DOCKET NO. 477 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at 46 Cemetery Road, Canterbury, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		February 15, 2018

Findings of Fact

Introduction

1. Cellco Partnership d/b/a Verizon Wireless (Cellco), in accordance with provisions of Connecticut General Statutes (C.G.S.) § 16-50g, et seq, applied to the Connecticut Siting Council (Council) on August 23, 2017 for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a 160-foot monopole wireless telecommunications facility located at 46 Cemetery Road in Canterbury, Connecticut (refer to Figure 1). (Cellco 1, pp. 1-2)

2. Cellco is a Delaware Partnership with an administrative office located at 99 East River Drive, East Hartford, Connecticut. Cellco is licensed by the Federal Communications Commission (FCC) to provide personal wireless communication service to Connecticut. (Cellco 1, pp. 2, 6)

3. The party in this proceeding is Cellco. (Transcript 1- December 12, 2017, 3:00 p.m. [Tr. 1], p. 5)

4. The primary purpose of the proposed facility is to increase network capacity and provide reliable wireless service to existing gaps in the southern portion of Canterbury and the eastern portion of Scotland. (Cellco 1, Tab 6)

5. Pursuant to C.G.S. § 16-50*l* (b), Cellco provided public notice of the filing of the application by publishing notification in The Bulletin on August 17 and August 18, 2017. (Cellco 2)

6. Pursuant to C.G.S. § 16-50*l* (b), notice of the application was provided to all abutting property owners by certified mail. One certified mail return receipt was unclaimed for 106 Cemetery Road. Cellco resent notice to this address by first class mail. (Cellco 1, Tab 4; Cellco 4, response 1)

7. On August 23, 2017, Cellco provided notice to all federal, state and local officials and agencies listed in C.G.S. § 16-50*l* (b). (Cellco 1, Tab 2)

Procedural Matters

8. Upon receipt of Cellco's application, the Council sent a letter to the Town of Canterbury (Town) on August 30, 2017, as notification that the application was received and is being processed in accordance with C.G.S. § 16-50gg. (Record)

9. During a regular Council meeting on September 14, 2017, the application was deemed complete pursuant to Regulations of Connecticut State Agencies (R.C.S.A.) § 16-50*l*-1a and a public hearing schedule was approved by the Council. (Record)

10. Pursuant to C.G.S. § 16-50m, on September 26, 2017 the Council published legal notice of the date and time of the public hearing in The Bulletin. (Record)

11. Pursuant to C.G.S. § 16-50m, on September 18, 2017, the Council sent a letter to the Town to provide notification of the scheduled public hearing and to invite the Town to participate. (Record)

12. On October 4, 2017, the Council held a pre-hearing conference on procedural matters at the Council's office for parties and intervenors to discuss the requirements for pre-filed testimony, exhibit lists, administrative notice lists, expected witness lists, filing of pre-hearing interrogatories and the logistics of the public inspection of the proposed site. (Record)

13. In compliance with R.C.S.A. § 16-50j-21, on November 21, 2017, Cellco installed a four-foot by six-foot sign at the driveway entrance to the site property that presented information regarding the project and the Council's public hearing. (Cellco 5)

14. The Council and its staff conducted an inspection of the proposed site on December 12, 2017, beginning at 2:00 p.m. During the field inspection, Cellco flew a balloon at the proposed site from 7:00 a.m. to 4:00 p.m. to simulate the height of the proposed tower. (Council's Hearing Notice dated September 18, 2017; Council's Hearing Procedures Memorandum dated October 5, 2017)

15. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public hearing on December 12, 2017, beginning with the evidentiary session of the hearing at 3:00 p.m. and continuing with the public comment session at 6:30 p.m. at the Canterbury Community Center, Canterbury, Connecticut. (Council's Hearing Notice dated September 18, 2017; Tr. 1, p. 1; Transcript 2 – December 12, 2017, 6:30 p.m. [Tr. 2], p. 82)

State Agency Comment

16. Pursuant to C.G.S. § 16-50j (g), on September 18, 2017, the following State agencies were solicited by the Council to submit written comments regarding the proposed facility: Department of Energy and Environmental Protection (DEEP); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Agriculture (DOAg); Department of Transportation (DOT); Connecticut Airport Authority (CAA); Department of Emergency Services and Public Protection (DESPP); and State Historic Preservation Office (SHPO). (Record)

17. No response from any State agency was received. (Record)

Municipal Consultation

18. On November 21, 2016, Cellco commenced the 90-day pre-application municipal consultation process by meeting with Canterbury's First Selectman Roy Piper and Land Use Director Melissa Gil. At the meeting, Cellco provided copies of the project technical report that included site plans coverage maps, and other project-related materials. (Cellco 1, p. 20; Cellco 1a)

19. At the request of the Town, Cellco hosted a Public Information Meeting at the Canterbury Town Hall on April 6, 2017. Notice of the public meeting was published in the Norwich Bulletin and notifications were mailed to property abutters by first class mail. (Cellco 1, p. 20; Tr. 1 pp. 67-68)

20. At the request of the Town, a public balloon float to simulate the height of the tower was conducted about a week after the Public Information Meeting. (Tr. 1 pp. 67-68)

Public Need for Service

21. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. Through the Federal Telecommunications Act of 1996, Congress seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996)

22. In issuing cellular licenses, the Federal government has preempted the determination of public need for cellular service by the states, and has established design standards to ensure technical integrity and nationwide compatibility among all systems. Cellco is licensed by the Federal Communications Commission (FCC) to provide personal wireless communication service to Connecticut. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996; Cellco 1, p. 6)

23. Section 253 of the Telecommunications Act of 1996 prohibits any state or local statute or regulation, or other state or local legal requirement from prohibiting or having the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996)

24. Section 704 of the Telecommunications Act of 1996 prohibits local and state entities from discriminating among providers of functionally equivalent services and from prohibiting or having the effect of prohibiting the provision of personal wireless services. This section also requires state or local governments to act on applications within a reasonable period of time and to make any denial of an application in writing supported by substantial evidence in a written record. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996)

25. Section 704 of the Telecommunications Act of 1996 also prohibits any state or local entity from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions, which include effects on human health and wildlife, to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996)

26. In February 2009, as part of the American Recovery and Reinvestment Act, Congress directed the FCC to develop a National Broadband Plan to ensure every American has "access to broadband capability." Congress also required that this plan include a detailed strategy for achieving affordability and maximizing use of broadband to advance "consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, employee training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes." (Council Administrative Notice Item No. 18 – The National Broadband Plan)

27. Section 706 of the Telecommunications Act of 1996 requires each state commission with regulatory jurisdiction over telecommunications services to encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans, including elementary and secondary schools, by utilizing regulating methods that promote competition in the local telecommunications market and remove barriers to infrastructure investment. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996)

28. In December 2009, President Barack Obama recognized cell phone towers as critical infrastructure vital to the United States. The Department of Homeland Security, in collaboration with other federal stakeholders, state, local, and tribal governments, and private sector partners, has developed the National Infrastructure Protection Plan to establish a framework for securing our resources and

maintaining their resilience from all hazards during an event or emergency. (Council Administrative Notice Item No. 11 –Presidential Proclamation 8460, Critical Infrastructure Protection)

29. In February 2012, Congress adopted the Middle Class Tax Relief and Job Creation Act to advance wireless broadband service for both public safety and commercial users. The Act established the First Responder Network Authority to oversee the construction and operation of a nationwide public safety wireless broadband network. Section 6409 of the Act contributes to the twin goals of commercial and public safety wireless broadband deployment through several measures that promote rapid deployment of the network facilities needed for the provision of broadband wireless services. (Council Administrative Notice Item No. 8 – Middle Class Tax Relief and Job Creation Act of 2012)

30. In June 2012, President Barack Obama issued an Executive Order to accelerate broadband infrastructure deployment declaring that broadband access is a crucial resource essential to the nation's global competitiveness, driving job creation, promoting innovation, expanding markets for American businesses and affording public safety agencies the opportunity for greater levels of effectiveness and interoperability. (Council Admin Notice Item No. 20 – FCC Wireless Infrastructure Report and Order; Council Administrative Notice Item No. 12 – Presidential Executive Order 13616, Accelerating Broadband Infrastructure Development)

31. Pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, also referred to as the Spectrum Act, a state or local government may not deny and shall approve any request for collocation, removal or replacement of equipment on an existing wireless tower provided that this does not constitute a substantial change in the physical dimensions of the tower. The Federal Communications Commission defines a substantial change in the physical dimensions of a tower as follows:
    a) An increase in the existing height of the tower by more than 10 percent or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater. Changes in height should be measured from the dimensions of the tower, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.
    b) Adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater.
    c) Installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four, or more than one new equipment shelter.
    d) A change that entails any excavation or deployment outside the current site.
    e) A change that would defeat the concealment elements of the tower.
    f) A change that does not comply with conditions associated with the siting approval of the construction or modification of the tower, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would exceed the thresholds identified in (a) – (d).

