

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-10103-RS
ADDRESS: 133 GUNNISON AVENUE

JUNE 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

Michael H. Tucker
M. TUCKER
DOE PROJECT ENGINEER

DATE

June 14, 1985

REA10103:REA-604

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-10103-RS, is a single-family residence located at 133 Gunnison Avenue, Grand Junction, Colorado.

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 action recommended is the removal of contaminated material and restoration of the property to its original condition. The identified residual radioactive material found on this property is tailings; the estimated volume is: exterior, 12 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$2,244. Remedial action on this property will take approximately 10 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 133 Gunnison Avenue

Zoning: Residential (RMF-64)

Lot Size: Approximately 5,000 sf (0.11 acres)

Legal Description: North 100 ft of Lots 9 and 10, Block 55, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately two miles northwest of the State of Colorado Tailings Repository. Appendix Figure 2.1 shows the property location relative to its surroundings.

Utilities: Utility locations are shown in Appendix Figure 2.2.

Electrical:	Overhead
Gas:	Underground
Telephone:	Overhead
Sewer:	Underground
Water:	Underground
Cable TV:	Overhead

Bordering Properties:

North:	Gunnison Avenue
South:	Gravel alley
East:	Single-family residence
West:	Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 998 sf
Construction Date:	1943
Construction:	Wood-frame with stucco finish
Foundation:	Concrete poured-in-place
Footing Depth:	Approximately 58" to bottom of footing from grade
Basement:	Partial
Crawl Space:	Yes
Condition:	Fair to good

Other Structures:

Type:	Shed I
Size:	Approximately 36 sf
Construction:	Wood-frame
Foundation:	None
Condition:	Fair to good

Type:	Shed II
Size:	Approximately 40 sf
Construction:	Wood-frame
Foundation:	Concrete slab
Condition:	Fair

General Remarks:

Structures, utilities, landscaping, and other special features of this property are included in Appendix Figure 2.2.

Historical Data:

This structure is not over 50 years old. Therefore, it does not meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-10103-RS on April 15, 1985. Data collection methods were performed in accordance with procedures fully described in the Radiologic Support Operations Procedures Manual GJ-07(84) (Bendix Field Engineering Corporation, 1984). These data were evaluated to determine the areal and vertical extent of uranium mill tailings contamination at this property as well as any other contaminated material that may have originated from the millsite.

A review of historical information from the files of the Colorado Department of Health (CDH) and the inclusion data from Oak Ridge National Laboratory (ORNL) was conducted. These records indicate contamination under and around the patio south of the primary structure, and along the fence at the southern property line.

The Bendix radiologic survey was designed to investigate the entire property, with emphasis on previously identified areas of contamination. Conclusions based upon data analyses are discussed in Section 3.5, Extent of Contamination. Photocopies of the Official Survey Report, Memo of Understanding, team leader notes, and deconvolution graphs are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 15 to 16 uR/h
Highest Outside Gamma Reading (HOG): 130 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1. Appendix Figure 3.2 presents the ranges of elevated gamma readings and indicates areas of possible contamination.

3.2.2 Interior Findings

Background Readings: 13 to 16 uR/h
Highest Inside Gamma Reading (HIG): 16 uR/h

Interior gamma exposure-rate measurements are summarized in Appendix Table 3.2. Appendix Figures 3.3a and 3.3b show interior exposure rates and locations of these measurements.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figure 3.4. Data from these investigations are included in Appendix Table 3.1.

3.4 Radon/Radon Daughter Concentration (RDC)

Determined by CDH: 0.008 gross working level (WL). No additional RDC measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figure 3.5 shows identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in this figure, areas recommended for remedial action that contain identified residual radioactive materials are:

- (AREA A) The soil in the planter north of the primary structure is contaminated to a depth of 12 inches (approximately 12 sf).
- (AREA B) In the lawn east of the primary structure, contamination extends to a depth of 6 inches (approximately 114 sf).
- (AREA C) South of the primary structure, the soil under a 2-inch-thick flagstone patio is contaminated to a total depth of 12 inches (approximately 160 sf).
- (AREA D) The soil beneath the west end of the flagstone patio is contaminated to a total depth of 9 inches (approximately 36 sf).
- (AREA E) The depth of contamination in the lawn, along the southern fence line, is 15 inches (approximately 45 sf).

(AREAS REQUIRING FURTHER INVESTIGATION DURING REMEDIAL ACTION)

Due to obstructions, a scan at the fence line west of Area E could not be done. When this area becomes accessible, monitoring should be done to assure that the contaminated deposit does not extend into this portion of the yard.

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-10103-RS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.5) and transport of removed material to the disposal site.

After remedial action is completed, the areas involved will be restored to original condition in accordance with the Bendix drawings, Vicinity Properties General Construction Specification (Bendix Field Engineering Corporation, 1984), and Statement of Work for Construction Subcontractor.

Dislocation of the occupants will not be required for this remedial action.

4.2 Evaluation of Recommended Remedial Action

Volume calculations of the areas included for remedial action are presented in Appendix Table 4.1. Cost estimates are presented in Appendix Table 4.2.

Estimated cost of remedial action is \$2,244.

This remedial action will result in removal of the identified residual radioactive materials.

There is no owner preference with respect to remedial action and no legal or other complications are foreseen at this time.

5.0 REFERENCES

ARIX, A Professional Corporation, Procedures Manual for the Grand Junction Remedial Action Program, for Colorado Department of Health, Radiation Control Division, and the U.S. Department of Energy, 1983.

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, 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, Grand Junction Vicinity Properties Operating Manual, (GJ-16) for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 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, 1984.

Bendix Field Engineering Corporation, Environmental Assessment of Preliminary Cleanup Activities at Offsite Properties Contaminated by Tailings from the Grand Junction Inactive Uranium Millsite, (GJ-04), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations, Albuquerque, New Mexico, 1983.

U.S. Department of Energy, Programmatic Memorandum of Agreement (DOE No. DE-GM04-84AL28460) between the U.S. Department of Energy, the Advisory Council on Historic Preservation, and the Colorado State Historic Preservation Officer, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

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 Concentrations at Exterior Locations
Table 3.2	Summary of Interior Gamma Exposure Rates
Table 4.1	Area and Volume Calculations
Table 4.2	Estimated Cost of Decontamination and Restoration

Appendix Figures:

Figure 2.1	Vicinity Map
Figure 2.2	Site Plan
Figure 3.1	Exterior Grid-Point Exposure Rates
Figure 3.2	Exterior Gamma Scan
Figure 3.3a	Interior Gamma Exposure Rates - Basement/Crawl Space
Figure 3.3b	Interior Gamma Exposure Rates - Ground Floor
Figure 3.4	Exterior Sample Locations
Figure 3.5	Exterior Estimated Extent of Contamination
Official Survey Report	
Memo of Understanding	
Team Leader Notes	
Deconvolution Graphs (Apparent Radium-226 Concentration)	

Radium Concentrations at Exterior Locations

DOE ID #GJ-10103-RS

133 Gunnison Avenue

Page 1 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1	131257	03	TC	2.8		*	Next to water meter
		06	TC	3.2		*	
		09	TC	3.5		*	
		12	TC	3.6		*	
		15	TC	3.8		*	DC = 0 inches
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	3.8		*	
2	140230	00	DS	1.5		*	Background
		00-06	SS			2.5	
		03	TC	3.2		*	DC = 0 inches
		06	TC	3.6		*	
		09	TC	3.9		*	
		12	TC	4.0		*	
		15	TC	4.1		*	
		18	TC	4.0		*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	4.0		*	
		33	TC	4.0		*	
3	177266	00	DS	4.5		*	Flower bed north side of house
		06	DS	3.5		*	
		09	DS	3.4		*	DC = 12 inches
		12	DS	1.5		*	
4	177280	00	DS	<1.0		*	DC = 0 inches
		06	DS	<1.0		*	
5	177284	00	DS	2.1		*	DC = 0 inches
		06	DS	<1.0		*	
		00-06	SS			2.7	
6	180251	03	TC	3.1		*	Next to north porch
		06	TC	3.3		*	
		09	TC	3.5		*	DC = 0 inches
		12	TC	3.6		*	
		15	TC	3.6		*	
		18	TC	3.7		*	
		21	TC	3.8		*	
		24	TC	3.9		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-10103-RS

