



April 19, 2022

Mr. Beau Fowler
Wedgewood Avenue
1033 Demonbreun Street
Suite 300
Nashville, TN 37203

Telephone: (615) 208-2944
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RE: Waters of the United States and State Assessment
Marie Street Property
123 Marie Street
Nashville, Davidson County, Tennessee
Terracon Project No. 18227105

Dear Mr. Fowler:

Terracon is pleased to submit the enclosed Waters of the U.S. and State (WOTUSS) Assessment report in accordance with our proposal (Terracon Proposal No. P18227105) dated March 17, 2022 and the Supplement to Agreement for Services Change to Scope of Services and Fees dated March 29, 2022. The findings of Terracon's assessment are summarized below:

- Total Site Size – Approximately 3.11 acres
- Traditionally Navigable Waters - 0 linear feet (LF)
- Jurisdictional Tributaries [(a)(2)] – 358 LF
- Jurisdictional Wetlands [(a)(4)] – 0 acres
- Other Jurisdictional WOTUS [(a)(3)]- 0 acres
- Non-Jurisdictional Tributaries [(b)(3)] – 0 LF
- Non-Jurisdictional Wetlands [(b)(1)] – 0 acres

Additionally, the State of Tennessee reserves the right to claim jurisdiction over features classified as State Waters. It is Terracon's opinion that the features listed below will be considered State Waters by the Tennessee Department of Environment and Conservation:

- Jurisdictional Wetlands – 0 acres
- Jurisdictional Streams - 108 LF



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Environmental



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Considerations

Terracon understands you intend to obtain a Jurisdictional Determination from the United States Army Corps of Engineers (USACE). There are two types of Jurisdictional Determinations that can be obtained from USACE; (1) Preliminary Jurisdictional Determination and (2) Approved Jurisdictional Determination.

- **Preliminary Jurisdictional Determination (PJD) Request:** A PJD is the most common type of jurisdictional determination provided by USACE. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a PJD will treat all waters and wetlands that would be affected in any way by the permitted activity as if they are jurisdictional WOTUS. In other words, there is a presumption of jurisdiction for all aquatic resources on a site. In most cases, PJDs are sufficient to initiate wetlands/WOTUS impact permitting if future phases of the project would impact aquatic resources. Other state and federal permitting agencies that rely on USACE to verify wetland/WOTUS boundaries also typically accept PJDs. The advantage of PJDs is less regulatory scrutiny and more expedited response from USACE. It should be noted that PJDs may not satisfy all local and/or state permitting authority requirements and, although infrequent, the USACE may require AJDs on a case-by-case basis.
- **Approved Jurisdictional Determination (AJD) Request:** An AJD is needed if there are non-jurisdictional (isolated) aquatic resources on a site. An AJD may also be required if there are no aquatic resources on the site and the entire site is comprised of uplands. The level of effort to obtain an AJD requires additional documentation and regulatory agency scrutiny is typically greater. Additionally, the USACE will seek concurrence from the United States Environmental Protection Agency (EPA) for AJDs.

By definition, a PJD can only be used to determine that wetlands or other water bodies that exist on a particular site “may be” jurisdictional WOTUS. A PJD by definition cannot be used to determine either that there are no wetlands or other water bodies on a site at all (i.e., that there are no aquatic resources on the site and the entire site is comprised of uplands), or that there are no jurisdictional wetlands or other water bodies on a site, or that only a portion of the wetlands or waterbodies on a site are jurisdictional. A definitive, official determination that there are, or that there are not, jurisdictional WOTUS on a site can only be made by an AJD¹.

Please note that either a PJD or AJD can be used for potential USACE Clean Water Act permitting efforts. The distinction is that PJD carries a presumption of jurisdiction; therefore, all aquatic resources on a site would be jurisdictional and subject to the Clean Water Act. Additionally,

¹ USACE Regulatory Guidance Letter No. 08-02, dated June 26, 2008

although both PJDs and AJDs are acceptable for potential permitting, only the AJD option can be appealed.

Recommendations

Based on the findings of the WOTUSS Assessment described in the enclosed report, Terracon recommends submitting a copy of the WOTUSS Assessment report and applicable Jurisdictional Determination request form to the USACE District office for review and verification of the WOTUSS Assessment to obtain a Jurisdictional Determination and submitting a copy to TDEC for a Hydrologic Determination concurrence letter. The USACE will likely review this report under the conditions of the December 2, 2008 Rapanos Guidance.

If future activities would result in impacts to aquatic resources located on the site, 404/401 Clean Water Act (CWA) permitting will likely be required. Impacts to aquatic resources are processed as a Nationwide Permit (NWP) or an Individual Permit (IP) depending upon the extent of impacts. NWPs are typically used for projects resulting in less than 0.5 acre of impacts to WOTUS. IPs are typically used for projects resulting in more than 0.5 acre of impacts to WOTUS. Additionally, impacts to Waters of the State of Tennessee at the site are processed as a General ARAP (Aquatic Resources Alteration Permit) or an Individual ARAP also depending upon the extent of impacts. General ARAPs are typically used for projects resulting in less than 0.1 acre of impacts to wetlands representing moderate resource value, and up to 0.25 acre of impacts to wetlands that are degraded and of low resource value.

Terracon is available to assist you with 404/401 CWA and state waters permitting services at your request. We can also provide additional support studies such as mitigation planning, and cultural resource assessments if required by USACE or Tennessee Department of Environment and Conservation (TDEC).

Terracon appreciates the opportunity to provide services on this important project. Please feel free to contact either of the undersigned if you have any questions or require additional information.

Sincerely,
Terracon Consultants, Inc.



Tom Buchanan, QHP-IT
Senior Staff Scientist



Dallas E. Whitmill, P.E.
Senior Engineer / Environmental Department Manager

Enclosure: Waters of the US and State Assessment Report

Waters of the U.S. and State Assessment

Marie Street Property
123 Marie Street
Nashville, Davidson County, Tennessee
April 19, 2022



Terracon Project No. 18227105

Prepared for:
Wedgewood Avenue
Nashville, Tennessee

Prepared by:
Terracon Consultants, Inc.
Nashville, Tennessee

terracon.com

Terracon

Environmental



Facilities



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1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) was retained by Wedgewood Avenue (client) to perform a Waters of the U.S. and State (WOTUSS) Assessment on the approximately 3.11-acre site located north of Marie Street and east of Dickerson Pike in Nashville, Davidson County, Tennessee, hereafter referred to as the site. The site location is depicted on the USGS Nashville West, Tennessee 7.5-minute topographic map dated 2016. The preliminary WOTUSS Assessment was performed in accordance with Terracon Proposal No. 18227105 dated March 17, 2022 and the Supplement to Agreement for Services Change to Scope of Services and Fees dated March 29, 2022. Photographs depicting the conditions on-site are provided in Appendix C.

The purpose of performing the preliminary WOTUSS Assessment was to characterize the existing site conditions, observe the site for the presence of WOTUSS, including wetlands, and provide an opinion regarding whether or not WOTUSS (if observed) would be considered jurisdictional by the United States Army Corps of Engineers (USACE) and/or the Tennessee Department of Environment and Conservation (TDEC).

2.0 SCOPE OF SERVICES

Terracon performed the following scope of work in accordance with our proposal:

- Preliminary Data Gathering and Analysis of readily available government documentation.
- Mobilized to the site to conduct the Field Delineation using colored flagging to mark aquatic resource boundaries.
- Sub-meter Global Positioning Satellite (GPS) surveying of each delineation flag.
- Prepared a map showing approximate locations of delineated WOTUSS, including wetland areas observed during the Field Delineation, if any.
- Completed a WOTUSS Assessment Report that included site characterization information, a discussion of applicable data, and recommendations for the site.

3.0 PRELIMINARY DATA GATHERING AND ANALYSIS

Prior to visiting the site to conduct the field delineation, background research was conducted, consisting of locating and reviewing historic aerial photographs, historic topographic maps, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) maps, soil data from the Natural Resources Conservation Service (NRCS), Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), publicly available elevation data, and/or other related data based on availability. The preliminary data analysis assisted Terracon in identifying potential aquatic resources and jurisdictional features on the site. The data evaluated is described in the subsections below.

3.1 Topographic Maps and Aerial Photographs

Readily available USGS topographic maps and select aerial photographs (at approximately 10 to 15-year intervals) were reviewed to evaluate the potential presence of aquatic resources that may be considered WOTUS by USACE or State Waters by TDEC. The tables below contain a brief description of applicable features identified during review of the topographic maps and aerials photographs for the site and the surrounding area within 100 feet of the site.

Topographic Maps:

- Nashville, Tennessee Quadrangle, **1903** (30-Minute, 1:125,000)
- Greenbrier, Tennessee Quadrangle, **1903** (30-Minute, 1:125,000)
- Hermitage, Tennessee Quadrangle, **1932, 1979** (15-Minute, 1:62,500)
- Nashville East, Tennessee Quadrangle, **1952, 1968, 1983, 1997, 2013** (15-Minute, 1:62,500)
- Nashville West, Tennessee Quadrangles, **1952, 1968, 1983, 1997, 2013** (7.5-Minute, 1:24,000)

Table 1. Historical Topographic Map Review

Direction	Description
Site	No potential water resources depicted on the site (1903-2013)
North	No potential water resources depicted within 100 feet of the site (1903-2013)
East	No potential water resources depicted within 100 feet of the site (1903-2013)
South	No potential water resources depicted within 100 feet of the site (1903-2013)
West	No potential water resources depicted within 100 feet of the site (1903-2013)

Terracon reviewed the above-referenced topographic maps for the site and the area within 100 feet of the site. Based on the review, no potential water resources were depicted in the topographic maps from 1903 to 2013. The above-referenced USGS topographic maps are included in Appendix D. The USGS Nashville West, Tennessee 7.5-minute topographic map dated 2013 is also included as Exhibit 1 in Appendix A.

Aerial Photographs

- EDR, **1938, 1949, 1951, 1954, 1963, 1971, 1974, 1981, 1987, 1992, 1997, 2008, 2012,** and **2016**; Scale 1" = 500'
- Google Earth, **October 2021**; 1" = 200'

Table 2. Historical Aerial Photograph Review

Direction	Description
Site	One channel apparent in the south-southeastern portion of the site (1938-1954 and 1974)
North	No readily identifiable potential water resources are observed within 100 feet of the site (1938-2016)
East	No readily identifiable potential water resources are observed within 100 feet of the site (1938-2016)
South	No readily identifiable potential water resources are observed within 100 feet of the site (1938-2016)
West	No readily identifiable potential water resources are observed within 100 feet of the site (1938-2016)

Terracon reviewed the above-referenced aerial photographs for the site and the area within 100 feet of the site. Based on the review, the site appears to contain a linear watercourse on the south-southeastern portion in the 1938-1954 and 1974 historic aerials photographs. No readily identifiable potential water resources are observed within 100 feet of the site in the historic aerial photographs referenced above. The above-referenced aerial photographs are included in Appendix D. The April 2019 aerial photograph provided by Google Earth is included as Exhibit 2 in Appendix A.

3.2 National Wetlands Inventory

The USFWS NWI map was reviewed to identify wetland areas on the site and in the immediate vicinity. The NWI map depicts suspect wetland areas and waterbodies based on stereoscopic analysis of high-altitude aerial photographs. Table 3 contains a brief description of applicable features identified based on review of the NWI map for the site and the area within 100 feet of the site.

Table 3. National Wetlands Inventory Map Review

Direction	Description
Site	No features are mapped
North	No features are mapped within 100 feet
East	No features are mapped within 100 feet
South	No features are mapped within 100 feet
West	No features are mapped within 100 feet

Terracon reviewed the NWI map for the site and the areas within 100 feet of the site. Based on the review, no features are mapped on the site or within 100 feet of the site. The NWI map is included as Exhibit 3.

3.3 Soil Data

Data from the USDA NRCS Web Soil Survey was reviewed to identify soil types, including hydric soils for the site. Soils containing hydric soil components are documented on the National List of Hydric Soils. Inclusion on the National List of Hydric Soils indicates that the soil series or one of its components contain characteristics that may be hydric and is not an indication of hydric soil for a specific location.

Hydric soils listed on the NRCS National List of Hydric Soils must meet one or more of the following NRCS hydric criteria codes:

1. All Histels except Folistels and Histosols except Folistis; or
2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil;
3. Map unit components that are frequently ponded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil; or
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soils meet the definition of a hydric soil.

Table 4 is an excerpt from the NRCS Web Soil Survey.

Table 4. Excerpt from the NRCS Web Soil Survey

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
McB	Maurry-Urban land complex, 2 to 7 percent slopes	0	3.3	100.0%
Totals for Area of Interest			3.3	100.0%

The NRCS soil data does not depict hydric or partially hydric soils on the site. The USDA-NRCS soil survey map is included as Exhibit 4.

3.4 FEMA FIRM Map

Terracon downloaded and reviewed Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map Number 47037C0234H (effective April 5, 2017). According to the FIRM panel, the entire project site is located in Zone X which is outside of the FEMA

designated 100-year and 500-year floodplain zones. A FEMA Floodplain Map is included as Exhibit 5.

3.5 Elevation Data

Terracon reviewed the USGS *Nashville West, Tennessee* 7.5-minute quadrangle topographic map dated 2013 and determined the site to vary in elevation from approximately 470 to 490 feet above sea level with topography generally sloping towards the southeast. The above-referenced topographic map is included as Exhibit 1.

4.0 FIELD TECHNIQUES

Terracon personnel conducted a reconnaissance of the site on March 21 and April 1, 2022 to characterize the existing site conditions and identify the presence of potential jurisdictional wetlands and waters. Characteristics of potential jurisdictional wetlands and waters were assessed (when applicable) utilizing the criteria detailed in sections 4.1 and 4.2 of this report. The evaluation methods generally followed the routine on-site determination method referenced in the 1987 USACE Manual and the Eastern Mountains and Piedmont Region Version 2.0) (Regional Supplement).

4.1 Wetland Observations

Wetlands generally have three essential characteristics: wetland hydrology, hydrophytic vegetation, and hydric soils. Vegetation and hydrology observations were performed throughout the site where access was permitted, and soils were evaluated to determine if wetland characteristics were present. Data regarding the three essential characteristics was gathered within observed suspect wetland areas as applicable to further delineate boundaries.

