

LINCOLN CITY/LANCASTER COUNTY PLANNING STAFF REPORT

for June 20, 2007 PLANNING COMMISSION MEETING

- P.A.S.:** County Special Permit #143A
- PROPOSAL:** To allow extension of existing 180' tall tower to 225' for wireless facilities.
- LOCATION:** Approximately one-quarter of a mile south of the intersection of Southwest 86th Street and West Roca Road (Hwy 33).
- LAND AREA:** An approximately 9,900 square foot (90' X 110') leased compound area on a 53.01 acre tract of land.
- WAIVER:** To Fall Zone from 112.5' to 100'.
- CONCLUSION:** This is an extension in height of an existing tower in order to provide better coverage. This request complies with the requirements of the Zoning Regulations and the Comprehensive Plan.

RECOMMENDATION:	Conditional Approval
Waiver to fall zone	Approval

GENERAL INFORMATION:

LEGAL DESCRIPTION: Lot 5 I.T (AKA Lot 15 I.T.) In the N ½ of the NW 1/4 of Section 23, T8N, R5E of the 6th PM., except the east 22 acres, Lancaster County, NE

EXISTING ZONING: AG Agriculture

EXISTING LAND USE: Farmland and existing 180' high cellular tower

SURROUNDING LAND USE AND ZONING:

North:	Agriculture, two farmsteads	AG
South:	Agriculture,	AG
East:	Agriculture, one house	AG
West:	Agriculture	AG

COMPREHENSIVE PLAN SPECIFICATIONS:

Page F25 - The 2025 Comprehensive Plan's Land Use Plan designates agricultural land uses in this area.
Page F126 - Wireless Telecommunications - The placement and construction of such facilities need to occur in a way that is compatible with the natural and built environment. Taller, more intensive facilities should be

located in commercial and industrial areas. Facilities in residential areas should be unobtrusive, of a scale consistent with the neighborhood setting, and sited in a way that does not detract from the enjoyment of the neighborhood by its residents.

TOPOGRAPHY: The land is gently rolling farmland in this area.

TRAFFIC ANALYSIS: The access easement to the tower site is off of Southwest 86th Street, a gravel county road adjacent to the west.

BACKGROUND: A prior Special Permit (CoSP 06060) one mile to the east, was withdrawn in order to collocate at this location. Special Permit # 143 was approved in September 1996 for a 180' cellular tower for Lincoln Telecommunications. This request is to amend that existing special permit to extend the existing 180'-tall lattice tower to a height of 225' to improve personal wireless facility performance. A review of this request based upon the adopted standards for evaluation as required in Article 10 *Personal Wireless Telecommunications Facilities* in the County Zoning Resolution follows below.

ANALYSIS:

STANDARDS FOR EVALUATION:

Conformity with Comprehensive Plan.

1. The Comprehensive Plan designates agricultural uses in this area. This request is consistent with the type of development recommended by the Land Use Plan for rural areas.

Preference of site location in accordance with Section 10.008.

2. There are three location preferences as follows:

A. Preferred Location Sites:

(1) Publicly owned sites on which personal wireless facilities can be unobtrusively located with due regard to visibility, aesthetic issues, traffic flow, public safety, health and welfare. Such sites may include locating on existing buildings, co-locating on existing towers, screened roof-top mounts, water towers, billboards, electric substations, or other camouflaged sites, but shall not include new towers.

(2) Privately owned sites with existing structures on which personal wireless facilities can be unobtrusively located with due regard to visibility, aesthetic issues, traffic flow, public safety, health and welfare. Such sites may include locating on existing buildings, co-locating on existing towers, screened rooftop mounts, water towers, billboards, electric substations, or other camouflaged sites, but shall not include new towers.

(3) Publicly owned sites in which the facility is minimally obtrusive, has a minimal impact on the surrounding area, is an appropriate distance from residential land uses, has minimal impact on residential uses, with due regard being given to the scale of the facility and the surrounding area and the impact on the location.

(4) Sites in commercially or industrially zoned districts in which the facility is minimally obtrusive, has a minimal impact on the surrounding area, is an appropriate distance from residential land uses, has minimal impact on residential uses, with due regard being given to the scale of the facility and the surrounding area and the impact on the location.

B. Limited Preference Sites, in order of priority:

- (1) Sites on other public property.
- (2) Sites on other commercially or industrially zoned property.
- (3) Screened antennas on multi-family residential structures exceeding 30' in height.
- (4) Camouflaged structures with minimal impact on residential land uses.

C. Sensitive Location Sites. Sites located in areas with residential uses, environmentally sensitive areas, Capitol View Corridors, the Capitol Environs District, entryway corridors, downtown, landmarks or landmark districts, properties listed or eligible to be listed on the National Register of Historic Places, the Airport Environs, and other sensitive areas. The applications for personal wireless facilities which are located at sensitive sites will be required to demonstrate a technical need to locate a personal wireless facility at a sensitive site and that other reasonable alternatives do not exist for the facility at a location which is not a sensitive site.

This application is considered a preferred location site, as it meets the criteria of A (2) above.

Compatibility with abutting property and land uses.

3. The proposed site is an existing tower. There are four farmsteads and an apartment complex within approximately a one-half mile radius. The nearest of these is less than one-eighth of a mile away to the north. All surrounding lands are zoned AG and used for agricultural purposes.

Adverse impacts such as visual, environmental or noise impacts.

4. The existing tower proposed to be extended is setback 231' from the property line adjacent to Southwest 86th Street and about 100' from the south lot line. The land in the area is farmed and there are few trees to screen the facility. The County Engineer recommends the tower be set back from the street a distance at least equal to the height of the tower, which is met.

The existing tower is unlighted. Lighting will now be required by FAA due to the height being over 200'. Historically the county has asked for no strobes at night, in order to limit impacts.