    (Council Administrative Notice Item No. 8 – Middle Class Tax Relief and Job Creation Act of 2012; Council Administrative Notice Item No. 20 – FCC Wireless Infrastructure Report and Order)

32. According to state policy, if the Council finds that a request for shared use of a facility by a municipality or other person, firm, corporation or public agency is technically, legally, environmentally and economically feasible, and the Council finds that the request for shared use of a facility meets public safety concerns, the Council shall issue an order approving such shared use to avoid the unnecessary proliferation of towers in the state. (C.G.S. §16-50aa)

33. On September 18, 2017, the Council sent correspondence to other telecommunications carriers requesting that carriers notify the Council if they were interested in locating on the proposed facility in the foreseeable future. T-Mobile responded on November 13, 2017, stating that T-Mobile has a need in this area but locating on the tower is not within T-Mobile's current build plan. No other carriers responded to the Council. (Record)

Existing and Proposed Wireless Services

34. Cellco's proposed facility would provide coverage to existing service gaps and would provide some capacity relief to adjacent Cellco sites. Cellco would name the proposed site as the "Canterbury South" facility in their network. (Cellco 1, pp. 7-9, Tab 8)

35. Existing adjacent Cellco telecommunications facilities include:

Cellco Site Name	Site Address	Distance and Direction from Proposed Tower	Antenna Height (agl)	Structure Type
Baltic	62 North Main St., Sprague	3.5 miles SW	165 feet	Lattice tower
Lisbon	26 Mell Rd., Lisbon	6.0 miles S	161 feet	Monopole
Jewett City	257 Norman Rd. Griswold	6.4 miles SE	158 feet	Lattice tower
Plainfield South	1197 Norwich Rd., Plainfield	5.0 miles SE	140 feet	Monopole
Canterbury	53 Westminster Rd., Canterbury	3.5 miles NE	170 feet	Monopole
Hampton	184 Fiske Rd., Hampton	7.4 miles NW	142 feet	Lattice tower
Scotland	165 Huntington Rd., Scotland	3.7 miles NW	228 feet	Lattice tower

(Cellco 1, p. 8; Council Administrative Notice Item No. 23 - Council telecommunications facility database)

36. Cellco would initially deploy Long Term Evolution (LTE) voice and data service equipment utilizing the 700 MHz and 2100 MHz frequency bands at the proposed Canterbury South site. Cellco designs its LTE network using a -105 dB Reverse Link Operational Path Loss standard for in-vehicle service and -95 Reverse Link Operational Path Loss standard for in-building service. (Cellco 4, response 2, response 4)

37. Propagation modeling at 700 MHz indicates an area of deficient wireless service in the southwest section of Canterbury, generally south of Route 14 and west of Route 169. Deficient 700 MHz service also exists in the eastern portion of Scotland and northern portion of Sprague (refer to Figures 2 and 3). Currently, there is no 2100 MHz service in the southwest section of Canterbury. (Cellco 1, Tab 6)

38. The proposed Canterbury South site would provide capacity relief at 700 MHz to Cellco's existing Baltic facility (Alpha sector) which is nearing its capacity limit. Capacity relief is expected to be around five percent. (Cellco 1, Tab 8; Tr. 1, pp. 32-34)

39. The proposed facility would provide an approximate service footprint of 18.8 square miles at 700 MHz and 3.1 square miles at 2100 MHz (refer to Figures 4 and 5). Additional "bands" of 700 MHz service would extend into Plainfield and Lisbon. (Cellco 1, Tab 8)

40. Additional service in other frequency bands (850 MHz and 1900 MHz) would be deployed in the future, if necessary, to meet future network demands. (Cellco 4, response 2, response 3)

Site Selection

41. Cellco established a search ring for the proposed facility in February of 2015. (Cellco 1, p. 11)

42. There are no other existing towers or other sufficiently tall structures available within Cellco's search area that Cellco could locate on to satisfy its network needs. (Cellco 1, p. 11, Tab 8)

43. After determining there were no suitable structures within the search area, Cellco searched for properties suitable for tower development. Cellco investigated four parcels in Canterbury, one of which was selected for site development. The three rejected parcels and reasons for their rejection are as follows:
    a) 148 Cemetery Road – tower development would require the construction of a lengthy access road, significant tree removal and a wetland crossing.
    b) 395 Water Street – tower development would require the construction of a lengthy access road, significant tree removal and a wetland crossing.
    c) Woodchuck Hill Road – parcel is heavily wooded terrain interspersed with wetlands. It is also landlocked with no developed access.

    (Cellco 1, Tab 8; Tr. 1, pp. 28-33)

44. Although it is technically possible to provide wireless service to the target service area using numerous small cells, the actual number of small cells necessary would be significant and not economically feasible due to the large size of the service area to be covered. Additionally, small cells require the presence of existing infrastructure such as electric distribution poles. If there are no existing poles in certain areas, property lease rights would be required to construct new poles for small cell attachments. Due to these complications, the use of a macro-cell installation at the proposed site is the most efficient and cost effective method for providing a large coverage footprint. (Cellco 4, response 5)

Facility Description

45. The proposed site is located on an approximately 41.8-acre parcel at 46 Cemetery Road, Canterbury. It is located along the north side of Woodchuck Hill, a narrow east-west oriented ridge that reaches a maximum elevation of 524 feet above mean sea level (amsl). (Cellco 1, Tab 1, Tab 10)

46. The property is owned by Nicholas Holowaty II. The property is used for agriculture (goat pasture) and contains a residence and large garage. (Cellco 1, p. 17, Tab 9 p. 1)

47. The subject property is zoned Rural District (RD). (Cellco 1, p. 17)

48. Other than the lessor's residence, there are no residences within 1,000 feet of the proposed tower site. The nearest off-site residence is approximately 1,048 feet to the northeast at 40 Cemetery Road. (Cellco 1, p. 13)

49. The tower site is located in the southwest corner of the subject parcel. The nearest abutting properties from the proposed tower are approximately 40 feet to the south at 395 Water Street and 85 feet to the west at 148 Cemetery Road (refer to Figure 6). (Cellco 1, Tab 1, Site Plans C-1, C-3)

50. The tower site is at an approximate elevation of 490 feet amsl. (Cellco 1, Tab 1, p. 4)

51. The site property is surrounded by residential and agricultural uses, and undeveloped land. (Cellco 1, Tab 1, p. 6)

52. The proposed facility would consist of a 160-foot monopole, approximately 54 inches wide at the base tapering to 24 inches wide at the top. (Cellco 1, Tab 1, pp. 4, 6)

53. The tower would be designed to support four levels of wireless carrier antennas as well as municipal emergency services antennas. (Cellco 1, p. 11)

54. The tower would be designed to be expandable in height by up to 20 feet. (Cellco 1, p. 11)

55. The monopole would have a galvanized, weathered steel finish. (Tr. 1, pp. 73-74)

56. Cellco would install nine panel antennas and nine remote radio heads at a centerline height of 157 feet above ground level (agl). The total height of the facility with Cellco's antennas would be 160 feet agl (refer to Figure 7). (Cellco 7, Sheet C-4)

57. A 50-foot by 50-foot equipment compound would be established within an 80-foot by 125-foot leased area (refer to Figure 7). The compound would be enclosed by an eight-foot high chain link fence of one-inch mesh. (Cellco 1, Tab 1, p. 7; Cellco 7, Sheet C-4, Sheet C-7)

58. Access to the compound would utilize an existing paved and gravel driveway for approximately 1,450 feet, and then extend over a new gravel driveway for 320 feet through an open pasture. (Cellco 1, p. iii)

59. Within the compound, Cellco would install a radio equipment cabinet, an emergency power battery, and an emergency diesel-fueled generator on a 16-foot by 9.3-foot elevated steel platform covered by a canopy. The generator unit has a built-in 12 gallon fuel tank. (Cellco 1, Tab 7; Cellco 7, Sheet C-4)

60. The compound area would require minimal grading to attain a level surface. (Cellco 1, Tab 1, Sheet C-3)

61. Electric service to the compound would be obtained from an existing high-voltage transformer located adjacent to the existing garage. Eversource examined the existing underground power line extending from Cemetery Road that supplies the transformer and determined no upgrades to the line would be necessary. (Tr. 1, pp. 14-15, 35-36)