133 Gunnison Avenue

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
6	180251	27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.7		*	
		39	TC	3.5		*	
		42	TC	3.6		*	
		45	TC	3.5		*	
		48	TC	3.5		*	
		51	TC	3.7		*	
		54	TC	3.8		*	
		57	TC	3.7		*	
		60	TC	3.9		*	
7	190285	00	DS	3.0		*	DC = 6 inches
		06	DS	<1.0		*	
		00-06	SS			5.4	
8	196272	00	DS	3.6		*	East of house
		06	DS	<1.0		*	DC = 6 inches
9	212240	00	DS	1.9		*	DC = 0 inches
		12	DS	2.4		*	
		21	DS	<1.0		*	On gas line
10	215260	00	DS	54.8		*	Flagstone patio
		06	DS	4.2		*	
		12	DS	1.6		*	DC = 12 inches
11	215272	00	DS	2.7		*	DC = 6 inches
		06	DS	1.3		*	
12	219243	00	DS	120.2		*	
		06	DS	3.2		*	DC = 9 inches
		09	DS	1.9		*	
13	219252	00	DS	1.9		*	
14	219269	00	DS	2.0		*	
15	220270	03	TC	3.2		*	South of house
		06	TC	3.4		*	
		09	TC	3.5		*	
		12	TC	3.5		*	DC = 0 inches

Radium Concentrations at Exterior Locations

DOE ID #GJ-10103-RS

133 Gunnison Avenue

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
15	220270	15	TC	3.5		*	
		18	TC	3.6		*	
		21	TC	3.6		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.8		*	
		45	TC	3.9		*	
		48	TC	3.9		*	
		51	TC	3.9		*	
		54	TC	4.0		*	
		57	TC	4.1		*	
		60	TC	4.1		*	
16	220279	00	DS	5.0		*	East side of south
		06	DS	5.5		*	lawn
		12	DS	1.4		*	DC = 12 inches
		00-06	SS			6.0	
17	221242	00	DS	1.1		*	
18	225255	03	TC	3.2		*	8 feet south of
		06	TC	3.4		*	flagstone patio
		09	TC	3.6		*	
		12	TC	3.7		*	DC = 0 inches
		15	TC	3.7		*	
		18	TC	3.7		*	
		21	TC	3.7		*	
		24	TC	3.8		*	
		27	TC	3.9		*	
		30	TC	3.9		*	
		33	TC	3.9		*	
19	253262	03	TC	7.0		*	Along south fence
		06	TC	7.8		*	line

Radium Concentrations at Exterior Locations

DOE ID #GJ-10103-RS

133 Gunnison Avenue

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
19	253262	09	TC	7.3		*	
		12	TC	6.1		*	
		15	TC	4.8		*	DC = 15 inches
		18	TC	4.5		*	
		21	TC	4.3		*	Based on the
		24	TC	4.2		*	deconvolution graph
		27	TC	4.2		*	
		30	TC	4.2		*	
		33	TC	4.3		*	

Measurement GB = GAD-6 Borehole
Types: GS = GAD-6 Surface
DS = Delta Scintillometer
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 = 04-15-85
Team Leader = JDG

Table 3.2
Summary of Interior Gamma Exposure Rates

DOE ID #GJ-10103-RS 133 Gunnison Avenue Page 1 of 1

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Location *	Number of Readings Taken at Waist Level	Range at Waist Level (uR/h)	Mean at Waist Level (uR/h)	Number of Readings Taken at Surface	Range at Surface (uR/h)	Mean Surface (uR/h)
-----	-----	-----	-----	-----	-----	-----
BASEMENT	*	*	*	*	15-16	*
CRAWL SPACE	00	-	-	11	15-17	16
GROUND FLOOR	*	*	*	*	13-15	*
SHED 1	*	*	*	*	14-16	*
SHED 2	*	*	*	*	14-16	*
=====	=====	=====	=====	=====	=====	=====

* The CDH and ORNL data indicates the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan. These areas and the ranges of gamma measurements are shown in Appendix Figures 3.3a and 3.3b. Exposure rates in the crawl space are shown in Appendix Figure 3.3a.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-10103-RS

Page 1 of 1

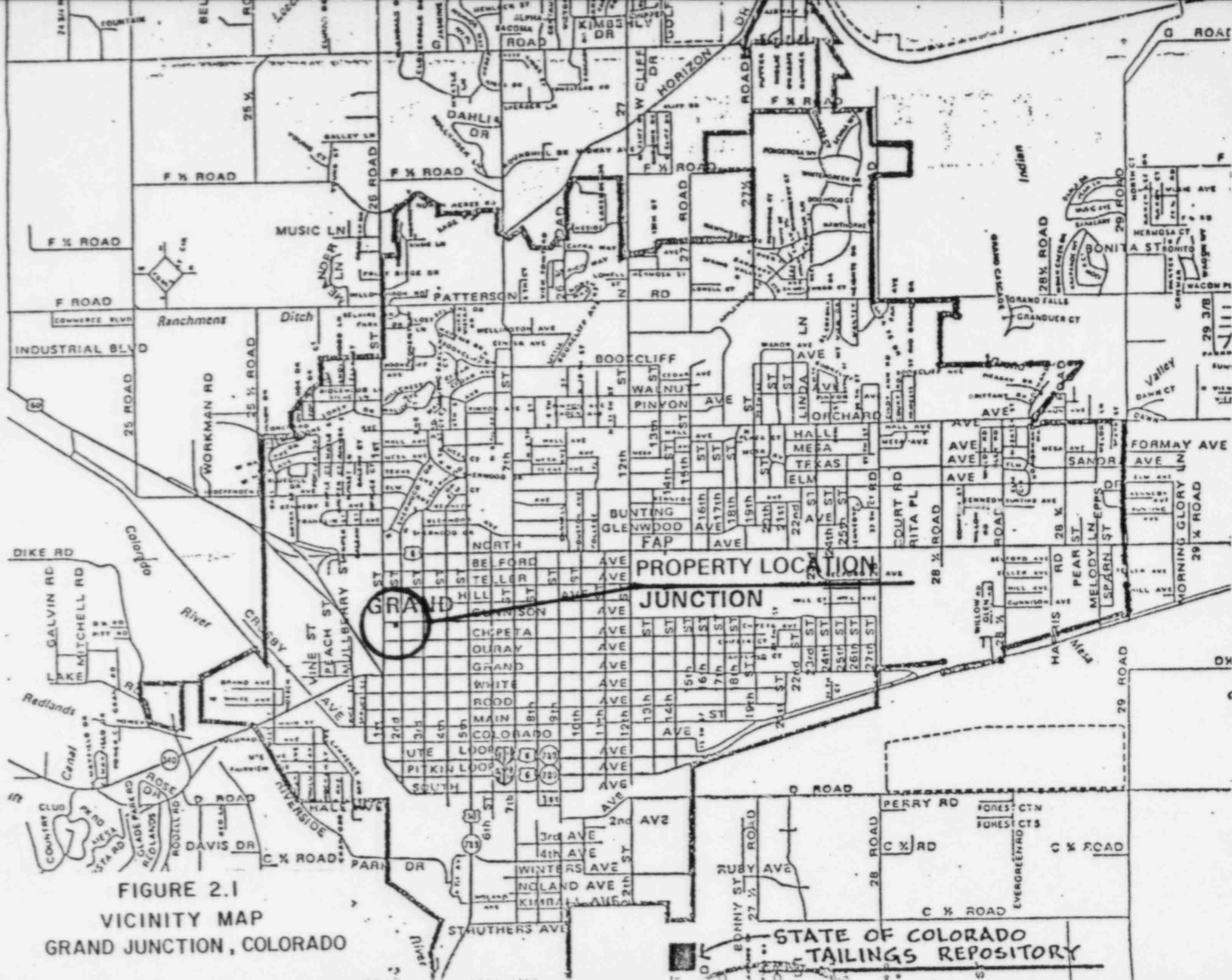
<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
EXTERIOR					
Flagstone and Concrete Grout					
C	8 x 20 =	160	x 0.2 =	32	
D	10 x 9 =	90	x 0.2 =	18	
Volume of Flagstone and Concrete				= 50	= 50/27 = 2
Contaminated Fill					
A	2 x 6 =	12	x 1.0 =	12	
B	3 x 22 =	66			
	4 x 12 =	48			
		114	x 0.5 =	57	
C	8 x 20 =	160	x 0.8 =	128	
D	3 x 10 =	30			
	.5 (4 x 3) =	6			
		36	x 0.6 =	22	
E	15 x 3 =	45	x 1.3 =	59	
Volume of Fill				= 278	= 278/27 = 10
TOTAL VOLUME - EXTERIOR					= 12