4.1.1 Plant Community Assessment

Suspect areas were visually observed to determine the species, when possible, and absolute percentage of ground cover for five strata of plant community types within a thirty-foot radius of the observation location. The wetland indicator status for each species of vegetation observed was documented. The indicator status was determined using the USACE National Wetlands Plant List (2016 NWPL v3.3) and the status categories are described below.

- **Obligate Wetland (OBL):** occur almost always (estimated probability greater than 99%) under natural conditions in wetlands.
- **Facultative Wetland (FACW):** usually occur in wetlands (estimated probability 67%-99%) but occasionally found in non-wetlands.
- **Facultative (FAC):** equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- **Facultative Upland (FACU):** usually occur in non-wetlands (estimated probability 67%-99%) but occasionally found in wetlands.

- **Upland (UPL):** rarely occur in wetlands but occur almost always (estimated probability greater than 99%) under natural conditions in non-wetlands.

The percent cover of each stratum was determined, and dominance was evaluated. Dominant species were the most abundant species that accounted for more than 20 percent of the absolute percent coverage of the stratum. The number of dominant species with an indicator status of OBL, FACW, and/or FAC was compared to the total number of dominant species across all strata. Typically, when more than 50 percent of the dominant species had an indicator status of OBL, FACW, and/or FAC, hydrophytic vegetation was present.

If the percentage of dominant species with an indicator status of OBL, FACW, and/or FAC was less than 50 percent, prevalence index and morphological adaptations may have been evaluated to confirm if hydrophytic vegetation was present or absent.

4.1.2 Hydric Soils Assessment

After Terracon evaluated wetland vegetation, subsurface soil samples were collected. The samples were collected to a depth of approximately 20 inches below ground surface or to refusal and were visually compared to Munsell Soil Color Charts®, which aided in the evaluation of hydric soil characteristics. The soil samples were further examined for hydric soil indicators including, but not limited to, histosol, thick dark surface, sandy gleyed matrix, sandy redox, loamy gleyed matrix, redox dark surface, and/or redox depressions. If these or other hydric soil indicators were observed in the subsurface soil sample, the observation location was considered to have hydric soil.

4.1.3 Wetland Hydrology Assessment

Visual indicators of wetland hydrology were evaluated. Examples of primary wetland hydrology indicators include, but are not limited to, surface water, high water table, soil saturation, water marks, sediment deposits, drift deposits, iron deposits, inundation visible on aerial imagery, and water-stained leaves. Examples of secondary wetland hydrology indicators include, but are not limited to, surface soil cracks, drainage patterns, moss trim lines, and crayfish burrows. If at least one primary wetland hydrology indicator or two secondary wetland hydrology indicators were observed, the observation location was considered to have wetland hydrology.

4.2 Classification of Wetlands

Upon completion of the review of the three wetland criteria at each area, a wetland determination was made by a Terracon scientist. Under normal circumstances, if one or more of the wetland criteria were not identified, the area was not considered to be a wetland. If present, the wetland/upland boundaries were marked in the field using consecutively numbered flagging and each flag location was marked using submeter GPS technology. The Field Delineation included collection of hydrology, vegetation, and soil assessment data from discrete sample locations (Data Points) necessary to complete required USACE Wetland Determination Data Forms. The number of Data Points evaluated was determined based on professional judgement. The

recorded Wetland Determination Data Forms for the project site can be found in Appendix B and Data Point locations are depicted on the Preliminary Water Resources Map (Exhibit 6 in Appendix A).

4.3 Surface Water and Drainage Feature Observations

Terracon also made observations of site features that may be considered jurisdictional waterbodies. If a waterbody was identified, observations regarding its characteristics were recorded. Potential jurisdictional waterbodies are typically evaluated based on the observation of the following characteristics:

- **Flow Characteristics:**
 - Perennial: contains water at all times except during extreme drought.
 - Intermittent: carries water a considerable portion of the time but ceases to flow occasionally or seasonally.
 - Ephemeral: carries water only during and immediately after periods of rainfall or snowmelt.
- **Ordinary High-Water Mark (OHWM):** The limit line on the shore established by the fluctuation of the water surface. It is shown by such things as a clear line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, the presence of litter and debris or other features influenced by the surrounding area.
- **Bank Shape Descriptions:**
 - Undercut: banks that overhang the stream channel
 - Steep: bank slope of approximately greater than 30 degrees
 - Gradual: bank slope of approximately 30 degrees or less
- **Aquatic Habitat Descriptions:**
 - Pool: deeper portion of a stream where water flows slower than in neighboring, shallower portions, smooth surface, and finer substrate
 - Riffle: shallow area in a stream where water flows swiftly over gravel and rock or other coarse substrate resulting in a rough flow and a turbulent surface
 - Run: section of a stream with a low or high velocity and with little or no turbulence on the surface of the water.

During the Field Delineation, Terracon personnel marked the jurisdictional limits (OHWM) of aquatic resources using consecutively numbered flagging. Each flag location was marked using submeter GPS technology. Linear aquatic resources located entirely within abutting wetland systems were evaluated for stream parameters and the approximate locations of the linear features were estimated and displayed on the Depiction of Aquatic Resources Map (Exhibit 6 in Appendix A).

4.4 Depiction of Aquatic Resources

USACE requires a depiction of the Field Delineation results to serve as the basis for verification of aquatic resource locations. The Preliminary Water Resources Map (Exhibit 6) was created using data collected by a Trimble Geo7x at each flag location.

5.0 FIELD DELINEATION RESULTS

On March 21, 2022 and April 1, 2022, Terracon performed a Field Delineation on the site using the field techniques described in Section 4.0. USACE requires a depiction of the Field Delineation results to serve as the basis for verification of aquatic resource locations. The findings of the Field Delineation are illustrated on the Preliminary Water Resources Map (Exhibit 6). The Preliminary Water Resources Map was created using data collected by a Trimble Geo7x submeter GPS with Global Navigation Satellite System (GNSS) receiver at each flag location. Site photographs are included in Appendix C and provide an indication of the physical characteristics observed during the Field Delineation. Descriptions of the aquatic resource features observed on site are provided in the following sections.

5.1 Wetlands

Terracon did not observe wetlands on the site. Hydric soil, hydrophytic vegetation, and hydrology indicators were not observed within soil pits installed on the site, which is consistent with the mapped soils on the site.

5.2 Tributaries

Terracon observed two tributaries on the site totaling approximately 456 on-site linear feet. Table 6 contains a summary of the tributaries identified on site during the Field Delineation.

Table 6. Summary of Tributaries

Tributary	Length (LF)	Start Location	USACE Classification	WOTUS	TDEC Classification	State Water
STR1	108	36°11'50.76"N, 86°46'10.34"W	Perennial	Jurisdictional	Stream	Jurisdictional
WWC1	250	36°11'53.37"N, 86°46'13.65"W	Ephemeral	Jurisdictional	WWC*	Non-Jurisdictional

*WWC – Wet weather conveyance

STR1

STR1 hydrology originates from a seep located at approximately 36°11'50.77"N, 86°46'10.31"W and ends at approximately 36°11'50.14"N, 86°46'9.28"W. S1 was scored using the Primary Field Indicator Evaluation methodology (7. Presence of naturally occurring ground water table connection).

WWC1

WWC1 was as an ephemeral channel from 36°11'53.37"N, 86°46'13.65"W to 36°11'51.20"N, 86°46'10.80"W. WWC1 was scored using the Secondary Field Indicator Evaluation methodology (score of 12.75).

Please see the Hydrologic Determination Field Data Sheets provided in Appendix B for further details on the features listed in the table above.

5.3 Upland Areas

Terracon sampled and assessed areas that represented different vegetative communities throughout the project site to thoroughly review if these areas may exhibit the three wetland criteria (hydrophytic vegetation, hydric soils, and hydrology). Some of the sample locations were found to be classified as uplands based on the three wetland criteria not being met in the different vegetative communities. The portions of the site not identified as containing aquatic resources are considered uplands.

6.0 CONCLUSIONS

Terracon conducted a WOTUSS Assessment of the approximately 3.11- acre site on March 21 and April 1, 2022. Table 7 contains a summary of the aquatic resources Terracon identified during the Field Delineation and Terracon's opinion regarding the jurisdictional status of each aquatic resource. The aquatic resources identified during the assessment are illustrated on the Preliminary Water Resources Map included as Exhibit 6. Official authority to make a determination defining applicable jurisdictional limits of aquatic resources has been delegated to the USACE and TDEC. Jurisdictional Determinations are made by the USACE and Hydrologic Determinations by the TDEC, upon specific written request, on a case-by-case basis.

Table 7. Summary of Field Delineation

Aquatic Resource	Size	WOTUS	State Water
Tributaries	S1: 108 LF	Jurisdictional	Jurisdictional
	WWC2: 250 LF	Jurisdictional	Non-Jurisdictional

7.0 GENERAL COMMENTS

The preliminary WOTUSS assessment was performed in accordance with generally accepted practices of this profession undertaken in similar studies at the same time and in the same geographical area. A preliminary WOTUSS assessment, such as the one performed at this site, is of limited scope, is noninvasive, and cannot eliminate the potential that wetlands or WOTUSS are present at the site beyond what is identified by the limited scope of this preliminary assessment. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. No biological delineation can wholly eliminate uncertainty regarding the potential for concerns in connection with a project. The limitations of this preliminary assessment should be recognized.

Waters of the US and State Assessment

Marie Street Property ■ Nashville, Tennessee

April 19, 2022 ■ Terracon Project No. 18227105

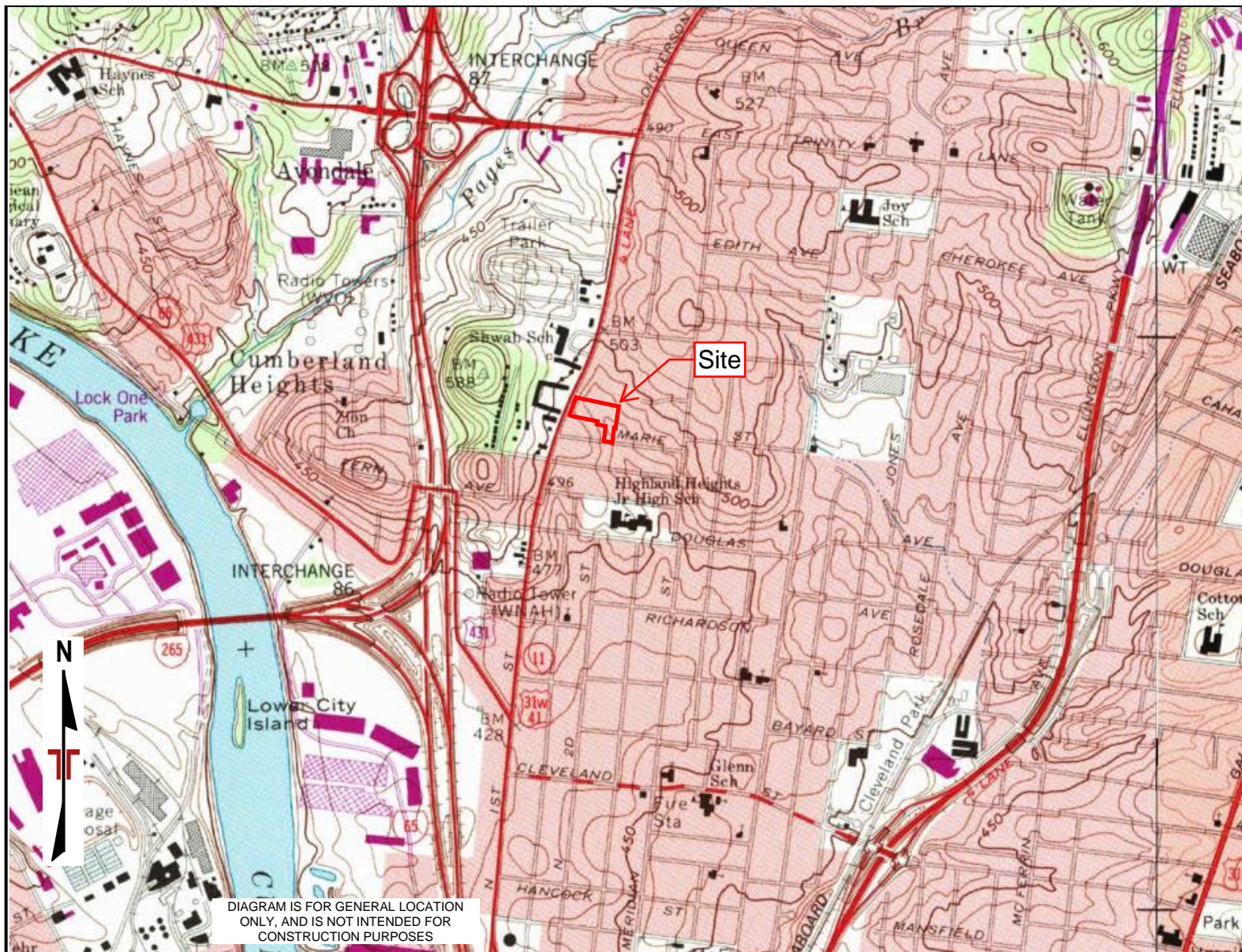


This report has been prepared in accordance with generally accepted scientific and engineering evaluation practices. This report is for the exclusive use of the client and any relying government entities for the project being discussed. No warranties, either expressed or implied, are intended or made.

Conditions within WOTUSS naturally change over time and can vary seasonally over short periods. Effects of man-made disturbances and/or temporal variations (e.g. rainfall, season, drought), and/or subjective regulatory interpretation of data and field conditions may preclude assessment in conformance with USACE and TDEC requirements and sometimes significantly affect findings, conclusions, and recommendations.

