



**NEPA ENVIRONMENTAL SUMMARY REPORT
AND CHECKLIST**

**Pyramid Network Services, LLC
Motorola MARC RAMBIS Project
Harrisonville Site
19108 East 231st Street
Harrisonville, Missouri 64701
ATC Project Number 17.29788.0009 (Task 17001)**



Prepared for:

Mr. T.J. Sauthoff
Pyramid Network Services, LLC
6519 Towpath Road
East Syracuse, New York 13057
(315) 701-1300

Prepared by:

ATC Associates Inc.
8246 Marshall Drive
Lenexa, Kansas 66214
(913) 438-2800

June 4, 2009



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June 4, 2009

Mr. T.J. Sauthoff
Pyramid Network Services, LLC
6519 Towpath Road
East Syracuse, New York 13057

**Re: NEPA Environmental Summary Report and Checklist
Pyramid Network Services, LLC
Motorola MARC RAMBIS Project
Harrisonville Site – 19108 East 231st Street
Harrisonville, Missouri 64701
ATC Project Number 17.29788.0009 (Task 17001)**

Dear Mr. Sauthoff:

ATC Associates Inc. (ATC) has completed an environmental screening of the Federal Communications Commission (FCC) special interest items as outlined in Title 47 of the Code of Federal Regulations (47 CFR) Section 1.1307 (a) (1) through (8), for Pyramid Network Services, LLC (Pyramid) site designated as **Harrisonville Site**, located at 19108 East 231st Street, Harrisonville, Cass County, Missouri (the “site”). Pyramid will be performing the work at this site on behalf of Motorola, a wireless telecommunications carrier, for the purpose of providing wireless telecommunications service under the Mid America Regional Council (MARC) Regional Area Multi-Band Integrated System (RAMBIS) Project. The National Environmental Policy Act (NEPA) land use checklist summarizing the findings of this report is included within Appendix A.

For the purposes of this assessment, the site consists of the proposed telecommunications facility, including the proposed lease area/tower compound, access easements, and any necessary utility easements. The site parcel includes the parcel of land on which the site is located, associated parking areas and access driveways.

SITE INFORMATION

The site is located in rural Cass County and is undeveloped. A rock quarry is located to the north. To the east is undeveloped land, followed by the rock quarry. To the west is undeveloped land, followed by agricultural fields. To the south is undeveloped land, followed by 231st Street.

According to the information provided by the Cass County Assessor’s Office on-line service, the site parcel is identified as Assessor’s Parcel Number (APN) 08-04-20-000-000-002.000. The current owner of the site is Cass County. As shown on United States Geological Survey (USGS) *Peculiar Quadrangle, Missouri 7.5 Minute Series (Topographic)* map, dated 1981, the site parcel is located in Township 45 North, Range 31 West, Section 20. Based on the USGS *Peculiar Quadrangle* map, the site is located approximately 938 feet above mean sea level in an area of gentle rolling hills topography. No on-site surface water features were observed during the site visit. A Site Vicinity Map is included in Appendix B.

The site will be accessed from the south via 231st Street along an existing dirt road to be upgraded as required. An access drive will merge off the existing dirt road heading east to the compound. The proposed tower site is undeveloped land approximately 500 feet north of 231st Street. According to the plans provided by Pyramid (*Site Plan, Enlarged Site Plan, and Tower Elevation*, prepared by Infinigy Engineering, dated February 18, 2009), a 2,500 square foot fenced compound will enclose the following: the 450-foot lattice guyed tower, a 11-foot by 16-foot equipment shelter on a concrete pad, a 1,000-gallon propane aboveground storage tank (AST) on a concrete pad, a H-frame with a single meter can, and a 50 kilowatt (KW) generator on a 4-foot by 9-foot concrete pad. An 8-foot tall chain-link fence will surround the perimeter of the proposed compound area. The power and telecommunications lines will be connected to an existing transformer and an existing telecommunications line that are located southeast of the site. Selected construction drawings are included in Appendix B.

NEPA ASSESSMENT

The NEPA Land Use Checklist table and supporting documentation are attached to this letter report. In accordance with 47 CFR Section 1.1307 (a) (1) through (8), an evaluation has been made to determine whether any of the listed FCC special interest items would be significantly affected if a tower structure and/or antenna and associated equipment were constructed at the proposed site location. In the event that the site affects one of the items, the FCC requires that an Environmental Assessment (EA) be prepared regarding that particular item. ATC conducted this research by consulting with appropriate state and federal agency personnel and reviewing readily available published data.

Site selection criteria were based on the need for coverage in the area and the desire to avoid or minimize possible environmental impact (as defined in 47 CFR). Other important factors included site accessibility, construction and other logistical considerations and financial requirements. The site selection process results in one of three outcomes: (1) selected site; (2) site alternative to the selected site; and (3) no action. The “no action” alternative was not considered since it would not meet the project’s objectives. The selected site was best able to meet all of the above outlined criteria and is the preferred alternative.

(1) Wilderness Areas

ATC reviewed information from the National Wilderness Preservation System (NWPS, <http://www.wilderness.net/nwps>) in addressing the issue of officially designated wilderness areas. The NWPS is comprised of lands designated as wilderness areas by the United States Forest Service (USFS), United States Fish and Wildlife Service (USFWS), United States Bureau of Land Management (BLM), and the National Park Service (NPS).

There are currently 702 wilderness areas in the United States. Eight wilderness areas (Paddy Creek, Bell Mountain, Rock Pile Mountain, Mingo, Irish, Devils Background, Hercules-Glades, and Piney Creek) are found in the southern part of the state of Missouri. According to the NWPS information reviewed, the site is not located in a designated wilderness area.

In addition, ATC reviewed the USGS Easton Quadrangle and the Rand McNally Atlas, 2008 Edition. The USGS Easton Quadrangle did not depict the site within a designated wilderness area. The Rand McNally Atlas, 2008 edition, did not indicate the presence of a designated wilderness area in the site vicinity.

Based on the information available from the NWPS, USGS Easton Quadrangle Map, and the Rand McNally Atlas, ATC has determined the site is not located within a designated wilderness area.

(2) Wildlife Preserves

ATC reviewed information from The National Wildlife Refuge system of the USFWS (<http://www.fws.gov/refuges/>) which identified nine national wildlife preserves in the State of Missouri, including the Big Muddy, Clarence Cannon, Great River, Mingo National, Ozark Cavefish, Pilot Knob, Middle Mississippi, Squaw Creek and Swan Lake, National Wildlife Refuges.

The site is located five miles north of Harrisonville in western Missouri. The nearest national wildlife preserve is the Big Muddy at Jackass Bend, located near Orrick, Missouri, approximately 50 miles north of the site. Therefore, the site is not located within or adjacent to an officially designated national or state wildlife preserve.

(3) Listed and/or Proposed Threatened or Endangered Species or Designated Critical Habitats

Section 7 of the Endangered Species Act (Act) of 1973 (16 U.S.C. §§ 1536) directs federal agencies to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of listed species or designated critical habitats. In addition, Section 7 of the Act sets out the consultation process, which is further implemented by regulation 50 CFR § 402.

The following represents an Informal Biological Assessment for the proposed activities.

ENDANGERED AND THREATENED SPECIES

In order to determine if the site is located in an area documented to have occurrences of listed and/or proposed threatened or endangered species, ATC submitted a consultative package to the USFWS and the Missouri Department of Conservation (MDC) including site maps, site photographs, and the site location on the USGS Peculiar Topographic Map:

- The consultative response from Mr. Shannon Cave, Chief of Environmental Services, Missouri Department of Conservation (MDC), dated March 5, 2009 indicated that no state listed species will be significantly affected by the project. Based on the response from the MDC, endangered or threatened species are not known to exist on or near the site and further evaluation is not warranted. A copy of the consultation response letter from the MDC is included in Appendix C.
- A response email transmission from Mr. Charles Scott, Field Supervisor, USFWS, confirming the Design Specifications Questionnaire was received by ATC on April 2, 2009 and is included in Appendix C.

Information obtained from the MDC and the USFWS is included in Appendix C. No concerns were identified during this review.

Appendix C contains a copy of the USFWS tower siting guidelines, entitled *Service Interim Guidelines For Recommendations On Communications Tower Siting, Construction, Operation, and Decommissioning*, dated September 14, 2000. As these guidelines may minimize the potential for avian collisions, the USFWS has recommended that they be implemented on existing and future telecommunication tower projects. Since migratory birds are documented to occur within the State of

Missouri, ATC has recommended that Pyramid and Motorola review and implement the USFWS tower siting guidelines when feasible.

MIGRATORY BIRDS

The USFWS has made the following recommendations that may help reduce potential bird/tower strikes:

- Collocation on other structures, self supporting structures (instead of towers requiring guy wires for support) and total tower heights under 200 feet;
- Use white flashing strobe lights as dim and brief as legally possible, and flash time intervals as long as legally possible, instead of red lights when night lighting is necessary;
- Locate new towers in urban and suburban areas whenever possible and in rural areas only if absolutely necessary, preferably on disturbed sites and not in, on, or near wetlands, hill tops, forests, prairie grasslands, and other known major migratory bird stopover sites, or feeding, nesting, or roosting routes; and
- If tower height requires guy wires, use no more than absolutely necessary to insure tower stability, and attach bird deflector devices to warn birds of the existing hazard.

The voluntary USFWS guidelines are included within Appendix C. Based on the information provided by Pyramid and Motorola, consideration has been given to the noted guidelines, and various measures have been incorporated into the project.

The Missouri Department of Conservation made the following recommendations that may help reduce potential avian collisions:

- Towers should be situated within areas of existing antennas to cluster these obstructions and reduce the cumulative impacts of these structures on migratory birds. Towers more than 199 feet should be lighted according to FAA standards. Anecdotal indications suggest that solid and beacon red lights attract night-migrating birds, disorient them, and raise the risk of avian collisions. If guy wires are necessary, the minimum number should be used to insure safety and stability of the tower. Daytime visual markers, such as bright-colored polyvinyl chloride (PVC) wraps, should be attached to the wires to prevent collisions by diurnal species.
- Towers should not be situated near wetlands or other areas birds are known to congregate. If wetlands are present at the site, the designer should contact the US Army Corps of Engineers to determine if the wetland is jurisdictional and if the project would require a Corps permit.
- The service provider should maintain a record of dead birds or bats found around the tower. If dead birds or bats are found in the immediate vicinity of the tower the information needs to be reported to the Missouri Department of Conservation, Columbia Office, on an annual basis providing the following information on tower location: dates of checks, number of dead birds and bats found, and other species (if recognizable).
- Implement general project conditions such as minimizing the removal of native upland and riparian vegetation, implementing measures to control soil erosion and protect water quality during construction, and re-vegetate all disturbed areas with similar native species.

