Explanation of Significant Differences

for the

Upper and Lower Harbor Operable Unit

New Bedford Harbor Superfund Site

New Bedford, Massachusetts

September 2001

U.S. Environmental Protection Agency - New England Region

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I. Introduction

A. Site Name and Location

Site Name: New Bedford Harbor, Upper and Lower Harbor Operable Unit (o.u. #1)

Site Location: Bristol County, Massachusetts

B. Lead and Support Agencies

Lead Agency: United States Environmental Protection Agency (EPA)

Contacts: David Dickerson, Co Remedial Project Manager (617) 918-1329
Jim Brown, Co Remedial Project Manager (617) 918-1308

Support Agency: Massachusetts Department of Environmental Protection (MA DEP)

Contact: Paul Craffey, Project Manager (617) 292-5591

C. Legal Authority for Explanation of Significant Differences

Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 300.435(c)(2)(1) of the National Contingency Plan (NCP) requires that, if any remedial or enforcement action is taken under Section 106 of CERCLA after adoption of a final remedial action plan, and such action differs in any significant respects from the final plan, the EPA shall publish an explanation of the significant differences (ESD) and the reasons such changes were made.

D. Summary of ESD

The Record of Decision (ROD) for this phase (or operable unit) of the site cleanup was issued on September 25, 1998. Since that time EPA has gathered additional site information and refined the cleanup approach for the upper and lower harbor area. This ESD describes five significant differences between the current remedial design and the cleanup plan envisioned in the 1998 ROD, and discusses how the current project cost estimate compares with the cost estimate in the ROD. The five significant differences, discussed in more detail in Section III below, are:

1. Additional intertidal cleanup areas in the upper harbor to address dermal contact risks
2. Mechanical dewatering of dredged sediments
3. Use of the pilot study confined disposal facility (CDF) at Sawyer Street as an interim TSCA (Toxic Substance Control Act) facility for PCB-contaminated sediments
4. Change in CDF D wall design
5. Use of rail at CDF D

Finally, as explained more fully in Section III.F below, the net effect of these refinements to the cleanup approach has maintained the estimated project cost within the acceptable range allowed by EPA guidance. The current, fully funded cost estimate for this cleanup of the upper and lower harbor operable unit, including the five modifications listed above, is $325 million; whereas the maximum cost allowed using applicable EPA guidance is $335 million. It should be emphasized, however, that this $325 million estimate is based on assumed "most efficient" levels of annual funding. Should annual funding rates be less than these levels, the total project cost will likely increase accordingly, due to the delays and inefficiencies that would result from a longer construction and dredging schedule.

E. Public Record

In accordance with Section 117(d) of CERCLA, this ESD will be part of the administrative record file that is available for public review at the two locations listed below.

EPA New England Records Center
1 Congress Street
Boston, MA 02114
(617) 918-1440
Monday-Friday: 9:00am - 5:00pm; (closed first Friday of every month and federal holidays)

New Bedford Free Public Library
613 Pleasant Street, 2nd floor Reference Department
New Bedford, MA 02740
(508) 961-3067
Monday-Thursday: 9:00am - 9:00pm
Friday-Saturday: 9:00am - 5:00pm

EPA is currently supplementing the administrative record with various documents generated since the 1998 ROD that support this ESD. All of the documents referenced in this ESD (see Appendix A) are either included in this supplement or are included in the original 1998 administrative record.

II. Summary of Site History, Contamination Problems and Selected Remedy

A. Site History and Enforcement Activity

Identification of PCB (polychlorinated biphenyl) contaminated sediments and seafood in and around New Bedford Harbor was first made in the mid-1970s as a result of EPA region-wide sampling programs. In 1978, the manufacture and sale of PCBs was banned by the federal Toxic Substance Control Act (TSCA). In 1979, the Massachusetts Department of Public Health promulgated regulations prohibiting fishing and lobstering throughout the site due to elevated

PCB levels in area seafood. Due to these concerns, the site was proposed for the Superfund National Priorities List (the NPL) in 1982, and finalized on the NPL in September 1983. Pursuant to 40 CFR 300.425(c)(2), the Commonwealth of Massachusetts (the Commonwealth) nominated the site as its priority site for listing on the NPL.

EPA's site-specific investigations began in 1983 and 1984. Site investigations continued throughout the rest of the 1980s and early 1990s, including a pilot dredging and disposal study in 1988 and 1989, computer modeling of the site completed in 1990, and an updated feasibility study for site cleanup also completed in 1990.

Collectively, these investigations identified the Aerovox manufacturing facility on Belleville Avenue in New Bedford as the primary source of PCBs to the site. PCB wastes were discharged from the facility's operations directly to the upper harbor through open trenches and discharge pipes, or indirectly throughout the site via CSOs (combined sewer overflows) and the City's sewage treatment plant outfall. Secondary inputs of PCBs were also made from the Cornell Dubilier Electronics, Inc. (CDE) facility just south of the hurricane barrier in New Bedford.

Based on the investigations' results, state and federal enforcement actions were initiated against both the Aerovox and CDE facilities as well as the City of New Bedford (though the City is not a Potentially Responsible Party for this site) pursuant to CERCLA, Massachusetts General Law c.21E, and other federal and state environmental statutes. For a summary of these enforcement actions and resulting settlements please see Section II of the 1998 ROD for the site (this ROD can be found as document 5.4.1 in the administrative record discussed above). The site cleanup is being managed by EPA, in partnership with the U.S. Army Corps of Engineers and the MA DEP.

In April 1990, EPA issued a ROD for the hot spot operable unit of the site (o.u. #2). The hot spot ROD called for dredging and on-site incineration of the site's most highly PCB-contaminated sediments located in the vicinity of the Aerovox facility. The ROD defined these hot spots as areas above 4,000 ppm (parts per million). Dredging of these sediments - about 14,000 cubic yards (cy) in volume and 5 acres in area - began in April 1994 and was completed in September 1995. However, due to a vehement and congressionally-supported reversal in local support for on-site incineration, EPA suspended the incineration component of the hot spot remedy. Pursuant to an October 1995 ESD the dredged hot spot sediments were temporarily stored in a shoreline confined disposal facility at Sawyer Street in New Bedford, and then, pursuant to an April 1999 amendment to the 1990 Hot Spot ROD, the sediments were dewatered and transported to an offsite landfill for permanent disposal. This final phase of the hot spot remedy was completed in May 2000.

