

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: ED-0388B-VL
ADDRESS: 602 3RD AVENUE
DOE ID NO.: ED-0388C-RS
ADDRESS: 606 3RD AVENUE
DOE ID NO.: ED-0388D-RS
ADDRESS: 608 3RD AVENUE

FEBRUARY 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

BENDIX FIELD ENGINEERING CORPORATION
P.O. Box 1569
Grand Junction, Colorado 81502

APPROVED BY _____
G. GRANDBOUCHE
DOE PROJECT ENGINEER

DATE _____

REA0388B:REA-303

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID #ED-0388B-VL, is vacant land located at 602 3rd Avenue, Edgemont, South Dakota.

The location, DOE ID #ED-0388C-RS, is a single-family residence located at 606 3rd Avenue, Edgemont, South Dakota.

The location, DOE ID #ED-0388D-RS, is a single-family residence located at 608 3rd Avenue, Edgemont, South Dakota.

The purpose of this assessment is to evaluate the extent of uranium millsite contamination at this property. This assessment includes recommended remedial action, estimated volume of material to be removed, and estimated cost of the proposed action.

1.2 Evaluation and Recommendation

The Bendix radiologic survey verifies the absence of residual radioactive materials on these properties; therefore, it is recommended that no remedial action be performed and that Property Completion Reports be issued.

2.0 PROPERTY DESCRIPTION

2.1 General Description for ED-0388B-VL

Address: 602 3rd Avenue, Edgemont, South Dakota

Zoning: Residential

Lot Size: Approximately 7,000 sq. ft. (0.16 acres)

Legal Description: Lot 2 of Block 10 of the Edgemont Original Township, Town of Edgemont, State of South Dakota.

Point of Reference: This property is located approximately 1/2 mile west of the Edgemont Uranium Millsite. Appendix Figure 2.1 shows the property location relative to its surroundings.

Utilities: Utilities locations are shown in Appendix Figure 2.2a.

Electrical:	Underground
Gas:	None
Propane:	None
Telephone:	Underground
Sewer:	Underground
Water:	Underground

Bordering Properties:

North:	Single-family residence (ED-0388A)
South:	Vacant land
East:	3rd Avenue
West:	Alley

2.1.1 Existing Facilities and Structures

Primary Structure: None

Improvements or Attachments to Structure:

Additions:	None
Porches:	None
Patios:	None
Driveways:	None
Sidewalks:	Type: Concrete
	Location: Parallel to 3rd Avenue with 13-foot section extending west
Fences:	None
General Remarks:	Structures, utilities, landscaping and other special features of this property are included in Appendix Figure 2.2a.

2.2 General Description for ED-0388C-RS

Address: 606 3rd Avenue, Edgemont, South Dakota

Zoning: Residential

Lot Size: Approximately 7,000 sq. ft. (0.16 acres)

Legal Description: Lot 4 of Block 10 of the Edgemont Original Township, Town of Edgemont, State of South Dakota.

Point of Reference: This property is located approximately 1/2 mile west of the Edgemont Uranium Millsite. Appendix Figure 2.1 shows the property location relative to its surroundings.

Utilities: Utilities locations are shown in Appendix Figure 2.2b.

Electrical:	Overhead
Gas:	None
Propane:	Underground
Telephone:	None
Sewer:	Underground
Water:	Underground

Bordering Properties:

North:	Vacant land
South:	Single-family residence (ED-0388D)
East:	3rd Avenue
West:	Alley

2.2.1 Existing Facilities and Structures

Primary Structure:

Type:	Mobile home
Size:	Approx. 470 sq. ft.
Construction:	Prefab metal panel
Foundation:	Mobile home is on jacks with plywood skirting around the perimeter.
Basement:	None
Crawl Space:	Full
Condition:	Good

Improvements or Attachments to Structure:

Additions:	None
Porches:	Type: Wooden front steps Size: Approx. 25 sq. ft. Location: South side of trailer
Patios:	None
Driveways:	None

Sidewalks: Type: Concrete in broken condition
 Location: Parallel to 3rd Avenue with 50' +
 section extending to trailer
 Fences: None
 General Remarks: Structures, utilities, landscaping and
 other special features of this property are
 included in Appendix Figure 2.2b.

2.3 General Description for ED-0388D-RS

Address: 608 3rd Avenue, Edgemont, South Dakota

Zoning: Residential

Lot Size: Approximately 7,000 sq. ft. (0.16 acres)

Legal Description: Lot 5 of Block 10 of the Edgemont Original
 Township, Town of Edgemont, State of South
 Dakota.

