

Packsaddle Schist

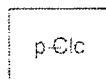
Consists from top down, in southeastern area, of Click Formation, p-Sc, Rough Ridge Formation, p-Er, Sandy Formation, p-Es, and Honey Formation, p-Ch. (See also Packsaddle Schist and index, p-45, marble, m, shown in blue.)

Click Formation, p-Sc, mostly hornblende schist, underlain by leptyte and quartz-feldspar mica schist, which grades into hornblende schist southward as a light green actinolite schist at base grades to mica schist and hornblende schist toward southeast, thickness about 7,500 feet.

Rough Ridge Formation, p-Er, gray leptyte, quartz-feldspar mica schist, and biotite schist, gneiss, locally mica schist, biotite schist, and both are mafic gneiss, thickness about 5,200 feet.

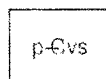
Sandy Formation, p-Es, alternating units of hornblende schist, and quartz-feldspar-mica schist and leptyte, thickness about 2,100 feet.

Honey Formation, p-Ch, upper part graphite schist, hornblende schist, and marble with graphite schist interbeds, middle part, muscovite schist, changes to leptyte, graphite, schist, and hornblende schist toward southeast, one prominent marble, lower part, hornblende schist, graphite schist, leptyte, and no other marble shown in blue; thickness about 7,800 feet.



Lost Creek Gneiss

Metasedimentary wagen gneiss, does not lie on the Valley Spring Gneiss below, grades upward through a sequence of alternating beds of wagen gneiss and schist to Packsaddle Schist.



Valley Spring Gneiss

From top down in eastern area, pink quartz-feldspar gneiss, well foliated, wagen gneiss near top, thickness 150 feet; gray quartz-feldspar biotite gneiss, thickness 250 feet; pink quartz-feldspar gneiss, moderately to poorly foliated, some marble, and rest not mapped; and south of Libby, thickness 8,000 feet, base not exposed.

From top down in western area, Paria Hill quadrangle, the following units have been mapped:

One unit: Medium grained, strongly foliated quartz-muscovite schist, thickness 150 feet.

Two units: Predominantly fine-grained to locally medium grained, well foliated, biotite-rich quartz-feldspar schist and gneiss, thickness 700 feet; Predominantly fine-grained to locally coarse grained, well foliated quartz-feldspar gneiss, locally mica or amphibole, locally some magnetite, thickness 1,500 to 2,500 feet. These units are about 2,500 feet.

Four units: Fine to medium grained, slightly foliated, epidote-rich quartz-feldspar gneiss with amphibole or biotite, thickness 800 feet; Fine to medium grained, well foliated to poorly foliated quartz-feldspar muscovite gneiss with alternating layers of fine to medium grained quartz-feldspar gneiss, thickness up to 4,200 feet where other facies absent; Fine to medium grained, well foliated, biotite- or hornblende-rich quartz-feldspar gneiss and schist, some layers of fine to medium grained marble, calc-silicate gneiss, and amphibolite, thickness up to 2,000 feet where other facies absent. Thickness of four units, about 7,000 feet.

Additional units, beneath those on the Paria Hill quadrangle, are exposed in the Fly Gap quadrangle as follows:

Fine to medium grained, slightly foliated, pink and green gneiss characterized by abundant green amphibole, thickness up to 2,200 feet, feathers out locally.

Well foliated, fine-grained quartz-feldspar gneiss, thickness up to 4,600 feet.

PRECAMBRIAN

Geology – Llano Uplift

The Llano Uplift is a roughly circular dome of Precambrian rock (1.35 billion years ago), primarily composed of granite that makes a bulls-eye pattern around the town of Llano, Texas. The region is characterized by a central exposure of Precambrian granite (Town **Mountain** Granite), surrounded by a ring of gneiss (Valley Spring Gneiss) and schist (Packsaddle Schist). These core, crystalline rocks are surrounded by uplifted lower Paleozoic strata (550 to 250 millions years ago). The outer area is rimmed by Cretaceous limestone ridges (145 to 65 million years ago).

Geology – Llano to San Saba through Llano County

North out of the town of Llano the geology of the area is igneous and metamorphic rocks. For several miles north-northeast of Llano, there are outcrops of crystalline rocks composed of pink granite and gneiss. In the northeast part of Llano County, there is the Baby Head mountain which is an east-west ridge of hard, igneous dike. The dike that stands above the surrounding Valley Spring gneiss is composed of a granite called Llanite.

Outside the core of Precambrian igneous and metamorphic crystalline rocks, geology turns to Paleozoic sandstone and limestone. The Paleozoic rocks dip gently to the north and, from south to north, are stacked in proper sequence, oldest to youngest, Cambrian to Pennsylvanian. These sedimentary rocks were deposited on the beveled surface of the Precambrian rocks.

Geology – Llanite

Llanite is a striking granite which contains red-pink feldspar crystals and blue quartz grains that float in a medium-grained, almost black groundmass. Llanite is unusually hard, and was once quarried for building stone. The quartz is blue because of chromium impurities. Llanite is unique to the area and cannot be found anywhere else in the world.

Geology – Llano to Burnet through Buchanan Dam

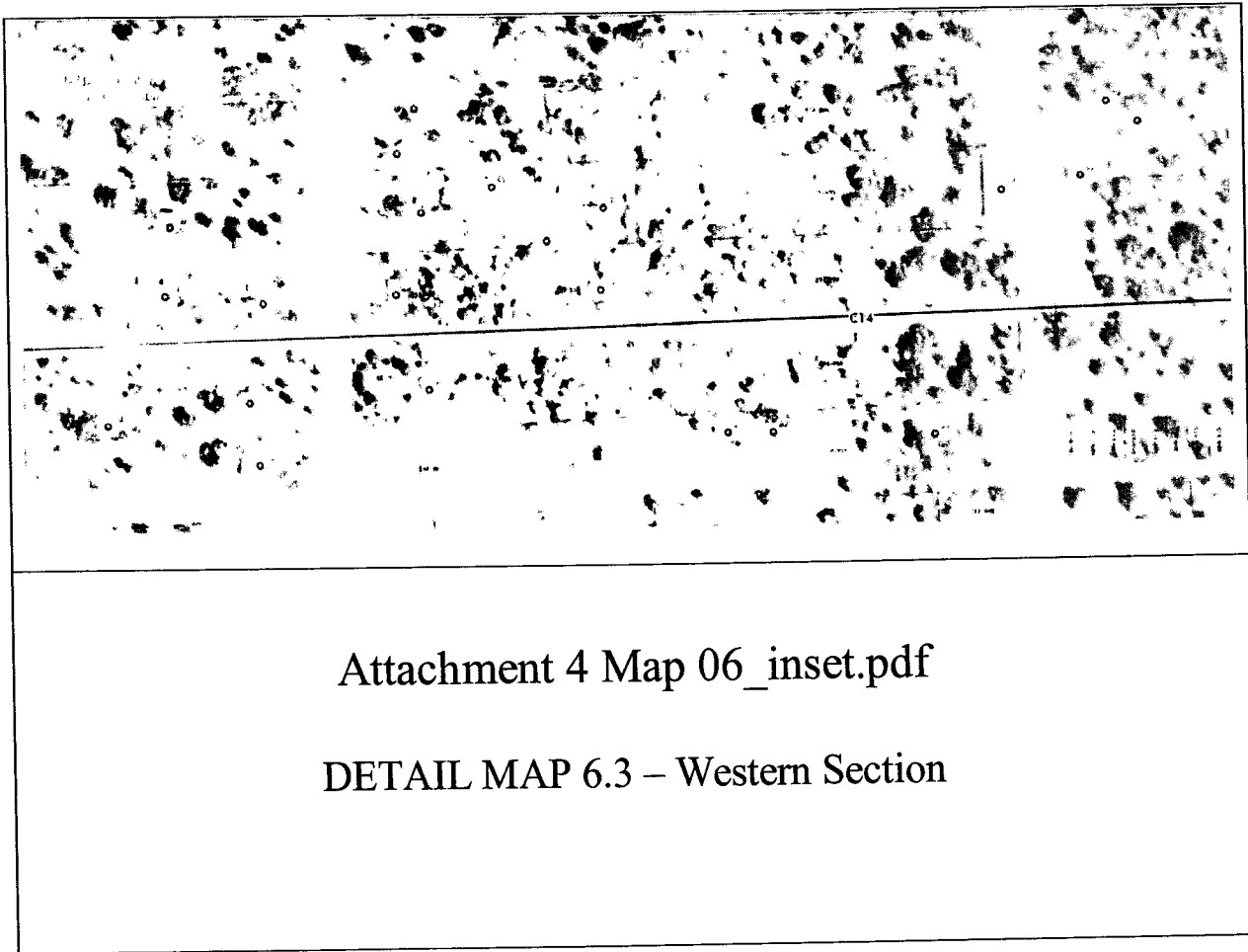
Between the towns of Llano and Buchanan Dam, Hwy 29 almost parallels the Llano River and the existing transmission line ROW as the highway traverses Precambrian crystalline rocks the entire distance. Near Llano, the geology is mainly gneiss. East of Llano to Buchanan Dam, the geology is Town Mountain granite. Between Buchanan Dam and Burnet, the geology is gneiss again as Cretaceous sandy sediments and limestones are encountered near Burnet. Also, south of Lake Buchanan, the geology is Cambrian sandstones and Ordovician limestone. In the following appendix, these sandstones can be seen in outcrop in the pictures of the existing transmission line ROW. (See EXHIBIT BRB-3)

South of Lake Buchanan, the Cambrian sandstones consist of the Riley Formation, the Wilberns Formation and the Tanyard Formation. The Riley Formation includes the Lion Mountain Sandstone and Cap Mountain Limestone. The Wilberns Formation includes the San Saba Member, the Point Peak Member and Morgan Creek Limestone and Wedge Sandstone Members. (See EXHIBIT BRB-4, descriptions from Geologic Atlas Sheets below, page 8 and 9.)

From Buchanan Dam east to Burnet, most of the geology is Valley Spring Gneiss. The edge of the Llano Uplift is found near the town of Burnet, where Cretaceous, sandy sediments, overlain by limestone, rests directly on the erosional surface, on Paleozoic and Precambrian rocks.

Alternate Route	Total Number of Habitable Structures Within 500 ft. of Centerline	Number of Newly Affected Habitable Structures within 500 ft. of an Existing Transmission Line	Table in EA
GN11	45	29	Table 6-3
GN1	28	23	Table 6-4
GN2	31	26	Table 6-5
GN3	60	55	Table 6-6
GN4	38	35	Table 6-7
GN5	35	23	Table 6-8
GN6	163	50	Table 6-9
GN7	80	52	Table 6-10
GN8	55	28	Table 6-11
GN9	29	17	Table 6-12
GN10	39	23	Table 6-13

Page 25 of EA revised by Filing #360, LCRA Transmission Services Corporation Second Errata to CREZ CNN Application, Docket No. 37448.



