

104-44

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# Munition Destruction Areas Peer Review Presentation

Presented by  
Stephen M. Absolom

# Munition Destruction Areas Presentation

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- Site Background
- Project Schedule
- Site Characterization
- Reuse
- Risk Assessment
- Technology Selection
- Cost
- Summary

# Background SEAD-45 Open Detonation Grounds

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- Open detonation of waste explosives
- RCRA permitted facility
- CERCLA Operable Unit

# Background SEAD-46 Small Arms Range

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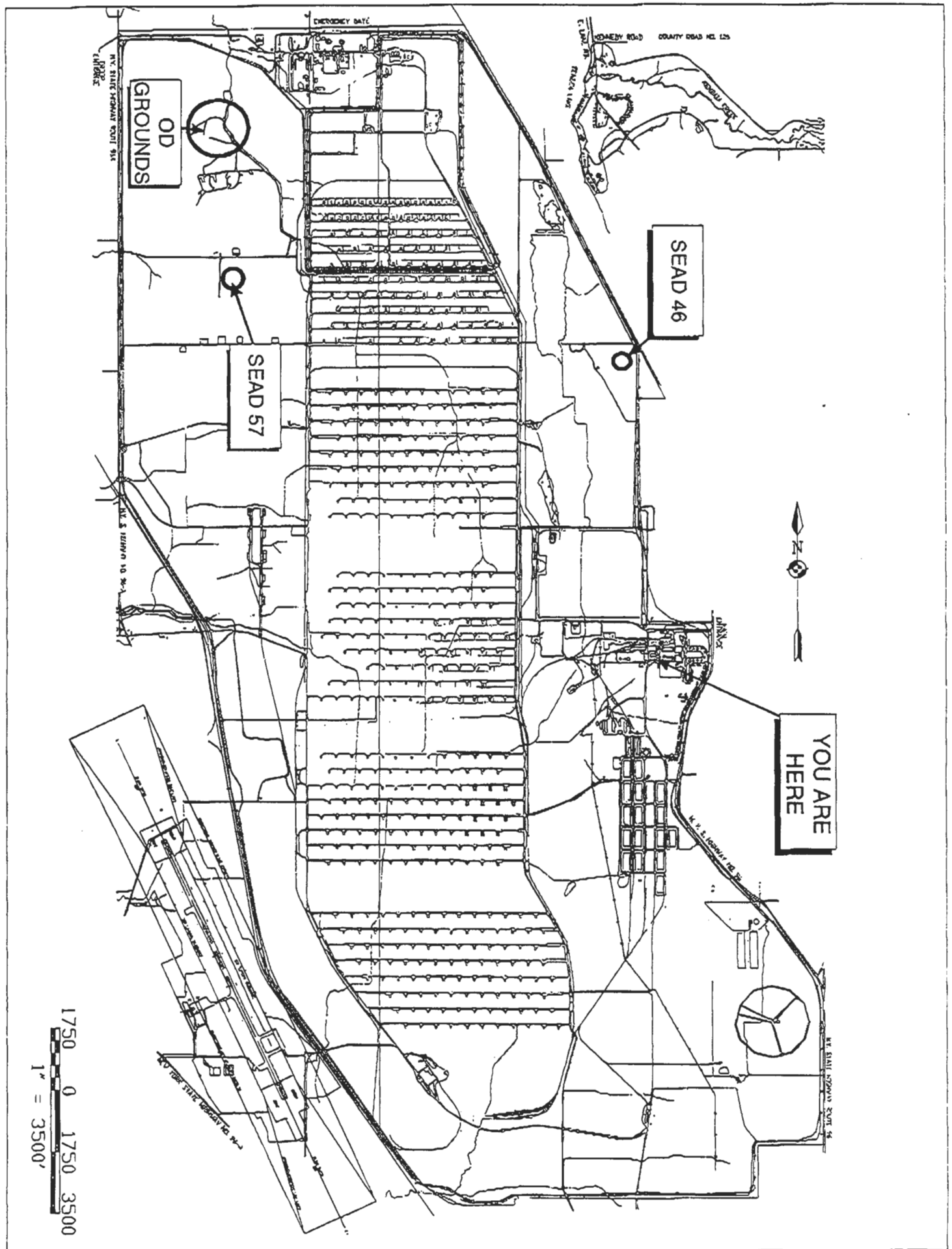
- 3.5 in Rockets
- Tracer Rounds

# Background SEAD-57

## Explosive Ordnance Disposal

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- Training Range- EOD
  - Open detonation training
  - Explosive disposal
  - Small quantities



