

# Technical Memorandum



June 17, 2024

**REFERENCE: BNSF PTC 15 Not Excluded Poles, Granite County, Montana: TCNS 281263**

**Third Subdivision\_42\_65.42, Third Subdivision\_42\_67.21, Third Subdivision\_42\_68.91, Third Subdivision\_42\_71.09, Third Subdivision\_42\_72.99, Third Subdivision\_42\_74.85, Third Subdivision\_42\_76.72, Third Subdivision\_42\_78.58, Third Subdivision\_42\_81.19, Third Subdivision\_42\_83.02, Third Subdivision\_42\_84.92, Third Subdivision\_42\_86.93, Third Subdivision\_42\_88.66, Third Subdivision\_42\_90.56, Third Subdivision\_42\_92.35**

Dear Interested Party:

On behalf of BNSF, and in accordance with the FCC's 2014 Program Comment (PC) for Positive Train Control (PTC) towers, Section VII., we are submitting information related to 15 PTC poles in Granite County, Montana. The towers are not excluded due to a National Register of Historic Places (NRHP)-eligible property overlapping the direct area of potential effects (APE).

The proposed 50-foot PTC poles (40-foot monopoles with 10-foot antennae) are 1 foot in diameter and will be installed via helical screw to a depth of 10 feet. The towers are located within BNSF railroad right-of-way which has been previously disturbed by track construction and maintenance.

The investigation was completed to assist BNSF in meeting its regulatory obligations pursuant to the PC for PTC Towers. The PC outlines the process for determining APEs (direct and visual). In accordance with the PC, the project's direct APE is defined here as the footprint of the proposed tower and a 0.25-mile visual APE was used to assess visual impacts on aboveground historic properties.

Please refer to the FCC website (<http://www.fcc.gov/encyclopedia/positive-train-control-ptc>) or call the FCC for guidance as the information requirements are different for towers submitted under the Program Comment. Additional guidance and Q&A documents are linked from the webpage, and the documents are updated by the FCC on an as-needed basis.

Associated documentation attached includes:

1. Spreadsheet containing the relevant tower numbers, names, locational data, installation technique, and the finding of no adverse effects at the proposed locations;
2. Google Street View Images showing overviews of tower locations;
3. Topographic maps showing the tower locations;
4. Aerial imagery maps showing the tower locations;
5. Tower specification schematic for a 40-foot-tall mast monopole with 10-foot antenna;
6. Photograph of a typical PTC pole installation with associated infrastructure.

In May 2024, HDR staff conducted background research using data provided by the Montana State Historic Preservation Office (SHPO). Research encompassed previous cultural resource

surveys, previously identified archaeological sites and aboveground properties (e.g., historical built environment resources), and a review of resources listed in the National Register of Historic Places (NRHP).

The investigation for the Third Subdivision\_42\_65.42, Third Subdivision\_42\_67.21, Third Subdivision\_42\_76.72, Third Subdivision\_42\_78.58 PTC towers identified two NRHP-eligible properties within the direct APEs. Sites 24GN0615, the Northern Pacific Railroad (NP), and 24GN0842, the Chicago, Milwaukee & St. Paul Railroad (CM&St.P), are located directly adjacent to the proposed tower location and follow the alignment of the present-day BNSF right-of-way.

The investigation for Third Subdivision\_42\_71.09 identified one NRHP-eligible property within the direct APE. Site 24GN0615, the NP, is located directly adjacent to the proposed tower location and follows the alignment of the present-day BNSF right-of-way.

The investigation for the Third Subdivision\_42\_68.91, Third Subdivision\_42\_72.99, Third Subdivision\_42\_74.85, Third Subdivision\_42\_81.19, Third Subdivision\_42\_83.02, Third Subdivision\_42\_86.93, Third Subdivision\_42\_90.56, and Third Subdivision\_42\_92.35 PTC towers identified one NRHP-eligible property within the direct APE. Site 24GN0615, the NP, is located directly adjacent to the proposed tower locations. Site 24GN0842, the CM&St.P, is within the 0.25-mile visual APE.

The investigation for the Third Subdivision\_42\_84.92 and Third Subdivision\_42\_88.66 identified one NRHP-eligible property within the direct APE. Site 24GN0615, the NP, is located directly adjacent to the proposed tower locations. Sites 24GN0842, the CM&St.P, and 24GN1096, Hot Springs – Anaconda Transmission Line, are within the 0.25-mile visual APEs.

## Assessment of Effects

### **24GN0615**

Site 24GN0615 consists of the historic Northern Pacific Railroad (NP), a transcontinental railroad constructed between 1870 and 1883. The NP's Granite County portion of Site 24GN0615 overlaps with the direct APE for each of the 15 PTC Tower projects. This NP portion has been evaluated as eligible for listing in the National Register of Historic Places (NRHP) for its statewide significance under Criterion A in the area of Exploration/Settlement and under Criterion B for its association with NP financier Jay Cooke. The Montana Cultural Resources Information System (CRIS) Form Historic Railroad update by Sarah Orm and Jennifer Borresen Lee (May 20, 2016) does not identify character-defining features associated with NP's Criteria A and B significance; however, the PTC towers will not impact any components within the direct APE that are typically associated with a historic railroad, such as rails, ties, ballast, or alignment. The previous documentation by Orms and Lee indicates a period of significance from the late 1800s to mid-1900s.

The Granite County portion of NP (Site 24GN0615) extends roughly east-west through the county's northern section and follows the general alignment of Interstate 90/US-12 (a divided highway), and the Clark Fork River. In addition to the interstate and river, the setting is

characterized by power transmission and distribution lines that parallel the interstate, paved and unpaved frontage roads, and existing BNSF railroad infrastructure, such as previously-installed monopoles, signals, crossing structures and/or metal cabinets. The Granite County portion of the CM&St.P (Site 24GN0842) runs parallel to much of the Granite County portion of the NP. Since NP's mid-twentieth century period of significance ended, the setting along NP's Granite County portion has been altered by newer infrastructure, particularly improvements to the interstate, construction of new connecting roads, establishment of nearby recreational facilities, and expansion of the town of Drummond. Furthermore, the setting already contains modern vertical components such as power transmission and distribution structures.

The project would introduce one modern component into the larger corridor to maintain ongoing rail function. Nearly all of the PTC towers would be installed at locations within the railroad right-of-way that contain existing railroad infrastructure. PTC systems are designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position. The proposed towers are a required element of this system. Although the proposed towers would introduce a modern infrastructure element within the boundaries of the NRHP-eligible railroad corridor, the setting has already been substantially modified since the mid-twentieth century by construction of linear resources, such as the interstate, and installation of higher profile resources, such as transmission lines and BNSF railroad infrastructure. Thus, the PTC towers' presence within the railroad right-of-way would not diminish NP's integrity of setting or limit the ability of the NRHP-eligible resource to convey its significance.

### **24GN0842**

Site 24GN0842 consists of portions of the Chicago, Milwaukee, St. Paul and Pacific Railroad (CM&St.P), a transcontinental railroad constructed between 1850 and 1910. The CM&St.P Granite County portion of Site 24GN0842 overlaps with the direct APE for 4 of the 15 PTC Tower projects and overlaps with the 0.25-mile visual APE for 10 of the 15 PTC Tower projects. This portion of the CM&St.P has been evaluated as eligible for listing in the NRHP for its statewide significance under Criterion A in the area of Exploration/Settlement. The Montana Cultural Resources Information System (CRIS) Form Historic Railroad update by Sarah Orm and Jennifer Borresen Lee (May 20, 2016) does not identify character-defining features associated with NP's Criteria A significance; however, the PTC towers will not impact any components within the direct APE that are typically associated with a historic railroad, such as rails, ties, ballast, or alignment. The previous documentation by Orms and Lee indicates a period of significance from around 1907, when construction began on the Montana portion, to the mid-1900s.

The Granite County portion of the CM&St.P (Site 24GN0842) extends roughly east-west through the county's northern section and follows the general alignment of the NP, Interstate 90/US-12 (a divided highway), and the Clark Fork River. In addition to the interstate and river, the setting is characterized by power transmission and distribution lines that parallel the interstate, paved and unpaved frontage roads, and nearby BNSF railroad infrastructure, such as previously-installed monopoles, signals, crossing structures and/or metal cabinets. Since the CM&St.P's mid-twentieth century period of significance ended, the setting along its Granite County portion has been altered by newer infrastructure, particularly improvements to the interstate, construction of

new connecting roads, establishment of nearby recreational facilities, and expansion of the town of Drummond. Furthermore, the setting already contains modern vertical components such as power transmission and distribution structures.

The project would introduce one modern component into the larger corridor to maintain ongoing rail function. Nearly all of the PTC towers would be installed at locations within the railroad right-of-way that contain existing railroad infrastructure. PTC systems are designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position. The proposed towers are a required element of this system. Although the proposed towers would introduce a modern infrastructure element within the boundaries of the NRHP-eligible railroad corridor, the setting has already been substantially modified since the mid-twentieth century by construction of linear resources, such as the interstate, and installation of higher profile resources, such as transmission lines and BNSF railroad infrastructure. Thus, the tower's presence within or near the railroad right-of-way would not diminish the CM&St.P's integrity of setting or limit the ability of the NRHP-eligible resource to convey its significance.

#### **24GN1096**

Site 24GN1096 consists of the Hot Springs-Anaconda Transmission Line, which is within the 0.25-mile visual APE of two of the subject PTC towers. The transmission line was completed by the Bonneville Power Administration in 1953 and has been evaluated as eligible for the NRHP under Criterion A in the area of Rural Electrification. The line appears to have statewide significance; however, that is not specified in the Montana Historic Property Record. The period of significance is "Post World War II", according to the record prepared by Nicole F. Brannan and dated September 13, 2007.

The proposed site for the PCT towers is more than 500 feet from the transmission line. The setting is characterized by Interstate 90/US-12 (a divided highway) and the Clark Fork River, as well as paved and unpaved frontage roads and nearby BNSF railroad infrastructure, such as previously-installed monopoles and metal cabinets. Since the transmission line's completion in 1953, the general setting has been altered by improvements to the interstate and to railroad infrastructure.

The project would introduce one modern component into the larger corridor to maintain ongoing rail function. PTC systems are designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position. The proposed tower is a required element of this system. Although the proposed tower would introduce a modern infrastructure element within the boundaries of the NRHP-eligible railroad corridor, the setting has already been substantially modified since the mid-twentieth century by construction of linear resources, such as the interstate, and installation of high profile resources, such as BNSF railroad infrastructure. Thus, the tower's presence within the transmission line's visual APE would not diminish the historic transmission line's integrity of setting or limit the ability of the NRHP-eligible resource to convey its significance.

Based on this analysis, it is recommended that the project would have no adverse effect on any previously recorded historic properties.

For historic property review, all non-excluded PTC poles will be subject to the 30-day review period as directed by the Program Comment.

Sincerely,

A handwritten signature in black ink that reads "Amy Leuchtmann". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Amy Leuchtmann, MA  
*Archaeology Project Director*

Please send all correspondence to Jennifer Schwaller at 10450 Holmes Road, Suite 600, Kansas City, MO 64131 or via email to [Jennifer.schwaller@hdrinc.com](mailto:Jennifer.schwaller@hdrinc.com).

Tower ID	Latitude	Longitude	Tower Type	Total Height (ft)	Pole Height (ft)	County	State	Zip	Installation Method	Exclusion	Eligible or Listed Sites in Direct APE	Eligible or Listed Sites in Visual APE	Finding
Third Subdivision_42_65.42	46.62037	-113.06304	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	No	No Adverse Effect
Third Subdivision_42_67.21	46.63388	-113.09349	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	No	No Adverse Effect
Third Subdivision_42_68.91	46.64867	-113.12075	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_71.09	46.6693	-113.15324	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	No	No Adverse Effect
Third Subdivision_42_72.99	46.6805	-113.18933	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_74.85	46.69629	-113.21783	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_76.72	46.70526	-113.25356	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	No	No Adverse Effect
Third Subdivision_42_78.58	46.71654	-113.28924	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	No	No Adverse Effect
Third Subdivision_42_81.19	46.70679	-113.33324	MTOWER - MONOPOLE	50	40	Granite County	MT	59825	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_83.02	46.70057	-113.36477	MTOWER - MONOPOLE	50	40	Granite County	MT	59825	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_84.92	46.69746	-113.39904	MTOWER - MONOPOLE	50	40	Granite County	MT	59825	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_86.93	46.6992	-113.44034	MTOWER - MONOPOLE	50	40	Granite County	MT	59832	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_88.66	46.70098	-113.47472	MTOWER - MONOPOLE	50	40	Granite County	MT	59825	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_90.56	46.70653	-113.50736	MTOWER - MONOPOLE	50	40	Granite County	MT	59825	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect
Third Subdivision_42_92.35	46.71812	-113.5411	MTOWER - MONOPOLE	50	40	Granite County	MT	59825	Helical Screw	Not Excluded	Yes	Yes	No Adverse Effect

Figure 1. Tower Information Table



Figure 2. Overview of the proposed location for Third Subdivision\_42\_65.42.



Figure 3. Overview of the proposed location for Third Subdivision\_42\_67.21.



Figure 4. Overview of the proposed location for Third Subdivision\_42\_68.91.



Figure 5. Overview of the proposed location for Third Subdivision\_42\_71.09.





Figure 6. Overview of the proposed location for Third Subdivision\_42\_72.99.



Figure 7. Overview of the proposed location for Third Subdivision\_42\_74.85.



Figure 8. Overview of the proposed location for Third Subdivision\_42\_76.72.



Figure 9. Overview of the proposed location for Third Subdivision\_42\_78.58.



Figure 10. Overview of the proposed location for Third Subdivision\_42\_81.19.

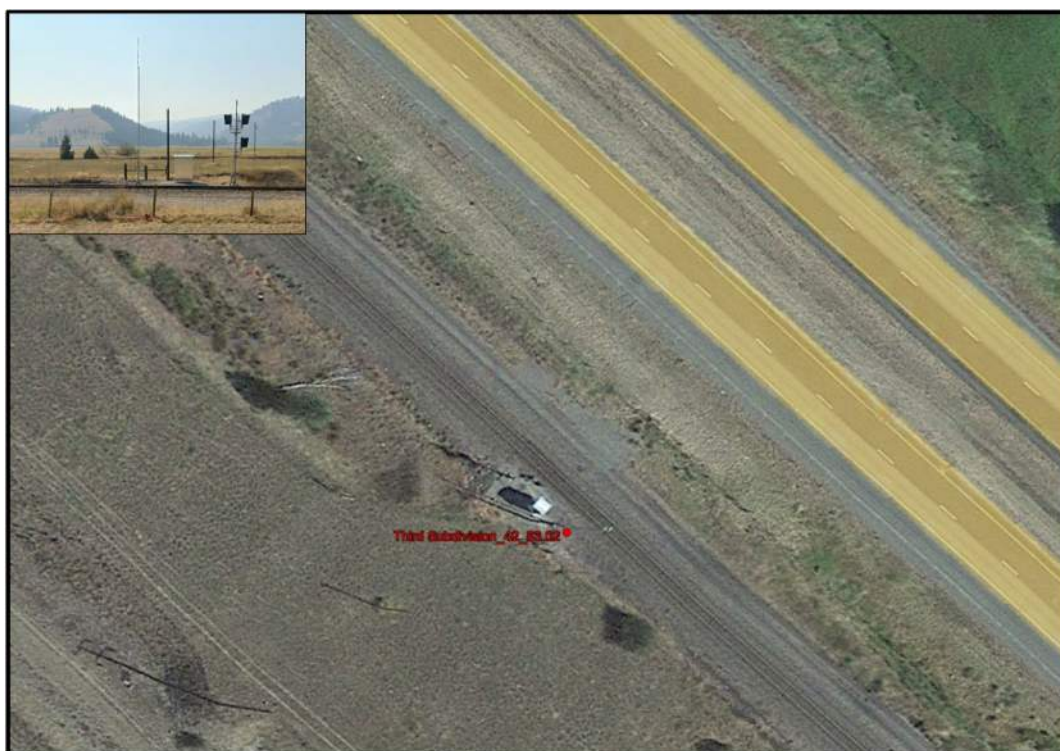


Figure 11. Overview of the proposed location for Third Subdivision\_42\_83.02.



Figure 12. Overview of the proposed location for Third Subdivision\_42\_84.92.



Figure 13. Overview of the proposed location for Third Subdivision\_42\_86.93.