Point of Reference: This property is located approximately 1/2 mile
 west of the Edgemont Uranium Millsite. Appendix
 Figure 2.1 shows the property location relative
 to its surroundings.

Utilities: Utilities locations are shown in Appendix Figure 2.2b.

Electrical: Overhead
 Gas: None
 Propane: Underground
 Telephone: Overhead
 Sewer: Underground
 Water: Underground

Bordering Properties:

North: Single-family residence (ED-0388C)
 South: Single-family residence
 East: 3rd Avenue
 West: Alley

2.3.1 Existing Facilities and Structures

Primary Structure:

Type: Mobile home
 Size: Approx. 900 sq. ft.
 Construction: Prefab metal panel
 Foundation: Mobile home is supported on cinder blocks.
 Basement: None
 Crawl Space: Full
 Condition: Good

Other Structures:

Type: Storage shed
Size: Approximately 100 sq. ft.
Construction: Metal prefabricated
Foundation: Shed is on wood
Condition: Good

Improvements or Attachments to Structure:

Additions: Storage added to north side of trailer
Size: Approximately 80 sq. ft.
Porches: Type: Wooden front steps Size: Approx. 25 sq. ft.
Location: South side of trailer
Patios: None
Driveways: None
Sidewalks: Type: Concrete
Location: Parallel to 3rd Avenue with 17' \pm
section extending west to trailer
Fences: None
General Remarks: Structures, utilities, landscaping and
other special features of this property are
included in Appendix Figure 2.2b.

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Pacific Northwest Laboratory (PNL) at location #ED-0388B-VL, #ED-0388C-RS, and #ED-0388D-RS. Additional field data were collected by Bendix on October 10, 1984. These data were evaluated to determine the areal and vertical extent of uranium mill tailings contamination at these properties as well as any other contaminated material that may have originated from the millsite.

The Bendix radiologic survey was designed to investigate the entire properties, with emphasis on previously identified areas of contamination. Conclusions based upon data analyses are discussed in Section 3.5, Extent of Contamination.

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

PNL (Bendix) Background Readings: 9 to 12 uR/h
PNL (Bendix) Highest Outside Gamma Reading (HOG): 14 uR/h

The Bendix exterior radium concentration measurements are presented in Appendix Table 3.1. Appendix Table 3.2 presents the PNL radium concentration measurements. PNL gamma exposure rate readings are shown in Appendix Figures 3.1a and 3.1b. Appendix Figure 3.2 presents the ranges of elevated gamma readings observed in the Bendix survey. These measurements indicate areas of possible contamination.

3.2.2 Interior Findings

PNL (Bendix) Background Readings: Not included in PNL report
PNL (Bendix) Highest Inside Gamma Reading (HIG): Not included in the PNL report.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated. The location of measurements collected by PNL are included in Appendix Figures 3.1a and 3.1b. The Bendix sample locations are shown in Appendix Figure 3.3. Data from these investigations are included in Appendix Tables 3.1 and 3.2.

3.4 Radon/Radon Daughter Concentration

Radon daughter concentration (RDC):

The working level (WL) was not assessed by PNL.
No RDC measurements were taken by Bendix.

3.5 Extent of Contamination

PNL historical data does not indicate any area of possible contamination on these properties. The Bendix radiologic survey verifies the absence of residual uranium mill tailings.

4.0 RECOMMENDED REMEDIAL ACTION

No action is recommended for locations ED-0388B-VL, ED-0388C-RS and ED-0388D-RS because no identified residual radioactive materials were found on these properties.

5.0 REFERENCES

Bendix Field Engineering Corporation, Engineering, Construction, and Land Support Manual Grand Junction Vicinity Properties Project, (GJ-08), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Operating Manual-Edgemont Vicinity Properties, (GJ-19), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Procedures Manual Radiologic Support Operations Grand Junction Vicinity Properties, (GJ-07), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Vicinity Properties General Construction Specification, for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1983.

Bendix Field Engineering Corporation, Environmental Assessment of Cleanup Activities at Vicinity Properties in Edgemont, South Dakota, (GJ-06), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations, Albuquerque, New Mexico, 1983.

Pacific Northwest Laboratory, Draft Proceedings of the Workshop on Radiological Surveys in Support of the Edgemont Clean-Up Action Program, R.W. Perkins, Workshop Chairman, 1981.