Availability of suitable existing structures for antenna mounting.

5. This is an extension of an existing wireless tower facility.

The purpose of the proposed tower extension is to provide improved coverage along the West Roca Road corridor between Crete and Lincoln.

Other facilities in the area are two-300' towers and a grain elevator located between 5-6 miles to the east.

Scale of facility in relation to surrounding land uses.

6. Compatibility of scale is partially provided by the amount of separation between the proposed tower and surrounding uses, and acts as a mitigating factor in the siting of the tower. Due to the proximity of the tower to Southwest 86th Street, it is a dominant feature to the traveling public. As noted previously, the County Engineer recommends the tower be set back a distance at least equal to the height of tower to prevent it from blocking the road should the tower collapse.

Impact on views/vistas and impact on landmark structures/districts, historically significant structures/districts, architecturally significant structures, landmark vistas or scenery and view corridors from visually obtrusive antennas and back-up equipment.

7. There are no significant impacts noted in this area.

Color and finish.

8. The existing tower has a galvanized finish. Because the tower is over 200' in height FAA approved lighting is required. This can be either be aviation orange and white paint or daytime white strobes and night-time red blinking lights. Strobes by day and red blinking by night with a galvanized metal tower is the staff preference.

Ability to collocate.

9. This does and will accommodate collocation.

Screening potential of existing vegetation, structures and topographic features, and screening potential of proposed facilities, ground level equipment, buildings and tower base.

10. As noted previously, there is little vegetation in the area to reduce the visual impact of the tower. No additional screening is proposed. The County has not required screening for towers surrounded by farm fields, nor did it on the existing permit.

Evidence of good faith efforts, and demonstration that a preferred or limited preference site was not technically, legally, or economically feasible.

11. As noted in #2 above, this is a preferred site.
12. The setback from 86th Street will met or exceed the County Engineers request for a one-to-one fall zone. The setback from the south property line must be ½ the height, or 112.5 feet. It appears to be 100', so a waiver must be approved or the tower shortened.

CONDITIONS:

Site Specific:

1. This approval permits a 225' tower for wireless facilities capable of accommodating at least three carriers consistent with the site plan submitted. A waiver of the fall zone to 100' to the south property line is granted. Strobe lighting shall be limited to daytime use only and the tower will continue to be galvanized metal.

General:

2. Before receiving building permits:
 - 2.1 The permittee shall have submitted 5 copies of the final plans showing the following revisions.
 - 2.1.1 Show the tower setback to SW 86th Street and to the south property line.
 - 2.2 The construction plans shall comply with the approved plans.
 - 2.3 A surety approved by the County Attorney in an amount sufficient to guarantee removal of the facility.

Standard:

3. The following conditions are applicable to all requests:
 - 3.1 Before use of the facility all development and construction shall have been completed in compliance with the approved plans.

- 3.2 All privately-owned improvements shall be permanently maintained by the owner.
 - 3.3 The site plan accompanying this permit shall be the basis for all interpretations of setbacks, yards, locations of buildings, location of parking and circulation elements, and similar matters.
 - 3.4 This resolution's terms, conditions, and requirements bind and obligate the permittee, its successors and assigns.
 - 3.5 The applicant shall sign and return the letter of acceptance to the County Clerk within 60 days following the approval of the special permit, provided, however, said 60-day period may be extended up to six months by administrative amendment. The clerk shall file a copy of the resolution approving the special permit and the letter of acceptance with the Register of Deeds, filling fees therefor to be paid in advance by the applicant.
4. The site plan as approved with this resolution voids and supersedes all previously approved site plans, however all resolutions approving previous permits remain in force unless specifically amended by this resolution.

Prepared by:

[Mike DeKalb, 441-6370, mdekalb@lincoln.ne.gov](mailto:mdekalb@lincoln.ne.gov)
Planner
June 6, 2007

APPLICANT: USCOC (US Cellular)
10343 Military Road
Omaha, NE, 68134
402-250-2527

CONTACT: Jenni Millsap
18013 Lillian St
Omaha, NE 68136
402-250-2527

OWNER: Allen D Sieck and Charlene K. Sieck, husband and wife
16476 SW 72nd Street
Martell, NE 68404-5132



**County Special Permit #143A
SW 86th St & W Roca Rd**

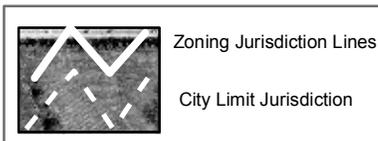
2005 aerial

W Roca Rd

Zoning:

- R-1 to R-8 Residential District
- AG Agricultural District
- AGR Agricultural Residential District
- R-C Residential Conservation District
- O-1 Office District
- O-2 Suburban Office District
- O-3 Office Park District
- R-T Residential Transition District
- B-1 Local Business District
- B-2 Planned Neighborhood Business District
- B-3 Commercial District
- B-4 Lincoln Center Business District
- B-5 Planned Regional Business District
- H-1 Interstate Commercial District
- H-2 Highway Business District
- H-3 Highway Commercial District
- H-4 General Commercial District
- I-1 Industrial District
- I-2 Industrial Park District
- I-3 Employment Center District
- P Public Use District

One Square Mile
Sec. 23 T08N R5E



ATTACHMENT A
LEGAL DESCRIPTION

NKA pt L15 NE 1/4 23-8-5

LEGAL DESCRIPTION PARENT PARCEL

Lot 5 of Irregular Tracts, located in the North half of the Northwest Quarter of Section 23, Township 8 North, Range 5 East, except the East 22 acres, of the 6th Principal Meridian, Lancaster County, Nebraska.