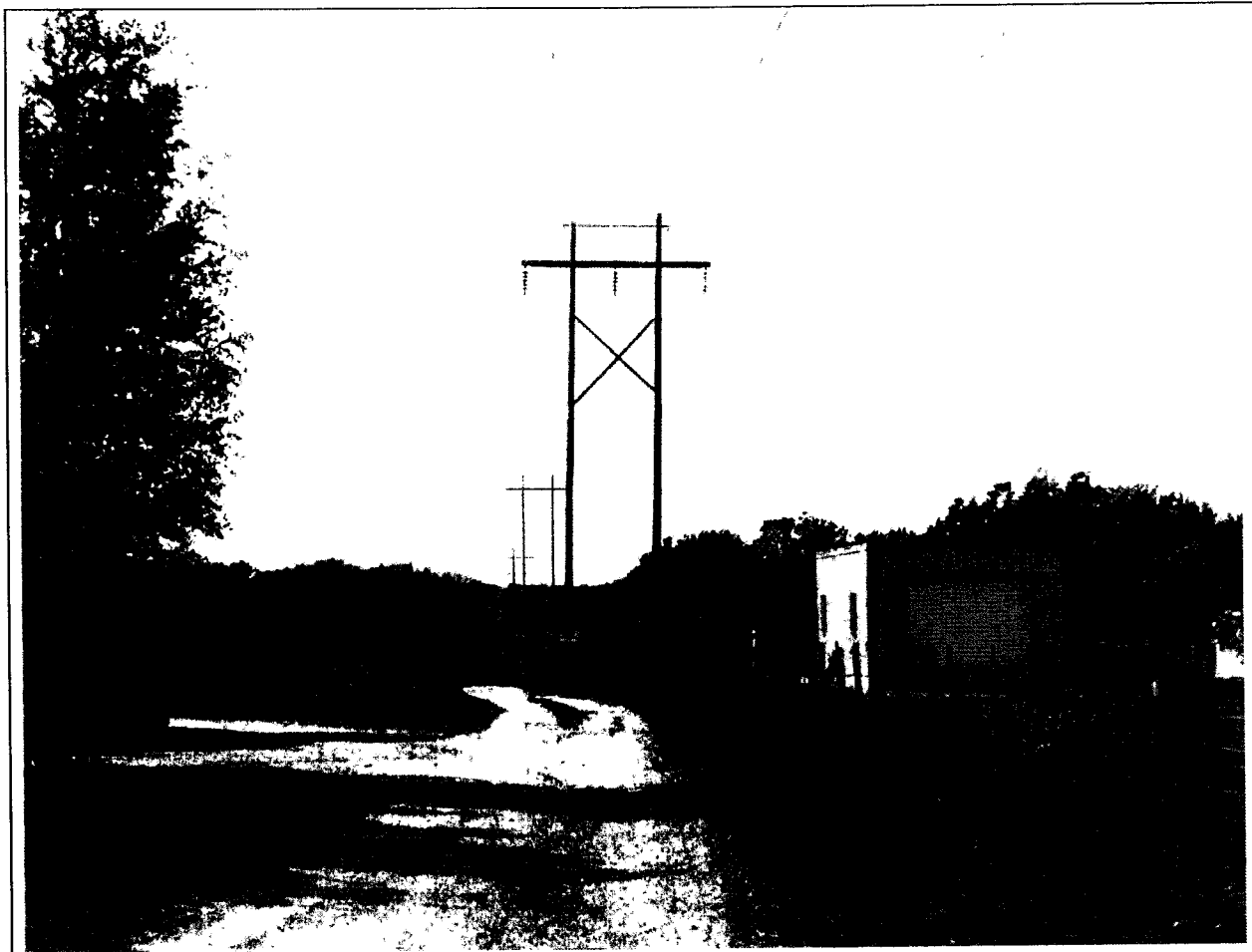
Attachment 4 Map 06_inset.pdf

DETAIL MAP 6.3 – Western Section



Habitable Structure 52 at 120 ft. S from ROW Centerline

DSCN0209-1.JPG



Current ROW Between Habitable Structures 52 & 51

DSCN0100-1.JPG



Habitable Structure 51 at 40 ft. N from ROW Centerline

DSCN0211-1.JPG



Habitable Structures 56 & 55 at 60 ft. N from ROW Centerline

DSCN0212-1.JPG



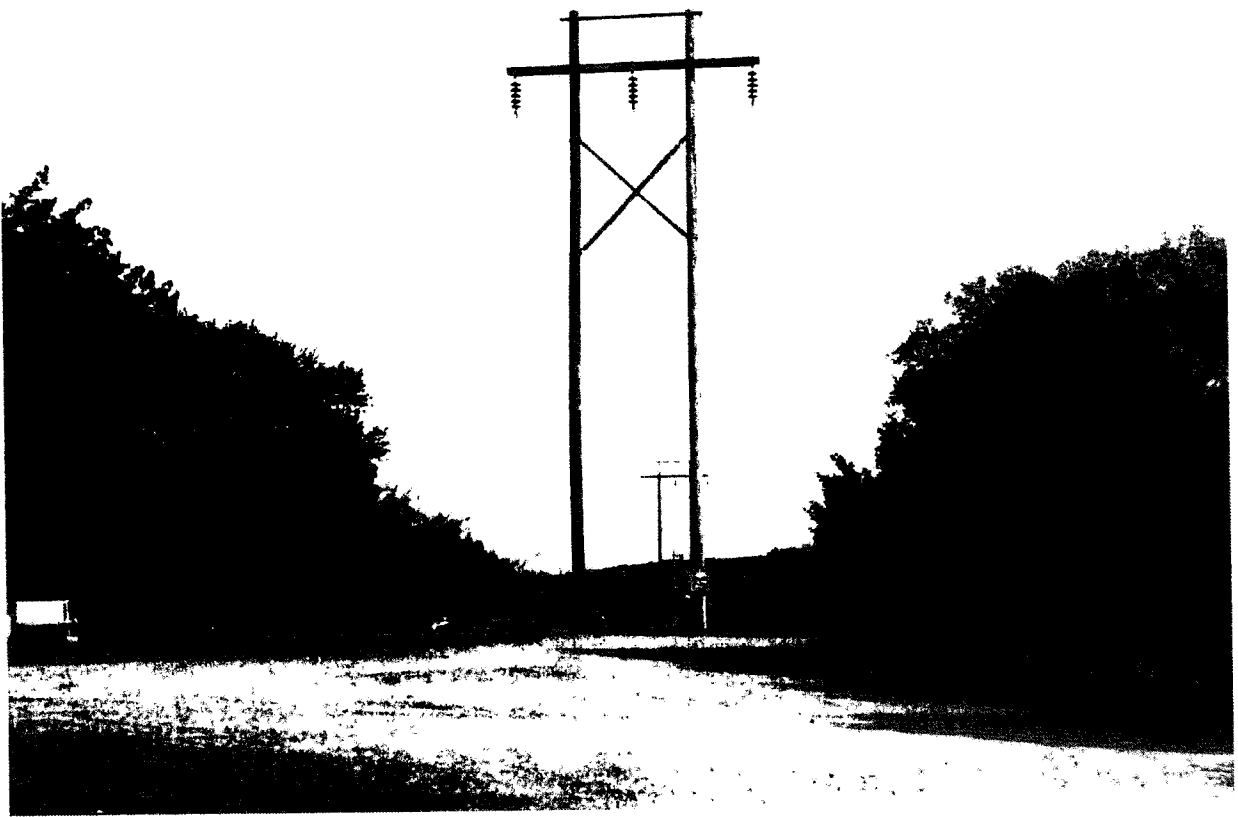
Habitable Structure 55 at 65 ft. N from ROW Centerline

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Habitable Structure 55 & 56 at 60 ft. N from ROW Centerline

DSCN0220-1.JPG



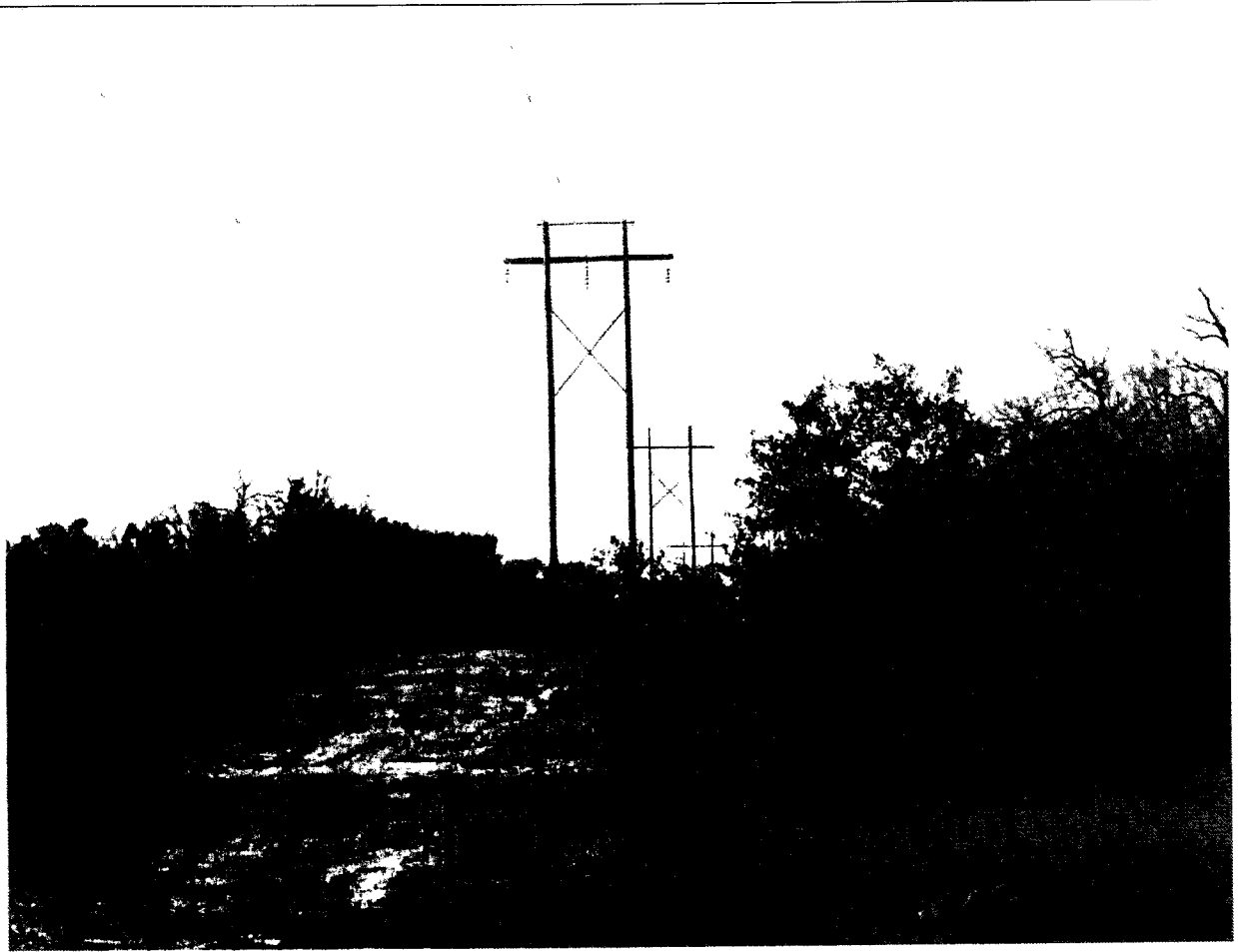
Current ROW Between Habitable Structures 56, 55 & 54

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Habitable Structure 67 at 190 ft. N from ROW Centerline