DESIGNATED CRITICAL HABITATS

According to the USFWS, critical habitat “identifies specific areas that have the physical and biological features that are essential to the conservation of a listed species, and that may require special management considerations or protection.” ATC reviewed 50 CFR, Wildlife and Fisheries, Parts 17.94 through 17.96 and Parts 226.101 through 226.213 (dated October 1, 2006), for designated critical habitats that may exist in the vicinity of the site. The review of 50 CFR did not reveal the presence of designated critical habitats within a one mile radius of the site.

Based on the findings of this review, impacts to threatened and endangered species and designated critical habitats are not anticipated, and further evaluation of biological resources is not warranted.

(4) Historic Places. May affect districts, sites, buildings, structures, or objects, significant in American history, architecture, archeology, engineering or culture that are eligible for listing in the National Register of Historic Places

Section 106 of the National Historic Preservation Act of 1966 (NHPA, 16 U.S.C. §§ 470 *et seq.*) and its implementing regulations, “Protection of Historic Properties” (36 CFR Part 800), require federal agencies to take into account the effects of their undertakings on historic properties. Therefore, in order to determine if the site is located in an area considered to be historically and/or archaeologically significant, ATC reviewed the *National Register of Historic Places* (NRHP) and consulted with the Missouri State Historic Preservation Office (SHPO).

ATC submitted a Section 106 review package to the Missouri SHPO on April 6, 2009. A copy of the submittal package is included in Appendix D.

ATC received a response from the Missouri SHPO on April 27, 2009. Mr. Mark Miles, State Historic Preservation Officer, Missouri SHPO concurs with the recommended finding of “No Historic Properties Affected.” A copy of the response received from the Missouri SHPO is included in Appendix D.

In accordance with 36 CFR 800, ATC submitted a Cultural Resources Assessment to the Missouri SHPO on April 6, 2009. A copy of the Cultural Resources Assessment is included in Appendix D.

Mr. Miles stated in the April 27, 2009 response that he found the report to be acceptable and concurs with its conclusion that the proposed project will have no effect on historic properties as defined in 36 CFR 800.

Based on the referenced information, no further evaluation of historic places is warranted.

(5) Indian Religious Sites

Section 106 of the NHPA and its implementing regulations, “Protection of Historic Properties” (36 CFR Part 800), require consultation with Native American tribal groups regarding proposed projects and potential impacts to Native American religious sites. In order to determine which Native American tribal groups may potentially have areas of cultural interest within this area of Missouri, ATC contacted federally recognized tribal groups that may have areas of interest surrounding the site via the FCC’s Tower Construction Notification System (TCNS). Notification to 19 tribal contacts was submitted to TCNS on February 4, 2009. Four tribes responded within 30 days to the TCNS notification. A copy of the TCNS notification is included within Appendix E.

Native American tribes responding to the notification by TCNS as potentially having interests in the area of the site (Harrisonville, Missouri) were the Shawnee Tribe of Oklahoma and the Osage Nation.

ATC submitted a consultation letter and Archeological Assessment (included in Appendix E) to the Shawnee Tribe of Oklahoma on April 27, 2009. Ms. Kim Jumper, Tribal Historical Preservation Officer, Shawnee Tribe, responded on May 19, 2009 stating that the Shawnee Tribe of Oklahoma does not have an interest in the Site. A copy of this response is included in Appendix F.

ATC submitted a consultation letter, Archeological Assessment, and a copy of the Missouri SHPO response to the Osage Nation on April 27, 2009. Dr. Andrea Hunter, Tribal Historical Preservation Officer, Osage Nation, responded in a letter dated June 2, 2009 stating that the site has “No Effect” on the Osage Nation. A copy of this response is included in Appendix F.

On March 17, 2009, a follow-up consultation letter was submitted to one Native American tribal group (Cheyenne-Arapaho Tribes of Oklahoma) that did not respond within the initial 30 day notification period. The tribe failed to respond within the 10 day comment period; therefore, they were referred to the FCC for a government to government consultation on April 8, 2009. No response was received from this tribe within 20 days; therefore, it may be assumed that they have no interest in participating in pre-construction review of the proposed action. Copies of the consultation letters submitted by ATC are included within Appendix E.

Based on the findings of this review, the proposed activities are not anticipated to affect Native American cultural resources or religious sites and further evaluation of Native American cultural resources is not warranted at this time.

(6) Located in a Flood Plain (Executive Order 11988)

According to the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map, the site is located in Flood Zone X, which is defined by FEMA as “areas outside the 1-percent annual chance floodplain” (Community Number 290783, Panel Number 0159E, dated March 16, 2006).

A copy of the FEMA Flood Insurance Rate Map showing the site location is included in Appendix B.

(7) Wetlands and Other Bodies, Change in Surface Features, Deforestation and Water Diversion (See Executive Order 11990 if wetlands are on federal property)

Under the Clean Water Act (40 CFR § 230.3), wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.” Potential wetlands under the jurisdiction of the United States Army Corps of Engineers (ACOE) include waterways, lakes, streams, and natural springs.

As shown on the USGS Peculiar Quadrangle Map and the National Wetland Inventory Map, the site is not located adjacent to surface waters. The nearest surface water source to the site is an unnamed creek, located approximately 300 feet southeast of the site.

A copy of the National Wetland Inventory Map showing the site location is included in Appendix B.

During the completion of the site inspection performed by ATC, there was no evidence of potential wetlands or hydrophytic vegetation in the area of the site. According to the Environmental Data Resources, Inc. (EDR) The EDR-Radius Map with Geocheck® regulatory database report, soils at the site are classified as Summit silty clay loam. Characteristically, Summit silty clay loams are considered to be moderately well drained and have slow infiltration rates to transmit water.

ATC reviewed the USFWS *National Wetlands Inventory* map available online at the National Wetlands Inventory website (<http://wetlandsfws.er.usgs.gov>). The review of the USFWS *National Wetlands Inventory* map confirmed that wetlands are not located on the site. In addition, ATC's review of published National Wetlands Inventory data within the EDR database report indicated the site is not located on or in the vicinity of a designated wetlands area. A copy of the EDR National Wetlands Inventory map showing the site location is included in Appendix B.

Deforestation is not proposed for the project, as no trees will be required to be removed for construction. In addition, since there are no surface water bodies near the site, water diversion and impacts to surface water features are not anticipated as a result of the project.

Based on the referenced information, wetlands, surface features, deforestation and water diversion are not anticipated to represent an environmental concern for the development of the site.

(8) High Intensity White Lights

According to the information provided by Pyramid, as a standard practice, Motorola does not construct facilities requiring high intensity white lights. If the FAA requires such, Motorola will request a dual mode lighting system consisting of red lights for night and medium intensity white lights for daylight and twilight. According to Pyramid, high intensity white lights will not be used for towers less than 500 feet in height.

According to the site plans provided by Pyramid, high intensity white lights will not be used for the site development.

(9) Radio Frequency Radiation

The FCC requires that certain communications services and devices perform environmental evaluation to assess compliance with radio frequency (RF) radiation exposure limits. Motorola confirms that the tower and all associated antennas will not cause human exposure to levels of RF emissions in excess of FCC-adopted guidelines (47 CFR § 1.1307b) and that the tower and all associated antennas will comply with the RF exposure standards as provided within 47 CFR §§ 1.1310 and 2.1093.

Additional Environmental Evaluation

National Scenic and Historic Trails

In October 1999, the Cellular Telecommunications Industry Association, Personal Communications Industry Association, Appalachian Trail Conference, American Hiking Society, and representative

Managing and Supporting Trails Organizations (MSTOs) for the National Scenic Trails signed a resolution for the *Siting of Wireless Telecommunications Facilities Near National Scenic Trails*. This resolution states that if a wireless telecommunications or site management company plans a new or significantly expanded facility within one mile of a National Scenic Trail, it will notify the non-profit group that supports the trail. Therefore, in order to determine if the site is located within one mile of a National Scenic or Historic Trail, ATC reviewed available information from the NPS.

There are six National Historic Trails located in portions of the State of Missouri. The Lewis and Clark Trail is designated from Wood River, Illinois to Washington State and courses through the State of Missouri. The Oregon Trail is designated from Independence, Missouri to Oregon City, Oregon. The California Trail is designated from Independence, Missouri to California. The Pony Express Trail is designated from St. Joseph, Missouri to Sacramento, California. The Santa Fe Trail is designated from Kansas City, Missouri to Santa Fe, New Mexico. The Trail of Tears is designated from sites located in Tennessee, Alabama, Georgia, and North Carolina to Oklahoma, coursing through portions of southern Missouri.

According to the information obtained from the NPS and the information reviewed for the National Historic Trails located in Missouri, the site is not located within one mile of a National Scenic or Historic Trail.

National Wild and Scenic Rivers

The National Wild and Scenic Rivers Act of 1968 designated "that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations." According to the National Wild and Scenic Rivers System (<http://www.rivers.gov/wildriverslist.html>), "the idea behind the National System is not to halt use of a river; instead, the goal is to preserve the character of a river."

ATC reviewed the National Wild and Scenic Rivers System data on National Wild and Scenic Rivers in the State of Missouri (<http://www.rivers.gov/wildriverslist.html>). There are no designated rivers within one mile of the site.

CONCLUSIONS/RECOMMENDATIONS

Based on the review of readily available records, including published lists, files, and maps regarding FCC issues, the proposed Harrisonville Site, will not affect the FCC special interest items outlined in 47 CFR 1.1307 (a) (1) through (8). Thus, the preparation of an Environmental Assessment is not warranted at this time.

The findings of this NEPA Environmental Summary Report and Checklist are based on the project location, project type, and construction diagrams provided by Pyramid. Should the project location, project type, and/or construction diagrams be altered, re-submittal of the Section 7 and Section 106 consultation packages will be required.