APPENDIX A

Exhibits



Project Manager:
TCB

Drawn by:
TCB

Checked by:
DEW

Approved by:
DEW

Project No.
18227105

Scale:
Not to Scale

File Name:
EX2

Date:
APR 12, 2022

Terracon
Consulting Engineers & Scientists

5217 Linbar Drive, Suite 309 Nashville, Tennessee 37211
PH. (615) 333-6444 FAX (615) 333-6443

Site Topographic Map

Marie Street Property
123 Marie Street
Nashville, Tennessee

Exhibit

1



Project Manager:	TCB	<div><div>Project No.</div><div>18227105</div><div>Scale:</div><div>Not to Scale</div><div>File Name:</div><div>EX2</div><div>Date:</div><div>APR 12, 2022</div></div> <div><div></div><div>Consulting Engineers & Scientists</div><div>5217 Linbar Drive, Suite 309 Nashville, Tennessee 37211</div><div>PH. (615) 333-6444 FAX (615) 333-6443</div></div>	Preliminary Site Map	Exhibit 2
Drawn by:	TCB		Marie Street Property	
Checked by:	DEW		123 Marie Street	
Approved by:	DEW		Nashville, Tennessee	



DIAGRAM IS FOR GENERAL LOCATION
ONLY, AND IS NOT INTENDED FOR
CONSTRUCTION PURPOSES

April 13, 2022

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

Project Manager:
TCB
Drawn by:
TCB
Checked by:
DEW
Approved by:
DEW

Project No.
18227105
Scale:
Not to Scale
File Name:
EX2
Date:
APR 12, 2022

Terracon
Consulting Engineers & Scientists

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Site NWI Map

Marie Street Property
123 Marie Street
Nashville, Tennessee

Exhibit

3

Hydric Rating by Map Unit—Davidson County, Tennessee



Project Manager:
TCB

Drawn by:
TCB

Checked by:
DEW

Approved by:
DEW

Project No.
18227105

Scale:
Not to Scale

File Name:
EX2

Date:
APR 12, 2022

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PH. (615) 333-6444 FAX (615) 333-6443

Site USDA Hydric Rating Map

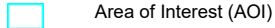
Marie Street Property
123 Marie Street
Nashville, Tennessee

Exhibit

4

MAP LEGEND

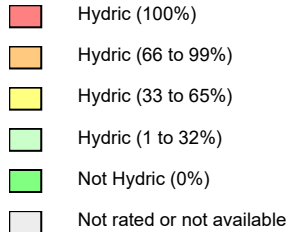
Area of Interest (AOI)



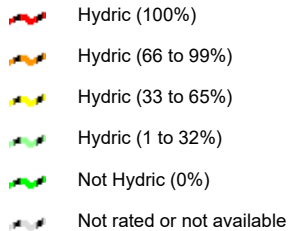
Area of Interest (AOI)

Soils

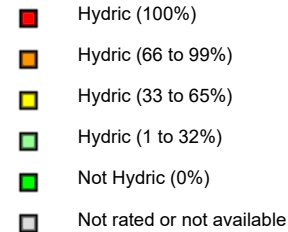
Soil Rating Polygons



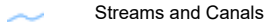
Soil Rating Lines



Soil Rating Points

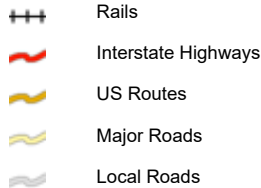


Water Features

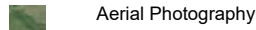


Streams and Canals

Transportation



Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Davidson County, Tennessee
Survey Area Data: Version 19, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 31, 2019—Nov 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
McB	Maury-Urban land complex, 2 to 7 percent slopes	0	3.3	100.0%
Totals for Area of Interest			3.3	100.0%

National Flood Hazard Layer FIRMette

86°46'28"W 36°12'4"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000
Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes, Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/14/2022 at 2:53 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Project Manager: TCB		Project No. 18227105		<div><p>Consulting Engineers & Scientists</p><p>5217 Linbar Drive, Suite 309 Nashville, Tennessee 37211</p><p>PH. (615) 333-6444 FAX (615) 333-6443</p></div>	Site FEMA Map		Exhibit	
Drawn by: TCB		Scale: Not to Scale			Marie Street Property		5	
Checked by: DEW		File Name: EX2			123 Marie Street			
Approved by: DEW		Date: APR 12, 2022			Nashville, Tennessee			

APPENDIX B

Wetland Determination Data Forms and Stream Determination Forms

**Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody:		Date/Time: 3/21/2022
Assessors/Affiliation: Tom Buchanan, Terracon Consultants, Inc.		Project ID :
Site Name/Description: 123 Marie Street		
Site Location: 123 Marie Street, Nashville, Tennessee 37207		
HUC (12 digit): 051302020305 (Cumberland River - Browns Creek)	Latitude: 36°11'50.68"N	
Previous Rainfall (7-days) : 0.49" (CoCoRaHS: Berry Hill 1.6 WNW)	Longitude: 86°46'10.49"W	
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data :		
Watershed Size : 0.08 sq mi (USGS StreamStats)	County: Davidson	
Soil Type(s) / Geology : Soil: Maury-Urban land complex; Geology: Bigby-cannon Limestone and Hermitage Formation	Source: USDA/NRCS & Geologic Map of TN 1966, William D Hardeman, State Geologist	
Surrounding Land Use : Residential		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Severe		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input checked="" type="checkbox"/>	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream
6. Presence of fish (except <i>Gambusia</i>)	<input checked="" type="checkbox"/>	Stream
7. Presence of naturally occurring ground water table connection	<input type="checkbox"/>	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = STREAM**Secondary Indicator Score (if applicable) = 0.00****Justification / Notes :**

See notes on Secondary Score sheet

Secondary Field Indicator Evaluation

STR-1

A. Geomorphology (Subtotal = 0.00)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	0
2. Sinuous channel	0	1	2	3	0
3. In-channel structure: riffle-pool sequences	0	1	2	3	0
4. Sorting of soil textures or other substrate	0	1	2	3	0
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0
12. Natural valley or drainageway	0	0.5	1	1.5	0
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 0.00)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	0
16. Leaf litter in channel	1.5	1	0.5	0	0
17. Sediment on plants or on debris	0	0.5	1	1.5	0
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 0.00)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	0
21. Rooted plants in the thalweg ¹	3	2	1	0	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 0.00

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrology originates from seep located at 36°11'50.77"N, 86°46'10.31"W and flows southeast. Feature channelized with brick and concrete. Watercourse observed dry up-gradient of the seep. Heavy sedimentation on substrate. Six salamanders and three crayfish observed in the reach. With intensive searching, two scuds found within the reach.



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody:		Date/Time:
Assessors/Affiliation:		Project ID :
Site Name/Description:		
Site Location:		
HUC (12 digit):	Latitude:	
Previous Rainfall (7-days) :	Longitude:	
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :		
Watershed Size :	County:	
Soil Type(s) / Geology :	Source:	
Surrounding Land Use :		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) :		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except <i>Gambusia</i>)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precip >0.1 " in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in
TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination =

Secondary Indicator Score (if applicable) =

Justification / Notes :

Secondary Field Indicator Evaluation

WWC-1

A. Geomorphology (Subtotal =	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	
2. Sinuous channel	0	1	2	3	
3. In-channel structure: riffle-pool sequences	0	1	2	3	
4. Sorting of soil textures or other substrate	0	1	2	3	
5. Active/relic floodplain	0	0.5	1	1.5	
6. Depositional bars or benches	0	1	2	3	
7. Braided channel	0	1	2	3	
8. Recent alluvial deposits	0	0.5	1	1.5	
9. Natural levees	0	1	2	3	
10. Headcuts	0	1	2	3	
11. Grade controls	0	0.5	1	1.5	
12. Natural valley or drainageway	0	0.5	1	1.5	
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	

B. Hydrology (Subtotal =	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	
15. Water in channel and >48 hours since sig. rain	0	1	2	3	
16. Leaf litter in channel	1.5	1	0.5	0	
17. Sediment on plants or on debris	0	0.5	1	1.5	
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		

C. Biology (Subtotal =	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	
21. Rooted plants in the thalweg ¹	3	2	1	0	
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	
23. Bivalves/mussels	0	1	2	3	
24. Amphibians	0	0.5	1	1.5	
25. Macroinvertebrates (record type & abundance)	0	1	2	3	
26. Filamentous algae; periphyton	0	1	2	3	
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	
28. Wetland plants in channel bed ²	0	0.5	1	1.5	

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = _____

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

APPENDIX C

Site Photographs

Waters of the US and State Assessment

Marie Street Property ■ Nashville, Tennessee

Photos Taken: March 21 & April 1, 2022 ■ Terracon Project 18227105

Terracon



Photo #1 View of STR-1 facing up gradient.



Photo #2 View of STR-1 facing up gradient.



Photo #3 View of STR-1 historic bank alterations.



Photo #4 View of seep area at start of STR-1.



Photo #5 View of WWC-1 start.

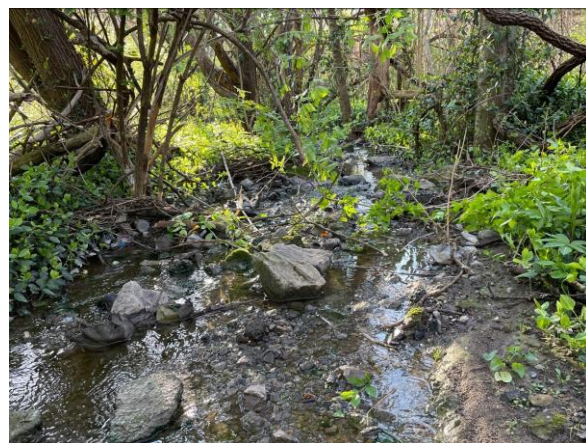


Photo #6 View of WWC-1 facing down gradient.

Waters of the US and State Assessment

Marie Street Property ■ Nashville, Tennessee

Photos Taken: March 21 & April 1, 2022 ■ Terracon Project 18227105

Terracon



Photo #7 View of WWC-1 facing up gradient.

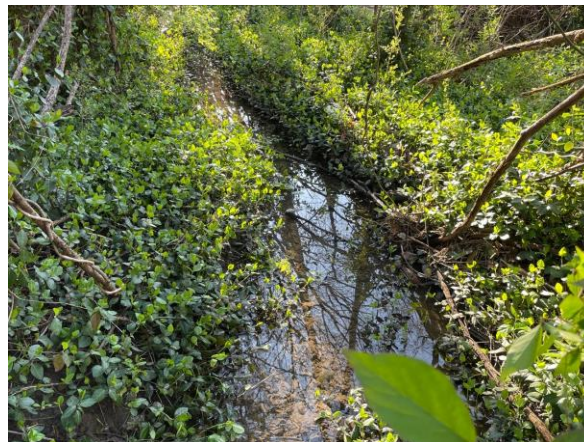


Photo #8 View of WWC-1 facing up gradient.



Photo #9 View of WWC-1 facing down gradient.



Photo #10 View of WWC-1 facing down gradient.



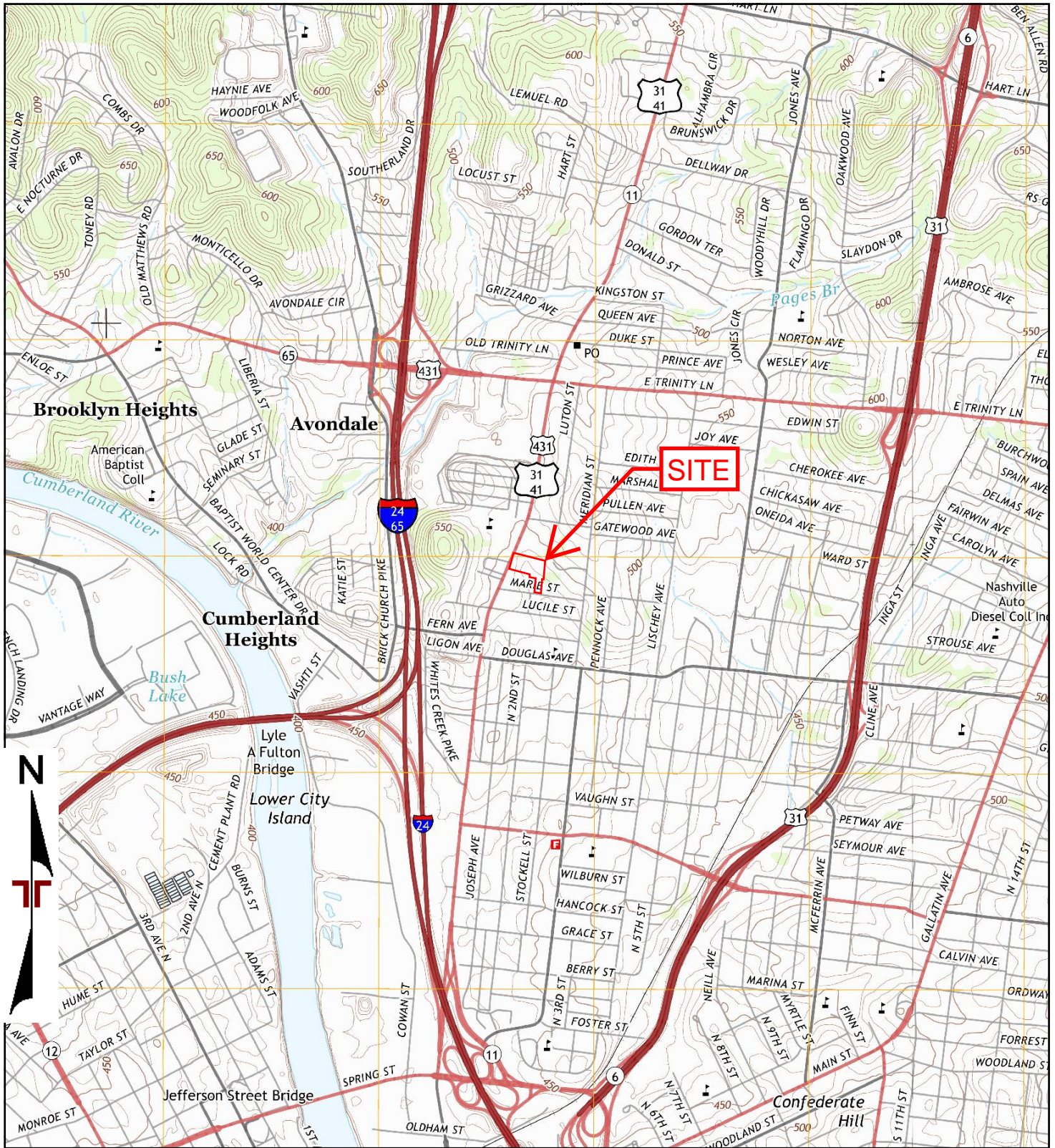
Photo #11 View of WWC-1 facing up gradient.



