MHM

19035

Murfreesboro Housing Authority | OAKLAND COURT Phase 1

Murfreesboro, TN

Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

Site Demolition Package

January 8, 2020

PROJECT MANUAL



McCARTY HOLSAPLE McCARTY

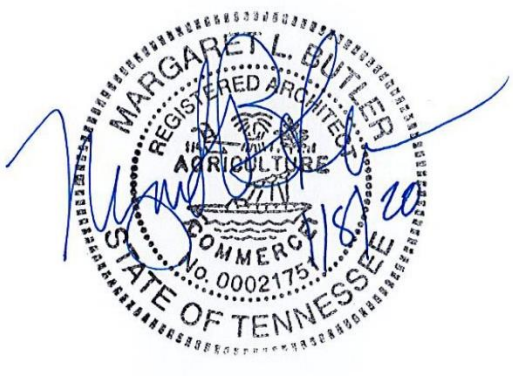
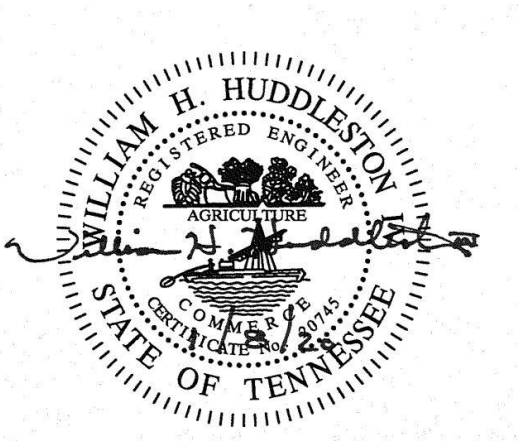
ARCHITECT
McCARTY HOLSAPLE McCARTY ARCHITECTS, INC.
550 WEST MAIN STREET SUITE 300
KNOXVILLE, TENNESSEE 37902
TEL: 865.544.2000 FAX: 865.544.0402

CIVIL ENGINEERING
HUDDLESTON-STEELE ENGINEERING, INC.
2115 NW BROAD STEET
MURFREESBORO, TN 3712
TEL: 615.893.4084 FAX: 615.893.0080

DATE: 01/8/2020

PROJECT IDENTIFICATION # 19035

SEALS PAGE

McCARTY HOLSAPLE McCARTY **ARCHITECTURAL** 	
HUDDLESTON-STEELE ENGINEERING, INC. **CIVIL ENGINEERING** 	

SECTION 00 01 02
PROJECT INFORMATION

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

A. Project Name: Murfreesboro Housing Authority Oakland Court Housing, located at E. Lokey Avenue and N.Academy Street Murfreesboro, TN.

B. The Owner, hereinafter referred to as Owner: Murfreesboro Housing Authority

C. Owner's Representative: Partners Development.
   1. Address: 520 W Summit Hill Dr Ste 603, Knoxville, TN 37902.
   2. Phone: (865) 524-7777.
   3. E-mail: posickey@partnersinfo.com.

1.02 PROJECT DESCRIPTION

A. Summary Project Description: The project consists of demolition of current homes, sitework and infrastructure to prepare for the construction of new single family, duplex and triplex - 76 homes at Oakland Court in Phase 1.

B. Contract Scope: demolition and hazardous material removal.

1.03 PROJECT CONSULTANTS

A. The Architect, hereinafter referred to as Architect: McCarty Holsaple McCarty Architects, Inc..
   1. Address: 550 W. Main St., Ste. 300, Knoxville, TN 37902.
   2. Phone: 865-544-2000.
   3. E-mail: mbutler@mhminc.com.

1.04 PROCUREMENT TIMETABLE

A. Pre-Bid Briefing: January 30, 2020 at 10:00 am CST.

B. Pre-Bid Site Tour: Following Pre-Bid briefing on January 30, 2020..

C. Last Request for Substitution Due: 7 days prior to due date of bids.

D. Bid Due Date: February 11, 2020 , before 12 PM local time.

E. Notice to Proceed: Within 7 days after due date.

F. Bids May Not Be Withdrawn Until: 30 days after due date.

G. Contract Time: 65 calendar days.

H. Desired Construction Start: Not later than February 24, 2020.

I. Desired Substantial Completion Date: Not later than 55 calendar days from Notice to Proceed.

J. Desired Final Completion Date: Not later than 65 calendar days from Notice to Proceed.

K. Completion date is critical due to requirements of Owner's operations.

L. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

1.05 PROCUREMENT DOCUMENTS

A. Availability of Documents: Complete sets of procurement documents may be obtained:
   1. From Owner at the following web address - www.mha-tn.org

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 00 01 10

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PROCUREMENT AND CONTRACTING REQUIREMENTS

1.01 DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

A. 00 01 02 - Project Information
B. 00 01 10 - Table of Contents
C. 00 31 26 - Existing Hazardous Material Information
D. 00 72 00 - General Conditions

SPECIFICATIONS

2.01 DIVISION 01 -- GENERAL REQUIREMENTS

A. 01 10 00 - Summary
B. 01 20 00 - Price and Payment Procedures
C. 01 26 20 - Weather Delays
D. 01 30 00 - Administrative Requirements
E. 01 40 00 - Quality Requirements
F. 01 50 00 - Temporary Facilities and Controls
G. 01 57 13 - Temporary Erosion and Sediment Control
H. 01 70 00 - Execution and Closeout Requirements
I. 01 74 19 - Construction Waste Management and Disposal

2.02 DIVISION 02 -- EXISTING CONDITIONS

A. 02 29 00 - Lawns and Grassses
B. 02 41 00 - Demolition
C. 02 82 00 - Asbestos Remediation

2.03 DIVISION 31 -- EARTHWORK

A. 31 00 00 - Earthwork
B. 31 10 00 - Site Clearing

END OF SECTION

ENVIRONMENTAL REVIEW
OAKLAND COURT DEVELOPMENT
EAST LOKEY AVENUE
MURFREESBORO, RUTHERFORD COUNTY, TENNESSEE

D3G PROJECT NUMBER:
2019-1705

REPORT ISSUE DATE:
JANUARY 20, 2020

INSPECTION DATE:
NOVEMBER 19, 2019

PREPARED FOR:
MURFREESBORO HOUSING AUTHORITY
415 N. MAPLE STREET
MURFREESBORO, TENNESSEE 37130

Samantha Holcombe
Site Assessor/Project Manager

Signature

John Exley
Environmental Professional

Signature

EXECUTIVE PROPERTY DESCRIPTION

Property: Oakland Court Development
East Lokey Avenue
Murfreesboro, Rutherford County, Tennessee

Site Description:

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure constructed in 1960. The subject property structures contain a total of seventy-six (76) residential dwelling units and are situated on 20.08 acres of land. Located within the community structure is a daycare. Exterior property improvements include a playground, a basketball court, landscaped regions and asphalt parking areas. The subject property is serviced by electricity, natural gas, and municipally supplied water and sewer. The Sponsor is submitting this project under the HUD's Rental Assistance Demonstration (RAD) program, consisting of the demolition of the current subject property structures and new construction of ninety (90) multi-family, duplex, and triplex structures containing a total of 150 residential dwelling units.



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2.0 ENVIRONMENTAL ASSESSMENT FACTORS.....2
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Appendix C: Airport Hazards
Appendix D: Coastal Barrier Resources
Appendix E: Flood Insurance
Appendix F: Air Quality
Appendix G: Coastal Zone Management
Appendix H: Site Contamination
Appendix I: Endangered Species Act
Appendix J: Explosive and Flammable Hazards
Appendix K: Farmlands Protection
Appendix L: Floodplain Management
Appendix M: Historic Preservation
Appendix N: Noise Abatement and Control
Appendix O: Sole Source Aquifers
Appendix P: Wetlands Protection
Appendix Q: Wild and Scenic Rivers
Appendix R: Housing Requirements
Appendix S: Environmental Justice
Appendix T: Environmental Assessment Factors Source Documentation

1.0 Compliance with Related Federal Laws and Authorities

The following table summarizes the results of Dominion Due Diligence Group's (D3G's) Environmental Review of the Oakland Court Development located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee (subject property). The U.S. Housing and Urban Development (HUD) Environmental Review Record Related Federal Laws and Authorities Worksheets are located in the corresponding appendix listed below.

STATUTE/ EXECUTIVE ORDER/ REGULATION	APPENDIX REFERENCE	ACCEPTABLE	COMPLIANCE STEPS/MITIGATION
AIRPORT HAZARDS	C	YES	
COASTAL BARRIER RESOURCES	D	YES	
FLOOD INSURANCE	E	YES	
AIR QUALITY	F	YES	
COASTAL ZONE MANAGEMENT	G	YES	
SITE CONTAMINATION	H	YES	
ENDANGERED SPECIES	I		(1)
EXPLOSIVE AND FLAMMABLE HAZARDS	J	YES	
FARMLANDS PROTECTION	K	YES	
FLOODPLAIN MANAGEMENT	L	YES	
HISTORIC PRESERVATION	M		(2)
NOISE ABATEMENT AND CONTROL	N	YES	
SOLE SOURCE AQUIFERS	O	YES	
WETLANDS PROTECTION	P	YES	
WILD AND SCENIC RIVERS	Q	YES	
HOUSING REQUIREMENTS	R		(3)
ENVIRONMENTAL JUSTICE	S	YES	
ENVIRONMENTAL ASSESSMENT FACTORS	T	YES	

The following Related Federal Laws and Authorities were identified in connection with the subject property that require further compliance documentation:

(1) D3G recommends that a time of year restriction (TOYR) for tree-clearing be observed. All tree-clearing activities will occur between October 15 and March 31.

(2) To assist HUD in making its historic preservation determination, D3G submitted its findings and project information to the appropriate State Historic Preservation Officer (SHPO). As of the date of this report, D3G has not received a response to this inquiry. Upon receipt of the agency response, D3G will forward this information as an addendum to this report. If no response is received or no material information is identified, our report will not be modified.

(3) All ACMs and NOB materials should be managed under the existing site-specific Operations and Maintenance (O&M) Program prepared by D3G dated January 17, 2020 until such time as the structures are demolished. If suspect ACMs are encountered during demolition activities which have not been previously sampled, they should be sampled by an appropriately licensed asbestos inspector prior to impaction and treated accordingly or treated as ACMs. ACMs should be removed by a licensed asbestos abatement contractor in accordance with applicable regulations prior to demolition activities.

2.0 Environmental Assessment Factors

The table below summarizes the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area [Ref. 40 CFR 1508.8 and 1508.27]. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. The following impact codes were utilized to make the determination of impact for each factor:

(1) Minor beneficial impact
(2) No impact anticipated
(3) Minor Adverse Impact - May require mitigation
(4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

LAND DEVELOPMENT		
ENVIRONMENTAL ASSESSMENT FACTOR	**IMPACT CODE**	**IMPACT EVALUATION**
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	The subject property currently consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure, and is the proposed location of a ninety (90) building multi-family, duplex, and triplex development containing a total of 150 residential dwelling units. According to the Murfreesboro zoning maps accessed at https://www.murfreesborotn.gov/216/Zoning, the subject property is currently zoned PRD (Planned Residential District) and the proposed development is in compliance with local zoning ordinances.
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	2	Based on visual observations, there is no evidence of soil problems or unstable conditions on the subject property. According to the USGS Topographic Quadrangle: Murfreesboro, Tennessee 2019, the topography of the site slopes to the west. On-site drainage at the subject property is suspected to consist of flow along the asphalt parking areas to strategically located storm drains and surface percolation in the unpaved areas.

ENVIRONMENTAL ASSESSMENT FACTOR	IMPACT CODE	IMPACT EVALUATION
Hazards and Nuisances including Site Safety and Noise	2	According to the Murfreesboro 2018 Annual Water Quality Report, sampling conducted in 2017 indicated lead in drinking water was detected at 2.57 parts per billion (ppb) in the 90th percentile, which is below the EPA action level of 15 ppb and meets all EPA Standards. Therefore, lead in drinking water is not suspected to be a concern at the subject property. According to visual observations during D3G's site inspection on November 19, 2019, a natural gas pipeline is located along the western subject property boundary, which is owned and maintained by Atmos Energy. However, the pipeline is not depicted in the National Pipeline Mapping System (NPMS) Public Map Viewer accessed at https://pvnpms.phmsa.dot.gov/PublicViewer/, which depicts nationwide transportation pipelines. According to HUD guidelines, "All parts of any structure must be at least 10 feet from the outer boundary of the easement for any high pressure gas or liquid petroleum transportation pipeline." D3G contacted Mr. James Robbins, Operations Supervisor with Atmos Energy; However, as of the date of this report, D3G has not received a response to this inquiry. Upon receipt of the agency response, D3G will forward this information as an addendum to this report. If no response is received or no material information is identified, our report will not be modified. Recommendations for the on-site natural gas pipeline is pending. No additional "nuisances" or "hazards" were observed at the subject property or surrounding properties during the subject property inspection.
Energy Consumption	2	Based on the fact that the proposed development will utilize as many energy efficient appliances and light fixtures as possible, the proposed project would not have unusual energy needs and is not expected to have a negative impact on energy consumption.

SOCIOECONOMIC		
ENVIRONMENTAL ASSESSMENT FACTOR	**IMPACT CODE**	**IMPACT EVALUATION**
Employment and Income Patterns	2	According to U.S. Census Bureau American Community Survey (ACS) 2013-2017 data obtained from the EPA NEPAssist accessed at http://nepassisttool.epa.gov/nepassist/entry.aspx, approximately 64% of population were listed as employed, the per capita income was $24,074, and 69.3% of the population in the area was above the poverty level. Based on the fact that the proposed subject property development will enhance the infrastructure of the surrounding area and provide employment opportunities in the community, no impact is anticipated.
Demographic Character Changes, Displacement	2	The site is located in a residentially developed area. The proposed development of the site is compatible with the surrounding neighborhood, no demographic character changes or displacement are anticipated with the proposed project.

COMMUNITY FACILITIES AND SERVICES		
ENVIRONMENTAL ASSESSMENT FACTOR	**IMPACT CODE**	**IMPACT EVALUATION**
Educational and Cultural Facilities	2	Based on research of the subject property and surrounding area, there are sufficient educational and cultural facilities located in the vicinity, of which no impacts are anticipated from the proposed development.
Commercial Facilities	2	Based on research of the subject property and surrounding area, there are sufficient commercial facilities located in the vicinity, of which no impacts are anticipated from the proposed development.
Health Care and Social Services	2	Based on research of the subject property and surrounding area, there are sufficient health care and social service facilities located in the vicinity, of which no impacts are anticipated from the proposed development.
Solid Waste Disposal / Recycling	2	Based on research of the subject property and surrounding area, there are sufficient solid waste/recycling facilities located in the vicinity, of which no impacts are anticipated from the proposed development.
Waste Water / Sanitary Sewers	2	Based on research of the subject property and surrounding area, there are sufficient waste water/sanitary sewer services available, of which no impacts are anticipated from the proposed development.
Water Supply	2	Based on research of the subject property and surrounding area, there are sufficient water services available, of which no impacts are anticipated from the proposed development.
Public Safety - Police, Fire and Emergency Medical	2	Based on research of the subject property and surrounding area, there are sufficient police, fire, and emergency medical services located in the vicinity, of which no impacts are anticipated from the proposed development.
Parks, Open Space and Recreation	2	Based on research of the subject property and surrounding area, there are sufficient parks and recreation facilities located in the vicinity, of which no impacts are anticipated from the proposed development.
Transportation and Accessibility	2	Based on research of the subject property and surrounding area, reasonable accessibility to vicinity public transportation facilities is available in the vicinity, of which no impacts are anticipated from the proposed development.

NATURAL FEATURES		
ENVIRONMENTAL ASSESSMENT FACTOR	**IMPACT CODE**	**IMPACT EVALUATION**
Unique Natural Features, Water Resources	2	Based on research of the subject property and surrounding area, no unique natural features or water resources are located in the vicinity, and no impacts are anticipated from the proposed development.
Vegetation, Wildlife	2	Based on the fact that the subject property is currently vacant and prepared for future construction and the surrounding area consists of residential and light commercial development, no impact is anticipated to the vegetation and/or wildlife of the subject property and surrounding area.
Other Factors	2	No other factors have been identified.

3.0 Reference Materials

- EPA Green Book — Current Nonattainment Counties for All Criterial Pollutants: http://www3.epa.gov/airquality/greenbk/ancl.html
- CBRA information: http://www.fws.gov/CBRA/Maps/index.html
- National Oceanic and Atmospheric Administration - Ocean and Coastal Resource Management accessed at https://coast.noaa.gov/czm/mystate/
- U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) System, accessed at http://ecos.fws.gov/ipac/
- U.S. Census Bureau TIGERweb Geography Division website accessed at http://tigerweb.geo.census.gov/tigerweb/
- Web Soil Survey accessed at http://websoilsurvey.nrcs.usda.gov/app/
- FEMA Flood Insurance Rate Map (FIRM) #47149C-0260H, dated January 5, 2007
- National Flood Insurance Program (NFIP) Community Status Book accessed at https://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book
- Federal Aviation Administration website accessed at https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm
- Environmental Data Resources Inc. (EDR) Report, dated November 18, 2019
- U.S. EPA NEPAssist access at http://nepassisttool.epa.gov/nepassist/entry.aspx
- Below provides basic descriptions for the data included in the mapping layers available through NEPAssist that were utilized in this Phase I ESA
- The Airport Polygons layer includes airport boundaries and airport runways within the United States. Source: National Transportation Atlas Database
- Demographic Information is obtained from the Census Bureau data from the full 2000 Census Summary File 3 (SF3) estimates, the 2010 Census Summary File 1 (SF1) 100% count data, and the annual American Community Survey (ACS) estimates using the 2012-2016 ACS 5-Year Summary database. Please note that all variables that show the percent rather than count were derived from count-based Census variables using the standard approach of count divided by total population of the population in question.
- The National Register of Historic Places - National Register layer is downloaded from the NPS National Register of Historic Places KML files. Source: http://focus.nps.gov/nrhp/Download?path=/natreg/docs/Download.html
- The Sole Source Aquifer layer includes information on the sole source aquifers (SSA) designated by EPA under section 1424(e) of the Safe Drinking Water Act of 1974. Source:
- USFWS National Wetlands Inventory map accessed at http://www.fws.gov/wetlands/Data/Mapper.html
- The Wild and Scenic Rivers layer includes segments of the National Wild and Scenic River System for the United States. Source: http://www.rivers.gov/mapping-gis.php
- National Park Service National Rivers Inventory accessed at http://www.nps.gov/ncrc/programs/rtca/nri/index.html

Appendix A:

Site Maps

Tax Map



Appendix A Tax Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Parcel #091E-B-039.00-000*	**DOMINION DUE DILIGENCE GROUP**

Go Back to Search Page

Add Property to Your Notifications Account

Results GIS Maps Pictures Street View

Account #: R0054858
Owner Name: MURFREESBORO HOUSING AUTHORITY
Owner Name 2:
Owner Address: 415 N MAPLE ST
Owner Address 2:
City, State, Zip: MURFREESBORO, TN 37130-2831
Property Address: N ACADEMY ST
Jurisdiction: 515 - Murfreesboro
Parcel #: 091E-B-039.00-000
Subdivision: -
Lot #:
Dimensions:
Land Flag: NODATA
Units/Acres/Sites: 20.20000
Class: 02 - City
Land Mkt Value: $440,000
Improvement Value: $0
Yard Item Value: $0
Total Market Appraisal: $440,000
Assessment %: 0%
Assessment: $0
Greenbelt Value: NODATA

Pay your County Taxes Online
See your estimated County tax bill

Building Information

BuildingSequence	Plumbing Fixtures	SQFT
	0	0.00

Sale Information

SaleDate	SalePrice	Book	Page	GrantorName	GranteeName
9/23/2019	0.00	1816	3691		

Non-Sale Document Information

SaleDate	SalePrice	Book	Page	GrantorName	GranteeName
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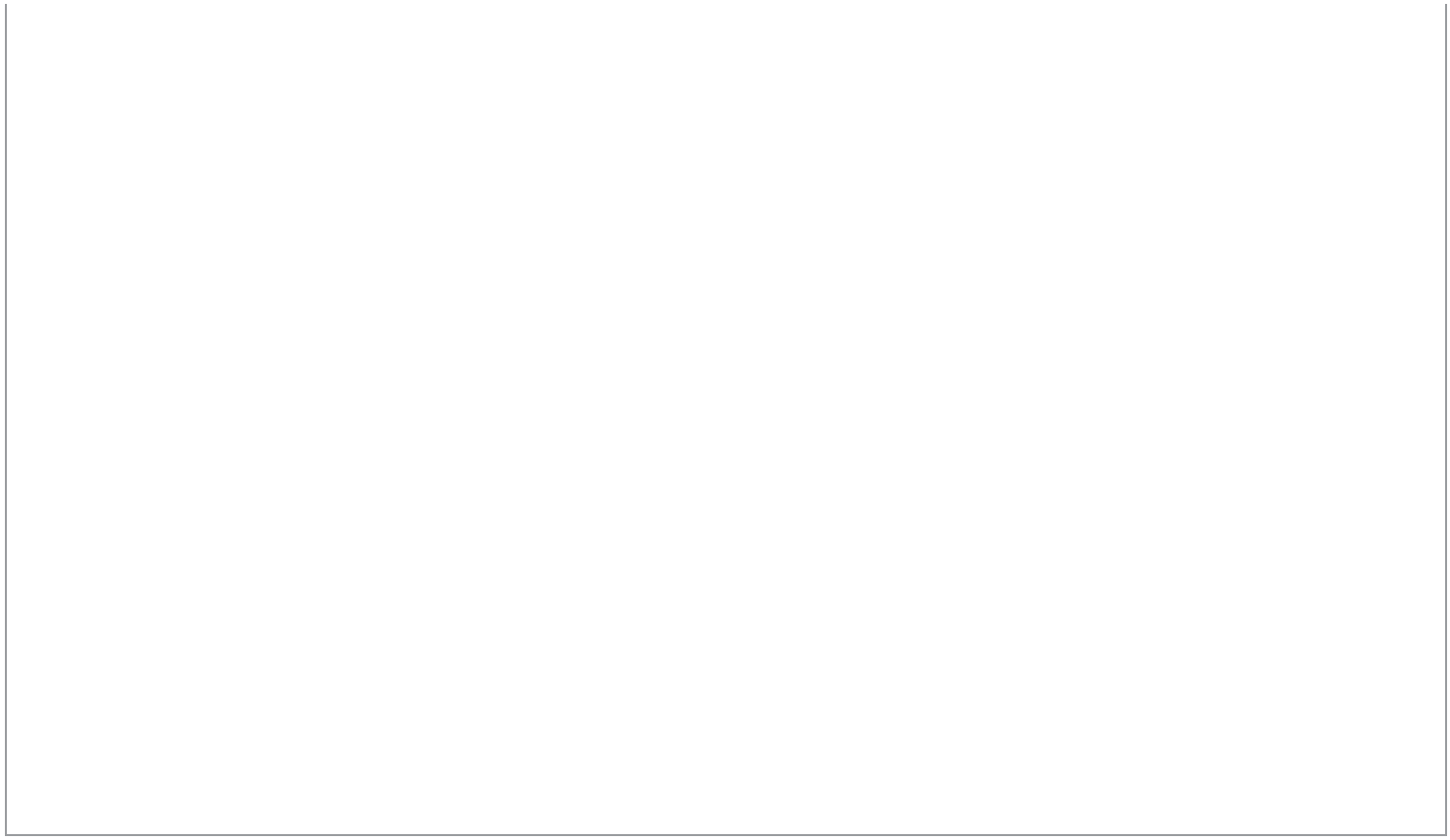
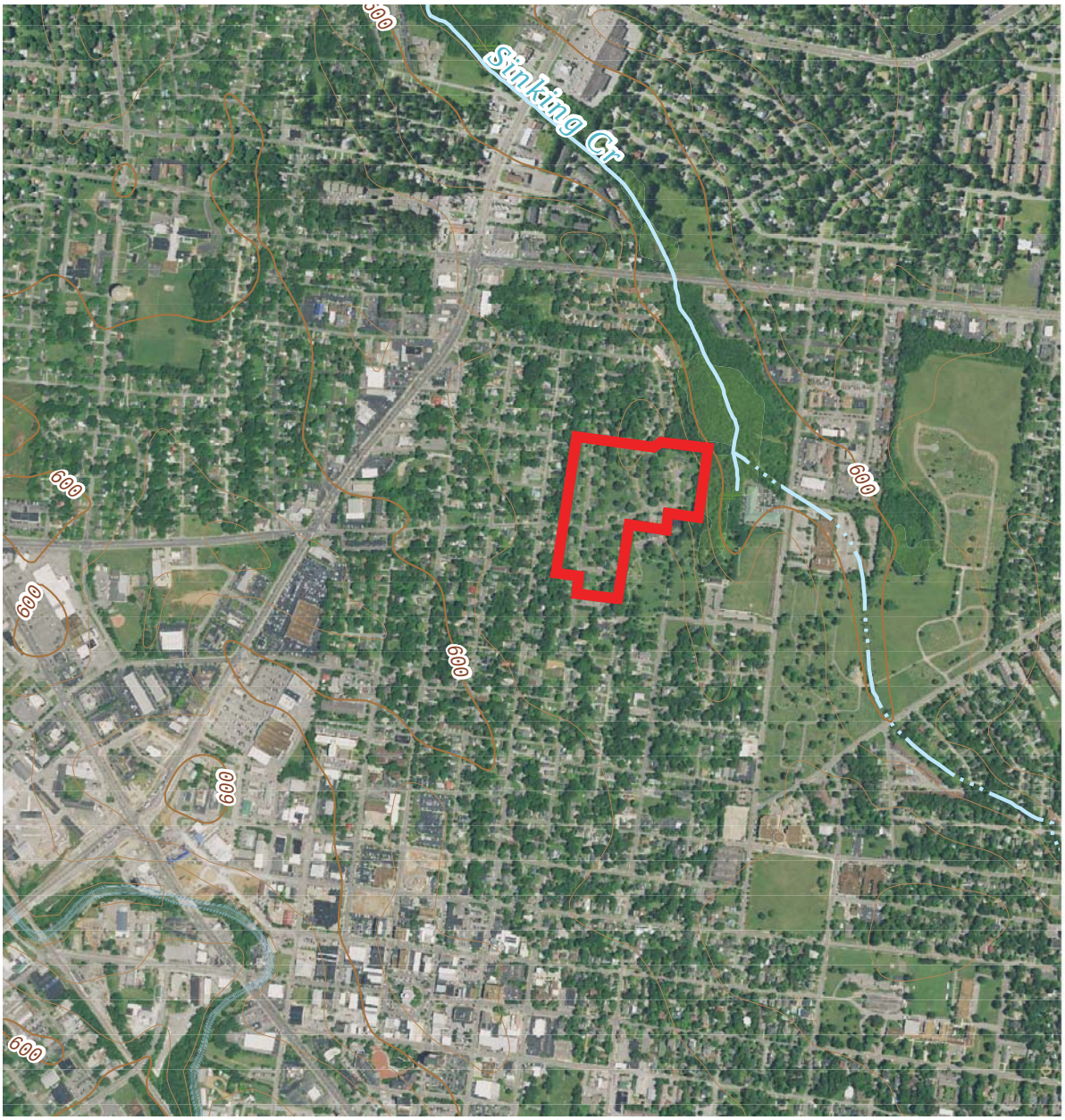
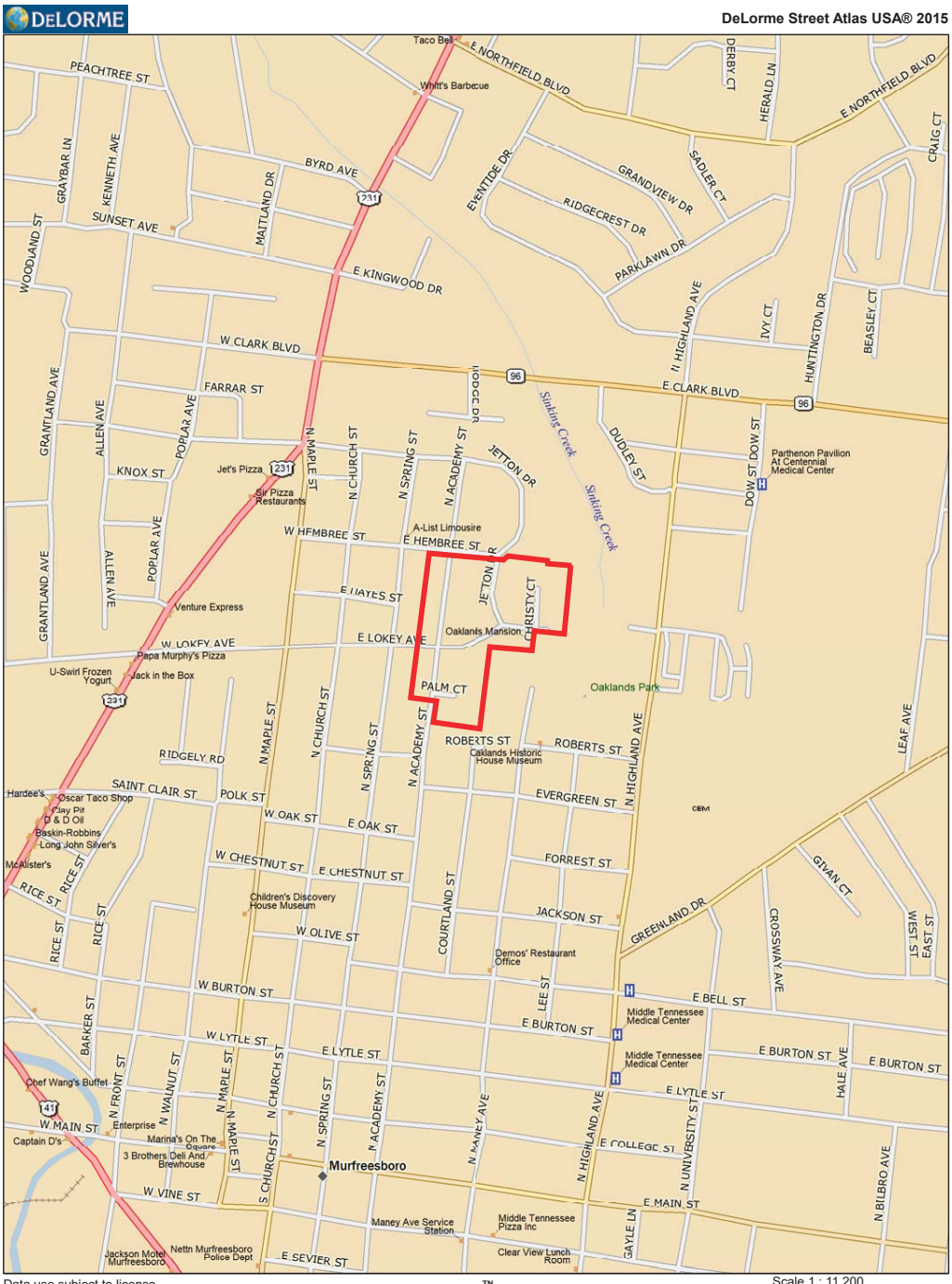
9/15/1959	0.00	129	463		MURFREESBORO HOUSING AUTHORITY

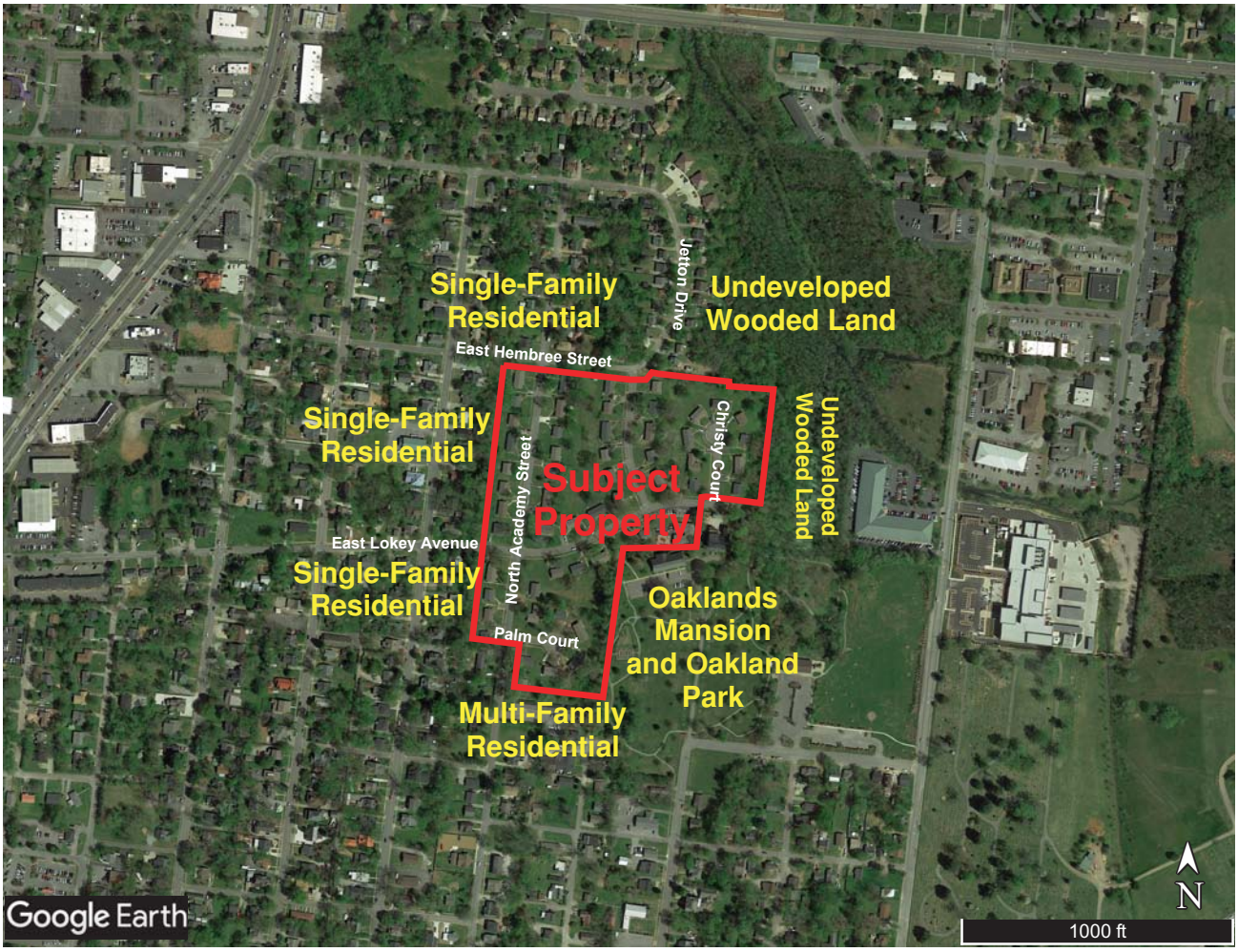




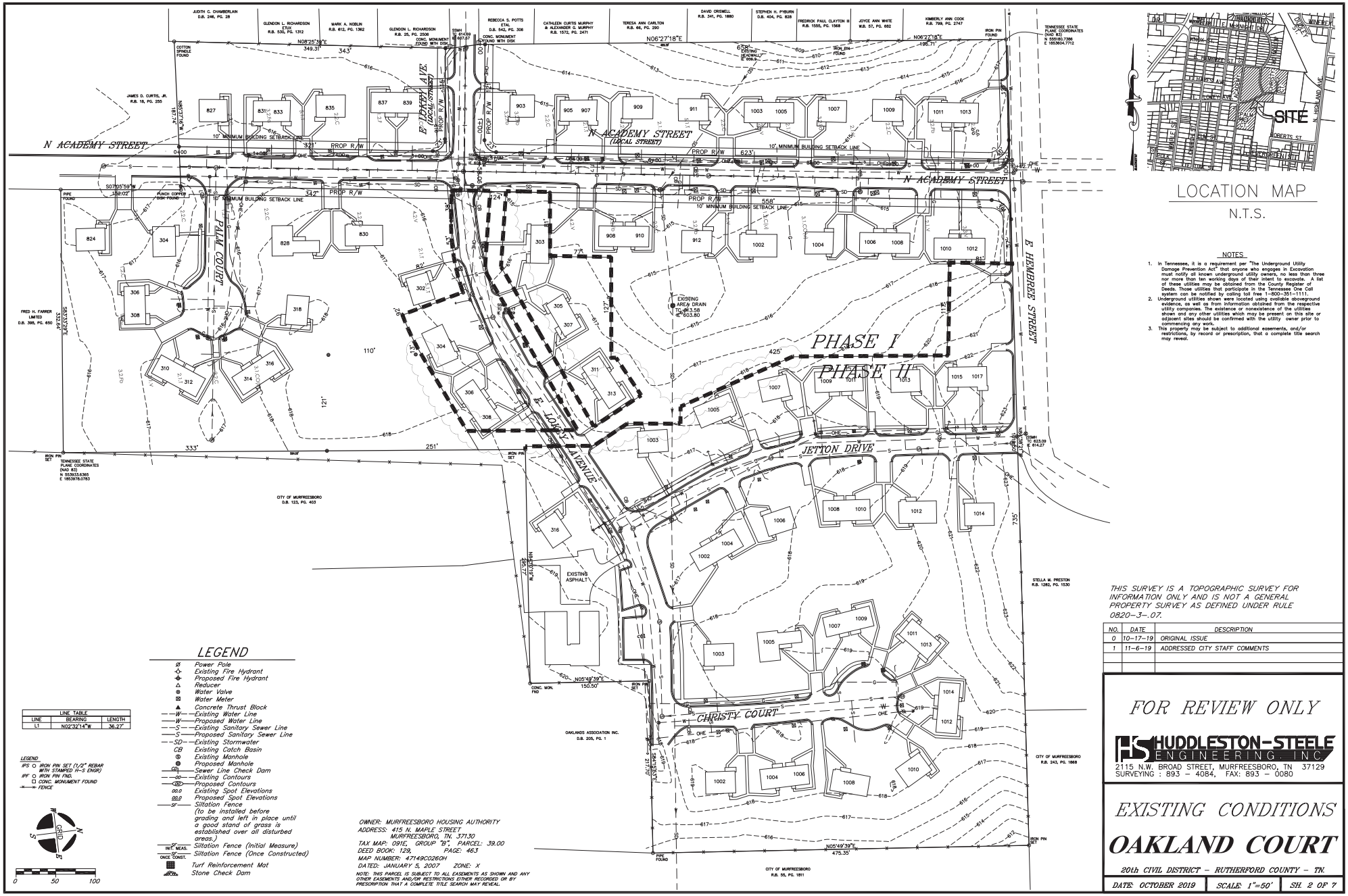
Appendix A Site Topographic Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Topographic Quadrangle: Murfreesboro, Tennessee 2019*	**DOMINION DUE DILIGENCE GROUP**



Appendix A Site Locator Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee	**DOMINION DUE DILIGENCE GROUP**



Appendix A Site Plan	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee	**DOMINION DUE DILIGENCE GROUP**



THIS SURVEY IS A TOPOGRAPHIC SURVEY FOR INFORMATION ONLY AND IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-.07.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

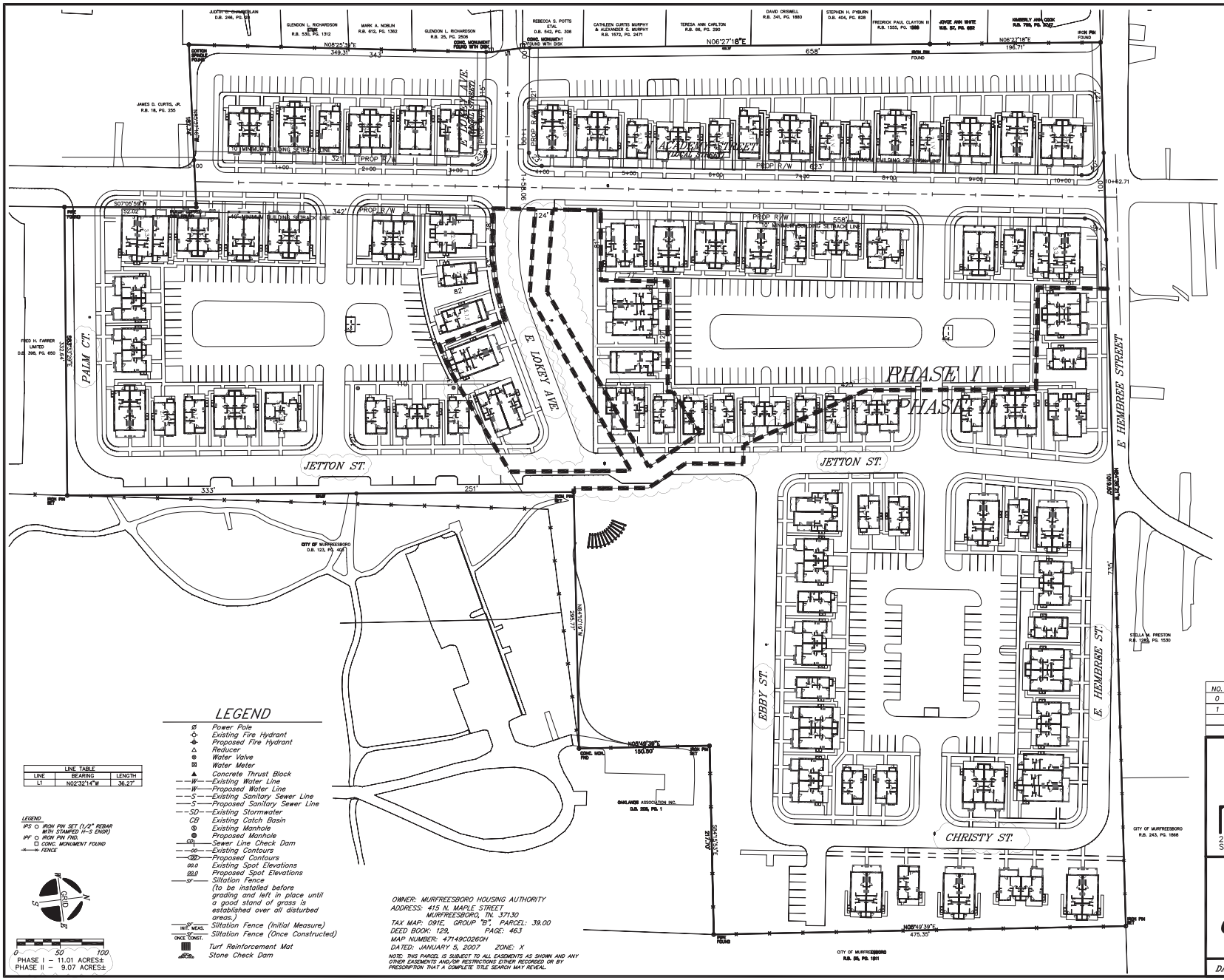
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 - 4084, FAX: 893 - 0080

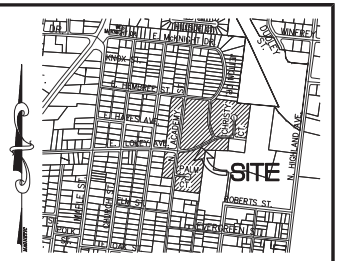
EXISTING CONDITIONS

OAKLAND COURT

20th CIVIL DISTRICT - RUTHERFORD COUNTY - TN.

DATE: OCTOBER 2019 | *SCALE: 1"=50'* | *SH. 2 OF 7*





LOCATION MAP

N.T.S.

NOTES

1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, that a complete title search may reveal.