We appreciate the opportunity to be of service to Pyramid for this project and look forward to working with you on future projects. If you have any questions about information in this report, please contact the undersigned in the ATC Lenexa, Kansas office at (913) 438-2800.

Sincerely,

ATC ASSOCIATES INC.



David Owens
Project Manager



Ed Creaden
Branch Manager

Attachments:

- | | |
|-------------------|---|
| Appendix A | NEPA Land Use Checklist |
| Appendix B | Site Vicinity Map, Site Plans, Federal Emergency Management Agency Flood Insurance Rate Map, and USFWS National Wetlands Inventory Map. |
| Appendix C | Information Obtained from the State Wildlife Agency and the United States Fish and Wildlife Service, Including the United States Fish and Wildlife Service Tower Siting Guidelines. |
| Appendix D | Section 106 State Historical Preservation Office (SHPO) Documentation |
| Appendix E | Native American Tribal Consultation Letters, TCNS Notification Completed by ATC Associates Inc. and Cultural Resource Survey |
| Appendix F | Response Received from Native American Tribal Groups. |

Appendix A

NEPA Land Use Checklist



Environmental, Geotechnical and Materials Professionals

NEPA LAND USE CHECKLIST

Prepared for Pyramid Network Services, LLC

Site #: NA	Site Name: Harrisonville	Site Address: 19108 East 231 st Street Harrisonville, Missouri 64705		
Coordinates (NAD 83): N Lat: 38° 42' 4.19" W Lon: 94° 22' 46.01"	Expert Federal / State Jurisdictional Agencies	Summarize any preliminary finding of positive effects	Check one box	
FCC Category			YES	NO
1. Will the facility be located in an officially designated wilderness area?	National Park Service, U.S. Forest Service, Bureau of Land Management, National Wilderness Preservation System			X
2. Will the facility be located in an officially designated wildlife preserve	U.S. Dept. of Interior—Fish & Wildlife Service (USFWS), National Wildlife Refuge System			X
3. Will the facility affect listed and proposed threatened or endangered species or designated critical habitat?	United States Fish and Wildlife Service, State Wildlife Agency			X
4. Will the facility affect districts, sites, buildings, structures or objects listed, or eligible for listing, in the National Register of Historic Places?	State Historic Preservation Office			X
5. Will the facility affect Indian Religious sites?	Native American Tribal Groups			X
6. Will the facility be located in a Flood Plain?	Federal Emergency Management Agency			X
7. Will the facility construction involve significant change in surface features?	Provided by Pyramid			X
8. Will the antenna towers and/or supporting structures be equipped with High Intensity White Lights?	Provided by Pyramid			X
9. Will the facility result in human exposure to radiation in excess of the applicable safety standards?	Provided by Pyramid			X
Additional Considerations				
10. Will the facility be located within one mile of a National Scenic or Historic Trail?	National Park Service			X
11. Will the facility affect National Wild and Scenic Rivers?	National Wild and Scenic River System			X

The undersigned has reviewed and approved the completion of this NEPA Checklist for the above-mentioned site.

Prepared by: ATC Associates Inc., 8246 Marshall Drive, Lenexa, Kansas 66214 (913) 438-2800

Signature: _____ Title: Project Manager
 Printed Name: David Owens Date: June 4, 2009

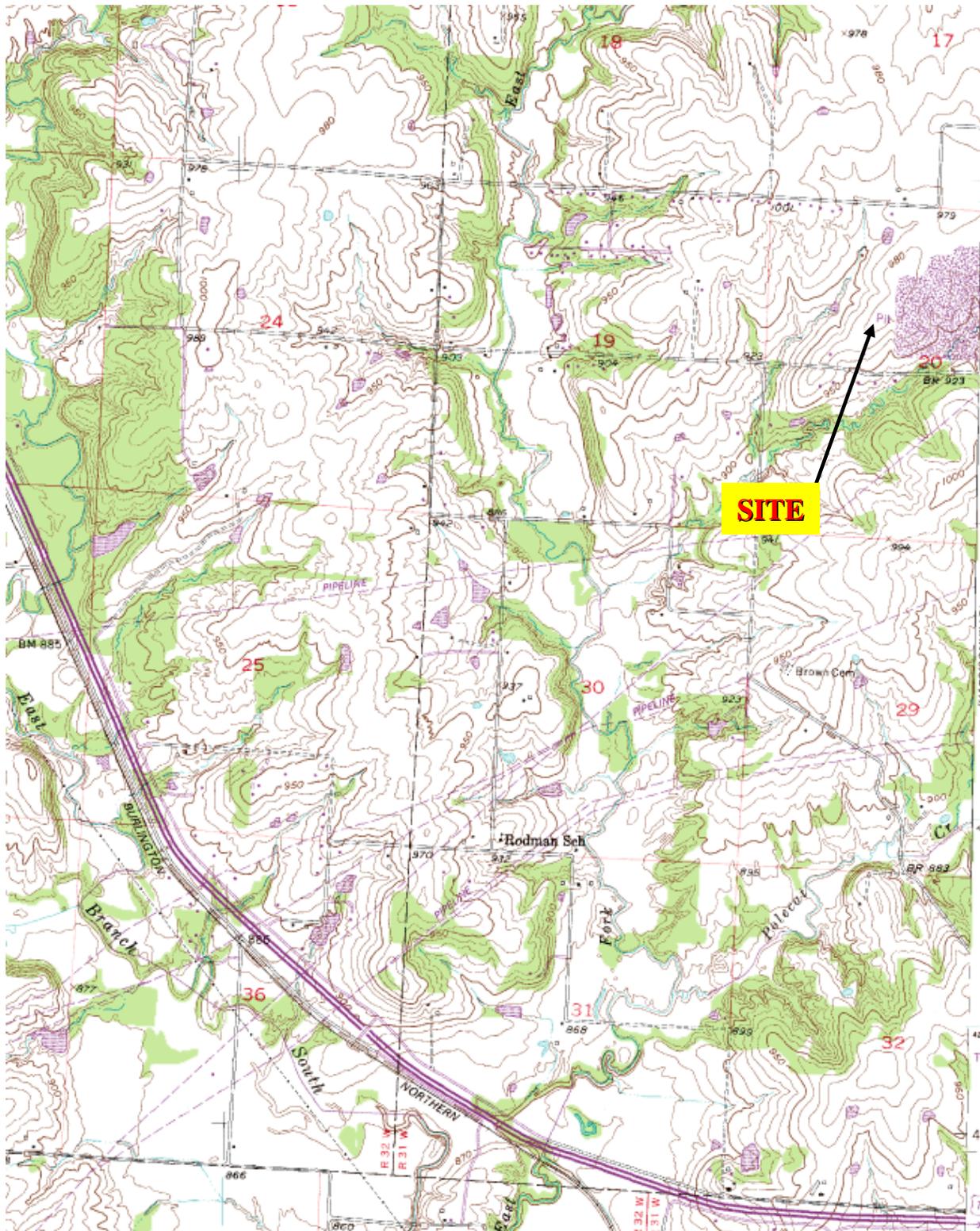
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Appendix B

**Site Vicinity Map, Federal Emergency Management Agency Flood Insurance Rate Map, USFWS
National Wetlands Inventory Map and Site Plans**

Appendix B

**Site Vicinity Map, Site Plans, Federal Emergency Management Agency Flood Insurance Rate Map,
and USFWS National Wetlands Inventory Map**



SOURCE: USGS PECULIAR QUADRANGLE, MISSOURI (7.5 MINUTE SERIES) 1954 TOPOGRAPHIC MAP – PHOTOREVISED 1981.



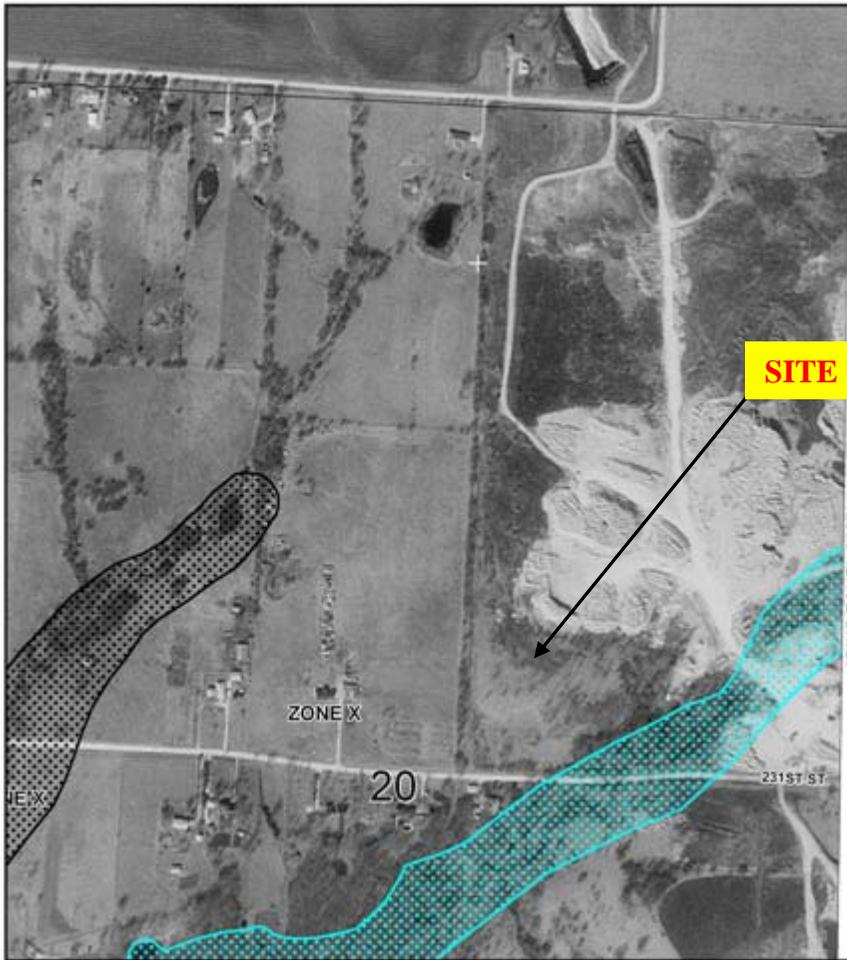
8246 Marshall Drive
 Lenexa, KS 66214
 (913) 438-2800

