

# OU-J REPAIR CERTIFICATION REPORT

*Prepared for:*

U.S. Steel LLC  
600 Grant Street  
Pittsburgh PA 15219-2749

December 3, 2001

*Prepared by:*

***URS Corporation***

Thresher Square  
700 South Third Street, Suite 700  
Minneapolis, Minnesota 55415

URS Job No. 48800-605-0003

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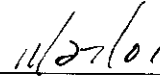
**PROFESSIONAL CERTIFICATION**

The U.S. Steel, former Duluth Works Site, Operable Unit J (OUJ) Berm Repair and Improvement Project is complete. The repairs and improvements were designed and performed to be consistent with the original approved Response Action Plan. No deficiencies in the work are believed to exist nor were any documented by the MPCA representative during site inspection. The certification statement below attests to the truth, accuracy, and completeness of the OUJ Berm Repair and Improvement Project implementation as required by the MPCA.

"I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified portions of this document for which I cannot personally verify their truth and accuracy, I certify as the company official having supervisory responsibility for the person(s) who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

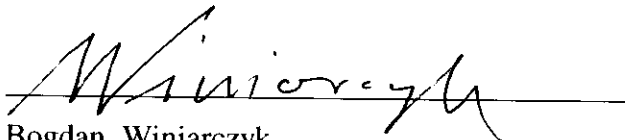


Dean Stockwell  
Senior Project Manager

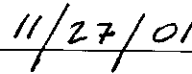


Date

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota."



Bogdan Winiarczyk  
Structural Engineer, P.E.



Date



Registration Number

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### **FIGURES**

- Figure 1 Site Location Map  
Figure 2 OU-J Perimeter Berm Slumps  
Figure 3 OU-J Perimeter Berm Cover Repair and Gabion Basket Extension (As Built)

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- Appendix A Construction Photographs  
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## 1.0 INTRODUCTION

URS was retained by U.S. Steel LLC (U.S. Steel) to prepare design plans and specifications, provide field oversight, and prepare this documentation report related to repair and improvement of Operable Unit J (OUJ) located at the former U.S. Steel Duluth Works in Duluth, Minnesota. Berm repair and improvements were necessary to repair two slumps in the perimeter berm between the Unnamed Creek adjacent to the northwest side of the site and the solidified material within OUJ. Approval by the Minnesota Pollution Control Agency (MPCA) of the Duluth Works OUJ Berm Repair and Improvement Project is requested.

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## 2.0 PROJECT DESCRIPTION

### 2.1 Background

The former Duluth Works (site) is located at 2402 Commonwealth Avenue, in Sections 34 and 35, Township 49 North, Range 15 West, and Sections 2 and 3, Township 48 West, Range 15 West, in the southern portion of the city of Duluth, St. Louis County, Minnesota (Figure 1). A Response Action (RA) to prevent human contact and releases to surface and ground water from tar, tar-contaminated soil and non-native materials associated with a former steel plant on the site was implemented between June and December 1997. Part of the RA called for stabilization/solidification of the materials and capping with a compacted soil, semi-impermeable cover. A perimeter berm of compacted soils was constructed to provide a barrier between the Unnamed Creek adjacent to the northwest side of the site and the solidified material. Some areas adjacent to the Unnamed Creek were reinforced with riprap and gabion baskets.

Beginning in the fall of 2000, slumps developed in the perimeter berm near the creek (Figure 2). The repair and improvement project consisted of repairing the slumps, stabilizing the perimeter berm by extending the existing gabion baskets, and repairing the affected areas of the cover.

URS was contracted to prepare the design elements and provide construction documentation of the repair. Veit & Company, Inc. (Veit), Duluth, Minnesota, was subcontracted by URS to implement the repair. This report describes the construction activities associated with the berm repair.

### 2.2 Scope of Repair

The berm repair consisted of the following elements:

- Installation of siltation and erosion controls.
- Removal and temporary stockpiling of topsoil from the perimeter berm.
- Excavation of the side and base of the perimeter berm to accept the new gabion baskets.
- Compaction of the soil in the excavated area.
- Lining the excavation with 7.5-ounce, non-woven geotextile liner.
- Installation of the new gabion baskets.
- Repair of the damaged slump areas with compacted material from the new gabion basket excavation.
- Replacement of topsoil in all disturbed areas.
- Reseeding the disturbed areas.

Construction workers and heavy equipment arrived on site on Wednesday, August 15, 2001. Work was substantially completed on August 17, 2001. Appendix A provides a photo documentation log of the berm repair construction activities. Appendix B contains daily field reports prepared by the URS field representative observing construction activities.

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### **2.3 Contractor Information**

Mr. Jon Ekeroth  
Veit & Company, Inc.  
110 West Gary Street  
Duluth, MN 55808  
218-626-2424

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## **3.0 CONSTRUCTION ACTIVITIES**

### **3.1 Berm Repair**

Site preparation activities for the berm repair began on August 15, 2001 by regrading the access road that had eroded since the completion of OIJ in 1997. Photographs 1 and 2 show the slumped areas of the berm. Three loads of sand/clay fill were brought in and temporarily placed in the drainage channel to allow equipment access to the top of OIJ. Silt fence was installed and the elevation for the top of the gabion baskets was established in both of the areas to be repaired.