# Proposed Schedule SEAD-45, 46, 57

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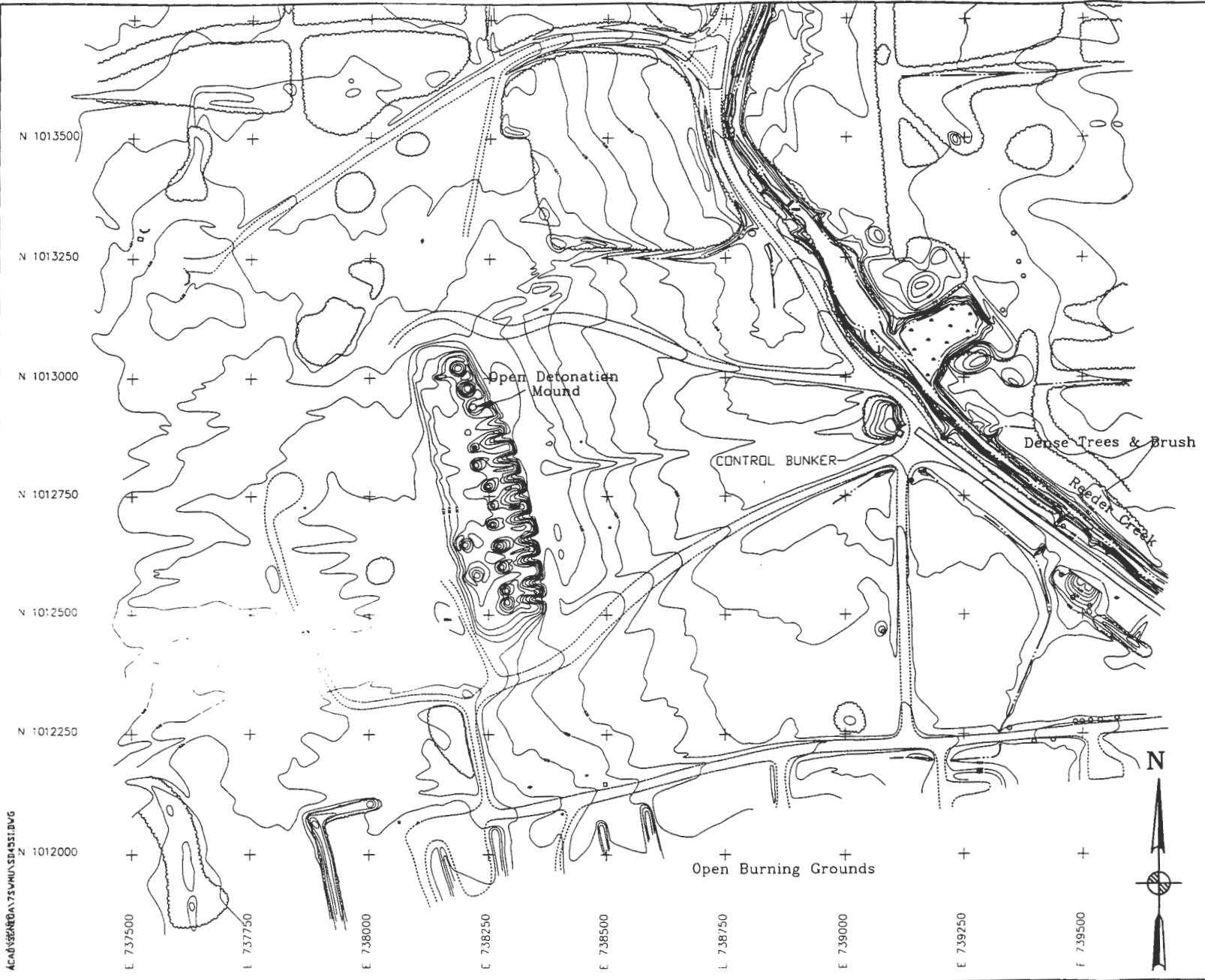
- RI Nov 1999
- FS Mar 2000
- PRAP Jul 2000
- ROD Jan 2001

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# Site Characterization

## Munition Destruction Areas





**LEGEND**

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- GROUND SURFACE ELEVATION CONTOUR

○ ROAD SIGN      ⊙ DECIDUOUS TREE      △ GUIDE POST  
 ⊕ FIRE HYDRANT      ⊗ MANHOLE      + COORDINATE GRID (250' GRID)  
 ○ POLE      □ UTILITY BOX      □ MAILBOX/RR SIGNAL  
 ○ OVERHEAD UTILITY POLE      ⊠ SURVEY MONUMENT

100 0 100 200  
(feet)