U.S. Department of Energy, Vicinity Properties Management and Implementation Manual, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Environmental Protection Agency, Standards for Remedial Action at Inactive Uranium Processing Sites (40 CFR Part 192), Washington, D.C., 1983.

6.0 APPENDIX

This Appendix contains the following:

Appendix Tables:

- Table 3.1 Radium Concentration at Exterior Locations - Bendix
- Table 3.2 Radium Concentration at Exterior Locations - PNL

Appendix Figures:

- Figure 2.1 Vicinity Map
- Figure 2.2a Site Plan
- Figure 2.2b Site Plan
- Figure 3.1a PNL Exterior Grid Point Exposure Rates
and Sample Locations
- Figure 3.1b PNL Exterior Grid Point Exposure Rates
- Figure 3.2 Bendix Exterior Gamma Scan
- Figure 3.3 Bendix Sample Locations

Team Leader Notes

Table 3.1
Exterior Radium Concentrations
Bendix
602, 606 & 608 3rd Avenue

DOE ID No. ED-0388B,C & D

Page 1 of 1

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1	184255	00-06 06	SS DS	2.0		25.3 *	Over sewer line
2	192294	00-06 00	SS DS	<1.0		1.6 *	Background location
3	216279	00	DS	27.6		*	DC based on scintil- lometer readings at 6 inches
4	221272	00	DS	15.9		*	DC based on scintil- lometer readings at 9 inches
5	237276	00	DS	108.7		*	
6	248213	00-06 06	SS DS	2.1		1.4 *	DC = 0 inches
7	251279	00	DS	25.4		*	DC based on scintil- lometer readings at 6 inches
8	255242	00	DS	157.5		*	DC based on scintil- lometer readings at 6 inches
9	255267	00	DS	226.2		*	DC based on scintil- lometer readings at 9 inches

Tool Types: GB = GAD-6 Borehole
GS = GAD-6 Surface
DS = Delta Scanner
TC = Total Count Borehole
SS = Soil Sample
BH = Combined GAD-6 and
Total Count Borehole

Notes: DC = Depth of Contamination
* = No Soil Sample Taken
[n] = Reading Taken n-Inches
Above Floor or Ground
Date of Survey = 10-10-84
Team Leader = SH

Table 3.2
Exterior Radium Locations
Pacific Northwest Laboratory
602, 606 & 608 3rd Avenue

DOE ID No. ED-0388B,C & D

Page 1 of 1

Location Code	Depth (cm)	Meas. Type	Ra-226 Concentration (pCi/g)	Deposit Depth (As per PNL)
#1	5	BH	336.0	DC = 60 cm (24 inches)
	10	BH	420.0	
	15	BH	457.0	
	20	BH	435.0	
	25	BH	329.0	
	30	BH	204.0	
	45	BH	40.9	
	60	BH	10.0	
	75	BH	3.6	
	105	BH	2.8	
	135	BH	2.7	
	165	BH	3.0	
#2	5	BH	3.4	DC = 0 cm
	15	BH	3.4	
	30	BH	2.2	
	45	BH	2.4	
	75	BH	2.3	
#3	5	BH	12.0	DC = 20 cm (8 inches)
	10	BH	26.8	
	15	BH	27.2	
	20	BH	10.6	
	25	BH	6.8	
	30	BH	3.4	
	45	BH	2.3	
	60	BH	2.3	
	75	BH	2.3	
A	00-45	SS	1029.0	
B	00-05	SS	3.3	
C	00-05	SS	2.7	