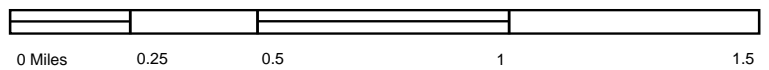
Photo #12 View of WWC-1 end facing down gradient.

APPENDIX D

Historical Documentation



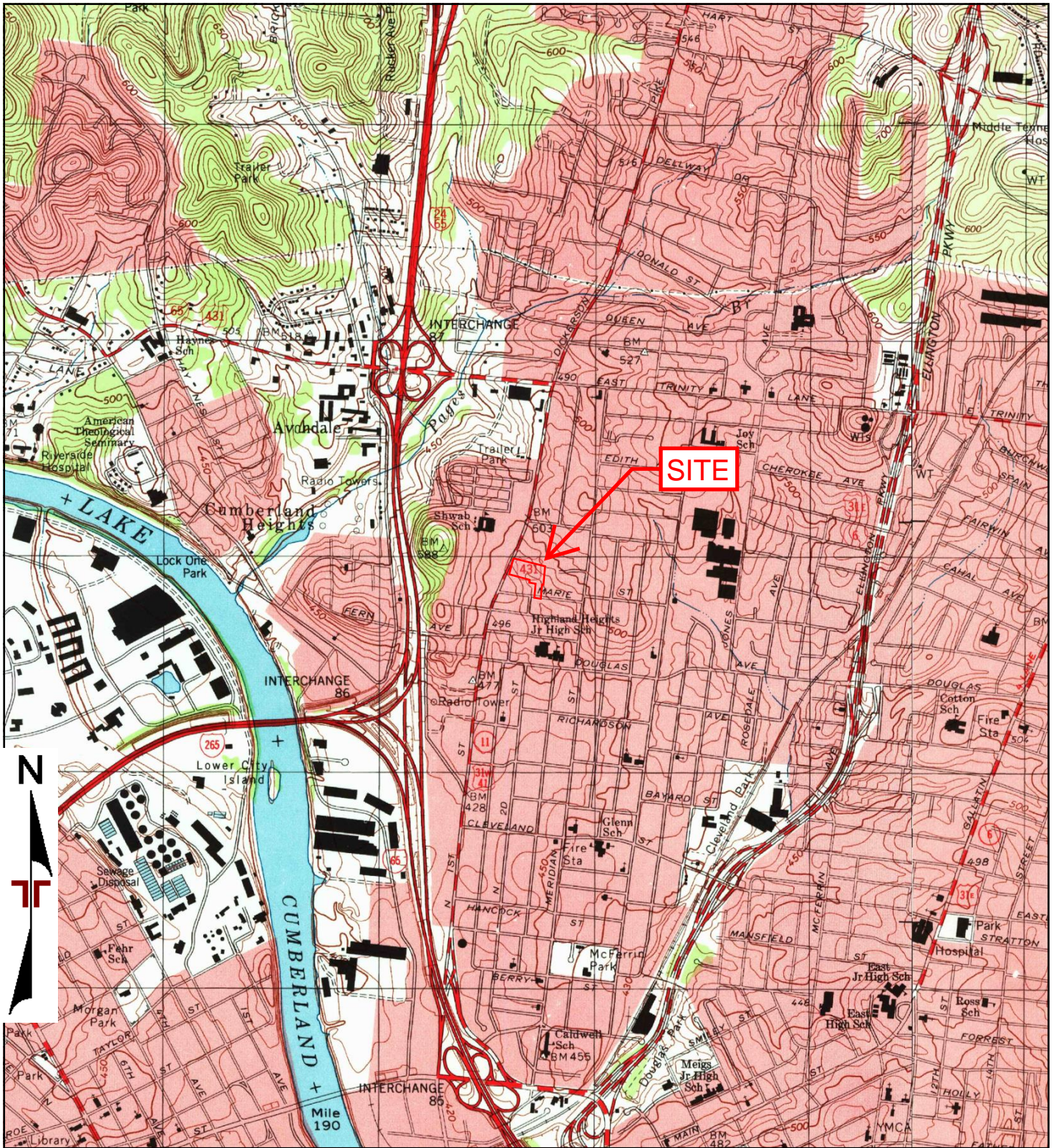
TP, Nashville West, 2013, 7.5-minute
E, Nashville East, 2013, 7.5-minute



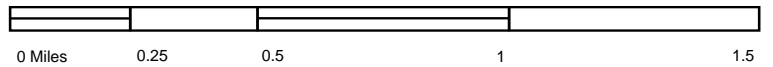
Project Manager:	Project No.
Drawn by:	Scale:
Checked by:	File Name:
Approved by:	Date:
	2013

Terracon

2013 TOPOGRAPHIC MAP



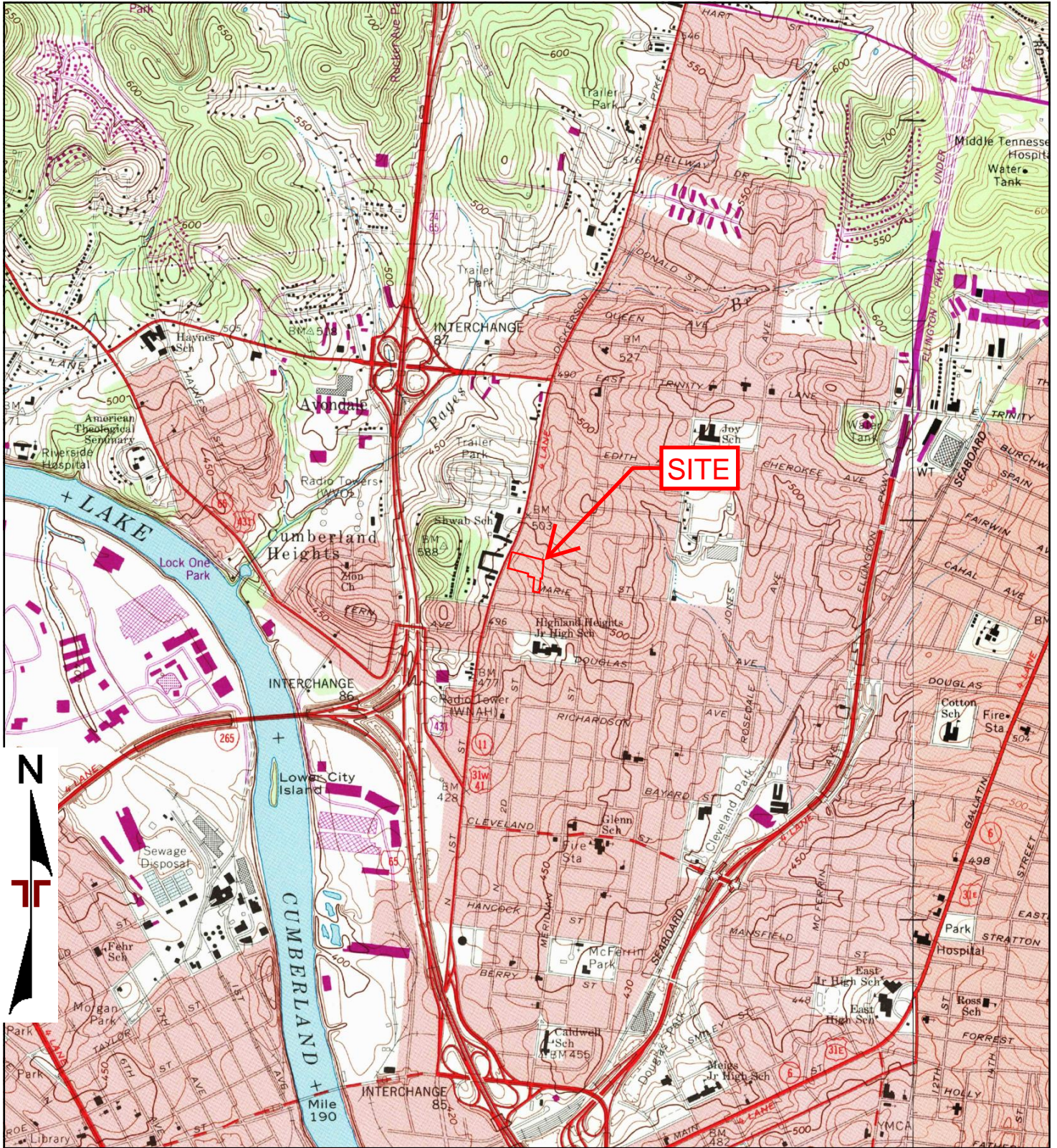
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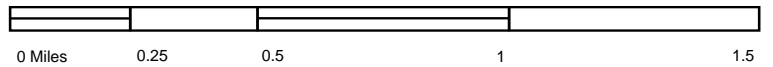
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Drawn by:	Scale:
Checked by:	File Name:
Approved by:	Date:
	1997

Terracon

1997 TOPOGRAPHIC MAP



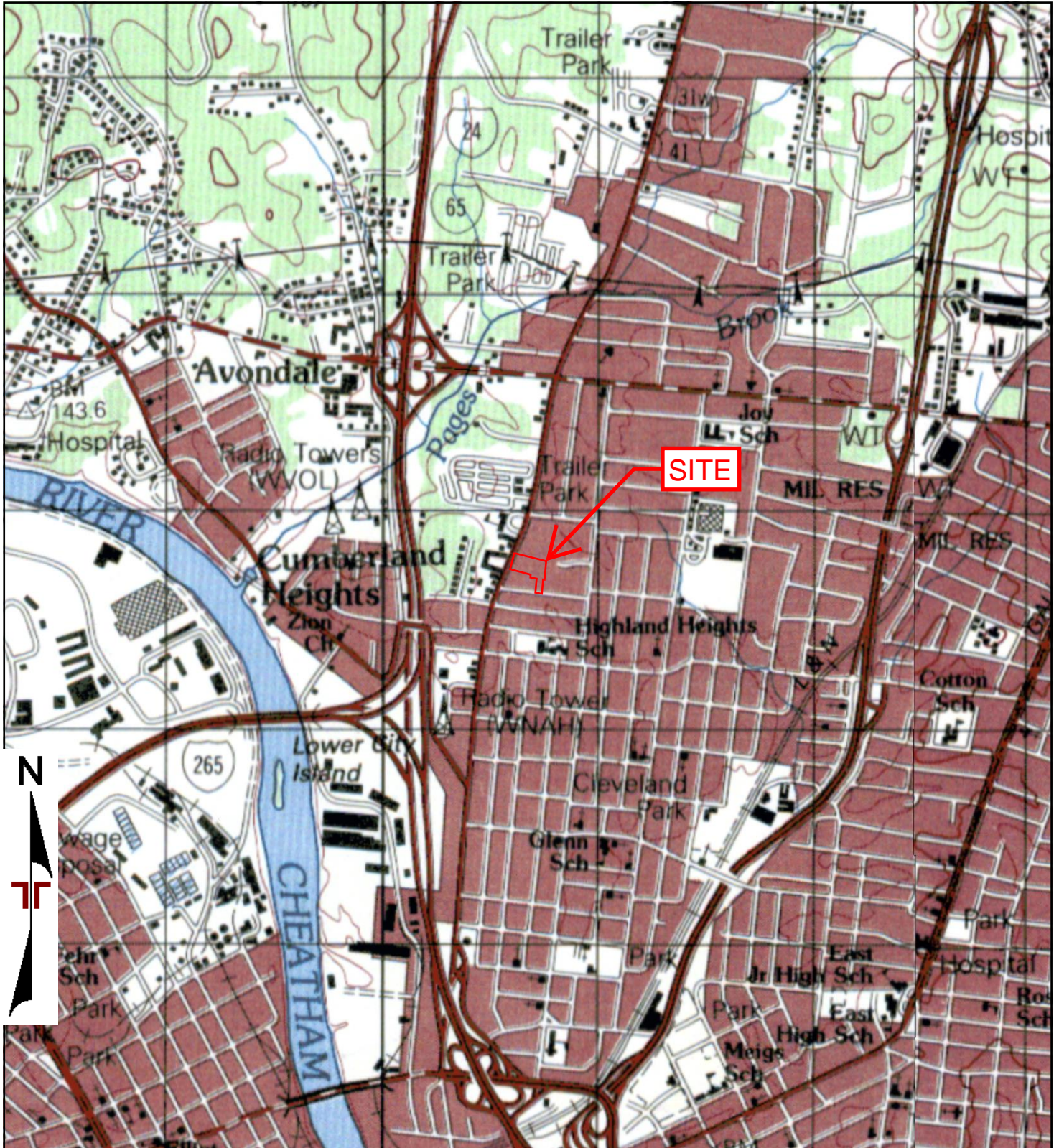
TP, Nashville West, 1983, 7.5-minute
E, Nashville East, 1983, 7.5-minute



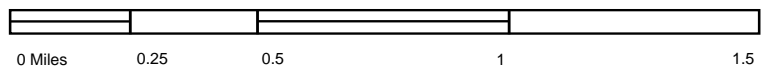
Project Manager:	Project No.
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Approved by:	Date:
	1983

