STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

DWW SOLAR, II, LLC PETITION FOR DECLARATORY RULING THAT NO CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS REQUIRED FOR A 26.4 MEGAWATT AC SOLAR PHOTOVOLTAIC ELECTRIC GENERATING FACILITY IN SIMSBURY CONNECTICUT	)	PETITION NO. 1313 SEPTEMBER 5, 2017

RESPONSES OF DWW SOLAR II, LLC TO THE FIRST SET OF INTERROGATORIES ISSUED BY THE TOWN OF SIMSBURY

The petitioner, DWW Solar II, LLC ("DWW") respectfully submits this response to the Town of Simsbury's First Set of Interrogatories in the above-referenced Petition. In response to these Interrogatories, DWW states as follows:

Abutters

Q1: How many abutters have representatives of DWW spoken with directly about the Project?

A1: The Petitioner (hereafter DWW) objects to this Interrogatory in that it goes beyond the scope of what is required for public participation in a Siting Council proceeding, is vague and is not likely to lead to the discovery of any information that would be admissible in this proceeding. Subject to the foregoing objection, DWW states that as described in section 5.1 of its Petition, DWW held two public meetings, which were attended by more than 250 people, several of which were abutters to the Project.

Q2: How many abutters have representatives of DWW met with either at the abutter's residence or on the Project Site about the Project?

A2: DWW objects to this Interrogatory in that it goes beyond the scope of what is required for public participation in a Siting Council proceeding and is not likely to lead to the discovery of any information that would be admissible in this proceeding. Subject to the foregoing objection DWW states that the answer to this Interrogatory is eight (8).

Q3: Please provide a list of abutters with whom representatives of DWW met or conversed about the Project.

A3: DWW objects to this Interrogatory in that it goes beyond the scope of what is required for public participation in a Siting Council proceeding, is vague and is not likely to lead to the discovery of any information that would be admissible in this proceeding. Subject to the foregoing objection, DWW states that it has not kept a list of abutters with whom it has met or conversed about the Project, however, DWW did maintain a sign-in sheet for its two public meetings, and has attached the list of attendees to those meetings to this response.

Q4: Page 54 of the Petition provides that DWW would address the application of additional vegetation barriers for residential properties directly abutting the Project Site on a case-by-case basis. Has DWW engaged in that case-by-case assessment? If so, what are the results of that assessment? If not, when would DWW do so?

A4: It is DWW's understanding that on July 26, 2017, Simsbury's Town Planner, Jamie Rabbitt, hosted a meeting with residents to discuss the landscape plan for the Project. It is DWW's understanding that the Town of Simsbury would provide DWW with the results of that meeting, including but not limited to, suggestions for landscaping for the Project. To date, the Town of Simsbury has not provided this information to DWW.

Q5: What type of plantings would DWW use to provide additional vegetation barriers for residential properties directly abutting the Project Site?

A5: As is stated in greater detail in Section 7.6 of the Petition, DWW will use native plantings, including trees, shrubs and wildflower plantings for visual screening. DWW anticipates that final plant selection will be completed as part of the Development and Management Plan (D&M Plan) process, if DWW's Petition is approved.

Q6: How did DWW determine that a ten foot vinyl fence was an appropriate screening measure that reflects the historical character of the Town, neighborhood and/or immediate area?

A6: DWW objects to this Interrogatory because it is vague and there has been no establishment of the "historical character of the Town, neighborhood and/or immediate area." Subject to the foregoing objection, DWW states that prior to DWW's first public meeting in the Town of Simsbury on May 11, 2017, DWW presented less vigorous methods for visual mitigation. At the public meeting and immediately afterwards, representatives of DWW were informed by staff of the Town of Simsbury, area residents and abutters that they did not want to see any solar panels. DWW therefore developed the ten foot high vinyl fence option as a way to accede to the Town's and area residents' wishes. DWW further notes that given the relatively recent construction of many of the homes in the various subdivisions that surround the project, DWW is hard-pressed to ascertain what the "historical character" of the neighborhood and/or immediate area is.

Q7: Has DWW entered into any agreements with any abutters for the purpose of landscaping and/or buffering concerning the Project? If so, with whom has DWW contracted? Please provide copies of those agreements.

A7: No.

Environmental Assessment

Q8: Please explain why DWW conducted a Phase I Environmental Site Assessment ("Phase I") of the Project Site under ASTM 1527-13 as opposed to the Connecticut Department of Energy and Environmental Protection Site Characterization Guidance Document.

A8: As the Preamble to the Site Characterization Guidance Document (SCGD) notes, the SCGD is guidance, not a requirement. Moreover, the SCGD is usually used in situations where the Connecticut Transfer Act (Conn. Gen. Stat. 22a-134 et seq.) or the federal Superfund law (also known as CERCLA) is implicated, however, neither statute is implicated by the development and/or construction of the Project. Finally, it should be noted that Chapter Three of the SCGD is devoted to the use of an ASTM-compliant Phase I Environmental Site Assessment as part of the SCGD.

Q9: Does DWW anticipate supplying the Phase I omissions to the ASTM standard practice as stated on page 2 of the Phase I? If not, why?

A9: No, DWW does not plan to supply this information. There are two data gaps referenced on page 2 of the Phase I. The first one, related to a title search for environmental liens was described on page 2 as "not a significant data gap." Therefore, DWW does not intend to expend resources to amend this portion of the Phase I Assessment. With respect to the other data gap, DWW notes that such information, by definition in the ASTM E 1527-13 standard, is to come from the site manager or site owner, as articulated on page 2. Therefore, by definition, DWW cannot provide this information on its own.

Q10: Does DWW intend to conduct soil and ground water testing of the Project Site for residual compounds consistent with the historic use of the Project Site as a tobacco farm? If not, provide evidence as to why the Project Site may have different characteristics than adjacent parcels that have been similarly farmed.

A10: DWW objects to this Interrogatory as it is vague, irrelevant and calls for information that is beyond the scope of the Siting Council proceeding. Subject to the foregoing objection, DWW states that it does not intend to conduct soil or groundwater testing at the site, as such testing will not impact the development of the Project.

Q11: Why has DWW not identified Areas of Concern (AOC) that may exist on the Project Site?

A11: DWW objects to this Interrogatory on the grounds that it is vague and ambiguous. Subject to the foregoing objection, DWW states that it is not DWW's role to identify areas of concern at a particular site. That is specifically the task for which GZA, an

environmental consulting firm, was retained. Three environmental professionals from GZA collaborated on the preparation of the environmental site assessment. As indicated on page 23 of the site assessment, those professionals found no "recognized environmental conditions" on the subject property, except as the use of the property related to agricultural pursuits. Therefore, DWW is unaware of any "Areas of Concern" as articulated by the Town.

Q12: The Phase I identified a significant data gap concerning current and past Project Site usage as well as facility operations. Please provide that missing information as it is essential to determining whether the Project Site constitutes an "establishment" under the Connecticut Transfer Act.

A12: DWW objects to this Interrogatory on the grounds that whether the site in question is subject to the Connecticut Transfer Act is irrelevant to the subject proceedings. Subject to the foregoing objection, DWW states that even with the data gap in question, GZA stated on page 24 of the site assessment that the site "does not appear to be an 'establishment' under the Connecticut Transfer Act. Moreover, DWW states that as a matter of law, the Connecticut Transfer Act imposes strict liability on the property owner, not the purchaser of the property, for failure to correctly determine establishment status under the Connecticut Transfer Act.

Q13: Monitoring wells on Parcel 5 were noted in the Phase I. Please provide additional information on past testing results, if any. Would all wells be properly abandoned as part of the development, if approved?

A13: DWW has no additional knowledge regarding these wells. DWW has not yet made a determination if it will abandon the wells, however, if DWW decides to abandon these wells, it will do so in accordance with applicable laws and regulations.

Q14: Would DWW remove and dispose of all solid waste, characterized as discarded materials and containers, located on the Project Site?

A14: DWW does not know what solid waste will remain on the Project Site at the time DWW acquires the Project Site. To the extent that solid waste exists on the Site at the time DWW takes title to the property, DWW will dispose of such waste in accordance with all applicable laws and regulations.

Q15: The Project is partially located over an area identified as an Aquifer Protection Zone. Please provide an Aquifer Protection Plan to establish proper protections for this resource consistent with the requirements of the State Department of Public Health.

A15: DWW objects to this Interrogatory as it presumes, without evidence, that the Project is located over an Aquifer Protection Zone and that DWW is required to provide an Aquifer Protection Plan. Subject to the foregoing objection, DWW states that it will comply with any applicable laws and regulations of the Connecticut Department of Public Health should it be determined that DWW must submit an Aquifer Protection Plan to the Department of Public Health.

Q16: Does the Project Site contain pump and irrigation facilities that would remain for site restoration requirements? If not, would those facilities be removed as part of the development of the Project?

A16: DWW objects to this Interrogatory on the grounds that it is vague and ambiguous. Subject to the foregoing objection, DWW states that these facilities are the property of the current site owner, and DWW has no knowledge regarding what the current site owner intends to do with these facilities.

Q17: Given the sandy soils present at the Project Site, would DWW utilize irrigation facilities to establish ground cover?

A17: Irrigation would be used for the initial establishment of vegetation at the Site if conditions warranted the need for irrigation, such as if a drought occurred.

Q18: Given the sandy soils present at the Project Site, and historical use of irrigation to grow crops, would DWW place topsoil in disturbed areas and employ temporary irrigation to ensure ground cover is adequately established during the first growing season?

A18: Please see the response to Interrogatory 17.

Q19: Provide more detail as to what, if any, prime agricultural soils would be removed, stockpiled and replaced as part of the Project.

A19: Please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the response to Interrogatory 8.

Q20: Provide details on expected precautions for storing petroleum fuels, refueling operations, and spill containment and locations for these activities.

A20: DWW will prepare a Stormwater Pollution Prevention Plan (SWPPP) as part of its Stormwater Permit application. The SWPPP would identify suitable areas for these activities during construction. Storing petroleum fuels and refueling operations are not anticipated to occur at the Site once construction is completed.

Q21: Do the solar panels contemplated for the Project, or any components of those solar panel arrays, including any chemicals used to clean the arrays, contribute substances to stormwater runoff? If so, please identify those substances and measures DWW would adopt to prevent harm to the Project Site and the surrounding environment.

A21: No. In addition, please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the responses to Interrogatories 42-46.

Q22: DWW has not provided any documentation or history concerning any public or private drinking water wells in the general area of the Project Site. Some of these wells are classified as GAA classified groundwater sources. Please provide further

information and data on the wells. Also provide information on any public water supply wells in the vicinity of the development.

A22: DWW objects to this interrogatory in that it assumes facts that are not in evidence and seeks to obtain information that is irrelevant to this proceeding. Subject to the foregoing objection, DWW states that it is unaware of any requirement DWW is subject to that would require DWW to provide such information.

Q23: Discuss air quality expected during construction and planned mitigation to address these conditions during construction including emissions expected from construction equipment. Discuss limitation on idling of construction equipment consistent with current regulatory requirements.

A23: Air quality during construction is expected to be similar to the current on-going farming practices at the site in terms of vehicle emissions and fugitive dust. DWW will comply with the state's regulations and policies relating to anti-idling of vehicles and will require construction vehicles not in use for more than three minutes to be turned off. Fugitive dust will be controlled with applications of water and/or calcium chloride during construction.

Wetlands; Wildlife; Noise

Q24: Would DWW be willing to provide a six inch gap at the bottom of all fencing to afford passage for wildlife?

A24: No. DWW does not believe it can allow for such a gap as a result of current National Electric Safety Code (NESC) requirements.

Q25: Please elaborate on the assumptions regarding the transition from existing ground cover ("Row crops, contoured, Poor") to proposed ground cover ("Legumes, straight row, Good") as set forth in Exhibit L of the Petition (Stormwater Management Report).

A25: While the farmland varies in ground cover throughout the year due to normal farming activity, it is predominantly developed as contoured row crops. In the various site investigations that were performed in preparing the stormwater management plan, it was noted that there was no crop litter during the periods of the year before or after the crops had been harvested. In accordance with Natural Resource Conservation Service Technical Release 55 (NRCS TR-55), this suggests that the use of "poor" hydrologic condition for runoff curve number is appropriate. Regarding the proposed ground cover, the intent is to plant a low-growing crop within the solar arrays that will not be harvested and will remain year-round. In the interest of being conservative and in the anticipation that the soil will not be manually re-contoured during the lifespan of the solar project, the runoff curve number for straight row has been used in lieu of contoured.

Q26: Will stormwater runoff affect the underlying aquifer or nearby surface waters such as small streams? Please explain and provide supporting documentation.

A26: Once the site is operational, vehicular access to the Project will be limited to infrequent maintenance visits. The solar panels themselves will not generate any pollutants or sediment. The crushed stone access paths will be trafficked infrequently and the grassy meadows downstream of the paths will provide residence time of stormwater runoff to remove the small amount of sediment from runoff. Furthermore, the proposed modification in ground cover will reduce the total amount of sediment runoff from the site. A complete and thorough analysis of pre- and post-Project runoff conditions is provided at Exhibit L of the Petition.

Q27: Would DWW conduct post construction assessment of resident, breeding and seasonal animal and plant species compared with baseline surveys?

A27: DWW has been and continues to be in consultation with the Connecticut Department of Energy and Environmental Protection (DEEP) concerning rare, threatened and endangered species that may be present at the Project Site. Thus far, DEEP has not identified the need for any post-construction assessments.

Q28: Will DWW require that transformers used at the site be certified as PCB-free?

A28: Although polychlorinated biphenyls (PCBs) were historically used in electrical equipment as an insulating fluid, production of PCBs was banned by the federal government in 1979. Consequently, the new equipment needed for the Project cannot contain PCB insulating fluid. A non-toxic, mineral oil dielectric fluid will be used in the transformers.

Q29: Will DWW comply with the Town's aquifer protection area regulations?

A29: Yes, to the extent that the Town's aquifer protection area regulations apply to the Project, DWW will comply with those regulations.

Q30: Will DWW obtain flood certification from the Connecticut Department of Energy and Environmental Protection for work in the area of special flood hazard?

A30: DWW objects to this Interrogatory in that it is ambiguous and is based on suppositions for which no evidence has been provided. Subject to the foregoing objection, DWW states that DWW does not believe that it is required to obtain such a flood certification.

Q31: According to the site plan, there is work within mapped wetland soils (adjacent to wetland flags 6-223, 6-220, 6-600, and 6-158). Has DWW reviewed the work proposed in this area? If so, is there an updated wetlands report which includes assessment of these activities?

A31: The supposition stated in the first sentence of this Interrogatory is incorrect. Site plan sheets 4.3 and 4.4 depict proposed work in the vicinity of these wetland flags, but not within mapped wetland soils. The wetland systems in the area are conveyed under an existing farm road via existing culverts and do not cross over the road. The work that is being proposed is within the road and not within the wetland systems.

Q32: Provide information on total cuts and fills expected and if any material is expected to be removed from the site.

A32: Please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the response to Interrogatory 56.

Q33: Identify any project lay-down areas within or outside of the project site.

A33: All project laydown areas will be located within the boundary of the Project Site. The final locations of these areas will be provided in the D&M Plan for the Project, should the Petition be approved.

Historical

Q34: Has DWW completed a Phase 1B survey as recommended by Heritage Consultants, LLC in Exhibit M of the Petition? If so, please provide a copy of that survey. If not, please explain why not. If not, please conduct such a survey and produce it to the Council and parties of record.

A34: Yes. A copy of that survey is included with these Interrogatory Responses.

Q35: Has DWW considered preserving all of the historical barns located on the Project Site? If so, why did DWW conclude that preservation of all five of the historical barns is unnecessary?

A35: As documented in its Petition, DWW has been in consultation with the State Historic Preservation Office (SHPO) concerning the barns located on the Project Site. DWW has committed to keep the two barns located on Hoskins Road. The three barns which are interior to the Project Site are all in a state of disrepair, and they will therefore be removed during the construction of the Project.

Q36: Will DWW prepare maintenance and preservation plans for the buildings that will be retained on the Project Site?

A36: DWW objects to this Interrogatory on the grounds that it vague and ambiguous. Subject to the foregoing objection, DWW states that it will comply with all applicable laws and regulations concerning the preservation of historic buildings located on the Project Site.

Q37: Has DWW conducted shovel-pit testing of Archeological areas, Site 128-52 and Locus 1 for evaluation of National Register eligibility?

A37: Yes. The subject shovel testing was performed in these areas and the findings are documented in the Phase 1b Survey Report.

Q38: Is DWW willing to conduct additional research on Martin Luther King's connection to the Cullman Brothers' properties to confirm the location of the farm(s) where he worked in 1944 and 1947?

A38: As is stated in the response to Interrogatory 35, DWW is in consultation with the SHPO and will be guided in its activities based on its consultation with the SHPO.

Buffering; Plantings

Q39: Would DWW be willing to install black vinyl-coated chain link fencing around the solar arrays with black posts and hardware?

A39: Yes, DWW would be willing to install such a fence in lieu of constructing a ten foot high vinyl fence.

Q40: Will barbed wire be used on fencing?

A40: No.

Q41: Will DWW hire a landscape architect to work with representatives from the Town on landscaping that impacts public view sheds and abutter properties?

A41: DWW has already hired a landscape architect to assist it with this Project. Consistent with other Siting Council proceedings, DWW anticipates that the Siting Council will require a landscape plan for the Project as part of the D&M Plan process.

Q42: What native flowering plants, trees and shrubs would DWW use at the Project Site? Where will these native flowering plants, trees and shrubs be located?

A42: Please see the response to Interrogatory 5.

Q43: Would DWW be willing to plant native pollinator species throughout the Project Site, including buffer areas? What proposals does DWW currently have for the planting of pollinators on the Project Site?

A43: DWW's proposal for the planting of native pollinator species is provided in Section 7.3 of its Petition. Additional details regarding such plantings are anticipated to be provided during the D&M Plan process.

Q44: Does the seed mix proposed include species of plant suitable for shaded areas (below solar panels) and sun areas (between rows)?

A44: The final seed mix has not been determined at this time, however, it is contemplated that there will only be one seed mix. The final mix that is selected will be selected to provide for growth in both sun and shade areas.

Q45: What percent of the Project Site would be dominated by wildflowers?

A45: This has not been determined at this time.

Q46: What percent of the Project Site would be dominated by native species cover?

A46: This has not been determined at this time, but such information will be provided as part of the D&M Plan process, if determined to be relevant.

Q47: What plant species used for ground cover will occupy more than 2 percent of the ground cover area for the Project Site?

A47: This has not been determined at this time, but such information will be provided as part of the D&M Plan process, if determined to be relevant.

Q48: How many species with at least three blooming seasons would there be and what percent of ground cover would those species occupy?

A48: This has not been determined at this time, but such information will be provided as part of the D&M Plan process, if determined to be relevant.

Q49: What percentage of the seed mixture or plants would be sourced from Connecticut?

A49: DWW objects to this Interrogatory on the ground that it is not relevant to the proceedings and such determinations may violate federal law. Subject to the foregoing, DWW states that the source of the seed mixture and/or plants has not been determined at this time, but DWW anticipates that much of the seed mixture or plants will be sourced from southern New England.

Q50: What is DWW's plan for invasive plant management at the Project Site?

A50: As indicated in the Petition, DWW intends to mow the site at least annually. DWW will mow the site more frequently as deemed necessary to maintain the desired site conditions.

Q51: Does DWW intend to remove stumps in areas of proposed panel installation as well as shade control areas? Please explain how the remaining stump and root systems, coupled with infrequent mowing and inspection (once per year each), would not overtake native meadow grasses and pollinators.

A51: Stumps are proposed to be removed from the area where the equipment is to be installed, which is generally within the safety and security fence. Outside of the fence, existing agricultural fields would be mowed at least once annually, and may be mowed more frequently as warranted to discourage the establishment of woody species. Within the area of the tree clearing proposed outside the limit of the safety and security fence, DWW reached an agreement with the SHPO to leave stumps in the ground to avoid unnecessary disturbance of potentially culturally significant features highlighted in the Phase 1a Cultural Resources Report. Within this area, vegetation maintenance will include selective removal of woody species with a mature height exceeding 20 feet. This maintenance will promote the establishment of a shrub habitat similar to that found in some electric transmission rights-of-way.

Q52: Would DWW install specific site signage in compliance with the Town's Zoning Regulations?

A52: DWW will comply with the Town's Zoning Regulations pertaining to signage to the extent that they are legally applicable to the Project and to the extent that they do not conflict with requirements of the National Electric Safety Code (NESC), North American Electric Reliability Corporation (NERC) or similar standards.

Q53: DWW states that it will develop a Resource Protection Plan. If the Petition is approved, would DWW provide a Resource Protection Plan as a component of its D&M Plan to be reviewed by the Council and parties of record?

A53: Yes.

Q54: Please provide a map indicating where DWW intends to plant additional native evergreen vegetation and/or landscaped berms to serve as screening of the Project.

A54: This has not been determined at this time, but such information will be provided as part of the D&M Plan process, if determined to be relevant.

Q55: In the forested areas slated for removal, has DWW reviewed a tree inventory to determine if any significant or potentially notable trees are present?

A55: DWW objects to the Interrogatory on the grounds that it is vague and ambiguous. Subject to the foregoing objection, DWW states that DWW has made efforts to minimize tree removal, and where trees are to be removed, DWW will follow applicable laws and regulations related to such tree removal.

Q56: Would DWW harvest the wood from the Project Site to make use of this natural resource?

A56: At this time, DWW has not made a determination as to what it will do with the wood from the Project Site.

Q57: To the extent the landscaping at the Project becomes unhealthy, what would be the process for notifying DWW? What is the timeline for DWW to correct any deficiencies?

A57: This has not been determined at this time, but such information will be provided as part of the D&M Plan process, if determined to be relevant.

Q58: Please provide details of the construction of proposed walking paths and a plan which illustrates public access to the proposed walking paths.

A58: The walking path is shown in the Petition on sheets 3.2-3.6 in Exhibit C and is discussed in Section 5.3 of the Petition itself. Additional information regarding the walking paths will be included as part of the D&M Plan process.

Visibility; Shading

Q59: How did DWW determine the proposed clearing parameters? Please provide any shade studies or assessments supporting the proposed clearing parameters.

A59: DWW objects to this Interrogatory on the grounds that it calls for information that will be irrelevant to this proceeding. DWW further objects to this Interrogatory on the grounds that it calls for information that is proprietary to DWW and would put DWW at a competitive disadvantage if such information were to be disclosed.

Q60: Please provide information on any site lighting or security cameras that would be constructed as part of the Project, if any. Has DWW assessed whether Project Site lighting would have any impact on abutting properties?

A60: DWW objects to this Interrogatory on the grounds that it calls for information that is proprietary to DWW and is necessary to remain outside of the public domain if it is to have effect. Subject to the foregoing objection, DWW states that the lighting proposed for the Project would be limited to safety lighting for access at the gates, and potentially in select additional locations. All lighting will be dark sky compliant and additional information will be provided as part of the D&M Plan process, if required.

Q61: Please describe nocturnal lighting that DWW would use at the Project Site and where it would be located.

A61: Please see the response to Interrogatory 60.

Q62: Please explain anticipated reflectivity from the solar panels and any expected impacts, i.e. glare, particularly on abutting property owners.

A62: Please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the response to Interrogatory 26.

Q63: On page 9 of the Petition, DWW states that the solar panels will be "approximately" ten feet above the ground. Is there a range that quantifies the descriptor "approximately?" If so, please provide that range.

A63: The highest point of the panels is designed to be ten feet above the ground. The use of the word "approximately" is to account for natural changes to topography, which may result in di minimis changes in the final height.

Q64: Did DWW generate any photo-simulations of existing views of the Project during leaf-off conditions? If so, please provide them. If not, why did DWW elect not to do so? If not, please produce a visibility analysis of the Project during leaf-off conditions.

A64: Due to the time of year when field work was conducted, the photos used for the visual simulations were taken during leaf-on conditions. Figure 4 of Exhibit G of the Petition contains a viewshed analysis prepared by Environmental Design & Research,

Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR). The timing of leaf-off conditions is such that there will not be sufficient time to produce the requested visibility analysis during this proceeding.

Operations & Maintenance

Q65: Will DWW develop and implement a detailed phasing plan for erosion and sediment control during construction? Will DWW agree to retain a qualified third party expert to periodically inspect erosion and sediment control measures and to report to the Council and the Town?

A65: Please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the response to Interrogatory 60.

Q66: Will DWW have professionals, such as a civil engineer and/or soil scientist, on site during construction to perform third party inspections, and who would report to the Town and the Council?

A66: Qualified professionals will be engaged by DWW or its authorized agents (such as, for example, DWW's EPC contractor) to perform such soil erosion and sediment control inspections as are required by the DEEP's Stormwater Program. DWW anticipates that inspections will be performed weekly or more frequently as needed based on precipitation or other conditions of concern. DWW anticipates that the EPC contractor will engage a suitably qualified professional for such matters. DWW will also retain a qualified professional to act as the owner's representative, who will review the activities of the EPC contractor's inspector and make recommendations for improvement, as needed.

Q67: Some of the Project Site contains soils which are classified as "prime land soils." Has DWW developed an agricultural management plan for pre- and post-construction that provides for protection and/or enhancement of these soils?

A67: DWW objects to this interrogatory in that it is vague and ambiguous and the term "prime land soils" is undefined. Subject to the foregoing objection, DWW states that it is willing to prepare an agricultural protection plan as part of its D&M Plan which would include details regarding the avoidance of impact to prime farmland soils during the construction and operation of the Project.

Q68: The Operations & Maintenance Plan (Exhibit Q) of the Petition ("O&M Plan") provides one mowing per year. What is the basis for determining that one mowing per year would be sufficient?

A68: Mowing once per year is an industry standard. More frequent mowing will be completed if determined necessary based on site conditions.

Q69: The O&M Plan does not address the areas DWW would seed with pollinator mixtures specifically. Has DWW considered the need for an additional level of

inspection that includes assessment of success and the need to re-seed not based solely on bare spots? If not, please provide such an assessment.

A69: This has not been determined at this time, but such information will be provided as part of the D&M Plan process, if determined to be appropriate.

Q70: Discuss the expected use, if any, of herbicides, pesticides or fertilizers for maintaining or removing vegetation as part of the O&M Plan. To what percentage of the Project Site would DWW apply such applications?

A70: Please see the response provided to the Connecticut Department of Agriculture's Interrogatories, in particular the response to Interrogatory 9.

Q71: The O&M Plan calls for snow to be plowed off the access roads and equipment pads following snow events. Would this maintenance work be limited to certain hours of the day to lessen the acoustical impact on abutting properties? What hours are proposed for this work?

A71: It is anticipated that plowing would be completed during daylight hours.

Q72: The O&M Plan states that grass and weeds would be removed once per year. How did DWW arrive at this number? Would this keep unintended vegetation and potential invasive plants from taking hold of planned vegetation? If so, please provide support for this proposition. If invasive plants take over the Project Site, would this impact stormwater calculations? How would this impact the pollinator demonstration area?

A72: Vegetation maintenance once per year is an industry standard. More frequent maintenance will be completed if deemed necessary based on site conditions. Whether the species are native or invasive has no bearing on the stormwater calculations. Stormwater runoff conditions are a function of the general vegetative cover type (e.g. grass, shrub, tree) and condition (e.g. poor, good, excellent) which is used to assign a runoff curve number in accordance with the NRCS TR-55 methodology which was used in the preparation of the Stormwater Report.

Q73: What assurances would/can DWW provide that the Project Site would be maintained in a manner consistent with the Petition or as ordered by the Council?

A73: The Siting Council, as an agency of the State of Connecticut, has authority to enforce the laws and regulations for which it is responsible.

Q74: Would DWW set aside contingency funds for additional landscaping and maintenance over the life of the Project?

A74: DWW will comply with all requirements the Siting Council may impose upon it through the approval of the Petition and/or the D&M Plan that relates to landscaping.

Q75: Would DWW conduct post construction monitoring of wildlife and vegetation? If yes, for how long and to whom would DWW report its findings?

A75: Please see the response to Interrogatory 27.

Decommissioning Plan

Q76: Exhibit S to the Petition (Decommissioning Plan) does not include the removal of pile foundations, which may impact future farming activity. Would DWW include full removal of pile foundations as part of the Decommissioning Plan?

A76: DWW anticipates that it will remove all structures related to the Project unless the structures are located so deeply underground that they will not have an impact on future agricultural uses for the property or the facilities are located in a non-agricultural area, such as a road.

Q77: Exhibit S of the Petition (Decommissioning Plan) provides that electric wire would be pulled and removed from the ground at the Project Site. Would this include all conduits, whether they are direct buried or concrete encased?

A77: Please see the response to Interrogatory 76.

Q78: Absent full knowledge of the end-of-life value of the solar panels contemplated for the Project, what is the basis for asserting that the salvage value of those solar panels would cover the costs of decommissioning?

A78: DWW has assessed what the value of such panels currently is on the salvage market. While DWW acknowledges that such valuations may change over time (primarily due to changes in commodity prices), DWW anticipates (as have other project developers in Connecticut that have had projects approved by the Siting Council) that the end-of-life value of the solar panels will exceed the costs of decommissioning.

Q79: What financial protection is available during the first ten years of the Project when the financial assurance by DWW has not been fully funded?

A79: The Project is the subject of power purchase agreements that provide for a guaranteed revenue stream for the Project. That revenue stream will be used to fund any required financial assurance.

Infrastructure

Q80: Provide a copy of the System Impact Study (SIS) prepared for ISO New England.

A80: No System Impact Study was prepared for the Project for ISO New England.

Q81: Please confirm that the electrical lines proposed as part of the Project both on-site and off-site would be underground installations. Has DWW discussed this issue with

the appropriate public service company and, if so, what is the status of those discussions?

A81: All of the electrical lines associated with the Project are anticipated to be installed underground. DWW is still discussing interconnection with Eversource, and these discussions are progressing well.

Q82: Please confirm whether any easements would be required over public or private property for the completion of the Project. If so, please detail the nature of and probable location of each such easement. Has DWW obtained these easements?

A82: DWW objects to this Interrogatory due to the fact that it calls for information that is beyond the scope of these proceedings. Subject to the foregoing objection, DWW states that Eversource is still evaluating interconnection options, so it is not known at this time if easements will be required.

Q83: Please provide information on any use of public water or sewer that is required for the Project, if any.

A83: Please see Section 7.4 of the Petition, which states that the Project will not require public water or sewer.

Q84: Does DWW anticipate ground mounted transformers to be constructed as part of the Project and, if so, would they be protected in accordance with the applicable electrical codes?

A84: Yes. Yes.

Q85: How many megawatts ("MW") of power is DWW required to provide under the power purchase agreement? Does the number of megawatts vary? Please provide a copy of the power purchase agreement.

A85: DWW objects on the grounds that this Interrogatory calls for information that is beyond the scope of these proceedings and would call for the disclosure of confidential and proprietary information. Redacted versions of the power purchase arrangements will be available to the public once filed with the appropriate regulatory agency by the purchasing utilities.

Q86: How many panels does DWW expect to use if the Project is approved as set forth in the Petition?

A86: Please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the response to Interrogatory 14.

Q87: What are the specifications for the individual solar panels selected for the Project?

A87: Please see the response provided to the Connecticut Siting Council's Interrogatories, in particular the response to Interrogatory 20.

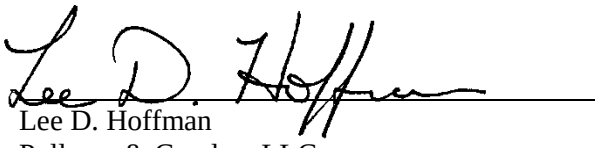
Q88: Are there any alternative panels with greater capacity, wattage and output available in the industry that might reduce the footprint of the Project to generate the same 26.4 MW? If so, why did DWW elect to use those currently contemplated for the Project?