62. Telephone service would be installed underground from an existing Eversource utility pole on Cemetery Road, extending west for approximately 860 feet to the existing garage, following the route of the existing underground high voltage electric service line. From the garage, electric and telephone service would extend south along the existing driveway, then turn west to follow the new access drive to the compound. (Cellco 7, Sheet C-2; Tr. 1, pp. 14-15, 42-43)

63. The estimated cost of the proposed facility is:

Cell site radio equipment	$170,000
Tower, coax, antennas	250,000
Power Systems	50,000
Equipment	98,000
Site development	$45,000
Total Estimated Costs	**$613,000**

(Cellco 1, p. 22)

64. Construction of the site would take approximately six to eight weeks, depending on scheduling and site conditions. Once radio equipment and antennas are installed, cell site integration and system testing would require another two weeks before the site is fully operational within Cellco's wireless network. (Cellco 1, p. 22)

Public Safety

65. The Wireless Communications and Public Safety Act of 1999 (911 Act) was enacted by Congress to promote and enhance public safety by making 9-1-1 the universal emergency assistance number, by furthering deployment of wireless 9-1-1 capabilities, and by encouraging construction and operation of seamless ubiquitous and reliable networks for wireless services. (Council Administrative Notice Item No. 6 - Wireless Communications and Public Safety Act of 1999)

66. The proposed facility would be in compliance with the requirements of the 911 Act and would provide Enhanced 911 services. (Cellco 1, p. 5)

67. Wireless carriers have voluntarily begun supporting text-to-911 services nationwide in areas where municipal Public Safety Answering Points (PSAP) support text-to-911 technology. Text-to-911 will extend emergency services to those who are deaf, hard of hearing, have a speech disability, or are in situations where a voice call to 911 may be dangerous or impossible. However, even after a carrier upgrades its network, a user's ability to text to 911 is limited by the ability of the local 911 call center to accept a text message. The FCC does not have the authority to regulate 911 call centers; therefore, it cannot require them to accept text messages. (Council Administrative Notice Item No. 19 – FCC Text-to-911: Quick Facts & FAQs)

68. Cellco's facility would be capable of supporting text-to-911 service as soon as the PSAP is capable of receiving text-to-911. However, no PSAPs in the vicinity of the proposed tower site are able to accept text-to-911 service at this time. (Cellco 4, response 7)

69. Pursuant to the Warning, Alert and Response Network Act of 2006, "Wireless Emergency Alerts" (WEA) is a public safety system that allows customers who own certain wireless phone models and other enabled mobile devices to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their area. WEA complements the existing Emergency Alert System that is implemented by the FCC and FEMA at the federal level through broadcasters and other media service providers, including wireless carriers. (Council Administrative Notice No. 5 – FCC WARN Act; Cellco 4, response 8)

70. Pursuant to C.G.S. §16-50p(a)(3)(G), the tower, and associated antennas/mounts, would be constructed in accordance with the American National Standards Institute "Structural Standards for Steel Antenna Towers and Antenna Support Structures" Revision G, the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code. (Cellco 4, response 10, response 11)

71. The proposed tower would not constitute an obstruction or hazard to air navigation and would not require any obstruction marking or lighting. (Cellco 1, p. 21)

72. The equipment compound would be enclosed by an eight-foot high security fence and a locked access gate. The equipment cabinets would be equipped with silent intrusion alarms. (Cellco 4, response 9)

73. The tower radius would extend onto abutting undeveloped property to the south (approximately 40 feet from the tower) and the west (approximately 95 feet from the tower). A yield point on a tower can only be designed above the midpoint of the tower; in this case at a height of a height of 80 feet agl. (Cellco 1, p. 18; Cellco 4, response 12)

74. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of all approved antennas and Cellco's proposed antennas is 27.2 percent of the standard for the General Public/Uncontrolled Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas in a sector would be pointed at the base of the tower and all channels would be operating simultaneously, which creates the highest possible power density levels. Under normal operation, the antennas would be oriented outward, directing radio frequency emissions away from the tower, thus resulting in significantly lower power density levels in the area around the base of the tower. (Cellco 1, Tab 14; Council Administrative Notice Item No. 2 – FCC OET Bulletin No. 65)

Emergency Backup Power

75. In response to two significant storm events in 2011, Governor Malloy formed a Two Storm Panel (Panel) that was charged with an objective review and evaluation of Connecticut's approach to the prevention, planning and mitigation of impacts associated with emergencies and natural disasters that can reasonably be anticipated to impact the state. (Final Report of the Two Storm Panel, Council Administrative Notice Item No. 45)

76. In response to the findings and recommendations of the Panel, and in accordance with C.G.S. §16-50*ll*, the Council, in consultation and coordination with the DEEP, DESPP and PURA, studied the feasibility of requiring backup power for telecommunications towers and antennas as the reliability of such telecommunications service is considered to be in the public interest and necessary for the public health and safety. The study was completed on January 24, 2013. (Council Administrative Notice Item No. 24 – Council Docket No. 432)

77. The Council reached the following conclusions in the study:
    a) "Sharing a backup source is feasible for Commercial Mobile Radio Service providers, within certain limits. Going forward, the Council will explore this option in applications for new tower facilities;" and
    b) "The Council will continue to urge reassessment and implementation of new technologies to improve network operations overall, including improvements in backup power."

    (Council Administrative Notice Item No. 24 – Council Docket No. 432)

78. Cellco proposes to use a battery unit and a 20-kilowatt diesel-fueled generator to provide emergency backup power. (Cellco 1, p. 10; Tr. 1, p. 54)

79. The generator would be remotely tested and activated for a 30 minute duration once every two weeks to ensure proper operation. (Tr. 1, pp. 56-57)

80. Prior to any predicted storm events, Cellco would top off the fuel tank if the tank was less than 80 percent full. (Tr. 1, p. 59)

81. The proposed diesel-fueled backup generator would have a double-walled fuel tank with remote alarm to protect against fuel leakage. The unit also feature containment system for fuel spills that occur during filling. (Cellco 1, Tab 7; Tr. 1, pp. 56, 60-61)

82. Propane could be installed as a back-up fuel source but would require a fuel tank separate from the generator unit. A propane fuel tank requires certain clearances that could take up approximately one-quarter of the fenced compound area. (Tr. 1, pp. 55-56)

83. According to R.C.S.A. §22a-69-1.8, noise created as a result of, or relating to, an emergency, such as an emergency backup generator, is exempt from the State Noise Control Regulations. (R.C.S.A. §22a-69-1.8)

84. Pursuant to R.C.S.A. §22a-174-3b, the generator would be managed to comply with DEEP's "permit by rule" criteria, and therefore, operation of the generator would be exempt from general air permit requirements. (Cellco 1, pp. 21-22)

Environmental Considerations

85. No historic properties would be affected by the proposed facility. The site development area does not possess the potential for archeological deposits. SHPO requests that the facility be constructed to be as non-visible as possible. (Cellco 3)

86. The site is located in the Federal Emergency Management Agency Zone C, an area outside of the 500-year flood zone. (Tr. 1, p. 11)

87. The nearest wetland to the proposed compound is approximately 45 feet to the southwest, on an abutting private property. This wetland (Wetland 1) is a forested headwater wetland that extends southward on the abutting property (refer to Figure 8). (Cellco 1, Tab 11)

88. A potential vernal pool exists within Wetland 1, approximately 250 feet south of the compound area. The proposed compound would not be located within the vernal pool envelope (0-100 feet from the vernal pool edge). Although the compound area would be within the potential vernal pool's critical terrestrial habitat buffer, the compound area is presently used as a goat pasture. (Cellco 1, Tab 11; Tr. 1, pp. 22-25)

89. Adjacent wetland resources would be protected by proper implementation of erosion and sedimentation control measures. (Tr. 1, pp. 21-22)

90. The compound area could be graded to direct run-off in a northerly direction rather than to the south, towards the adjacent wetland. (Tr. 1, pp. 39-42)

91. It may be possible, upon consent of the landowner, to shift the tower/compound up to 50 feet to the east to enlarge the buffer between the site and adjacent off-site wetland. (Tr. 1, pp. 39-42, 52-53)

92. The telephone line would be installed within an approximate 2 to 4-foot wide, 4-foot deep trench that would pass through three wetland areas, disturbing approximately 250 linear feet of wetlands. The wetlands (Wetland 4, 5 and 6) are hillside seep wetlands that have been previously disturbed by the installation of existing underground electric service that extends to the landlord's garage (refer to Figure 8). (Cellco 1, Tab 11; Tr. 1, pp. 11-12, 15)