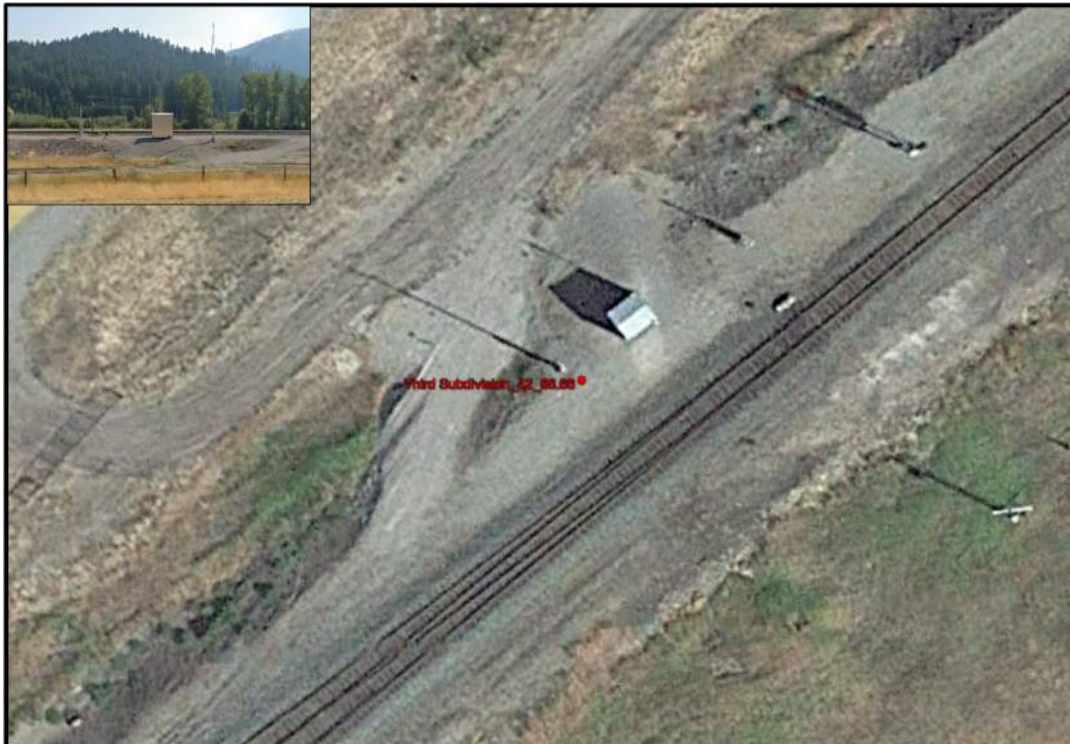


Figure 14. Overview of the proposed location for Third Subdivision\_42\_88.66.



Figure 15. Overview of the proposed location for Third Subdivision\_42\_90.56.



Figure 16. Overview of the proposed location for Third Subdivision\_42\_92.35.

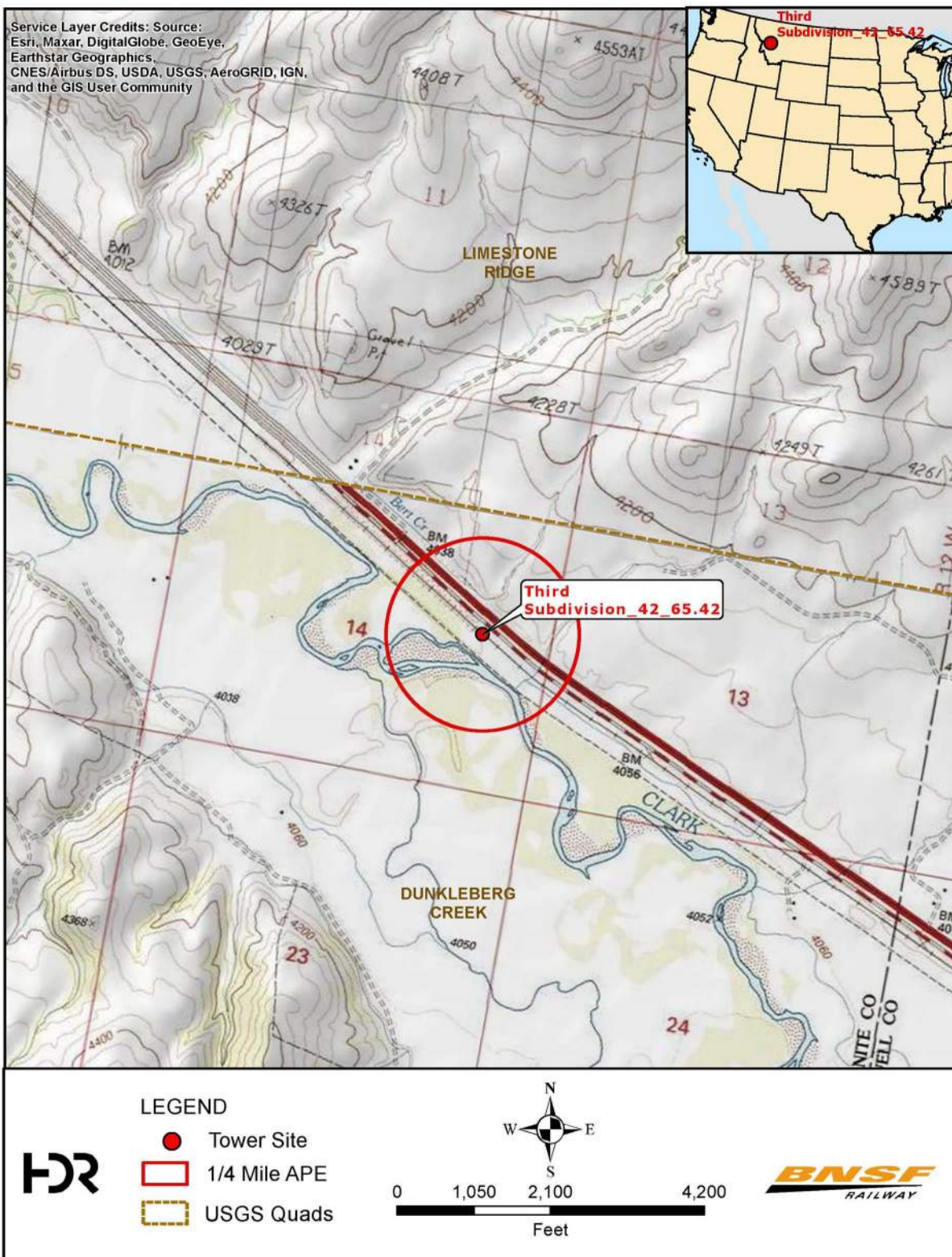


Figure 17. Topographic Map of proposed tower Third Subdivision\_42\_65.42.

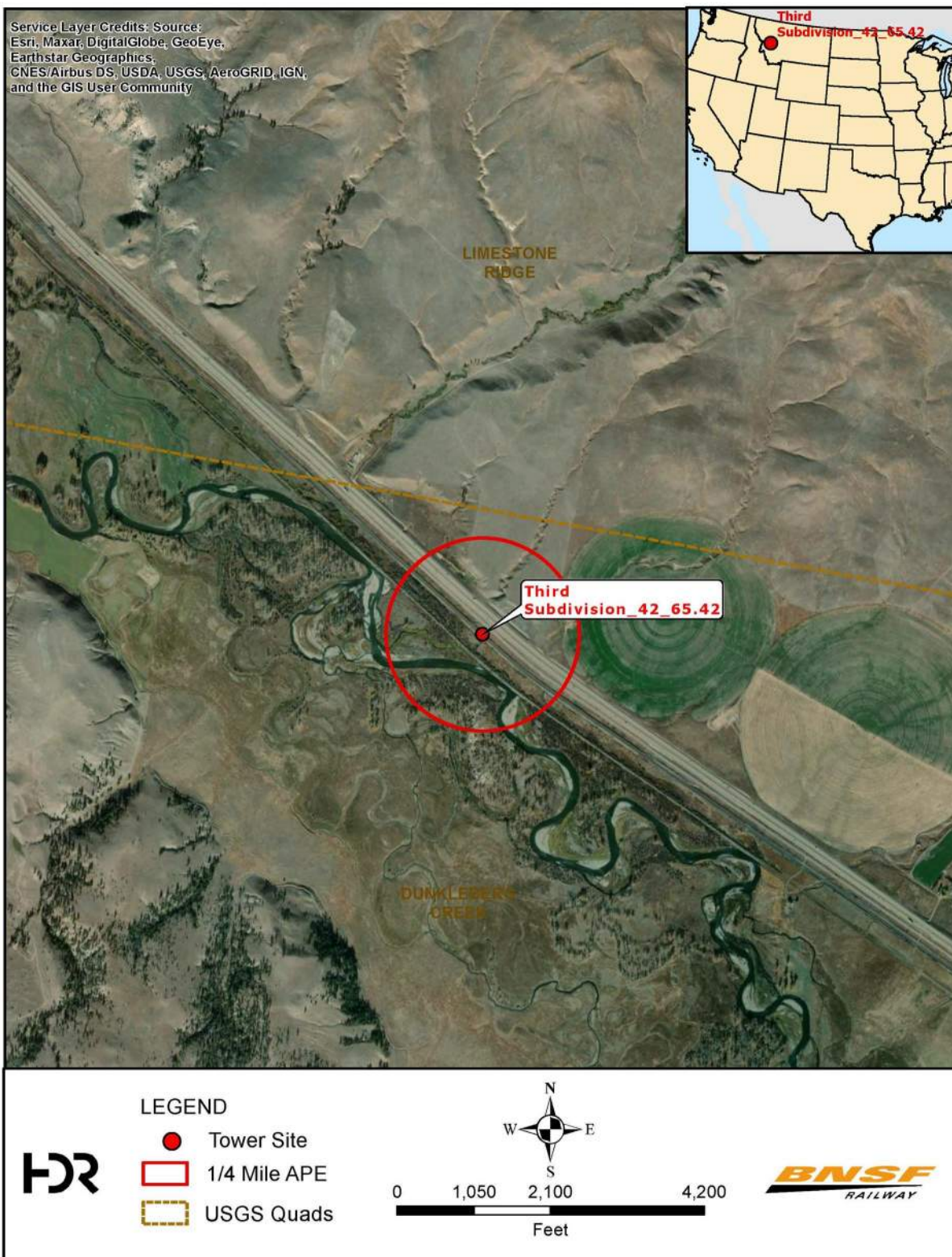


Figure 18. Aerial Map of the proposed tower Third Subdivision\_42\_65.42.



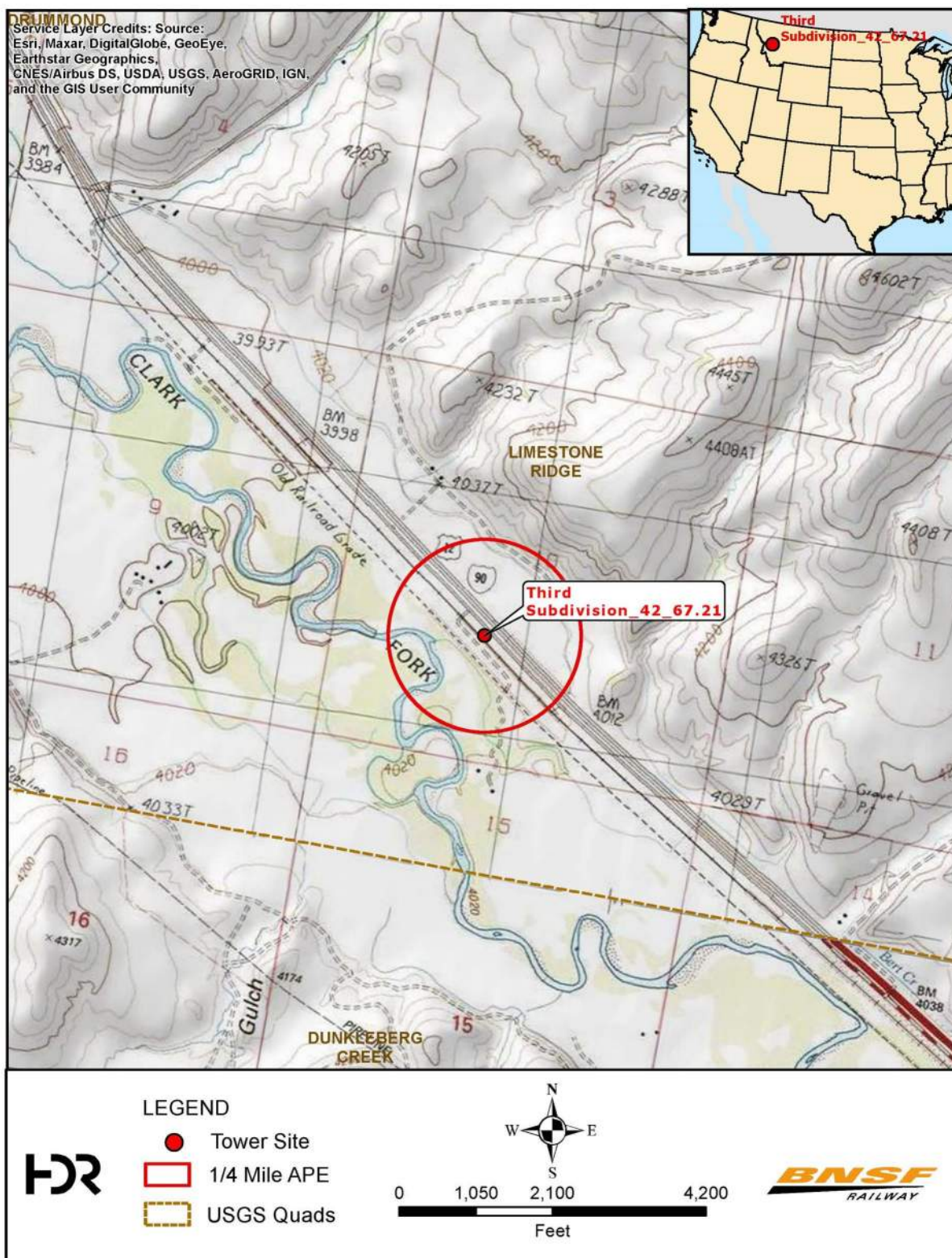


Figure 19. Topographic Map of proposed tower Third Subdivision\_42\_67.21.

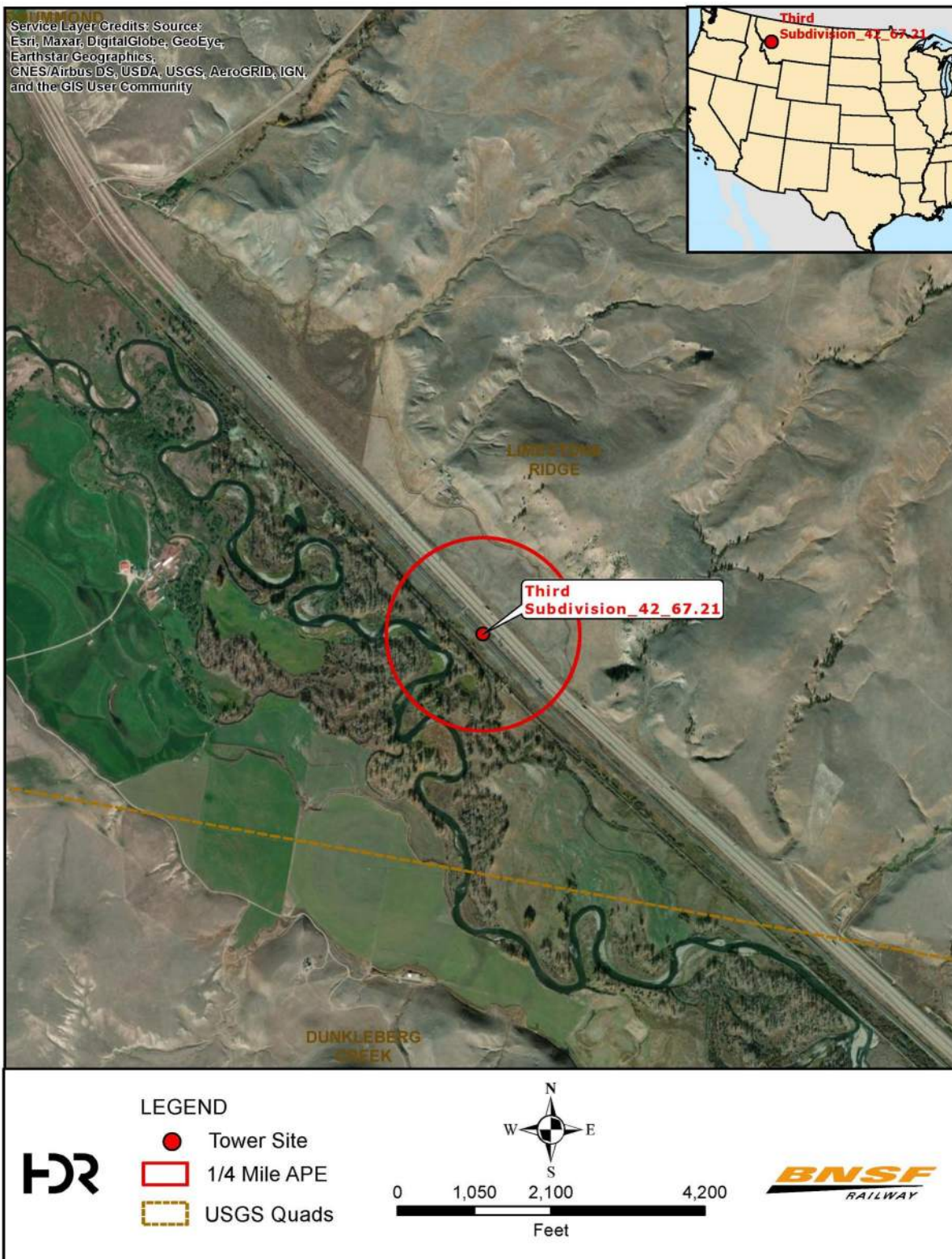


Figure 20. Aerial Map of the proposed tower Third Subdivision\_42\_67.21.