Terracon

1983 TOPOGRAPHIC MAP



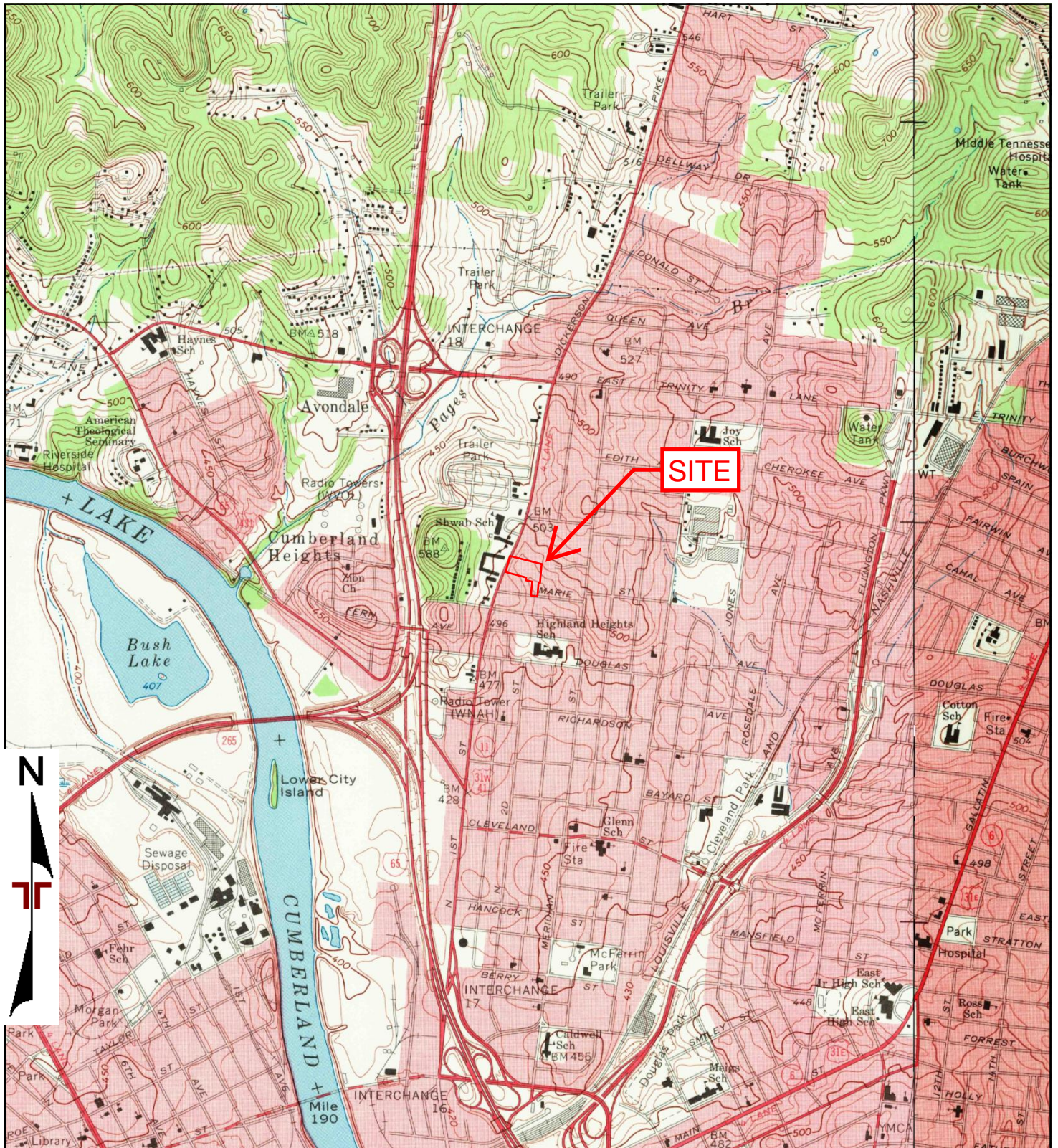
TP, NASHVILLE, 1980, 15-minute
SE, HERMITAGE, 1979, 15-minute



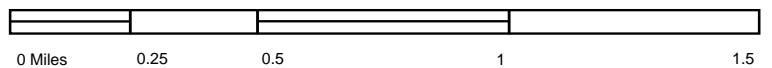
Project Manager:	Project No.
Drawn by:	Scale:
Checked by:	File Name:
Approved by:	Date: 1979, 1980

Terracon

1979, 1980 TOPOGRAPHIC MAP



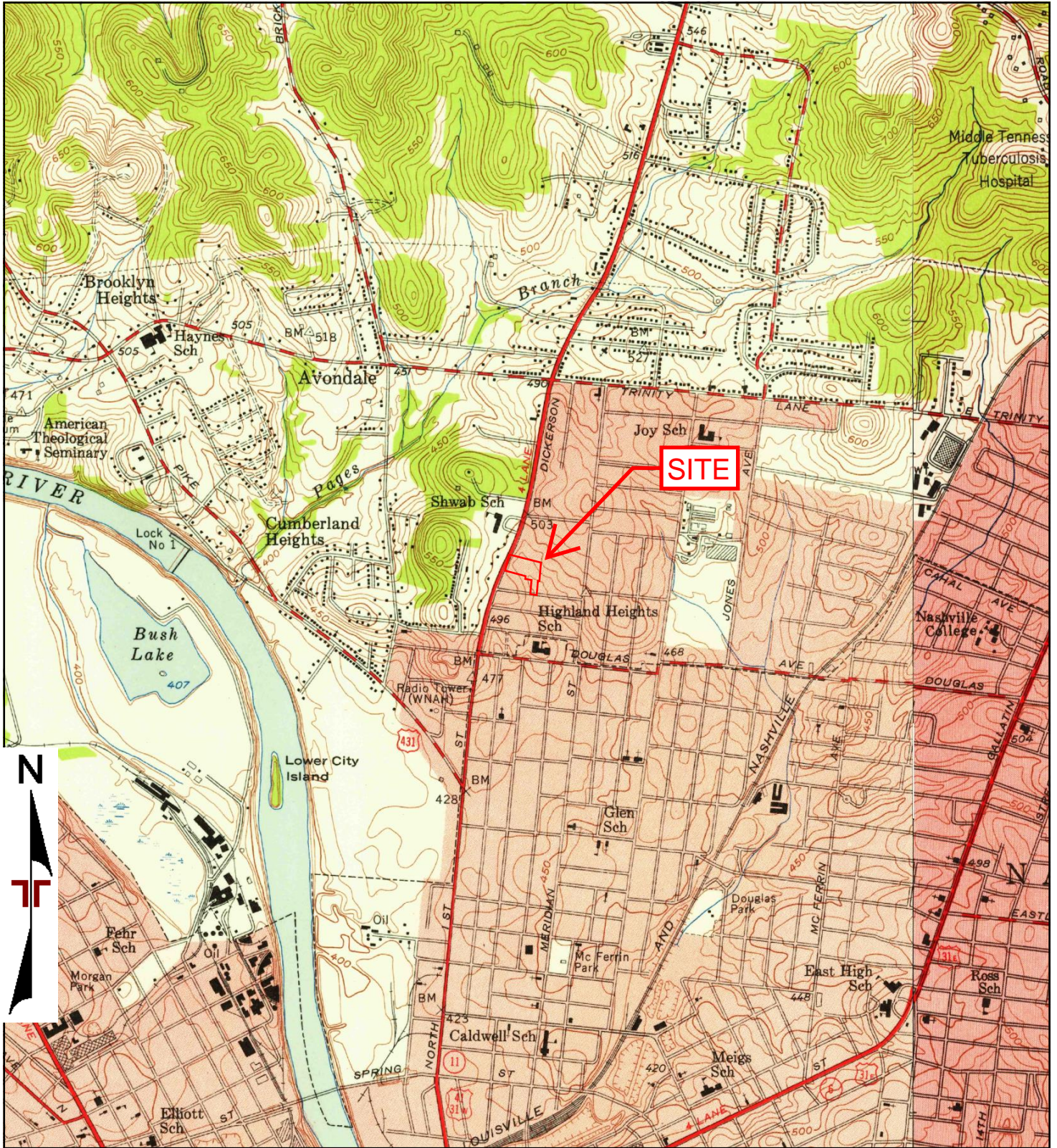
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E, Nashville East, 1968, 7.5-minute



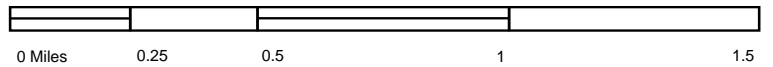
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Checked by:	File Name:
Approved by:	Date: 1968

Terracon

1968 TOPOGRAPHIC MAP



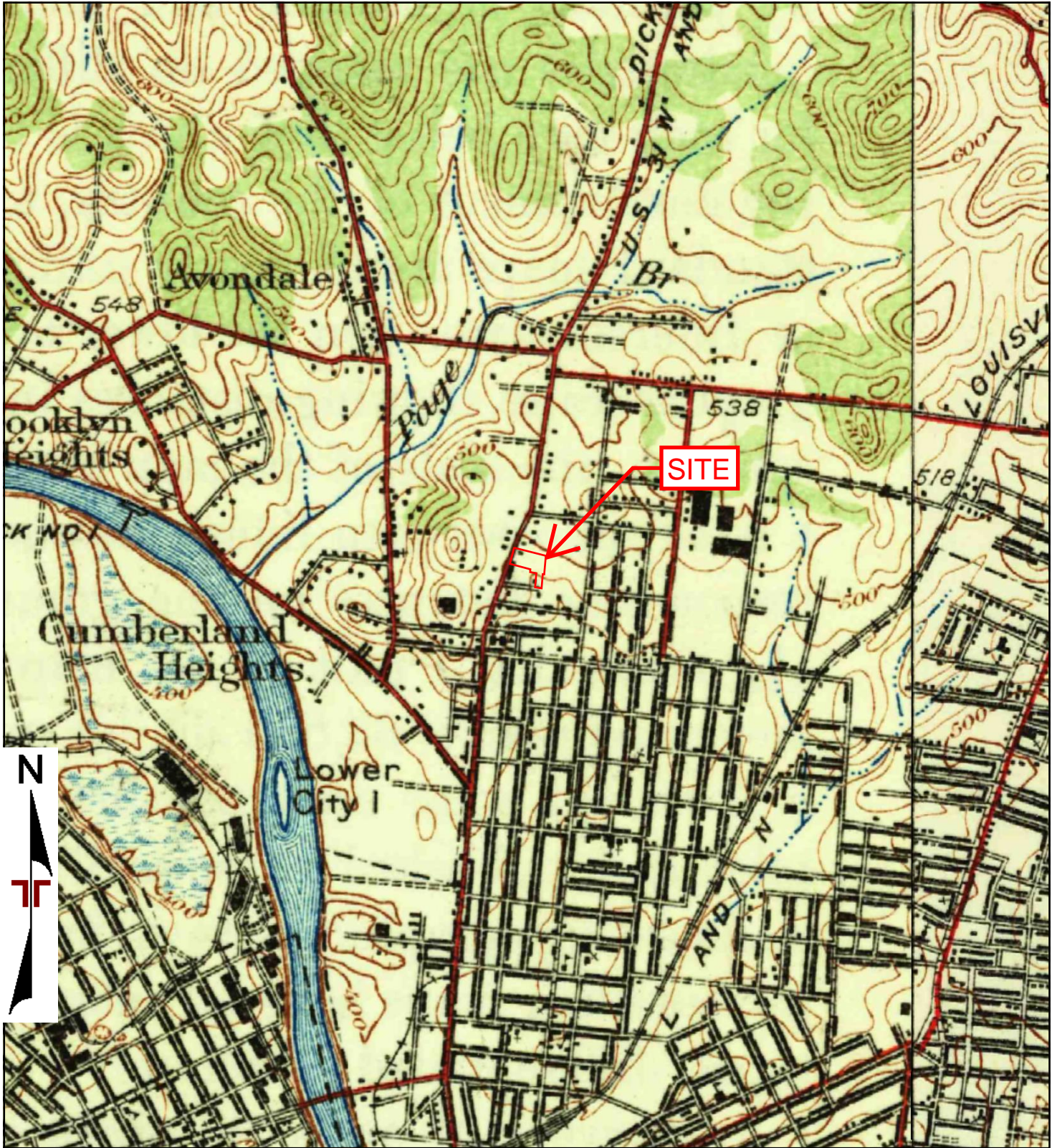
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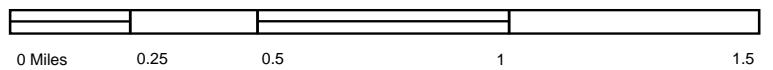
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Approved by:	Date: 1952

Terracon

1952 TOPOGRAPHIC MAP



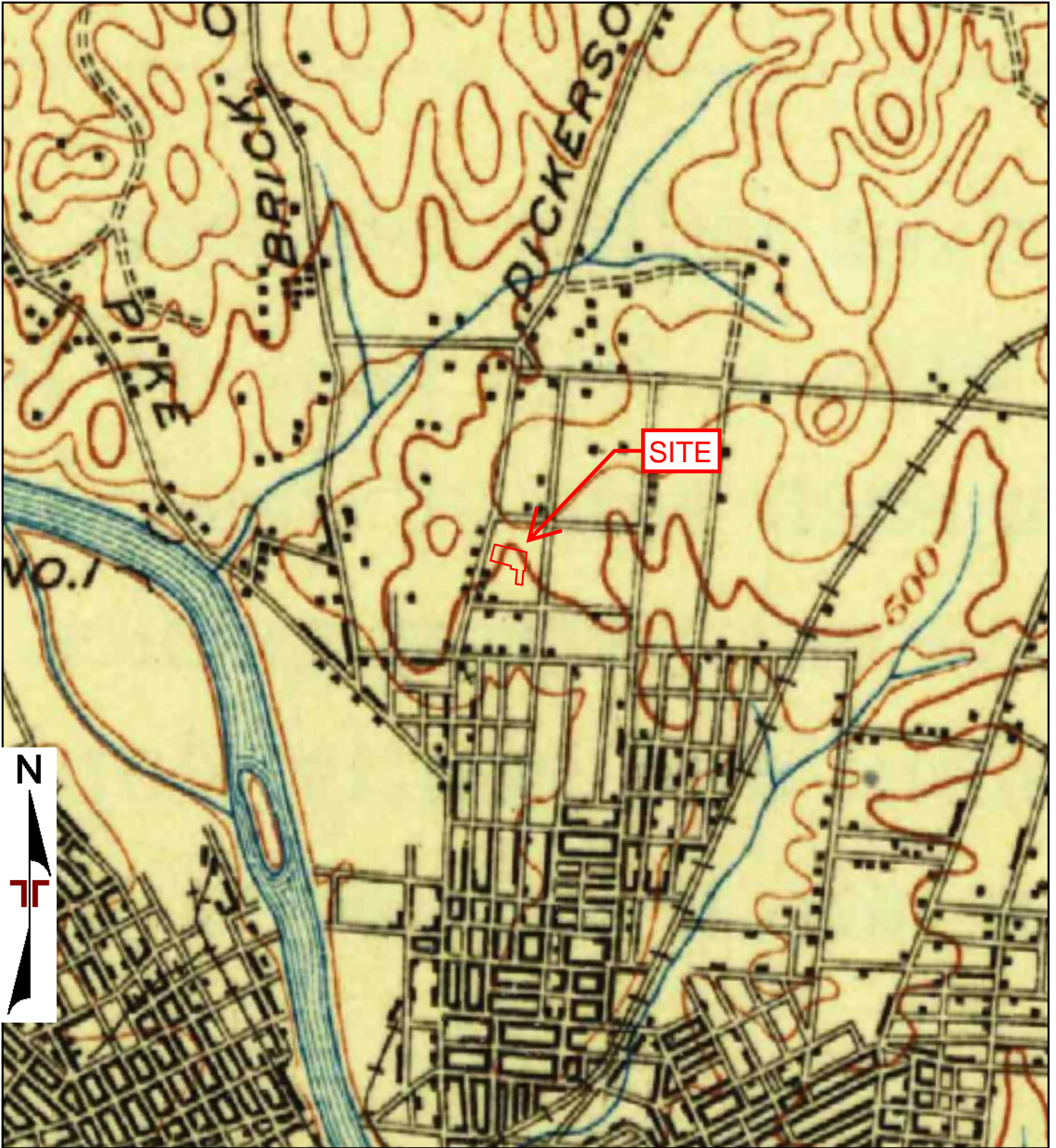
TP, Nashville, 1932, 15-minute
SE, Hermitage, 1932, 15-minute



