

5022

**EXCAVATION PLAN  
FOR AREA 7/CELL 8**

**FERNALD CLOSURE PROJECT  
FERNALD, OHIO**



**JULY 2003**

**U.S. DEPARTMENT OF ENERGY  
FERNALD AREA OFFICE**

**20500-PL-0001  
REVISION A  
DRAFT**

**000001**

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**LIST OF ACRONYMS AND ABBREVIATIONS**

D&D	Decontamination and Decommission
DOE	U.S. Department of Energy
FCP	Fernald Closure Project
FRL	final remediation level
NPDES	National Pollutant Discharge Elimination System
OSDF	On-Site Disposal Facility
WAC	waste acceptance criteria

## EXCAVATION PLAN FOR AREA 7/CELL 8

### 1.0 INTRODUCTION

#### 1.1 Background

The On-Site Disposal Facility (OSDF) is being constructed to contain impacted materials obtained from remediation of the operable units at the Fernald Closure Project (FCP) and is located on the eastern portion of the site. When completed, the OSDF will consist of eight cells being constructed and filled generally from north to south. The major components of each cell include a liner and final cover system, leachate management system, surface-water management system, and support facilities and the utilities. Prior to the placement of waste within an individual cell the subgrade must be prepared and the liner system and portions of the leachate management system must be completed. Prior to constructing the liner and portions of the leachate management system, the subgrade must be readied. This includes removal of top soil, other unsuitable soils, and at- and below-grade structures. In addition, the area must be certified to meet the established final remediation level (FRL) goals based on the Operable Unit 5 Record of Decision (DOE 1996).

A portion of the footprint for OSDF Cell 8 will be constructed has not been certified. This excavation plan addresses the steps required to obtain certification for this area prior to subgrade preparation activities for OSDF Cell 8.

#### 1.2 Purpose

This excavation plan describes the remediation of soil, and at- and below-grade structures within an uncertified portion of the OSDF Cell 8 footprint. This area is included in Area 7. The majority of the OSDF Cell 8 footprint as already been certified as part of Area 1, Phase II (see Figure 1). Note: As of the date of this publication, Cell 8 has not been designed and the footprint required to construct the cell liner and cap has been approximated for purposes of this document.

#### 1.3 Exclusions

The removal of above-grade structures at the Fuel Loading/Unloading Facility (82B) located within the Area 7/Cell 8 footprint is excluded from this document. The removal of these structures will be performed as a Decontamination and Decommission (D&D) activity [see Miscellaneous Small Structures Phase II Implementation Plan for Above-Grade D&D (DOE 2003a)]. In addition, the purging for fuel from the associated underground diesel and gasoline fuel lines is excluded from this document and will be conducted as a facility isolation operation.

1 The predesign characterization of the Area 7/Cell 8 Footprint is also excluded from this document (see  
2 Project Specific Plan for Predesign Investigation in Area 5 (DOE 2002). This area was reclassified from  
3 part of Area 5 to part of Area 7 based on a verbal request from the U.S. Environmental Protection Agency  
4 and as submitted in the Area 3B/4B/5 Implementation Plan (DOE 2003b).

5  
6 The removal of structures within the OSDF Cell 8 footprint that are in already certified areas (Area 1,  
7 Phase II) will not be governed by this document and will be removed as part of the OSDF Cell 8 subgrade  
8 preparation effort.

## 9 10 2.0 REMEDIAL APPROACH

### 11 2.1 Description

12 The Area 7/Cell 8 Footprint is located east of the Administration Area and east of the southeast corner of  
13 the Former Production Area (see Figure 1). The area functions as a radiologically clean area (not  
14 radiologically controlled) and has served primary as a support area for site operations.

15  
16 The area has primarily been used to park inbound and outbound tractor trailers used to ship waste  
17 materials off-site for disposal at the Nevada Test Site. This includes several concrete pads and gravel  
18 parking lots to facilitate trailer parking. In addition, several auxiliary gravel parking lots to facilitate  
19 worker parking have been constructed within the area.

20  
21 The area also includes the Fuel Loading/Unloading Facility (82B). This contains two above-ground fuel  
22 tanks (one for diesel and one for gasoline that service two sets of pumps). One set of pumps is located on  
23 the western side of Facility 82B. The other set of pumps is located within the Former Production Area  
24 near the Elevated Portable Water Tank (20D) and service site vehicles within the radiologically controlled  
25 areas. These tanks and the two adjacent pumps will be removed by D&D prior to the beginning of  
26 excavation.

27  
28 A number of underground utilities are located within the Area 7 Cell 8 footprint. This includes portions  
29 of electrical duct banks, direct buried electrical cables, communication cables, potable water lines, a fuel  
30 gas (natural gas) line, an effluent line, a sanitary force main line and the original OSDF Leachate  
31 Conveyance System gravity pipe. In addition, there are underground diesel and gasoline lines running  
32 west from Facility 82B to the controlled area pumping station. This area also has a number of overhead  
33 electrical power lines including three lines from a Cinergy Gas and Electric transmission tower to the  
34 site's Main Electrical Station (16A).

## 2.2 Stormwater Management

Stormwater from the Area 7/Cell 8 Footprint area drains indirectly to Paddys Run through surrounding ditches and the OSDF Sediment Basin #2 (see Figure 2). Likewise during excavation, storm water will drain indirectly to Paddys Run through surrounding ditches and the OSDF Sediment Basin #2; however, check dams will be installed at strategic locations to reduce the amount of sediment loading in the discharge. Specifically, check dams will be installed at the inlets of two culverts that are to remain in place after excavation, and at the outlet of a third culvert that will be removed during the remediation process.

Three culverts drain storm water from the work area. Two of these culverts are located on the west side of the work area and drain under "F" Street to the OSDF Sediment Basin #2 Main Drainage Channel. These two culverts are to remain in service after remediation of the area and will not be removed until "F" Street is remediated, which is not covered by this document. Check dams will be installed at the inlets to these two culverts. The other culvert that drains storm water from the work area is located near the Fuel Loading/Unloading Facility and drains northward into a stone lined ditch that discharges into the OSDF Sediment Basin #2 Main Drainage Channel. This culvert will be removed during remediation of the work area. A check dam will be installed at the outlet of this culvert.

Water collected in the OSDF Sediment Basin #2 Main Drainage Channel drains into the OSDF Sediment Basin #2 prior to being released to Paddys Run. Discharge from this basin spills into a riser pipe, flows through a large storm pipe located under the southeast parking lot, is drains into the Storm Sewer Outfall Ditch, and is released into Paddys Run at Permitted National Pollutant Discharge Elimination System (NPDES) Stormwater Outfall (STRM 4003) under Ohio NPDES Permit 11O00004\*FD.

## 2.3 Remedial Excavation

Prior to excavation, the utilities within the work area will be isolated, and check dams and construction safety fences will be installed as per the drawings (see Appendix A).

Excavation equipment will be used to break at-grade concrete pads and asphalt pavement within the work area. Broken concrete, asphalt, and surface gravel will be removed from the work area for disposal in the OSDF. Real-time monitoring will be performed on soil immediately under removed pads, pavement, and surface gravel to ensure that no material above the waste acceptance criteria (WAC) material for the OSDF exists on the underlying surface of the soil prior to continued excavation. Disturbance to the soil under pads, pavement, and gravel will be minimized until the underlying surface can be monitored.

1 Underground utilities and below-grade structures within the work area will be removed. This includes the  
2 last remaining portion of the abandoned-in-place Leachate Conveyance System Gravity Flow Pipe which  
3 is located almost entirely within the area to be certified but includes almost 60 feet of pipe that runs just  
4 outside and southwest of the work area. In addition, an approximately 30-foot portion of the underground  
5 diesel and gasoline fuel lines will also be removed that are located within the Area 1, Phase II  
6 Certification Area. One potable water line and yard hydrant located within the excavation area will be  
7 protected during excavation and left in place. This line and hydrant are actually outside the Cell 8 liner  
8 footprint and will be used to support construction of Cell 8 as needed. This line will be removed when it  
9 becomes isolated due to soil remediation in other areas that would take the line out of service.

10  
11 After the removal of surface concrete, asphalt, and gravel, a 6-inch surface scrap will be performed over  
12 the work area to ensure removal of contaminated material otherwise not discovered during predesign  
13 characterization. All excavated material, soil and debris meeting the OSDF WAC will be disposed in the  
14 OSDF. Any above-WAC material discovered during remediation will be disposed of accordingly.

#### 15 16 2.4 Interim Restoration

17 A precertification Project Specific Plan will be submitted as a separate document to the regulatory  
18 agencies for review and approval. Precertification activities will commence after the design grade has  
19 been reached and all other remediation in the area is complete. The precertification area will be  
20 delineated and controlled to prevent cross-contamination of environmental media. Real-time monitoring  
21 of the excavated grade will be performed to precertify the area as attaining the uranium, thorium, and  
22 radium FRL goals. The remediated area will be seeded in accordance with Technical Specification  
23 Section 02930.

24  
25 After certification of the area is obtained, the construction of the OSDF Cell 8 liner and Valve House #8  
26 can begin as scheduled.

#### 27 28 References

29 U.S. Department of Energy, 1996, "Record of Decision for Remedial Actions at Operable Unit 5," Final,  
30 Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

31  
32 U.S. Department of Energy, 2002, "Project Specific Plan for Predesign Investigation of Area 5,"  
33 Revision 0, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

- 1 U.S. Department of Energy, 2003a, "Miscellaneous Small Structures Phase II Implementation Plan for
- 2 Above-Grade Decontamination and Dismantlement," Revision 0 PCN 1, Fernald Closure Project, DOE,
- 3 Fernald Area Office, Cincinnati, Ohio.
- 4
- 5 U.S. Department of Energy, 2003b, "Implementation Plan for Area 3B/4B/5," Draft Revision B, Fernald
- 6 Closure Project, DOE, Fernald Area Office, Cincinnati, Ohio.

