commercial Driver's License Standards: Requirements and Penalties"; 391, "Qualifications of Drivers"; and 172, Subpart H, "Training."

The following information must be available for inspection by BEI prior to any transportation activity:

- A medical examiner's certificate, or a legible photographic copy of a certificate, or a statement attesting to a record on file with the Subcontractor of a medical examiner's certificate on each motor vehicle operator's physical qualifications to operate a motor vehicle in accordance with 49 CFR 391.43, "Medical examination; Certification of Physical Examination," and 49 CFR 391.41, "Physical Qualifications for Drivers."
- A statement certifying the Subcontractor, at least once every 12 months, reviews the driving record of each motor vehicle operator it employs in accordance with 49 CFR 391.25, "Annual Review of Driving Record." Included in this review shall be a list of all violations of motor vehicle traffic laws in accordance with 49 CFR 391.27, "Record of Violations."
- A valid commercial driver's license (CDL) for each motor vehicle operator.

#### **3.2 MOTOR VEHICLE OPERATORS NOT QUALIFIED**

Motor vehicle operators may not be deemed qualified or acceptable in accordance with 49 CFR 391.51, "Disqualification of Drivers." Motor vehicle operators deemed not acceptable for transporting HW, HM, or CM shall be replaced at Subcontractor's expense, including time lost.

## **4.0 OTHER REQUIREMENTS**

### **4.1 MOTOR VEHICLE WEIGHT REQUIREMENTS**

Prior to arrival for loading, all Subcontractor motor vehicles provided, shall be weighed at an offsite certified (certified calibrated) scale. Upon arrival for loading, each vehicle operator shall provide a legible copy of the certified tare (light) weight receipt for that motor vehicle.

Prior to releasing the loaded motor vehicle for transport, the Subcontractor will verify motor vehicle and load weight by requiring all loaded motor vehicles (truck, trailer, and load) to be weighed at an offsite certified scale located within 30 miles of the project site. The Subcontractor shall provide BEI with a legible copy of the certified loaded weight receipt for each motor vehicle.

Only certified tare- and loaded-weight receipts containing the following information will be accepted by BEI:

- Motor vehicle identification number
- Date motor vehicle was weighed
- Name, address, and telephone number of offsite certified scale
- Weigh master's signature

Gross weight of loaded motor vehicles (tractor, trailer, and load) released from the site(s) shall not exceed gross vehicle weight/road weight restrictions. If a motor vehicle (tractor, trailer, and load) exceeds gross vehicle weight, the motor vehicle is to return to the jobsite to off-load the excess weight at the Subcontractor's expense.

### **4.2 TRANSPORTATION SAFETY RATING**

The Subcontractor shall have available for inspection by BEI a current copy of his Federal Motor Carrier Safety Rating assigned by the Federal Highway Administration (FHWA) as set forth in 49 CFR 385, "Determination of Safety Rating." A Subcontractor receiving notification by the FHWA of a "conditional" or "unsatisfactory" rating will be ineligible to transport HM, HW, or CM for BEI.

### **4.3 TRANSPORTER EPA ID NUMBER**

If hazardous wastes are to be transported, the Subcontractor shall submit to BEI a copy of their (or their lower-tier subcontractor's) completed RCRA Part A waste transporter application and a notarized copy of their EPA waste transport identification number. If polychlorinated biphenyls (PCBs) are being transported, the Subcontractor is also required to have submitted a separate "Notification of PCB Activity" Form 7710-53 to EPA as required by 40 CFR 761.202 and 761.205. A legible copy shall be provided to BEI prior to BEI's release of the load.

#### **4.4 CARRIER SURETY BOND OR POLICIES OF INSURANCE**

The Subcontractor shall submit to BEI proof of insurance on DOT Form MCS-82 or MCS-90, as required in 49 CFR 387.

#### **4.5 TRANSPORTATION REPRESENTATIVE**

The Subcontractor shall designate a competent, authorized representative, acceptable to BEI, that is knowledgeable in DOT hazardous materials regulations to represent and act for the Subcontractor. The Subcontractor shall inform BEI in writing of the name and address of such a representative.

#### **4.6 REQUIRED PERMITS AND LICENSES**

The Subcontractor shall obtain all required permits and/or licenses and shall make all required notifications for transporting HM, HW, or CM from project sites to the TSDF (or to another site), including any over-dimension/over-weight permits and/or notifications.

#### **4.7 DOCUMENTATION**

The Subcontractor shall complete and be responsible for all documents/shipping papers in accordance with 49 CFR 177.817 or 49 CFR 174.24, "Shipping Papers." The Subcontractor shall comply with the directions provided elsewhere in the subcontract document prior to shipment regarding TSDF documents/shipping papers. All documents/shipping papers shall be kept with shipments at all times. Subcontractor documents will include the following when applicable:

- Signed Uniform Hazardous Waste Manifest/Bill of Lading
- Exclusive Use Control Instruction
- Vehicle Survey Release Form (completed at the site prior to vehicle release)
- TSDF specific forms
- Emergency Response Guide Information

The Subcontractor shall submit a copy of the signed Bill of Lading, the Uniform Hazardous Waste Manifest (when required under 40 CFR 262), and any TSDF specific forms. These forms shall be included with the Subcontractor's invoice for payment of transportation services.

#### **4.8 TRANSPORTATION ROUTES AND EMERGENCY RESPONSE PLAN**

##### **4.8.1 Transportation by Highway**

The Subcontractor shall meet all existing federal, state, and local regulations for traffic control and motor vehicle operation for transportation of HM, HW, or CM on public roads and highways.

If hazardous wastes are transported, the Subcontractor shall have available for inspection by BEI a written transportation Emergency Response Plan, which includes instructions for compliance with 49 CFR 171.15, "Immediate Notice of Certain Hazardous Materials Incidents," and 172, Subpart G, "Emergency Response Information." The plan shall include all aspects and considerations for HM, HW, or CM transportation hazards that may arise during transportation operations, and shall be available for BEI review 10 working days prior to any waste hauling.

The Subcontractor shall notify BEI immediately upon learning that a transportation-related accident has occurred as stated in Section 6.0, "ACCIDENTS INVOLVING TRANSPORT VEHICLES," of this Specification.

The Subcontractor shall have available on request a proposed transportation route that is in compliance with 49 CFR 397, "Transportation of Hazardous Materials; Driving and Parking Rules" [397.9, "Routes," and 397, Subpart D, "Routing of Class 7 (Radioactive) Materials"] to be used between the project site (or TSDF) and TSDF (or another project site) prior to transport.

The cleanup cost for any release of HM, HW, or CM by the Subcontractor shall be the responsibility of the Subcontractor. The cleanup operations shall be performed at the expense of the Subcontractor. Cleanup shall be performed immediately.

#### **4.8.2 Railroad Routing Map**

The Subcontractor shall make available to BEI upon request a map showing the proposed routing of rail freight cars from point of origin to the disposal facility. The routing map should identify all utilized railroads and indicate key milestones expressed in travel days from the time leaving the point of origin.

### **4.9 TRACKING AND NOTIFICATION**

#### **4.9.1 Transportation by Highway**

The Subcontractor shall have in operation a vehicle tracking system to be used on all BEI shipments. The Subcontractor shall provide the capability to recall or reroute a shipment due to unforeseen events which may require the motor vehicle/load to return to the origination point or be rerouted to an alternate TSDF.

BEI shall be notified if the Subcontractor's motor vehicle is delayed due to equipment failure, accident, inclement weather, or any condition that prevents the motor vehicle/load from continuing on the approved route and/or transportation schedule.

The Subcontractor shall contact the TSDF, or other destination, 24 hours in advance to schedule an arrival time. The Subcontractor shall be responsible for contacting the pickup and destination facilities before shipments begin, to identify appropriate procedures at the individual facilities (i.e., opening and closing times, pass requirements, etc.). Any cost incurred due to failure to comply with these procedures, or due to lack of appropriate planning, shall be the responsibility of the Subcontractor. The contact and telephone

number for the pickup and destination facilities will be provided with the Work Release or as otherwise provided. BEI shall be notified within 24 hours of the scheduled delivery date if the shipment was not delivered to the TSDF on the scheduled delivery date.