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
- —W— Proposed Water Line
- —S— Existing Sanitary Sewer Line
- —S— Proposed Sanitary Sewer Line
- —SD— Existing Stormwater
- CB Existing Catch Basin
- Existing Manhole
- Proposed Manhole
- —CD— Sewer Line Check Dam
- —00— Existing Contours
- —000— Proposed Contours
- 000 Existing Spot Elevations
- 000 Proposed Spot Elevations
- —SF— Siltation Fence (to be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INST. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED "H-S ENGR)
IPF ○ IRON PIN FND.
□ CONC. MONUMENT FOUND
-x- FENCE

PHASE I – 11.01 ACRES±
PHASE II – 9.07 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET
MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X

NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

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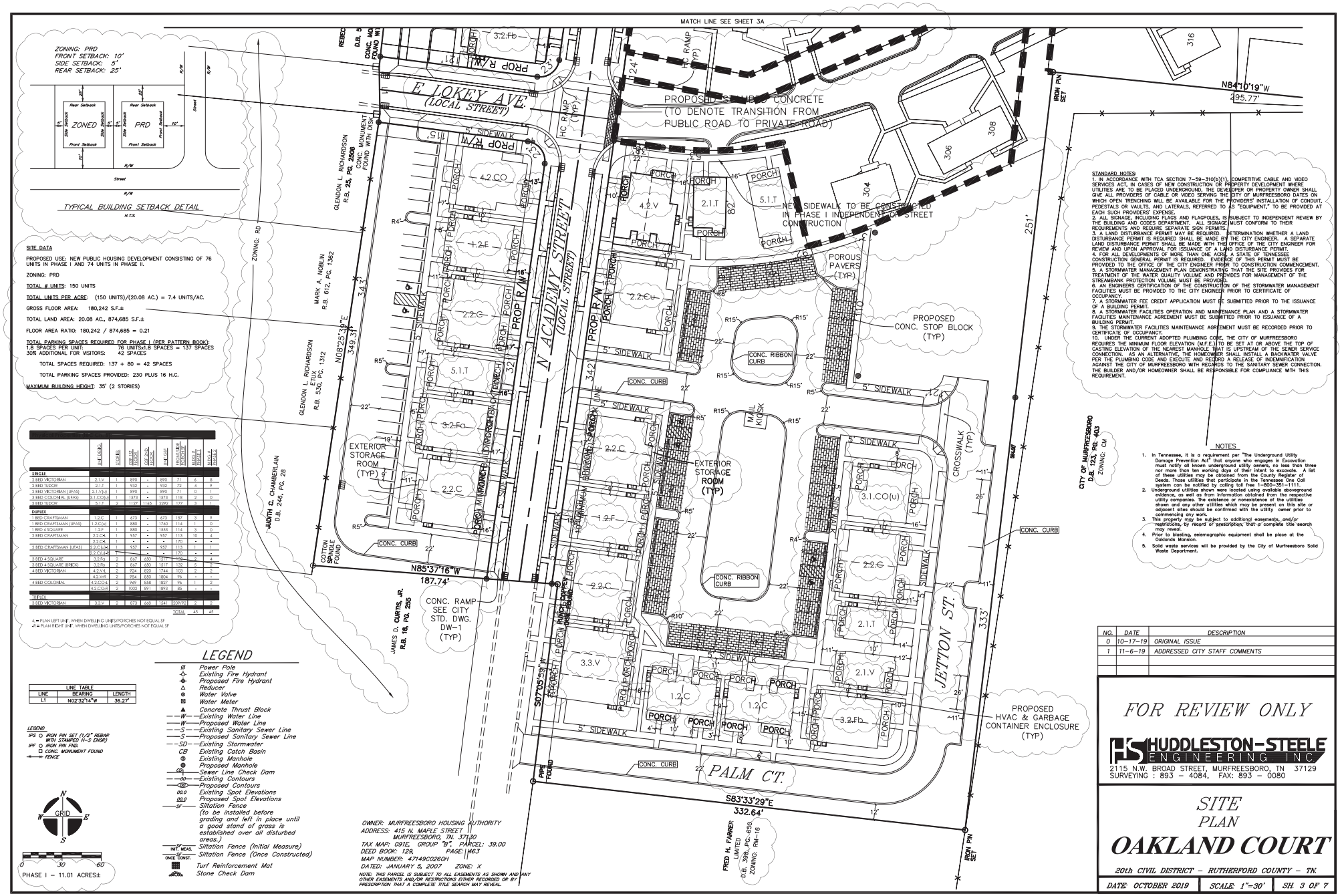
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

MASTER PLAN

OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=50' | SH. 1 OF 7



	1ST FLOOR	LEVELS	2ND FLOOR	GARAGE	1ST FLOOR	HANDICAP PARKING	BEDS	BLDG # (MAX)
SINGLE								
2 BED VICTORIAN	2.1.V	1	890	-	890	71	6	4
2 BED TUDOR	2.1.T	1	932	-	932	72	4	9
2 BED VICTORIAN (LIFAS)	2.1.V(u)	1	890	-	890	71	0	1
2 BED COLONIAL (LIFAS)	3.1.CO(u)	1	1573	-	1573	118	2	0
4 BED TUDOR	5.1.T	2	1172	1165	2290	177	3	1
DUPLEX								
1 BED CRAFTSMAN	1.2.C	1	679	-	679	159	3	4
1 BED CRAFTSMAN (LIFAS)	1.2.C(u)	1	880	-	1760	114	1	6
1 BED 4 SQUARE	1.2.F	1	880	-	1553	114	3	6
2 BED CRAFTSMAN	2.2.C-L	1	957	-	957	113	10	4
	2.2.C-L	1	-	-	-	170	-	-
2 BED CRAFTSMAN (LIFAS)	2.2.C(u)-L	1	957	-	957	113	1	1
	2.2.C(u)-R	1	-	-	-	170	-	-
2 BED 4 SQUARE	3.2.Fa	2	867	650	1517	199	2	1
2 BED 4 SQUARE (BRICK)	3.2.Fb	2	867	650	1517	132	5	2
3 BED VICTORIAN	4.2.V-L	2	924	820	1744	103	2	-
	4.2.V-R	2	954	850	1804	96	-	-
4 BED COLONIAL	4.2.CO-L	2	969	858	1827	96	1	-
	4.2.CO-R	2	1002	891	1893	85	-	-
TRIPLEX								
3 BED VICTORIAN	3.3.V	2	873	668	1541	209/92	2	2
						TOTAL	45	45

-L = PLAN LEFT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF
-R = PLAN RIGHT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED H-S ENGR)
IPF ○ IRON PIN FND.
□ CONC. MONUMENT FOUND
-x-x- FENCE

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
- —W— Proposed Water Line
- —S— Existing Sanitary Sewer Line
- —S— Proposed Sanitary Sewer Line
- —SD— Existing Stormwater
- CB Existing Catch Basin
- Existing Manhole
- Proposed Manhole
- CD Sewer Line Check Dam
- 00 Existing Contours
- 00 Proposed Contours
- 00.0 Existing Spot Elevations
- 00.0 Proposed Spot Elevations
- SF Siltation Fence (to be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INIT. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

GRID
0 30 60
PHASE I – 11.01 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 146.3
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X
NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

STANDARD NOTES:
1. IN ACCORDANCE WITH TCA SECTION 7-59-310(b)(1), COMPETITIVE CABLE AND VIDEO SERVICES ACT, IN CASES OF NEW CONSTRUCTION OR PROPERTY DEVELOPMENT WHERE UTILITIES ARE TO BE PLACED UNDERGROUND, THE DEVELOPER OR PROPERTY OWNER SHALL GIVE ALL PROVIDERS OF CABLE OR VIDEO SERVING THE CITY OF MURFREESBORO DATES ON WHICH OPEN TRENCHING WILL BE AVAILABLE FOR THE PROVIDERS' INSTALLATION OF CONDUIT, PEDESTALS OR VAULTS, AND LATERALS, REFERRED TO AS "EQUIPMENT," TO BE PROVIDED AT EACH SUCH PROVIDERS' EXPENSE.
2. ALL SIGNAGE, INCLUDING FLAGS AND FLAGPOLES, IS SUBJECT TO INDEPENDENT REVIEW BY THE BUILDING AND CODES DEPARTMENT. ALL SIGNAGE MUST CONFORM TO THEIR REQUIREMENTS AND REQUIRE SEPARATE SIGN PERMITS.
3. A LAND DISTURBANCE PERMIT MAY BE REQUIRED. DETERMINATION WHETHER A LAND DISTURBANCE PERMIT IS REQUIRED SHALL BE MADE BY THE CITY ENGINEER. A SEPARATE LAND DISTURBANCE PERMIT SHALL BE MADE WITH THE OFFICE OF THE CITY ENGINEER FOR REVIEW AND UPON APPROVAL FOR ISSUANCE OF A LAND DISTURBANCE PERMIT.
4. FOR ALL DEVELOPMENTS OF MORE THAN ONE ACRE, A STATE OF TENNESSEE CONSTRUCTION GENERAL PERMIT IS REQUIRED. EVIDENCE OF THIS PERMIT MUST BE PROVIDED TO THE OFFICE OF THE CITY ENGINEER PRIOR TO CONSTRUCTION COMMENCEMENT.
5. A STORMWATER MANAGEMENT PLAN DEMONSTRATING THAT THE SITE PROVIDES FOR TREATMENT OF THE WATER QUALITY VOLUME AND PROVIDES FOR MANAGEMENT OF THE STREAMBANK PROTECTION VOLUME MUST BE PROVIDED.
6. AN ENGINEERS CERTIFICATION OF THE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES MUST BE PROVIDED TO THE CITY ENGINEER PRIOR TO CERTIFICATE OF OCCUPANCY.
7. A STORMWATER FEE CREDIT APPLICATION MUST BE SUBMITTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
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9. THE STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE RECORDED PRIOR TO CERTIFICATE OF OCCUPANCY.
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NOTES
1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, that a complete title search may reveal.
4. Prior to blasting, seismographic equipment shall be place at the Oaklands Mansion.
5. Solid waste services will be provided by the City of Murfreesboro Solid Waste Department.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

SITE PLAN
OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=30' | SH. 3 OF 7



	UNIT MODEL	STORIES	GARAGE FOOTPRINT	FOOTPRINT	LIVING AREA	FOOTPRINT/ UNIT/DWELLING	BEDS/ UNIT	BEDS/ BUILDING
SINGLE								
2 BED VICTORIAN	2.1.V	1	890	-	890	71	6	8
2 BED T/DOOR	2.1.T	1	930	-	930	72	4	9
2 BED VICTORIAN (UFAS)	2.1.V(u)	1	890	-	890	71	0	1
3 BED COLONIAL (UFAS)	3.1.CO(u)	1	1,573	-	1,573	118	3	0
5 BED T/DOOR	5.1.T	2	1127	1165	2292	173	5	5
DUPLEX								
1 BED CRAFTSMAN	1.2.C	1	673	-	673	157	3	9
1 BED CRAFTSMAN (UFAS)	1.2.C(u)	1	880	-	1760	114	1	0
1 BED 4 SQUARE	1.2.F	1	880	-	1,553	114	3	0
2 BED CRAFTSMAN	2.2.C-L	1	957	-	957	113	10	4
	2.2.C-R	1	-	-	-	170	-	-
2 BED CRAFTSMAN (UFAS)	2.2.C(u)-L	1	957	-	957	113	1	1
	2.2.C(u)-R	1	-	-	-	170	-	-
3 BED 4 SQUARE	3.3.Fd	2	867	650	1517	132	2	4
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LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
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- —sf— Siltation Fence (To be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INIT. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

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- IPF ○ IRON PIN FND.
- □ CONC. MONUMENT FOUND
- x—x FENCE

GRID N W E S

0 30 60

PHASE I – 11.01 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET
MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
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0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

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HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

SITE PLAN
OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=30' | SH. 3A OF 7

Appendix B:

Site Photographs



View of the subject property



View of the subject property



View of the subject property



View of the subject property



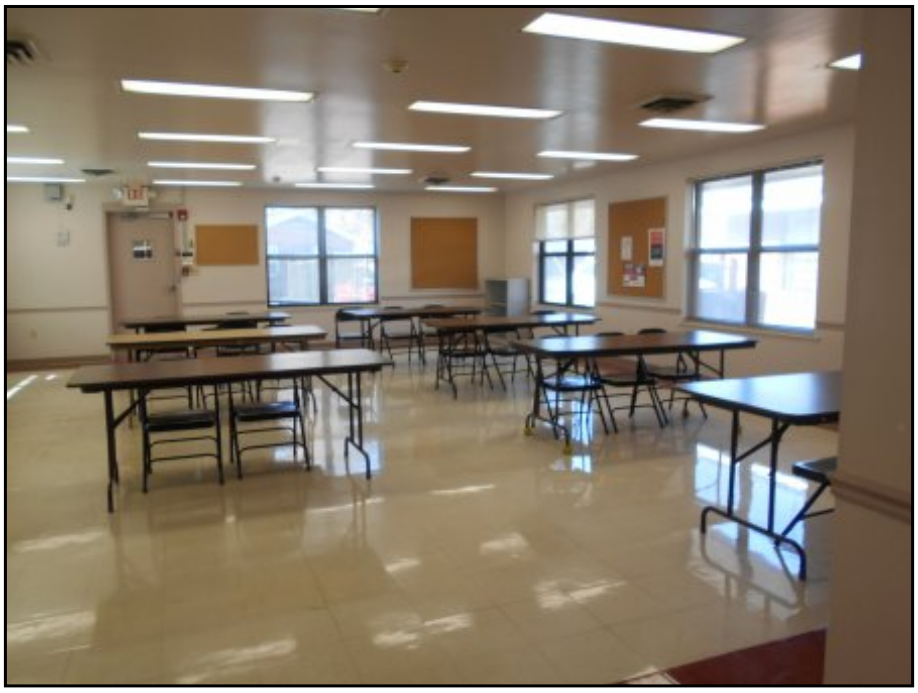
View of the subject property



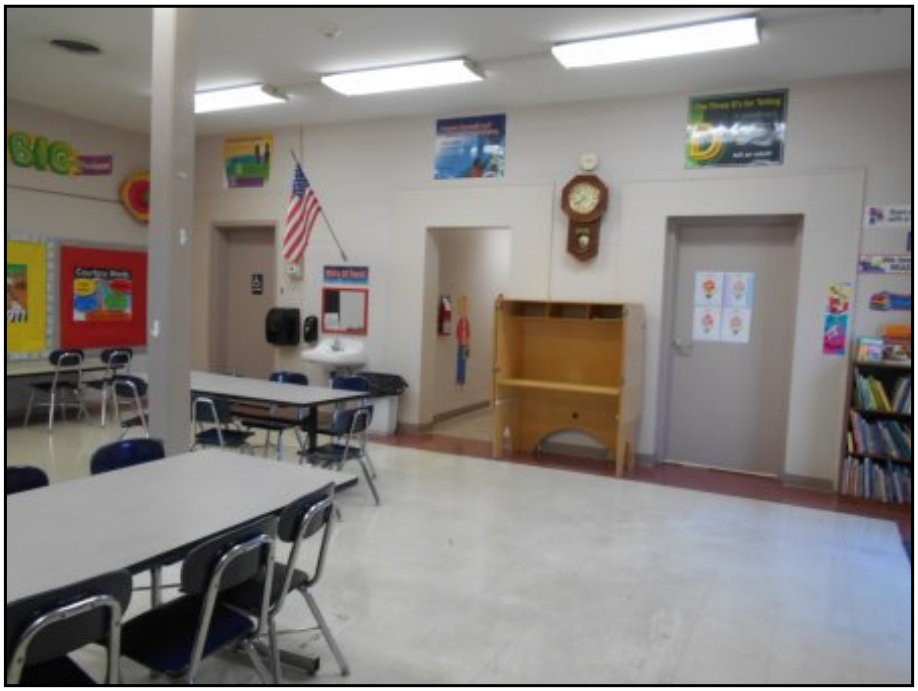
View of the subject property



View of the on-site community center and pre-school



View of a communal area



View of the pre-school area



View of the playground



View of the basketball court



View of a typical resident unit kitchen



View of a typical resident unit living room



View of a typical resident unit bathroom



View of a typical resident unit bedroom



View of a typical resident unit storage area



View of a typical pole-mounted electrical transformer



View of the on-site natural gas pipeline equipment



View of the northern adjacent single-family residential



View of the northern adjacent single-family residential



View of the northern adjacent undeveloped land



View of the eastern adjacent undeveloped wooded land



View of the eastern adjacent Oaklands Mansion



View of the eastern adjacent Oakland Park



View of the southern adjacent multi-family residential



View of the western adjacent single-family residential



View of the western adjacent single-family residential

Appendix C:

Airport Hazards

Airport Hazards (CEST and EA)

General requirements	Legislation	Regulation
It is HUD's policy to apply standards to prevent incompatible development around civil airports and military airfields.		24 CFR Part 51 Subpart D
Reference		
https://www.hudexchange.info/environmental-review/airport-hazards		

1. To ensure compatible land use development, you must determine your site's proximity to civil and military airports. Is your project within 15,000 feet of a military airport or 2,500 feet of a civilian airport?

☑ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within the applicable distances to a military or civilian airport.*

☐ Yes → *Continue to Question 2.*

2. Is your project located within a Runway Potential Zone/Clear Zone (RPZ/CZ) or Accident Potential Zone (APZ)?

☐ Yes, project is in an APZ → *Continue to Question 3.*

☐ Yes, project is an RPZ/CZ → *Project cannot proceed at this location.*

☐ No, project is not within an APZ or RPZ/CZ

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within either zone.*

3. Is the project in conformance with DOD guidelines for APZ?

☐ Yes, project is consistent with DOD guidelines without further action.

Explain how you determined that the project is consistent:

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting this determination.*

☐ No, the project cannot be brought into conformance with DOD guidelines and has not been approved.

→ Project cannot proceed at this location.

☐ Project is not consistent with DOD guidelines, but it has been approved by Certifying Officer or HUD Approving Official.

Explain approval process:

If mitigation measures have been or will be taken, explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting this determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to Federal Aviation Administration (FAA) information accessed at https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm and http://nepassisttool.epa.gov/nepassist/entry.aspx, there are no military airports within 15,000 feet of the subject property or civil airport runways within 2,500 feet of the subject property. The proposed undertaking is in compliance with HUD's Airport Hazard regulations and no mitigation is warranted.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Airports within 2,500 Feet



November 20, 2019

1:36,112

0 0.3 0.6 1.2 mi

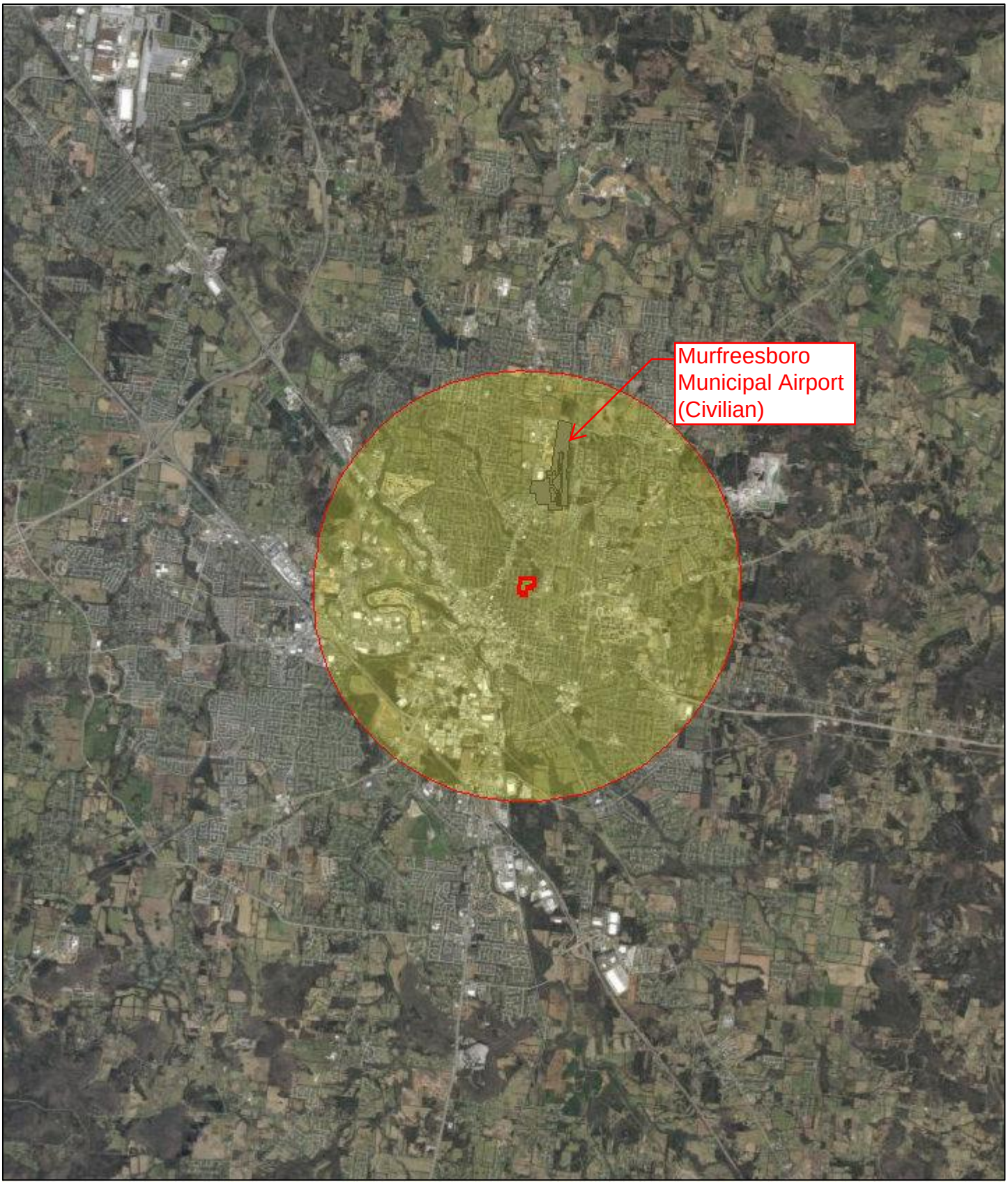
0 0.5 1 2 km

Airport Points

Airport Polygons

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
EPA OEI

Airports within 15,000 Feet



November 20, 2019

1:144,448

0 1.25 2.5 5 mi

0 2 4 8 km

Airport Points

Airport Polygons

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
EPA OEI

Federal Aviation Administration

« OE/AAA

Circle Search For Airports Results

Records 1 to 3 of 3 Page 1 of 1

Locator Id	Name	Site Type	City	State	Latitude	Longitude	Distance(NM)	Azimuth
MBT	MURFREESBORO MUNI	Airport	MURFREESBORO	TN	35° 52' 43.17" N	86° 22' 38.90" W	1.39	198.59°
MQY	SMYRNA	Airport	SMYRNA	TN	36° 0' 32.30" N	86° 31' 12.30" W	11.2	144.47°
50M	PUCKETT	Gliderport	EAGLEVILLE	TN	35° 41' 22.00" N	86° 36' 54.00" W	14.99	48°

Rows per Page: 20

Records 1 to 3 of 3 **Page:** 1 Page 1 of 1

Appendix D:

Coastal Barrier Resources

Coastal Barrier Resources (CEST and EA)

General requirements	Legislation	Regulation
HUD financial assistance may not be used for most activities in units of the Coastal Barrier Resources System (CBRS). See 16 USC 3504 for limitations on federal expenditures affecting the CBRS.	Coastal Barrier Resources Act (CBRA) of 1982, as amended by the Coastal Barrier Improvement Act of 1990 (16 USC 3501)	
References		
https://www.hudexchange.info/environmental-review/coastal-barrier-resources		

Projects located in the following states must complete this form.

Alabama	Georgia	Massachusetts	New Jersey	Puerto Rico	Virgin Islands
Connecticut	Louisiana	Michigan	New York	Rhode Island	Virginia
Delaware	Maine	Minnesota	North Carolina	South Carolina	Wisconsin
Florida	Maryland	Mississippi	Ohio	Texas	

1. Is the project located in a CBRS Unit?

☑ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within a CBRS Unit.*

☐ Yes → *Continue to Question 2.*

> Federal assistance for most activities may not be used at this location. You must either choose an alternate site or cancel the project. In very rare cases, federal monies can be spent within CBRS units for certain exempted activities (e.g., a nature trail), after consultation with the Fish and Wildlife Service (FWS) (see 16 USC 3505 for exceptions to limitations on expenditures).

2. Indicate your selected course of action.

☐ After consultation with the FWS the project was given approval to continue

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map and documentation of a FWS approval.*

☐

Project was not given approval

Project cannot proceed at this location.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to Coastal Barrier Resource Area information accessed at http://www.fws.gov/CBRA/Maps/index.html , the subject property is not located within a coastal barrier. Therefore, the project is in compliance with HUD's Coastal Barrier Resource Systems regulations and no mitigation is warranted.

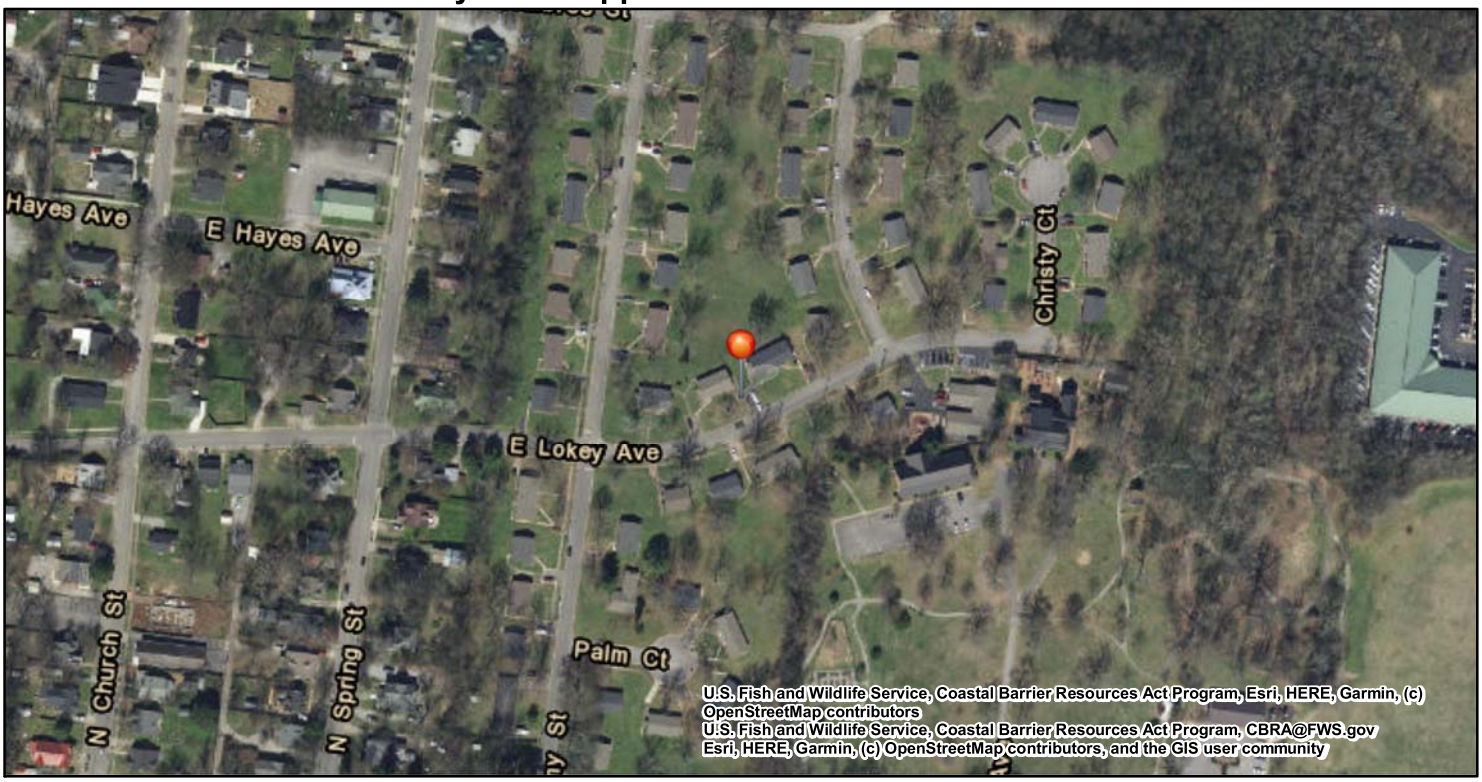
Are formal compliance steps or mitigation required?

☐ Yes

☑ No

U.S. Fish and Wildlife Service

Coastal Barrier Resources System Mapper Documentation



CBRS Units

Otherwise Protected Area
System Unit
CBRS Buffer Zone
-86.386636, 35.856238

0 65 130 260 390 ft

1:4,514

The pin location displayed on the map is a point selected by the user. Failure of the user to ensure that the pin location displayed on this map correctly corresponds with the user supplied address/location description below may result in an invalid federal flood insurance policy. **The U.S. Fish and Wildlife Service (Service) has not validated the pin location with respect to the user supplied address/location description below. The Service recommends that all pin locations be verified by federal agencies prior to use of this map for the provision or denial of federal funding or financial assistance** . Please note that a structure bisected by the Coastal Barrier Resources System (CBRS) boundary (i.e., both "partially in" and "partially out") is within the CBRS and therefore affected by CBRA's restrictions on federal flood insurance. A pin placed on a bisected structure must be placed on the portion of the structure within the unit (including any attached features such as a deck or stairs).

User Name: Oakland Court Development
User Supplied Address/Location Description: E Lokey Avenue Murfreesboro, TN 37130
Pin Location: Outside CBRS
Pin Flood Insurance Prohibition Date: N/A
Pin System Unit Establishment Date: N/A

The user placed pin location is not within the CBRS. The official CBRS maps are accessible at https://www.fws.gov/cbra/maps/index.html .

The CBRS information is derived directly from the CBRS web service provided by the Service. This map was exported on 11/20/2019 and does not reflect changes or amendments subsequent to this date. The CBRS boundaries on this map may become superseded by new boundaries over time.

This map image may be void if one or more of the following map elements do not appear: basemap imagery, CBRS unit labels, prohibition date labels, legend, scale bar, map creation date. For additional information about flood insurance and the CBRS, visit: https://www.fws.gov/cbra/Flood-Insurance.html .

Coastal Barrier Resources System

Ecological Services

Overview
Legislation and Testimony
CBRA Prohibitions
Official Maps »
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Official CBRS Maps

The John H. Chafee Coastal Barrier Resources System (CBRS) is a collection of specific units of land and associated aquatic habitats that serve as barriers protecting the Atlantic, Gulf, and Great Lakes coasts. The CBRS currently includes 585 System units, which comprise nearly 1.3 million acres of land and associated aquatic habitat. There are also 272 "otherwise protected areas," a category of coastal barriers already held for conservation purposes that include an additional 1.9 million acres of land and associated aquatic habitat.

Step 1: Use the CBRA Online Mapper or the State Locator Maps (PDF format) below to find a unit name (s).

State Locator Maps

Alabama	Georgia	Massachusetts	New Jersey	Ohio	Texas
Connecticut	Louisiana	Michigan	New York Great Lakes	Puerto Rico	Virgin Islands
Delaware	Maine	Minnesota	New York Long Island	Rhode Island	Virginia
Florida	Maryland	Mississippi	North Carolina	South Carolina	Wisconsin

Step 2: Download Official CBRS Maps (PDF format)

To download a map, click on a file name to save it, then open the file with a PDF viewer or editor.

Click here to access Official CBRS Maps

Last updated: June 29, 2015

Appendix E:

Flood Insurance

Flood Insurance (CEST and EA)

General requirements	Legislation	Regulation
Certain types of federal financial assistance may not be used in floodplains unless the community participates in National Flood Insurance Program and flood insurance is both obtained and maintained	Flood Disaster Protection Act of 1973 as amended (42 USC 4001-4128)	24 CFR 50.4(b)(1) and 24 CFR 58.6(a) and (b); 24 CFR 55.1(b).
Reference		
https://www.hudexchange.info/environmental-review/flood-insurance		

1. Does this project involve financial assistance for construction, rehabilitation, or acquisition of a mobile home, building, or insurable personal property?

☐ No. This project does not require flood insurance or is excepted from flood insurance. → *Continue to the Worksheet Summary.*

☑ Yes → *Continue to Question 2.*

2. Provide a FEMA/FIRM map showing the site.

The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs). For projects in areas not mapped by FEMA, use the best available information to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site. Provide FEMA/FIRM floodplain zone designation, panel number, and date within your documentation.

Is the structure, part of the structure, or insurable property located in a FEMA-designated Special Flood Hazard Area?

☑ No → Continue to the Worksheet Summary.

☐ Yes → Continue to Question 3.

3. Is the community participating in the National Flood Insurance Program or has less than one year passed since FEMA notification of Special Flood Hazards?

☐ Yes, the community is participating in the National Flood Insurance Program.

For loans, loan insurance or loan guarantees, flood insurance coverage must be continued for the term of the loan. For grants and other non-loan forms of financial assistance, flood insurance coverage must be continued for the life of the building irrespective of the transfer of ownership. The amount of coverage must equal the total project cost or the maximum coverage limit of the National Flood Insurance Program, whichever is less Provide a copy of the flood insurance policy declaration or a paid receipt for the current annual flood insurance premium and a copy of the application for flood insurance.

→ Continue to the Worksheet Summary.

☐ Yes, less than one year has passed since FEMA notification of Special Flood Hazards. If less than one year has passed since notification of Special Flood Hazards, no flood Insurance is required

→ Continue to the Worksheet Summary.

☐ No. The community is not participating, or its participation has been suspended.

Federal assistance may not be used at this location. Cancel the project at this location.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to FEMA Flood Insurance Rate Map (FIRM) #47149C-0260H, dated January 5, 2007, the subject property is located in Unshaded Zone X, designated as an area outside the 100 and 500-year flood zones and the flood potential for the subject property is minimal. According to the National Flood Insurance Program (NFIP) Community Status Book accessed at https://www.fema.gov/national-flood-insurance-program-community-status-book, the subject property is located in Community ID #470168 which is a participating community in the NFIP. However, as no structures or insurable property are located within a Special Flood Hazard Area (100-year flood zone), flood insurance is not required under the NFIP.

According to the FEMA Flood Map Service Center accessed at https://msc.fema.gov/portal/home, there are no preliminary or pending FIRMs for the subject property.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

National Flood Hazard Layer FIRMette

FEMA

35°51'36.12"N

86°23'33.36"W



86°22'55.90"W

35°51'6.96"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

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
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 11/20/2019 at 1:54:46 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.

> Filter By Posting Date Range *(Optional)*

Search | Clear All Fields

Search Results for MURFREESBORO, CITY OF

Click subscribe to receive email notifications when products are updated. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist.

Please Note: Searching All Products by county displays all products for all communities within the county. You can refine your search results by specifying your specific jurisdiction location using the drop-down menus above.

- Effective Products (231)
- Preliminary Products (0)
- Pending Product (0)
- Historic Products (77)
- Flood Risk Products (0)

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Official website of the Department of Homeland Security

Federal Emergency Management Agency
Community Status Book Report
TENNESSEE
Communities Participating in the National Flood Program

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
	470409).						
470336#	MICHIE, CITY OF	MCNAIRY COUNTY	10/01/76	12/01/06	12/02/08(M)	12/01/06	No
470447#	MIDDLETON, TOWN OF	HARDEMAN COUNTY		09/28/07	09/28/07	11/02/10	No
470060#	MILAN, TOWN OF	GIBSON COUNTY	05/24/74	02/16/83	11/05/08	02/16/83	No
470130#	MILLEDGEVILLE, TOWN OF	MCNAIRY COUNTY	07/02/76	12/02/08	12/02/08(M)	07/21/11	No
470388#	MILLERSVILLE, CITY OF	ROBERTSON COUNTY/SUMNER COUNTY		06/15/84	04/17/12	06/15/84	No
470178#	MILLINGTON, CITY OF	SHELBY COUNTY	05/31/74	03/16/81	02/06/13	03/16/81	No
470233#	MONROE COUNTY*	MONROE COUNTY	07/08/77	09/04/91	02/03/10	02/04/02	No
470309#	MONTEAGLE, TOWN OF	FRANKLIN COUNTY/MARION COUNTY/GRUNDY COUNTY	07/02/76	08/04/08	09/25/09(M)	05/22/12	No
470463#	MONTEREY, TOWN OF	PUTNAM COUNTY		05/16/07	(NSFHA)	04/22/11	No
470136#	MONTGOMERY COUNTY *	MONTGOMERY COUNTY	08/30/74	06/15/84	03/18/08	06/15/84	No
470139#	MORGAN COUNTY*	MORGAN COUNTY	01/17/75	03/01/87	06/18/07	03/01/87	No
470467#	MORRISON, TOWN OF	WARREN COUNTY		09/26/08	(NSFHA)	02/28/08	No
470070#	MORRISTOWN, CITY OF	HAMBLEN COUNTY	03/01/74	06/15/78	07/03/06	06/15/78	No
470049#	MOSCOW, CITY OF	FAYETTE COUNTY	05/10/74	06/01/81	11/05/08	06/01/81	No
470310#	MOSHEIM, TOWN OF	GREENE COUNTY	09/03/76	07/03/06	07/03/06	07/03/06	No
470311#	MOUNT CARMEL, TOWN OF	HAWKINS COUNTY	07/09/76	07/03/06	07/03/06	07/03/06	No
470125#	MOUNT PLEASANT, CITY OF	MAURY COUNTY	02/15/74	02/17/88	04/16/07	02/17/88	No
470275#	MOUNTAIN CITY, CITY OF	JOHNSON COUNTY	03/01/74	08/05/86	06/16/09(M)	08/05/86	No
470290#	MT. JULIET, CITY OF	WILSON COUNTY	07/18/75	05/17/82	05/18/09	05/17/82	No
470422#	MUNFORD, CITY OF	TIPTON COUNTY		12/19/06	05/04/09(M)	06/30/03	No
	USE TIPTON COUNTY (CID 470340) FIRM PANEL # 150						
470168#	MURFREESBORO, CITY OF	RUTHERFORD COUNTY	06/07/74	07/18/83	01/05/07	07/18/83	No
470377#	NEW HOPE, TOWN OF	MARION COUNTY	01/25/80	09/27/85	01/06/12	09/27/85	No
470266#	NEW JOHNSONVILLE, CITY OF	HUMPHREYS COUNTY	02/15/74	09/29/86	09/25/09	09/29/86	No
470385#	NEW MARKET, TOWN OF	JEFFERSON COUNTY	09/22/78	09/30/87	12/16/08(M)	09/30/87	No
470030#	NEW TAZEWELL, CITY OF	CLAIBORNE COUNTY	06/28/74	08/05/86	11/02/11(M)	08/05/86	No
470386#	NEWBERN, CITY OF	DYER COUNTY		07/19/00	10/16/08(M)	09/09/00	No
475440#	NEWPORT, CITY OF	COCKE COUNTY		09/03/71	09/25/09	09/03/71	No
470312#	NIOTA, CITY OF	MCMINN COUNTY	05/28/76	09/28/07	09/28/07	10/23/14	No
470425#	NOLENSVILLE, TOWN OF	WILLIAMSON COUNTY	12/06/74	04/01/81	09/29/06	10/02/07	No
470003#	NORRIS, CITY OF	ANDERSON COUNTY	06/14/74	06/25/76	05/04/09	06/25/76	No
470351B	OAK HILL, CITY OF	DAVIDSON COUNTY	10/27/74	04/01/80	04/05/17	04/01/80	No
475441#	OAK RIDGE, CITY OF	ROANE COUNTY/ANDERSON COUNTY		10/27/72	11/18/09	10/27/72	No
470140#	OAKDALE, CITY OF	MORGAN COUNTY	02/01/74	09/29/86	06/18/07	09/29/86	No
470418#	OAKLAND, TOWN OF	FAYETTE COUNTY		11/05/08	11/05/08(M)	11/05/08	No
470361#	OBION COUNTY *	OBION COUNTY	07/21/78	06/17/91	11/05/08	03/04/98	No
470253#	OBION, TOWN OF	OBION COUNTY	01/31/75	03/16/81	11/05/08	03/16/81	No
470005#	OLIVER SPRINGS, TOWN OF	ANDERSON COUNTY/ROANE COUNTY/MORGAN COUNTY	03/22/74	05/15/80	06/18/07	05/15/80	No
470170#	ONEIDA, TOWN OF	SCOTT COUNTY	06/14/74	06/17/86	09/28/07(M)	06/17/86	No
470314#	ORME, TOWN OF	MARION COUNTY	07/02/76	02/04/09	02/04/09(M)	08/11/16	No
470362#	OVERTON COUNTY *	OVERTON COUNTY	01/13/78	05/18/09	05/18/09	05/18/09	No
470445#	PALMER, TOWN OF	GRUNDY COUNTY		09/25/09	(NSFHA)	01/11/11	No
470090#	PARIS, CITY OF	HENRY COUNTY	02/01/74	07/05/83	09/28/07	07/05/83	No
470451#	PARKER'S CROSSROADS, CITY OF	HENDERSON COUNTY		04/16/08	(NSFHA)	11/26/08	No
470315#	PARROTTSVILLE, TOWN OF	COCKE COUNTY	07/02/76	01/06/88	09/25/09(M)	10/26/10	No
470316#	PARSONS, TOWN OF	DECATUR COUNTY	06/11/76	11/01/06	04/19/10(M)	11/01/06	No
470291B	PEGRAM, TOWN OF	CHEATHAM COUNTY	07/18/75	11/05/80	12/22/16	04/09/87	No
470144#	PERRY COUNTY*	PERRY COUNTY	12/22/78	06/01/05	09/29/10	06/01/05	No

Appendix F:

Air Quality

Air Quality (CEST and EA)

General requirements	Legislation	Regulation
The Clean Air Act is administered by the U.S. Environmental Protection Agency (EPA), which sets national standards on ambient pollutants. In addition, the Clean Air Act is administered by States, which must develop State Implementation Plans (SIPs) to regulate their state air quality. Projects funded by HUD must demonstrate that they conform to the appropriate SIP.	Clean Air Act (42 USC 7401 et seq.) as amended particularly Section 176(c) and (d) (42 USC 7506(c) and (d))	40 CFR Parts 6, 51 and 93
Reference		
https://www.hudexchange.info/environmental-review/air-quality		

Scope of Work

1. Does your project include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities OR five or more dwelling units?

☑ Yes
→ *Continue to Question 2.*

☐ No
Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.

Air Quality Attainment Status of Project's County or Air Quality Management District

2. Is your project's air quality management district or county in non-attainment or maintenance status for any criteria pollutants?
Follow the link below to determine compliance status of project county or air quality management district:
http://www.epa.gov/oaqps001/greenbk/

☑ No, project's county or air quality management district is in attainment status for all criteria pollutants
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☐ Yes, project's management district or county is in non-attainment or maintenance status for one or more criteria pollutants.

Describe the findings:
→ *Continue to Question 3.*

3. Determine the estimated emissions levels of your project for each of those criteria pollutants that are in non-attainment or maintenance status on your project area. Will your project exceed any of the de minimis or threshold emissions levels of non-attainment and maintenance level pollutants or exceed the

screening levels established by the state or air quality management district?

☐ No, the project will not exceed de minimis or threshold emissions levels or screening levels
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Explain how you determined that the project would not exceed de minimis or threshold emissions.*

☐ Yes, the project exceeds de minimis emissions levels or screening levels.
→ *Continue to Question 4. Explain how you determined that the project would not exceed de minimis or threshold emissions in the Worksheet Summary.*

4. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to http://www.epa.gov/airquality/greenbk/ancl.html and the EPA NEPAssist tool accessed at https://www.epa.gov/nepa/nepassist, the subject property is not located within a Non-attainment or Maintenance area of the state of Tennessee. Therefore, the project is in compliance with HUD's Air Quality regulations and no mitigation is required.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Nonattainment Areas



November 20, 2019

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

Ozone 8-hr (2015 Standard)
- Maintenance
- Nonattainment

SO2 1-hr (2010 standard)
- Maintenance
- Nonattainment

PM10 (1987 standard)
- Maintenance
- Nonattainment

Lead (2008 standard)
- Maintenance
- Nonattainment

PM2.5 Annual (2012 standard)
- Maintenance
- Nonattainment

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
U.S. EPA Office of Air and Radiation (OAR) - Office of Air Quality Planning

TENNESSEE

Anderson Co

PM-2.5 (1997)		Knoxville, TN - (Moderate)
PM-2.5 (2006)		Knoxville-Sevierville-La Follette, TN - (Moderate)

Blount Co

PM-2.5 (1997)		Knoxville, TN - (Moderate)
PM-2.5 (2006)		Knoxville-Sevierville-La Follette, TN - (Moderate)

Knox Co

PM-2.5 (1997)		Knoxville, TN - (Moderate)
PM-2.5 (2006)		Knoxville-Sevierville-La Follette, TN - (Moderate)

Loudon Co

PM-2.5 (1997)		Knoxville, TN - (Moderate)
PM-2.5 (2006)		Knoxville-Sevierville-La Follette, TN - (Moderate)

Roane Co

PM-2.5 (1997)	*	Knoxville, TN - (Moderate)

PM-2.5 (2006) * Knoxville-Sevierville-La Follette, TN - (Moderate)

Sullivan Co

Sulfur Dioxide (2010) * Sullivan County, TN

Appendix G:

Coastal Zone Management

Coastal Zone Management Act (CEST and EA)

General requirements	Legislation	Regulation
Federal assistance to applicant agencies for activities affecting any coastal use or resource is granted only when such activities are consistent with federally approved State Coastal Zone Management Act Plans.	Coastal Zone Management Act (16 USC 1451-1464), particularly section 307(c) and (d) (16 USC 1456(c) and (d))	15 CFR Part 930
Reference		
https://www.onecpd.info/environmental-review/coastal-zone-management		

Projects located in the following states must complete this form.