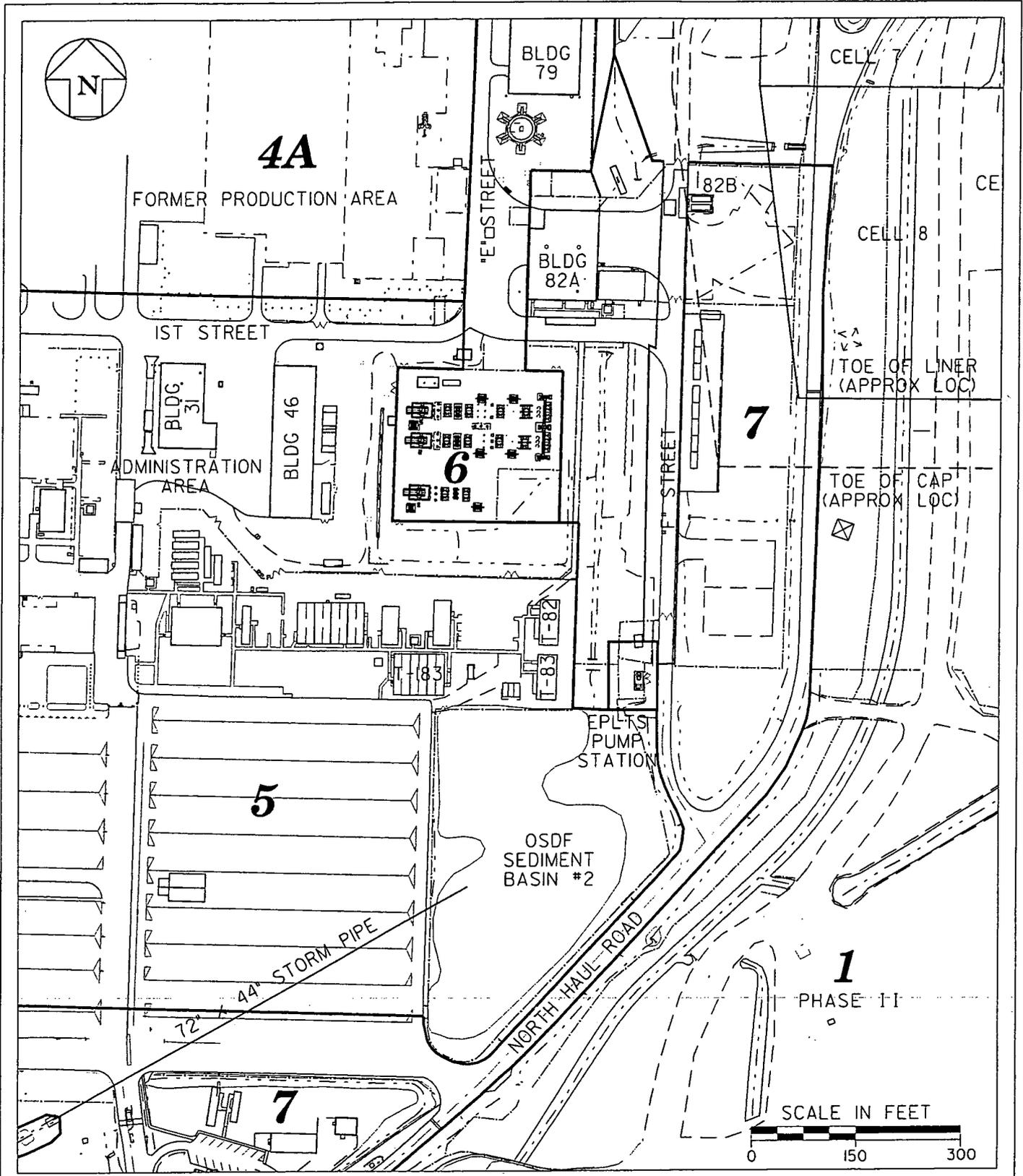
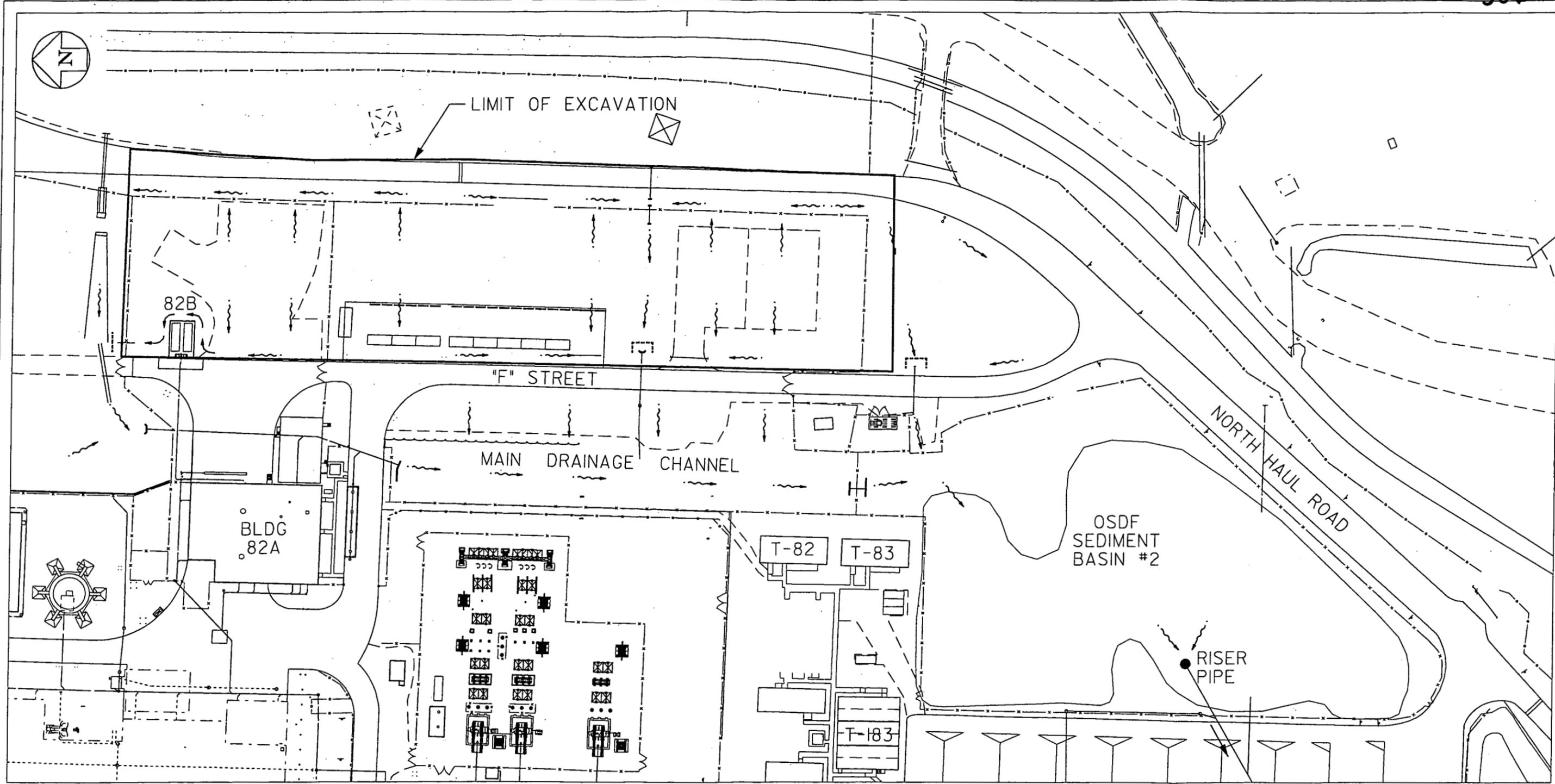


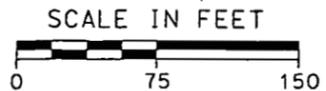
FIGURE 1  
 AREA 7 / CELL 8  
 FOOTPRINT