On August 16, 2001, topsoil from the slumped areas and from the areas to be excavated for gabion basket installation was removed and stockpiled. Excavation on the west side of OIJ for the new gabion baskets was completed using a backhoe with a reach of 60 feet. Geotextile fabric was installed in the excavation. The gabion baskets were then installed and backfilled. The slump was then repaired using the soil excavated for the new gabion baskets. The stockpiled topsoil was installed over the repaired slump area and compacted. Excavation on the north side of OIJ for the new gabion basket was completed and geotextile fabric was installed. Approximately 70 feet of gabion basket was installed on the north side of OIJ. Photographs 3 through 6 show excavation, fabric installation and gabion basket construction.

On August 17, 2001, installation of the new gabion basket and final repair of the slump on the north side of OIJ was completed. The new gabion basket excavation was backfilled, then topsoil was replaced on the disturbed areas and compacted. All disturbed areas were seeded according to project specifications and covered with a mulch blanket to reduce erosion. Photographs 7 through 13 show regraded areas and mulch blanket installation.

Following completion of the repair activities, the drainage channel was reopened. The fill from the drainage channel was used to fill erosion channels on and adjacent to the access road leading to OIJ.

### **3.2 Worker Health and Safety**

Veit was responsible for the health and safety of their personnel. Since the contaminated materials are covered by over seven feet of clean fill, training in accordance with OSHA 1910.120 was not required for site workers.

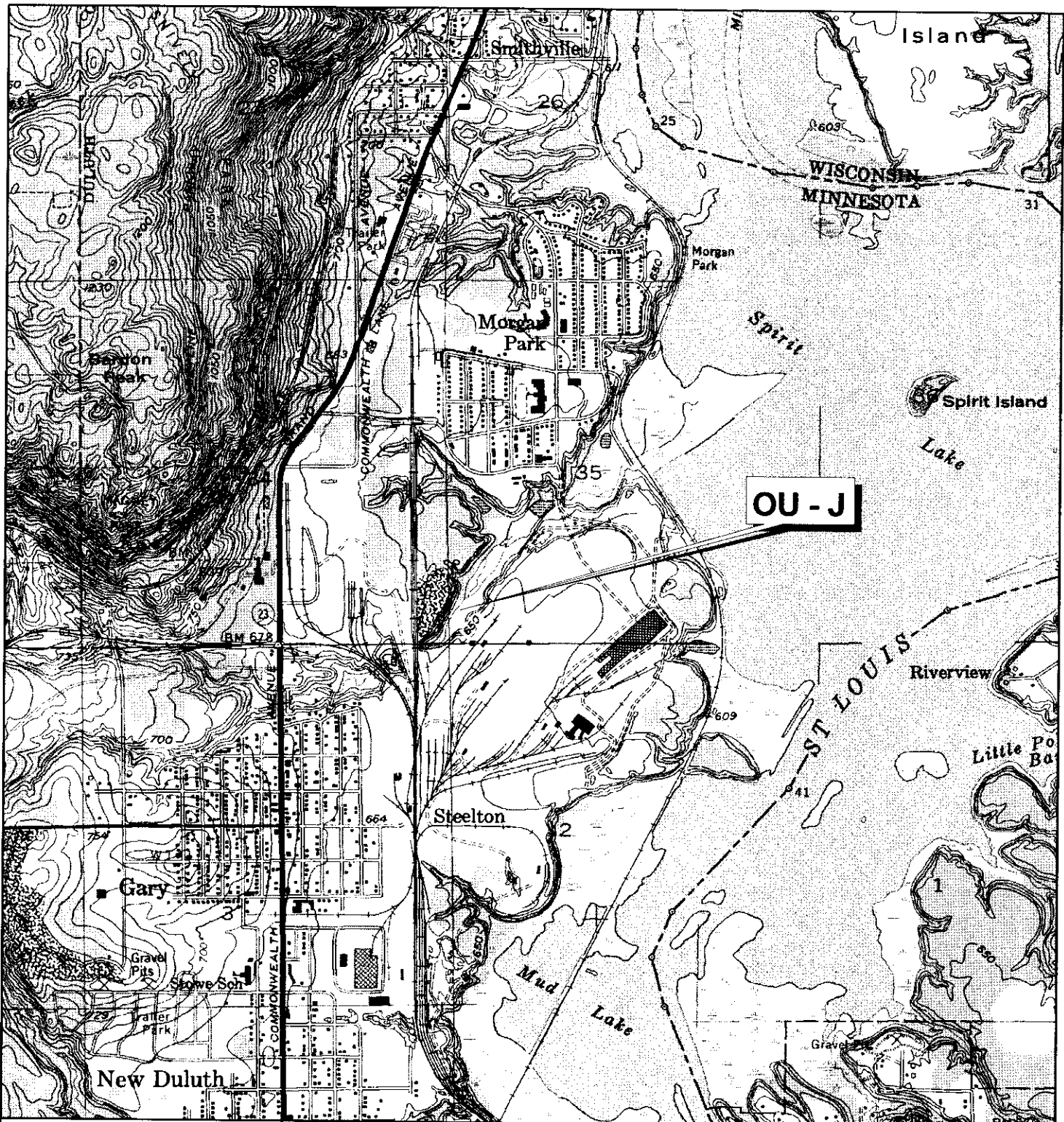
URS' health and safety program was in place for their field personnel. The URS health and safety plan, medical monitoring information, and training certificates are contained in the project files and available for review as needed. URS site personnel received training in accordance with OSHA 1910.120.