In September 1998, EPA issued the second ROD for the site for cleanup of the upper and lower New Bedford Harbor areas (o.u. #1). The remedy selected in this 1998 ROD (also known as ROD 2) is summarized in section II.C below.

B. Contamination Problems

As noted above, the main site concern is the widespread PCB contamination in New Bedford Harbor. Although the hot spot remedy removed approximately 14,000 cy of the most contaminated sediment, elevated levels up to and, in isolated areas, above 4,000 ppm total PCBs remain in both sediments and wetlands. The highest levels are generally found in the northern reaches of the upper harbor, with PCB levels decreasing in a southerly trend. Because of this sediment contamination, PCBs are also found in elevated levels in the water column and in local seafood, and to a lesser extent in the air along certain areas of the shoreline (Foster Wheeler, 2001a). In addition to the PCB contamination, harbor sediments also contain high levels of other contaminants including heavy metals (e.g., cadmium, chromium, copper and lead).

As described more completely in sections V and VI of the 1998 ROD, EPA found the PCB contamination to result in unacceptable risks to human health and the environment. The biggest human health risk was found to be from frequent (e.g., weekly) ingestion of local seafood, although secondary risks were also found from frequent human contact with PCB-contaminated shoreline sediments or soils. Ecologically, EPA's investigations concluded that the harbor's marine ecosystem is severely damaged from the widespread PCB contamination.

C. Summary of Remedy Originally Selected in the 1998 Record of Decision

Due to this contamination and risks to human health and the environment, EPA in the 1998 ROD selected a cleanup remedy for the entire upper and lower harbor areas. The ROD calls for the dredging and containment of approximately 450,000 cubic yards of PCB-contaminated sediment spread over about 170 acres. In the upper harbor north of Coggeshall Street, sediments above 10 ppm PCBs will be dredged, while in the lower harbor and in salt marshes, sediments above 50 ppm PCBs will be dredged. To protect human health against risks due to dermal contact with PCBs, intertidal sediments or soils in areas adjacent to homes will be removed if PCB levels are above 1 ppm, while those adjacent to parks or recreational shoreline areas where people spend less time than in areas adjacent to residences will be removed if PCB levels are above 25 ppm (the "beachcombing standard").

The ROD calls for the dredged sediments to be placed in four shoreline confined disposal facilities (CDFs) and the seawater decanted from these sediments to be treated before discharge back into the harbor. The ROD also requires that institutional controls, including the continuation of a state-sanctioned fishing ban, be in place until PCB levels in seafood reach acceptable levels. Figure 1 attached shows the location of the four CDFs identified in the ROD as well as the approximate sediment areas to be dredged as part of the cleanup.

III. Description of Significant Differences and the Basis for These Differences

Set out below are explanations of how several components of the current remedial design differ from the remedy described in the 1998 ROD. Additional investigations performed since

the ROD, including field surveys, sediment sampling and a state-of-the-art dredging field test conducted in August 2000, have yielded significant new information pertaining to the harbor cleanup. The differences below reflect how this additional information has been incorporated into the remedy for sound construction and cost-effective implementation while remaining protective of human health and the environment. Documents that support these changes are referenced (see Appendix A of this ESD) and are being added to the two site repositories listed above in Section I.E.

A. Additional Intertidal Cleanup Areas in the Upper Harbor to Address Dermal Contact Risk

The 1998 ROD (see pp.42-43 and Figure 23 of the ROD) describes three specific areas in the upper harbor north of the Coggeshall Street bridge with intertidal sediment PCB levels greater than dermal health-based cleanup levels. These areas are the Coffin Avenue cove (or Riverside Park) area in New Bedford, the residential area immediately north of Wood Street in New Bedford, and the Veranda Street inlet area in Fairhaven.

In addition to these three areas, EPA is now aware, based on post-ROD sampling, of at least two other areas in the upper harbor where these intertidal, dermal-based cleanup levels are appropriate to protect human health. These two areas are the small residential area along the Acushnet River just south of Main Street in Acushnet, and the area slated for "River Road Park" directly across the river along River Road in New Bedford. See Figure 2 attached.

In this first area in Acushnet, the post-ROD sampling revealed elevated PCB levels as high as 23,000 ppm in intertidal area sediments (Foster Wheeler, 2001b). As a result this area was the first to be remediated pursuant to the 1998 ROD as part of EPA's Early Action program. Approximately 2,500 cy of contaminated shoreline soil and sediment was removed. The excavated areas were then backfilled with clean material and replanted using native wetland species in late winter and early spring 2001. EPA plans to sample this shoreline over time to ensure that recontamination does not occur.

The second dermal risk area, the proposed River Road Park, was formally a lumber yard and truss manufacturing facility. The City of New Bedford is currently in the process of acquiring this property for the purpose of developing a shoreline park (New Bedford, 2001). Consistent with section XIII.B.4 of the 1998 ROD, the vegetated intertidal area of this shoreline was originally slated for a cleanup to 50 ppm due to the (former) industrial/commercial land use. Since more frequent contact with intertidal sediments is expected under the new recreational land use, EPA will now apply the 25 ppm "beachcombing" standard instead.

The post-ROD shoreline sediment sampling in the River Road Park area has revealed PCB levels above this 25 ppm level; as high as 680 ppm in the intertidal zone (Foster Wheeler, 2001c, Foster Wheeler, 2001b). The sampling performed to date in this area also indicates that the PCB contamination is limited to certain portions of the shoreline. EPA will coordinate the cleanup of this contaminated shoreline with the City to ensure that the cleanup is completed before the shoreline area of the proposed park is opened to the public.

For the record, the Early Action program discussed above also included temporary shoreline fencing at the Coffin Avenue cove area and at the shoreline residential area immediately north of Wood Street, both in New Bedford. In both of these areas the shoreline was fenced to prevent human access to and contact with PCB-contaminated intertidal sediments. Once these shoreline areas are remediated as part of the larger dredging and excavation program, these fences will be removed.