000008



--- INDICATES CHECK DAM

~~~ INDICATES SURFACE DRAINAGE DIRECTION



TO PADDY'S RUN BY SWRB  
OUTFALL

000009

FIGURE 2  
AREA 7 / CELL 8  
FOOTPRINT DRAINAGE

**APPENDIX A**

**LIST OF DRAWINGS**

**APPENDIX A  
LIST OF DRAWINGS**

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2  
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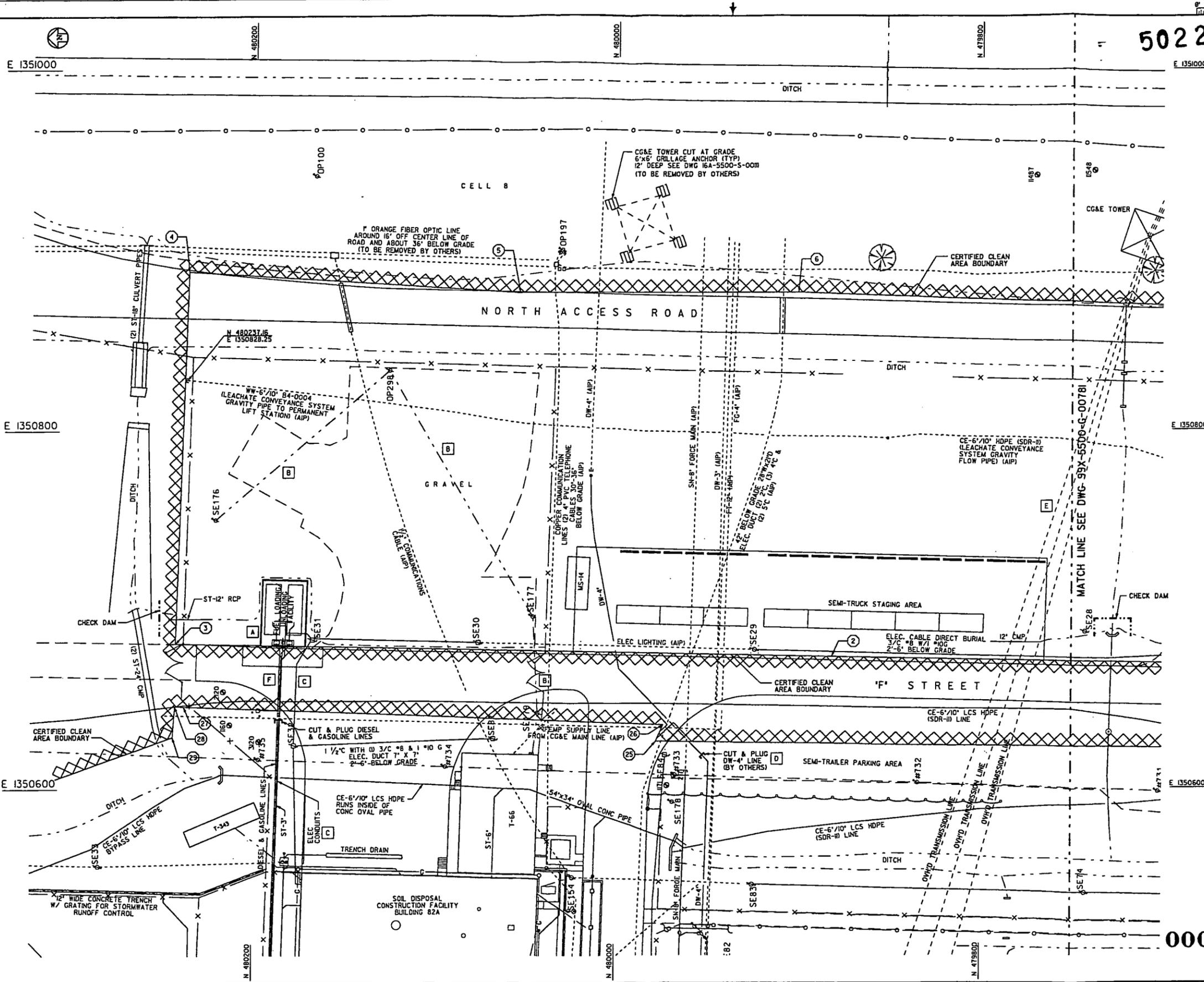
Design Drawings

Drawing 99X-5500-G-00780 Area 7 Cell 8 Partial Excavation Plan, Sheet 1 of 2  
Drawing 99X-5500-G-00781 Area 7 Cell 8 Partial Excavation Plan, Sheet 2 of 2

Reference Drawings

Drawing 99X-5500-X-00639 Legend and General Notes  
Drawing 99X-5500-G-00769 Utility and Structure Removal Below Design Grade  
Drawing 22F-5500-P-00663 Grid 4 Underground Utilities – Bldg. 79, 82 and E. Water Tower  
Drawing 22A-5500-P-00664 Grid 5 Underground Utilities – East of Main Substation

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**GENERAL NOTES**

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND ADDITIONAL GENERAL NOTES.
2. COORDINATE WITH REAL-TIME TO SCAN SURFACE UNDER CONCRETE, ASPHALT, AND GRAVEL, IN ACCORDANCE WITH THE SITEWIDE EXCAVATION PLAN (2500-WP-0028) SECTION 4.4.2.3.
3. IF ABOVE-WAC MATERIAL IS DISCOVERED UNDER PADS/PAVEMENT, REMOVE IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
4. SURVEY AND RECORD THE ENDS OF UTILITIES REMAINING AFTER EXCAVATION.
5. THE CONSTRUCTION MANAGER WILL ARRANGE FOR PRECERTIFICATION MONITORING AND SAMPLING OF THE EXCAVATED AREA.
6. PROTECT MONITORING WELLS THAT REMAIN AT TIME OF EXCAVATION.

**SCOPE OF REMEDIATION WORK**

1. THE LIMIT OF WORK AREA IS THE AREA INCLUSIVE OF CERTIFIED CLEAN AREA CONTROL POINTS 1 THROUGH 7 AND EXCAVATION CONTROL POINT 1.
2. REMOVE CONCRETE PADS AND ASPHALT PAVEMENT WITHIN THE LIMIT OF WORK AREA AND HAUL TO OSDF.
3. REMOVE GRAVEL WITHIN THE LIMIT OF WORK AREA AND HAUL TO OSDF.
4. EXCAVATE THE TOP 6 INCHES OF SOIL ACROSS THE LIMIT OF WORK AREA AND HAUL TO OSDF. THIS INCLUDES SOIL UNDERNEATH CONCRETE PADS, ASPHALT PAVEMENT, AND GRAVEL/STONE.
5. REMOVE UNDERGROUND UTILITIES WITHIN THE LIMIT OF WORK IN ACCORDANCE WITH DRAWING 99X-5500-G-00769. CAP REMAINING UTILITIES AT THE LIMIT OF WORK.

**KEYED NOTES**

- A** PRIOR TO EXCAVATION VERIFY ABOVE-GRADE DIESEL AND GASOLINE TANKS, AND ABOVE-GRADE PUMPS HAVE BEEN REMOVED BY OTHERS AND UNDERGROUND DIESEL AND GASOLINE LINES HAVE BEEN ELECTRICALLY ISOLATED BY OTHERS.
- B** PRIOR TO EXCAVATION VERIFY OVERHEAD POWER LINES BETWEEN POLES SE179, SE177, OP298, AND SE176 HAVE BEEN ELECTRICALLY ISOLATED BY OTHERS.
- C** PRIOR TO EXCAVATION VERIFY UNDERGROUND POWER LINES BETWEEN POLES SE31, SE32, AND ELECTRICAL CONDUIT ADJACENT TO THE UNDERGROUND DIESEL AND GASOLINE LINES HAVE BEEN ELECTRICALLY ISOLATED BY OTHERS.
- D** PRIOR TO EXCAVATION VERIFY 4 INCH POTABLE WATER LINE (DW-4") HAS BEEN CUT AND PLUGGED BY OTHERS.
- E** PROTECT OVERHEAD ELECTRICAL LINES FROM CG&E TRANSMISSION TOWER TO MAIN ELECTRICAL SUBSTATION.
- F** REMOVE A PORTION OF BOTH THE DIESEL AND GASOLINE LINES ACROSS THE CERTIFIED AREA FROM THE FUEL LOADING/UNLOADING FACILITY TO THE CUT POINT. PLUG THE EXPOSED ENDS OF THE REMAINING PORTIONS OF BOTH LINES. BACKFILL TRENCH WITH ODOT ITEM 304 AGGREGATE.

| CERTIFIED CLEAN AREA CONTROL POINTS |           |            |
|-------------------------------------|-----------|------------|
| PT NO.                              | NORTHING  | EASTING    |
| 1                                   | 47988.35  | 1350673.19 |
| 2                                   | 480242.82 | 1350680.84 |
| 3                                   | 480236.56 | 1350888.21 |
| 4                                   | 480053.74 | 1350876.26 |
| 5                                   | 479900.70 | 1350876.26 |
| 6                                   | 479977.41 | 1350626.03 |
| 7                                   | 479973.25 | 1350635.21 |
| 8                                   | 480238.12 | 1350645.74 |
| 9                                   | 480243.09 | 1350645.98 |
| 10                                  | 480244.31 | 1350628.86 |

**PRELIMINARY**  
NOT FOR CONSTRUCTION

000012



| NO. | REVISIONS | DATE | DWN. BY | APPD. NO. | REVISIONS | DATE | DWN. BY | APPD. NO. | REF. DWG. NO. |
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|     |           |      |         |           |           |      |         |           |               |
|     |           |      |         |           |           |      |         |           |               |

**NOTE:**  
FLUOR FERNALD CADD DRAWING, DO NOT REVISE MANUALLY.

**CONFIGURATION MANAGEMENT DRAWING**

**APPROVALS**

|              |               |
|--------------|---------------|
| CIVIL & STR. | SAFETY ENG.   |
| ELECTRICAL   | MAINTENANCE   |
| ENGINEER     | IFRE PROTECT. |
| INSTRUMENT   | WASTE MANAGE. |
| MECHANICAL   | SECURITY      |
|              | PROJECTS      |

COORDINATOR ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

CHECKED: \_\_\_\_\_ APPROVED: \_\_\_\_\_

**Fernald Closure Project**

**FLUOR FERNALD, INC.**

**U.S. DEPARTMENT OF ENERGY**

**AREA 7**  
**CELL 8 PARTIAL EXCAVATION PLAN**  
**SHEET 1 OF 2**

PROJECT 20500  
DATE 5/20/03  
DRAWN BY LINDGREN  
99X-5500-G-00780 A

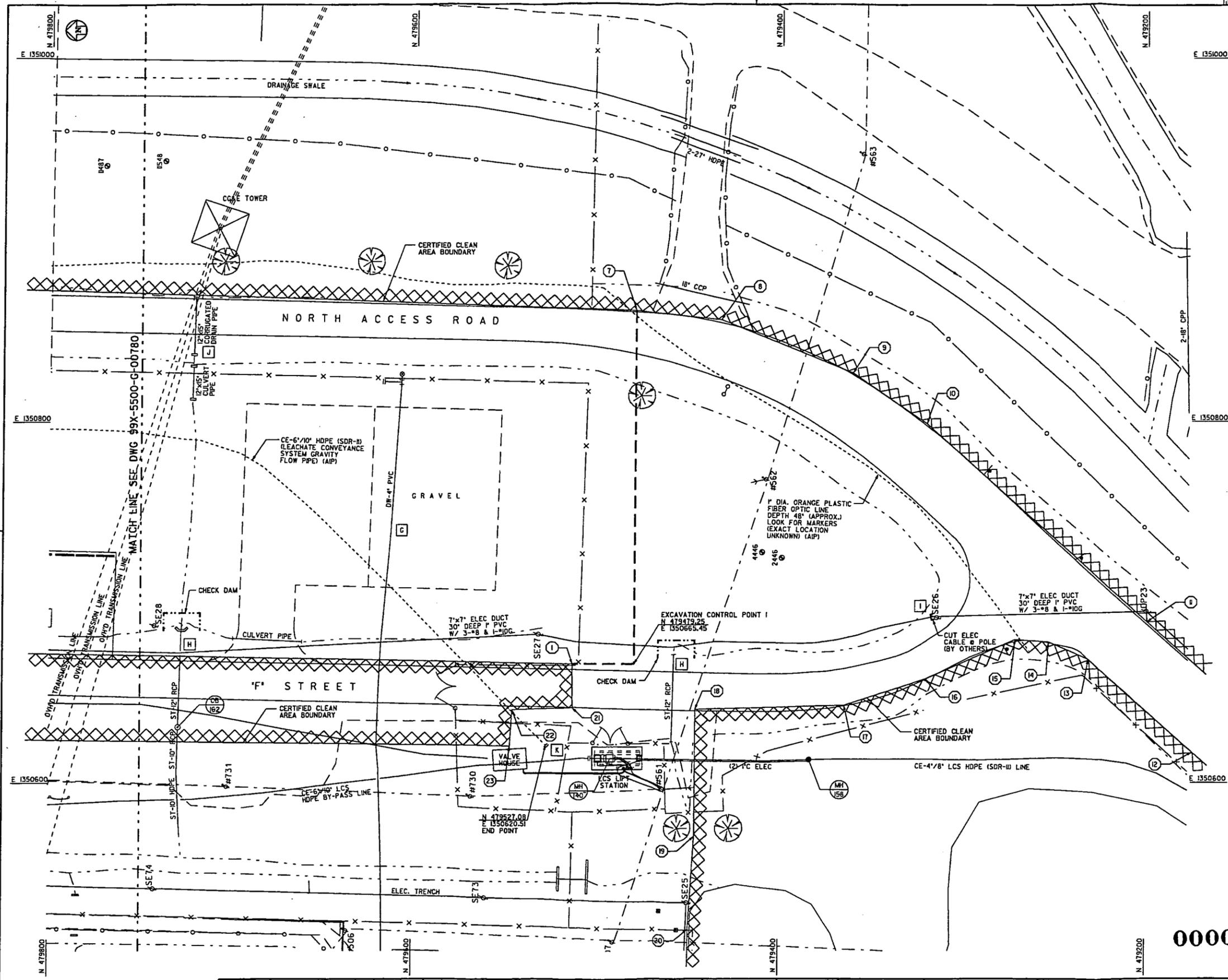
FILE NAME: /osdf/project20500/99xg0780.dgn

99xg0781 OSD/F3 lind8392 Monday July 21 2003 03:06:46 PM EDT

**GENERAL NOTES**

- SEE DRAWING 99X-5500-G-00780 FOR GENERAL NOTES AND SCOPE OF REMEDIATION WORK.
- SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND ADDITIONAL GENERAL NOTES.

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**KEYED NOTES**

- G** PROTECT BELOW GRADE 4 INCH POTABLE WATER LINE (DW-4"), TO REMAIN IN SERVICE
- H** PROTECT 12 INCH STORM SEWER LINES (ST-12" RCP), TO REMAIN IN SERVICE
- I** PRIOR TO EXCAVATION, VERIFY UNDERGROUND ELECTRIC CABLE WEST OF POLE SE26 HAS BEEN ELECTRICALLY ISOLATED BY OTHERS.
- J** ESTABLISH DRAINAGE DITCH AFTER REMOVING CULVERT AND CORRUGATED DRAIN PIPES
- K** REMOVE THE ABANDONED IN PLACE LEACHATE CONVEYANCE SYSTEM GRAVITY FLOW PIPE ACROSS THE CERTIFIED AREA TO THE END POINT. BACKFILL ACROSS "F" STREET WITH ODOT ITEM 304 AGGREGATE.

**CERTIFIED CLEAN AREA CONTROL POINTS**

| PT. NO. | NORTHING  | EASTING    |
|---------|-----------|------------|
| 1       | 479512.95 | 1350665.45 |
| 7       | 479479.25 | 1350861.16 |
| 8       | 479432.68 | 1350856.30 |
| 9       | 479360.97 | 1350826.87 |
| 10      | 479320.16 | 1350798.81 |
| 11      | 479199.46 | 1350688.80 |
| 12      | 479174.80 | 1350616.59 |
| 13      | 479231.74 | 1350667.97 |
| 14      | 479253.50 | 1350677.58 |
| 15      | 479271.74 | 1350678.99 |
| 16      | 479320.34 | 1350657.31 |
| 17      | 479364.89 | 1350642.54 |
| 18      | 479445.60 | 1350640.30 |
| 19      | 479445.60 | 1350570.30 |
| 20      | 479448.61 | 1350519.55 |
| 21      | 479512.76 | 1350641.22 |
| 22      | 479545.61 | 1350640.30 |
| 23      | 479546.78 | 1350620.15 |

FOR INFORMATION ONLY

**PRELIMINARY**  
NOT FOR CONSTRUCTION

000013



| NO. | REVISIONS | DATE | OWN. | BY | APPD. | NO. | REVISIONS | DATE | OWN. | BY | APPD. | NO. | REF. DWG. NO. |
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|     |           |      |      |    |       |     |           |      |      |    |       |     |               |