LEGAL DESCRIPTION LEASE SITE

That part of Lot 5 of Irregular Tracts, located in the North half of the Northwest Quarter of Section 23, Township 8 North, Range 5 East, except the East 22 acres, of the 6th Principal Meridian, Lancaster County, Nebraska, being more particularly described as follows:

Beginning at the Northwest corner of said Section 23; thence southerly S 00°00'00" E, on the West line of the Northwest Quarter of Section 23, 1169.77 feet; thence easterly N 90°00'00" E, 203.00 feet to the Point of Beginning for the described Lease Site; thence easterly N 90°00'00" E, 80.00 feet; thence southerly S 00°00'00" E, 50.00 feet; thence westerly S 90°00'00" W, 80.00 feet; thence northerly N 00°00'00" W, 50.00 feet to the Point of Beginning for the described Lease Site.

Containing a total calculated area of 0.09 Acres, more or less.

SWR

**County Special Permit #143A
SW 86th St & W Roca Rd**

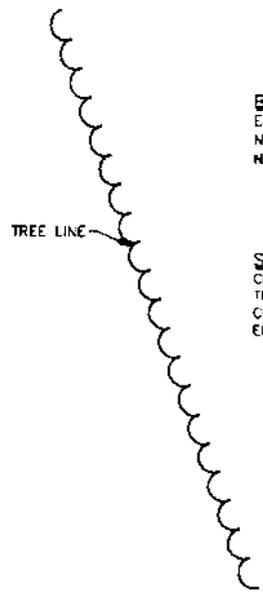
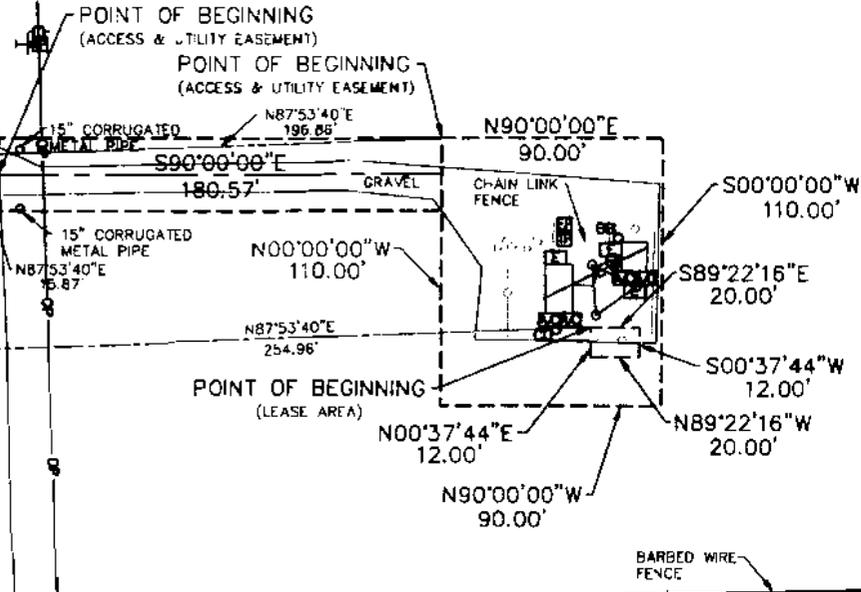
SITE SURVEY
 PROPERTY OWNER: ALLEN D. SIECK & CHARLENE K. SIECK

County Special Permit #143A
SW 86th St & W Roca Rd

NW CORNER OF
 SEC 23, T8N, R5E

86TH STREET
 S02°06'20"E 1133.26'
 S02°06'20"E 1147.61'

S02°06'20"E 272.82'



BENCHMARK REFERENCE:
 ELEVATIONS DERIVED FROM GPS OBSERVATION
 NGS SITE NO. LG1298 "1991"
 NGS SITE NO. LG1305 "1991"

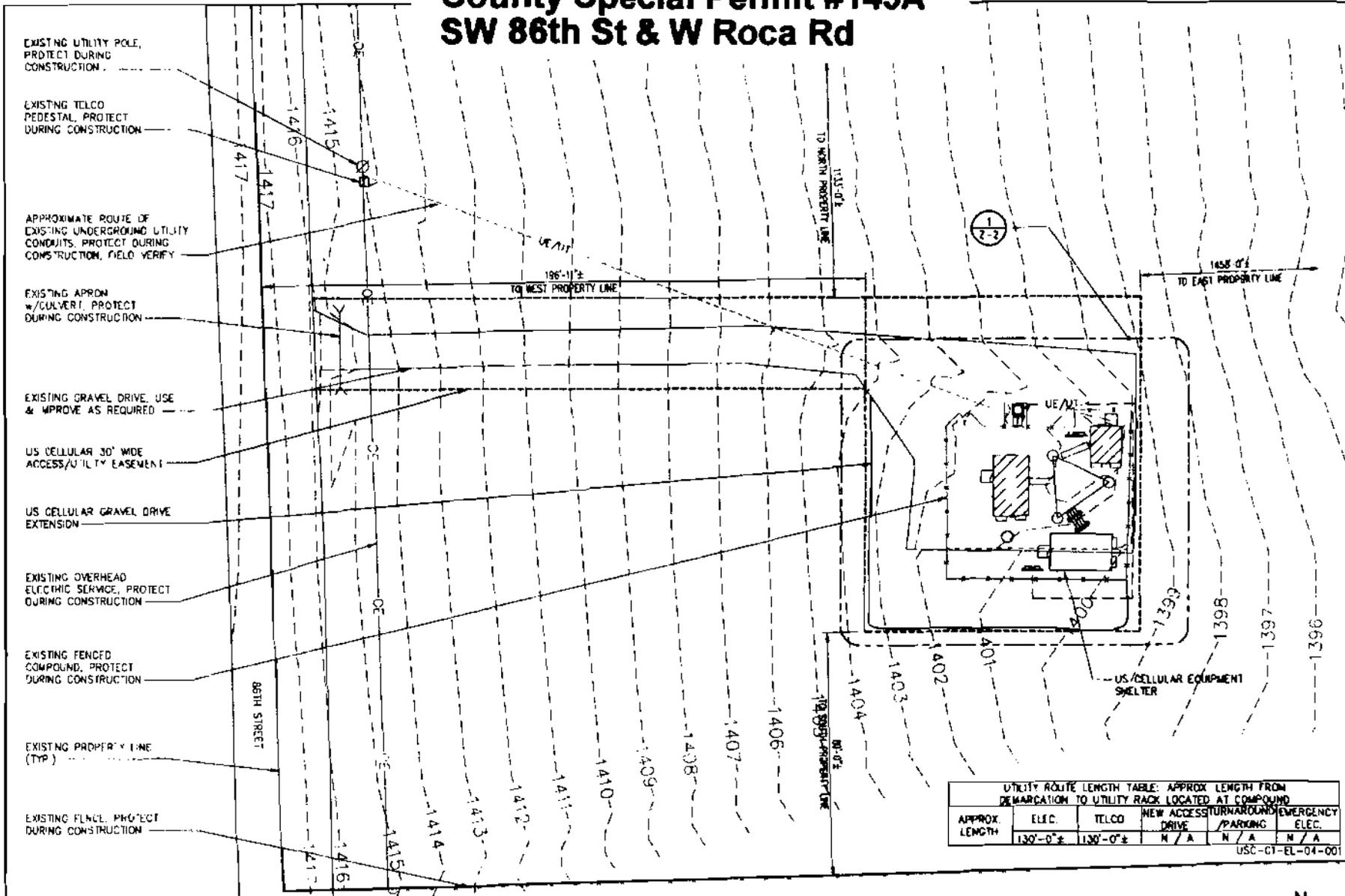
SITE BENCHMARK:
 CHISELED SQUARE FOUND IN
 THE NORTHERN MOST
 CONCRETE LEG OF TOWER
 ELEVATION = 1401.34 FEET