93. Wetland soils excavated during trenching would be stockpiled, replaced and re-seeded appropriately. Trench plugs would be installed within the trench in the wetland areas to prevent alteration of subsurface water flows. (Tr. 1, pp. 17-19, 50-51)

94. Extending telephone service overhead along the existing driveway from Cemetery Road is not feasible since it would cause an aerial trespass through an abutting private property. (Tr. 1, pp. 19, 39-40)

95. An underground telephone service route may be feasible along the existing driveway but would require crossing under the existing driveway at the entrance apron to avoid a wetland. Additionally, the landowner prefers that the telephone line be installed adjacent to the existing underground electric line in order to keep all utilities servicing the property from Cemetery Road in one common easement. (Tr. 1, pp. 19, 36, 39-40)

96. No tree clearing would be required to construct the site. The telephone line would be installed in a cleared area established for the existing underground electric service to the garage. (Cellco 1, Tab 1; Tr. 1, p. 27)

97. According to the DEEP Natural Diversity Database (NDDB), the site is not within an area known to contain records of State endangered, threatened or special concern species. The NDDB determination is valid until June 20, 2019. (Cellco 6)

98. Connecticut is within the range of the northern long-eared bat (NLEB), a federally-listed Threatened species and State-listed Endangered species. There are no known NLEB hibernacula or known maternity roost trees near the project area and thus the proposed facility is not likely to adversely impact the NLEB. The United States Fish and Wildlife Service (USFWS) did not respond to Cellco's NLEB submittal, and in accordance with USFWS rules, the project is thus deemed in compliance and no further action is necessary. (Cellco 1, p. 14, Tab 10)

99. There are no National Audubon Society designated Important Bird Areas within two miles of the proposed site. (Council Administrative Notice Item No. 67)

100. The design of the proposed facility would comply with USFWS guidelines for minimizing the potential impact of telecommunications towers to bird species. The guidelines recommend that towers be less than 199 feet tall, avoid the use of aviation lighting, and avoid guy-wires as tower supports. (Cellco 1, Tab 10)

101. The proposed project would comply with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control.* (Cellco 1, Tab 11)

102. The proposed site is not within a DEEP designated Aquifer Protection Area (APA). The nearest APA is 3.7 miles southeast of the site. (Cellco 4, response 14)

103. The tower and new driveway are not on areas determined by the Natural Resources Conservation Service as containing prime agricultural soils. The trench for the proposed telephone service conduit would pass through some prime farmland soils on the eastern portion of the property. This area is not used for agriculture and has been previously disturbed for the installation of electric service to the property. (Cellco 1, p. 16, Tab 13)

104. DOAg does not retain development rights on any portion of the site property. (Cellco 4, response 15)

Visibility

105. The proposed tower would be visible year-round from approximately 119 acres within a two-mile radius of the site, mostly within 0.64 mile of the site. Land use with year-round views consist of open field areas, a small lake (Cranberry Lake) and rural residential areas along Cemetery Road and Bingham Road No. 2 north-northwest of the site and wooded areas south of the site. (refer to Figure 9). (Cellco 1, Tab 9)

106. The tower would be seasonally visible from an additional 202 acres within a two-mile radius of the site, mostly limited to an area within 0.8 mile of the site. (Cellco 1, Tab 9; Tr. 1, pp. 10-11)

107. The residence at 40 Cemetery Road, approximately 1,048 feet to the east, would have seasonal (leaf-off) views of portions of the tower through the trees. (Tr. 1, pp. 72-73)

108. Pursuant to C.G.S § 16-50p(a)(3)(F), no schools or commercial day care facilities are located within 250 feet of the site. The nearest school or daycare is located approximately 0.85 miles to the northeast at 337 Water Street in Canterbury. The tower would not be visible from the daycare. (Cellco 1, Tab 9 – Visibility Analysis, p. 8)

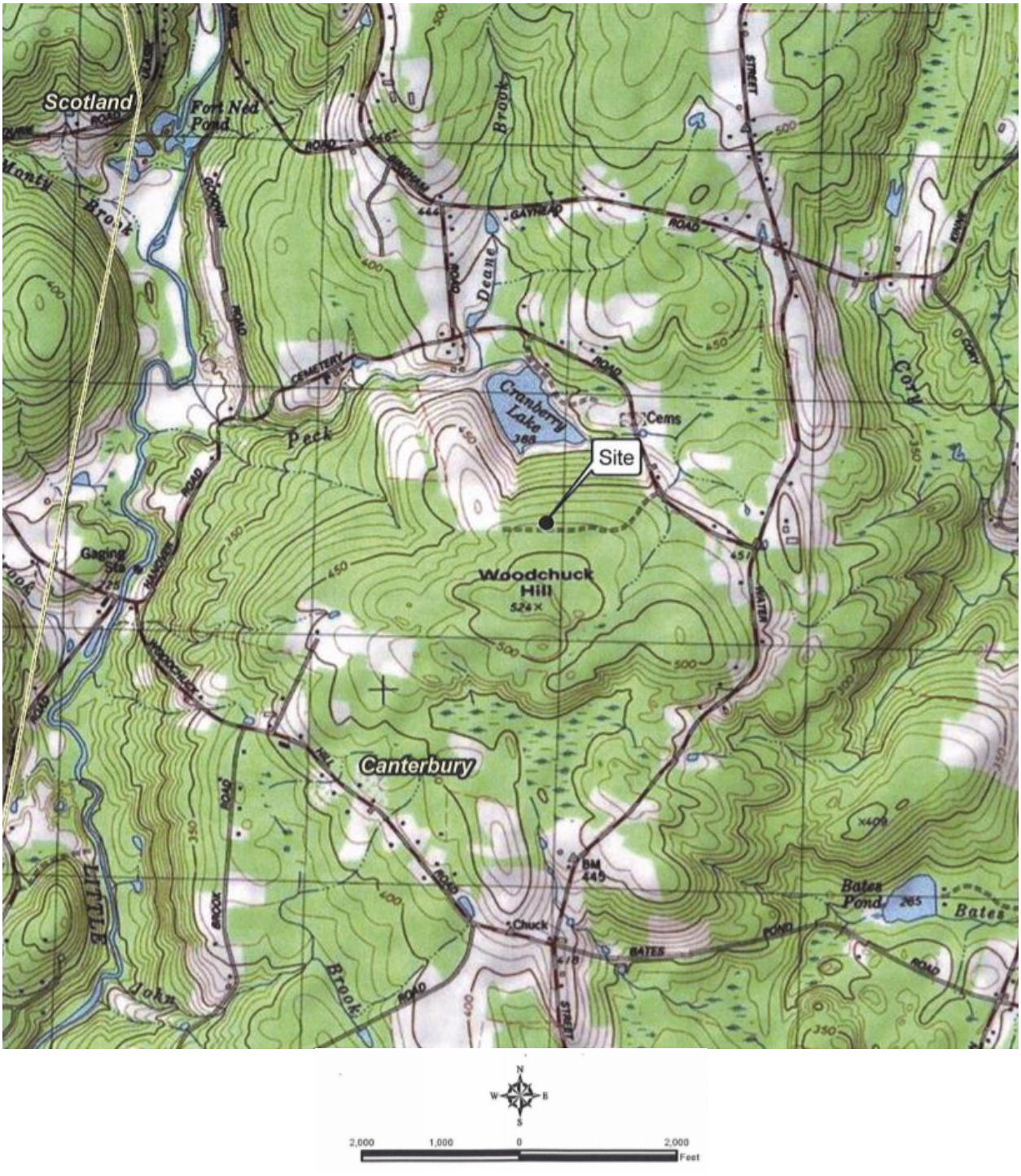
109. There are no known "blue blazed" hiking trails maintained by the Connecticut Forest and Parks Association within two miles of the site. (Cellco 1, Tab 9)

110. There are no known State or locally-designated scenic roads located within two miles of the site. (Cellco 1, Tab 9)

111. Reducing the profile of the tower by using flush-mount antennas would require the Cellco to utilize two or three tower levels rather than one, as proposed, to accommodate all of their antennas/equipment on the tower, thus reducing co-location opportunities for other carriers. Additionally a flush-mount tower design could reduce Cellco's ability to install new technologies, restricting network enhancements. (Cellco 4, response 6)