### **3.3 Surveying**

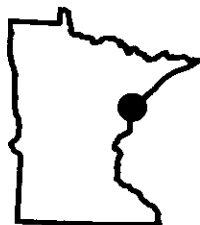
Project surveying services for the original layout of the berm repair was provided by URS. URS provided two benchmarks on top of the OIJ cap for use by Veit during repairs for elevation control. Veit established grade stakes to set the elevation of the top of the gabion baskets. A final survey of the completed cap repair was completed by URS. The data was used by URS to complete final record drawings for the berm repair (Figure 3).







0 1000 2000 Feet



QUADRANGLE LOCATION  
WEST DULUTH, MINNESOTA

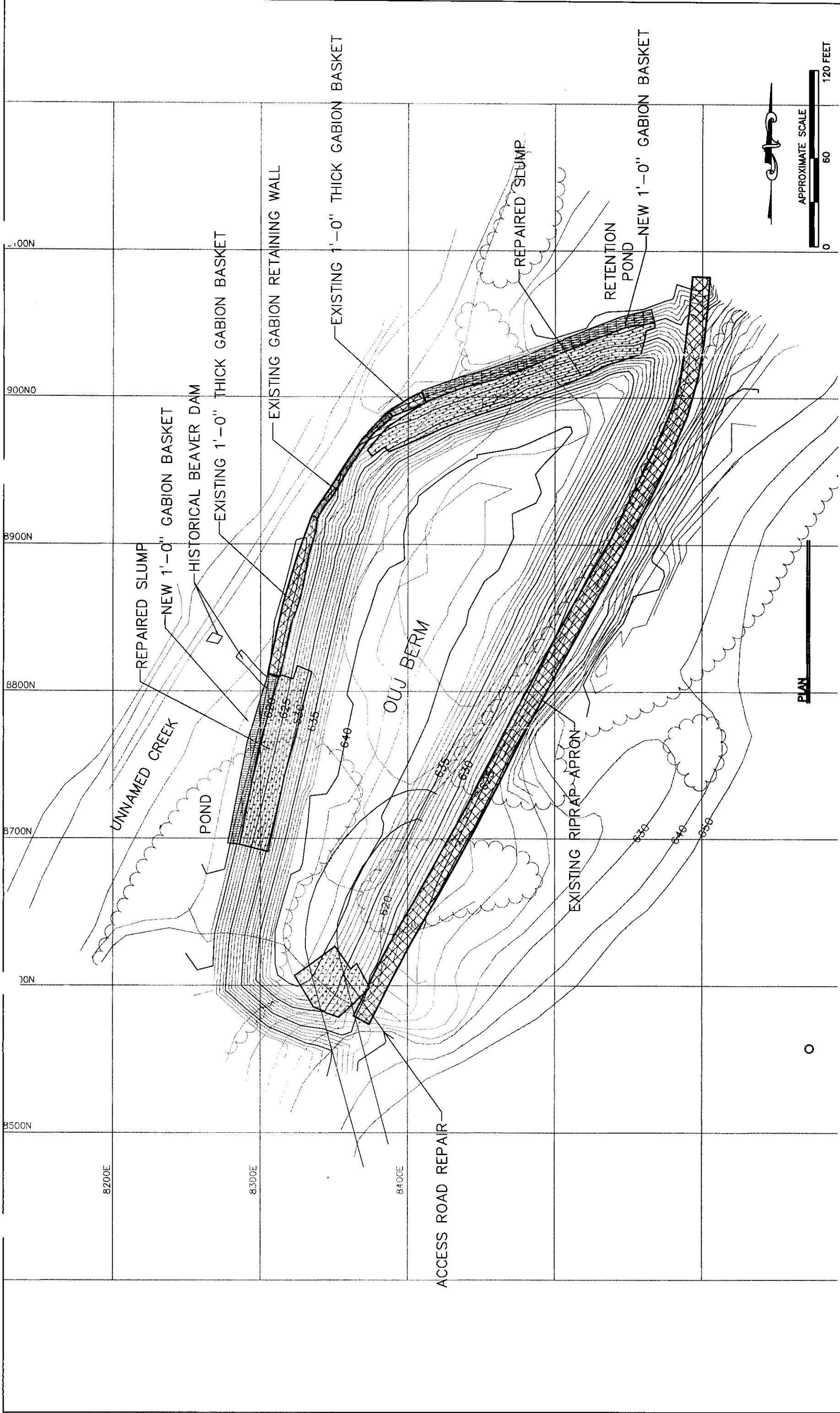
**URS**

Thresher Square  
700 Third Street South  
Minneapolis, MN 55415  
612.370.0700 Tel  
612.370.1378 Fax