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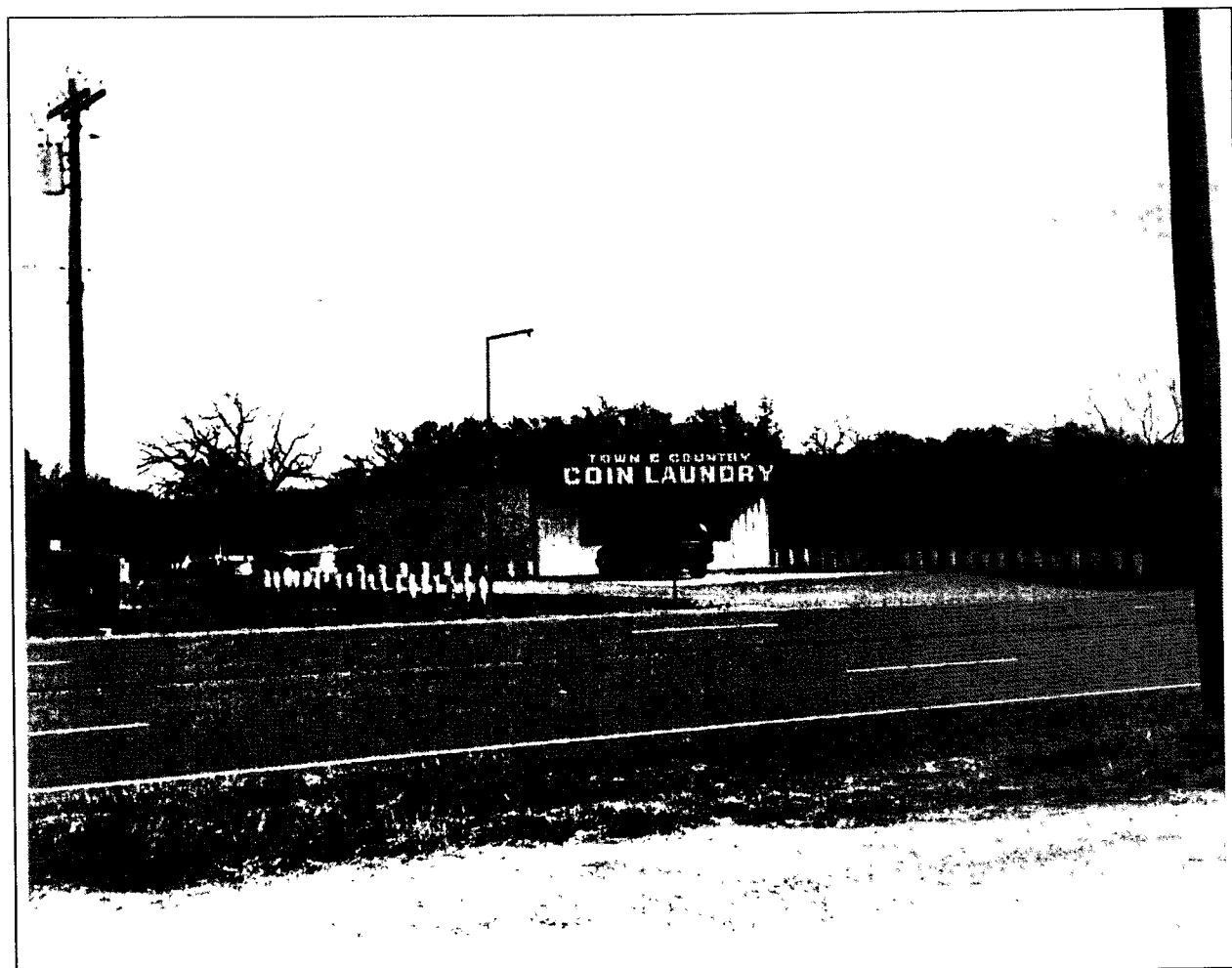
Current ROW South of Habitable Structure 67

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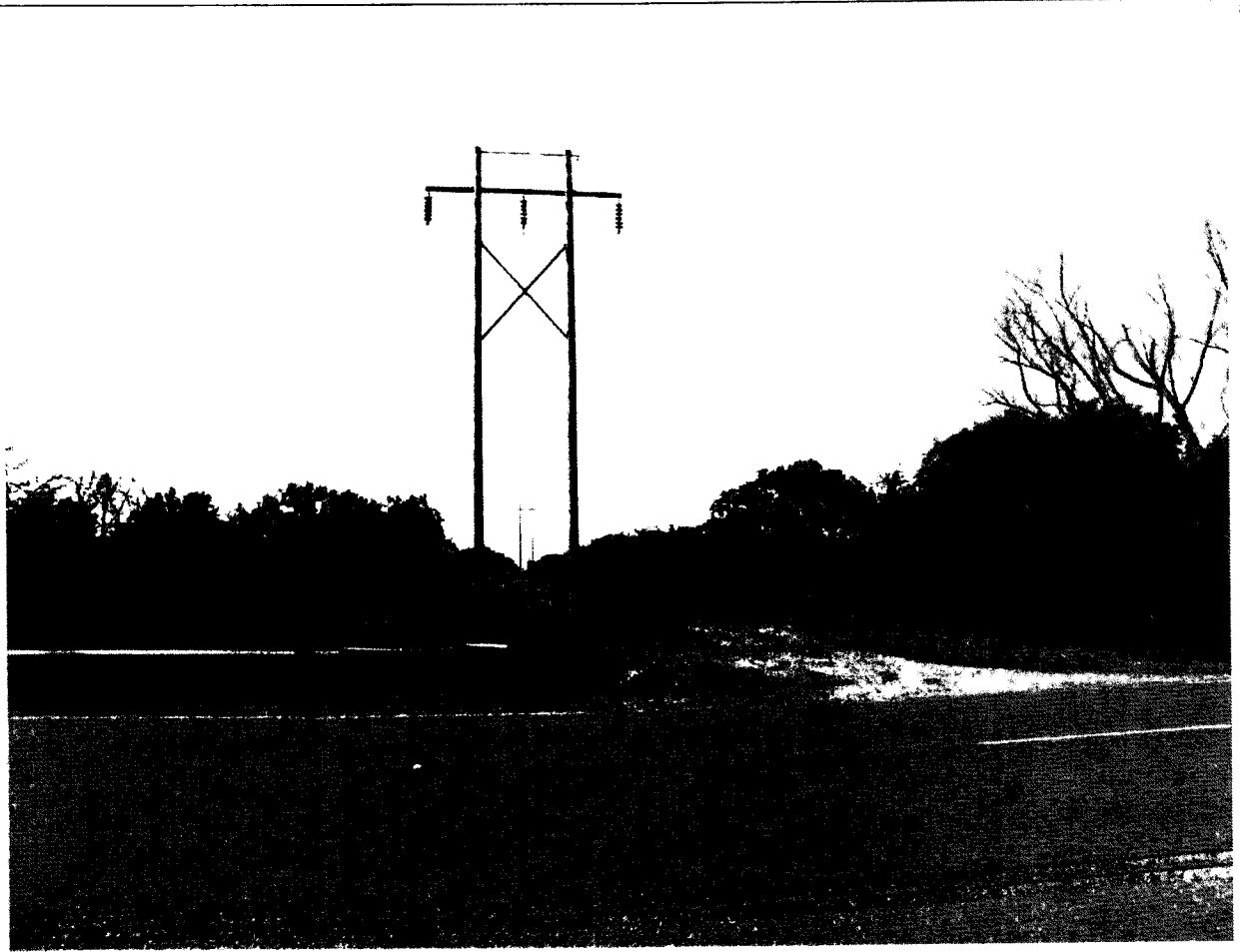
Habitable Structure 70 & 69 at 455 ft. N from ROW Centerline

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Habitable Structure 68 at 285 ft. N from ROW Centerline

DSCN0093-1.JPG



Current ROW South of Habitable Structures 68-70

DSCN0097-1.JPG



Attachment 4 Map 06_inset.pdf

DETAIL MAP 6.2 – Western Section



Habitable Structure 77

DSCN0025-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a camper, not a mobile home. Ida Norris owns structures 76 to 85.



Habitable Structure 78

DSCN0024-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a mobile home. Ida Norris owns structures 76 to 85.

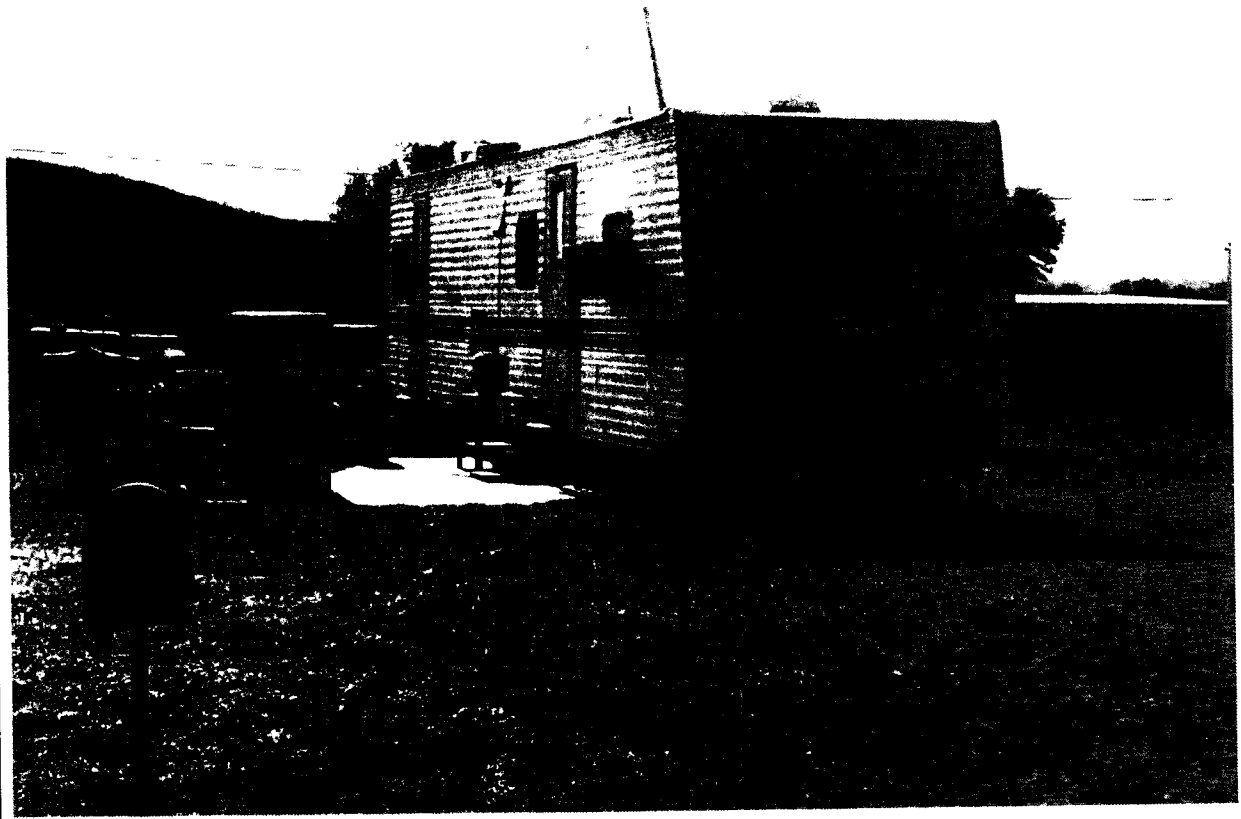


Habitable Structure 79

DSCN0023-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a mobile home. Ida Norris owns structures 76 to 85.