See Appendix Figure 3.5 For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-10103-RS

Page 1 of 1

Remove flagstone patio 250 sf @ \$1.48/sf	\$ 370
Remove identified residual radioactive material 10 cy @ \$14.50/cy	145
Remove and replace metal lattice Lump sum	25
Remove and replace rose bush Lump sum	25
Replace compacted roadbase 6 cy @ \$11.50/cy	69
Replace topsoil 4 cy @ \$9.50/cy	38
Replace sod 159 sf @ \$.35/sf	56
Replace flagstone patio with concrete 319 sf @ \$1.50/sf	479
<hr/>	
TOTAL EXTERIOR	\$ 1,207
TOTAL INTERIOR	0
ACCESS CONTROL	250
<hr/>	
SUBTOTAL	\$ 1,457
CONTINGENCY @ 10%	146
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SUBTOTAL	\$ 1,603
CONTRACTOR OVERHEAD & PROFIT @ 40%	641
<hr/>	
GRAND TOTAL	\$ 2,244



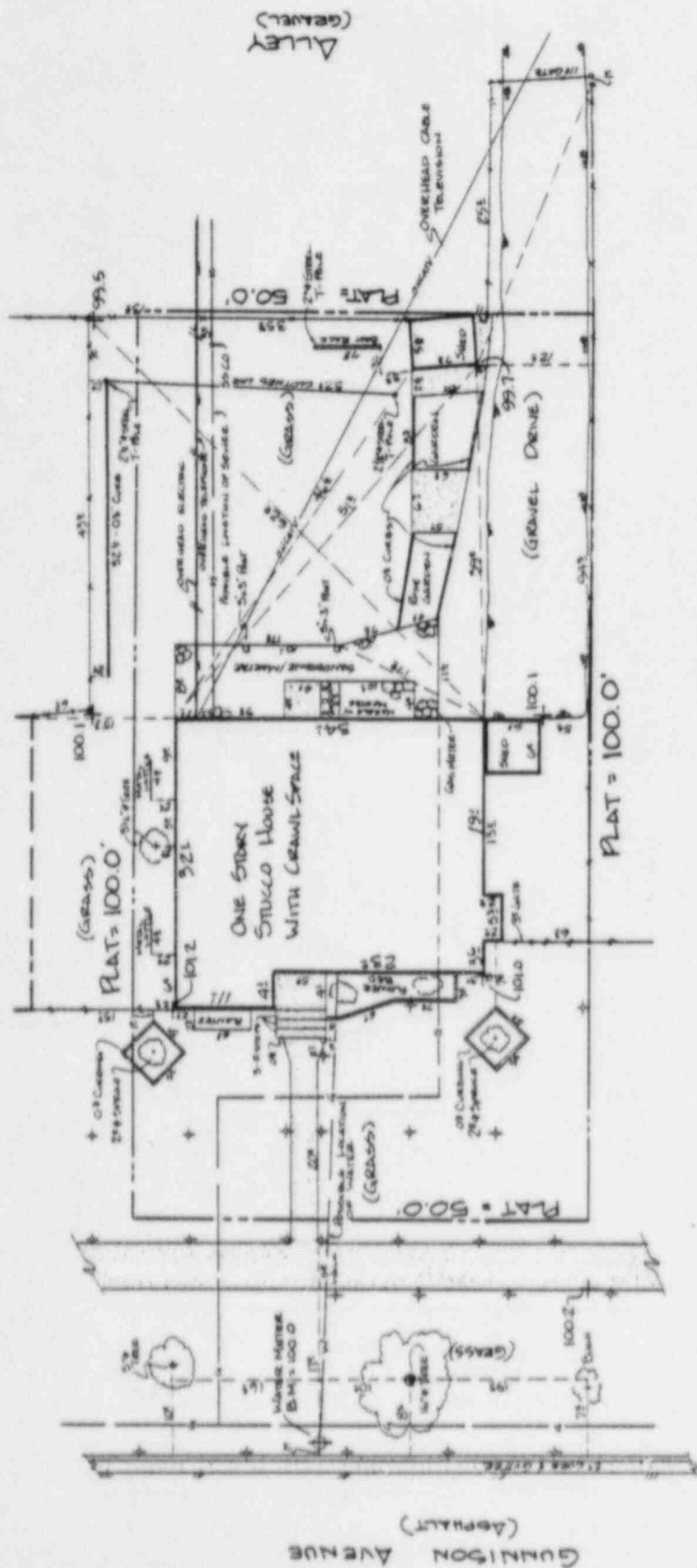
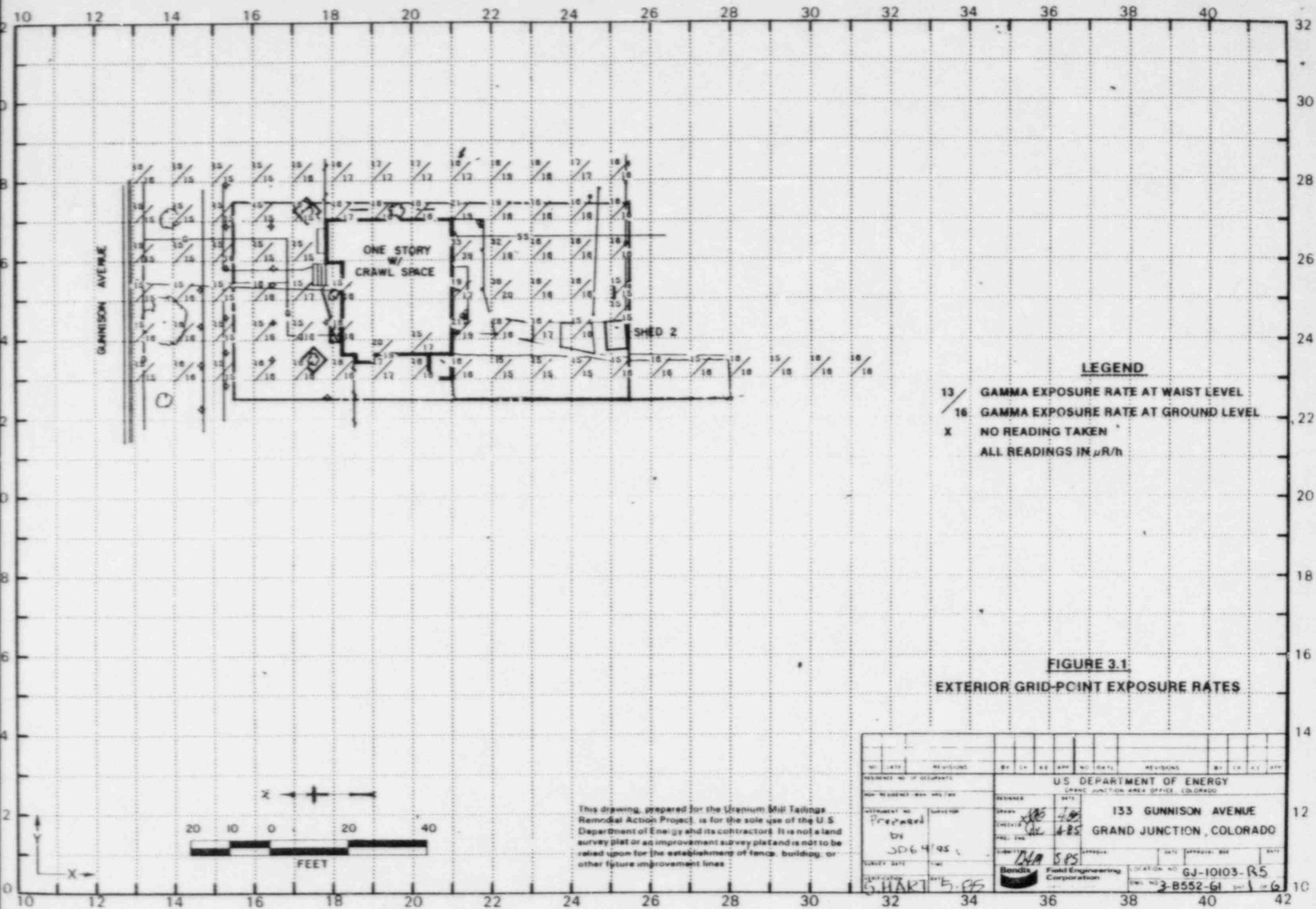
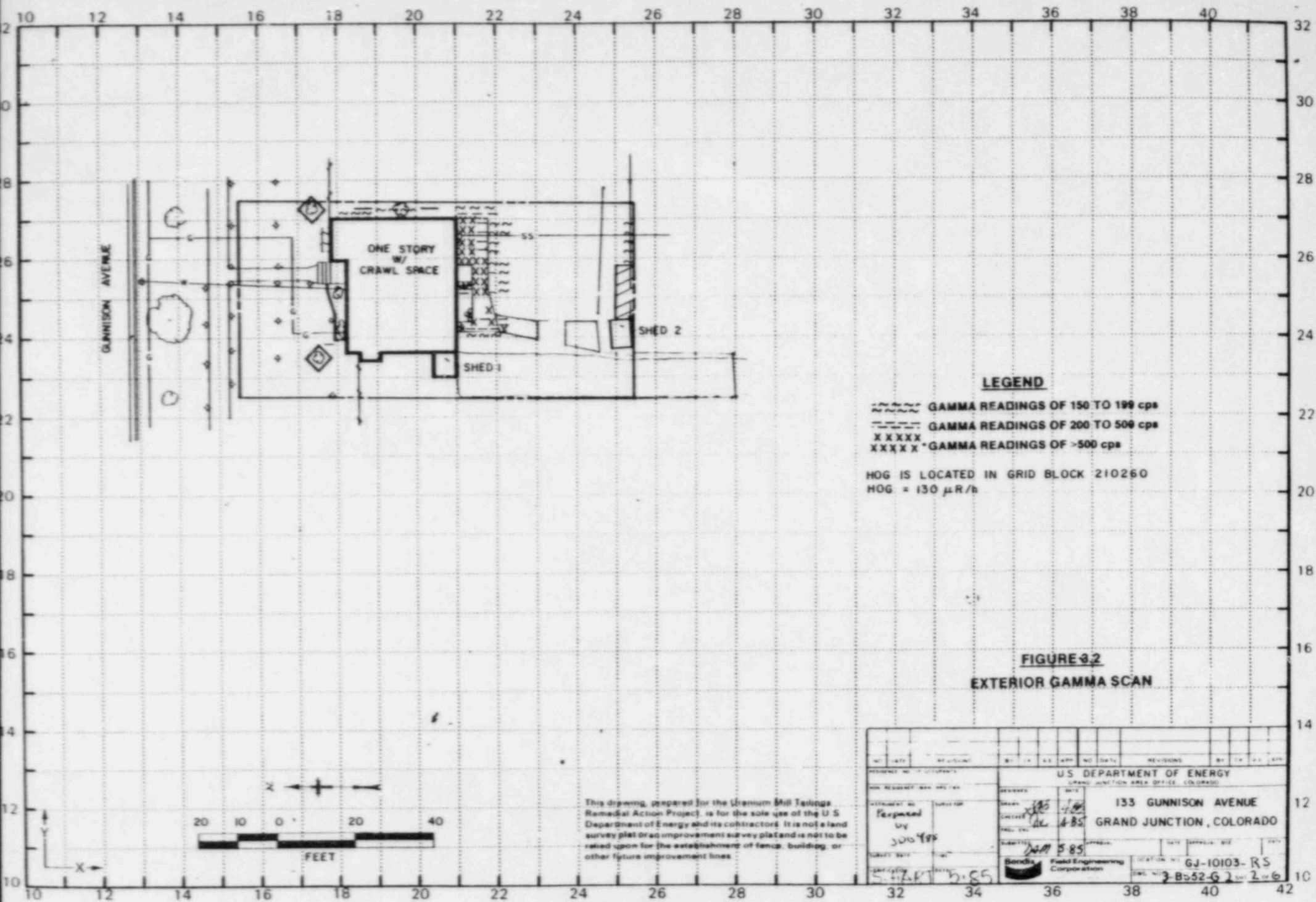
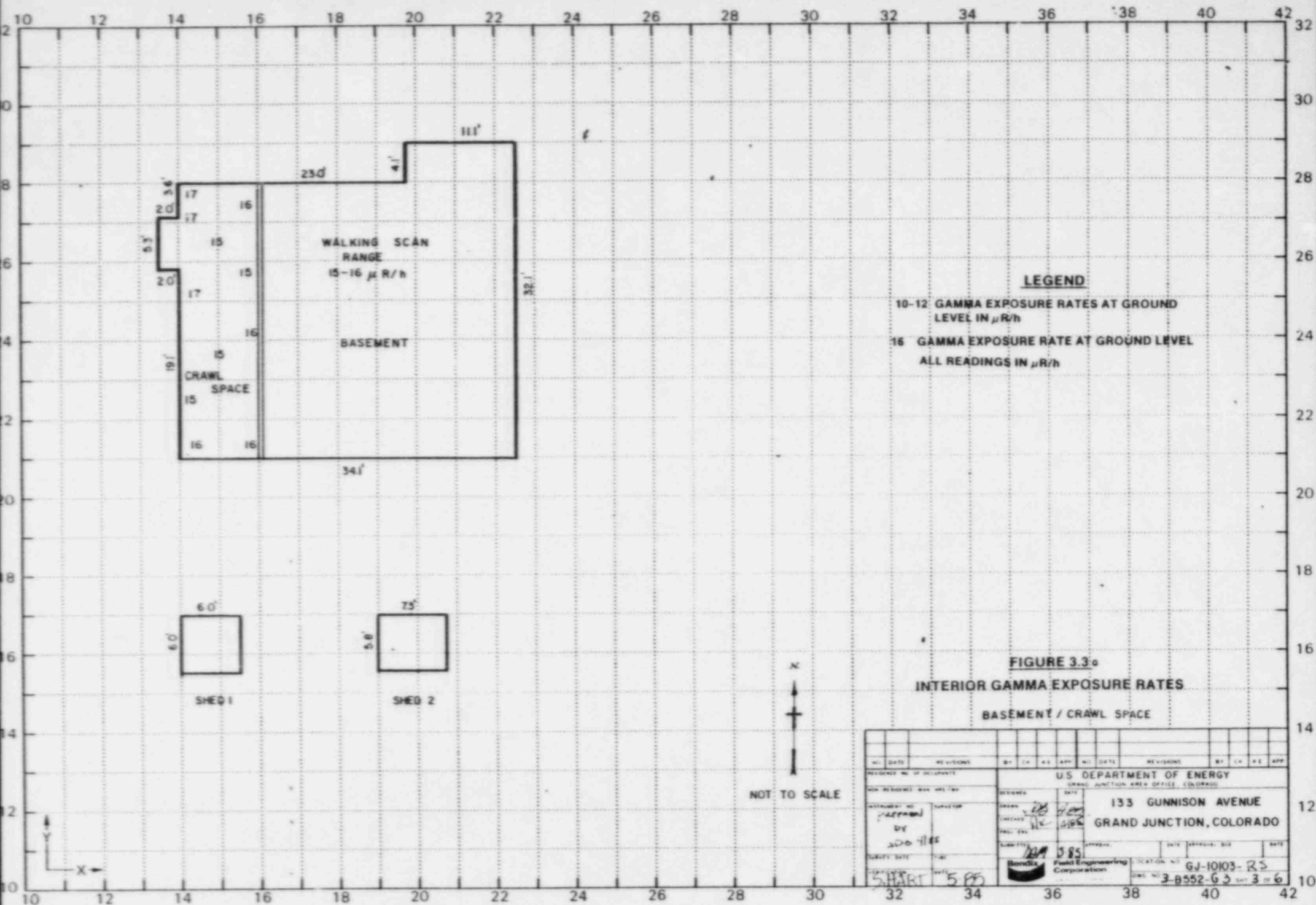