**PARSONS**  
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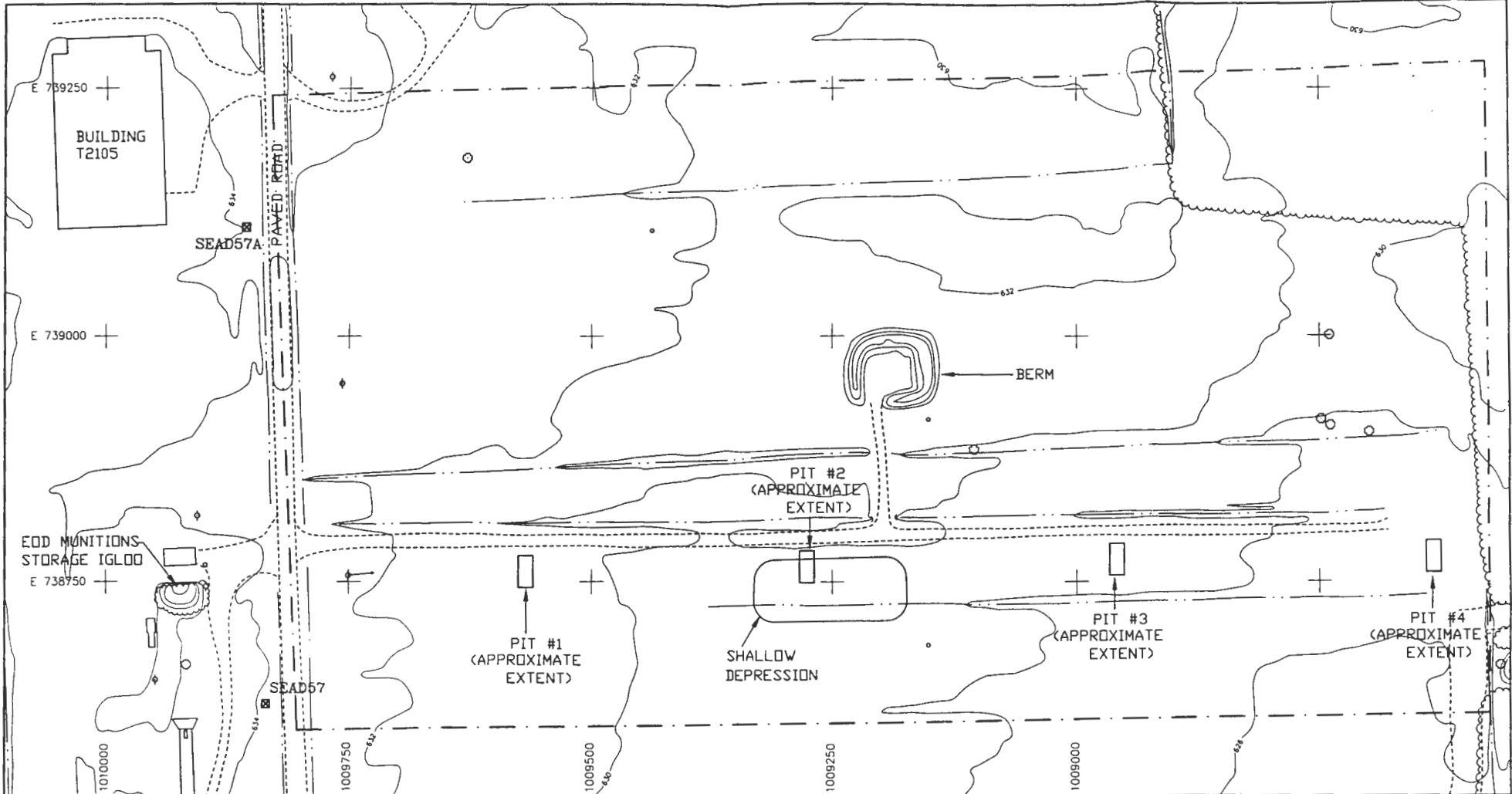
CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT  
 EXPANDED SITE INSPECTION OF  
 7 HIGH-PRIORITY SWMUS**