A88: Technology related to solar photovoltaic systems changes constantly. DWW has estimated its project needs based on the technology that is currently available. Moreover, DWW has not yet made a final determination of what types of panels it will use for the Project. If new, cost-effective technology becomes available before the Project begins construction, DWW will consider the use of such technology.

Q89: If DWW were to use the alternative panels referenced in Request 88, how many panels would DWW require to produce 26.4 MW of power? How much of the Project footprint could be reduced?

A89: DWW objects to this Interrogatory on the grounds that it is so speculative that it cannot be answered.

Respectfully Submitted,
DWW Solar II, LLC

By: 

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CERTIFICATION

I hereby certify that on September 5, 2017, the foregoing was delivered by electronic mail and regular mail, postage prepaid, in accordance with § 16-50j-12 of the Regulations of Connecticut State Agencies, to all parties and intervenors of record, as follows:

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Lee D. Hoffman
Commissioner of the Superior Court

ATTACHMENT

SUPPLEMENT TO RESPONSE A3:

Sign-in Sheets for Attendees of Two Public Meetings;

May 11, 2017 and June 22, 2017

Supplement to Response to Interrogatory Three

June 22, 2017 Meeting	**May 11, 2017 Meeting**
Amanda Gurren	Jeannie Fisher
Sharon Byron	Suzy Norman
Marilyn Hellwig	William Rice
Kip (Kathleen) Palmer	David Ryan
Shelley Spoering	John and Bertha Jacobs
D. Roth	Mark Parise
Mark Jacobs	Steven Smolnik
Frank Hokunson	Bill Ferrigno
Johnny Minor	Mark Orenstein
Don Prarson	Steven Angeloff
Donna Beinstein	Dianne Treacy
Samuel Beinstein	Bob and Donna Beinstein
Brad Mead	Steve and Sue Raye
Richard Boorman	Ruben Acosta
Bob Beinstein	Eileen Higham
John and Eileen McGarry	Rick Boormar
Linda Schofield	Joe Treacy
Denise Coombes	Sharon Ions
Jim and Val Patrina	Karen Grant
Winthrop Wadsworth	Anthony Feola
Angela [cannot be read clearly]	Karyn Sweezy
Bob Knight	Ken Veroecchia
Pat and Bill Dryden	Phil Carollo
Marion Doey	Alan Needham
Rene Bradford	G. S. Kleiner
Lisa Caesar	Andy Sherrell
Stephen Banulski	Frank and Katherine Jozef
John Hampton	Jennifer and Steve Rowley
Kevin Witkas	Christine Kilbourn-Jones
April Pozzato	Lis Shlansky
Linda Lough	Kathleen Marques
Jeff and Della Greenwood	Harold Bender
Susan Schafer	Stephan Sutton
Ron Laforrre	Sue Grise
Chris Meuse	Tom and Wendy Palmisano
Michelle Cyr	Steven Angeloff
Gary Cyr	Barbara Strong
Richard J. Dion	Carol Kirsch
Kate Robbins	Donna Kottas
Kris Barnett	Bill Trainor
Gil Kleiner	Rich Lyons
Mary D. S. Ryerson	Lorraine Wry

June 22, 2017 Meeting	**May 11, 2017 Meeting**
Chris Klemmer	Lisa Heavner
Kent McCord	Mike Laureno
David C. Balboni	Sally Crowe
Junjie Cheng	Linda Lough
Jan and Diane Heermance	Jeff and Della Greenwood
Dana and Brian Denault	Len Fenelon
Kathy Brignac	April Pozzato
Lindsay and Rich Thomson	Carol and Edward Wrobel
Teresa Bludear	Joseph Slattery
Eric Borough	Jill Schlicher
Lee Barrett	Ed Gaffney
Mark and Sue Silverman	Amy Dion
Judie and Rich Levine	Al Gran
Nedda Wittels	Barbara Bush
Josh Livingston	Stacey McMahon
Susan Oson	Lisa Szekretar
Jean McKena	Nedda Wittels
Beth Skolnick	John Barrett
Leon Botham	Tom Nigro
Susan VanKleef	Kelly Meuser
Linda and Robert Oseychik	Steven Antonio
Robert [cannot be read clearly]	Laura Nigro
Joan M. Kelchman	Jim Ray
Holly McGrath	Susan Masino
Joseph Pozzato	Ryan McEleney
Bill Trainor	Lauren Kiss
Joe Treacy	Zhenkui Zhang
Mike Greene	Kimberly Meyer
Carol and Ed Wrobel	Andy Markowski
Martha Drapear	Tom Palmisano
Peggy and John Schuyler	
Jean Schwager	
Mary [cannot be read clearly]	
Steve Rowley	
Laura Nigro	
Tom Nigro	
Diane Zalewski	

ATTACHMENT

SUPPLEMENT TO RESPONSE A34:

Cultural Resources Assessment Survey

AUGUST 2017

PHASE IB CULTURAL RESOURCES ASSESSMENT SURVEY OF THE PROPOSED TOBACCO VALLEY SOLAR PROJECT IN SIMSBURY, CONNECTICUT

Prepared For:

VHB, Inc.
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PROVIDENCE, RHODE ISLAND 02903

PREPARED BY:

HERITAGE CONSULTANTS, LLC
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ABSTRACT

The report presents the result of a Phase IB cultural resources reconnaissance survey of the proposed Tobacco Valley Solar Project in Simsbury, Connecticut. Heritage Consultants, LLC completed this project using a combination of pedestrian survey and the excavation of 420 shovel tests throughout eight areas of moderate and high archaeological sensitivity. Examination of the moderate and high archaeologically sensitive areas resulted in the identification of three cultural resources loci (Locus 1 through 3) and the re-identification of Site 128-52. Pedestrian survey and shovel testing of Locus 1, which yielded a small number of lithic artifacts, indicated that it represents a short-term use of the area during an unknown prehistoric time period. This disturbed deposit lacks research potential and is not eligible for listing on the National Register of Historic Places. Locus 2, which also yielded a small number of lithic artifacts from an unknown prehistoric time period, was identified during pedestrian survey of the Project Area. It too represents a short-term use of the area, lacks research potential, and is not eligible for listing on the National Register of Historic Places. Locus 3 was identified in the southern portion of the Project Area while completing pedestrian survey of an agricultural field. This non-site locus yielded a small number of lithic artifacts from surficial and disturbed subsurface contexts. Unfortunately, none of the artifacts could be assigned to a specific prehistoric time period. Locus 3 appears to represent a short-term occupation; however, it lacks research potential and is not eligible for listing on the National Register of Historic Places. Finally, pedestrian survey of the northern portion of the study area resulted in the re-identification of Site 128-52, which has been described as a multi-component site with deposits dating from the nineteenth century and an unknown prehistoric period. While no additional prehistoric period artifacts were recovered from the site area during the current investigation, pedestrian survey did confirm the presence nineteenth century artifacts (e.g., whiteware sherds, glass shards, etc.), as well as modern cultural material (e.g., plastic sheeting, plastic piping, etc.). All of these items were mixed together on the surface of the site, indicating that the site area lacks depositional integrity. Thus, due to a lack of prehistoric cultural materials, as well as the mixing of historic and modern artifact, it was determined that Site 128-52 lacks research potential and the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). In sum, no additional archaeological examination of Loci 1 through 3 or Site 128-52 is recommended, and the construction of the proposed solar facility will have no adverse effect on archaeological resources.

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CHAPTER I

INTRODUCTION

This report presents the results of a Phase IB cultural resources reconnaissance survey for a proposed solar energy project in Simsbury, Connecticut (Figure 1). In January of 2017, Deepwater Wind, LLC (DWW), acting through its consultant, VHB, Inc., (VHB) requested that Heritage Consultants, LLC (Heritage) complete a Phase IA cultural resources assessment survey as part of the planning process for a 26.4 MW-AC solar power generating facility, the proposed Tobacco Valley Solar Project. In February of 2017, Heritage conducted the assessment survey of 289.92 acres of land in the northern portion of Simsbury; this area is referred to herein as the Study Area (Figure 2). As noted in the previously submitted Phase IA cultural resources assessment survey, the proposed Tobacco Valley Solar Project will be constructed within the Study Area, but will only occupy a portion of the 289.92 acres surveyed. The area to be occupied by the Project is described herein as the Project Area.

The results of the Phase IA investigation, revealed that the proposed construction areas contained various zones of no/low, moderate, and high archaeological sensitivity (Heritage Consultants, LLC 2017). These areas are bordered to the south and west by residential neighborhoods, to the north by an existing powerline right-of-way, and to the east by Route 10/202. The current Phase IB cultural resources reconnaissance report presents the results of archaeological survey of the moderate and high sensitivity areas that were identified during the previously completed Phase IA investigation; the no/low areas were not subjected to Phase IB survey as they retain little, if any, potential to retain intact cultural deposits. All work associated with this project was performed in accordance with National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969, as amended, and; the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987) promulgated by the Connecticut Historic Commission, State Historic Preservation Office.

Project Description and Methods Overview

DWW proposed the Tobacco Valley Solar Project in response to the New England Clean Energy request for proposals solicited by the Connecticut Department of Energy and Environmental Protection (CT DEEP), Eversource Energy, National Grid, and Unitil. In October of 2016, Deepwater's Simsbury project was selected as one of the bidders to enter final contract negotiations with Eversource Energy. The Simsbury project is a new 26.4 MW-AC solar power generating facility located on approximately 153 acres of land previously developed for agriculture in Simsbury, Connecticut, and it is adjacent to Connecticut Light & Power's existing 115 kV Northeast Simsbury substation. The project will be located on five parcels of agricultural land along Hoskins Road, County Road, and Hopmeadow Street in Simsbury, Connecticut. DWW is advancing the project to design and permitting through the Connecticut Siting Council review process, and will also obtain Federal permits as necessary (TBD).

The project includes the installation of arrays of photovoltaic panels across the five parcels. The panels will be mounted on metal framework or "racking." The racks will be mounted on pile foundations arranged in rows sufficiently spaced to enable access by pickup truck or ATV. The panels will be connected with direct buried electrical cable that will connect the panel arrays to electrical equipment pads. Concrete equipment pads spaced throughout the project footprint will contain transformers, inverters, and electrical panels. The array will connect to the substation described above via a buried electrical cable. The facility will be surrounded by a 20-foot-wide gravel perimeter roadway for safety and a 7-foot-high chain link fence for security. Outside of the fence, an approximately 100-foot-wide

zone around the east, west, and south sides will be cleared of vegetation and managed as meadow or shrub cover for the lifetime of the facility operation.

Generally, the project will conform to existing surface grades. Within the fence line, where steep slopes are present, grading will be required to achieve maximum slopes of 10 percent. Limited grading will be necessary around the project perimeter to meet existing grades. Proposed array foundations will be driven piles, either H-piles or pre-drilled concrete if bedrock is encountered. Concrete electrical equipment pads will be cast-in-place 20 x 20 ft pads. Footings for the pads will extend 4 to 5 feet below grade, and direct buried cable will be trenched in approximately 3 to 4 feet below grade. The current Phase IB cultural resources reconnaissance survey consisted of the completion of pedestrian survey, limited shovel testing of the previously identified moderately sensitive areas, and systematic, close interval shovel testing of landforms within the previously identified high sensitive areas in order to identify any archaeological deposits that may exist within the planned construction areas.

The Phase IB cultural resources reconnaissance survey was completed utilizing pedestrian survey, systematic shovel testing along survey transects, detailed mapping, and photo-documentation. The pedestrian survey portion of this investigation included visual reconnaissance of all moderate sensitivity areas scheduled for impacts by the solar project. In these areas, archaeologists walked parallel survey transects and noted the locations of artifacts on the ground surface and recovered them for laboratory analysis. The recorded artifact locations then were subjected to limited shovel testing to determine if intact soils remained in the areas and if additional artifacts and/or cultural features could be identified.

During testing of the high sensitivity areas, Heritage Consultants, LLC conducted the systematic excavation of shovel tests along parallel survey transects. Depending upon the size of the landform being tested the interval between shovel tests and survey transect was set at either 7.5 m (26.4 ft) or 15 m (49.2 ft) intervals. Each shovel test measured 50 x 50 cm (19.7 x 19.7 in) in size and each was excavated to the glacially derived C-Horizon or until immovable objects (e.g., tree roots, boulders, etc.) was encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth and examined visually for cultural material. Soil characteristics were recorded using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled immediately upon completion of the archeological recordation process.

Project Results and Management Recommendations Overview

The Phase IB cultural resources reconnaissance survey of the moderate and high archaeologically sensitive areas resulted in the identification of three non-site cultural resources loci (Locus 1 through Locus 3). In addition, a previously identified archaeological site (128-52) also was revisited and examined. These cultural resources are discussed briefly below.

Pedestrian survey and subsurface testing of Locus 1, which was identified along the southern edge of Hoskins Road resulted in the collection of 5 quartz items from the surface of a plowed field. Subsequent laboratory analysis of the recovered materials, it was determined that three of them consisted of prehistoric quartz thinning flakes, while the other two did not appear to have been altered by humans. Despite the successful excavation of 5 of 5 (100 percent) shovel tests throughout the locus area, no evidence of cultural features, additional artifacts, and/or temporally diagnostic material was recovered. Thus, it was determined that Locus 1 retains little, if any, research potential. As a result, this non-site cultural resources locus was assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional testing of this archeological Locus 1 is recommended.

Locus 2, which also consisted of a surface scatter of prehistoric lithic artifacts, was identified during pedestrian survey of the large tobacco field immediately north of Hoskins Road. Cultural material collected

from the surface of Locus 2 included 1 basalt secondary thinning flake, 1 chert end scraper, and a single piece of fire-crack rock. All three of these items were situated in a small cluster measuring approximate 5 m (16. 4 ft) in diameter. In order to determine whether Locus 2 retained any intact subsurface deposits, Heritage Consultants, LLC field personnel excavated 5 of 5 (100 percent) planned shovel tests in the vicinity of the surface finds. The excavation of Shovel Test 1 within Locus 2 provided the only additional artifact in the area, a basalt secondary thinning flake. This artifact was collected from the disturbed plowzone/C-Horizon interface.

The archaeological data recovered from Locus 2 area indicated that the cultural material could not be dated to a specific prehistoric period and that it likely reflects a limited use of the area rather than a long-term occupation. No cultural features were identified in the locus area, and it was determined that Locus 2 has been destroyed by centuries of repeated plowing for tobacco cultivation. Thus, Locus 2 lacks research potential and the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Locus 2 is required prior to construction of the proposed solar facility.

Completion of the above-described Phase IB cultural resources reconnaissance survey also resulted in the identification of a third cultural resources locus (Locus 3); it is situated within the southern portion of the Study Area on the south side of Hoskins Road. Visual reconnaissance of the Locus 3 area resulted in the collection of six prehistoric artifacts that included 1 basalt secondary thinning flake and 5 chert secondary thinning flakes. These artifacts were found in three small clusters situated close to each other within an agricultural field. Based on the recovery of these materials, Heritage Consultants, LLC excavated 12 shovel tests throughout the Locus 3 area. Of these, nine (75 percent) failed to produce any additional cultural material. The three remaining shovel tests yielded a single prehistoric lithic artifact each; these items were described chert secondary thinning flakes that originated from the plowzone at depths ranging from 0 to 20 cmbs (0 to 8 inbs). An examination of the soil stratigraphy in the area indicated that the plowzone deposit existed directly on top of the glacially derived C-Horizon, and that no intact subsoils remained within the field. Thus, based the recovered cultural material and soils data, the Locus 3 area no longer retains depositional integrity or research potential. Thus, it was determined that it does not possess qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Locus 3 is recommended prior to construction of the proposed solar facility.

Finally, field personnel relocated Site 128-52, which was identified in the 1980s by Dr. Marc Banks. This site was originally recorded as a multicomponent occupation that produced both prehistoric lithic and historic artifacts dating from the nineteenth century. Pedestrian survey of the site area resulted in the observation of a mix of nineteenth century artifacts (e.g. ceramic sherds, brick fragments, and glass shards, etc.) and modern trash (e.g. plastic sheeting, plastic piping, and plastic bottles, etc.). No additional prehistoric artifacts were noted during the pedestrian survey. The surface of the site area also contained patches of coarse sand and numerous large cobbles, indicating that repeated plowing of the site areas has greatly disturbed the site area such that the local stratigraphy has been inverted and destroyed. As a result, it was determined that Site 128-52 does not possess qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Site 128-52 is recommended prior to construction of the proposed solar facility.

Project Personnel

Key personnel for this project included Mr. David R. George, M.A., R.P.A, who supervised the fieldwork portion of the project and compiled this report. He was assisted by Mr. Antonio Medina, B.A., Field Crew Chief; and Mr. William Keegan, B.A., who provided GIS support services and project mapping. Finally, Ms. Kristen Keegan completed this historic background research of the project and contributed to the final report.

Organization of the Report

The natural setting of the region encompassing the Study Area is presented in Chapter II; it includes a brief overview of the geology, hydrology, and soils, of the project region. The prehistory of the project region is outlined briefly in Chapter III. The history of the region encompassing the project region and Study Area is chronicled in Chapter IV, while a discussion of previous archaeological investigations in the vicinity of the Study Area is presented in Chapter V. The methods used to complete this investigation are discussed in Chapter VI. Finally, the results of this investigation are outlined in Chapter VII. Finally, Chapter VIII contains management recommendations for the identified cultural resources and the Study Area.

CHAPTER II

NATURAL SETTING

Introduction

This chapter provides a brief overview of the natural setting of the region containing the Study Area. Previous archaeological research has documented that a few specific environmental factors can be associated with both prehistoric and historic period site selection. These include general ecological conditions, as well as types of fresh water sources and soils present. The remainder of this section provides a brief overview of the ecology, hydrological resources, and soils present within the Study Area and the larger region in general.

Ecoregions of Connecticut

Throughout the Pleistocene and Holocene Periods, Connecticut has undergone numerous environmental changes. Variations in climate, geology, and physiography have led to the "regionalization" of Connecticut's modern environment. It is clear, for example, that the northwestern portion of the state has very different natural characteristics than the coastline. Recognizing this fact, Dowhan and Craig (1976), as part of their study of the distribution of rare and endangered species in Connecticut, subdivided the state into various ecoregions. Dowhan and Craig (1976:27) defined an ecoregion as:

> "an area characterized by a distinctive pattern of landscapes and regional climate as expressed by the vegetation composition and pattern, and the presence or absence of certain indicator species and species groups. Each ecoregion has a similar interrelationship between landforms, local climate, soil profiles, and plant and animal communities. Furthermore, the pattern of development of plant communities (chronosequences and toposequences) and of soil profile is similar in similar physiographic sites. Ecoregions are thus natural divisions of land, climate, and biota."

Dowhan and Craig defined nine major ecoregions for the State of Connecticut. They are based on regional diversity in plant and animal indicator species (Dowhan and Craig 1976). Only one of the ecoregions is germane to the current investigation: North-Central Lowlands ecoregion. A brief summary of this ecoregion is presented below. It is followed by a discussion of the hydrology and soils found in and adjacent to the Study Area.

North Central Lowlands Ecoregion

The North-Central Lowlands region consists of a broad valley located between approximately 40.2 and 80.5 km (25 and 50 mi) to the north of Long Island Sound (Dowhan and Craig 1976). It is characterized by extensive floodplains, backwater swamps, and lowland areas situated near large rivers and tributaries. Physiography in this region is composed of a series of north-trending ridge systems, the easternmost of which is referred to as the Bolton Range (Bell 1985:45). These ridge systems comprise portions of the terraces that overlook the larger rivers such as the Connecticut and Farmington Rivers. Elevations in the North-Central Lowlands range from 15.2 to 76.2 m (50 to 250 ft) above sea level, reaching a maximum of nearly 274 m (900 ft) above sea level along the trap rock ridges that surround the central valley. The bedrock of the region is composed of Triassic sandstone, interspersed with very durable basalt or "traprock" (Bell 1985). Soils found in the upland portion of this ecoregion are developed on red, sandy to clayey glacial till, while those soils situated nearest to the rivers are situated on widespread deposits of stratified sand, gravel, silt, and alluvium resulting from the impoundment of glacial Lake Hitchcock.

Hydrology in the Vicinity of the Study Area
The proposed Study Area is situated within close proximity to several sources of freshwater, including Great Pond, Minnisunk Brook, Russell Brook, Saxton Brook, and the Farmington River, as well as several unnamed wetlands. These brooks, ponds, rivers, and wetlands may have served as resource extraction areas for Native American and historic populations. This is especially true for the Farmington River, which has numerous documented archaeological sites along its banks in this region. Previously completed archaeological investigations in Connecticut have demonstrated that streams, rivers, and wetlands were focal points for prehistoric occupations because they provided access to transportation routes, sources of freshwater, and abundant faunal and floral resources.

Soils Comprising the Study Area
Soil formation is the direct result of the interaction of a number of variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to a number of diagenic processes. Different classes of artifacts may be preferentially protected, or unaffected by these processes, whereas others may deteriorate rapidly. Cyclical wetting and drying, freezing and thawing, and compression can accelerate chemically and mechanically the decay processes for animal bones, shells, lithics, ceramics, and plant remains. Lithic and ceramic artifacts are largely unaffected by soil pH, whereas animal bones and shells decay more quickly in acidic soils such as those that are present in within the current Study Area. In contrast, acidic soils enhance the preservation of charred plant remains.

A review of the soils within the Study Area is presented below. The Study Area is characterized by the presence of approximately 10 different soil types ranging from sandy loams to mucks. The most ubiquitous soil types found within the region and which cover the vast majority of the Study Area include Hinckley, Windsor, Merrimac, and Manchester soils. These four soil types are well correlated with both historic and prehistoric archaeological site locations. Descriptive profiles for each, which were accessed via the National Resources Conservation Service, are presented below.

<u>Hinckley Soils:</u>
Oe-0 to 1 inch; moderately decomposed plant material derived from red pine needles and twigs.

Ap-1 to 8 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; 5 percent fine gravel; very strongly acid; abrupt smooth boundary;

Bw1-8 to 11 inches; strong brown (7.5YR 5/6) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 20 percent gravel; very strongly acid; clear smooth boundary;

Bw2-11 to 16 inches; yellowish brown (10YR 5/4) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 25 percent gravel; very strongly acid; clear irregular boundary;

BC-16 to 19 inches; yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; common fine and medium roots; 40 percent gravel; strongly acid; clear smooth boundary;

C-19 to 65 inches; light olive brown (2.5Y 5/4) extremely gravelly sand consisting of stratified sand, gravel and cobbles; single grain; loose; common fine and medium roots in the upper 8 inches and very few below; 60 percent gravel and cobbles; moderately acid.

Windsor Soils:
Oe-0 to 3 cm; black (10YR 2/1) moderately decomposed forest plant material; many very fine and fine roots; very strongly acid; abrupt smooth boundary;

A-3 to 8 cm; very dark grayish brown (10YR 3/2) loamy sand; weak medium granular structure; very friable; many very fine and fine roots; strongly acid; abrupt wavy boundary;

Bw1-8 to 23 cm; strong brown (7.5YR 5/6) loamy sand; very weak fine granular structure; very friable; many fine and medium roots; strongly acid; gradual wavy boundary;

Bw2-23 to 53 cm; yellowish brown (10YR 5/6) loamy sand; very weak fine granular structure; very friable; common fine and medium roots; strongly acid; gradual wavy boundary;

Bw3-53 to 64 cm; light yellowish brown (10YR 6/4) sand; single grain; loose; few coarse roots; strongly acid; clear wavy boundary;

C-64 to 165 cm; pale brown (10YR 6/3) and light brownish gray (10YR 6/2) sand; single grain; loose; few coarse roots; strongly acid.

Merrimac Soils:
Ap -- 0 to 10 inches (0 to 25 centimeters); very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; very friable; many fine roots; 10 percent fine gravel; strongly acid; abrupt smooth boundary:

Bwl -- 10 to 15 inches (25 to 38 centimeters); brown (7.5YR 4/4) fine sandy loam; weak fine and medium granular structure; very friable; common fine roots; 10 percent fine gravel; strongly acid; clear wavy boundary;
Bw2 -- 15 to 22 inches (38 to 56 centimeters); dark yellowish brown (10YR 4/4) gravelly sandy loam; weak fine and medium granular structure; very friable; few fine roots; 15 percent gravel; strongly acid; clear wavy boundary;

Bw3 -- 22 to 26 inches (56 to 66 centimeters); dark yellowish brown (10YR 4/4) gravelly loamy sand; very weak fine granular structure; very friable; few fine roots; 25 percent gravel; moderately acid; clear wavy boundary;

2C -- 26 to 65 inches (66 to 165 centimeters); 80 percent yellowish brown (10YR 5/4) and 20 percent dark grayish brown (10YR 4/2) very gravelly sand; single grain; loose; stratified; few fine roots in upper 4 inches; 40 percent gravel, 10 percent cobbles; moderately acid.

Manchester Soils:
Ap--0 to 9 inches; dark brown (7.5YR 3/2) gravelly sandy loam; weak medium granular structure; very friable; many fine and common medium roots; 20 percent gravel; strongly acid; clear smooth boundary;

Bw--9 to 18 inches; reddish brown (5YR 4/3) gravelly loamy sand; very weak fine and medium granular structure; very friable; few fine roots; 25 percent gravel; strongly acid; clear wavy boundary;

C--18 to 65 inches; reddish brown (5YR 4/4) very gravelly sand; single grain; loose; 50 percent gravel; very strongly acid.

Summary

The natural setting associated with the proposed Study Area is common throughout the North-Central Lowlands ecoregion. Streams and rivers of this area all ultimately empty into the Connecticut River and the landscape in general is dominated by sandy loamy soil types. With the exception of the traprock ridge located to the east of the Study Area, low slopes dominate the region. The project region, and the Study Area in particular, were well suited to Native American occupation throughout the prehistoric era. As a result, hundreds of archaeological sites have been documented in the larger project region, and additional prehistoric cultural deposits may be expected within the Study Area. This area also was used extensively throughout the historic era, and archaeological sites dating from the last 350 years or so may be expected.

CHAPTER III

PREHISTORIC SETTING

Introduction

Prior to the late 1970s and early 1980s, very few systematic archaeological surveys of large portions of the state of Connecticut had been undertaken. Rather, the prehistory of the region was studied at the site level. Sites chosen for excavation were highly visible and they were located in such areas as the coastal zone, e.g., shell middens, and Connecticut River Valley. As a result, a skewed interpretation of the prehistory of Connecticut was developed. It was suggested that the upland portions of the state, i.e., the northeastern and northwestern hills ecoregions, were little used and rarely occupied by prehistoric Native Americans, while the coastal zone, i.e., the eastern and western coastal and the southeastern and southwestern hills ecoregions, were the focus of settlements and exploitation in the prehistoric era. This interpretation remained unchallenged until the 1970s and 1980s when several town-wide and regional archaeological studies were completed. These investigations led to the creation of several archaeological phases that subsequently were applied to understand the prehistory of Connecticut. The remainder of this chapter provides an overview of the prehistoric setting of the region encompassing the Area of Potential Effect.

Paleo-Indian Period (12,000-10,000 Before Present [B.P.])

The earliest inhabitants of the area encompassing the State of Connecticut, who have been referred to as Paleo-Indians, arrived in the area by ca., 12,000 B.P. (Gramly and Funk 1990; Snow 1980). Due to the presence of large Pleistocene mammals at that time and the ubiquity of large fluted projectile points in archaeological deposits of this age, Paleo-Indians often have been described as big-game hunters (Ritchie and Funk 1973; Snow 1980); however, as discussed below, it is more likely that they hunted a broad spectrum of animals.

While there have been numerous surface finds of Paleo-Indian projectile points throughout the State of Connecticut, only two sites, the Templeton Site (6-LF-21) in Washington, Connecticut and the Hidden Creek Site (72-163) in Ledyard, Connecticut, have been studied in detail and dated using the radiocarbon method (Jones 1997; Moeller 1980). The Templeton Site (6-LF-21) is located in Washington, Connecticut and was occupied between 10,490 and 9,890 years ago (Moeller 1980). In addition to a single large and two small fluted points, the Templeton Site produced a stone tool assemblage consisting of gravers, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend some time in the area, but they also had access to distant stone sources, the use of which likely occurred during movement from region to region.

The only other Paleo-Indian site studied in detail in Connecticut is the Hidden Creek Site (72-163) (Jones 1997). The Hidden Creek Site is situated on the southeastern margin of the Great Cedar Swamp on the Mashantucket Pequot Reservation in Ledyard, Connecticut. While excavation of the Hidden Creek Site produced evidence of Terminal Archaic and Woodland Period components (see below) in the upper soil horizons, the lower levels of the site yielded artifacts dating from the Paleo-Indian era. Recovered Paleo-

Indian artifacts included broken bifaces, side-scrapers, a fluted preform, gravers, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represented a short-term occupation, and that separate stone tool reduction and rejuvenation areas were present.

While archaeological evidence for Paleo-Indian occupation is scarce in Connecticut, it, combined with data from the West Athens Road and King's Road Site in the Hudson drainage and the Davis and Potts Sites in northern New York, supports the hypothesis that there was human occupation of the area not long after ca. 12,000 B.P. (Snow 1980). Further, site types currently known suggest that the Paleo-Indian settlement pattern was characterized by a high degree of mobility, with groups moving from region to region in search of seasonally abundant food resources, as well as for the procurement of high quality raw materials from which to fashion stone tools.

Archaic Period (10,000 to 2,700 B.P.)

The Archaic Period, which succeeded the Paleo-Indian Period, began by ca., 10,000 B.P. (Ritchie and Funk 1973; Snow 1980), and it has been divided into three subperiods: Early Archaic (10,000 to 8,000 B.P.), Middle Archaic (8,000 to 6,000 B.P.), and Late Archaic (6,000 to 3,400 B.P.). These periods were devised to describe all non-farming, non-ceramic producing populations in the area. Regional archeologists recently have recognized a final "transitional" Archaic Period, the Terminal Archaic Period (3,400-2,700 B.P.), which was meant to describe those groups that existed just prior to the onset of the Woodland Period and the widespread adoption of ceramics into the toolkit (Snow 1980; McBride 1984; Pfeiffer 1984, 1990; Witthoft 1949, 1953).

Early Archaic Period (10,000 to 8,000 B.P.)

To date, very few Early Archaic sites have been identified in southern New England. As a result, researchers such as Fitting (1968) and Ritchie (1969), have suggested a lack of these sites likely is tied to cultural discontinuity between the Early Archaic and preceding Paleo-Indian Period, as well as a population decrease from earlier times. However, with continued identification of Early Archaic sites in the region, and the recognition of the problems of preservation, it is difficult to maintain the discontinuity hypothesis (Curran and Dincauze 1977; Snow 1980).

Like their Paleo-Indian predecessors, Early Archaic sites tend to be very small and produce few artifacts, most of which are not temporally diagnostic. While Early Archaic sites in other portions the United States are represented by projectile points of the Kirk series (Ritchie and Funk 1973) and by Kanawha types (Coe 1964), sites of this age in southern New England are identified recognized on the basis of a series of ill-defined bifurcate-based projectile points. These projectile points are identified by the presence of their characteristic bifurcated base, and they generally are made from high quality raw materials. Moreover, finds of these projectile points have rarely been in stratified contexts. Rather, they occur commonly either as surface expressions or intermixed with artifacts representative of later periods. Early Archaic occupations, such as the Dill Farm Site and Sites 6LF64 and 6LF70 in Litchfield County, an area represented by camps that were relocated periodically to take advantage of seasonally available resources (McBride 1984; Pfeiffer 1986). In this sense, a foraging type of settlement pattern was employed during the Early Archaic Period.