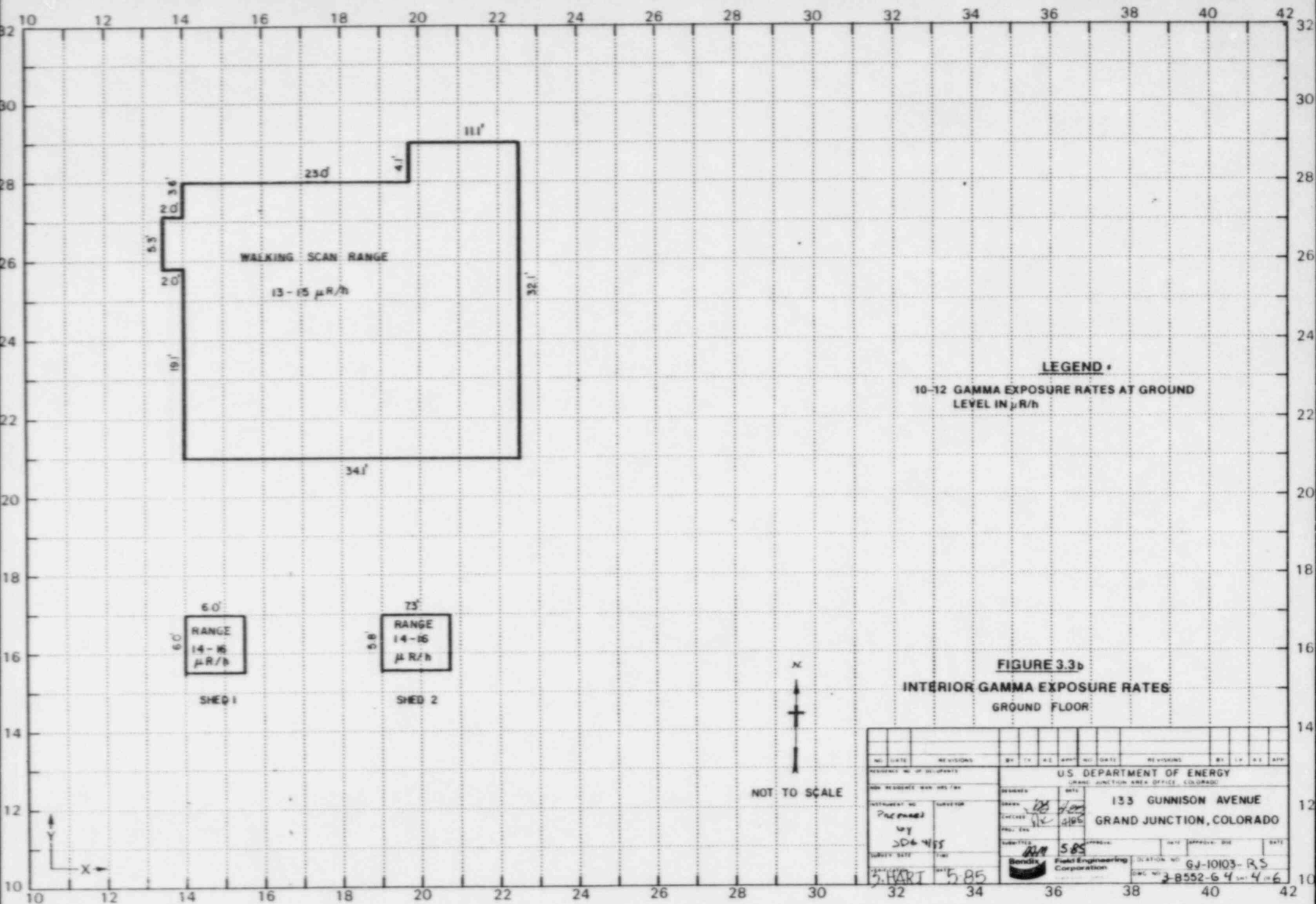
FIGURE 2.2 SITE PLAN

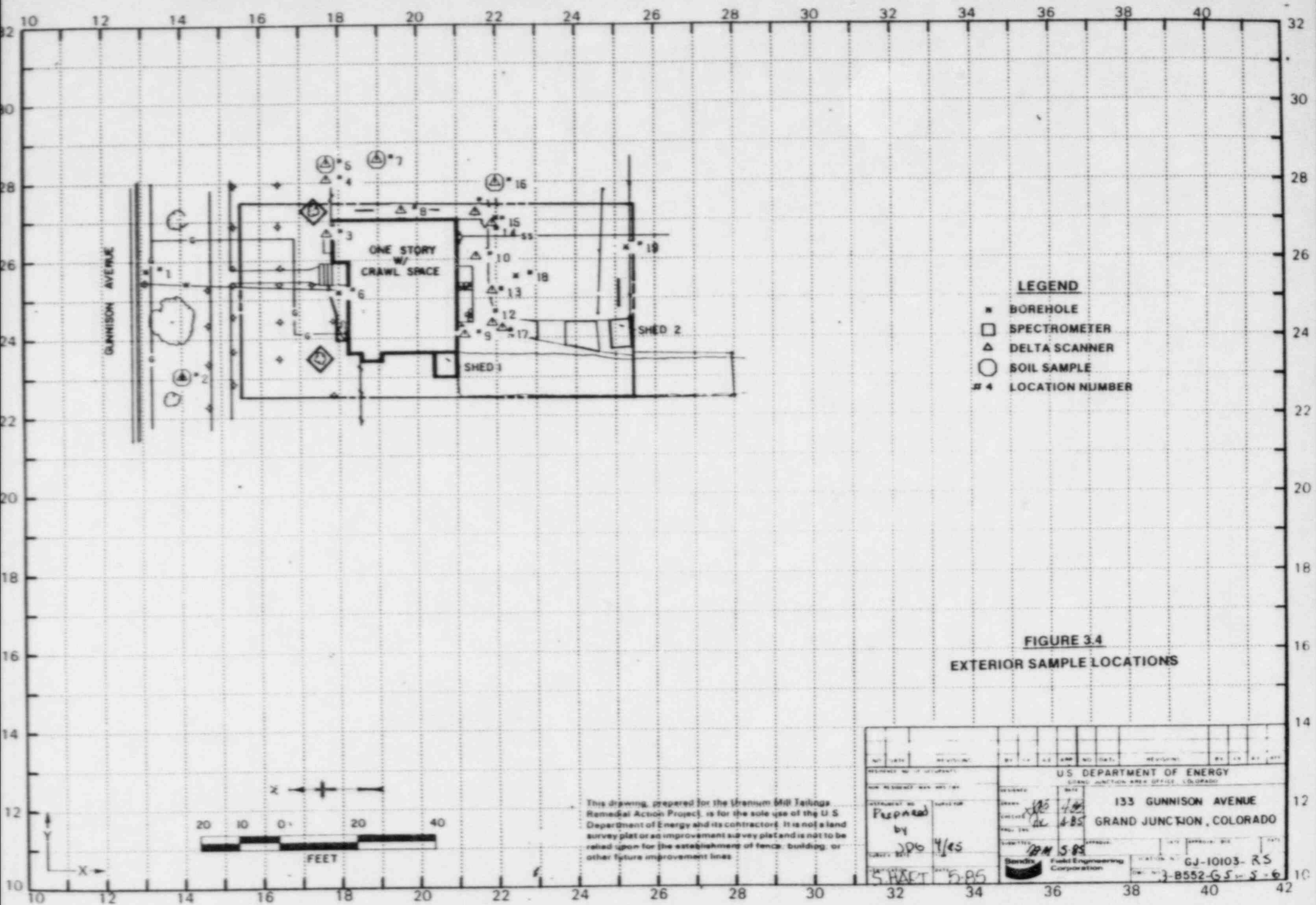
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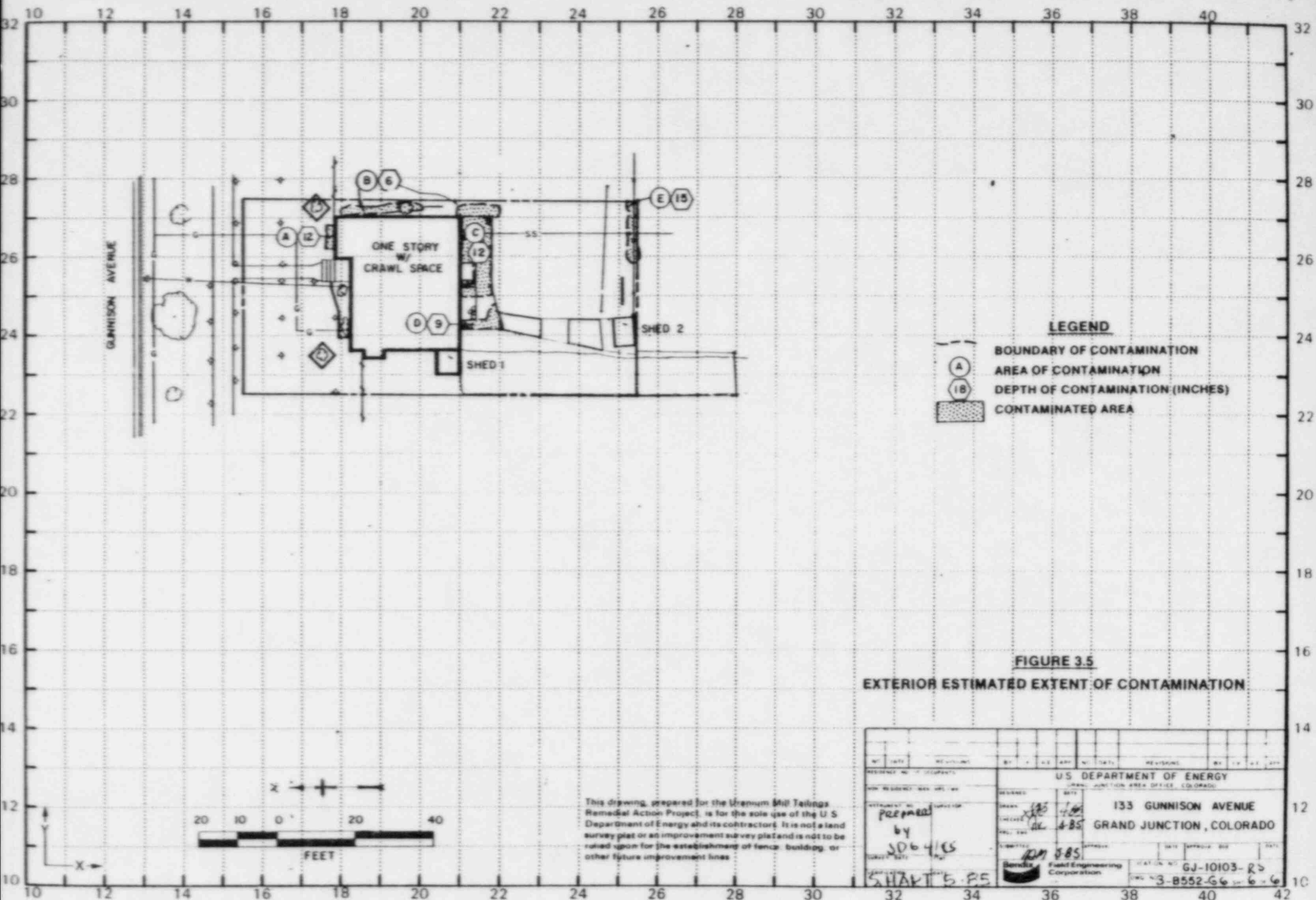