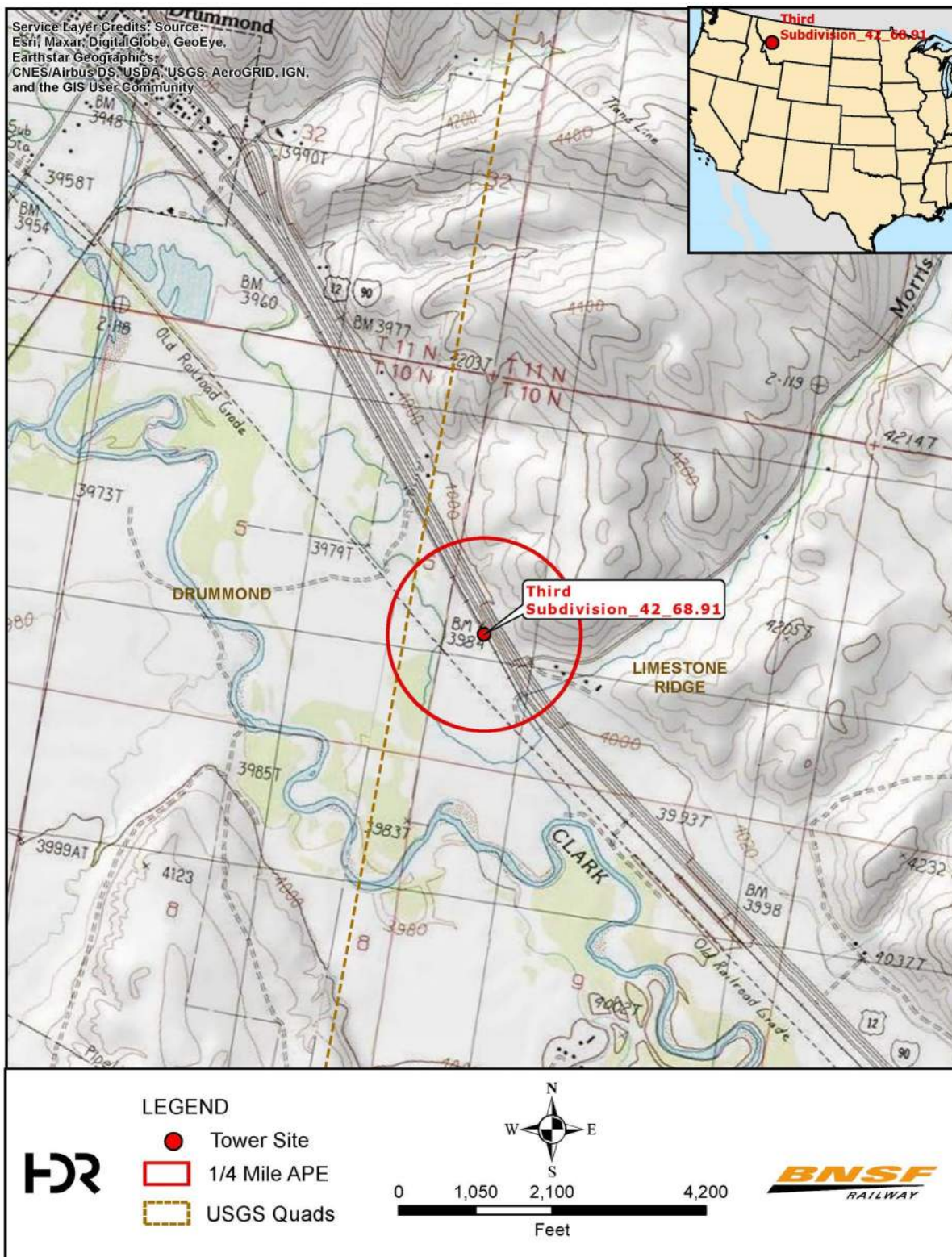


Figure 21. Topographic Map of proposed tower Third Subdivision\_42\_68.91.

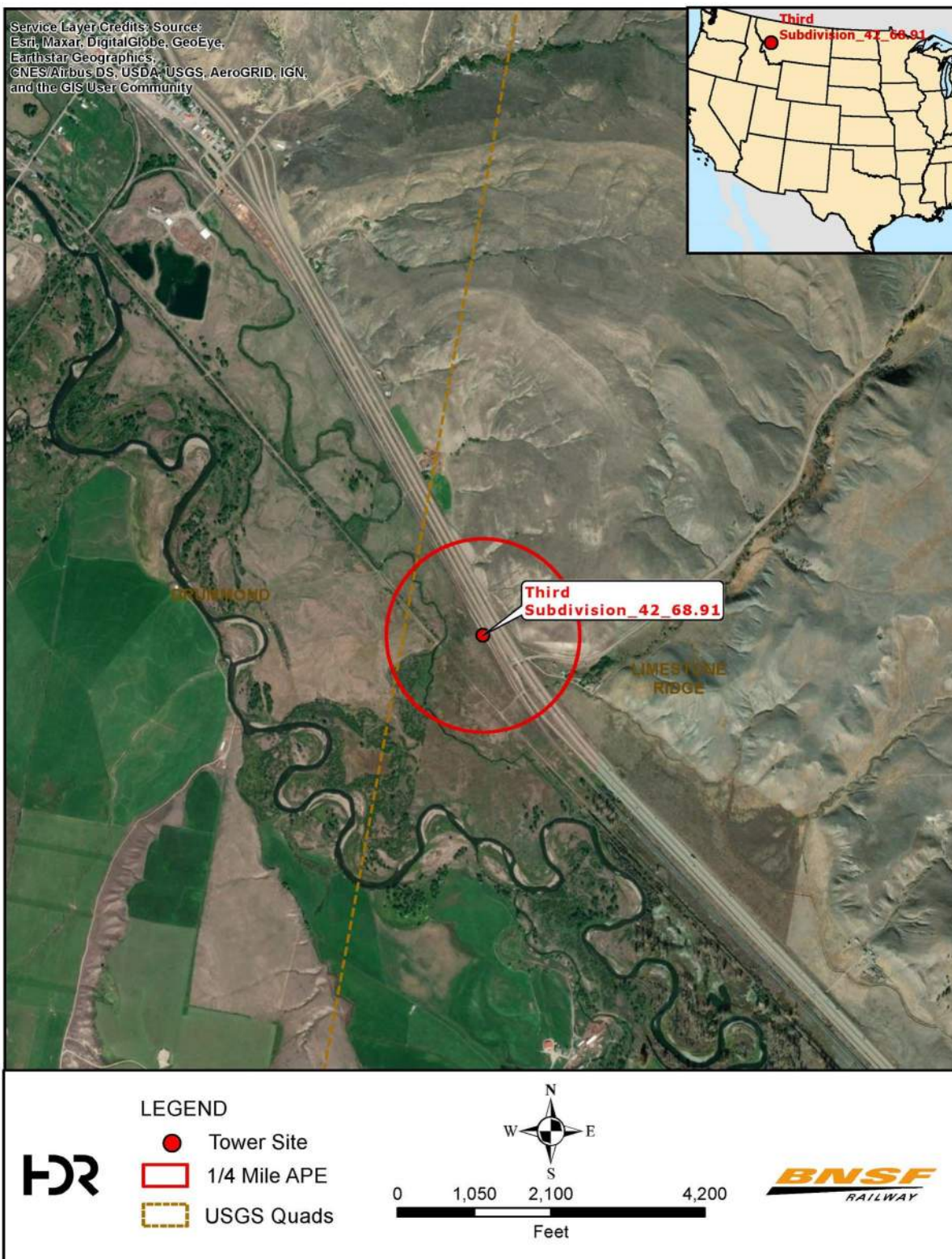


Figure 22. Aerial Map of the proposed tower Third Subdivision\_42\_68.91.

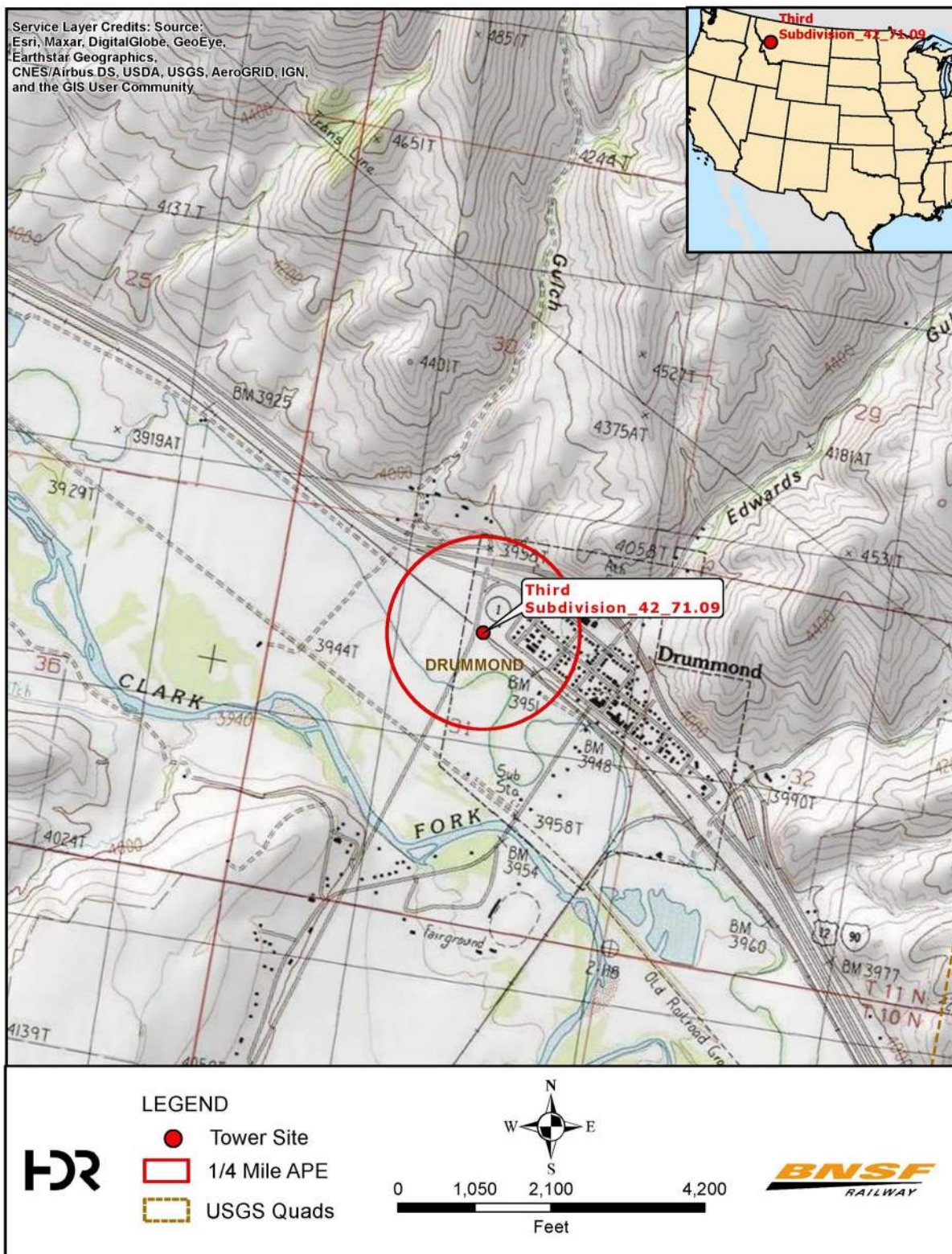


Figure 23. Topographic Map of proposed tower Third Subdivision\_42\_71.09.

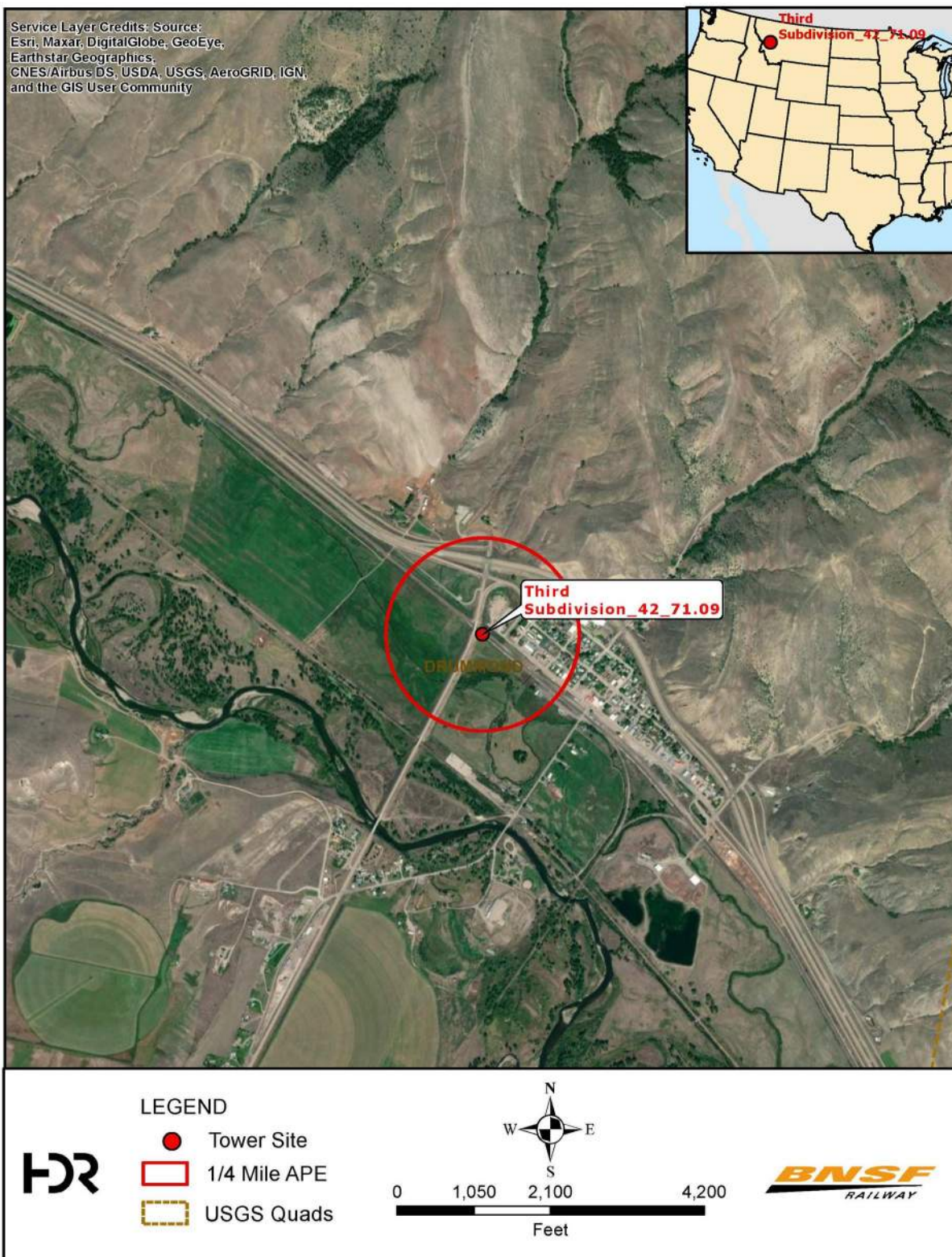


Figure 24. Aerial Map of the proposed tower Third Subdivision\_42\_71.09.