Middle Archaic Period (8,000 to 6,000 B.P.)

By the onset of the Middle Archaic Period, essentially modern deciduous forests had developed in the region (Davis 1969). It is at this time that increased numbers and types of sites are noted in Connecticut (McBride 1984). The most well-known Middle Archaic site in New England is the Neville Site, which is located in Manchester, New Hampshire and studied by Dincauze (1976). Careful analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca., 7,700 and 6,000 years ago. In fact, Dincauze (1976) obtained several radiocarbon dates from the Middle Archaic component of the

Neville Site. The dates, associated with the then-newly named Neville type projectile point, ranged from 7,740±280 and 7,015±160 B.P. (Dincauze 1976).

In addition to Neville points, Dincauze (1976) described two other projectile points styles that are attributed to the Middle Archaic Period: Stark and Merrimac projectile points. While no absolute dates were recovered from deposits that yielded Stark points, the Merrimac type dated from 5,910±180 B.P. Dincauze argued that both the Neville and later Merrimac and Stark occupations were established to take advantage of the excellent fishing that the falls situated adjacent to the site area would have afforded Native American groups. Thus, based on the available archaeological evidence, the Middle Archaic Period is characterized by continued increases in diversification of tool types and resources exploited, as well as by sophisticated changes in the settlement pattern to include different site types, including both base camps and task-specific sites (McBride 1984:96)

Late Archaic Period (6,000 to 3,700 B.P.)

The Late Archaic Period in southern New England is divided into two major cultural traditions that appear to have coexisted. They include the Laurentian and Narrow-Stemmed Traditions (Funk 1976; McBride 1984; Ritchie 1969a and b). Artifacts assigned to the Laurentian Tradition include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights, and scrapers. The diagnostic projectile point forms of this time period in southern New England include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a; Thompson 1969). In general, the stone tool assemblage of the Laurentian Tradition is characterized by flint, felsite, rhyolite and quartzite, while quartz was largely avoided for stone tool production.

In terms of settlement and subsistence patterns, archaeological evidence in southern New England suggests that Laurentian Tradition populations consisted of groups of mobile hunter-gatherers. While a few large Laurentian Tradition occupations have been studied, sites of this age generally encompass less than 500 m^2 (5,383 ft^2). These base camps reflect frequent movements by small groups of people in search of seasonally abundant resources. The overall settlement pattern of the Laurentian Tradition was dispersed in nature, with base camps located in a wide range of microenvironments, including riverine as well as upland zones (McBride 1978, 1984:252). Finally, subsistence strategies of Laurentian Tradition focused on hunting and gathering of wild plants and animals from multiple ecozones.

The second Late Archaic tradition, known as the Narrow-Stemmed Tradition, is unlike the Laurentian Tradition, and it likely represents a different cultural adaptation. The Narrow-Stemmed tradition is recognized by the presence of quartz and quartzite narrow stemmed projectile points, triangular quartz Squibnocket projectile points, and a bipolar lithic reduction strategy (McBride 1984). Other tools found in Narrow-Stemmed Tradition artifact assemblages include choppers, adzes, pestles, antler and bone projectile points, harpoons, awls, and notched atlatl weights. Many of these tools, notably the projectile points and pestles, indicate a subsistence pattern dominated by hunting and fishing, as well the collection of a wide range of plant foods (McBride 1984; Snow 1980:228).

The Terminal Archaic Period (3,700 to 2,700 B.P.)

The Terminal Archaic, which lasted from ca., 3,700 to 2,700 BP, is perhaps the most interesting, yet confusing of the Archaic Periods in southern New England prehistory. Originally termed the "Transitional Archaic" by Witthoft (1953) and recognized by the introduction of technological innovations, e.g., broadspear projectile points and soapstone bowls, the Terminal Archaic has long posed problems for regional archeologists. While the Narrow-Stemmed Tradition persisted through the Terminal Archaic and into the Early Woodland Period, the Terminal Archaic is coeval with what appears to be a different technological adaptation, the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is recognized in southern New England by the presence of a new stone tool industry that was based on the use of high quality raw materials for stone tool production and a settlement pattern different

from the "coeval" Narrow-Stemmed Tradition.

The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and associated artifacts. There are several local sequences within the tradition, and they are based on projectile point type chronology. Temporally diagnostic projectile points of these sequences include the Snook Kill, Susquehanna Broadspear, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). The initial portion of the Terminal Archaic Period (ca., 3,700-3,200 BP) is characterized by the presence of Snook Kill and Susquehanna Broadspear projectile points, while the latter Terminal Archaic (3,200-2,700 BP) is distinguished by the use Orient Fishtail projectile points (McBride 1984:119; Ritchie 1971).

In addition, it was during the late Terminal Archaic that interior cord marked, grit tempered, thick walled ceramics with conoidal (pointed) bases made their initial appearance in the Native American toolkit. These are the first ceramics in the region and they are named Vinette I (Ritchie 1969a; Snow 1980:242); this type of ceramic vessel appears with much more frequency during the ensuing Early Woodland Period. In addition, the adoption and widespread use of soapstone bowls, as well as the implementation subterranean storage, suggests that Terminal Archaic groups were characterized by reduced mobility and longer-term use of established occupation sites (Snow 1980:250).

Finally, while settlement patterns appeared to have changed, Terminal Archaic subsistence patterns were analogous to earlier patterns. The subsistence pattern still was diffuse in nature, and it was scheduled carefully. Typical food remains recovered from sites of this period consist of fragments of white-tailed deer, beaver, turtle, fish and various small mammals. Botanical remains recovered from the site area consisted of *Chenopodium* sp., hickory, butternut and walnut (Pagoulatos 1988:81). Such diversity in food remains suggests at least minimal use of a wide range of microenvironments for subsistence purposes.

Woodland Period (2,700 to 350 B.P.)

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery; however, as mentioned above, early dates associated with pottery now suggest the presence of Vinette I ceramics appeared toward the end of the preceding Terminal Archaic Period (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been divided into three subperiods: Early, Middle, and Late Woodland. The various subperiods are discussed below.

Early Woodland Period (ca., 2,700 to 2,000 B.P.)

The Early Woodland Period of the northeastern United States dates from ca., 2,700 to 2,000 B.P., and it has thought to have been characterized by the advent of farming, the initial use of ceramic vessels, and increasingly complex burial ceremonialism (Griffin 1967; Ritchie 1969a and 1969b; Snow 1980). In the Northeast, the earliest ceramics of the Early Woodland Period are thick walled, cord marked on both the interior and exterior, and possess grit temper.

Careful archaeological investigations of Early Woodland sites in southern New England have resulted in the recovery of narrow stemmed projectile points in association with ceramic sherds and subsistence remains, including specimens of White-tailed deer, soft and hard-shell clams, and oyster shells (Lavin and Salwen: 1983; McBride 1984:296-297; Pope 1952). McBride (1984) has argued that the combination of the subsistence remains and the recognition of multiple superimposed cultural features at various sites indicates that Early Woodland Period settlement patterns were characterized by multiple re-use of the same sites on a seasonal basis by small co-residential groups.

Middle Woodland Period (2,000 to 1,200 B.P.)

The Middle Woodland Period is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). The latter suggests that regional exchange networks were established, and that they were used to supply local populations with necessary raw materials (McBride 1984; Snow 1980). The Middle Woodland Period is represented archaeologically by narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types indicative of the Middle Woodland Period includes Linear Dentate, Rocker Dentate, Windsor Cord Marked, Windsor Brushed, Windsor Plain, and Hollister Stamped (Lizee 1994a:200).

In terms of settlement patterns, the Middle Woodland Period is characterized by the occupation of village sites by large co-residential groups that utilized native plant and animal species for food and raw materials in tool making (George 1997). These sites were the principal place of occupation, and they were positioned close to major river valleys, tidal marshes, estuaries, and the coastline, all of which would have supplied an abundance of plant and animal resources (McBride 1984:309). In addition to villages, numerous temporary and task-specific sites were utilized in the surrounding upland areas, as well as in closer ecozones such as wetlands, estuaries, and floodplains. The use of temporary and task-specific sites to support large village populations indicates that the Middle Woodland Period was characterized by a resource acquisition strategy that can best be termed as logistical collection (McBride 1984:310).

Late Woodland Period (ca., 1,200 to 350 B.P.)

The Late Woodland Period in southern New England dates from ca., 1,200 to 350 B.P., and it is characterized by the earliest evidence for the use of corn in the lower Connecticut River Valley (Bendremer 1993; Bendremer and Dewar 1993; Bendremer et al. 1991; George 1997; McBride 1984); an increase in the frequency of exchange of non-local lithics (Feder 1984; George and Tryon 1996; McBride 1984; Lavin 1984); increased variability in ceramic form, function, surface treatment, and decoration (Lavin 1980, 1986, 1987; Lizee 1994a, 1994b); and a continuation of a trend towards larger, more permanent settlements in riverine, estuarine, and coastal ecozones (Dincauze 1974; McBride 1984; Snow 1980).

Stone tool assemblages associated with Late Woodland occupations, especially village-sized sites, are functionally variable and they reflect plant and animal resource processing and consumption on a large scale. Finished stone tools recovered from Late Woodland sites include Levanna and Madison projectile points; drills; side-, end-, and thumbnail scrapers; mortars and pestles; nutting stones; netsinkers; and celts, adzes, axes, and digging tools. These tools were used in activities ranging from hide preparation to plant processing to the manufacture of canoes, bowls, and utensils, as well as other settlement and subsistence-related items (McBride 1984; Snow 1980). Finally, ceramic assemblages recovered from Late Woodland sites are as variable as the lithic assemblages. Ceramic types identified include Windsor Fabric Impressed, Windsor Brushed, Windsor Cord Marked, Windsor Plain, Clearview Stamped, Sebonac Stamped, Selden Island, Hollister Plain, Hollister Stamped, and Shantok Cove Incised (Lavin 1980, 1988a, 1988b; Lizee 1994a; Pope 1953; Rouse 1947; Salwen and Ottesen 1972; Smith 1947). These types are more diverse stylistically than their predecessors, with incision, shell stamping, punctation, single point, linear dentate, rocker dentate stamping, and stamp and drag impressions common (Lizee 1994a:216).

Summary of Connecticut Prehistory

In sum, the prehistory of Connecticut spans from ca., 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence patterns, and land use strategies. For the majority of the prehistoric era, local Native American groups practiced a subsistence pattern based on a mixed economy of hunting and gathering wild plant and animal resources. It is not until the Late Woodland Period that

incontrovertible evidence for the use of domesticated species is available. Further, settlement patterns throughout the prehistoric era shifted from seasonal occupations of small co-residential groups to large aggregations of people in riverine, estuarine, and coastal ecozones. In terms of the region containing the proposed Study Area, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.

CHAPTER IV

HISTORIC OVERVIEW

Introduction

The Study Area is located in the northern portion of the town of Simsbury. This location is particularly well-suited to agriculture, and parts of the Study Area are still cleared agricultural fields with a history of use for tobacco growing. The Town of Simsbury and the Study Area have a long and rich history beginning with early contacts between Native American and Colonial settlers and extending into the modern era. The remainder of this chapter presents an overview history of the project region, as well as more specific data related to the Study Area parcels.

Native American History

At the time of contact, the Native American population at Massacoe (the future Simsbury) was large, and they maintained several villages and cornfields along the banks of the Farmington River. It is thought that Simsbury Native Americans were tributaries of the Tunxis or Farmington tribe, which occupied areas to the south, but the relationships among contact-era Native American groups are poorly understood, and sometimes interpreted to help justify past land seizures by the colonists. De Forest, for example, asserts that the Massacoe group was part of the Tunxis people further south in Farmington, probably on the assumption that a group "few in number" must really have been politically bound to a larger group and not independent (1852:52).

Details of the location or particular numbers of Native Americans at Massacoe are unknown. Barber (1886) notes that in 1642, the colony government made Massacoe subject to distribution to the colonists of Windsor, and in 1647 ordered that a proper purchase of it be made and the land distributed; however, neither event took place. Their first three land-related transactions with the English colonists involved a man named John Griffin, who sought to extract payment in land from the tribe because of the destruction by fire of some of his pitch and tar. The first was little more than a scribbled note marked by a Native American named Manahanoose, dated 1648. The second was made by three additional tribal members, and in essence was only a promise to convey their "right in the land at Massaco" when called for by a court, and marked by Pacatoco, Pamatacount, and Youngcoout. A few months later, Griffin transferred this "deede" to the town of Windsor (Phelps 1845:147). Although it pleased Griffin and the colonial legislature to regard these transactions as actual sales, strict reading of the latter document in particular shows that they were not.

Even without valid ownership, English colonists began settling at Massacoe during the 1660s with the legislature's approval. The Indians' relations with the new arrivals remained friendly enough that in 1675, at the start of King Philip's War, all of those Indians living in what was then Hartford County agreed to an alliance and peace treaty with the Connecticut Colony. Yet for reasons that are not clear, as hostilities mounted, the Massacoe fled the area, perhaps taking refuge with neighbors, or perhaps, as one traditional report has it, they moved westward to Weatauge, in what is now Salisbury. On March 26, 1676, during King Philip's War (1675-1676), a band of Indians of unknown origins burned all of Simsbury's buildings to the ground. It was several years after the war, in 1680, that the first correct deed, properly approved by the colonial government, was executed by nine Native Americans (including two women). Interestingly, at its start the document referred to the two previous transactions as involving two different parcels of

land – as if the individuals who made were individual landowners in the English style. It also claimed rights of ownership to the whole of Massacoe for the sellers, although they did not say they lived there anymore. The area described extended from the northern boundary of Farmington 10 miles north and from the western boundary of Windsor 10 miles west. Witnessed by five additional Native Americans as well as three Europeans, the deed excluded from sale a two-acre parcel that one of them allegedly owned at Weatauge, and also reserved the right to "hunt, fowl and fish" within all the territory conveyed (Phelps 1845, 149). The Weatauge mentioned here seems to have been one located in Simsbury. One of the signers, Waquaheag (also known as Cherry), is said to have been a Tunxis man and possibly a chief (Phelps 1845).

Numerous alarms about possible attacks perturbed the colonists until sometime after 1724, but nothing actually happened. Despite the sale of their lands and the flight of many of their fellows in 1675, it appears that some of the Massacoes continued to live in Simsbury, with "a few families" still residing there after 1710, one of whom owned a little land on the east side of the river. Around 1750, however, it is believed that they all had left (Phelps 1845). It was probably the pressure of the English claims to own their land that caused most of these Native Americans to move to more secure territory during the 1660s and 1670s.

Seventeenth and Eighteenth Century History of the Town of Simsbury, Connecticut

As noted above, the Connecticut Colony's first gesture toward acquiring the Massacoe territory came in 1642, when the General Court gave "the Governor" permission to distribute Massacoe territory to any Windsor inhabitants they chose. In 1647, a second order established another committee to look into the purchase and distribution of Massacoe, again with little result. In 1653, and again in 1663, the legislature made grants of land at Massacoe to individuals, and again established committees to distribute the rest of the lands. The absence of significant settlement after these actions suggests uncertainty about the legitimacy of the English claim to this area lying west of Windsor, or else about the wisdom of moving so far into the wilderness. The fact that the Farmington River was only fordable at a point near the northern boundary of the area may have been a factor as well. Nonetheless, John Griffin was residing there as early as 1664, having been active there (in the matter of making pitch and tar) by 1643. In 1668, an order of the General Court referred to permanent residents in Massacoe. Then in 1667 a distribution of meadow lands along the river was made to some 20 colonists. Those who received land in "Meadow Plain" were John Gillett, Samuel Wilcoxson, John Case, John Pettibone, and also a minister's portion. By 1669, perhaps, all of the named individuals had moved their families from Windsor to Massacoe (Phelps 1845).

All of these actions had been taken with Massacoe being considered part of Windsor. In 1668, the legislature issued an order that it should be organized into a new town, and a formal proprietors' meeting was held. In 1669, it appears that there were 13 families whose residence was in Massacoe, and John Case was appointed constable. In 1670, the inhabitants petitioned to be made a formal town, and as "Simsbury" it became the twenty-first town in Connecticut. By the time of King Philip's War in the early 1670s, there were some 40 houses, as well as other buildings in the town, which were all burned; however, none of the residents lost their lives because they had evacuated to Windsor beforehand. The inhabitants did not return until 1677, but some tried to abandon their holdings. In response, in 1679 the General Court ordered them to return, and appointed a committee to decide where they should build their new houses. Four of them were ordered to build at Weatauge on the west side of the river; and several were prosecuted and fined for not building their houses on time. In this year, the first grist and saw mills were built, on Hop Brook. It was in the following year, as discussed above, that a proper deed from the Native Americans was acquired, and also the line between Windsor and Simsbury was settled. In 1681, a Congregational Church was organized, but it was only after some dispute that its meeting house was finally built on the west side of the Farmington River, at Hop Meadow, after a drawing by lot in 1683, in which thirty-two men participated. In 1707, the copper mine in what would later be Granby was discovered (Phelps 1845).

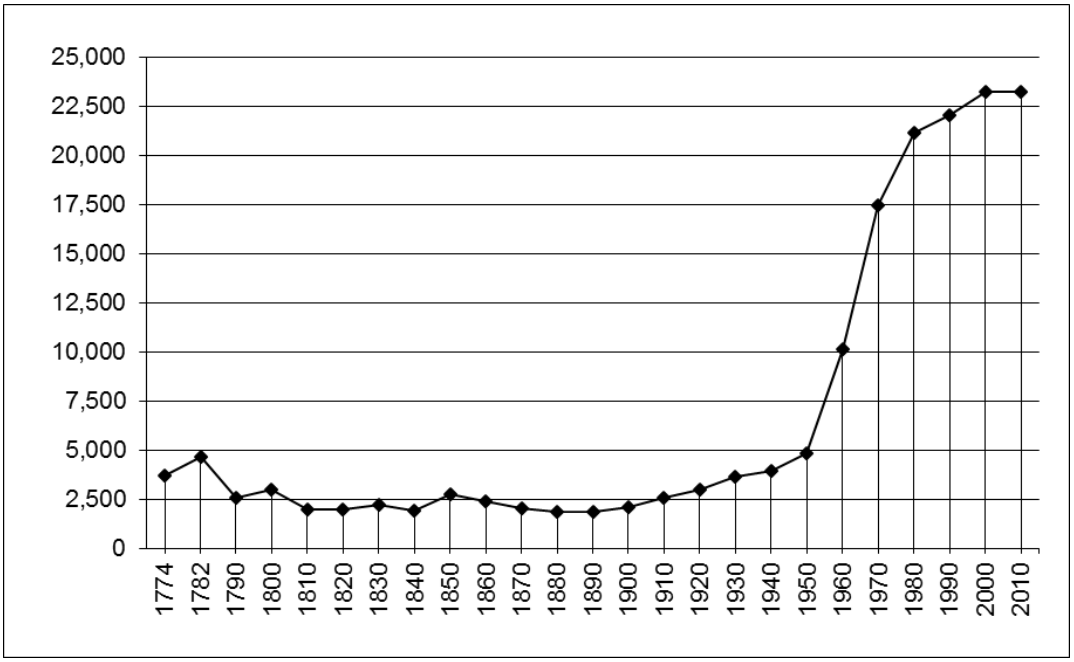
The meetinghouse had already become too small and worn in 1725, and a decision was made to replace it – which occasioned another 13 years of dispute over where it should be, and then over how many ecclesiastical societies the town should be divided into, questions that were not settled until 1736 (Phelps 1845). In the meantime, a map of the town, showing the location of houses, fords, the meetinghouse, and roads, was drawn, presumably to help the various committees make a final decision. The exact date of this map is uncertain, but has been suggested as 1736. It shows a series of houses along the road south of "Weatogue West," but it cannot be said (given the map's lack of precision) whether any of them were in or particularly close to the Study Area. A close examination of this map shows it depicts 162 houses, 58 in the future Granby, and 104 in Simsbury. The final decision on ecclesiastical societies was to divide the town into three – two in the north, which would later become Granby, and one in the south. The First Society built a new meeting house a short distance from the old one. A census of the state taken in 1756 found 2,245 residents, and in the same year a private ferry across the Farmington River opened (Phelps 1845).

For many years, the town had a productive salmon fishery on the aptly named Salmon Brook, as well as shad, but after 1740, overfishing and increasing construction of dams and mills on the rivers led to its decline and eventual disappearance. It is thought that the first attempt to manufacture steel in the future United States was begun in about 1727 by one Samuel Higley of Simsbury, but whether this venture was at all successful is not known. Pitch and tar, made from pine trees, were made in town as early as 1643, as John Griffin's history shows, and turpentine was also made here as well. In 1734, a toll bridge was built across the Farmington River at Weatogue, where there had long been a much-used crossing place. It seems to have stayed a toll bridge for only a few years, and though it was periodically swept away by floods it was always rebuilt. Others followed, making access to the two sides of the river much more convenient. During the French and Indian War, in 1756, the town raised a company to serve; and in 1763, a 47-man company served on the expedition to Havana, of which perhaps one-third returned home, most having died of illness on the campaign (Phelps 1845).

The population of Simsbury entered the Revolutionary era at 3,700, but the separation of Granby (1786) and Canton (1806) caused it to drop first to 2,576 and then to 1,966, and it did not really recover until after 1900 (see the chart below; Keegan 2012). During the Revolutionary War, a number of companies were raised in Simsbury. One was activated in May 1775, and went to Boston under Captain Abel Pettibone, and there some members joined in the Battle of Bunker Hill; another was raised shortly after that, with seventy-five men and five officers, and also went to Boston, where they stayed until December. More joined a regiment in 1776, and served near New York, as well as other places (Phelps 1845). The town's first post office was established in 1798 (Phelps 1845).

Nineteenth and Twentieth Century History of the Town of Simsbury, Connecticut

During the War of 1812, the firm of Allyn and Phelps built an iron wire factory at Tariffville (in the northeastern corner of Simsbury), which used Salisbury iron to make wire of various kinds (Phelps 1845). An 1819 gazetteer reported that the colonial fisheries had already ceased, but noted the existence of three wire factories, a small cotton factory, three tinware factories, and two each of distilleries and tanneries. The processing needs of the town's agricultural production were met by two facilities for carding wool, three grist mills, and four saw mills, and there were also four general stores. Religious needs were met by one Congregational and one Episcopal church, only one of which apparently had a full-time clergyman; other needs were met by one physician and one lawyer (Pease and Niles 1819).



In the 1830s, the village of Tariffville had its own post office, two taverns, and the New England Carpet Company, which employed 175 workers (Barber 1837). In 1850, there were several small and two large industrial enterprises in Simsbury. Three carriage-makers employed 10 men in that business; a cooper employed two; a tinner three; and two pump and plumbing makers another four. The Bacon & Bickford Company of safety fuse makers employed three men and 15 women making $35,000 in fuses. Finally, the Tariffville Manufacturing Company employed 329 male and 326 females in making eight different varieties of carpet (U.S. Census 1850). The latter was begun in around 1825 and by 1845 was one of the largest in the country. The fuse company was located at East Weatauge; its fuses were for rock blasting, and in 1845 it was the only one of its kind in the world (Phelps 1845).

Also during the first half of the nineteenth century, the Farmington Canal was built and passed through Simsbury on the west side of the Farmington River. Before railroads became the norm for long-distance transportation, water transport was far superior to surface transport, and canals were a way of creating artificial navigable waterways. Running from Long Island Sound at New Haven to Suffield at the Massachusetts border, the Farmington canal bypassed Hartford and the navigation-blocking falls at Enfield. It significantly boosted commercial and manufacturing interests along its route. The Connecticut section of the canal measured 58 miles in length. Approximately four feet deep, 20 feet wide at the bottom and 36 feet wide at the top, the canal was flanked by embankments and towpaths that added some 30 feet to the width, for a total width of 66 feet on average. Unfortunately, technical problems impeded its effectiveness, but it did carry substantial traffic whenever navigation was possible. The costs of maintaining the canal consistently exceeded its income, however, and in 1850 a re-chartered and re-named company completed the New Haven and Northampton Railroad (also known as the Canal Railroad) as far north as Granby. For much of this distance, the railroad followed the canal's towpaths, and the canal itself was abandoned (Roth 1981). The original maps of the canal's route show that it passed a short distance to the east of the Study Area (Figure 3).

Other transportation improvements in this era included two turnpikes. In an effort to improve commerce by improving the roads, many states in the young republics chartered private turnpike companies, which were to do the road work in exchange for the privilege of charging tolls. The Granby Turnpike was incorporated in 1800, and ran from Hartford through Tariffville and Granby and to the Massachusetts

line; it continued in business until 1854. In 1801, the Torrington Turnpike was chartered, and built a road from West Simsbury through Torrington to Litchfield; in 1838, the eastern end was made public, and in 1861 the charter was surrendered (Wood 1919). Most turnpikes in the state were unable to compete with the railroads, and went out of business around the same time. The 1855 map of the county shows the Canal Railroad passing even further east of the Study Area than the canal had, this area being one of those where it did not closely follow the canal's route. It also had extended a spur line to Tariffville, and east of the Study Area, where what is now Hoskins road meets Hopmeadow Street (the main north-south road in town) and the railroad, there were a hotel and a cluster of 10 or so houses, arguing for the presence of an unmarked depot there (Figure 4).

Throughout the rest of the nineteenth century and well into the twentieth, Simsbury's economic and population characteristics changed only in the details. In 1881, the carpet factory at Tariffville was bought out by the Auer Silk Manufacturing Company, which later changed its name to the Hartford Silk Company, and shifted the manufacturing to dress goods, tapestries, and so forth, and a second company was started to make silk thread. The fuse factory was moved to Hop Brook and changed its name to Toy, Bickford & Co., and in the mid-1880s employed about 100 people. During this late nineteenth century, the soil was thought to be particularly good for Indian corn and for tobacco. The latter apparently was important even in the mid-eighteenth century, when the town would appoint men to supervise the packing of tobacco, and in the late nineteenth century the business apparently continued unabated. The raising of beef stock and dairying was also important, and a creamery was established in 1882 (Barber 1886).

Despite these various enterprises, however, the population figures for Simsbury show that the town was in no danger of becoming an urban center; in fact, the population fell below 2,500 after 1850 and did not regain that number until 1910 (see the chart above; Keegan 2012). The Canal Railroad was a busy and prosperous road in 1874, with 20 locomotives and 400 employees, moving people and goods between New Haven and points north. In 1887, it was leased to and owned by the New Haven railroad. In the twentieth century, as transportation shifted from rail to road, the line was abandoned and in 1985, the tracks in the Avon to Granby section (including Simsbury) were removed (Turner and Jacobus 1989). The 1869 historic map, unlike the earlier one, does show a railroad station east of the Study Area, along with a hotel, a school and a cluster of houses (Figure 5). By the 1890s, USGS topographic maps were identifying this location as "Hoskins" (Figure 6).

In 1932, the town of Simsbury's main industries were simply "agriculture and the manufacture of safety fuses" (Connecticut 1932:300). The population had slowly been rising since 1890, but was still only 3,625 in 1930 (Keegan 2012). Nonetheless, in 1935 a local historian remarked upon Simsbury's "change from the rural and provincial to a more urban and residential character … seen in the acquisition of the first regular town policeman … the adoption of voting machines at elections … [and] the adoption of zoning regulations" (Ellsworth 1935, 143). During the Depression, Simsbury's Ensign-Bickford Company (successor to Toy, Bickford & Company mentioned above), survived by lowering wages and work hours, but many other manufacturing businesses furloughed their workers or failed entirely (Cunningham 1995). World War II undoubtedly helped this business, but it was not until after 1950 that Simsbury's population began to increase substantially. In the 20 years between 1950 and 1970, the town's population rocketed from just under 5,000 to nearly 17,500. The rate of growth slowed after 1970, and by 2000 had reached only 23,234 – huge compared with all the town's previous history, but still not an urban population, and in 2010 the population was actually slightly lower at 23,220 (Keegan 2012). This pattern of post-1950 growth is consistent with the residential development of places within driving distance of cities, a phenomenon known as suburbanization. Like many places in Connecticut, Simsbury became a suburban town, and over time a number of new firms started or moved there.

As of 2005, only 2.1 percent of the town's workers were employed in agriculture; the 8.1 percent that were engaged in manufacturing was much higher than usual on Connecticut, due to the continued

presence of the Ensign-Bickford Companies (one of the town's top five employers of 2006). Consistent with the rest of the region, the vast majority of workers were in trade, services, and finances, insurance and real estate (the latter accounting for 17.3 percent of employment in town). The other top employers were The Hartford Life Insurance Company, Chubb-Executive Risk Company, McLean Home (a nursing home), and the Town of Simsbury. In 2000, most of the town's workers stayed in town, but a large number commuted to Hartford (CERC 2008). As of 2014, the major employers' information was the same as before, but the proportion of manufacturing jobs had fallen to 5.4 percent (and no data about agriculture was provided in the source). 25 percent of jobs, in contrast, were in the finance and insurance subcategory – not surprising given that three out of five major employers were finance or insurance companies. In 2014 about as many people worked in Simsbury as commuted to Hartford (about 2,000 of each), an interesting shift from the previous survey's proportions (CERC 2016). The flattening of Simsbury's population growth suggests that the town had nearly reached full buildout by 2000. The town's 2007 plan of conservation and development places strong emphasis on preserving the town's physical appearance in terms of open space, scenic resources, and historic resources via planning for sustainable development (Simsbury 2007).

History of the Study Area

This Study Area is very large and it is best discussed in its three sub-areas, which are designated South Area, Middle Area, and North Area (see Figure 7). The South Area has the clearest direct connection to known historic use; the notch in its northern edge, next to the road, is a typical house-containing parcel reserved from the sale of a larger piece of land. The 1855 map shows that there was a house there at that time, owned by Asa Hoskins (Figure 5). Large portions of the Study Area have a history of use for growing tobacco, the general history of which is discussed in the section "Tobacco Farming in Connecticut," below.

A manuscript map of Simsbury from the 1730s was consulted for this research, but it shows the houses in town as being strung along the Farmington River and the main north-south road, some distance east of the Study Area. Similarly, the Farmington Canal map from 1828, referenced above, covers only the area immediately around the canal, and thus has no information about the Study Area. The 1855 and 1869 maps, however, were made at a time when the town had become as fully settled as it was going to get in the nineteenth century, and sought to capture the location of homes and other structures, most often with the owners' names attached to them. The precision of this type of map is not high, but it is still useful. The proximity of a house is not generally a perfect indicator of ownership of nearby land, but one can gain a good idea of the characteristics of any actual owner of the property.

In this case, the South Area has the notch by the road within which is the house of Asa Hopkins. The question of occupation is complicated, however, by the fact that about a mile to the west in the 1855 map there is another house labeled Asa Hoskins. It cannot be said for certain which house Asa Hoskins actually lived in. The Middle Area's ownership is more ambiguous, though it is speculated that it belonged to Noah Hoskins, marked as owning two structures just west of Asa's house. Other members of the Hoskins family in the area included Daniel Hoskins, to the southwest, and by the railroad over to the east N. Hoskins and Capt. Shubael Hoskins were noted (Figure 5). The 1869 historic map shows "A. Hoskins" and "N. Hoskins" still in place, with an additional "A. Hoskins" house to the west as before. The family was still represented by "D.M. Hoskins" to the southwest, and "S. Hoskins" near the railroad.