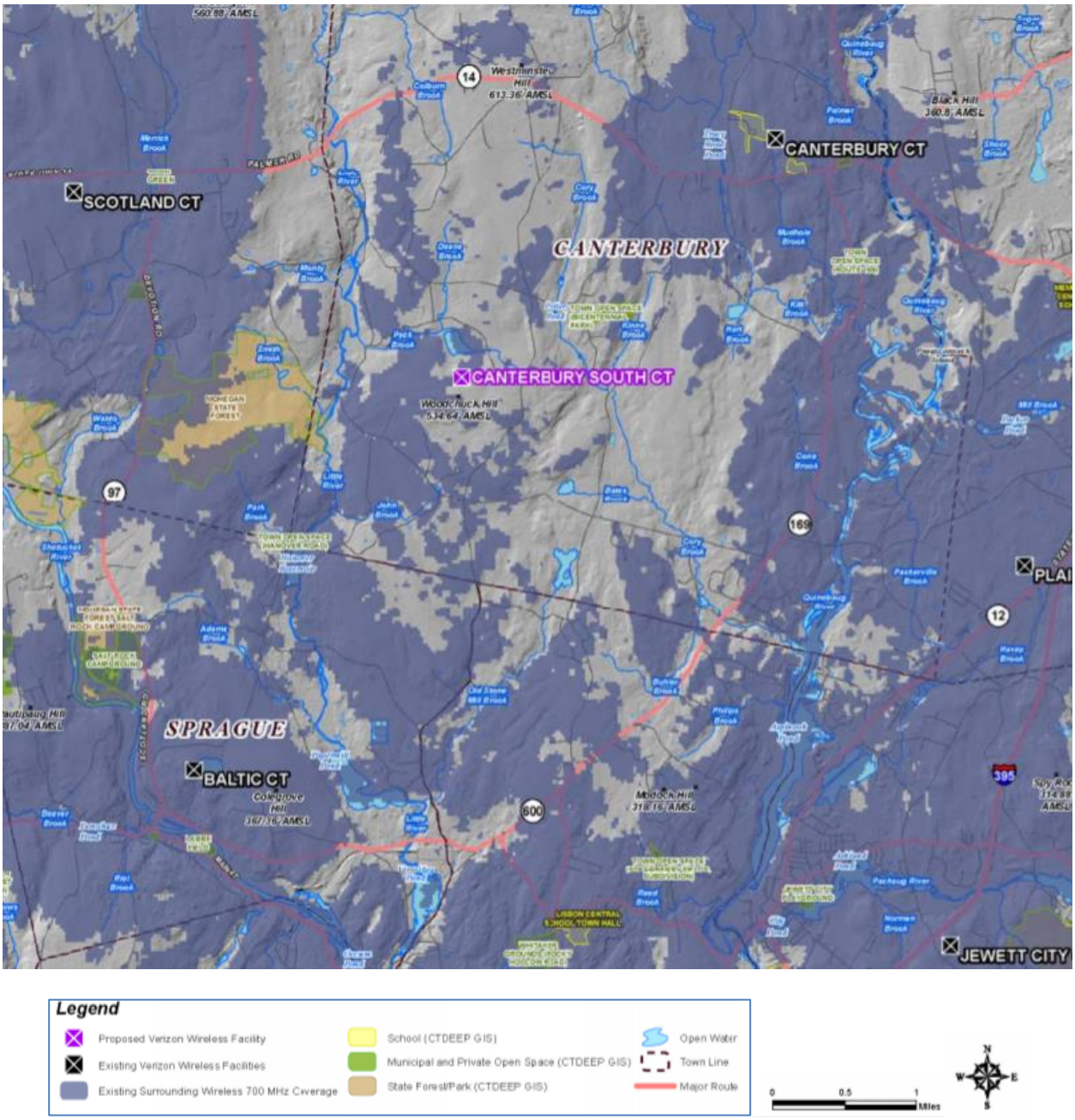
112. No landscaping around the compound is proposed. (Cellco 7-Site plans)

Figure 1 – Site Location



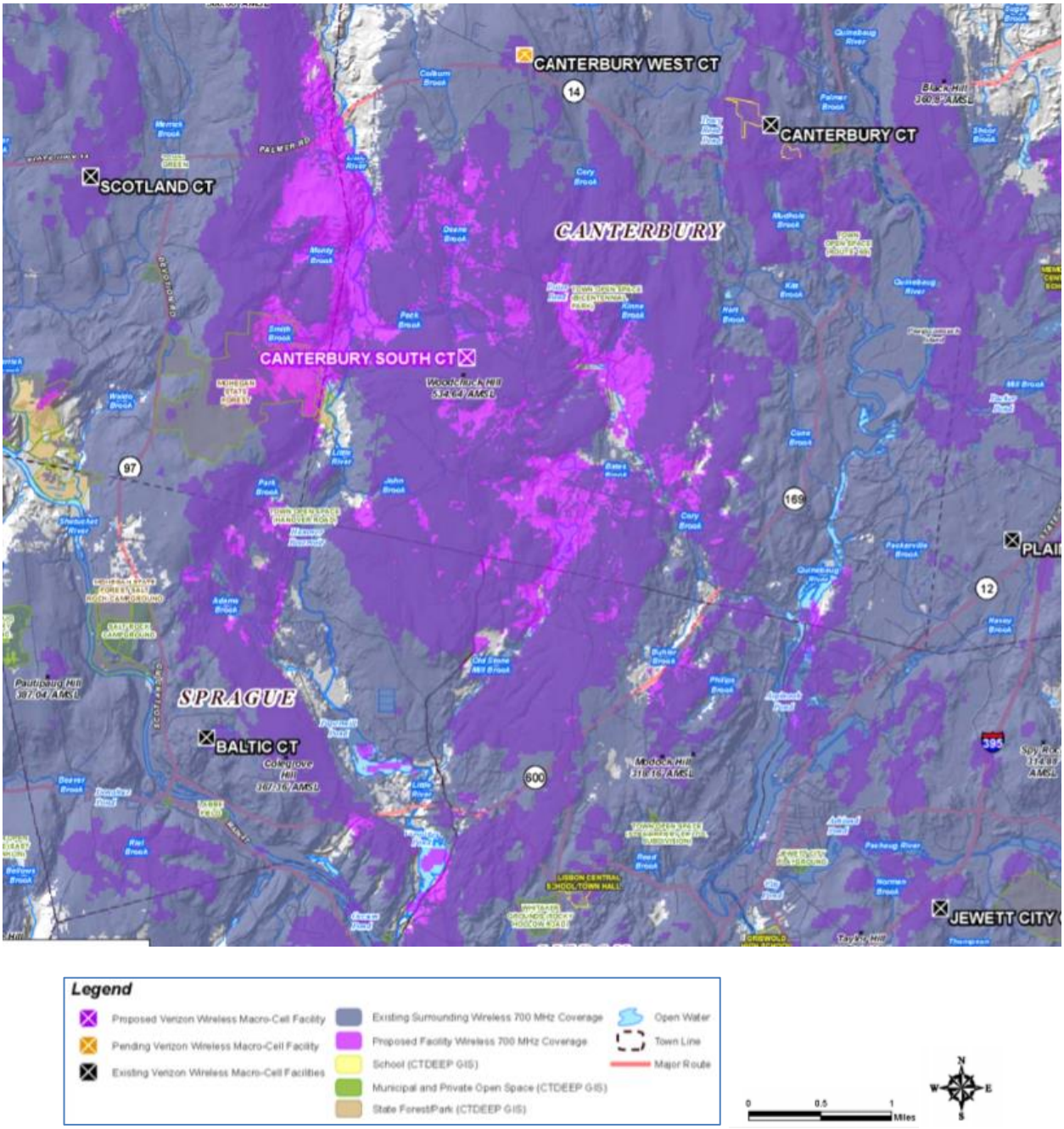
(Cellco 1, p. iii)