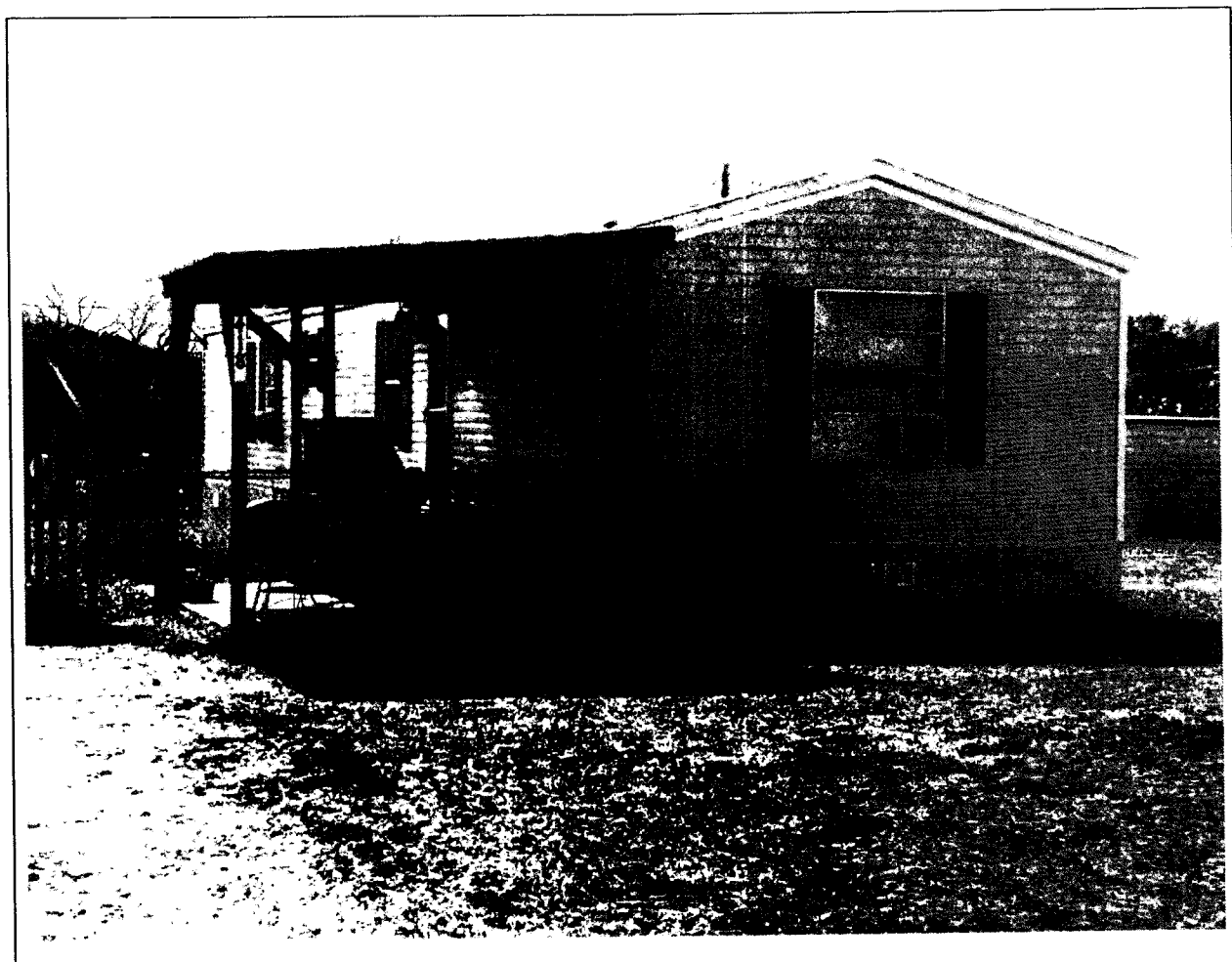


Habitable Structure 80

DSCN0022-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a camper, not a mobile home. Ida Norris owns structures 76 to 85.

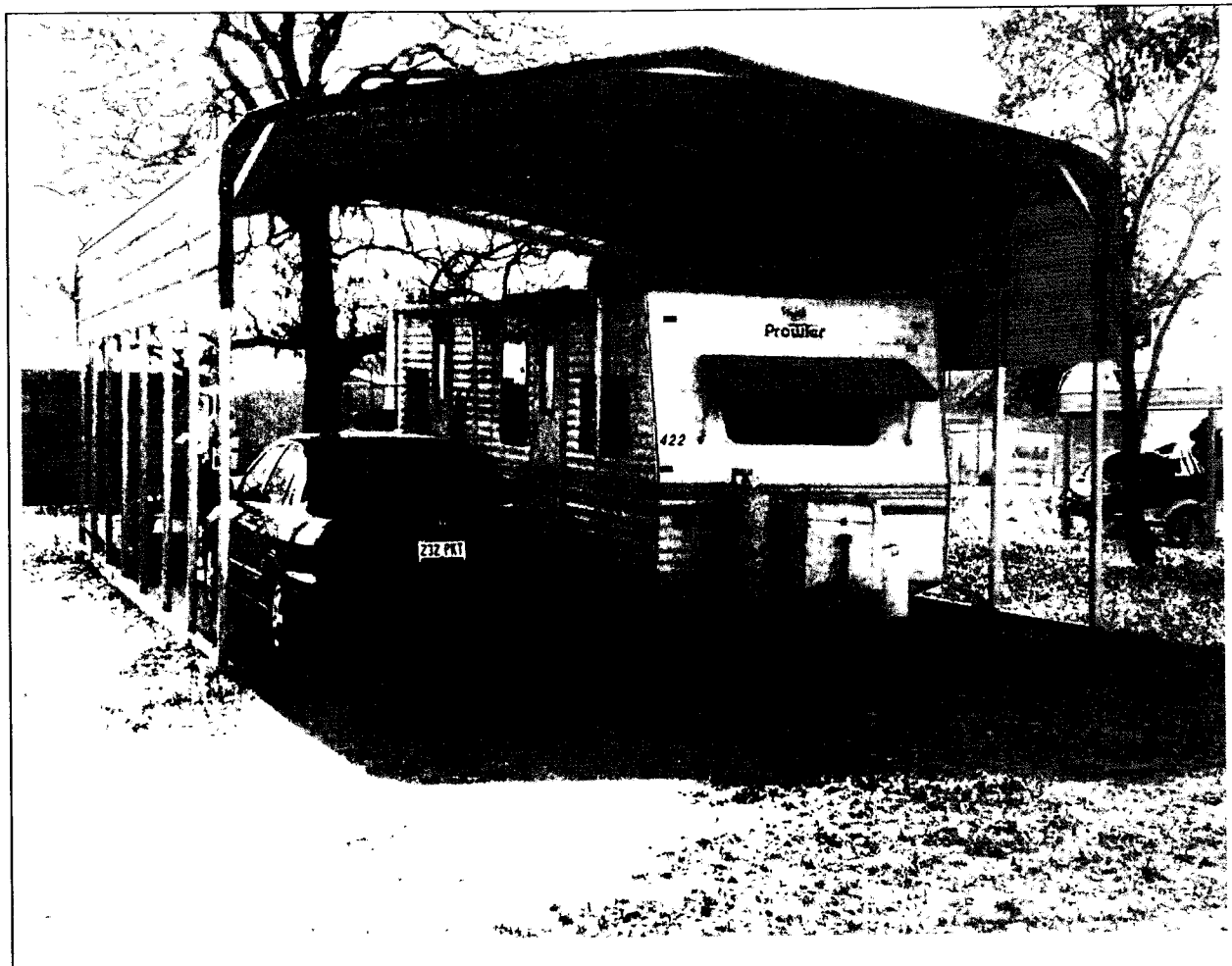


Habitable Structure 81

DSCN0021-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a mobile home. Ida Norris owns structures 76 to 85.



Habitable Structure 82

DSCN0020-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a camper, not a mobile home. Ida Norris owns structures 76 to 85.



Habitable Structure 83

DSCN0019-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a camper, not a mobile home. Ida Norris owns structures 76 to 85.



Habitable Structure 84

DSCN0018-1.JPG

The habitable structure is at 408 LNB Dr. Llano CAD property id is 18243/18253.

The structure is a camper, not a mobile home. Ida Norris owns structures 76 to 85.

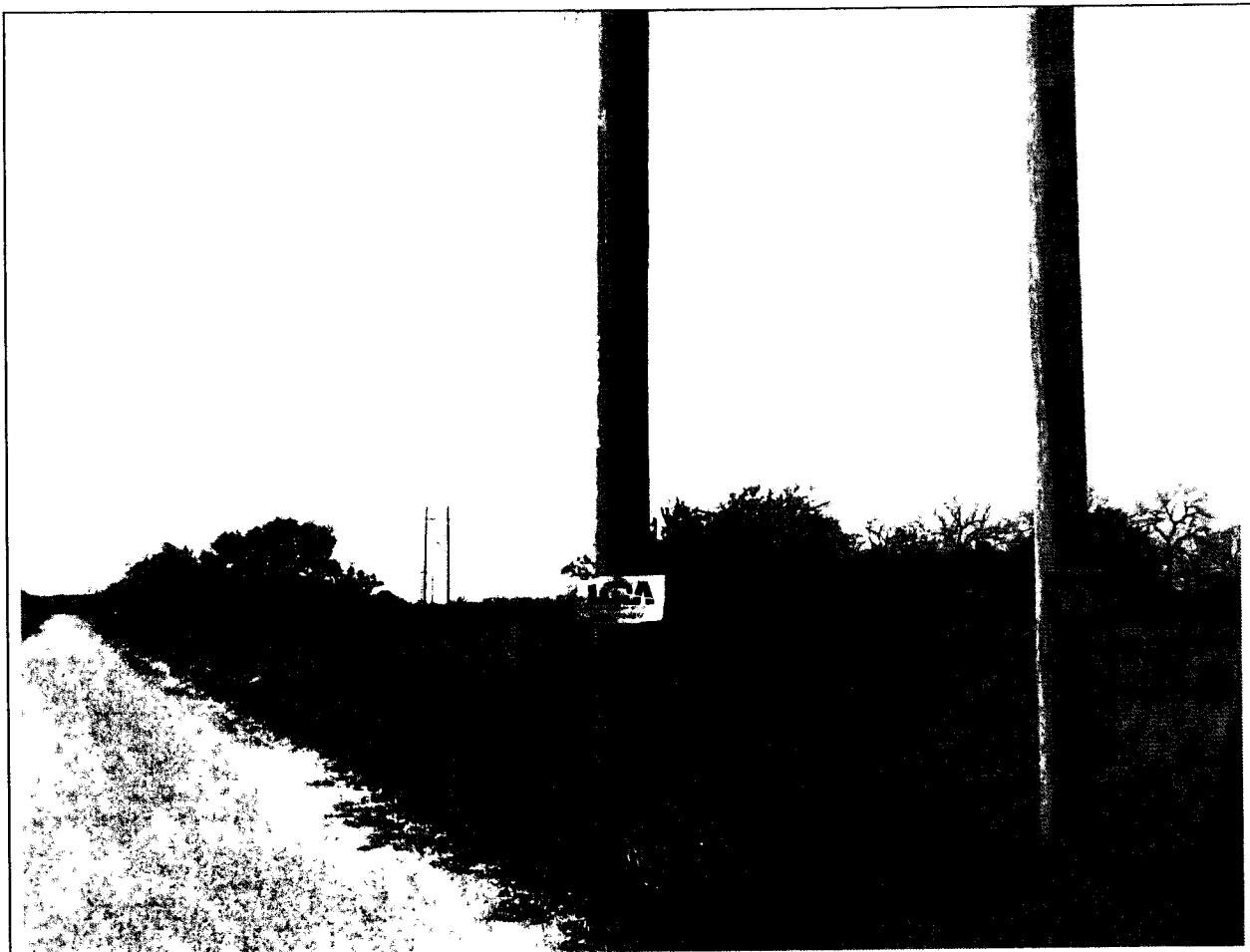


Habitable Structure 87 at 225 ft. N from ROW Centerline

DSCN0083-1.JPG

This habitable structure is at 275 LNB Dr. The Llano CAD property id is 57530.

The beige and salmon mobile home is VACANT. There are no doors or windows.



