

21	3.4	3.4
24	3.4	3.2
27	3.5	3.7
30	3.5	3.7
33	3.4	3.0
36	3.5	3.7
39	3.5	3.3
42	3.6	3.8
45	3.6	3.6
48	3.6	3.6
51	3.6	3.2
54	3.8	4.3
57	3.7	3.5
60	3.7	3.7
63	3.7	3.5
66	3.8	4.0
69	3.8	3.8
72	3.8	3.8
75	3.8	3.6
78	3.9	3.9
81	4.0	4.4
84	3.9	3.5
87	4.0	3.8
90	4.2	4.7
93	4.1	3.9
96	4.1	3.9
99	4.2	4.6
102	4.1	3.7
105	4.2	4.2

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-11411-RS
ADDRESS: 524 COMPTON AVENUE

JULY 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

M. K. Tucker ⁶³ CPH
M. TUCKER
DOE PROJECT ENGINEER

DATE

7-2-85

REAL1411:REA-608

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-11411-RS, is a single-family residence located at 524 Compton 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, 26 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$2,205. Remedial action on this property will take approximately 7 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 524 Compton Avenue, Grand Junction, Colorado

Zoning: Residential (RSF-8)

Lot Size: Approximately 7,275 sf (0.2 acre)

Legal Description: Lot 17, Compton Subdivision, Section 7,
1 South, 1 East, City of Grand Junction,
County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2
miles northeast of the State of Colorado
Tailings Repository. Appendix Figure 2.1 shows
the property location relative to its surround-
ings.

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:	Single-family residence
South:	Single-family residence
East:	Single-family residence
West:	Compton Avenue

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 833 sf
Construction Date:	1955
Construction:	Wood-frame
Foundation:	Concrete stemwall on spread footing
Footing Depth:	Approximately 28" to bottom of footing from grade
Basement:	None
Crawl Space:	Yes - under entire living area
Condition:	Good

Other Structures:

Type:	Shed
Size:	Approximately 182 sf
Construction:	Pre-fabricated metal
Foundation:	None
Condition:	Good

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-11411-RS on May 17, 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 in the east yard, along the east and north sides of the primary structure and at the west end of the entry sidewalk.

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, deconvolution graphs, and Exterior Gamma Scan map are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 15 to 17 uR/h
Highest Outside Gamma Reading (HOG): 59 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1.

3.2.2 Interior Findings

Background Readings: 12 to 15 uR/h
Highest Inside Gamma Reading (HIG): 15 uR/h

Interior gamma exposure-rate measurements are summarized in Appendix Table 3.2. Appendix Figures 3.2a and 3.2b show the 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 3.3. Data from these investigations are included in Appendix Table 3.1.

3.4 Radon/Radon Daughter Concentration (RDC)

The working level was not assessed by CDH. No RDC measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figure 3.4 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) There is contaminated material around and under the west end of the sidewalk which runs parallel to the driveway. The total depth of contamination is 12 inches (approximately 231 sf).
- (AREA B) In the southeast quarter of the property (backyard), there is a deposit which is contaminated to a depth of 15 inches (approximately 285 sf).
- (AREA C) There are two small, isolated deposits along the east side of the primary structure. The depth of contamination is 12 inches (approximately 51 sf).
- (AREA D) Along the north side of the primary structure, there is contaminated soil extending to a depth of 6 inches (approximately 57 sf).

(AREAS REQUIRING FURTHER INVESTIGATION DURING REMEDIAL ACTION)

The water meter pit showed anomalous gamma readings near the top of the pit, which are believed to be associated with the materials used to stabilize the topsoil over the pit. This should be investigated during remedial action to confirm the absence of mill tailings contamination.

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-11411-RS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.4) 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 \$2,205.

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 3.2a	Interior Gamma Exposure Rates
Figure 3.2b	Interior Gamma Exposure Rates
Figure 3.3	Exterior Sample Locations
Figure 3.4	Estimated Extent of Contamination

Official Survey Report

Exterior Gamma Scan Field Map

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Radium Concentrations at Exterior Locations

DOE ID #GJ-11411-RS

524 Compton 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	149215	03	TC	12.3		*	Just south of mailbox
		06	BH	10.2	8.5	*	
		09	TC	8.4		*	
		12	TC	7.1		*	
		15	TC	6.2		*	DC = 12 inches Based on all available data
		18	BH	6.0	3.8	*	
		21	TC	5.9		*	
		24	TC	5.9		*	
		27	TC	5.9		*	
		30	BH	5.7	2.9	*	
		33	TC	5.7		*	
		36	TC	5.6		*	
		39	TC	5.4		*	
		42	BH	5.4	2.7	*	
		45	TC	5.1		*	
		48	TC	5.0		*	
		51	TC	4.8		*	
		54	BH	4.6	2.1	*	
		57	TC	4.5		*	
		60	TC	4.4		*	
		63	TC	4.5		*	
2	152272	00	DS	2.3		*	Across fence west of water meter
		06	DS	2.0		*	
3	155272	00	DS	1.5		*	By water meter (buried bricks, sandstone, shale)
		06	DS	<1.0		*	
		12	DS	2.1		*	
4	170215	00	DS	4.0		*	Adjacent to front sidewalk
		06	DS	1.8		*	
5	177255	00	DS	1.0		*	Gas line
		11	DS	1.7		*	
6	182256	03	TC	4.7		*	Foundation on north side of primary structure
		06	TC	5.0		*	
		09	TC	4.9		*	
		12	TC	4.7		*	
		15	TC	4.4		*	
		18	TC	4.2		*	DC = 6 inches Based on the deconvolution graph
		21	TC	4.2		*	
		24	TC	4.1		*	
		27	TC	4.1		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-11411-RS

524 Compton Avenue

Page 2 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
6	182256	30	TC	4.1		*	
		33	TC	4.2		*	
		36	TC	4.3		*	
		39	TC	4.3		*	
		42	TC	4.3		*	
		45	TC	4.4		*	
		48	TC	4.5		*	
		51	TC	4.4		*	
		54	TC	4.4		*	
		57	TC	4.4		*	
		60	TC	4.3		*	
		63	TC	4.4		*	
		66	TC	4.4		*	
		69	TC	4.3		*	
7	190255	00	DS	5.4		*	North side of primary structure DC = 6 inches
		06	DS	1.4		*	
8	200227	00	DS	6.2		*	East side of primary structure DC = 12 inches
		06	DS	6.2		*	
		09	DS	4.0		*	
		12	DS	1.8		*	
9	200239	00	DS	2.3		*	DC = 6 inches
		06	DS	1.9		*	
10	200246	00	DS	2.5		*	East side of primary structure DC = 12 inches
		06	DS	2.5		*	
		12	DS	1.3		*	
11	201243	03	TC	5.0		*	Sewerline East side of primary structure
		06	TC	5.1		*	
		09	TC	5.0		*	
		12	TC	4.8		*	DC = 12 inches Based on the deconvolution graph
		15	TC	4.7		*	
		18	TC	4.5		*	
		21	TC	4.3		*	
		24	TC	4.1		*	
		27	TC	4.0		*	
		30	TC	3.9		*	
		33	TC	3.8		*	
		36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.9		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-11411-RS

524 Compton Avenue

Page 3 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
11	201243	45	TC	4.0		*	
		48	TC	4.0		*	
		51	TC	4.1		*	
		54	TC	4.1		*	
		57	TC	4.0		*	
		60	TC	4.0		*	
		63	TC	4.1		*	
		66	TC	3.9		*	
12	220216	00	DS	1.7		*	Southeast backyard
		06	DS	1.5		*	
13	223203	03	TC	21.4		*	South side of backyard
		06	BH	21.6	20.7	*	
		09	TC	15.3		*	
		12	BH	10.2	7.5	*	DC = 15 inches Based on all available data
		15	TC	7.0		*	
		18	BH	5.5	3.7	*	
		21	TC	5.0		*	
		24	BH	4.7	1.8	*	
		27	TC	4.6		*	
		30	TC	4.5		*	
		33	TC	4.5		*	
14	223207	00	DS	28.5		*	Southeast backyard
		06	DS	6.8		*	
		12	DS	3.3		*	
15	240251	00	DS	1.1		*	Background hole, located on north side of shed
		03	TC	3.0		*	
		06	BH	3.6	1.3	*	
		09	TC	3.9		*	
		12	BH	4.0	1.4	*	
		15	TC	4.1		*	DC = 0 inches
		18	BH	4.0	1.4	*	
		21	TC	4.1		*	
		24	BH	3.9	1.1	*	
		27	TC	3.8		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-11411-RS