|     |           |      |      |    |       |     |           |      |      |    |       |     |               |
|     |           |      |      |    |       |     |           |      |      |    |       |     |               |

NOTE:  
FLUOR FERNALD CADD DRAWING. DO NOT REVISE MANUALLY.

**CONFIGURATION MANAGEMENT DRAWING**

COORDINATING ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

CHECKED: \_\_\_\_\_ APPROVED: \_\_\_\_\_

| APPROVALS             |                         |
|-----------------------|-------------------------|
| CIVIL & STR. ENGINEER | SAFETY ENG. MAINTENANCE |
| ELECTRICAL ENGINEER   | FIRE PROTECT.           |
| INSTRUMENT MECHANICAL | WASTE MNGR              |
|                       | SECURITY PROJECTS       |

**Fernald Closure Project**  
**FLUOR FERNALD, INC.**

U.S. DEPARTMENT OF ENERGY

AREA 7  
CELL 8 PARTIAL EXCAVATION PLAN  
SHEET 2 OF 2

PROJECT: 20500  
DATE: 5/2/03  
DRAWN: RL/UNGCEN

99X-5500-G-00781 A

FILE NAME: /osdct/project/20500/99xg0781.dgn

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| SYMBOLS LEGEND |                                                                  | SYMBOLS LEGEND |          | CONSTRUCTION DRAWING ABBREVIATIONS |                                                          | FOUNDATION DRAWING ABBREVIATIONS |                            |
|----------------|------------------------------------------------------------------|----------------|----------|------------------------------------|----------------------------------------------------------|----------------------------------|----------------------------|
| EXISTING       | PROPOSED                                                         | EXISTING       | PROPOSED | ACM                                | ASBESTOS CONTAINING MATERIAL                             | APPROX                           | APPROXIMATELY              |
|                | MANHOLE                                                          | N/A            |          | AIP                                | ABANDONED IN PLACE                                       | B/                               | BOTTOM OF                  |
|                | CATCH BASIN                                                      | N/A            |          | AW                                 | ACID WASTE WATER LINE                                    | C.I.                             | CAST IRON                  |
|                | ABOVE-GRADE WATERLINE                                            | N/A            |          | BR                                 | BRINE LINES                                              | C                                | CENTERLINE                 |
|                | ELECTRIC POLE                                                    | N/A            |          | BSL                                | BIOIDENTIFICATION SURGE LAGOON                           | CONC.                            | CONCRETE                   |
|                | LIGHT POLE                                                       | N/A            |          | CB                                 | CATCH BASIN                                              | Δ                                | INTERSECTION ANGLE (DELTA) |
|                | ELECTRIC MANHOLE                                                 | N/A            |          | CE                                 | CONTAMINATED EFFLUENT LINE                               | DIA                              | DIAMETER                   |
|                | ELECTRIC MANHOLE WITH TELEPHONE MANHOLE                          | N/A            |          | CFM                                | CUBIC FEET PER MINUTE                                    | E                                | EASTING                    |
|                | GRAVEL ROADWAY                                                   | N/A            |          | COC                                | CONSTITUENTS OF CONCERN                                  | E/W                              | EAST WEST                  |
|                | PAVED ROADWAY                                                    | N/A            |          | CN                                 | STEAM CONDENSATE LINE                                    | EL                               | ELEVATION                  |
|                | BUILDING SLAB/CONCRETE PAD/TRAILER                               | N/A            |          | CO                                 | CLEAN OUT                                                | EXIST                            | EXISTING                   |
|                | CHAIN LINK FENCE                                                 | N/A            |          | DF                                 | DEIONIZED FEED LINE                                      | FIN                              | FINISHED                   |
|                | TRAFFIC GATE                                                     | N/A            |          | DW                                 | LOW PRESSURE FIRE / POTABLE WATER LINE                   | FTG                              | FOOTING                    |
|                | CONSTRUCTION SAFETY FENCE                                        | N/A            |          | EC                                 | EDGE OF CONCRETE                                         | INV                              | INVERT                     |
|                | ROPE CONSTRUCTION FENCE                                          | N/A            |          | EMH                                | ELECTRICAL MANHOLE                                       | JT                               | JOINT                      |
|                | SILT FENCE                                                       | N/A            |          | EP                                 | EDGE OF PAVEMENT                                         | L                                | LENGTH                     |
|                | STRAW BALE                                                       | N/A            |          | EPLTS                              | ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM          | L.P.                             | LOW POINT                  |
|                | LIMIT OF EXCAVATION OR WORK                                      | N/A            |          | EL                                 | ELECTRICAL LINE                                          | N                                | NORTHING                   |
|                | PROTECTED AREA                                                   | N/A            |          | ELEV                               | ELEVATION                                                | N/S                              | NORTH SOUTH                |
|                | BENCHMARK                                                        | N/A            |          | FCP                                | FERNALD CLOSURE PROJECT                                  | PED                              | PEDESTAL                   |
|                | LIMIT OF ABOVE-WAC MATERIAL                                      | N/A            |          | FG                                 | FUEL GAS LINE                                            | PS                               | PIPE SUPPORT               |
