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1	1	Cog. Mgr. P. W. Griffin	<i>P. W. Griffin</i>	10/20/92	R2-77						
		QA									
1	1	Safety F. G. ZW	<i>F. G. ZW</i>	10/23/92							

18. W. M. Hayward <i>W. M. Hayward</i> 10/20/92 Signature of EDT Date Originator	19. _____ Authorized Representative Date for Receiving Organization	20. <i>P. W. Griffin</i> P. W. Griffin 10/20/92 Cognizant/Project Date Engineer's Manager	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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**SUPPORTING DOCUMENT**

1. Total Pages 16

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3. Number

WHC-SD-DD-TI-073

4. Rev No.

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Organization/Charge Code 85100/PJ21F

7. Abstract

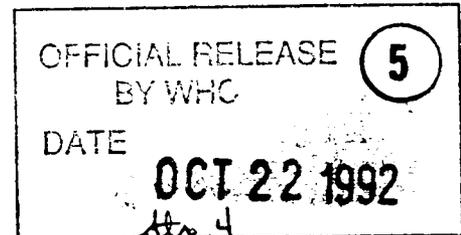
The risk and consequences of UN-216-W-31 Interim Stabilization are compared with the similar activities analyzed for 216-A-24 crib. The risk is found to be acceptable and the 216-A-24 Safety Evaluation is applicable.

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10. RELEASE STAMP



9. Impact Level 3S

SAFETY EVALUATION FOR THE INTERIM STABILIZATION  
OF UN-216-W-26 UNPLANNED RELEASE SITE

W. M. Hayward

October 1992

Westinghouse Hanford Company  
P. O. Box 1970  
Richland, Washington

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## SAFETY EVALUATION FOR THE INTERIM STABILIZATION OF UN-216-W-26 UNPLANNED RELEASE SITE

### 1. INTRODUCTION

In the near future, Environmental Restoration Operations intends to decontaminate, consolidate, and interim stabilize sections of the 216-W-26 (W-26) Unplanned Release Site (URS). The planned actions are described in WHC-SD-DD-TI-067, *Interim Stabilization Plan and Alternatives Evaluation for UN-216-W-24, -26, and -30 and 207-S* (WHC 1992), and are necessary in order to control migrating surface contamination until a record of decision is made for final remediation. Figures 1 and 2 show the location and layout of W-26. The work consists of removing the surface contamination from the majority of W-26 and consolidating it against the railroad berm to the east. The contaminated soil will then be stabilized with 18 to 24 inches of clean soil. On the western edge of the site, the rails from the 204-S railroad track will be removed and the ballast and ties will be interim stabilized with 18 to 24 inches of clean soil. The equipment and methods used are the same as those successfully uses for interim stabilization or decontamination of 1,100 acres at Hanford over the past 13 years.

In 1988, a safety evaluation (WHC 1988b) was prepared for the stabilization of the 216-A-24 crib (A-24), which is located just outside the east fence of 200 East Area. After analyzing explosion, resuspension of contaminated soils, and resuspension of excavated soils scenarios, it was concluded that the consequences were well within the risk acceptance guidelines. The work planned for W-26 is of similar type to that analyzed for A-24, including the distances to onsite structures. As a result, the two resuspension scenarios are appropriate for both cases, and provided there are no differences between the facilities which cause the results of the evaluation to exceed the risk acceptance guidelines, the safety evaluation is applicable to both. The explosion scenario is not applicable to W-26 due to the absence of an underground waste site and therefore the volatile or explosive chemicals which were identified at A-24. The soil at A-24 was contaminated with radioactive material at levels comparable to those found at W-26. The hazards associated with the work at A-24 were found to be within the risk acceptance guidelines. Therefore, the hazards associated with excavating contaminated soil at W-26 should also be within the risk acceptance guidelines.

### 2. COMPARISON OF RADIOLOGICAL RISK

Since the W-26 area does not have a documented inventory as does A-24, it is not possible to use that for comparison. Data does exist for contamination levels on both sites, and this will serve as the basis for comparison of the radiological risk. Contamination levels on the A-24 Crib were reported as 200 to 80,000 cpm in the *Environmental Radiological Survey Summary for*

Figure 1. Location of UN-216-W-26 in 200 West Area.