524 Compton Avenue

Page 4 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
15	240251	30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.9		*	

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 = 05-17-85
Team Leader = JD

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)
CRAWL SPACE	00	-	-	12	16-17	17
GROUND FLOOR	*	*	*	*	12-15	*
SHED	05	14-15	14	05	15-15	15

=====

* The CDH and ORNL data indicate the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan on the ground floor. The area and the range of gamma measurements are shown in Appendix Figure 3.2b. Exposure rates in the crawl space and shed are shown in Appendix Figure 3.2a.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-11411-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					
Concrete					
A	2 x 27 =	54			
	20 x 5 =	100			
		154	x 0.3 =	46	
	Volume of Concrete			46 =	46/27 = 2
Contaminated Fill					
A	2 x 27 =	54			
	14 x 3 =	42			
	(under concrete) =	96	x 0.7 =	67	
	5 x 15 =	75			
	2 x 30 =	60			
		135	x 1.0 =	135	
B	19 x 15 =	285	x 1.3 =	371	
C	3 x 7 =	21			
	3 x 10 =	30			
		51	x 1.0 =	51	
D	19 x 3 =	57	x 0.5 =	29	
	Volume of Fill			= 653 =	653/27 = 24
	TOTAL VOLUME - EXTERIOR				= 26

See Appendix Figure 3.4 For Areas

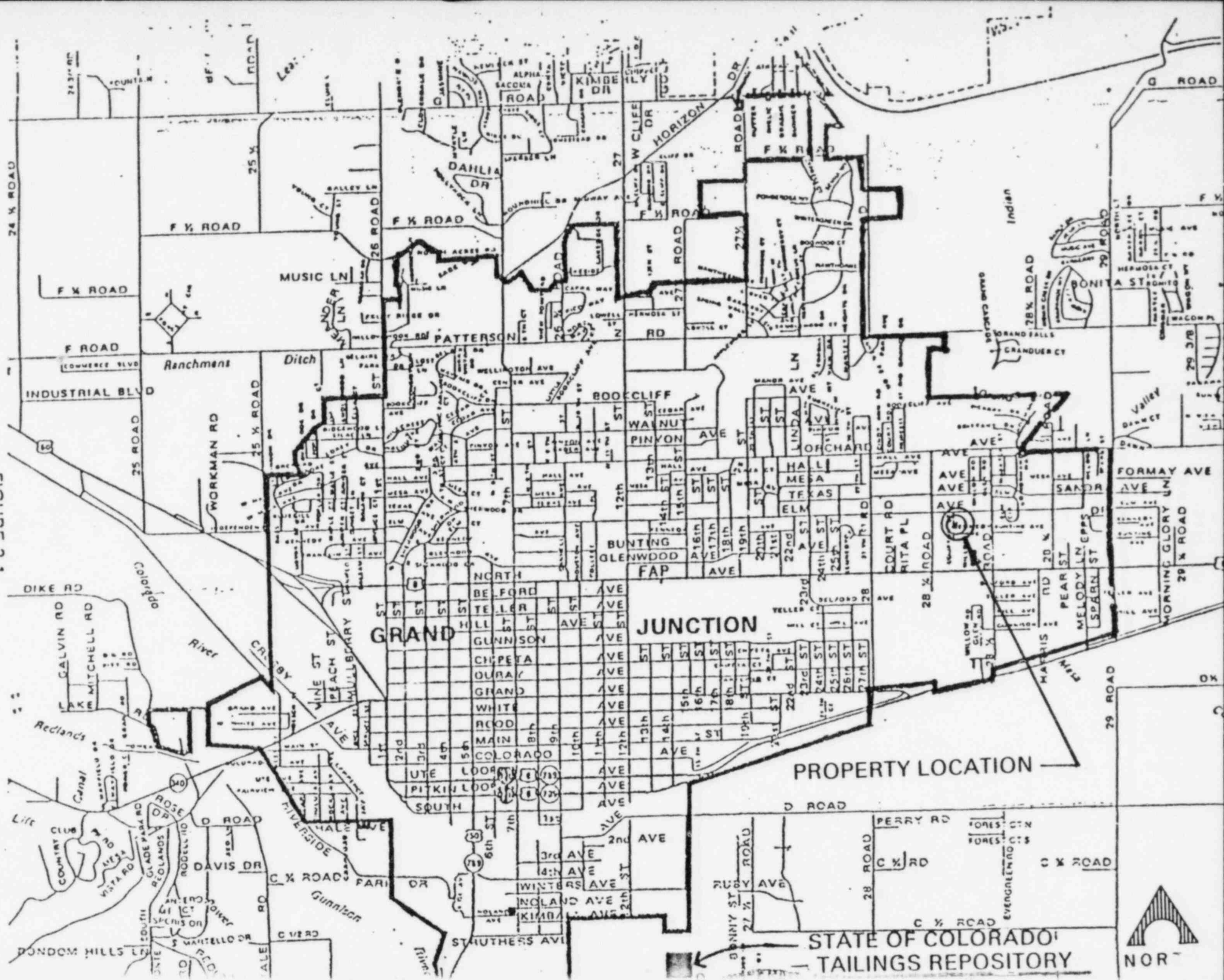
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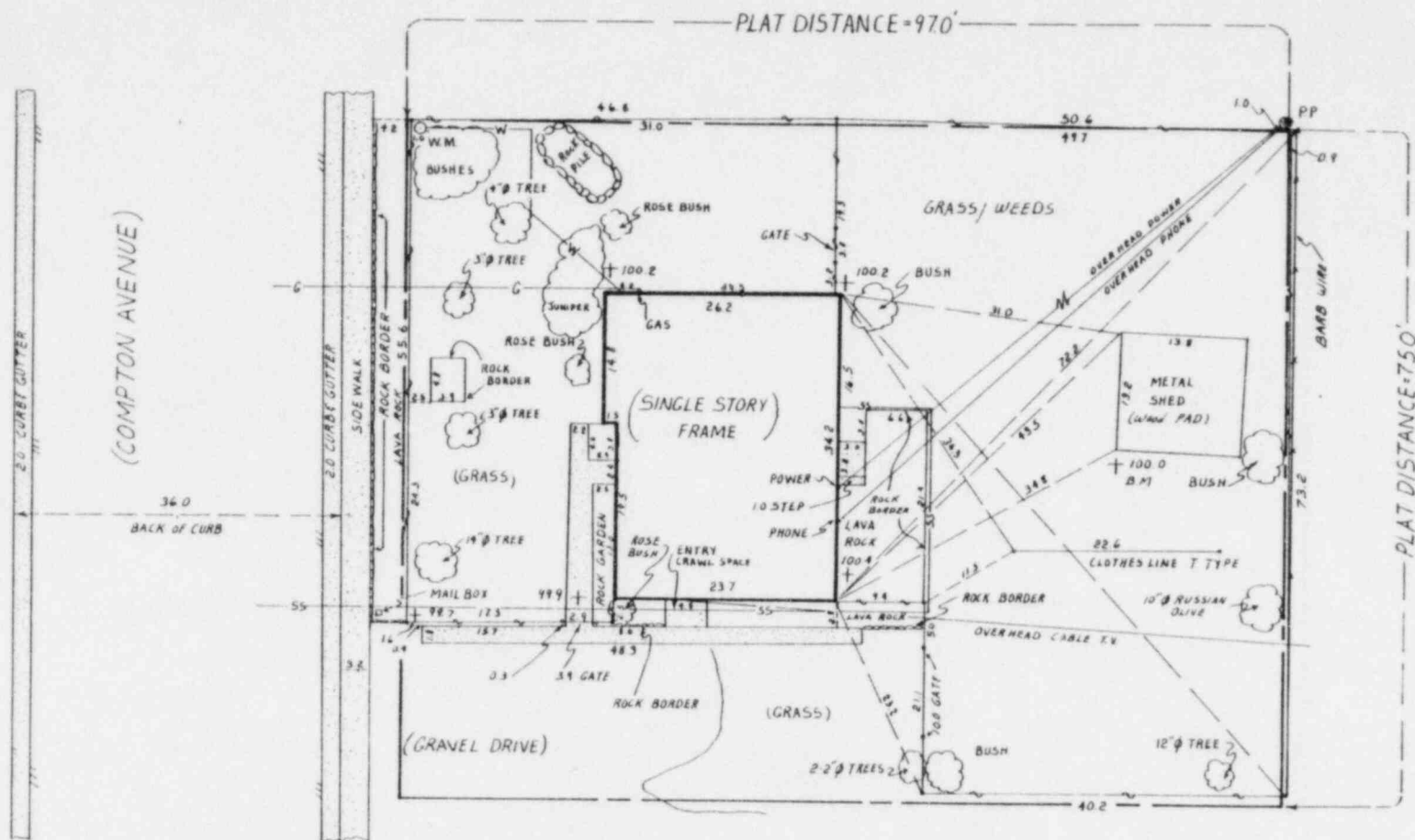
Remove identified residual radioactive material		
23 cy @ \$14.50/cy (machine-open)	\$	334
3 cy @ \$44/cy (manual-open)		132
Remove/replace concrete		
154 sf @ \$3/sf		462
Replace areas with compacted roadbase		
13 cy @ \$11.50/cy		150
Replace areas with topsoil		
13 cy @ \$9.50/cy		124
Replace areas with sod		
60 sf @ \$.50/sf		30
		<hr/>
TOTAL EXTERIOR	\$	1,232
TOTAL INTERIOR		0
ACCESS CONTROL		200
		<hr/>
SUBTOTAL	\$	1,432
CONTINGENCY @ 10%		143
		<hr/>
SUBTOTAL	\$	1,575
CONTRACTOR OVERHEAD & PROFIT @ 40%		630
		<hr/>
GRAND TOTAL	\$	2,205