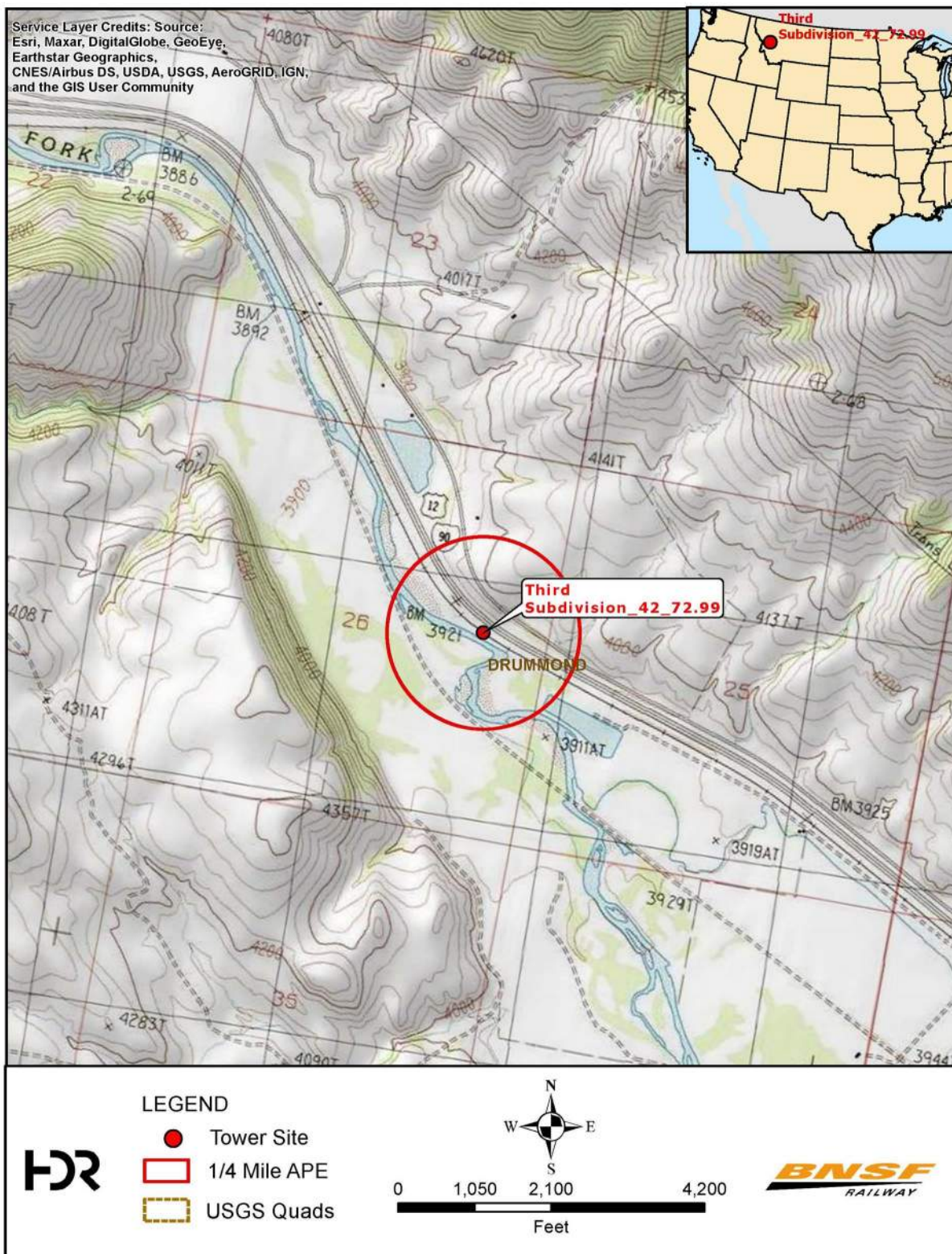


Figure 25. Topographic Map of proposed tower Third Subdivision\_42\_72.99.

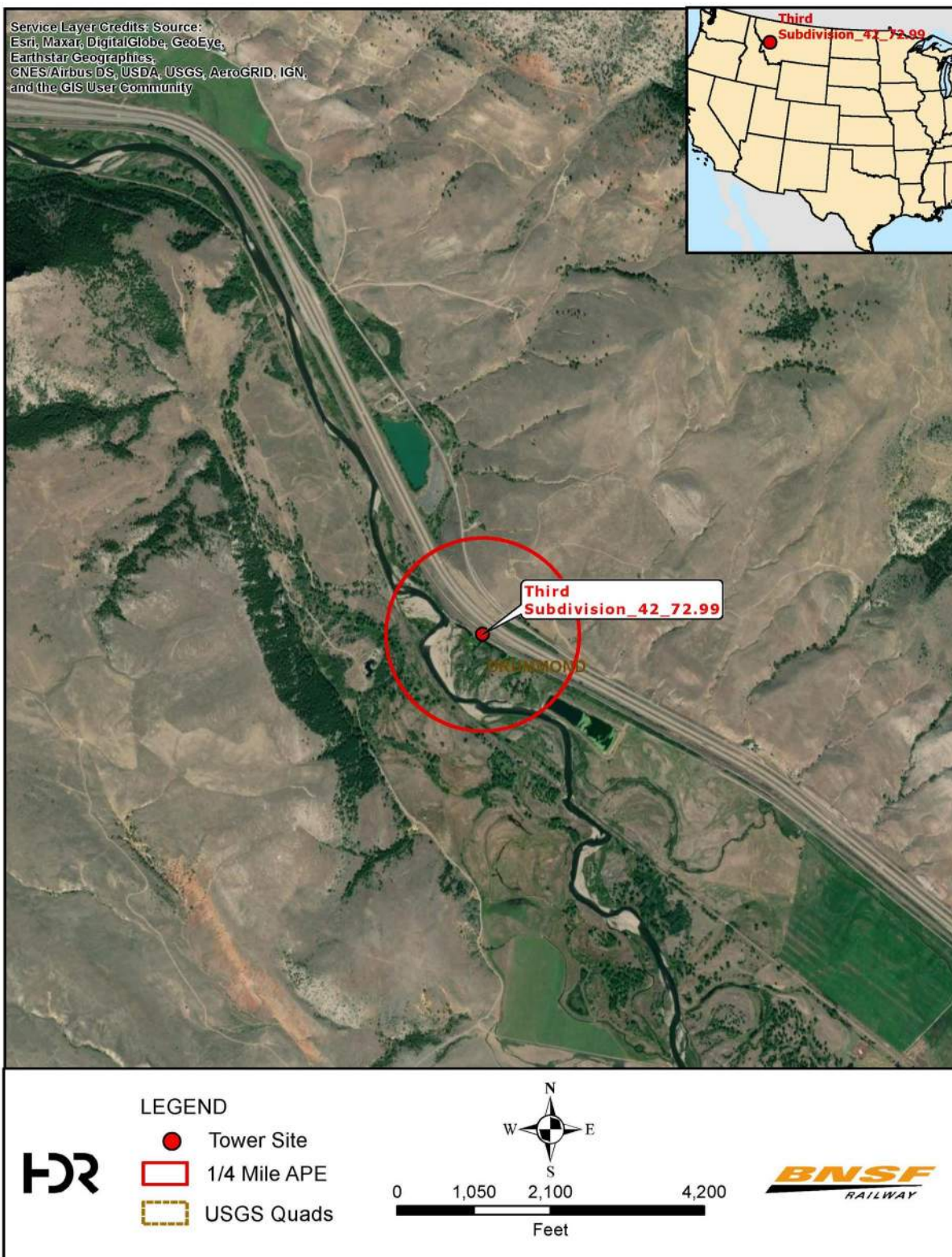


Figure 26. Aerial Map of the proposed tower Third Subdivision\_42\_72.99.



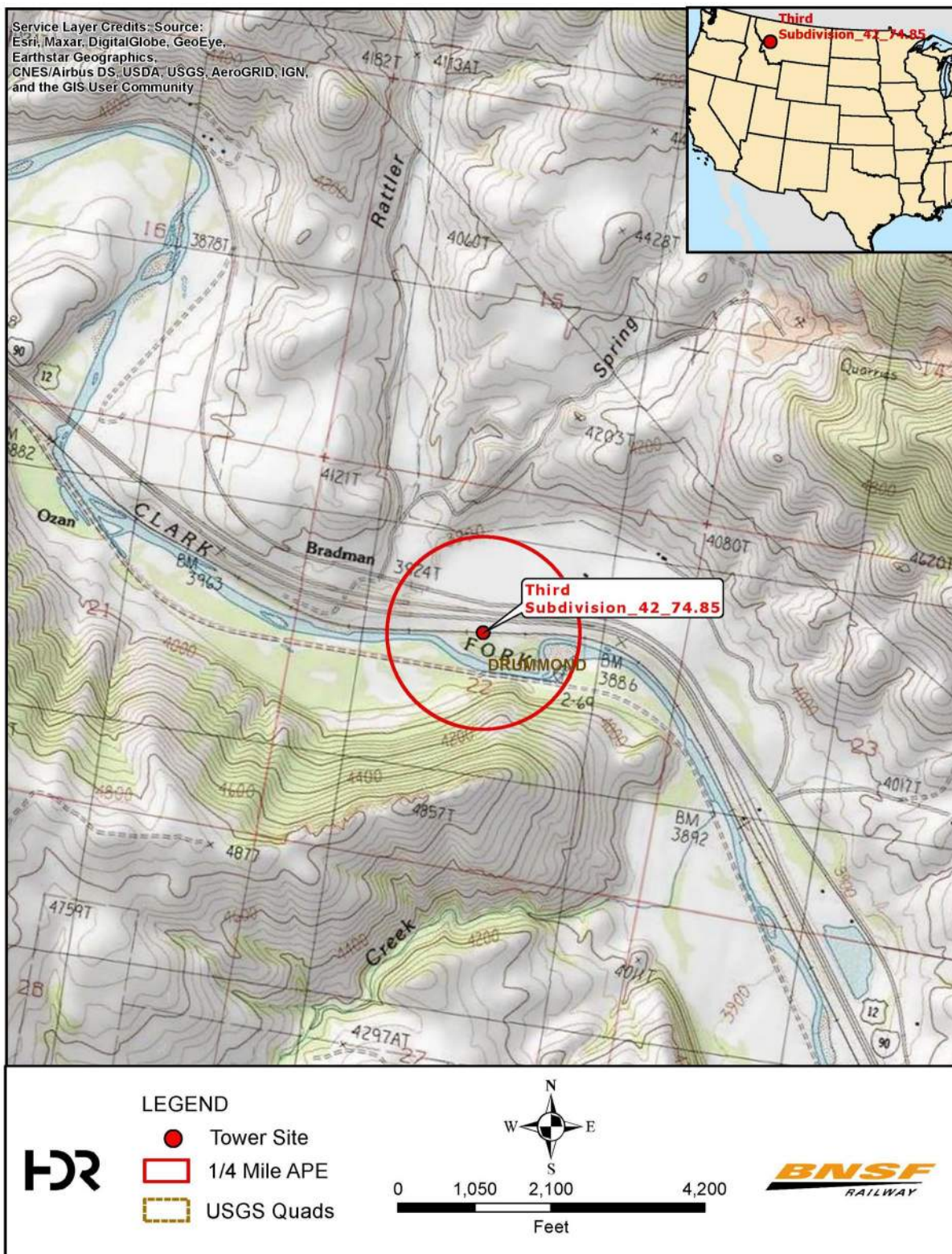


Figure 27. Topographic Map of proposed tower Third Subdivision\_42\_74.85.

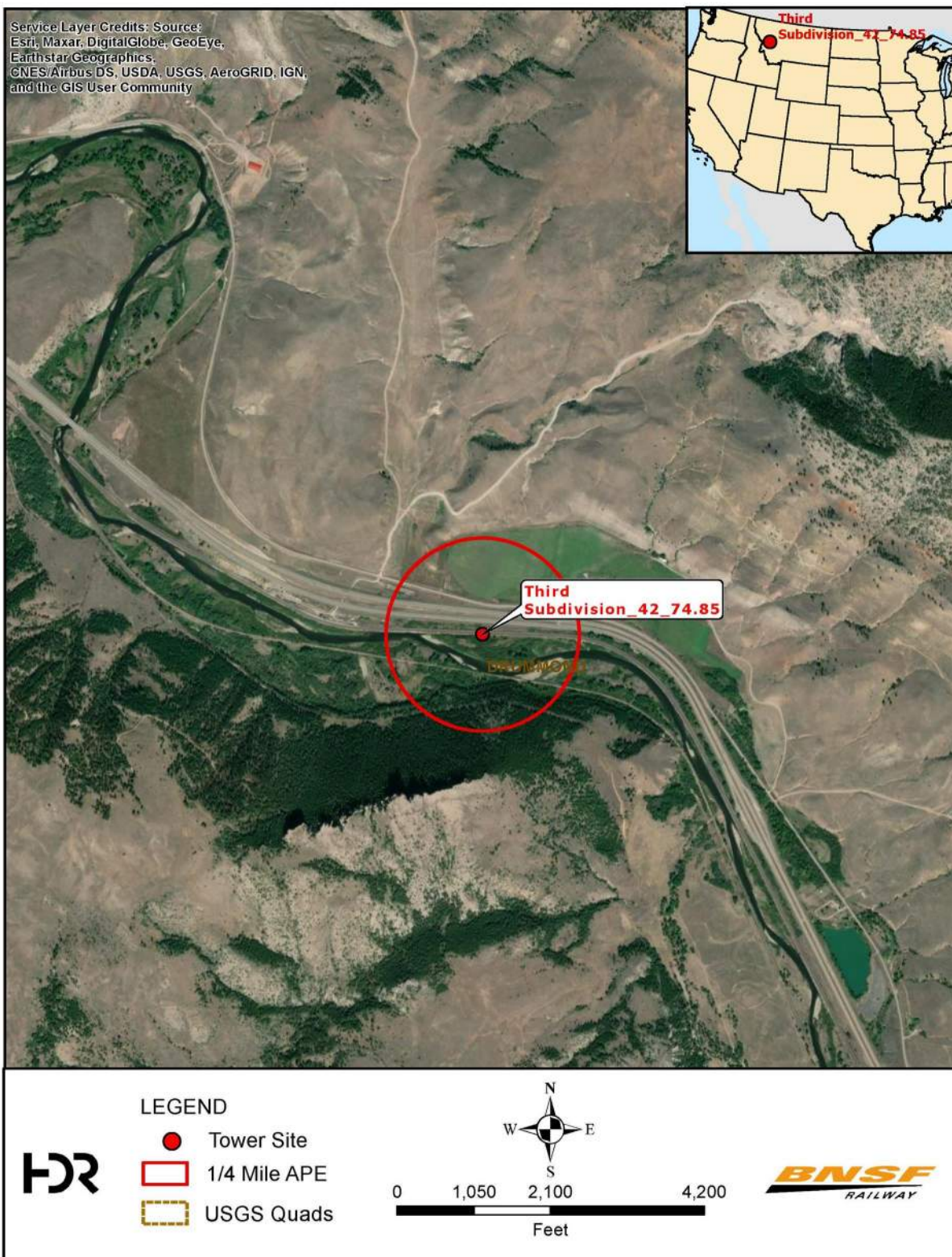


Figure 28. Aerial Map of the proposed tower Third Subdivision\_42\_74.85.

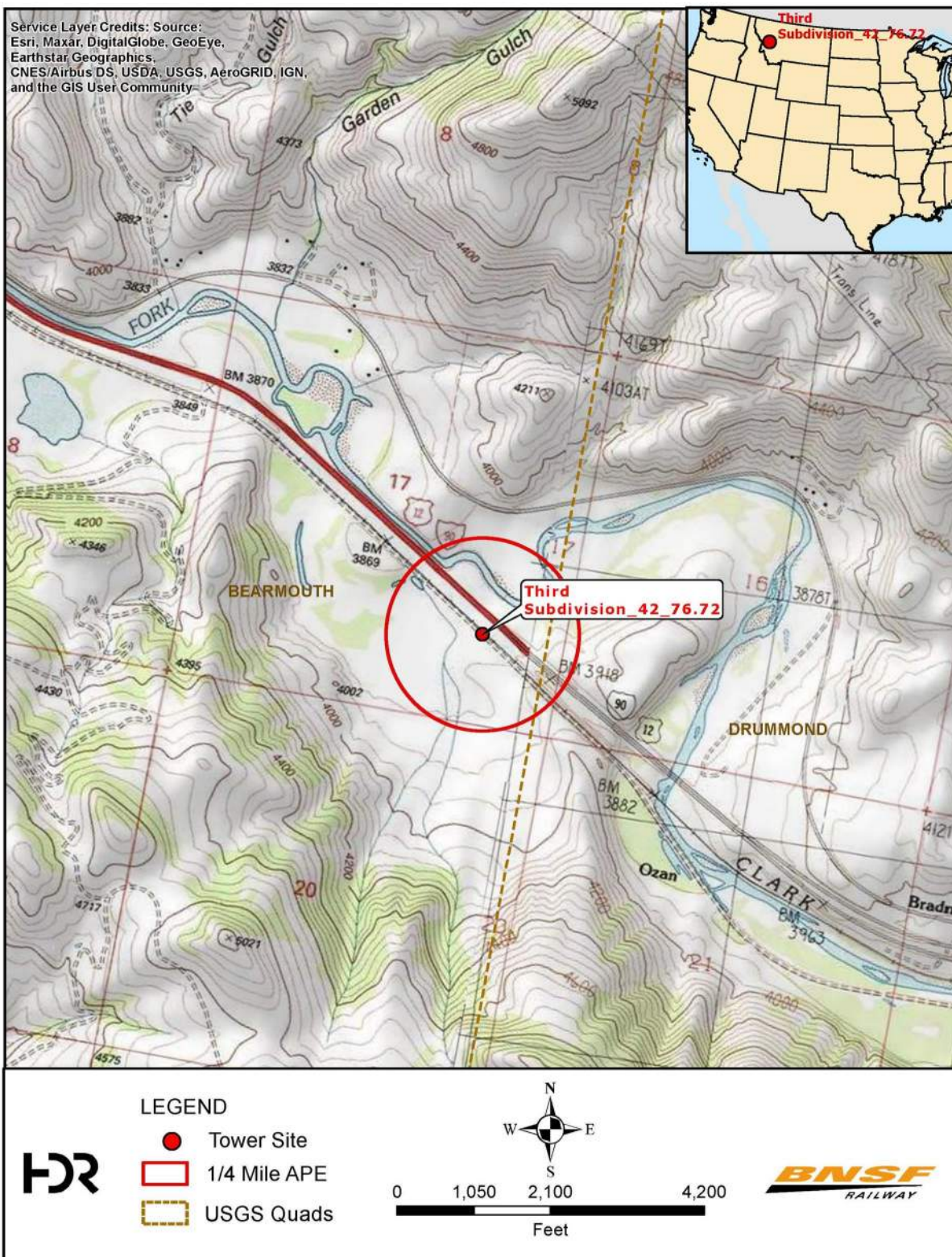


Figure 29. Topographic Map of proposed tower Third Subdivision\_42\_76.72.