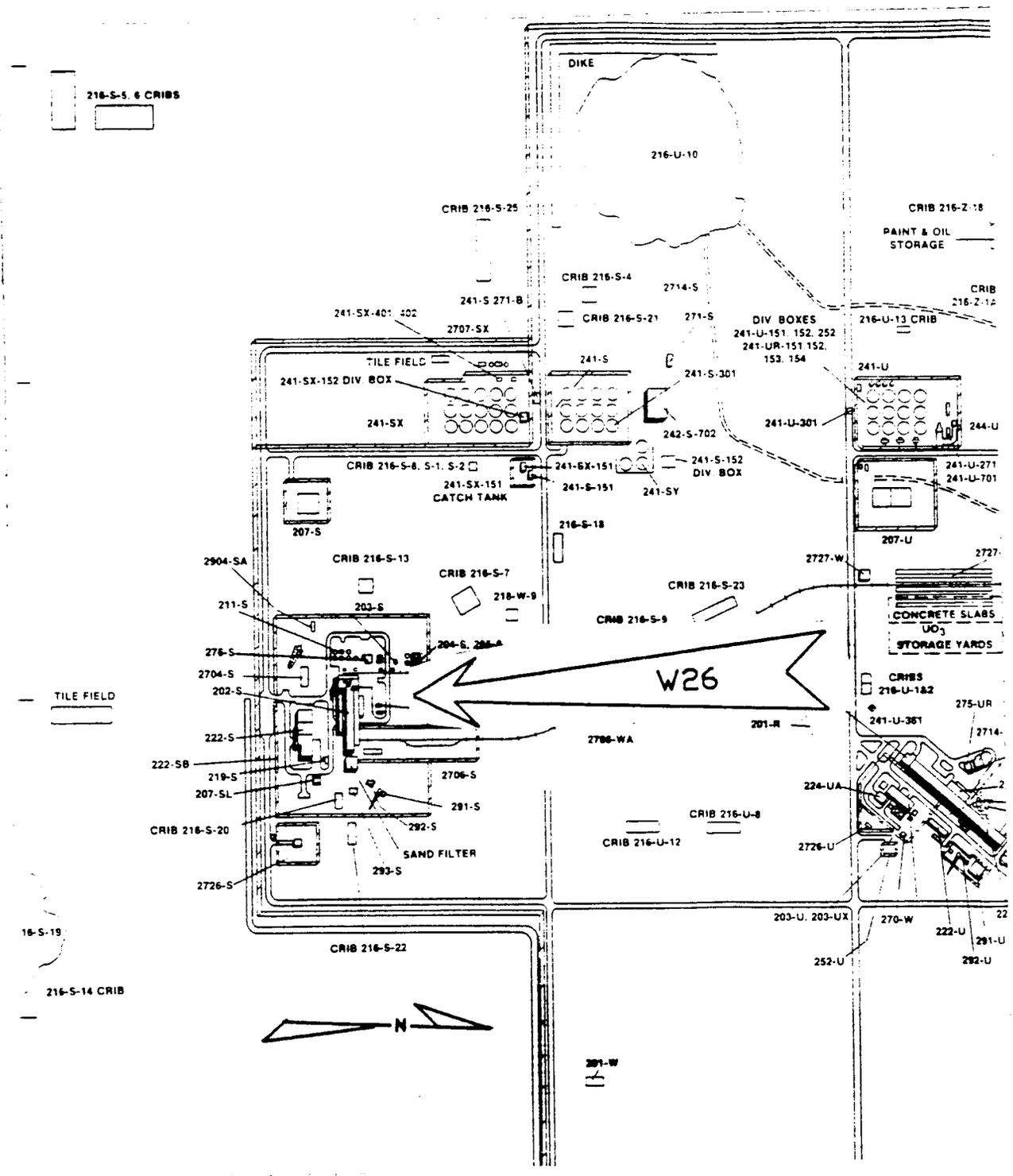