DEPT ENVIRONMENTAL ENGINEERING      Des. No. 720477-02000

**FIGURE 1.1-18  
 SEAD-45 OPEN DETONATION GROUNDS  
 SITE PLAN**

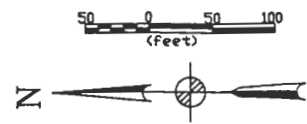
SCALE 1" = 200'      DATE MAY 1995

ACAD:SEAD45/739500/381500.DWG



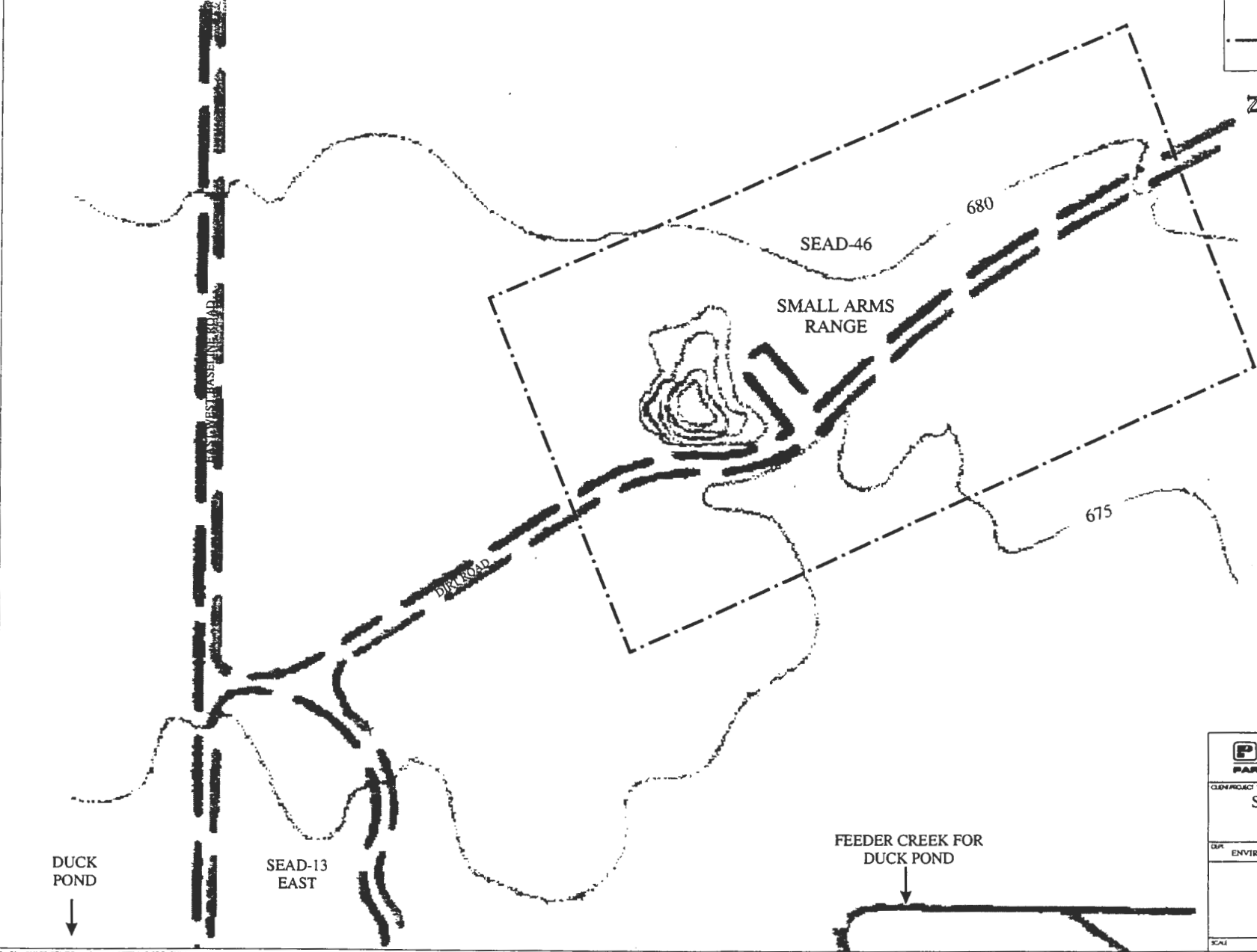
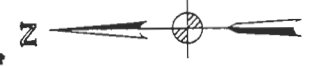
**LEGEND**


