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MANAGEMENT PLAN FOR ON-SITE DISPOSAL FACILITY MATERIAL TRANSFER AREA (OMTA) BULK DEBRIS TRANSFER AREA

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
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TABLE OF CONTENTS

1.0 Introduction 1
1.1 Construction History 2
1.1.1 Material Disposition 2
1.1.2 Gravel Pad Construction 3
1.1.3 Cultural Resources Considerations 4

2.0 Management Controls 5
2.1 Safety Management 5
2.1.1 Safety Assessment and Hazard Category Determination 5
2.1.2 Radiological Protection 5
2.1.3 Exposure Control 6
2.1.4 Personal Protection 6
2.1.5 Lighting/Overhead Electric Cable 6
2.2 Fugitive Dust Management 6
2.2.1 Dust Control 7
2.2.2 Perimeter Air Monitors 7
2.3 Surface Water Management 7
2.4 Physical Access Controls 7

3.0 Bulk Debris Placement 8
3.1 WAC Compliance 8
3.2 Bulk Debris Handling 8
3.3 Equipment Fueling 10

4.0 Inspections 11

5.0 Decommissioning 12

References R-1

LIST OF FIGURES

Figure 1 On-Site Disposal Facility Material Transfer Area (OMTA), Bulk Debris Transfer Area
Figure 2 On-Site Disposal Facility Material Transfer Area (OMTA), Bulk Debris Transfer Area Detail

LIST OF ACRONYMS AND ABBREVIATIONS

ALARA	as low as reasonably achievable
BAT	Best Available Technology
BDTA	Bulk Debris Transfer Area
BZ	Breathing Zone monitors
CFR	Code of Federal Regulations
cm^2	square centimeters
CTA	Container Transfer Area
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
dpm	disintegrations per minute
FEMP	Fernald Environmental Management Project
IIMS	Integrated Information Management System
ODOT	Ohio Department of Transportation
OMTA	OSDF Material Transfer Area
OSDF	On-Site Disposal Facility
PWID	Project Waste Identification and Disposition
RCRA	Resource Conservation and Recovery Act
ROB	roll-off box
SP	Soil Stockpile
SDFP	Soil and Disposal Facility Project
STP	Sewage Treatment Plant
WAC	waste acceptance criteria
WAO	Waste Acceptance Organization

1.0 INTRODUCTION

This Management Plan describes the management of the On-Site Disposal Facility (OSDF) Material Transfer Area (OMTA) Bulk Debris Transfer Area (BDTA), in Remediation Area 6 at the Fernald Environmental Management Project (FEMP) in southwestern Ohio. The OMTA consists of two parts: the Container Transfer Area (CTA), where activities were initiated in mid-1998 and the BDTA, where activities were initiated in October 2000. This plan discusses only the management of the BDTA.

The OMTA BDTA covers 6.77 acres which are adjacent to and part of the OSDF. It is located in the northeastern portion of the FEMP site, north of the Haul Road, south of the Rail Yard, east of "B" Street, and west of the OSDF (Figures 1 and 2). The northwest corner of the BDTA housed the former KC2 Resource Conservation and Recovery Act (RCRA) Warehouse and the southeast corner housed the former Decontamination and Decommissioning (D&D) Building scrap yard. The southwest corner was a grassy area, and the north east corner was a grass and gravel area on which soil piles and debris were placed.

The BDTA was constructed to serve as a transfer area for bulk debris awaiting disposition in the OSDF. It was needed to provide a location for D&D projects to deposit bulk construction debris meeting the OSDF waste acceptance criteria (WAC) during OSDF activities and during periods of OSDF shutdown. The BDTA enables D&D projects to perform work during the winter months when the OSDF is closed, and will enable D&D projects to continue working in the event of an extended cell closure.

Above- and below-grade bulk debris meeting criteria in the WAC Attainment Plan for the OSDF (DOE 1998) is suitable for staging in the BDTA. Bulk debris may be accepted currently by two methods:

- As loose debris directly from project areas for off loading
- As containerized debris for off loading.