In addition, immediately east of the South Area was a house labeled "Wm. Hall" (Figure 5). In the 1884 historic map shown in Figure 8, there was still and "A. Hoskins" with a simple "Hoskins" next. Research in the U.S. Census records suggests that Asa and Noah Hoskins were brothers (aged 26 and 30 in 1850), who were prosperous farmers. They and their sons remained in possession of farms in Simsbury until at least 1900, raising families and maintaining a succession of temporary laborers and servants in their households. The agricultural census returns provide information about the uses to which their fields were

put. In 1850, their 200 acres each of land was used to grow rye, Indian corn, oats, buckwheat, Irish potatoes, orchard fruit, and hay. Only the buckwheat was relatively unusual in this town. Only two farmers anywhere in town reported growing tobacco at this time. They also pastured a typical number of horses, oxen, milk cows (from which butter was the main product), other cattle, and swine. But they also pastured sheep and produced wool, which was quite unusual in Simsbury at the time. According to the 1870 agricultural census, however, almost everyone in town (including Asa and Noah Hoskins) was growing tobacco, and almost no one was still keeping sheep (Asa still had one). These were the only notable changes in agricultural land use between 1850 and 1870. As of 1880, the patterns were much the same, except the Census asked additional questions revealing that most farmers kept poultry and had apple orchards. Asa had 400 apple trees and Noah had 300. By 1900, however, Asa's son Edmund was the head of the family, living with a brother (both were unmarried) and their mother (or possibly stepmother), and one Swedish and one German servant (U.S. Census 1850, 1860, 1870, 1880, 1900). The addition of residents, such as these servants, whose origins were not Irish was typical of the later nineteenth and early twentieth centuries in the United States; although this page of the census was still mostly Connecticut-born people, there were a number of Irish, Swedish, and German people in other households as well.

The North Area does not have any clear association with particular names on the 1855 map. The structures closest to the area are labeled N. Godard, William Shaw, and Tudor F. Holcomb. Holcomb's full name was in fact attached to two structures, one nearer than the other; there were also an E.B. Holcomb, and Holcomb with no given name, and across the town line in Granby a cluster of more than half a dozen Holcombs with different given names (Figure 5). The 1869 map shows three T.F. Holcomb houses to the northwest of the North Area, William Shaw and N. Godard still in place to the east, and an F. Norton newly marked near the North Area's southeast corner (Figure 6). In the absence of a proliferation of Godards and Shaws, and with a distinctive name to help with the research process, Tudor F. Holcomb was researched in the Census records. As of the 1850 census, he was 26 years old and living with his mother and siblings in a household headed by Samuel Holcomb (36 years old). This pattern suggests a household whose father died relatively young, and whose children had not yet split off into their own families. According to the 1850 agricultural schedule, the family owned 220 acres of improved land and 80 acres unimproved, and carried on typical farming activities for Simsbury, except that they kept 135 sheep. In the 1860 census, Tudor F. Holcomb was the head of the household but apparently was still living with his mother and siblings or other relatives, plus live-in help. Like everyone else, he switched from growing sheep to growing tobacco, but though he was arguably one of the more prosperous farmers in town, it appears that he did not marry; by 1880, only his sister Sarah was in the area, and by 1900 there were apparently no Holcombs in Simsbury at all (United States Census 1850, 1860, 1870, 1880, 1900). Consistent with this, the 1884 historic map shows only a "Miss Holcomb" (Figure 8).

A 1914 map prepared by the U.S. Postal Service refers to the intersection with the railroad to the east of the Study Area as Hoskins Station, and shows houses in much the same places. Northeast of the North Area, it even has a house some distance from the Study Area marked "T. Holcum" (Figure 9). A map from 1931 has more information – the name marked closest to the South Area and Middle Area was Cullman Brothers, while on the east side of the Middle Area it lists (all together) St. John, Cullman Brothers, and Cummings. Not far from the northwest corner of the North Area was a notation "Est. of T. J. Clark 215 A" (Figure 10). According to the U.S. Census, this would have been Timothy J. Clark, a Wisconsin-born farmer of Irish parentage, who started out as a renter in this area and passed away between 1910 and 1920; one of his seven sons, Henry W., apparently took over the house as of 1920, but he was a house carpenter, not a farmer, and moved elsewhere in town by 1930 (U.S. Census 1900, 1910, 1920, 1930).

Cullman Brothers was clearly the most important owner of land in this area, however. This company's origins lay with a mid-nineteenth-century German immigrant whose son, Joseph Cullman, took up growing cigar-wrapper tobacco in the Connecticut River Valley and eventually Cullman Brothers grew wrapper tobacco on 12,000 acres and binder tobacco on 30,000 acres. In 1969, the company acquired Connecticut's American Sumatra Tobacco Company but as the market for tobacco declined, they also began shifting production on their lands to products other than tobacco; in 1976, as part of this process, the company became Culbro Corporation. Some of the problems with their land in Simsbury (and the land of spinoff corporations such as Griffin Land & Nurseries) included a history of contamination with chlordane, a pesticide, as well as coping with local zoning (Advameg 2017). According to Ellsworth (1935), Cullman Brothers' operations were focused around the Firetown section (to the west of the Study Area), while a company called The Ketchin Tobacco Company had established fields in the Hoskins Station section (to the east of the Study Area), and there were other companies in town as well. In the early 1930s, he reported, the market for tobacco had crashed, which led to a reduction in planting in Simsbury, and even caused parts of Cullman's fields to be turned to cattle grazing in 1934.

The 1934 aerial photograph depicted in Figure 11 shows what activities were being carried out in the various parts of the Study Area. The South Area shows a large farmstead where the Asa Hoskins home is expected to be, in the cutout beside the road. Within the South Area proper, just south of the farmstead, were additional structures: a small possible barn and two large barns or tobacco sheds, all surrounded by what might be remnants of the nineteenth-century apple orchard. Parts of the parcel were heavily wooded, while the rest of it was cleared for agriculture. The former Noah Hoskins farmstead can also be seen in place nearby. The Middle Area had more structures, all at the south end near the road: three tobacco sheds and two smaller structures that could have any of several functions (barn, workshop, housing, etc.). Part of the northern end of the parcel was forested, but the northernmost field looks to have been under gauze for growing shade tobacco, while the southern fields were cleared but apparently unused. The North Area was a mix of cleared and forested areas. In its southeastern part, there was a long, narrow field with a structure near its center, perhaps taking advantage of every square foot of dry, level land. The larger part of the area was partly under gauze and partly showing signs of previous shade tobacco installations. There were three tobacco sheds in this area, near the northeast, southeast, and southwest edges of the large area, and three other structures (possibly workers' housing) near the south end of the tented field, with a pond or marsh beside them. Farm roads crisscrossed both of the Middle Area and the North Area. In general, the vicinity had many marks of formerly cleared fields, apparently at different stages of reforestation, and there were also many still-used fields, including some under gauze. Multiple tobacco sheds and related structures can be seen associated with the fields; to the northwest of the North Area, a possible Holcomb/Clark farmstead is also visible (Figure 11).

Over succeeding years, the aerial photographs show multiple changes in which fields were under gauze at any particular time. In 1941, the South Area was much changed, with two tobacco sheds located along the southern edge of the field and only the small barn standing in the midst of shade tents (Figure 12). In 1944 and 1947, the adolescent Martin Luther King Jr., worked for Cullman Brothers in Simsbury; the dormitory that he stayed in for the first summer was on Firetown Road, which is to the west of the Study Area. The dormitory was burned down by the town fire department and it was replaced with a housing complex (Simsbury Historical Society). In 1951, a quadrangle map indicates that the North Area had a fourth tobacco shed in place, and a cleared right-of-way for power lines crossed part of the area. The "Hoskins" name was still applied to the road/railroad intersection east of the Study Area (Figure 13). By 1963, the town's population growth was reflected in the construction of a dozen or so buildings near the northeast corner of the North Area, and near the North Area, a gravel or sand operation was opening up the earth (Figure 14). By 1968, more housing development had appeared in the area, but the Study Area proper seemed to be undergoing much the same use as before (Figure 15). This decade was, as is noted above, the period of most rapid population growth in Simsbury.

Even by 1970, much of the Study Area was still cleared for agriculture, although one of the tobacco sheds in the South Area had been torn town, as had some of the Asa Hoskins farmstead buildings. More housing and other developments had also appeared in the area (Figure 16). By 1991, some of the Study Area was still under tents for tobacco-growing, and those areas that were not showed visible signs of decades of such use, in the form of ruler-straight parallel paths and roads in the fields. In contrast, most of the vicinity had been taken over for housing, though there was still some forested open space as well. Each of the three parcels had lost one of its tobacco sheds (Figure 17). The quality of the 2004 aerial photograph is good enough to show that in the South Area, the adjacent Asa Hoskins house was still standing and had two outbuildings at the rear – and that the old shed or barn actually standing in the Study Area had a patchy roof. In the Middle Area, only one tobacco shed and the structure of uncertain use were still standing; similarly, the North Area also had only one tobacco shed and the three other buildings in place (Figure 18). In the 2010 aerial photograph, the old barn in the South Area had vanished; all of the fields were still cleared, but it is not clear what they were being used for (Figure 19). Four years later, in 2014, one of the three buildings near the pond in the North Area had gone, but the fields were still clear and other buildings and tobacco sheds in the North Area and Middle Area were still present (Figure 20). Finally, the 2016 aerial photograph depicted in Figure 2 shows no major changes within the Study Area (Figure 2). It does not appear that the fields have been used for tobacco-growing in recent decades, but traces of that past use are still visible in most of them.

Tobacco Farming in Connecticut

Although in colonial Connecticut tobacco growing was not the overwhelmingly important activity that it was in more southern colonies, it was an important cash crop in the Connecticut River Valley by 1700 (McDonald 1936:5). This was especially true in the Town of Windsor. Tobacco was first raised in that town in 1640, using seed from Virginia (Crofut 1937). Records from 1739 indicate that "some '221 weight'" of tobacco was sold by a Windsor resident to Barbados. Between 1744 and 1767 another Windsor man sold thousands of pounds to the West Indies and to traders in Boston. In one of the earliest records of tobacco sales, a 1704 document "showed that tobacco was one of the principal articles of trade between Wethersfield and the West Indies" (McDonald 1936:5). The General Court passed a law in 1740 forbidding the use of any tobacco except that grown in the colony (Brown 1886). Whether this was a protectionist or moralistic law is unclear. The late eighteenth century saw a decline in production caused by the various wars and competition from Virginia, but after the Revolutionary War it recovered and in 1801 the valley produced 20,000 pounds, the largest crop up to that date. In 1810, cigar making began at East Windsor and Suffield, and by 1830 a new way of curing tobacco for cigar wrappers called "sweating" was discovered by an East Windsor company. After that, all or most of the industry shifted to producing for cigars, and high profit margins encouraged farmers to try their hand at growing it from the Housatonic valley to New Haven and as far north as Vermont and Maine (McDonald 1936:14). As of 1879, Hartford County had 5,112 acres planted in tobacco, which produced over nine million pounds of tobacco; the county produced 65 percent of the state's tobacco (Brown 1886). By the late nineteenth century, competition and overproduction had brought about a gradual decrease of acreage, until only the "best lands in the immediate vicinity of the Connecticut river continued to be used," presumably because those lands produced the highest yield (McDonald 1936:14). The total produced continued to rise through at least 1880, however, with the volume rising from 8 million pounds statewide in 1870 to 14 million pounds in 1880 (Brown 1886).

An improvement in tobacco production, which occurred in 1896, was the development of a method for growing "shade tobacco," and consisted simply of building light cloth tents on poles over the plants. This caused the tobacco leaves to take on a more pleasant color, and the technique rapidly spread throughout the market. It resulted in significant increases in the grower's profit base (McDonald 1936). Windsor again led the way here, growing the first shade-grown tobacco in 1900; but 10 years earlier, the Connecticut Tobacco Experiment Station was established in the Poquonnock District of Windsor. A second "Tobacco Experiment Station" was established in 1921, and the work of these initially private

operations “made Windsor the center of the industry, with more acres under cultivation than any other town in the valley” (Cunningham 1995, 107). Simsbury was one of several other towns whose farmers invested heavily in tobacco production during this period. While in 1907 only 70 acres throughout New England were planted under shade, by 1919 there were 3,900 acres so planted in Connecticut alone. The Connecticut crop was valued at $4,830,000.00. Between 1923 and 1936, the value of the tobacco crop was over 33 percent of the total value of Connecticut agricultural products (McDonald 1936). In 1950, nearly 20,000 acres of tobacco were cultivated in Connecticut; however, during the 40 years between 1950 and 1990 the acreage declined to less than 2,000. Nonetheless, because the market price of tobacco had increased dramatically, “the annual crop from this reduced acreage is actually worth twice as much as it was in 1950” (Cunningham 1995, 106). Tobacco drying sheds (better known to non-growers as “tobacco barns”) are still a common sight on the landscape, and, as discussed in more detail below, they are visible in historic aerial photographs and maps of the vicinity of the Study Area.

Tobacco shade tents were and are constructed by erecting parallel rows of posts, with wires stapled to and strung between them to hold the tent cloth. The posts were set 33 feet apart in each direction; by the 1950s they were standardized at 12 feet long and four to five inches in diameter, dug three to three and a half feet into the ground. An additional impact to the landscape was the arrangement of the end posts. At the edge of the field, the wires were anchored to posts known as “dead men,” which were three-foot lengths of post that had the end of the wire attached to them and then were buried three feet underground, the point being to keep the wires as taut as possible. Once they were set the posts were not removed, unless they rotted; early posts were of chestnut, and probably lasted only a few years, but chemically preserved red cedar and other species later became standard (Anderson 1953). Tobacco was not planted by growing the seeds in the fields, but by starting them in raised, heated seed beds and then transplanting them into the fields. Because of the posts, the machinery used had to be specially adapted to the process; swivel plows that could be flipped from side to side were used, as well as machinery for smoothing and fertilizing the soil. Even planting was somewhat automated; many farmers used a “Bemis Transplanter” drawn by a tractor or by a team. The machine would mark the correct planting distance, and two men sitting on the back would dig the hole with an attached implement, put in the seedlings, and water them from the barrel of water mounted on the machine (Luddy/Taylor n.d.).

In addition to these physical features, tobacco production left cultural impacts as well. A 1943 Federal report on Connecticut’s tobacco industry indicated that 900 of the 1,045 migrant workers in the state (about 17 percent of the overall the labor force) were African-Americans “and mostly high-school and college students recruited through southern colleges,” while one-third were children from Connecticut and Massachusetts. Living and working conditions, especially for the African-American workers, are considered poor (Hall and Harvey 1995, 585). By the 1970s, a quarter of the migrant workers were from Puerto Rico, and while many, if not most, of both groups moved on, some also stayed and altered the ethnic makeup of the Connecticut River Valley (Cunningham 1995). Examples of residences used by tobacco workers referred to by Hall and Harvey (1995) were once located near the southwestern corner of the Study Area, as shown in the map discussed above.

Conclusions

The documentary record indicates that the Study Area has been used for agricultural purposes throughout the historic period. The earlier crops were probably a mix of grains, potatoes, apple trees, and open-field tobacco, but by the early twentieth century (if not a little earlier), the Study Area and some adjacent fields were used to produce shade-grown tobacco and continued to be so used until at least the 1960s. Structures related to tobacco production, including but not limited to tobacco drying sheds, still exist or formerly existed along the margins of most of the fields, and in a few cases in the middle of the fields. The documentary evidence does not suggest that any use other than agricultural has been made of the Study Area during the historic period.

CHAPTER V

PREVIOUS INVESTIGATIONS

Introduction

This chapter presents an overview of previous archaeological research completed within the vicinity of the Study Area in Simsbury, Connecticut. This discussion provides the comparative data necessary for assessing the results of the current Phase IB cultural resources reconnaissance survey, and it ensures that the potential impacts to all previously recorded cultural resources located within and adjacent to the Study Area are taken into consideration. Specifically, this chapter reviews all previously completed cultural resources surveys conducted within in the vicinity of the Study Area, as well as those archaeological sites, National and State Register of Historic Places properties, and historic standing structures situated in the project region. The discussions presented below are based on information currently on file at the Connecticut State Historic Preservation Office in Hartford, Connecticut. In addition, the electronic site files maintained by Heritage also were examined during the course of this investigation. Both the quantity and quality of the information contained in the original cultural resources survey reports and State of Connecticut archaeological site forms are reflected below.

Previously Conducted Cultural Resources Survey Located Within the Vicinity of the Study Area

A total of three cultural resources investigations (CHPC 86, CHPC 113, and CHPC 228) has been completed previously within the vicinity of the Study Area (Figure 21). These surveys are discussed briefly below.

CHPC 86

CHPC 86 was completed by Connecticut Archaeological Survey (CAS) in 1977 (Figure 21). This Phase I cultural resources reconnaissance survey was undertaken prior to the construction of the Phase II portion of the Simsbury wastewater system. The investigation was completed along roadside locations situated to the south and west of the proposed Study Area. Besides the recovery of typical twentieth century trash along the edge of the road, the Phase I survey resulted in the identification of a single area of prehistoric period quartz and chert artifacts near the junction of Russell Brook and the Farmington River. Unfortunately, this resource was not assigned an official State of Connecticut site number. CAS recommended additional archaeological testing of the area containing the quartz and chert artifacts, but it is unclear if the recommended work was ever completed. The site identified as part of CHPC 86 will not be impacted by the proposed solar facility.

CHPC113

CHPC 113 was completed by Dr. Marc Banks and Dr. Lucianne Lavin in 2002 (Figure 21). This investigation was undertaken on behalf of the Town of Simsbury Planning Department. The report states that “the purpose of this analysis [was] to provide the Town of Simsbury with an archaeological site inventory and prehistoric and historic site maps to provide the information necessary for the Town to preserve its significant archaeological resources and make informed decisions regarding future development plans” (Banks and Lavin 2002:4). The report specifies numerous areas where both prehistoric and historic archaeological resources are known and/or expected. It also indicates that most the archaeological resources known in the town have received very little attention over the years, and that a lack of research has prevented most of them from being assessed applying the National Register of

Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). The authors recommend that the town consider these resources in their plan for conservation and development of the town, and they provided an archaeological site sensitivity analysis for the town consideration. Based in a review of the maps provided in the 2002 report, the proposed Study Area does not fall within an area identified by Banks and Lavin as either a historic district or a potential historic district.

CHPC228

CHPC 28 was completed in Raber Associates in 1981 (Figure 21). This investigation was completed prior to the construction of sewer system laterals to the south of Lake Basile. The investigation was completed along roadside location situated to the south and west of the proposed Study Area. Upon completing background research for the project, it was determined that portions of the new sewer system were to cross the historic Farmington canal. As a result, Raber Associates completed a series of soil bores to collect general stratigraphic information about the canal system. It was concluded that the canal contained two unlined sand embankments flanking the canal, and that towpaths measuring approximately 30 feet in were present. The report does not mention the recovery of any archaeological materials, but it does indicate that the portion of the Farmington Canal examined was intact and eligible for listing on the National Register of Historic Places. The canal has since been listed on the National Register in 1985, and is considered significant under Criteria A and C of the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]) in the areas of archaeology, commerce, engineering, and transportation. The Farmington Canal will not be impacted by the proposed solar facility.

Previously Recorded National Register of Historic Places Properties and Archaeological Sites Located in the Vicinity of the Study area

A review of data currently on file at the Connecticut State Historic Preservation Office, as well as the electronic site files maintained by Heritage resulted in the identification of three National Register of Historic Places district and 12 previously recorded archaeological sites located within the vicinity of the Study Area (Figure 22 and 23; Table 1). Of the 12 previously identified sites, one is located within the Study Area. These sites are of particular importance to this investigation and they are discussed in detail below. The remainder of the sites (n=11) are described briefly in Table 1 at the end of this chapter.

Site 128-52

Site 128-52, also known as the Minnisunk Site was identified in the 1980s by Dr. Marc Banks of Simsbury during surface collection of a plowed tobacco field in the central portion of the Study Area (Figure 22). This site yielded both prehistoric and historic period components. The prehistoric cultural material recovered from the surface of the site areas included “small quantities of debitage.” Dr. Banks was unable to ascribed the prehistoric period occupation of the site area to any particular time period. The historic period items recovered from the site area consisted of a field scatter of typical historic refuse, including glass shards, ceramic sherds, and brick fragments. No archaeological excavations have taken place at Site 128-52; thus, the extent or depositional integrity of the site remain unknown. Site 128-52 was not assessed applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]) This prehistoric cultural resource is located in the northwestern portion of the proposed Study Area, and it appears based on Figure 22 that it will be impacted by the proposed construction.

Terry’s Plains Historic District

Listed on the National Register of Historic Places in 1993, the Terry’s Pain Historic District is located to the south of the current Study Area (Figure 23). The Terry’s Plain Historic District consists of a rural landscape characterized by extensive open fields, 13 historic residences that once were part of farm complexes, and 14 major agricultural outbuildings ranging from two-bay open sheds to large tobacco sheds. The historic district encompasses slightly more than 300 ac of land and is situated on the east side of the Farmington River. It is positioned on a level terrace between a large meander in the river and the base of Talcott Mountain. The historic residences in the Terry’s Plains Historic District are located close

to the local street and are flanked by barns or other outbuildings. The houses, which generally are constructed of wood and contain clapboard siding, date from the late eighteenth to the early twentieth centuries. The majority of the houses in the district consist of vernacular architecture with few stylistic details; however, are few well-preserved examples of the Federal, Greek Revival, and Colonial Revival styles. The Terry's Plain Historic District is considered significant as an historic rural landscape because its open fields and farmhouses reflect the agricultural development of the Central Connecticut Valley. Due to its distance from the Study Area, the Terry's Pain Historic District will not be impacted directly by the proposed solar facility. Further, the viewshed of the historic district also will not be impacted by the proposed project due to the fact that the views from the Study Area are interrupted by significant stands of tree and increased elevations.

Tariffville Historic District

The Tariffville Historic District was listed on the National Register of Historic Places in 1993. It consists of a nineteenth century village locates in the northeast corner of the Town of Simsbury, Connecticut (Figure 23). The historic district encompasses approximately 90 acres of land bounded on the east by the Farmington River. According to the nomination form, the majority of the buildings in the Tariffville Historic District are wood framed residence that date from through the nineteenth century, including 87 residences and 55 contributing outbuildings. The Tariffville Historic District also contains a mill that was built in 1825 by the Tariffville Manufacturing Company. This stone building was the site of a carpet producing enterprise. The mill owners also built homes for their workers. The worker houses consisted of two-story gable-roofed frame houses built on brick foundations. The houses contained two entrance doors, indicating that they housed two families each. They were simple wood frame constructions that were covered in wood clapboard siding. The other residences in the historic district were built in the Italianate, Federal, Greek Revival, Gothic Revival, and Colonial Styles. The 55 contributing outbuildings in the Tariffville Historic District are almost all wood frame constructions. They consist of barns, tool sheds, wagon sheds, chicken coops, a workshop, and garages. According the nomination form, "the Tariffville Historic District is significant architecturally because it retains the mill housing and street layout of an early nineteenth century mill village as well as the Greek Revival and Gothic Revival structures of later nineteenth century development. The commercial blocks, religious structures, and publicly owned buildings, together with the many 19th-century houses and their outbuildings, tell the story of the community's development into the 20th century with integrity and few intrusions." (Tariffville Historic District National Register Nomination Form 1993).

Farmington Canal

The Farmington Canal extended from the Massachusetts border in Suffield to tidewater at New Haven; it was built between 1825 and 1829 and extended through Simsbury (Figure 23). The canal ran for approximately 56 miles from north to south and contained 28 lift locks, most of which were accompanied by lockkeeper's houses. Except for the vertical masonry walls in New Haven, the canal consisted of an earthen waterway that was four feet deep and approximately 35 feet wide. The canal crossed numerous streams and brooks, and a dozen arched culverts with spans of 40 to 50 feet that helped the canal to cross over larger waterways. The canal followed the course of the floodplain terraces in the Farmington and Quinnipiac river basins, and extended through roughly dozen town or village centers. Most of these population centers had at least one privately owned basin for canal freight transportation, travel and commercial facilities, and or boat building. The Farmington Canal had significant impacts on both local and regional economic growth in the early nineteenth century; however, the canal's importance declined with the advent of the railroad. As seen in the discussion of CHPC 228 above, portions of the Farmington Canal remain on the landscape today. They were listed on the National Register in 1985, and are considered significant under Criteria A and C of the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]) in the areas of archaeology, commerce, engineering, and transportation. Three canal segments are located within 2.4 km (1.5 mi) of the current Study Area; they will not be impacted by the proposed solar facility

Summary and Interpretations

The review of previously completed research in the vicinity of the proposed Study Area and the analysis of archaeological sites recorded nearby, indicates that the larger project region contains numerous prehistoric Native American sites, as well as many historic period occupations. Archaeological sites recorded within and adjacent to the study region date from between the Early Archaic to Late Woodland periods (ca. 10,000 to 450 B.P.), as well as the historic era. The long use of the area throughout prehistory and the historic era suggests that additional archaeological sites may be expected in the Study Area.

Table 1. Previously identified archaeological sites in the project region.

Site Number	Period	Type	Reporter/Date	NRHP Eligibility
128-13	Unknown Prehistoric	Lithic Scatter	Gustevson/1979	Not Assessed
128-14	Late Archaic	Lithic Scatter	Gustevson/1979	Not Assessed
128-16	Unknown Prehistoric	Lithic Scatter	Gustevson/1979	Not Assessed
128-30	Unknown Prehistoric	Camp	Banks/2002	Not Assessed
128-41	Unknown Prehistoric	Lithic Scatter	Banks/2002	Not Assessed
128-43	Late Woodland	Camp	Banks/2002	Not Assessed
128-44	Late Archaic/Terminal Archaic	Camp	Banks/2002	Not Assessed
128-45	Middle Archaic	Lithic Scatter	Banks/2002	Not Assessed
128-50	Unknown Prehistoric	Lithic Scatter	Banks/2002	Not Assessed
128-51	Unknown Prehistoric	Lithic Scatter	Banks/2002	Not Assessed
128-68	Nineteenth Century	Agrarian	Forrest/2009	Not Significant

CHAPTER VI

METHODS

Introduction

This chapter describes the research design and field methodology used to complete both the Phase IB cultural resources reconnaissance survey of the Study Area in Simsbury, Connecticut. It also includes a discussion of the laboratory methods used during the investigation, as well as the procedures used to process and analyze the cultural material recovered. Finally, the location and point-of-contact for the final facility at which all cultural material, drawings, maps, photographs, and field notes generated during survey will be curated is provided below.

Research Framework

The current Phase IB cultural resources reconnaissance survey was designed to identify all archaeological resources within the moderate and high archaeologically sensitive areas of the proposed Project Area, and to assess them applying the National Register of Historic Places criteria for evaluation (36 CFR 60.a [a-d]). The undertaking was comprehensive in nature, and project planning considered the results of each previously completed archaeological surveys within the project vicinity, the distribution of previously recorded cultural resources located within the Study Srea, and the results of the previously completed Phase IA cultural resources assessment survey. The methods used to complete this investigation were designed to provide coverage of all portions of the moderate and high archaeologically sensitive areas. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, and a subsurface testing regime of those areas previously determined to retain high archaeological sensitivity (see below).

Following the completion of all background research and in order to better control the Phase IB fieldwork effort, the larger Study Area was divided into eight test areas, designated as Areas 1 through 8 (Figure 24). The test areas that coincided with previously identified moderate archaeological sensitivity were subjected to pedestrian survey whereby archaeologists were spaced approximately 2 m (6.6 ft) apart and walked parallel transects while inspecting the ground for cultural material. When cultural materials were identified, the field crew completed a limited number of shovel tests around the find spots to determine if any intact soils existed in the area and whether they contained additional archaeological evidence. Finally, all surface finds were collected and transported to the laboratory for analysis. This approach was used in Test Areas 2, 3, 4, and 8 (Figure 24).

In high archaeologically sensitive areas, the field crew conducted systematic shovel test survey. In this case, a grid of shovel tests was established over each area and shovel testing commenced at 7.5 m (24.6 ft) or 15 m (49.2 ft) intervals along parallel transects spaced the same distance apart. The selected shovel test and transect interval was dictated by the size of the landform being tested. Those portions of the high sensitivity areas that contained slopes or any signs of prior disturbance were subjected to pedestrian survey only; these areas were not shovel tested.

During survey, each shovel test measured 50 cm (19.7 in) in size and each was excavated until glacially derived C-Horizon soils were identified or until immovable objects (e.g., boulders) were encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within identified strata, and the fill from each

level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth; extremely wet soils were hand-sifted, troweled, and examined visually for cultural material. Soil characteristics were recorded in the field using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled immediately upon completion of the archeological recordation process. This approach was used in Test Areas 1, 5, 6, and 7 (Figure 24).

Laboratory Analysis

Laboratory analysis of recovered cultural material, which consisted of prehistoric lithic artifacts, was completed following established archaeological protocols. To begin the laboratory analysis process, field specimen bag proveniences first were crosschecked against the field notes and the specimen inventories for accuracy and completeness. Following this quality-control process, all recovered material was washed by hand, air-dried, and sorted into basic material categories.

The nature and structure of the laboratory analysis was determined by the goals of the project. The artifact analysis consisted of making and recording a series of observations for each recovered specimen. The observations were chosen to provide the most significant information about each specimen. A Microsoft database was employed to store, organize, and manipulate the data generated by the analytical process. The database was designed specifically for the analysis of the recovered historic artifacts. The analytical protocols applied to the recovered artifacts area discussed in detail below.

Prehistoric Lithic Analysis

The lithic analysis protocol used during completion of this project was a "technological" or "functional" one designed to identify prehistoric reduction trajectories and lithic industries. The protocol therefore focused on recording technological characteristics of the recovered lithic artifacts. The lithic artifact database was organized by lithic material group, type, and subtype. The first level described the raw material type of the artifact. Lithic materials were identified utilizing recognized geological descriptions and terminology, and were placed into distinct categories based on three factors: texture, color, and translucence. The second analysis level, type, was used to define the general class (e.g., unmodified flake, core, or perform) of lithic artifact, while the last level, subtype, was employed to specify morphological attributes (e.g., primary cortex, extensively reduced, etc.). These levels followed classifications outlined by such authors as Callahan (1979) and Crabtree (1972), among others.

Curation

Following the completion and acceptance of the final report, all cultural material, drawings, maps, photographs, and field notes will be curated with:

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CHAPTER VII

RESULTS OF THE INVESTIGATION

Introduction

This chapter presents the results of the Phase IB cultural resources reconnaissance survey of the Study Area in Simsbury, Connecticut. As mentioned in Chapter VI of this document, the Study Area was divided into eight separate areas to facilitate better control over the Phase IB survey process (Figure 24). The results of survey of the test areas are presented below.

Area 1

Area 1 is situated in the east-central portion of the Study Area at approximate elevations ranging from of 79.2 to 85.3 m (260 to 280 ft) NGVD (Figures 1 and 24). At the time of survey, this area was characterized by mixed deciduous and coniferous tree species (Photo 1). The northern and eastern portions of this area sloped down to wetlands. During survey, a total of 97 shovel tests were excavated throughout Area 1. A total of 95 of the shovel tests were positioned at 15 m (49.2 ft) intervals along 10 survey transects spaced 15 m (49.2 ft) apart. The two remaining shovel tests were placed judgmentally along the northern edge of the landform within Area 1 overlooking a large wetland to the north (Figure Area 25). The areas shown in Figure area 1 testing as untested consisted of steep slopes and wet areas; they were reclassified as no/low sensitivity during the Phase IB fieldwork.

A typical shovel test excavated within Area 1 exhibited five soil strata in profile and reached to an average maximum depth of 70 cmbs (24 inbs). Stratum I, the existing decaying vegetative layer, was described as a deposit of very dark brown (10YR 3/3) sandy silt that reached from 0 to 5 cmbs (0 to 2 inbs). It was underlain by Stratum II, an A-Horizon that was described as a brown (10YR 4/3) silty sand that ranged in depth from 5 to 20 cmbs (2 to 8 inbs). Stratum III, the B-1 Horizon, was classified as a yellowish brown (10YR 5/6) fine silty sandy subsoil that extended from 20 to 30 cmbs (8 to 12 inbs). It was underlain by Stratum IV, a B-2 Horizon; it reached from 30 to 50 cmbs (12 to 20 inbs). Finally, Stratum V, the glacially derived C-Horizon, which consisted of a deposit of light olive brown (2.5Y 5/3) coarse sand mixed with pebbles, was encountered at 50 cmbs (19.7 inbs) and was excavated to a terminal depth of 70 cmbs (24 inbs).