SITE VICINITY MAP

MOTOROLA MARC RAMBIS PROJECT
 HARRISONVILLE SITE
 19108 EAST 231 STREET
 HARRISONVILLE MISSOURI 64701

PROJECT NO.: 17.29788.0009

DESIGNED BY: ATC	SCALE: N/A	REVIEWED BY: ESC
DRAWN BY: DMO	DATE: 06/09	FILE: SITE.PPT



MAP SCALE 1" = 500'

250 0 500 1000
FEET

METERS

NFP PANEL 0159E

FIRM
FLOOD INSURANCE RATE MAP

**CASS COUNTY,
MISSOURI
AND INCORPORATED AREAS**

PANEL 159 OF 480
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
CASS COUNTY	290793	0159	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
29037C0159E

EFFECTIVE DATE
MARCH 16, 2006

Federal Emergency Management Agency

JOINS PANEL 0200

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.maf.fema.gov

SOURCE: www.fema.gov



8246 Marshall Drive
Lenexa, Kansas 66214

PROJECT NO: 09.29788.0009 (TASK 17001)

DESIGNED BY: ATC SCALE: NTS REVIEWED BY: ESC

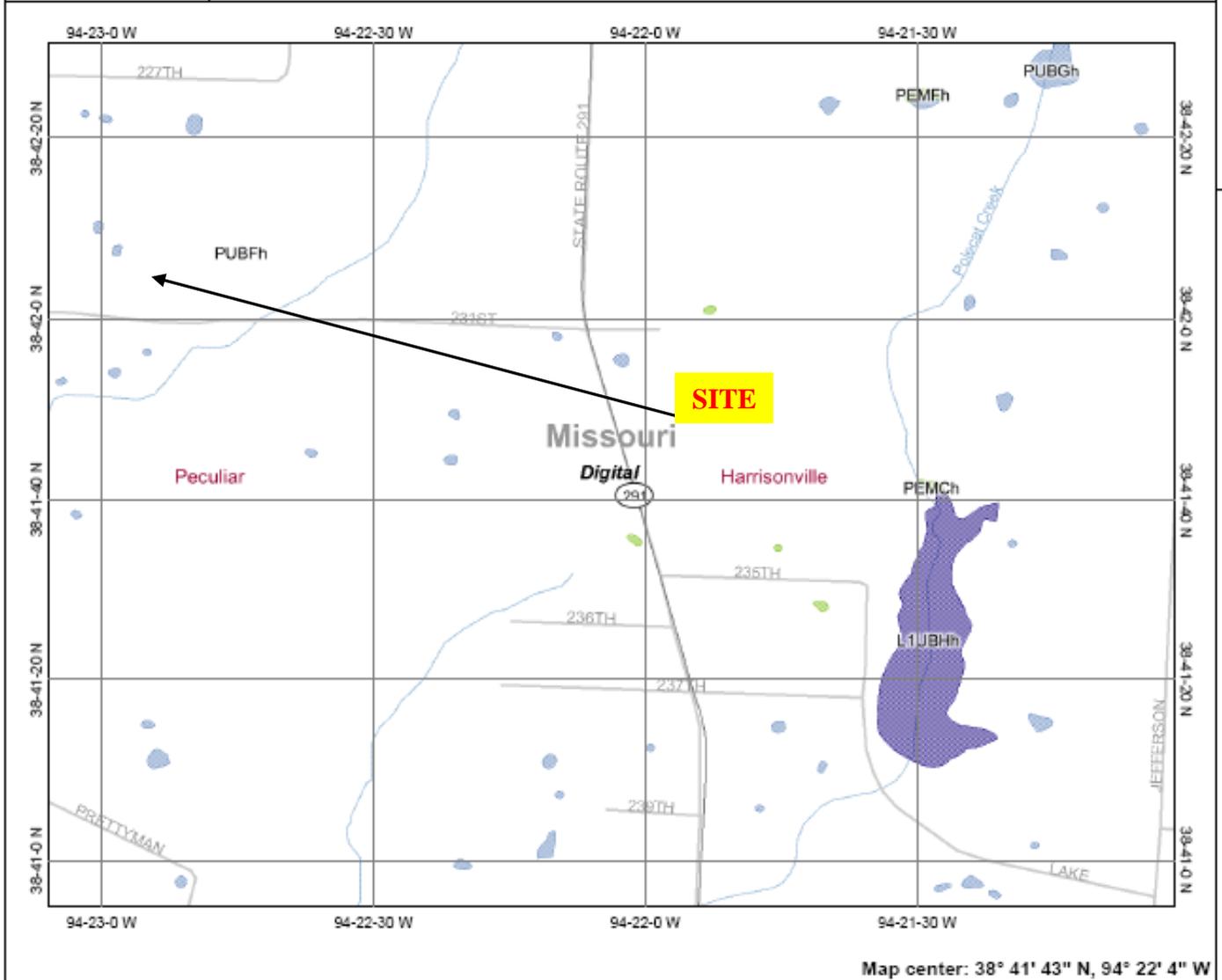
DRAWN BY: DMO DATE: 03/09 FILE: NWI

FEMA FLOOD INSURANCE RATE MAP

MOTOROLA CASS COUNTY PROJECT
HARRISONVILLE SITE
19108 EAST 231ST STREET
HARRISONVILLE, MISSOURI



Harrisonville Missouri



SOURCE: www.nwi.gov, Wetlands Digital Mapper



8246 Marshall Drive
Lenexa, Kansas 66214

PROJECT NO: 09.29788.0009 (TASK 17001)

DESIGNED BY: ATC	SCALE: NTS	REVIEWED BY: ESC
DRAWN BY: DMO	DATE: 03/09	FILE: NWI

NATIONAL WETLANDS INVENTORY MAP

ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT

MOTOROLA MARC RAMBIS PROJECT
HARRISONVILLE SITE
19108 EAST 231ST STREET
HARRISONVILLE, MISSOURI

Appendix C

Information Obtained from the State Wildlife Agency and the United States Fish and Wildlife Service, Including the United States Fish and Wildlife Service Tower Siting Guidelines



Missouri Department of Conservation Heritage Review Report

March 6, 2009; page 1 of 2

Policy Coordination Unit
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Shannon Cave
shannon.cave@mdc.mo.gov
573-522-4115X3250

Mr. David Owens, Project Manager
ATC Associates, Inc.
8246 Marshall Drive
Lenexa, KS 66214

Project type:	Telecommunication Tower
Location/Scope:	SE ¼ of NW ¼, S20, T45N, R31W
County:	Cass
Query reference:	FCC/NEPA Site Evaluation on Tower Installation-Harrisonville, MO
Query received:	March 2, 2009

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it indicates whether or not public lands and sensitive resources are known to be located close to and potentially affected by the proposed project.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Consult with the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132). STATE ENDANGERED species are listed in and protected under the Wildlife Code of Missouri (3CSR10-4.111).

Records of federal-listed or state-listed (endangered) species or critical habitats near the project site:

Heritage records identify no wildlife preserves, no designated wilderness areas or critical habitats, and no state- or federal-listed endangered species records within section 20 or any other section in T45N, R31W. Please

1. Complete the questionnaire at http://www.fws.gov/habitatconservation/TOWER_SITE_EVALUATION_FORM.pdf and file with U.S. Fish and Wildlife Service (USFWS). MDC shares FWS concerns regarding potential avian mortality that can occur with the installation and operation of towers.
2. Review FWS recommendations for tower design, accessible on line at <http://www.fws.gov/migratorybirds/issues/towers/comtow.html>. If any specifications for your tower project fall outside the "Service Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation, and Decommissioning," please provide USFWS maps of sites and information on tower plans, especially in regard to guywires and lighting. USFWS has responsibility for certain international treaty obligations relating to migratory birds that are not considered species of conservation concern due to their rarity.

Heritage records were identified at some date and at a more or less precise location. This report includes information about records near but not necessarily on the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean the project will not encounter something not recorded. On-site verification is the responsibility of the project. Incorporating information from Heritage records into plans can help reduce adverse impacts to sensitive natural resources. However, these records only provide one reference and other information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Compare biological and habitat needs of records listed to planned project activities to avoid or minimize impacts. More information may be found at www.mdc.mo.gov/nathis/endangered/ and mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx. Find contact information on the department's nearest Natural History Biologist at <http://www.mdc.mo.gov/nathis/contacts/>.

Records of unlisted species/habitats of conservation concern near the project site:

No records within section 20 or any other section in T45N, R31W.

The state tracks many species not listed as endangered, but sufficiently rare or challenged that special efforts to conserve them may be important to their survival and to avoid future listing.

Recommendations related to this project or site (not to specific heritage records):

- Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at <http://mdc.mo.gov/79>.
- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites. Especially important at this time is the zebra mussel, known in the Missouri and Mississippi Rivers and Lake of the Ozarks, but missing from many inland streams and most lakes.
 - ◆ Remove any mud, soil, trash, plants or animals before leaving any water body or work area.
 - ◆ Before leaving a project site, drain water from boats and machinery (that has operated in the water), checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
 - ◆ When possible, wash and rinse equipment thoroughly with hard spray or HOT (104° F or more) water, like that found at a do-it-yourself carwash and dry in the hot sun before using again. Please help prevent the spread of invasive species by inspecting and cleaning equipment thoroughly before moving between project sites.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Heritage records largely reflect only sites visited by specialists in the last 30 years. This means that many privately owned tracts could host remnants of species once but no longer common.

Project managers can pre-screen heritage review requests at <http://mdcgis.mdc.mo.gov/heritage/newheritage/heritage.htm>. A “Level 1 response” will result in a printable document that will make further submission to MDC or USFWS unnecessary.





Design Specifications Questionnaire for Proposed Communications Towers in Missouri



The U.S. Fish and Wildlife Service (Service) has concerns regarding potential avian mortality that could occur with the installation and operation of communications towers. Despite the well-developed visual acuity of most bird species, collisions with above-ground structures frequently occur. The problem is especially acute at tall, lighted, guyed towers, particularly at night during inclement weather, and during spring and fall songbird migrations.

The Service encourages the implementation of recommendations that minimize potential impacts to fish and wildlife resources. Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low cloud ceilings.

Please use one form for each proposed communications tower.