Alabama	Florida	Louisiana	Mississippi	Ohio	Texas
Alaska	Georgia	Maine	New Hampshire	Oregon	Virgin Islands
American Samoa	Guam	Maryland	New Jersey	Pennsylvania	Virginia
California	Hawaii	Massachusetts	New York	Puerto Rico	Washington
Connecticut	Illinois	Michigan	North Carolina	Rhode Island	Wisconsin
Delaware	Indiana	Minnesota	Northern Mariana Islands	South Carolina	

1. Is the project located in, or does it affect, a Coastal Zone as defined in your state Coastal Management Plan?

☐ Yes → *Continue to Question 2.*

☑ No. → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within a Coastal Zone.*

2. Does this project include activities that are subject to state review?

☐ Yes → *Continue to Question 3.*

☐ No. → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination.*

3. Has this project been determined to be consistent with the State Coastal Management Program?

☐ Yes, with mitigation. → *Continue to Question 4.*

☐ Yes, without mitigation. → Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination.

☐

No, project must be canceled.
Project cannot proceed at this location.

4. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the State Coastal Management Program letter of consistency) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management (OCM) accessed at https://coast.noaa.gov/czm/mystate/, the state of Tennessee is not located within a Coastal Management Zone. Therefore, the proposed undertaking is in compliance with HUD's Coastal Zone Management Act regulations and no consultation nor mitigation measures are warranted.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Coastal Zone Management Programs

Alabama [#alabama]
Alaska (*) [#alaska]
American Samoa [#samoa]
California [#california]
Connecticut [#connecticut]
Delaware [#delaware]
Florida [#florida]
Georgia [#georgia]
Guam [#guam]
Hawaii [#hawaii]
Illinois [#illinois]
Indiana [#indiana]
Louisiana [#louisiana]
Maine [#maine]
Maryland [#maryland]
Massachusetts [#massachusetts]
Michigan [#michigan]
Minnesota [#minnesota]
Mississippi [#mississippi]
New Hampshire [#newhampshire]
New Jersey [#newjersey]
New York [#newyork]
North Carolina [#northcarolina]
Northern Mariana Islands [#mariana]
Ohio [#ohio]
Oregon [#oregon]
Pennsylvania [#pennsylvania]
Puerto Rico [#puertorico]
Rhode Island [#rhodeisland]
South Carolina [#southcarolina]
Texas [#texas]
Virgin Islands [#virginislands]
Virginia [#virginia]
Washington [#washington]
Wisconsin [#wisconsin]

** All 35 coastal and Great Lakes states and territories (with the exception of Alaska) participate in the National Coastal Zone Management Program.*

ALABAMA
The Alabama Coastal Management Program [http://www.adem.state.al.us/programs/coastal/default.cnt] , approved by NOAA in 1979, is administered by two state agencies:

- The Alabama Department of Conservation and Natural Resources [http://www.outdooralabama.com/alabama-coastal-area-management-program] is responsible for planning, fiscal management, public education, and research management; and the
- Alabama Department of Environmental Management [http://adem.alabama.gov/programs/coastal/default.cnt] carries out permitting, regulatory, and enforcement functions.

The primary authority for the coastal management program is the Alabama Coastal Area Act of 1976 (Act 534). The Alabama coastal zone [/czm/media/StateCZBoundaries.pdf] extends inland to the continuous 10-foot contour in Mobile and Baldwin Counties.

ALASKA
Alaska withdrew from the voluntary National Coastal Zone Management Program [/czm/about/] on July 1, 2011. Contact NOAA's Office of Ocean and Coastal Resource Management for additional information.

AMERICAN SAMOA
The American Samoa Coastal Management Program [http://www.doc.as/resource-management/ascmp/] , approved by NOAA in 1980, is led by the American Samoa Department of Commerce. The coastal program has developed a unique approach that incorporates both western and traditional systems of management. The American Samoa Coastal Management Act provides the primary authority for the program. American Samoa's coastal zone boundary [/czm/media/StateCZBoundaries.pdf] consists of seven islands, totaling roughly 77 square miles, with a coastline of 126 miles.

CALIFORNIA
The California Coastal Management Program, approved by NOAA in 1978, is administered by three state agencies:

- The California Coastal Commission [http://www.coastal.ca.gov/] manages development along the California coast except San Francisco Bay, where the
- San Francisco Bay Conservation and Development Commission [http://www.bcdc.ca.gov/] oversees development.
- The California Coastal Conservancy [http://www.scc.ca.gov/] purchases, protects, restores, and enhances coastal resources, and provides access to the shore.

The primary authorities for the California Coastal Management Program are the California Coastal Act, McAteer-Petris Act, and Suisan Marsh Preservation Act. The California coastal zone [/czm/media/StateCZBoundaries.pdf] generally extends 1,000 yards inland from the mean high tide line. The coastal zone for the San Francisco Bay Conservation and Development Commission includes the open water, marshes, and mudflats of greater San Francisco Bay, and areas 100 feet inland from the line of highest tidal action.

CONNECTICUT

The Connecticut Coastal Management Program [http://www.ct.gov/dep/cwp/view.asp?a=2705&q=323536&depNav_GID=1622] , approved in 1980, is administered by the Office of Long Island Sound Programs within the Department of Energy and Environmental Protection. The primary authority for the coastal management program is the Connecticut Coastal Management Act of 1980. Connecticut has a two-tiered coastal zone [/czm/media/StateCZBoundaries.pdf] . The first tier, the “coastal boundary,” generally extends inland 1,000 feet from the shore. The second tier, the “coastal area,” includes all of the state’s 36 coastal municipalities.

DELAWARE

The Delaware Coastal Management Program [http://www.dnrec.delaware.gov/coastal/Pages/CoastalMgt.aspx] was approved by NOAA in 1979. The coastal management program’s lead agency is the Division of Soil and Water Conservation, Department of Natural Resources and Environmental Control. The program coordinates across nearly every state agency to ensure the effective implementation of policies, state laws, regulations and executive orders that affect coastal resources. Because the goals of the coastal management program are to balance the use, preservation, and development of coastal resources, these policies cover a surprising range of coastal issues.

The whole state of Delaware is designated as a coastal zone [/czm/media/StateCZBoundaries.pdf] due to its small size and is divided into two tiers: the “coastal strip” and the rest of the state. The coastal strip, averaging four miles in width, receives special zoning protection from industrial development, while the second tier only falls under general program provisions.

FLORIDA

The Florida Coastal Management Program [http://www.dep.state.fl.us/cmp/default.htm] was approved by NOAA in 1981, with the Florida Department of Environmental Protection serving as the lead agency. A network of eight state agencies and five water management districts together enforce 23 separate statutes. The Florida coastal zone [/czm/media/StateCZBoundaries.pdf] is the entire state but is divided into two tiers. Only coastal cities and counties that include or are contiguous to state water bodies are eligible to receive coastal management funds.

GEORGIA

The Georgia Coastal Management Program [http://coastalgadnr.org/cm] was approved by NOAA in 1998, with Georgia’s Department of Natural Resources, Coastal Resources Division, serving as the lead agency. The Georgia Coastal Management Act authorized the creation of the Georgia Coastal Management Program. The Georgia coastal zone [/czm/media/StateCZBoundaries.pdf] includes the state’s six coastal counties and five “inland tier” counties, which include Chatham, Effingham, Bryan, Liberty, McIntosh, Long, Glynn, Wayne, Brantley, Camden, and Charlton counties.

GUAM

The Guam Coastal Management Program [http://www.bsp.guam.gov/index.php?option=com_content&view=category&id=38&Itemid=37] was approved in 1979, and is overseen by the Bureau of Statistics and Plans. The coastal management program guides the use, protection, and development of land and ocean resources within Guam’s coastal zone.

Guam's comprehensive planning enabling legislation, Seashore Protection Act, and several executive orders are among the key legislation for the coastal management program. Because Guam is a small island, the entire land area is included within its coastal zone [/czm/media/StateCZBoundaries.pdf] .

HAWAII

The Hawaii Coastal Management Program [http://planning.hawaii.gov/czm/] , approved by NOAA in 1978, is led by the Hawaii Office of Planning. The coastal management program is a network of authorities and partnerships collectively implementing the objectives and policies of Hawaii's Coastal Zone Management Statutes (Chapter 205A, HRS). The entire state of Hawaii falls within Hawaii's coastal zone boundary [/czm/media/StateCZBoundaries.pdf] .

ILLINOIS

The Illinois Coastal Management Program [http://www.dnr.illinois.gov/cmp/Pages/default.aspx] is the newest state partner in the National Coastal Zone Management Program, gaining approval in 2012. Illinois' program, under the direction of the Illinois Department of Natural Resources, Office of Coastal Management, focuses on several priority issues in the Illinois coastal zone [/czm/media/StateCZBoundaries.pdf] , a 63-mile stretch along Lake Michigan. The program manages impacts to its Lake Michigan shoreline through the Rivers, Lakes, and Streams Act, Lake Michigan Shore Line Act, and a network of other authorities.

INDIANA

The Indiana Coastal Management Program [http://www.in.gov/dnr/lakemich/] , approved by NOAA in 2002, is led by the Indiana Department of Natural Resources. The coastal management program is a networked program built upon a framework of state laws and authorities addressing key coastal priorities. The Coastal Advisory Board, which represents various stakeholder groups, determines the priorities for each grant funding cycle and provides a forum for public input on regional issues affecting Lake Michigan coastal resources. The Indiana coastal zone [/czm/media/StateCZBoundaries.pdf] is based on watershed boundaries and varies from a little less than two miles to 17 miles from the shore.

LOUISIANA

The Louisiana Coastal Management Program [http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=85&ngid=5] , approved by NOAA in 1980, is administered by the Department of Natural Resources through the Office of Coastal Management. The primary authority for the coastal management program is the State and Local Coastal Resources Management Act of 1978. The Louisiana coastal zone [/czm/media/StateCZBoundaries.pdf] , which varies from 16 to 32 miles inland from the Gulf coast, is a 10 million-acre area that includes 40 percent of the nation's coastal wetlands.

MAINE

The Maine Coastal Management Program [http://www.maine.gov/dacf/mcp/index.htm] , approved in 1978, is led by the Maine Department of Agriculture, Conservation, and Forestry. The coastal management program consists of a network of 19 state laws with four state agencies working in cooperation with local governments, nonprofit organizations, private businesses, and the public to improve management of coastal resources. Maine's coastal zone [/czm/media/StateCZBoundaries.pdf] extends to the inland boundary of all towns bordering tidal waters and includes all coastal islands.

MARYLAND

The Maryland Coastal Management Program [http://dnr2.maryland.gov/ccs/Pages/funding/czma.aspx] was approved by NOAA in 1978, with the Department of Natural Resources acting as the lead agency. The coastal management program is a networked program composed of several state planning and regulatory programs implementing a suite of enforceable policies to protect coastal resources and manage coastal uses, including the Chesapeake Bays Critical Areas Protection Program. Maryland's coastal zone [/czm/media/StateCZBoundaries.pdf] follows the inland boundary of the counties (and Baltimore City) bordering the Atlantic Ocean, Chesapeake Bay, and the Potomac River (as far as the municipal limits of Washington, D.C.).

MASSACHUSETTS

The Massachusetts Coastal Management Program [http://www.mass.gov/czm/czm.htm] , approved by NOAA in 1978, is administered by the Office of Coastal Zone Management within the Executive Office of Environmental Affairs and serves as the lead for coastal policy and technical assistance in the state.

The Executive Office of Environmental Affairs enforces 20 program policies and nine management principles governing activities within the coastal zone. The Massachusetts coastal zone [/czm/media/StateCZBoundaries.pdf] roughly includes all land within a half-mile of coastal waters and salt marshes, as well as all islands.

MICHIGAN

The Michigan Coastal Management Program [http://www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-11188--,00.html] was approved by NOAA in 1978, and is administered by the Department of Environmental Quality. Key management authorities of the coastal management program include several parts of the Natural Resources and Environmental Protection Act pertaining to Shorelands Protection and Management (Part 323), Great Lakes Submerged Lands (Part 325), and Sand Dunes Protection and Management (Part 353).

Boasting the world's largest freshwater coastline, Michigan's coastal zone [/czm/media/StateCZBoundaries.pdf] generally extends a minimum of 1,000 feet inland from the ordinary high water mark, with the boundary extending further inland in some locations to encompass important coastal features.

MINNESOTA

The Minnesota Coastal Management Program [http://www.dnr.state.mn.us/waters/lakesuperior/index.html] was approved by NOAA in 1999 and consists of a network of agencies and programs led by the Department of Natural Resources.

Key legislation includes the Shoreland Management Act and the North Shore Management Plan. Minnesota's coastal zone [/czm/media/StateCZBoundaries.pdf] includes the area approximately six miles inland from Lake Superior, following the nearest township boundaries along the shore.

MISSISSIPPI

The Mississippi Coastal Management Program [http://www.dmr.ms.gov/index.php/coastal-resources-management] , approved by NOAA in 1980, consists of a network of agencies with authority in the coastal zone. The Department of Marine Resources, through the Office of Coastal Ecology, serves as the lead agency.

The primary authority guiding the coastal management program is the Coastal Wetlands Protection Act. The Mississippi coastal zone [/czm/media/StateCZBoundaries.pdf] includes the three coastal counties, as well as all adjacent coastal waters and the barrier islands of the coast.

NEW HAMPSHIRE

The New Hampshire Department of Environmental Services leads the implementation of the state's coastal program. The New Hampshire Coastal Management Program [http://des.nh.gov/organization/divisions/water/wmb/coastal/index.htm] , approved by NOAA in 1982, is a networked program where several state agencies help enforce the coastal management program's 16 coastal policies. The New Hampshire coastal zone [/czm/media/StateCZBoundaries.pdf] covers areas next to the Atlantic Ocean and the lower Piscataqua River, along with areas bordering the Great Bay and tidal rivers, and all 17 municipalities along tidal waters.

NEW JERSEY

The New Jersey Coastal Management Program [http://www.state.nj.us/dep/cmp/] was approved by NOAA in 1978 and is directly administered by its lead agency, the New Jersey Department of Environmental Protection, in partnership with the New Jersey Meadowlands Commission, as the lead planning agency for the Hackensack Meadowlands District.

The coastal management program is based on three major laws: the Coastal Area Facility Review Act, the Wetlands Act of 1970, and the Waterfront Development Law. New Jersey's coastal zone [/czm/media/StateCZBoundaries.pdf] encompasses approximately 1,800 miles of tidal coastline and ranges in width from 100 feet to 24 miles inland.

NEW YORK

The New York Coastal Management Program [http://www.dos.ny.gov/communitieswaterfronts/WFRevitalization/coastmgmtprog.html] was approved by NOAA in 1982, with the New York Department of State serving as the lead agency. The Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways, provides the state with the authority to establish a coastal program, develop coastal policies, define the coastal boundaries, and establish state consistency requirements.

The inland New York coastal zone boundary [/czm/media/StateCZBoundaries.pdf] is variable but generally is 1,000 feet from the shoreline in non-urbanized areas. In urbanized areas and other developed locations along the coastline, the inland boundary is usually 500 feet or less from the shoreline, with the boundary possibly extending inland up to 10,000 feet to encompass significant coastal resources.

NORTH CAROLINA

The North Carolina Coastal Management Program [http://dcm2.enr.state.nc.us/] , approved by NOAA in 1978, is administered by the Division of Coastal Management within the Department of Environment and Natural Resources. The primary authority for the coastal management program is the Coastal Area Management Act.

North Carolina's coastal zone [/czm/media/StateCZBoundaries.pdf] includes 20 coastal counties that in whole or in part are adjacent to, adjoining, intersected, or bounded by the Atlantic Ocean or any coastal sound.

NORTHERN MARIANA ISLANDS

The Commonwealth of the Northern Mariana Islands is made up of 14 islands that span 440 miles of the western Pacific Ocean, with the Division of Coastal Resources Management serving as the lead agency for the Northern Mariana Islands Coastal Management Program. NOAA approved the commonwealth's coastal management program in 1980. Since the islands are small, the entire land and water area of the commonwealth is included within the coastal zone [/czm/media/StateCZBoundaries.pdf] .

OHIO

The Ohio Coastal Management Program [http://coastal.ohiodnr.gov/] was approved by NOAA in 1997, with the Ohio Department of Natural Resources serving as the lead agency for the networked program. The coastal management program incorporates state laws, regulations, and programs within 41 management policies that are organized around nine issue areas [http://coastal.ohiodnr.gov/ocmp] . Ohio's coastal zone [/czm/media/StateCZBoundaries.pdf] is quite varied and runs through the nine counties bordering Lake Erie and its tributaries. The boundary width ranges from about one-eighth of a mile to 15 miles depending on features, such as coastal wetlands and bluffs.

OREGON

The Oregon Coastal Management Program [https://www.oregon.gov/LCD/OCMP/pages/cstzone_intro.aspx] , approved by NOAA in 1977, consists of a network of agencies with authority in the coastal zone. The Oregon Department of Land Conservation and Development serves as the lead agency. The primary authority for the coastal management program is the Oregon Land Use Planning Act and the 19 statewide planning goals. The Oregon coastal zone [/czm/media/StateCZBoundaries.pdf] includes the state's coastal watersheds and extends inland to the crest of the coast range, with a few minor exceptions.

PENNSYLVANIA

The Pennsylvania Coastal Management Program [http://www.dep.state.pa.us/river/czmp.htm] , approved in 1980, is administered by the Department of Environmental Protection. The coastal management program comprises two widely separated coastal areas: the 63-mile Lake Erie shoreline and the 57-mile stretch of coastline along the Delaware Estuary.

The program relies on a network of state authorities. The Pennsylvania coastal zone [/czm/media/StateCZBoundaries.pdf] along Lake Erie varies from 900 feet in urban areas to over three miles in rural areas, and the Delaware River Estuary boundary extends inland from 660 feet in urbanized areas to 3.5 miles in rural areas.

PUERTO RICO
Puerto Rico's Coastal Management Program [http://drna.pr.gov/tag/zona-costanera/] was approved by NOAA in 1978 and comprises a network of state agencies led by the Department of Natural and Environmental Resources. The program encompasses 40 statutes.

Puerto Rico's coastal zone [/czm/media/StateCZBoundaries.pdf] generally extends 1,000 meters (one kilometer) inland, but extends further inland in places to include important coastal resources.

RHODE ISLAND
The Rhode Island Coastal Management Program [http://www.crmc.ri.gov/] , approved by NOAA in 1978, is administered by the Rhode Island Coastal Resources Management Council. The primary authority for the coastal management program is the Coastal Resources Management Act of 1971. Rhode Island's coastal zone [/czm/media/StateCZBoundaries.pdf] encompasses the entire state, although the inland extent of the coastal management program's regulatory authority is generally 200 feet inland from any coastal feature.

SOUTH CAROLINA
The South Carolina Coastal Management Program [http://www.scdhec.net/environment/ocrm/] was approved by NOAA in 1979, and the lead agency is the Department of Health and Environmental Control. The primary authority for the coastal management program is the 1977 Coastal Tidelands and Wetlands Act. The South Carolina coastal zone [/czm/media/StateCZBoundaries.pdf] includes all lands and waters in the counties of the state that contain any one or more "critical areas," which are defined as coastal waters, tidelands, beaches, and primary oceanfront sand dunes.

TEXAS
The Texas Coastal Management Program [http://www.glo.texas.gov/coast/grant-projects/cmp/index.html] , approved by NOAA in 1996, is administered by the Texas General Land Office in conjunction with the Coastal Coordination Advisory Committee. The Coastal Coordination Act is the primary authority for the Texas Coastal Management Program.
The Texas coastal zone [/czm/media/StateCZBoundaries.pdf] is generally the area seaward of the Texas coastal facility designation line, up to three marine leagues into the Gulf of Mexico.

VIRGIN ISLANDS
The U.S. Virgin Islands Coastal Management Program was approved by NOAA in 1979. The lead agency is the Department of Planning and Natural Resources. The primary authority for the coastal management program is the U.S. Virgin Islands Coastal Zone Management Act, and the coastal zone [/czm/media/StateCZBoundaries.pdf] includes the entire territory.

VIRGINIA
The Virginia Coastal Management Program [http://www.deq.state.va.us/Programs/CoastalZoneManagement.aspx] was approved by NOAA in 1986, and the Department of Environmental Quality serves as the lead agency. Authorized by a commonwealth executive order, the coastal management program is structured as a network of agencies that have authority for implementing nine core policies and a set of advisory policies covering wetlands, fisheries, water quality, dunes and beaches, subaqueous lands, and other coastal resources in the Virginia coastal zone [/czm/media/StateCZBoundaries.pdf] . The coastal zone includes the state's 29 coastal counties, 17 cities, and 42 incorporated towns.

WASHINGTON
The Washington Coastal Management Program [http://www.ecy.wa.gov/programs/sea/czm/index.html] , approved by NOAA in 1976, was the first approved program in the nation. The Department of Ecology serves as the lead coastal management agency. The primary authority for the coastal management program is the Shoreline Management Act of 1971. The Washington coastal zone [/czm/media/StateCZBoundaries.pdf] includes the state's 15 coastal counties that front saltwater.

WISCONSIN
The Wisconsin Coastal Management Program [http://www.doa.state.wi.us/section.asp?linkid=65&locid=9] , approved by NOAA in 1978, is administered by the Department of Administration, Bureau of Intergovernmental Relations. The

coastal management program is a networked program implemented in partnership with the Wisconsin Coastal Management Council, with representatives from local governments, state agencies, Native American tribes, and interest groups. The council sets the policy direction for the program. The Wisconsin coastal zone [/czm/media/StateCZBoundaries.pdf] comprises the 15 counties fronting Lake Superior, Lake Michigan, and Green Bay.

For more information, contact us [https://coast.noaa.gov/contactform/] .

About the National Program [/czm/about/]

States and Territories [/czm/mystate/]

Coastal Zone Management Act [/czm/act]

Regulations [http://www.ecfr.gov/cgi-bin/text-idx?SID=73fa77136a5eecb25a52b3ef02368ecb&tpl=/ecfrbrowse/Title15/15cfr923_main_02.tpl]

National Program Funding Summary [/czm/media/funding-summary.pdf]

Program Guidance [/czm/guidance/]

National Program Publications [/czm/publications/]

Evaluations [/czm/evaluations/]

Performance Measures [/czm/performance/]

Appendix H:

Site Contamination

Contamination and Toxic Substances (Multifamily and Non-Residential Properties)

General requirements	Legislation	Regulations
It is HUD policy that all properties that are being proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of the occupants or conflict with the intended utilization of the property.		24 CFR 58.5(i)(2) 24 CFR 50.3(i)
Reference		
https://www.hudexchange.info/programs/environmental-review/site-contamination		

1. How was site contamination evaluated? Select all that apply.

- ☑ ASTM Phase I ESA
- ☐ ASTM Phase II ESA
- ☐ Remediation or clean-up plan
- ☑ ASTM Vapor Encroachment Screening
- ☐ None of the above

→ *Provide documentation and reports and include an explanation of how site contamination was evaluated in the Worksheet Summary. Continue to Question 2.*

2. Were any on-site or nearby toxic, hazardous, or radioactive substances found that could affect the health and safety of project occupants or conflict with the intended use of the property? (Were any recognized environmental conditions or RECs identified in a Phase I ESA and confirmed in a Phase II ESA?)

☑ No

Explain:

Dominion Due Diligence Group performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Oakland Court Development located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee (subject property). Any exceptions to, or deletions from, this practice are described in Section 2.4 of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) or controlled recognized environmental conditions (CRECs) in connection with the subject property.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ Yes

→ *Describe the findings, including any recognized environmental conditions (RECs), in Worksheet Summary below. Continue to Question 3.*

3. Mitigation

Document the mitigation needed according to the requirements of the appropriate federal, state, tribal, or local oversight agency. If the adverse environmental effects cannot be mitigated, then HUD assistance may not be used for the project at this site.

Can adverse environmental impacts be mitigated?

☐ Adverse environmental impacts cannot feasibly be mitigated

→ Project cannot proceed at this location.

☐ Yes, adverse environmental impacts can be eliminated through mitigation.

→ *Provide all mitigation requirements and documents. Continue to Question 4.*

4. Describe how compliance was achieved. Include any of the following that apply: State Voluntary Clean-up Program, a No Further Action letter, use of engineering controls , or use of institutional controls .

If a remediation plan or clean-up program was necessary, which standard does it follow?

☐ Complete removal

→ *Continue to the Worksheet Summary.*

☐ Risk-based corrective action (RBCA)

→ *Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Dominion Due Diligence Group performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Oakland Court Development located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee (subject property). Any exceptions to, or deletions from, this practice are described in Section 2.4 of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) or controlled recognized environmental conditions (CRECs) in connection with the subject property.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Oakland Court Development
East Lokey Avenue
Murfreesboro, TN 37130

Inquiry Number: 5874329.2s
November 18, 2019

FirstSearch Report

Search Summary Report

TARGET SITE **EAST LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Sel	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	Y	0	0	0	0	0	0	0
NPL Delisted	Y	0	0	0	0	-	0	0
CERCLIS	Y	0	0	0	0	-	0	0
NFRAP	Y	0	0	0	0	-	0	0
RCRA COR ACT	Y	0	0	0	0	0	0	0
RCRA TSD	Y	0	0	0	0	-	0	0
RCRA GEN	Y	0	0	0	-	-	0	0
Federal IC / EC	Y	0	0	-	-	-	0	0
ERNS	Y	0	0	-	-	-	0	0
State/Tribal NPL	Y	0	0	0	0	0	0	0
State/Tribal SWL	Y	0	0	0	0	0	0	0
State/Tribal LTANKS	Y	0	0	1	6	-	1	8
State/Tribal Tanks	Y	0	0	1	-	-	0	1
State/Tribal IC / EC	Y	0	0	-	-	-	0	0
State/Tribal VCP	Y	0	0	0	0	-	0	0
ST/Tribal Brownfields	Y	0	0	0	0	-	0	0
US Brownfields	Y	0	0	0	0	-	0	0
Other SWF	Y	0	0	0	0	-	0	0
Other Tanks	Y	0	0	-	-	-	0	0
Local Land Records	Y	0	0	-	-	-	0	0
Spills	Y	0	0	-	-	-	0	0
Other	Y	0	0	3	-	-	0	3
	- Totals --	0	0	5	6	0	1	12

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6 Armstrong Road, 4th floor
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Toll Free: 800.352.0050
www.edrnet.com

Search Summary Report

TARGET SITE: **EAST LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	NPL	07/19/2019	1.000	0	0	0	0	0	0	0
	Proposed NPL	07/19/2019	1.000	0	0	0	0	0	0	0
	NPL LIENS	10/15/1991	TP	0	-	-	-	-	0	0
NPL Delisted	Delisted NPL	07/19/2019	0.500	0	0	0	0	-	0	0
CERCLIS	FEDERAL FACILITY	04/03/2019	0.500	0	0	0	0	-	0	0
	SEMS	07/19/2019	0.500	0	0	0	0	-	0	0
NFRAP	SEMS-ARCHIVE	07/19/2019	0.500	0	0	0	0	-	0	0
RCRA COR ACT	CORRACTS	06/24/2019	1.000	0	0	0	0	0	0	0
RCRA TSD	RCRA-TSDF	06/24/2019	0.500	0	0	0	0	-	0	0
RCRA GEN	RCRA-LQG	06/24/2019	0.250	0	0	0	-	-	0	0
	RCRA-SQG	06/24/2019	0.250	0	0	0	-	-	0	0
	RCRA-VSQG	06/24/2019	0.250	0	0	0	-	-	0	0
Federal IC / EC	LUCIS	08/13/2019	0.125	0	0	-	-	-	0	0
	US ENG CONTROLS	08/19/2019	0.125	0	0	-	-	-	0	0
	US INST CONTROL	08/19/2019	0.125	0	0	-	-	-	0	0
ERNS	ERNS	09/09/2019	0.125	0	0	-	-	-	0	0
State/Tribal NPL	SHWS	07/01/2019	1.000	0	0	0	0	0	0	0
State/Tribal SWL	SWF/LF	09/09/2019	0.750	0	0	0	0	0	0	0
State/Tribal LTANKS	LUST	08/01/2019	0.500	0	0	1	6	-	1	8
	INDIAN LUST	04/11/2019	0.500	0	0	0	0	-	0	0
State/Tribal Tanks	FEMA UST	08/27/2019	0.250	0	0	0	-	-	0	0
	UST	08/01/2019	0.250	0	0	1	-	-	0	1
	AST	10/01/1999	1.000	0	0	0	0	0	0	0
	INDIAN UST	04/11/2019	0.250	0	0	0	-	-	0	0
State/Tribal IC / EC	ENG CONTROLS	08/12/2019	0.125	0	0	-	-	-	0	0
	INST CONTROL	08/12/2019	0.125	0	0	-	-	-	0	0
State/Tribal VCP	VCP	07/01/2019	0.500	0	0	0	0	-	0	0

Search Summary Report

TARGET SITE: **EAST LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
	INDIAN VCP	07/27/2015	0.500	0	0	0	0	-	0	0
ST/Tribal Brownfields	BROWNFIELDS	06/27/2016	0.500	0	0	0	0	-	0	0
US Brownfields	US BROWNFIELDS	06/03/2019	0.500	0	0	0	0	-	0	0
Other SWF	INDIAN ODI	12/31/1998	0.500	0	0	0	0	-	0	0
	ODI	06/30/1985	0.500	0	0	0	0	-	0	0
Other Tanks	HIST UST	08/01/2019	0.125	0	0	-	-	-	0	0
Local Land Records	LIENS	03/10/2015	0.125	0	0	-	-	-	0	0
Spills	SPILLS	01/05/2015	0.125	0	0	-	-	-	0	0
Other	RCRA NonGen / NLR	06/24/2019	0.250	0	0	3	-	-	0	3
	RADINFO	07/01/2019	TP	0	-	-	-	-	0	0
	INDIAN RESERV	12/31/2014	1.000	0	0	0	0	0	0	0
	LEAD SMELTERS	07/19/2019	TP	0	-	-	-	-	0	0
	AIRS	07/29/2019	TP	0	-	-	-	-	0	0
	DRYCLEANERS	05/01/2019	0.250	0	0	0	-	-	0	0
	LEAD	02/25/2019	TP	0	-	-	-	-	0	0
	- Totals --			0	0	5	6	0	1	12

Site Information Report

Request Date: NOVEMBER 18, 2019
Search Type: COORD
Request Name: SAMANTHA HOLCOMBE
Job Number: TEAM 3 TEAM 3

Target Site: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	86.386945	86.3869450 - 86˚ 23' 13.00''	Easting:	555354.8
Latitude:	35.856382	35.8563820 - 35˚ 51' 22.97''	Northing:	3967992.8
Elevation:	618 ft. above sea level		Zone:	Zone 16

Demographics

Sites: 11 **Non-Geocoded:** 1 **Population:** N/A

RADON

Federal EPA Radon Zone for RUTHERFORD County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 37130

Number of sites tested: 14

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.829 pCi/L	86%	14%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal Area Radon Information for RUTHERFORD COUNTY, TN

Number of sites tested: 19

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.500 pCi/L	89%	11%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	17.500 pCi/L	0%	100%	0%

Site Information Report

RADON

State Database: TN Radon

Radon Test Results

County	Total Sites	Avg	Max	<4 pCi/L	4-10 pCi/L	10-20 pCi/L	20-50 pCi/L	50-100 pCi/L	>100 pCi/L
RUTHERFORD	55	2.2	23.5	49	5	0	1	0	0

Target Site Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

Sites Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
1	RCRA NonGen / NLR --TND077644755	MURFREESBORO POLICE HEADQUARTE	1004 N HIGHLAND AVE MURFREESBORO, TN 37130	0.14 East	- 20	1
2	RCRA NonGen / NLR --TND987787116	MAPCO #3162	1251 CHURCH MURFREESBORO, TN 37130	0.14 NNW	- 7	2
3	RCRA NonGen / NLR --TND065829749	ELROD H MORTON	626 NORTH MAPLE STREET MURFREESBORO, TN 37130	0.24 SW	- 22	4
A4	UST --Permanently Out of Use --3/27/2015 --6/10/1991 --6/20/1994 --5750137	SWIFTY STATION NO. 259	1110 MEMORIAL BLVD. MURFREESBORO, TN 37129	0.25 WNW	- 11	6
A5	LUST --5750137 --8 Case Closed --1a Completed Tank Closure	SWIFTY SERVICE STATION #259	1110 MEMORIAL BLVD MURFREESBORO, TN 37110	0.25 WNW	- 11	13
6	LUST --5750101 --8 Case Closed	MAPCO EXPRESS #3407	1320 MEMORIAL BLVD. MURFREESBORO, TN 37130	0.27 NNW	- 6	16
7	LUST --5750380 --1a Completed Tank Closure	UNITED CITIES GAS CO	334 LOKEY AVENUE MURFREESBORO, TN 37130	0.30 West	- 18	17
8	LUST --5750133 --1a Completed Tank Closure	JONES CAR WASH	1103 MEMORIAL BLVD. MURFREESBORO, TN 37130	0.31 WNW	- 15	18
9	LUST --5750303 --1a Completed Tank Closure	WT'S MARKET	925 SOUTHWEST MEMORIAL BL MURFREESBORO, TN 37130	0.36 West	- 24	19
10	LUST --5750168 --8 Case Closed	MURFREESBORO HOUSING AUTHORITY	415 NORTH MAPLE ST. MURFREESBORO, TN 37130	0.40 SW	- 7	20

Sites Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
11	LUST --5750333 --8 Case Closed	EZ MART	728 MEMORIAL BLVD. MURFREESBORO, TN 37130	0.47 WSW	- 16	23

Sites Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
	LUST --5750110 --8 Case Closed	HOOVER, INC	TWIN OAK DR MURFEESBORO, TN 37130	NON GC	N/A	N/A

Database Descriptions

NPL: NPL National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices. NPL - National Priority List Proposed NPL - Proposed National Priority List Sites. NPL LIENS - Federal Superfund Liens.

NPL Delisted: Delisted NPL The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Delisted NPL - National Priority List Deletions

CERCLIS: FEDERAL FACILITY A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities. FEDERAL FACILITY - Federal Facility Site Information listing SEMS - Superfund Enterprise Management System.

NFRAP: SEMS-ARCHIVE SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site. SEMS-ARCHIVE - Superfund Enterprise Management System Archive

RCRA COR ACT: CORRACTS CORRACTS identifies hazardous waste handlers with RCRA corrective action activity. CORRACTS - Corrective Action Report

RCRA TSD: RCRA-TSDF RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste. RCRA-TSDF - RCRA - Treatment, Storage and Disposal

RCRA GEN: RCRA-LQG RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. RCRA-LQG - RCRA - Large Quantity Generators RCRA-SQG - RCRA - Small Quantity Generators. RCRA-VSQG - RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators).

Federal IC / EC: LUCIS LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties. LUCIS - Land Use Control Information System US ENG CONTROLS - Engineering Controls Sites List. US INST CONTROL - Sites with Institutional Controls.

ERNS: ERNS Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances. ERNS - Emergency Response Notification System

Database Descriptions

State/Tribal NPL: SHWS "Inactive hazardous substance sites that constitute an imminent, substantial danger" is an inactive hazardous substance site where there is a threat of danger to the public health, safety, or environment which is both real and presently existing. Such situations may include, but are not limited to one or more of the following: an immediate action is necessary to minimize an ongoing threat to the public health or pollution of the environment, an inactive hazardous substance site where there is an active release, where direct access to the hazardous substance is not controlled, or where incompatible hazardous substances are found in close proximity. Also known as Promulgated Sites List. SHWS - Promulgated Sites

State/Tribal SWL: SWF/LF Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. SWF/LF - Solid Waste Disposal Facilities SWM COMPLAINTS - Solid Waste Management Complaints.

State/Tribal LTANKS: LUST A listing of leaking underground storage tank site locations. LUST - Fund Eligible Leaking Underground Storage Tank Sites INDIAN LUST R5 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R4 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R9 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R6 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R7 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R8 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R1 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R10 - Leaking Underground Storage Tanks on Indian Land.

State/Tribal Tanks: FEMA UST A listing of all FEMA owned underground storage tanks. FEMA UST - Underground Storage Tank Listing UST - Facility and Tank Report. AST - Aboveground Storage Tanks. INDIAN UST R6 - Underground Storage Tanks on Indian Land. INDIAN UST R5 - Underground Storage Tanks on Indian Land. INDIAN UST R4 - Underground Storage Tanks on Indian Land. INDIAN UST R1 - Underground Storage Tanks on Indian Land. INDIAN UST R10 - Underground Storage Tanks on Indian Land. INDIAN UST R9 - Underground Storage Tanks on Indian Land. INDIAN UST R7 - Underground Storage Tanks on Indian Land. INDIAN UST R8 - Underground Storage Tanks on Indian Land.

State/Tribal IC / EC: ENG CONTROLS Sites that have engineering controls. ENG CONTROLS - Engineering Control Sites INST CONTROL - Institutional Control Sites.

State/Tribal VCP: INDIAN VCP R7 VCP - Voluntary Cleanup, Oversight and Assistance Program Sites. INDIAN VCP R1 - Voluntary Cleanup Priority Listing. A listing of voluntary cleanup priority sites located on Indian Land located in Region 1. INDIAN VCP R1 - Voluntary Cleanup Priority Listing

ST/Tribal Brownfields: BROWNFIELDS Brownfields sites included on the Superfund Voluntary Cleanup, Oversight & Assistance Program listing. BROWNFIELDS - Superfund VOAP Listing

US Brownfields: US BROWNFIELDS Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs. US BROWNFIELDS - A Listing of Brownfields Sites

Other SWF: INDIAN ODI Location of open dumps on Indian land. INDIAN ODI - Report on the Status of Open Dumps on Indian Lands ODI - Open Dump Inventory.

Database Descriptions

Other Haz Sites: PFAS A listing of sites where PFAS has been detected to date. PFAS - PFAS Contamination Site Location Listing

Other Tanks: HIST UST This database is no longer updated by the agency. It contains records and detail fields that the current UST database does not. HIST UST - Underground Storage Tank Database

Local Land Records: LIENS A listing of sites with environmental liens information. LIENS - Liens Information

Spills: SPILLS A listing of spills locations. SPILLS - State Spills

Other: RCRA NonGen / NLR RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste. RCRA NonGen / NLR - RCRA - Non Generators / No Longer Regulated FEDLAND - Federal and Indian Lands. PRP - Potentially Responsible Parties. RADINFO - Radiation Information Database. BRS - Biennial Reporting System. INDIAN RESERV - Indian Reservations. LEAD SMELTER 1 - Lead Smelter Sites. LEAD SMELTER 2 - Lead Smelter Sites. US AIRS (AFS) - Aerometric Information Retrieval System Facility Subsystem (AFS). US AIRS MINOR - Air Facility System Data. AIRS - Listing of Permitted Sources. DRYCLEANERS - Registered Facilities List. LEAD CERT - Lead Safe Housing Registry. MINES MRDS - Mineral Resources Data System.