Other than modern trash (i.e., plastic, modern glass shards, roofing shingles, etc.) that originated from the previously disturbed A-Horizon, no cultural material or evidence of cultural features, either historic or prehistoric in origin, was recovered from Area 1. As a result, no additional archaeological testing of Area 1 is recommended prior to construction of the proposed solar facility.

Area 2

Area 2 is located in the southern portion of the Study Area; it is situated to the north of the intersection of Hoskins Road and County Road (Figure 24). This area contained approximate elevations ranging from of 85.3 to 91.4 m (280 to 300 ft) NGVD (Figures 1). At the time of survey, this entire area consisted of a recently plowed agricultural field; it was bordered by Hoskins and County Roads to the south, by a gravel driveway and wooded areas to the east, by a forested area to the north, and by residential lots to the west (Photo 2). As agreed to in a consultation meeting with the Connecticut State Historic Preservation Office in May of 2017, Area 2 was subjected to pedestrian survey wherein archaeologists positioned approximately 2

m (6.6 ft) apart systematically walked the entire field and noted the locations of all cultural material that originated from the prehistoric and historic periods. During that effort, Heritage Consultants, LLC personnel collected three artifacts from the surface of Area 2 (Figure 26). These included 1 basalt secondary thinning flake, 1 chert end scraper, and a single piece of fire-crack rock. All three of these items were situated in a small cluster measuring approximate 5 m (16. 4 ft) in diameter in the westernmost portion of Area 2, and they were designated as Locus 2 (note that Locus 1 was identified during the previous Phase IA cultural resources assessment survey and is summarized below in the Area 8 discussion).

Locus 2

In order to determine whether Locus 2 retained any intact subsurface deposits, field personnel excavated five shovel tests in the vicinity of the above-referenced surface finds (Figure 26 and Photo 2). These shovel tests all exhibited the same soil stratigraphy. All five were excavated to an approximate depth of 70 cmbs (21.3 inbs) and all five exhibited two soil strata in profile. Stratum I, the previously disturbed plowzone, ranged from 0 to 45 cmbs (18 inbs) and it was described as a layer of brown (10YR 3/3) silty sand. It was underlain by Stratum II, the glacially derived C-Horizon, which was excavated to a maximum depth of 70 cmbs (21.3 inbs) and was classified as a deposit of olive yellow (2.5Y 6/6) coarse sand and gravel.

The excavation of Shovel Test 1 yielded the only subsurface artifact in from the Locus 2 area; it was classified as a basalt secondary thinning flake. This artifact was collected from Stratum I at a depth of approximately 40 to 50 cmbs (16 to 20 inbs); it originated from the disturbed plowzone/C-Horizon interface. This artifact did not come from intact soil deposits. Despite the field effort, no other cultural material was collected from Area 2.

In sum, the archaeological data recovered during the Phase IB cultural resources reconnaissance survey of the Locus 2 area indicated that the cultural material date from an unknown prehistoric period and likely reflects a limited use of the area rather than a longer-term occupation. No cultural features were identified in the locus area, and it was determined that Locus 2 has been severely impacted by centuries of repeated plowing for tobacco cultivation. Thus, Locus 2 lacks research potential and the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Locus 2 is required prior to construction of the proposed solar facility.

<u>Area 3</u>

Area 3 is located in the northern portion of the Study Area at approximate elevations ranging from 82.3 to 88.4 m (270 to 290 ft) NGVD (Figures 1 and 24). At the time of survey, this area also consisted of a large recently plowed agricultural field; it was bordered to the south and west by forested areas, to the north by a steep slope down to Saxton Brook, and to the east by residential and forested areas (Photo 3). As was the case with Area 2, Area 3 was subjected to pedestrian survey in accordance with the May 2017 consultation meeting with the Connecticut State Historic Preservation Office. Again, archaeologists positioned approximately 2 (6.6 ft) apart visually scanned the entire surface of Area 3.

Particular attention was paid to the northwestern quadrant of Area 3, as this was the location of previously identified Site 128-52 (Figure 27). As mentioned in Chapter V of this document, Site 128-52, also known as the Munnisunk Site was identified in this area during the 1980s by Dr. Marc Banks. Dr. Banks indicated on the submitted site form that the site area contained small quantities of prehistoric stone tool waste debris, as well as domestic artifacts dating from the nineteenth century. During the current investigation, an attempt to re-locate this multicomponent archaeological deposit was made since ground visibility in the vicinity of the site area was good due to recent plowing. While visual inspection of the site area failed to produce any additional prehistoric artifacts, a few examples of glass shards, brick fragments, and plain whiteware sherds were noted on the surface of Site 128-52. The historic artifacts

appeared to date from the late nineteenth century to the modern era; they were not collected since they are typical of very numerous artifact types and would not provide any new sites into later historic/modern era occupations.

In addition, inspection of the soils at Site 128-52 indicated the presence of large amounts of small pebbles and some larger cobbles intermixed. This suggested that the site area has been plowed very deeply and that the pebbles and cobbles have originated from the glacially derived C-horizon, suggesting that intact subsoils no longer remain in the area. This was verified through the placement of a limited number of auger tests in the area, all of which revealed a dark brown (10YR 3/3) silty sandy plowzone reaching to an approximate depth of 50 cmbs (20 inbs). This plowzone rested directly upon glacially derived C-Horizon soils that were described as olive yellow (2.5Y 6/6) coarse sand and gravel mixed with cobbles.

In sum, pedestrian survey of Area 3 indicated that while historic and modern period artifacts associated with Site 128-52 remain within Area 3, no prehistoric cultural material was observed. Based on the available cultural material and soils data noted above, the Site 128-52 area no longer retains depositional integrity or research potential. Thus, it was determined that Site 128-52 does not possess qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Site 128-52 or Area 3 is recommended prior to construction of the proposed solar facility.

Area 4

Area 4 is situated in the northeastern portion of the Study Area at elevations ranging from 76.2 to 85.3 m (250 to 280 ft) NGVD (Figures 1 and 24). This area also was a fallow agricultural field; it was bordered to the north and east by wooded areas, to the south by a tree line separating it from another agricultural field and to the west by a dirt access road leading to Areas 3 (Photo 4). This area, like Areas 2 and 3 was subjected to pedestrian survey only, which was agreed to in a consultation meeting with the Connecticut State Historic Preservation Office in May of 2017 (Figure 28). Again, archaeologists were positioned approximately 2 m (6.6 ft) apart and systematically walked the entire field from east to west.

Despite the above-referenced field effort, no cultural material or evidence of cultural features, either historic or prehistoric in origin, was identified within Area 4 during the Phase IB cultural resources survey. Instead this area contained modern trash throughout (i.e., plastic, roofing shingles, burlap sacks, etc.). It was noted that numerous cobbles and light gray coarse sands were present on the surface of the area. This material was consistent with glacially-derived soils found elsewhere on the property and suggested that the entire field had been plowed down to the C-Horizon. Thus, no intact soils exist in the area and additional archaeological testing of Area 4 is recommended prior to construction of the proposed solar facility.

Area 5

Area 5 is located just to the south of Area 3, and it was forested at the time of survey (Figures 1 and 24). This area contains elevations ranging from 85.3 to 91.4 m (280 to 300 ft) NGVD (Photos 5). During survey, a total of 166 shovel tests were excavated throughout the low sloping and undisturbed portions of Area 5. Those parts of Area 5 that were not shovel tested contained a combination of moderate to steep slopes and modern disturbances; the latter were pronounced between Areas 3 and 5 (Figure 29). This zone was heavily disturbed and contained large amounts of modern trash and tobacco farming related materials (drain pipes, wooden poles, barrels, etc.).

A typical shovel test excavated within Area 5 exhibited three strata in profile and reached to a maximum depth of 70 cmbs (28 inbs). Stratum I, the A-Horizon, was described as a deposit of dark brown (10YR 3/3) sandy silt extending from 0 to 20 cmbs (0 to 8 inbs). It was underlain by a yellowish brown (10YR 5/6) silty sand that reached from 20 to 55 cmbs (8 to 22 inbs). Finally, Stratum III, the glacially derived C-Horizon, a deposit of light olive brown (2.5Y 5/4), was excavated to a terminal depth of 70 cmbs (28 inbs). Despite the

completion of systematic and comprehensive testing using shovel tests situated at 15 m (49.2 ft) intervals along parallel survey transects spaced 15 m (49.2 ft) apart, no historic or prehistoric cultural material or evidence of cultural features was identified during Phase IB survey. As a result, no additional archaeological testing of Area 5 is recommended prior to construction of the proposed solar facility.

Area 6

Area 6, which is located at elevations ranging from 82.3 to 85.3 m (270 to 280 ft) NGVD and was originally assessed as moderate sensitivity area, is located in the northernmost portion of the Study Area (Figures 1 and 24). At the time of survey, this area was covered in secondary forest (Photo 6). It originally was part of Area 3, but after closer inspection during pedestrian survey it appeared to retain some relatively level, intact areas overlooking Munnisunk Brook. As a result, it was determined that subsurface survey should be conducted in the area. Thus, field personnel excavated 40 shovel tests throughout Area 6 (Figure 30). Of these, 33 shovel tests were situated at 7.5 m (16.4 ft) intervals along six parallel survey transects spaced 7.5 m (16.4 ft) apart. Of the remaining shovel tests, five were situated along an east-west trending survey transect in the southern portion the area, while two shovel tests were situated in the western part of Area 6.

A typical shovel test excavated within Area 6 exhibited three strata in profile and reached to a maximum depth of 80 cmbs (32 inbs). Stratum I, the A-Horizon, was described as a deposit of dark brown (10YR 3/4) sandy silt extending from 0 to 15 cmbs (0 to 6 inbs). It was underlain by a yellowish brown (10YR 5/6) silty sandy subsoil deposit that reached from 15 to 75 cmbs (6 to 30 inbs). Finally, Stratum III, the glacially derived C-Horizon, consisted of a deposit of light olive brown (2.5Y 5/4) that was excavated to a terminal depth of 80 cmbs (32 inbs). Despite the Phase IB survey effort, no historic or prehistoric cultural material or evidence of cultural features was identified within Area 6. As a result, no additional archaeological testing of Area 6 is recommended prior to construction of the proposed solar facility.

Area 7

Area 7 is located in the southeastern portion of the Study Area and it situated on the south side of Hoskins Road. It rests at approximate elevations ranging from 73.2 to 82.3 m (240 to 270 ft) NGVD (Figures 1 and 24). This area was characterized by secondary forest at the time of survey; it was bordered by Hoskins Road to the north, a gulley to the east, a wooded area to the south, and by an agricultural field to the west (Photo 7). During survey, a total of 77 of 77 (100 percent) planned shovel tests were excavated throughout Area 7 (Figure 31). A typical shovel test excavated within Area 7 exhibited three strata in profile and reached to a maximum depth of 65 cmbs (26 inbs). Stratum I, the A-Horizon, extended from 0 to 15 cmbs (0 to 6 inbs); it was described as a deposit of dark brown (10YR 3/4) silty sand. It was underlain by a subsoil deposit of yellowish brown (10YR 5/6) silty sand that ranged in depth from 15 to 50 cmbs (6 to 20 inbs). Finally, Stratum III, the glacially derived C-Horizon, a deposit of light olive brown (2.5Y 5/4) coarse sand and gravel, reached to a terminal depth of 65 cmbs (26 inbs). Despite the completion of the close interval shovel testing effort, no cultural material or evidence of cultural features, either historic or prehistoric in origin, was recovered from Area 7 during the Phase IB cultural resources survey effort. Thus, no additional archaeological testing of Area 7 is recommended prior to construction of the proposed solar facility.

Area 8

Area 8 also is located in the southern portion of the Study Area on the south side Hoskins Road. This area is positioned approximate elevations ranging from of 79.2 to 82.3 m (260 to 270 ft) NGVD (Figures 1 and 24). At the time of survey, this entire area consisted of an agricultural field; it was bordered by Hoskins Road to the north, by a wooded area to the east and south, and by elementary school to the west (Photo 8). As agreed to in a consultation meeting with the Connecticut State Historic Preservation Office in May of 2017, Area 8 was subjected to pedestrian survey during which archaeologists were positioned approximately 2 m (6.6 ft) apart systematically and walked the field and noted the locations of all cultural material that originated from the prehistoric and historic periods. During that effort, field personnel collected prehistoric cultural material artifacts from two areas of the field (Figure 32). The first area, designated as Locus 1, was located in the

northeastern portion of Area 8 and immediately adjacent to Hoskins Road. The second area, which has been designated as Locus 3 was identified in the southeastern portion of Area 8. Locus 1 and Locus 3 are discussed below.

Locus 1

Locus 1, which is a non-site archaeological deposit, was noted on the surface of Area 8 adjacent to Hoskins Road and at an approximate elevation of 82.3 m (270 ft) NGVD (Figure 32). The cultural material noted during surface collection of this area consisted of 5 quartz artifacts interpreted as thinning flakes. Closer examination of them in the laboratory indicated that two of the artifacts were of questionable origin and could not be definitively attributed as of human manufacture. Pedestrian survey of the Locus 1 area also revealed the presence of numerous cobbles and coarse olive brown sands on the surface of the area. As was the case with Area 3 discussed above, this suggested that the locus area has been plowed very deeply and that the pebbles and cobbles have originated from the glacially derived C-horizon. This was verified through the five shovel tests in the Locus 2 area, all of which revealed a dark brown (10YR 3/3) silty sandy plowzone reaching to an approximate depth of 50 cmbs (20 inbs). This plowzone rested directly upon glacially derived C-Horizon soils that were described as light olive brown (2.5Y 5/4) coarse sand and gravel mixed with cobbles.

Pedestrian survey and shovel testing of the Locus 1 area resulted in the recovery of only a small number of prehistoric artifacts from disturbed soil contexts. Locus 1 no longer retains depositional integrity or research potential. Thus, it was determined that it does not possess qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Locus 1 is recommended prior to construction of the proposed solar facility.

Locus 3

Pedestrian survey of Area 8 also revealed the presence of Locus 3. This archaeological deposit also was situated at approximate elevation of (82.3 m (270 ft) NGVD; it was identified in the southeastern part of Area 8 (Figure 32). Visual reconnaissance of this area resulted in the collection of six prehistoric artifacts from an area measuring approximately 35 x 100 m (115 x 328 ft) in size. These included 1 basalt secondary thinning flake and 5 chert secondary thinning flakes, all of which were found in three small clusters situated close to each other. Based on the recovery of these materials, field personnel excavated 10 shovel tests throughout the Locus 3 area. Of these, seven failed to produce any additional cultural material. The three remaining shovel tests each yielded a single prehistoric lithic artifact; these items were all described chert secondary thinning flakes that originated from the plowzone at depths ranging from 0 to 20 cmbs (0 to 8 inbs).

As was the case with Locus 1, pedestrian survey of the Locus 3 area also revealed the presence of numerous cobbles and coarse olive brown sands on the surface of the area, indicating that the site area has been plowed very deeply and that the pebbles and cobbles on the surface have originated from the glacially derived C-horizon. This was verified through the excavation of the 12 shovel tests, all of which revealed a dark brown (10YR 3/3) silty sandy plowzone reaching to an approximate depth of 50 cmbs (20 inbs). This plowzone rested directly upon glacially derived C-Horizon soils that were described as light olive brown (2.5Y 5/4) coarse sand and gravel mixed with cobbles.

Based the recovered cultural material and soils data noted above, the Locus 3 area no longer retains depositional integrity or research potential. Thus, it was determined that it does not possess qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 a-d). No additional archaeological examination of Locus 3 or Area 8 is recommended prior to construction of the proposed solar facility.

CHAPTER VIII

SUMMARY AND MANAGEMENT RECOMMENDATIONS

The current report presents the result of a Phase IB cultural resources reconnaissance survey of the moderate and high archaeologically sensitive areas associated with the proposed Tobacco Valley Solar Project in Simsbury, Connecticut. Heritage Consultants, LLC completed this project using a combination of pedestrian survey and shovel testing. Examination of the moderate and high archaeologically sensitive areas resulted in the identification of three cultural resources loci (Locus 1 through 3) and the re-identification of Site 128-52. Pedestrian survey and shovel testing of Locus 1, which yielded a small number of lithic artifacts, indicated that it represents a short-term use of the area during an unknown prehistoric time period. This disturbed deposit lacks research potential and is not eligible for listing on the National Register of Historic Places. Locus 2, which also yielded a small number of lithic artifacts from an unknown prehistoric time period, also was identified during pedestrian survey of the project area. It too represents a short-term use of the area, lacks research potential, and is not eligible for listing on the National Register of Historic Places. Locus 3 was identified in the southern portion of the project area while completing pedestrian survey of an agricultural field. This non-site locus yielded a small number of lithic artifacts from surficial and disturbed subsurface contexts. Unfortunately, none of the artifacts could be assigned to a specific prehistoric time period. Locus 3 also appears to represent a short-term occupation; it lacks research potential and is not eligible for listing on the National Register of Historic Places. Finally, pedestrian survey of the northern portion of the Study Area resulted in the re-identification of Site 128-52, which has been described as a multi-component site with deposits dating from the nineteenth century and an unknown prehistoric period. While no additional prehistoric period artifacts were recovered from the site area during the current investigation, pedestrian survey did confirm the presence nineteenth century artifacts (e.g., whiteware sherds, glass shards, etc.), as well as modern cultural material (e.g., plastic sheeting, plastic piping, etc.). All of these items were mixed together on the surface of the site, indicating that the site area lacks depositional integrity. Thus, due to a lack of prehistoric cultural materials, as well as the mixing of historic and modern artifact, it was determined that Site 128-52 lacks research potential and the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). In sum, no additional archaeological examination of Loci 1 through 3 or Site 128-52 is recommended, and the construction of the proposed solar facility will have no adverse effect on archaeological resources.

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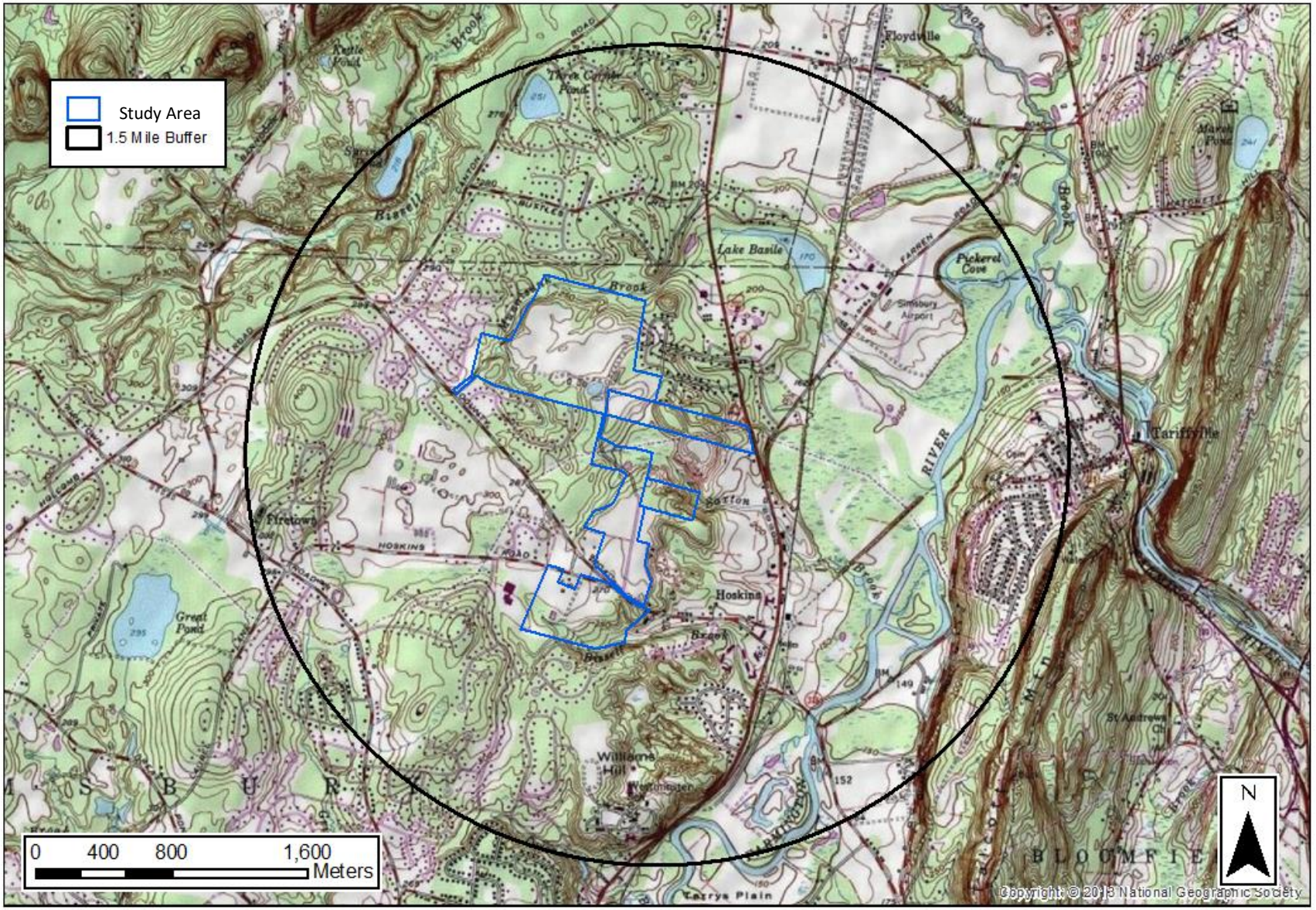

Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the study area in Simsbury, Connecticut.

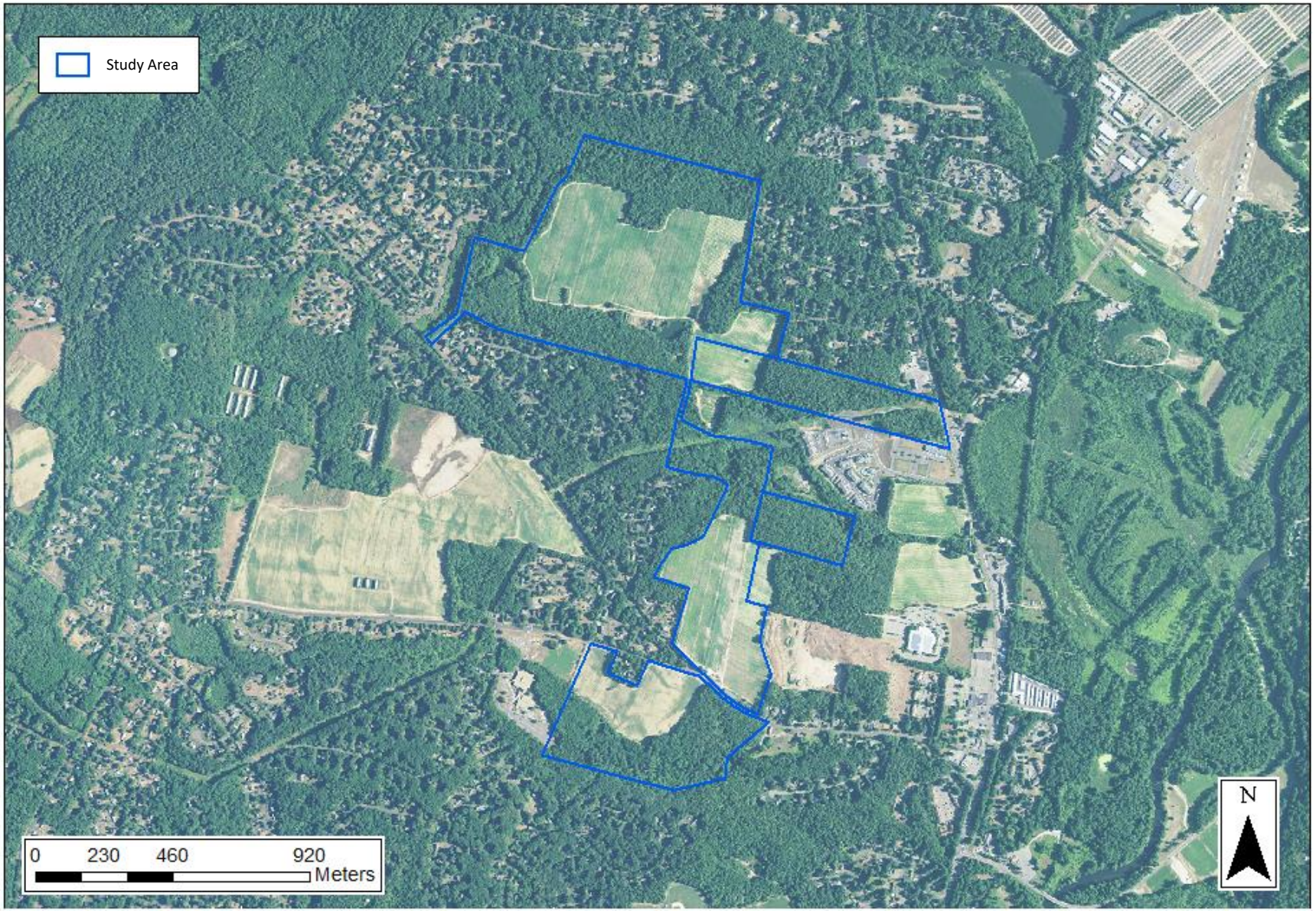

Figure 2. Excerpt from a 2016 aerial image showing the location of the study area in Simsbury, Connecticut

Figure 3. Excerpt from an 1828 map showing the location of the study area in relation to the Farmington Canal in Simsbury, Connecticut.

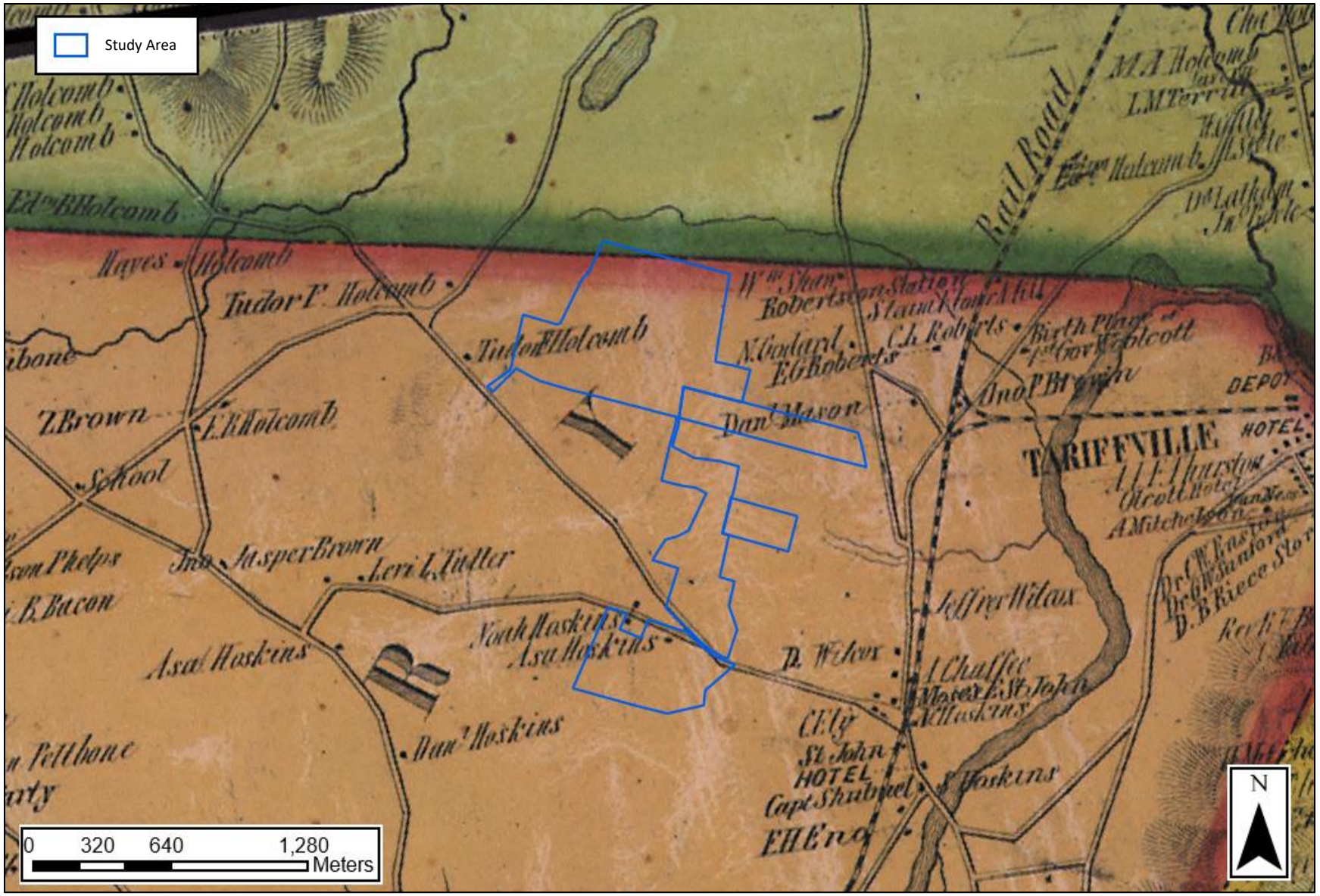

Figure 4. Excerpt from an 1855 map showing the location of the study area in Simsbury, Connecticut.

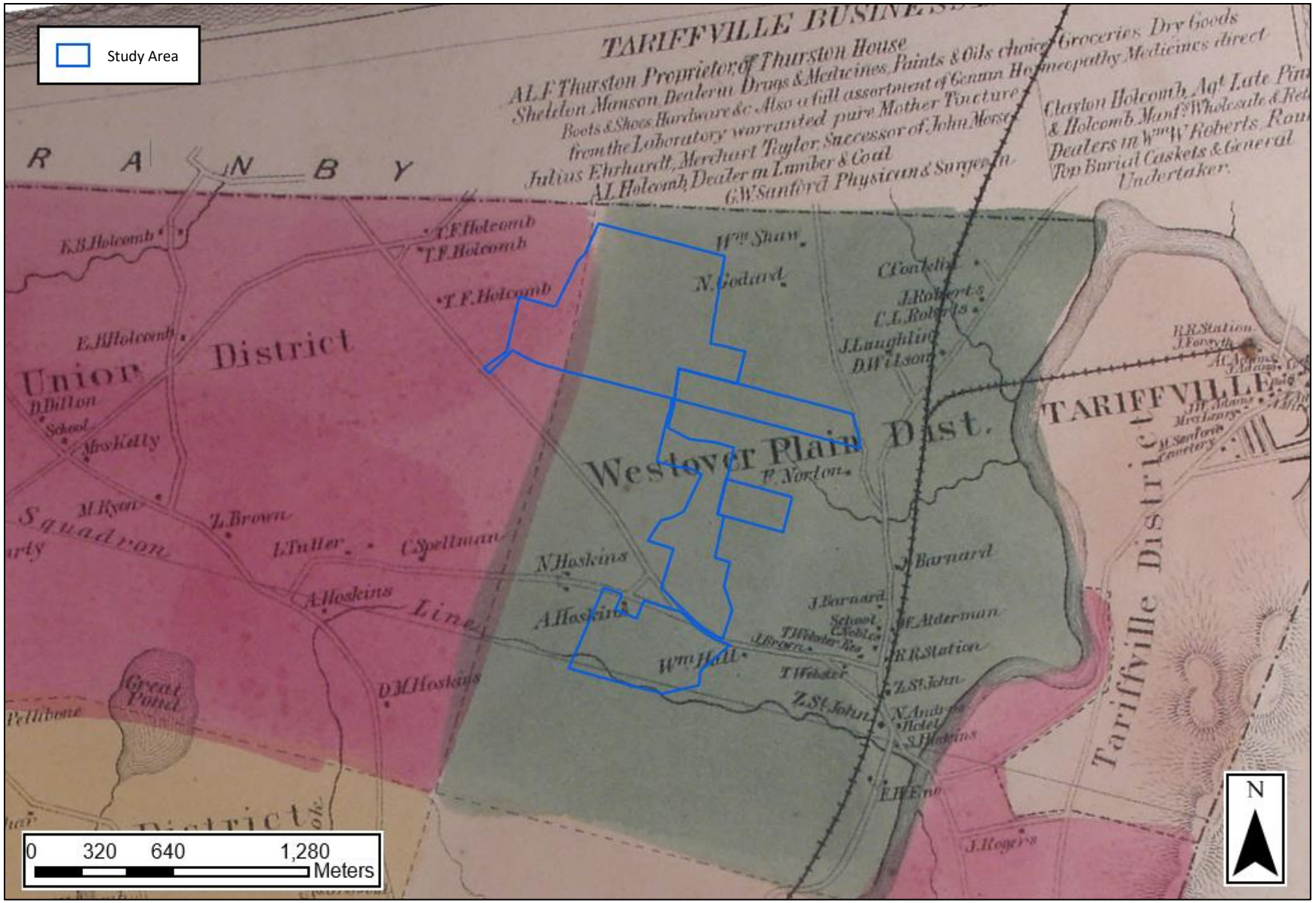

Figure 5. Excerpt from an 1869 map showing the location of the study area in Simsbury, Connecticut.