Current ROW South of Habitable Structure 87

DSCN0076-1.JPG



Habitable Structure 91 at 385 ft. N from ROW Centerline

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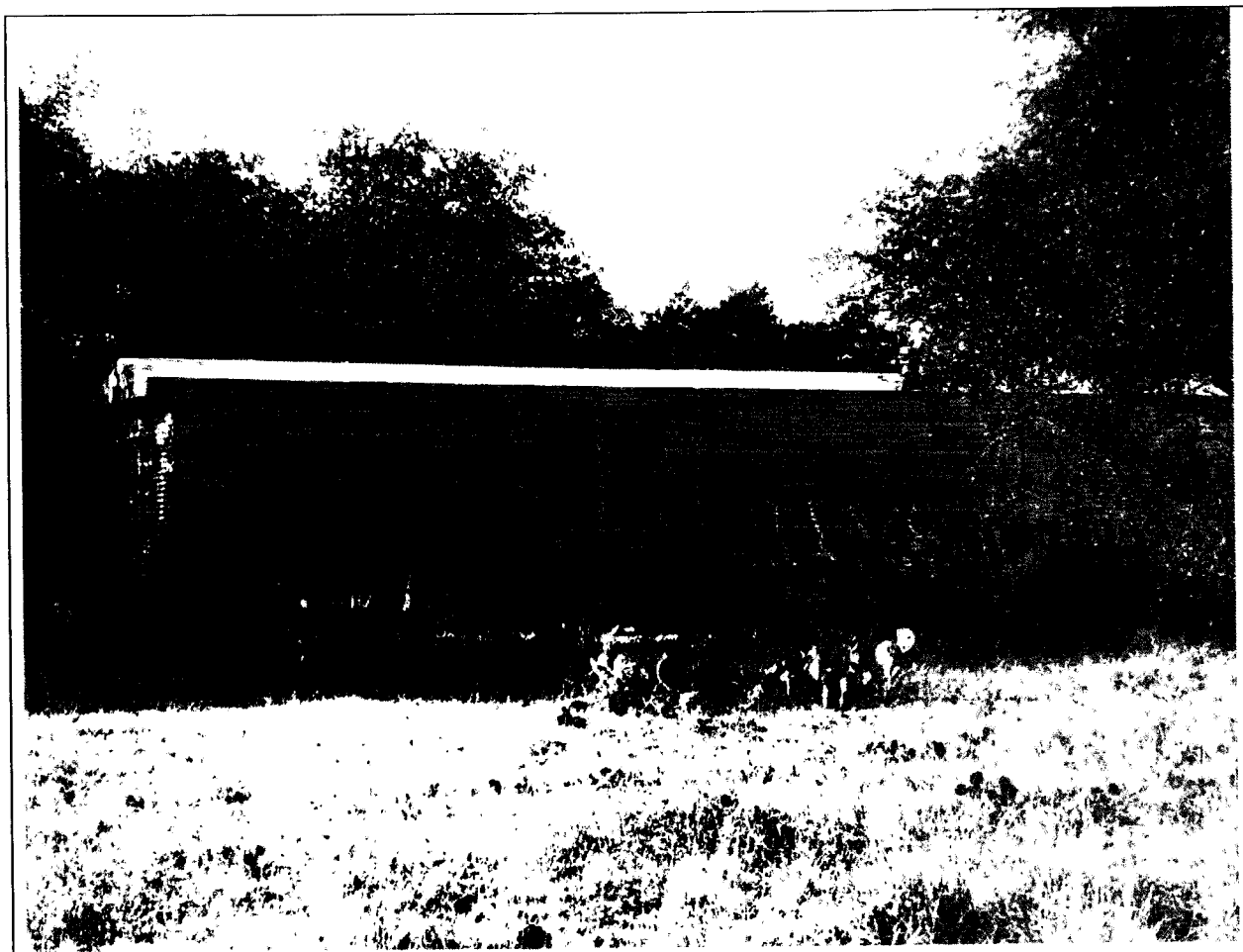


Habitable Structure 92 at 340 ft. N from ROW Centerline

DSCN0190-1.JPG

The habitable structure is on LNB at Hi-Line. Llano CAD property id is 24756.

The structure is a camper, not a mobile home. Wayne Davis owns this property.



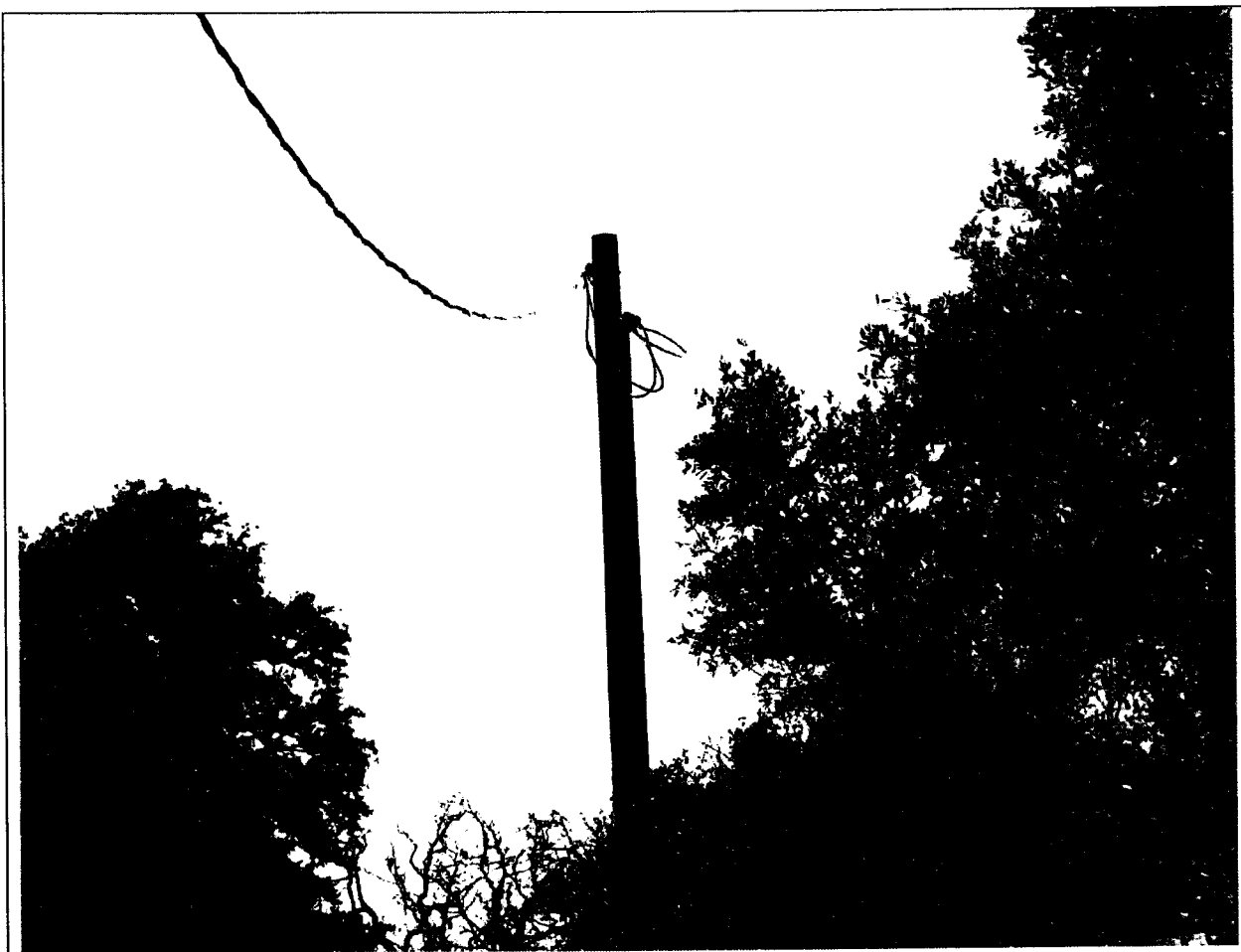
Habitable Structure 93 at 330 ft. N from ROW Centerline

DSCN0188-1.JPG

The habitable structure is on LNB at Hi-Line. Llano CAD property id is 24756.

The silver mobile home is VACANT. The windows have been boarded up closed.

There is no electricity hooked up to the house. Wayne Davis owns this property.



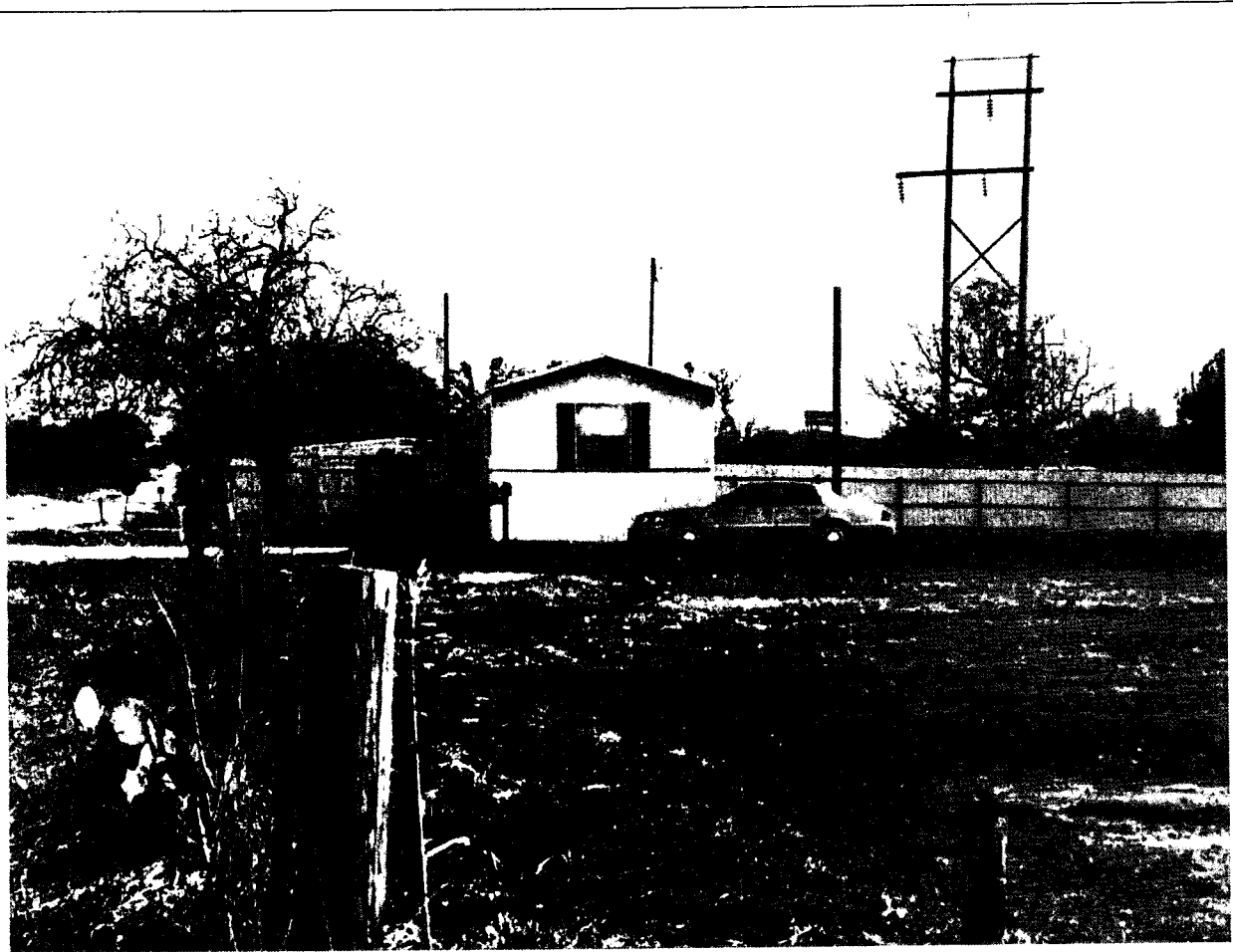
Habitable Structure 93 at 330 ft. N from ROW Centerline

DSCN0194-1.JPG

The habitable structure is on LNB at Hi-Line. Llano CAD property id is 24756.

The silver mobile home is VACANT. The windows have been boarded up closed.

There is no electricity hooked up to the house. Wayne Davis owns this property.