<p>ACAD/SENECA/RI/FS/SEAD57/SDB7/SDB7SIDING</p> <p>MINOR WATERWAY</p> <p>MAJOR WATERWAY</p> <p>FENCE</p> <p>UNPAVED ROAD</p> <p>BRUSH LINE</p> <p>LANDFILL EXTENT</p> <p>RAILROAD</p> <p>GROUND SURFACE ELEVATION CONTOUR</p>	<p>SURVEY MONUMENT</p> <p>ROAD SIGN</p> <p>FIRE HYDRANT</p> <p>POLE</p> <p>OVERHEAD UTILITY POLE</p> <p>DECIDUOUS TREE</p> <p>MANHOLE</p> <p>GUIDE POST</p> <p>UTILITY BOX</p> <p>COORDINATE GRID (250' GRID)</p> <p>MAILBOX/RR SIGNAL</p>	<p>APPROXIMATE SITE BOUNDARY FOR SEAD-57</p>
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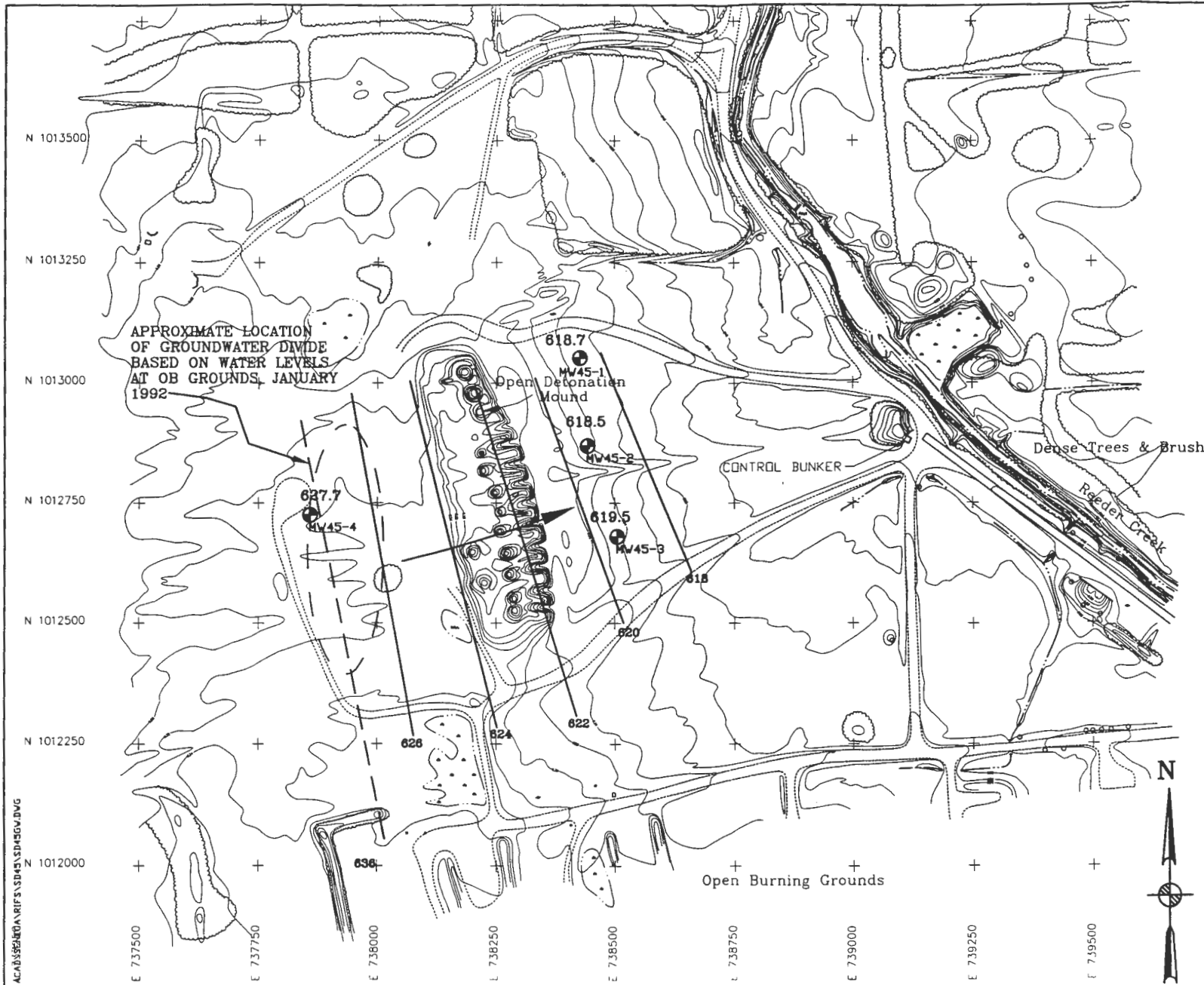
<b>PARSONS</b>	
<b>PARSONS ENGINEERING SCIENCE, INC.</b>	
CLIENT/PROJECT TITLE	
<b>SENECA ARMY DEPOT ACTIVITY</b>	
<b>RI/FS PROJECT SCOPING PLAN</b>	
<b>SEAD-57 EXPLOSIVE ORDNANCE DISPOSAL AREA</b>	
DEPT	Draw No
ENVIRONMENTAL ENGINEERING	727861-02013
<b>FIGURE 1-3</b>	
<b>SEAD-57 SITE PLAN</b>	
SCALE: 1" = 100'	DATE: FEBRUARY 1996

**LEGEND**  
 - - - - - APPROXIMATE EXTENT OF SEAD-46



 <b>PARSONS</b> PARSONS ENGINEERING SCIENCE, INC.	
<small>CLIENT/PROJECT FILE</small> <b>SENECA ARMY DEPOT</b> RI/FS PROJECT SCOPING PLAN SEAD-46 SMALL ARMS RANGE	
<small>DISC</small> ENVIRONMENTAL ENGINEERING	<small>DWG NO.</small> 726511-02001
<b>FIGURE 1-2</b> <b>SITE MAP</b>	
<small>SCALE</small> 1"=100'	<small>DWG</small> MARCH 1996

R:\GRAPHICS\SENECA\SEAD-46\SITE\MAP\CDR\CV.M

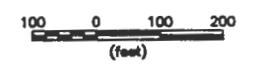


**LEGEND**

	MINOR WATERWAY
	MAJOR WATERWAY
	FENCE
	UNPAVED ROAD
	BRUSH LINE
	LANDFILL EXTENTS
	RAILROAD
	GROUND SURFACE ELEVATION CONTOUR

	ROAD SIGN		DECIDUOUS TREE		GUIDE POST
	FIRE HYDRANT		MANHOLE		COORDINATE GRID (250' GRID)
	POLE		UTILITY BOX		MAILBOX/RR SIGNAL
	OVERHEAD UTILITY POLE		SURVEY MONUMENT		

LOCATION OF DETONATION MOUND IN 1968  
 MW45-1 MONITORING WELL WITH WATER TABLE ELEVATION 618.7  
 624 GROUNDWATER ELEVATION CONTOUR (ARROW INDICATES DIRECTION OF FLOW)