#### **4.9.2 Transportation by Rail**

The Subcontractor shall notify BEI of any abnormal occurrences identified in the following subsections or any similar, but not identified, occurrences.

##### **Location Tracking and Notification**

The Subcontractor shall have in operation a system which identifies the location of each BEI rail freight car grouping in transit from the project site to the designated TSDF.

The Subcontractor shall contact the disposal site 24 hours in advance of the scheduled arrival time.

##### **Movement of Defective Cars for Repair**

The Subcontractor shall notify BEI as soon as practical whenever a loaded rail freight car has been determined to have a defective component. The Subcontractor shall relay to BEI's Subcontractor Administrator the related information and restrictions imposed by the designated inspector in accordance with 49 CFR Part 215.9.

##### **Reporting Hazardous Material Incidents and Abnormal Occurrences**

The term *abnormal occurrences* means any of, or similar to, the following conditions noted during transport of hazardous materials, substances, or wastes:

- failure of the watertight, sift-proof liner
- broken tamper-indicating devices or package seals
- deviation from the designated routing maps
- any transportation condition that is not normally incident to transportation

As soon as practical, the Subcontractor shall notify BEI of an incident which occurs during transportation in which HM, HW, or CW materials are involved, whether a report is or is not required by 49 CFR Parts 171.15 and 171.16.

##### **Leaking Rail Freight Cars and/or Intermodal Packages**

The Subcontractor shall notify BEI immediately of any noted leakage of material from any rail freight car or intermodal package during transportation.

## **Emergency Response Plan**

The Subcontractor shall make available to BEI (upon request) a written transportation Emergency Response Plan. The plan shall include instructions for compliance with 49 CFR Part 171.15, "Immediate Notice of Certain Hazardous Material Incidents." The plan shall include all aspects and considerations arising from transport incidents involving hazardous substances, materials, or wastes. The plan shall be available to BEI for review at least 10 working days in advance of any waste transportation as scheduled. The plan shall include the name of the Subcontractor emergency response coordinator.

## **4.10 ADDITIONAL REQUIREMENTS FOR LOOSE CONVEYANCE LOADS**

Vehicles used for loose conveyance transport of soil shall meet the following requirements:

- (1) The truckbed shall be free of drain holes, cracks, or other conditions that may allow leakage of soil.
- (2) If the vehicle has a tailgate for dumping, the Subcontractor vehicle operator shall demonstrate to the BEI site superintendent or designee that the tailgate can maintain a seal. A vehicle that cannot maintain a seal will be repaired or replaced by the Subcontractor before being placed into service. If seals fail after the vehicle is placed into service, they are to be repaired immediately, and BEI shall be notified.
- (3) Vehicles are not to be equipped with side boards while transporting loose conveyances.
- (4) Material shall not be loaded higher than one foot below the top of the vehicle side walls.
- (5) Tarpaulin covers shall be installed and used on all vehicles. Before being installed, sharp objects and/or protrusions are to be eliminated to prevent cutting or puncture of the tarpaulin.
- (6) Tarpaulins are to be firmly secured over the soil with sufficient overlap so that the material will not be blown from the vehicle during transport.

## **5.0 MOTOR VEHICLE LOADING AND UNLOADING OPERATIONS**

All areas and buildings of the project/jobsites (or TSDF) are off limits to Subcontractor motor vehicles (and motor vehicle operators) except those areas and buildings designated by BEI (or TSDF). Motor vehicle operators shall remain inside the tractor cab at all times, unless directed otherwise by BEI (or TSDF). Staging of vehicles for loading will be at the direction of the BEI site manager. Where space is limited, the Subcontractor will be given instructions as to the maximum number of vehicles to be loaded and a schedule for loading.

All Subcontractor motor vehicles will be monitored by BEI for external contamination prior to being allowed onto project/job sites. Subcontractor motor vehicles shall arrive at the site sufficiently clean to allow accurate monitoring. Motor vehicles shall be free of dried mud, dirt, grease, or other accumulations.

If accurate monitoring is unsuccessful, due to excess mud, dirt, grease, or other accumulations, the motor vehicle shall be removed from the site and cleaned. Motor vehicle cleaning and time lost will be at the Subcontractor's expense. Only motor vehicles determined to be free of contamination will be allowed onto project/job sites.

Loading and unloading operations will be conducted in a highly controlled manner that prevents contamination of motor vehicles. BEI will verify that motor vehicles are free of contamination before their release from the loading/unloading area. Subcontractor motor vehicles will be checked for contamination as appropriate prior to leaving the loading/unloading area.

Motor vehicles that become contaminated during loading/unloading operations at the jobsite will be decontaminated by BEI. After decontamination, the motor vehicle will be checked again by BEI to verify that it is free of contamination prior to its release for transport.

Load configurations shall be a joint effort of BEI and the motor vehicle operator(s). After loading, and prior to leaving the site (or TSDF), the motor vehicle operator(s) shall perform an inspection to verify the load is arranged and secured properly (based on experience and training, and in accordance with 49 CFR 393, Subpart I, "Protection Against Shifting or Falling Cargo," and 392.9, "Safe Loading").

Upon acceptance of the load for transport, the Subcontractor shall be responsible for maintaining the integrity of the load, the load arrangement, and any security seals. The motor vehicle operator shall examine and periodically reexamine the load (load inspections during transit do not apply to sealed trailers, only to the inspection of security seals) and its load-securing devices as may be necessary to maintain the integrity of the load and the load arrangement in accordance with 49 CFR 392.9.

The Subcontractor shall be in compliance with the requirements of Section 6.0, "Accidents Involving Transport Vehicles," of this Specification, upon discovery of a change in the condition of BEI's load, load arrangement, or security seals (e.g., changed due to equipment/packaging failure, motor vehicle accident, adverse weather conditions, vandalism, or theft) which involves a release of HM, HW, or CM.

## **6.0 ACCIDENTS INVOLVING TRANSPORT VEHICLES**

In the event of an accident, the Subcontractor shall follow the procedures outlined in its Emergency Response Plan and shall be in compliance with the requirements of 49 CFR 390.15, "Assistance in Investigations and Special Studies, Subpart E, Accidents and License Revocation: Duties of Driver," and 172, Subpart G, "Emergency Response Information."

In the event of an accident involving a release of HM, HW, or CM, the Subcontractor shall notify BEI immediately upon learning of the accident, and if initially unsuccessful, will continue to attempt to contact BEI.

Notification of an accident shall include location, date and time of the accident, resultant damage or injury, person(s) involved, probable cause, condition of the load, if HM, HW, or CM was released and the amount, and any other pertinent information concerning the accident. Also to be included if applicable,

are weather conditions, distance to water sources, government agencies on the scene and a telephone number where communications can be maintained.

The motor vehicle operator shall comply with all directions provided by BEI (unless counter to FHWA regulations) and/or the laws and ordinances of the jurisdiction in which the motor vehicle was in operation at the time of the accident. BEI will issue instructions regarding continued transportation of the load. The motor vehicle operator shall remain with the motor vehicle until assistance arrives or until otherwise directed.

The Subcontractor shall submit to BEI within five days of an accident or incident involving a release of HM, HW, or CM a written report which shall include the location, date and time of the accident or incident, resultant damage or injury, person(s) involved, probable cause, the amount of HM, HW, or CM released, government agencies involved, and any other pertinent information concerning the accident or release. In addition, when an accident or incident occurs involving the release of HM, HW, or CM, the Subcontractor shall submit to BEI copies of any accident/incident reports required by State or other governmental entities.

## 7.0 SUBMITTALS

BEI documentation requirements are summarized in the Subcontractor Submittal Requirements Summary of the issued Subcontract package. BEI will determine if documentation is complete as submitted by the Subcontractor, and reserve the right to reject and require resubmittal of any submittal that in BEI's opinion does not meet the Subcontract requirements.