Finally, as EPA continues with post-ROD sampling, other areas may be identified which require early action dredging or excavation. As these areas are identified, EPA will issue fact sheet(s) with more details of these activities.

B. Mechanical Dewatering of Dredged Sediments

Mechanical dewatering is a process which uses various types of mechanical equipment to squeeze or remove excess amounts of water from sediments or sludge. It is a process frequently used at wastewater treatment plants, and more recently as part of sediment cleanups.

Although evaluated as potentially useful in the 1990 Feasibility Study for the site (see documents 4.6.3-5 in the Administrative Record for this operable unit), EPA did not specifically include mechanical dewatering in the 1998 ROD's selected remedy. The main reason for this was that given EPA's pilot study and hot spot dredging experience (both of which used hydraulic dredging without mechanical dewatering), EPA believed that the remedy could be implemented without the added expense of the mechanical dewatering step. During the detailed post-ROD design process, however, it became clear that mechanical dewatering could help resolve a number of project challenges, as explained below.

The greatest benefit of using mechanical dewatering would be to minimize the CDF disposal volume required. If dewatering is not undertaken, the 473,000 cy of *in situ* sediments to be removed from the seabed would increase to 615,000 cy needing disposal due since these sediments expand during the dredging and slurry transport process. If dewatering is performed, the 473,000 cy of *in situ* sediments would be reduced to approximately 349,000 cy, a volume which could be disposed of entirely in CDF C and a reduced size CDF D. Thus, given this volume reduction due to mechanical dewatering, the proposed CDFs A and B may not be needed provided the current estimate of total *in situ* sediment volume requiring disposal (473,000 cy) is reasonable. CDFs A and B would be needed, however, if this current estimate is significantly exceeded (see Section III.E below for more discussion of this sediment volume issue).

Other advantages of mechanical dewatering are: a) it helps control air emissions since the operation would take place in an enclosed building with emissions control as necessary; b) it assists in the water treatment process since the water produced from the dewatering process gets filtered (i.e., clarified) as it is squeezed out of the dredge material before the water is sent to the water treatment plant; c) it reduces any limited potential for low-level leakage of PCBs from the CDFs over time due to the removal of sediment pore water, even though this potential leakage is

considered insignificant (see p.29 of the 1998 ROD); d) it produces a sediment "cake" which can be placed mechanically and which is dryer than the slurry from hydraulic dredging, thereby decreasing the time required for consolidation and temporary capping of sediment placed in the CDFs; and e) it allows the earlier application of heavier loads during beneficial reuse of the final CDFs. The conceptual location of the dewatering facility is shown in Figure 5 attached.

C. Use of the Pilot Study CDF at Sawyer Street as an Interim TSCA Facility for PCB-Contaminated Sediment

As part of EPA's pilot study of dredging and disposal techniques in1988-89, a six acre CDF was constructed along the shoreline immediately north of Sawyer Street in New Bedford. This CDF consisted of a primary and a secondary cell separated by a sheet pile wall, and was partially filled with PCB-contaminated sediments dredged from the cove just north of the CDF. Cleaner, deeper sediments from this cove were used to cap the contaminated sediments (USACE, 1990).

This area was further modified in 1992 to create the hot spot water treatment facility: this work entailed transforming the western portion of the pilot study CDF into the new water treatment facility, and leaving the eastern area as a Debris Disposal Area (DDA). Also in 1992, a six inch sand cap was added over the original sediments within the DDA.

As part of the original hot spot remedy, cell #1 of the water treatment facility (the former western portion of the pilot study CDF) was to receive solidified incinerator ash, and this cell was to be covered with a landfill-type cap (USACE, 1991). The final resolution of the DDA area was to be left to a later decision document. As described in the hot spot ROD Amendment, however, the incinerator component of the remedy was not implemented (see section II.A above), and the cap over cell #1 was not installed, nor was a final resolution of the DDA issued.

More recently, a portion of the remaining volume in the DDA has been used to dispose of approximately 2,500 cy of PCB-contaminated sediments excavated from the Early Action areas in Acushnet (see section III.A above), as well as for approximately 1,000 cy of sediments excavated near the discharge structure of the relocated Sawyer Street CSO for CDF C. Other than PCBs, no other potential contaminants in the sediment and debris in the DDA meet federal or state standards to be classified as hazardous waste (USACE, 1994). This use of of the DDA has allowed the cleanup to proceed in a timely and cost-effective manner. Additional "unused" volume remains in the DDA for potential disposal of other contaminated sediments excavated or dredged as part of the remedy.

Groundwater and air monitoring have been and continue to be performed in and around the DDA, all of which indicates that PCBs are not migrating from the DDA (USEPA, 2001a, USEPA, 2001b). In addition, testing of the current surface layer of the DDA shows that it does not present an unreasonable dermal exposure risk (USACE, 2001). With regard to the soil conditions underlying the DDA, Figures 3.a and 3.b attached show the most recent cross-section

of this area, taken from the CDF C design. This cross section shows a clay layer sandwiched between the DDA and the underlying sands of the area. In addition, test pit logs from the pilot study report indicate a concrete slab approximately four to six feet below the 1987 ground level in much of the western portion of the DDA (USACE, 1990).

Given these groundwater, surface soil and air monitoring results, the subsurface features in the area and the fact that the dredged sediments in the DDA are naturally very impermeable, EPA will continue to use this DDA area as an interim TSCA facility for PCB-contaminated sediment from the site. This facility must comply with TSCA regulations governing remediation waste. CERCLA § 121. Section 761.61(c) of the TSCA regulations require that the EPA Regional Administrator make a determination that the facility does not pose an unreasonable risk to health or the environment. After reviewing the information contained in the administrative record, the Regional Administrator, by his signature on this document, determines that the facility does not pose an unreasonable risk to health or the environment as long as the following conditions are maintained: (1) Groundwater and air monitoring of this area is continued as long as the PCB contaminated sediment remains in place; (2) subsurface conditions remain intact; (3) surface PCB levels in the DDA remain low or, alternatively, a clean soil cover (approximately six inches thick) is placed so that it does not pose an unreasonable risk to health or the environment and (4) a final resolution of the facility is made in a later decision document.