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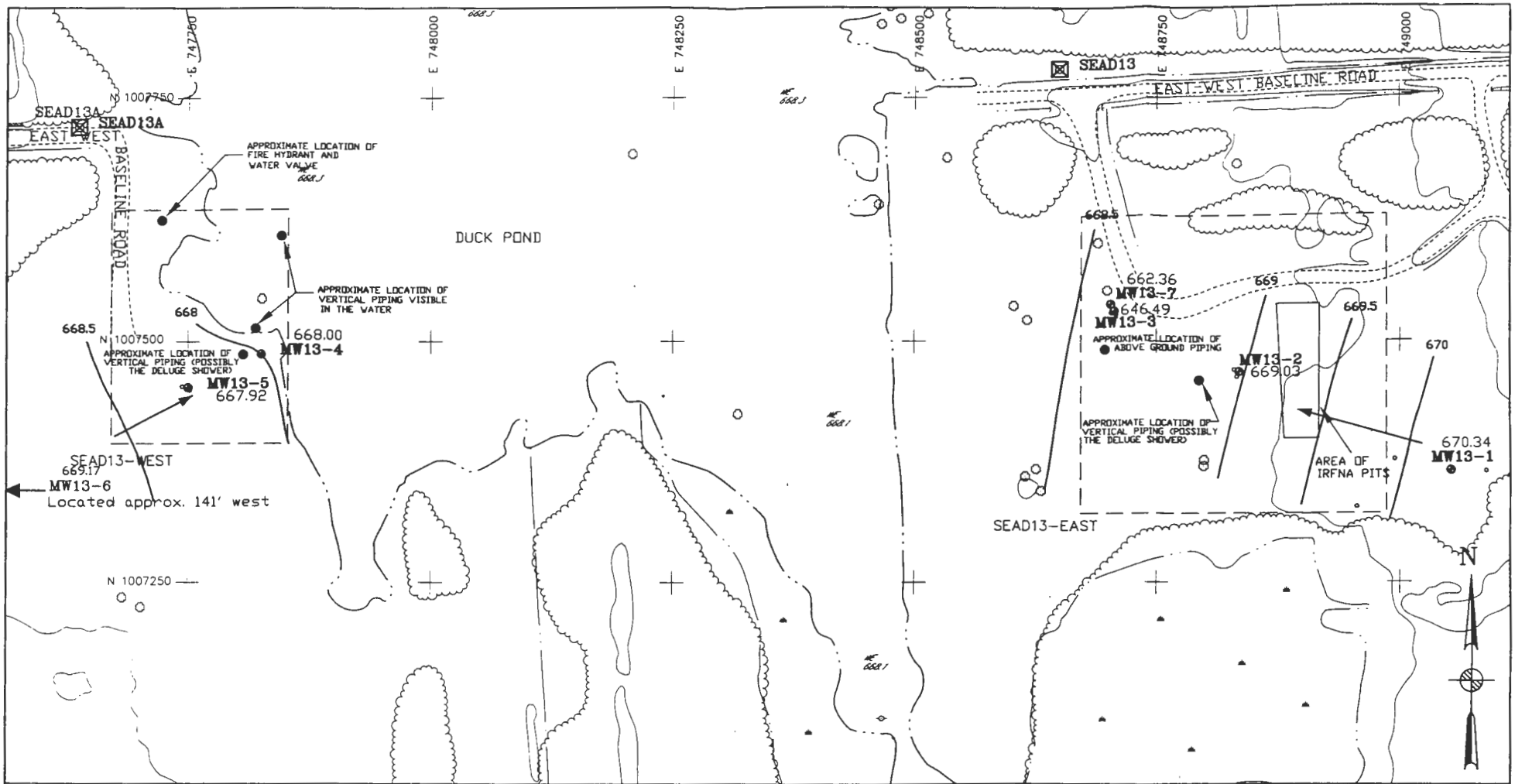
CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT ACTIVITY  
 RI/FS PROJECT SCOPING PLAN  
 SEAD-45 OPEN DETONATION GROUNDS**