SITE LOCATION MAP  
US STEEL DULUTH WORKS SITE  
DULUTH, MINNESOTA

DRN BY:	TBN	DATE:	12/00	PROJECT NO.	FIG. NO.
CHK'D BY:	DDS	DATE:	12/00	48800-605	1





PLAN

<p>FINAL GRADING PLAN                  ORIGINAL DESIGN BY GERAHTY AND MILLER                  DRAWING 8 RESPONSE ACTION IMPLEMENTATION                  CERTIFICATION REPORT OPERABLE UNIT J                  FEBRUARY 1998</p>	<p>JMB 3-3-98</p>	<p>DESIGNED BY: KAH                  CHECKED BY: DDS                  PEER REVIEWED BY: CGB                  PROJECT MANAGER: [blank]                  DATE: 5/02/01</p>	<p>USX DULUTH WORKS, DULUTH, MINNESOTA</p>	<p>REVISION: [blank]</p>
<p>PROJECT: OJ PERIMETER BERM COVER REPAIR AND GABION BASKET EXTENSION (AS BUILT)</p>		<p>DRAWING: <b>FIG 3</b></p>		
<p>DESCRIPTION OF REVISION</p>		<p>BY: [blank]</p>	<p>DATE: [blank]</p>	<p>SHEET OF</p>



Thatcher Street  
 700 Third Street South  
 Minneapolis, MN 55415  
 612.338.7100  
 www.urscorp.com

**Appendix A**  
**Construction Photographs**

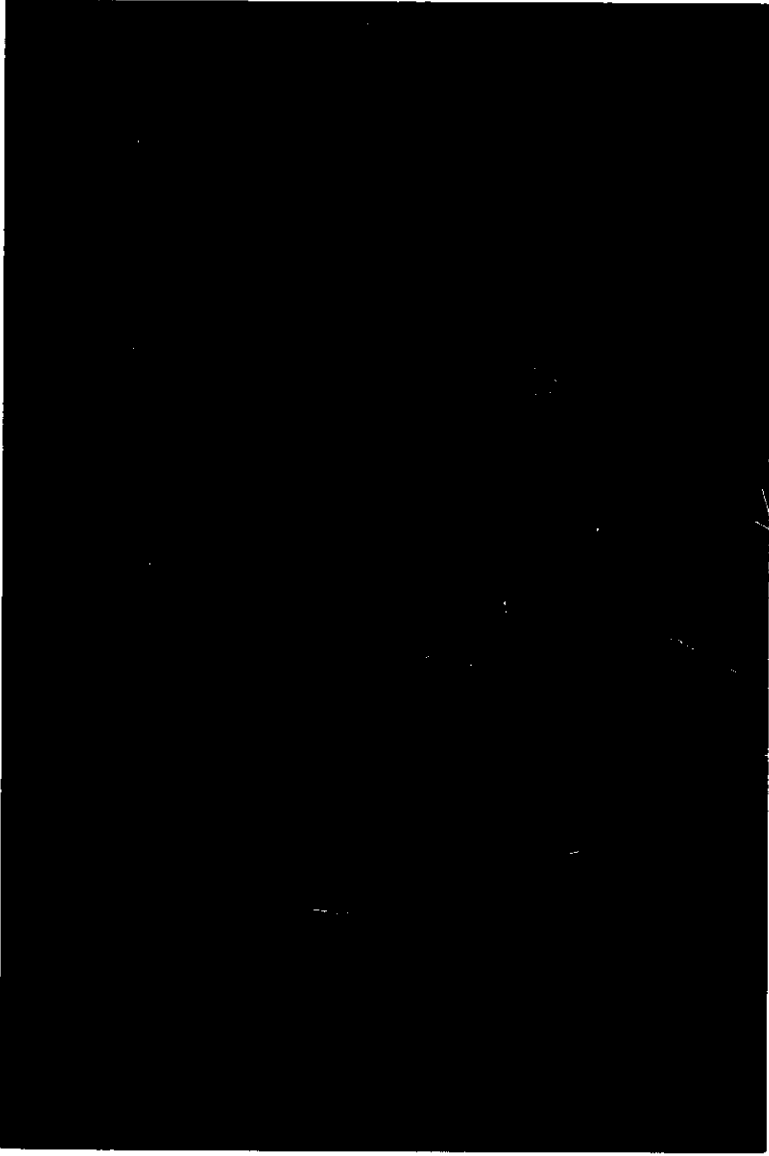
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**APPENDIX A**  
**CONSTRUCTION PHOTOGRAPHS**