SITE PLAN & LEASE AREA

Z-12

County Special Permit #143A SW 86th St & W Roca Rd



EXISTING UTILITY POLE, PROTECT DURING CONSTRUCTION.

EXISTING TELCO PEDESTAL, PROTECT DURING CONSTRUCTION.

APPROXIMATE ROUTE OF EXISTING UNDERGROUND UTILITY CONDUITS, PROTECT DURING CONSTRUCTION, FIELD VERIFY.

EXISTING APRON w/ CULVERT, PROTECT DURING CONSTRUCTION.

EXISTING GRAVEL DRIVE, USE & IMPROVE AS REQUIRED.

US CELLULAR 30' WIDE ACCESS/UTILITY EASEMENT.

US CELLULAR GRAVEL DRIVE EXTENSION.

EXISTING OVERHEAD ELECTRIC SERVICE, PROTECT DURING CONSTRUCTION.

EXISTING FENCED COMPOUND, PROTECT DURING CONSTRUCTION.

EXISTING PROPERTY LINE (TYP).

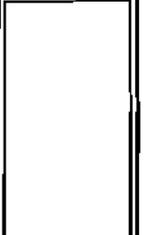
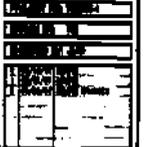
EXISTING FENCE, PROTECT DURING CONSTRUCTION.

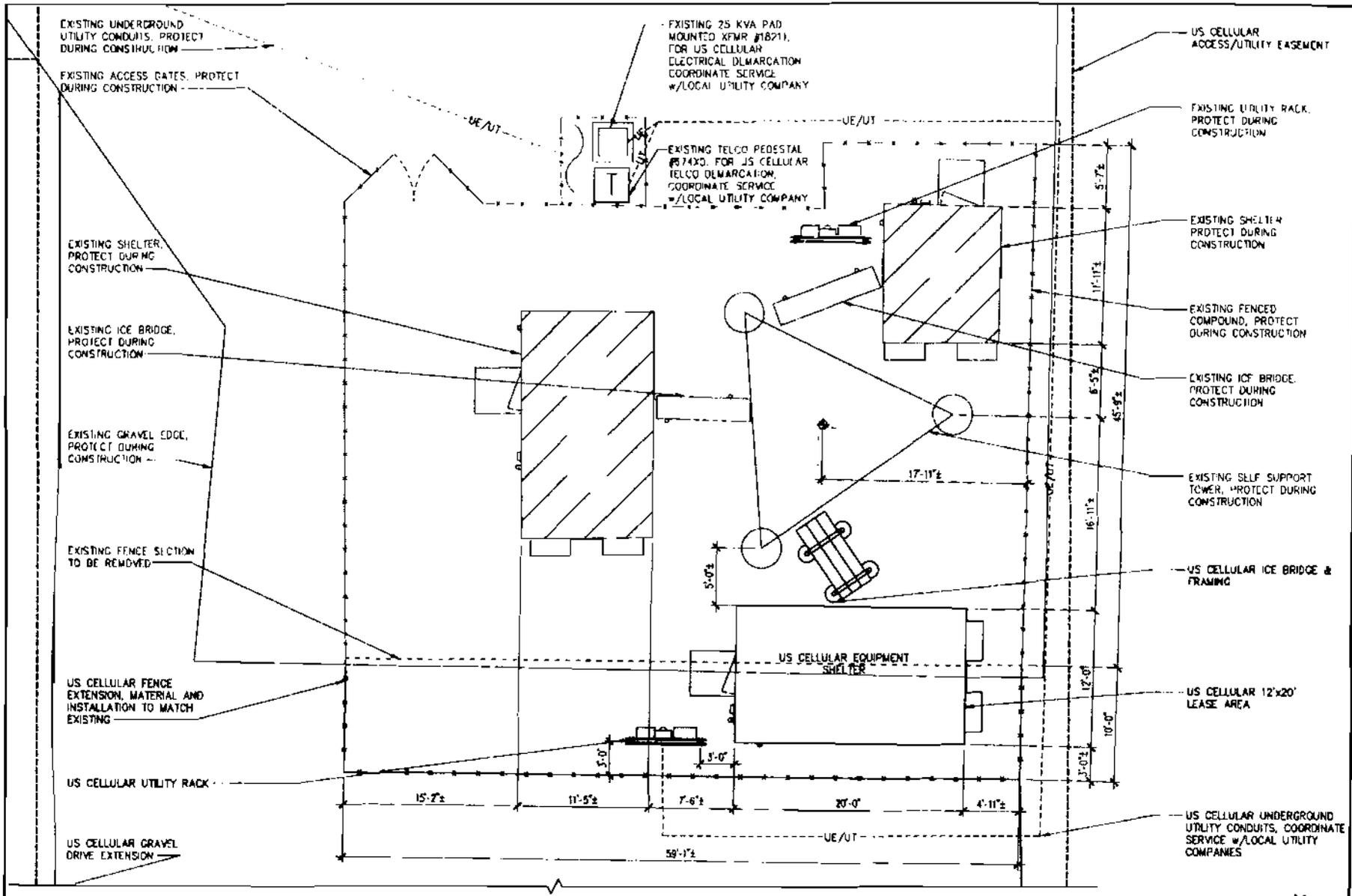
UTILITY ROUTE LENGTH TABLE: APPROX LENGTH FROM DEMARCATION TO UTILITY RACK LOCATED AT COMPOUND