TOWER SITING LOCATION INFORMATION (ATTACH PERTINENT MAPS AND PHOTOGRAPHS):

County Cass USGS Quad Name Peculiar Missouri
TSR¹ T45N, R31W, Sec. 20, NW 1/4 Lat./Long. 38-42-04.19 / 94-22-46.01
Tower Footprint Including Access Roads (Sq. Ft.) 4,000 Nearest City Harrisonville, Missouri
Circle One: Urban or Rural Site Developed? YES or NO Tree Removal? YES or NO
Habitat Description _____

PLEASE CHECK ALL THAT APPLY:

1. Communications equipment will be co-located on an existing FCC licensed communication tower or other existing structure (e.g. billboard, water tower, or building mount). **If yes, describe type of structure (no further information is required):**
2. Tower height less than 200 feet above ground level (AGL) and will NOT require supporting guy wires. **If yes, complete only items 10 through 15.**
3. Tower height less than 200 feet AGL and will NOT require supporting guy wires or lighting per Federal Aviation Administration (FAA) regulations. **If yes, complete only items 10 through 15.**
4. Tower design will require guy wires for support.
Proposed number of guy wires : Three
5. Guyed tower will be equipped with daytime visual markers on the wires to prevent collisions by raptors, waterfowl, and other diurnally moving bird species.²
6. Tower design will exceed a height of 200 feet AGL and will require lights for aviation safety. **If no, complete only items 10 through 15.**
Proposed tower height: 450 Feet
7. Tower will be equipped with the **minimum amount** of pilot warning and obstruction avoidance lighting required by the FAA.
8. Tower will be equipped with only white strobe lights at night, and these will be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. **No.** It will be a dual medium intensity lighting system - white during the day; red at night.
9. Tower will NOT be equipped with solid red or pulsating (beacon) red warning lights at night. (Current research indicates that solid or pulsating (beacon) red lights attract night-migrating bird at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.)
- No.** It will be a dual medium intensity lighting system - white during the day; red at night. The neighbors do not want white strobe lights flashing at night and red is the most commonly accepted in zoning.

¹T

²For guidance on markers, see Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp, and Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp. Copies can be obtained via the Internet at <http://www.eei.org/resources/pubcat/enviro/>, or by calling 1-800/334-5453.

- 10. Tower will be sited within an existing "antenna farm" (towers in clusters).
- 11. Tower and appendant facilities will be sited, designed, and constructed to avoid or minimize habitat loss within and adjacent to the tower "footprint." (However, a larger tower footprint is preferable to the use of supporting guy wires in construction.)
- 12. Road access and fencing will be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.
- 13. Tower is designed structurally and electrically to accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (**minimum of three users for each tower structure**), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.
- 14. Security lighting for on-ground facilities and equipment will be down-shielded to keep light within the site boundaries.
- 15. Tower will be removed within 12 months of cessation of use or if determined to be obsolete.

For U.S. Fish and Wildlife Service Personnel Use Only (DO NOT WRITE IN THIS BOX)

This response is provided by the U.S. Fish and Wildlife Service under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327), the Migratory Bird Treaty Act (16 U.S.C. 703-712)³, and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

- Tower design will adequately minimize bird strikes.
- Significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site is recommended. If this is not an option, please contact this office at the number listed below.
- Tower location proposed in or near stream or wetland, relocation to an alternate site is recommended. If this is not an option, please contact this office at the number listed below.
- Trees must be removed between between October 1st and March 30th to avoid potential injury or death to roosting Indiana bats. If this is not an option, please contact this office at the number listed below.
- The U.S. Fish and Wildlife Service has determined that no federally listed species or designated critical habitat occurs within the project area; consequently, this concludes Section 7 consultation and no further review of this project is necessary.

*Pasture
no trees
removed,*

Charles M. Scott

Charles M. Scott, Field Supervisor

4/2/09

Date

RETURN THIS FORM TO:

**U.S. Fish and Wildlife Service
Ecological Services
608 East Cherry St, Room 200
Columbia, Missouri 65201
phone 573-876-1911; fax 573-876-1914**

³The Migratory Bird Treaty Act (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the Act has no provision for allowing unauthorized take, it must be recognized that some birds may be killed at structures such as communications towers even if all reasonable measures to avoid it are implemented. The Service's Division of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds.

United States Department of Interior
Fish and Wildlife Service
Washington, DC 20240

September 14, 2000

To: Regional Directors

From: Director /s/ Jamie Rappaport Clark

Subject: Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers

Construction of communications towers (including radio, television, cellular, and microwave) in the United States has been growing at an exponential rate, increasing at an estimated 6 percent to 8 percent annually. According to the Federal Communication Commission's *2000 Antenna Structure Registry*, the number of lighted towers greater than 199 feet above ground level (AGL) currently number over 45,000 and the total number of towers over 74,000. Non-compliance with the registry program is estimated at 24 percent to 38 percent, bringing the total to 92,000 to 102,000. By 2003, all television stations must be digital, adding potentially 1,000 new towers exceeding 1,000 feet AGL.

The construction of new towers creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. Communications towers are estimated to kill 4-5 million birds per year, which violates the spirit and the intent of the Migratory Bird Treaty Act and the Code of Federal Regulations at Part 50 designed to implement the MBTA. Some of the species affected are also protected under the Endangered Species Act and Bald and Golden Eagle Act.

Service personnel may become involved in the review of proposed tower sitings and/or in the evaluation of tower impacts on migratory birds through National Environmental Policy Act review; specifically, Sections 1501.6, opportunity to be a cooperating agency, and 1503.4, duty to comment on federally-licensed activities for agencies with jurisdiction by law, in this case the MBTA, or because of special expertise. Also, the National Wildlife Refuge System Improvement Act requires that any activity on Refuge lands be determined as compatible with the Refuge system mission and the Refuge purpose(s). In addition, the Service is required by the ESA to assist other Federal agencies in ensuring that any action they authorize, implement, or fund will not jeopardize the continued existence of any Federally endangered or threatened species.

A Communication Tower Working Group composed of government agencies, industry, academic researchers and NGO's has been formed to develop and implement a research protocol to determine the best ways to construct and operate towers to prevent bird strikes. Until the research study is completed, or until research efforts uncover significant new mitigation measures, all Service personnel involved in the review of proposed tower sitings and/or the evaluation of the impacts of towers on migratory birds should use the attached interim guidelines when making recommendations to all companies, license applicants, or licensees proposing new tower sitings. These guidelines were developed by

Service personnel from research conducted in several eastern, midwestern, and southern states, and have been refined through Regional review. They are based on the best information available at this time, and are the most prudent and effective measures for avoiding bird strikes at towers. We believe that they will provide significant protection for migratory birds pending completion of the Working Group's recommendations. As new information becomes available, the guidelines will be updated accordingly.

Implementation of these guidelines by the communications industry is voluntary, and our recommendations must be balanced with Federal Aviation Administration requirements and local community concerns where necessary. Field offices have discretion in the use of these guidelines on a case by case basis, and may also have additional recommendations to add which are specific to their geographic area.

Also attached is a [Tower Site Evaluation Form](#) which may prove useful in evaluating proposed towers and in streamlining the evaluation process. Copies may be provided to consultants or tower companies who regularly submit requests for consultation, as well as to those who submit individual requests that do not contain sufficient information to allow adequate evaluation. This form is for discretionary use, and may be modified as necessary.

The Migratory Bird Treaty Act (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the Act has no provision for allowing unauthorized take, it must be recognized that some birds may be killed at structures such as communications towers even if all reasonable measures to avoid it are implemented. The Service's Division of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds. While it is not possible under the Act to absolve individuals or companies from liability if they follow these recommended guidelines, the Division of Law Enforcement and Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals or companies who have made good faith efforts to avoid the take of migratory birds.

Please ensure that all field personnel involved in review of FCC licensed communications tower proposals receive copies of this memorandum. Questions regarding this issue should be directed to Dr. Benjamin Tuggle, Chief, Division of Habitat Conservation, at (703)358-2161, or Jon Andrew, Chief, Division of Migratory Bird Management, at (703)358-1714. These guidelines will be incorporated in a Director's Order and placed in the Fish and Wildlife Service Manual at a future date.

Service Interim Guidelines For Recommendations On

Communications Tower Siting, Construction, Operation, and Decommissioning

1. Any company/applicant/licensee proposing to construct a new communications tower should be strongly encouraged to collocate the communications equipment on an existing communication tower or other structure (e.g., billboard, water tower, or building mount). Depending on tower load factors, from 6 to 10 providers may collocate on an existing tower.
2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level (AGL), using construction techniques which do not require guy wires (e.g., use a lattice structure, monopole, etc.). Such towers should be unlighted if Federal Aviation Administration regulations permit.
3. If constructing multiple towers, providers should consider the cumulative impacts of all of those towers to migratory birds and threatened and endangered species as well as the impacts of each individual tower.
4. If at all possible, new towers should be sited within existing “antenna farms” (clusters of towers). Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.
5. If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.
6. Tower designs using guy wires for support which are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species. (For guidance on markers, see *Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp*, and *Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for*