Certificates that are specific to each individual motor vehicle operator (e.g., copy of CDL, Medical Examiner's Certificate) must be available for inspection by BEI site superintendent at the job site. Nonshipment specific submittals (e.g., Carrier Surety Bond, or Policies of Insurance) required upon acceptance of the Subcontract award, must be received within five working days from time of Subcontract award notification and acceptance. Status of the submittals will be made to the Subcontractor by BEI within three working days following the receipt of required submittals. Rejected submittals must be corrected and received by BEI within three working days of notification of submittal rejection. All submittals must be accepted by BEI prior to the start of onsite work.

The minimum required transportation submittals include:

- List of vehicles, type, and size to be provided
- Proof of insurance and bonding
- Name of Subcontractor Representative and contact phone number
- Dimensions and weights of containers

For hazardous materials:

- EPA transporter ID number
- Manifesting documentation

To be available for inspection at the job site:

- Proof of medical qualifications
- Proof of vehicle inspection, daily inspection report, and brake certification
- Proof of Hazmat training
- Federal Motor Carrier Safety Rating
- Route maps
- Emergency Response Plan (if required)

### **8.0 TRANSPORTATION WORK RELEASE**

The attached example is typical of the information provided in a transportation work release.

WORK RELEASE

Subcontract No. 22567-

WORK RELEASE NO.

Work Included:

The work to be performed under this work release will include the items contained below carried out in accordance with the Subcontract documents and technical specifications.

Type of Work: X Equipment Lease X Profile/ID X Transportation
X Treatment X Disposal

Site Location:



IR-3, Truman Annex DDT Mixing Area
Naval Air Station
Keywest, Florida

NOTE: Waste will be profiled prior to excavation and then stockpiled for loading purposes.

Table with 4 columns: Required Equipment, Quantity Required, Date Required, Lease Duration. Rows include Tractor, Flatbed Trailer, Roll-Off Trailer, Roll On/Roll Off Container, Overpacks, Dump-Style Trailer, Scales to Weigh Trucks.

Schedule for Work Effort: Monday thru Thursday Loading Operation. Arrival Times 7:30-1st Truck, 8:30-2nd Truck, 9:30-3rd Truck, 10:30-4th Truck, 12:30-5th Truck, 1:30-6th Truck, 2:30-7th Truck, 3:30-8th Truck See attached Schedule for Further Info.

Material to be Transported: Hazardous Waste-U061 (DDT).

Container Types:

\_ Drums Quantity \_\_\_ ea. Total Estimated Weight of Each Vehicle: \_\_\_
\_ Roll on/Roll off Quantity \_\_\_ ea. Total Estimated Weight of Each Vehicle: \_\_\_
X Other Quantity 63 ea. Total Estimated Weight of Each Vehicle: 80,000 lbs.
Description for Other: Dump Style Truck shall meet the criteria of a sift-proof strong tight container.

Additional Information or Instructions: Tentative Schedule Provided; however, dates may shift +/- 30 days. Waste shall be sampled while in-situ and then stockpiled for transport.

Prepared By: \_\_\_\_\_ Date: \_\_\_\_\_
Approved By: \_\_\_\_\_ Date: \_\_\_\_\_
Subcontractor Concurrence: \_\_\_\_\_ Date: \_\_\_\_\_



## DEPARTMENT OF THE NAVY

SOUTHERN DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 P.O. BOX 110010  
 2105 EAGLE DRIVE  
 NORTH CHARLESTON, S.C. 29419-0010

11000/064DC  
 15 October 1998

Ms Laura Kammerer, Supervisor-Compliance Review  
 Florida Department of State  
 Bureau of Historic Preservation  
 4<sup>th</sup> Floor R. A. Gray Building  
 500 Bronough Street  
 Tallahassee, Florida 32399-0250

Re: PLANNED ENVIRONMENTAL CLEAN UP OF 3 BRAC SITES ON NAVY  
 PROPERTY AT NAVAL AIR STATION, KEY WEST, FLORIDA

Dear Ms. Kammerer,

In compliance with the Comprehensive Environmental Compensation Liability Act (CERCLA), the Navy has through its Comprehensive Long-term Environmental Action-Navy (CLEAN) contractor identified three (3) minor clean up sites on Navy Historic properties on Key West, Florida that must be cleared of hazardous or contaminated site soils prior to any potential BRAC transfer action on these properties. There are two (2) sites on Truman Annex and one (1) on the old Hawk Missile Site adjacent to the Key West International Airport.

These three (3) sites (a.k.a. "GRIDS") include:

- \*\* Truman Annex -site at Seminole Battery—GRID 25' X 25' X 2ft deep
- \*\* Truman Annex - site near Fort Zachary Taylor between Bldgs 261 and 284  
 GRID is 35 X 150 X 2 FT deep or down to cap rock.
- \*\* Hawk Missile Site-three locations. Two GRIDS measuring 25' x 25' X 2 ft deep and  
 One sediment GRID measuring 30' X 80" X 1ft deep.

Enclosure (1) provides a location map of each site with a brief description of the size and depth of each clean up site. Enclosure (2) is a detailed description of the clean-up procedures to be followed at sites.

The existing contaminated material will be replaced with clean uncontaminated "in kind" inorganic native material from a local borrow pit. The excavated contaminated waste earth will be handled in accordance with applicable state and federal laws for such undertakings. Although the excavated material is non-hazardous to human health, it will be processed in accordance with existing Federal and Florida laws addressing the disposal of contaminated materials. At the Fort Zachary Taylor site it is suspected that old ammunition and other potentially dangerous ordnance could exist under ground. Consequently, the CLEAN contractors will be fully instructed in the Section 106 procedures to follow when/if archeological finds are encountered on a clean-up site.

Direct questions to Don Cough, Asst. Historic Preservation Officer at (843) 820-5894 or Dudley Patrick, Remedial Project manager at (843) 820-5541.

We feel that these undertakings will have no adverse effect to the historic structures on these sites. We do hereby request your concurrence with our findings by signing in the space provided at the bottom of this correspondence.

*archaeologic resources*  
*(LAK)*  
*RNJ*

*R. N. Johnson*  
R. N. JOHNSON  
By direction

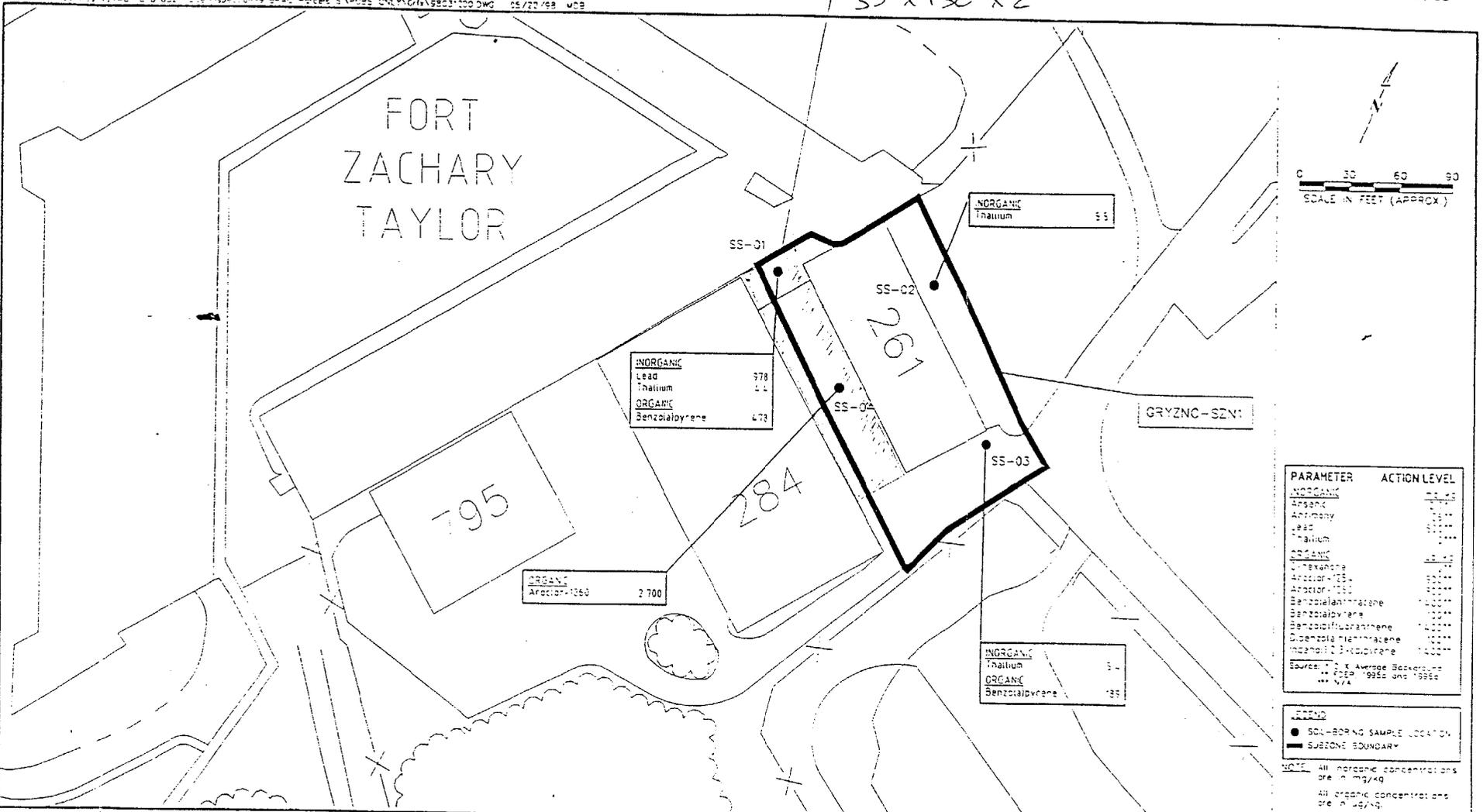
CONCUR: *Laura R. Kammerer* Date: 10-16-98  
*for* Florida State Historic Preservation Officer