|                | LIMIT OF HWMU MATERIAL                                           | N/A            |          | FRL                                | FINAL REMEDIATION LEVEL                                  | R                                | RADIUS                     |
|                | PIPE PLUG                                                        | N/A            |          | FT                                 | FILTRATE OR EFFLUENT LINE                                | R                                | RISER FOR STAIRS           |
|                | AIR GAP FOR STORM SEWER                                          | N/A            |          | FTF                                | FIRE TRAINING FACILITY                                   | S                                | SLOPE                      |
|                | UNDERGROUND UTILITIES                                            | N/A            |          | FOI                                | HIGH PRESSURE FIRE LINE                                  | S                                | CURVE DATA                 |
|                | HAUL ROAD                                                        | N/A            |          | GMA                                | UNSATURATED SANDS AND GRAVELS OF THE GREAT MIAMI AQUIFER | SYM                              | SYMMETRICAL                |
|                | WALKWAY                                                          | N/A            |          | GW                                 | GROUND WATER LINE                                        | T                                | TANGENT                    |
|                | CONTOUR - MINOR                                                  | 584            |          | HWMU                               | HAZARDOUS WASTE MANAGEMENT UNIT                          | T                                | TREAD FOR STAIRS           |
|                | CONTOUR - MAJOR                                                  | 585            |          | IE                                 | INVERT ELEVATION                                         | T/                               | TOP OF                     |
|                | CERTIFIED AREA BOUNDARY                                          | N/A            |          | KV                                 | KILOVOLT                                                 | TYP                              | TYPICAL                    |
|                | DEWATERING CHANNEL OR LINE                                       | N/A            |          | LF                                 | LINEAR FEET                                              | UNO                              | UNLESS NOTED OTHERWISE     |
|                | AREA ISOLATION TRENCH                                            | SEE PLANS      |          | LS                                 | LIVE STEAM                                               | WWF                              | WELDED WIRE FABRIC         |
|                | MODELED URANIUM CONTAMINATION EXTENDING OUTSIDE EXCAVATION AREAS | N/A            |          | LSP                                | LIME SLUDGE POND                                         |                                  |                            |
|                |                                                                  |                |          | MDC                                | MAIN DRAINAGE CORRIDORS                                  |                                  |                            |
|                |                                                                  |                |          | MH                                 | MANHOLE                                                  |                                  |                            |
|                |                                                                  |                |          | NAR                                | NITRIC ACID RECOVERY                                     |                                  |                            |
|                |                                                                  |                |          | OC                                 | ON CENTER                                                |                                  |                            |
|                |                                                                  |                |          | OD                                 | OUTSIDE DIAMETER                                         |                                  |                            |
|                |                                                                  |                |          | OMTA                               | OSDF MATERIAL TRANSFER AREA                              |                                  |                            |
|                |                                                                  |                |          | OSDF                               | ON-SITE DISPOSAL FACILITY                                |                                  |                            |
|                |                                                                  |                |          | PA                                 | PLANT AIR LINE                                           |                                  |                            |
|                |                                                                  |                |          | PCE                                | TETRACHLOROETHENE                                        |                                  |                            |
|                |                                                                  |                |          | PIV                                | POST INDICATOR VALVE                                     |                                  |                            |
|                |                                                                  |                |          | RAD                                | RADIUS                                                   |                                  |                            |
|                |                                                                  |                |          | RCRA                               | RESOURCE CONSERVATION AND RECOVERY ACT                   |                                  |                            |
|                |                                                                  |                |          | RW                                 | RAW WATER LINE                                           |                                  |                            |
|                |                                                                  |                |          | SA                                 | INSTRUMENT AIR SUPPLY LINE                               |                                  |                            |
|                |                                                                  |                |          | SD                                 | SUB-SURFACE DRAINAGE LINE                                |                                  |                            |