The BDTA is 6.77 acres in size, and can accommodate approximately 24,500 cubic yards of bulk debris or the contents of approximately 800 roll-off boxes (ROBs), based on a 30-yard capacity ROB size. Currently, debris is being delivered in ROBs with only 12 to 15 yards enclosed due to the weight of the debris. Smaller volumes of debris being delivered could result in staging 1,600 ROB equivalents or

more. Currently, a portion of the area is divided into seven storage bins each measuring approximately 100 feet by 100 feet in size, each able to accommodate bulk debris. The debris height is determined by the size of the construction equipment being used to safety consolidate the bulk debris within the bin. Current construction equipment can safely place debris 30 feet in height. The configuration, location, and number of storage bins, as well as the type of construction equipment and the debris height may be changed to meet project needs.

Bulk debris containing process residue, such as a pipe containing visible process residue, is prohibited from disposal in the OSDF and therefore prohibited from entering the BDTA. In addition, bulk debris that meets OSDF WAC but is light and may become airborne when staged, or any other material not suitable for bulk storage, will not be accepted in the BDTA.

The BDTA is currently managed by the Soil and Disposal Facility Project (SDFP) OSDF Construction organization. Currently, a cell contractor handles placement activities in the BDTA, CTA, and in the OSDF cells, although OSDF construction has the ability to self perform this work if necessary. The requirements for debris tracking, manifesting, and records management as defined in the WAC Attainment Plan is met and performed by Waste Acceptance Organization (WAO) personnel. Inspections are performed by SDFP construction and compliance personnel.

1.1 CONSTRUCTION HISTORY

1.1.1 Material Disposition

Prior to construction the BDTA footprint one former groundwater monitoring well was removed, the area cleared of debris, and the surface and subsurface soils prepared for gravel pad construction. Specifically:

- Casing was removed on April 13, 2000 from former groundwater Monitoring Well 41240 (formerly 67). This well was placed in service on June 28, 1951 at coordinates N482138.416, E1349490.041 (1983 coordinate system) which later became the footprint of the KC2 Warehouse

- The 477-cubic yard debris pile HRD-02A containing Sewage Treatment Plant (STP) South Trickling Filter media and above-WAC petroleum spill contained soil was moved from its location in the southeast corner of the BDTA footprint to the above-WAC Soil Stockpile (SP) JDC-SP7.

- Gravel pile A3A-006 was moved from its location in the south central portion of the footprint to Stockpile W800051 (SP1). This has subsequently been used for building impacted access roads and ramps inside the OSDF cells

- Approximately 471 cubic yards of above-WAC debris, surface and subsurface soil containing residue material with elevated radiological readings from the old site D&D Building scrap pile was sent to JDC-SP7

- Approximately 210 cubic yards of below-WAC surface soil were sent to the meets-WAC Stockpile W800051 (SP1)

- Approximately 1,106 yards of uncharacterized debris and soil were sent to the unknown WAC status Stockpile A3B-001

- Approximately 1,806 cubic yards of meets-WAC soil were placed in the OSDF

- The railroad ties have remained in the area and have been reused to delineate the BDTA bins

- Unimpacted surface gravel/soil was left in place and became part of the soil base below the geotextile fabric for the gravel pad.

1.1.2 Gravel Pad Construction

Site preparation for the BDTA gravel pad began in July 2000 by Wise Services Construction Company. Work instructions and safety precautions were managed under the OSDF Material Transfer Area (OMTA) Expansion Debris Storage Construction Traveler (DOE 2000a) and the OSDF Safety Assessment (DOE 2000b).

During gravel pad construction the following activities were performed:

- Drainage control,
- Surface grading,
- Geotextile liner placement, gravel placement and compaction, and
- Electric service installation/perimeter fencing and access gates installation.

Construction of the gravel pad was a multi-step operation. First, surface water drainage from the process area isolation trench immediately north of the footprint and water from the OSDF wheel wash facility needed to be diverted from draining into the footprint. Old drain lines within the BDTA footprint, which had been installed originally to aid in water removal from the trench, were cut, air gapped, plugged, and grouted closed. Drainage from the process area isolation trench was redirected through new storm sewer lines to feed directly into the process area storm water collection system west of "B" Street.