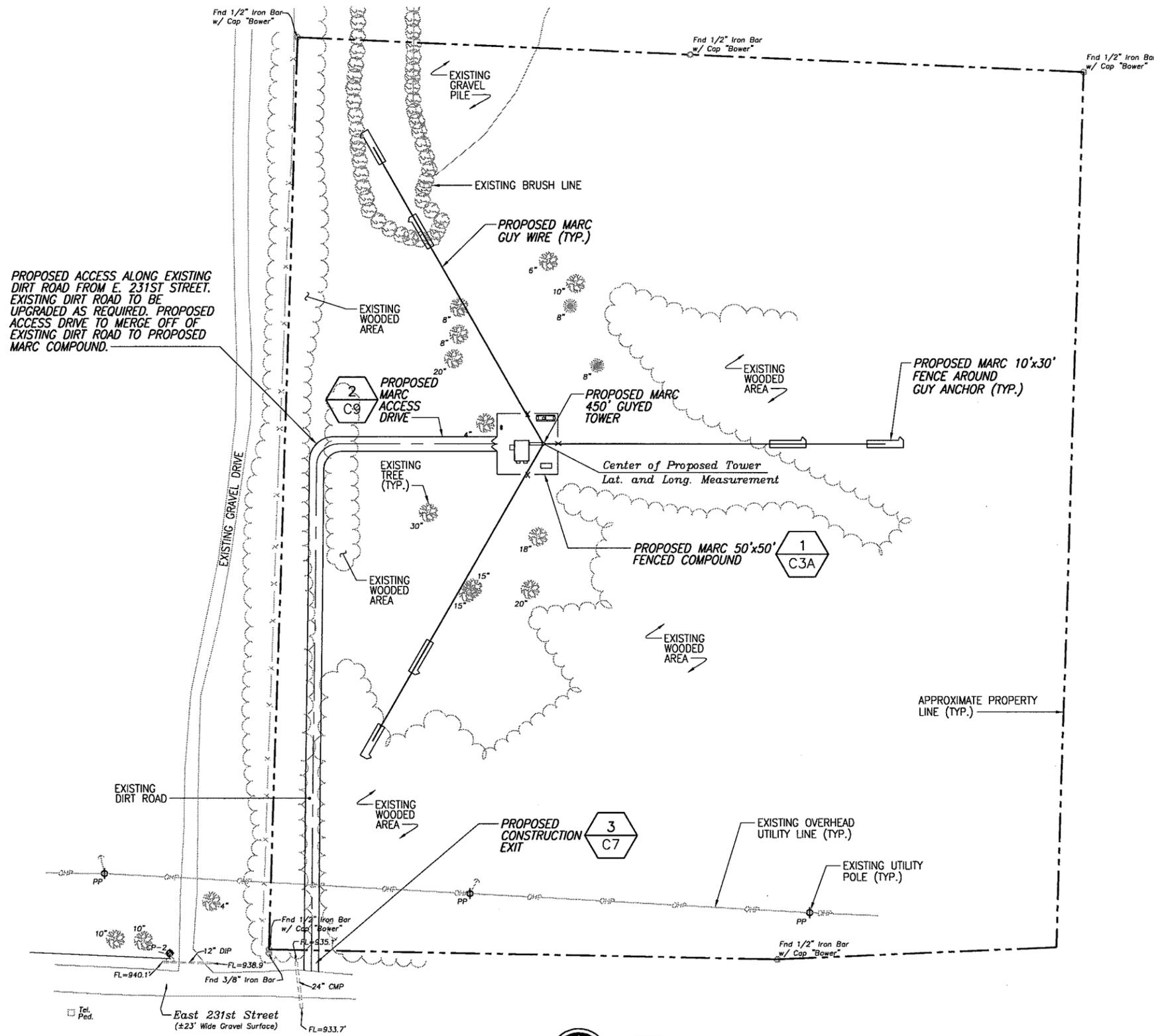
Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp. Copies can be obtained via the Internet at <http://www.eei.org/resources/pubcat/enviro/>, or by calling 1-800/334-5453).

7. Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower “footprint”. However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.
8. If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site should be recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during periods of high bird activity.
9. In order to reduce the number of towers needed in the future, providers should be encouraged to design new towers structurally and electrically to accommodate the applicant/licensee’s antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.
10. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.
11. If a tower is constructed or proposed for construction, Service personnel or researchers from the Communication Tower Working Group should be allowed access to the site to evaluate bird use, conduct dead-bird searches, to place net catchments below the towers but above the ground, and to place radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.
12. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use.

In order to obtain information on the extent to which these guidelines are being implemented, and to identify any recurring problems with their implementation which may necessitate modifications, letters provided in response to requests for evaluation of proposed towers should contain the following request:

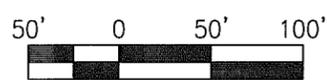
“In order to obtain information on the usefulness of these guidelines in preventing bird strikes, and to identify any recurring problems with their implementation which may necessitate modifications, please advise us of the final location and specifications of the

proposed tower, and which of the measures recommended for the protection of migratory birds were implemented. If any of the recommended measures can not be implemented, please explain why they were not feasible.”



PROPOSED ACCESS ALONG EXISTING DIRT ROAD FROM E. 231ST STREET. EXISTING DIRT ROAD TO BE UPGRADED AS REQUIRED. PROPOSED ACCESS DRIVE TO MERGE OFF OF EXISTING DIRT ROAD TO PROPOSED MARC COMPOUND.

GRAPHIC SCALE





 1 SITE PLAN
 NORTH

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	02/18/09	ISSUED FOR REVIEW	DAD	CJW	CJW

infinigy
 engineering
 2255 SEWELL MILL ROAD
 SUITE 130
 MARIETTA, GA 30062
 OFFICE #: (678) 444-4463
 FAX #: (678) 444-4472
 XXX-XXX

MARC
 Mid-America Regional Council
 Kansas City Regional Area
 Multi-Band Integrated System
 (RAMBIS)

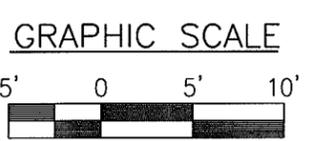
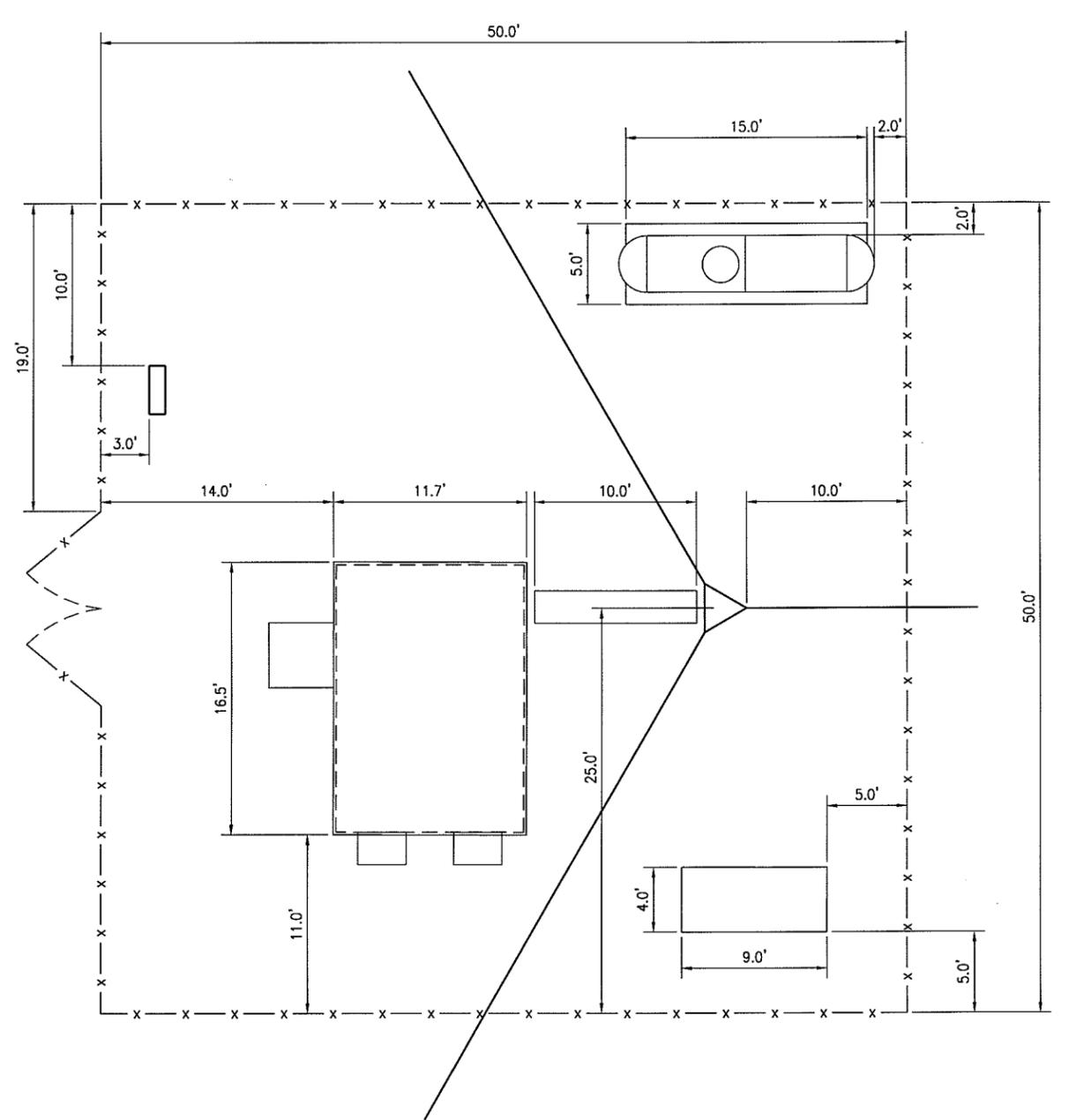
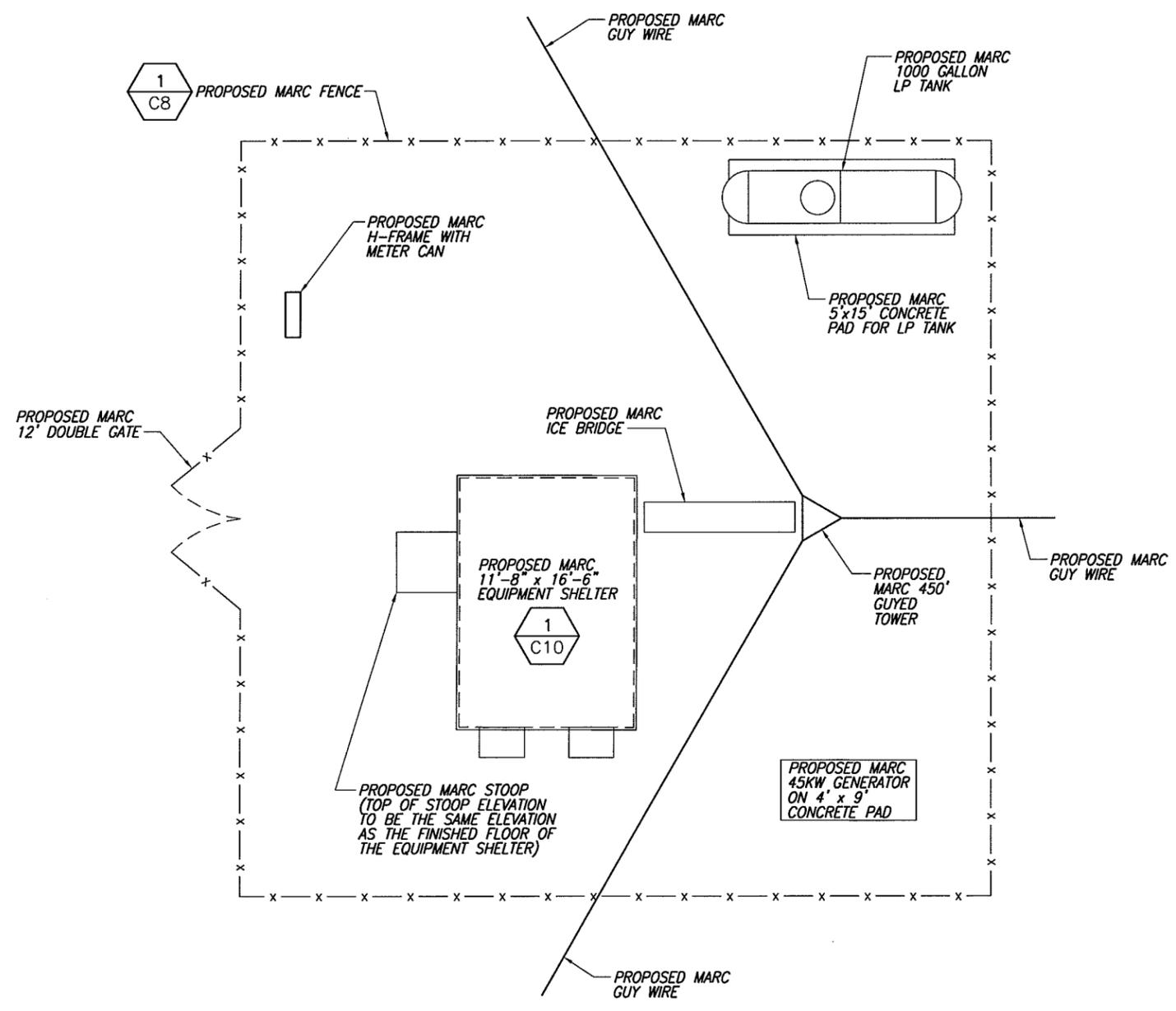