Database Sources

NPL: EPA

Updated Quarterly

NPL Delisted: EPA

Updated Quarterly

CERCLIS: Environmental Protection Agency

Varies

NFRAP: EPA

Updated Quarterly

RCRA COR ACT: EPA

Updated Quarterly

RCRA TSD: Environmental Protection Agency

Updated Quarterly

RCRA GEN: Environmental Protection Agency

Updated Quarterly

Federal IC / EC: Department of the Navy

Varies

ERNS: National Response Center, United States Coast Guard

Updated Quarterly

State/Tribal NPL: Department of Environment & Conservation

Updated Semi-Annually

State/Tribal SWL: Department of Environment and Conservation

Updated Quarterly

State/Tribal LTANKS: Department of Environment and Conservation

Updated Semi-Annually

State/Tribal Tanks: FEMA

Varies

Database Sources

State/Tribal IC / EC: Department of Environment & Conservation

Updated Semi-Annually

State/Tribal VCP: EPA, Region 7

Varies

ST/Tribal Brownfields: Department of Environment & Conservation

Varies

US Brownfields: Environmental Protection Agency

Updated Semi-Annually

Other SWF: Environmental Protection Agency

Varies

Other Haz Sites: Department of Environment & Conservation

Varies

Other Tanks: Department of Environment & Conservation

No Update Planned

Local Land Records: Department of Environment & Conservation

Varies

Spills: Department of Environment & Conservation

Varies

Other: Environmental Protection Agency

Updated Quarterly

Street Name Report for Streets near the Target Property

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

Street Name	Dist/Dir	Street Name	Dist/Dir
Christy Ct	0.11 East		
Courtland St	0.17 South		
E Hayes Ave	0.09 WNW		
E Hembree St	0.10 North		
E Lokey Ave	0.03 SSE		
E McKnight Dr	0.23 North		
Elm St	0.18 SSW		
Evergreen St	0.22 South		
Jetton Dr	0.06 ENE		
Lee St	0.23 SE		
N Academy St	0.02 West		
N Church St	0.16 West		
N Maney Ave	0.18 SSE		
N Maple St	0.23 West		
N Spring St	0.09 West		
Palm Ct	0.09 South		
Roberts St	0.18 SSE		
W Hayes Ave	0.16 WNW		
W Hembree St	0.19 NW		
W Lokey Ave	0.17 West		

Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: NPL, RCRACOR, STATES Sites

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Indian Reservations BIA

National Priority List Sites

EDR Reference Code (EDR Internal use only): 5874329.2s
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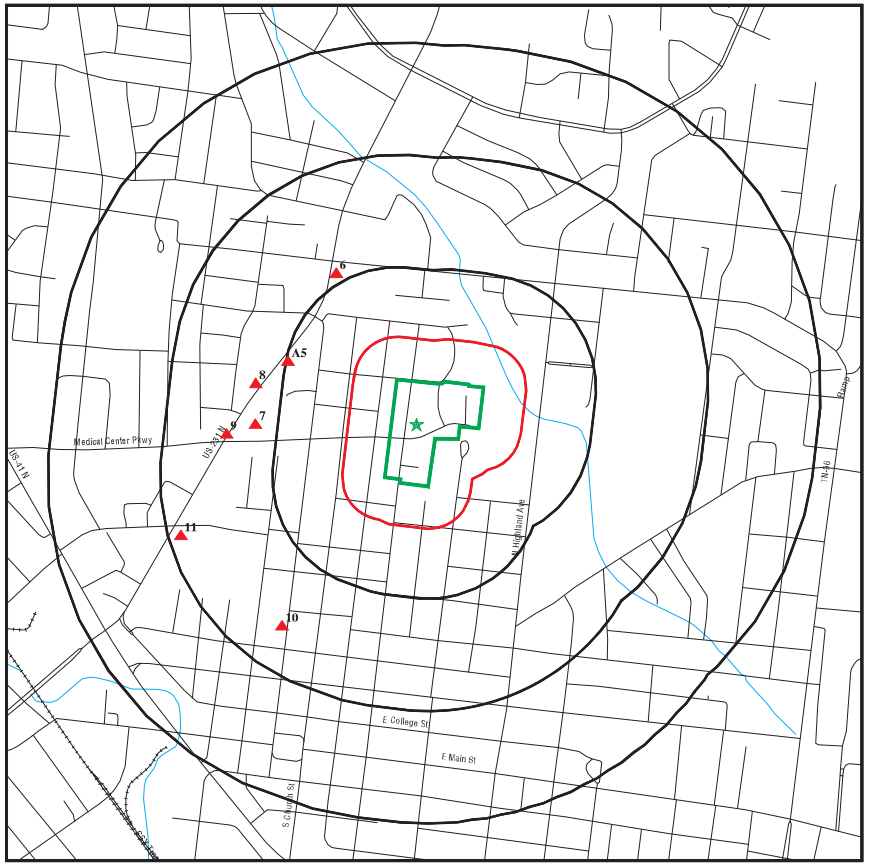
19-11-18.17502s50.Mon

Environmental FirstSearch

0.750 Mile Radius

ASTM MAP: CERCLIS, RCRATSD, LUST, SWL

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Indian Reservations BIA

National Priority List Sites

EDR Reference Code (EDR Internal use only): 5874329.2s
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19-11-18.17502s22.Mon

Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Indian Reservations BIA

National Priority List Sites

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Environmental FirstSearch

0.25 Mile Radius

Non ASTM Map, Spills, FINDS

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Sensitive Receptors

Indian Reservations BIA

National Priority List Sites

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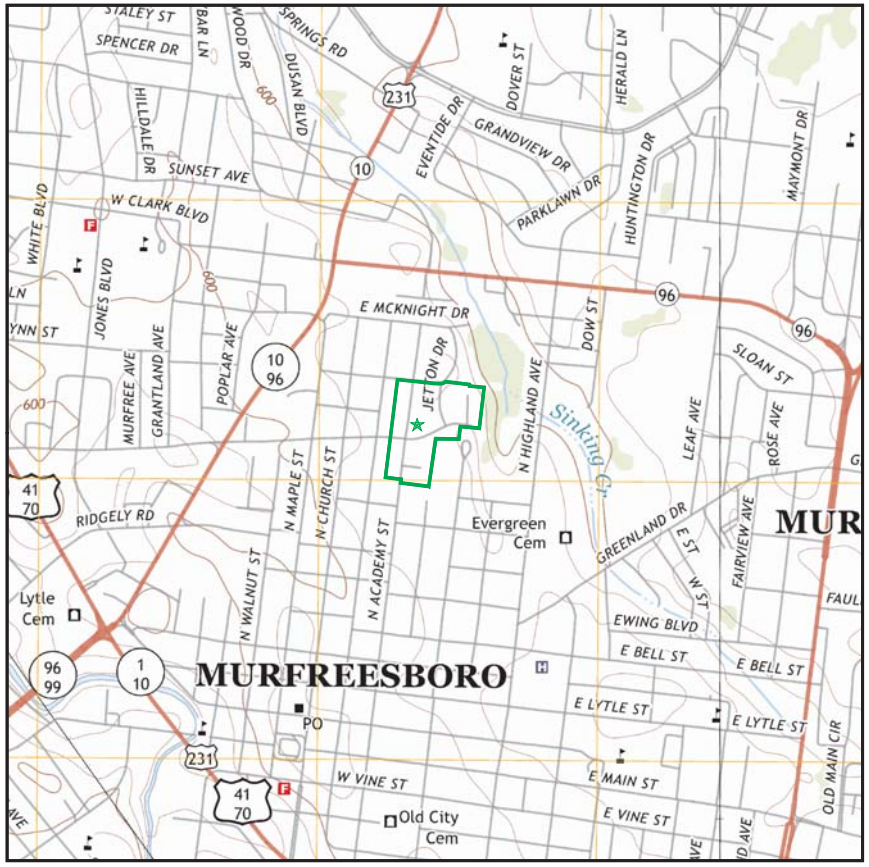
Site location Map

Topo: 0.75 Mile Radius

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Map Image Position: TP
Map Reference Code & Name: 5944176 Murfreesboro
Map State(s): TN
Version Date: 2013
Map Image Position: SE
Map Reference Code & Name: 5944164 Dillton
Map State(s): TN
Version Date: 2013

Non-Invasive Tier 1 Vapor Encroachment Screening - Database Review Worksheet
Oakland Court Development

						Up-gradient		Down-gradient		Cross-gradient		Notes
					Area of Concern	COC : .33 mile	Petroleum: .10 mile	COC : .02 mile	Petroleum: .02 mile	COC: .07 mile	Petroleum: .03 mile	
State Standard Environmental Record Sources												
Database	**Site Name**	**Site Address**	**Distance**	**Direction**	**Gradient**							
LUST	SWIFTY SERVICE STATION #259	1110 MEMORIAL BLVD	0.246	WNW	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
LUST	BP STA 24433-03	1320 MEMORIAL BLVD	0.273	NNW	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
LUST	UNITED CITIES GAS CO	334 LOKEY AVE	0.301	W	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
LUST	JONES CAR WASH	1103 MEMORIAL BLVD.	0.310	WNW	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
Federal Standard Environmental Record Sources												
Database	**Site Name**	**Site Address**	**Distance**	**Direction**	**Gradient**							
There are no Federal Environmental Record Sources identified within the Area of Concern.												
Sites outside of the maximum area of concern (1/3 mile) for both State and Federal Environmental Record Sources are not a VEC and are therefore not inlcuded in this worksheet.												
Total Sources of Vapor Encroachment						**0**	**0**	**0**	**0**	**0**	**0**	

Appendix I:

Endangered Species Act

Endangered Species Act (CEST and EA)

General requirements	ESA Legislation	Regulations
Section 7 of the Endangered Species Act (ESA) mandates that federal agencies ensure that actions that they authorize, fund, or carry out shall not jeopardize the continued existence of federally listed plants and animals or result in the adverse modification or destruction of designated critical habitat. Where their actions may affect resources protected by the ESA, agencies must consult with the Fish and Wildlife Service and/or the National Marine Fisheries Service ("FWS" and "NMFS" or "the Services").	The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.); particularly section 7 (16 USC 1536).	50 CFR Part 402
References		
https://www.hudexchange.info/environmental-review/endangered-species		

1. Does the project involve any activities that have the potential to affect species or habitats?

☐ No, the project will have No Effect due to the nature of the activities involved in the project.
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☐ No, the project will have No Effect based on a letter of understanding, memorandum of agreement, programmatic agreement, or checklist provided by local HUD office.

Explain your determination:

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☑ Yes, the activities involved in the project have the potential to affect species and/or habitats.
→ *Continue to Question 2.*

2. Are federally listed species or designated critical habitats present in the action area?
Obtain a list of protected species from the Services. This information is available on the FWS Website or you may contact your local FWS and/or NMFS offices directly.

☐ No, the project will have No Effect due to the nature of the activities involved in the project.
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination. Documentation may include letters from the Services, species lists from the Services' websites, surveys or other documents and*

analysis showing that there are no species in the action area.

☑ Yes, there are federally listed species or designated critical habitats present in the action area
→ *Continue to Question 3.*

3. What effects, if any, will your project have on federally listed species or designated critical habitat?

☐ No Effect: Based on the specifics of both the project and any federally listed species in the action area, you have determined that the project will have absolutely no effect on listed species or critical habitat.
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination. Documentation should include a species list and explanation of your conclusion, and may require maps, photographs, and surveys as appropriate.*

☑ May Affect, Not Likely to Adversely Affect: Any effects that the project may have on federally listed species or critical habitats would be beneficial, discountable, or insignificant.
→ *Continue to Question 4, Informal Consultation.*

☐ Likely to Adversely Affect: The project may have negative effects on one or more listed species or critical habitat.
→ *Continue to Question 5, Formal Consultation.*

4. Informal Consultation is required

Section 7 of ESA (16 USC. 1536) mandates consultation to resolve potential impacts to endangered and threatened species and critical habitats. If a HUD-assisted project may affect any federally listed endangered or threatened species or critical habitat, then compliance is required with Section 7. See 50 CFR Part 402 Subpart B Consultation Procedures.

Did the Service(s) concur with the finding that the project is Not Likely to Adversely Affect?

☑ Yes, the Service(s) concurred with the finding.
→ *Based on the response, the review is in compliance with this section. Continue to Question 6 and provide the following:*
(1) A biological evaluation or equivalent document
(2) Concurrence(s) from FWS and/or NMFS
(3) Any other documentation of informal consultation

Exception: If finding was made based on procedures provided by a letter of understanding, memorandum of agreement, programmatic agreement, or checklist provided by local HUD office, provide whatever documentation is mandated by that agreement.

☐ No, the Service(s) did not concur with the finding.
→ *Continue to Question 5.*

5. Formal consultation is required

Section 7 of ESA (16 USC 1536) mandates consultation to resolve potential impacts to federally listed

endangered and threatened species and critical habitats. If a HUD assisted project may affect any endangered or threatened species or critical habitat, then compliance is required with Section 7. See 50 CFR Part 402 Subpart B Consultation Procedures.

→ *Once consultation is complete, the review is in compliance with this section. Continue to Question 6 and provide the following:*

(1) A biological assessment, evaluation, or equivalent document
(2) Biological opinion(s) issued by FWS and/or NMFS
(3) Any other documentation of formal consultation

6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the proposed measures that will be implemented to mitigate for the impact or effect, including the timeline for implementation.

☑ Mitigation as follows will be implemented:
A time of year restriction (TOYR) for tree-clearing will be observed. All tree-clearing activities will occur between October 15 and March 31.

☐ No mitigation is necessary.
Explain why mitigation will not be made here:

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

D3G obtained an Official Species List for the subject property using the USFWS Information for Planning and Consultation (IPaC) website accessed at https://ecos.fws.gov/ipac/. According to the Official Species List, seven (7) federally-listed endangered species have the potential to be present within the project area: Gray Bat, Indiana Bat, Northern Long-eared Bat, Littlewing Pearlymussel, Braun's Rockcress, Guthrie's Ground-plum, Leafy Prairie-clover. Based on an analysis of the habitat requirements of the identified species and the physical characteristics of the subject property, no suitable habitat is believed to be present for five (5) of the identified species, as detailed in the attached Species Conclusion Table. In addition, no critical habitats were identified within the project area. Based on the foregoing information, D3G concludes that the proposed undertaking will have No Effect on the Gray Bat, Littlewing Pearlymussel, Braun's Rockcress, Guthrie's Ground-plum, Leafy Prairie-clover or critical habitats.

The subject property is currently developed as a multi-family apartment complex, however, there are trees interspersed throughout the property that may represent suitable summer habitat for the Indiana Bat and Northern Long-eared Bat. Less than one (1) acre of trees will be cleared in conjunction with the proposed development. As such, a time of year restriction (TOYR) for tree-clearing will be observed. All tree-clearing activities will occur between October 15 and March 31. Based on the foregoing information, D3G concludes that the proposed undertaking May Affect, but is Not Likely to Adversely Affect, the Indiana Bat and Northern Long-eared Bat.

D3G submitted this finding and supporting documentation to the appropriate state USFWS office for review and comment. According to a response dated December 13, 2019, the USFWS concurs that the proposed undertaking will not adversely affect federally-listed species, provided that the time of year tree-clearing restriction is observed.

Are formal compliance steps or mitigation required?

☑ Yes

☐ No

Hannah Pearl

From: Harrison, Sarah <sarah_harrison@fws.gov>
Sent: Friday, December 13, 2019 5:30 PM
To: Hannah Pearl
Cc: FWS Tennessee ES
Subject: 2020-I-0336 HUD - D3 Group - Oakland Court Development, Murfreesboro, Rutherford Co

Ms. Pearl,

U.S. Fish and Wildlife Service (Service) personnel have reviewed your correspondence from November 2, 2019, regarding the proposed demolition and new construction of the Oakland Court Development in Murfreesboro, Rutherford County, Tennessee. The proposed project involves the demolition of 54 single story apartment structures and one community structure. It would also include the new construction of 90 single family duplex and triplex structures. Your correspondence requested information regarding potential impacts to federally threatened and endangered species. In response, the Service offers the following comments.

Information available to the Service does not indicate that federally threatened and endangered species or designated critical habitat or wetlands occur within the impact area of this project. We note, however, that collection records available to the Service may not be all-inclusive. Our database is a compilation of collections records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality.

The Service would not anticipate the proposed action to adversely affect federally listed species; however, in accordance with section 7 of the Endangered Species Act (87 stat. 884 as amended; 16 U.S.C. 1531 et seq.), it is the responsibility of the lead federal agency to make an effects determination. A may affect determination would require further coordination with the Service.

For future projects, we request that you utilize the online project review tool to streamline your consultation with the Service (https://www.fws.gov/cookeville/project_review.html). To complete this process, you should self-certify your project after making an effects

determination and use the generated letter to document section 7 compliance. For projects requiring additional review, we request that you submit those via email to TennesseeES@fws.gov.

Please feel free to contact me if you have any questions or concerns regarding this information.

Sincerely,

Sarah Harrison

--
Sarah Harrison
Fish & Wildlife Biologist
USFWS Tennessee Field Office
446 Neal Street
Cookeville, TN 38501
Phone: 931-528-6481 ext. 222

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

November 22, 2019

U.S. Fish and Wildlife Services
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, Tennessee 38501

Subject: USFWS Determination
Consultation Code: 04ET1000-2020-SLI-0294
Oakland Court Development
E Lokey Avenue
Murfreesboro, Tennessee 37130
Parcel #: 091E B 03900
Latitude: 35.856405, Longitude: -86.385846

Pursuant to Section 7 of the Endangered Species Act, this letter is to provide you with the necessary information and our findings for the following proposal with respect to endangered and threatened resources known to be within the undertaking's area of potential effects:

HUD PROGRAM:

HUD RAD 1 – Rental Assistance Demonstration of a multi-family apartment complex

LOCATION:

Murfreesboro, Rutherford County, Tennessee

PROJECT SIZE:

20.08 acres

PRESENT CONDITION OF THE SITE:

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure constructed in 1960. The subject property structures contain a total of seventy-six (76) residential dwelling units and are situated on 20.08 acres of land. Located within the community structure is a daycare. Exterior property improvements include a playground, a basketball court, landscaped regions and asphalt parking areas. The Sponsor is submitting this project under the HUD Rental Assistance Demonstration (RAD) program, consisting of the demolition of the current subject property structures and new construction of ninety (90) single-family duplex, and triplex structures containing a total of 150 residential dwelling units.

D3G obtained an Official Species List for the subject property using the USFWS Information for Planning and Consultation (IPaC) website accessed at https://ecos.fws.gov/ipac/. According to the Official Species List, seven (7) federally-listed endangered species have the potential to be present within the project area: Gray Bat, Indiana Bat, Northern Long-eared Bat, Littlewing Pearlymussel, Braun's Rockcress, Guthrie's Ground-plum, Leafy Prairie-clover. Based on an analysis of the habitat requirements of the identified species and the physical characteristics of the subject property, no suitable habitat is believed to be present for five (5) of the identified species, as detailed in the attached Species Conclusion Table. In addition, no critical habitats were identified within the project area. **Based on the foregoing information, D3G concludes, on behalf of the federal agency (US Department of Housing and Urban Development), that the proposed undertaking will have No Effect on the Gray Bat, Littlewing Pearlymussel, Braun's Rockcress, Guthrie's Ground-plum, Leafy Prairie-clover or critical habitats.**

The subject property is currently developed as a multi-family apartment complex, however, there are trees interspersed throughout the property that may represent suitable summer habitat for the Indiana Bat and Northern Long-eared Bat. Less than one (1) acre of trees will be cleared in conjunction with the proposed development. As such, a time of year restriction (TOYR) for tree-clearing will be observed. All tree-clearing activities will occur between October 15 and March 31. **Based on the foregoing information, D3G concludes, on behalf of the federal agency (US Department of Housing and Urban Development), that the proposed undertaking May Affect, but is Not Likely to Adversely Affect, the Indiana Bat and Northern Long-eared Bat.**

Your review and response to these findings will be appreciated to satisfy the requirements of the federal agency providing funding for the proposed action, the US Department of Housing and Urban Development (HUD). Supporting documentation is attached to assist in your review.

Should you or your staff require additional information or have any questions, please feel free to contact me.

Sincerely;

DOMINION DUE DILIGENCE GROUP

Hannah L. Pearl, EP, CFM
NEPA Compliance Manager
h.pearl@d3g.com
(804) 726-5156

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
Phone: (931) 528-6481 Fax: (931) 528-7075

In Reply Refer To:
Consultation Code: 04ET1000-2020-SLI-0294
Event Code: 04ET1000-2020-E-00394
Project Name: Oakland Court Development

November 21, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
(931) 528-6481

Project Summary

Consultation Code: 04ET1000-2020-SLI-0294

Event Code: 04ET1000-2020-E-00394

Project Name: Oakland Court Development

Project Type: DEVELOPMENT

Project Description: (76) units within (54) single-story apartment structures and (1) community building/daycare constructed in 1960 on 20.30 acres. The property is the proposed location of 149 units within 90 apartment structures.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.85619833157809N86.38658025783545W



Counties: Rutherford, TN

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Littlewing Pearlymussel *Pegias fabula* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2572	Endangered

Flowering Plants

NAME	STATUS
Braun's Rock-cress *Arabis perstellata*	Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4704	
Guthrie's (=pyne's) Ground-plum *Astragalus bibullatus*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1739	
Leafy Prairie-clover *Dalea foliosa*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5498	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

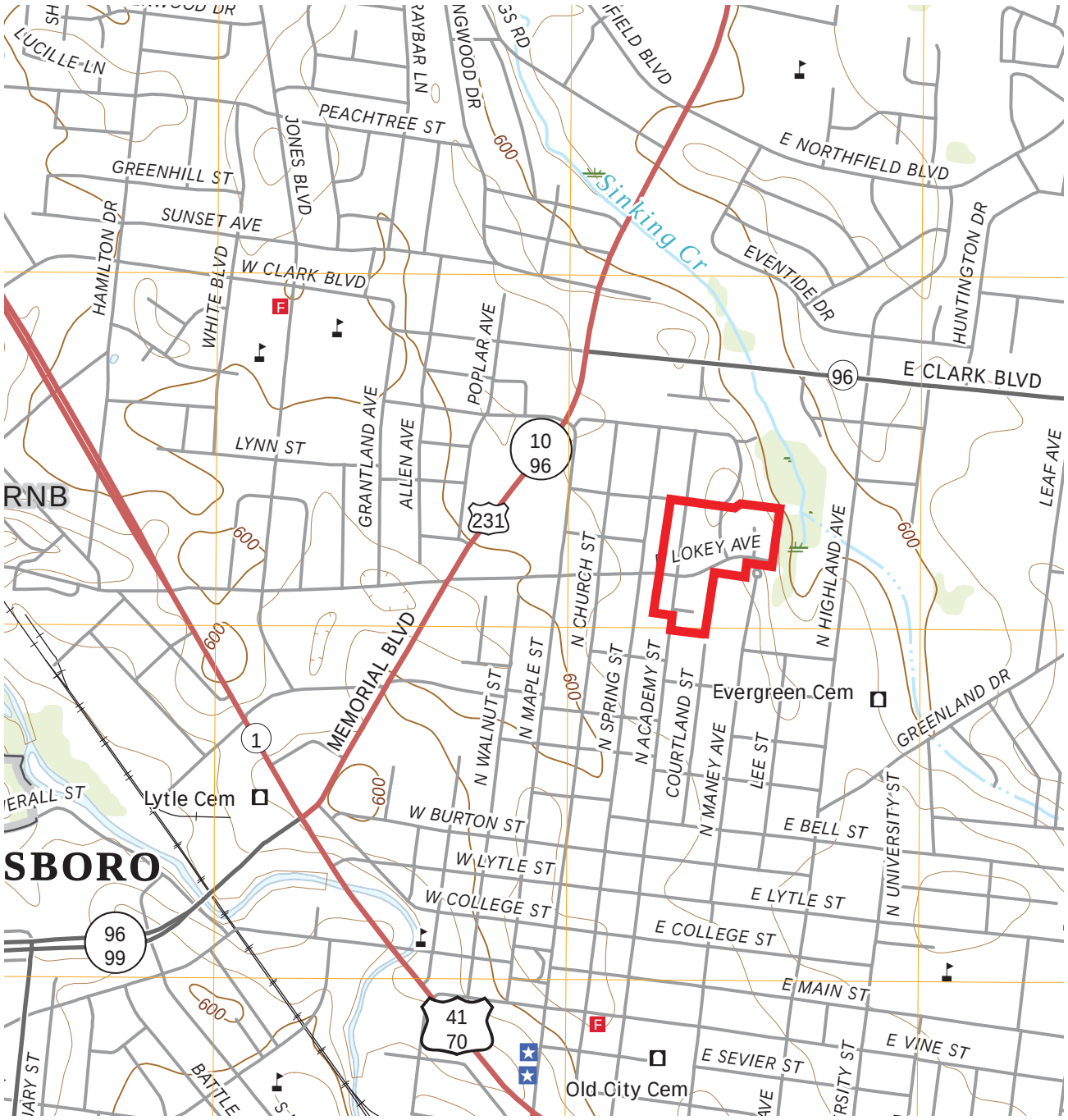
Species Conclusions Table

Project Name: Oakland Court Development

Date: November 22, 2019

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Gray Bat (*Myotis grisescens*)	No Suitable Habitat Present	No Effect	Per the ECOS Species Profile, with rare exceptions, gray bats live in caves year-round. During the winter gray bats hibernate in deep, vertical caves. In the summer, they roost in caves which are scattered along rivers. These caves are in limestone karst areas of the southeastern United States. They do not use houses or barns. The subject property is currently developed as a multi-family apartment complex, which does not represent suitable habitat for this species. Therefore, the proposed undertaking will have No Effect on the Gray Bat.
Indiana Bat (*Myotis sodalis*)	Potential Suitable Habitat Present	May Affect; Not Likely to Adversely Affect	Per the ECOS Species Profile, the Indiana Bat is a small, social species of bat that hibernate in caves or abandoned mines and migrate to wooded areas where they roost under loose tree bark on dead or dying trees at least three (3) inches in diameter at breast height (dbh) during the summer. The subject property is currently developed as a multi-family apartment complex, however, there are trees interspersed throughout the property that may represent suitable summer habitat for this species. Less than one (1) acre of trees will be cleared in conjunction with the proposed development. As such, a time of year restriction (TOYR) for tree-clearing will be observed. All tree-clearing activities will occur between October 15 and March 31. Therefore, the proposed undertaking May Affect, but is Not Likely to Adversely Affect, the Indiana Bat.
Northern Long-eared Bat (*Myotis septentrionalis*)	Potential Suitable Habitat Present	May Affect; Not Likely to Adversely Affect	Per USFWS, this species hibernates in caves and spends summers roosting in trees. The subject property is currently developed as a multi-family apartment complex, however, there are trees interspersed throughout the property that may represent suitable summer habitat for this species. Less than one (1) acre of trees will be cleared in conjunction with the proposed development. As such, a time of year restriction (TOYR) for tree-clearing will be observed. All tree-clearing activities will occur between October 15 and March 31. Therefore, the proposed undertaking May Affect, but is Not Likely to Adversely Affect, the Northern Long-eared Bat.
Littlewing Pearlymussel *(Pegias fabula)*	No Suitable Habitat Present	No Effect	Per FWS, this species inhabits cool-water streams in the Cumberland and Tennessee River basins that are small to medium in size, low turbidity, and have a high to moderate gradient. The subject property is currently developed as a multi-family apartment complex and lacks the water resources this species requires. Therefore, suitable habitat is not present, and the proposed undertaking will have No Effect on the Littlewing Pearlymussel.

Braun's Rock-cress *(Arabis perstellata)*	No Suitable Habitat Present	No Effect	Per Encyclopedia of Life, this species is typically found on wooded steep slopes with limestone outcrops. The outcrops tend to be moist but not wet; rarely, plants can be found on seepy outcrops. They also may be found in protected areas, such as around the bases of larger trees, or in areas where there is little competition, such as around areas regularly scoured by talus movement or erosion. The subject property is currently developed as a multi-family apartment complex and lacks the topography typically associated with this species. Therefore, suitable habitat is not present, and the proposed undertaking will have No Effect on the Braun's Rock-cress.
Guthrie's (Pyne's) Ground-plum *(Astragalus bibullatus)*	No Suitable Habitat Present	No Effect	Per Encyclopedia of Life, this species is endemic to the cedar glades of middle Tennessee. All sites are associated with thin-bedded, fossiliferous Lebanon limestone outcroppings that support the unique cedar glade communities found in Tennessee's central basin. The species only grows along the deeper soiled glade margins or in areas within the glades that are partially shaded. The subject property is currently developed as a multi-family apartment complex and lacks the topography typically associated with this species. Therefore, suitable habitat is not present, and the proposed undertaking will have No Effect on the Guthrie's Ground-plum.
Leafy Prairie-clover *(Dalea foliosa)*	No Suitable Habitat Present	No Effect	Per USFWS, this species is found in prairie remnants along the Des Plains River in Illinois, in thin soils over limestone substrate. In Alabama and Tennessee, it lives in prairie-like areas on the edges of cedar glades. It favors sites with a wet spring and fall and a dry summer. The subject property is currently developed as a multi-family apartment complex and lacks the topography typically associated with this species. Therefore, suitable habitat is not present, and the proposed undertaking will have No Effect on the Leafy Prairie-clover.
Critical Habitat	No Critical Habitat Present	No Effect	Per the Official Species List, there are no critical habitats present within the project area. Therefore, the proposed undertaking will have No Effect on critical habitats.



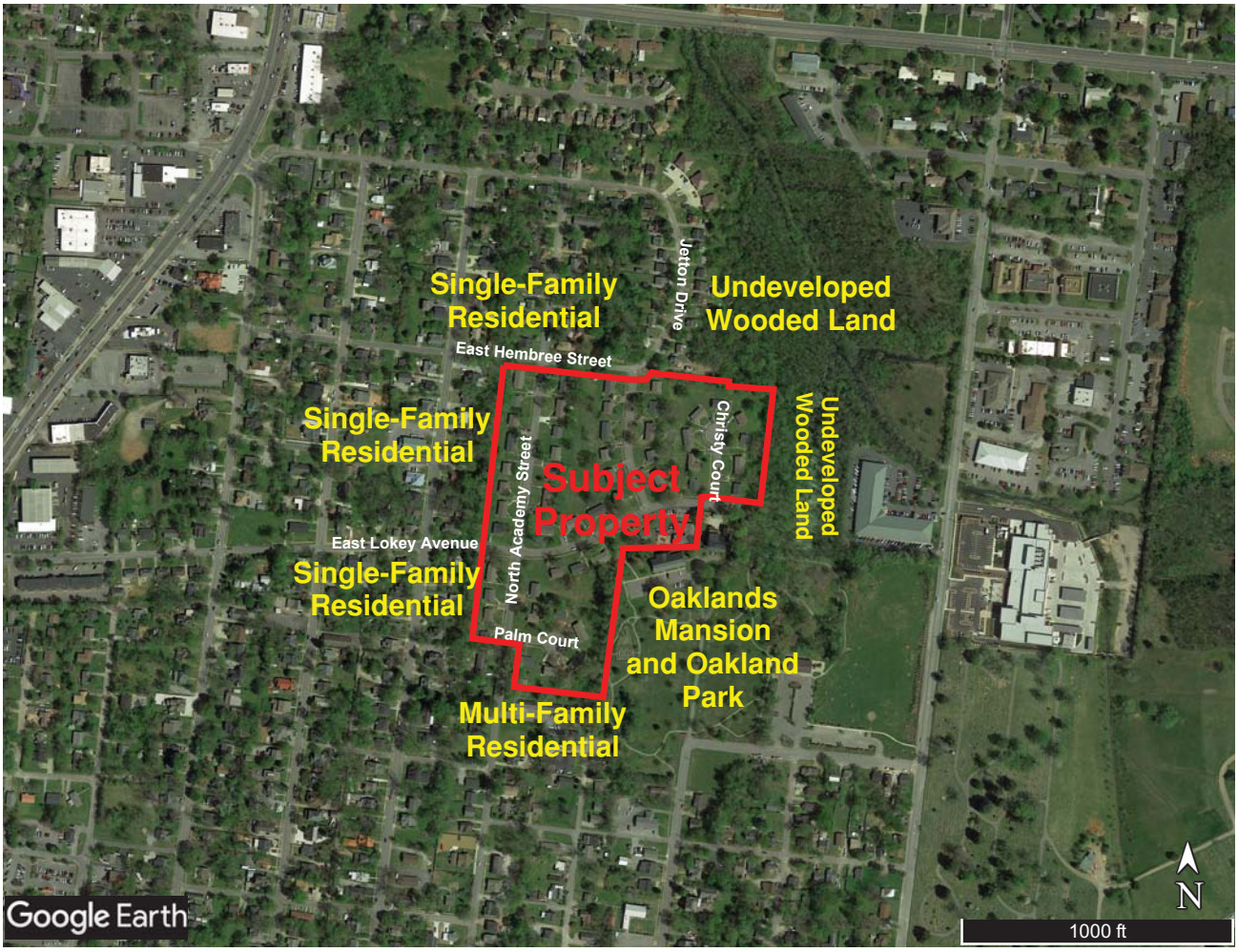
Site Topographic Map

N

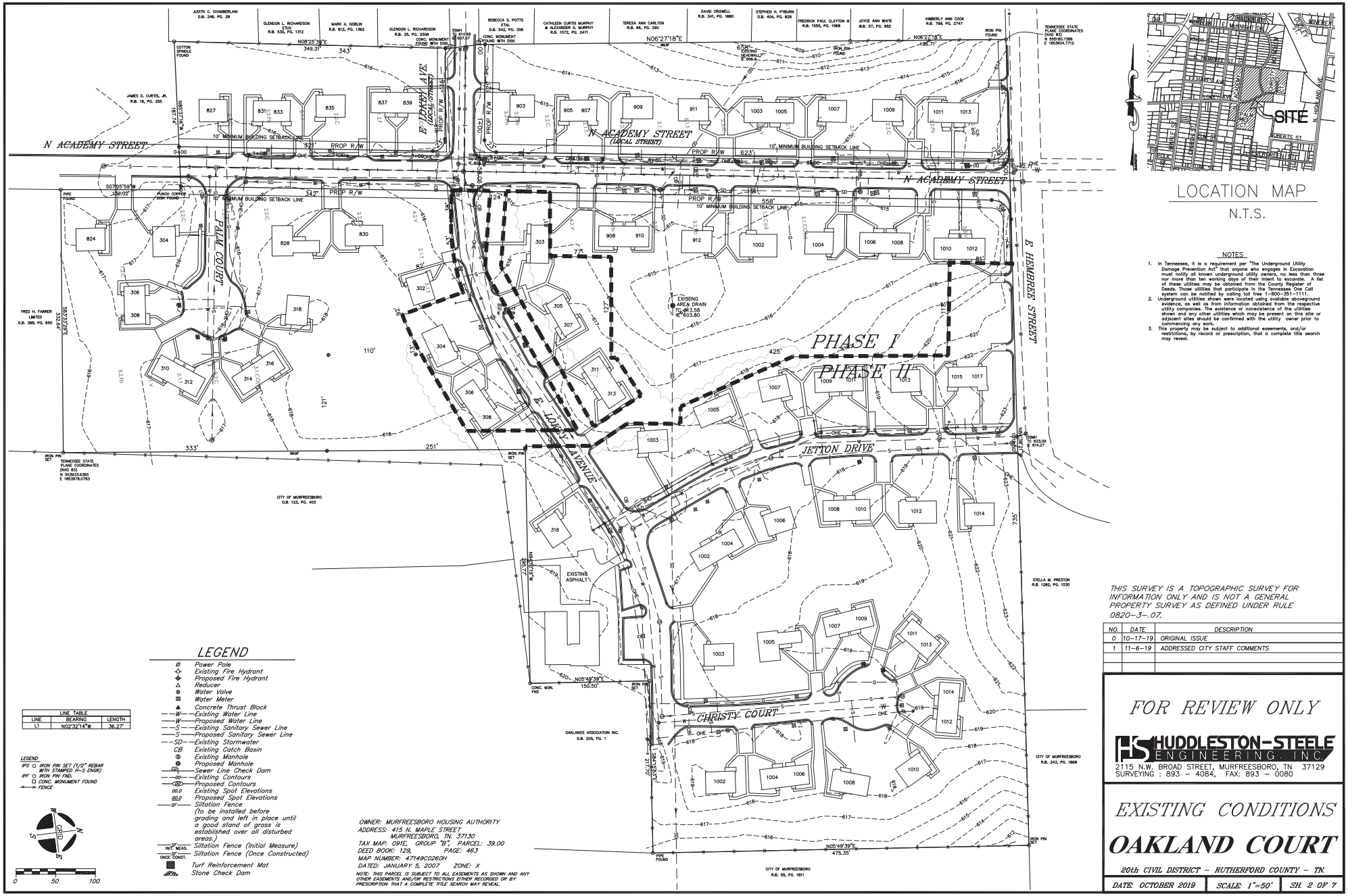
Oakland Court Development
E Lokey Avenue
Murfreesboro, Tennessee

Topographic Quadrangle: Murfreesboro, Tennessee 2019

DOMINION DUE DILIGENCE GROUP



Site Plan	↑ N	Oakland Court Development E Lokey Avenue Murfreesboro, Tennessee	**DOMINION DUE DILIGENCE GROUP**



THIS SURVEY IS A TOPOGRAPHIC SURVEY FOR INFORMATION ONLY AND IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-.07.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

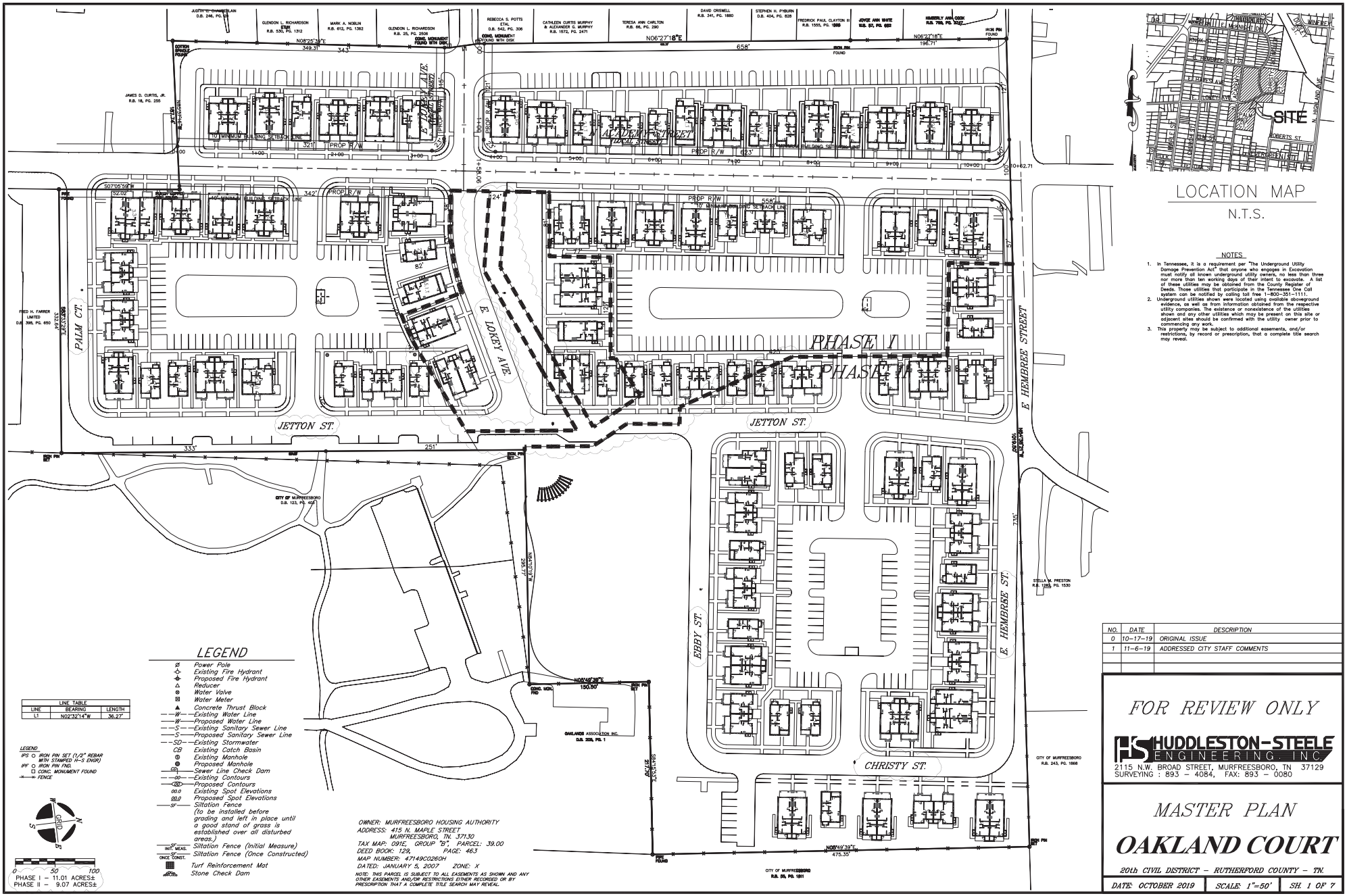
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 - 4084, FAX: 893 - 0080

EXISTING CONDITIONS

OAKLAND COURT

20th CIVIL DISTRICT - RUTHERFORD COUNTY - TN.

DATE: OCTOBER 2019	SCALE: 1"=50'	SH. 2 OF 7



NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

MASTER PLAN

OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=50' | SH. 1 OF 7



View of the subject property



View of the subject property



View of the subject property



View of the subject property



View of the subject property



View of the subject property

Appendix J:

Explosive and Flammable Hazards

Explosive and Flammable Hazards (CEST and EA)

General requirements	Legislation	Regulation
HUD-assisted projects must meet Acceptable Separation Distance (ASD) requirements to protect them from explosive and flammable hazards.	N/A	24 CFR Part 51 Subpart C
Reference		
https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities		

1. Does the proposed HUD-assisted project include a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?

☑ No.
→ Continue to Question 2.

☐ Yes

Explain:

→ *Continue to Question 5.*

2. Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?

☐ No
→ Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.

☑ Yes
→ Continue to Question 3.

3. Within 1 mile of the project site, are there any current *or planned* stationary aboveground storage containers:

- Of more than 100 gallon capacity, containing common liquid industrial fuels OR
- Of any capacity, containing hazardous liquids or gases that are not common liquid industrial fuels?

☐ No
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide all documents used to make your determination.*

☑ Yes
→ *Continue to Question 4.*

4. Is the Separation Distance from the project acceptable based on standards in the Regulation?

Please visit HUD's website for information on calculating Acceptable Separation Distance.

☑ Yes

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank".*

☐ No

→ *Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank." Continue to Question 6.*

5. Is the hazardous facility located at an acceptable separation distance from residences and any other facility or area where people may congregate or be present?

Please visit HUD's website for information on calculating Acceptable Separation Distance.

☐ Yes

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*

☐ No

→ *Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations. Continue to Question 6.*

6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to make the Separation Distance acceptable, including the timeline for implementation. If negative effects cannot be mitigated, cancel the project at this location.

Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, provide approval from a licensed professional engineer.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to 24 CFR Part 51, Subpart C - Siting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature, a HUD-assisted project involves the development, construction, rehabilitation or modernization involving an increase in residential unit densities, or conversion of any project that is intended for residential, institutional, recreational, commercial, or industrial uses. Based on the activities involved in the proposed undertaking (new construction under HUD RAD), the project is not considered a HUD-assisted project and compliance with 24 CFR Part 51, Subpart C is not warranted.

To assist HUD with their substantive evaluation of risk associated with proximity to hazardous facilities per MAP Guide Chapter 9.5.I, D3G reviewed NEPAssist information accessed at https://nepassisttool.epa.gov/nepassist/nepamap.aspx, along with visual observations during the site visit conducted by D3G on November 19, 2019. There are no facilities handling explosive or fire-prone materials such as liquid propane, gasoline, or other storage tanks as defined by 24 CFR 51.201 located on-site, adjacent to, or visible from the subject property.

Several extraordinary (10,000+ gallons) ASTs were observed within one (1) mile of the subject property. Utilizing the HUD ASD Electronic Assessment Tool accessed at https://www.hudexchange.info/environmental-review/asd-calculator/, D3G determined a set of parameters that must apply for any vicinity AST which would require further evaluation. The following are the minimum AST sizes within the specified radii which require further evaluation: 1/8 mile (or 660 feet) radius at 8,000 gallons; ¼ mile (or 1,320 feet) radius at 42,650 gallons; ½ mile (or 2,640 feet) radius at 225,000 gallons; and 1 mile (or 5,280 feet) radius at 1,187,500 gallons. No ASTs (outside of any previously discussed on-site or adjacent/visible ASTs) up to 8,000 gallons were observed within 1/8 mile (or 660 feet); no ASTs ranging from 8,000 to 42,650 gallons were observed from 1/8 mile to ¼ mile (or 1,320 feet) radius of the subject property; no ASTs ranging from 42,650 to 225,000 gallons were observed from ¼ mile to½ mile radius of the subject property; and no ASTs ranging from 225,000 to 1,187,500 gallons were observed from ½ mile to 1 mile radius of the subject property. Therefore, D3G does not believe that acceptable separation distance (ASD) or any resulting mitigation is warranted.

In addition, D3G contacted Mr. Carl Peas, Assistant Chief and Fire Marshal for the Murfreesboro Fire and Rescue Department, on October 21, 2019 for any current or recent (w/in the past year) permits issued for thermal/explosive hazards (ASTs > 100 gallons) located within a one (1) mile radius of the subject property. According to Mr. Peas, no permits are available.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Oakland Court Development
E Lokey Avenue
Murfreesboro, TN 37130

Inquiry Number: 5874345.2s
November 18, 2019

FirstSearch Area/Linear Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

FORM-FXL-MGA

Search Summary Report

TARGET SITE **E LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Sel	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
	- Totals --	0	0	0	0	0	0	0

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Search Summary Report

TARGET SITE: **E LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
State/Tribal Tanks	AST	10/01/1999	1.000	0	0	0	0	0	0	0
	- Totals --			0	0	0	0	0	0	0

Site Information Report

Request Date: NOVEMBER 18, 2019
Request Name: SAMANTHA HOLCOMBE
Search Type: COORD
Job Number: TEAM 3

Target Site: E LOKEY AVENUE
MURFREESBORO, TN 37130

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)	UTMs	
Longitude:	86.386083	86.3860830 - 86° 23' 9.89''	Easting:	555432.4
Latitude:	35.856696	35.8566960 - 35° 51' 24.10''	Northing:	3968028.0
Elevation:	619 ft. above sea level		Zone:	Zone 16

Demographics

Sites: 0 **Non-Geocoded:** 0 **Population:** N/A

RADON

Federal EPA Radon Zone for RUTHERFORD County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 37130

Number of sites tested: 14

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.829 pCi/L	86%	14%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal Area Radon Information for RUTHERFORD COUNTY, TN

Number of sites tested: 19

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.500 pCi/L	89%	11%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	17.500 pCi/L	0%	100%	0%

Site Information Report

RADON

State Database: TN Radon

Radon Test Results

County	Total Sites	Avg	Max	<4 pCi/L	4-10 pCi/L	10-20 pCi/L	20-50 pCi/L	50-100 pCi/L	>100 pCi/L
RUTHERFORD	55	2.2	23.5	49	5	0	1	0	0

Target Site Summary Report

Target Property: E LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3

TOTAL: 0 GEOCODED: 0 NON GEOCODED: 0

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

NO SITES FOUND

Database Descriptions

State/Tribal SWL: SWM COMPLAINTS A listing of reported complaints related to the Solid Waste Management division. SWM COMPLAINTS - Solid Waste Management Complaints

State/Tribal Tanks: AST Registered Aboveground Storage Tanks. AST - Aboveground Storage Tanks

Other Haz Sites: PFAS A listing of sites where PFAS has been detected to date. PFAS - PFAS Contamination Site Location Listing

Other: FEDLAND Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service. FEDLAND - Federal and Indian Lands PRP - Potentially Responsible Parties. BRS - Biennial Reporting System. US AIRS (AFS) - Aerometric Information Retrieval System Facility Subsystem (AFS). US AIRS MINOR - Air Facility System Data. MINES MRDS - Mineral Resources Data System.