=====

LR062185
REAL1411/REA-608/LMR

FIGURE 2.1
VICINITY MAP





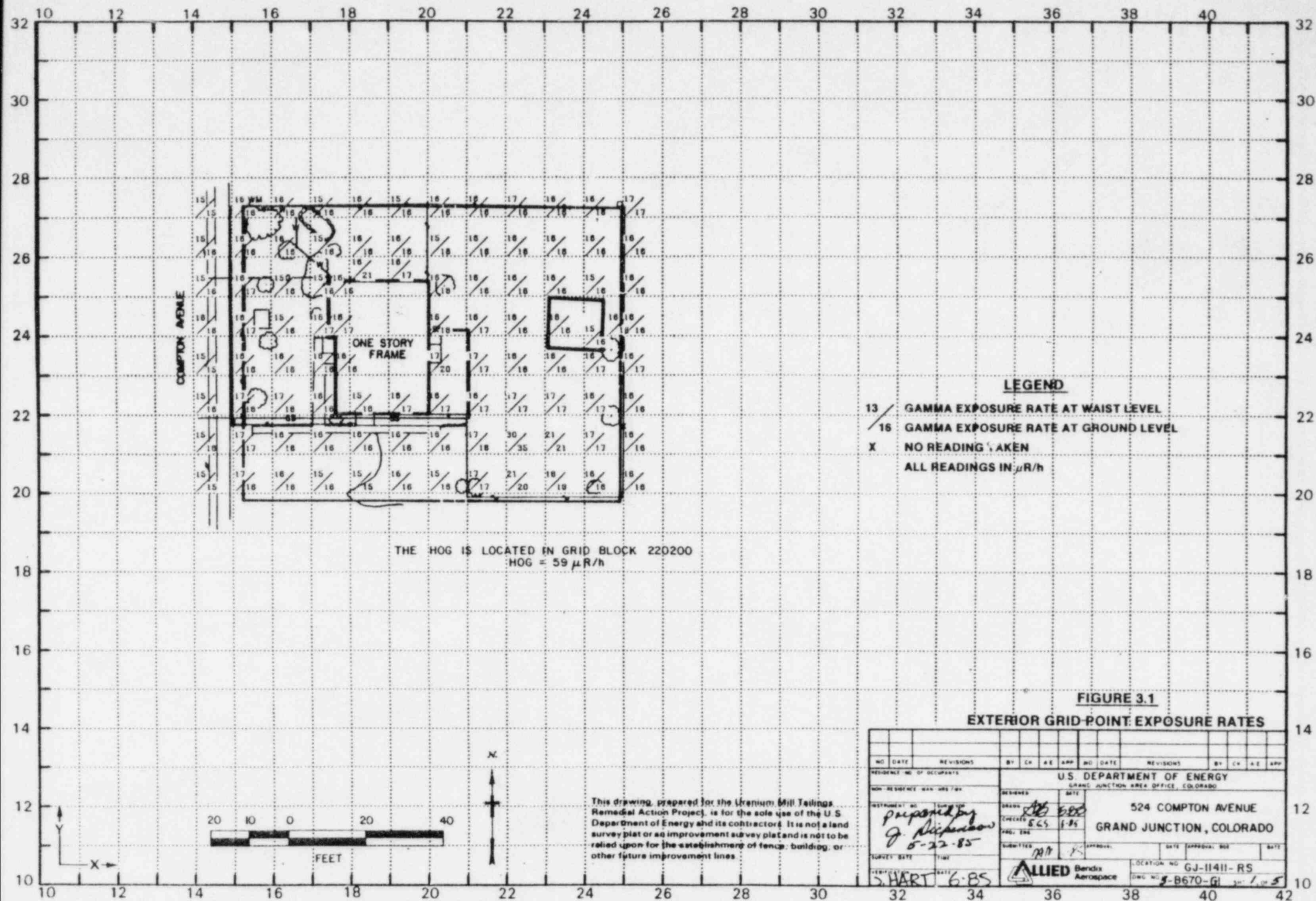
LOT 17 COMPTON SUB SEC 7, 15, 1E
CITY OF GRAND JUNCTION
MESA COUNTY COLORADO

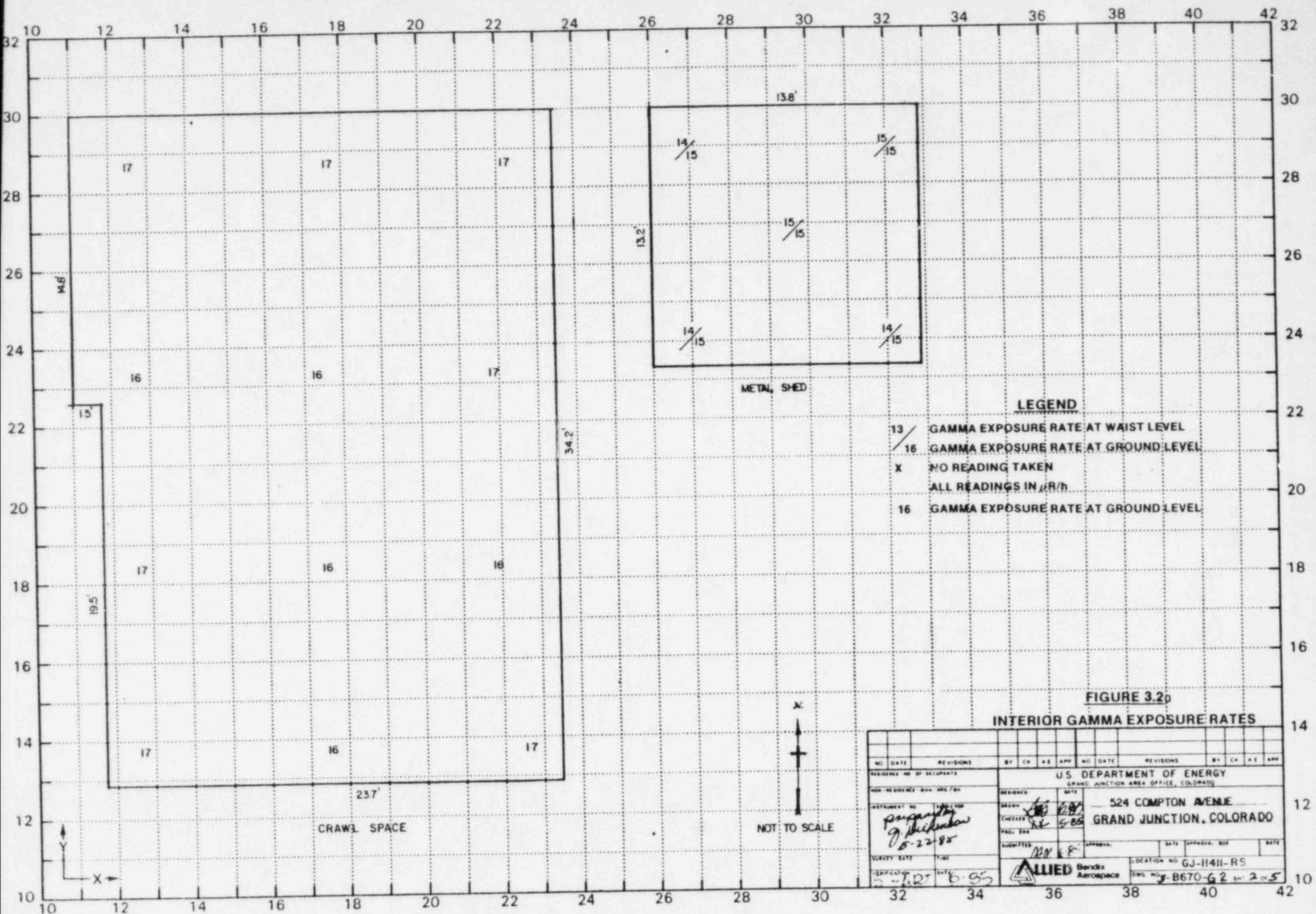
FIGURE 2.2 SITE PLAN

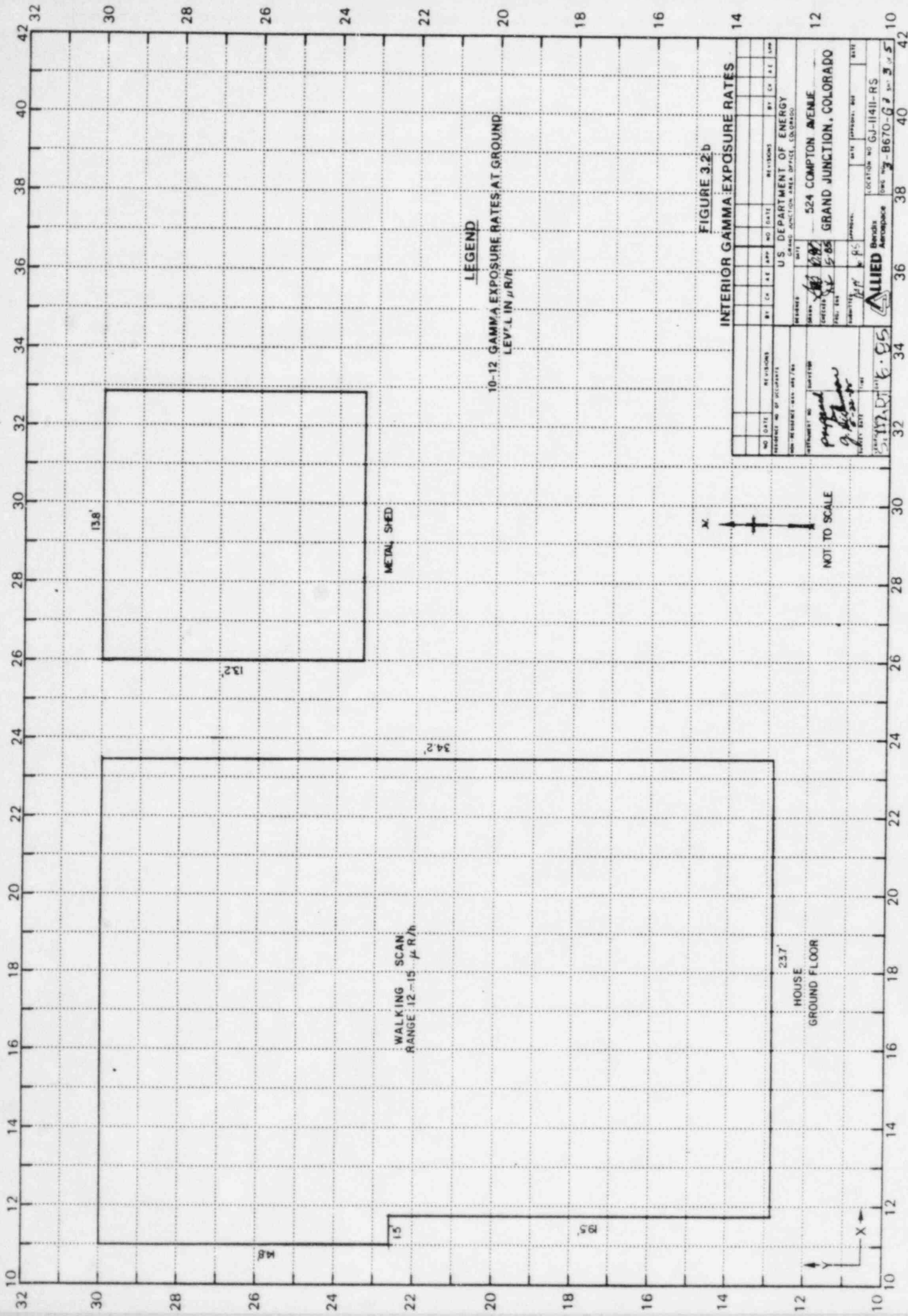


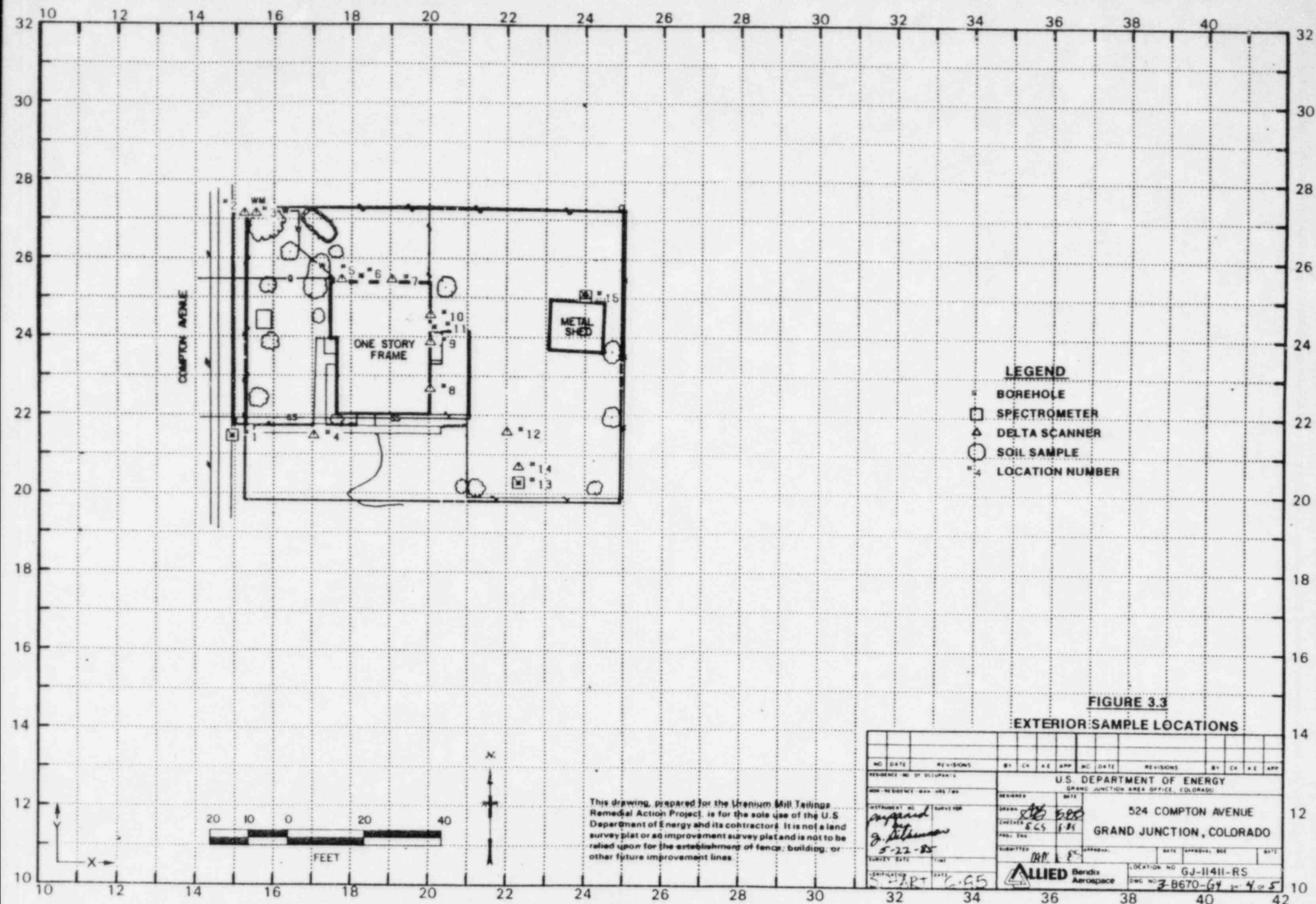
This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Dept. of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement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

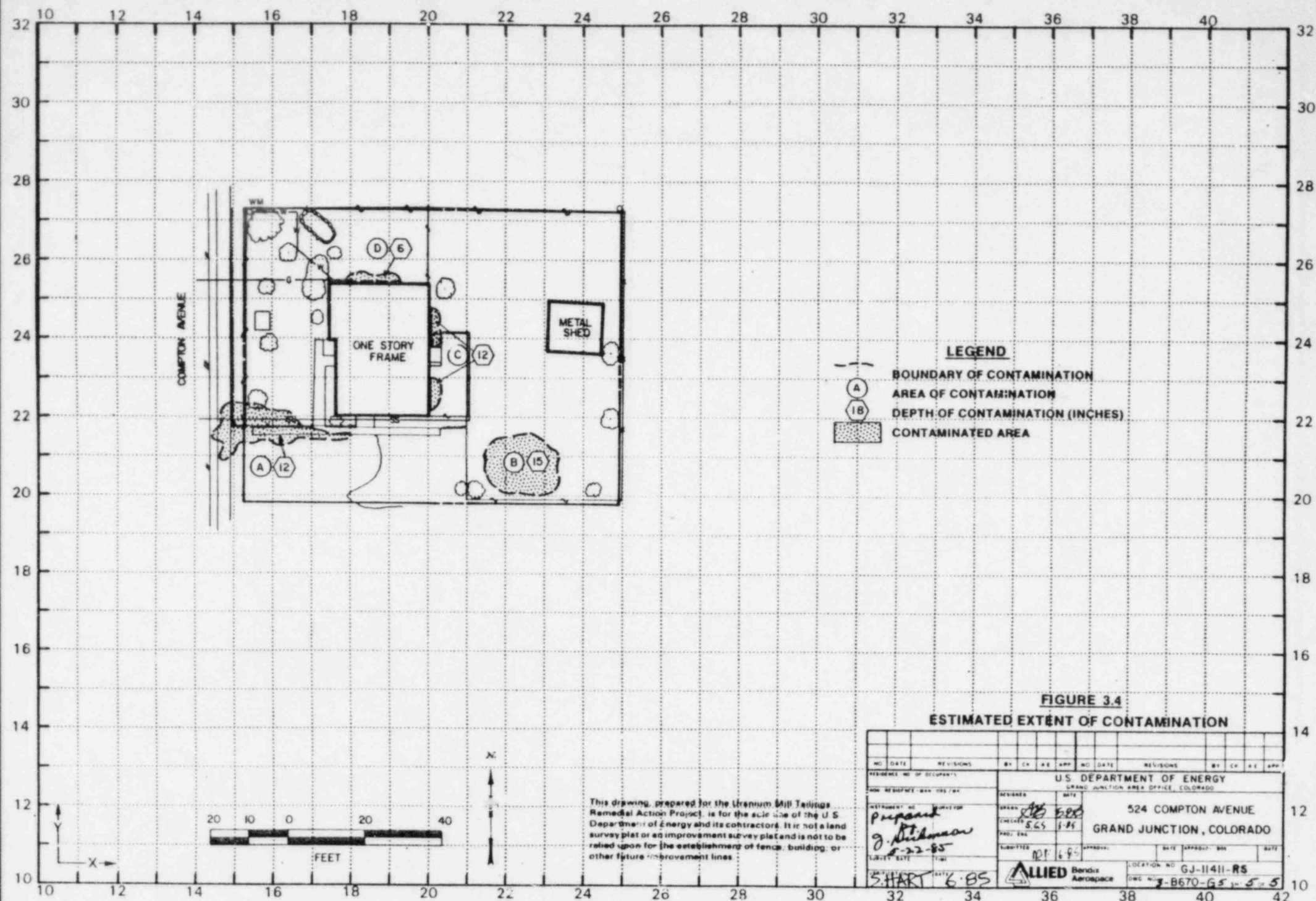
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION PROJECT OFFICE, COLORADO		DOE ID NO. GJ-11411-RS
ADDRESS 524 COMPTON AVENUE GRAND JUNCTION, COLORADO		ALLIED Bonds Fast Engineering Corporation Grand Junction, Colorado
SURV. RLB/5-13-85	DRAFT JRG/5-14-85	CR WCF/5-14-85
DRAWING NO. 3-C-670-K1		SHEET 1 OF 1











3/85

DOE ID NO. GJ-11411-RS

Date 5-20-85

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

Official Survey Report

Property Address 424 Compton Avenue

Property Owner F.H. Cheney

Address of Owner (if different from above)

Report Prepared By J. Dickerson

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

☐ No evidence of residual radioactive material on surveyed property.

☒ Residual radioactive materials found at the following locations:

☒ In open areas.

☐ Under or around exterior improvements.

☐ Under or around a typically nonoccupied structure.

☐ Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

☐ 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.