Figure 2 - Existing LTE 700 MHz Service



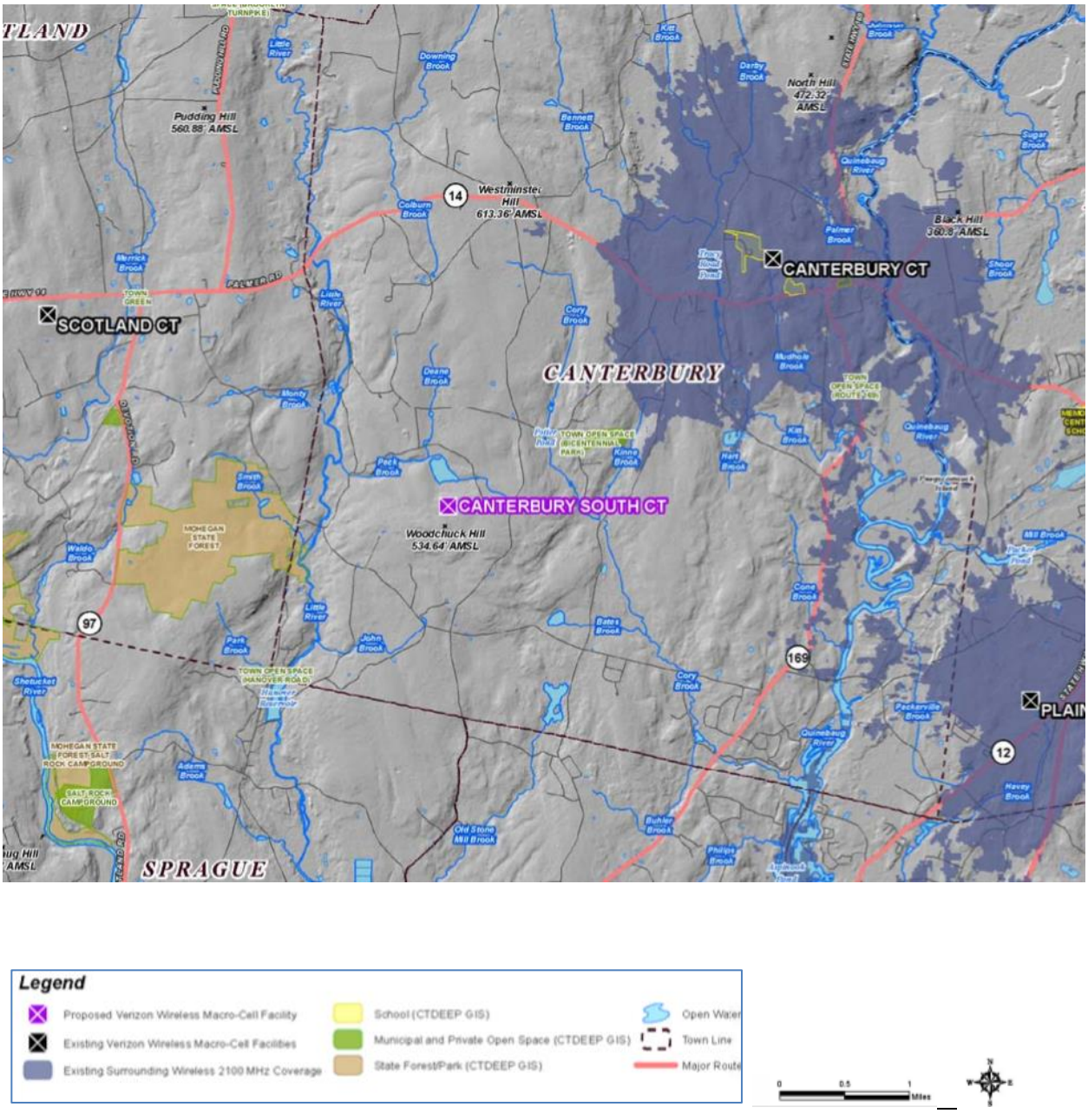
(Cellco 1, Tab 6)

Figure 3 - Proposed LTE 700 MHz Service



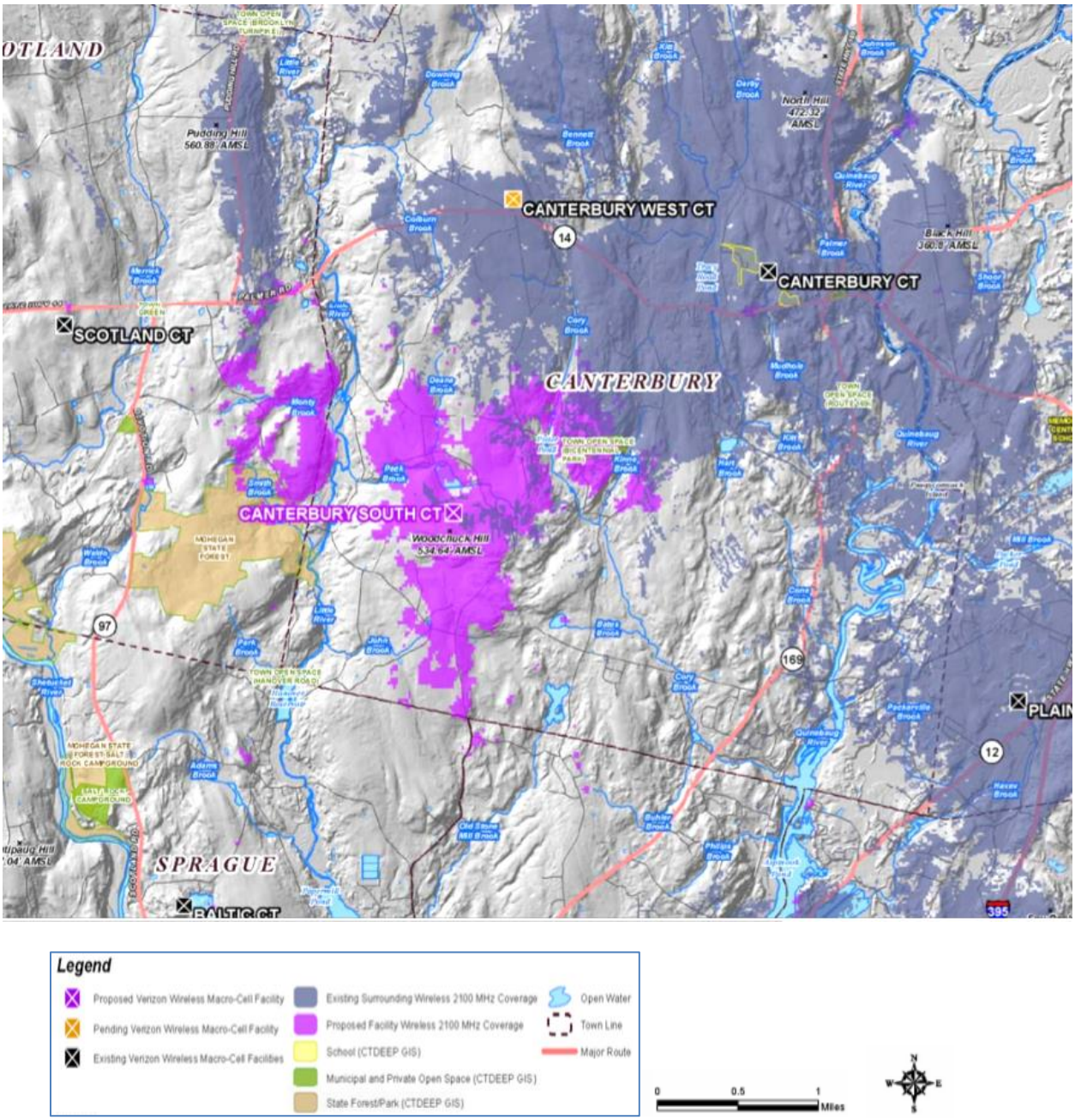
(Cellco 1, Tab 6)