3/85

DOE ID NO. GJ-10103-RS

Date 4/23/85

U.S. DEPARTMENT OF ENERGY
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT
GRAND JUNCTION VICINITY PROPERTIES

Official Survey Report

Property Address 133 Gunnison Avenue

Property Owner R.H. and D.M. Derosé

Address of Owner (if different from above) _____

Report Prepared By James D. Garcia

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

1 1 No evidence of residual radioactive material on surveyed property.

1xxx 1 Residual radioactive materials found at the following locations:

1xxx 1 In open areas.

1xxx 1 Under or around exterior improvements.

1 1 Under or around a typically nonoccupied structure.

1 1 Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

1 1 Levels of radiation from residual radioactive materials, if any, do not exceed EPA Standards and no action is required under the Uranium Mill Tailings Remedial Action Project.

1xxx 1 Levels of radiation from residual radioactive materials exceed EPA Standards such that Remedial Action is recommended and will be accomplished, with your consent, as soon as budget and schedule permit.

cc:

G. A. Franz, III, GJ/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 16 uR/h
HOG = 130 uR/h



Bendix
Aerospace

Bendix Field Engineering Corporation
P. O. Box 1569
Grand Junction, CO 81502-1569
Telephone (303) 242-8621
Telex: 454-338

April 24, 1985

Colorado Department of Health
222 South 6th Street
Grand Junction, Colorado 81501

ATTN: Chuck Thornberg

Dear Chuck:

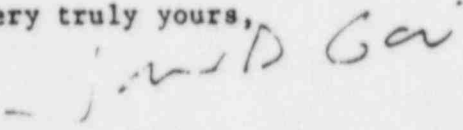
The following is in response to your questions and comments during the Technical Review concerning Department of Energy (DOE) Identification (ID) number GJ-10103-RS.

1. The location where the sewer lines exits from the house and the sewer clean-out was located during the survey. The auger hole at location number 12 is closer to the actual sewer line.
2. The gas line exists on the south end of the house and travels west. The delta sample was taken on the actual gas line.
3. The marble step is inset, which is surrounded by a flagstone patio.
4. The shading will be on the final map.
5. The shading will be on the final map.
6. I am unable to explain why. We can only write what the instrument reads. The instrument showed no high readings in this area.
7. The shading will be on the final map.

Chuck Thornberg
Colorado Department of Health
GJ-10103-RS
April 24, 1985
Page 2

Thank you for your time and cooperation. If you should have additional questions or comments you may contact me at 242-8621, extension 475.

Very truly yours,


James D. Garica
RSD Survey Team

CDHLETTERS.GJ-10103-JDG:pr

Internal
Memorandum



Field Engineering
Corporation

Grand Junction Operations

Date April 15, 1985 Letter No.

To Files

P.O. Box 1568
Grand Junction, CO. 81501
Tel (303) 242-8621

A Subsidiary of
The Bendix Corporation

From Jim Garcia

Subject Team Leader Notes - DOE ID No. GJ-10103-RS

Address: 133 Gunnison Avenue

Owners: Raymond and D. DeRose, 242-2784

Field Crew

J. Hebel	B. Moody	B. Wilkins
V. Rothman	D. Dow	A. Quintana
B. Beltz	M. Dexter	J. Garcia

Instruments

Scintillometers: C-1021, C-1182, C-1180, C-1149
Delta Scanner: C-3935
Total Count, PRS-1: C-4006

Most of the contamination seems to be located along the southern edge of the house under and around the patio and along the southern fenceline.

The survey was completed at approximately 1:30 P.M.. Everyone was alpha scanned. I sent some of the people from the crew to help on other properties.

Technical review package was sent to CDH on April 20th.

Technical review was held at 2:30 P.M. on April 23rd.