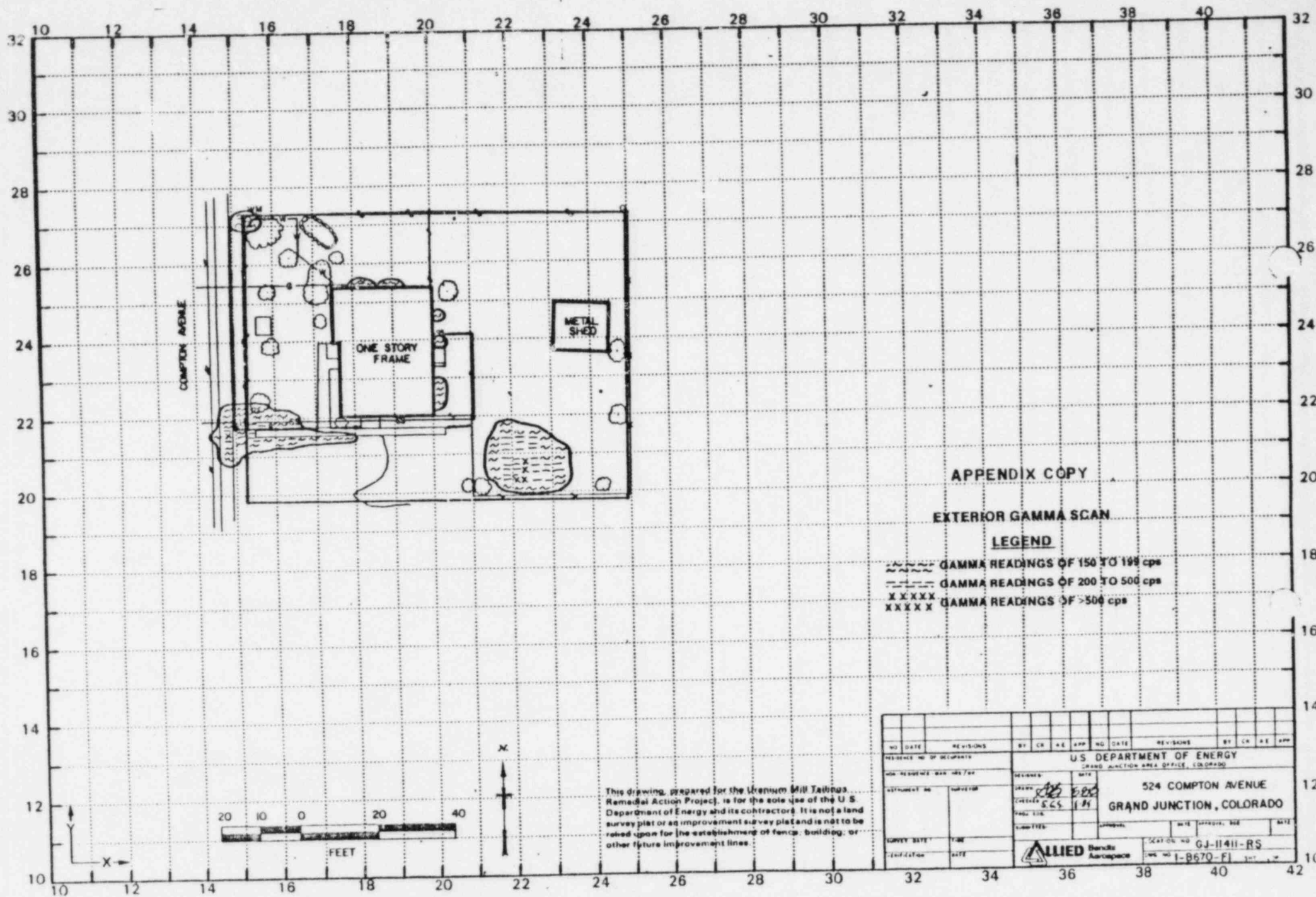
☒ Levels of radiation from residual radioactive materials exceed EPA Standards such that Remedial Action is recommended and will be accomplished, with your consent, as soon as budget and schedule permit.

cc:

G. A. Franz, III, GJ/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 17 uR/h
EOG = 59 uR/h



APPENDIX COPY

EXTERIOR GAMMA SCAN

LEGEND

- ~~~~~ GAMMA READINGS OF 150 TO 199 cps
- GAMMA READINGS OF 200 TO 500 cps
- XXXXX GAMMA READINGS OF >500 cps

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 improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

NO. DATE REVISIONS BY CR AE APP NO. DATE REVISIONS BY CR AE APP									
RESIDENCE NO. OF OCCUPANTS									
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO									
524 COMPTON AVENUE GRAND JUNCTION, COLORADO									
DESIGNED BY		DATE		DRAWN BY		DATE		CHECKED BY	
J. S. S.		1/81		J. S. S.		1/81		J. S. S.	
SURVEY DATE		TIME		SURVEY DATE		TIME		SURVEY DATE	
1/81		1:00		1/81		1:00		1/81	
SECTION NO. GJ-11411-RS NO. 1-8670-F1									



ALLIED Bendix
Aerospace

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Grand Junction, CO 81502-1569
Telephone (303) 242-8621
Telex: 454-338

May 30, 1985

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

ATTN: Elaine Brummett

Dear Elaine:

The following is in response to your questions and comments during the Technical Review concerning Department of Energy (DOE) Identification (ID) number GJ-11411-RS, which I received May 24, 1985.

1. The elevated total count readings in Borehole 1 are due to sloughing.
2. In the area of Location 2 (by the water meter pit), delta scintillometer readings do not provide evidence of contamination. The slightly elevated readings shown on the gamma scan map derive from rocks and bricks located near the water pit.
3. The depth of contamination at Location 4 is given as 12 inches because the area is contiguous to that of Location 1, and the subsurface base of the deposit is interpreted as grading from 12 inches (Location 1) to 6 inches (Location 2).