**U.S. STEEL DULUTH WORKS OIJ BERM REPAIR AND IMPROVEMENT  
PROJECT PHOTO LOG**

1. Facing northwest. West side slump area before repair.
2. Facing southwest. North side slump area before repair.
3. Facing southwest. Excavation for new gabion basket on west side of OIJ.
4. Facing west. Installation of geotextile fabric and gabion basket on west side of OIJ.
5. Facing southwest. Filling gabion baskets with gabion stone.
6. Facing south. Installed gabion basket on west side.
7. Facing northwest. Placing backfill behind gabion baskets.
8. Facing north. Installed gabion basket on north side.
9. Facing southeast. North side slump area after repair.
10. Facing northeast. Installation of mulch blanket on north side after seeding.
11. Facing west. Completed repair project on north side.
12. Facing north-northwest. Completed repair project on west side.
13. Facing north-northwest. Mulch on south side of OIJ. The area was used for vehicle access.

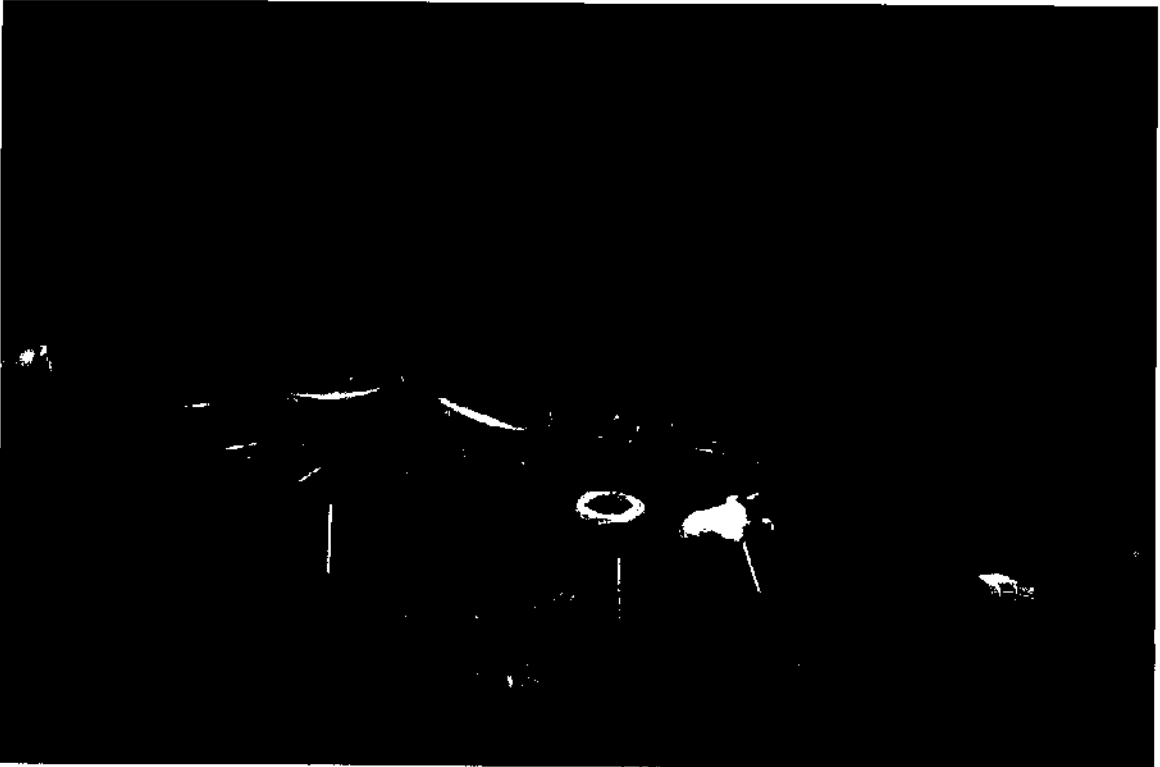


**PHOTOGRAPH 1**





**PHOTOGRAPH 3**



**PHOTOGRAPH 4**

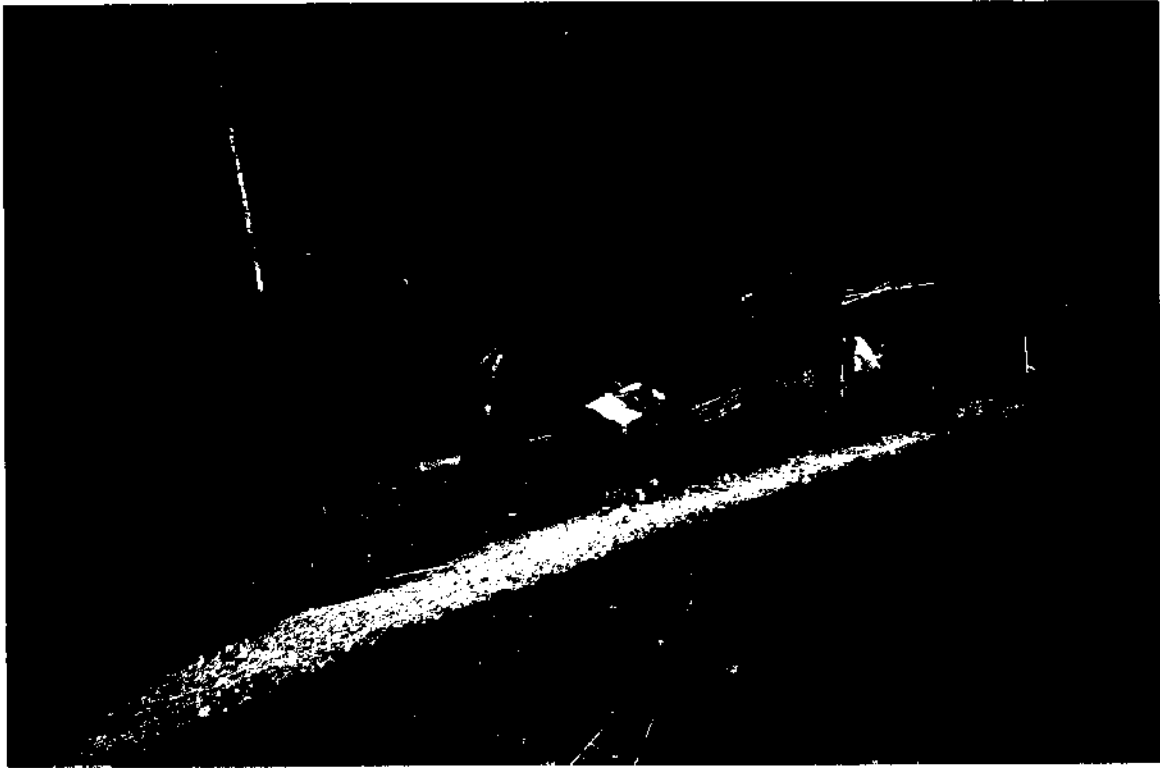


**PHOTOGRAPH 5**

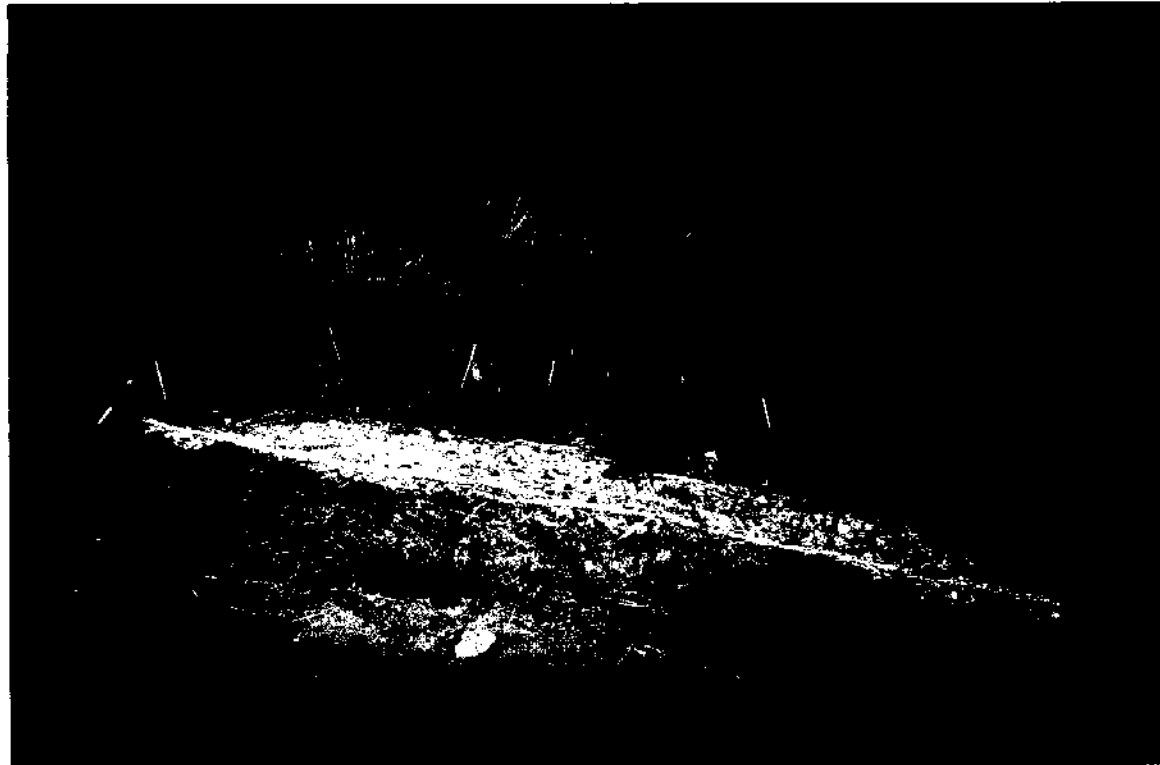


**PHOTOGRAPH 6**





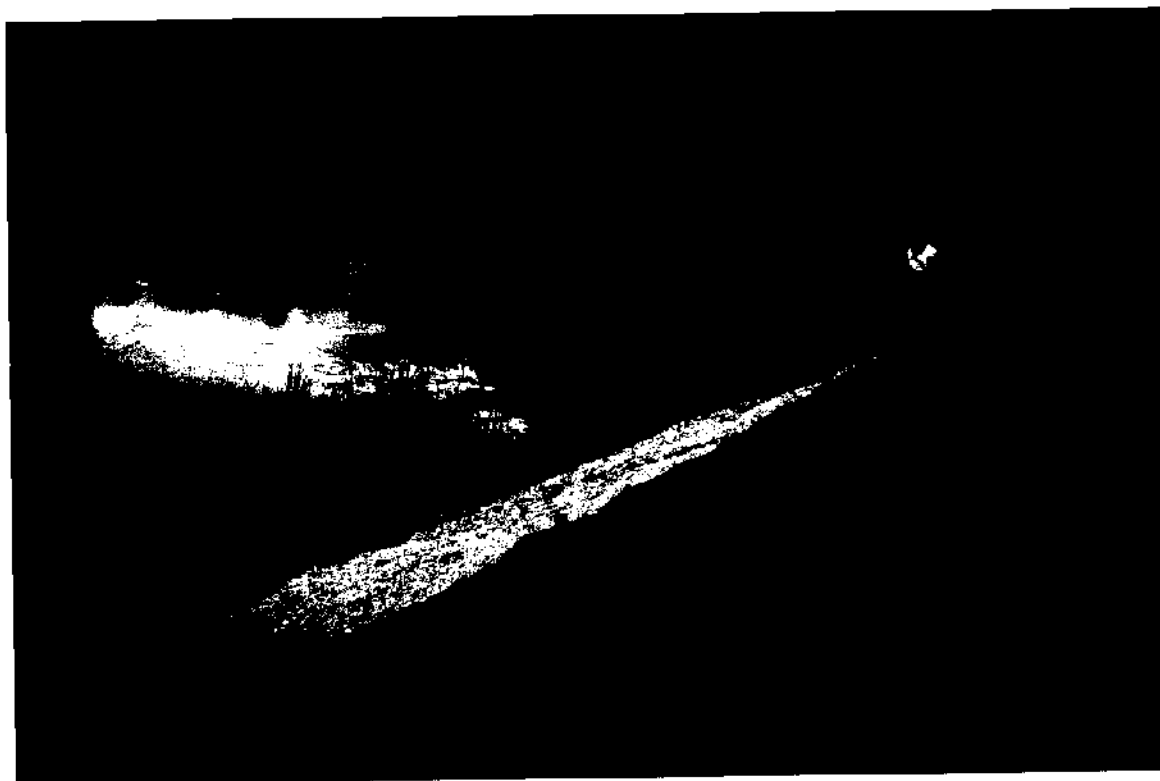