|                |                                                                  |                |          | SL                                 | SUMP LIQUOR LINE                                         |                                  |                            |
|                |                                                                  |                |          | SMH                                | SANITARY MANHOLE                                         |                                  |                            |
|                |                                                                  |                |          | SMTA                               | SPECIAL MATERIAL TRANSFER AREA                           |                                  |                            |
|                |                                                                  |                |          | SN                                 | SANITARY SEWER LINE                                      |                                  |                            |
|                |                                                                  |                |          | SP                                 | STOCKPILE / SOIL PILE                                    |                                  |                            |
|                |                                                                  |                |          | ST                                 | STORM SEWER LINE                                         |                                  |                            |
|                |                                                                  |                |          | SWL                                | SOLID WASTE LANDFILL                                     |                                  |                            |
|                |                                                                  |                |          | SWRB                               | STORMWATER RETENTION BASIN                               |                                  |                            |
|                |                                                                  |                |          | TC-99                              | TECHNETIUM-99                                            |                                  |                            |
|                |                                                                  |                |          | TOG                                | TOP OF GRATING                                           |                                  |                            |
|                |                                                                  |                |          | TOP                                | TOP OF PIPE                                              |                                  |                            |
|                |                                                                  |                |          | TYP                                | TYPICAL                                                  |                                  |                            |
|                |                                                                  |                |          | TW                                 | TREATED WATER LINE                                       |                                  |                            |
|                |                                                                  |                |          | UST                                | UNDERGROUND STORAGE TANK                                 |                                  |                            |
|                |                                                                  |                |          | VOC                                | VOLATILE ORGANIC COMPOUNDS                               |                                  |                            |
|                |                                                                  |                |          | WAC                                | WASTE ACCEPTANCE CRITERIA                                |                                  |                            |
|                |                                                                  |                |          | WR                                 | WATER RETURN-COOLING LINE                                |                                  |                            |
|                |                                                                  |                |          | WS                                 | WATER SUPPLY-COOLING LINE                                |                                  |                            |
|                |                                                                  |                |          | WWF                                | WELDED WIRE FABRIC                                       |                                  |                            |

- ### GENERAL NOTES
- EXISTING TOPOGRAPHY SHOWN ON DRAWINGS PROVIDED BY FLUOR FERNALD. THESE SOURCES INCLUDE EXISTING SITE DATA SOURCE (IN-PLANT FILES) FCP CADD GRID/UTILITY DRAWINGS.
  - HORIZONTAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NORTH AMERICAN DATUM 1983 (NAD 83).
  - VERTICAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
  - SILT FENCES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO UPGRADIENT LAND DISTURBANCES IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
  - DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE MINIMUM LIMITS OF EXCAVATION REQUIRED TO CAPTURE CONTAMINATION AND FOUNDATIONS WHILE MAINTAINING SAFE SLOPE REQUIREMENTS. FIELD CHANGES SHALL BE REPORTED TO CONSTRUCTION MANAGER AND APPROVED BY ENGINEER.
  - GEOLOGICAL AND CROSS SECTION INFORMATION TAKEN FROM (FEMP) OU-2 RL 1995, OU-2 FS, 1995, GEOTECHNICAL REPORTS, AND FEMP 3D CADD MODEL. ACTUAL GEOLOGICAL CONDITIONS AND DEPTHS SHOWN ON CROSS SECTIONS MAY VARY AND SHALL BE DETERMINED IN THE FIELD DURING EXCAVATION.
  - LOCATION AND DEPTH OF EXISTING UTILITIES AND FOUNDATION STRUCTURES ARE APPROXIMATE. IF UNIDENTIFIED UTILITIES ARE DISCOVERED, PROCEED AS DIRECTED BY THE CONSTRUCTION MANAGER.
  - DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
  - FIGURED DIMENSIONS AND/OR ELEVATIONS MARKED THUS (+/-) SHALL BE VERIFIED IN THE FIELD BEFORE START OF REMEDIATION.
  - MAINTAIN AND PROTECT UTILITIES OUTSIDE THE LIMIT OF EXCAVATION AND/OR LIMIT OF WORK.
  - PROVIDE TEMPORARY SHORING, BRACING, OR OTHER METHODS AS NECESSARY TO SAFELY SUPPORT EXCAVATION. PROTECTION SHALL BE IN ACCORDANCE WITH OSHA 29 CFR 1926, SUBPART P-EXCAVATIONS, LATEST EDITION.
  - OUTSIDE THE BOUNDARIES OF A COMPLETED UTILITY ISOLATION TRENCHED AREA, A PENETRATION PERMIT MUST BE OBTAINED BY THE CONSTRUCTION MANAGER FOR EXCAVATION OR PENETRATION INTO THE SOIL DEEPER THAN 6 INCHES.
  - TECHNICAL SPECIFICATIONS GOVERNING THIS PROJECT ARE THE LATEST REVISIONS OF 38/48/5 TECHNICAL SPECIFICATIONS (DOCUMENT # NO. 20004-TS-0001 AND 20013-TS-0001) AND ON-SITE DISPOSAL FACILITY (OSDF) PHASE IV TECHNICAL SPECIFICATIONS (DOCUMENT NO. 20104-TS-0001).