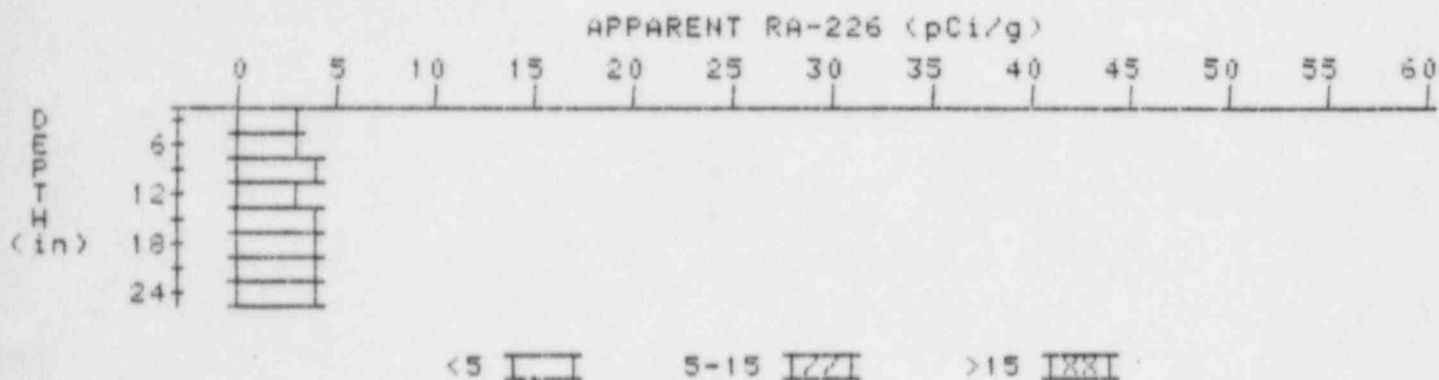
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

1

PROPERTY NUMBER: GJ-10103-RS

HOLE NUMBER: 1

LOCATION: 131257



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	3.2	3.4
9	3.5	3.9
12	3.6	3.4
15	3.8	4.2
18	3.8	3.6
21	3.9	4.3
24	3.8	3.8

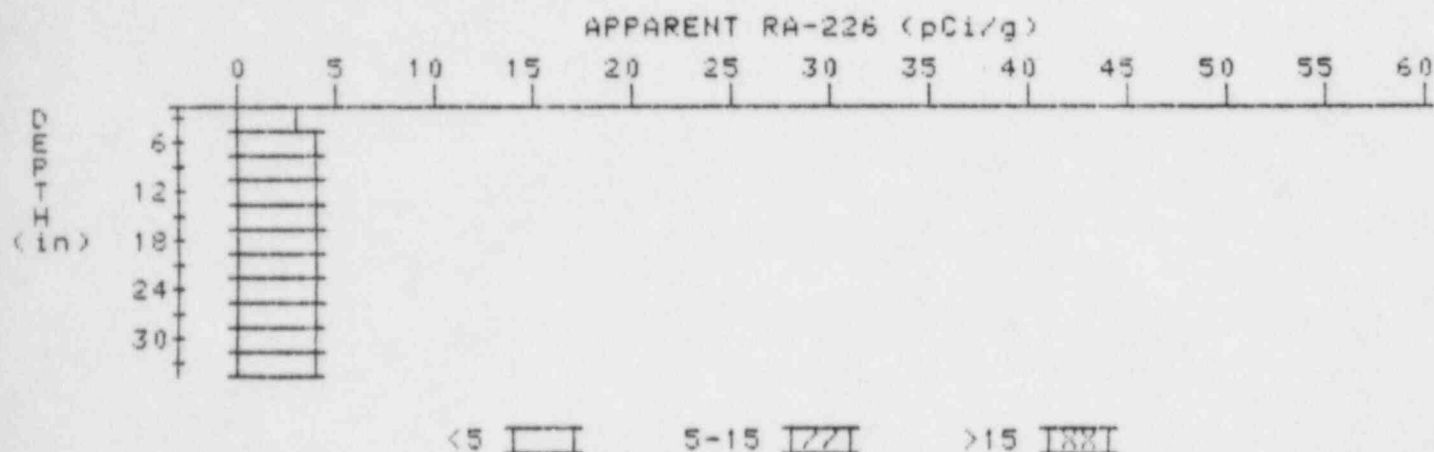
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

2

PROPERTY NUMBER: GJ-10103-RS

HOLE NUMBER: 2

LOCATION: 140230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.6	3.8
9	3.9	4.3
12	4.0	4.0
15	4.1	4.5
18	4.0	4.0
21	3.9	3.7
24	3.9	3.9
27	3.9	3.7
30	4.0	4.2
33	4.0	4.0

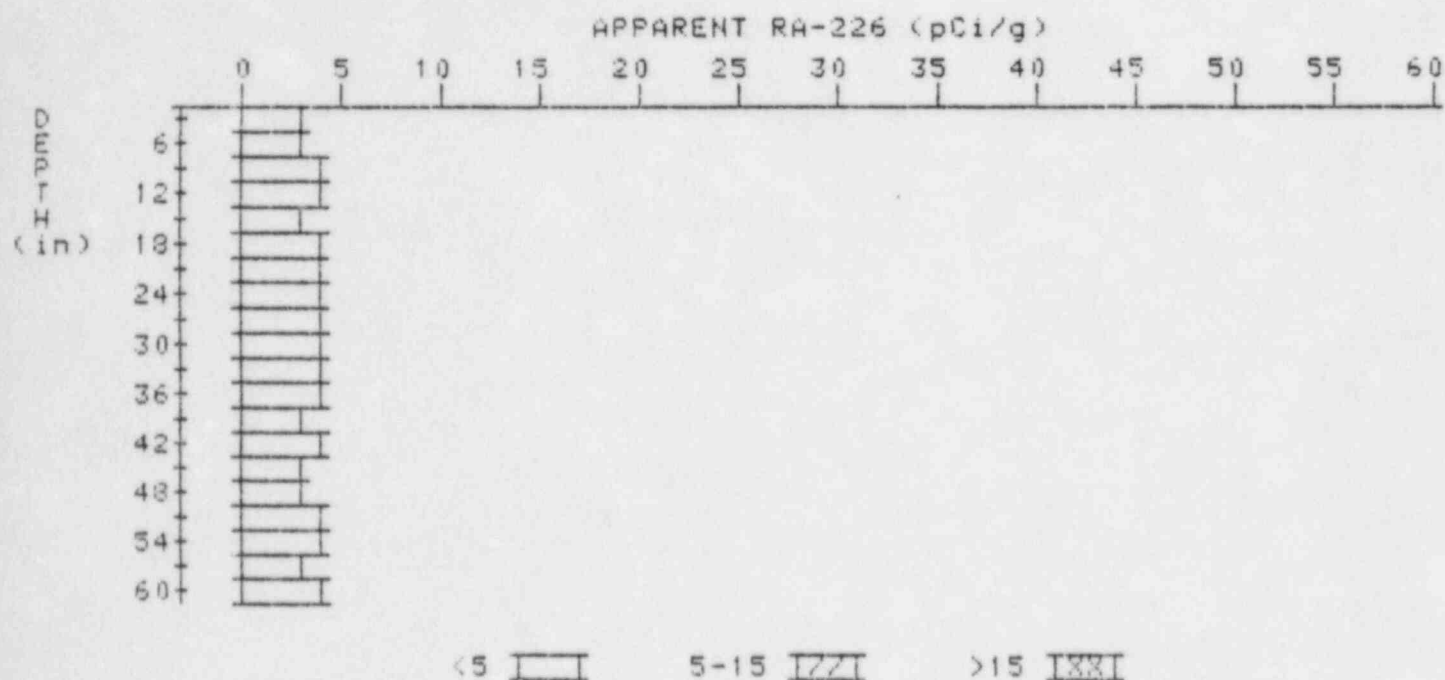
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

6

PROPERTY NUMBER: GJ-10103-RS

HOLE NUMBER: 6

LOCATION: 180251



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.3	3.3
9	3.5	3.7
12	3.6	3.8
15	3.6	3.4
18	3.7	3.7
21	3.8	3.8
24	3.9	4.3
27	3.8	3.6
30	3.8	3.8
33	3.8	4.0
36	3.7	3.9
39	3.5	3.0
42	3.6	4.0
45	3.8	3.3
48	3.8	3.1
51	3.7	3.9
54	3.8	4.2