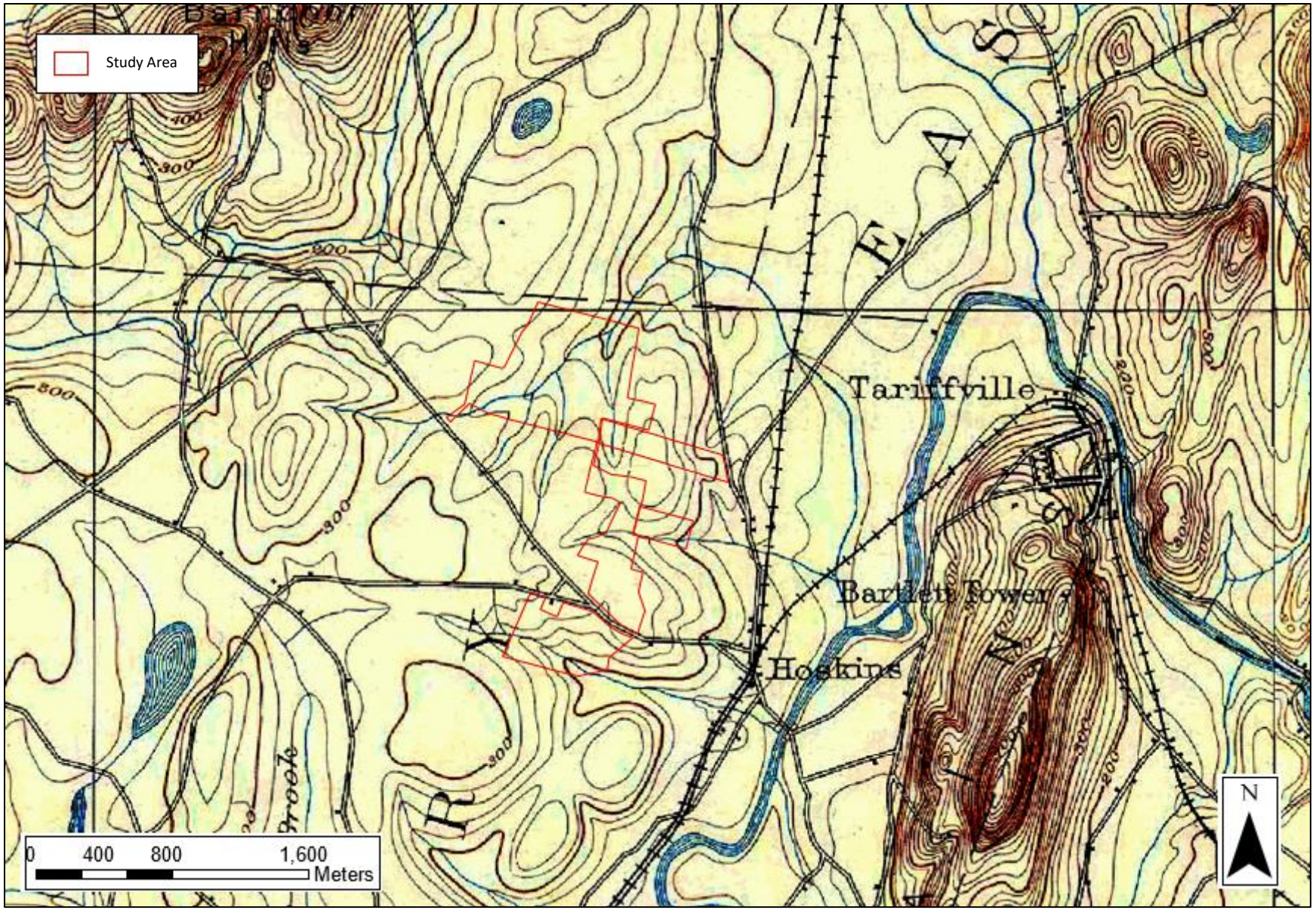

Figure 6. Excerpt from an 1890 USGS 15' series topographic quadrangle showing the location of the study area in Simsbury, Connecticut.

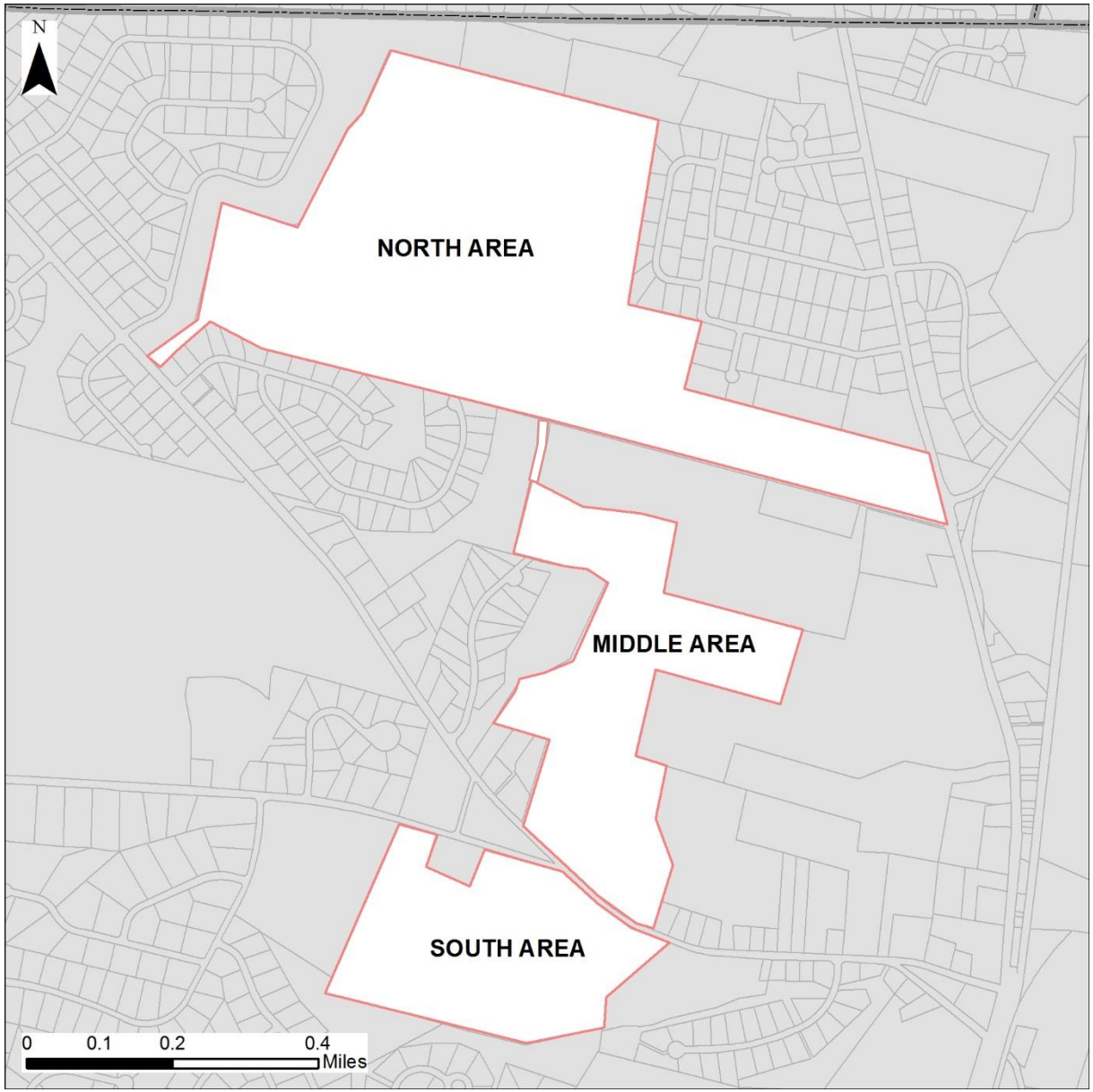

Figure 7. Digital map of the parcel constituting the study area in Simsbury, Connecticut.

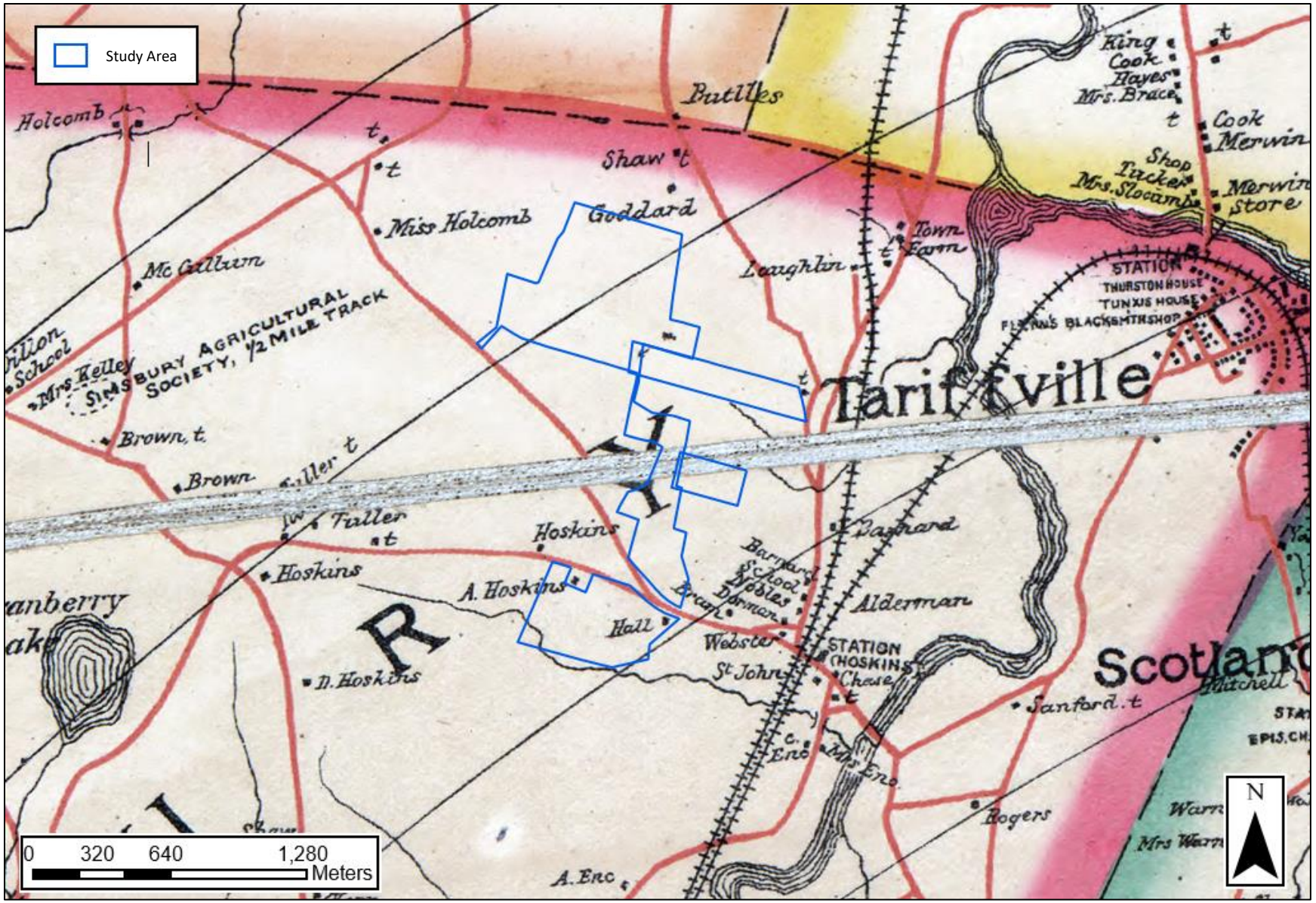

Figure 8. Excerpt from an 1884 map image showing the location of the study area in Simsbury, Connecticut.

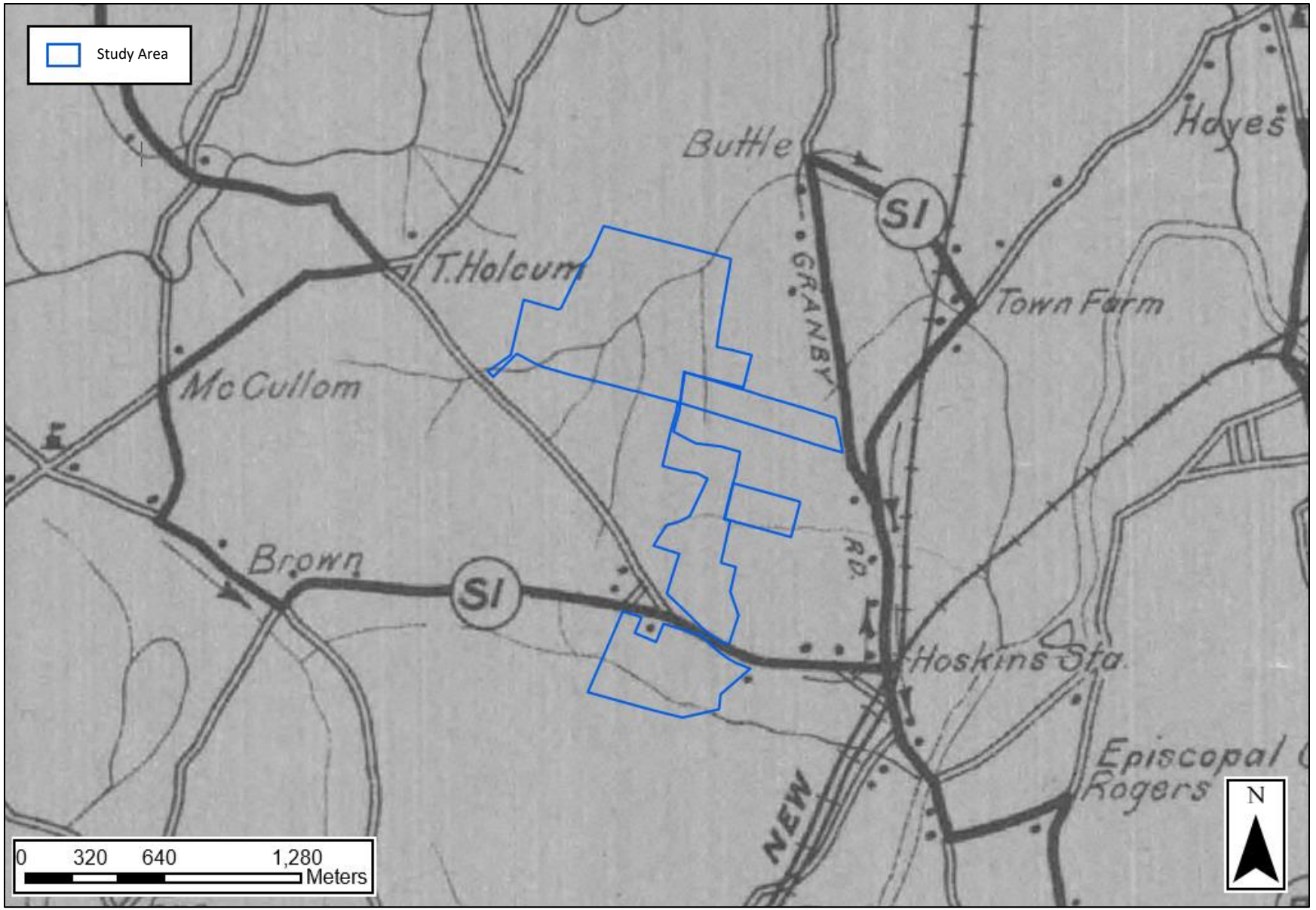

Figure 9. Excerpt of a 1914 map the location of the study area in Simsbury, Connecticut

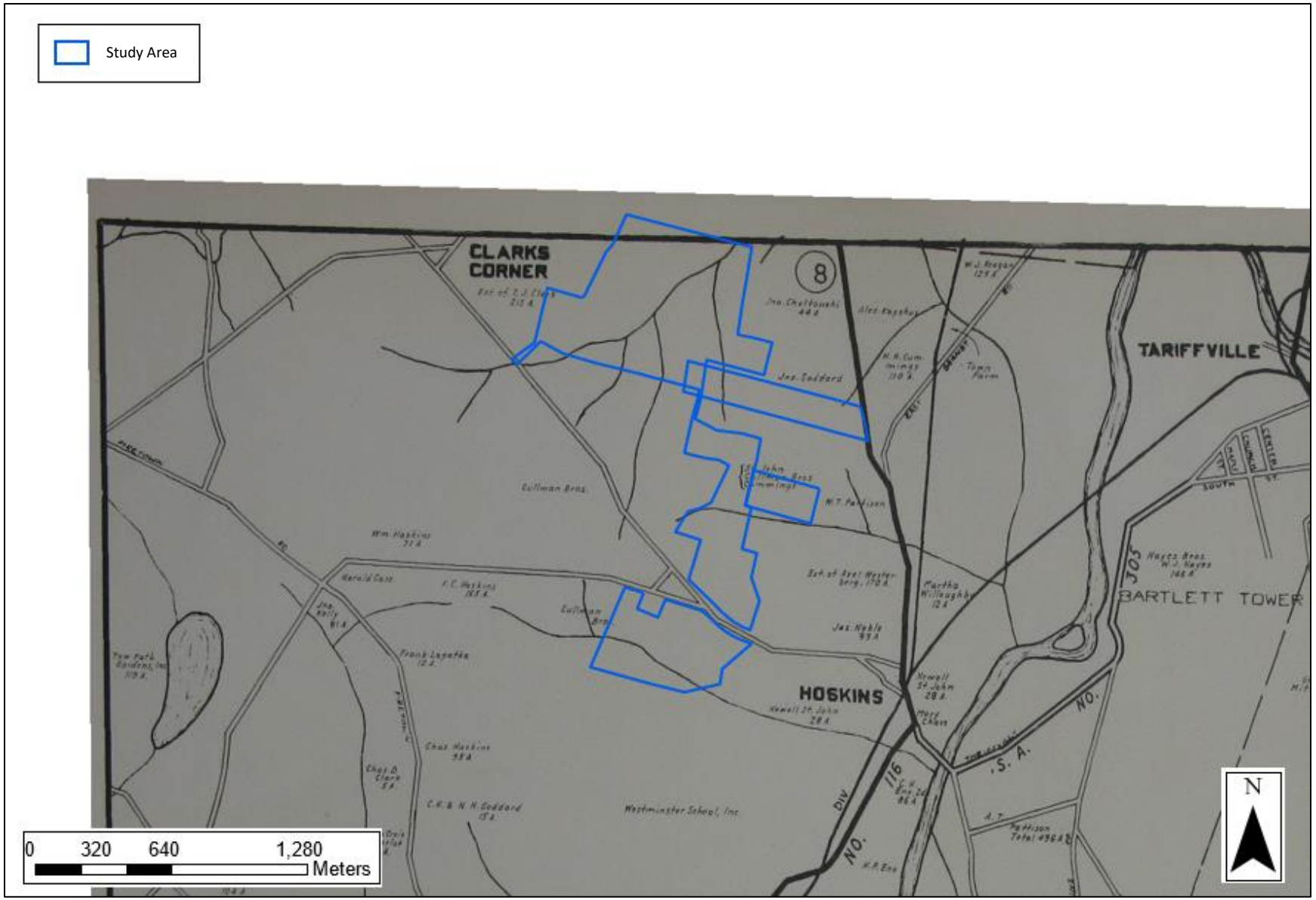

Figure 10. Excerpt from a 1931 map showing the location of the study area in Simsbury, Connecticut.

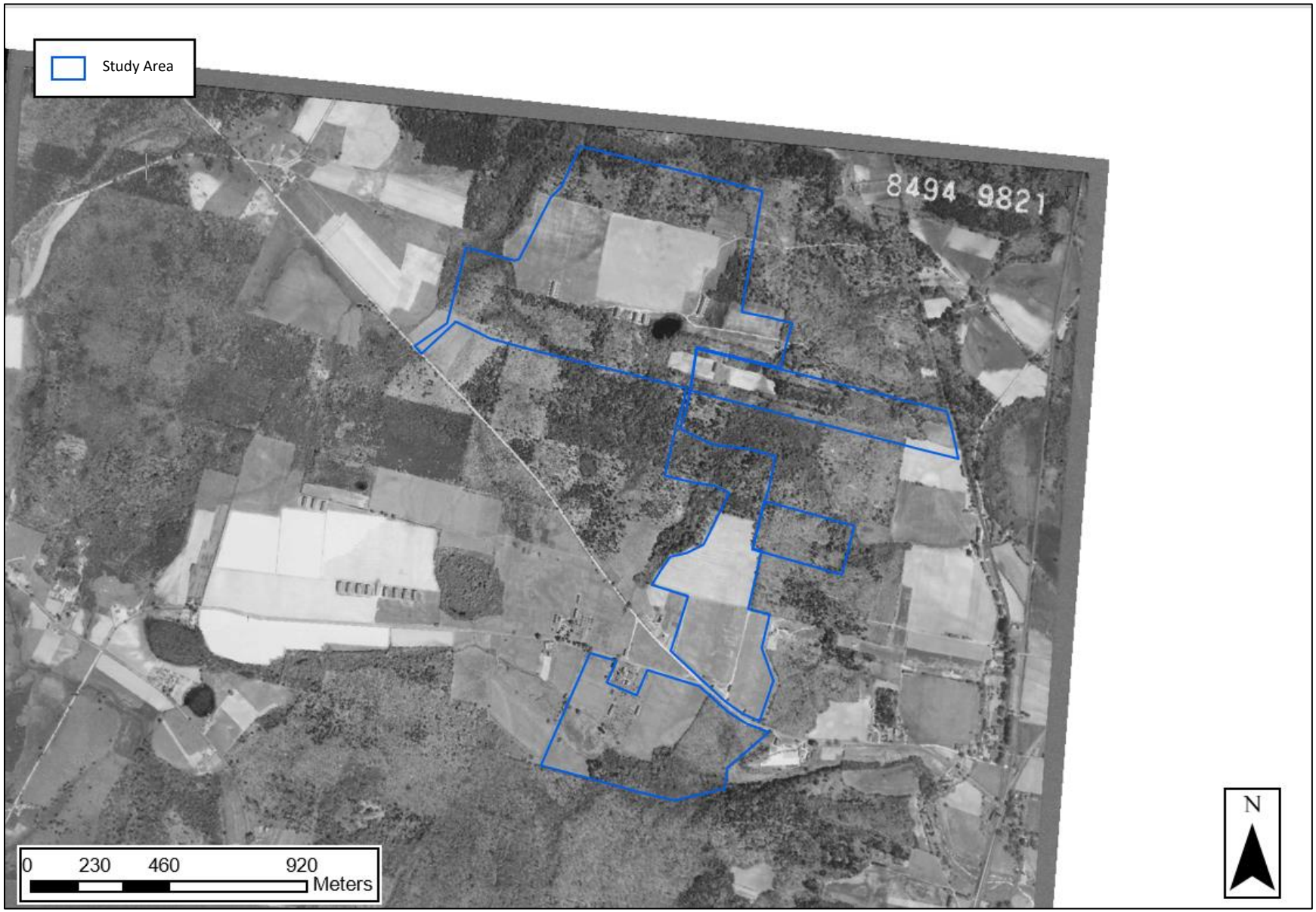

Figure 11. Excerpt from a 1934 aerial image showing the location of the study area in Simsbury, Connecticut.

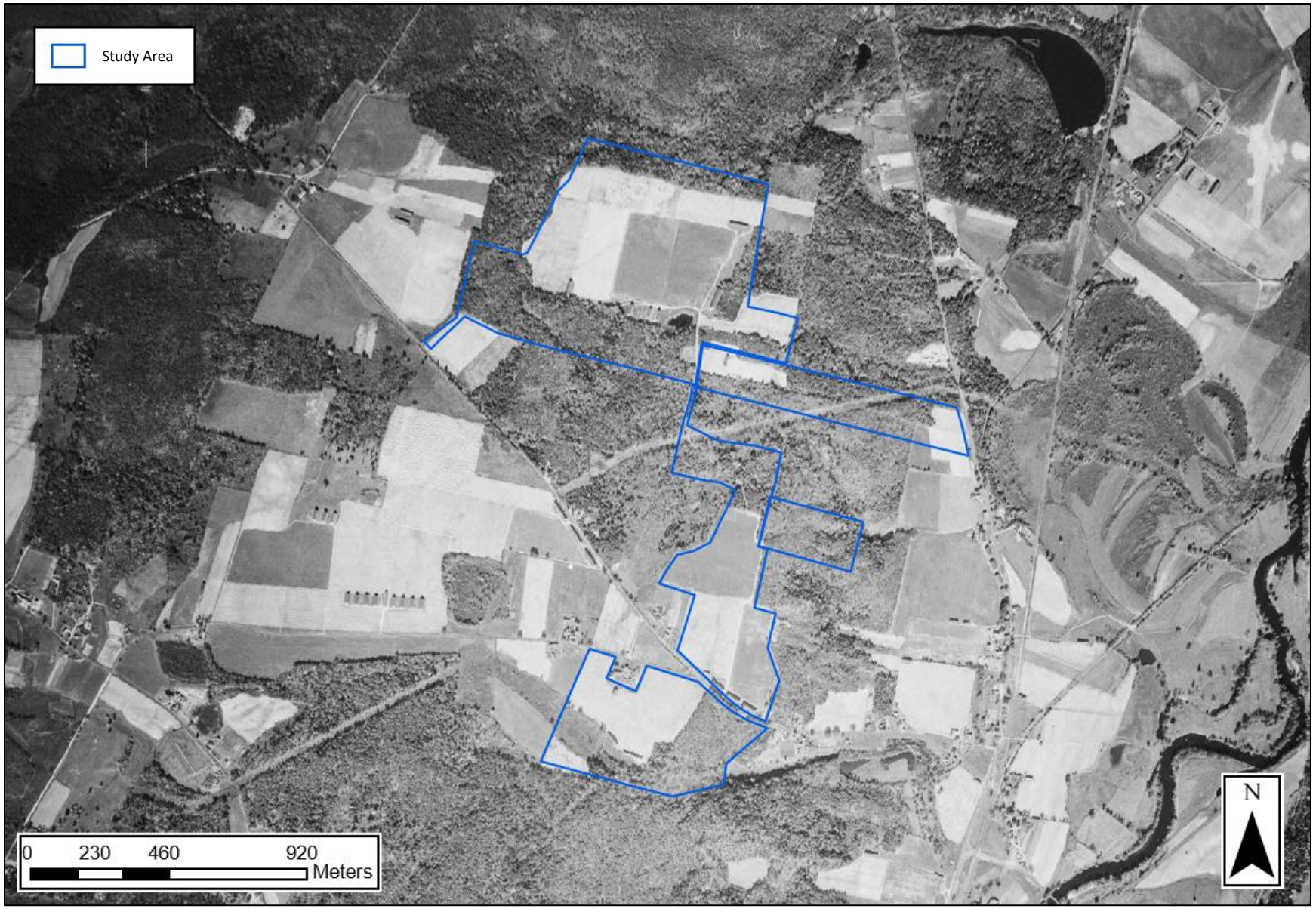

Figure 12. Excerpt from a 1941 aerial image showing the location of the study area in Simsbury, Connecticut.

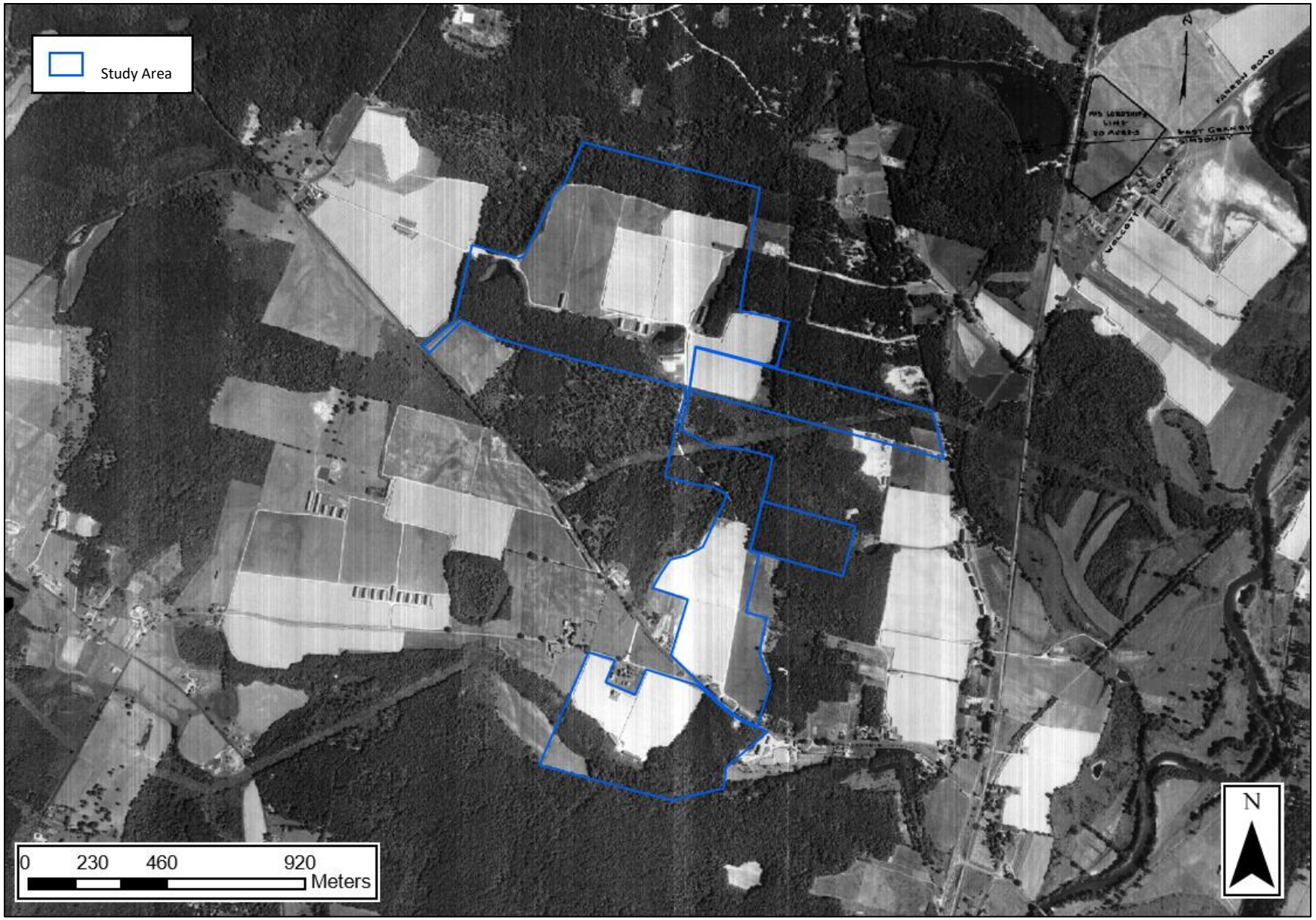

Figure 13. Excerpt from a 1951 aerial image showing the location of the study area in Simsbury, Connecticut.