The groundwater and air monitoring of this area, as well as additional groundwater modeling, will continue in order to confirm the protectiveness of this DDA as a CDF. Once all of this information is in hand, and should this monitoring and modeling confirm that the DDA would be suitable for a permanent CDF, EPA will solicit public comment on any proposal to make the DDA a permanent TSCA facility. If made a permanent facility, the DDA would be filled and covered with a cap that meets all applicable federal and state standards.

D. Change in CDF D Wall Design

The 1998 ROD's conceptual design of the CDF D wall called for a single sheet pile wall around the entire CDF, along with a synthetic liner on the inside wall of this sheet pile to minimize PCB leakage. Sediment borings performed during the detailed design for CDF D, however, revealed the existence of very weak, silty sediments. When combined with the deep water depths in the area, this new information showed that the conceptual sheet pile wall design would not meet project design criteria.

A number of different wall and dike designs were thus evaluated to replace the original single sheet pile concept. The two considered to be most preferable and cost effective were: a) a cellular sheet pile wall consisting of interconnected 66-foot diameter sheet pile cells filled with structural fill, and b) an earthen and rock filled dike. Based on current estimates, EPA believes that the rock filled dike design, as shown in Figure 4, is the best choice of these two alternatives due to its cost-effectiveness and permanence. The rock filled design is considered more permanent since it should last in perpetuity, whereas a sheet pile-based design would eventually need significant maintenance or replacement.

It should be noted that, with either of these dike designs, due to the very soft and geotechnically weak sediments in the area, approximately 300,000 cy of these sediments would have to be removed and replaced with structural fill as the first construction step (USACE, 2000). These "foundation" sediments would not necessarily be contaminated with PCBs since they exist at deeper, cleaner depths than the contaminated surficial sediment.

In addition, due to the inclusion of mechanical dewatering discussed above and the volume reductions it allows, the overall footprint of CDF D has been reduced from that conceived in the 1998 ROD. Figure 5 attached shows the revised footprint with the rock filled dike design. This reduction has eliminated the need to relocate the navigational channel in this area, which would have been covered by the original CDF D footprint.

The revised wall design brings with it the need for significant amount of rock to be delivered to the site as well as the disposal of the 300,000 cy of foundation sediment discussed above. EPA has considered the reuse of the non-contaminated portion of these foundation sediments for backfilling excavated wetlands, as well as the viability of local temporary disposal facilities to store this material before reuse. No viable local area was found, however, thus offsite disposal for this foundation material is currently considered the most likely option.

E. Use of Rail at CDF D

Although not specifically envisioned in the 1998 ROD, EPA believes that extension of a rail spur to CDF D from the rail depot located across Herman Melville Boulevard from the CDF could serve a variety of uses during the harbor cleanup. Previously inactive, the City of New Bedford is currently working to redevelop this rail yard. The benefits of such a rail spur could include facilitating material delivery for construction of the CDF, and providing for the offsite disposal of any non-TSCA (Toxic Substance Control Act) material such as the foundation sediments discussed above or "clean" sand removed from the dredging process.

An additional potential advantage of a rail spur is that it could serve as an off-site disposal contingency in case the overall volume of sediments to be disposed exceeds the built capacity of the CDFs. This could be an important consideration since computer modeling of the total *in situ* sediment volume needing disposal indicates a worst case total of up to approximately 800,000 cy. This worst case estimate is based on a conservative method of estimating the PCB concentrations between actual sediment sampling locations within the approximately 1,000 acre upper and lower harbor area. Current project planning is using an *in situ* sediment volume estimate of 473,000 cy, based on a less conservative but reasonable approach to estimating these PCB levels in unsampled areas. This 473,000 cy is consistent with the 1998 ROD's estimate of 450,000 cy, especially in light of the approximately 57,000 cy of PCB- contaminated "footprint" sediments that must be removed should CDFs A and B not be needed due to the benefits of mechanical dewatering (see Section II.B). (These 57,000 cy are included in the updated 473,000 cy estimate, but were not included in the ROD's 450,000 cy estimate.)

As discussed in Section II.D, the current CDF wall design requires substantially more construction material than the ROD's conceptual sheet pile wall design, and the 300,000 cy of "foundation" sediments would likely need to be transported offsite. Use of rail for this material delivery and offsite transport would thus help alleviate community concerns about increased truck traffic during the remedy. Addition of a rail spur also aligns with the City of New Bedford and Harbor Development Commission's long term plans for a multi-modal port facility for the CDF D area, as developed in their recent harbor master plan (New Bedford, 2001; VHB, 2000). The conceptual location of this rail spur is shown in Figure 5 attached.

F. Updated Cost Estimate

The current, fully funded cost estimate to implement ROD 2 including the remedy refinements outlined above is $324.6 million, using 2001 price levels. Table 1 attached outlines the major cost components of this estimate. Note that the total project cost could become greater if actual funding levels are so low as to cause significant project delays and inefficiencies.

As explained below, this current, fully funded $325 million estimate is a different type of cost estimate than used in the 1998 ROD. The ROD's estimate - $129 million for EPA costs - is a present worth estimate, and was based on 1995 price levels. Present worth is the amount required to fund a project assuming that amount can be invested at the start of the project for a given rate of return as the project progresses. Present worth estimates help evaluate various options on an equal basis, but they do not represent the actual funding levels that will be required for a project of this type. The fully funded estimate, on the other hand, reflects the total of the actual annual funding levels required to implement the harbor cleanup project. In addition, since the ROD cost estimate is based strictly on a conceptual (rather than a detailed) project design, EPA guidance acknowledges that actual project costs could be up to 50% higher than the cost estimate developed for the ROD (USEPA, 1999).

The following table shows the comparative process used by EPA and the Corps of Engineers to evaluate whether the current, fully funded estimate of $325 million is within the initial, present worth estimate of $129 million included in the ROD.

Type of Cost Estimate	**$ - in millions**
EPA costs at 1995 price level, as presented in the ROD, **present worth**	129
EPA costs at 1995 price level, **present worth basis removed**	188
EPA costs **at 2001 price level, present worth basis removed** (increases due to inflation)	223
2001 price level, acceptable upper limit (**$223 million times 1.5** per EPA guidance)	335

Since the current, fully funded estimate of $325 million is $10 million less than this last $335 million threshold, EPA believes that the remedy with the refinements discussed herein has been maintained within the acceptable range of the original ROD cost estimate.