Figure 4 - Existing LTE 2100 MHz Service



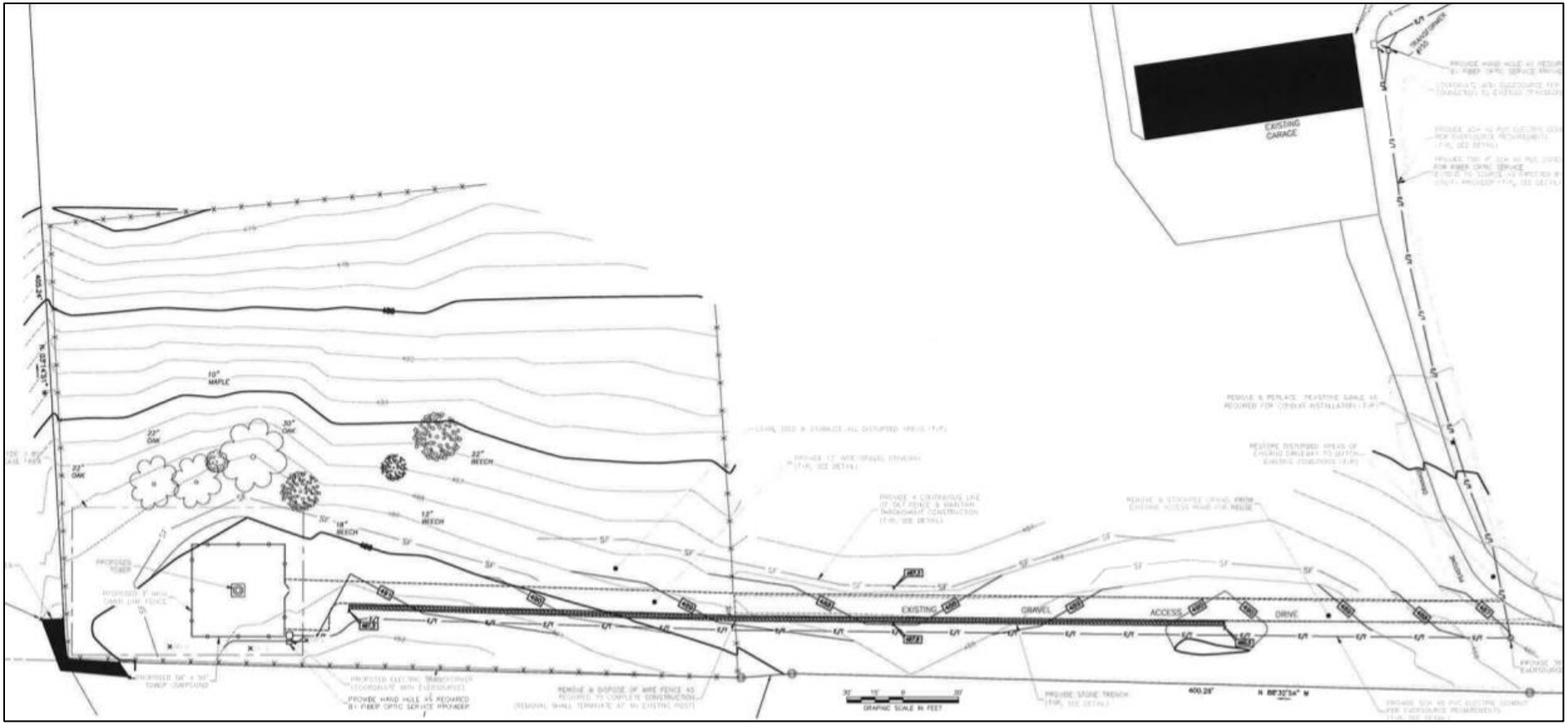
(Cellco 1, Tab 6)

Figure 5 - Proposed LTE 2100 MHz Service



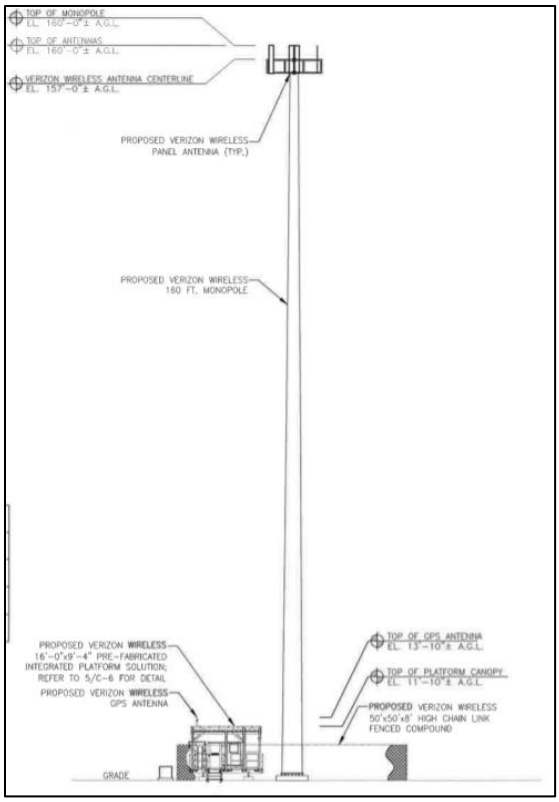
(Cellco 1, Tab 6)

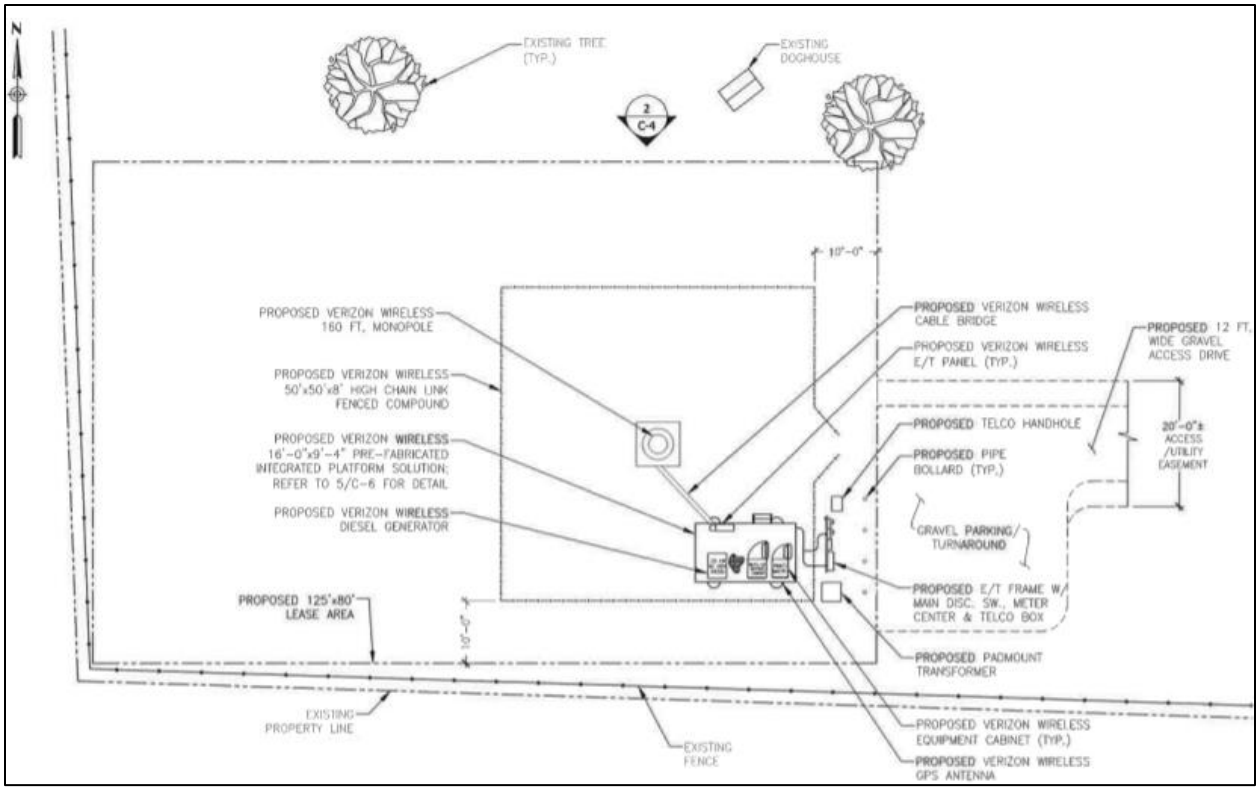
Figure 6 – Partial Site Plan



(Cellco 7, Tab 1 – Sheet C-3)