**PHOTOGRAPH 7**



**PHOTOGRAPH 8**



**PHOTOGRAPH 9**



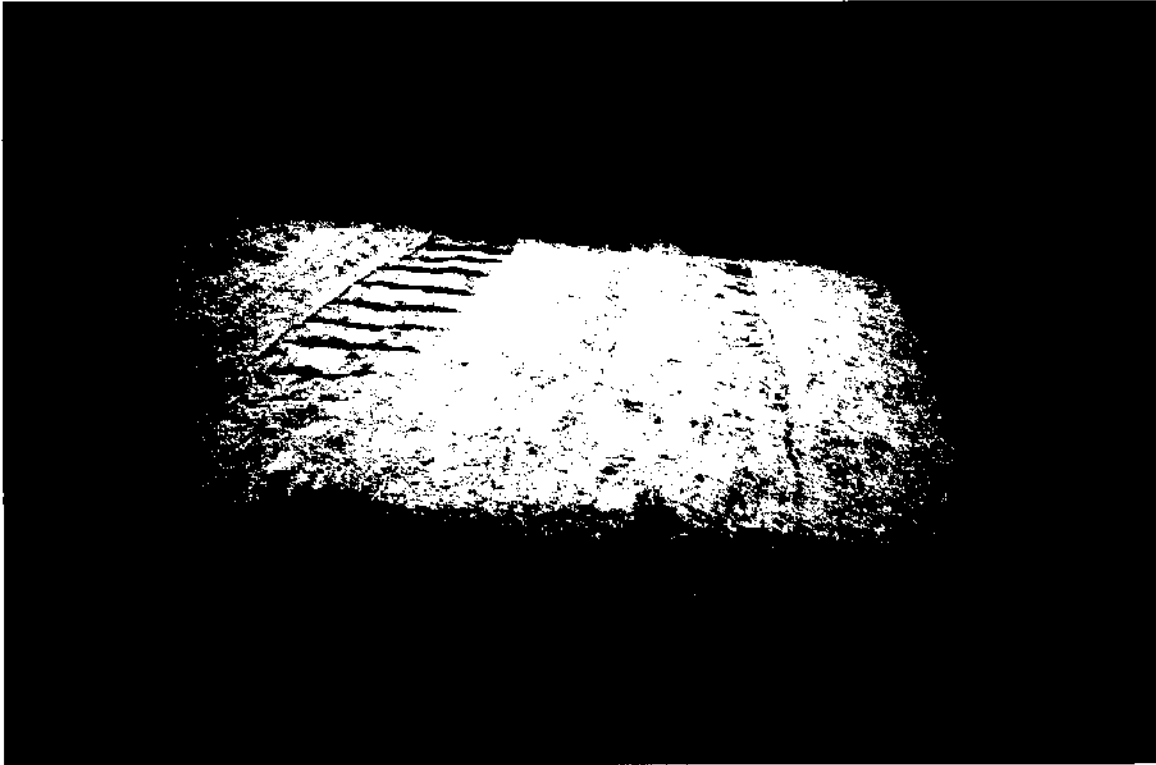
**PHOTOGRAPH 10**



**PHOTOGRAPH 11**



**PHOTOGRAPH 12**



**PHOTOGRAPH 13**

**Appendix B**  
**Daily Field Reports**

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**DAILY FIELD REPORT**

**PROJECT:** US Steel Duluth Works OIJ Berm Repair      **REPORT NO.:** 1  
**CONTRACTOR(S):** Veit & Company, Inc.      **PROJECT NO.:** 48800-605-0002  
**URS PERSONNEL:** Bruce Galer      **DATE:** 8-15-2001  
**INSPECTION PERIOD:** 700 - 1700      **WEATHER:** Cloudy, mid 70's,  
scattered showers  
**PAGE:** 1 OF 1

**PROGRESS OF WORK:**

Bruce Galer (URS) and Ron Benson (US Steel) met with Jon Ekeroth (Veit) and Craig Smith (Veit) for a pre-construction meeting to discuss the scope and methodology of the work.

Heavy equipment and laborers started arriving at 1145. The access road was regraded to cover erosion channels. Three loads of sand/clay were brought in to place in drainage channel so that trucks could drive up to the top of OIJ. The silt fence was installed below the work areas. Veit established the elevation for the top of the gabion baskets. Conducted safety review with Veit employees.