Database Sources

State/Tribal SWL: Department of Environment & Conservation

Varies

State/Tribal Tanks: Department of Environment and Conservation

No Update Planned

Other Haz Sites: Department of Environment & Conservation

Varies

Other: U.S. Geological Survey

N/A

Street Name Report for Streets near the Target Property

Target Property: E LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3

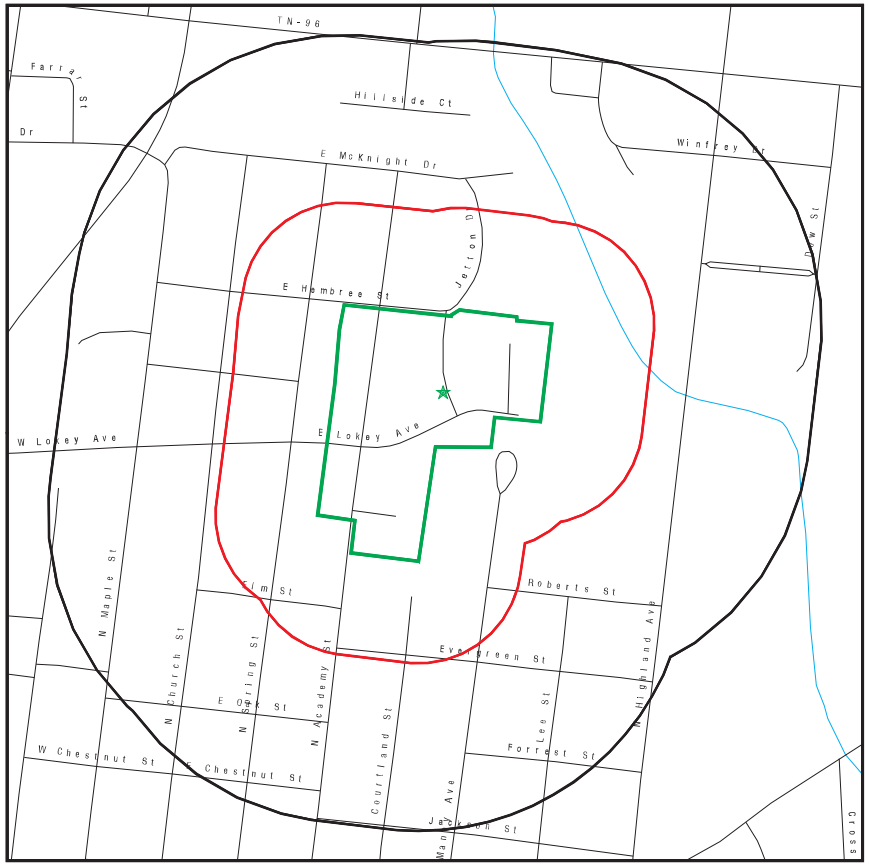
Street Name	Dist/Dir	Street Name	Dist/Dir
Christy Ct	0.06 East		
Courtland St	0.19 South		
E Hayes Ave	0.13 West		
E Hembree St	0.08 North		
E Lokey Ave	0.02 SSE		
E McKnight Dr	0.20 North		
Elm St	0.22 SSW		
Evergreen St	0.24 South		
Jetton Dr	0.00 ENE		
Lee St	0.22 SSE		
N Academy St	0.07 West		
N Church St	0.21 West		
N Highland Ave	0.22 East		
N Maney Ave	0.18 SSE		
N Spring St	0.13 West		
Palm Ct	0.12 SSW		
Roberts St	0.18 SSE		
W Hayes Ave	0.21 West		
W Hembree St	0.22 WNW		
W Lokey Ave	0.22 WSW		

Environmental FirstSearch

0.25 Mile Radius

ASTM MAP: NPL, RCRACOR, STATES Sites

E LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ **Target Property (Latitude: 35.856696 Longitude: 86.386083)**

▲ **Identified Sites**

National Priority List Sites

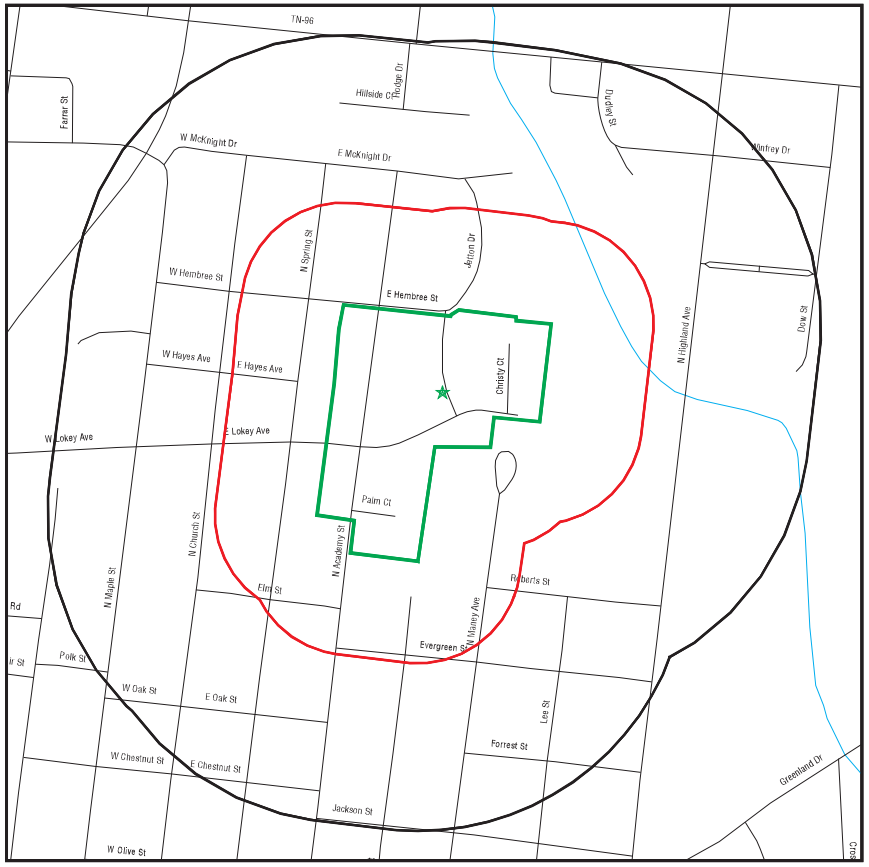
Copyright © 2019 EDR, Inc. © 2015 TomTom Rel. 2015.

Environmental FirstSearch

0.25 Mile Radius

ASTM MAP: CERCLIS, RCRATSD, LUST, SWL

E LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ **Target Property (Latitude: 35.856696 Longitude: 86.386083)**

▲ **Identified Sites**

National Priority List Sites

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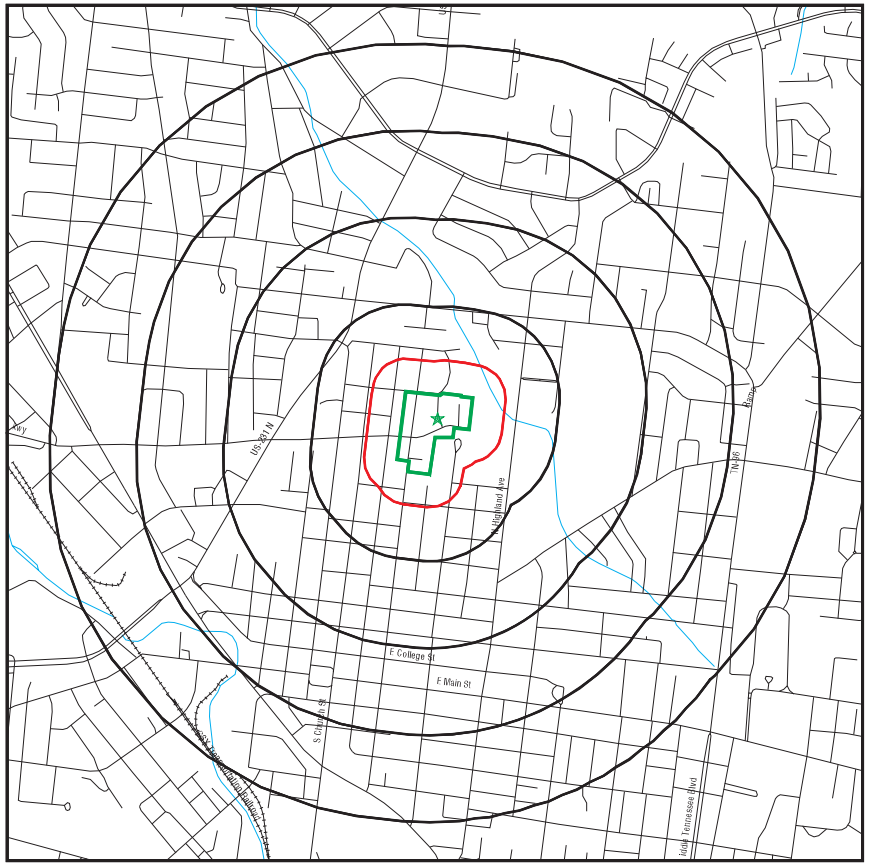
Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

E LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856696 Longitude: 86.386083)

▲ Identified Sites

National Priority List Sites

Copyright © 2019 EDR, Inc. © 2015 TomTom Rel. 2015.

Environmental FirstSearch

0.25 Mile Radius

Non ASTM Map, Spills, FINDS

E LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856696 Longitude: 86.386083)

▲ Identified Sites

Sensitive Receptors

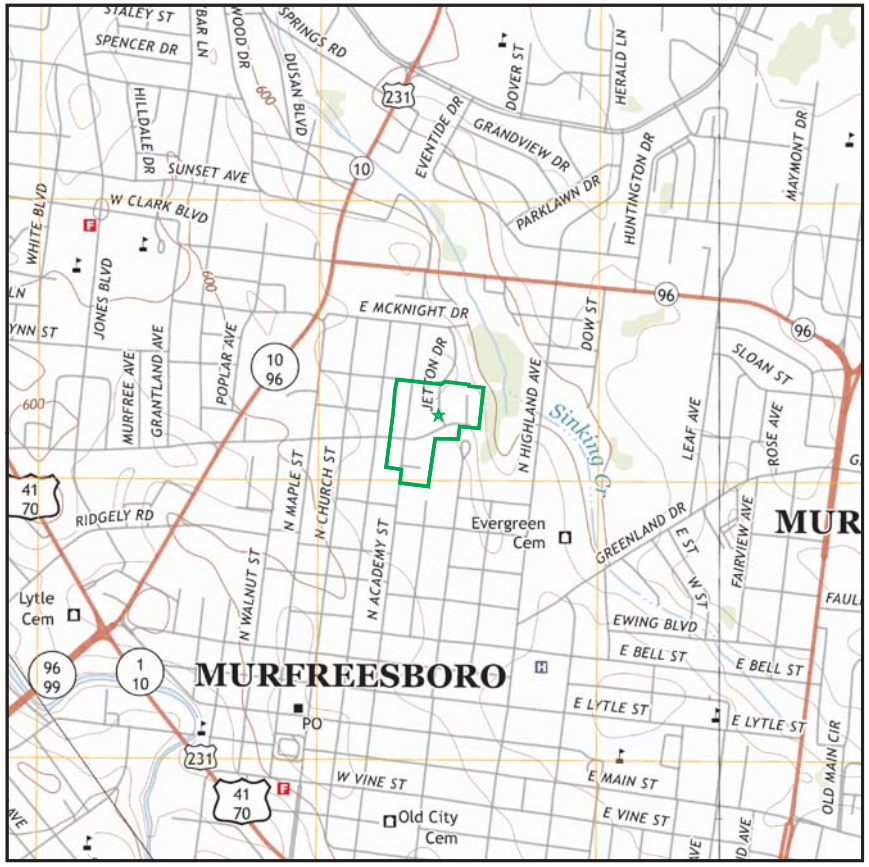
National Priority List Sites

Copyright © 2019 EDR, Inc. © 2015 TomTom Rel. 2015.

Site location Map

Topo: 0.75 Mile Radius

E LOKEY AVENUE MURFREESBORO, TN 37130



Map Image Position: TP
Map Reference Code & Name: 5944176 Murfreesboro
Map State(s): TN
Version Date: 2013
Map Image Position: SE
Map Reference Code & Name: 5944164 Dillton
Map State(s): TN
Version Date: 2013

[2019-001705] **Initials:** LS

COMPLIANCE REQUEST:
Fire and Code Enforcement Verifications

Date: October 21, 2019

Completed By: Name & Title: Carl Pegs Assistant Chief / Fire Marshal
Department: Murfreesboro Fire Rescue
Direct Contact Info: 615-642-3224

Re: Property: Oakland Court Development
Address: Lokey Street
City, State & Zip: Murfreesboro, TN 37130

Requestor: Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

Dominion Due Diligence Group is requesting your assistance on behalf of the above referenced requestor. Please confirm whether the above noted subject property has any known outstanding fire code violations.

1. To the best of our knowledge, the property is free of any applicable code violations.

☒ Yes ☐ No Reason: _____

2. **Last Inspection Date:** 10-11-18

If available, attach the inspection report. Please list the frequency in which inspections are required. If no inspections are required, please list municipality's policy:

Annually

3. Are any permits available for former or current underground storage tanks?

☐ Yes If yes, please attach all related information.

☒ No If no, can you provide a department to contact for additional information.

4. Has the fire department responded to any hazmat spills at the property?

☐ Yes If yes, please attach all related information.

☒ No If no, can you provide a department to contact for additional information.

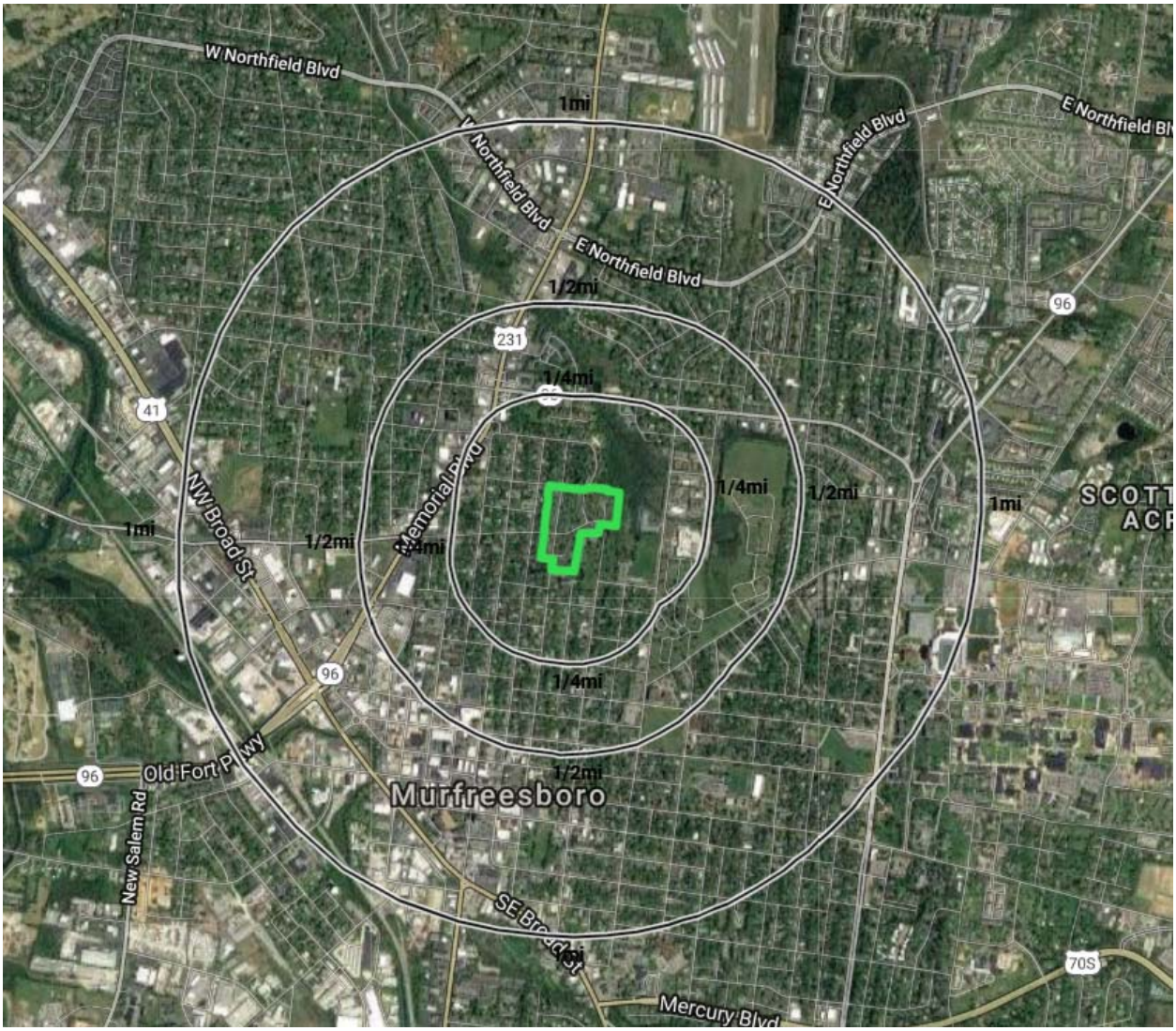
5. Are there any current or recent (within the past year) permits issued for thermal/explosive hazards (aboveground storage tanks >100 gallons) located within a one (1) mile radius of the subject property?

☐ Yes If yes, please attach a copy of all available information. ☒ No

Carl Pegs
Fire Official Signature

10-31-19
Date

ASTs w/in 1 Mile Radius



Minimum AST Sizes w/in Radii Which Require Further Evaluation	
Radius	**Minimum AST Size**
1/4 Mile (or 1,320 feet)	42,650 Gallons
1/2 Mile (or 2,640 feet)	225,000 Gallons
1 Mile (or 5,280 feet)	1,187,500 Gallons

ASD Calculations for 1/4 Mile Radius

Acceptable Separation Distance (ASD) Electronic Assessment Tool

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Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	42650
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	
ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	1320.76
ASD for Thermal Radiation for Buildings (ASDBPU)	285.04
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using **Ask A Question (/ask-a-question/my-question/)**. Enter "Environmental Review" in the "My question is related to" field.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

ASD Calculations for 1/4 Mile Radius

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☑ **No:** ☐
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☑
Is the container diked?	**Yes:** ☐ **No:** ☐
What is the volume (gal) of the container?	42650
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	
ASD for Blast Over Pressure (ASDBOP)	757.45
ASD for Thermal Radiation for People (ASDPPU)	1320.76
ASD for Thermal Radiation for Buildings (ASDBPU)	285.04
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

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Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

ASD Calculations for 1/2 Mile Radius

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	225000
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	
ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	2640.70
ASD for Thermal Radiation for Buildings (ASDBPU)	614.91
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

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Please send comments or other input using **Ask A Question (/ask-a-question/my-question/)**. Enter "Environmental Review" in the "My question is related to" field.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

ASD Calculations for 1/2 Mile Radius

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☑ **No:** ☐
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☑
Is the container diked?	**Yes:** ☐ **No:** ☐
What is the volume (gal) of the container?	225000
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	
ASD for Blast Over Pressure (ASDBOP)	1312.60
ASD for Thermal Radiation for People (ASDPPU)	2640.70
ASD for Thermal Radiation for Buildings (ASDBPU)	614.91
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

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Related Information

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- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

ASD Calculations for 1 Mile Radius

Acceptable Separation Distance (ASD) Electronic Assessment Tool

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Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☐ **No:** ☑
What is the volume (gal) of the container?	1187500
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	
ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	5280.71
ASD for Thermal Radiation for Buildings (ASDBPU)	1326.79
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

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Please send comments or other input using **Ask A Question (/ask-a-question/my-question/)**. Enter "Environmental Review" in the "My question is related to" field.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

ASD Calculations for 1 Mile Radius

Acceptable Separation Distance (ASD) Electronic Assessment Tool

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Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☑ **No:** ☐
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☑
Is the container diked?	**Yes:** ☐ **No:** ☐
What is the volume (gal) of the container?	1187500
What is the Diked Area Length (ft)?	
What is the Diked Area Width (ft)?	
Calculate Acceptable Separation Distance	
Diked Area (sqft)	
ASD for Blast Over Pressure (ASDBOP)	2274.96
ASD for Thermal Radiation for People (ASDPPU)	5280.71
ASD for Thermal Radiation for Buildings (ASDBPU)	1326.79
ASD for Thermal Radiation for People (ASDPNPD)	
ASD for Thermal Radiation for Buildings (ASDBNPD)	

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using **Ask A Question (/ask-a-question/my-question/)**. Enter "Environmental Review" in the "My question is related to" field.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

Appendix K:

Farmlands Protection

Farmlands Protection (CEST and EA)

General requirements	Legislation	Regulation
The Farmland Protection Policy Act (FPPA) discourages federal activities that would convert farmland to nonagricultural purposes.	Farmland Protection Policy Act of 1981 (7 U.S.C. 4201 et seq.)	7 CFR Part 658
Reference		
https://www.hudexchange.info/environmental-review/farmlands-protection		

1. Does your project include any activities, including new construction, acquisition of undeveloped land or conversion, that could convert agricultural land to a non-agricultural use?

☐ Yes. → *Continue to Question 2.*

☑ No

Explain how you determined that agricultural land would not be converted:

According to the U.S. Census Bureau Urbanized Area Map, accessed at http://tigerweb.geo.census.gov/tigerweb/, the subject property is located within an urbanized area; therefore, the subject property is already in an area committed to urban development and is exempt from compliance with the Farmland Protection Policy Act.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting your determination.*

2. Does "important farmland," including prime farmland, unique farmland, or farmland of statewide or local importance regulated under the Farmland Protection Policy Act, occur on the project site?

You may use the links below to determine important farmland occurs on the project site:

- Utilize USDA Natural Resources Conservation Service's (NRCS) Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm
- Check with your city or county's planning department and ask them to document if the project is on land regulated by the FPPA (zoning important farmland as non-agricultural does not exempt it from FPPA requirements)
- Contact NRCS at the local USDA service center http://offices.sc.egov.usda.gov/locator/app?agency=nrcs or your NRCS state soil scientist for assistance

☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☐ Yes → *Continue to Question 3.*

3. Consider alternatives to completing the project on important farmland and means of avoiding impacts to important farmland.

- Complete form **AD-1006**, "Farmland Conversion Impact Rating" http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045394.pdf and contact the state soil scientist before sending it to the local NRCS District Conservationist.
  (NOTE: for corridor type projects, use instead form **NRCS-CPA-106**, Farmland Conversion Impact Rating for Corridor Type Projects: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045395.pdf.)
- Work with NRCS to minimize the impact of the project on the protected farmland. When you have finished with your analysis, return a copy of form AD-1006 (or form NRCS-CPA-106 if applicable) to the USDA-NRCS State Soil Scientist or his/her designee informing them of your determination.

Document your conclusion:

☐ Project will proceed with mitigation.

Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide form AD-1006 and all other documents used to make your determination.*

☐ Project will proceed without mitigation.

Explain why mitigation will not be made here:

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide form AD-1006 and all other documents used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure and is the proposed location of ninety (90) single-family, duplex, and triplex structure . Per the NRCS Farmland Classification Map, the entire subject property is classified as “farmland of statewide importance.” However, the subject property is currently developed and located within an urbanized area; therefore, the subject property is already in an area committed to urban development and is exempt from compliance with the Farmland Protection Policy Act. Therefore, the proposed undertaking does not involve conversion of important farmland as defined by the Farmlands Policy Protection Act per 7 CFR Part 658.2. The project is in compliance with HUD’s Farmlands regulations and no mitigation is warranted.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Urban Areas



November 20, 2019

1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

2010 Census Urbanized Areas	2010 Census Urbanized Areas
2010 Census Urban Clusters	2010 Census Urban Clusters
States	States
Counties	Counties

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Source: U.S. Census Bureau



Map Scale: 1:2,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

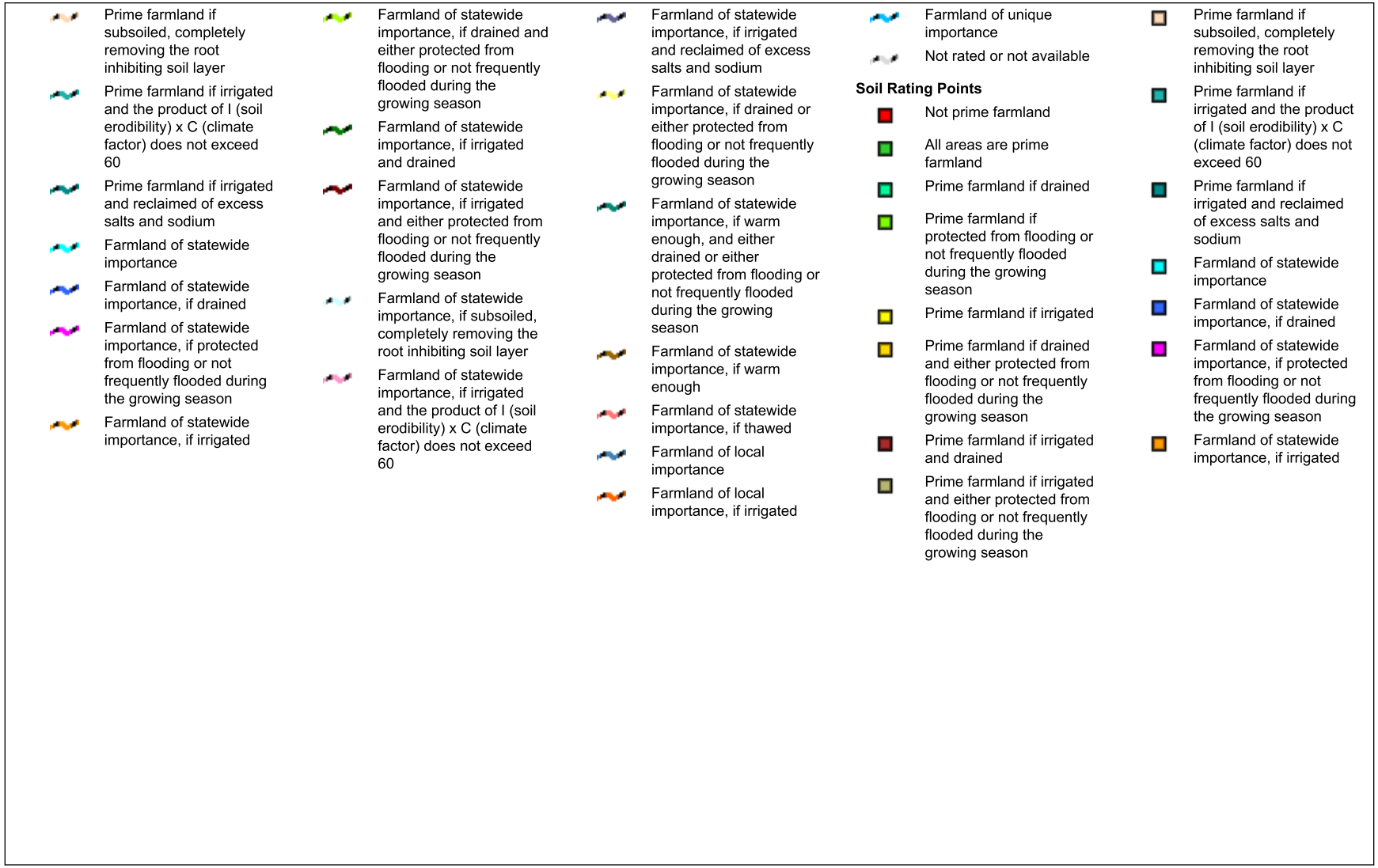
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

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: Rutherford County, Tennessee
Survey Area Data: Version 16, Sep 16, 2019

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

Date(s) aerial images were photographed: Oct 23, 2011—Oct 18, 2017

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.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BrC2	Bradyville silt loam, 5 to 12 percent slopes	Not prime farmland	0.2	0.9%
CuA	Cumberland silt loam, 0 to 2 percent slopes	All areas are prime farmland	16.1	80.6%
CuB	Cumberland silt loam, 2 to 5 percent slopes	All areas are prime farmland	3.7	18.5%
Totals for Area of Interest			**20.0**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix L:

Floodplain Management

Floodplain Management (CEST and EA)

General requirements	Legislation	Regulation
Executive Order 11988, Floodplain Management, requires Federal activities to avoid impacts to floodplains and to avoid direct and indirect support of floodplain development to the extent practicable.	Executive Order 11988	24 CFR 55
Reference		
https://www.hudexchange.info/environmental-review/floodplain-management		

1. Does 24 CFR 55.12(c) exempt this project from compliance with HUD's floodplain management regulations in Part 55?

☐ Yes

Provide the applicable citation at 24 CFR 55.12(c) here. If project is exempt under 55.12(c)(7) or (8), provide supporting documentation.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☑ No → Continue to Question 2.

2. Provide a FEMA/FIRM or ABFE map showing the site.

The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs) or Advisory Base Flood Elevations (ABFEs). For projects in areas not mapped by FEMA, use the best available information to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site.

Does your project occur in a floodplain?

☑ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ Yes

Select the applicable floodplain using the FEMA map or the best available information:

☐ Floodway → *Continue to Question 3, Floodways*

☐ Coastal High Hazard Area (V Zone) → *Continue to Question 4, Coastal High Hazard Areas*

☐ 500-year floodplain (B Zone or shaded X Zone) → *Continue to Question 5, 500-year Floodplains*

☐ 100-year floodplain (A Zone) → *The 8-Step Process is required. Continue to Question 6, 8-Step Process*

3. Floodways

Is this a functionally dependent use?

☐

Yes

The 8-Step Process is required. Work with your HUD FEO to determine a way to satisfactorily continue with this project. Provide a completed 8-Step Process, including the early public notice and the final notice.

→ *Continue to Question 6, 8-Step Process*

☐ No

Federal assistance may not be used at this location unless a 55.12(c) exception applies. You must either choose an alternate site or cancel the project at this location.

4. Coastal High Hazard Area

Is this a critical action?

☐ Yes

Critical actions are prohibited in coastal high hazard areas. Federal assistance may not be used at this location. Unless the action is excepted at 24 CFR 55.12(c), you must either choose an alternate site or cancel the project.

☐ No

Does this action include construction that is not a functionally dependent use, existing construction (including improvements), or reconstruction following destruction caused by a disaster?

☐ Yes, there is new construction.

New construction is prohibited in V Zones ((24 CFR 55.1(c)(3)).

☐ No, this action concerns only a functionally dependent use, existing construction(including improvements), or reconstruction following destruction caused by a disaster.

This construction must have met FEMA elevation and construction standards for a coastal high hazard area or other standards applicable at the time of construction.

→ *Continue to Question 6, 8-Step Process*

5. 500-year Floodplain

Is this a critical action?

☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ Yes → *Continue to Question 6, 8-Step Process*

6. 8-Step Process.

Does the 8-Step Process apply? Select one of the following options:

☐ 8-Step Process applies.

Provide a completed 8-Step Process, including the early public notice and the final notice.

→ *Continue to Question 7, Mitigation*

☐ 5-Step Process is applicable per 55.12(a)(1-3).

Provide documentation of 5-Step Process.
Select the applicable citation:

☐*55.12(a)(1)* HUD actions involving the disposition of HUD-acquired multifamily housing projects or "bulk sales" of HUD-acquired one- to four-family properties in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24).

☐*55.12(a)(2)* HUD's actions under the National Housing Act (12 U.S.C. 1701) for the purchase or refinancing of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, and intermediate care facilities, in communities that are in good standing under the NFIP.

☐*55.12(a)(3)* HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, intermediate care facilities, and one- to four-family properties, in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and are in good standing, provided that the number of units is not increased more than 20 percent, the action does not involve a conversion from nonresidential to residential land use, the action does not meet the thresholds for "substantial improvement" under § 55.2(b)(10), and the footprint of the structure and paved areas is not significantly increased.

☐*55.12(a)(4)* HUD's (or the recipient's) actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing nonresidential buildings and structures, in communities that are in the Regular Program of the NFIP and are in good standing, provided that the action does not meet the thresholds for "substantial improvement" under § 55.2(b)(10) and that the footprint of the structure and paved areas is not significantly increased.

→*Continue to Question 7, Mitigation*

☐ 8-Step Process is inapplicable per 55.12(b)(1-4).
Select the applicable citation:

☐*55.12(b)(1)* HUD's mortgage insurance actions and other financial assistance for the purchasing, mortgaging or refinancing of existing one- to four-family properties in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24), where the action is not a critical action and the property is not located in a floodway or coastal high hazard area.

☐*55.12(b)(2)* Financial assistance for minor repairs or improvements on one- to four-family properties that do not meet the thresholds for "substantial improvement" under § 55.2(b)(10)

☐ 55.12(b)(3) HUD actions involving the disposition of individual HUD-acquired, one- to four-family properties.

☐*55.12(b)(4)* HUD guarantees under the Loan Guarantee Recovery Fund Program (24 CFR part 573) of loans that refinance existing loans and mortgages, where any new construction or rehabilitation financed by the existing loan or mortgage has been completed prior to the filing of an application under the program, and the refinancing will not allow further construction or rehabilitation, nor result in any physical impacts or changes except for routine maintenance.

☐*55.12(b)(5)* The approval of financial assistance to lease an existing structure located within the floodplain, but only if -

(i) The structure is located outside the floodway or Coastal High Hazard Area, and is in a community that is in the Regular Program of the NFIP and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24);

(ii) The project is not a critical action; and

(iii) The entire structure is or will be fully insured or insured to the maximum under the NFIP for at least the term of the lease.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

7. Mitigation

For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

Which of the following mitigation/minimization measures have been identified for this project in the 8-Step or 5-Step Process? Select all that apply.

☐ Permeable surfaces
☐ Natural landscape enhancements that maintain or restore natural hydrology
☐ Planting or restoring native plant species
☐ Bioswales
☐ Evapotranspiration
☐ Stormwater capture and reuse
☐ Green or vegetative roofs with drainage provisions
☐ Natural Resources Conservation Service conservation easements or similar easements
☐ Floodproofing of structures
☐ Elevating structures including freeboarding above the required base flood elevations
☐ Other

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to FEMA Flood Insurance Rate Map (FIRM) #47149C-0260H, dated January 5, 2007, the subject property is located in Unshaded Zone X, designated as an area outside the 100 and 500-year flood zones and the flood potential for the subject property is minimal. However, the eastern boundary of the subject property is located approximately 150 feet from Zone AE, designated as an area within the 100-year floodplain associated with Sinking Creek, and approximately 250 feet from the regulatory floodway associated with Sinking Creek.

A letter was obtained from the Project Engineer (Huddleston-Steele Engineering, Inc.), dated December 4, 2019, confirming that there will be no direct or indirect impacts to the adjacent 100-year flood zone and regulatory floodway; that all applicable erosion and sediment control measures will be observed throughout project activities; and that all appropriate provisions will be made for site drainage.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

National Flood Hazard Layer FIRMette

FEMA

35°51'36.12"N

86°23'33.36"W



86°22'55.90"W

35°51'6.96"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

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
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 11/20/2019 at 1:54:46 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.

> Filter By Posting Date Range *(Optional)*

Search | Clear All Fields

Search Results for MURFREESBORO, CITY OF

Click subscribe to receive email notifications when products are updated. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist.

Please Note: Searching All Products by county displays all products for all communities within the county. You can refine your search results by specifying your specific jurisdiction location using the drop-down menus above.

- Effective Products (231)
- Preliminary Products (0)
- Pending Product (0)
- Historic Products (77)
- Flood Risk Products (0)

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HUDDLESTON-STEELE
ENGINEERING, INC.
2115 N.W. Broad Street • Murfreesboro, TN 37129 • Engineering 615-893-4084 • Surveying 615-890-0372 • Fax 615-893-0080

December 4, 2019

Mr. L. Thomas Rowe, Executive Director
Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130
Email: trowe@mha-tn.org

Re: Oakland Court
Murfreesboro, TN

Dear Mr. Rowe:

This letter is written to confirm the following:

1. There will be no direct or indirect impacts to the adjacent 100-yeay flood zone and regulatory floodway per City of Murfreesboro and FEMA regulations.
2. All applicable erosion and sediment control measures are to be observed by the contractor throughout project activities per City of Murfreesboro regulations and a Stormwater Pollution Prevention Plan including a Notice of Intent filed with the Tennessee Department of Environment and Conservation (TDEC).
3. All appropriate provisions are to be made by the contractor for site drainage per City of Murfreesboro and TDEC regulations.
4. All applicable erosion and sediment control regulations are to be observed by the contractor throughout construction, and all appropriate drainage provisions are to be made by the contractor to ensure no negative effects to adjacent properties per City of Murfreesboro and TDEC regulations.

Feel free to contact us if you have any questions or comments.

Sincerely,

HUDDLESTON-STEELE ENGINEERING, INC.

William H. Huddleston IV, P.E., R.L.S.

12/4/19

Appendix M:

Historic Preservation

Historic Preservation (CEST and EA)

General requirements	Legislation	Regulation
Regulations under Section 106 of the National Historic Preservation Act (NHPA) require a consultative process to identify historic properties, assess project impacts on them, and avoid, minimize, or mitigate adverse effects	Section 106 of the National Historic Preservation Act (16 U.S.C. 470f)	36 CFR 800 "Protection of Historic Properties"
Reference		
https://www.hudexchange.info/environmental-review/historic-preservation		

Threshold

Is Section 106 review required for your project?

☐ No, because the project consists solely of activities listed as exempt in a Programmatic Agreement (PA). (See the PA Database to find applicable PAs.)

Either provide the PA itself or a link to it here. Mark the applicable exemptions or include the text here:

→ *Continue to the Worksheet Summary.*

☐ No, because the project consists solely of activities included in a No Potential to Cause Effects memo or other determination [36 CFR 800.3(a)(1)].

Either provide the memo itself or a link to it here. Explain and justify the other determination here:

→ *Continue to the Worksheet Summary.*

☑ Yes, because the project includes activities with potential to cause effects (direct or indirect). → *Continue to Step 1.*

The Section 106 Process

After determining the need to do a Section 106 review, initiate consultation with regulatory and other interested parties, identify and evaluate historic properties, assess effects of the project on properties listed on or eligible for the National Register of Historic Places, and resolve any adverse effects through project design modifications or mitigation.

Note that consultation continues through all phases of the review.

Step 1: Initiate consultation

Step 2: Identify and evaluate historic properties

Step 3: Assess effects of the project on historic properties

Step 4: Resolve any adverse effects

Step 1 - Initiate Consultation

The following parties are entitled to participate in Section 106 reviews: Advisory Council on Historic Preservation; State Historic Preservation Officers (SHPOs); federally recognized Indian tribes/Tribal Historic Preservation Officers (THPOs); Native Hawaiian Organizations (NHOs); local governments; and project

grantees. The general public and individuals and organizations with a demonstrated interest in a project may participate as consulting parties at the discretion of the RE or HUD official. Participation varies with the nature and scope of a project. Refer to HUD's website for guidance on consultation, including the required timeframes for response. Consultation should begin early to enable full consideration of preservation options.

Use the When To Consult With Tribes checklist within Notice CPD-12-006: Process for Tribal Consultation to determine if you should invite tribes to consult on a particular project. Use the Tribal Directory Assessment Tool (TDAT) to identify tribes that may have an interest in the area where the project is located. Note that consultants may not initiate consultation with Tribes.

Select all consulting parties below (check all that apply):

- ☑ State Historic Preservation Officer (SHPO)
- ☐ Advisory Council on Historic Preservation
- ☐ Indian Tribes, including Tribal Historic Preservation Officers (THPOs) or Native
- ☐ Hawaiian Organizations (NHOs)

  List all tribes that were consulted here and their status of consultation:

  It is the responsibility of HUD to contact any applicable Tribal Historic Preservation Officers (THPO) of any affected tribes, as applicable.

- ☐ Other Consulting Parties

  List all consulting parties that were consulted here and their status of consultation:

Describe the process of selecting consulting parties and initiating consultation here:

According to the HUD MAP Guide, applications for Firm Commitment, whether for new construction, rehabilitation, refinancing or conversion from non-residential to residential property, are considered “federal undertakings” which require HUD to make a determination of no effect, no adverse effect, or adverse effect upon historic properties. To assist HUD in making its historic preservation determination, D3G submitted a consultation request and project information to the appropriate State Historic Preservation Officer (SHPO). HUD is responsible for contacting the Tribal Historic Preservation Officer (THPO) of any affected tribes, as applicable.

Provide all correspondence, notices, and notes (including comments and objections received) and continue to Step 2.

Step 2 - Identify and Evaluate Historic Properties

Define the Area of Potential Effect (APE), either by entering the address(es) or providing a map depicting the APE. Attach an additional page if necessary.

The Direct Area of Potential Effects (APE) has been defined to include only the subject property, as no off-site ground disturbance is proposed. The Indirect APE includes any vicinity properties within an approximate 0.10-mile view-shed to the subject property, as delineated on the attached map.

Gather information about known historic properties in the APE. Historic buildings, districts and archeological sites may have been identified in local, state, and national surveys and registers, local historic districts, municipal plans, town and county histories, and local history websites. If not already listed on the National Register of Historic Places, identified properties are then evaluated to see if they are eligible for the National Register. Refer to HUD's website for guidance on identifying and evaluating historic properties.

In the space below, list historic properties identified and evaluated in the APE.

Every historic property that may be affected by the project should be listed. For each historic property or district, include the National Register status, whether the SHPO has concurred with the finding, and whether information on the site is sensitive. Attach an additional page if necessary.

One (1) historic site, Oaklands (NRI: 70000616) is located adjacent to the southeast of the subject property.

Provide the documentation (survey forms, Register nominations, concurrence(s) and/or objection(s), notes, and photos) that justify your National Register Status determination.

Was a survey of historic buildings and/or archeological sites done as part of the project?

If the APE contains previously unsurveyed buildings or structures over 50 years old, or there is a likely presence of previously unsurveyed archeological sites, a survey may be necessary. For Archeological surveys, refer to HP Fact Sheet #6, Guidance on Archeological Investigations in HUD Projects.

☑ Yes *Provide survey(s) and report(s) and continue to Step 3.*
Additional notes:

A Phase I Archaeological Survey was conducted by Midsouth Cultural Resource Consultants in January 20202

☐ No *Continue to Step 3.*

Step 3 - Assess Effects of the Project on Historic Properties

Only properties that are listed on or eligible for the National Register of Historic Places receive further consideration under Section 106. Assess the effect(s) of the project by applying the Criteria of Adverse Effect. (36 CFR 800.5)] Consider direct and indirect effects as applicable as per HUD guidance.

Choose one of the findings below - No Historic Properties Affected, No Adverse Effect, or Adverse Effect; and seek concurrence from consulting parties.

☑No Historic Properties Affected

Document reason for finding:

☐ No historic properties present. → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

☑ Historic properties present, but project will have no effect upon them. → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

If consulting parties concur or fail to respond to user's request for concurrence, project is in compliance with this section. No further review is required. If consulting parties object, refer to (36 CFR 800.4(d)(1)) and consult further to try to resolve objection(s).

☐

☐ No Adverse Effect

Document reason for finding:

Does the No Adverse Effect finding contain conditions?

☐ Yes

Check all that apply: (check all that apply)

☐ Avoidance

☐ Modification of project

☐ Other

Describe conditions here:

→ *Monitor satisfactory implementation of conditions. Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

☐ No → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

If consulting parties concur or fail to respond to user's request for concurrence, project is in compliance with this section. No further review is required. If consulting parties object, refer to (36 CFR 800.5(c)(2)) and consult further to try to resolve objection(s).

☐ Adverse Effect

Document reason for finding:

Copy and paste applicable Criteria into text box with summary and justification. Criteria of Adverse Effect: 36 CFR 800.5]

Notify the Advisory Council on Historic Preservation of the Adverse Effect and provide the documentation outlined in 36 CFR 800.11(e). The Council has 15 days to decide whether to enter the consultation (Not required for projects covered by a Programmatic Agreement).

→ Continue to Step 4.

Step 4 - Resolve Adverse Effects

Work with consulting parties to try to avoid, minimize or mitigate adverse effects. Refer to HUD guidance and 36 CFR 800.6 and 800.7.

Were the Adverse Effects resolved?

☐ Yes

Describe the resolution of Adverse Effects, including consultation efforts and participation by the Advisory Council on Historic Preservation:

For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Provide signed Memorandum of Agreement (MOA) or Standard Mitigation Measures Agreement (SMMA). Continue to the Worksheet Summary.*

☐ No

The project must be cancelled unless the "Head of Agency" approves it. Either provide approval from the

"Head of Agency" or cancel the project at this location.

Describe the failure to resolve Adverse Effects, including consultation efforts and participation by the Advisory Council on Historic Preservation and "Head of the Agency":

Explain in detail the exact conditions or measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Provide correspondence, comments, documentation of decision, and "Head of Agency" approval. Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

A review of the National Register of Historic Places indicates that the subject property structures are not listed on the National Register of Historic Places; are not located within, or adjacent to, a Historic District; and are not listed as local landmarks. However, one (1) historic site, Oaklands (NRI: 70000616) is located adjacent to the southeast of the subject property. This two-story house is comprised of three (3) houses that were built in different periods and combined over time. The house is significant for its architectural style, social and humanitarian history, and military presence during the Civil War. Oaklands was bought by the city of Murfreesboro in 1957 and was restored after having fallen into disrepair. The back of Oaklands faces the subject property but is enclosed by a wooden fence. The subject property currently consists of single-story structures that are set for demolition and are proposed to be replaced with one- and two-story structures. While the two-story structures will be somewhat visible from the Oaklands site, the proposed redevelopment is not too dramatic a shift in design elements from the current aesthetics of the subject property.