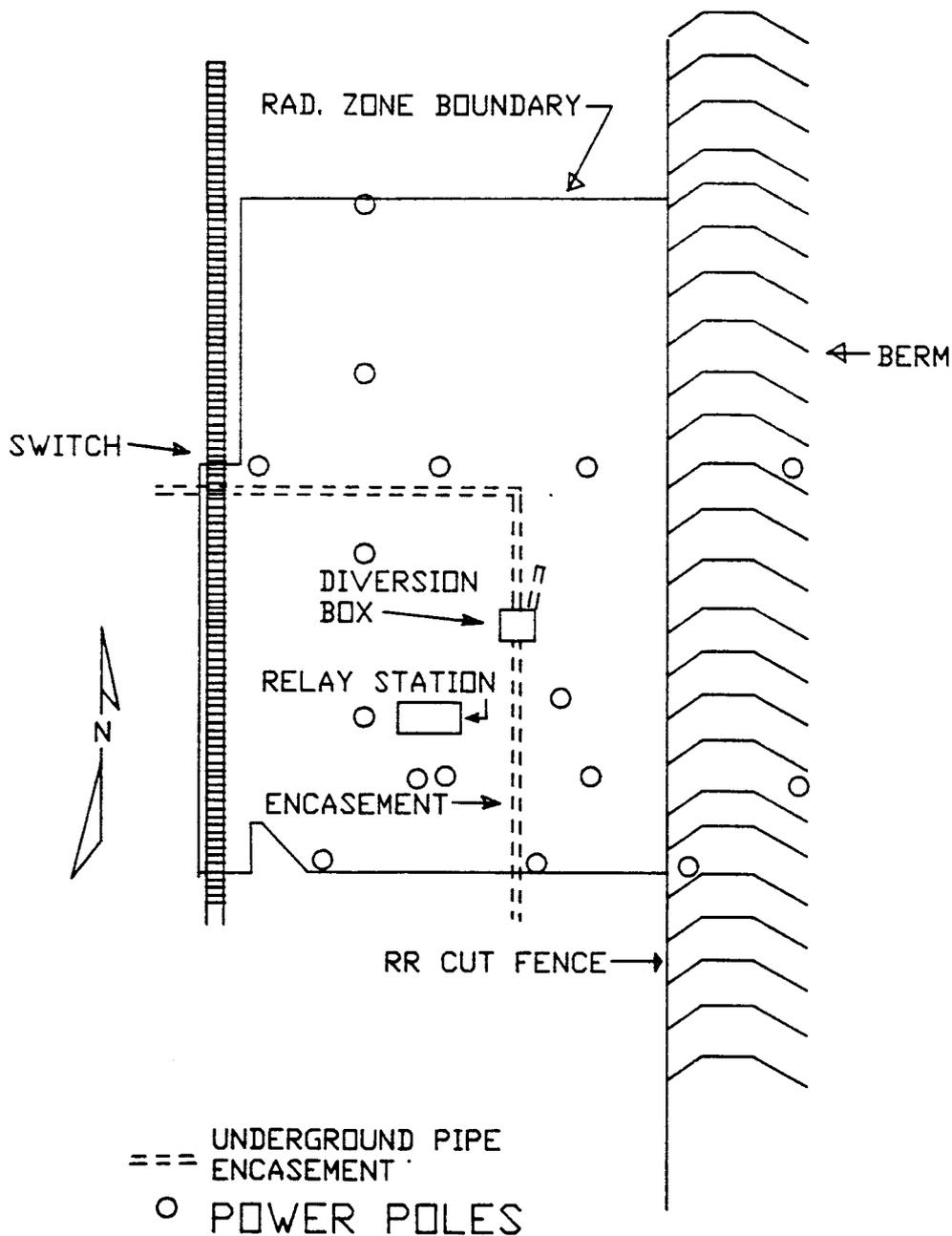