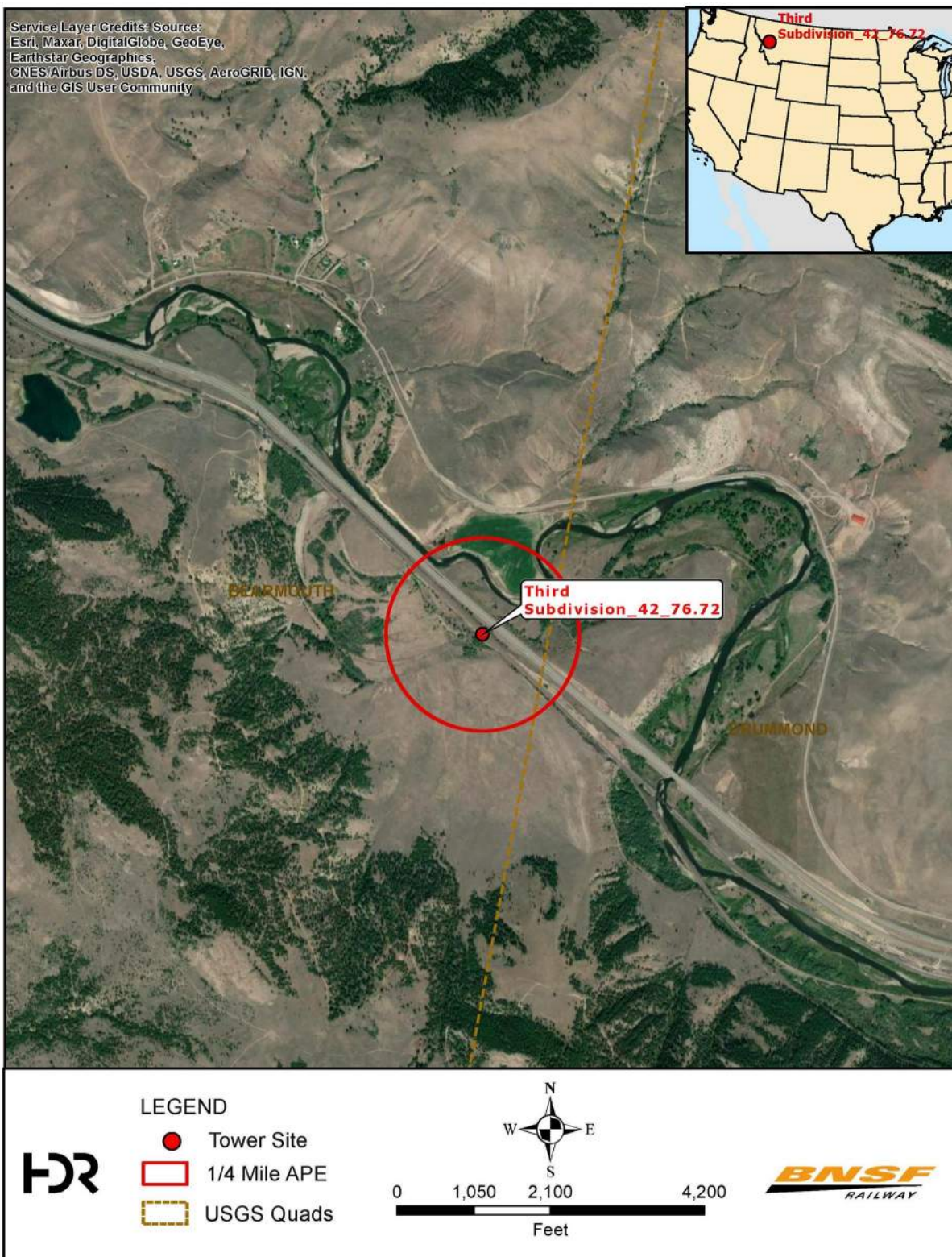


Figure 30. Aerial Map of the proposed tower Third Subdivision\_42\_76.72.

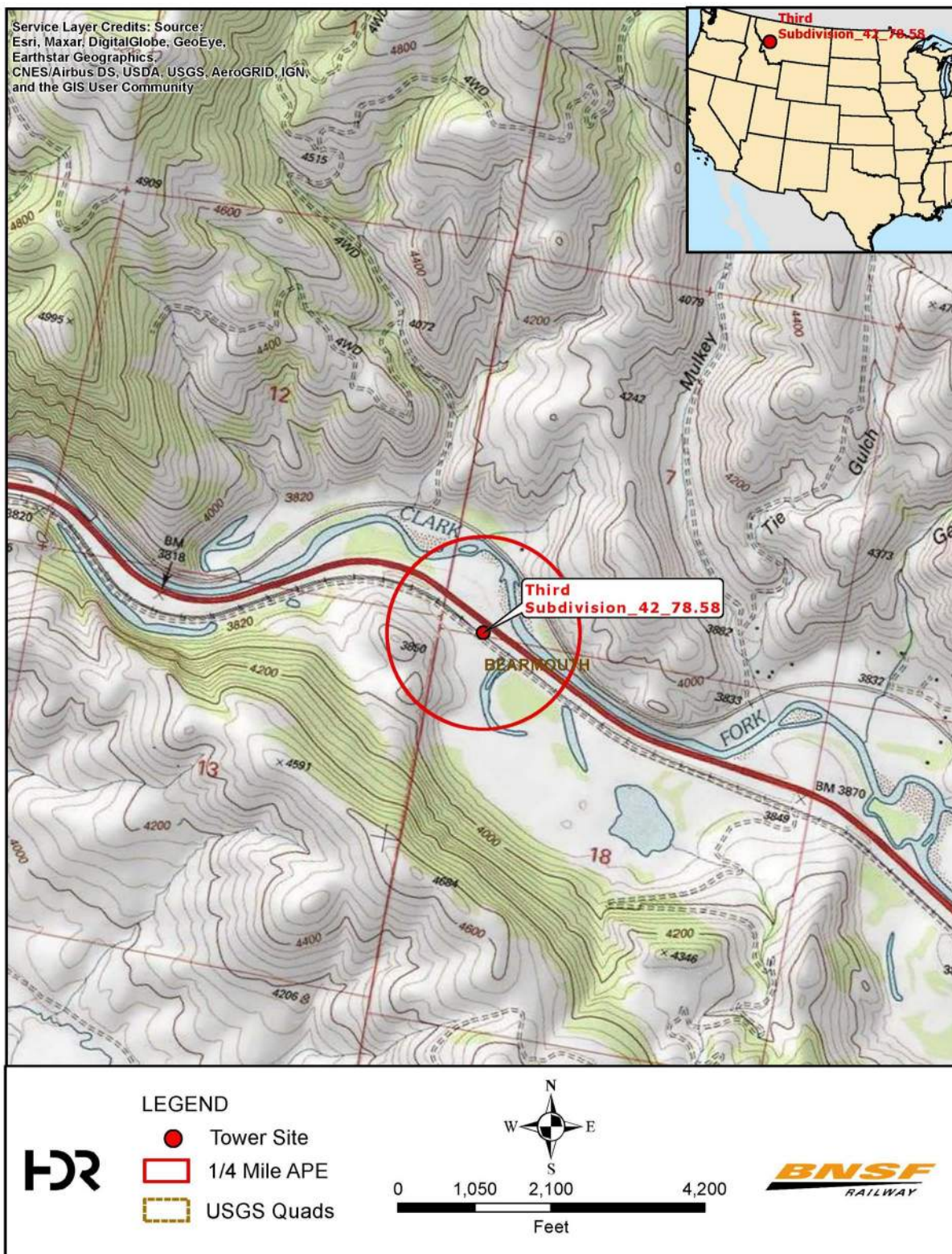


Figure 31. Topographic Map of proposed tower Third Subdivision\_42\_78.58.

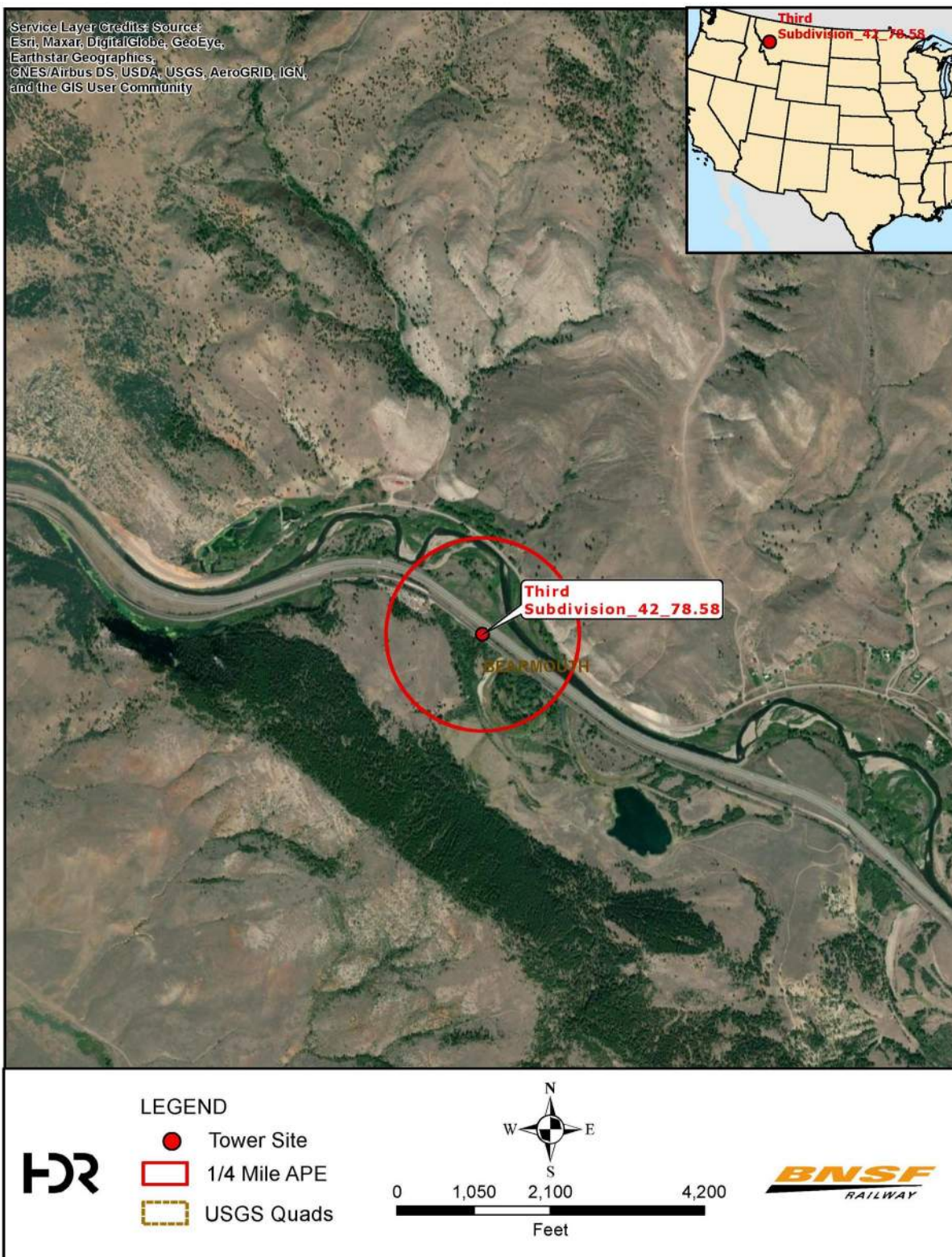


Figure 32. Aerial Map of the proposed tower Third Subdivision\_42\_78.58.

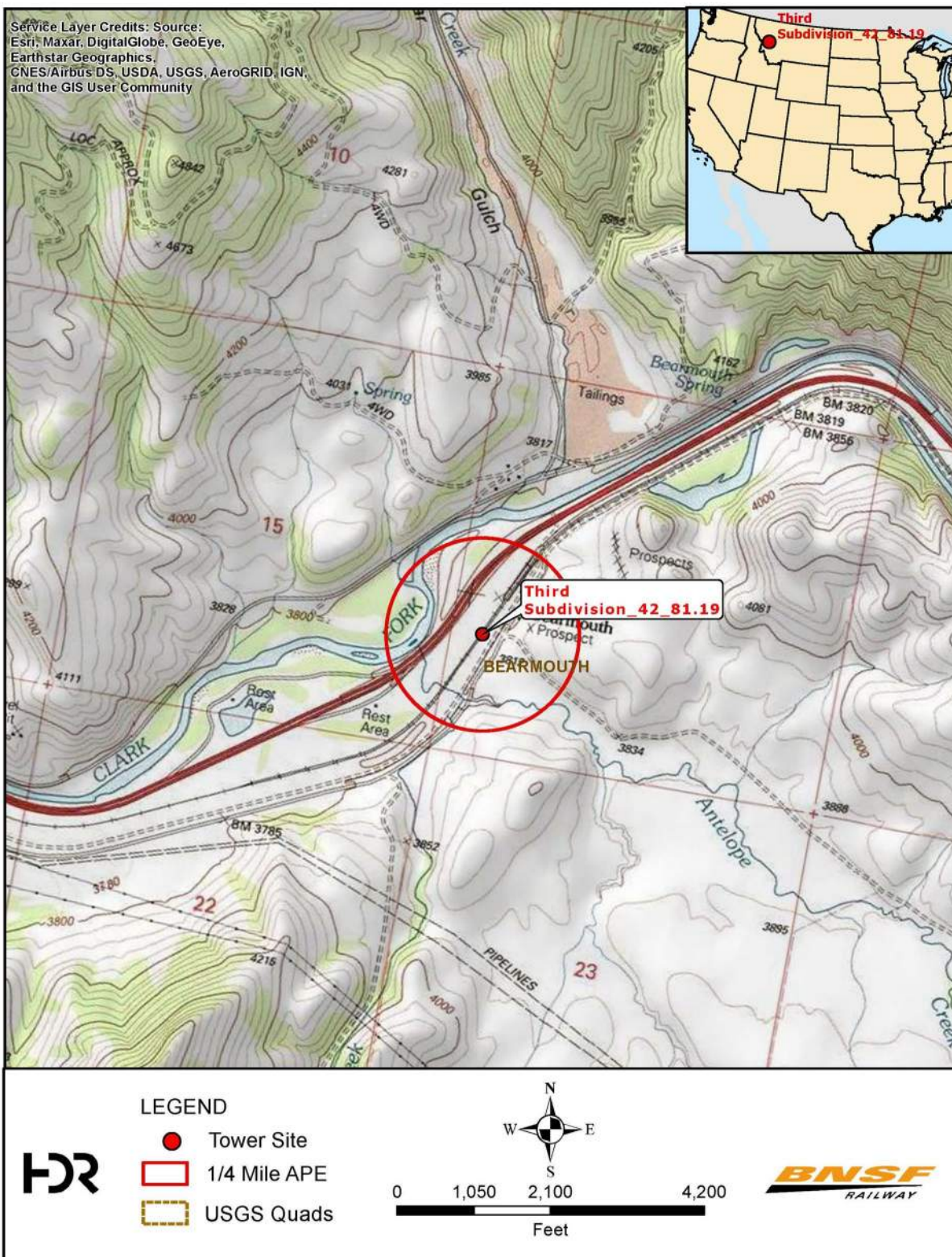


Figure 33. Topographic Map of proposed tower Third Subdivision\_42\_81.19.