Thank you for your time and cooperation. If you should have additional questions or comments you may contact me at 242-8621, extension 506.

Sincerely,

John Dickerson
RSD Survey Team Leader

JD:pr

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: May 17, 1985
To: Files
From: John Dickerson
Subject: Team Leader Notes - GJ-11411-RS

Address: 524 Compton Avenue

Owner: F.H. Cheney

Team Members

J. Dickerson (Team Leader)	M. Dexter
D. Dow	L. Kula
R. Herman	D. Bell
A. Raabe	

Instruments

Scintillometer - C-1166, C-3510, C-1185, C-1024, C-3936, C-3935
Total Count - C-4005, C-3957

The gas and sewer lines were investigated next to the house. The water line egress from the house was inaccessible for boreholes (bushes), will auger adjacent to the water main pit (auger refusal).

D. Diss (Health and Safety) visited the site, no problems.

The water main pit reads 175 cps at the bottom, approximately 220 cps near the top, near slate, bricks, sandstone (which overlies the pit barrel underlies the top soil).

The contaminated areas are located at the west end of the driveway, along the east side of the house, and at the southeast quarter of the property.

Team Leader Notes
John Dickerson
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May 17, 1985
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No interior involvement.

The water meter pit will require further investigation during remedial action. The borehole investigation aborted, due to the instability of the rocks, brick, and soil at the top of the pit barrel. Suspect the brick and/or rocks are causing the elevated readings near the top of the pit.

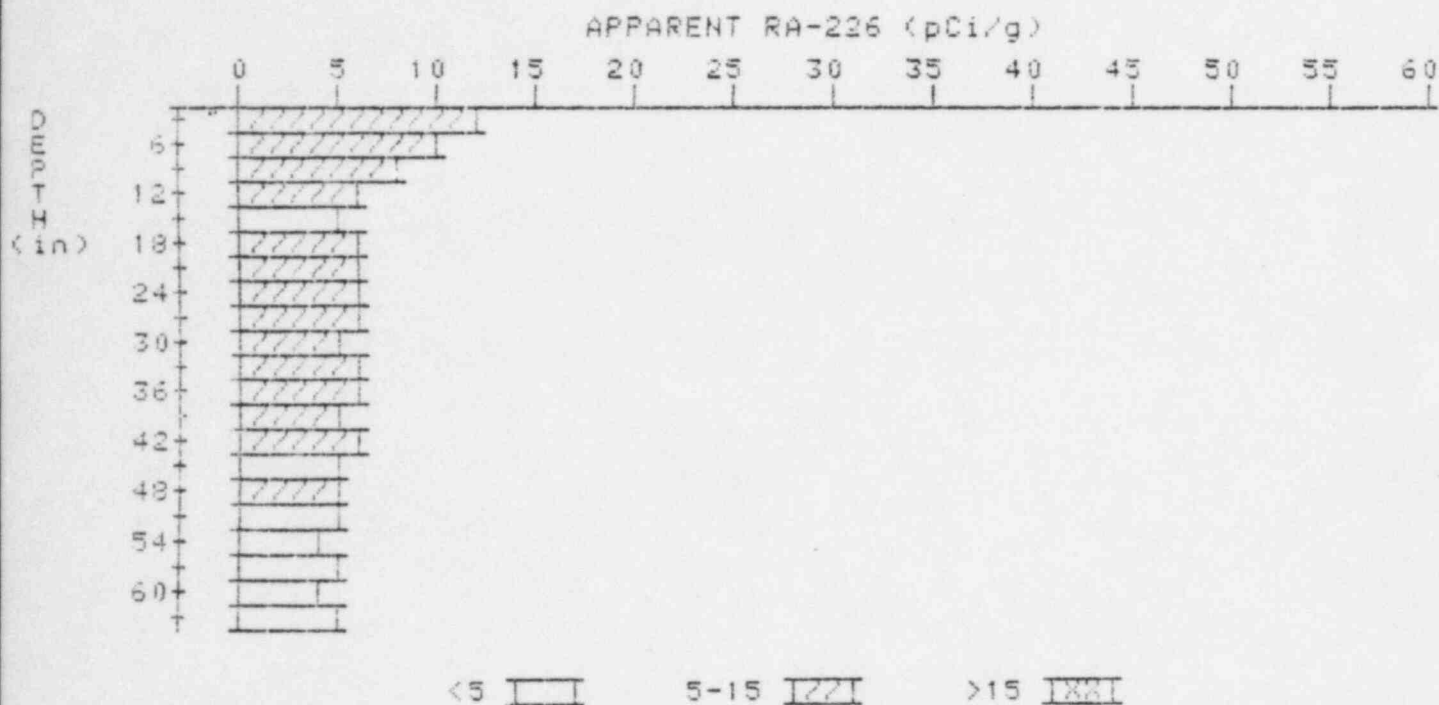
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

1

PROPERTY NUMBER: GJ-11411-RS

HOLE NUMBER: 1

LOCATION: 149215



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	12.3	12.3