  - UNDERGROUND UTILITY GRIDS AND UTILITY DESIGNATION ABBREVIATIONS ARE IN ACCORDANCE WITH THE FEMP MASTER GRID OF UNDERGROUND UTILITY PLANS DRAWING 22X-5500-P-00659.

5022

| REV. NO. | ISSUE OR REVISION PURPOSE - DESCRIPTION | DATE   | REV. BY | APP. |
|----------|-----------------------------------------|--------|---------|------|
| 0        | ISSUED CERTIFIED FOR CONSTRUCTION       | 6/9/03 | RML     | GEP  |

**UNITED STATES  
DEPARTMENT OF ENERGY**

**FERNALD CLOSURE PROJECT**

THIS DRAWING PREPARED BY

**FLUOR FERNALD, INC.**

PROJECT NAME  
**SOIL REMEDIATION**

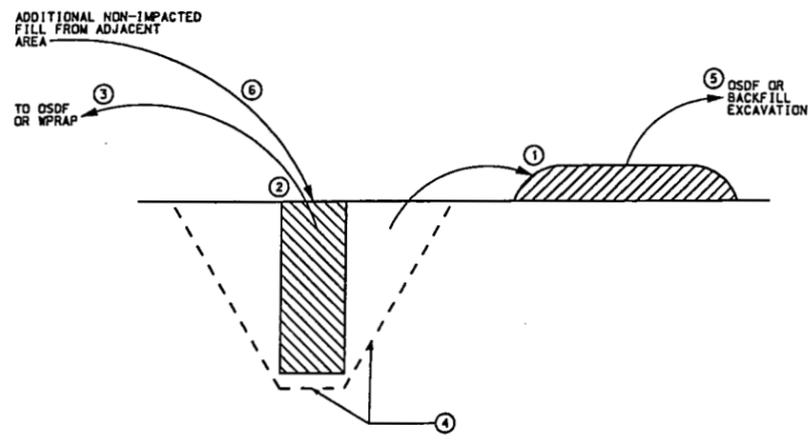
DRAWING TITLE  
**000014 LEGEND AND GENERAL NOTES**

| APPROVALS        |              |                        |           |          |  |
|------------------|--------------|------------------------|-----------|----------|--|
| COGNIZANT ENG.   | A. SHEER     | SAFETY ENG.            | C. JONES  |          |  |
| CIVIL & STR.     |              | MAINTENANCE            |           |          |  |
| ELECTRICAL       |              | FIRE PROTECT.          |           |          |  |
| ENGINEER         | A. BAZELL    | WASTE MNGMT.           |           |          |  |
| INSTRUMENT       |              | SECURITY               |           |          |  |
| MECHANICAL       |              | CONSTRUCTION           | A. BAZELL |          |  |
| CHECKED          | C. HEBBURN   | UTILITIES              | A. BAZELL |          |  |
| APPROVED         | C. HEBBURN   |                        |           |          |  |
| DRAWN BY         | PROJECT NO.  | DRAWING INDEX CODE NO. | SHEET NO. | REV. NO. |  |
| SLR              | 20850        | 99X-5500-X-00639       | X-3       | 0        |  |
| REV. PROJECT NO. | FILENAME     |                        |           |          |  |
|                  | 99X00639.DGN |                        |           |          |  |

99XG00769 OSD-F1 rabbb7064 Friday July 25 2003 01:33:23 PM EDT

GENERAL NOTES

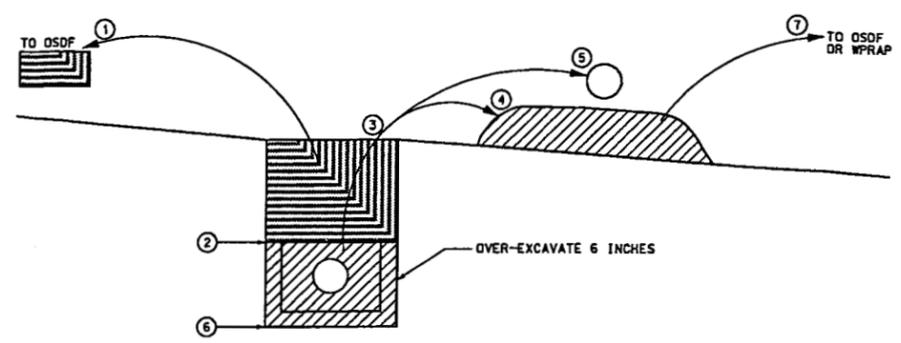
5022



- 1 EXCAVATE PRECERTIFIED OVERBURDEN SOIL FROM AROUND THE STRUCTURE\* AND TEMPORARILY STOCKPILE WITHIN THE EXCAVATION.
- 2 EXCAVATE THE STRUCTURE, PLUS OVER-EXCAVATE 6 INCHES ADJACENT TO AND BELOW THE STRUCTURE TO ENSURE REMOVAL OF POTENTIAL IMPACTED MATERIAL.
- 3 VISUALLY INSPECT THE STRUCTURE DURING EXCAVATION. STRUCTURES FREE OF VISIBLE PROCESS RESIDUE SHALL BE DISPOSITIONED IN THE OSDF IN ACCORDANCE WITH SECTION 02205. STRUCTURES THAT ARE DEFORMED, CLOSED OR OTHERWISE HINDER VISUAL INSPECTION, OR CANNOT BE CLEANED OF VISIBLE PROCESS RESIDUE SHALL BE DISPOSITIONED IN WPRAP IN ACCORDANCE WITH SECTION 02205.
- 4 PERFORM REAL-TIME MONITORING AND/OR PHYSICAL SAMPLING AT THE EXCAVATION BOTTOM.
- 5 AS DIRECTED BY THE CONSTRUCTION MANAGER, DISPOSITION MATERIAL STOCKPILED IN STEP 1 IN EITHER THE OSDF AS IMPACTED MATERIAL OR USE AS NON-IMPACTED MATERIAL TO BACKFILL THE EXCAVATION. IF STOCKPILED MATERIAL IS DEEMED IMPACTED, OVER-EXCAVATE STOCKPILE FOOTPRINTS 6 INCHES TO ENSURE REMOVAL OF IMPACTED MATERIAL.
- 6 BACKFILL ADDITIONAL NON-IMPACTED SOIL FROM THE IMMEDIATE PRE-CERTIFIED AREA AND COMPACT IN ACCORDANCE WITH SECTION 02206 AS NEEDED TO MEET SURROUNDING GRADE.

\* THE TERM 'STRUCTURE' IS USED AS A GENERIC REFERENCE TO PILES, PIERS, OR FOOTERS.

EXCAVATION OF STRUCTURES BELOW THE DESIGN GRADE  
NTS



- 1 EXCAVATE PRECERTIFIED OVERBURDEN SOIL FROM ABOVE THE PIPE\* BEDDING AND DISPOSITION IN THE OSDF.
- 2 PERFORM REAL-TIME MONITORING, AND/OR AT 50 FEET INTERVALS, PERFORM PHYSICAL SAMPLING OF THE PIPE BEDDING MATERIAL IN THE TRENCH.
- 3 EXCAVATE PIPE AND PIPE BEDDING, PLUS OVER-EXCAVATE 6 INCHES ADJACENT TO AND BELOW THE PIPE BEDDING TO ENSURE REMOVAL OF IMPACTED MATERIAL.
- 4 TEMPORARILY STOCKPILE PIPE BEDDING ADJACENT TO AND DOWN-GRADIENT OF THE UTILITY TRENCH.
- 5 VISUALLY INSPECT THE PIPE DURING EXCAVATION. PIPE FREE OF VISIBLE PROCESS RESIDUE SHALL BE DISPOSITIONED IN THE OSDF IN ACCORDANCE WITH SECTION 02205. PIPING THAT IS DEFORMED, CLOSED OR OTHERWISE HINDERS VISUAL INSPECTION, OR CANNOT BE CLEANED OF VISIBLE PROCESS RESIDUE SHALL BE DISPOSITIONED IN WPRAP IN ACCORDANCE WITH SECTION 02205.
- 6 AS IN STEP 2, PERFORM REAL-TIME MONITORING, AND/OR AT 50 FEET INTERVALS, PERFORM PHYSICAL SAMPLING BELOW THE PIPE BEDDING WITHIN THE TRENCH.
- 7 AS DIRECTED BY THE CONSTRUCTION MANAGER, DISPOSITION PIPE BEDDING IN EITHER THE OSDF AS IMPACTED MATERIAL OR WPRAP AS ABOVE-WAC MATERIAL. OVER-EXCAVATE STOCKPILE FOOTPRINTS 6 INCHES TO ENSURE REMOVAL OF IMPACTED MATERIAL.
- 8 BACKFILL ADDITIONAL NON-IMPACTED SOIL FROM THE IMMEDIATE PRE-CERTIFIED AREA AND COMPACT IN ACCORDANCE WITH SECTION 02206 AS NEEDED TO MEET SURROUNDING GRADE.

NOTE:

- 1 AS DIRECTED BY THE CONSTRUCTION MANAGER, PENDING MONITORING OF TRENCH BOTTOM, RE-EXCAVATE AT TRENCH LOCATIONS DESIGNATED BY THE CONSTRUCTION MANAGER TO REMOVE ADDITIONAL IMPACTED MATERIAL. THE CONSTRUCTION MANAGER CERTIFIES THE BACKFILLED TRENCH AND SURROUNDING AREA.
- \* THE TERM 'PIPE' IS USED AS A GENERIC REFERENCE TO UNDERGROUND UTILITIES.

EXCAVATION OF UTILITIES BELOW THE DESIGN GRADE  
NTS

|  |  |  |  |  |
|--|--|--|--|--|
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|          |                                         |        |         |       |
|----------|-----------------------------------------|--------|---------|-------|
| 0        | ISSUED CERTIFIED FOR CONSTRUCTION       | 7/8/03 | KLR     | GEP   |
| REV. NO. | ISSUE OR REVISION PURPOSE - DESCRIPTION | DATE   | REV. BY | APPR. |
|          |                                         |        |         |       |

UNITED STATES  
DEPARTMENT OF ENERGY  
FERNALD CLOSURE PROJECT

THIS DRAWING PREPARED BY  
**FLUOR FERNALD, INC.**

PROJECT NAME  
SOIL REMEDIATION

DRAWING TITLE  
**000015** UTILITY AND STRUCTURE REMOVAL  
BELOW DESIGN GRADE

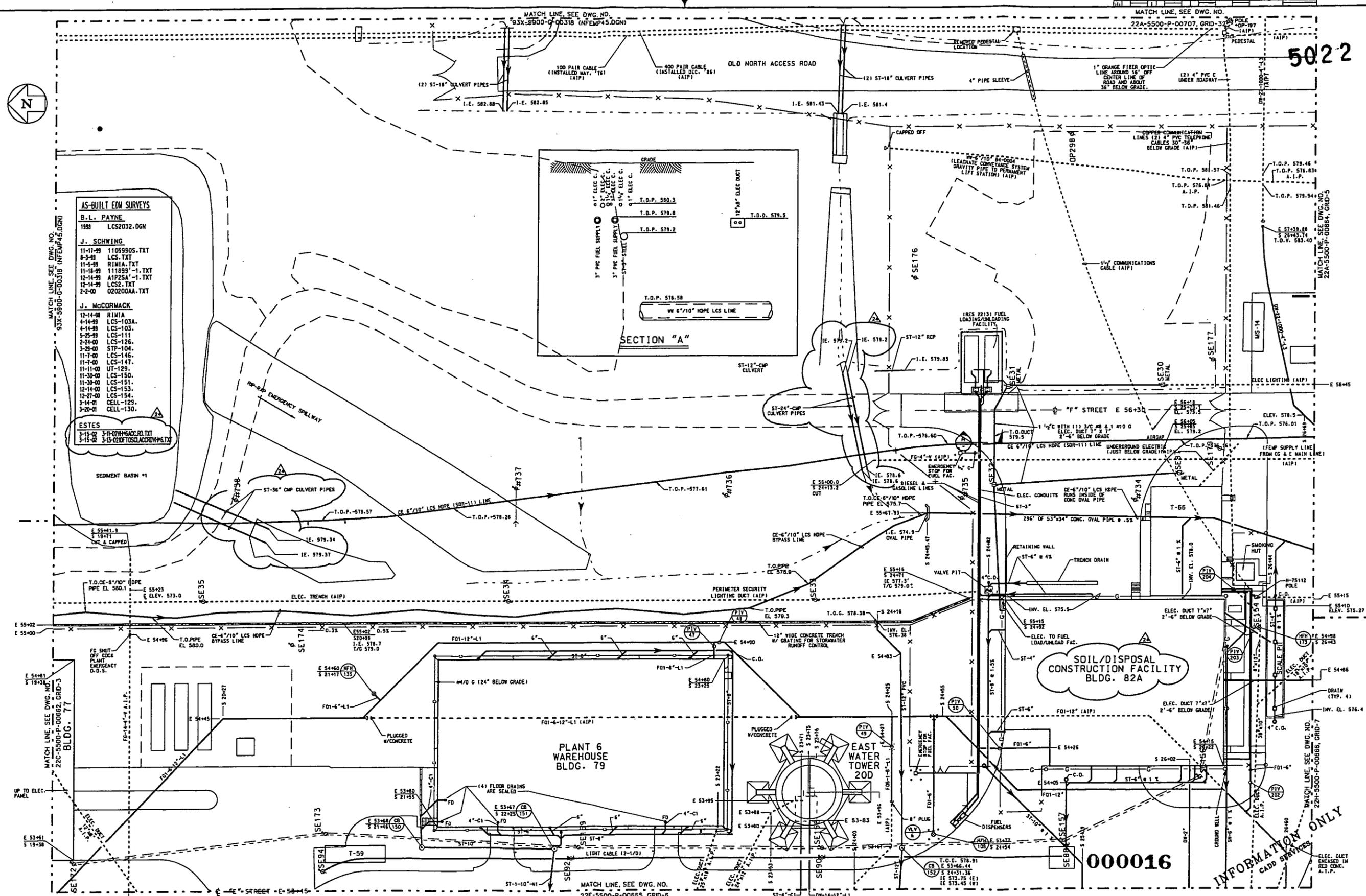
APPROVALS

|               |        |               |        |
|---------------|--------|---------------|--------|
| COORZANT ENG. | 1/2/03 | SAFETY ENG.   | 1/2/03 |
| CIVIL & STR.  | 1/2/03 | MAINTENANCE   | 1/2/03 |
| ELECTRICAL    | 1/2/03 | FIRE PROTECT. | 1/2/03 |
| ENGINEER      | 1/2/03 | WASTE MANAGE  | 1/2/03 |
| INSTRUMENT    | 1/2/03 | SECURITY      | 1/2/03 |
| MECHANICAL    | 1/2/03 | CONSTRUCTION  | 1/2/03 |

|                  |             |                        |           |
|------------------|-------------|------------------------|-----------|
| CHECKED          | 1/2/03      | APPROVED               | 1/2/03    |
| DRAWN BY         | PROJECT NO. | DRAWING INDEX CODE NO. | SHEET NO. |
| KLR              | 20030       | 99X-5500-G-00769       | D-3       |
| REV. PROJECT NO. | FILENAME    | 99XG00769.DGN          | REV. NO.  |
|                  |             |                        | 0         |



5022



**AS-BUILT EDM SURVEYS**

**B.L. PAYNE**  
1998 LCS2032.DGN

**J. SCHWING**  
11-11-99 11059905.TXT  
8-3-99 LCS.TXT  
11-5-99 RIMIA.TXT  
11-18-99 111899-1.TXT  
12-14-99 A1P25A-1.TXT  
12-14-99 LCS2.TXT  
2-2-00 020200AA.TXT

**J. MCCORMACK**  
12-14-99 RIMIA  
4-14-99 LCS-103A  
4-14-99 LCS-103  
5-25-99 LCS-111  
2-24-00 LCS-126  
3-29-00 STP-104  
11-7-00 LCS-146  
11-7-00 LCS-147  
11-11-00 UT-129  
11-30-00 LCS-150  
11-30-00 LCS-151  
12-14-00 LCS-153  
12-17-00 LCS-154  
3-14-01 CELL-129  