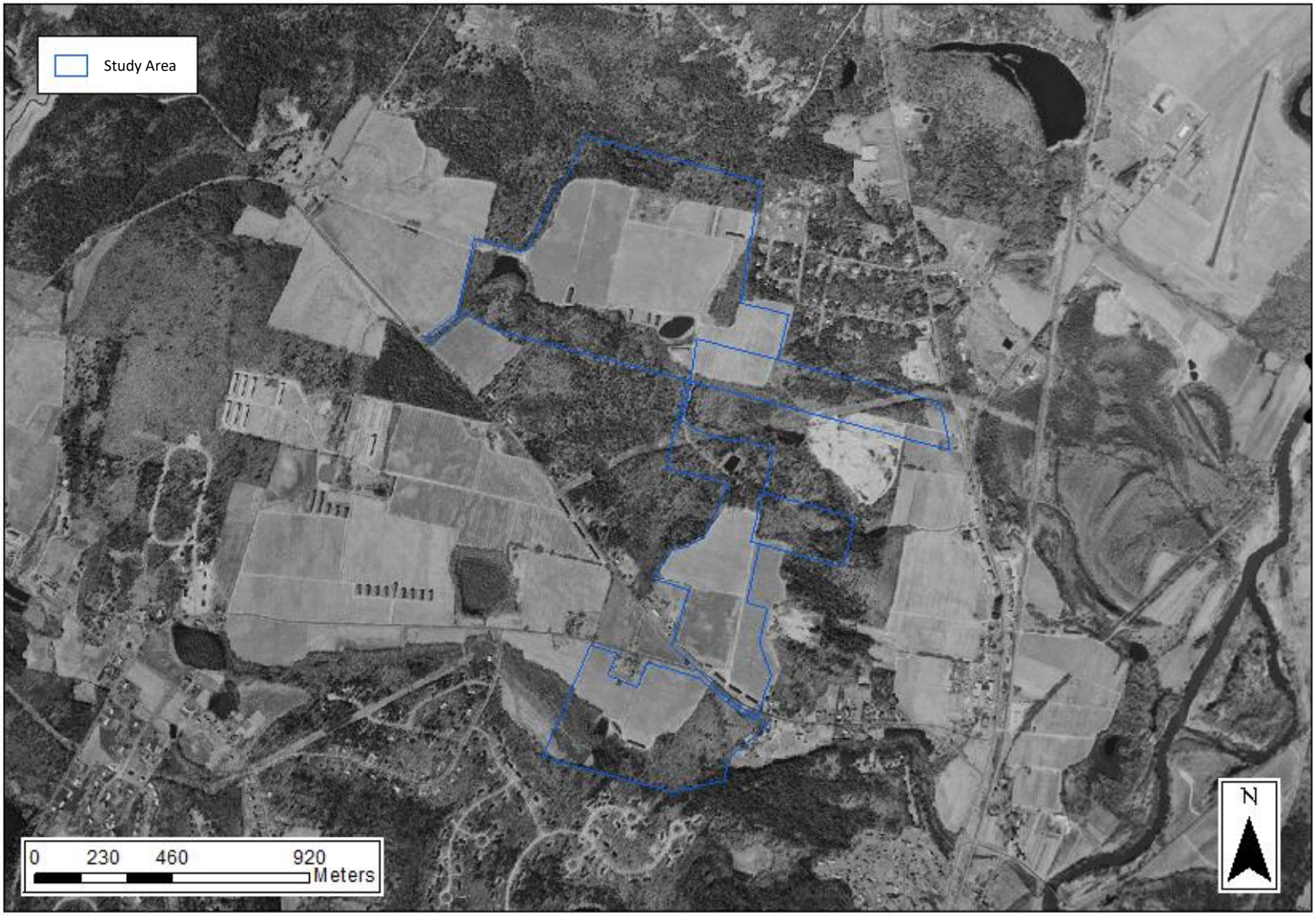

Figure 14. Excerpt from a 1963 aerial image showing the location of the study area in Simsbury, Connecticut.

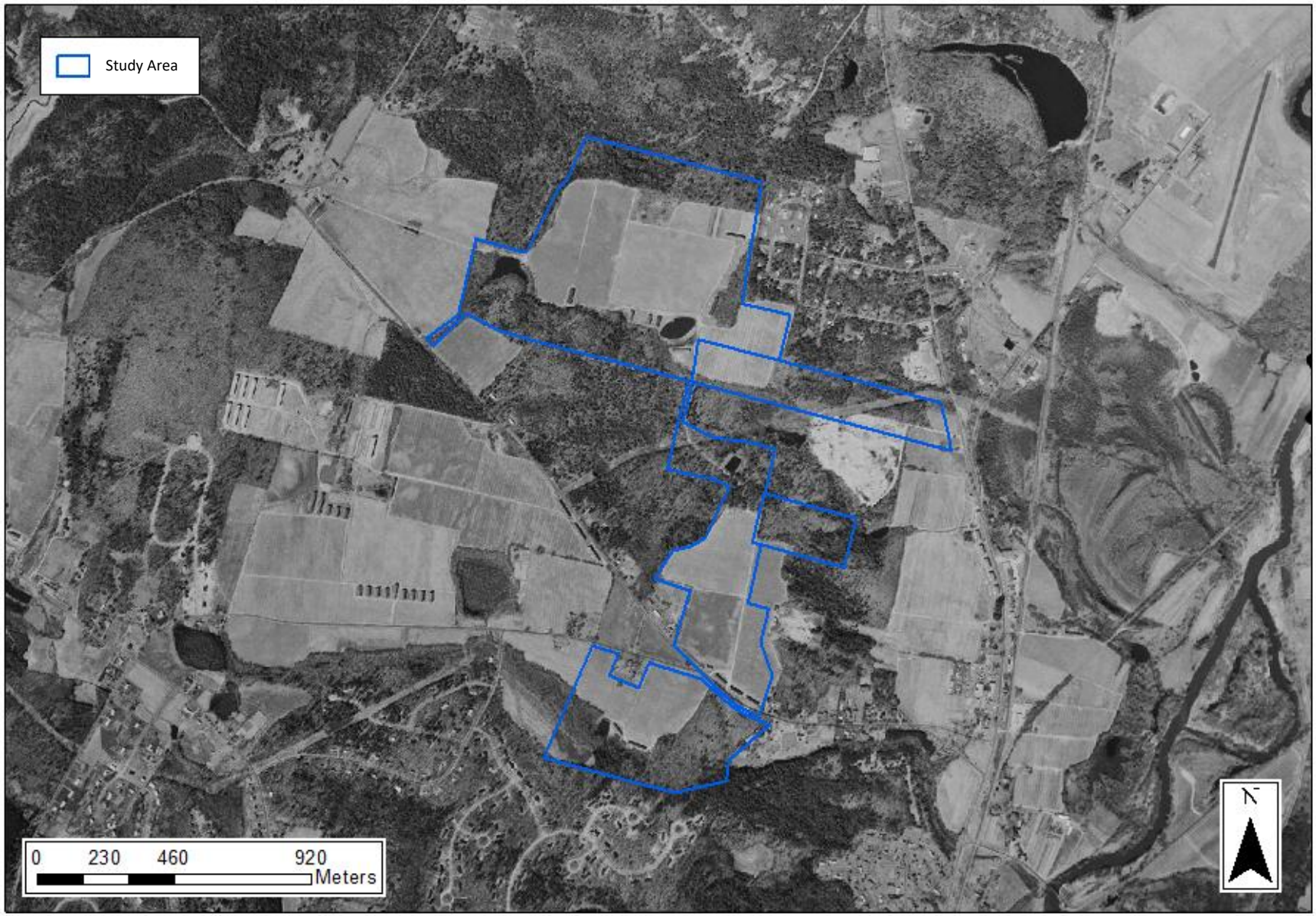

Figure 15. Excerpt from a 1968 aerial image showing the location of the study area in Simsbury, Connecticut.

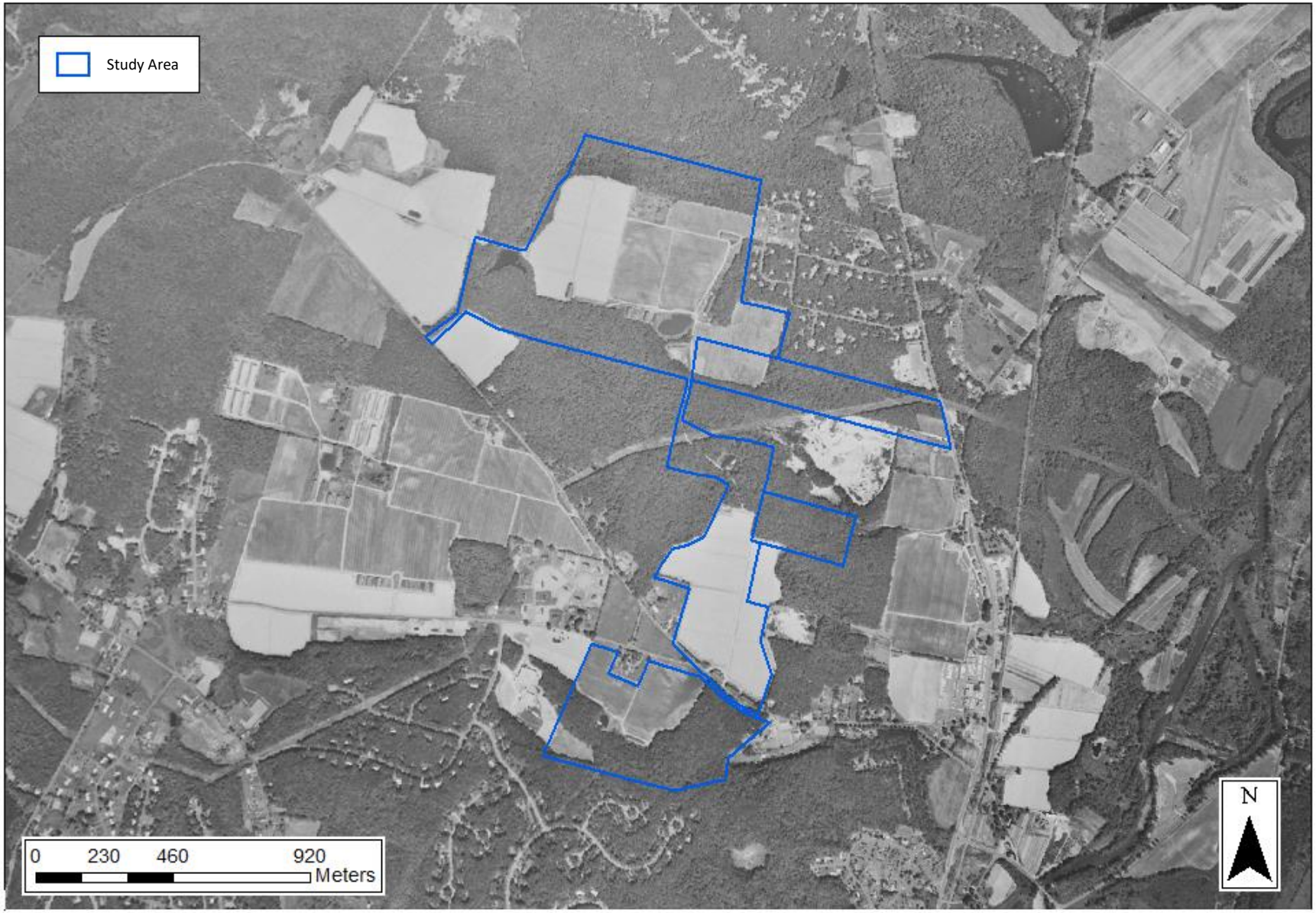

Figure 16. Excerpt from a 1970 aerial image showing the location of the study area in Simsbury, Connecticut.

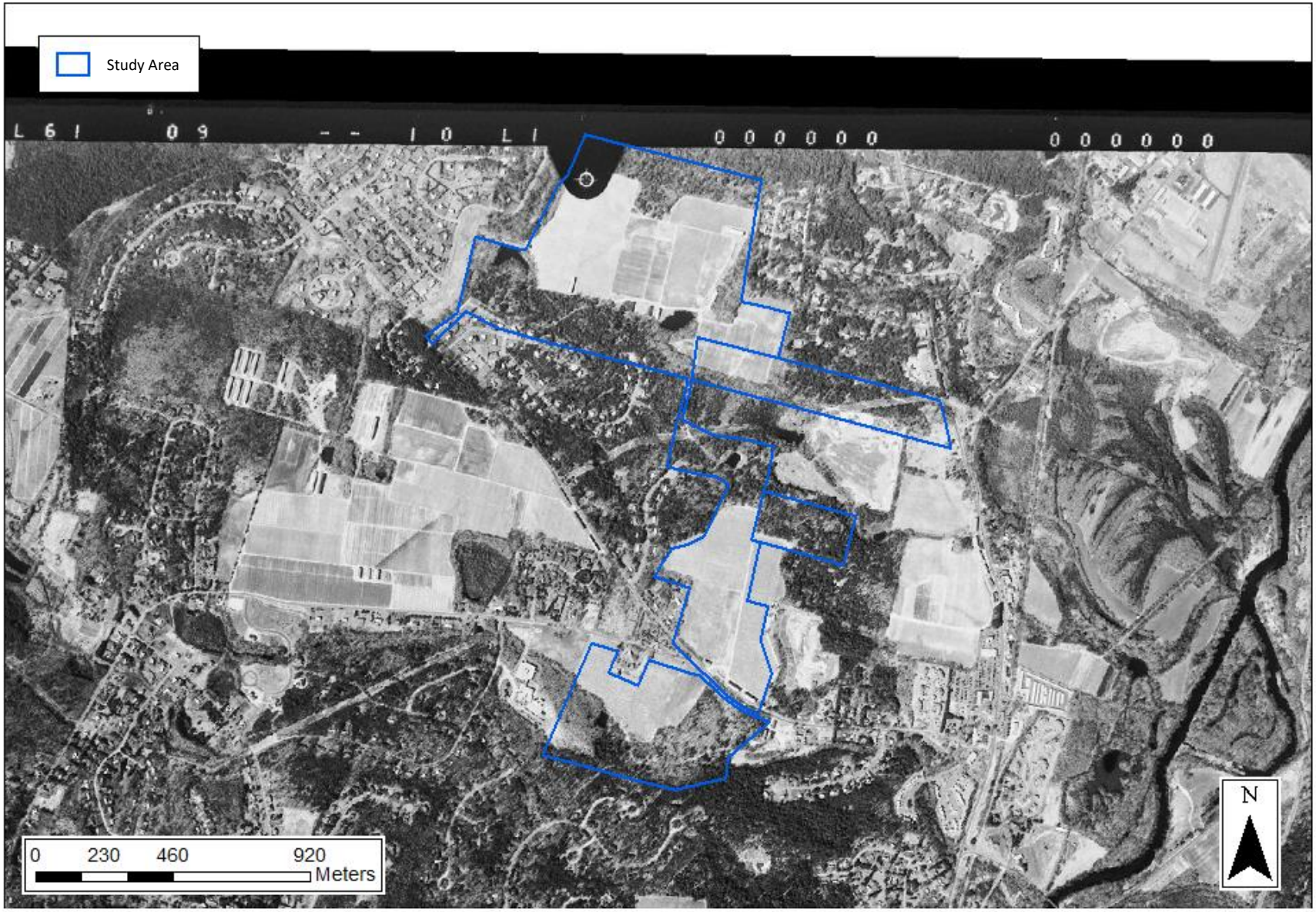

Figure 17. Excerpt from a 1991 aerial image showing the location of the study area in Simsbury, Connecticut.

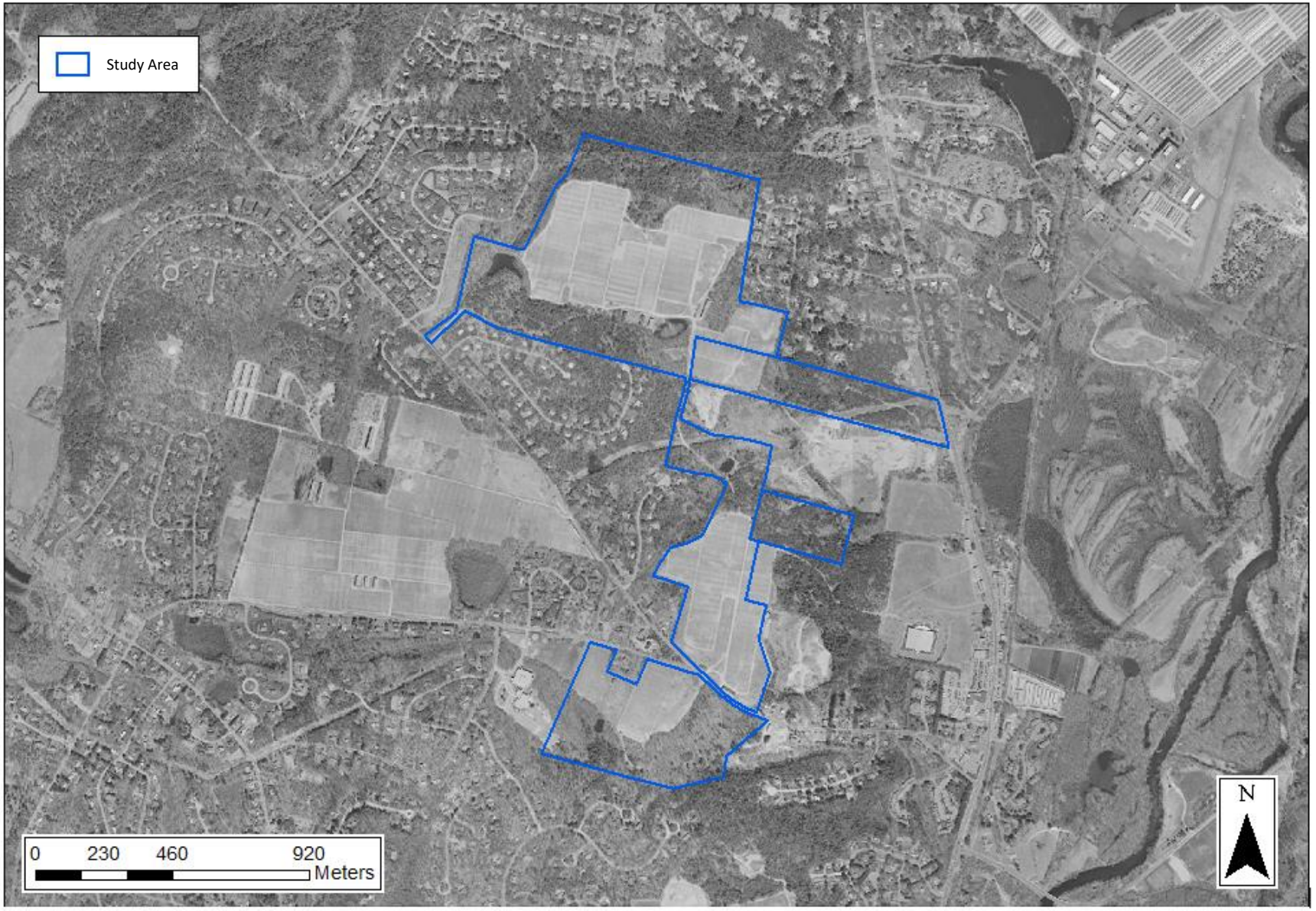

Figure 18. Excerpt from a 2004 aerial image showing the location of the study area in Simsbury, Connecticut.

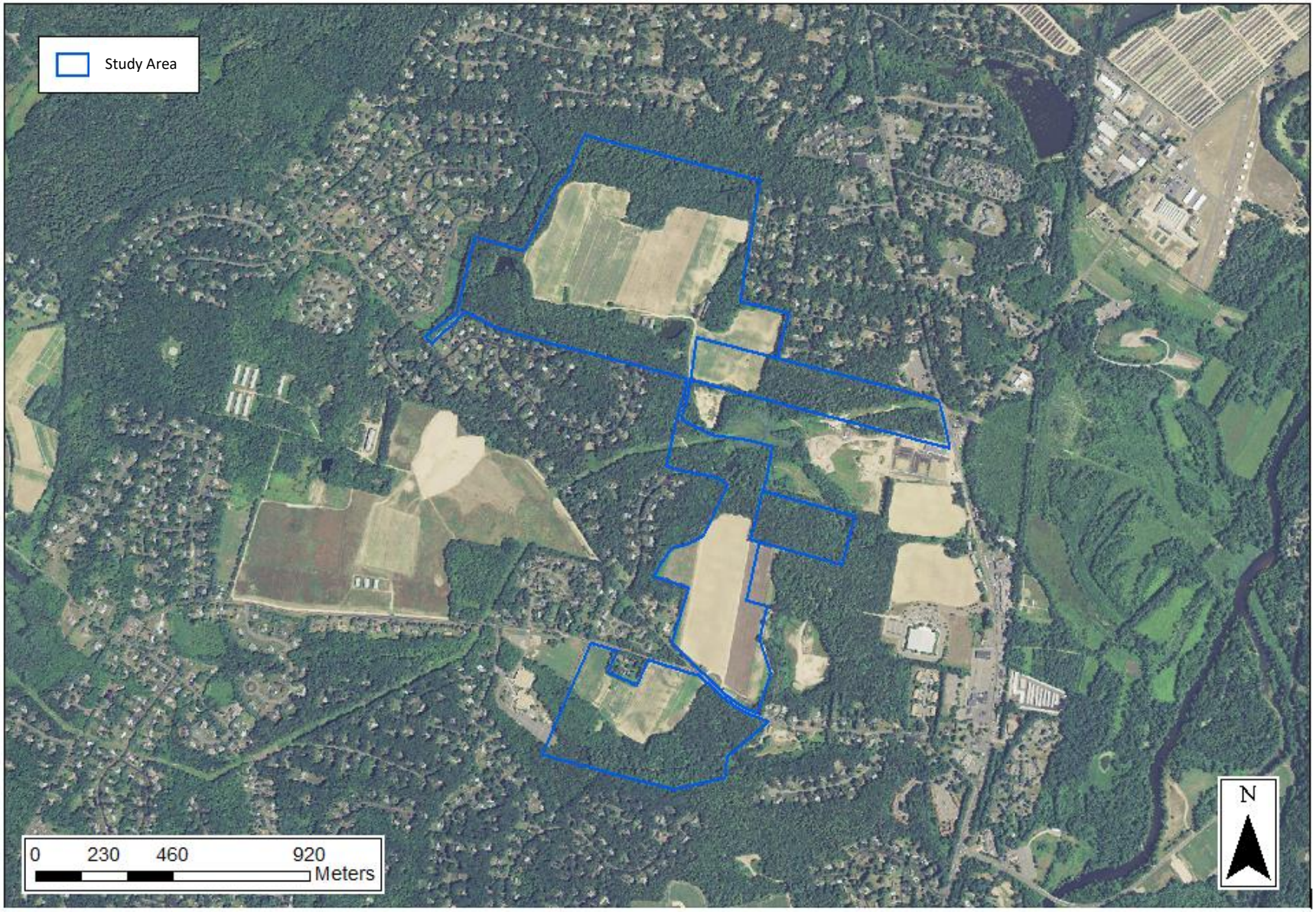

Figure 19. Excerpt from a 2010 aerial image showing the location of the study area in Simsbury, Connecticut.

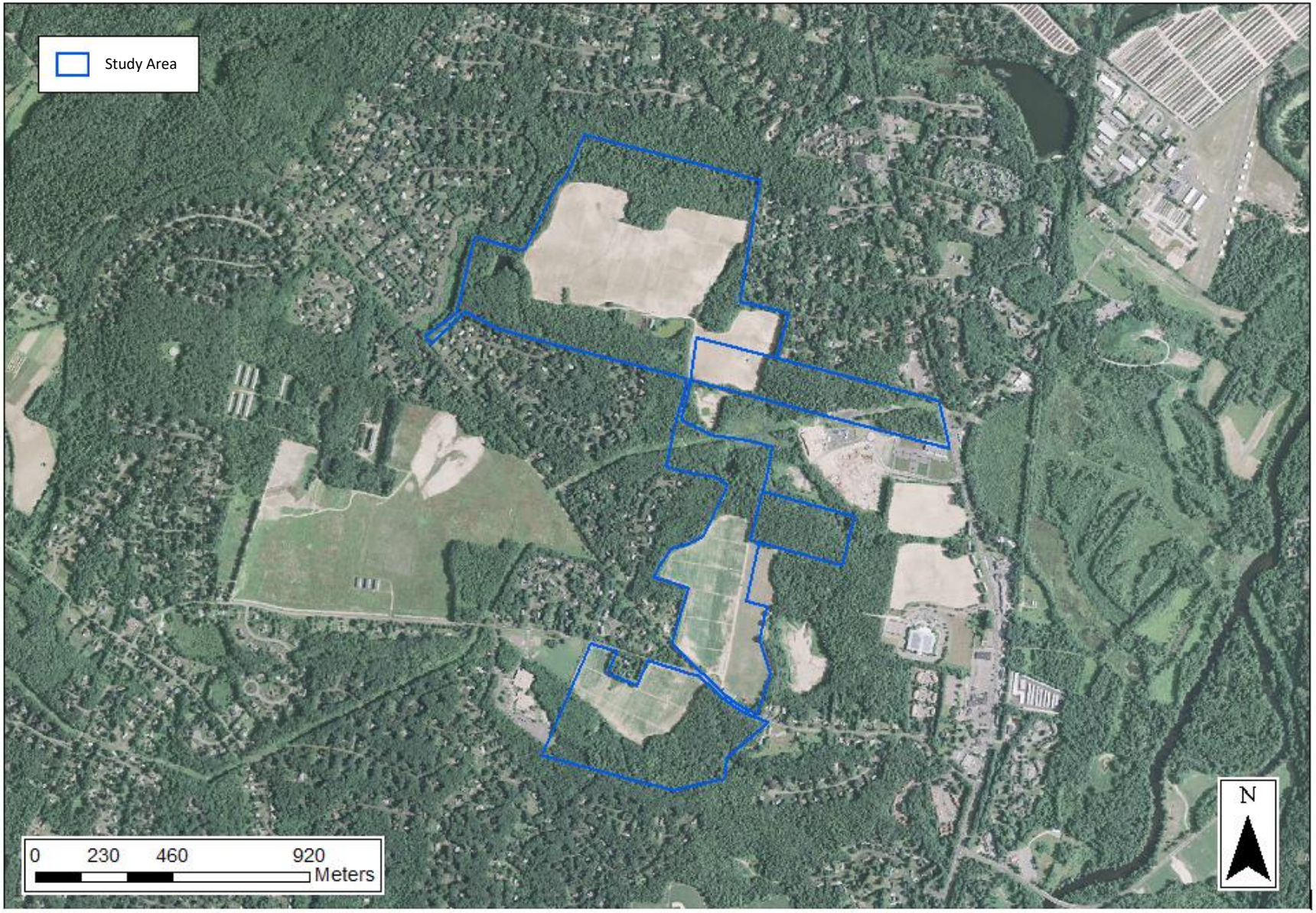

Figure 20. Excerpt from a 2014 aerial image showing the location of the study area in Simsbury, Connecticut.

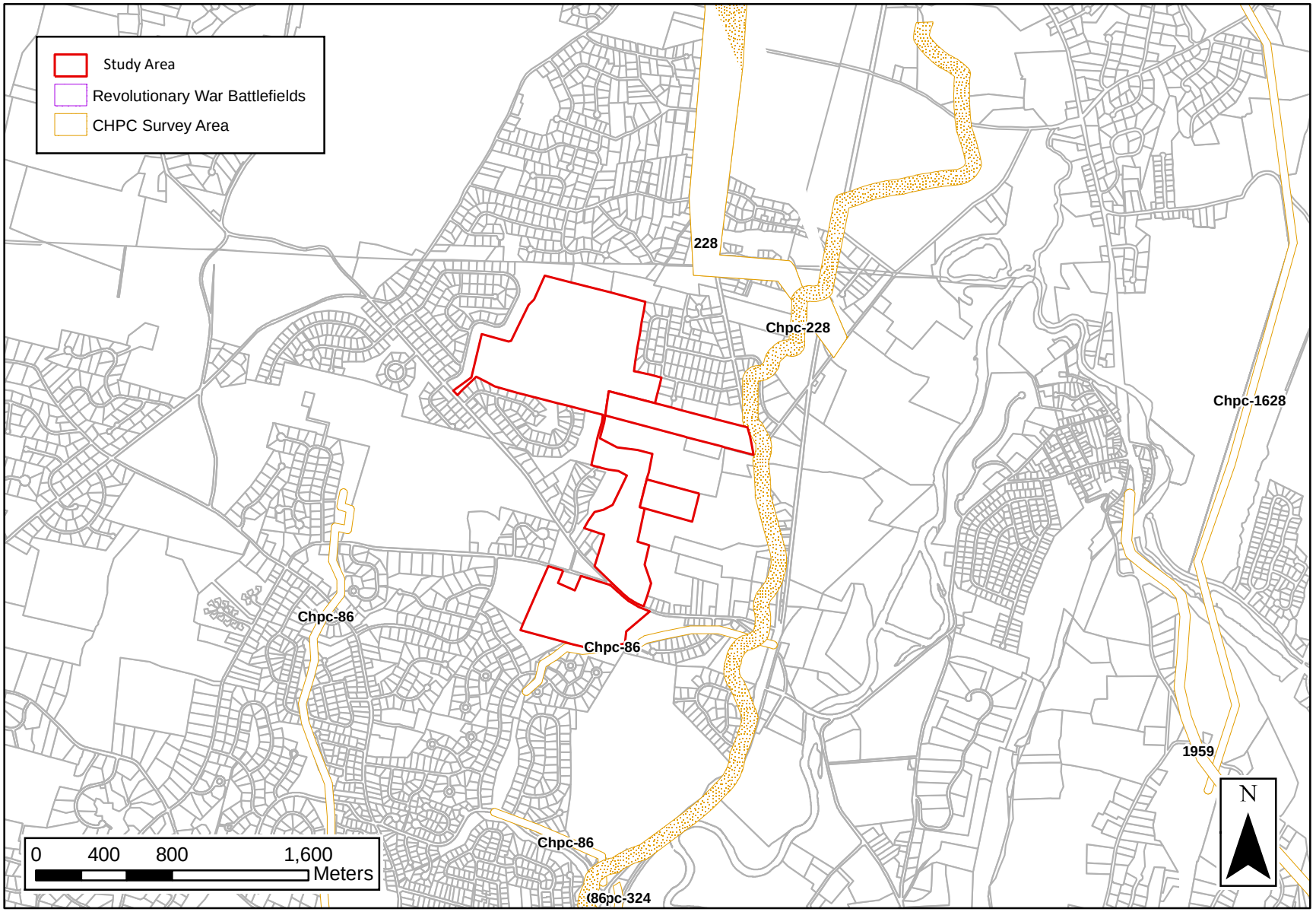

Figure 21. Digital map showing the locations of previously completed archaeological investigations in the vicinity of the study area in Simsbury, Connecticut.