APPROX LENGTH	ELEC.	TELCO	NEW ACCESS/DRIVE	TURNAROUND/PARKING	EMERGENCY ELEC.
	130'-0"±	130'-0"±	N/A	N/A	N/A

USC-C1-EL-04-001

1 PARTIAL SITE PLAN
SCALE: 1"=30'





U.S. Cellular
 10000 W. Roca Rd
 Overland Park, MO 66211

SHIVE-HATTERY
 1100 S. Main St. # 100
 Overland Park, MO 66211
 Phone: 913.241.1100
 Fax: 913.241.1101

BLUE STEM LAKE
 LICCC# 87864
 1100 S. Main St.
 Overland Park, MO 66211
 913.241.1100

COMPOUND PLAN

Z-3

1 COMPOUND PLAN
 SCALE: 1/8"=1'-0"

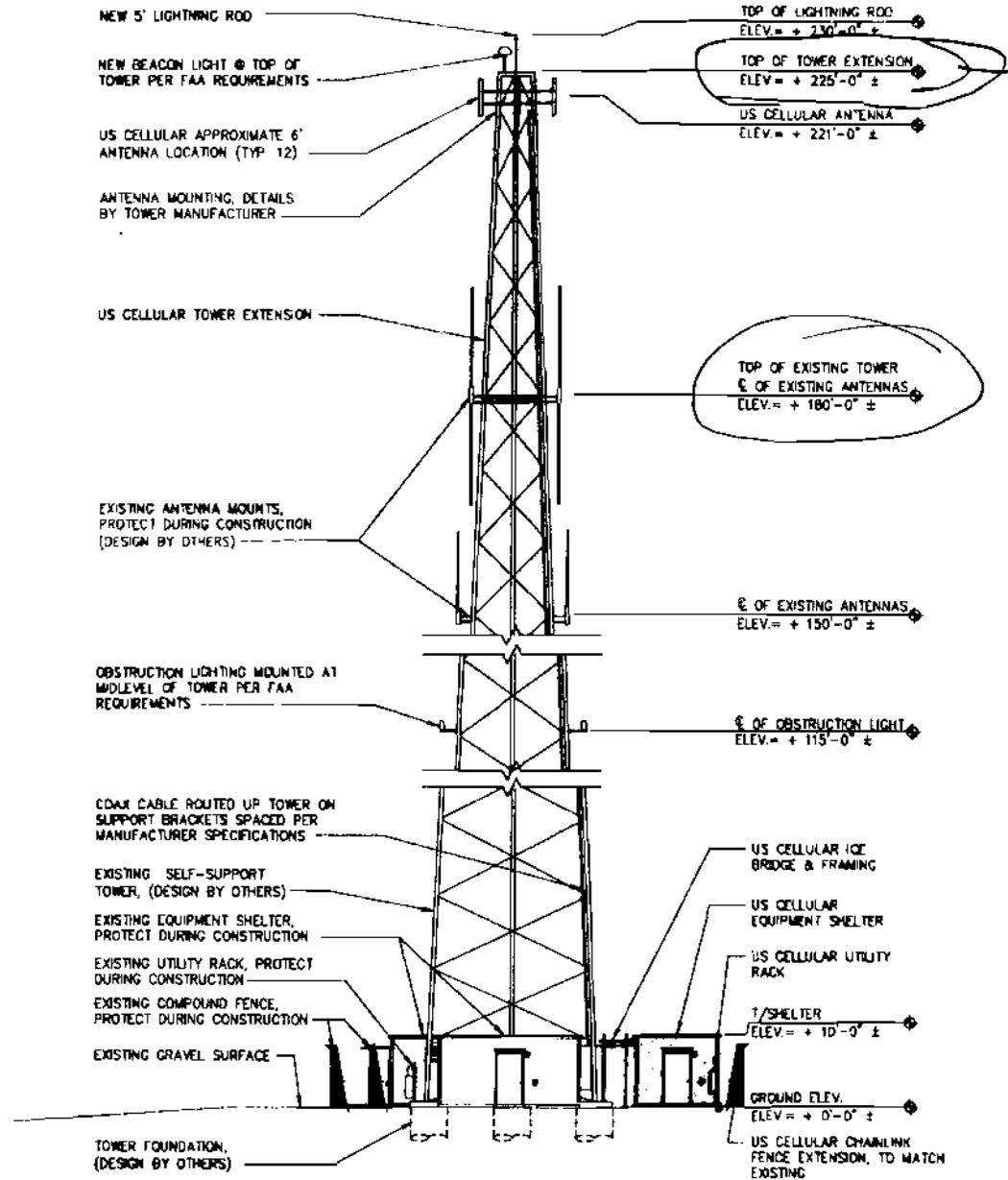


County Special Permit #143A
SW 86th St & W Roca Rd

GENERAL NOTES:

USC-01-NO-01-002

1. ELEVATION IS FOR REFERENCE PURPOSE ONLY. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. CONTRACTOR SHALL PERFORM WORK DONE TO OR ON EXISTING STRUCTURE IN ACCORDANCE WITH OWNER PROVIDED STRUCTURAL ANALYSIS SEPARATE FROM SHIVE-HATTERY ENGINEERED DOCUMENTS.
3. TOP OF ANTENNA WILL NOT EXTEND BEYOND TOP OF LIGHTNING ROD.
4. LIGHTING TO BE ADDED PER FAA REQUIREMENTS, MED-DUAL LIGHTING, FLASH 324 E1 LIGHTING SYSTEM.



1 TOWER ELEVATION
SCALE: 1/8"=1'-0"

U.S. Cellular
1000 UNIVERSITY ROAD
 OMAHA, NE 68102

SHIVE-HATTERY
ENGINEERS & ARCHITECTS
 1000 UNIVERSITY ROAD
 OMAHA, NE 68102
 PHONE: 402-442-1111
 FAX: 402-442-1112

BLUE STEM LAKE
 UNCCO 87854
1000 UNIVERSITY ROAD
 OMAHA, NE 68102
 PHONE: 402-442-1111
 FAX: 402-442-1112

SHIVE-HATTERY
 ENGINEERS & ARCHITECTS

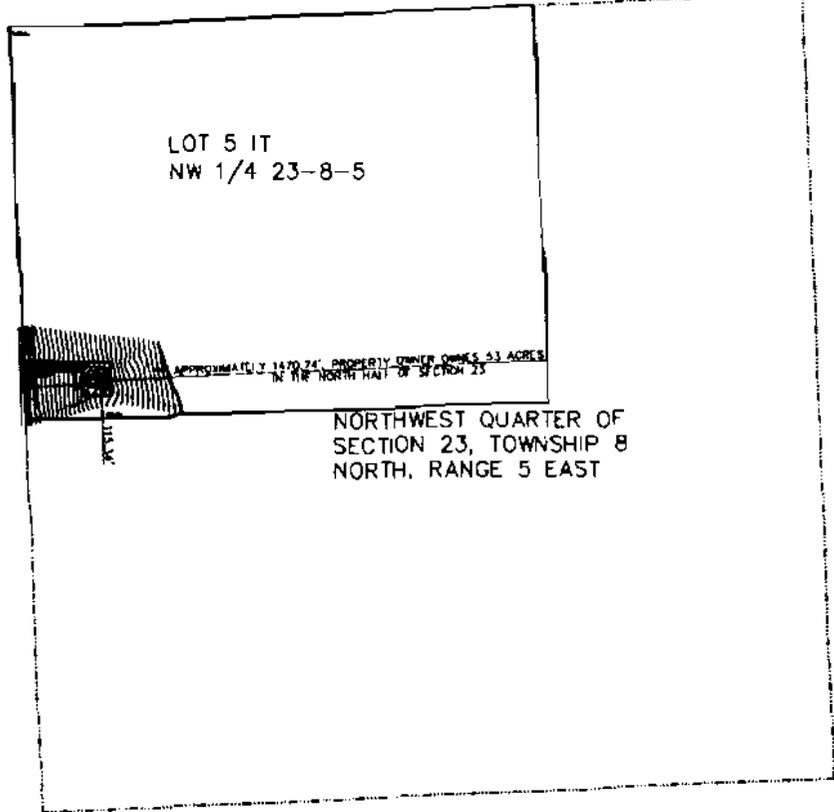
SHIVE-HATTERY
 ENGINEERS & ARCHITECTS

Z-4

County Special Permit #143A
SW 86th St & W Roca Rd

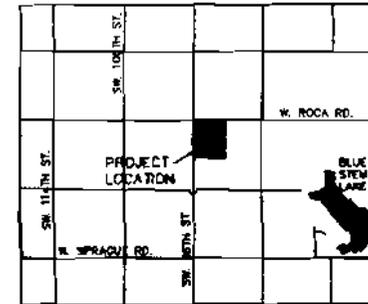
SITE SURVEY

PROPERTY OWNER: ALLEN D. SIECK & CHARLENE K. SIECK



TN=TRUE NORTH
MN=MAGNETIC NORTH

(MAGNETIC DECLINATION TAKEN FROM NATIONAL GEODETIC SURVEY WEB SITE FOR THIS AREA, 1/08/2006)



VICINITY MAP
NOT TO SCALE

GEOGRAPHIC COORDINATES:

LATITUDE: 40°39' 02.117" (NAD83)
LONGITUDE: 96°50' 14.662" (NAD83)
SITE ELEVATION: 1400.7 FEET (NAVD88)

GENERAL NOTES:

THIS PARCEL IS ZONED "AG" AGRICULTURAL DISTRICT PER THE LANCASTER COUNTY, NEBRASKA ZONING REGULATIONS.

BUILDING SETBACKS: FRONT = 50' FROM STREET SIDE, REAR = 100', SIDE = 60'.

THIS PARCEL IS LOCATED WITHIN FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN, ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 310134 0415 E WITH AN EFFECTIVE DATE OF SEPTEMBER 21, 2001.