IV. Supporting Agency Comments

In a letter to EPA dated September 27, 2001, the MA DEP expressed its agreement with the changes documented in this ESD.

V. Statutory Determinations

As discussed above in Section III.C, this ESD documents EPA New England's Regional Administrator Robert W. Varney's regulatory finding under TSCA 40 CFR Sec. 761.61(c) that the use of the DDA to store PCB-contaminated sediments does not pose an unreasonable risk of injury to health or the environment.

EPA believes that the remedy as modified herein remains protective of human health and the environment, complies with all Federal and State requirements that are applicable or relevant and appropriate to this remedial action (and which were not waived in the 1998 ROD), and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

VI. Public Participation Activities

EPA and DEP meet regularly with site stakeholders to keep the community up to date with the site's cleanup status, including the issues described above in section III. For example, EPA and DEP meet quarterly with the facilitated New Bedford Harbor Superfund Site Community Forum, as well as monthly with the Forum's subcommittee. Additional meetings and outreach efforts with other groups occur as necessary to successfully implement the cleanup program.

Robert W. Varney, Regional Administrator
EPA New England

9-27-01
Date

Patricia Meaney, Director
Office of Site Remediation and Restoration
EPA-New England

9/27/01
Date

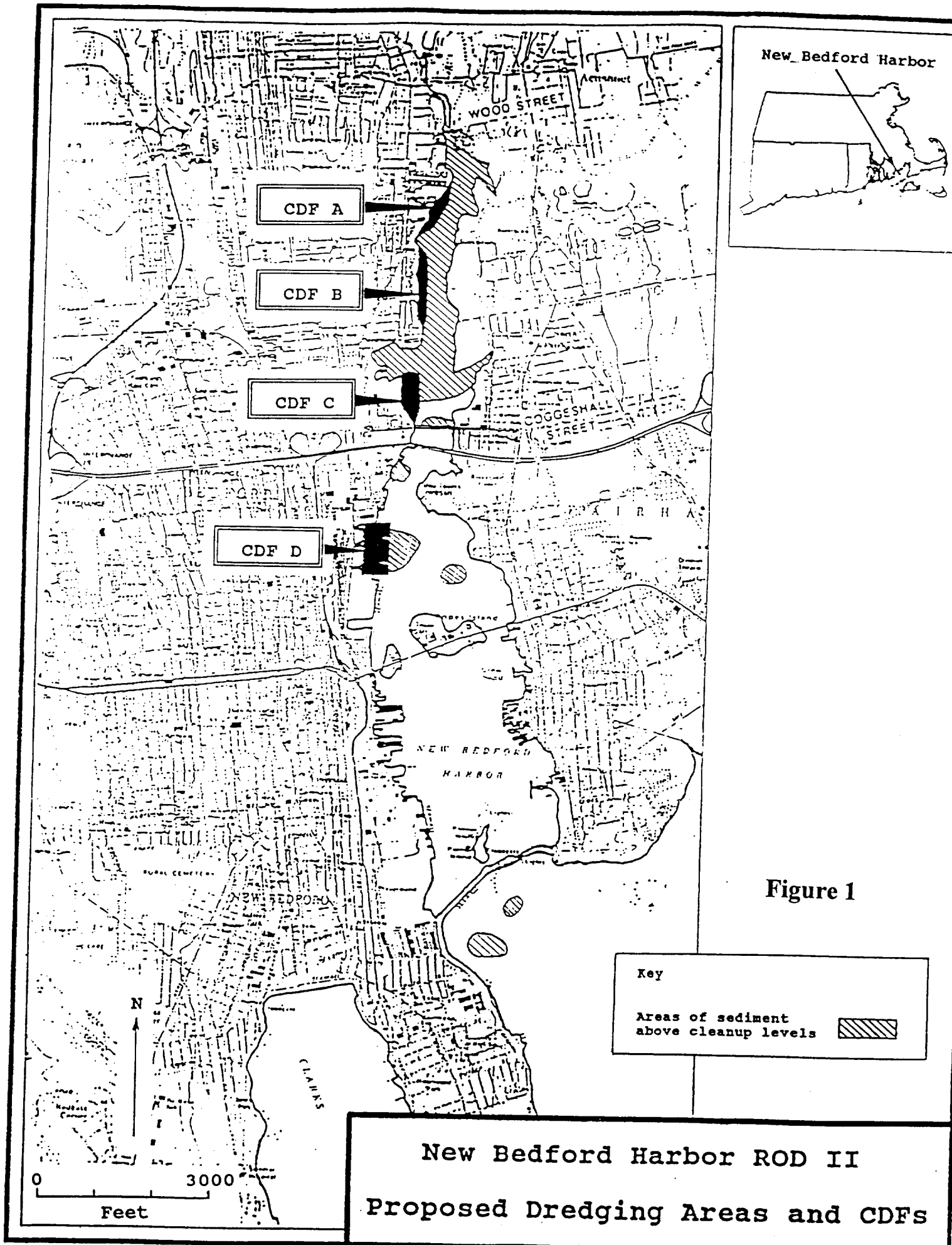


Figure 1

New Bedford Harbor ROD II

Proposed Dredging Areas and CDFs

Figure 2
Updated Dermal Risk Areas
New Bedford Harbor Superfund Site

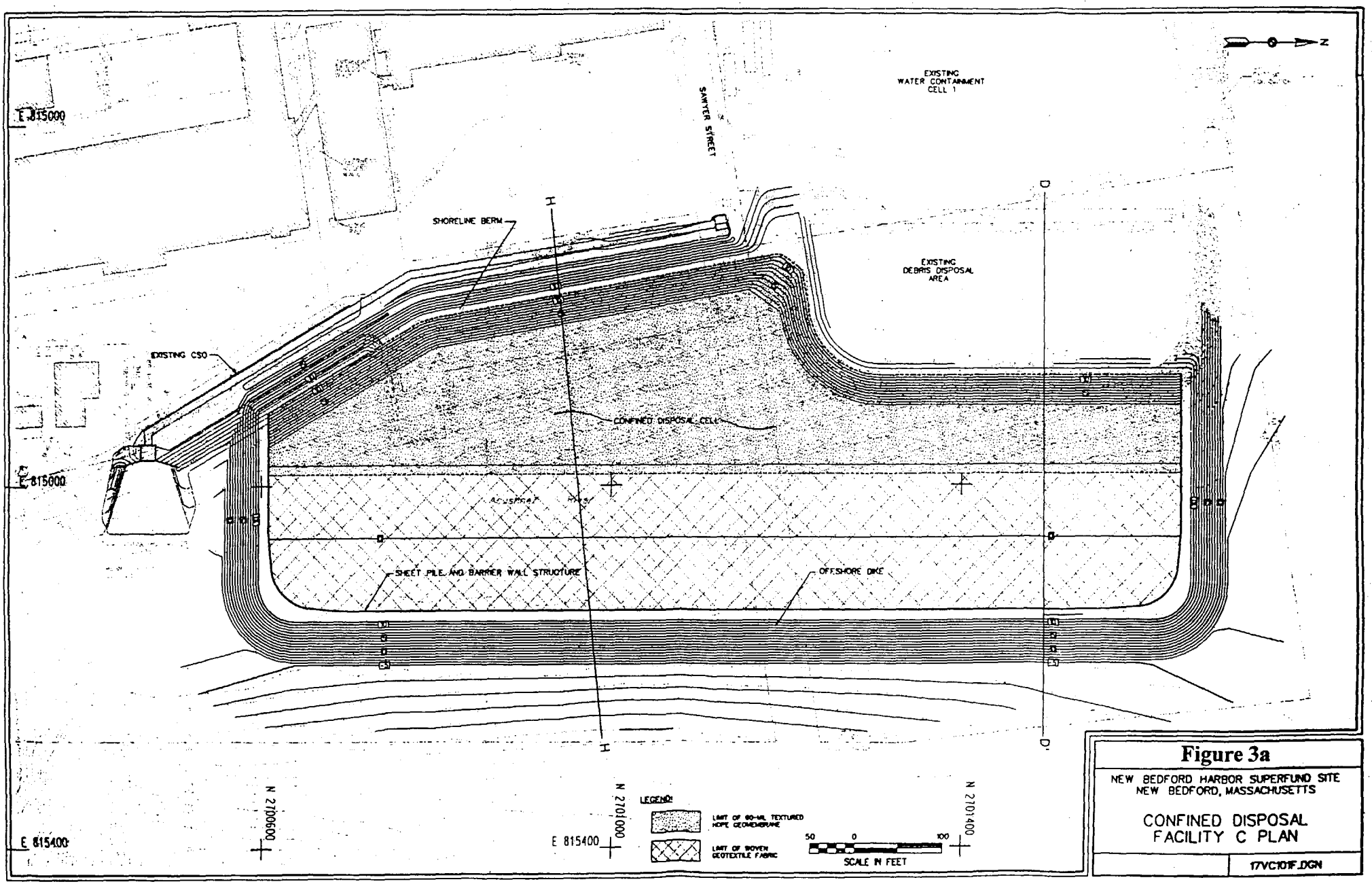
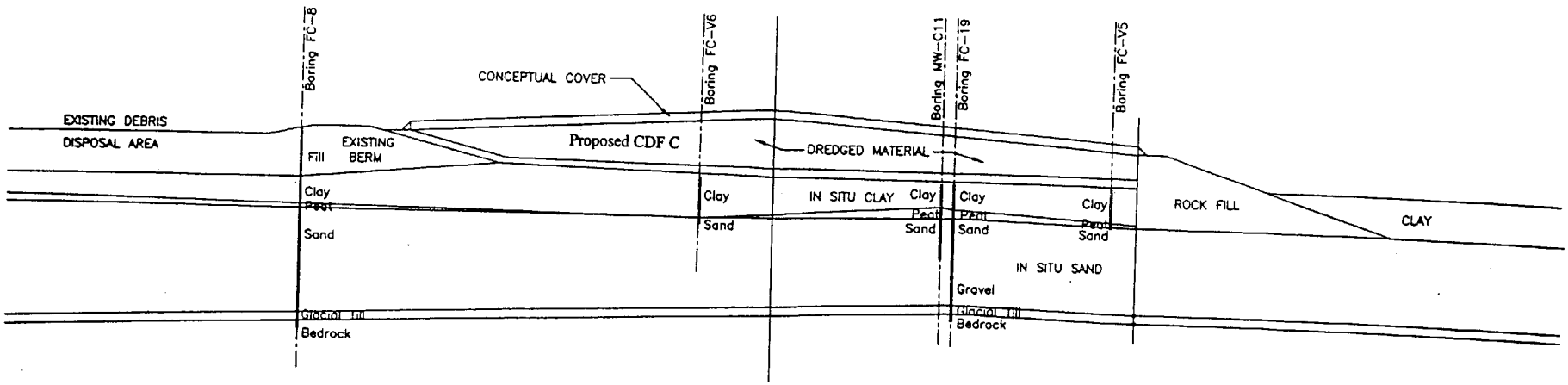