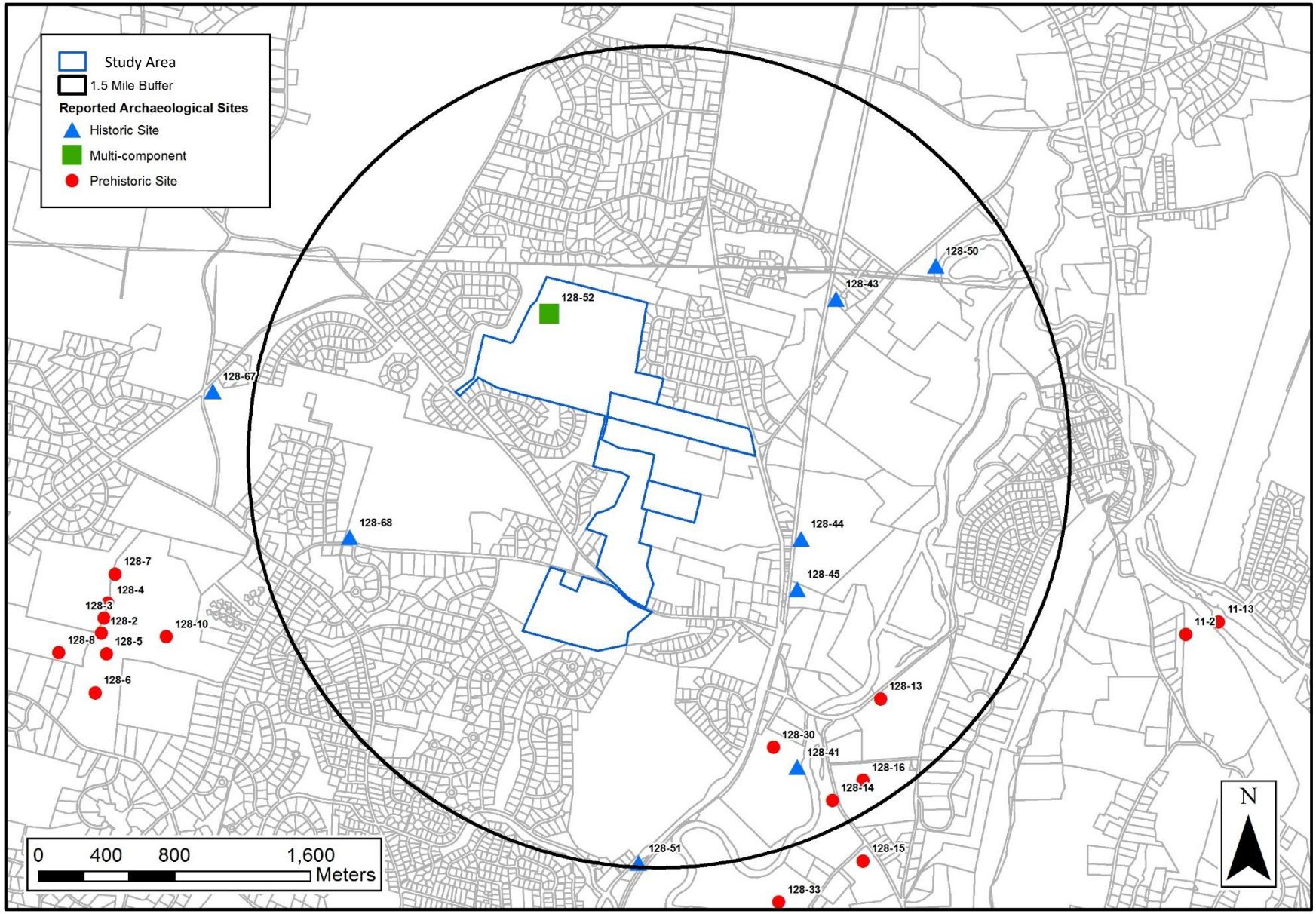

Figure 22. Digital map showing the locations of previously identified archaeological sites in the vicinity of the study area in Simsbury, Connecticut.

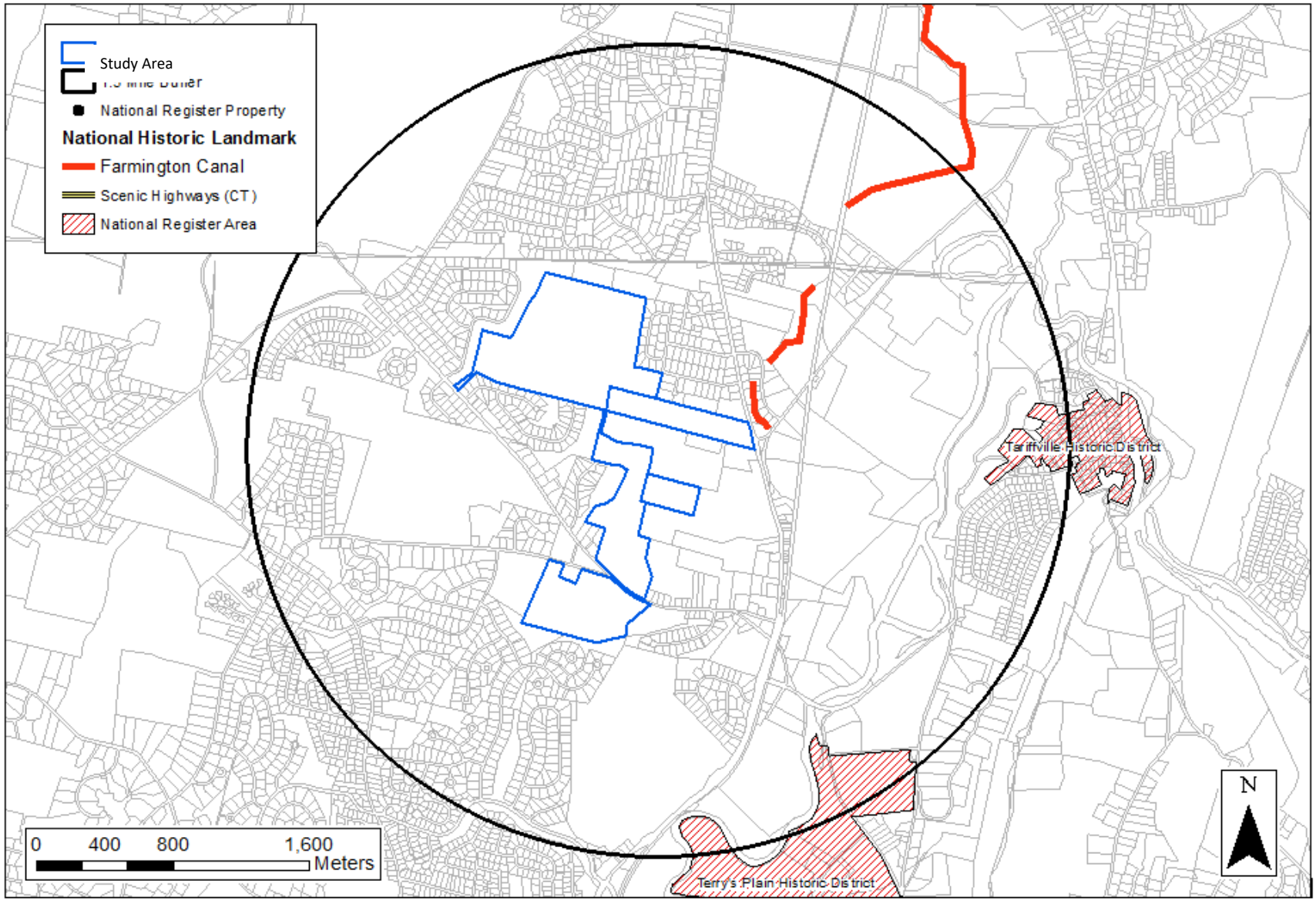

Figure 23 Digital map showing the locations of previously identified National Register of Historic Places properties in the vicinity of the study area in Simsbury, Connecticut.

Figure 24. Excerpt from a 2016 aerial image depicting the archaeological sensitivity of the study area in Simsbury, Connecticut.

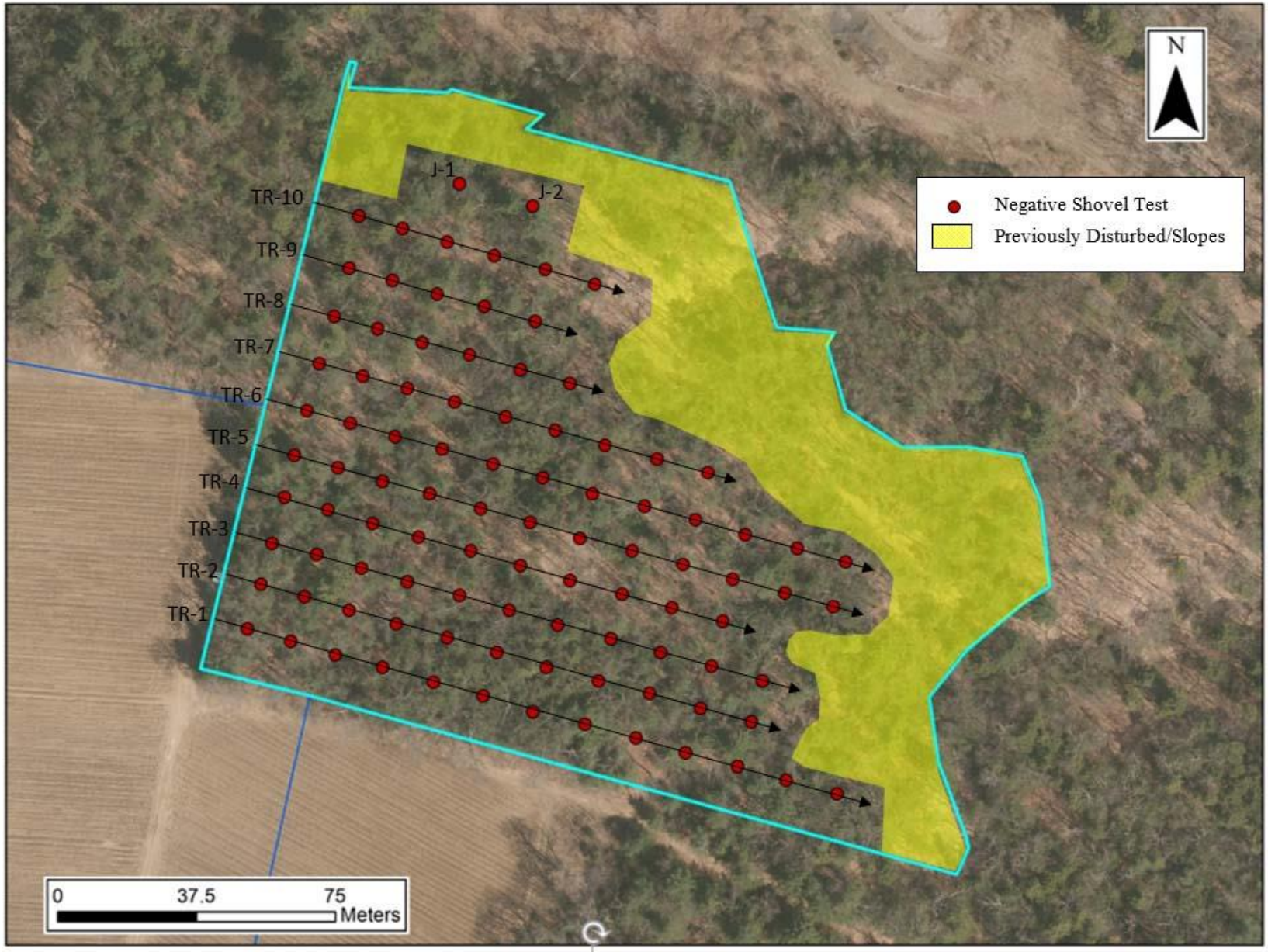

Figure 25. Excerpt from a 2016 aerial image showing Area 1 and shovel testing completed during Phase IB survey.

Figure 26. Excerpt from a 2016 aerial image showing Area 2 and the shovel testing completed during Phase IB survey.

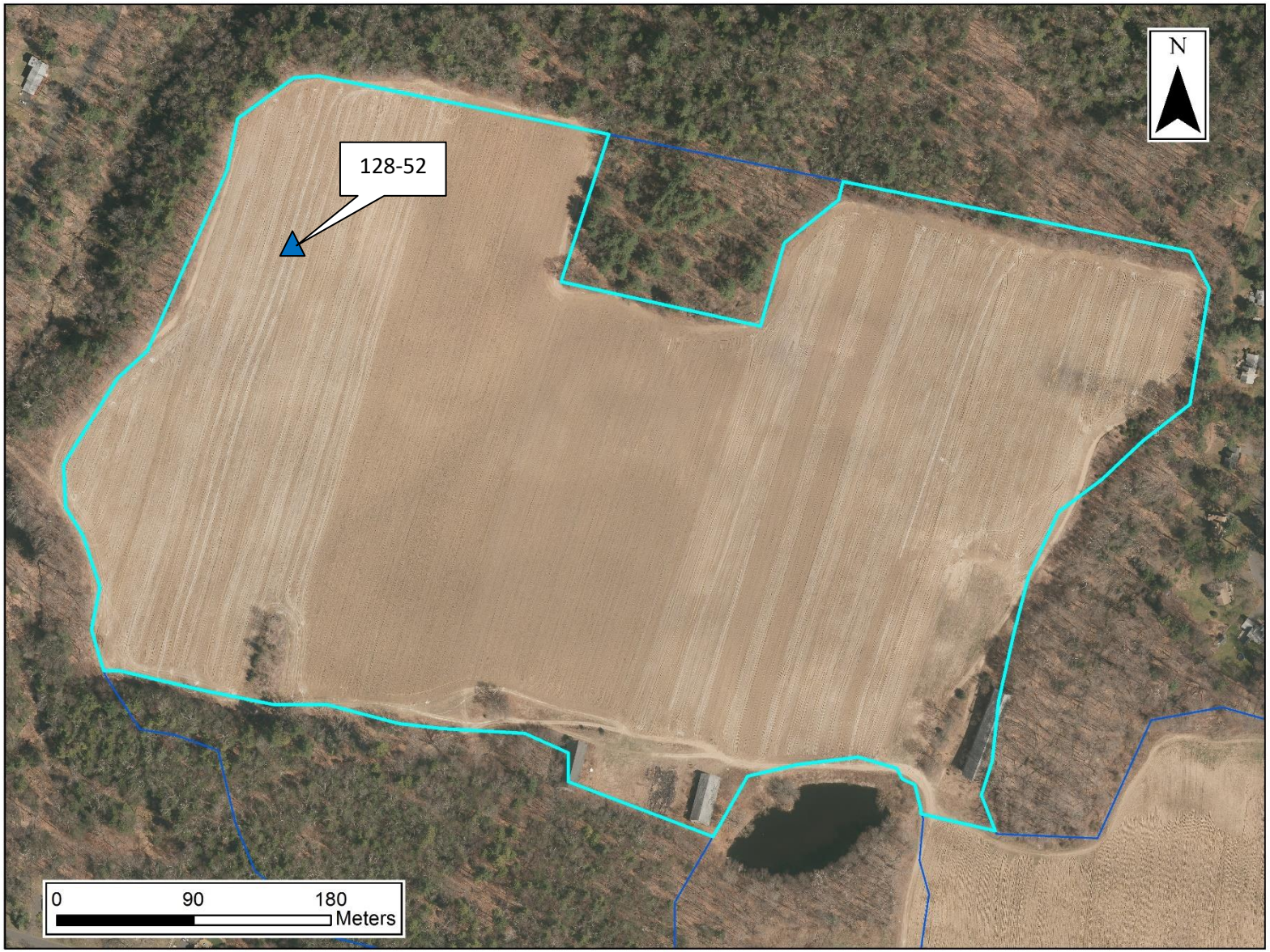

Figure 27. Excerpt from a 2016 aerial image showing Area 3 and the location of Site 128-52.

Figure 28. Excerpt from a 2016 aerial image showing Area 4.

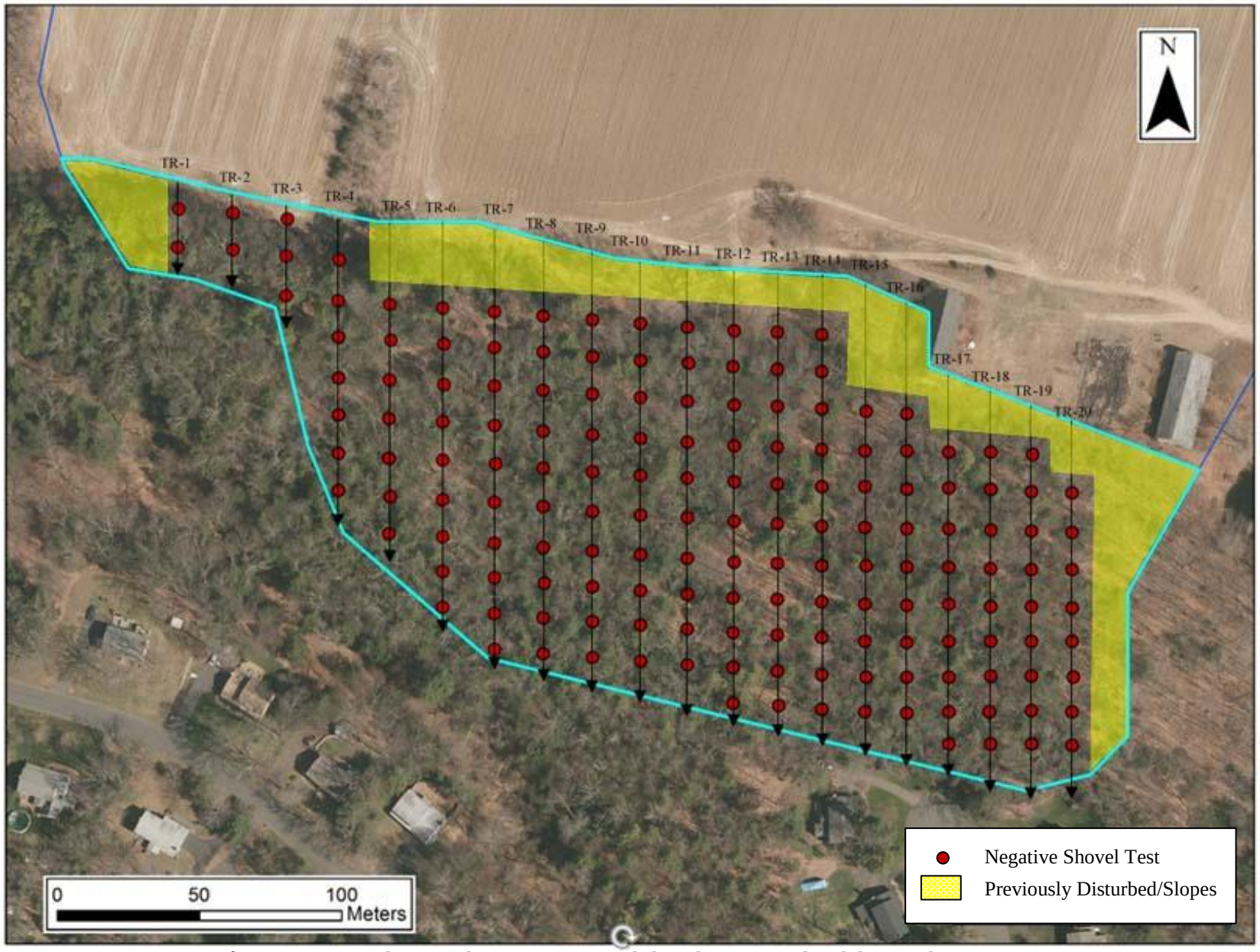

Figure 29. Excerpt from a 2016 aerial image showing Area 5 and shovel tests completed during Phase IB survey.

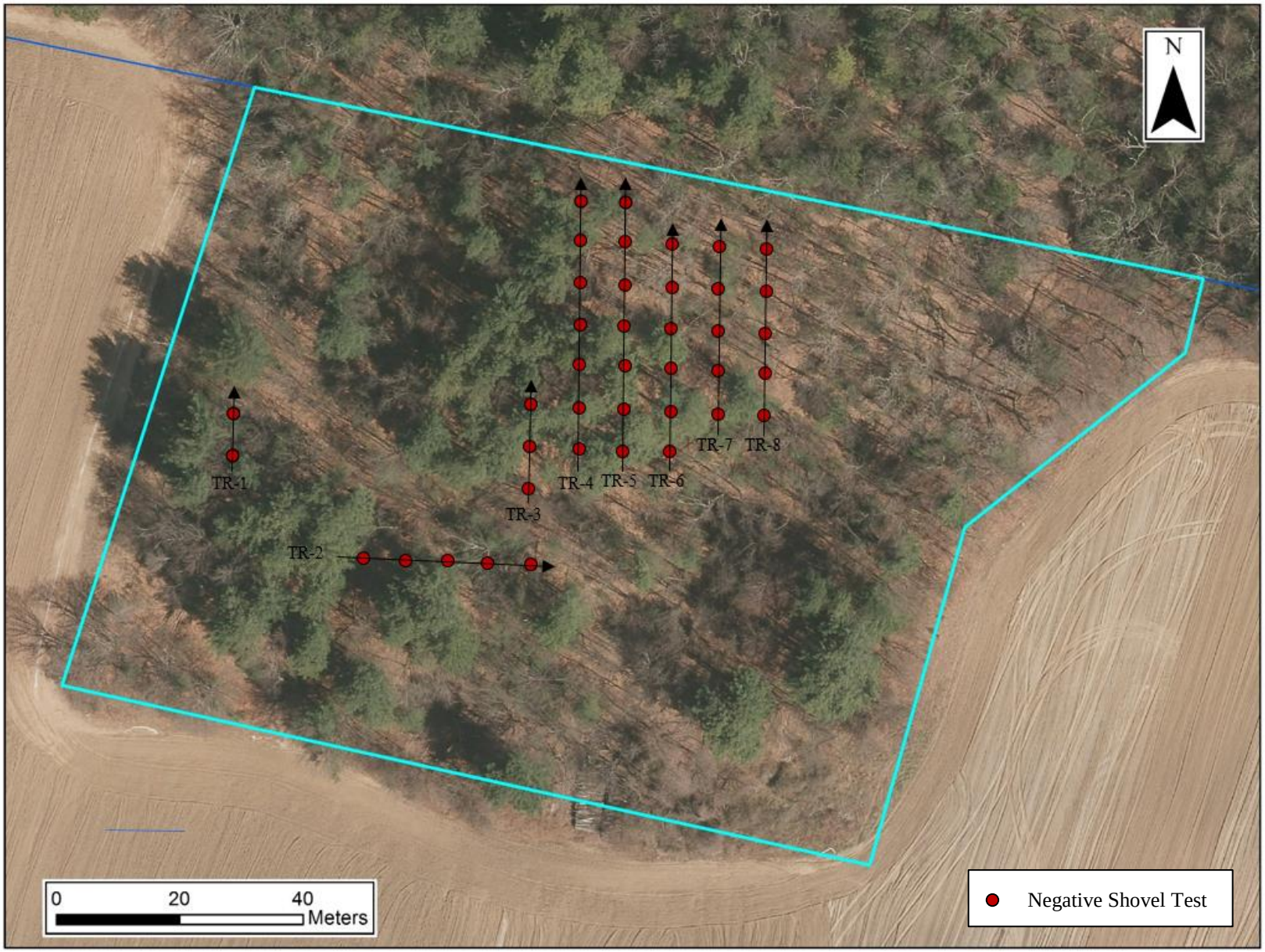

Figure 30. Excerpt from a 2016 aerial image showing Area 6 and shovel tests completed during Phase IB survey.

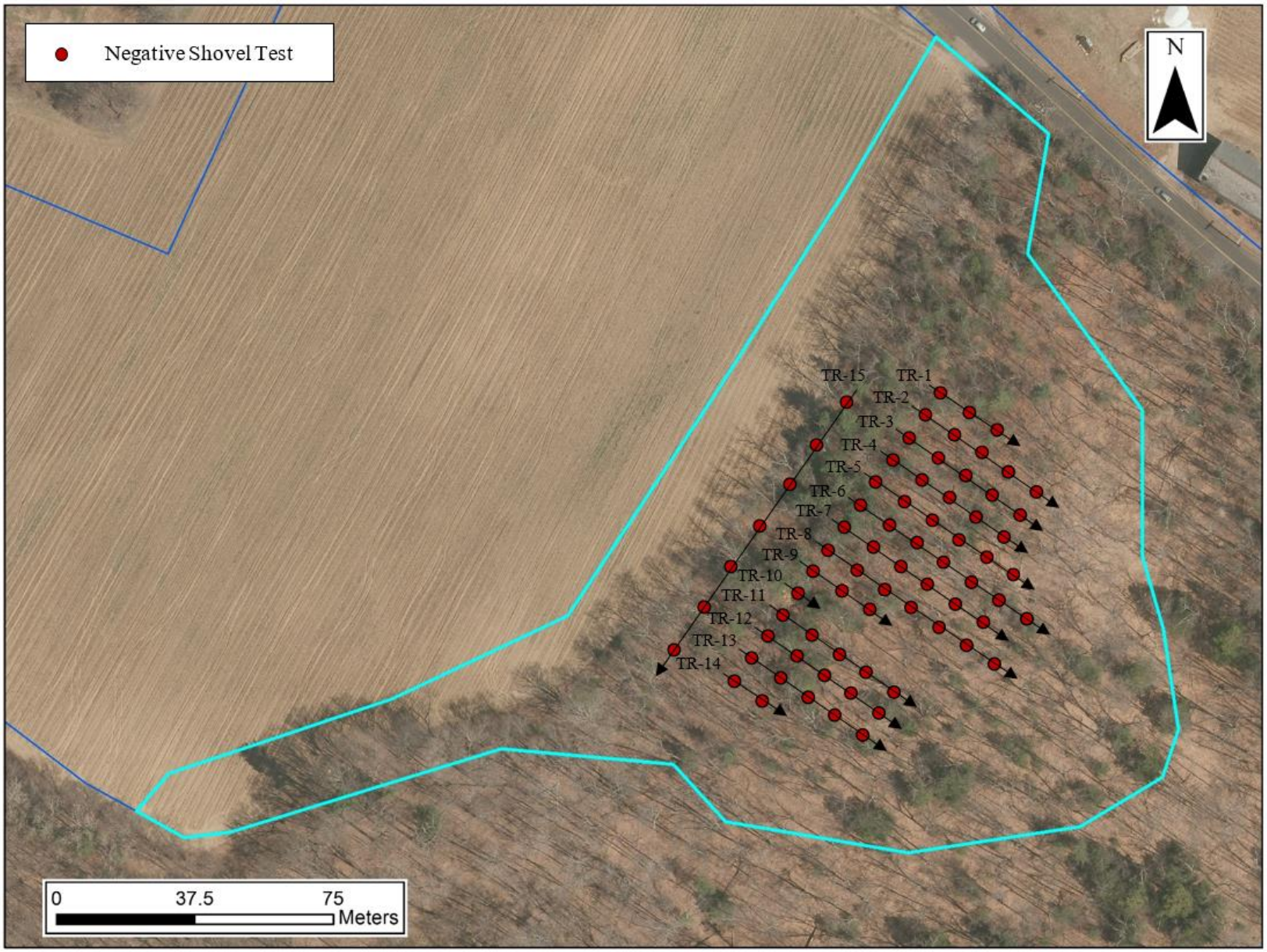

Figure 31. Excerpt from a 2016 aerial image showing Area 7 and shovel tests completed during Phase IB survey.

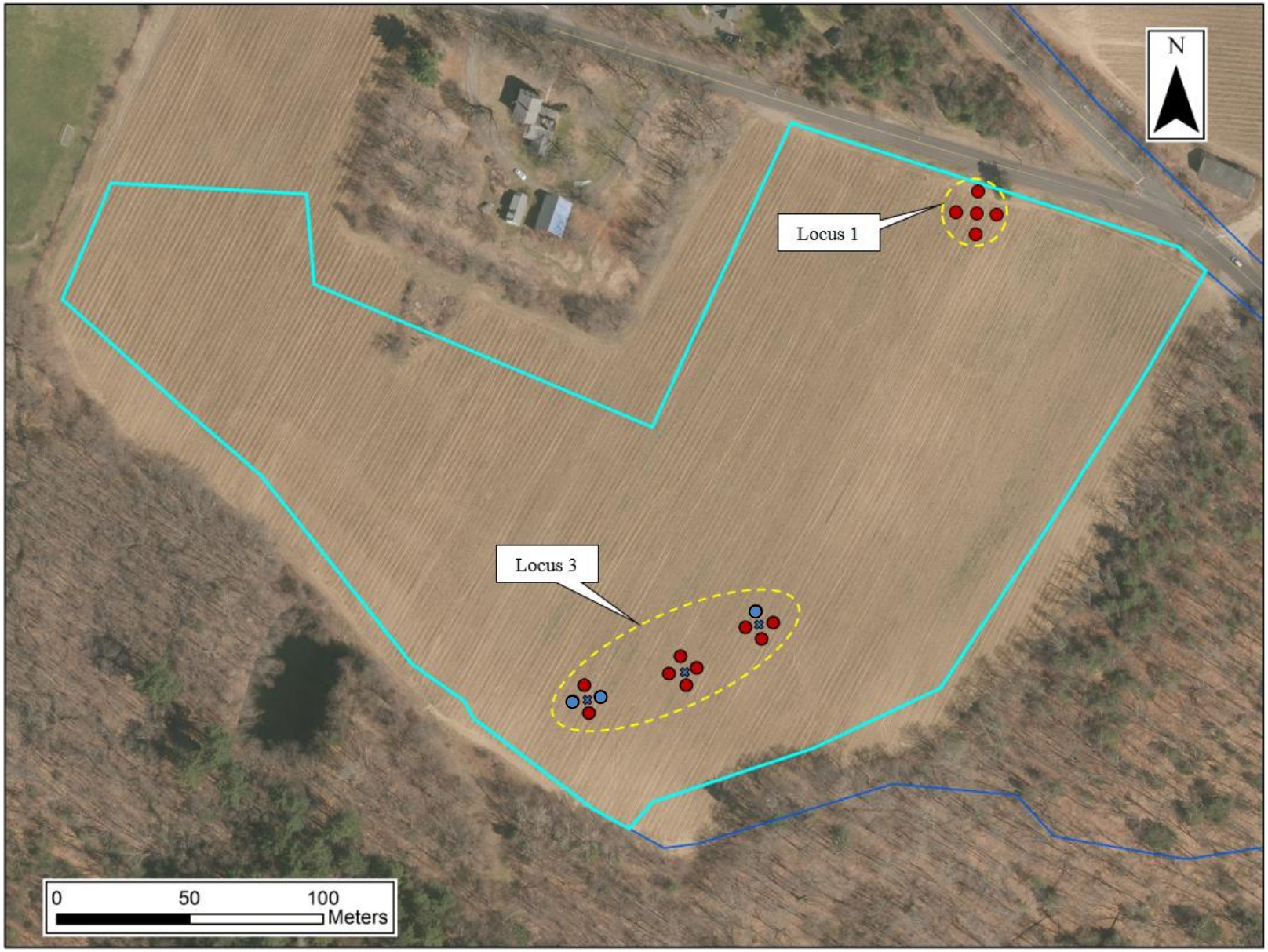

Figure 32. Excerpt from a 2016 aerial image showing Area 8 and shovel tests completed during Phase IB survey.