Over one inch of rain fell on the site during the evening.

**INSPECTOR:** Bruce R. Galer, P.G.



**REVIEWED BY**



**URS Corporation**

**DAILY FIELD REPORT**

**PROJECT:** US Steel Duluth Works OIJ Berm Repair      **REPORTNO.:** 2  
**CONTRACTOR(S):** Veit & Company, Inc.      **PROJECT NO.:** 48800-605-0002  
**URS PERSONNEL:** Bruce Galer      **DATE:** 8-16-2001  
**INSPECTION PERIOD:** 600 - 1440      **WEATHER:** Cloudy 58°, High 70°  
**PAGE:** 1 OF 1

**PROGRESS OF WORK:**

Conducted safety review for Veit employees not on site yesterday. First truckload of rock for gabion baskets arrived at 0752 and slid off the access road on the way up OIJ. After dumping the load and removing the truck, six inches of topsoil was stripped off to remove the grass and expose dry dirt. Gabion baskets, geotextile fabric, and mulch arrived at 0800. Excavation for gabion baskets on the west side of OIJ began at 0811 and was finished at 0850. Geotextile fabric was installed by 0950 and gabion basket installation began. Approximately 60 feet of gabion basket was installed by 1440.

**INSPECTOR** Bruce R. Galer, P.G.

*B.R.G.*