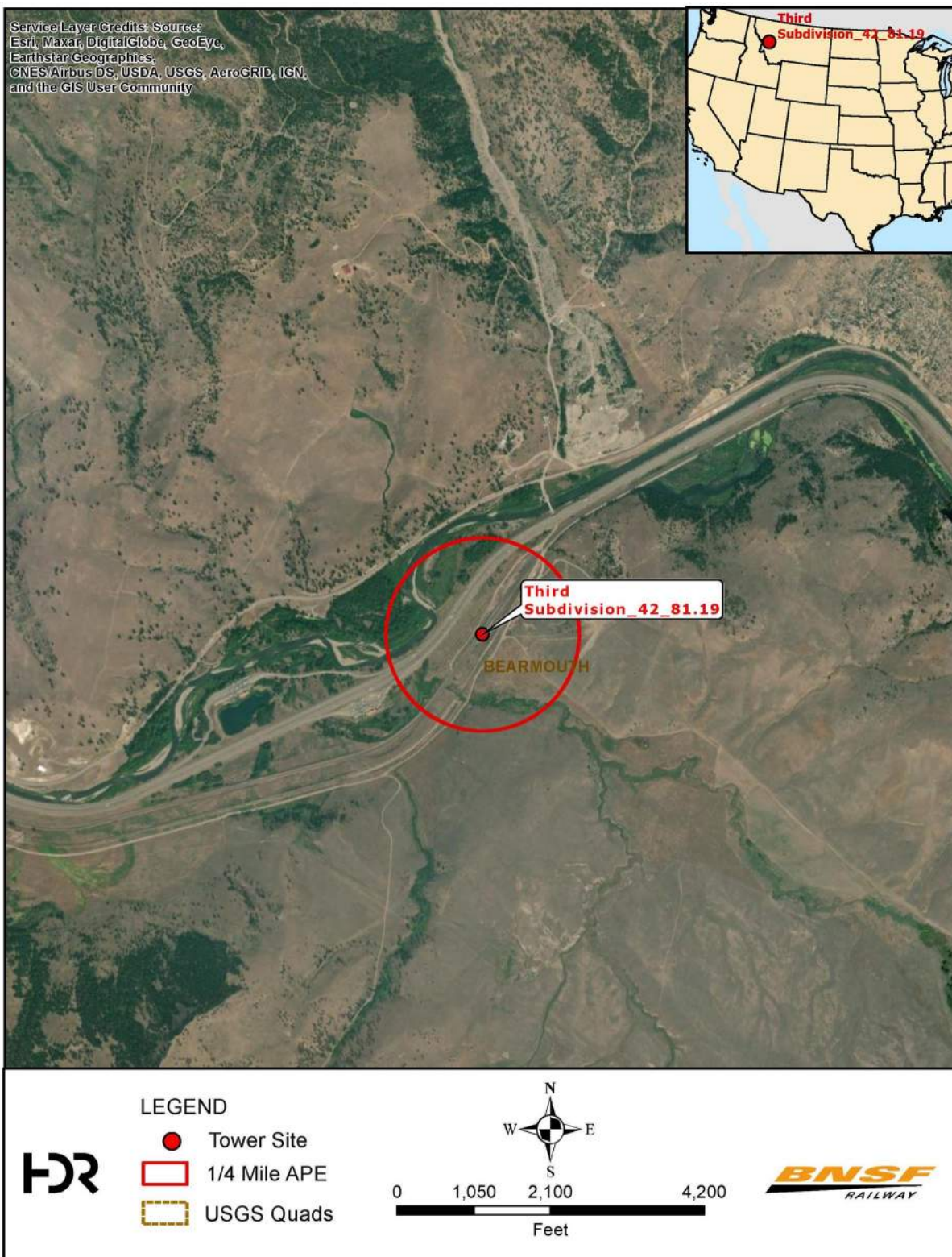


Figure 34. Aerial Map of the proposed tower Third Subdivision\_42\_81.19.



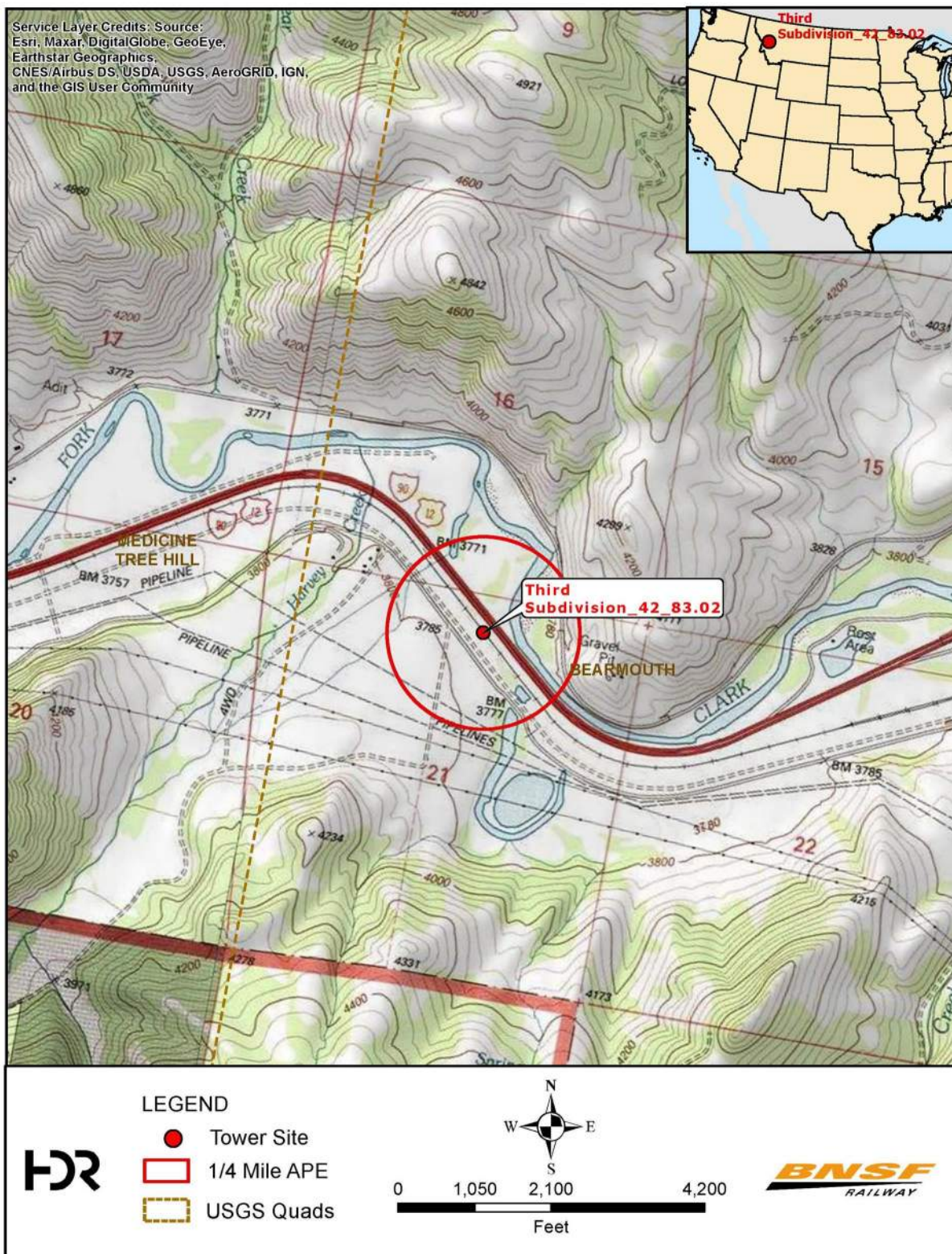


Figure 35. Topographic Map of proposed tower Third Subdivision\_42\_83.02.



Figure 36. Aerial Map of the proposed tower Third Subdivision\_42\_83.02.

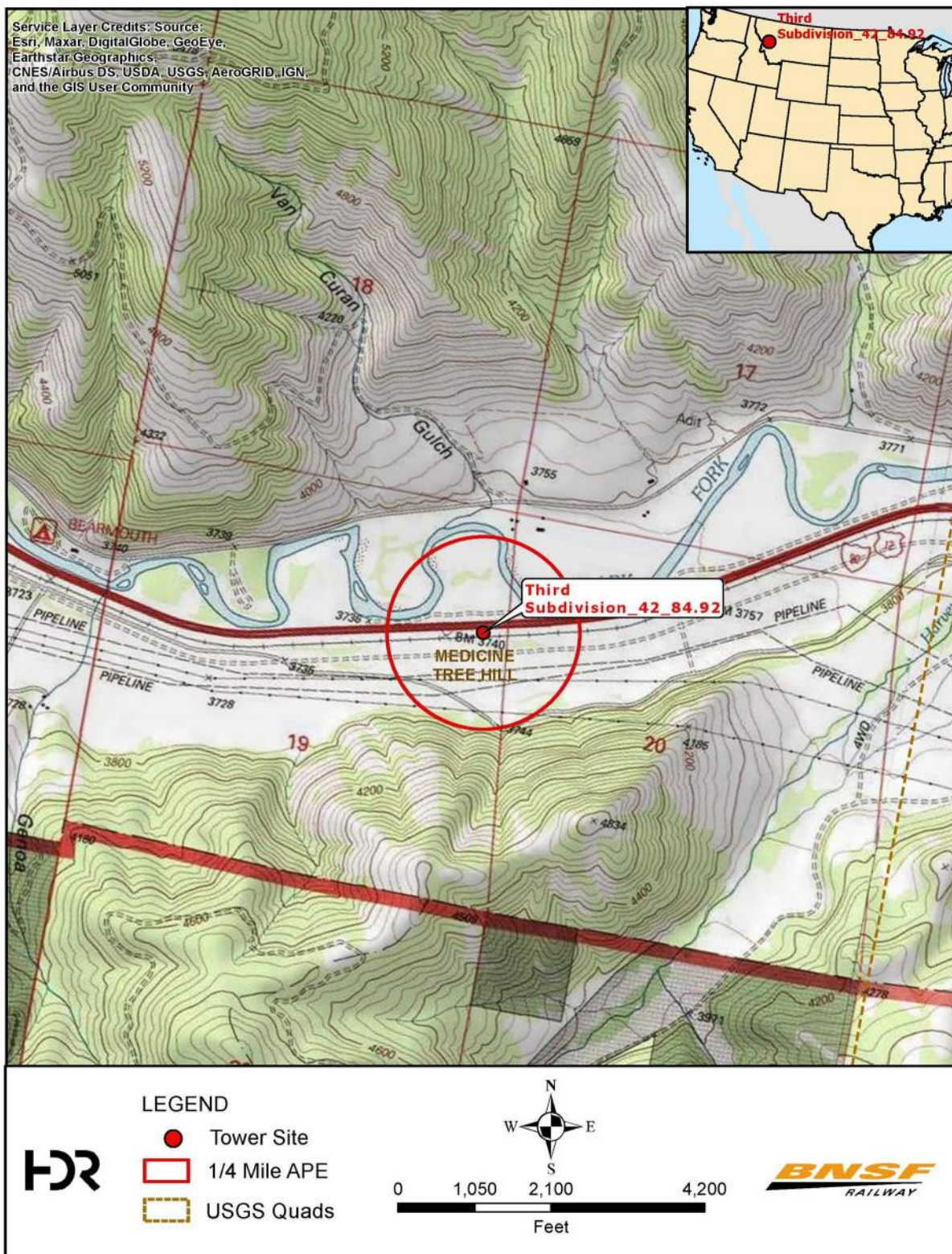


Figure 37. Topographic Map of proposed tower Third Subdivision\_42\_84.92.

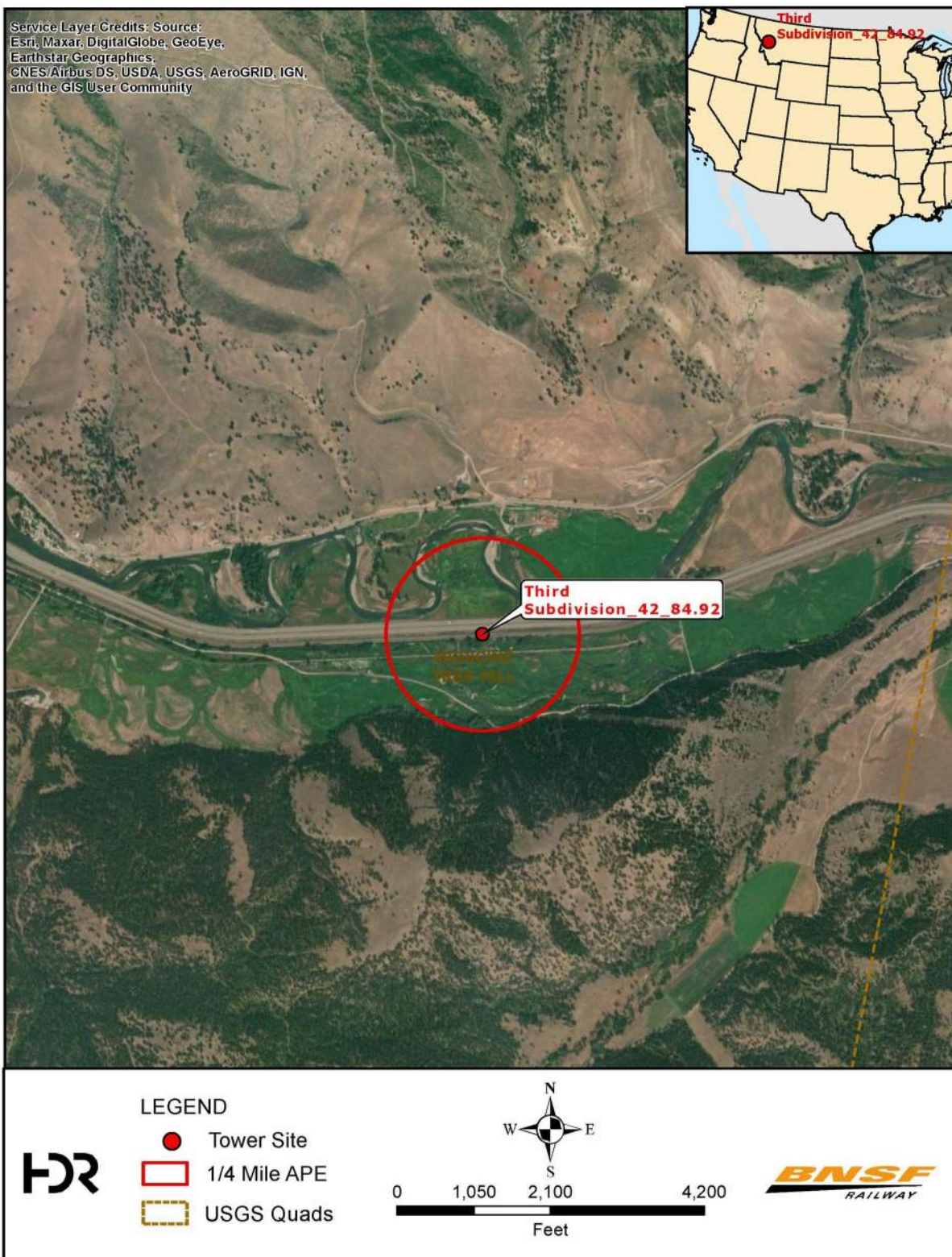


Figure 38. Aerial Map of the proposed tower Third Subdivision\_42\_84.92.