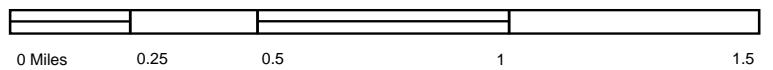
Project Manager:	Project No.
Drawn by:	Scale:
Checked by:	File Name:
Approved by:	Date:
	1932

Terracon

1932 TOPOGRAPHIC MAP



TP, Nashville, 1903, 30-minute
TP, Greenbrier, 1903, 30-minute



Project Manager:	Project No.
Drawn by:	Scale:
Checked by:	File Name:
Approved by:	Date: 1903

Terracon

1903 TOPOGRAPHIC MAP

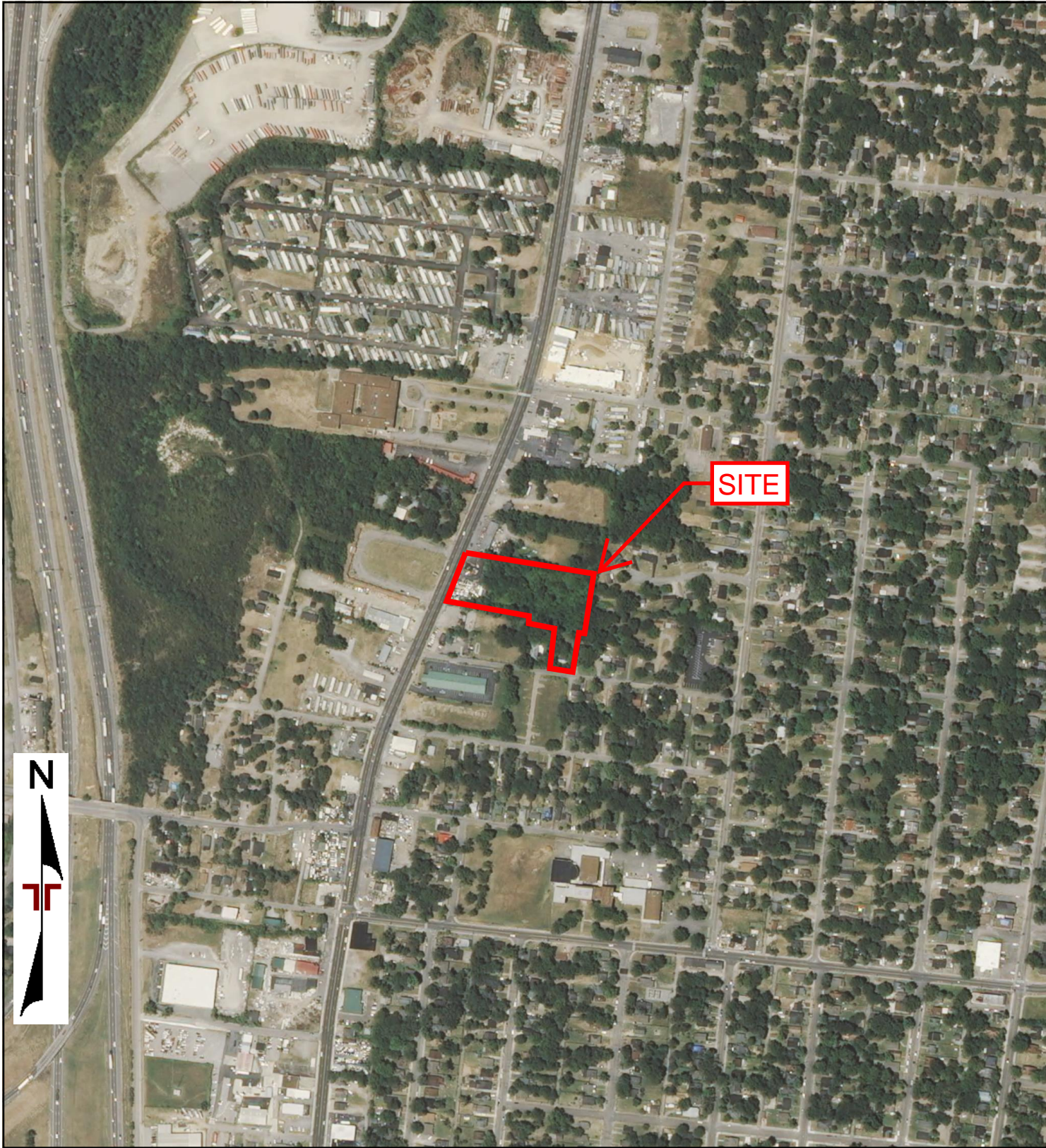


0 Feet 500 1000 2000

Project Manager:	Project No:
Drawn By:	Scale:
Checked By:	File Name:
Approved By:	Date: 2016



2016 AERIAL PHOTOGRAPH	



0 Feet

500

1000

2000

Project Manager:

Project No:

Drawn By:

Scale:

Checked By:

File Name:

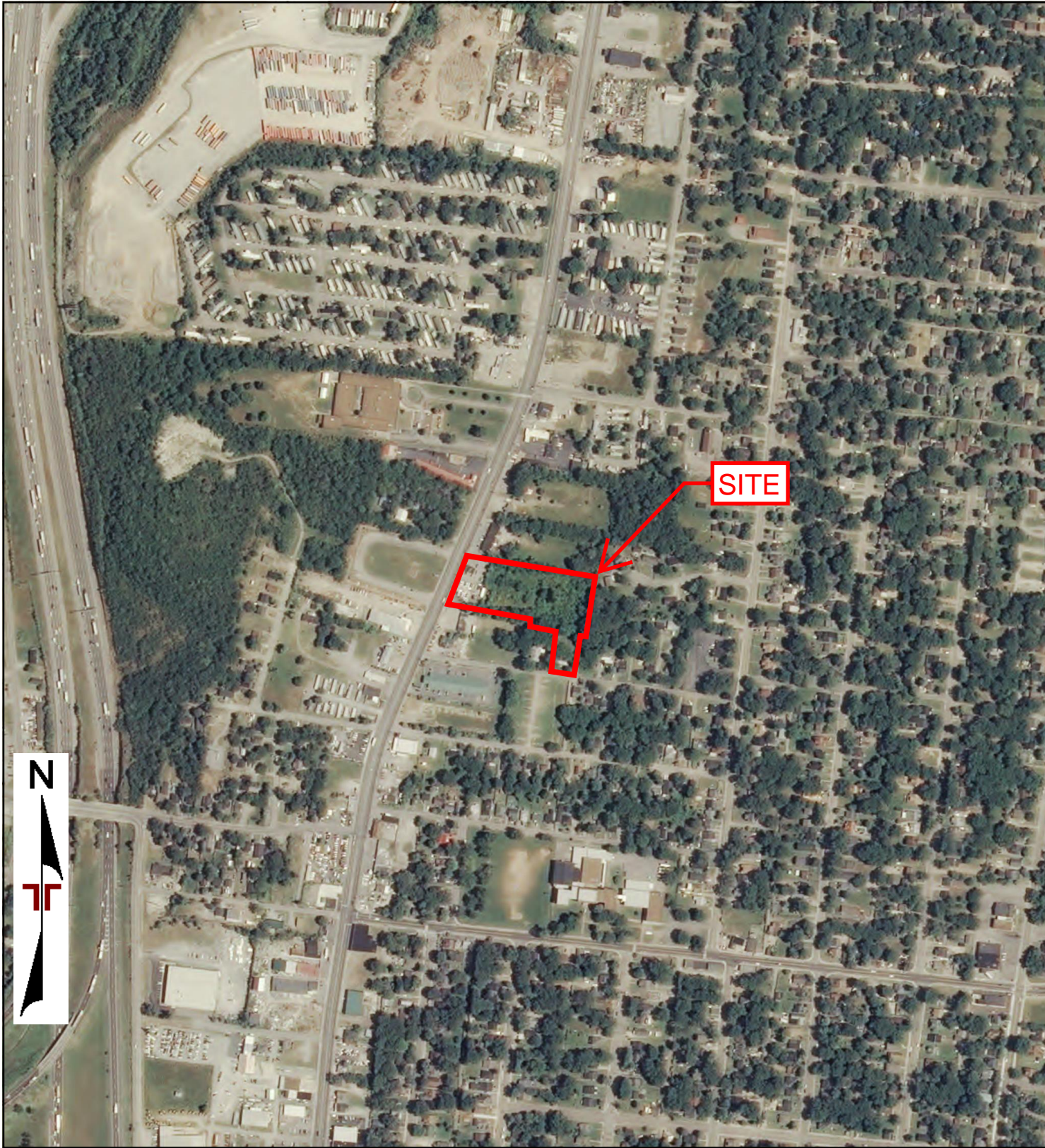
Approved By:

Date:

2012

Terracon

2012 AERIAL PHOTOGRAPH



0 Feet 500 1000 2000

Project Manager:	Project No:
Drawn By:	Scale:
Checked By:	File Name:
Approved By:	Date: 2008



2008 AERIAL PHOTOGRAPH	



0 Feet

500

1000

2000

Project Manager:	Project No:
Drawn By:	Scale:
Checked By:	File Name:
Approved By:	Date:
	1997

Terracon

1997 AERIAL PHOTOGRAPH



0 Feet 500 1000 2000

Project Manager:	Project No:		1992 AERIAL PHOTOGRAPH	
Drawn By:	Scale:			
Checked By:	File Name:			
Approved By:	Date: 1992			



0 Feet 500 1000 2000

Project Manager:

Project No:

Drawn By:

Scale:

Checked By:

File Name:

Approved By:

Date:

1987

Terracon

1987 AERIAL PHOTOGRAPH



0 Feet

500

1000

2000

Project Manager:	Project No:		1981 AERIAL PHOTOGRAPH	
Drawn By:	Scale:			
Checked By:	File Name:			
Approved By:	Date:			
	1981			




0 Feet

500

1000

2000

Project Manager:	Project No:		1974 AERIAL PHOTOGRAPH	
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	1974			