**REVIEWED BY**

*JDS*

**URS Corporation**

**DAILY FIELD REPORT**

**PROJECT:** US Steel Duluth Works OIJ Berm Repair      **REPORT NO.:** 3  
**CONTRACTOR(S):** Veit      **PROJECT NO.:** 48800-605-0002  
**URS PERSONNEL:** Bruce Galer      **DATE:** 8-17-2001  
**INSPECTION PERIOD:** 0815 – 1800      **WEATHER:** Sunny upper 70's,  
rain after 3:00 pm  
**PAGE:** 1 OF 1

**PROGRESS OF WORK:**

Upon arrival, the west side gabion baskets were placed and backfilled. Approximately 150 feet of gabion basket was placed on the north side. According to Veit employees, they installed approximately 70 feet of gabion basket on the north side last night. The gabion baskets on the north side were installed and backfilled by 1050. The slump that was above the existing gabion basket on the north side of OIJ was repaired by 1130. Backfilling of the west side gabion basket was completed by 1200. Extra fill used to regrade the access road was removed from the drainage channel and completed by 1415. Seeding and mulching was completed by 1745.

Veit is to return on Monday August 20 to remove backhoe.

**INSPECTOR** Bruce R. Galer, P.G.

*BRG*

**REVIEWED BY**

*DDS*

**URS Corporation**