6	10.2	9.7
9	8.4	7.5
12	7.1	6.4
15	6.2	5.8
18	6.0	5.8
21	5.9	5.7
24	5.9	5.9
27	5.9	6.3
30	5.7	5.3
33	5.7	5.9
36	5.6	5.8
39	5.4	5.0
42	5.4	5.9
45	5.1	4.7
48	5.0	5.2
51	4.8	4.8

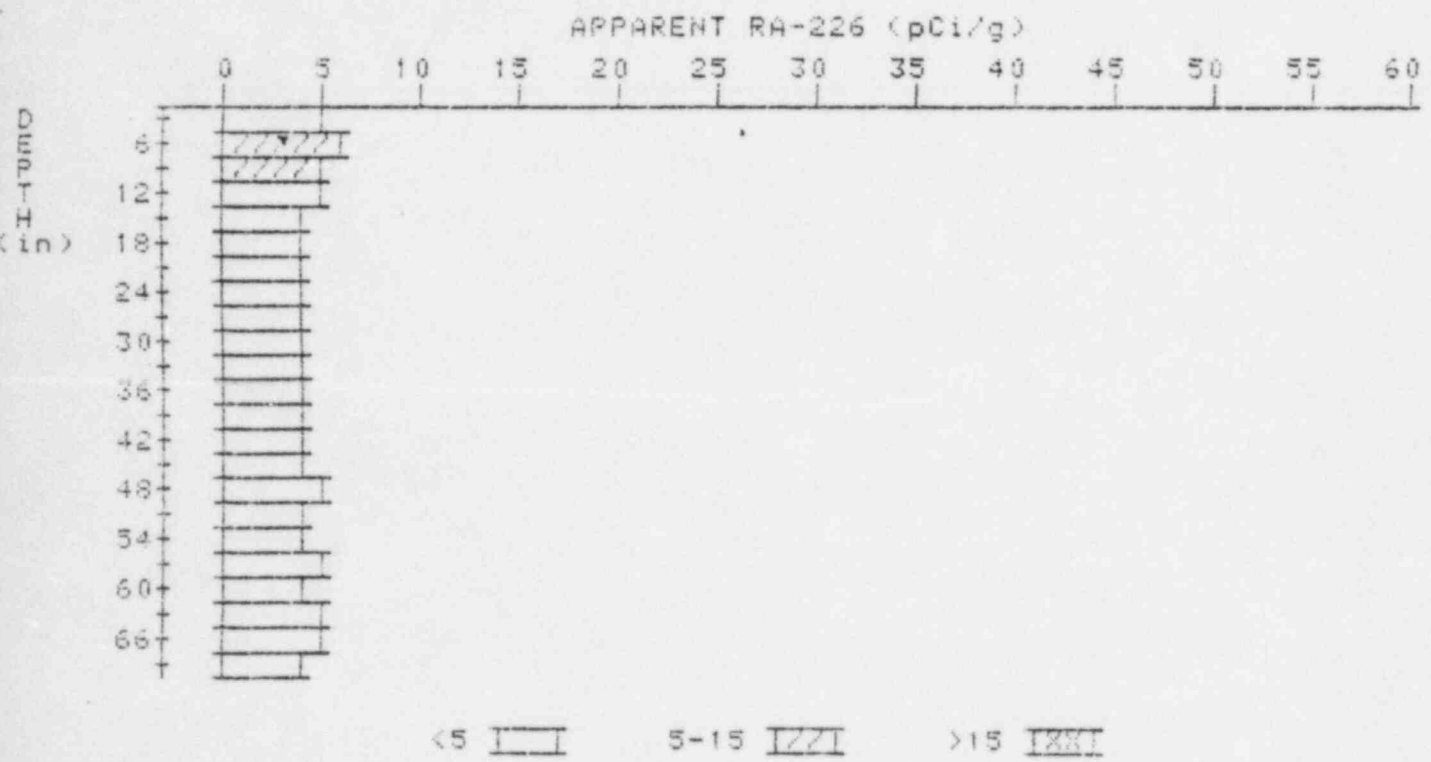
54
57
60
63

4.5
4.5
4.4
4.5

4.4
4.5
4.0
4.5

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 6

PROPERTY NUMBER: GJ-11411-RS
HOLE NUMBER: 6
LOCATION: 182256



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.7	4.7
6	5.0	5.7
9	4.9	5.1
12	4.7	4.9
15	4.4	4.2
18	4.2	3.8
21	4.2	4.4
24	4.1	3.9
27	4.1	4.1
30	4.1	3.9
33	4.2	4.2
36	4.3	4.5
39	4.3	4.3
42	4.3	4.1
45	4.4	4.4

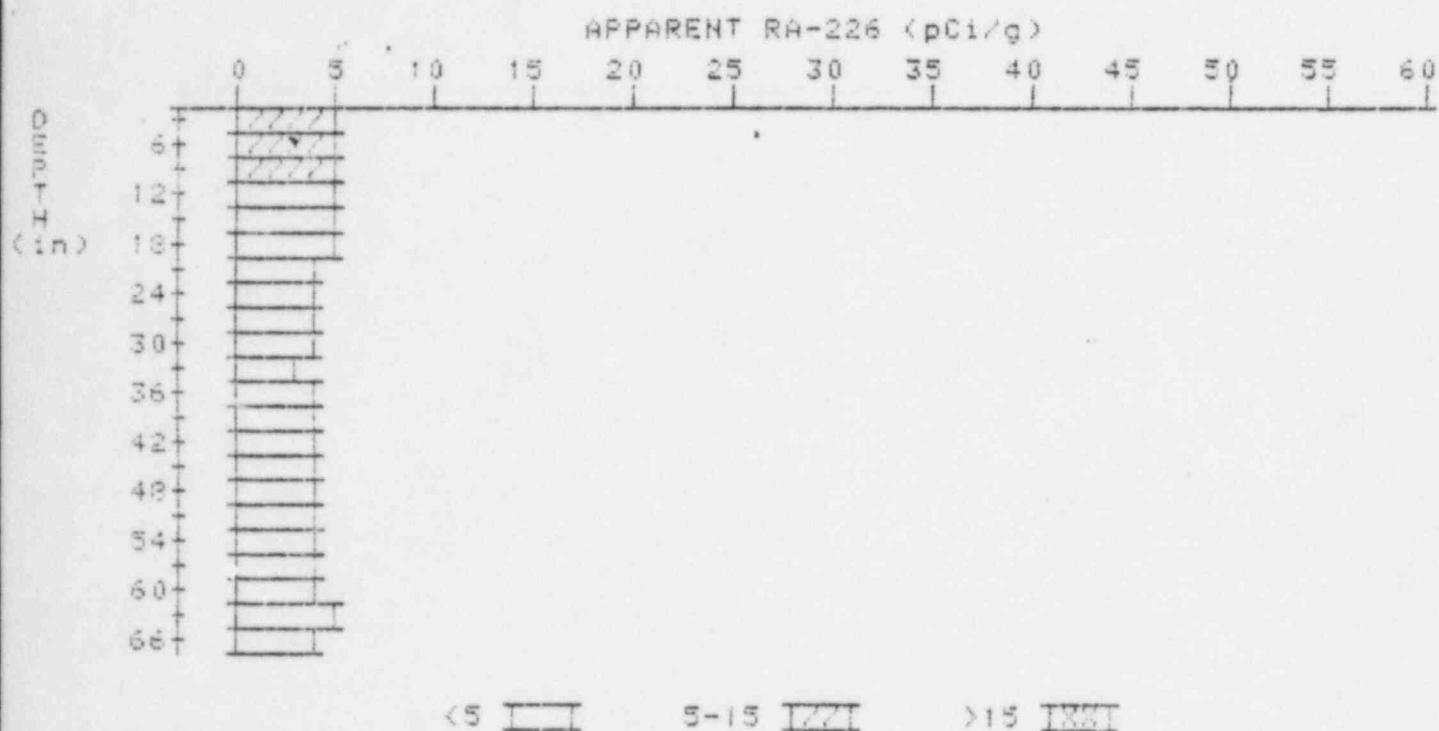
48
51
54
57
60
63
66
69

4.5
4.4
4.4
4.4
4.3
4.4
4.4
4.3

4.9
4.2
4.4
4.6
3.9
4.6
4.6
4.3

APPARENT RADIUM-226 CONCENTRATION 11 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-11411-RS
HOLE NUMBER: 11
LOCATION: 201243



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.0	5.0
6	5.1	5.5
9	5.0	5.2
12	4.8	4.6
15	4.7	4.9
18	4.5	4.5
21	4.3	4.3
24	4.1	3.9
27	4.0	4.0
30	3.9	3.9
33	3.8	3.4
36	3.9	4.1
39	3.9	3.9
42	3.9	3.7
45	4.0	4.2
48	4.0	3.8

51
54
57
60
63
66

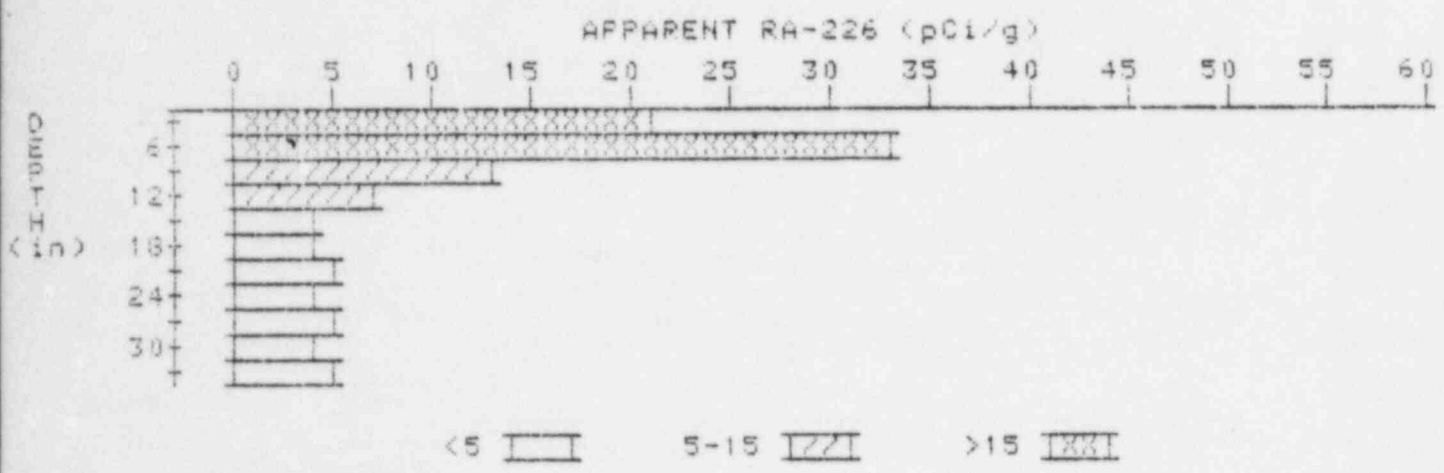
4.1
4.1
4.0
4.0
4.1
3.9

4.3
4.3
3.8
3.8
4.6
3.9

APPARENT RADIUM-226 CONCENTRATION 13

DECONVOLUTION GRAPH

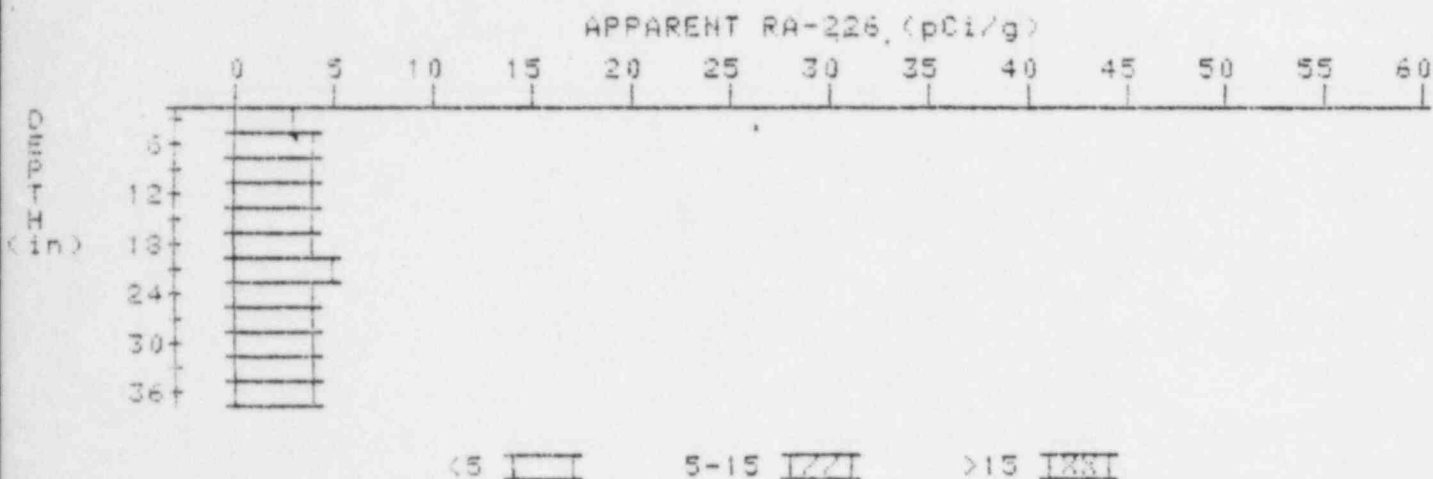
PROPERTY NUMBER: GJ-11411-RS
HOLE NUMBER: 13
LOCATION: 223203



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	21.4	21.4
6	21.6	33.2
9	15.3	13.2
12	10.2	6.8
15	7.0	4.0
18	5.5	3.7
21	5.0	4.6
24	4.7	4.3
27	4.6	4.6
30	4.5	4.3
33	4.5	4.5

APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-11411-RS
HOLE NUMBER: 15
LOCATION: 240251



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.6	4.1
9	3.9	4.3
12	4.0	4.0
15	4.1	4.5
18	4.0	3.6
21	4.1	4.6
24	3.9	3.7
27	3.8	3.6
30	3.8	3.8
33	3.8	3.6
36	3.9	3.9