Figure 3a

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MASSACHUSETTS

CONFINED DISPOSAL
FACILITY C PLAN

17VC101F.DGN



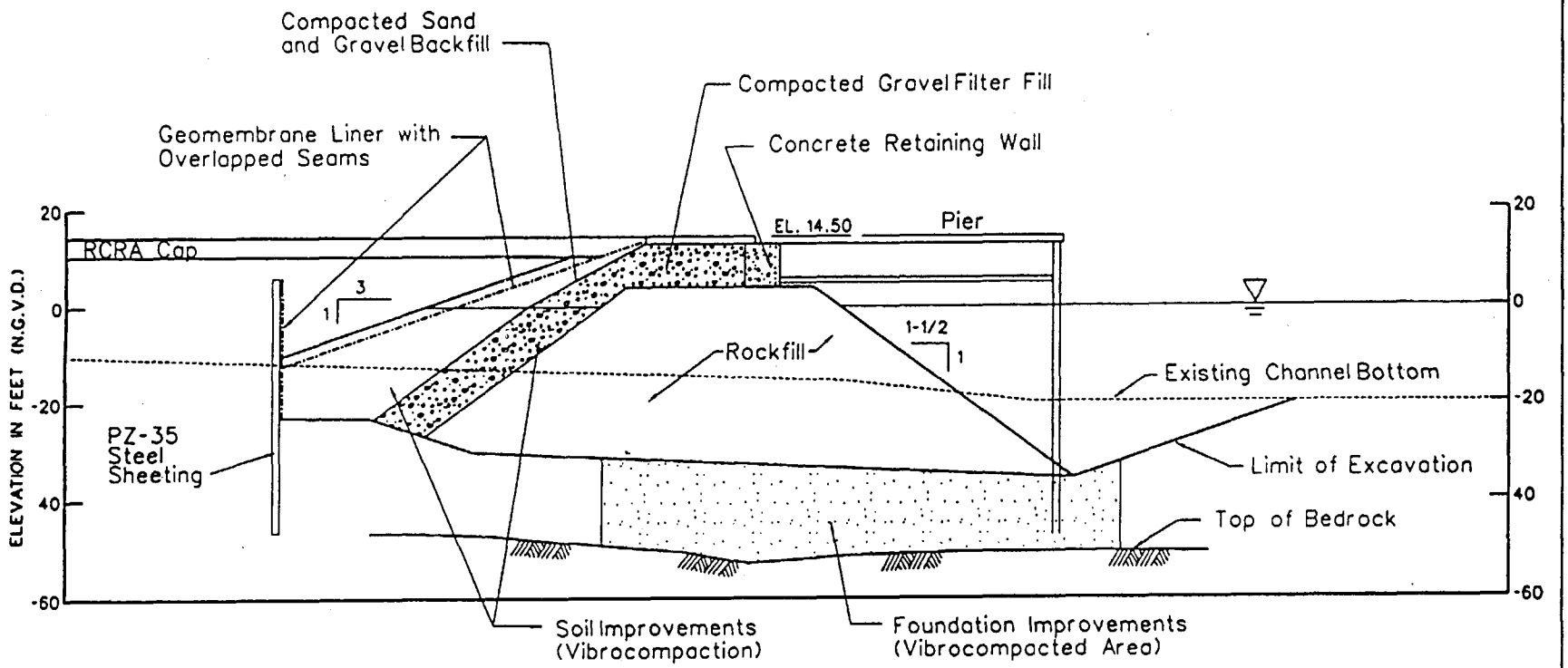
SECTION D-D'

Figure 3b

NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MASSACHUSETTS

TYPICAL NORTHERN CROSS SECTION

17VC30F.DWG



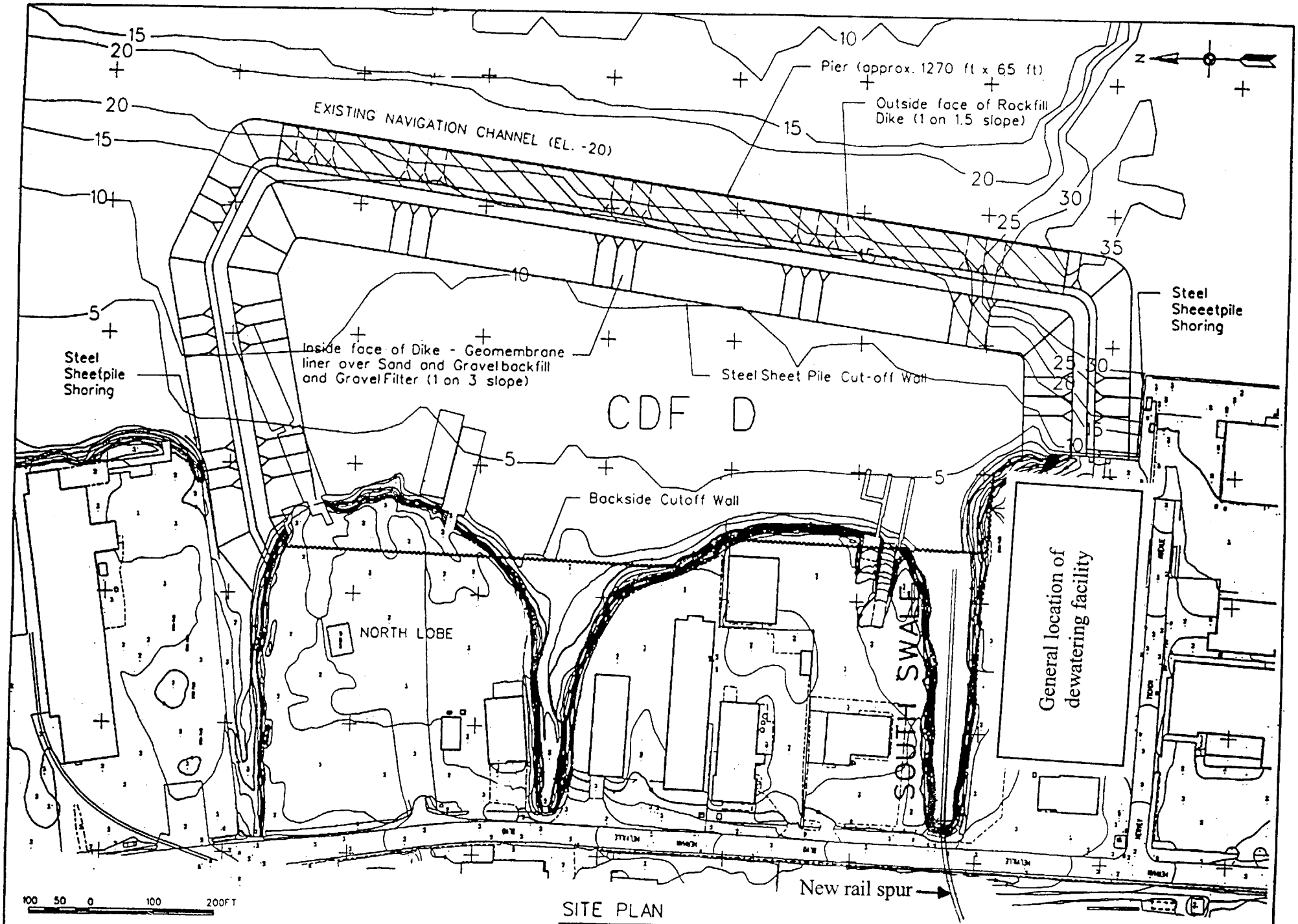
U.S. ARMY ENGINEER DISTRICT
NEW ENGLAND DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