Pyramid Network Services, LLC

HARRISONVILLE
 EAST 231ST STREET
 HARRISONVILLE, MO

SITE PLAN
 HARRISONVILLE, MO

C3
 REV 0

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.



NORTH

1
-
ENLARGED SITE PLAN

NORTH

2
-
STAKING PLAN

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	02/18/09	ISSUED FOR REVIEW	DAD	CJW	CJW

infinigy
engineering

2255 SEWELL MILL ROAD
SUITE 130
MARIETTA, GA 30062
OFFICE #: (678) 444-4463
FAX #: (678) 444-4472
XXX-XXX

MARC
Mid-America Regional Council

Kansas City Regional Area
Multi-Band Integrated System
(RAMBIS)

Pyramid Network Services, LLC

HARRISONVILLE
EAST 231ST STREET
HARRISONVILLE, MO

STAKING PLANS
HARRISONVILLE, MO

C3A
REV
0

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

NOTES:

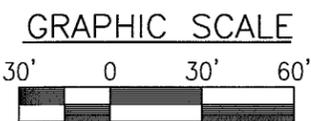
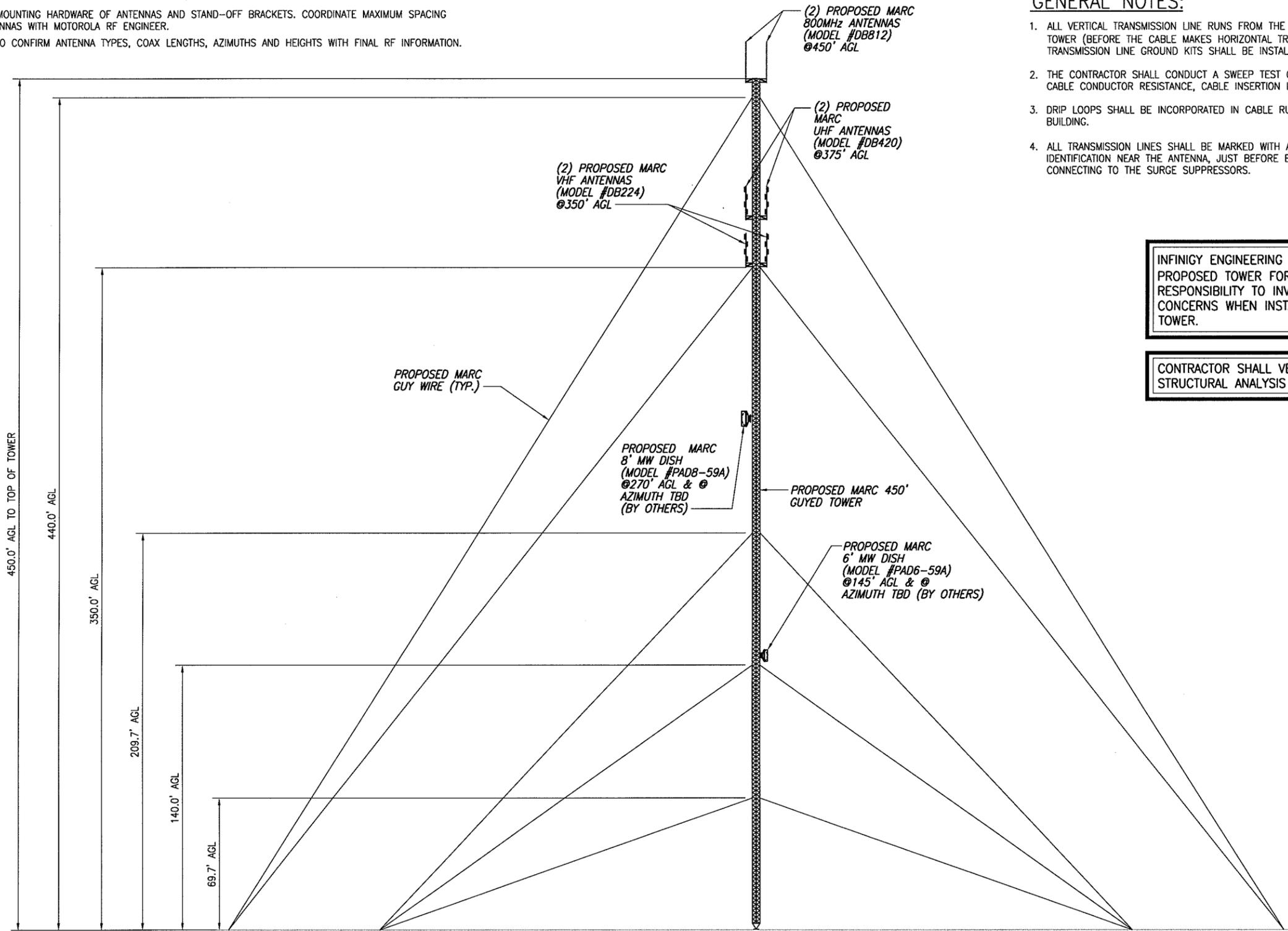
1. FIELD VERIFY MOUNTING HARDWARE OF ANTENNAS AND STAND-OFF BRACKETS. COORDINATE MAXIMUM SPACING BETWEEN ANTENNAS WITH MOTOROLA RF ENGINEER.
2. CONTRACTOR TO CONFIRM ANTENNA TYPES, COAX LENGTHS, AZIMUTHS AND HEIGHTS WITH FINAL RF INFORMATION.

GENERAL NOTES:

1. ALL VERTICAL TRANSMISSION LINE RUNS FROM THE ANTENNAS SHALL BE GROUNDED NEAR THE TOP AND BOTTOM OF THE TOWER (BEFORE THE CABLE MAKES HORIZONTAL TRANSITION AND NEAR THE ENTRY PORT ON THE SHELTER). ADDITIONAL TRANSMISSION LINE GROUND KITS SHALL BE INSTALLED AS NEEDED TO LIMIT THE DISTANCE BETWEEN GROUND KITS TO 75 FEET.
2. THE CONTRACTOR SHALL CONDUCT A SWEEP TEST ON ALL THE NEWLY INSTALLED TRANSMISSION LINES TO DETERMINE THE CABLE CONDUCTOR RESISTANCE, CABLE INSERTION LOSS, REFLECTION AND STIMULUS RESPONSE MEASUREMENTS.
3. DRIP LOOPS SHALL BE INCORPORATED IN CABLE RUNS TO PREVENT WATER FROM TRICKLING DOWN THE LINES INTO THE BUILDING.
4. ALL TRANSMISSION LINES SHALL BE MARKED WITH APPROPRIATE COLOR TAPE BANDS (ONE INCH WIDE COLOR TAPE) FOR IDENTIFICATION NEAR THE ANTENNA, JUST BEFORE ENTERING THE BUILDING AS WELL AS INSIDE THE BUILDING, BEFORE CONNECTING TO THE SURGE SUPPRESSORS.

INFINIGY ENGINEERING HAS NOT EVALUATED THE PROPOSED TOWER FOR THIS SITE. IT IS THE CARRIER'S RESPONSIBILITY TO INVESTIGATE ANY LOADING CONCERNS WHEN INSTALLING ANY EQUIPMENT TO THE TOWER.

CONTRACTOR SHALL VERIFY THE RF CONFIGURATION & STRUCTURAL ANALYSIS BEFORE INSTALLATION.



1 GUYED TOWER ELEVATION

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	02/18/09	ISSUED FOR REVIEW	DAD	CJW	CJW

infinigy
 engineering
 2255 SEWELL MILL ROAD
 SUITE 130
 MARIETTA, GA 30062
 OFFICE #: (678) 444-4463
 FAX #: (678) 444-4472
 XXX-XXX

MARC
 Mid-America Regional Council
 Kansas City Regional Area
 Multi-Band Integrated System
 (RAMBIS)

Pyramid Network Services, LLC

HARRISONVILLE
 EAST 231ST STREET
 HARRISONVILLE, MO

TOWER ELEVATION & DETAILS
 HARRISONVILLE, MO

C4
 REV 0

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

Appendix D

Section 106 State Historical Preservation Office (SHPO) Review Documentation



Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

April 21, 2009

RECEIVED

APR 27 2009

Mr. Ed Creadon
ATC Associates Inc.
8246 Marshall Drive
Lenexa, KS 66214

Re: **SHPO Project Number: 015-CS-09:** Tower Rambis, Harrisonville, Cass County, Missouri (FCC)

Dear Ms. Creadon:

Thank you for submitting information about the above-referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which require identification and evaluation of cultural resources.