Once the inflow of water from the process area isolation trench was rerouted, the footprint was sloped for surface water drainage control. The footprint was sloped to allow drainage to flow from north to south and from east to west where it enters the process area storm water collection system.

After the footprint was sloped for drainage, soft spots in the soil footprint were bridged with No. 2 stone and compacted, and a textile fabric placed over the surface to aid in stabilization of the final pad. The fabric was AMOCO Style 2002 woven geotextile fabric meeting Ohio Department of Transportation (ODOT) 712.09 Type D requirements. The fabric has a permeability rating of 0.003 cm/sec. On top of the fabric, approximately 12 inches of ODOT 304 aggregate was placed and compacted to approximately an 8 to 10-inch thickness to create the pad.

Following pad construction, electric service was provided through the installation of 480-volt overhead lines to provide power to the perimeter air monitors and the control point trailers. In addition, fencing, gates and construction area postings were installed to provide controlled access to the area.

1.1.3 Cultural Resources Considerations

The 1997 agreement entitled Programmatic Agreement Among the U.S. Department of Energy, Fernald Office, the Advisory Council on Historic Preservation, and the Ohio Historic Preservation Office Regarding Archeological Investigations at the Fernald Environmental Management Project (DOE 1997) exempts the BDTA from cultural resources field investigations due to previous soil disturbance during the process area construction. In the event any unexpected discoveries were uncovered during construction, the contingency plan Unexpected Discoveries of Cultural Resources (Procedure EP-0003) would have been implemented.

2.0 MANAGEMENT CONTROLS

2.1 SAFETY MANAGEMENT

2.1.1 Safety Assessment and Hazard Category Determination

The OSDF Safety Assessment (DOE 2000b) addressed the hazards and activities performed in OSDF cells and the OMTA CTA. This safety assessment was also used to construct the OMTA BDTA. Addendum 1 to the safety assessment (DOE 2001) determined the addition of the BDTA did not change the Hazard Category from "Other Industrial Hazards." These identified hazards are managed through compliance with the OSDF Construction Traveler and the Safety Performance Requirements (Procedure RM-0021).

2.1.2 Radiological Protection

The occupational radiological protection program for the BDTA follows standard operating procedures associated with field activities, the Construction Traveler, existing radiological control department procedures, and radiological work permits. The Radiological Control Department implements radiological controls at the FEMP in accordance with 10 Code of Federal Regulations (CFR) 835, Occupational Radiation Protection, as relayed in Procedure RM-0020, Radiological Control Requirements Manual, and site and department procedures. Existing Radiological Control procedures are utilized for equipment calibrations, measurements on response checks, and calculations of all radiological control data.

The BDTA is a posted high contamination area. Project personnel enter the area through the control point currently at T-96. There are also currently two entrance/exit points for equipment to access the BDTA. The first entrance/exit point is on the west end of the area at the "B" Street T-191 Control Point. Equipment enters through the controlled area "B" Street entrance from various site projects and locations. Equipment exiting at this point is surveyed in the buffer zone, and if necessary receives a water spray to remove any mud or loose debris before reentering the controlled area. The second entrance/exit point is on the south end of the BDTA immediately north of the haul road. Equipment enters through the gate directly from the contaminated Plants 5 and 6 D&D project areas. Equipment exiting at this point must have a visual inspection performed to ensure there is no visible mud or debris on the outside. Any visible mud or debris is physically removed, the equipment re-inspected and released to the project areas. Equipment exiting the posted high contamination area is monitored for

fixed and loose surface contamination. The levels for release are <1,000 disintegrations per minute (dpm)/100 square centimeters (cm^2) for loose and <5,000 dpm/100cm^2 for fixed contamination.

2.1.3 Exposure Control

Personnel exposure is monitored using breathing zone (BZ) air samplers. A minimum of 25 percent of the personnel working in the BDTA wear BZs. The requirement is applicable to work activities within a contamination, high contamination or an airborne radioactivity area. Requirements for air samplers are managed under Radiological Controls Field Operations Procedure 602-1025.