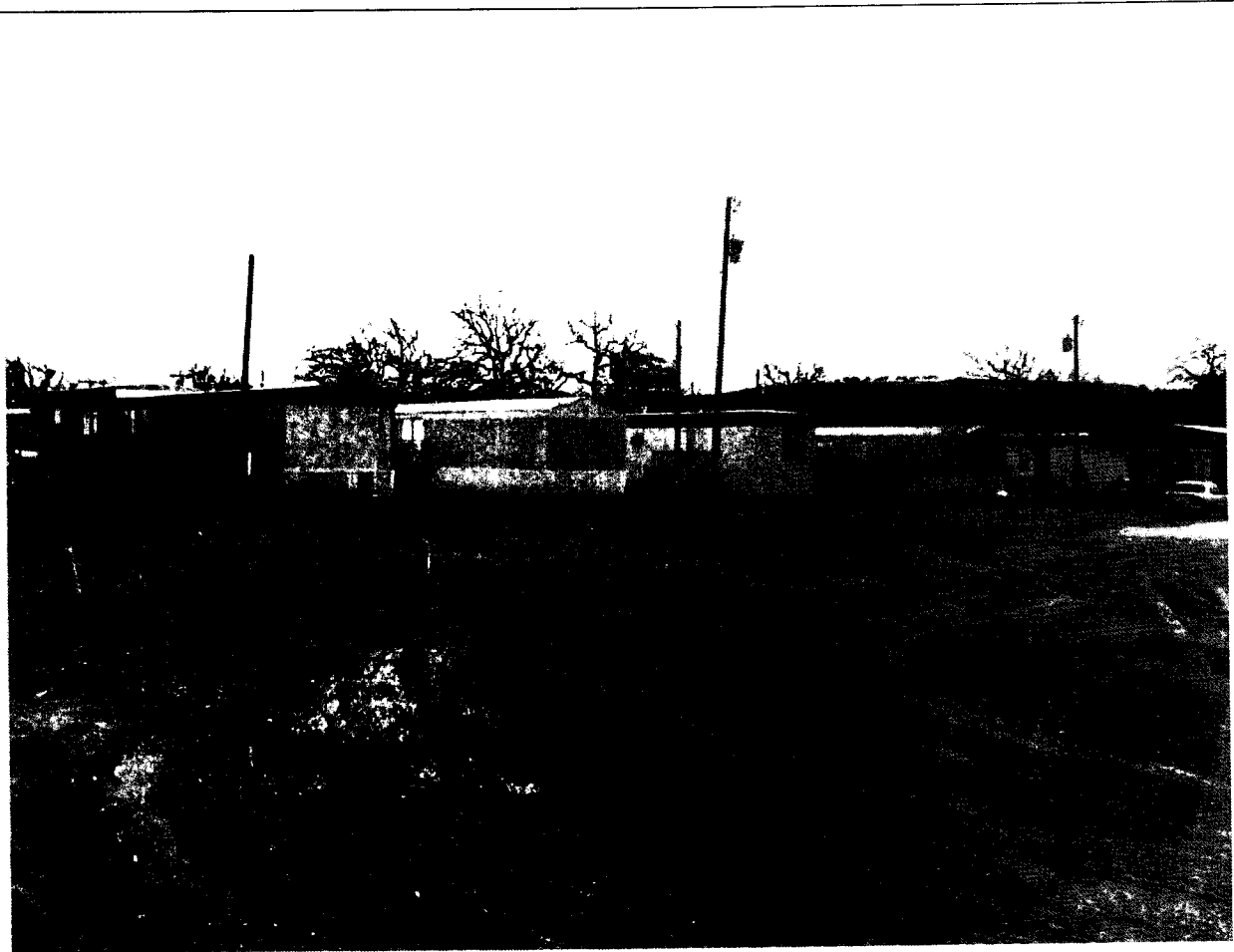


Habitable Structure 100 at 0 ft. from ROW Centerline

DSCN0014-1.JPG

The habitable structure is at 630 LNB Dr. Llano CAD property id is 17965.

The structure is a mobile home. Richard Mathys owns structures 94 to 105.



Habitable Structures 95 to 99 & 90

DSCN0015-1.JPG

The habitable structure is at 630 LNB Dr. Llano CAD property id is 17965.

All structures are mobile homes. Richard Mathys owns structures 94 to 105.

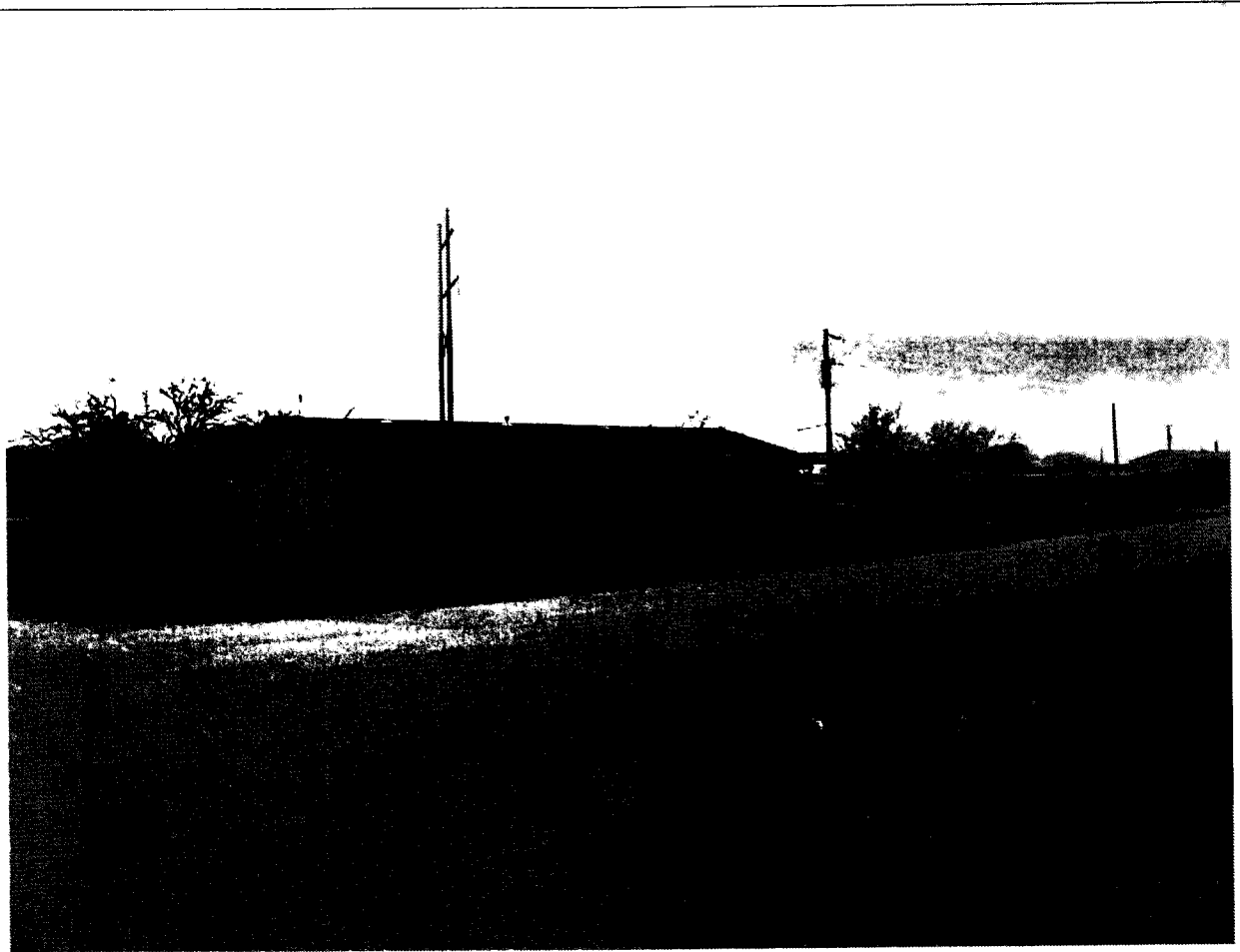


Habitable Structures 90 & 94

DSCN0016-1.JPG

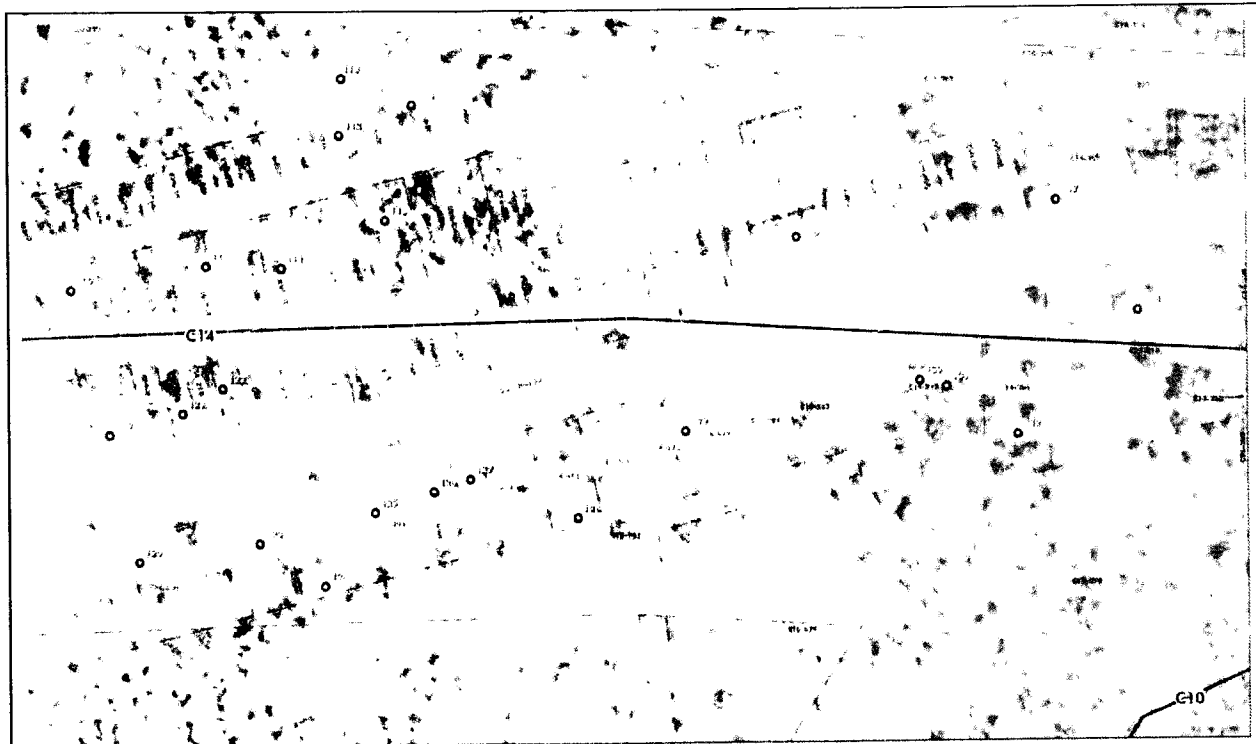
The habitable structure is at 630 LNB Dr. Llano CAD property id is 17965.

All structures are mobile homes. Richard Mathys owns structures 94 to 105.