Based on the date of construction (1960), the subject property structures may be eligible for listing on the National Register. However, per visual observations, the structures consist of rudimentary brick façade, double-hung windows, and no outstanding architectural features which would indicate historic significance.

In addition, a Phase I Archaeological Survey was conducted by Midsouth Cultural Resource Consultants (MCRC) in January 2020. This survey recovered no artifacts and MCRC concluded that the proposed undertaking will have no effect on cultural resources and no further archaeological investigations are warranted.

Based on the foregoing information, D3G concludes that the proposed undertaking will have No Effect on historic properties or cultural resources.

To assist HUD in making its historic preservation determination, D3G submitted its findings and project information to the appropriate State Historic Preservation Officer (SHPO). As of the date of this report, D3G has not received a response to this inquiry. Upon receipt of the agency response, D3G will forward this information as an addendum to this report. If no response is received or no material information is identified, our report will not be modified.

HUD is responsible for contacting the Tribal Historic Preservation Officer (THPO) of any affected tribes, as applicable.

Are formal compliance steps or mitigation required?

☐ Yes

☐ No

January 10, 2020

Mr. Patrick McIntyre, Jr., Executive Director, SHPO
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37214

Subject: Federal Agency/SHPO Consultation/Determination
Oakland Court Development
E Lokey Avenue
Murfreesboro, Tennessee 37130
Parcel #: 091E B 03900
Latitude: 35.856405, Longitude: -86.385846

In response to your letter dated December 4, 2019 Dominion Due Diligence Group (D3G) is submitting the attached archaeological survey for the above-referenced project.

A Phase I Archaeological Survey was conducted by Midsouth Cultural Resource Consultants (MCRC) in January 2020. This survey recovered no artifacts and MCRC concluded that the proposed undertaking will have no effect on cultural resources and no further archaeological investigations are warranted.

Per previous correspondence with your office, no architectural properties eligible for listing on the National Register will be affected by the proposed undertaking.

Based on the foregoing information, D3G concludes that the proposed undertaking will have No Effect on historic properties or cultural resources.

Your review and response will be appreciated. Supporting documentation is attached for your review as well as a digital copy of the proposed project plans. Please feel free to contact me with any questions regarding this project.

I appreciate your assistance and look forward to your response.

Sincerely;

DOMINION DUE DILIGENCE GROUP

Hannah L. Pearl, EP, CFM
NEPA Compliance Manager
h.pearl@d3g.com

TENNESSEE HISTORICAL COMMISSION
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
www.tnhistoricalcommission.org

December 4, 2019

Ms. Hannah L. Pearl
Dominion Due Diligence Group
201 Wylderose Drive
Midlothian, VA 23113

RE: HUD / Department of Housing and Urban Development, Oakland Court Development, E. Lokey Avenue, Murfreesboro, Rutherford County, TN

Dear Ms. Pearl:

In response to your request, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we find that no architectural properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. No additional architectural investigations are warranted.

In order to complete our review of this undertaking, we will need to receive from you a detailed archaeological survey report on the area of potential effect for this undertaking. A list of individuals and organizations which have indicated a desire to work in Tennessee is available at https://www.tn.gov/content/dam/tn/environment/archaeology/documents/arch_CONSLIST_3_2019.pdf . This list is solely for the convenience of persons or firms seeking archaeological services. It does not indicate nor imply any sanction, certification, or approval by the State of Tennessee.

Upon receipt of the survey report, we will continue our review of this undertaking as expeditiously as possible. Until such time as this office has rendered a final comment on this project, your Section 106 obligation under federal law has not been met. Please inform this office if this project is canceled or not funded, licensed, or permitted by the federal agency. Questions and comments may be directed to Jennifer M. Barnett (615) 687-4780.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb

Phase I Archaeological Survey of the Oakland Court 2019-1705, Rutherford County, Tennessee

January 2020

Midsouth Cultural Resource Consultants

Phase I Archaeological Survey of the Oakland Court 2019-1705, Rutherford County, Tennessee

Lead Agency:

Housing and Urban Development

Prepared For:

Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

Prepared By:

Midsouth Cultural Resource Consultants
1215 Stonewall Blvd.
Murfreesboro, Tennessee 37130

Midsouth Cultural Resource Consultants Project #0307



J. Scott Jones, Ph.D., Principal Investigator

Authored by J. Scott Jones

January 2020

Management Summary

At the Request of the Murfreesboro Housing Authority, Midsouth Cultural Resource Consultants (MCRC) conducted a Phase I archaeological survey of the Oakland Court 2019-1705 Housing development, Rutherford County, Tennessee. The Phase I archaeological survey program was requested to satisfy requirements of the National Historic Preservation Act (NHPA) of 1966, revised 1980. The Phase I archaeological survey was conducted in order to identify and record archaeological or cultural resources that may be adversely impacted by the above referenced construction and to make recommendations concerning the eligibility of such resources for the National Register of Historic Places (NRHP) pursuant to 36 CFR Part 60.4.

The project area is located in Rutherford County, Tennessee within the city of Murfreesboro. The Area of Potential Effect (APE) consists of ca. 20.08 acres (.0314 sq. miles) centered upon N. Academy St. and Lokey Ave., and extends to Christy Court. A development project currently occupies the project area. The APE borders the Oakland Mansion property to the east.

The state archaeological site files housed with the Tennessee Division of Archaeology (TDOA) were investigated on December 12, 2019. The site file search at the TDOA revealed two (n=2) previously recorded archaeological sites (40SU225, 40RD236) located within a 1-mile (1.61 km) radius of the project area. Site 40SU225 is the Oaklands Mansion and is on the NRHP. Site 40RD236 is an open habitation site with an indeterminate prehistoric occupation and historic scatter. Neither site will be adversely affected by the project.

The archaeological survey was conducted by J. Scott Jones and personnel from MCRC. The survey was completed within approximately one day in mostly sunny conditions. Due to the extent of disturbance due to previous construction, it is unlikely that any archaeological or cultural resources are present. **No further archaeological investigations are recommended by MCRC in relation to the proposed Oakland Court development project.**

Acknowledgements

MCRC would like to thank Mr. Thomas Rowe for the opportunity to conduct the project. MCRC would like to thank TDOA site file curators Paige Silcox and Satin Platt their assistance. J. Scott Jones is the P.I. and is responsible for the contents of the Phase I report.

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I. Introduction

At the Request of the Murfreesboro Housing Authority, MCRC conducted a Phase I archaeological survey of the Oakland Court 2019-1705 Housing development, Rutherford County, Tennessee. The Phase I archaeological survey program was requested to satisfy requirements of the NHPA of 1966, revised 1980. The Phase I archaeological survey was conducted in order to identify and record archaeological or cultural resources that may be adversely impacted by the above referenced construction and to make recommendations concerning the eligibility of such resources for the NRHP pursuant to 36 CFR Part 60.4.

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The archaeological survey was conducted by J. Scott Jones and personnel from MCRC. The survey was completed within approximately one day in mostly sunny conditions. Due to the extent of disturbance due to previous construction, it is unlikely that any archaeological or cultural resources are present. **No further archaeological investigations are recommended by MCRC in relation to the proposed Oakland Court development project.**

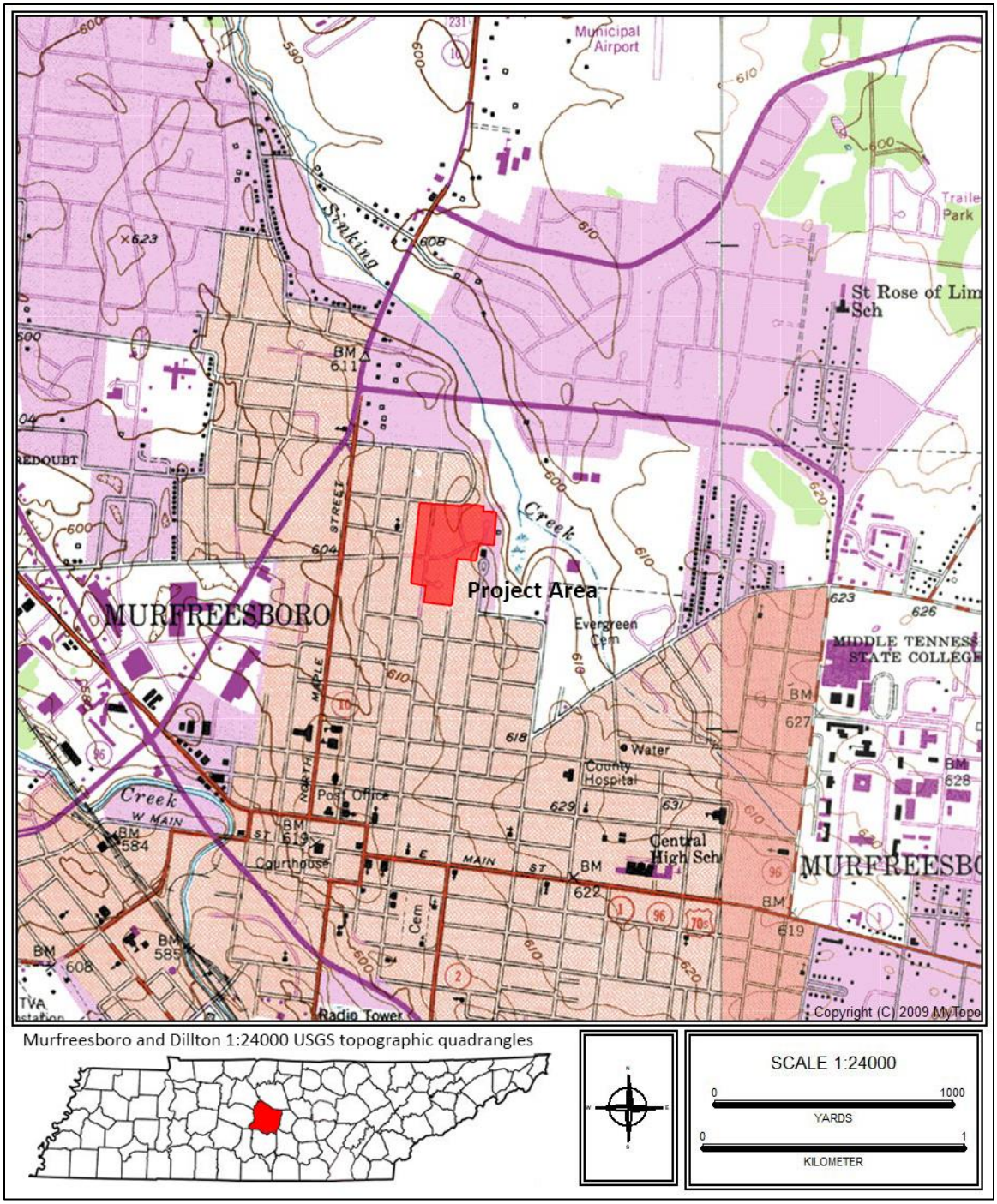

Figure 1. Location of project area; Murfreesboro and Dillton USGS 1:24000 topographic quadrangle.

II. Environment

Project Area Description

The APE begins west of the intersection of E. Hembree St. and N. Academy St and extends southward to Palm Ct. at which point the APE shifts to the east side of N. Academy continues south for ca. 65 meters (213.25‘). The APE then extends eastward ca. 90 meters (295.27‘) to the Oaklands Mansion property boundary. The APE follows the Oaklands Mansion western property boundary north of Christy Court and then turns westward to the intersection of Jetton Drive and E. Hembree St. Figure 2 Illustrates the extent of the APE.

The APE was first developed as a residential housing project area in 1958. Housing units, ballcourts and playgrounds, and community center currently occupy the APE (Figures 3 and 4). Evidence of extensive earth moving is exhibited along property lines with elevated property lines. In addition to housing construction, underground utilities and road construction has also extensively disturbed the APE (Figures 5 and 6).

Physiography

The project area is situated within the Central Basin (Figure 7). The Central Basin was formed through erosion and collapse of the “Nashville Dome” forming a basin-like feature. The Inner Central Basin is underlain by Ordovician limestones. The occurrence of the Mississippian Fort Payne formation marks the boundary between the Central Basin and Highland Rim. Downcutting of streams from the more highly elevated Highland Rim to the Nashville Basin has produced the characteristic dissected uplands at the transition between the two provinces. The more resistant Highland Rim bedrock is attributed to the greater degree of chert and “cherty” limestones in the bedrock. The Highland Rim is well-known for its abundant, high quality chert (Amick 1987) including Fort Payne, St. Louis, and St. Genevieve cherts among others.

The Central Basin is divided into the Inner and Outer Basins. Elevations in the Inner Central Basin range from 580’ ASL to 620’ ASL. The Inner Basin is also characterized by extensive “glades” with cedar forests and exposed bedrock.

Soils

Soils in the project area consist of Cumberland silt loam, 0-2% and 2-5% slopes. These soils occur on stream terrace treads. These are well-drained soils that are clayey alluvium derived from limestone.



Figure 2. Aerial photograph of the APE.

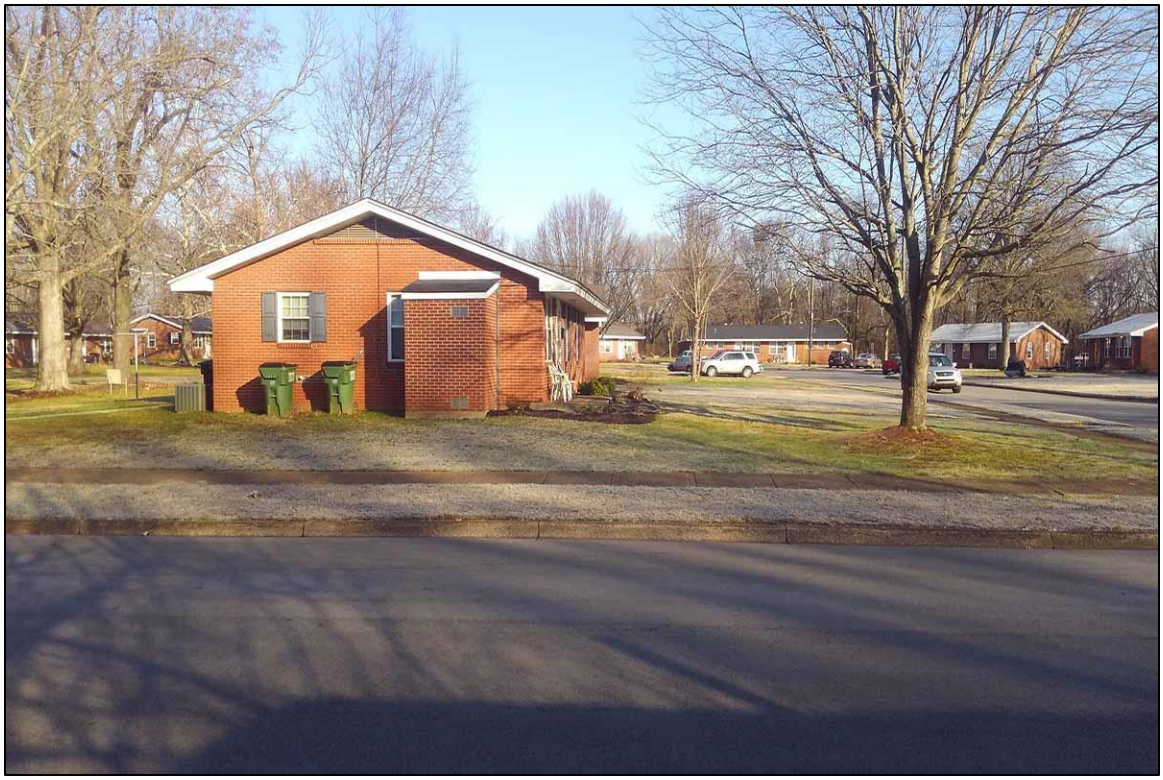

Figure 3. Typical view of current housing project along E. Lokey Ave.



Figure 4. Typical view of backside of housing units.

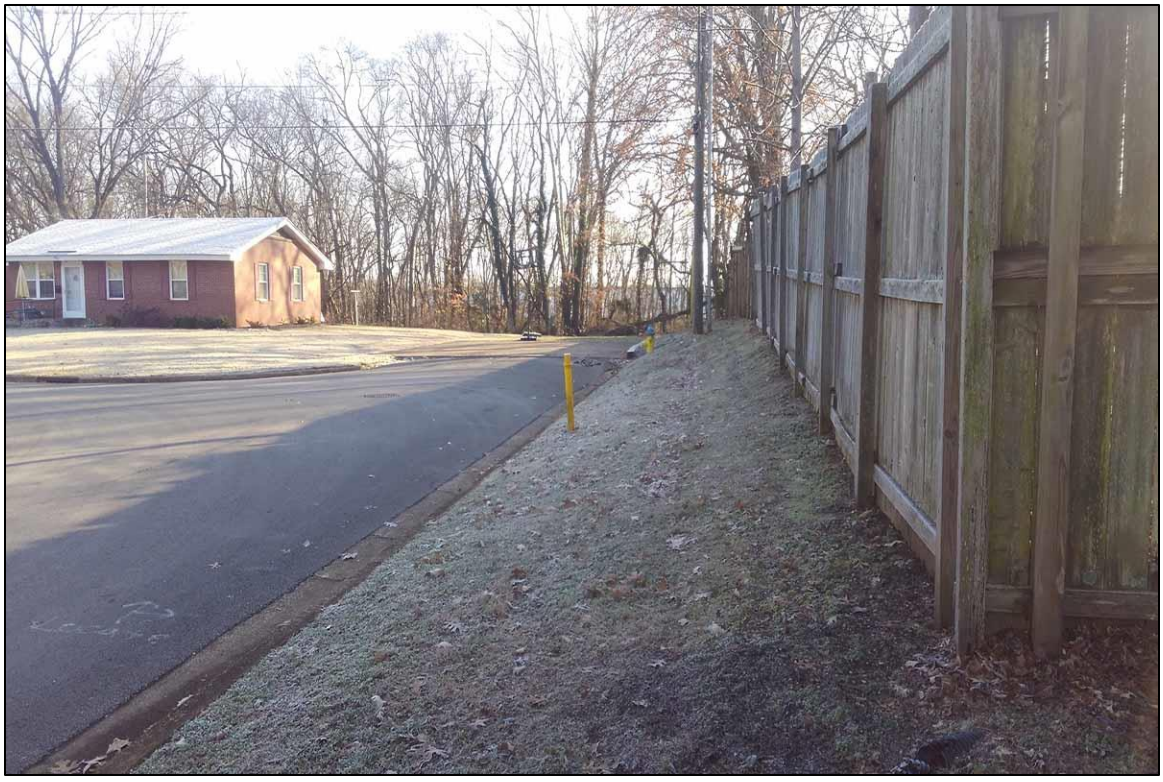

Figure 5. View of elevated property line and underground utilities.



Figure 6. Elevated property line and original ground surface.

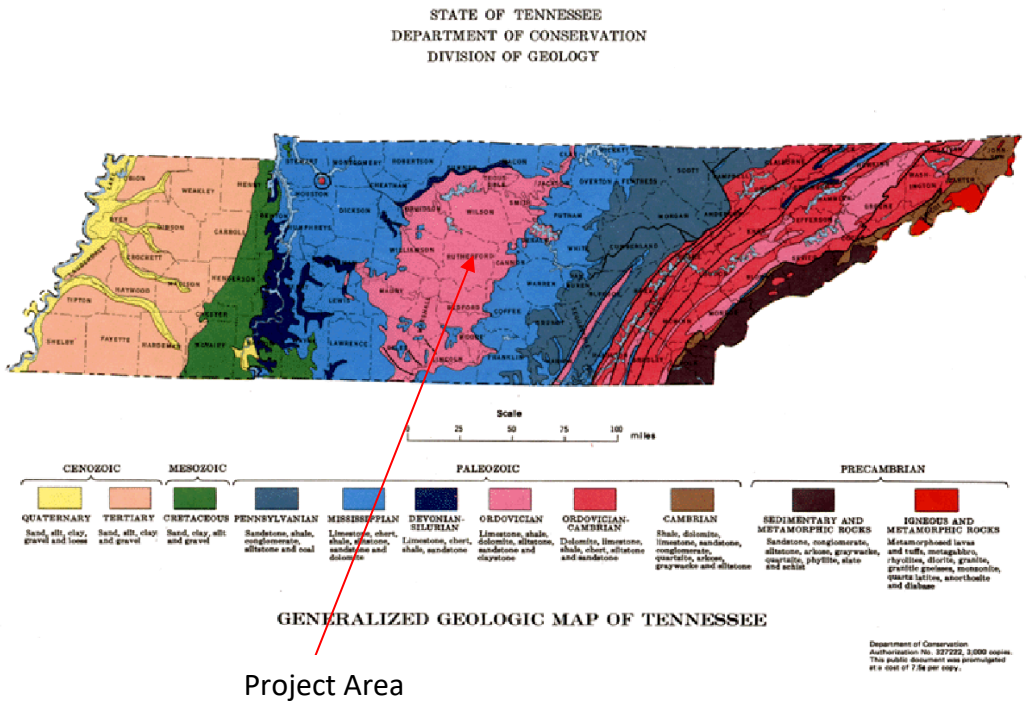

Figure 7. Generalized physiographic map of Tennessee and project area location.

Hydrology

Sinking Creek is adjacent the APE and is a tributary of the West Fork Stones River. The confluence of the West Fork Stones River and the East Fork Stones River forms the Stones River, a major tributary of the Cumberland River. The Cumberland River is a primary tributary of the Ohio River.

Paleoenvironment

The paleoenvironment composition of the Southeastern U.S. has been described by Delcourt (1979) and Delcourt and Delcourt (1981, 1984). In the study area, during the Late Pleistocene and Early Holocene (12,500-8500 yr B.P.) the environment consisted of mixed hardwoods dominated by beech and hickory. Summers were cooler than the present with abundant moisture. Pleistocene fauna including mammoth, mastodon, bison, sabretooth tiger, giant sloth, and others were present prior to their extinction around 10,800 yr B.P. (Meltzer and Mead 1983).

After 8000 yr B.P., a period known as the Altithermal or Hypsithermal Interlude occurs that is characterized by more xeric conditions and expansion of grasslands (Delcourt 1979). Faunal evidence from Cheek Bend Cave dating to 7500 yr B.P. includes species such as least shrew (*Cryptotis parva*) which prefers open grassland type environments (Klippel

and Parmalee 1982). Dominant hardwoods include oak, hickory, and ash. Between 5000 and 4000 yr B.P., modern environments began to emerge.

Modern Environment

The project area is located in the Western Mesophytic Forest Region of the Interior Low Plateau (Braun 1950). Oak and oak-hickory association are the dominant forest species with beech, yellow poplar, sycamore, maple, gum, and eastern cedar are also present.

The faunal composition of the project area can be described as the Carolinian biotic province (Dice 1943). Over 300 vertebrate species have been identified in this province (Cleland 1966). Faulkner and McCollough (1973) suggest that only those species available in high numbers such as waterfowl or mollusks or species with high meat/caloric yield such as deer, bear, and turkey would have been exploited.

III. Cultural History

The cultural history of the project area is divided into four primary traditions: Paleoindian, Archaic, Woodland, and Mississippian. Each of these are discussed in relation to the project area and is followed by an overview of the historical context of the project area.

Paleoindian Tradition

The Paleoindian period in the Eastern U.S. has traditionally been divided into Early, Middle, and Late periods (Anderson et al. 1996). In the following discussion, the Early Paleoindian period (11,500-10,900 yr B.P.), the Middle Paleoindian period (10,900-10,500 yr B.P.), and the Late or Transitional Paleoindian period (10,500-9900 yr B.P.) are described.

Early Paleoindian (11,500-10,900 yr B.P.)

The hallmark of the Clovis horizon is the lanceolate projectile point/knife (pp/k) with the classic "flute" or flake removed from the base, usually on both faces, and is parallel to the lateral edges. Clovis pp/k's and sites are widely distributed in Tennessee (Broster and Norton 1996; Anderson 2004). Important Clovis sites in Middle Tennessee include the Johnson site (Broster et al. 1991), Carson-Conn-short (Broster and Norton 1993), and Widemeier (Broster et al. 2006). In relation to the project area in the Middle Cumberland River Valley, Early Paleoindian artifacts and sites are much less common in the Cumberland Plateau and Appalachian Highlands in the (Lane and Anderson 2001). Increased use of the region throughout the Paleoindian tradition into the Archaic is evident in the archaeological record.

Middle Paleoindian (10,900-10,500 yr B.P.)

The Middle Paleoindian period is recognized by both fluted lanceolate pp/k's such as Cumberland and Redstone and unfluted lanceolate project points referred to as Quad and Beaver Lake. These pp/k types are generally restricted to the Midsouth region between the Ohio and Tennessee River Valleys (Anderson 1995; Goodyear 2005).

Not much is known of the Cumberland horizon in the eastern U.S. This horizon is recognized by the distinctive "fishtail" or waisted pp/k with a flute extending nearly the length of the point. Considerably more is known of the settlement and subsistence patterns of the unfluted Quad and Beaver Lake horizon. Rockshelters in northern Alabama (Driskell 1994; DeJarnette et al. 1962) have produced evidence of Quad and Beaver Lake occupations indicating a greater use of upland environments than the previous fluted point horizons. The Dust Cave excavations in Northern Alabama produced radiocarbon dates ranging from 10,310 yr B.P. to 10,490 yr B.P. in association with Quad and Beaver Lake pp/k's (Driskell 1994). Faunal remains from Dust Cave indicate a dependence upon

avian and aquatic species (Walker 2000) while the botanical remains provide an enhanced picture of the nature of plant gathering (Hollenbach 2007).

Late Paleoindian (10,500-9900 yr B.P.)

The Late or Transitional Paleoindian period is associated with the Dalton horizon (Goodyear 1982, 2005). Dalton pp/k's are lanceolate in shape with incurvate bases and a shouldered hafting area with incurvate edges. Blade edges often clearly exhibit resharpening during the point's use-life (Goodyear 1974; Morse 1973). A hallmark of the Dalton horizon is the addition of the Dalton adze, which marks the first appearance of a groundstone artifact type in a Southeastern lithic assemblage.

Dalton pp/k's are more widely distributed in upland zones than previous Paleoindian artifact types (Walthall 1998). Dalton occupation in the Cumberland River Valley has been dated at the Puckett site to 9790±160 yr B.P. (Norton and Broster 1993). The Tennessee Valley most likely supported a substantial population due to the high number of pp/k's and sites dating to this period (Breitburg and Broster 1994; Jones 2007; McNutt et al. 2008).

Archaic Tradition

The Archaic tradition marks the advent of adaptation to modern environments during the Holocene following the end of the Pleistocene. Traditionally the Archaic period has been viewed as a time of generalized hunting and gathering subsistence based in a relatively stable, egalitarian social structure. The Archaic is discussed in three components: Early (9900-8000 yr B.P.), Middle (8000-5000 yr B.P.), and Late (5000-2450 yr B.P.).

Early Archaic (9900-8000 yr B.P.)

The initial stage in the Holocene is the Early Archaic period (9900-8000 yr B.P.). A number of cultural horizons have been defined in the Early Archaic due to excavations at the Rose Island (Chapman 1975, 1976) in Tennessee and St. Albans site (Broyles 1966, 1971) in West Virginia. The initial Early Archaic phase is described as Kirk Corner-Notched with a number of radiocarbon dates placing this phase from 9900-9000 yr B.P. (Chapman 1976).

Following the Kirk horizon, the subsequent stage is described as the bifurcate horizon (9000-8000 yr B.P.). Bifurcate pp/k's exhibit a deeply indented base resulting in the classic "bifurcate" base. The MacCorkle pp/k type has been suggested as a transitional type between Kirk Corner-Notched horizon and the Bifurcate horizon. The bifurcate horizon consists of a sequence consisting of the St. Albans phase (8900-8500 yr B.P.), Lecroy phase (8500-7800 yr B.P.), and Kanawha phase (8200-7800 yr B.P.). These Early Archaic sequences have been identified at the Johnson site (Barker and Broster 1996) and the Widemeier site (Broster et al. 2006).

While no postmolds or other evidence of structures were found at Rose Island or any other sites with Early Archaic components, hearths with textile impressions have been found (Chapman 1975). Additionally, a number of groundstone tools including celts, hammerstones, mortars, and anvil stones have been recovered indicating the importance of gathering in addition to hunting as well as some degree of sedentism.

Middle Archaic (8000-5000 yr B.P.)

Early Middle Archaic cultural complexes include the Stanley and Kirk Stemmed/Serrated complexes. Based upon radiocarbon dates from Tellico Reservoir, the Stanley horizon dates from 7800-7500 yr B.P. The Kirk Stemmed/Serrated complex is recognized through the Kirk Stemmed and Kirk Serrated pp/k types. Based upon radiocarbon dates from Dust Cave, Kirk Stemmed/Serrated pp/k's post-date the bifurcate horizon and are associated with dates as late as 7000 yr B.P. (Driskell 1994).

The Eva-Morrow Mountain horizon has been dated throughout the Tennessee-Alabama-Mississippi region from 7250-6375 yr B.P. (McNutt 2008) and at Dust Cave from generally 7000-6000 yr B.P. (Driskell 1994). White Springs/Sykes cluster (7250-6600 yr B.P.) consists of follow the Eva-Morrow Mountain horizon.

During the Middle Archaic, an important addition to the subsistence practices include development of squash horticulture. Yarnell (1987) and Decker-Walters (1993) indicate the addition of squash horticulture to the economy between 7000-6700 yr B.P. Hunting and gathering remain the mainstay of the Middle Archaic economy. Extensive use of mussels and aquatic species occurs at this time due to desiccation of the environment and shift of populations to riverine resources (Dye 1995). The Anderson site in Middle Tennessee is a particularly important Middle Archaic site (Dowd 1989).

Late Archaic (6000 yr B.P.-2450 yr B.P.)

Radiocarbon dates place the Benton phase as early as 6700 yr B.P. (Peacock 1988) while others place the Benton phase more generally within the 6000-5000 yr B.P. range (Deter-Wolf 2004; McNutt 2008; Meeks 2000) and also as late as 3900 yr B.P. (Jones 1998; Peacock 1988). The Ledbetter phase (5000-3000 yr B.P.) is recognized by a cluster of stemmed pp/k types including the Ledbetter, Pickwick, Mulberry Creek, and Maples (Bentz 1995). Bentz describes the Ledbetter phase as consisting of seasonal hunting and gathering encampments occupied by single family units organized around pit clusters. Additionally larger, multifamily sites contain a wide range of feature types including storage pits, shallow basins, earth ovens, midden deposits, and open and enclosed structures. The Terminal Archaic or Wade phase (3200-2450 yr B.P.) exhibits many of the same characteristics as the Ledbetter phase. Encampments centered around clusters of pits, limestone-filled earth ovens, and flexed burials characterize this phase (Bentz 1995). A wide range of ground stone tools including digging implements, sandstone bowls, and gorgets are present. Steatite commonly occurs as well as micaceous schist bowls indicate

the participation of these peoples in long-distance, interregional exchange. A notable distinction of the Terminal Archaic is the inclusion of simple horticulture in the subsistence practices. Squash and gourd horticulture continues as well as the addition of sunflower to the economy (Crites 1987). Extensive exploitation of mussels is indicated by the appearance of shell mounds during the Late Archaic (Walthall 1980) such as the Penitentiary Branch site (40JK25) on the Cumberland River (Cridlebaugh 1986).

Woodland Tradition

The Woodland tradition has often been considered to be the period of the development of cultural complexity with the addition of horticulture, social ranking, sedentism, and monumental architecture. A tripartite division in the Woodland tradition consisting of Early (2625-2200 yr B.P.), Middle (2200-1400 yr B.P.), and Late (1200-1000 yr B.P.) periods are discussed.

Early Woodland (2625-2200 yr B.P.)

In the project area, the initial Early Woodland phase is the Watts Bar phase (2625-2350 yr B.P. (Faulkner 2002). The diagnostic artifact of the Watts Bar phase is quartz-tempered, fabric marked pottery. Projectile points include Adena-like and Wade cluster types indicating a continuity of stone tool technology (Faulkner 2002). Other similarities to Late Archaic habitations include sites with large, circular storage pits, shallow basins, occupied by small, nuclear, family groups.

After 2400 yr B.P., the Long Branch phase is present in the Highland Rim and continues until ca. 2200-2100 yr B.P. Quartz tempered ceramics are replaced by limestone tempered, fabric marked ceramics while stemless pp/k's occur (Faulkner 2002). Larger clusters of features occur on Long Branch phase sites indicative of larger groups reoccupying the sites on a more frequent basis.

Middle Woodland (2200-1100 yr B.P.)

Continuity between the Early and Middle Woodland periods may be found in the Neel Phase (2200-1800 yr B.P.), which overlaps both the preceding Early Woodland Long Branch phase and the subsequent Middle Woodland McFarland phase. The Neel phase is known primarily as a mortuary complex although habitation sites have also been identified (Faulkner 2002). The McFarland phase (2200-1800 yr B.P.) represents the initial Middle Woodland phase in the study area. Limestone tempered ceramics with a predominance of fabric marked and check stamped are present along with triangular and expanded stemmed pp/k's (Faulkner 2002). Occupations consist of oval cabana and pole structures with discrete food preparation and storage areas. The McFarland phase exhibits a great deal of similarity to the Copena phase in the Middle Tennessee Valley that is well-known for its burial mound construction (Faulkner 2002).

The Owl Hollow phase emerges by 1700 yr B.P. in the Eastern Highland Rim (Faulkner 2002), and was defined at the Owl Hollow site (40FR7) in Tims Ford Reservoir (Cobb and Faulkner 1978). Owl Hollow phase sites consist of large oval double earth-oven winter houses and companion warm season oval or pole houses. These structures often are arranged in a circular pattern around a plaza. Owl Hollow ceramics are limestone tempered and include simple stamped and plain surface treatments. Owl Hollow phase occupations are present in the Eastern Highland Rim as late as 1100 yr B.P., although post-1400 yr B.P. occupations are not well known.

Late Woodland (1200-1000 yr B.P.)

By 1200 yr B.P., the Late Woodland period is represented by the Mason phase in the study area. Like the preceding Owl Hollow phase, the Mason type site is located in the Elk River Valley (Faulkner 1968). Compared to the previous Middle Woodland phases, comparatively little is known of the Mason phase. Ceramics are now tempered with crushed chert with cord marking and net impressions (Faulkner 2002). Mason phase sites are smaller than preceding Owl Hollow phase sites, more dispersed, and less organized. Mortuary patterns are highly variable as well consisting of flexed interments in rock-filled pits, refuse-filled storage pits, and shaft and chamber burials (Faulkner 2002).

Mississippian Tradition

The Mississippian tradition (1100-500 yr B.P.) represents a distinct diversion from the previous Woodland tradition. While cultural traits such as maize agriculture and flat-top mound construction have their origins in the previous Woodland tradition, these become more elaborated in the Mississippian tradition. Additionally, sociopolitical organization becomes more complex with the emergence of chiefdoms. A wide range of site types are present including farmsteads, hamlets, palisaded and non-palisaded villages, and mound sites. Shell-tempered pottery is a hallmark of Mississippian period occupations. The Mississippian tradition in the Middle Cumberland River Valley have been defined to a much greater extent than the previous Woodland tradition and is discussed below.

The early Mississippian (A.D. 950-1050) occupation in the Middle Cumberland is poorly understood. It is unclear whether the initial Mississippian occupation is derived from *in situ* Woodland populations or if it is from a migrating population. The Spencer site (40DV191) represents an early Mississippian habitation in the Middle Cumberland (Spears et al. 2008).

The Dowd phase (A.D. 1050-1250) represents the initial period of mound-building in the region (Smith and Moore 1996). The population was dispersed throughout the region in farmsteads and hamlets oriented towards mound centers. Typical ceramic assemblages at this time include coarse paste blank-faced hooded water bottles, fine paste cylindrical neck bottles, coarse paste fabric impressed pans, fine paste outslanting-wall bowls, and medium to coarse paste plain, fabric, and/or cordmarked jars. Jars typically have loop

handles. Dowd phase sites include Brandywine Pointe (Moore and Smith 1993) and Sogom (Norton and Broster 2004).

By A.D. 1250, the subsequent Thruston phase exhibits many departures from the previous Dowd phase (Smith and Moore 1996). Most notable of these is a demographic rearrangement in which populations nucleated in villages, most of which were palisaded, and the cessation of mound construction. Additions to the ceramic assemblage include varieties of Mathews incised jars, coarse and fine paste notched rim bowls, rim rider effigy bowls, structural effigy bowls fine paste hooded and effigy bottles, carafe-neck bottles, and plain surface jars. Loop handles are replaced by flattened loop and strap handles. Notable Thruston phase sites that have been investigated in recent years include Gordontown (Moore and Breitburg 1998), Brentwood library (Moore 2005), and Kelly's Battery (Jones 2001).

Protohistoric Period

After A.D. 1450, the Middle Cumberland region is largely abandoned. That much of the Midsouth region including the lower and central Ohio, Mississippi, Tennessee, and Cumberland River Valleys were largely depopulated is known as the Vacant Quarter hypothesis (Williams 1990). While the Middle Cumberland does not exhibit a sizeable population after A.D. 1450, small populations of Shawnee from the Ohio River may have relocated to the Middle Cumberland (Moore and Smith 2001). In fact, early historical records indicate the occupation of the Cumberland River Valley by Shawnee (Swanton 1946, reprint 1979). Into the historical period, the Middle Cumberland as well as the project area was subject to incursions by historic groups such as the Cherokee and Creek.

History of Rutherford County

This history of Rutherford County is derived from Hankins (2018) and modified for use here. Rutherford County was created in 1803 from sections of Davidson, Wilson, Williamson, and Sumner Counties and is named in honor of Griffith Rutherford, an Irish immigrant who served on the council of the Southwest Territory. The county's 619 square miles encompass the geographic center of the state.

Early maps depict the Nickajack Trail and the Creek War Trace converging near present-day Murfreesboro at the springs camp of Black Fox, a noted Cherokee chief. After a series of treaties negotiated between settlers and native tribes failed, militia under Nashville founder James Robertson wiped out Black Fox's camp. The Cherokees last used the camp springs site of the legendary leader as they were forcibly marched along the Trail of Tears to reservations in Oklahoma.

Stones River, named for explorer Uriah Stone around 1767, provided a transportation route and water source for settlers and power for mills built throughout the county. Jefferson, a river town now covered by the waters of Percy Priest Lake, was the first

county seat. Centrally located Murfreesboro gained county seat status in 1811. From 1818 to 1826 Murfreesboro was the capital of Tennessee. Smyrna, LaVergne, and Eagleville are incorporated towns within the county.

A moderate climate supporting a long growing season, proximity to Nashville, access to market by water, road, and, by the 1850s, the Nashville and Chattanooga Railroad, combined to promote an agrarian base of considerable diversity and wealth. Oaklands, established by the Murfree and Maney families in the 1820s, had 1,500 acres and, as illustrated by the 1850s Italianate house museum, was a very prosperous estate. Livestock and grains continue to be the county's chief agricultural products.

Rutherford County's location between Nashville and Chattanooga made it a highly contested area during the Civil War. The battle of Stones River was one of the bloodiest confrontations of the western theater. To supply the Union advance to the south, General William Rosecrans ordered the construction of the largest earthworks fortification built during the war–Fortress Rosecrans. Of the county's many Civil War stories, none is better known than that of Smyrna's Sam Davis, who was only twenty-one when captured, tried, and hanged as a Confederate spy. He is buried in the family cemetery on the grounds of his home, now a state historic site. Another noted Confederate scout from Rutherford County was Dewitt Jobe, who also was executed for spying in 1864.

Education has traditionally been a priority in Rutherford County. Nineteenth-century schools included Bradley Academy, established around 1811 and attended by James K. Polk and John Bell, Union University, Soule College, and Jefferson Academy. The Tennessee College for Women, completed in 1907, was a landmark of education as well as Classical Revival architecture. It was followed in 1911 by the Middle Tennessee Normal School, now Middle Tennessee State University (MTSU). Denied formal education for generations, Rutherford County's African American population took advantage of the schools which opened across the county in the wake of Reconstruction and in succeeding decades. Bradley Academy, reopened in the 1880s as a school for African Americans, became the county's first accredited high school for blacks.

Major employers in the county's history include the Carnation Milk Plant, Tennessee Red Cedar Wooden Ware Company, Sunshine Hosiery Mills, General Electric, National Healthcare Corporation, Bridgestone/Firestone, Ingram Distribution, and Samsonite Furniture Company. Nissan Motor Manufacturing Corporation, U.S.A., is the largest private employer in the county.

IV. Methodology

Pre-field Research

Prior to conducting the Phase I archaeological survey, the state archaeological site files at the TDOA and the historic files at the THC and associated literature were examined to determine the presence of previously recorded archaeological sites or resources.

Field Methods

The Phase I survey consisted of pedestrian survey and shovel testing. Areas with 50% or greater surface visibility were visually inspected for archaeological remains. Areas with less than 15% slope were shovel tested in order to identify buried archaeological remains. Due to the extent of the surface visibility and evident disturbance, shovel tests were intuitively placed at locations that appeared to offer potential for subsurface deposits. Shovel tests were excavated to subsoil or one (1) meter in depth. All fill from shovel tests was screened through ¼" hardware cloth. Materials recovered from positive shovel tests were bagged and labeled with the proper provenience information. All shovel tests were recorded and described in field notes including depth, munsell color, soil texture, and presence or absence of cultural material. Representative examples of shovel tests were photographed. All shovel tests were marked and labeled on project area map. Field notes were maintained on a daily basis. Photographs of the project area were taken.

Laboratory Methods

No laboratory methods were employed as no artifacts were recovered.

V. Results

Pre-field Research

The state archaeological site files housed with the Tennessee Division of Archaeology (TDOA) were investigated on December 12, 2019. The site file search at the TDOA revealed two (n=2) previously recorded archaeological sites (40SU225, 40RD236) located within a 1-mile (1.61 km) radius of the project area (Figure 8). Site 40SU225 is the Oaklands Mansion and is on the NRHP. 40RD236 is an open habitation site with an indeterminate prehistoric occupation and historic scatter. Neither site will be adversely affected by the project.

Survey Results

The archaeological survey consisted of pedestrian survey, shovel testing, and soil coring (Figure 9). Surface visibility was varied across the APE. The entire APE was visually inspected for artifacts or cultural material as well as clear evidence of earthmoving disturbance. No artifacts were observed on the surface. Clear evidence of disturbance by significantly lower surface than the original land surface was evident along fencerows. Extensive earthmoving due to housing and road construction, grading, and subsurface utilities all have significantly altered the current landscape.

A shovel test was excavated adjacent the Oaklands Mansion property boundary in the western area of the APE in order to evaluate the potential and/or presence of intact subsurface deposits potentially related to the historic occupation of Oaklands Mansion (Figure 10). The shovel tests revealed 37 cm of heavily mottled grey/brown and reddish-yellow fill overlying a 10YR5/6 (yellowish brown) clay loam subsoil. Nine oakfield soil cores were also excavated within the APE. The soil profiles revealed in these cores were similar to those in the shovel test. Extensive earthmoving and disturbance is pervasive across the APE.