*RNJ* Precautions to CLEAN contractors to avoid all damage to H. Taylor wall masonry.

Acknowledge above 2 additions.

*R. N. Johnson* Date: 10-16-98  
PRESERVATION OFFICER  
SOUTH DIVISION - CHAS. N.

Soils  
35' x 150' x 2'



Enclosure (1)

| NO. | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES |
|-----|------|-----------|----|------|------|------------|
|     |      |           |    |      |      |            |
|     |      |           |    |      |      |            |
|     |      |           |    |      |      |            |
|     |      |           |    |      |      |            |

DRAWN BY \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

COST/SCHEM-AREA \_\_\_\_\_

SCALE AS NOTED



SITE INSPECTION REPORT FOR NINE BRAC PARCELS  
FIGURE 4-2. SUBZONE 1 SAMPLE LOCATIONS & CHEMICAL EXCEEDANCES  
BRAC PARCEL C - DRMO WASTE STORAGE AREA  
NAVY SOUTHERN DIVISION  
NAS KEY WEST, FLORIDA

CONTRACT NO. 7500

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_

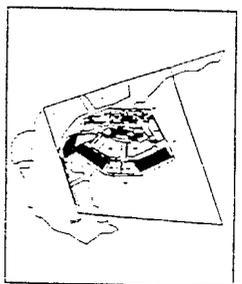
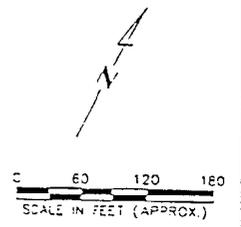
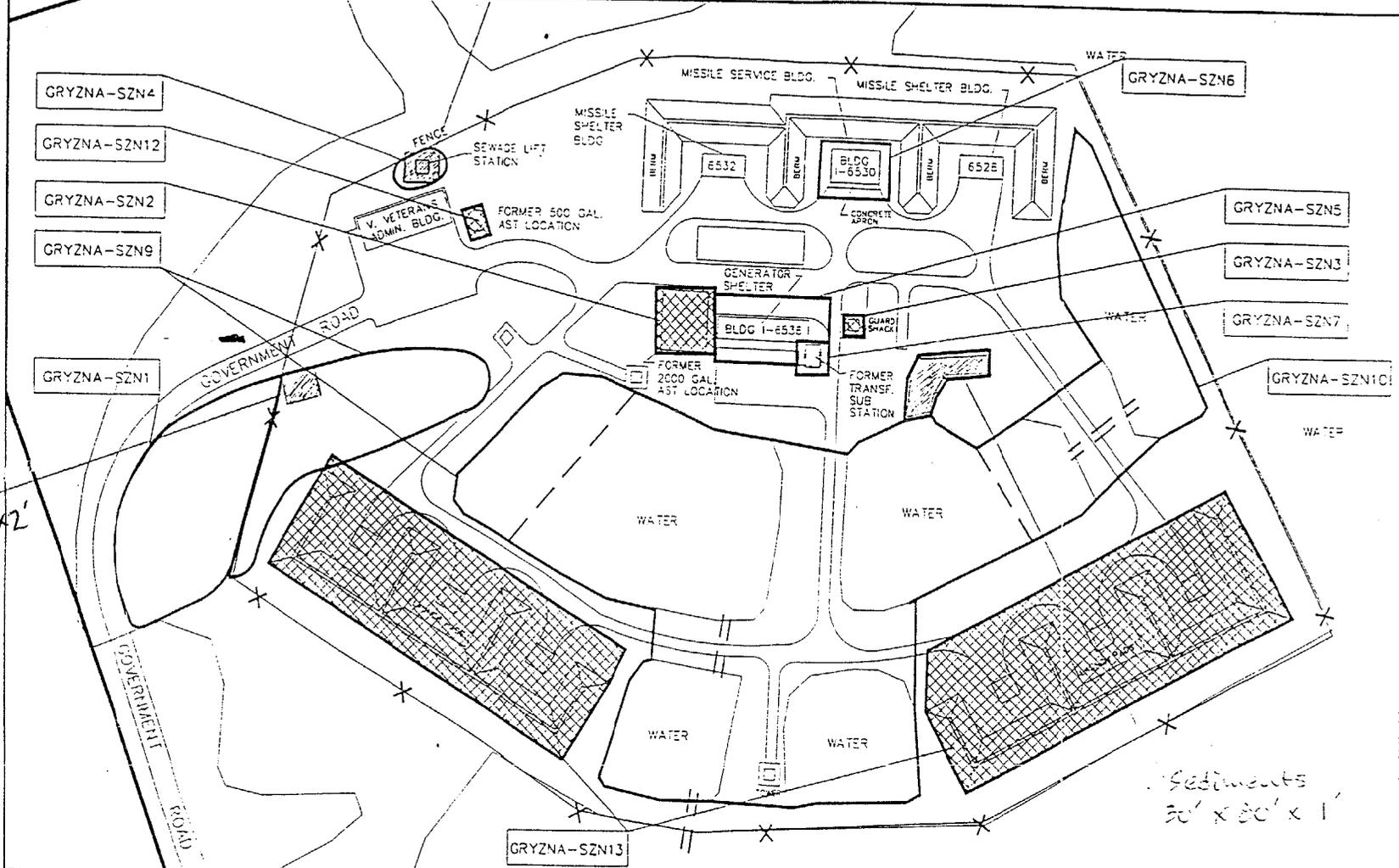
DRAWN BY 98031200.dwg



Soils  
25' x 25' x 2'

Rev. 0  
6/3/98

ACAD: P:\Key West\BRAC\1070\0321\Site Inspection\9 BRAC Parcels\SWRUBS ONLY\1070\97061305.dwg 05/25/98 MJB



LEGEND  
 Area not of concern

NOTE:  
 GRYZNA-SZN8 Remainder of Parcel A Soil is not of concern  
 GRYZNA-SZN11 Groundwater Squeeze includes all of Parcel A

Sediments  
30' x 30' x 1'

Soils  
25' x 25' x 2'

Enclosure (1)  
Page 3

| NO | DATE | REVISIONS | BY | CHKD | APPD | REFERENCES |
|----|------|-----------|----|------|------|------------|
|    |      |           |    |      |      |            |
|    |      |           |    |      |      |            |
|    |      |           |    |      |      |            |
|    |      |           |    |      |      |            |

|                 |          |
|-----------------|----------|
| DRAWN BY        | DATE     |
| CHECKED BY      | DATE     |
| COST/SCHED-AREA |          |
| SCALE           | AS NOTED |