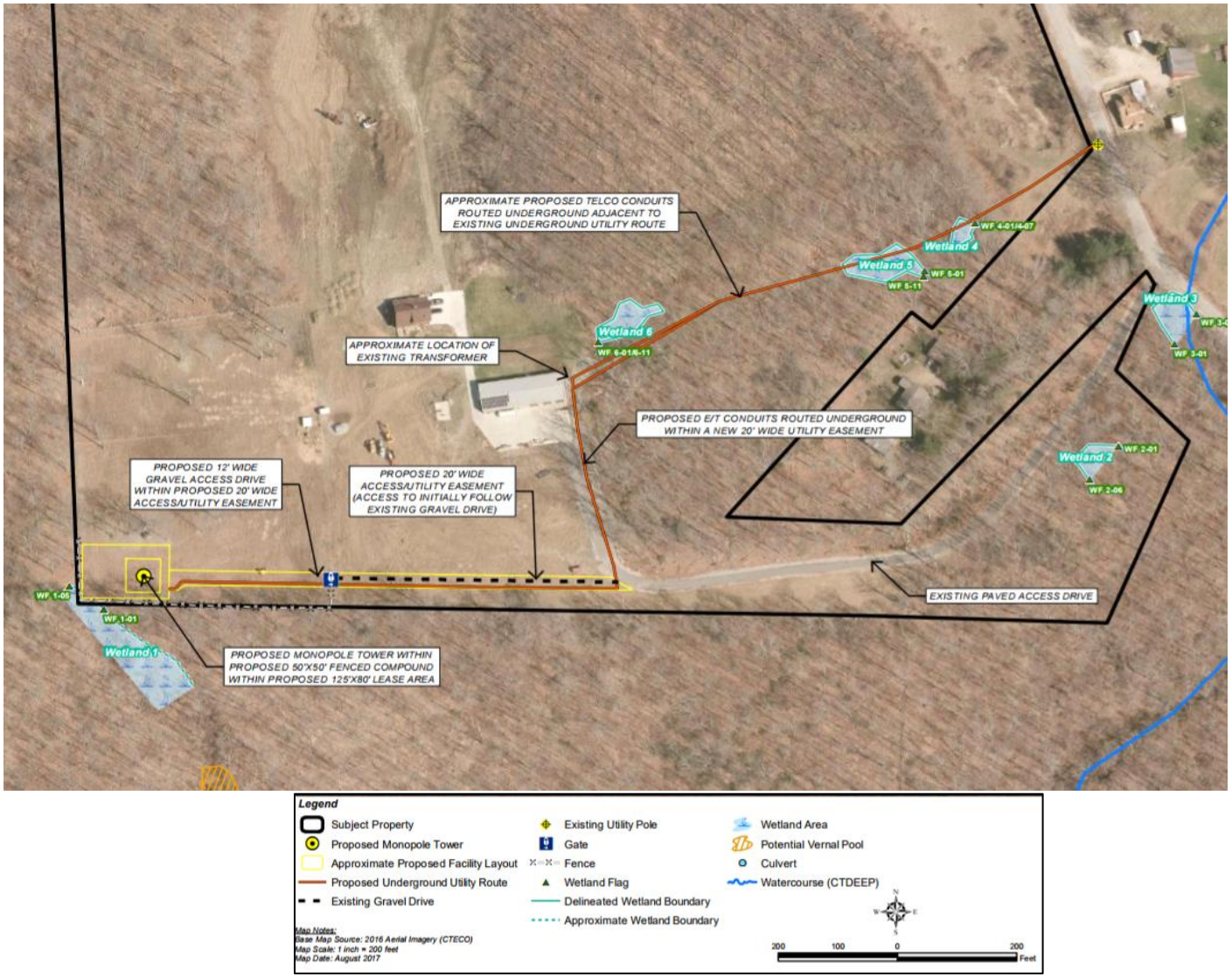
Figure 7 – Tower Plan and Compound Plan





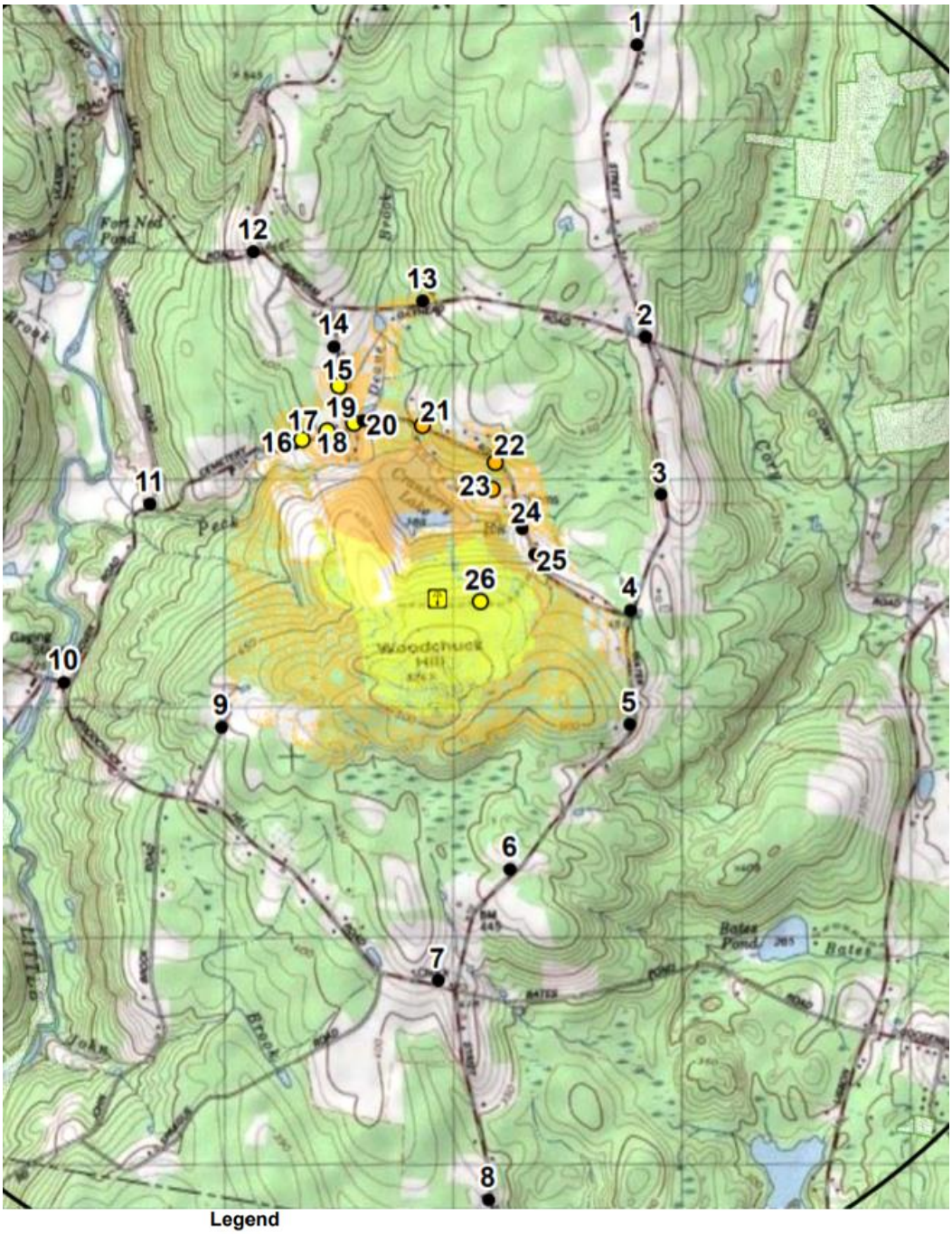
(Cellco 7, Sheet C-4)

Figure 8 – Site Plan and Wetland Locations *



*The underground telephone line would also extend through a portion of wetland 6, following an existing utility easement. (Cellco 1, Tab 11; Tr. 1, pp. 14-15)

Figure 9 – Visibility Analysis



See next page for photo location description. (Cellco 1, Tab 9 – Viewshed Map)

Figure 9 (cont.)- Visibility Analysis photo log- corresponds to locations on visibility map

View	Location	Orientation	Distance to Site	View Characteristics
1	Water Street	Southwest	±1.60 Miles	Not Visible
2	Water Street at Kinne Road	Southwest	±0.91 Mile	Not Visible
3	Water Street	Southwest	±0.67 Mile	Not Visible
4	Water Street at Cemetery Road*	West	±0.52 Mile	Not Visible
5	Water Street	Northwest	±0.62 Mile	Not Visible
6	Water Street	Northwest	±0.76 Mile	Not Visible
7	Woodchuck Hill Road	North	±1.04 Miles	Not Visible
8	Water Street	North	±1.64 Miles	Not Visible
9	Garoshen Road	Northeast	±0.69 Mile	Not Visible
10	Woodchuck Hill Road**	Northeast	±1.05 Miles	Not Visible
11	Goodwin Road No. 1	Southeast	±0.83 Mile	Not Visible
12	Ulasik Road	Southeast	±1.07 Miles	Not Visible
13	Gay Head Road	South	±0.81 Mile	Not Visible
14	Bingham Road 2	Southeast	±0.74 Mile	Not Visible
15	Bingham Road 2	Southeast	±0.64 Mile	Year Round
16	Cemetery Road*	Southeast	±0.58 Mile	Not Visible
17	Cemetery Road	Southeast	±0.57 Mile	Year Round
18	Cemetery Road	Southeast	±0.55 Mile	Year Round
19	Cemetery Road	Southeast	±0.53 Mile	Year Round
20	Cemetery Road	Southeast	±0.52 Mile	Not Visible
21	Cemetery Road	South	±0.47 Mile	Seasonal
22	Cemetery Road	Southwest	±0.40 Mile	Seasonal
23	Dean Cemetery	Southwest	±0.33 Mile	Seasonal
24	Cemetery Road*	Southwest	±0.30 Mile	Not Visible
25	Cemetery Road*	Southwest	±0.29 Mile	Not Visible

(Cellco 1, Tab 9)