A FULL BOUNDARY SURVEY WAS NOT PERFORMED ON THE PARENT PARCEL SHOWN ON THIS SHEET. ONLY MONUMENTS SHOWN AS "FOUND" WERE USED TO DESCRIBE THE EASEMENTS AND LEASE AREA.

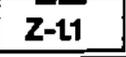
THIS SURVEY WAS PREPARED WITHOUT THE AID OF A TITLE COMMITMENT. REFER TO CURRENT TITLE COMMITMENT, DEED AND LOCAL CODES FOR ANY EASEMENTS, BUILDING SETBACKS AND OTHER RESTRICTIONS NOT SHOWN HEREON.

UTILITY NOTE:

THE LOCATIONS OF UTILITY MAINS, STRUCTURES, AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES, AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC., AND NOT SHOWN ON THIS DRAWING.

LEGAL DESCRIPTION: (PARENT PARCEL)

THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 23, TOWNSHIP 8 NORTH, RANGE 5 EAST OF THE 6TH P.M., LANCASTER COUNTY, NEBRASKA (NOW KNOWN AS LOT 5 OF IRREGULAR TRACTS)



**County Special Permit #143A
SW 86th St & W Roca Rd**

Lighting

The FAA that Alltel has requires Med -Dual lighting.

ATC uses Flash Technology which has designed their lighting system to minimize ground scatter and the Flash 324 E1 Lighting System is design to focus the light pattern on the horizon so it can easily be observed by pilots. Unfortunately, the FAA has strict guidelines and the lighting cannot have any sort of shielding.

Blue Stem Lake:

**County Special Permit #143A
SW 86th St & W Roca Rd**

Objective:

Cover Hwy 33 from US 77 west to Crete. This site will tie the existing Lincoln sites to the 800MHz existing Crete site.

Candidates:

- 1) Existing American Tower site
 - a. NAD 83 Coordinates – 40-39-02.01, 96-50-14.0
 - b. Height – 180 foot Self Support with 130 feet available

Discussion:

The Blue Stem Lake site is needed to provide coverage to Hwy 33. U.S. Cellular® has received a large amount of complaints from those who commute between Crete and Lincoln. An existing American Tower site just NW of the proposed location was analyzed and it was determined that it could not provide the needed coverage for this site at the current height.

A propagation map is provided showing the existing coverage in this area. U.S. Cellular® plans to co-locate on the existing Hickman tower along US 77; the coverage provided from this proposed co-location is shown on the existing coverage plot.

Propagation maps are also included for the following heights at the American Tower location:

- 130 feet
 - This is the level currently available on the American Tower without extending the height.

- At this level, we see many white areas on the map which correspond to areas with insufficient coverage to place or receive a mobile phone call.
- 210 feet
 - A propagation map at this level is provided to show that holes still exist along Hwy 33.
- 225 feet
 - This map shows the predicted coverage from the proposed extension to the American Tower site.
 - All holes are filled in providing continuous coverage along Hwy 33 from US 77 to Crete.

Indoor vs Outdoor Coverage:

The signals between cell towers and mobile phones are affected by a multitude of factors. Included in those factors is whether the mobile phone user is inside a structure or outside in the open. If a mobile phone user is indoors, the signal to and from the tower is reduced in strength by the walls of the structure. Because of this, indoor coverage is much less than if the user were outdoors. These levels are reflected on the provided plots as green (indoor) and purple (outdoor).

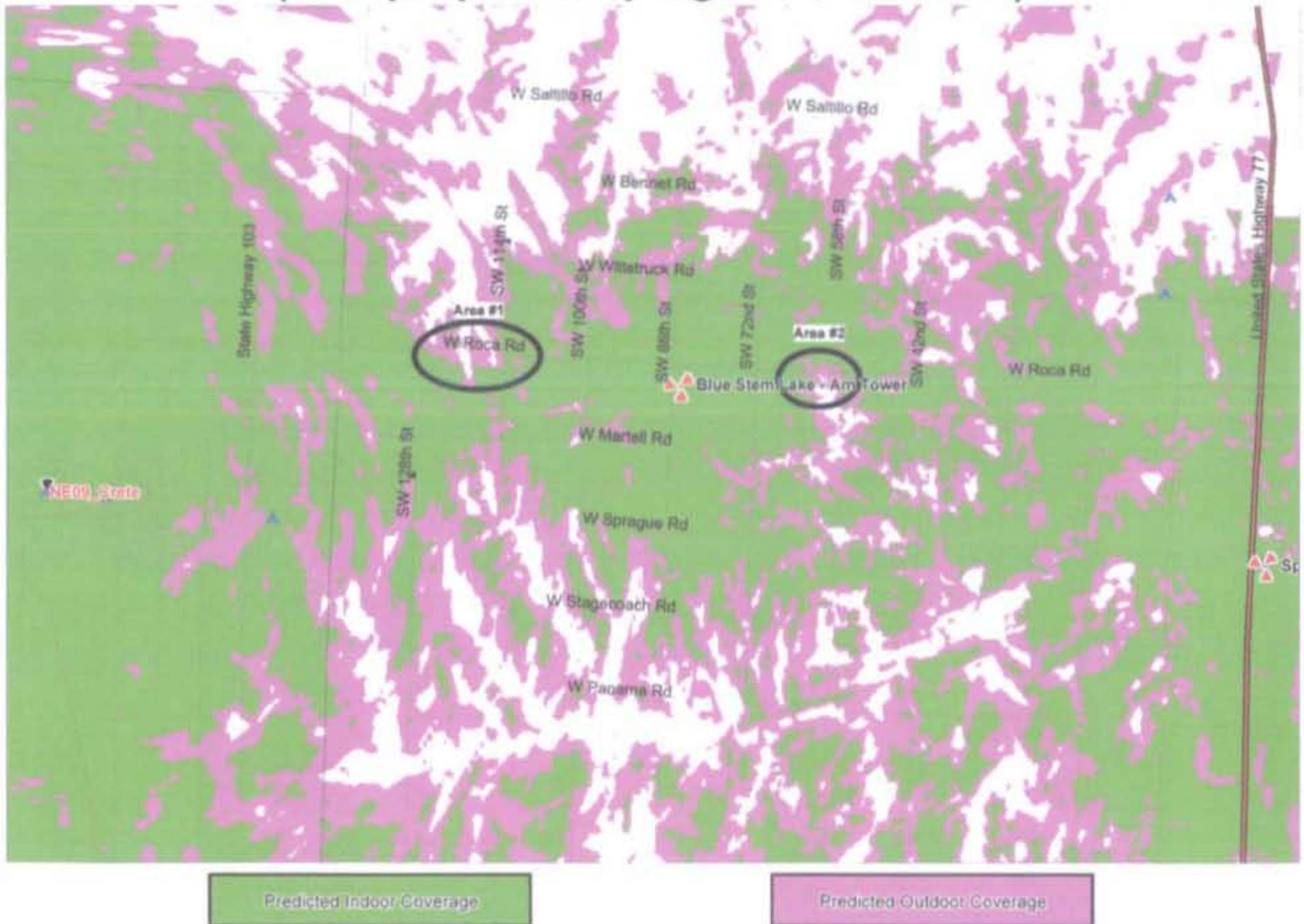
Blue Stem Lake - Existing Coverage (with proposed Sprague Co-location)