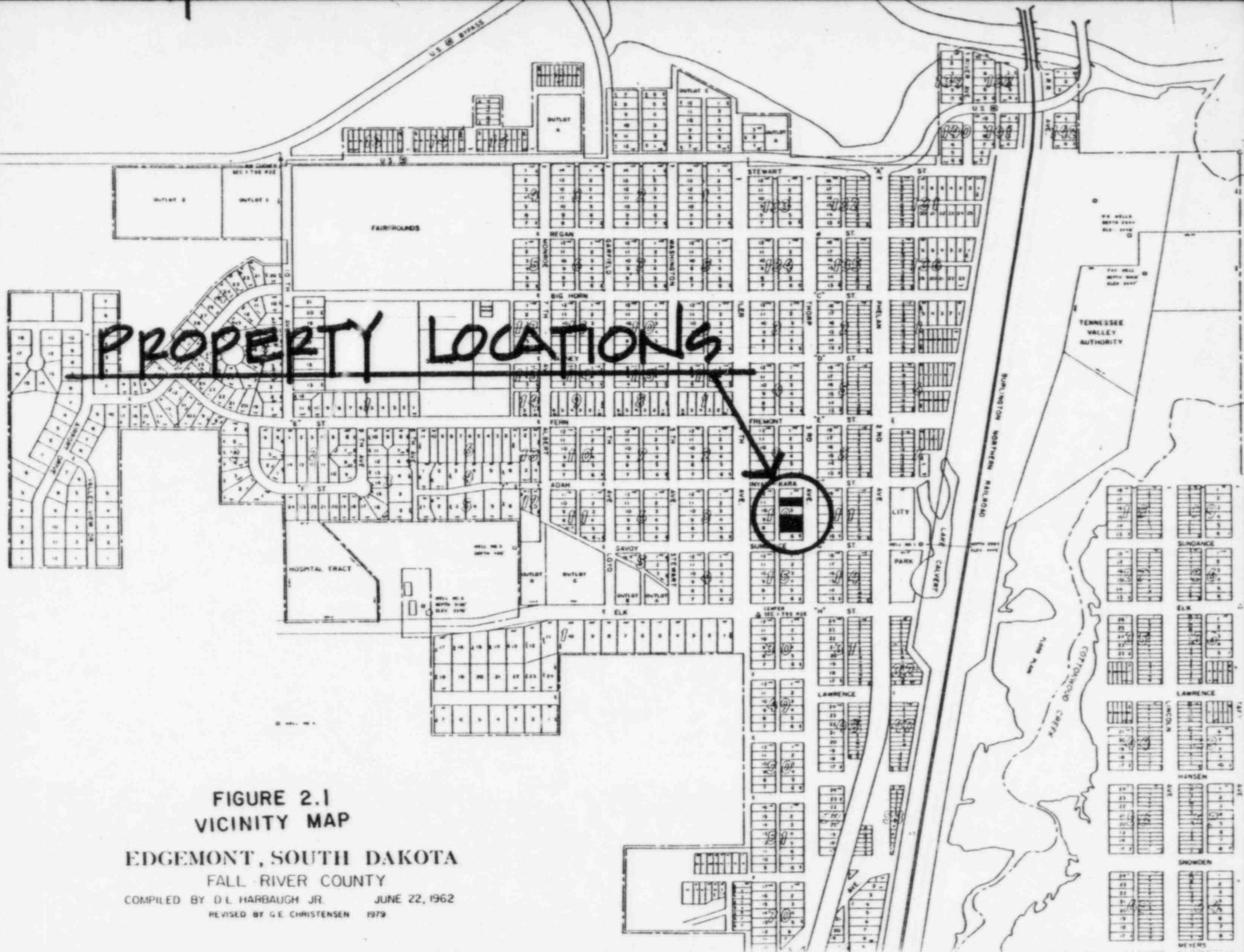
SS = Soil Sample

BH = Borehole Measurement

See Figures 3.1a and 3.1b For PNL Sample Locations

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