Figure 2. General Layout of UN-216-W-26.



February 1988 (WHC 1988a). This is shortly before the crib was stabilized. These levels are equivalent to 2,000 to 800,000 dpm (the current units for reporting). The two most recent survey reports for the W-26 Area (No. 10123 for 1990 and No. 6656 for 1991, Appendix A) show the highest levels of contamination as 250,000 dpm and 600 dpm respectively. The levels for W-26 are substantially below those for A-24. Since the analysis for A-24 concluded that radiological risk was within the risk acceptance guidelines the radiological risk for W-26 is also within the risk acceptance guidelines.

### 3. CRITICALITY

There are no criticality concerns associated with the W-26 as there is no known contamination with plutonium or uranium over 1 percent enrichment. The type of work proposed here has been analyzed in WHC-SD-SQA-CSA-20342, CSAR 80-024, Addendum 5; *Criticality Hazard Reviews of Restoration Work Plans for WHC Deactivated Cribs* (WHC 1991), and found to present no criticality hazard.

### 4. CHEMICAL RISK

There is no known chemical inventory at W-26. The proposed work will not open any pipes, wells, or other structures which could contain chemical fumes or vapors. Therefore, there is no chemical risk associated with this work.

### 5. INDUSTRIAL SAFETY HAZARDS

Industrial safety hazards will be addressed in a Job Safety Analysis (JSA). A JSA will be prepared specifically for this interim stabilization job and will be reviewed with the workers at the prejob safety meeting. Radiological hazards will be documented in the Radiation Work Permit (RWP).

### 6. CONCLUSION

Based on the comparison and evaluation presented above, the Safety Evaluation for 216-A-24 Crib is applicable to the work planned for W-26 and the risk is within risk acceptance guidelines. No further evaluation of risk is required.

As with previous projects, the work will be performed in accordance with an approved procedure and other operating level documents. All field personnel will have been trained (as a minimum) to the 24-hour Hazardous Waste Site Basic Training and radiation worker training. All equipment used on this job will be inspected to ensure it is in safe operating condition.

7. REFERENCES

- WHC, 1988a, *Environmental Radiological Survey Summary for February 1988*, SD-SQA-EV-024, April 19, 1988, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988b, *Safety Evaluation of Stabilization of 216-A-24 Crib*, WHC-SD-DD-TI-032 Rev. 0, September 13, 1988, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1991, *CSAR 80-024, Addendum 5; Criticality Hazard Reviews of Restoration Work Plans for WHC Deactivated Cribs*, WHC-SD-SQA-CSA-20342, August 30, 1991, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1992, *Interim Stabilization Plan and Alternatives Evaluation for UN-216-W-24, -26, and -30 and 207-S*, WHC-SD-DD-TI-067 Rev. 0, June 24, 1992, Westinghouse Hanford Company, Richland, Washington.

**APPENDIX A**

**SURVEY REPORTS**

ENVIRONMENTAL PROTECTION DATA SHEET

SITE: 216-W-26

SURVEY FREQUENCY M EM Q SA A (Circle One)

DATE: 10/25/90 HEALTH PHYSICS TECH: [Signature]

SURVEY NUMBER: 904770

ZONE TYPE : SURFACE \* UNDERGROUND \_\_\_\_\_ OTHER \_\_\_\_\_

MAXIMUM DCSE RATE:

Window Open @ contact 2.1 Window Closed @ contact <1

PHYSICAL CONDITION:

Type of Contamination found (Animal Activity, Vegetation, etc) \_\_\_\_\_

Cave-In or Depressions present? YES \_\_\_\_\_ NO \*

Evidence of Animal or Insect Intrusion ? (Burrows, feces, insect mounds) YES \* NO \_\_\_\_\_