DEPT ENVIRONMENTAL ENGINEERING Dwg No 726010-03001

**FIGURE 3-3**  
**SEAD-45 GROUNDWATER ELEVATION MAP**  
 APRIL 4, 1994

SCALE 1" = 200' DATE FEBRUARY 1996

ACAD\$SEAD45\RI\FS\SD45\SD45GV.DWG



**LEGEND**

—	MINOR WATERWAY	⊠	SURVEY MONUMENT
==	MAJOR WATERWAY	⊕	DECIDUOUS TREE
---	FENCE	⊗	ROAD SIGN
- - -	UNPAVED ROAD	⊙	FIRE HYDRANT
~~~~	BRUSH LINE	⊠	MANHOLE GUIDE POST
.....	LANDFILL EXTENT	⊕	POLE
-----	RAILROAD	⊙	UTILITY BOX
-----	GROUND SURFACE ELEVATION CONTOUR	⊙	COORDINATE GRID (250' GRID)
746		⊠	OVERHEAD UTILITY MAILBOX/RR SIGNAL POLE

MW13-1	●	MONITORING WELL WITH WATER TABLE ELEVATION
748.3		
744	↗	GROUNDWATER ELEVATION CONTOUR, ARROW INDICATES DIRECTION OF FLOW

**NOTES**  
 1. MONITORING WELL WATER LEVEL SURVEY DATE: 4/4/94  
 2. GROUNDWATER CONTOUR ELEVATION DATUM IS NGVD OF 1929



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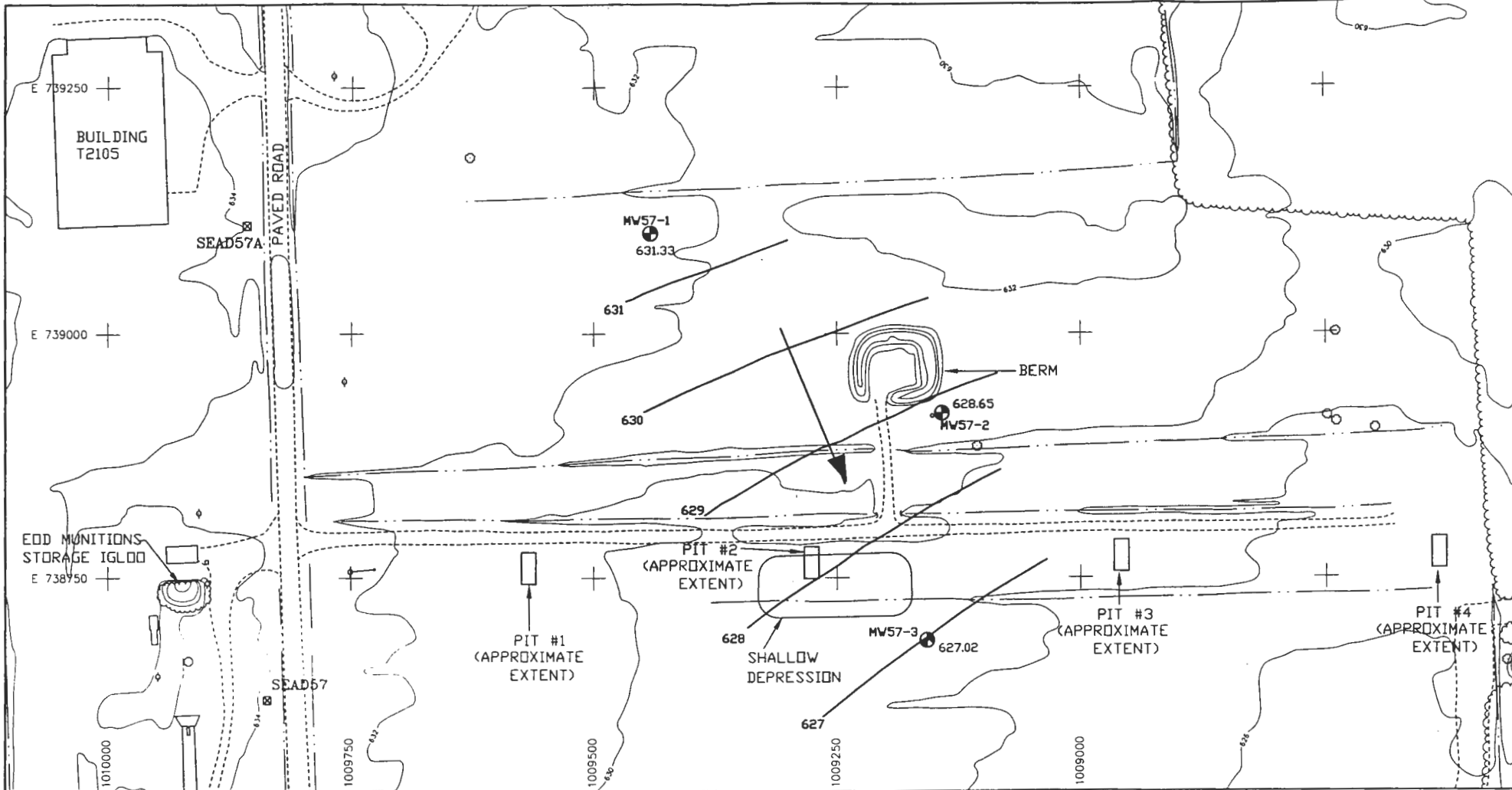
CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT ACTIVITY  
 EXPANDED SITE INSPECTION OF  
 3 MODERATE-PRIORITY SWMUS**

DPI: ENVIRONMENTAL ENGINEERING      Dwg No: 720478-02000

**FIGURE 3.2-4  
 SEAD-13 IRFNA DISPOSAL SITE  
 GROUNDWATER TOPOGRAPHY MAP**

SCALE: 1" = 100'      DATE: JUNE 1995      REV: A

ACAD\SENECA\35\WV\13\03\DWG



**LEGEND**

ACAD:SENECA:RIE\S057\SD57GW.DWG	MINOR WATERWAY	☒ SURVEY MONUMENT
---	MAJOR WATERWAY	⊕
---	FENCE	⊖
---	UNPAVED ROAD	⊕
---	BRUSH LINE	⊕
---	LANDFILL EXTENT	⊕
---	RAILROAD	⊕
---	GROUND SURFACE ELEVATION CONTOUR	⊕
---	POLE	⊕
---	UTILITY BOX	⊕
---	COORDINATE GRID (250' GRID)	⊕
---	OVERHEAD UTILITY	⊕
---	MAILBOX/RR SIGNAL POLE	⊕
---	ROAD SIGN	⊕
---	DECIDUOUS TREE	⊕
---	FIRE HYDRANT	⊕
---	MANHOLE	⊕
---	GUIDE POST	⊕

MW57-1  
631.33  
MONITORING WELL WITH WATER TABLE ELEVATION

631  
GROUNDWATER ELEVATION CONTOUR  
ARROW INDICATES DIRECTION OF FLOW

- NOTES**
1. MONITORING WELL WATER LEVEL SURVEY DATE: 4/4/94
  2. GROUNDWATER CONTOUR ELEVATION DATUM IS NAVD OF 1988



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PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT ACTIVITY  
RI/FS PROJECT SCOPING PLAN  
SEAD-57 EXPLOSIVE ORDNANCE DISPOSAL AREA**

DEPT. ENVIRONMENTAL ENGINEERING    Proj. No. 787801-02003

**FIGURE 3-13**  
SEAD-57 GROUNDWATER ELEVATION MAP  
APRIL 4, 1994

SCALE 1" = 100'    DATE FEBRUARY 1998    SHEET 1 OF 1

# Summary Soil Statistics Data

## SEAD-45 Open Detonation Area

COMPOUND	MAX. (mg/Kg)	MEAN (mg/Kg)	NYSDEC SOIL TAGM CRITERIA (mg/Kg)	NUMBER OF TIMES DETECTED	NUMBER OF TIMES ABOVE TAGM
<u>Volatiles</u>					
None Exceeded the TAGM Criteria					
<u>Semivolatiles</u>					
Benzo(a)pyrene	0.082	0.046	0.061	8	1
<u>PCBs/Pesticides</u>					