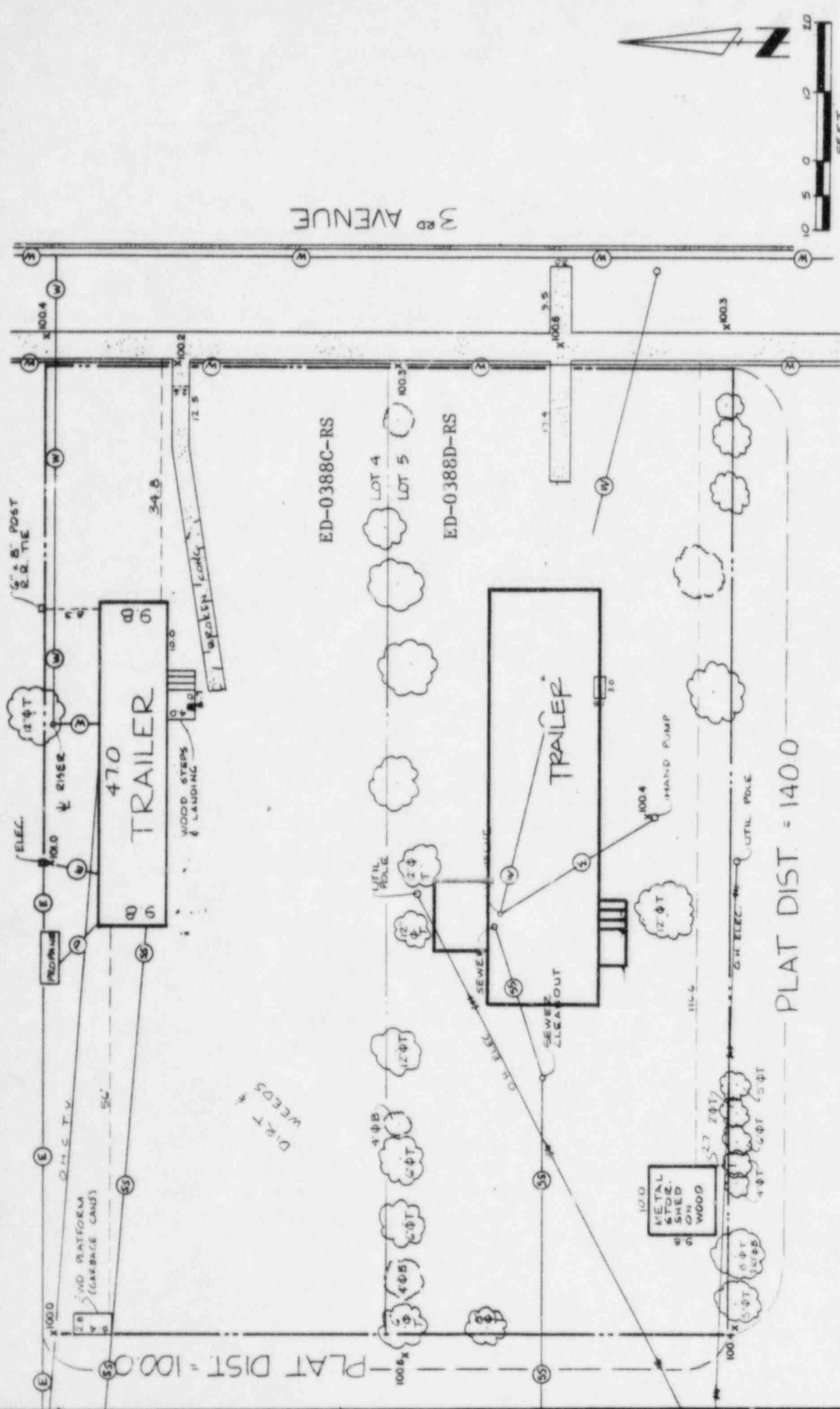
PLAT DIST = 100.0



This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an inconspicuous survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