2.1.4 Personal Protection

Project safe work and PPE requirements are controlled through the Construction Traveler, Exposure Control and Monitoring Procedure (RP-0023), and the FEMP Work Permit Procedure (SH-0021). Currently, the need for air-purifying respirators with particulate filters for personnel within 25 feet of the unloading/loading activity is routinely evaluated. Respirators are assigned as needed in accordance with the Construction Traveler and the Radiation Work Permit. If respirators are in use within the 25-foot zone then personnel beyond the 25-foot zone are to stay "up wind" from field activities. A windsock is currently used to provide a visible indication of wind direction. Personnel protective equipment requirements may be changed by the project to meet changing program needs. Changing safety requirements are communicated to personnel at daily and weekly safety meetings.

2.1.5 Lighting/Overhead Electric Cable

Either generator power or overhead electric lines may provide lighting in the BDTA. Lighting requirements are found in the Construction Traveler, and must meet or exceed the requirements in 29 CFR 1910.120 (m) entitled Illumination.

2.2 FUGITIVE DUST MANAGEMENT

The BDTA is managed to control fugitive dust in accordance with Procedure RM-0047, Fugitive Dust Control Requirements. The Best Available Technology (BAT) identified to minimize the release of fugitive dust to the environment is the use of water spray and when appropriate, the use of tarps. Compliance with this requirement is verified through monitoring the field activities to ensure fugitive dust emissions are controlled. In addition, water is also used for as low as reasonably achievable (ALARA) purposes to ensure radioactive airborne contamination levels are kept to a minimum.

2.2.1 Dust Control

Dust control during debris off loading, staging, and reloading for transport to the OSDF is accomplished using a water spray, as needed. Water can be supplied through fire hoses, water trucks, portable hydro-seeder, or other methods. To prevent water from freezing inside the spray equipment during the winter months, Propylene Glycol antifreeze or other environmentally safe antifreeze may be used.

Dust control during debris transport to the BDTA is accomplished using a water spray or tarps, as needed to control dust. It is anticipated that ROBs will not need to be tarped during continuous loading, transportation and dumping operations between D&D areas and the BDTA. It is also anticipated that tarps will not be needed during continuous disposition of debris from the BDTA to the OSDF cells.

2.2.2 Perimeter Air Monitors

Currently there are three air particulate monitors in place at the north, west and east boundaries of the BDTA. The monitors are active during material off loading at the BDTA, material segregation within the area, or dispositioning from the area to the OSDF. These air samplers are evaluated daily during work activities to ensure the effectiveness of the dust suppression system. The number, type and location of perimeter monitors can be changed to meet project needs.

2.3 SURFACE WATER MANAGEMENT

Surface water, from both rainfall and from water used as needed to rinse loose debris from equipment leaving the area, is captured in the south west corner of the pad, fed into the site storm water collection system, and sent to the Advanced Wastewater Treatment Facility for processing.

2.4 PHYSICAL ACCESS CONTROLS

The BDTA is controlled by the SDFP/OSDF Construction Facility owner. A locked perimeter fence has been installed to control access to the BDTA when not in use. To access the area, the fence must be unlocked and any debris and tracking log inspected prior to off loading.

3.0 BULK DEBRIS PLACEMENT

Bulk debris placement began in October 2000 with Category 2 debris received from the demolition of the former Industrial Relations building, and is expected to continue until all FEMP debris meeting OSDF WAC which may need to be staged is deposited in the OSDF.

3.1 WAC COMPLIANCE

SDFP Construction and WAO personnel ensure only material meeting the OSDF WAC Attainment Plan and the Impacted Material Placement Plan (DOE 2000c) is placed in the BDTA. WAC compliance is managed through Project Waste Identification and Disposition Report (PWID) generation, the Field Tracking Log/OSDF Manifest for Containerized Debris (Form FS-F-5153), the OSDF Manifest for Bulk Soils and Debris (Form FS-F-5154), and visual inspections.

WAO personnel generate a PWID prior to debris generation. The PWID evaluates the debris for WAC attainment and assigns it to a debris category. To ensure compliance, WAO personnel visually inspect the debris:

- At its point of generation
- During the loading or containerizing operation prior to transport to BDTA
- During off-loading at the BDTA
- During placement in the OSDF.