None Exceeded the TAGM Criteria					
<u>Explosives</u>					
None Exceeded the TAGM Criteria					
<u>Metals</u>					
Aluminum	22,800	18,281	14,592	16	16
Arsenic	8.2	6.1	7.5	16	1
Barium	365	188	300	16	1
Beryllium	1.1	0.80	0.73	16	10
Cadmium	6.5	13.1	1	16	15
Chromium	39.3	28.1	22	16	16
Copper	1,240	429	25	16	16
Cyanide	0.7	0.66	0.3	2	2
Lead	87.8	53.2	22	16	13
Mercury	4.3	1.96	0.1	16	16
Nickel	51	27.6	33.6	16	10
Silver	26.2	5.5	0.4	12	12
Zinc	557	254.2	82	16	11

# Summary Soil Statistics Data

## SEAD-57 Explosive Ordnance Disposal Area

COMPOUND	MAX. (mg/Kg)	MEAN (mg/Kg)	NYSDEC SOIL TAGM CRITERIA (mg/Kg)	NUMBER OF TIMES DETECTED	NUMBER OF TIMES ABOVE TAGM
<u>Volatiles</u>					
None Exceeded the TAGM Criteria					
<u>Semivolatiles</u>					
None Exceeded the TAGM Criteria					
<u>PCBs/Pesticides</u>					
None Exceeded the TAGM Criteria					
<u>Explosives</u>					
None Exceeded the TAGM Criteria					
<u>Metals</u>					
Aluminum	22,900	9,897	14,592	29	9
Antimony	6.5	1.1	3.6	11	2
Arsenic	122	8.0	7.5	29	5
Beryllium	1.1	0.48	0.73	29	8
Chromium	34.5	15.3	22	29	10
Copper	2,930	118	25	29	10
Lead	1,860	79.5	22	29	11
Nickel	54.1	23.2	33.6	29	9
Silver	1.7	0.17	0.4	10	1
Zinc	1,250	98.2	82	29	9



# Reuse Issues

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- Conservation area
- UXO
- Time frame

# Risk Assessment Receptors

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- Current site workers
- Visitors
- Terrestrial
- Aquatic

# Risk Assessment

## Pathway Exposure Route

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- Inhalation
- Ingestion
- Dermal contact

# Risk Assessment Assumptions

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- Soil
  - Dust
  - Runoff/Erosion
  - Sediment
- Water
  - Ground
  - Surface

# Technology Selection To Be Considered

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- Land treatment
- Bioventing
- Vapor extraction
- Off-site disposal
- Soil washing
- Low temperature thermal desorption
- Composting

# Cost

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- RI/FS                      \$2.7 mil CTC  
                                         1.7 mil EPR
  
- RD                              0.2 mil CTC  
                                         0.6 mil EPR
  
- RA                              4.3 mil CTC  
                                         5.5 mil EPR

# Reduction of Cost

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- Generic Workplan
- Combine sites
- RCRA Corrective Action
- RCRA Closure

# Summary

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- Ecological risk
- Contaminants of Concern
  - ✓ Metals
  - ✓ Explosives
- Time frame