Deep Rooted Vegetation Adequately Controlled? YES \* NO \_\_\_\_\_

POSTING: correct? YES \* NO \_\_\_\_\_

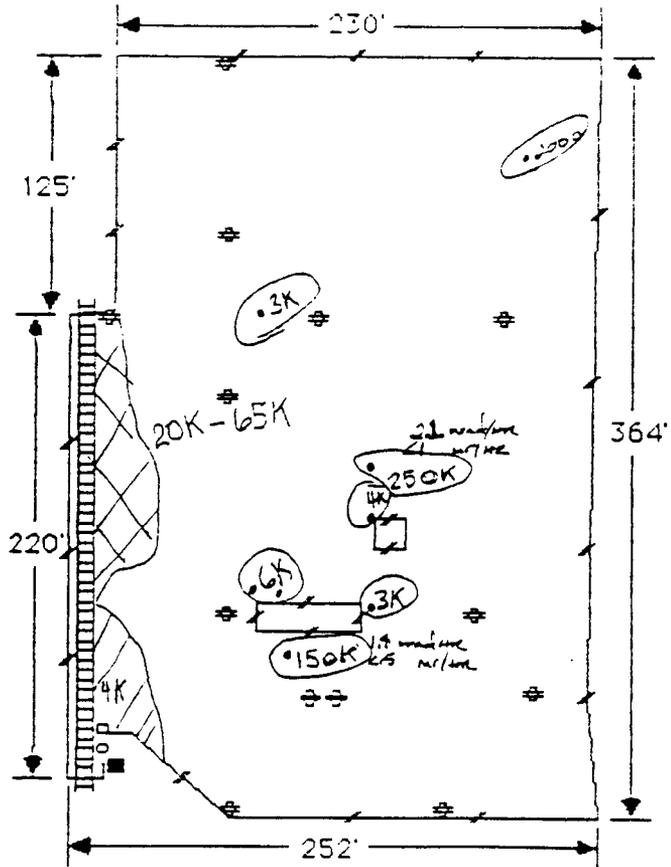
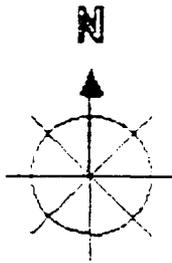
Concrete ID Posts : YES \_\_\_\_\_ NO \*

Steel Posts and Chain YES \* NO \_\_\_\_\_

COMMENTS: \_\_\_\_\_

HOUSEKEEPING: GOOD 10 9 8 7 6 5 4 3 2 1 POOR

Health Physics		Date	Task No.	Rev.	Survey No.	Location								
SUPPLEMENTAL SCHEDULED RADIATION SURVEY REPORT		10/25/90	W-11-74-104	-	10123	UN-216-W-2.6								
Area		200 WEST												
Item No.	Description	DOSE RATE			CONTAMINATION									
		beta mrad/hr	gamma mR/hr	neutron mrem/hr	Direct dpm	beta (dpm)	alpha (dpm)	Smear 100 cm <sup>2</sup>						
①	NE Corner	2.5	< 0.5	-	beta	2000	< D	alpha	< D	beta	2000	< D	mrad/hr	< 0.5
②	WEST Perimeter ALONG R.R. Tracks	2.5	< 0.5	-	beta	65K	< D	alpha	< D	beta	65K	< D	mrad/hr	< 0.5
③	SW Corner ALONG R.R. Tracks	2.5	< 0.5	-	beta	4K	< D	alpha	< D	beta	4K	< D	mrad/hr	< 0.5
④	South of Power poles	1.4 mrad/hr	< 0.5	-	beta	150K	< D	alpha	< D	beta	150K	< D	mrad/hr	1.4
⑤	North of Diversion Pit (center of the site)	2.1	< 1	-	beta	250K	< D	alpha	< D	beta	250K	< D	mrad/hr	2.1
Instruments Used		ROC	<input checked="" type="checkbox"/> GM	<input checked="" type="checkbox"/> P ROBE	<input checked="" type="checkbox"/> PAM									
Serial No.		6354	1991	325	2776									
REMARKS														
PRT Signature: <i>D. J. [unclear]</i> Payroll No: 69636 Reviewed By: _____ Date: _____														



UN-216-W-26  
POSTED SC

- Legend:
- CONCRETE PAD
  - ⊕ TELEPHONE POLE

10/25/90

Scale: 1" = 75'