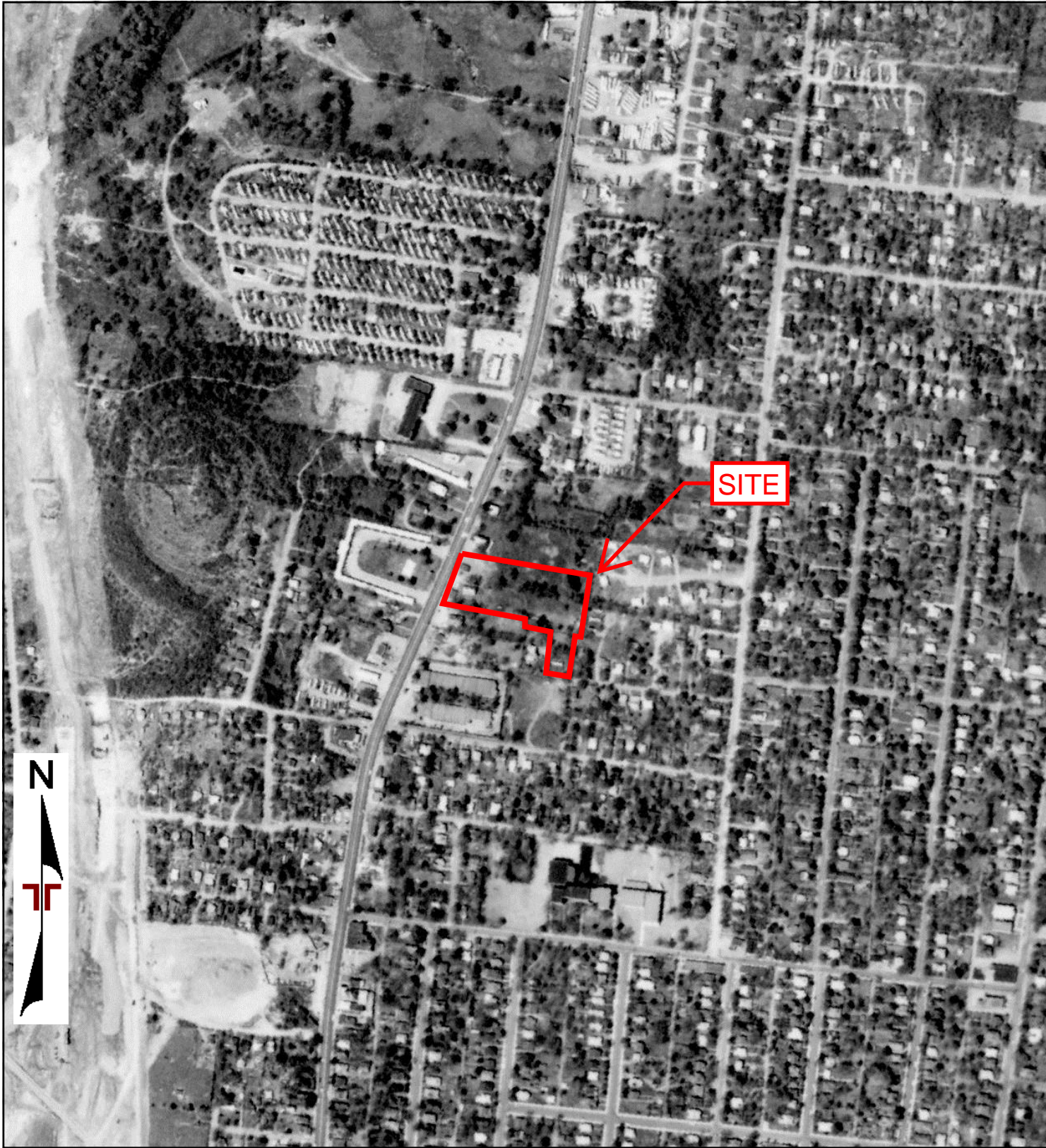
0 Feet

500

1000

2000

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Approved By:	Date:			
	1971			



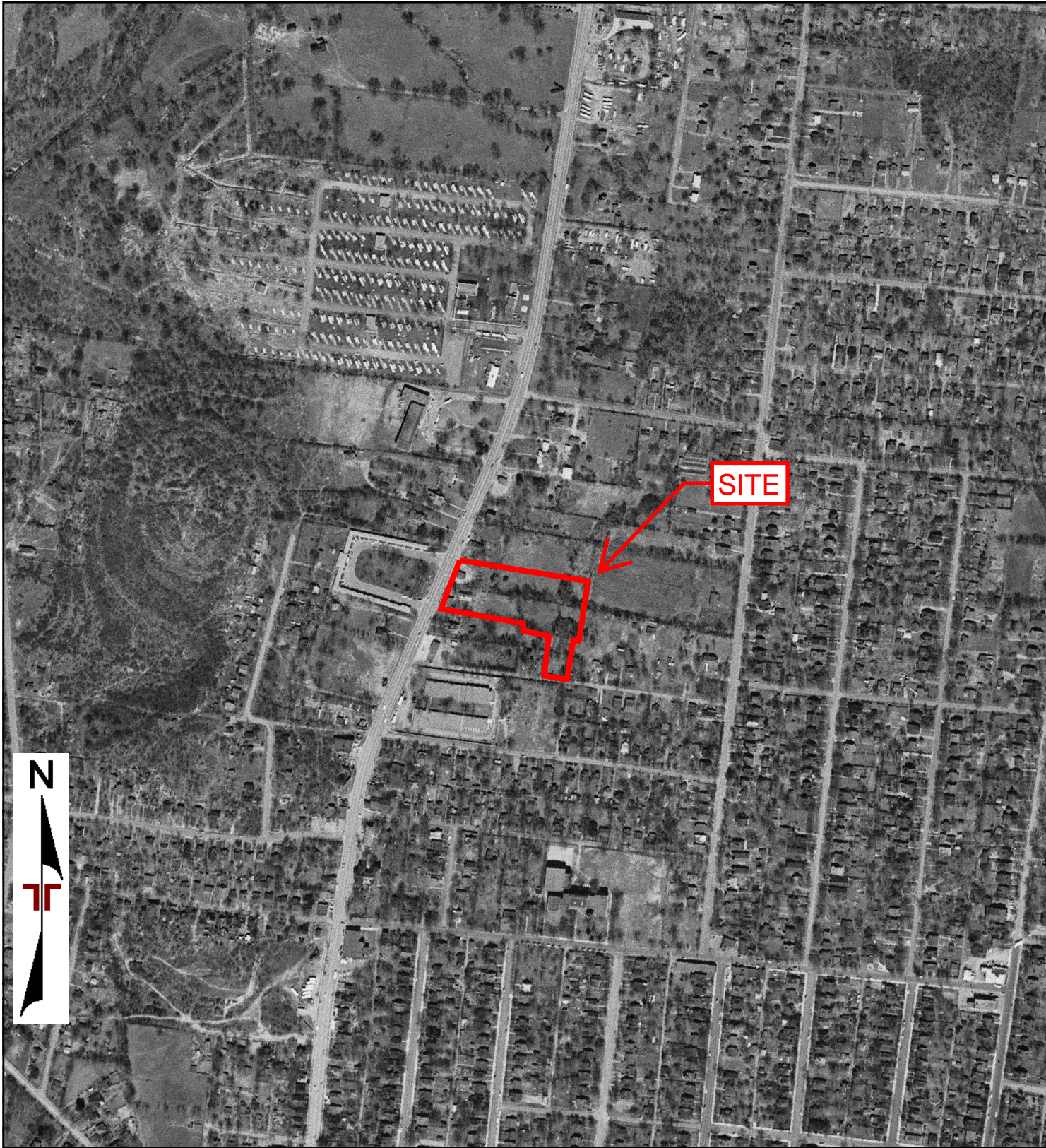
0 Feet

500

1000

2000

Project Manager:	Project No:		1963 AERIAL PHOTOGRAPH	
Drawn By:	Scale:			
Checked By:	File Name:			
Approved By:	Date:			
	1963			



0 Feet

500

1000

2000

Project Manager:

Project No:

Drawn By:

Scale:

Checked By:

File Name:

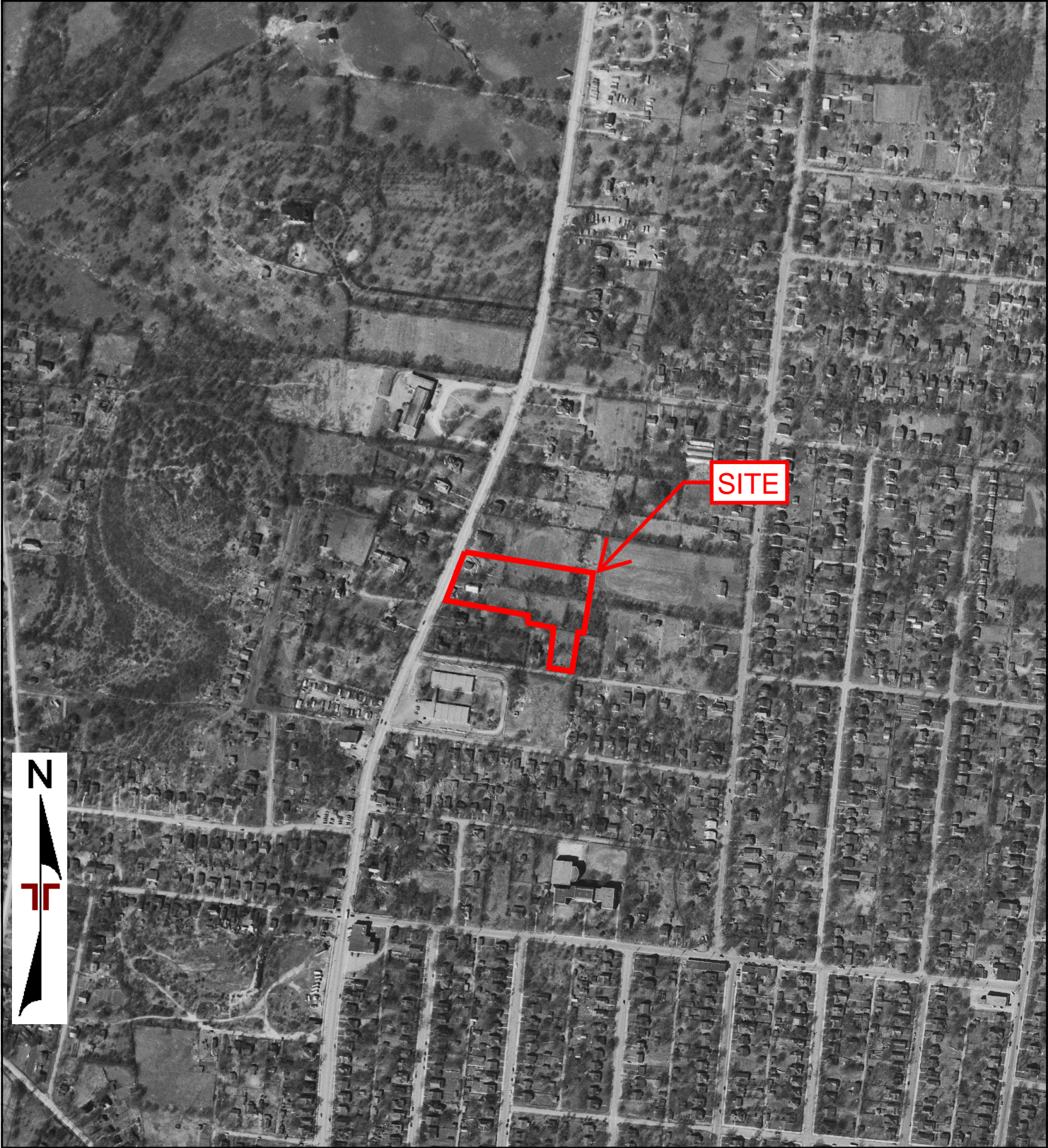
Approved By:

Date:

1954

Terracon

1954 AERIAL PHOTOGRAPH



0 Feet

500

1000

2000

Project Manager:

Project No:

Drawn By:

Scale:

Checked By:

File Name:

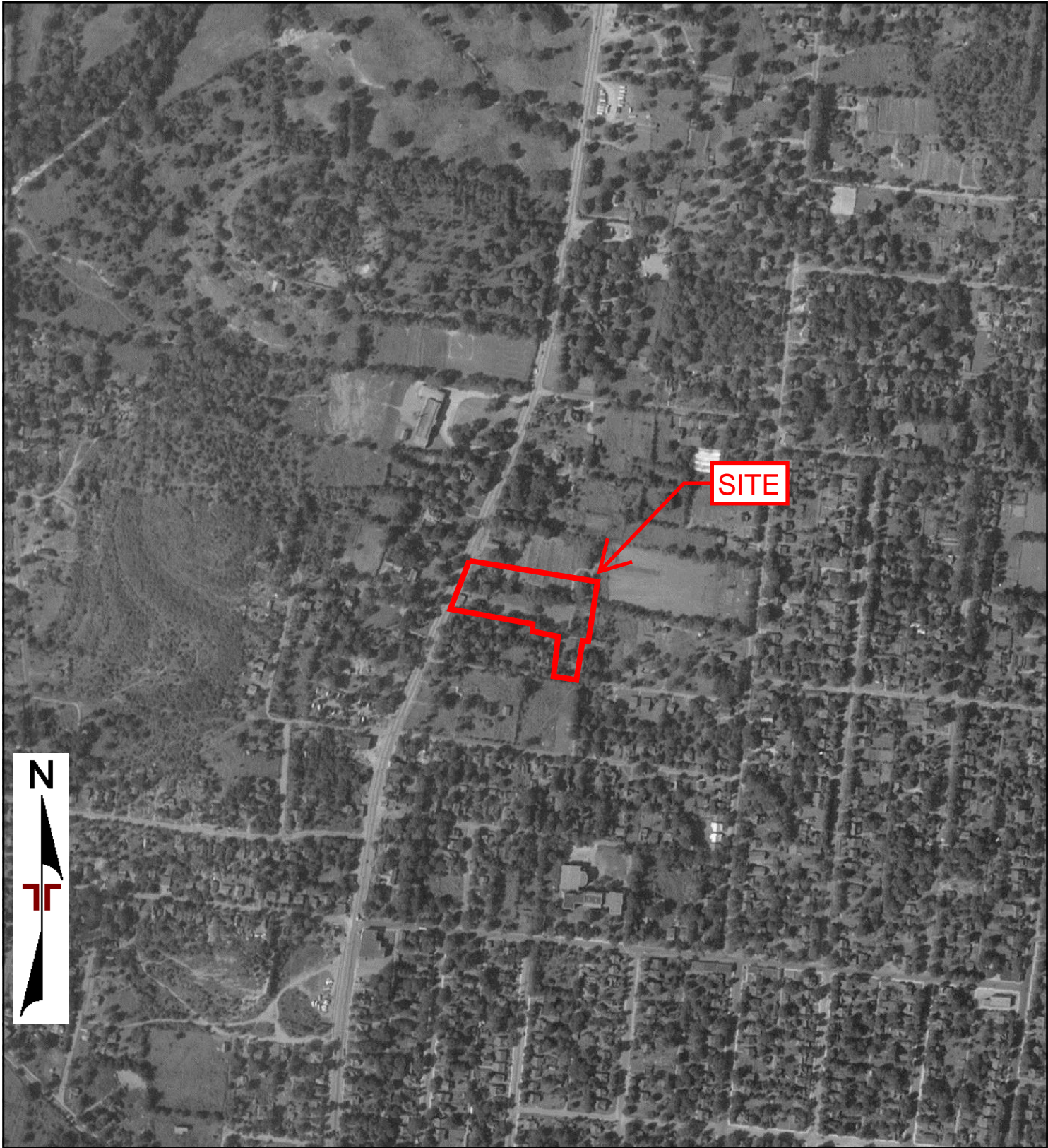
Approved By:

Date:

1951

Terracon

1951 AERIAL PHOTOGRAPH



0 Feet

500

1000

2000

Project Manager:

Project No:

Drawn By:

Scale:

Checked By:

File Name:

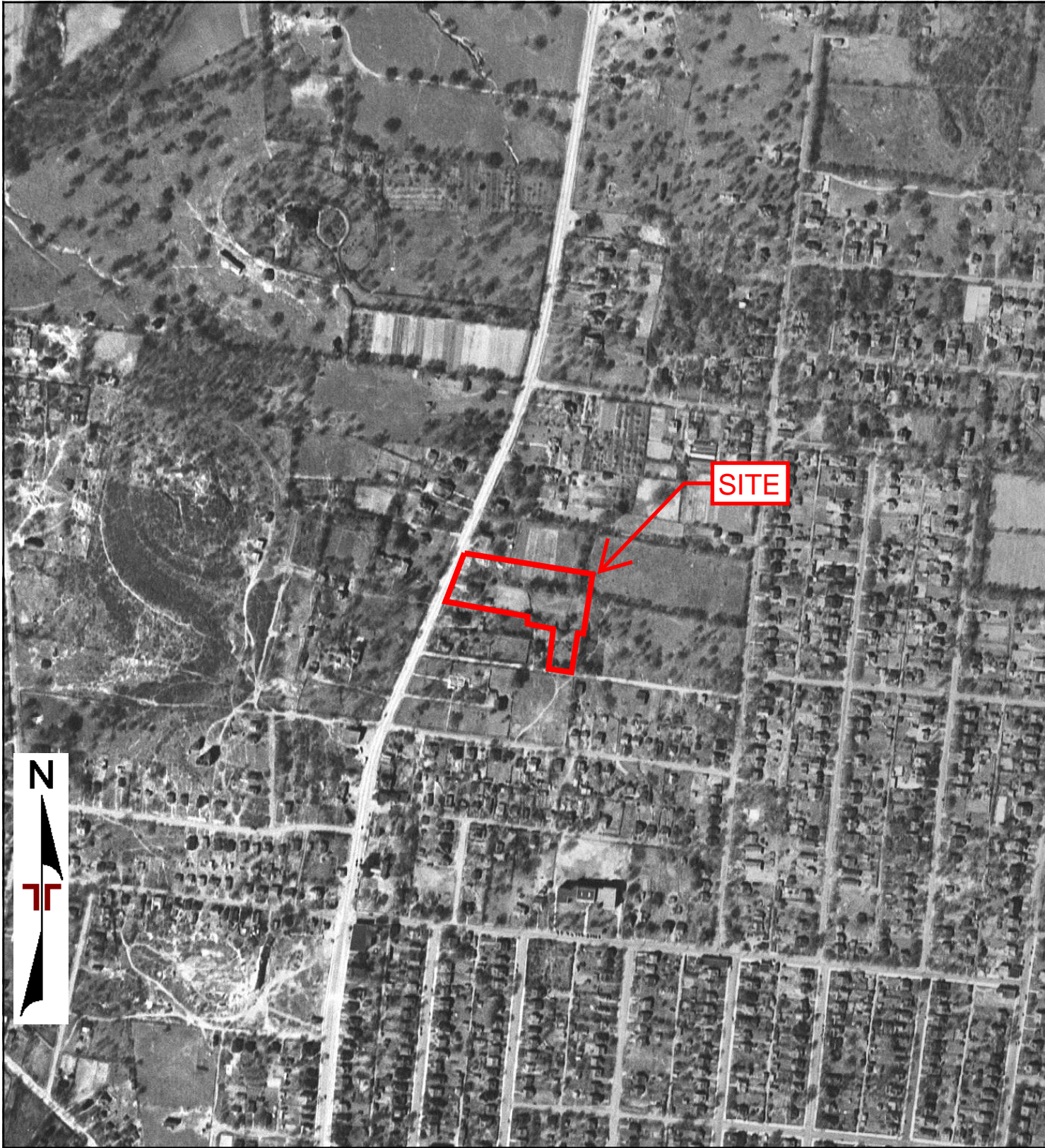
Approved By:

Date:

1949

Terracon

1949 AERIAL PHOTOGRAPH



0 Feet

500

1000

2000

Project Manager:

Project No:

Drawn By:

Scale:

Checked By:

File Name:

Approved By:

Date:

1938

Terracon

1938 AERIAL PHOTOGRAPH

APPENDIX E

Credentials

DALLAS E. WHITMILL, P.E.

SENIOR ENGINEER / ENVIRONMENTAL DEPARTMENT MANAGER

PROFESSIONAL EXPERIENCE

Mr. Whitmill is a Senior Environmental Engineer and Environmental Department Manager in Terracon's Chattanooga, Tennessee office. Mr. Whitmill is responsible for managing all aspects of multiple, simultaneous projects, providing engineering and senior level technical support for other project managers including risk-based analysis, design, construction and installation of remediation systems, stormwater plans, phase I and phase II environmental assessments, air permitting, NEPA survey and documentation and development of corrective action plans.

PROJECT EXPERIENCE

Chattanooga Metropolitan Airport NEPA Assessment – Chattanooga, Tennessee

Provided program management, acted as senior engineer and performed senior oversight and review for multiple NEPA assessments for the Chattanooga Metropolitan Airport's multi-year expansion project. Services performed included NEPA assessments, categorical exclusions and environmental assessments.

Chickamauga Battlefield NEPA Assessment – Chickamauga, Georgia

Provided senior oversight and review for NEPA documentation for a new sidewalk project to be funded by a Federal Highway Administration grant. Services performed included NEPA survey, air and noise assessment, phase I ecology assessment, stream/wetland assessment, protected species habitat assessment, invasive plant species survey and programmatic categorical exclusion.

Southern Group Water Quality Improvement – Marion County, Tennessee

Served as project manager and lead engineer. Services included providing stormwater design, inspections and management, USACE and TDEC natural resource permitting, endangered and threatened species surveys, stream and wetland restoration design and water resource assessments for multiple developments in Tennessee, Alabama and Georgia, consisting of over 17,000 acres.

Whisper Creek Stream Restoration – Hamilton County, Tennessee

Served as senior engineer and provided project oversight. Services included habitat assessment, threatened and endangered species survey, stream channel restoration through diversion and sediment removal. Additional services included stream bank riparian buffer restoration and subsequent monitoring.

Education

*Bachelor of Science,
Environmental Engineering,
University of Tennessee at
Chattanooga, 1996*

Registrations

*Professional Engineer:
Tennessee, Georgia, and
Alabama*

Certifications

*Clandestine Methamphetamine
Laboratory (CML) Hygienist, TN*

*OSHA 29 CFR 1910.120 40-Hour
Training for HAZWOPER*

*OSHA 29 CFR 1910.120 8-Hour
Refresher Training*

TN EPSC Level I and II Certified

Work History

*Terracon Consultants, Inc.,
Senior Project
Engineer/Environmental
Department Manager, 2009-
Present*

*Aquaterra Engineering, Senior
Engineer/Environmental
Department Manager, 1999-
2009*

*TDEC, Division of Underground
Storage Tanks, Environmental
Protection Specialist, 1998-1999*

Sequatchie Valley Wetland Preserve - Marion County, Tennessee

Served as project manager and Senior Engineer for the establishment of a 168 acre wetland mitigation bank that is a primary service provider to Hamilton County, Tennessee. Services performed include delineation of jurisdictional wetlands, evaluation of threatened and endangered species and cultural resources, preparation of a Bank Prospectus, engineering design, preparation of Banking Instrument and long term monitoring and reporting.

Tennessee Department of Transportation Region II Headquarters - Chattanooga, Tennessee

Served as Project Manager and Senior Engineer for the delineation of wetlands and determination of streams for the proposed Tennessee Department of Transportation Region II Headquarters. After the jurisdictional determination was completed Mr. Whitmill also served as the Project Manager and Senior Engineer for the Individual Clean Water Act 404 permit and the Aquatic Resource Alteration Permit applications through the Army Corp of Engineers and the Tennessee Department of Environment and Conservation. Mr. Whitmill also provided assistance in facility design and permit changes due to the discovery of a protected flower within one of the onsite wetlands.

Seminars / Presentations

Spill Prevention Control and Countermeasure Plans, Tennessee Oil Marketers Association May 2007.

Conducting the Proper Environmental Due Diligence for a Successful Property Transaction, 2005-2007.

Development Constraints, An Environmental Perspective, AIA/CEA E192-ENV002, 2007-2009.

Meth Labs – Your Neighborhood Hazardous Waste Facility, 2005-2010; Environmental Show of the South, April 2007, National Association of Environmental Professionals Annual Conference, April 2010.

Ecological Development Constraints, CMA Environmental Review, May 2007.

Construction Storm Water Permitting/Compliance, 2007-2008.

Types of Environmental Jobs, City of Chattanooga EPA Job Training Grant, January 2010.

Environmental Technician – A Day in the Life, City of Chattanooga EPA Job Training Grant, January 2010.

Soil Vapor Intrusion: Screening, Testing, Evaluating, Reporting, and Remediating, Environmental Show of the South, April 2011

Four Times The Money - The Story of a Small City Taking Value from EPA Assessment Grant Data Again and Again for Successful, Sustainable Brownfields Redevelopment, Environmental Show of the South April 2013.

Sequatchie Valley Wetland Preserve, ASCE monthly meeting, June 2015; Tennessee Engineers Conference, September 2015.

Published Articles

Whitmill, Dallas E., P.E. “*Meth Labs – A Melting Pot of Liabilities.*” E News, Environmental Law Section, Tennessee Bar Association. p. 4

Whitmill, Dallas E., P.E. “*Perspectives from the Field- Meth Labs: Your Neighborhood Hazardous Waste Facility.*” Environmental Practice Journal. p.187

Whitmill, Dallas E. P.E. “*Wetland Mitigation Banks: An Option to Consider*” Delivering Success, Issue 32 Summer 2014.

Tom Buchanan

SENIOR STAFF SCIENTIST

PROFESSIONAL EXPERIENCE

Tom has over seven years of experience in the field of environmental science, with career foundations in both regulatory and environmental consulting. His professional experience includes environmental sampling, scientific writing, data analysis and permit compliance. With technical experience in field work and project management, Tom will provide effective and cost-efficient solutions to clients and team members.

Specific experiences include UST compliance, industrial stormwater compliance, EPSC planning and compliance, ground and surface water sampling, Phase I & II Environmental Site Assessments, soil management associated with TDEC Brownfield Program, TDEC Aquatic Resource Alteration Permits, NPDES Construction General Permits, Municipal Separate Storm Sewer (MS4) Compliance, Tennessee Multi-Sector Permit compliance and TDEC Hydrologic Determinations.

REPRESENTATIVE PROJECT EXPERIENCE (TDEC)

Performed Hydrologic Determinations (HDs) – 2018-2021*

Conducted HDs for private property owners throughout Middle Tennessee to aid private property owners through TDEC's permitting process to provide regulatory guidance and timely coverage. Reviewed Hydrologic Determinations submitted by consultants and issued regulatory concurrence letters.

Regulatory review of Aquatic Resource Alteration Permit applications – 2018-2021*

Reviewed ARAP applications for accuracy and completeness in a timely manner and communicated with stakeholders to provide needed items and guidance for future permit submittals.

Regulatory review of Stormwater Pollution Prevention Plans (SWPPPs)– 2018-2021*

Reviewed SWPPPs and EPSC plans for construction projects greater than 1-acre throughout Middle Tennessee. Led regulatory inspections of construction sites, industrial facilities and their associated SWPPPs for TMSP compliance.

NPDES Municipal Separate Storm Sewer System (MS4) Compliance – 2018-2021*

Conducted compliance evaluation inspections of municipalities covered under the MS4 permit for discharge of stormwater to surface waters.

REPRESENTATIVE PROJECT EXPERIENCE

COMMERCIAL

Nashville Yards – Nashville, TN – 2017*

Conducted limited subsurface investigations in and around the Lifeway building prior to demolition activities. Compiled laboratory data and associated reports and aided in providing regulatory guidance to our client.

222 2nd Avenue Building – Nashville, TN – 2016*

Managed soil excavation oversight activities for removal of coal ash and historic landfill materials during construction activities. Coordinated with site supervisor, trucking companies and permitted landfill to secure safe and structured approach to working in a high-density urban setting.

Project East Bank – Nashville, TN – 2016*

Prepared Phase I & II ESAs of the proposed East Bank Development and communicated findings with leadership to form appropriate recommendations to minimize possible disruptions or delays in project development.



EDUCATION

Bachelor of Science, Environmental Geoscience, Mississippi State University, 2013

Summer Geology Field Camp, University of Arkansas, 2013

CERTIFICATIONS

Level 1 EPSC, Tennessee, 2018

Qualified Hydrologic Professional in Training, 2018

AFFILIATIONS

Association of Environmental & Engineering Geologists

WORK HISTORY

Terracon Consultants, Inc., Senior Staff Scientist, 2021

Tennessee Department of Environment and Conservation, Environmental Scientist, 2018-2021

Intertek-PSI, Environmental Scientist, 2015-2017

Mississippi Department of Environmental Quality, Environmental Scientist, 2014-2015

ADDITIONAL TRAINING

OSHA 40-Hour HAZWOPER, 2017

48-Hour Hazardous Materials Technician Training – MS State Fire Academy, 2014

** Work performed prior to joining Terracon.*

Tom Buchanan (continued)

Cambria Hotel – Nashville, TN – 2016*

Performed a Phase II ESA, soil excavation oversight and vapor barrier installation oversight at the Cambria Hotel development.

Virgin Hotel – Nashville, TN – 2017*

Performed Phase I ESA and groundwater monitoring activities for geotechnical and environmental subsurface characterization.

Regions Bank Construction – Maryville, TN – 2017*

Phase I & II ESAs, soil excavation oversight and vapor barrier installation oversight during the construction of a Regions Bank. Coordinated with subcontractors and site supervisors to ensure maximum efficiency possible.

AIRPORTS

Signature Flight Services – Nashville, TN – 2017*

Conducted Phase I & II ESAs for the construction of additional airplane hangars at the Nashville International Airport.

Memphis Airport UST Closure – Memphis, TN – 2016*

Performed soil and groundwater sampling in the vicinity of USTs at the Memphis International Airport and coordinated with TDEC Memphis Environmental Field Office for the closure and removal of two 10,000-gallon USTs.

INDUSTRIAL

Koppers Industries Facility – Guthrie, KY – 2016*

Performed soil and groundwater sampling for characterization of subsurface creosote concentrations associated with timber treatment for railroad operations.

Nissan Integrated Logistics Center – Murfreesboro, TN – 2015*

Performed Phase I & II ESAs, soil excavation oversight of a karst feature and vapor barrier installation oversight for the construction of a warehouse facility.

Kinder Morgan Terminal – Blytheville, AR – 2017

Performed a Phase I ESA of a fertilizer terminal along the Mississippi River.

APPENDIX F

Common Acronyms

COMMON ACRONYMS

AJD	Approved Jurisdictional Determination
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GPS	Global Positioning Systems
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate Wetland
OHWM	Ordinary High Water Mark
PJD	Preliminary Jurisdictional Determination
UPL	Obligate Upland
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

USGS

U.S. Geologic Survey

WOTUS

Waters of the U.S.