Any debris not meeting WAC is returned to the generator and the return noted on the manifest.

WAO hard-copy field records become part of the WAO Operating Record and are maintained in WAO controlled locked files. In addition, information from the hard-copy records are input into the Integrated Information Management System (IIMS) database for permanent data storage.

3.2 BULK DEBRIS HANDLING

Bulk debris handling can occur during off-loading at the BDTA, during debris segregation within the area, and during disposition from the area to the OSDF cells. During any bulk debris handling activity, the use of water spray to control fugitive dust is the primary method of dust control, although tarps may be used as needed.

Bulk debris currently enters the area in untarped ROBs. ROBs do not need to be tarped during continuous loading operations between D&D areas and the BDTA; however, loaded ROBs being staged for an extended duration will be tarped to prevent the accumulation of rain water in the ROBs when rain events are expected. Any tarped ROB will be untarped before being transported to the BDTA or untarped at the KC2 Warehouse footprint within the BDTA. The use of other types of construction equipment besides ROBs may be used by the project to move the bulk debris to the BDTA provided similar fugitive dust control measures are employed.

Once inside the BDTA, the WAO representative reviews the field tracking log/OSDF manifest for WAC compliance and if acceptable, the construction representative directs the load to a designated bin or bins within the area. During unloading, a WAO representative again views the debris to ensure no prohibited items are in the load. Construction management ensures water is sprayed on the debris as needed to prevent dust generation.

Currently a portion of the BDTA is divided into seven bins each approximately 100 feet by 100 feet in size, separated by railroad ties. The debris is placed within a bin, the height of which is determined by the size of the construction equipment being used to safely consolidate the debris within the bin. Current construction equipment allows debris 30 feet in height to safely be placed. The configuration, location, and number of storage bins, as well as the debris height may be changed to meet project needs.

After unloading, the vehicle leaves the area for either a controlled or contaminated area. Requirements for release are found in Section 2.1.2.

The debris will remain in the area until it is ready to be dispositioned in the OSDF. At the time of dispositioning, various types of construction equipment may be used to move the bulk debris to the cell. If fugitive dust could be generated, a water spray is used. The construction equipment does not need to be tarped during continuous dispositioning to the cell, and care will be exercised to ensure the equipment is not staged for an extended duration to prevent the accumulation of rainwater.

3.3 EQUIPMENT FUELING

Support equipment remaining in the BDTA is refueled within the area to eliminate the need to release the vehicle from the high contamination zone for refueling. Currently refueling operations occur at the

northeast gate, but the refueling operation may be relocated to meet project needs. Refueling activities must comply with requirements in the Construction Traveler, the Safety Performance Requirements Manual (Procedure RM-0021) and 29 CFR 1926 Subpart F.

4.0 INSPECTIONS

SDFP Construction and/or compliance personnel conduct inspections on a weekly basis, or as specified by the Construction Project Manager, to verify the BDTA meets all requirements including:

- Fence integrity
- Dust control compliance
- Bin debris integrity
- Runoff control.

Verification of perimeter fence security is essential to ensuring above-WAC materials remain excluded from the BDTA. The gates are kept locked when the area is not in use, and there are to be no breaks in the perimeter fence.

During dust control monitoring, observations are made to ensure no material in the transfer area has become loose and able to become airborne.

During bin debris integrity observations, the debris is considered for stability, signs of erosion, and loose objects that could cause a hazard or become airborne.

During runoff control verification the catch basins are inspected to ensure they are not blocked.

Records of the inspections are maintained by OSDF Construction and upon project completion will be sent to Engineering/Construction Document Control for storage.

5.0 DECOMMISSIONING

Upon completion of BDTA activities, the gravel and geotextile liner will be removed and disposed in accordance with OSDF WAC criteria, and the footprint will be released to SDFP for subsequent soils remediation. If cultural resources are uncovered during remediation, the contingency plan Unexpected Discovery of Cultural Resources (EP-0003), will be followed.