LOT 1 AND LOT 2 BLOCK 10
TOWN OF EDGE MONT
FALL RIVER COUNTY, SOUTH DAKOTA

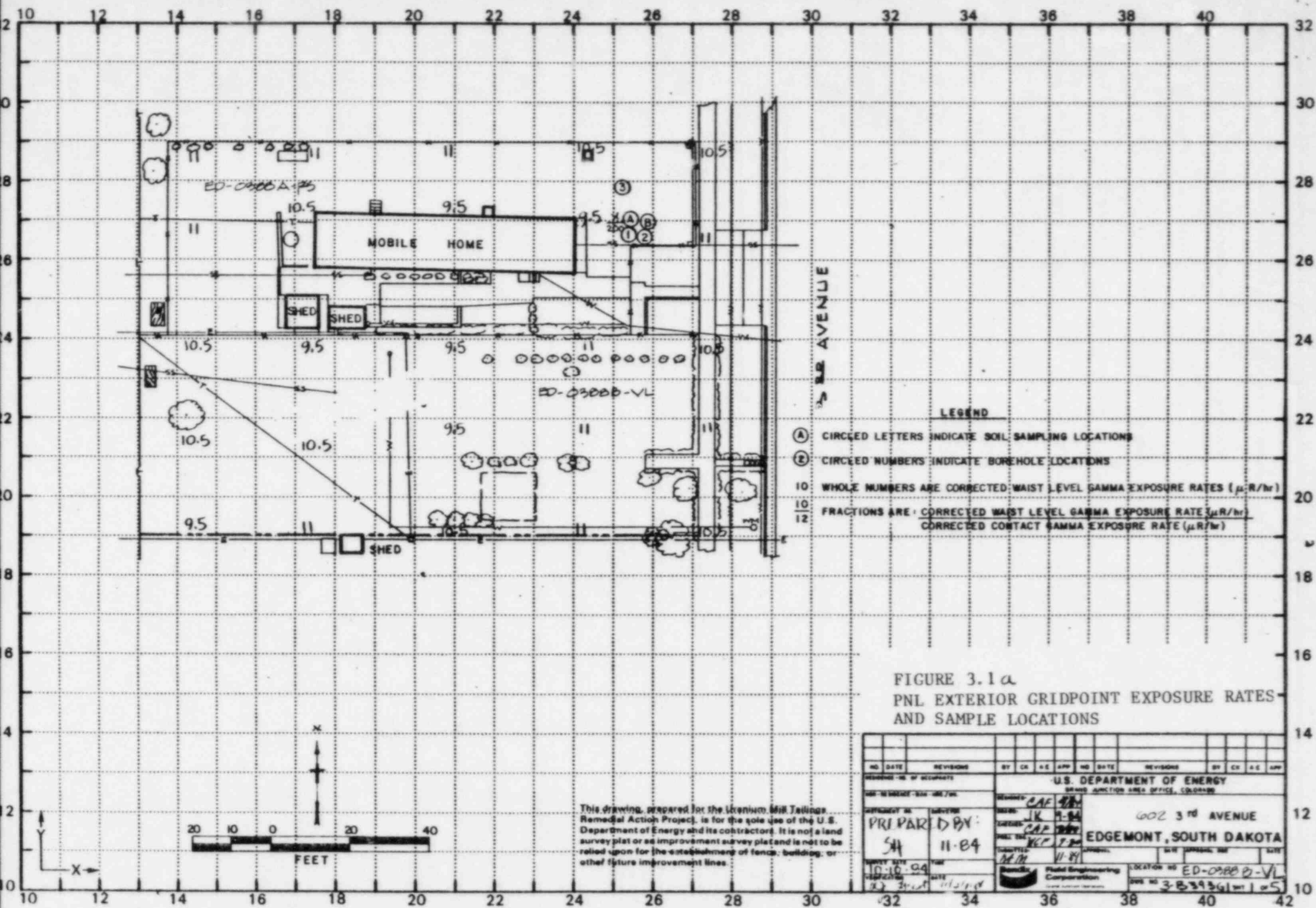
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO ADDRESS 600 & 602 ED-0388A-RS ED-0388B-VL	EDGEMONT 3 D FIGURE 2.2a. SITE PLAN	 U.S. GEOLOGICAL SURVEY 1000 G Street, N.W. Washington, D.C. 20540
		SURV. JLC, 7/24/84 DRAFT. T.J. 5/16/84 DRAWING NO. 3-C-373-F SHEET 1 OF 2