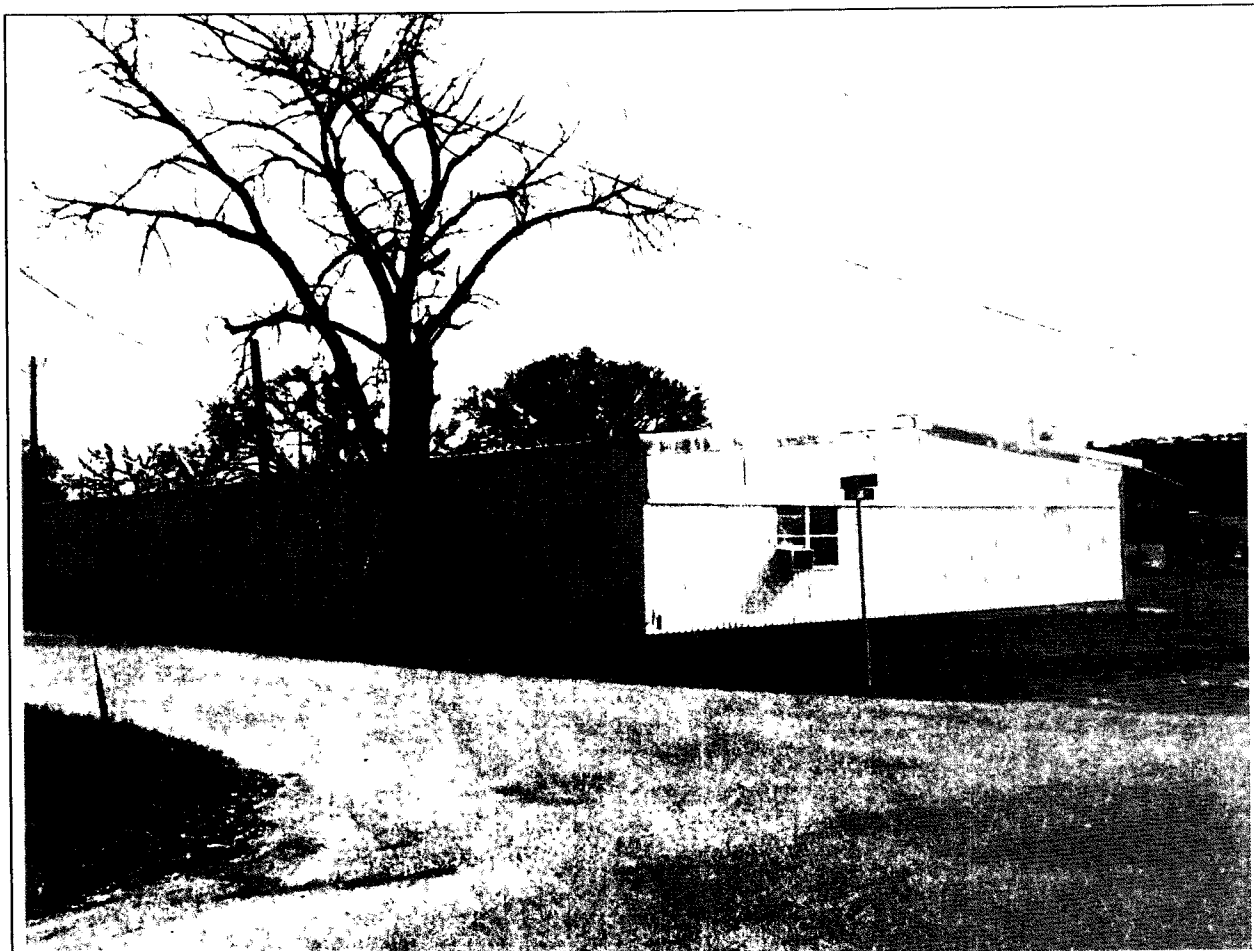
Habitable Structure 108 at 20 ft. N from ROW Centerline

DSCN0071-1.JPG



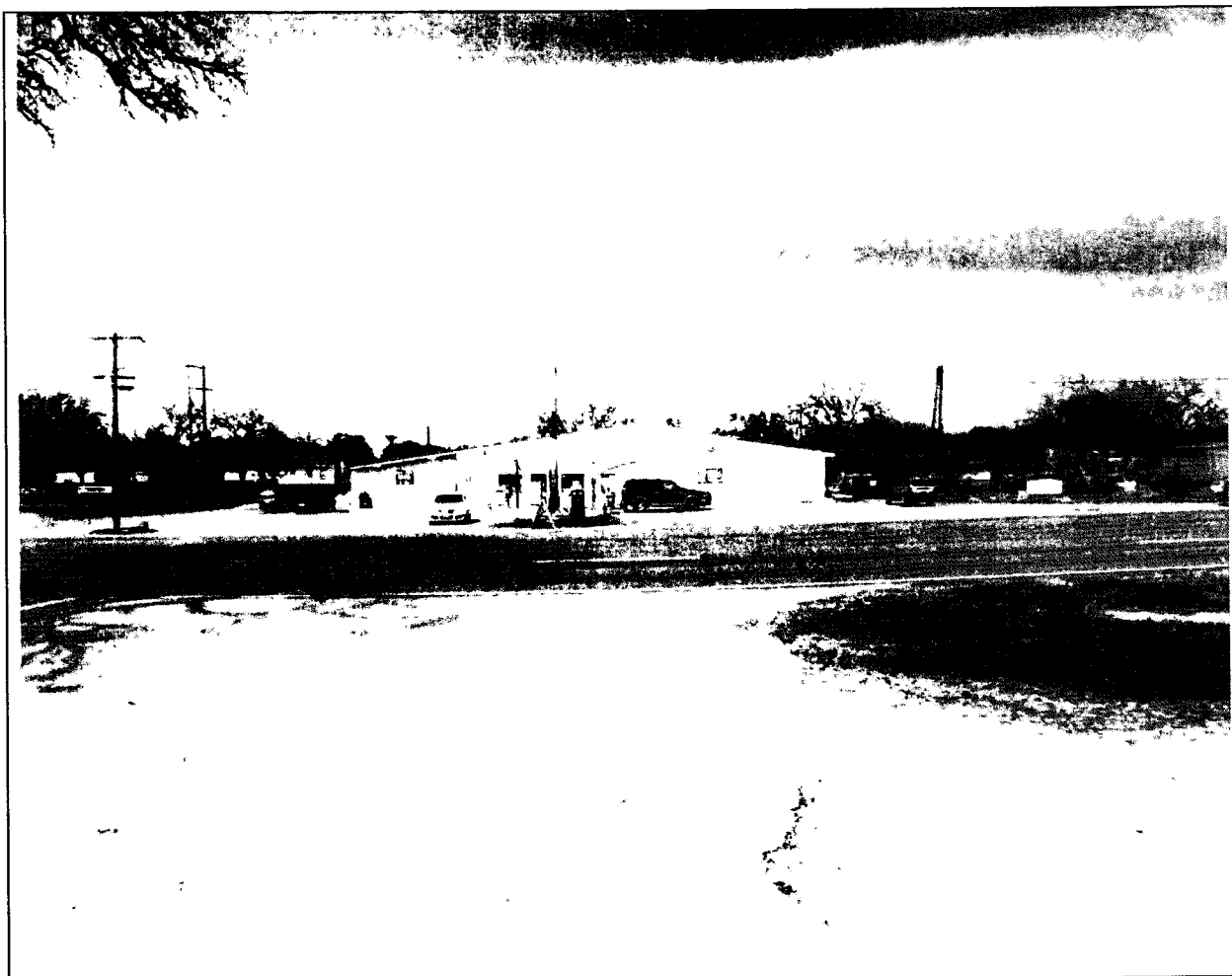
Attachment 4 Map 06_inset.pdf

DETAIL MAP 6.2 – Eastern Section



Habitable Structure 109 at 50 ft. N from ROW Centerline

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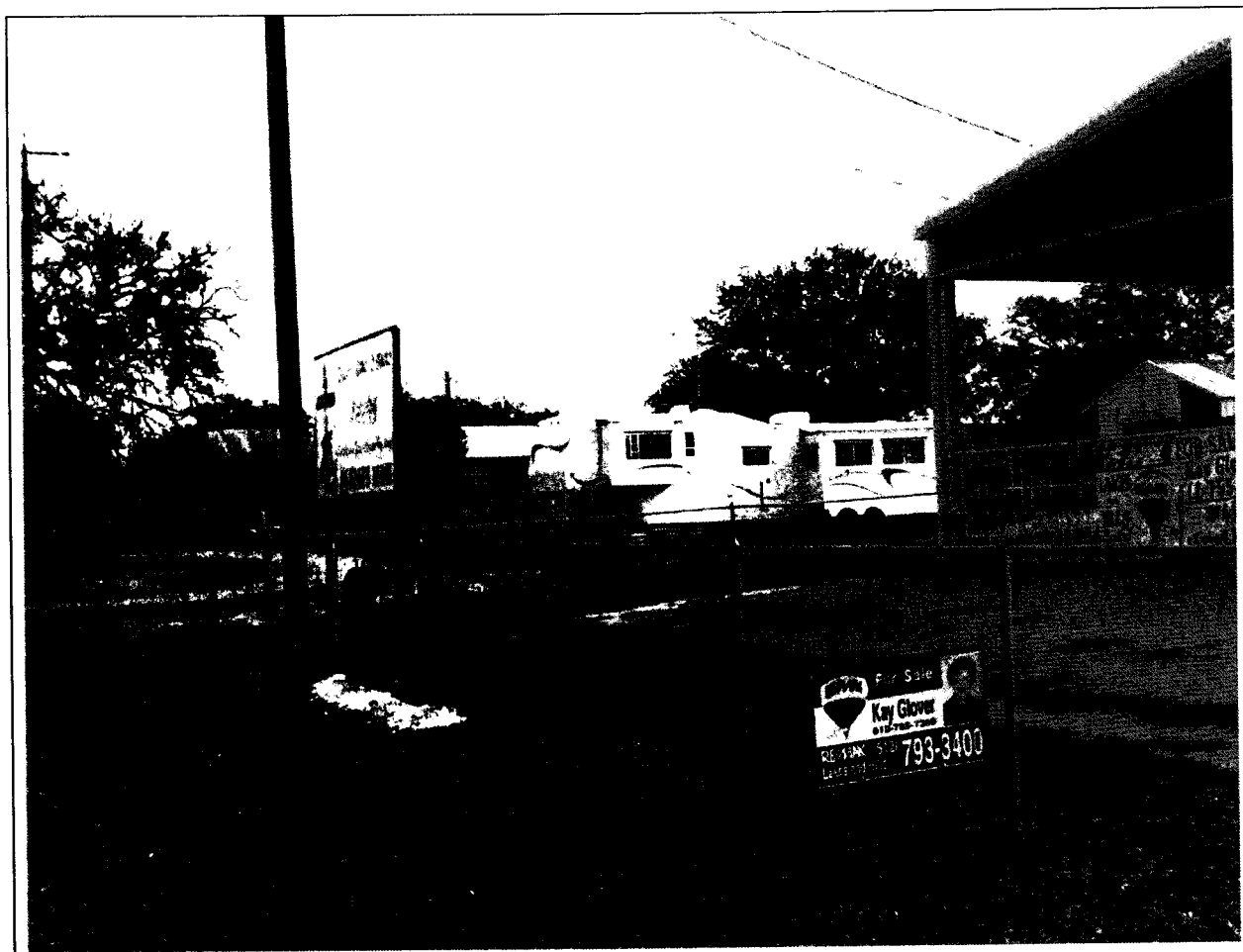
Habitable Structure 119 at 155 ft. S from ROW Centerline

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Habitable Structures 121, 122 & 110

DSCN0056-1.JPG



Habitable Structures 125, 126 & 127

DSCN0052-1.JPG



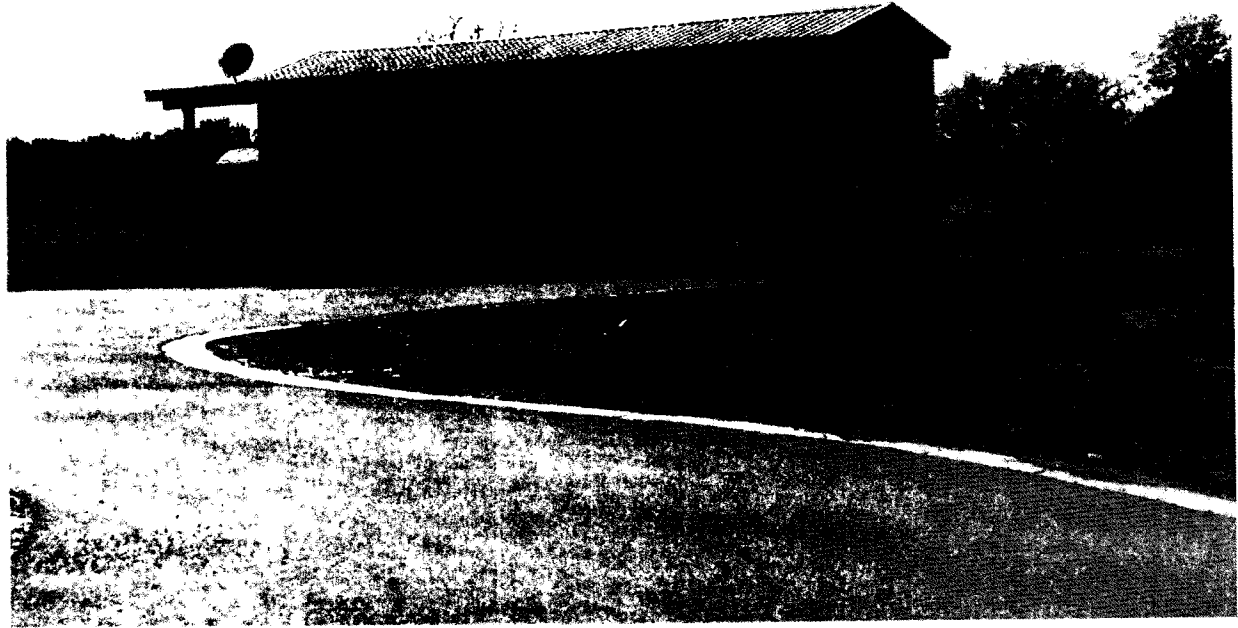
Habitable Structure 130 at 65 ft. S from ROW Centerline