REFERENCES

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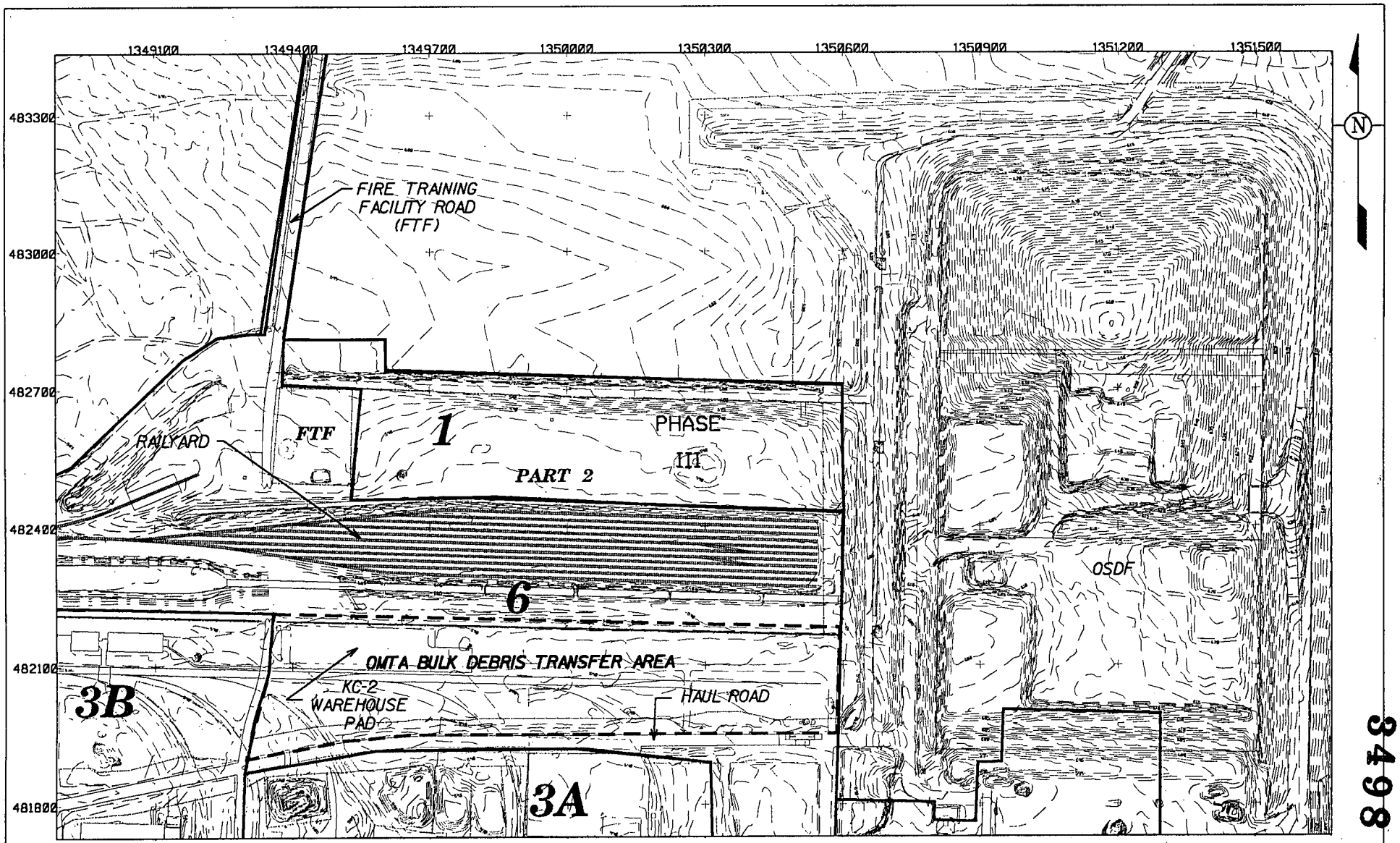

LEGEND:

- - - - OMTA BOUNDARY

SCALE

300 150 0 300 FEET

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FIGURE 1. ON-SITE DISPOSAL FACILITY MATERIAL TRANSFER AREA (OMTA), BULK DEBRIS TRANSFER AREA