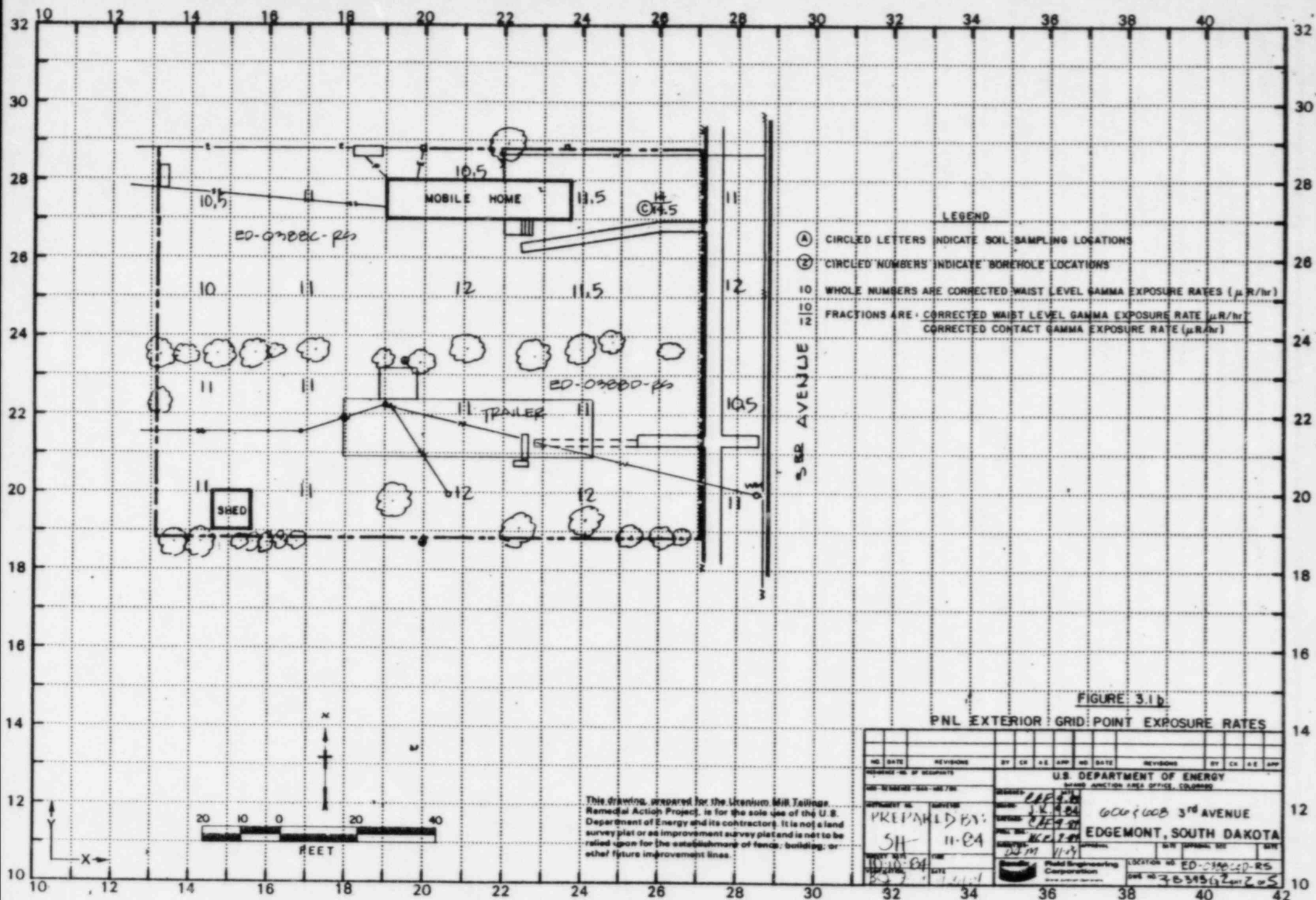


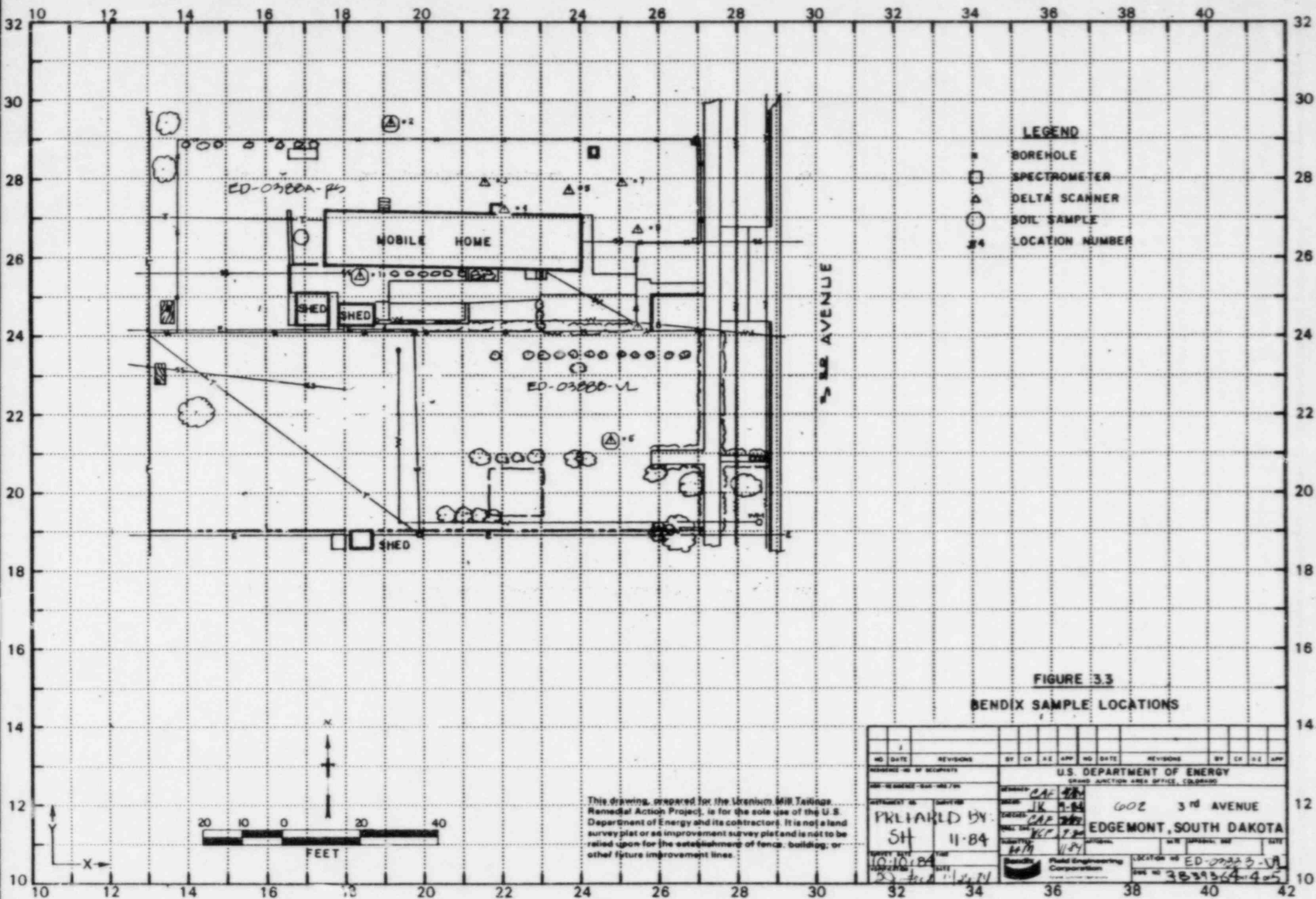
LOT 4 AND LOT 5 BLOCK 10
TOWN OF EDGE MONT
FALL RIVER COUNTY, SOUTH DAKOTA

This drawing prepared for the University of Minnesota
Remedial Action Project, in the state of the U.S.
Department of Energy and its contractors. It is not a final
survey plan or an improvement survey plan and is not to be
relied upon for the establishment of fence, building, or
other future improvement lines.

U.S. DEPARTMENT OF ENERGY	ED-0388C-RS
GRAND JUNCTION AREA OFFICE, COLORADO	ED-0388D-RS
ADDRESS 6000 + 600 35E	
EDGE MONT SD	
FIGURE 2.2.b. SITE PLAN	
SURV. J. L. G. / 7/24/84 DRAFT T. J. / 6/14/84	CR.
DRAWING NO. 5-C-393-F1	SHEET 2 OF 2







OWNER: HARROD

662-7027

10-10-84 p.m.
#E00388
602 & 608 3RD AVE

A walking scan was performed on lots #1, #2, #4 and #5. The only areas of elevated gamma were a small spot in the east side of lot #2, and scattered deposits of predominantly ore (point sources) in lot #1. The point source readings were as high as 3500 cps. Five ore or tailings deposits were documented on lot #1 that PNL did not indicate in their survey data. The contamination in lot #2 was not identified by PNL either. Six inch & 9 inch exploration holes were investigated over some ore deposits to indicate the depth of contamination. Soil samples and surface deltas were also taken.