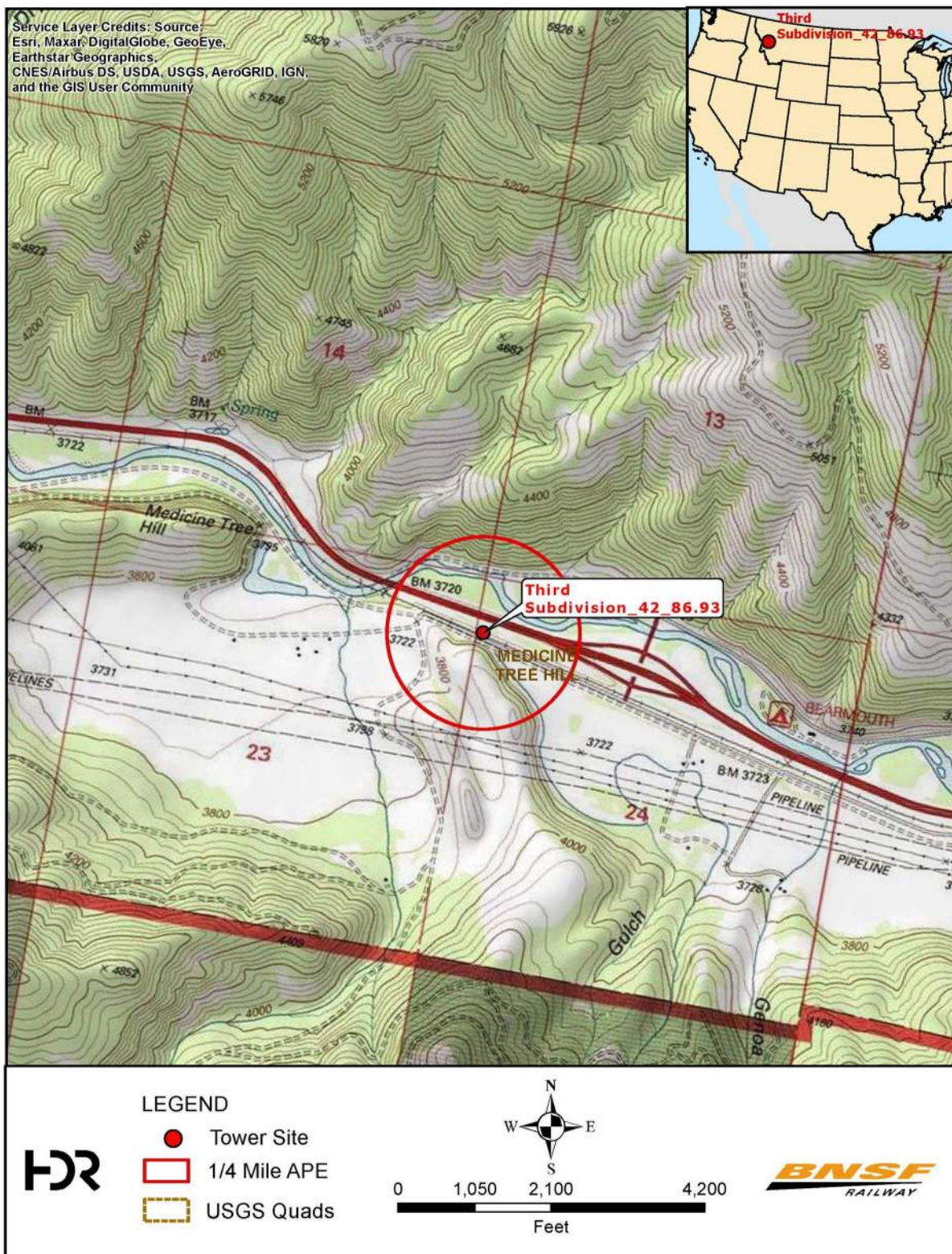


Figure 39. Topographic Map of proposed tower Third Subdivision\_42\_86.93.

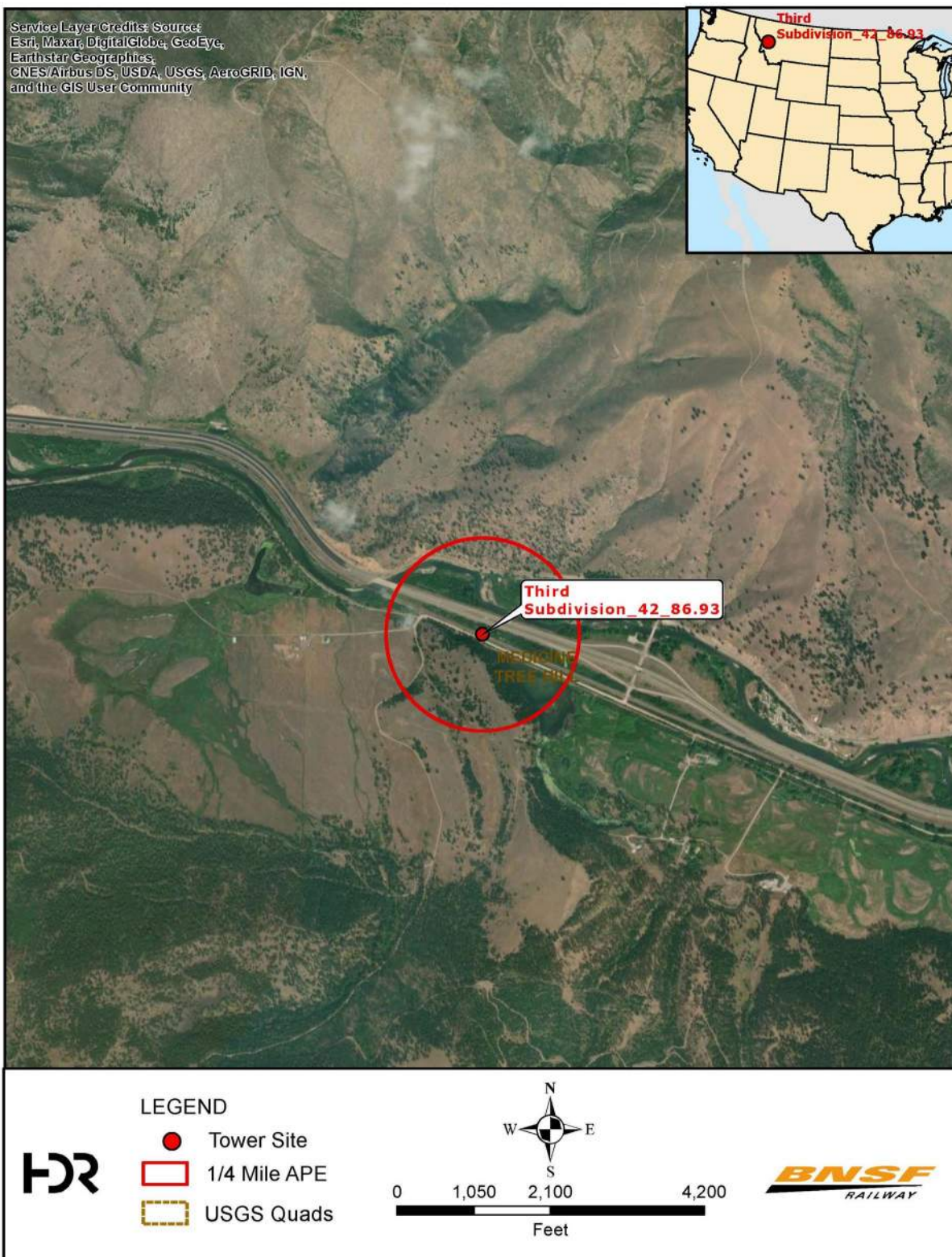


Figure 40. Aerial Map of the proposed tower Third Subdivision\_42\_86.93.

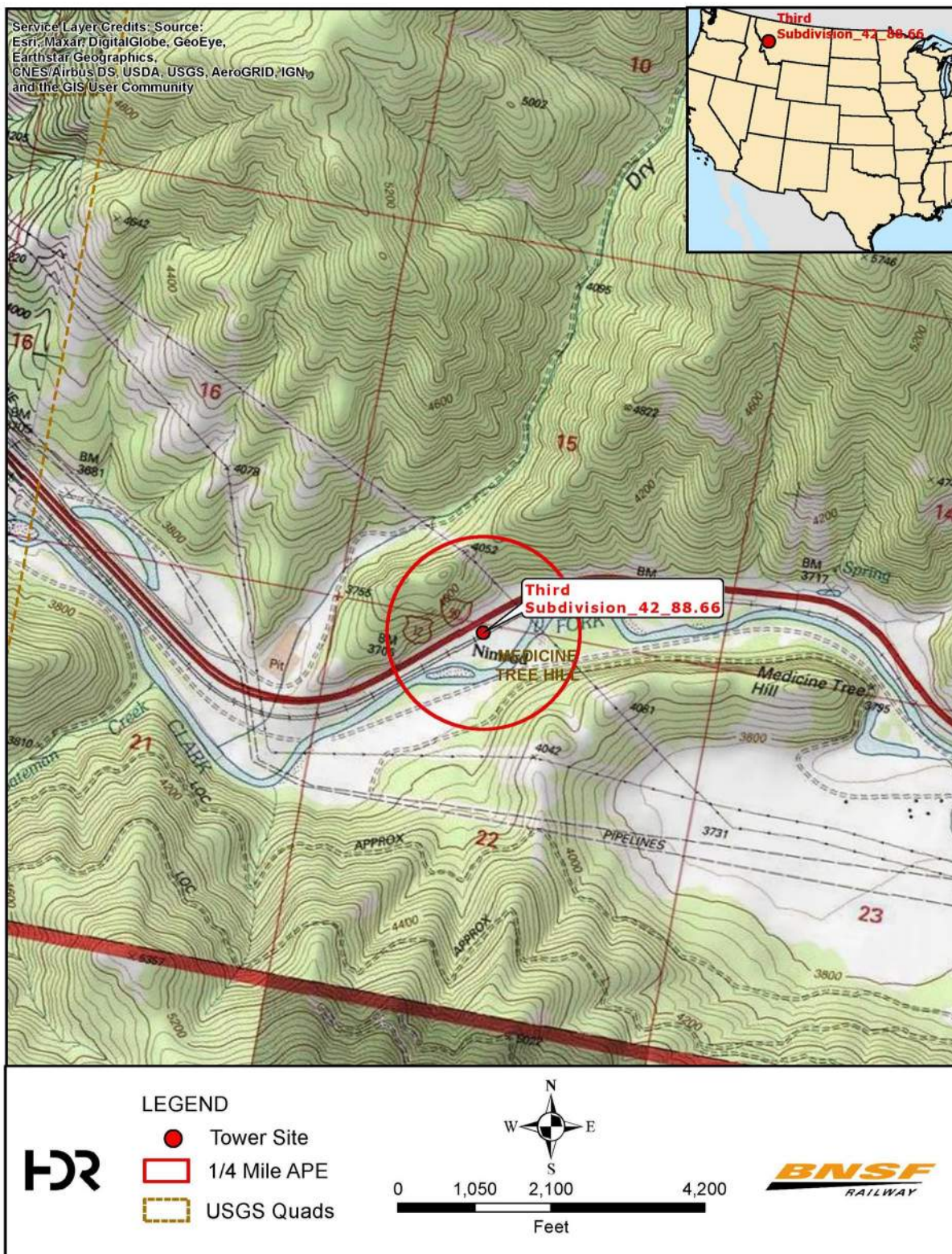


Figure 41. Topographic Map of proposed tower Third Subdivision\_42\_88.66.

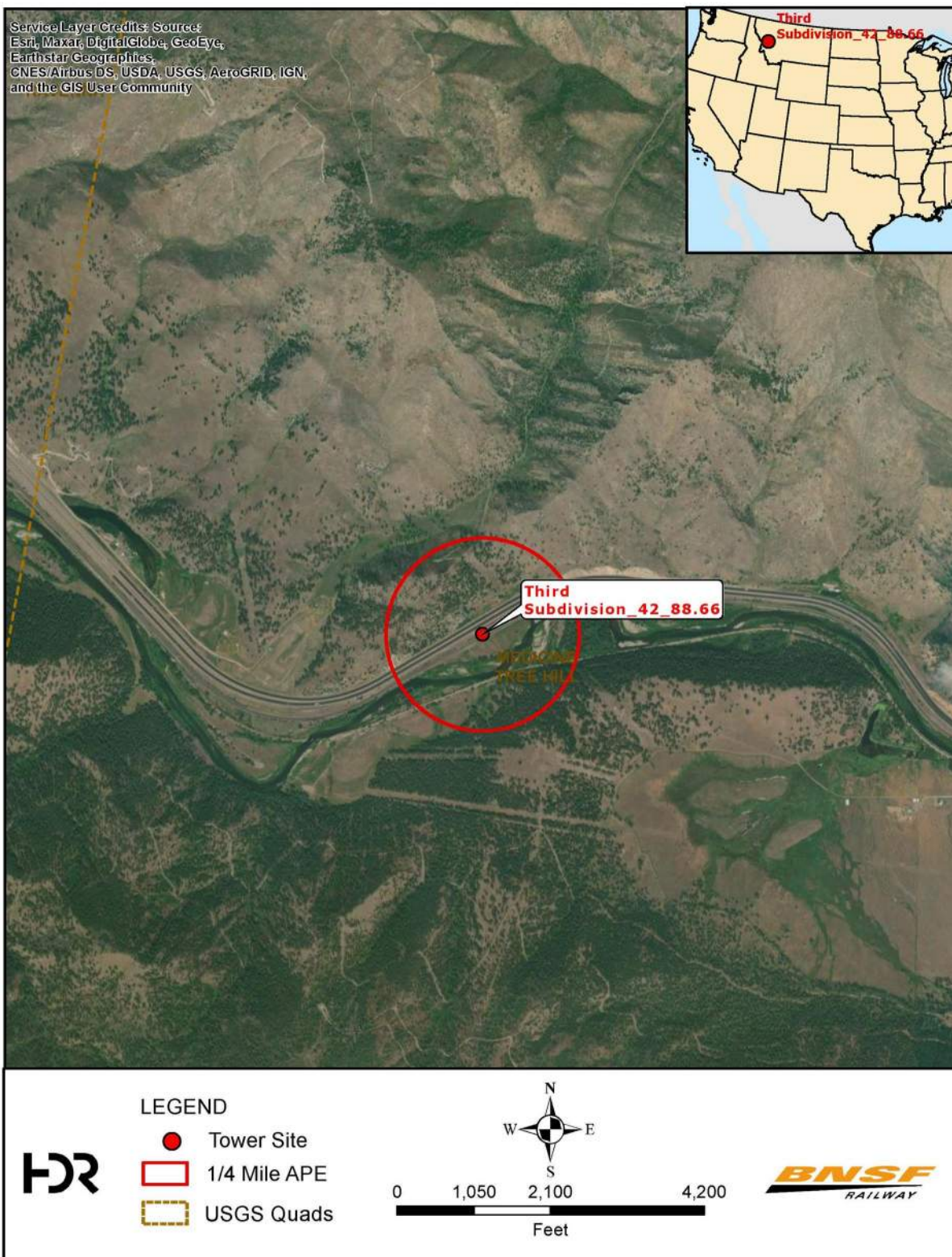


Figure 42. Aerial Map of the proposed tower Third Subdivision\_42\_88.66.



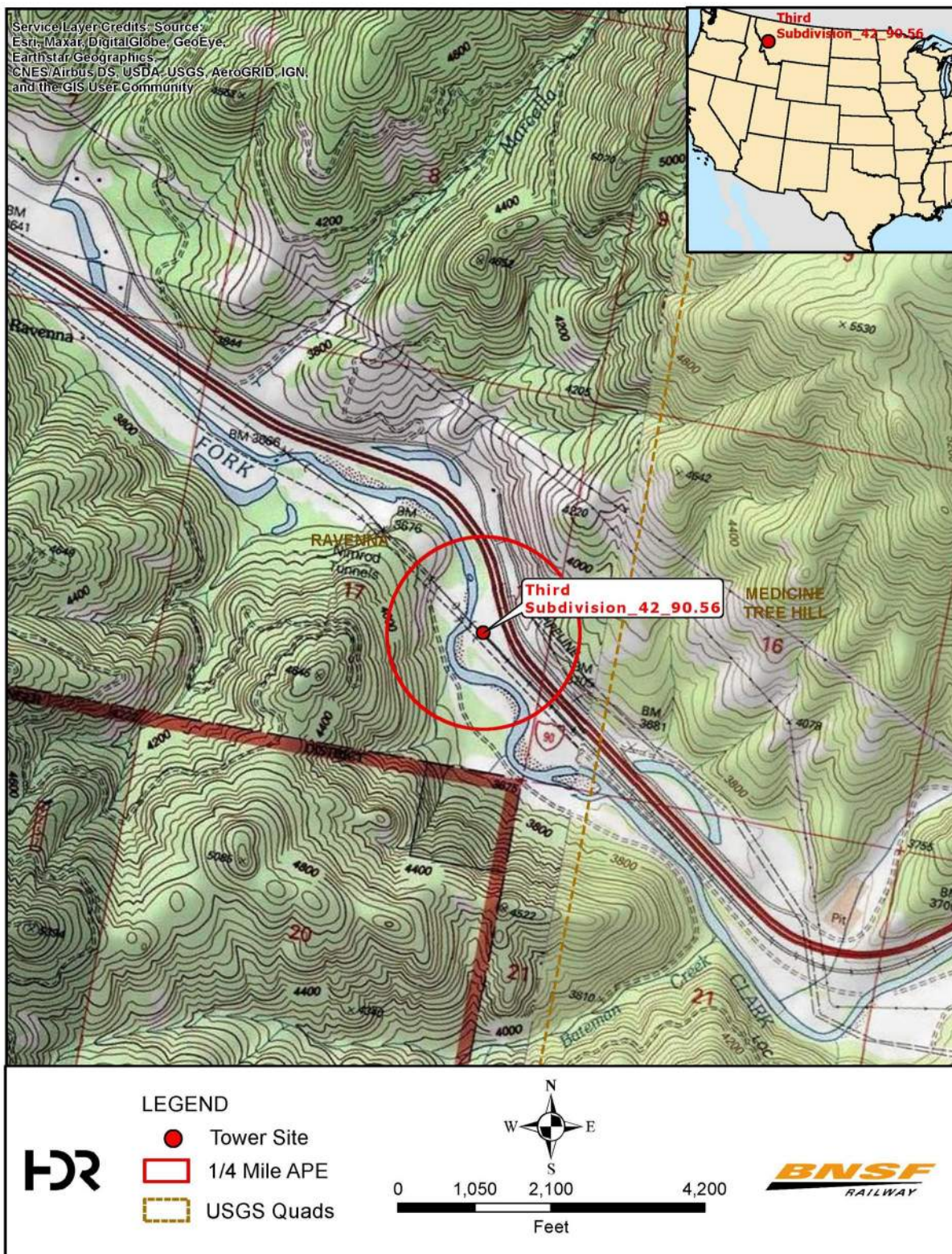


Figure 43. Topographic Map of proposed tower Third Subdivision\_42\_90.56.