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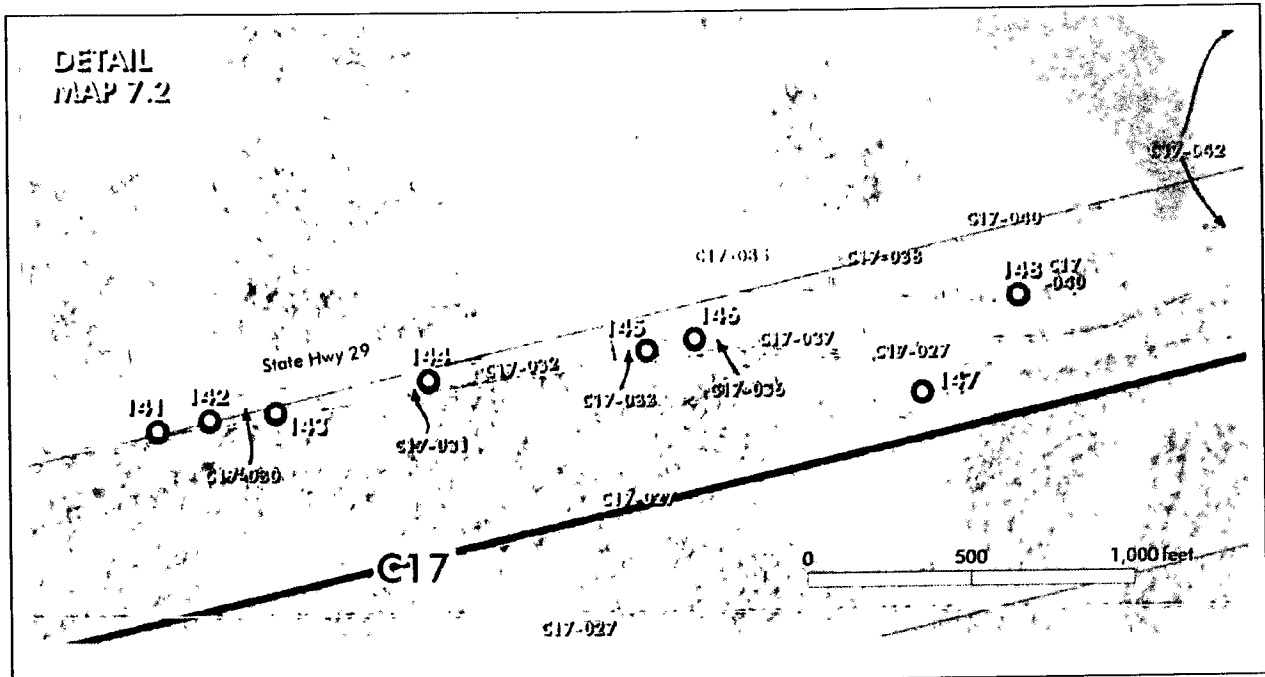
Habitable Structure 118 at 45 ft. N from ROW Centerline

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Habitable Structure 139 at 500 ft. N from ROW Centerline

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Attachment 4 Map 07.pdf

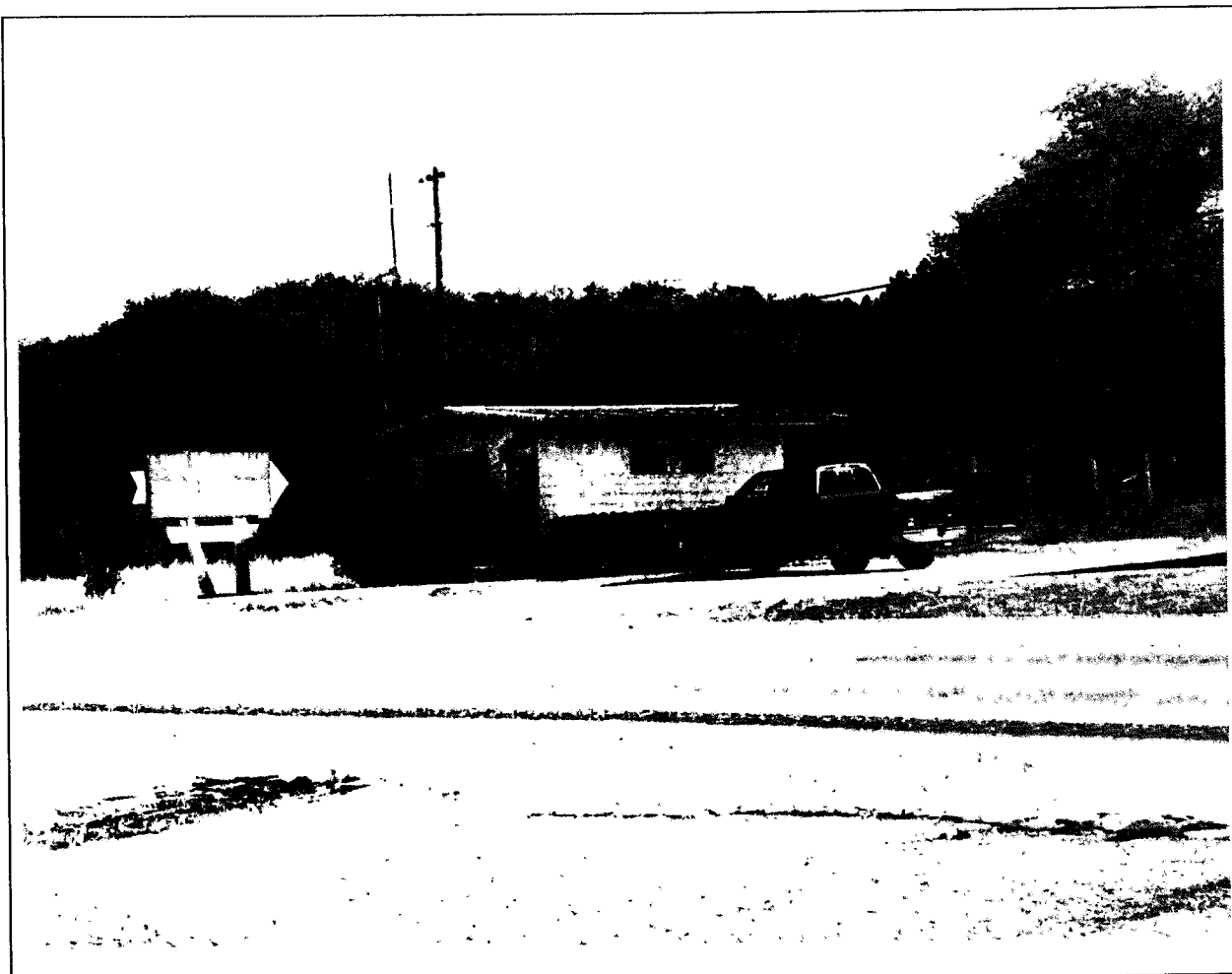
DETAIL MAP 7.2 – Western Section



Habitable Structures 141, 142 & 143

at 500 ft. N from ROW Centerline

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Habitable Structure 144 at 500 ft. N from ROW Centerline

DSCN0151-1.JPG



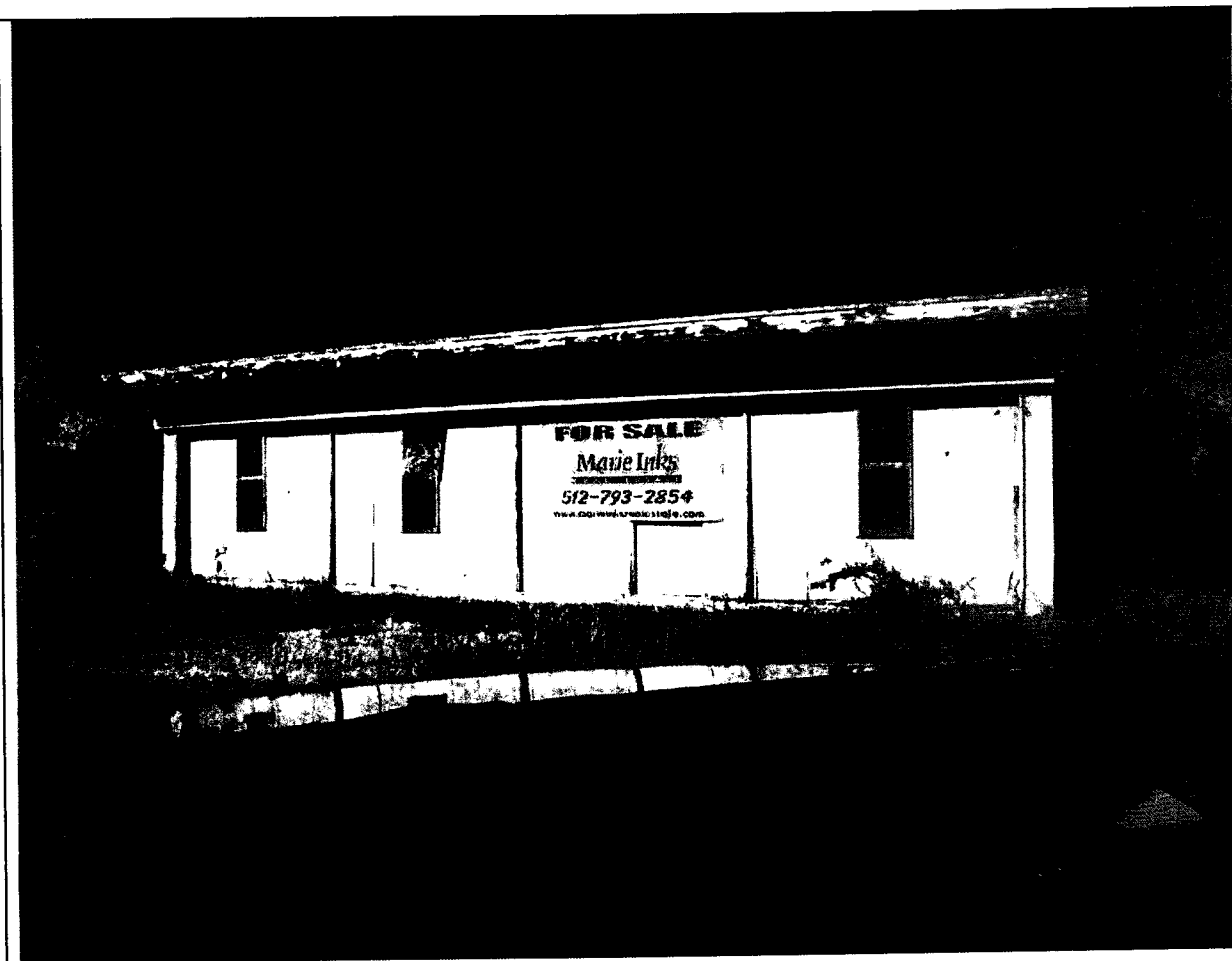
Habitable Structures 145 & 146

DSCN0143-1.JPG



Habitable Structure 147 at 95 ft. N from ROW Centerline

DSCN0160-1.JPG



Habitable Structure 148 at 320 ft. N from ROW Centerline

DSCN0156-1.JPG