All surveys were decontaminated and frisked. No contamination was found.

HART 1116 DELTA

MACKLER 1137

RYAN 1196

1137 } SENTIMETERS
1196 } S. Hart

Lot #1 has a new owner.

Mrs. Harrod sold this property

to Shirley A. Barlett.

An access permit was filled out and signed by the new owner.

5/7

Bendix

**Field Engineering
Corporation**

Grand Junction Operations

P.O. Box 1868
Grand Junction, CO 81502
Tel (303) 242-8821

A Subsidiary of
The Bendix Corporation

Mr. George Grandbouche
U.S. Department of Energy
Grand Junction Area Office
P.O. Box 2567
Grand Junction, CO 81502

February 22, 1985

Subject: Resubmittal of REA for DOE ID No. ED-00149-RS
Located at 504 5th Avenue, Edgemont, South Dakota

Dear George:

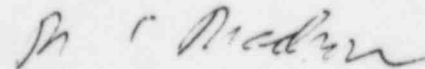
Attached are copies of the REA for the subject vicinity property.

Please forward two copies of the REA and the appropriate approval form to the South Dakota Department of Water and Natural Resources and the Nuclear Regulatory Commission. One additional review copy is enclosed for transmittal to the UMTRA Project Office.

Please return completed REA approval forms to me by March 8, 1985.

If you have any questions, please do not hesitate to contact me at (303) 242-8621 extension 393.

Sincerely,



Michael E. Madson
EDGVP Project Manager

cc: L. Edwards w/attachment
J. Friestad w/attachment

EDREA-7:SMEM301