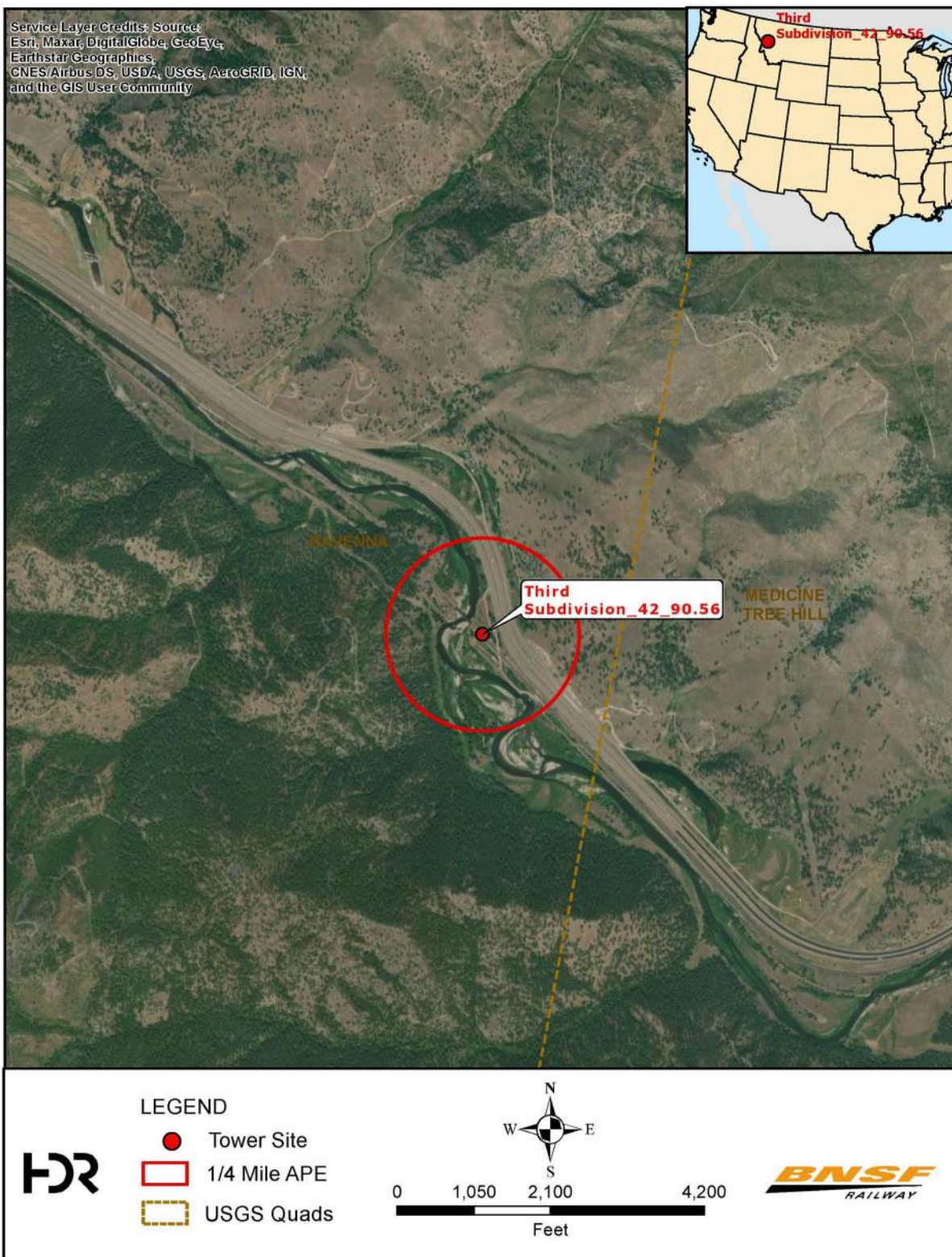


Figure 44. Aerial Map of the proposed tower Third Subdivision\_42\_90.56.

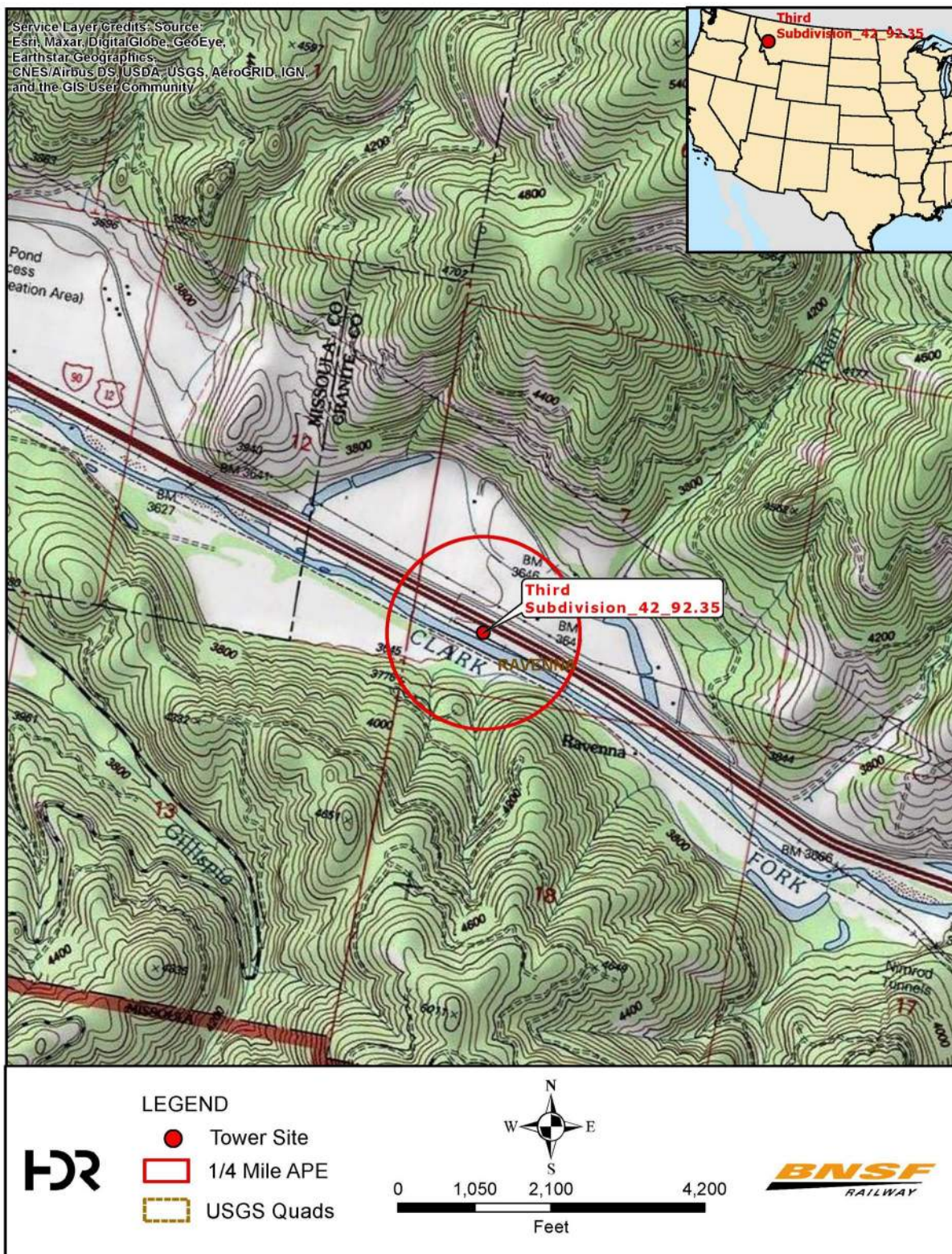


Figure 45. Topographic Map of proposed tower Third Subdivision\_42\_92.35.

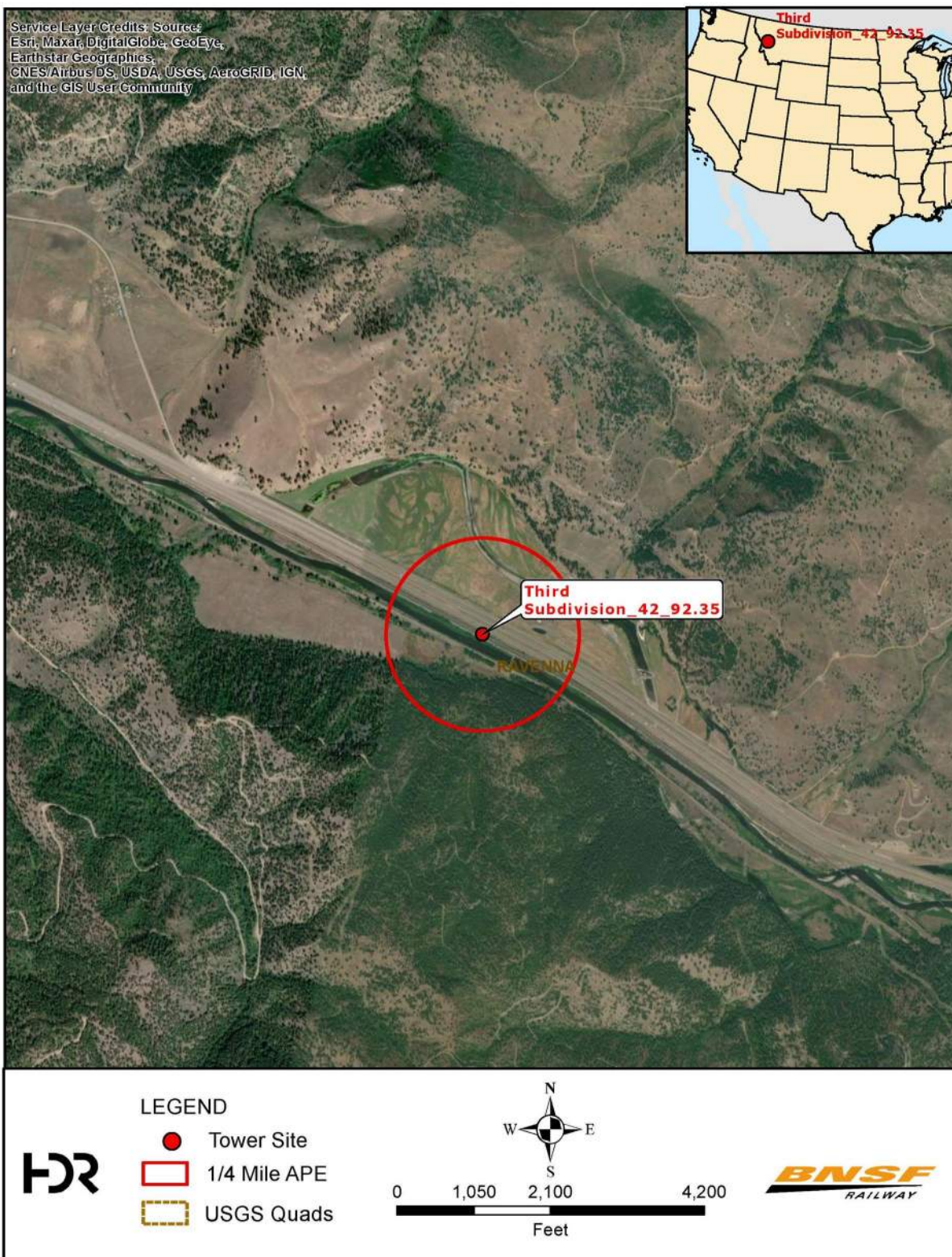
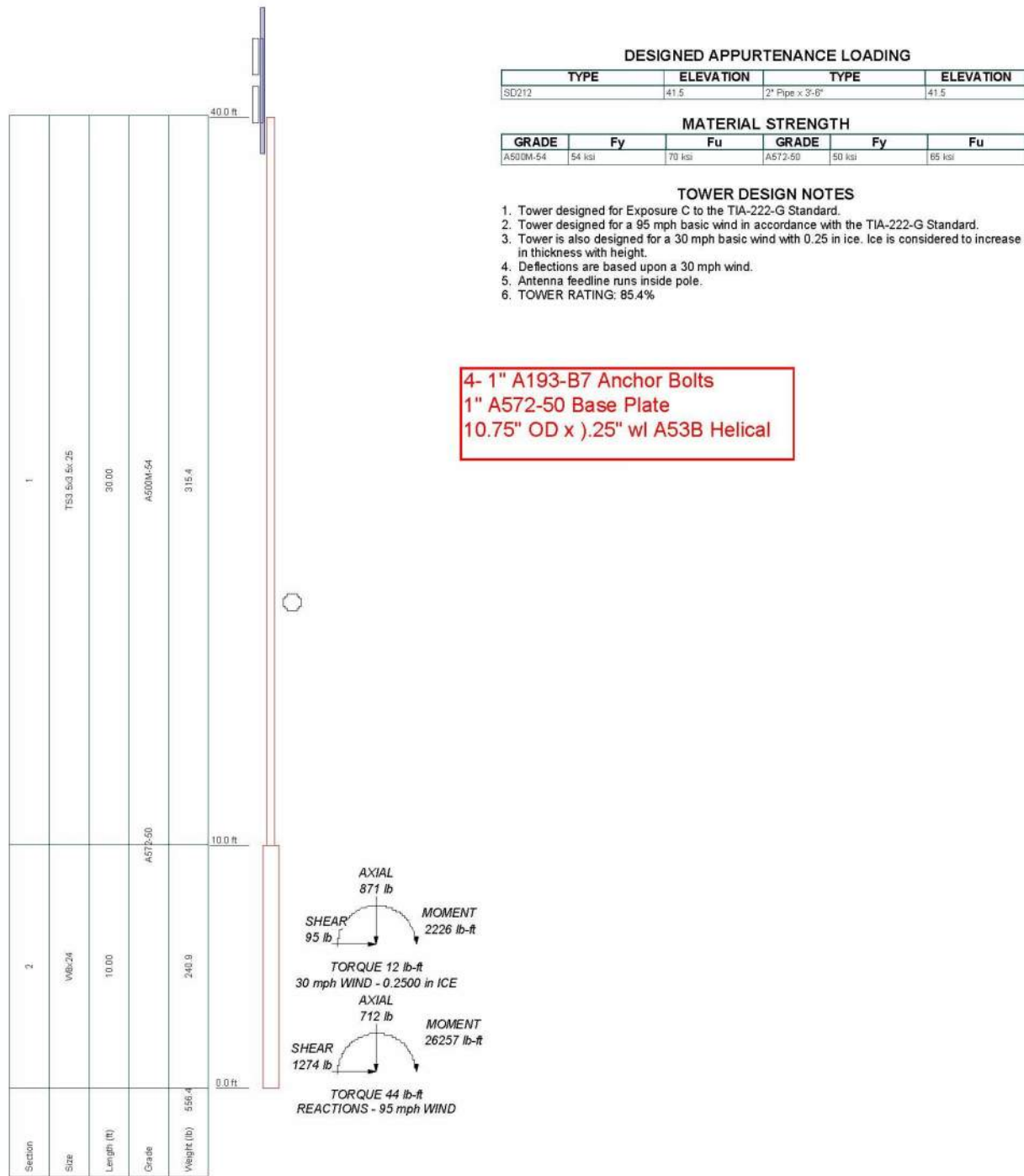


Figure 46. Aerial Map of the proposed tower Third Subdivision\_42\_92.35.



<b>V.G. Duvall, Jr., PE</b>		JOB: <b>09-0082</b>	
9006 Grand Lake Estates Dr. Montgomery, TX 77316 Phone: 281.650.9731 FAX:		Project: <b>40' FIXED TREBUCHET BNSF</b>	
Client: <b>EMI</b>	Drawn by: <b>VGD</b>	App'd:	
Code: <b>TIA-222-G</b>	Date: <b>02/10/11</b>	Scale: <b>NTS</b>	
Path:		Dwg No: <b>E-1</b>	

**Figure 47. Tower specification schematic for a 40-foot-tall mast monopole with 10-foot antenna.**



**Figure 48. Photograph of a typical PTC pole installation with associated infrastructure.**