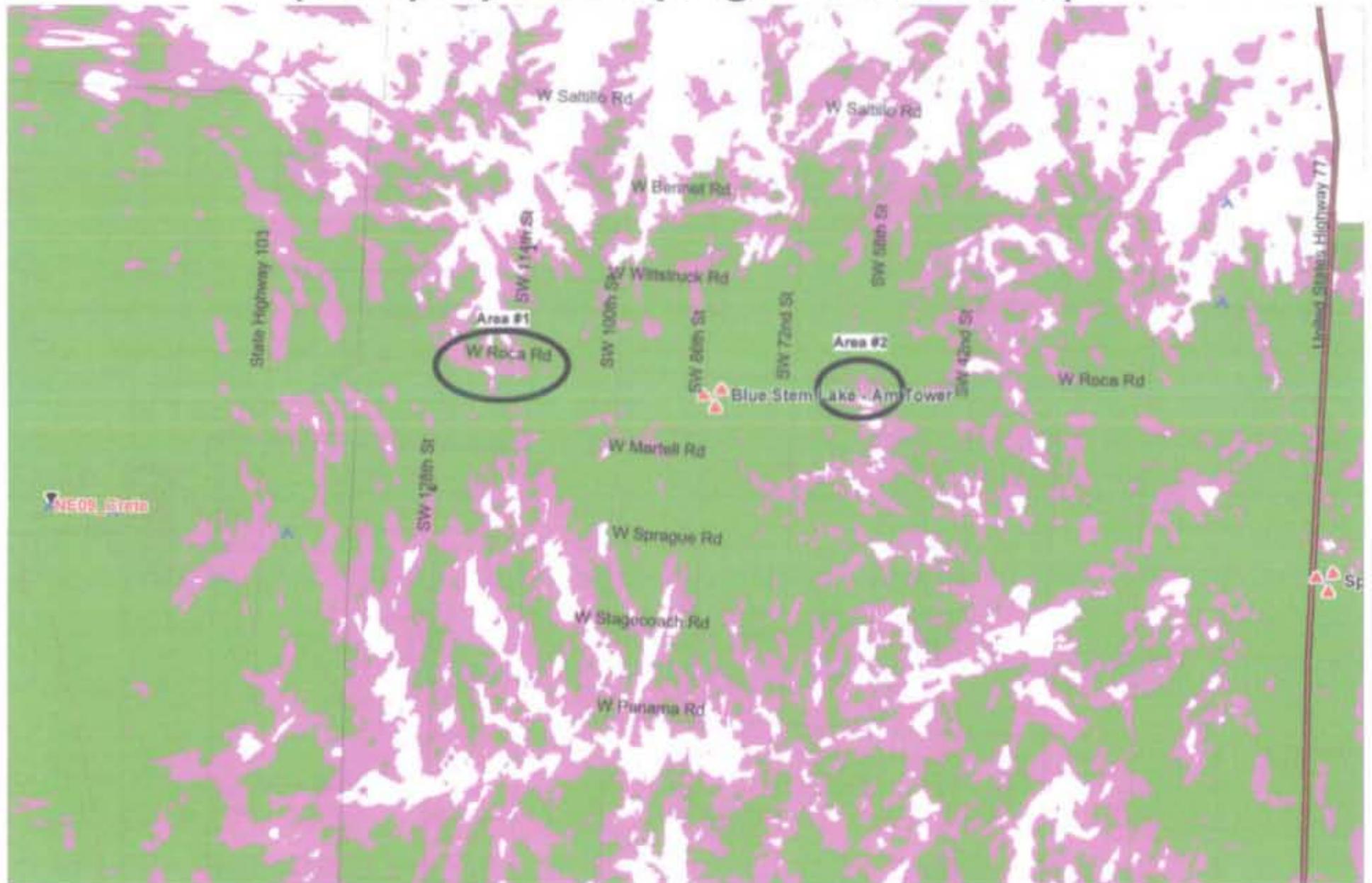
Blue Stem Lake - Proposed Coverage at 130 feet (with proposed Sprague Co-location)



Blue Stem Lake - Proposed Coverage at 210 feet (with proposed Sprague Co-location)



Blue Stem Lake - Proposed Coverage at 225 feet (with proposed Sprague Co-location)



Predicted Indoor Coverage

Predicted Outdoor Coverage