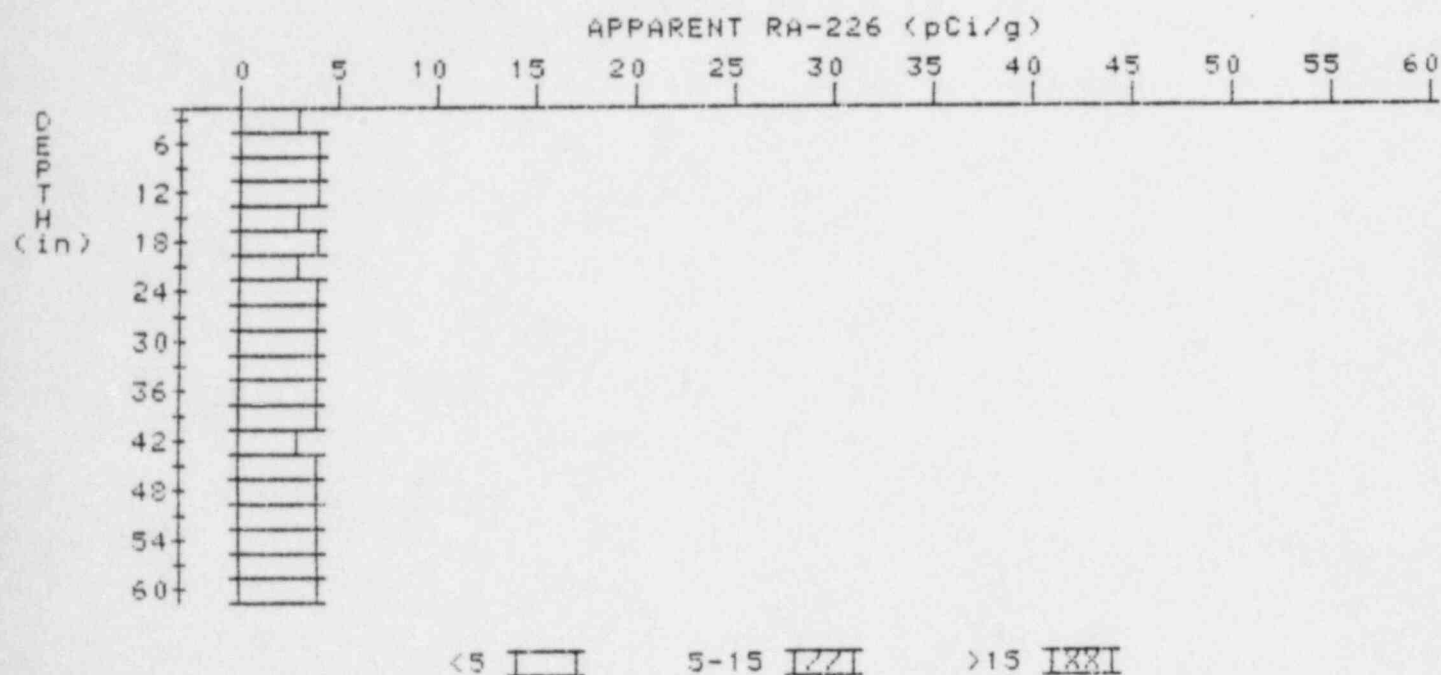
57
60

3.7
3.9

3.2
3.9

APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10103-RS
HOLE NUMBER: 15
LOCATION: 220270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.4	3.6
9	3.5	3.7
12	3.5	3.5
15	3.5	3.3
18	3.6	3.8
21	3.6	3.4
24	3.7	3.9
27	3.7	3.5
30	3.8	4.0
33	3.8	3.6
36	3.9	4.1
39	3.9	4.1
42	3.8	3.4
45	3.9	4.1
48	3.9	3.9
51	3.9	3.7
54	4.0	4.0

57
60

4.1
4.1

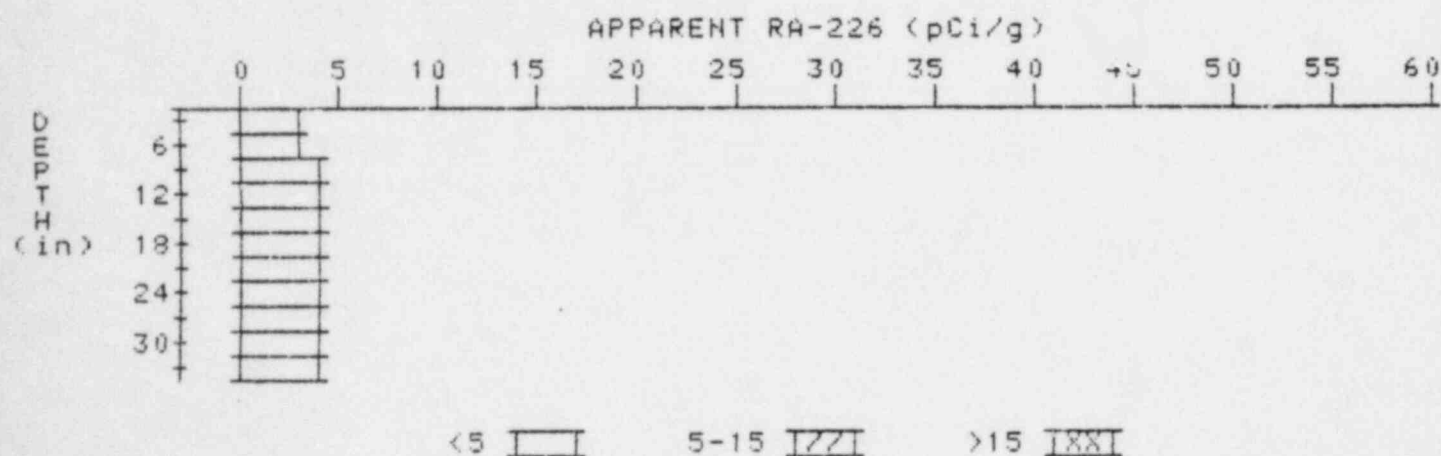
4.3
4.1

APPARENT RADIUM-226 CONCENTRATION 18 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10103-RS

HOLE NUMBER: 18

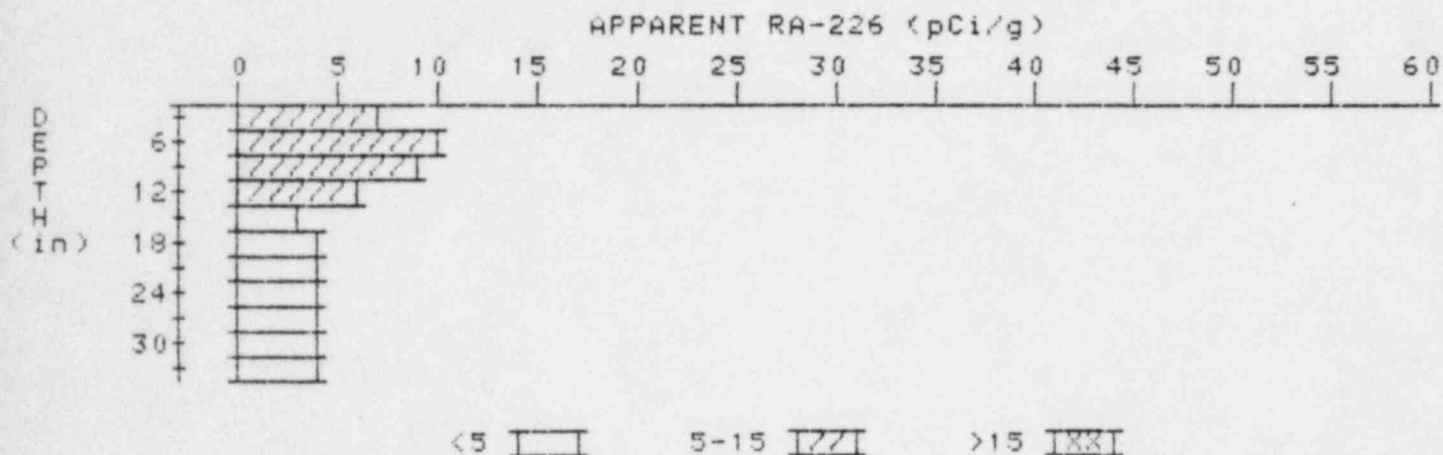
LOCATION: 225255



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.4	3.4
9	3.6	3.8
12	3.7	3.9
15	3.7	3.7
18	3.7	3.7
21	3.7	3.5
24	3.8	3.8
27	3.9	4.1
30	3.9	3.9
33	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 19 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10103-RS
HOLE NUMBER: 19
LOCATION: 253262



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	7.0	7.0
6	7.8	10.1
9	7.3	8.5
12	6.1	6.3
15	4.8	3.0
18	4.5	4.3
21	4.3	4.1
24	4.2	4.0
27	4.2	4.2
30	4.2	4.0
33	4.3	4.3