ENVIRONMENTAL PROTECTION DATA SHEET

SITE: UN-215-4-26

SURVEY FREQUENCY: M  BM  Q  SA  Circle One

DATE: 11-31-91 HEALTH PHYSICS TECH: [Signature]

SURVEY NUMBER: 0656

ZONE TYPE: SURFACE  UNDERGROUND  OTHER

MAXIMUM DOSE RATE:  
Window Open @ contact 4.5 Window Closed @ contact 4.5

PHYSICAL CONDITION:

Type of Contamination found (Animal Activity, Vegetation, etc):  
\_\_\_\_\_  
\_\_\_\_\_

Cave-in or Depressions present? YES \_\_\_\_\_ NO   
Evidence of Animal or Insect Intrusion? YES  NO \_\_\_\_\_  
(Burrows, feces, insect mounds)  
Deep Rooted Vegetation Adequately Controlled? YES \_\_\_\_\_ NO

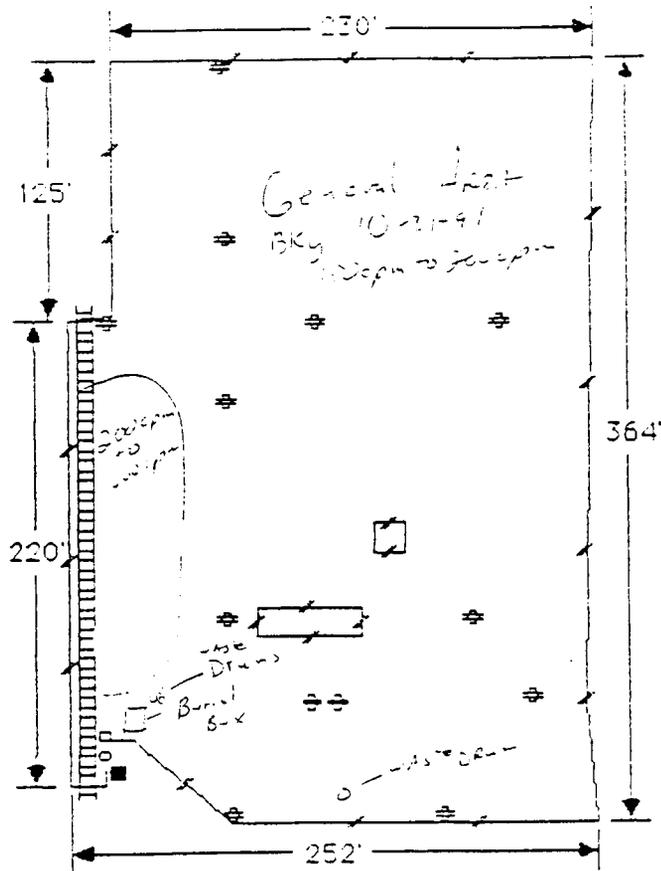
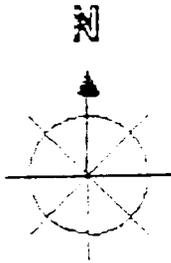
POSTING: correct? YES  NO \_\_\_\_\_  
Concrete ID Posts: YES \_\_\_\_\_ NO   
Steel Posts and Chain YES  NO \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

HOUSEKEEPING: GOOD 10 9 8 7 6 5 4 3 2 1 - POOR

**INFORMATION ONLY**





UN-216-W-25  
POSTED SC

Legend:

- CONCRETE PAD
- ⊕ TELEPHONE POLE

Scale: 1" = 75'

**INFORMATION ONLY**

Date Received: 07 22 1992

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WHC-CM-3-4

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Date Cancelled	Date Disapproved

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Safety Evaluation for the Interim Stabilization of UN-216-W-26 Unplanned Release Site

EDT No.: 156161

ECN No.:

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S. R. Durfee	T3-11	X		
P. W. Griffin	R2-77	X		
W. M. Hayward (5)	R2-77	X		
D. O. Hess	L6-57	X		
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