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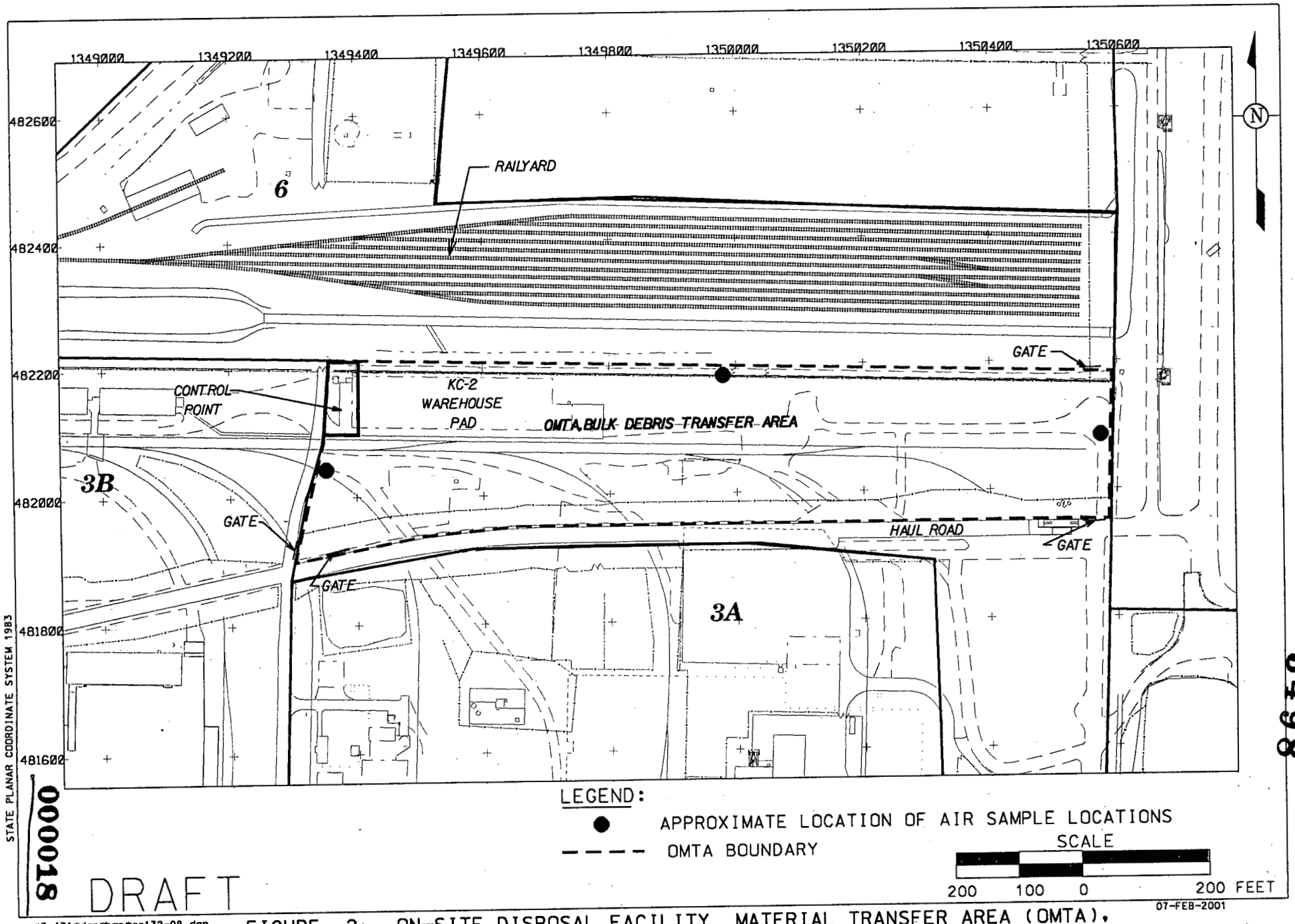

FIGURE 2. ON-SITE DISPOSAL FACILITY MATERIAL TRANSFER AREA (OMTA), BULK DEBRIS TRANSFER AREA DETAIL