March 2001

ENVIRONMENTAL PROTECTION AGENCY
NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MASSACHUSETTS

CONFINED DISPOSAL FACILITY "D"
ROCKFILL DIKE ALTERNATIVE
CONCEPTUAL SECTION

Figure
4



SITE PLAN

U.S. ARMY ENGINEER DISTRICT
NEW ENGLAND DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

ENVIRONMENTAL PROTECTION AGENCY
NEW BEDFORD HARBOR SUPERFUND SITE
NEW BEDFORD, MASSACHUSETTS
CONFINED DISPOSAL FACILITY "D"

Figure 5

Table 1

PLAN "Fa" : CDFs C & D (w/Stone Fill), Dewater Harbor Sediments		
Dredge/Excav: 472,700 CY Contaminated		
COST SUMMARY		
	Cost	Percent of Total
Confined Disposal Facility "D" (CDF D) w/o Cap	$ 23,258,000	7%
CDF D Wharf (Loading /Unloading Dock)	$ 6,604,000	2%
Confined Disposal Facility "C" (CDF C) w/o Cap	$ 11,084,000	3%
Combined Sewer Overflow for CDF D (CSO D) w/mark-ups	3,636,000	1%
Combined Sewer Overflow @ CDF C (CSO C) w/ mark-ups	2,233,000	1%
Fill CDFs & Emissions Control	7,753,000	2%
CDF D Surcharging & CDFs Final RCRA Caps and O&F	12,349,000	4%
Build Water Treatment Plant & Water Treatment	2,825,000	1%
Build De-Watering Bldg, So. Lobe & Sawyer St., Mobilize, Remove Vessels	12,720,000	4%
Harbor Dredging & Excavation (w/ Early Action & Confirmatory Sampling)	24,027,000	7%
De-Water Harbor Sediments	18,855,000	6%
Transport & Dispose Harbor Sediments Off-Site (T&D) Incls. to Pierce Mill	3,189,000	1%
Wetland / Habitat Restoration	4,178,000	1%
Relocate Commonwealth Electric Power Cables	6,499,600	2%
Air/Water Quality, Ecological, Seafood Monitoring & Confirmatory Sampling	7,068,000	2%
Soccer Field w/ Parking Area & Fence	415,000	0.1%
Site/Home Ofc. Mgt, Eng. During Construction, SS&H,QC, Admin., Overhead, Site Operations (15% on Construc. Costs + USACE Construction Oversight)	34,383,300	11%
Project Construction Contingency (40% on Future TERC Construction Costs)	59,714,500	18%
Contract Fee (7% on TERC Construction Costs)	15,117,323	5%
Real Estate Acquisition	3,411,000	1.0%
USACE & Contract Remedial Design & Investigations	35,058,034	11%
Inflation @ 3%/Year Over Design/Construction Period	30,268,674	9%
Total (Not Rounded)	$ 324,646,430	
Total Project Fully Funded Cost	**$ 325,000,000**	100%
Total Fully Funded O&M through 2030	**$ 6,300,000**	
Note: CDF O&M Program would continue beyond 2030.		

APPENDIX A - REFERENCES CITED

1. Foster Wheeler, 2001a. Final Annual Report, Baseline Ambient Air Sampling and Anaylsis, 1June 1999 - 30May2000. Operable Unit #1, New Bedford Harbor Superfund Site. Foster Wheeler Environmental Corporation. March 2001. (Note: this document is included in the 2001 supplement to the administrative record for this operable unit in section 6)

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5. USACE, 1990. New Bedford Harbor Superfund Pilot Study, Evaluation of Dredging and Dredged Material Disposal. US Army Corps of Engineers, New England Division. May 1990. (Note: this document is included in the 1998 administrative record for this operable unit as document 4.6.1)

6. USACE, 1991. Final construction drawings, New Bedford Harbor Superfund Hazardous Waste Cleanup, Hot Spot Operable Unit. US Army Corps of Engineers, Omaha District December 1991. (Note: due to the oversize nature of these drawings, this document is only available at the Boston, MA records center listed in section I.E above).

7. USACE, 1994. New Bedford Harbor Remediation. US Army Corps of Engineers, New England Division, Enviromental Laboratory (concerning TCLP analysis of the hot spot sediments). October 6, 1990. (Note: this document is included in the 1998 administrative record for this operable unit as document 7.2.2)

8. USACE, 2000. Draft Technical Information Report, Confined Disposal Facility D. US Army Corps of Engineers, New England Division. June 9, 2000. (Note: this document is included in the 2001 supplement to the administrative record for this operable unit in section 6)

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10. USEPA, 1999. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents. USEPA Office of Solid Waste and Emergency Response. EPA 540-R-98-031, OSWER 9200.1-23P, PB98-963241. July 1999. (Note: this guidance document is available at the EPA New England Records Center at the location listed in Section I.E above.)

11. USEPA, 2001a. Compilation of groundwater monitoring results for the Debris Disposal Area, New Bedford Harbor Superfund Site. US Environmental Protection Agency, New England Region. September 06, 2001. (Note: this document is included in the 2001 supplement to the administrative record for this operable unit in section 7)

12. USEPA, 2001b. Compilation of Sawyer Street air monitoring results, October 2000 through May 2001, New Bedford Harbor Superfund Site. US Environmental Protection Agency, New England Region. September 26, 2001. (Note: this document is included in the 2001 supplement to the administrative record for this operable unit in section 7)

13. VHB, 2000. New Bedford/Fairhaven Harbor Plan, Executive Summary and Figure 1.1. Vanasse Hangen Brustlin et al. August 2000. (Note: this document is included in the 2001 supplement to the administrative record for this operable unit in section 17)