SITE INSPECTION REPORT FOR NINE BRAC PARCELS  
 FIGURE 2-1. PARCEL AND SUBZONE BOUNDARIES  
 BRAC PARCEL A - HAMACA HAWK MISSILE SITE  
 NAVY SOUTHERN DIVISION  
 NAS KEY WEST, FLORIDA

|                              |
|------------------------------|
| CONTRACT NO.<br>7593         |
| APPROVED BY _____ DATE _____ |
| APPROVED BY _____ DATE _____ |
| DRAWING NO.<br>97061305.dwg  |

**Procedure for Excavation of Contaminated Soils and Sediments  
and Replacement with Clean Fill at  
Truman Annex and Hawk Missile Site  
Naval Air Station Key West, Florida**

**Location**

The location of the work is on US Navy property at the Truman Annex and at the Former Hawk Missile site near Key West International Airport. Two distinct areas at Truman Annex will be addressed, as depicted on Figures 4-2 and 5-2, pages 1 and 2 of enclosure (1), respectively. Three distinct areas at Hawk Missile site will be addressed, as depicted on Figure 2-1 on page 3 of enclosure (1).

**General Procedure**

The following general procedure will be utilized for both soil and sediments at all locations:

1. First, a utility survey will be performed.
2. The necessary dig permits will be obtained from the NAS.
3. The area will be excavated to a depth of 2 feet or caprock for soil, 1 foot for sediments.
4. Areas where soil was removed will be backfilled with like (crushed limestone) material and compacted. Areas where sediment was removed will not be backfilled.
5. All excavated material will be transported offsite to an approved landfill.
6. A civil survey will be performed to document the extent of excavation.

**Special Procedures**

The following special procedures will be utilized as the situation warrants:

1. The area directly adjacent to Fort Zachary Taylor will be hand-excavated at the wall.
2. In the event that historical or archeological artifacts are unearthed, the NAS Natural and Cultural Resources Manager will be notified immediately, and the work in the area stopped.

**Timetable**

The work is currently scheduled to occur, availability of funds permitting, in November and December 1998, completing in January 1999.

**Point of Contact**

The point of contact for the US Navy is Mr. Dudley Patrick, Remedial Project Manager, in Charleston, SC. He can be reached at (843) 820-5541, fax (843) 820-7465.

Dudley Patrick's comments on the RWP for BRAC Parcels Fast Track Soil Removals at NAS Key West, Florida, are as follows:

**Comment 1:**

Paragraphs 2.1.1, 2.1.2, 2.1.3. Though no "archeological items" are expected at the Hawk Missile Site, it is OK to leave this sentence as is.

**Response:** Comment noted.

**Comment 2:**

Paragraphs 2.2.1 & 2.3.1, 2nd bullet. Delete "at SOUTHDIV". The SHPO is a representative of the state of Florida.

**Response:** Comment noted and text revised.

**Comment 3:**

Figure 9. As discussed at last week's meeting in Key West, be sure to include the 0-4 ft hit in front of Bldg 103 as shown on Chuck's tag map, at sample point E09-SS-11. Need add to legend to cover 0-4 ft.

**Response:** Comment noted and figure revised.

**Comment 4:**

Address Mark Ewing's comments.

**Response:** See responses to Mark's comments.

Mark Ewing's comments on the RWP for BRAC Parcels Fast Track Soil Removals at NAS Key West, Florida, are as follows:

**Comment 1:**

Delineation sampling by Bechtel vs. Tetra Tech NUS would be more cost and schedule efficient.

**Response:** While Bechtel would welcome the opportunity to conduct the sampling for this work, the sampling is not budgeted in Bechtel's scope.

**Comment 2:**

Will Tetra Tech NUS be establishing initial delineation of area to be excavated? The figures 1-11 do not include dimensions from any point of reference.

**Response:** The removal actions are based on sampling locations and in some cases the grid that was established by Tetra Tech NUS. Bechtel will coordinate with Tetra Tech NUS prior to the start of any activities in the areas to be excavated.

**Comment 3:**

What soil removal action, if any, is required at Truman Annex Parcel K?

**Response:** No soil removals are planned or needed at Parcel K.

**Comment 4:**

What restoration, if any, will be performed at excavations after backfilling? Recommend seeding.

**Response:** The reuse plan for these areas involves a lot of construction. Any seeding would be destroyed by these activities, therefore reseeded was not included in Bechtel's scope.

**Comment 5:**

Specification 22567-001-SP000-05, "Contaminated Earthwork and Miscellaneous Demolition", Part 1, Paragraph 1.4: add US Army Corps of Engineers Safety and Health Manual, EM 385-1-1.

**Response:** This manual is referenced by Bechtel's Health and Safety Policy prepared for the Navy RAC Project. This Policy covers all of the Navy RAC work. As such, the specification does not need to be revised to add this reference.

**Comment 6:**

Specification 22567-001-SP000-05, "Contaminated Earthwork and Miscellaneous Demolition", Part 1, paragraph 1.3.5 excludes loading and transporting contaminated material. Specification 001-SP000-03, "Transportation of Contaminated Material", includes transportation. What specification includes loading of transport vehicles?

**Response:** These are standard specifications written for the case when an excavation subcontractor and a separate transportation subcontractor is working the same site. In our case only one subcontractor will be used for both tasks and the Scope of Work details all the activities the subcontractor is to perform. A copy of the Scope of Work is included for reference.

**Comment 7:**

Specification 22567-001-SP000-05, "Contaminated Earthwork and Miscellaneous Demolition", Part III, paragraph 3.1 indicates Bechtel will provide "available" underground utility information. This could be included in the subcontractor scope of work and if so, must include an electromagnetic search for underground utilities per the basic contract. Otherwise, Bechtel or some other subcontractor shall perform electromagnetic search.

**Response:** The Scope of Work for the excavation subcontractor includes all utility searches. A copy of the Scope of Work is attached for reference.

Chuck Bryan's comments on the RWP for BRAC Parcels Fast Track Soil Removals at NAS Key West, Florida, are as follows:

**Comment 1:**

Page ii, Contents

Sections 2.5.1 and 2.5.2, Both say BRAC Parcel E, **should say BRAC Parcel F**

**Response:** Comment noted and text revised.

**Comment 2:**

Page ii, Contents

Section 2.4.3, says Subzone 9 Buildings 103, should say **Building 103**

**Response:** This section has been deleted.

**Comment 3:**

Page 1, 2<sup>nd</sup> paragraph

"Delineation sampling, confirmation sampling, and waste characterization will be performed by Tetra Tech NUS and **are** not in Bechtel's scope of work."

**Response:** Comment noted and text revised.

**Comment 4:**

Page 2, Section 1.3, 3<sup>rd</sup> bullet

Parcel E – Buildings 102, 103 and 104

**Response:** Comment noted and text revised.

**Comment 5:**

Page 2, Section 1.3, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence

"The Army, to **build** Fort Zachary Taylor, used..."

**Response:** Comment noted and text revised.

**Comment 6:**

Page 4, 1<sup>st</sup> complete sentence, change form to from and delete repeated drain

"The water will drain **from** the GEOTUBE **and back** into the pond."

**Response:** Comment noted and text revised.

**Comment 7:**

Page 4, Section 2.2.1

Should re-paving be added to the list of activities to restore site to original conditions?

**Response:** The reuse plan for these areas involves a lot of construction. Any paving would be destroyed by these activities, therefore repaving was not included in Bechtel's scope.

**Comment 8:**

Page 5, Section 2.3.1, 2<sup>nd</sup> bullet

Delete **State**, should be "Clearance for excavation next to the historic Seminole Battery will be obtained from the **Historic Preservation Officer** at SOUTHDIV."