After reviewing the report, we find it to be adequate. Based on the information provided, we concur that there are two National Register of Historic Places properties located within the area of potential effects for the proposed tower: the Robert A. Brown House, which is listed on the National Register, and the Prettyman Bridge, which is eligible for listing. Additionally, we agree that the proposed project will have **no adverse effect** on the historic properties.

Please be advised that, if the project area is increased, cultural materials are encountered during construction or adjacent areas that may contain significant cultural resources may be adversely impacted, appropriate information must be provided to this office for further review and comment.

If you have any questions please write Missouri Department of Natural Resources, State Historic Preservation Office, Attn: Review and Compliance, P.O. Box 176, Jefferson City, Missouri 65102, or call Rebecca Prater at (573) 751-7958. Please be sure to include the **SHPO Project Number (015-CS-09)** on all future correspondence relating to this project. If the information is provided via telephone call, please follow up in writing for our files.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

A handwritten signature in cursive script that reads 'Mark A. Miles'.

Mark A. Miles
Director and Deputy
State Historic Preservation Officer

MAM:rp

C: John Bozell



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 HISTORIC PRESERVATION PROGRAM
 P.O. BOX 176, JEFFERSON CITY, MISSOURI 65102
 (573) 751-7858

SECTION 106 SURVEY MEMO

SHPO USE ONLY	
REVIEWER	
DATE	SHPO LOG #
<input type="checkbox"/> ACCEPTED	<input type="checkbox"/> REJECTED

1) HPP 106 PROJECT #
 010-CS-09

LOCATION INFORMATION AND SURVEY CONDITIONS

2) COUNTY(S) Cass		
3) QUADRANGLE Peculiar	4) PROJECT TYPE/TITLE RAMBIS-Harrisonville, Missouri	
5) FUNDING/PERMITTING FEDERAL AGENCY(S) FCC		
6) SECTION SE SE SE NW Section 20	7) TOWNSHIP 45N	8) RANGE 31W
9) U.T.M. see Continuation Sheet		
10) PROJECT DESCRIPTION 450' telecommunications tower		
11) TOPOGRAPHY Terrace and slope		
12) SOILS Polo Silt Loam		
13) DRAINAGE Unnamed tributary of the East Fork, South Branch Grand River		
14) LAND USE/GROUND COVER (INCLUDING % VISIBILITY) Previously disturbed and eroded pasture (40-50%)		
15) SURVEY LIMITATIONS One area of low visibility.		

HISTORICAL BACKGROUND INFORMATION

16) HPP - CULTURAL RESOURCE INVENTORY <input checked="" type="checkbox"/>	17) ARCHAEOLOGICAL SURVEY OF MISSOURI <input type="checkbox"/>	18) GIS DATABASE <input checked="" type="checkbox"/>
19) HISTORIC PLATS/ATLASES/SOURCES 1895, 1912, and 1930 Cass Co. Atlases (see Continuation Sheet for references)		
20) PREVIOUSLY REPORTED SITES No archeological sites w/in APE, 2 architectural sites w/in 1.5 mi visual APE		
21) PREVIOUS SURVEYS One survey along southern margin of project -negative (see Continuation Sheet for reference)		
22) REGIONAL SOURCES UTILIZED Cass Co. Historical Society, 400 E Mechanic, Harrisonville, MO 64701		
23) MASTER PLAN RECOMMENDATION		
24) INVESTIGATION TECHNIQUES Pedestrian Survey at 5m north-south intervals (n=35) across project area and excavation of one shove		
test in heavy pasture (see Continuation Sheet)		25) TIME EXPENDED 11 PERSON HOURS
26) HISTORIC PROPERTIES LOCATED Brown House and Prettyman Bridge		
27) CULTURAL MATERIALS None		
		28) CURATED AT NA
29) COLLECTION TECHNIQUES NA		
30) AREA SURVEYED (ACRES & SQUARE METERS) 7 ac (c 25,000 square meters)		

31) RESULTS OF INVESTIGATION AND RECOMMENDATIONS:

- a) No Historic Properties Located.
 - b) No National Register Eligible Historic Properties Located.
 - c) National Register Eligible Historic Properties Located.
 - d) Historic Properties May Meet Requirements For National Register Eligibility; Phase II Testing Is Recommended:
- e) Comments: Brown House (listed) and Prettyman Bridge (eligible). No adverse effect (see Continuation Sheet)

CULTURAL RESOURCE MANAGEMENT CONTRACTOR INFORMATION

32) ARCHAEOLOGICAL CONSULTANT

John R. Bozell (resume attached)

33) ADDRESS/PHONE

408 1/2 S Western Ave. Sioux Falls, SD 67104

34) SURVEYOR(S)

John R. Bozell

35) SURVEY DATE(S)

2/2 and 4/4 2009

36) REPORT COMPILED BY

John R. Bozell

37) DATE

4/6/09

38) SUBMITTED BY (SIGNATURE AND TITLE)

John R. Bozell (Consultant)

39) ATTACHMENT CHECK LIST (REQUIRED)

- 1) Relevant Portion of USGS 7.5' Topographic Quadrangle Map(s) Showing Project Location and Any Recorded Sites;
- 2) Project Map(s) Depicting Survey Limits and, when applicable, Approximate Site Limits, and Concentrations of Cultural Materials;
- 3) Site Form(s): One Copy of Each Form;
- 4) All Relevant Project Correspondence;
- 5) Additional Information Sheets as Necessary.

40) ADDRESS OF OWNER/AGENT/AGENCY TO WHOM SHPO COMMENT SHOULD BE MAILED

ED CREADON

ATC ASSOCIATES INC.

8246 MARSHALL DRIVE

LEWIS, KS 66214

41) CONTACT PERSON

Ed Creadon

42) PHONE NUMBER

913-205-8979

REVIEWER COMMENTS

SECTION 106 SHPO MEMO, CONTINUATION SHEET

9) UTM coordinates for the corners of project area. NW: 4288577/379954; NE: 4288571/380114; SE 4284423/380123; SW 4284413/379971. All Zone 15 S (NAD 1983).

16) An initial records search was completed for archeological sites and previous archeological surveys using the HPP GIS database. The review was completed by Kerry Nichols (MoSHPO Cultural Resources Inventory Coordinator) and the results emailed to the author. Nichol's review indicated that no archeological sites have been previously recorded within the direct effects APE but several are within one-mile and are plotted on USGS topographic maps appended to this report. One previous cultural resources survey ran along the southern margin of the project area and is also depicted on the appended USGS maps (Environmental Research Center of Missouri, 1982).

Additional research was completed by the author at the Missouri State Historic Preservation Office (MoSHPO) in Jefferson City on April 3, 2009. The research consisted of discussions with Kerry Nichols, Rebecca Prater (MoSHPO Historian), and Judith Deel (MoSHPO Archaeologist). The visual impacts APE radius for a 450' tower is 1.5 miles as per the FCC nationwide programmatic agreement (FCC-04-222) for telecommunication towers. The programmatic agreement does not require additional survey for visual impacts beyond what is presently on file with the SHPO. Files for historic properties (archeological and structural) were consulted for Cass County with specific attention on the 1.5 mi radius. Below are the results of the background research.

- No archeological sites have been previously recorded within the APE for direct effects. The nearest previously recorded archeological sites are over one mi away in Section 18 to the northwest (sites 23CS48 and 23CS55) and Section 30 to the southwest (site 23CS38).
- There are seven (7) properties listed in the *National Register of Historic Places* in Cass County. All are architectural sites and one of these is within the 1.5 mi visual effects APE radius. This property is the Robert A. Brown House (built in 1850) located 1.2 mi south of the proposed tower site.
- Three additional properties in Cass County have been determined eligible for *National Register of Historic Places* listing. One of these is within the 1.5 mi visual effects APE radius. This property is the Prettyman Bridge located 1.5 mi south of the proposed tower site.
- The only properties recorded during MoSHPO historic sites inventory surveys within the 1.5 mi radius are the Brown House and the Prettyman Bridge.

19) Three Cass County maps were consulted. None depict buildings at project location.

1895 Northwest Publishing Co. Plat Book of Cass County, Missouri. Drawn from Actual Surveys and County Records.

1912 Atlas of Cass County, Missouri. Windmill Publications, Reprint 1998.

1930 Plat Book of Cass County, Missouri. W.M. Hixson and Co., Rockford, Illinois.

21) 1982 *An Intensive Cultural Resources Survey of the Areas to be Included in the Proposed Cass County Water District # 10 Waterline Project*. Prepared by the Environmental Research Center of Missouri, Inc. Jefferson City, Missouri.

24) In addition to the surface survey, one shovel test was excavated at the center of the project. The test was 50 cm in diameter and excavated to a depth of 20 cm at which point dense limestone and shale bedrock was encountered. Fill from 0-5 cm below surface was dark loam with shale and limestone fragments. Fill from 5-20 cm below surface was yellowish brown clay loam with shale and limestone fragments. Fill was screened through ¼ inch mesh and no cultural material was observed or recovered. A profile of the shovel test is provided in the attachments to this document. The surface of the survey area included a considerable amount of shale and limestone bedrock fragments. The tract also is undulating suggesting it may have been previously cultivated or impacted by quarrying or placement of quarry fill.

31e) The undertaking will have no effect on any archeological properties listed or eligible for listing in the National Register of Historic Places. The Robert A. Brown House is listed in the National Register of Historic Places and is located 1.2 miles south of the undertaking. The Prettyman Bridge is eligible for listing in the National Register of Historic Places and is located 1.5 miles south of the undertaking. The visual impact on the Brown House and the Prettyman Bridge by the undertaking is negligible and no greater than that imposed by a variety of existing telecommunication towers, roads, and transmission lines that are located in closer proximity to the properties than the presently considered facility. In addition, a high ridge system separates the project from the Brown and Prettyman properties. Therefore a finding of "No Historic Properties Affected" is recommended.