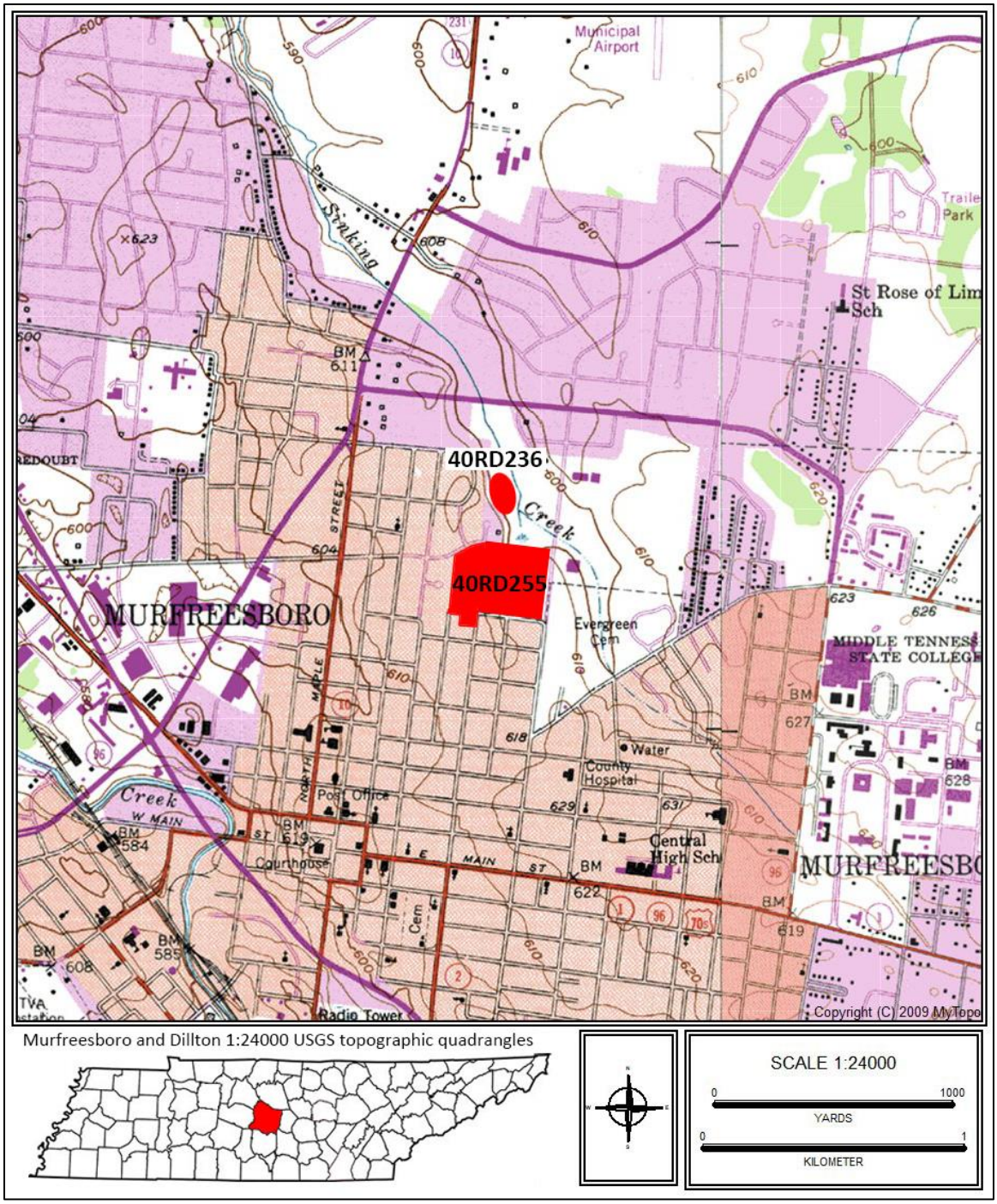

Figure 8. Previously recorded archaeological sites; Murfreesboro and Dillton 1:24000 USGS topographic quadrangles.



Figure 9. Aerial photograph with subsurface investigations in APE.



Figure 10. Typical shovel test.

VI. Summary and Conclusions

At the Request of the Murfreesboro Housing Authority, MCRC conducted a Phase I archaeological survey of the Oakland Court 2019-1705 Housing development, Rutherford County, Tennessee. The Phase I archaeological survey program was requested to satisfy requirements of the NHPA of 1966, revised 1980. The Phase I archaeological survey was conducted in order to identify and record archaeological or cultural resources that may be adversely impacted by the above referenced construction and to make recommendations concerning the eligibility of such resources for the NRHP pursuant to 36 CFR Part 60.4.

The project area is located in Rutherford County, Tennessee within the city of Murfreesboro. The APE consists of ca. 20.08 acres (.0314 sq. miles) centered upon N. Academy St. and Lokey Ave., and extends to Christy Court. A development project currently occupies the project area. The APE borders the Oakland Mansion property to the east.

The state archaeological site files housed with the TDOA were investigated on December 12, 2019. The site file search at the TDOA revealed two (n=2) previously recorded archaeological sites (40SU225, 40RD236) located within a 1-mile (1.61 km) radius of the project area. Site 40SU225 is the Oaklands Mansion and is on the NRHP. 40RD236 is an open habitation site with an indeterminate prehistoric occupation and historic scatter. Neither site will be adversely affected by the project.

The archaeological survey was conducted by J. Scott Jones and personnel from MCRC. The survey was completed within approximately two days in mostly sunny conditions. Due to the extent of disturbance due to previous construction, it is unlikely that any archaeological or cultural resources are present. **No further archaeological investigations are recommended by MCRC in relation to the proposed Oakland Court development project.**

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November 22, 2019

Mr. Patrick McIntyre, Jr., Executive Director, SHPO
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37214

Subject: Federal Agency/SHPO Consultation/Determination
Oakland Court Development
E Lokey Avenue
Murfreesboro, Tennessee 37130
Parcel #: 091E B 03900
Latitude: 35.856405, Longitude: -86.385846

Pursuant to 36 CFR 800.4 this letter is to provide you with the necessary information and our determination for the following proposal with respect to historical and cultural properties known to be within the undertaking's area of potential effects:

FUNDING PROGRAM:

HUD RAD 1 – Rental Assistance Demonstration of a multi-family apartment complex

LOCATION:

Murfreesboro, Rutherford County, Tennessee

PROJECT SIZE:

20.08 acres

PRESENT CONDITION OF THE SITE:

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure constructed in 1960. The subject property structures contain a total of seventy-six (76) residential dwelling units and are situated on 20.08 acres of land. Located within the community structure is a daycare. Exterior property improvements include a playground, a basketball court, landscaped regions and asphalt parking areas. The Sponsor is submitting this project under the HUD Rental Assistance Demonstration (RAD) program, consisting of the demolition of the current subject property structures and new construction of ninety (90) single-family duplex, and triplex structures containing a total of 150 residential dwelling units.

Area of Potential Effect:
The Direct Area of Potential Effects (APE) has been defined to include only the subject property, as no off-site ground disturbance is proposed. The Indirect APE includes any vicinity properties within an approximate 0.10-mile view-shed to the subject property, as delineated on the attached map.

APE History:
According to the reviewed subject property historical information, the subject property was originally developed with F.R. Henry's Brick Yard from at least 1914 until 1931 when the property was developed with two (2) residential dwelling sheds. The property was then depicted as agricultural land and agricultural-related structures from at least 1950, prior to the construction of the current subject property structures in 1960. Vicinity structures within the APE date to the late-1930s.

Review of Historic Property Listings:
A review of the National Register of Historic Places indicates that the subject property structures are not listed on the National Register of Historic Places; are not located within, or adjacent to, a Historic District; and are not listed as local landmarks. However, one (1) historic site, Oaklands (NRI: 70000616) is located adjacent to the southeast of the subject property. This two-story house is comprised of three (3) houses that were built in different periods and combined over time. The house is significant for its architectural style, social and humanitarian history, and military presence during the Civil War. Oaklands was bought by the city of Murfreesboro in 1957 and was restored after having fallen into disrepair. The back of Oaklands faces the subject property but is enclosed by a wooden fence. The subject property currently consists of single-story structures that are set for demolition and are proposed to be replaced with one- and two-story structures. While the two-story structures will be somewhat visible from the Oaklands site, the proposed redevelopment is not too dramatic a shift in design elements from the current aesthetics of the subject property.

Based on the date of construction (1960), the subject property structures may be eligible for listing on the National Register. However, per visual observations, the structures consist of rudimentary brick façade, double-hung windows, and no outstanding architectural features which would indicate historic significance. In addition, given the historic ground disturbance of the subject property, the project is unlikely to impact archaeological resources.

Based on the foregoing information, D3G respectfully submits that, pursuant to 36CFR800.4(b), the proposed undertaking will have No Adverse Effect on historic properties or archaeological resources.

Your review and response will be appreciated. Supporting documentation is attached for your review as well as a digital copy of the proposed project plans. Please feel free to contact me with any questions regarding this project.

I appreciate your assistance and look forward to your response.

Sincerely;

DOMINION DUE DILIGENCE GROUP



Hannah L. Pearl, EP, CFM
NEPA Compliance Manager
h.pearl@d3g.com
(804) 726-5156

National Register of Historic Places



November 21, 2019

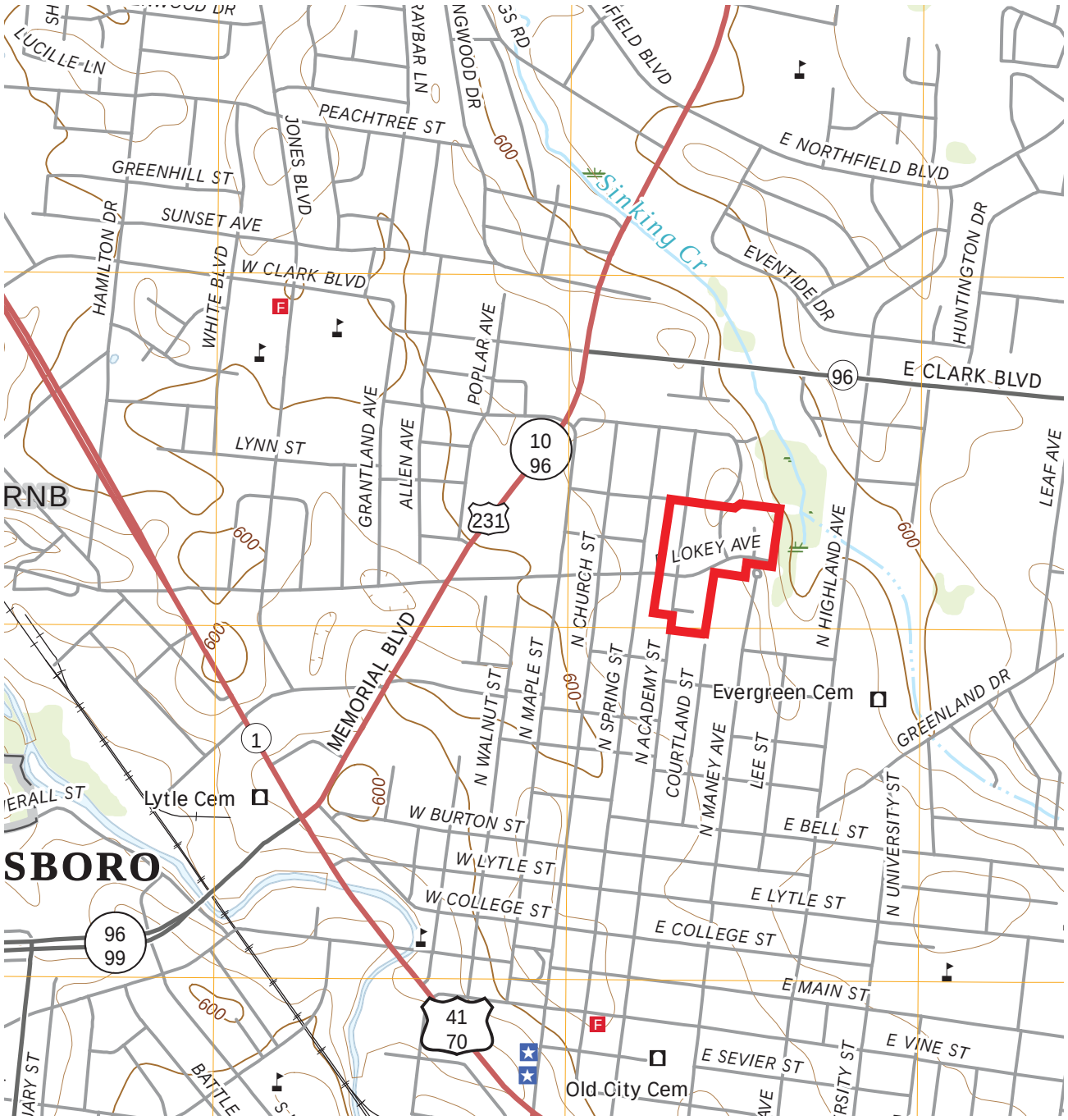
1:9,028

National Register of Historic Places

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
EPA OEI, OFA



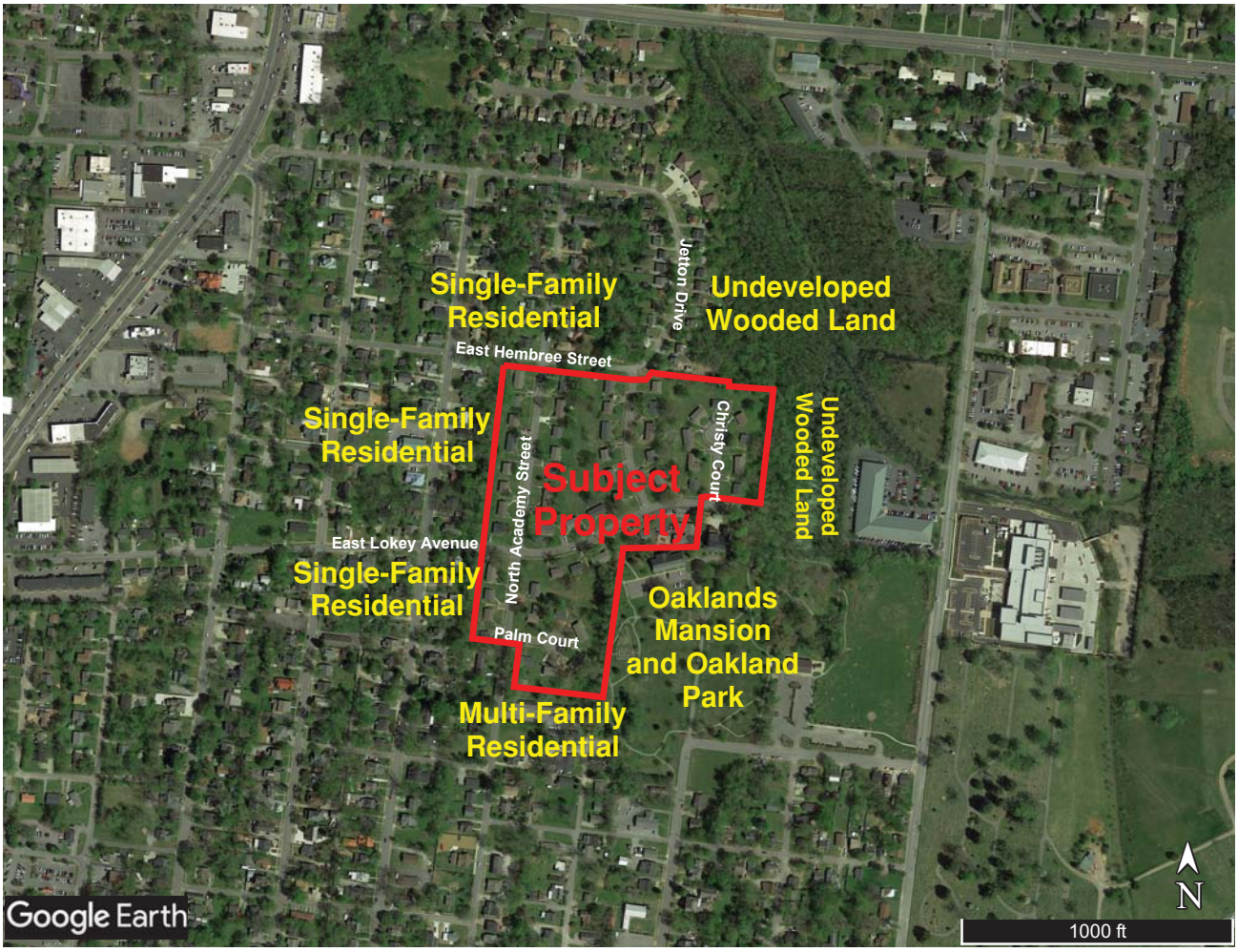
Site Topographic Map

N

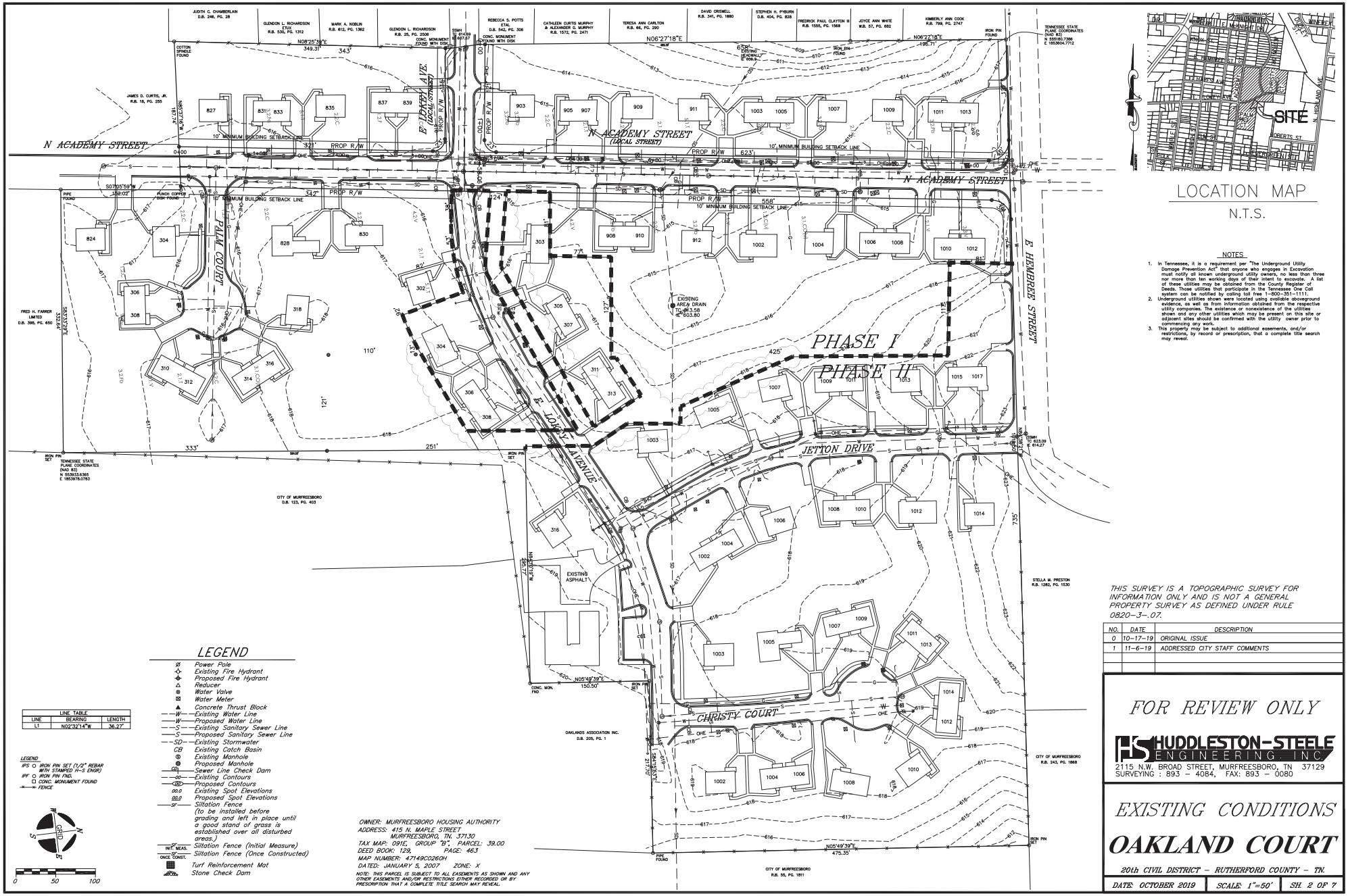
Oakland Court Development
E Lokey Avenue
Murfreesboro, Tennessee

Topographic Quadrangle: Murfreesboro, Tennessee 2019

DOMINION DUE DILIGENCE GROUP



Site Plan	↑ N	Oakland Court Development E Lokey Avenue Murfreesboro, Tennessee	**DOMINION DUE DILIGENCE GROUP**



THIS SURVEY IS A TOPOGRAPHIC SURVEY FOR INFORMATION ONLY AND IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-.07.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

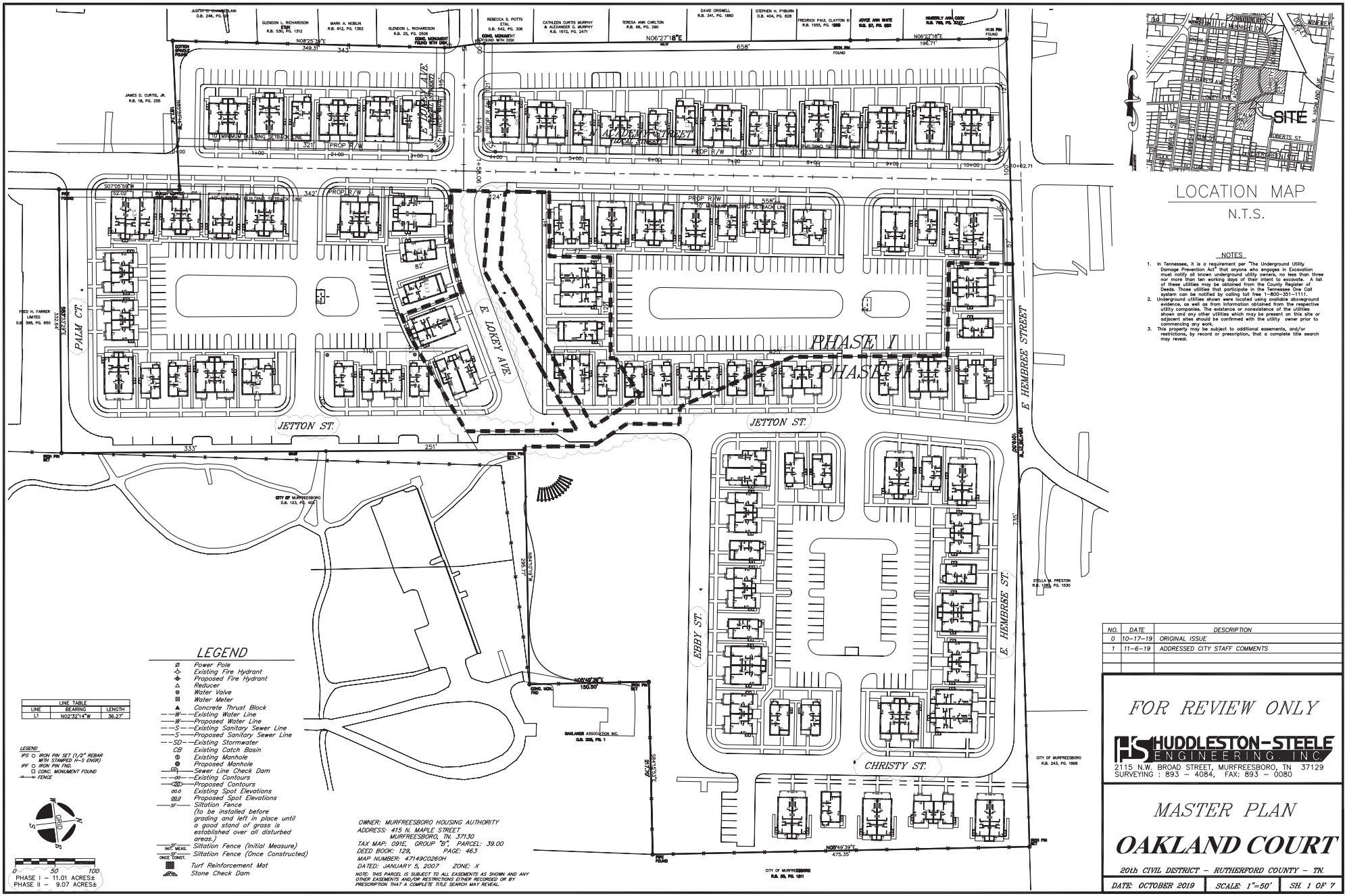
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 - 4084, FAX: 893 - 0080

EXISTING CONDITIONS

OAKLAND COURT

20th CIVIL DISTRICT - RUTHERFORD COUNTY - TN.

DATE: OCTOBER 2019	SCALE: 1"=50'	SH. 2 OF 7



NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

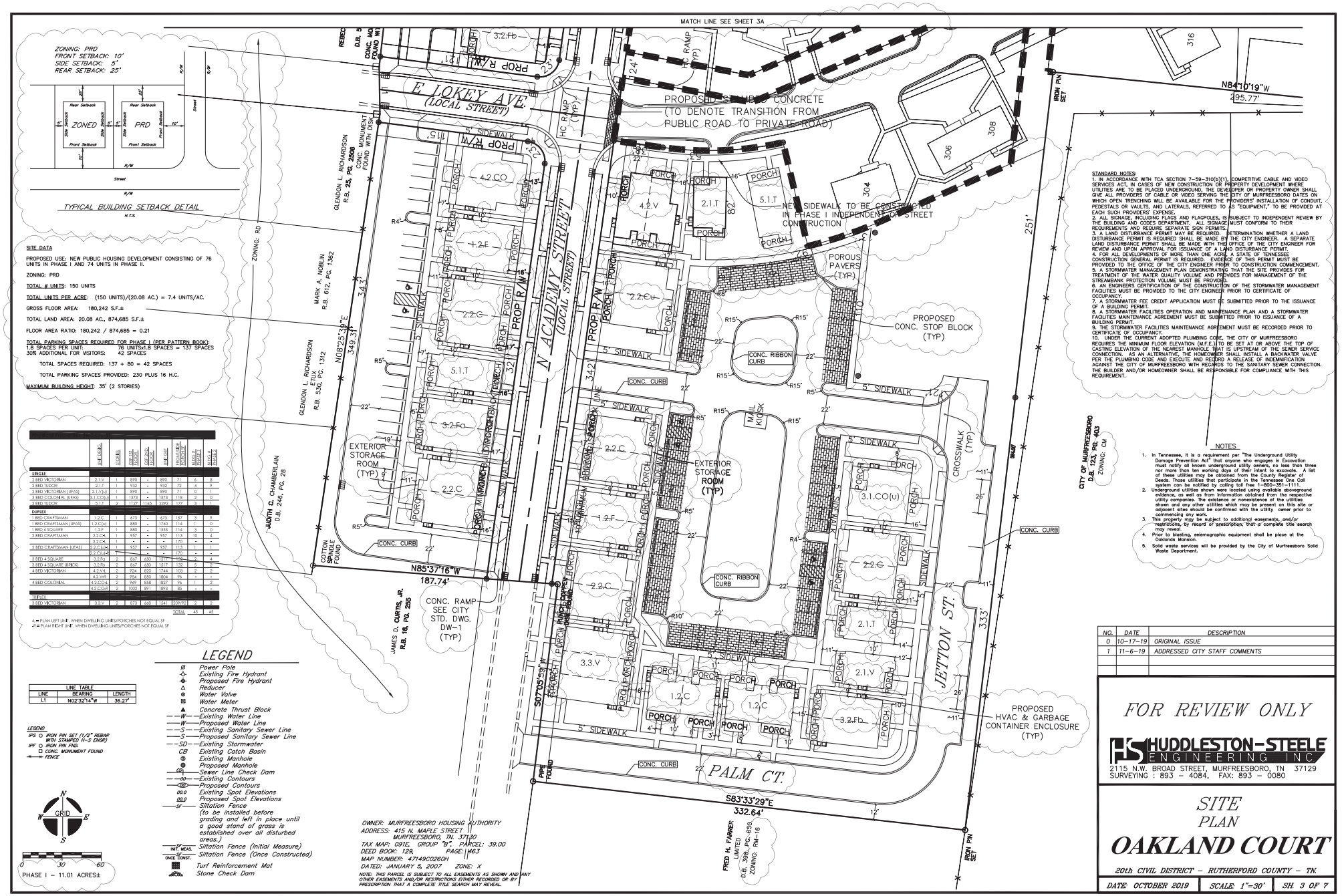
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

MASTER PLAN

OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=50' | SH. 1 OF 7



UNIT CODE	UNIT TYPE	BEDS	CONDO FLOOR	GROSS FLOOR	UNIT SF	PARKING SPACES	UNIT COUNT	BLDG # (PHASE I)
SINGLE								
2 BED VICTORIAN	2.1.V	1	890	-	890	71	6	4
2 BED TUDOR	2.1.T	1	932	-	932	72	4	9
2 BED VICTORIAN (LIFAS)	2.1.V(u)	1	890	-	890	71	0	1
2 BED COLONIAL (LIFAS)	3.1.CO(u)	2	1573	-	1573	118	2	0
3 BED TUDOR	3.1.T	2	1172	1165	2292	177	3	-
DUPLEX								
1 BED CRAFTSMAN	1.2.C	1	679	-	679	159	3	6
1 BED CRAFTSMAN (LIFAS)	1.2.C(u)	1	880	-	1760	114	1	0
1 BED 4 SQUARE	1.2.F	1	880	-	1553	114	3	6
2 BED CRAFTSMAN	2.2.C-L	1	957	-	957	113	10	4
	2.2.C-L	1	-	-	-	170	-	-
2 BED CRAFTSMAN (LIFAS)	2.2.C(u)-L	1	957	-	957	113	1	-
	2.2.C(u)-R	1	-	-	-	170	-	-
3 BED 4 SQUARE	3.2.Fa	2	867	650	1517	132	2	4
3 BED 4 SQUARE (BRICK)	3.2.Fa	2	867	650	1517	132	5	2
3 BED VICTORIAN	4.2.V-L	2	924	820	1744	103	2	-
	4.2.V-R	2	954	850	1804	96	-	-
4 BED COLONIAL	4.2.CO-L	2	969	858	1827	96	1	-
	4.2.CO-R	2	1002	891	1893	85	-	-
TRIPLEX								
3 BED VICTORIAN	3.3.V	2	873	668	1541	209/92	2	2
						TOTAL	45	45

-L = PLAN LEFT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF
-R = PLAN RIGHT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
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SITE PLAN
OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=30' | SH. 3 OF 7



	UNIT MODEL	STORIES	GARAGE (Y/N)	FLOOR AREA (SF)	GARAGE	PROPOSED PARKING	BEDS PER UNIT	BEDS PER BLDG
SINGLE								
2 BED VICTORIAN	2.1.V	1	-	890	-	890	71	6	8
2 BED FLOOR	2.1.T	1	-	930	-	930	72	4	9
2 BED VICTORIAN (UFAS)	2.1.V(u)	1	-	890	-	890	71	0	1
3 BED COLONIAL (UFAS)	3.1.CO(u)	1	-	1,573	-	1,573	118	2	0
5 BED FLOOR	5.1.T	2	Y	1127	1165	2292	173	3	-
DUPLEX									
1 BED CRAFTSMAN	1.2.C	1	-	673	-	673	157	3	9
1 BED CRAFTSMAN (UFAS)	1.2.C(u)	1	-	880	-	1760	114	1	0
1 BED 4 SQUARE	1.2.F	1	-	886	-	1553	114	3	0
2 BED CRAFTSMAN	2.2.C-L	1	-	957	-	957	113	10	4
	2.2.C-U	1	-	-	-	-	170	-	-
2 BED CRAFTSMAN (UFAS)	2.2.C(u)-L	1	-	957	-	957	113	1	1
	2.2.C(u)-U	1	-	-	-	-	170	-	-
3 BED 4 SQUARE	3.3.Fd	2	-	867	650	1517	132	2	4
3 BED 4 SQUARE (BRICK)	3.3.Fb	2	-	867	650	1517	132	5	2
4 BED VICTORIAN	4.2.V-L	2	-	924	820	1744	103	2	2
	4.2.V-R	2	-	954	850	1804	96	-	-
4 BED COLONIAL	4.2.CO-L	2	-	969	858	1827	96	1	2
	4.2.CO-U	2	-	1002	891	1893	85	-	-
DUPLEX									
3 BED VICTORIAN	3.3.V	2	-	873	648	1521	209/72	2	2
							TOTAL	45	45

-L = PLAN LEFT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF
-R = PLAN RIGHT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
- —W— Proposed Water Line
- —S— Existing Sanitary Sewer Line
- —S— Proposed Sanitary Sewer Line
- —SD— Existing Stormwater
- CB Existing Catch Basin
- Existing Manhole
- Proposed Manhole
- Sewer Line Check Dam
- —00— Existing Contours
- —00— Proposed Contours
- 00.0 Existing Spot Elevations
- 00.0 Proposed Spot Elevations
- —sf— Siltation Fence (To be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INT. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
- IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED "H-S ENGR)
- IPF ○ IRON PIN FND.
- □ CONC. MONUMENT FOUND
- x — FENCE

GRID N W E S

0 30 60

PHASE I – 11.01 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET
MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X

NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

STANDARD NOTES:
1. IN ACCORDANCE WITH TCA SECTION 7-59-310(b)(1), COMPETITIVE CABLE AND VIDEO SERVICES ACT, IN CASES OF NEW CONSTRUCTION OR PROPERTY DEVELOPMENT WHERE UTILITIES ARE TO BE PLACED UNDERGROUND, THE DEVELOPER OR PROPERTY OWNER SHALL GIVE ALL PROVIDERS OF CABLE OR VIDEO SERVICE THE CITY OF MURFREESBORO DATES ON WHICH OPEN TRENCHING WILL BE AVAILABLE FOR THE PROVIDERS' INSTALLATION OF CONDUIT, PEDESTALS OR VAULTS, AND LATERALS, REFERRED TO AS "EQUIPMENT," TO BE PROVIDED AT EACH SUCH PROVIDERS' EXPENSE.
2. ALL SIGNAGE, INCLUDING FLAGS AND FLAGPOLES, IS SUBJECT TO INDEPENDENT REVIEW BY THE BUILDING AND CODES DEPARTMENT. ALL SIGNAGE MUST CONFORM TO THEIR REQUIREMENTS AND REQUIRE SEPARATE SIGN PERMITS.
3. A LAND DISTURBANCE PERMIT MAY BE REQUIRED. DETERMINATION WHETHER A LAND DISTURBANCE PERMIT IS REQUIRED SHALL BE MADE BY THE CITY ENGINEER. A SEPARATE LAND DISTURBANCE PERMIT SHALL BE MADE WITH THE OFFICE OF THE CITY ENGINEER FOR REVIEW AND UPON APPROVAL FOR ISSUANCE OF A LAND DISTURBANCE PERMIT.
4. FOR ALL DEVELOPMENTS OF MORE THAN ONE ACRE, A STATE OF TENNESSEE CONSTRUCTION GENERAL PERMIT IS REQUIRED. EVIDENCE OF THIS PERMIT MUST BE PROVIDED TO THE OFFICE OF THE CITY ENGINEER PRIOR TO CONSTRUCTION COMMENCEMENT.
5. A STORMWATER MANAGEMENT PLAN DEMONSTRATING THAT THE SITE PROVIDES FOR TREATMENT OF THE WATER QUALITY VOLUME AND PROVIDES FOR MANAGEMENT OF THE STREAMBANK PROTECTION VOLUME MUST BE PROVIDED.
6. AN ENGINEERS CERTIFICATION OF THE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES MUST BE PROVIDED TO THE CITY ENGINEER PRIOR TO CERTIFICATE OF OCCUPANCY.
7. A STORMWATER FEE CREDIT APPLICATION MUST BE SUBMITTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
8. A STORMWATER FACILITIES OPERATION AND MAINTENANCE PLAN AND A STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE SUBMITTED PRIOR TO ISSUANCE OF A BUILDING PERMIT.
9. THE STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE RECORDED PRIOR TO CERTIFICATE OF OCCUPANCY.
10. UNDER THE CURRENT ADOPTED PLUMBING CODE, THE CITY OF MURFREESBORO REQUIRES THE MINIMUM FLOOR ELEVATION (M.F.E.) TO BE SET AT OR ABOVE THE TOP OF CURBING ELEVATION OF THE NEAREST MANHOLE THAT IS UPSTREAM OF THE SEWER SERVICE CONNECTION. AS AN ALTERNATIVE, THE HOMEOWNER SHALL INSTALL A BACKWATER VALVE PER THE PLUMBING CODE AND EXECUTE AND RECORD A RELEASE OF INDEMNIFICATION AGAINST THE CITY OF MURFREESBORO WITH REGARDS TO THE SANITARY SEWER CONNECTION. THE BUILDER AND/OR HOMEOWNER SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THIS REQUIREMENT.

NOTES
1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, and a complete title search may reveal.
4. Prior to blasting, seismographic equipment shall be place at the Oaklands Mansion.
5. Solid waste services will be provided by the City of Murfreesboro Solid Waste Department.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
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SITE PLAN
OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=30' | SH. 3A OF 7



View of the subject property



View of the subject property



View of the subject property



View of the subject property



View of the subject property



View of the subject property



View of the northern adjacent single-family residential



View of the northern adjacent single-family residential



View of the northern adjacent undeveloped land



View of the eastern adjacent undeveloped wooded land



View of the eastern adjacent Oaklands Mansion



View of the eastern adjacent Oakland Park



View of the southern adjacent multi-family residential



View of the western adjacent single-family residential



View of the western adjacent single-family residential

Form 10-300
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY – NOMINATION FORM

(Type all entries – complete applicable sections)

STATE: Tennessee
COUNTY: Rutherford
FOR NPS USE ONLY
ENTRY NUMBER: 10.2.41. ~~007~~ 0005
DATE: 2/26/70

SEE INSTRUCTIONS

1. NAME

COMMON: Oaklands
AND/OR HISTORIC:

RECEIVED JAN 23 1970 NATIONAL REGISTER

2. LOCATION

STREET AND NUMBER: N. Maney Avenue
CITY OR TOWN: Murfreesboro

STATE	CODE	COUNTY	CODE
Tennessee	41	Rutherford	149

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP		STATUS	ACCESSIBLE TO THE PUBLIC
☐ District ☒ Building	☒ Public	Public Acquisition:	☐ Occupied	Yes:
☐ Site ☐ Structure	☐ Private	☐ In Process	☒ Unoccupied	☐ Restricted
☐ Object	☐ Both	☐ Being Considered	☐ Preservation work in progress	☒ Unrestricted
				☐ No

PRESENT USE *(Check One or More as Appropriate)*

☐ Agricultural	☐ Government	☐ Park	☐ Transportation	☐ Comments
☐ Commercial	☐ Industrial	☐ Private Residence	☐ Other *(Specify)*	
☐ Educational	☐ Military	☐ Religious		
☐ Entertainment	☒ Museum	☒ Scientific		

4. OWNER OF PROPERTY

OWNER'S NAME: City of Murfreesboro
STREET AND NUMBER:
CITY OR TOWN:
STATE: Tennessee
CODE: 41

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC: Rutherford County Register's Office
STREET AND NUMBER: Public Square
CITY OR TOWN: Murfreesboro
STATE: Tennessee
CODE: 41

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY:
DATE OF SURVEY: ☐ Federal ☐ State ☐ County ☐ Local
DEPOSITORY FOR SURVEY RECORDS:
STREET AND NUMBER:
CITY OR TOWN:
STATE:
CODE:

STATE: Tennessee
COUNTY: Rutherford
FOR NPS USE ONLY
ENTRY NUMBER
DATE

7. DESCRIPTION

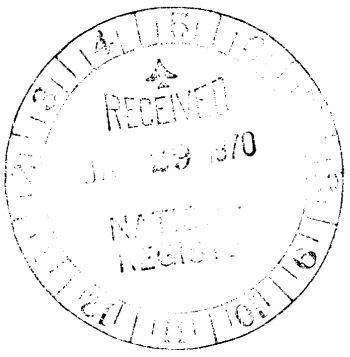
CONDITION	(Check One)					
	☐ Excellent	☒ Good	☐ Fair	☐ Deteriorated	☐ Ruins	☐ Unexposed
	(Check One)		(Check One)			
	☒ Altered	☐ Unaltered	☐ Moved	☒ Original Site		

DESCRIBE THE PRESENT AND ORIGINAL *(if known)* PHYSICAL APPEARANCE

Oaklands is actually three houses of different periods combined into one whole. The original structure was a simple two-room house connected by a breezeway to a kitchen. This was built in the early 1800's and was like any other pioneer home in a frontier community. In the 1820's a Dr. James Maney and his family occupied the house and added eight more rooms on the south side and the equivalent number upstairs. This house was built of brick with large brick chimneys at the east and west ends.

In the 1850's a second major addition was made. This consisted of two large rooms on the ground floor, each opening from a gracious center hallway, and two additional bedrooms and a hallway on the second floor. The center south room of the older building was united with the front hallway where an elaborate semicircular stairway led to the upper floors. English craftsmen built the addition aided by slave labor. The stairway was built by a ship's carpenter and a decorator came from Chicago to fresco the ceilings in the reception suite. Ash floors were used, alternating with cherry to achieve a parquet-type border. Architects feel the house was added ~~or~~ about 1858-59 because of the Italianate Victorian features of the facade of the house - the rounded arch over the entrance, the "Hudson River" bracketing under the eaves, the carved cornices over the windows.

Some years later in the 1890's a white colonnaded portico was added to the front and remains today.



SEE INSTRUCTIONS

8. SIGNIFICANCE

PERIOD *(Check One or More as Appropriate)*

☐ Pre-Columbian	☐ 16th Century	☐ 18th Century	☐ 20th Century
☐ 15th Century	☐ 17th Century	☒ 19th Century	

SPECIFIC DATE(S) *(If Applicable and Known)*

AREAS OF SIGNIFICANCE *(Check One or More as Appropriate)*

Aboriginal	☐ Education	☐ Political	☐ Urban Planning
☐ Prehistoric	☐ Engineering	☐ Religion/Philosophy	☐ Other *(Specify)*
☐ Historic	☐ Industry	☐ Science	
☐ Agriculture	☐ Invention	☐ Sculpture	
☒ Architecture	☐ Landscape Architecture	☒ Social/Humanitarian	
☐ Art	☐ Literature	☐ Theater	
☐ Commerce	☒ Military	☐ Transportation	
☐ Communications	☐ Music		
☐ Conservation			

STATEMENT OF SIGNIFICANCE

Oaklands is a significant house first of all because its history is something of an architectural history of the South in the nineteenth century. Secondly, the families who lived there were the leaders of the community. Dr. James Maney came from North Carolina and eventually settled in Murfreesboro, where he bought and enlarged the house as his family grew. Lewis Maney, his son, later inhabited the house and added to its furnishings. The reputation of the house as one of the most impressive in the area grew. Many famous people were entertained there, some welcomed, others not.

During the Civil War the house was occupied by both Southern and Northern officers as headquarters. Jefferson Davis, with his aide, Colonel George W. C. Lee, son of General Robert E. Lee, stayed at Oaklands when he visited troops in the area. Among the distinguished military leaders who enjoyed the hospitality of Oaklands were Confederate Generals Braxton Bragg, Leonidas Polk and George E. Maney.

In 1884, after the death of Lewis, Oaklands passed after 86 years from the Maney family. It was owned by three other families and underwent minor changes until the city of Murfreesboro bought it in 1957. The house had fallen into disrepair, but the Oaklands Association was organized in 1959 and proceeded with restoration which saved the house.

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JAN 29 1970
NATIONAL REGISTER

SEE INSTRUCTIONS

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Hughes, Mary B., Hearthstones, The Story of Historic Rutherford County Homes (2nd ed., Murfreesboro, 1960).

McBride, Robert M. "Oaklands: A Venerable Host," Tennessee Historical Quarterly, Vol. XXII (1963), No. 4, pp. 303-322.

Sims, Carlton C. (ed.) A History of Rutherford County (Murfreesboro, 1947).

NC TPM

10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY						OR	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES					
CORNER	LATITUDE			LONGITUDE				LATITUDE			LONGITUDE		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
NW	°	'	"	°	'	"		35°	51'	21"	86°	23'	06"
NE	°	'	"	°	'	"							
SE	°	'	"	°	'	"							
SW	°	'	"	°	'	"							

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 10 (less than)

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE

RECEIVED JAN 23 1970 NATIONAL REGISTER

11. FORM PREPARED BY

NAME AND TITLE:
May Dean Coop, Assistant Director of History

ORGANIZATION: Tennessee Historical Commission

DATE: 6-9-69

STREET AND NUMBER: 403, 7th Avenue, North

CITY OR TOWN: Nashville

STATE: Tennessee

CODE: 41

12. STATE LIAISON OFFICER CERTIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National ☐ State ☒ Local ☐

Name Stephen S. Lawrence

Stephen S. Lawrence
Executive Director
Title Tennessee Historical Comm.