**Response:** The officer is a state official. The words "at SOUTHDIV" have been deleted.

**Comment 9:**

Page 6, Section 2.4.3

Title says Subzone 9 Buildings 103, should be **Building 103**

**Response:** This section has been deleted.

**Comment 10:**

Page 6, Sections 2.5.1 and 2.5.2

Both these sections are labeled as Parcel E, and **should be Parcel F**

**Response:** Comment noted and text revised.

**Comment 11:**

Page 9, Section 4.2, last sentence in paragraph

"Hazardous waste will not be offered to any transporters or treatment, storage or disposal facilities (TSDFs) that **does** not have an EPA identification number."

**Response:** Comment noted and text revised.

**Comment 12:**

Page 10, Section 6, 2<sup>nd</sup> sentence

Add hyphen, "A **task-specific** Safety and Health Plan..."

**Response:** Comment noted and text revised.

**Comment 13:**

Regarding Safety and Health Plan, where is the document? TtNUS will need this.

**Response:** This document is being prepared and a copy will be forwarded to TtNUS when it is completed.

DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION

SCOPE OF WORK  
FOR  
EXCAVATION AND DISPOSAL  
AT  
THE BRAC PARCELS  
NAVAL AIR STATION KEY WEST, FLORIDA

|   |   |                     |                                 |            |            |             |  |
|---|---|---------------------|---------------------------------|------------|------------|-------------|--|
|   |   |                     |                                 |            |            |             |  |
|   |   |                     |                                 |            |            |             |  |
|   |   |                     |                                 |            |            |             |  |
| 0   | 10/21/98  | Issued for Use      | <i>Retn</i>                     | <i>KSA</i> | <i>Shy</i> | <i>Retn</i> |  |
| REV   | DATE  | REASON FOR REVISION | BY                              | Check      | EGS        | PE          |  |
|  | Excavation and Disposal at the BRAC Parcels<br>Naval Air Station, Key West, Florida |                     | JOB NO. 22567                   |            |            |             |  |
|   |   |                     | Scope of Work<br>327-SW0839-001 |            |            | REV.<br>0   |  |
|   |   |                     | Page 1 of 10                    |            |            |             |  |

CONTENTS

Page

1.0 SUMMARY OF WORK .....3  
1.1 MOBILIZATION .....3  
1.2 DEMOBILIZATION .....4  
2.0 WORK ACTIVITIES .....4  
2.1 Work Plan .....4  
2.2 Health and Safety Program .....4  
2.3 Work Area Requirements .....4  
2.4 Earthwork .....4  
2.5 Site Restoration .....5  
2.6 Emergency Response .....5  
3.0 SCOPE OF WORK .....6  
3.1 HAWK MISSILE SITE (PARCEL A) .....6  
3.1.1 BRAC Parcel A – Subzone 4, Sewage Lift Station .....6  
3.1.2 BRAC Parcel A – Subzone 9, Wetland Area Adjacent to Government Road .....6  
3.1.3 BRAC Parcel A – Subzone 9, Pond Sediments .....6  
3.2 TRUMAN ANNEX DRMO WASTE STORAGE AREA (PARCEL C) .....7  
3.2.1 BRAC Parcel C – Subzone 1, Building 261 .....7  
3.3 TRUMAN ANNEX SEMINOLE BATTERY (PARCEL D) .....7  
3.4 TRUMAN ANNEX BUILDINGS 102, 103, AND 104 (PARCEL E) .....8  
3.4.1 BRAC Parcel E – Subzone 2, Former Location of Building 136 .....8  
3.4.2 BRAC Parcel E – Subzones 3 and 9, Buildings 102, 103, and 104 .....8  
3.5 TRUMAN ANNEX BUILDING 223 (PARCEL F) .....8  
3.5.1 BRAC Parcel F – Subzone 1, Former Lube Area .....8  
3.5.2 BRAC Parcel F – Subzone 3, Former Hazardous Waste Storage Area .....9  
4.0 WASTE MANAGEMENT .....9  
5.0 DOCUMENTATION AND SUBMITTALS .....9  
6.0 WORK NOT INCLUDED .....9

Attachment

Figures

**EXCAVATION AND DISPOSAL  
AT  
THE BRAC PARCELS  
NAVAL AIR STATION KEY WEST, FLORIDA**

**1.0 SUMMARY OF WORK**

The work included in this Subcontract is remediation services for the excavation and disposal of contaminated soils at several Base Realignment and Closure (BRAC) Parcels at the Naval Air Station (NAS) Key West, Florida. Figure 1 is a location map for NAS Key West. Figure 2 shows the approximate location of the various BRAC Parcels.

The SUBCONTRACTOR will be responsible under this scope for performing the following activities along with all other requirements as detailed herein.

- A. Preparation of pre-work submittals, including a Work Plan.
- B. Mobilization of equipment and personnel to Key West.
- C. Setup of equipment at Key West.
- D. Providing support equipment, utilities, and facilities as necessary to accomplish the scope of work.
- E. Excavation of the soils in the contaminated areas on the BRAC Parcels.
- F. Transportation and disposal of the contaminated soils to a licensed disposal facility.
- G. Backfill of the excavations with clean soil, meeting the specified compaction requirements.
- H. Management and disposal of any free product, petroleum contact water, and decon water.
- I. Site restoration, decontamination, and demobilization of equipment and personnel.
- J. Preparation of post-work submittals.

**1.1 MOBILIZATION**

Mobilization includes preparation of all pre-work submittals and any required permits, compliance testing, setup of the site, and delivering to Key West all personnel, equipment, and materials necessary to perform the work in this scope. Mobilization of equipment and personnel to Key West will be initiated by written "Notice to Proceed" from BECHTEL. Mobilization will also include:

- 1. A pre-construction meeting at NAS Key West on the first day of mobilization to discuss the details of the site locations and other pertinent details. This meeting is expected to last approximately 2 hours. The preliminary agenda includes discussions on security, responsibilities, contacts, BECHTEL Subcontract Technical Representative (STR) roles and responsibilities, change orders, submittals, daily reports, and NAS Key West requirements. A final agenda will be provided by BECHTEL before the meeting. The SUBCONTRACTOR's site supervisor must attend this meeting.
- 2. Acquiring NAS Key West vehicle passes and personnel badges.
- 3. Setting up temporary laydown areas, decon pad, and support facilities needed to perform the work at Truman Annex and Hawk Missile Site as necessary. SUBCONTRACTOR shall provide sanitary facilities, water, ice, etc., for its personnel during work activities. Bechtel will provide office space.
- 4. Site-specific training attended by all site personnel that will address site orientation, site work rules, procedures, and safety and health requirements. This training is expected to last approximately 1 hour and must be attended by all site personnel.

## 1.2 DEMOBILIZATION

Demobilization includes removing from the site all personnel, equipment, materials, and temporary construction used to support work performed. Final site restoration and cleaning, waste disposal, and submittal of waste manifests and certificates of disposal are also included in demobilization. Post-work submittals shall be transmitted to BECHTEL within 21 calendar days after site demobilization.

## 2.0 WORK ACTIVITIES

### 2.1 WORK PLAN

The SUBCONTRACTOR shall prepare a Work Plan that addresses as a minimum ALL of the work activities required to perform this scope of work. The Work Plan shall describe in detail:

1. Work requirements and sequencing.
2. Organization, name, title, and work functions of personnel.
3. Work area requirements.
4. Site security.
5. Major equipment to be employed, including make and model.
6. Communication methods to be used.
7. Stand-by emergency response equipment and materials.
8. Excavation methods and equipment to be employed.
9. Water management plan, including stormwater runoff and runoff, decontamination water, and petroleum contact water.
10. Decontamination plan for the decontamination of equipment used for this scope of work.

### 2.2 HEALTH AND SAFETY PROGRAM

The SUBCONTRACTOR shall have a Safety and Health Program meeting the requirements specified in Exhibit G of the subcontract.

### 2.3 WORK AREA REQUIREMENTS

The SUBCONTRACTOR shall provide an accurate description of the area needed at each excavation and clearances required. The SUBCONTRACTOR shall establish and maintain work zones that are clearly marked. The SUBCONTRACTOR will be responsible for site improvements and restoration necessary for the placement, use, and storage of the SUBCONTRACTOR's equipment.