3-20-01 CELL-130

**ESTES**  
3-15-02 3-11-02VHMACC.DGN  
3-15-02 3-11-02VHMACC.DGN

MATCH LINE, SEE DWG. NO. 22C-5500-P-00662, GRID-3 BLDG. 77

INFORMATION ONLY  
ENCASED IN RED CONC. AT P.

**NOTE:**  
1. THIS DRAWING ISSUED PERIODICALLY FOR THE MOST RECENT VERSION OF THIS DRAWING, ACCESS THE FILENAME BELOW THE TITLE BLOCK.  
2. COORDINATES SHOWN ON THIS DRAWING ARE TAKEN FROM EXISTING FIELD DRAWINGS AND ARE NOT VERIFIED TO BE AS-BUILT. IT IS HIGHLY RECOMMENDED THAT A FIELD SURVEY BE PERFORMED PRIOR TO SITE DESIGN WORK.  
3. LEACHATE CONVEYANCE SYSTEM (PO 184) LCS LINE IS FROM B.L. PAYNE AS-BUILT SURVEY, SEE /PAYNE/LCS/LSL00K.

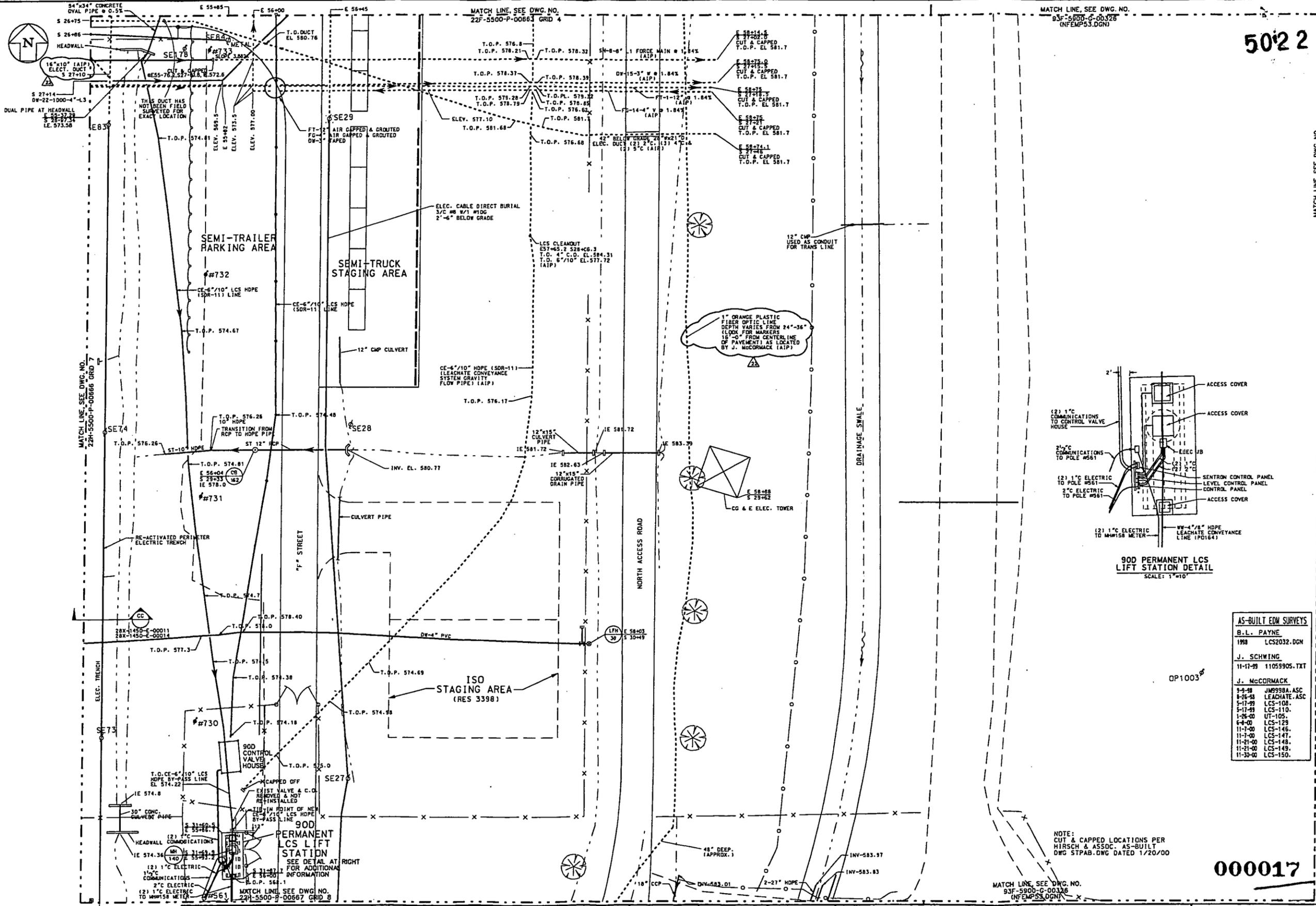
| NO. | REVISIONS                                                                                                                                                                                                                                   | DATE | BY | APPD. | NO. | REVISIONS                                                                                                                 | DATE | BY | APPD. | REF. DWG. NO.    |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|-------|-----|---------------------------------------------------------------------------------------------------------------------------|------|----|-------|------------------|
| 22  | POLE SEIGS REMOVED PER H. DERROUGH WALKDOWN 6/12/01, REMOVED PORTION OF ORIGINAL WW-6"/10" LEACHATE LINE, REMOVED POLES SE185 & SE186 PER WISE TASK ORDER 051, MOVE 28M TO NFEMP HS. MOVE 28E SOUTH, COMM EAST OF FENCE ALP, GENERAL UPDATE |      |    |       | 21  | ADD ELEC & LCS LINE TO SECTION "A", AS-BUILT LCS LINE & POLE #734 TO #738 PER J. MCCORMACK SURVEYS, EXCAVATION BOUNDARIES |      |    |       | 22X-5500-P-00659 |
| 24  | ADDED ESTES AS-BUILT SURVEY                                                                                                                                                                                                                 |      |    |       |     |                                                                                                                           |      |    |       |                  |
| 23  | ELECTRIC DUCTS ALP, PER COMPLETED                                                                                                                                                                                                           |      |    |       |     |                                                                                                                           |      |    |       |                  |
|     | WORK ORDER ALOS6313                                                                                                                                                                                                                         |      |    |       |     |                                                                                                                           |      |    |       |                  |

**NOTE:**  
WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

| UNLESS OTHERWISE SPECIFIED INDICATE ALL IN NOTES | APPROVALS                             |
|--------------------------------------------------|---------------------------------------|
| DESIGNED BY: [Signature]                         | SAFETY ENG. MAINTENANCE: [Signature]  |
| CHECKED BY: [Signature]                          | ENGINEER: [Signature]                 |
| DATE: [Date]                                     | INSTRUMENT MECHANICAL: [Signature]    |
| SCALE: [Scale]                                   | FIRE PROTECT. WASTE MNGT: [Signature] |
|                                                  | APPROVED: G.E. PAUL 7-20-00 SECURITY  |

**WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO**  
FERNALD, OHIO  
ENVIRONMENTAL MANAGEMENT PROJECT  
U.S. DEPARTMENT OF ENERGY

|                                         |                     |
|-----------------------------------------|---------------------|
| BLDG. 79, 82 & E. WATER TOWER YARD AREA | GRID 4              |
| UNDERGROUND UTILITIES                   | SCALE 1"=20'        |
| DATE: 7-20-00                           | 22F-5500-P-00663 24 |
| DRAWN: J.K.W.C.                         |                     |

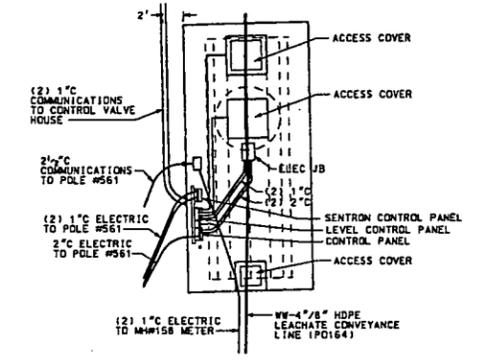


50'22

MATCH LINE, SEE DWG. NO. 93F-5900-G-00326 (NFEMP53.DGN)

MATCH LINE, SEE DWG. NO. 22A-5500-P-00666 GRID 7

MATCH LINE, SEE DWG. NO. 22A-5500-P-00707 GRID 32



90D PERMANENT LCS LIFT STATION DETAIL  
SCALE: 1"=10'

AS-BUILT EDM SURVEYS

|              |              |              |
|--------------|--------------|--------------|
| B.L. PAYNE   | 1998         | LCS2032.DGN  |
| J. SCHWING   | 11-17-99     | 11059905.TXT |
| J. McCORMACK |              |              |
| 9-9-98       | JM9998A.ASC  |              |
| 8-26-98      | LEACHATE.ASC |              |
| 5-17-99      | LCS-108.     |              |
| 5-17-99      | LCS-110.     |              |
| 1-26-00      | UT-105.      |              |
| 6-4-00       | LCS-129.     |              |
| 11-7-00      | LCS-146.     |              |
| 11-7-00      | LCS-147.     |              |
| 11-21-00     | LCS-148.     |              |
| 11-21-00     | LCS-149.     |              |
| 11-30-00     | LCS-150.     |              |

000017

NOTE:  
1. THIS DRAWING ISSUED PERIODICALLY FOR THE MOST RECENT VERSION OF THIS DRAWING, ACCESS THE FILENAME BELOW THE TITLE BLOCK.  
2. COORDINATES SHOWN ON THIS DRAWING ARE TAKEN FROM EXISTING FEMP DRAWINGS AND ARE NOT VERIFIED TO BE AS-BUILT. IT IS HIGHLY RECOMMENDED THAT A FIELD SURVEY BE PERFORMED PRIOR TO SITE DESIGN WORK.  
3. THE WEST UTILITIES CORRIDOR TRENCH IS THE RESULT OF AN AS-BUILT SURVEY BY B.L. PAYNE & ASSOC. THIS INCLUDES THE LCS LINE (FORMERLY FOR B.L. PAYNE SURVEY SEE FILE/PAYNE/LCS2032.DGN).

| NO. | REVISIONS                                                                                                                                                             | DATE    | BY  | APPD. | NO. | REVISIONS | DATE | BY | APPD. | REF. DWG. NO.    |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-------|-----|-----------|------|----|-------|------------------|
| 23  | A.I.P. UND'GD. FIBER OPTIC LINE, GENERAL UPDATE                                                                                                                       | 1/8/02  | RML | GEP   |     |           |      |    |       |                  |
| 22  | RE-ACTIVATED PERIMETER ELECTRIC IN TRENCH PER R. DUCKWORTH 3/18/01 MEMO, ADDED LIFT STATION DETAIL. INCORP. REDLINE AS-BUILT FROM J. McCORMACK 5/01/01 GENERAL UPDATE | 5/27/01 | RML | GEP   |     |           |      |    |       | 22X-5500-P-00655 |

NOTE:  
WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

| DESIGNED BY | CHECKED BY | DATE | APPROVED BY | DATE |
|-------------|------------|------|-------------|------|
|             |            |      |             |      |

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO  
FERNALD, OHIO  
ENVIRONMENTAL MANAGEMENT PROJECT  
U.S. DEPARTMENT OF ENERGY

EAST OF MAIN SUB-STATION YARD AREA  
GRID 5  
UNDERGROUND UTILITIES  
SCALE 1"=20'  
22A-5500-P-00664 23  
DATE: 2-29-00  
DRAWN: DEL TURPIN  
FILE NAME: JUNDER/22A0664.DGN