### 2.4 EARTHWORK

Before beginning excavation, the designated areas will be checked for by the SUBCONTRACTOR for existing utilities and other potential interferences. The SUBCONTRACTOR will obtain any necessary excavation permits from the local utility companies and will also perform a walkdown of the areas to be excavated to visually observe locations of manholes, hydrants, valves, open cuts, overhead obstructions, curbs, buildings, etc., and other unusual conditions. In addition, the SUBCONTRACTOR will perform

location surveys using standard field utility detection equipment. No excavation will be initiated until the subgrade interference survey is complete. "Technical Specification for Contaminated Earthwork and Miscellaneous Demolition" and "Technical Specification for Uncontaminated Earthwork" provide specifications for excavation activities.

All excavation will be by backhoe and/or excavator where practical. In areas where interferences are present and preclude use of mechanized equipment, excavation will be by hand. All interferences such as existing utilities will be properly maintained while the excavation is in progress and remain protected until the excavation is backfilled. Hand excavation may also be required adjacent to historic structures, as directed by BECHTEL.

Backfill of excavated areas will be performed after the results of the confirmatory sampling of the excavation are received and are reviewed by BECHTEL. In the interim, the area of excavation will remain open and will be protected using temporary fencing to avoid inadvertent intrusion. Backfill material will be from SUBCONTRACTOR-identified offsite borrow areas approved by BECHTEL. All material placed within the excavations will be field compacted with the tracks of earth moving equipment or roller compactors to a minimum of 85 percent compaction or no less than four passes of the earth moving equipment. Material shall be compacted in lifts of approximately 1 ft.

Before backfilling, an appropriate amount of crushed stone may be provided as a bottom layer in order to stabilize saturated material resulting from groundwater intrusion within the open excavation. Standing water in the excavation will not be removed before backfilling, unless directed by BECHTEL. If required, this layer of crushed stone will provide the means to achieve the desired compaction. Backfilling with a layer of gravel will be at the direction of BECHTEL.

## 2.5 SITE RESTORATION

The SUBCONTRACTOR will restore the site after completion of work. This will include:

- Removal of all SUBCONTRACTOR's equipment, remaining supplies, trash, and debris.
- Excavation areas at all sites will be graded and shaped to drain after backfilling.
- Any areas outside of the excavation that are damaged by the SUBCONTRACTOR's equipment will be leveled and repaired as required.
- Any fencing that is removed or damaged during the execution of work activities shall be repaired or replaced by the SUBCONTRACTOR.

## 2.6 EMERGENCY RESPONSE

The SUBCONTRACTOR will provide a plan and the necessary equipment to address potential emergencies during the implementation of this scope of work. This plan is to be part of the Work Plan and shall include but is not limited to:

- Spills
- Communications
- Waste transportation accidents

### 3.0 SCOPE OF WORK

#### 3.1 HAWK MISSILE SITE (PARCEL A)

##### 3.1.1 BRAC Parcel A – Subzone 4, Sewage Lift Station

At sample locations SS-02, SS-03 and SS-04 surface soil samples exceeded the action level for arsenic. The following activities will be required to complete the soil removal actions at this site:

- A utility survey will be performed
- A 25-ft × 35-ft × 2-ft deep area will be excavated at this location. The excavation depth will be to 2 ft or until caprock is encountered. Figure 3 details the area of the excavation.
- The excavated material will be disposed of as nonhazardous waste.
- Excavated areas at this location will be backfilled with government owned material available on the site.

##### 3.1.2 BRAC Parcel A – Subzone 9, Wetland Area Adjacent to Government Road

At sample location SD-08, one sediment soil sample exceeded the action level for aluminum, lead, vanadium, and DDE. The following activities will be required to complete the sediment removal at this site:

- A utility survey will be performed.
- A 25-ft × 25-ft × 2-ft deep area will be excavated at this location. The excavation depth will be to 2 ft deep or until caprock is encountered. Figure 4 details the area of the excavation.
- The excavated material will be disposed of as nonhazardous waste.
- The excavated area will be backfilled in accordance with the wetlands permit and the site will be allowed to naturally revegetate.

##### 3.1.3 BRAC Parcel A – Subzone 9, Pond Sediments

At sample location SD-05, one sediment sample exceeded the action level for cadmium, lead, DDE, bis (2-ethylhexyl) phthalate, and butyl benzyl phthalate. This sample is in a 30-ft by 40-ft pond surrounded by mangroves. Figure 4 shows the location of the pond. The following activities will be required to complete the sediment removal at this site:

- The cable trays and supports in the pond will be removed and disposed of.
- Some mangroves may need to be removed for access to the pond. This removal will be kept to a minimum.
- The sediments will be removed with a long-reach excavator. Sediments will be placed on a drying bed constructed of straw bales and geotextile fabric and allowed to dry; then be loaded for disposal.
- Any remaining sediments in the pond will be removed by hydraulic dredging. A 4-in. diaphragm pump will be used to pump the sediments from the bottom of the pond. All the sediments in the pond will be removed up to the edge of the mangrove roots. The pumped sediments will be placed

into a "GEOTUBE" filtering tube. The water will drain from the GEOTUBE back into the pond. The GEOTUBE will be allowed to dry, and the sediments will be loaded into a truck for disposal.

- The sediments will be disposed of as a nonhazardous waste.
- The excavated area will not be backfilled.

### **3.2 TRUMAN ANNEX DRMO WASTE STORAGE AREA (PARCEL C)**

#### **3.2.1 BRAC Parcel C – Subzone 1, Building 261**

At sample locations SS-01 and SS-04 surface soil samples exceeded the action level for PCBs, lead, and PAHs. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- The area indicated on Figure 5 will be excavated to a depth of 2 ft or until caprock is encountered.
- If any archeological items are unearthed during excavation activities, BECHTEL shall be immediately notified. All excavation activities will cease in the area until clearance to resume is given to the SUBCONTRACTOR by BECHTEL.
- The excavated material will be disposed of as nonhazardous waste.
- This excavated area will be backfilled.

#### **3.2.2 BRAC Parcel C – Subzone 3 and 4, DRMO Waste Storage Area**

At this site elevated levels of organics and inorganics were detected in the sampling results. The following activities will be required to complete the soil removals at this site:

- The remaining metal debris and trash will be collected and recycled or disposed of as nonhazardous waste.
- A utility survey will be performed.
- The areas indicated on Figure 6 will be excavated to a depth shown or until caprock or the water table is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- The excavated area will be backfilled.

### **3.3 TRUMAN ANNEX SEMINOLE BATTERY (PARCEL D)**

One location at the Seminole Battery (Parcel D) is included in the BRAC Fast Track Soil Removals. At sample location SS-03 surface soil sample results exceeded the action levels for arsenic and PAHs. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- A 25-ft by 25-ft area will be excavated to a depth of 2 ft or until caprock is encountered. See Figure 7 for the location of the excavation.

- If any archeological items are unearthed during excavation activities, BECHTEL shall be notified. All excavation activities will cease in the area until clearance to resume is given by BECHTEL.
- The excavated material will be disposed of as nonhazardous waste.
- The excavated area will be backfilled.

### **3.4 TRUMAN ANNEX BUILDINGS 102, 103, AND 104 (PARCEL E)**

#### **3.4.1 BRAC Parcel E – Subzone 2, Former Location of Building 136**

At this site elevated levels of PAHs and inorganics were detected. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- The areas indicated on Figure 8 will be excavated to the depth indicated or until caprock or the water table is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- The excavated area will be backfilled.

#### **3.4.2 BRAC Parcel E – Subzones 3 and 9, Buildings 102, 103, and 104**

At this site elevated levels of PAHs were detected at several sample locations within these subzones. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed
- The areas indicated on Figure 9 will be excavated to the depth indicated on the figure or until caprock or the water table is encountered.
- Free product could be encountered at the southern end of Building 103. Any free product encountered will be collected from the excavation with a vac truck.
- The excavated material and recovered free product will be disposed of as nonhazardous waste.
- The excavated areas will be backfilled.

### **3.5 TRUMAN ANNEX BUILDING 223 (PARCEL F)**

#### **3.5.1 BRAC Parcel F – Subzone 1, Former Lube Area**

At this site an elevated level of arsenic was detected at sample location SS-04. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- One 25-ft by 25-ft area indicated on Figure 10 will be excavated to a depth of 2 ft or until caprock is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- The excavated area will be backfilled.

### **3.5.2 BRAC Parcel F – Subzone 3, Former Hazardous Waste Storage Area**

At this site an elevated level of arsenic was detected at sample location SS-01. The following activities will be required to complete the soil removal at this site:

- A utility survey will be performed.
- One 25-ft by 25-ft area indicated on Figure 11 will be excavated to a depth of 2 ft or until caprock is encountered.
- The excavated material will be disposed of as nonhazardous waste.
- The excavated area will be backfilled.

## **4.0 WASTE MANAGEMENT**

The SUBCONTRACTOR will be responsible for the transportation and disposal of all contaminated soils, decontamination water, petroleum contact water and free product generated by the excavation activities related to the BRAC Parcels. The SUBCONTRACTOR shall:

- Store and transport waste material in accordance with all local, state, and federal regulations.
- Containerize all decontamination water, petroleum contact water, and free product. Waste management regulations for Petroleum Contact Water are found in FAC 62-740.
- Prepare generator Waste Characterization Report for Navy signature as generator, forward the signed report to the disposal facility for approval to accept wastes, and provide BECHTEL a copy.
- Provide BECHTEL a copy of the disposal facility approval to accept the waste material.
- Complete the required waste manifests for signature by the Navy as generator and provide BECHTEL a copy.
- Notify BECHTEL 72 hours in advance of any waste shipments to a disposal facility.
- Submit certifications of disposal to BECHTEL 7 calendar days after disposal.
- Provide offsite disposal of all garbage, trash, rubbish, and construction debris that is generated as a result of these services.

The Technical Specification for Transportation of Contaminated Materials provides specifications guidance for loading transporting and manifesting of hazardous wastes and other contaminated materials.

## **5.0 DOCUMENTATION AND SUBMITTALS**

All documentation and submittals shall be supplied to BECHTEL in accordance with the SUBCONTRACTOR Submittal Requirements Summary (SSRS), Exhibit F of the subcontract document.

## **6.0 WORK NOT INCLUDED**

The following items of related work are not included:

- Confirmation sampling of the excavated areas.

- Characterization sampling for waste disposal.
- Obtaining wetlands permits.
- Reseeding excavated areas.
- Civil surveys.
- Site layouts.

## Attachment

### Figures

| Figure No. | Title   |
|------------|---|
| 1          | Location Map for NAS Key West                             |
| 2          | BRAC Parcels Locations                                    |
| 3          | Parcel A – Subzone 4, Sewage Lift Station                 |
| 4          | Parcel B – Subzone 9, Wetland Areas                       |
| 5          | Parcel C – Subzone 1, Building 261                        |
| 6          | Parcel C – Subzones 3 and 4, DRMO Waste Storage Area      |
| 7          | Parcel D – Truman Annex Seminole Battery                  |
| 8          | Parcel E – Subzone 3, Former Location of Building 136     |
| 9          | Parcel E – Subzones 3 and 9, Buildings 102, 103, and 104  |
| 10         | Parcel F – Subzone 1, Former Lube Area                    |
| 11         | Parcel F – Subzone 3, Former Hazardous Waste Storage Area |

AIK-98-0245

1-20

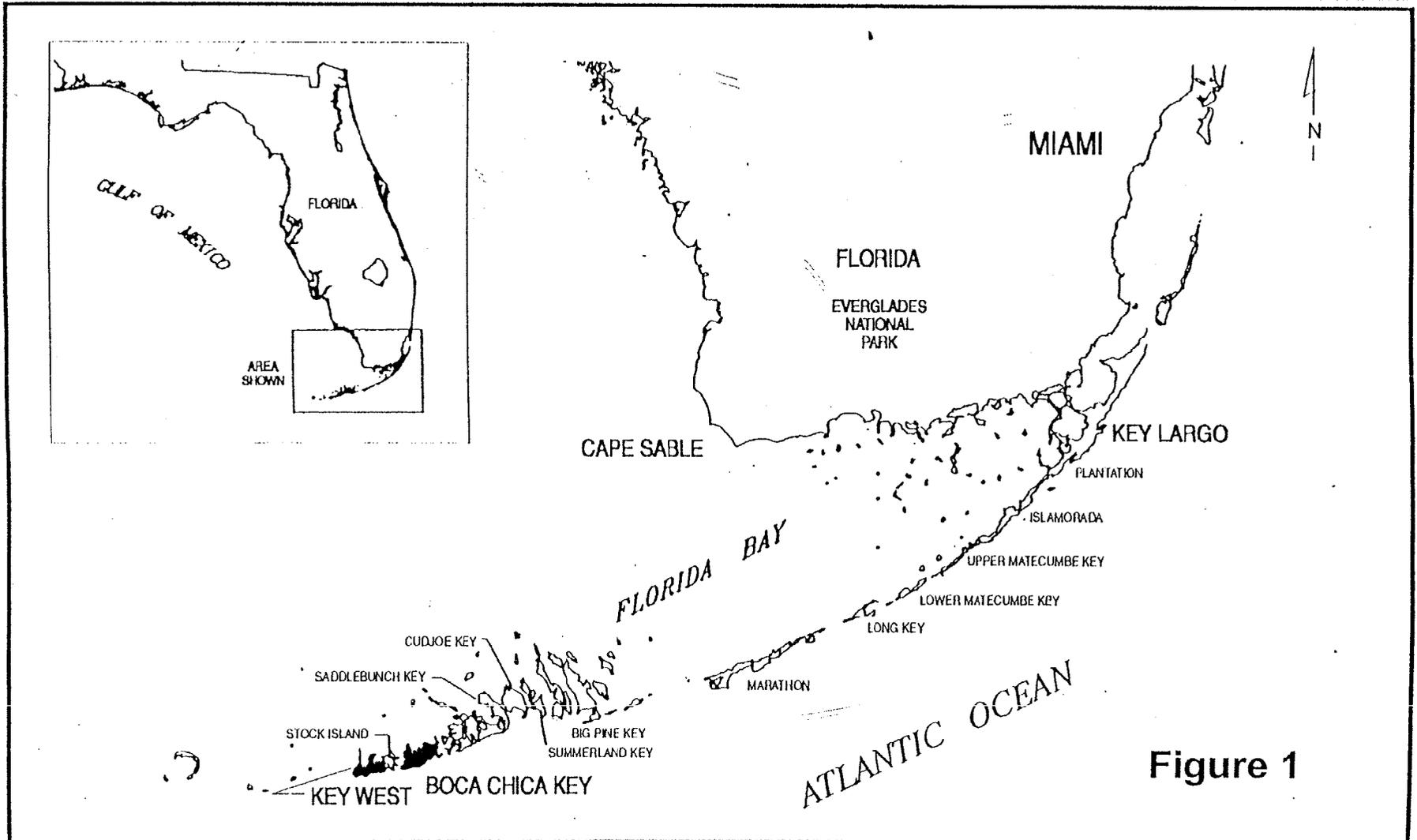


Figure 1

|  |                                    |   |  |  |
|--|------------------------------------|---|--|--|
| DRAWN BY<br>MDB<br>CHECKED BY<br>DSP<br>COST/SCHED-AREA<br>SCALE<br>N.T.S. | DATE<br>3/12/98<br>DATE<br>3/12/98 |  | SITE INSPECTION REPORT FOR<br>NINE BRAC PARCELS<br>LOCATION MAP<br>NAVAL AIR STATION KEY WEST<br>NAVY SOUTHERN DIVISION<br>NAS KEY WEST, FLORIDA | CONTRACT NO.<br>7593   |
|  |                                    |   |  | APPROVED BY _____ DATE _____<br>APPROVED BY _____ DATE _____<br>DRAWING NO. F1-1BRAC.PPT**F1-1LINK.TIF |

CTO 0032

6/3/98