Date

NATIONAL REGISTER VERIFICATION

I hereby certify that this property is included in the National Register.

Ernest Allen Connally
Chief, Office of Archeology and Historic Preservation

FEB 26 1970

Date

ATTEST:

William J. Murtagh
Keeper of The National Register

Date FEB 12 1970

SEE INSTRUCTIONS

Appendix N:

Noise Abatement and Control

Noise (CEST and EA)

General requirements	Legislation	Regulation
HUD's noise regulations protect residential properties from excessive noise exposure. HUD encourages mitigation as appropriate.	Noise Control Act of 1972 General Services Administration Federal Management Circular 75-2: "Compatible Land Uses at Federal Airfields"	Title 24 CFR 51 Subpart B
References		
https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control		

1. What activities does your project involve? Check all that apply:

☑ New construction for residential use

NOTE: HUD assistance to new construction projects is generally prohibited if they are located in an Unacceptable zone, and HUD discourages assistance for new construction projects in Normally Unacceptable zones. See 24 CFR 51.101(a)(3) for further details.

→ *Continue to Question 2.*

☐ Rehabilitation of an existing residential property

NOTE: For major or substantial rehabilitation in Normally Unacceptable zones, HUD encourages mitigation to reduce levels to acceptable compliance standards. For major rehabilitation in Unacceptable zones, HUD strongly encourages mitigation to reduce levels to acceptable compliance standards. See 24 CFR 51 Subpart B for further details.

→ *Continue to Question 2.*

☐ A research demonstration project which does not result in new construction or reconstruction, interstate, land sales registration, or any timely emergency assistance under disaster assistance provisions or appropriations which are provided to save lives, protect property, protect public health and safety, remove debris and wreckage, or assistance that has the effect of restoring facilities substantially as they existed prior to the disaster

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ None of the above

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

2. Complete the Preliminary Screening to identify potential noise generators in the vicinity (1000' from a major road, 3000' from a railroad, or 15 miles from an airport). Indicate the findings of the Preliminary

Screening below:

☐ There are no noise generators found within the threshold distances above.
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing the location of the project relative to any noise generators.*

☑ Noise generators were found within the threshold distances.
→ *Continue to Question 3.*

3. Complete the Noise Assessment Guidelines to quantify the noise exposure. Indicate the findings of the Noise Assessment below:

☑ Acceptable: (65 decibels or less; the ceiling may be shifted to 70 decibels in circumstances described in §24 CFR 51.105(a))

Indicate noise level here: → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide noise analysis, including noise level and data used to complete the analysis.*

☐ Normally Unacceptable: (Above 65 decibels but not exceeding 75 decibels; the floor may be shifted to 70 decibels in circumstances described in 24 CFR 51.105(a))

Indicate noise level here:

If project is rehabilitation:
→ *Continue to Question 4. Provide noise analysis, including noise level and data used to complete the analysis.*

If project is new construction:
Is the project in a largely undeveloped area ?

☐ No
→ *Continue to Question 4. Provide noise analysis, including noise level and data used to complete the analysis, and any other relevant information.*

☐ Yes
→ *Your project requires completion of an Environmental Impact Statement (EIS) pursuant to 51.104(b)(1)(i). Elevate this review to an EIS-level review.*

☐ Unacceptable: (Above 75 decibels)

Indicate noise level here:

If project is rehabilitation:
HUD strongly encourages conversion of noise-exposed sites to land uses compatible with high noise levels. Consider converting this property to a non-residential use compatible with high noise levels.
→ *Continue to Question 4. Provide noise analysis, including noise level and data used to complete the analysis, and any other relevant information.*

If project is new construction:
Your project requires completion of an Environmental Impact Statement (EIS) pursuant to

51.104(b)(1)(i). You may either complete an EIS or provide a waiver signed by the appropriate authority. Indicate your choice:

☐ Convert to an EIS
→ *Provide noise analysis, including noise level and data used to complete the analysis.*
Continue to Question 4.

☐ Provide waiver
→ *Provide an Environmental Impact Statement waiver from the Certifying Officer or the Assistant Secretary for Community Planning and Development per 24 CFR 51.104(b)(2) and noise analysis, including noise level and data used to complete the analysis.*
Continue to Question 4.

4. HUD strongly encourages mitigation be used to eliminate adverse noise impacts. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation. This information will be automatically included in the Mitigation summary for the environmental review.

☐ Mitigation as follows will be implemented:

→ *Provide drawings, specifications, and other materials as needed to describe the project's noise mitigation measures. Continue to the Worksheet Summary.*

☐ No mitigation is necessary.
Explain why mitigation will not be made here:
→ *Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

The subject property is located within fifteen (15) miles of the Murfreesboro Municipal Airport and the Smyrna Airport. There are no major roads that would be considered a noise source within 1,000 feet of the subject property. There are no active railways within 3,000 feet of the subject property. The projected DNL value for all noise sources is less than 65 decibels (dB). Pursuant to 24 CFR 51.101(a)(3), a composite DNL of < 65 dB is acceptable.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

RE: Noise Levels at the Oakland Court Development
E Lokey Avenue
Murfreesboro, Rutherford County, Tennessee

Dominion Due Diligence Group has calculated the estimated noise characteristics of the proposed Oakland Court Development located along E Lockey Avenue in Murfreesboro, Rutherford County, Tennessee.

The subject property is located approximately 1.4 miles from the Murfreesboro Municipal Airport and approximately 11.2 miles from the Smyrna Airport. According to Mr. Chad Gehrke, Airport Director with the Murfreesboro Municipal Airport (cgehrke@murfreesborotn.gov), due to the size and limited operations of the airport it has not been required by the Federal Aviation Administration to develop a noise contour map. In addition, Mr. Gehrke provided the Federal Aviation Administration Part 77 Airspace Surfaces for the airport which demonstrates the surrounding areas affected by airport noise and the subject property is not included in those areas. Therefore, the Murfreesboro Municipal Airport is not suspected to impact the noise characteristics of the subject property. According to the 2004 noise contour map for the Smyrna Airport provided by Ms. Lois Vallance, Airport Manager with the Smyrna Airport (vallance@smyrnaairport.com), the subject property is located well outside of the 65 DNL contour line for the airport and it is not suspected to impact the noise characteristics of the subject property. There are no military airfields or other civil airports within fifteen (15) miles of the subject property that would be considered a noise source.

There are no major roads that would be considered a noise source within 1,000 feet of the subject property.

There are no active railways within 3,000 feet of the subject property.

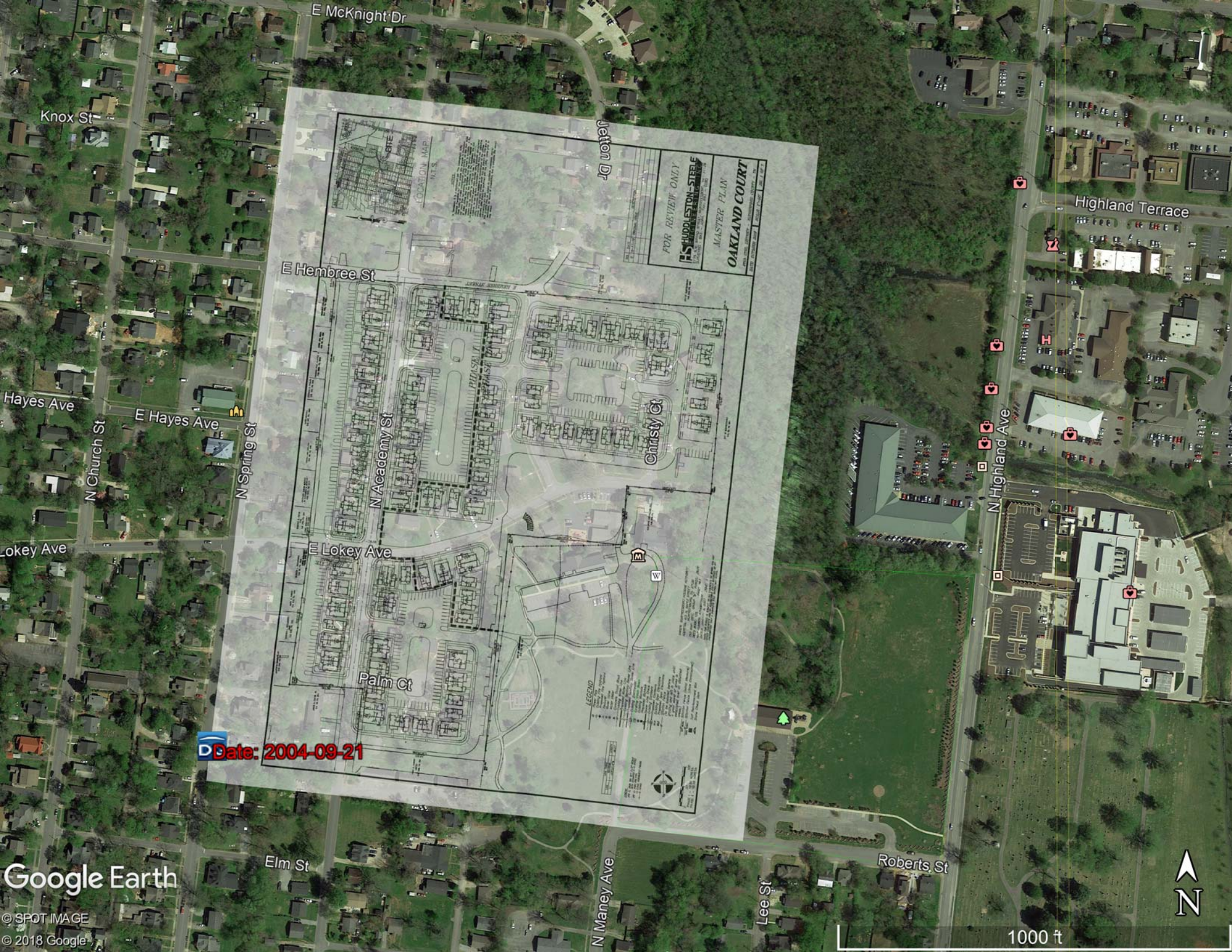
Acceptability categories, as defined by 24 CFR 51.101(a)(3), are as follows:

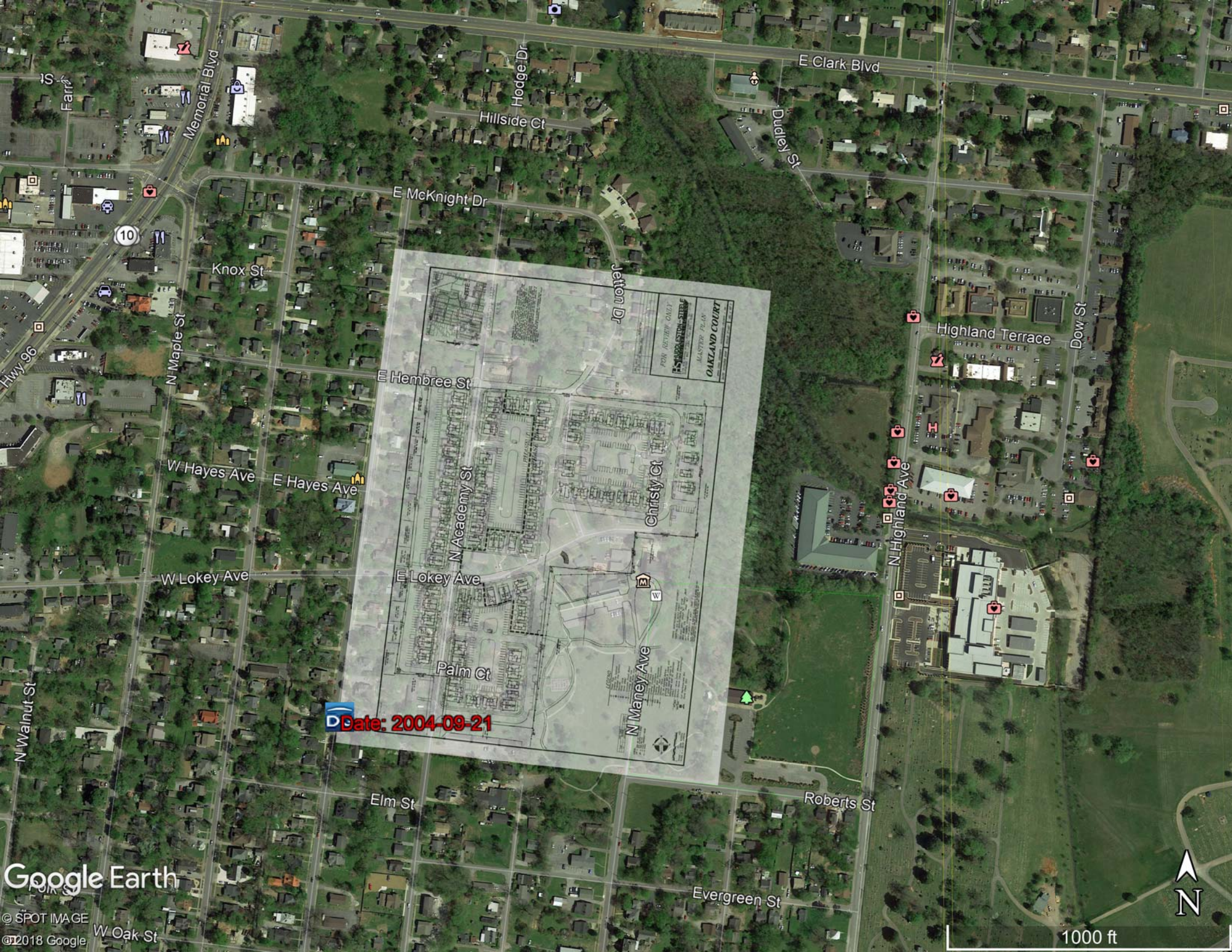
Acceptable - < 65 dB
Normally unacceptable – 65-75 dB
Unacceptable - > 75 dB

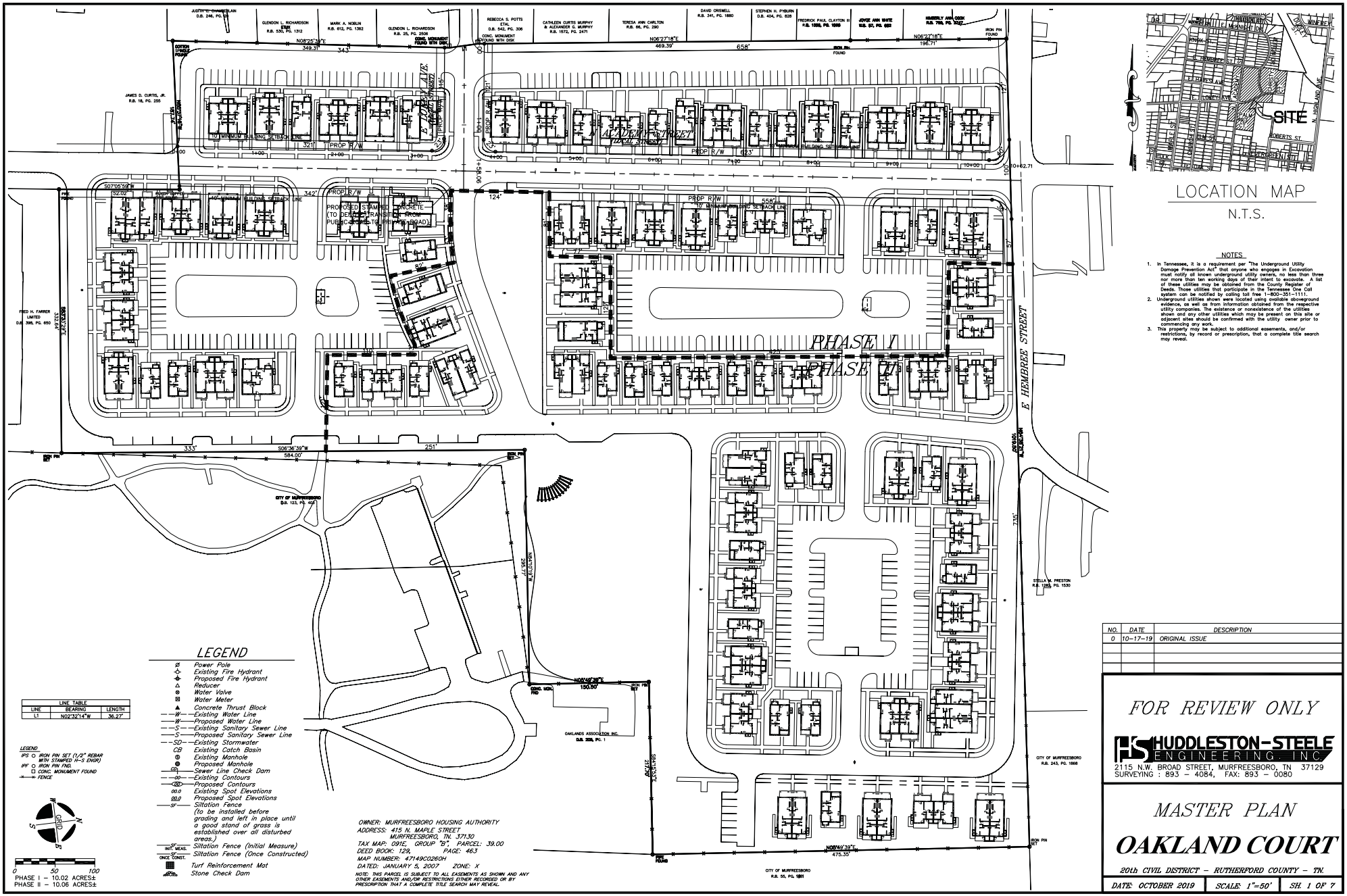
The projected DNL value for all noise sources is less than 65 decibels (dB). Pursuant to 24 CFR 51.101(a)(3), a composite DNL of < 65 dB is "acceptable".

Attached is the supporting documentation. All distances were measured utilizing Google Earth and the Master Plan prepared by Huddleston-Steele Engineering, Inc. dated October 2019. Distances measured to approximately 6.5 feet from the nearest building foundation and/or amenity to the noise source.

Supporting Documentation


E McKnight Dr
Knox St
Jetton Dr
Highland Terrace
E Hembree St
FOR REVIEW ONLY
HUDDLESTON-STEELE
MASTER PLAN
OAKLAND COURT
LOCATION MAP
N.T.S.
Hayes Ave
E Hayes Ave
N Church St
N Spring St
N Academy St
Christy Ct
N Highland Ave
Lokey Ave
E Lokey Ave
Palm Ct
Date: 2004-09-21
Elm St
N Maney Ave
Lee St
Roberts St
Google Earth
© SPOT IMAGE
© 2018 Google
N
1000 ft


E Clark Blvd
Memorial Blvd
Hodge Dr
Hillside Ct
Dudley St
E McKnight Dr
Knox St
Hwy 96
N Maple St
Jetton Dr
Highland Terrace
Dow St
E Hembree St
W Hayes Ave
E Hayes Ave
N Academy St
Christy Ct
N Highland Ave
W Lokey Ave
E Lokey Ave
Palm Ct
N Maney Ave
N Walnut St
Elm St
Roberts St
Evergreen St
W Oak St
OAKLAND COURT
FOR REVIEW ONLY
MASTER PLAN
Date: 2004-09-21
Google Earth
© SPOT IMAGE
©2018 Google
N
1000 ft



LOCATION MAP

N.T.S.

NOTES

1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, that a complete title search may reveal.

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
- —W— Proposed Water Line
- —S— Existing Sanitary Sewer Line
- —S— Proposed Sanitary Sewer Line
- —SD— Existing Stormwater
- CB Existing Catch Basin
- Existing Manhole
- Proposed Manhole
- —CD— Sewer Line Check Dam
- —00— Existing Contours
- —00— Proposed Contours
- 00.0 Existing Spot Elevations
- 00.0 Proposed Spot Elevations
- —SF— Siltation Fence (to be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INIT. MEAS. Siltation Fence (Initial Measure)
- SF CNSTR. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED "H-S ENGR)
IPF ○ IRON PIN FND.
□ CONC. MONUMENT FOUND
-x-x- FENCE

0 50 100

PHASE I – 10.02 ACRES±
PHASE II – 10.06 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET
MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X

NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE

FOR REVIEW ONLY

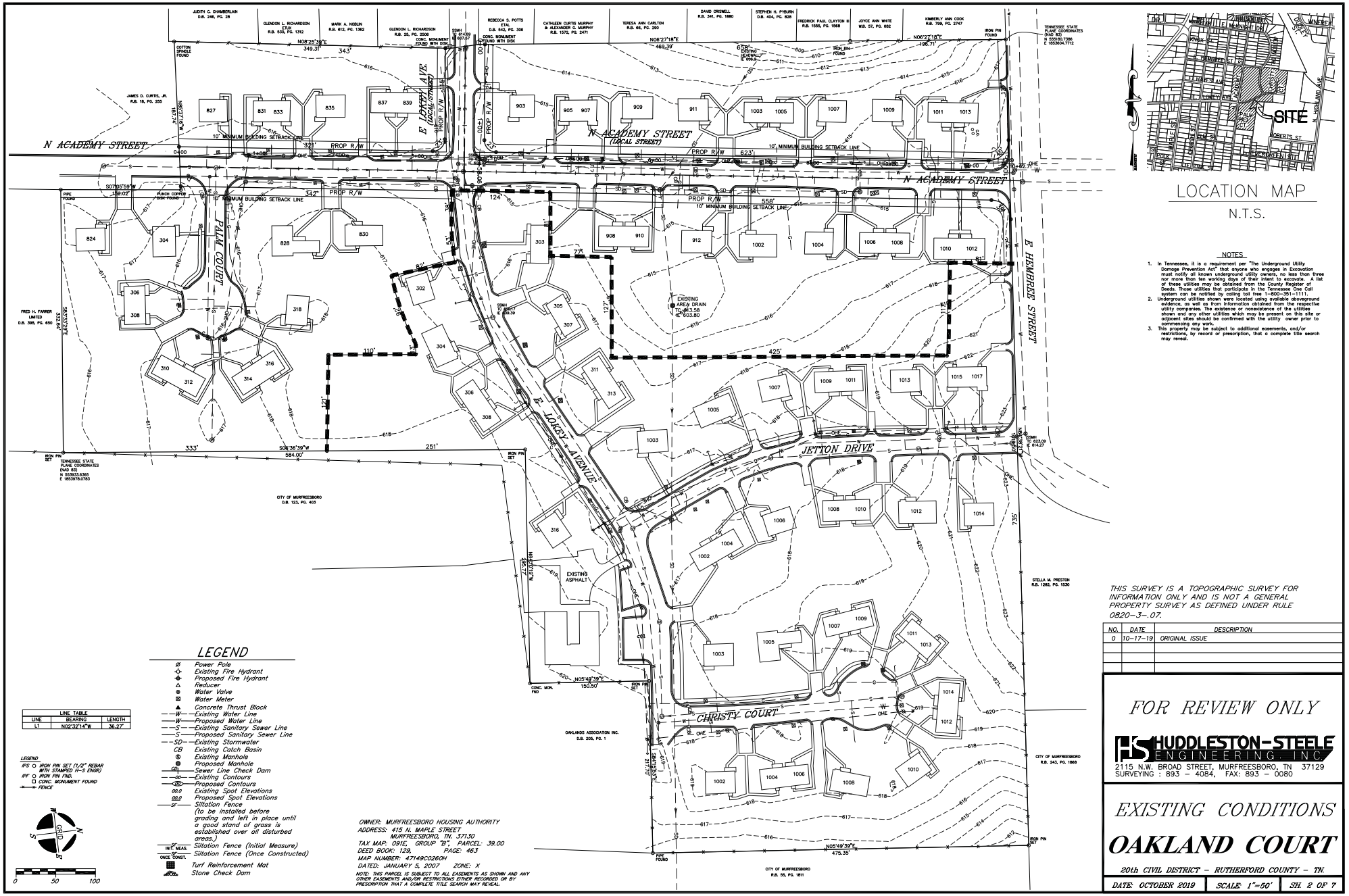
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

MASTER PLAN

OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=50' | SH. 1 OF 7



LOCATION MAP

N.T.S.

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0 50 100

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ADDRESS: 415 N. MAPLE STREET MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X

NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

THIS SURVEY IS A TOPOGRAPHIC SURVEY FOR INFORMATION ONLY AND IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-.07.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE

FOR REVIEW ONLY

HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 - 4084, FAX: 893 - 0080

EXISTING CONDITIONS

OAKLAND COURT

20th CIVIL DISTRICT - RUTHERFORD COUNTY - TN.

DATE: OCTOBER 2019	SCALE: 1"=50'	SH. 2 OF 7

Federal Aviation Administration

« OE/AAA

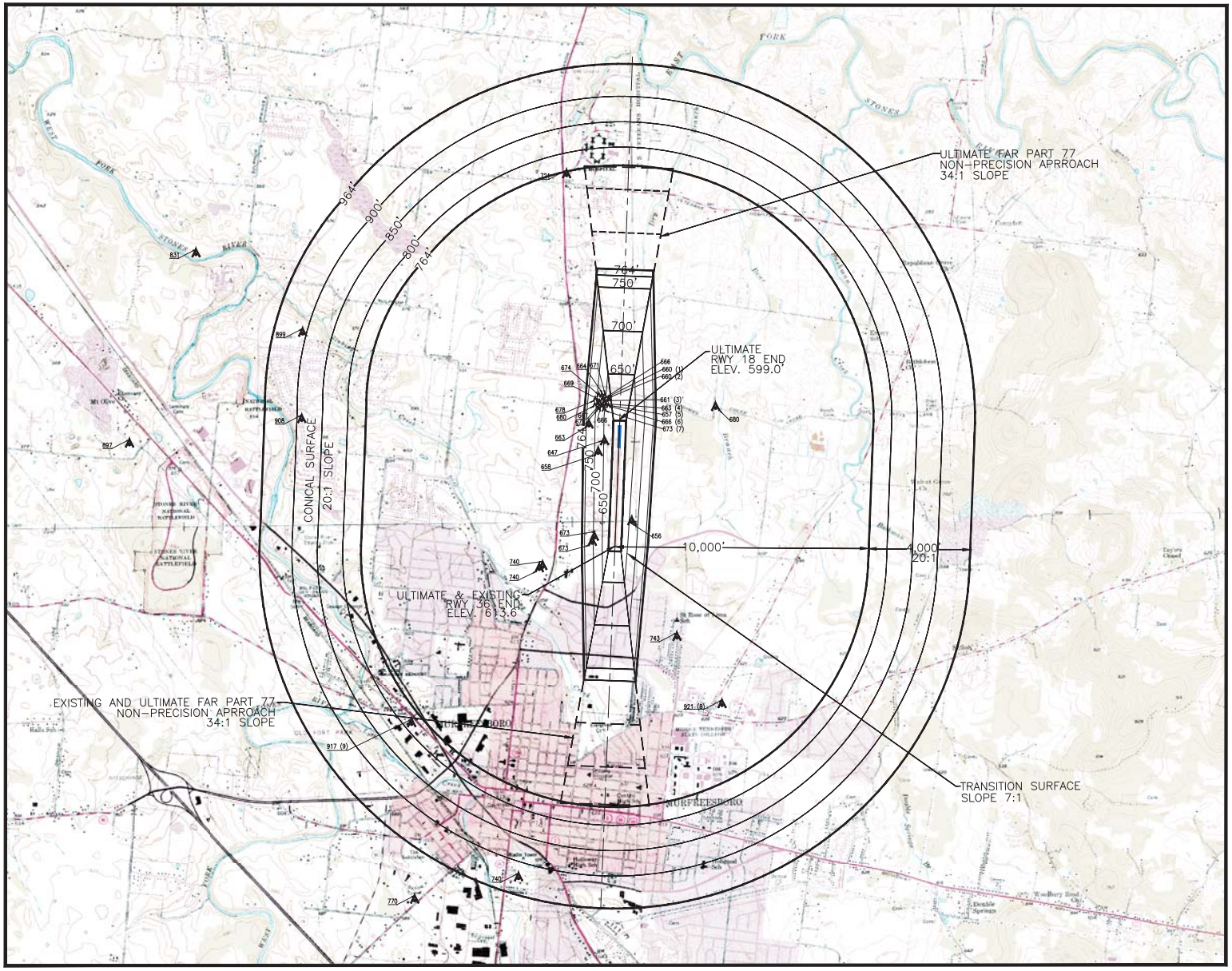
Circle Search For Airports Results

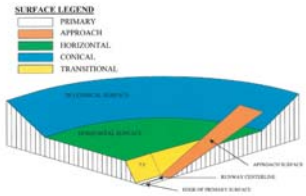
Records 1 to 3 of 3 Page 1 of 1

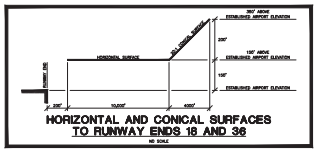
Locator Id	Name	Site Type	City	State	Latitude	Longitude	Distance(NM)	Azimuth
MBT	MURFREESBORO MUNI	Airport	MURFREESBORO	TN	35° 52' 43.17" N	86° 22' 38.90" W	1.37	200.85°
MQY	SMYRNA	Airport	SMYRNA	TN	36° 0' 32.30" N	86° 31' 12.30" W	11.15	144.56°
50M	PUCKETT	Gliderport	EAGLEVILLE	TN	35° 41' 22.00" N	86° 36' 54.00" W	14.98	47.78°

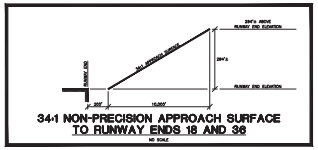
Rows per Page: 20

Records 1 to 3 of 3 **Page:** 1 Page 1 of 1






HORIZONTAL AND CONICAL SURFACES
TO RUNWAY ENDS 18 AND 36
NO SCALE


34:1 NON-PRECISION APPROACH SURFACE
TO RUNWAY ENDS 18 AND 36
NO SCALE

OBSTRUCTIONS

OBJECT #	DESCRIPTION	TOP ELEVATION	PENETRATION	PROPOSED ACTION *
LIGHT POLE 1	ATHLETIC FIELD LIGHT POLE	660'	10'	TBL
LIGHT POLE 2	ATHLETIC FIELD LIGHT POLE	660'	10'	TBL
LIGHT POLE 3	ATHLETIC FIELD LIGHT POLE	661'	11'	TBL
LIGHT POLE 4	ATHLETIC FIELD LIGHT POLE	663'	13'	TBL
LIGHT POLE 5	ATHLETIC FIELD LIGHT POLE	657'	7'	TBL
LIGHT POLE 6	ATHLETIC FIELD LIGHT POLE	666'	16'	TBL
LIGHT POLE 7	ATHLETIC FIELD LIGHT POLE	673'	23'	TBL
TOWER 8	TOWER	921'	157'	TBL
TOWER 9	TOWER	917'	153'	TBL

* TO BE LIGHTED

GENERAL NOTES

APPROACH SURFACES BEGIN 200' BEYOND RUNWAY PAVEMENT ENDS.

ANY HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA, INCLUDING AN INITIAL APPROACH SEGMENT, AND A DEPARTURE AREA, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE IS AN OBSTRUCTION TO AIR NAVIGATION.

OBJECT DATA FROM FAA.GOV, OBSTRUCTION EVALUATION VERSION 2010.3.2. DECEMBER 12, 2010.

ELEVATIONS APPROXIMATE FEET ABOVE MEAN SEA LEVEL.

SEE RUNWAY PROFILE SHEETS FOR OBSTRUCTIONS IN INNER PORTION OF APPROACH SURFACES.

DENOTES TOWER LOCATION AND ELEVATION.

DENOTES ATHLETIC FIELD LIGHT POLE AND ELEVATION.

SEE AIRPORT DATA TABLES FOR MAGNETIC DECLINATION

DATE	REVISION

MURFREESBORO MUNICIPAL AIRPORT
CITY OF MURFREESBORO
MURFREESBORO, TENNESSEE
AIRPORT LAYOUT PLAN

HANSON PROJECT		08A0172
SCALE	1:2,000' DATE	9/6/13
LAYOUT	JLB2	6/13
DRAWN	JLB2	6/13
REVIEWED	TSH	7/2/13

HANSON

©Copyright Hanson Professional Services Inc. 2013

FAR PART 77 SURFACES

6

SEP 13, 2013 10:13 AM BINGH01213\:\AIRPORTS\MBT\08A0172\CADD\SHEETS\MBT-AIRSPACE.DWG

Charlie Huntoon

From: Chad Gehrke <cgehrke@murfreesborotn.gov>
Sent: Monday, November 4, 2019 10:40 PM
To: Charlie Huntoon
Subject: RE: noise contour map request
Attachments: 6-MBT-AIRSPACE-PT77.pdf

Charlie,

Thank you for your email.

The Murfreesboro Municipal Airport is a small general aviation airport and is not required by the Federal Aviation Administration to conduct noise studies. I have, however, attached the Federal Aviation Regulation Part 77 Airspace Surfaces. These surfaces are not noise contours but represent the various protective surfaces that are in the air and on the ground that protect the airport and the areas around the airport. The aircraft pattern is within the Horizontal Surface which is typically one to two miles from the centerline of the runway. One of the other surfaces is the Runway Protection Zone which is typically one of the surfaces that most realtors or prospective home owners seeking HUD and or VA financing ask about. Given the location on the apartment complex on Lokey Street the Runway Protection Zone is not an issue either.

If you have any questions or need any additional information do not hesitate to call or write.

Chad

Chad L. Gehrke, CM
Airport Manager

City of Murfreesboro
Murfreesboro Municipal Airport
1930 Memorial Boulevard
Murfreesboro, TN 37129
Office 616-848-3254
Fax 616-848-3256
Email cgehrke@murfreesborotn.gov

This message was sent to you from

MBT
MIKE BRAVO TANGO

From: Charlie Huntoon <c.huntoon@d3g.com>
Sent: Monday, November 4, 2019 2:45 PM
To: Chad Gehrke <cgehrke@murfreesborotn.gov>
Subject: noise contour map request

Caution: This email originated from outside of the City of Murfreesboro email system. Please use discretion when clicking on attachments and links from unknown senders or suspicious emails.

Good afternoon,

I am conducting a noise survey per HUD regulations for an existing apartment located at Lokey Street in Murfreesboro, Tennessee. To conduct this survey I am required to evaluate all airports within fifteen (15) miles of the subject property. I am hoping that you will be able to provide me with the most recent noise contour map for the Murfreesboro Municipal Airport. Thank you in advance for any help you are able to provide.

Best,

Charlie

Charlie Huntoon,
Hazardous Materials Specialist, Dominion Due Diligence Group
O: (603) 398-3846 | **F:** (804) 621-2244
E: c.huntoon@d3g.com
A: 201 Wylderose Drive Midlothian, Va. 23113

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Celebrating 25 years of supporting workforce housing development and affordable housing preservation across the country. Click our logo to learn more about the services we offer.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT MASTER RECORD

PRINT DATE: 11/4/2019
AFD EFF 10/10/2019
FORM APPROVED OMB 2120-0015

> 1 ASSOC CITY: MURFREESBORO
> 2 AIRPORT NAME: MURFREESBORO MUNI
3 CBD TO AIRPORT (NM): 02 N
4 STATE: TN
6 REGION/ADO: ASO/MEM
LOC ID: MBT
5 COUNTY: RUTHERFORD TN
7 SECT AERO CHT: ATLANTA
FAA SITE NR: 23118.2*A

GENERAL

10 OWNERSHIP: PUBLIC
> 11 OWNER: CITY OF MURFREESBORO
> 12 ADDRESS: CITY HALL, 111 W VINE ST.
MURFREESBORO, TN 37130
> 13 PHONE NR: 615-893-5210
> 14 MANAGER: CHAD GEHRKE
> 15 ADDRESS: 1930 MEMORIAL BLVD.
MURFREESBORO, TN 37129
> 16 PHONE NR: 615-849-6031
> 17 ATTENDANCE SCHEDULE:

ALL	MON-SAT	0730-1830
ALL	SUN	0900-1830

18 AIRPORT USE: PUBLIC
19 ARPT LAT: 35-52-43.1700N ESTIMATED
20 ARPT LONG: 086-22-38.8950W
21 ARPT ELEV: 614.1 SURVEYED
22 ACREAGE: 225
> 23 RIGHT TRAFFIC: NO
> 24 NON-COMM LANDING: NO
25 NPIAS/FED AGREEMENTS: NGY
> 26 FAR 139 INDEX:

SERVICES

> 70 FUEL: 100LL A+
> 71 AIRFRAME RPRS: MAJOR
> 72 PWR PLANT RPRS: MAJOR
> 73 BOTTLE OXYGEN: LOW
> 74 BULK OXYGEN: LOW
75 TSNT STORAGE: HGR, TIE
76 OTHER SERVICES: AFRT, AVNCS, CHTR, INSTR, RNTL, SALES

FACILITIES

> 80 ARPT BCN: CG
> 81 ARPT LGT SKED : SS-SR
BCN LGT SKED: SS-SR
> 82 UNICOM: 123.075
> 83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: NO
86 FSS: NASHVILLE
87 FSS ON ARPT: NO
88 FSS PHONE NR:
89 TOLL FREE NR: 1-800-WX-BRIEF

BASED AIRCRAFT

90 SINGLE ENG:	104
91 MULTI ENG:	17
92 JET:	1
TOTAL:	122
93 HELICOPTERS:	1
94 GLIDERS:	0
95 MILITARY:	0
96 ULTRA-LIGHT:	1

OPERATIONS

100 AIR CARRIER:	0
102 AIR TAXI:	2,000
103 G A LOCAL:	75,000
104 G A ITNRNT:	3,600
105 MILITARY:	100
TOTAL:	80,700
OPERATIONS FOR 12 MONTHS ENDING:	12/31/2019

RUNWAY DATA

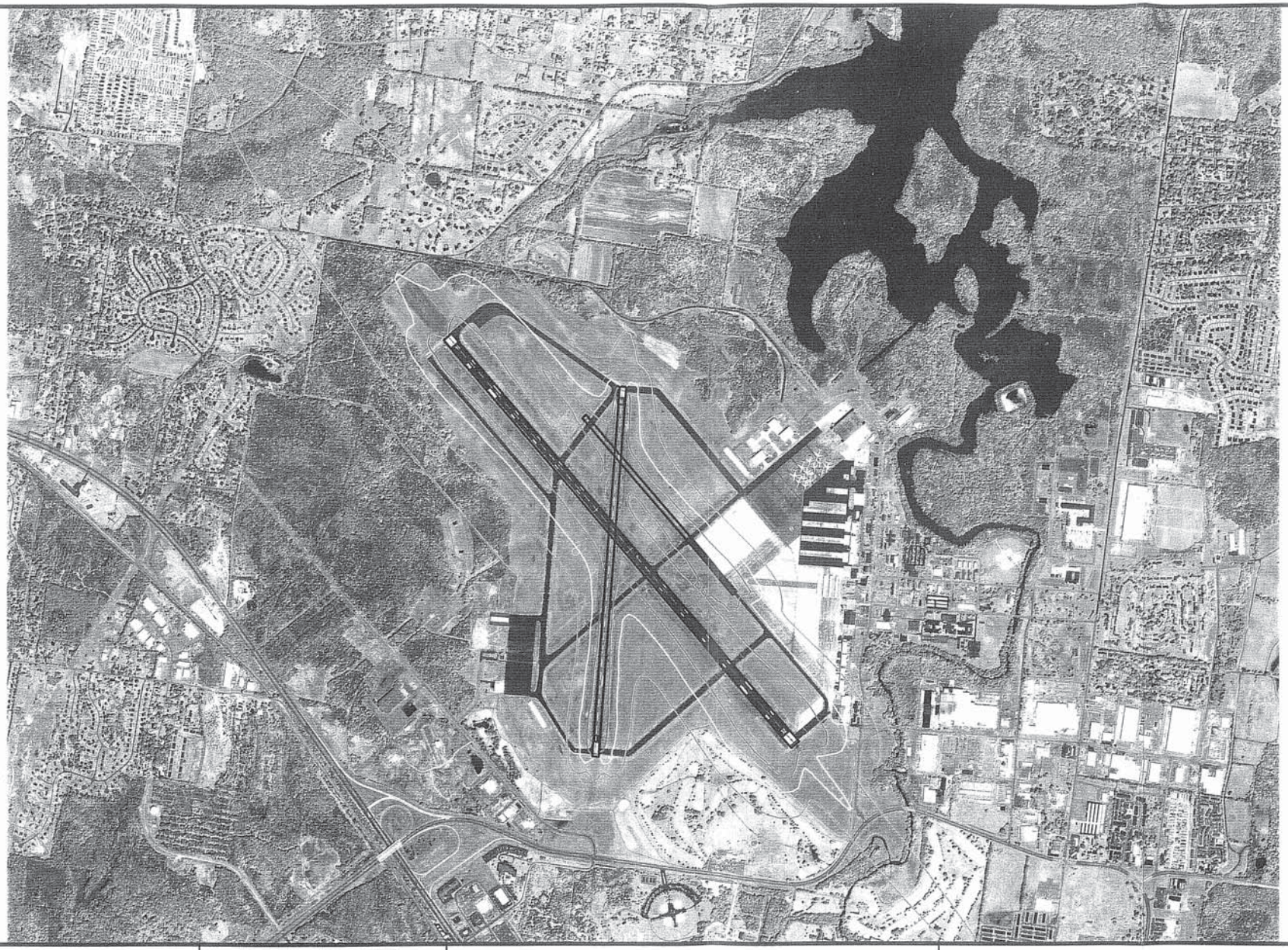
	18/36			
> 30 RUNWAY INDENT:				
> 31 LENGTH:	4,753			
> 32 WIDTH:	100			
> 33 SURF TYPE-COND:	ASPH-G			
> 34 SURF TREATMENT:				
35 GROSS WT: S	30.0			
36 (IN THSDS) D				
37 2D				
38 2D/2D2				
> 39 PCN:				
LIGHTING/APCH AIDS				
> 40 EDGE INTENSITY:	MED			
> 42 RWY MARK TYPE-COND:	NPI - G / NPI - G	- / -	- / -	- / -
> 43 VGSI:	P2L / P2L	/	/	/
44 THR CROSSING HGT	18 / 25	/	/	/
45 VISUAL GLIDE ANGLE:	3.00 / 3.75	/	/	/
> 46 CNTRLN-TDZ:	- / -	- / -	- / -	- / -
> 47 RVR-RVV:	- / -	- / -	- / -	- / -
> 48 REIL:	Y / Y	/	/	/
> 49 APCH LIGHTS:	/	/	/	/
OBSTRUCTION DATA				
50 FAR 77 CATEGORY	C / C	/	/	/
> 51 DISPLACED THR:	/	/	/	/
> 52 CTLG OBSTN:	TREE / TREE	/	/	/
> 53 OBSTN MARKED/LGTD:	/	/	/	/
> 54 HGT ABOVE RWY END:	58 / 92	/	/	/
> 55 DIST FROM RWY END:	1,955 / 1,808	/	/	/
> 56 CNTRLN OFFSET:	277R / 116L	/	/	/
57 OBSTN CLNC SLOPE:	30:1 / 17:1	/	/	/
58 CLOSE-IN OBSTN:	N / N	/	/	/
DECLARED DISTANCES				
> 60 TAKE OFF RUN AVBL (TORA):	/	/	/	/
> 61 TAKE OFF DIST AVBL (TODA):	/	/	/	/
> 62 ACLT STOP DIST AVBL (ASDA):	/	/	/	/
> 63 LNDG DIST AVBL (LDA):	/	/	/	/

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS

A 017	GEN ARPT INFO 615-848-3254; FOR EMERG OR AFT HRS SVC 615-849-6031.
A 110-001	EXTENSIVE STUDENT FLIGHT TRNG 0800-1700. STD TFC PATTERN REQ OF ALL ACFT.
A 110-100	GCO AVBL ON FREQ 135.075 THRU NASHVILLE CD. IF UNA FOR CD CTC NASHVILLE APCH 615-695-4522.
A 110-103	WILDLIFE IN VCNTY OF & ARND ARPT.
A 110-104	ACFT ENGINE RUN-UPS CONDUCTED E SIDE OF MAIN RAMP.
A 30A	RWY 36 CALM WIND RWY.

111 INSPECTOR: (S)
112 LAST INSP: 06/04/2019
113 LAST INFO REQ:



LEGEND

65 DNL
70 DNL
75 DNL

N.T.S.

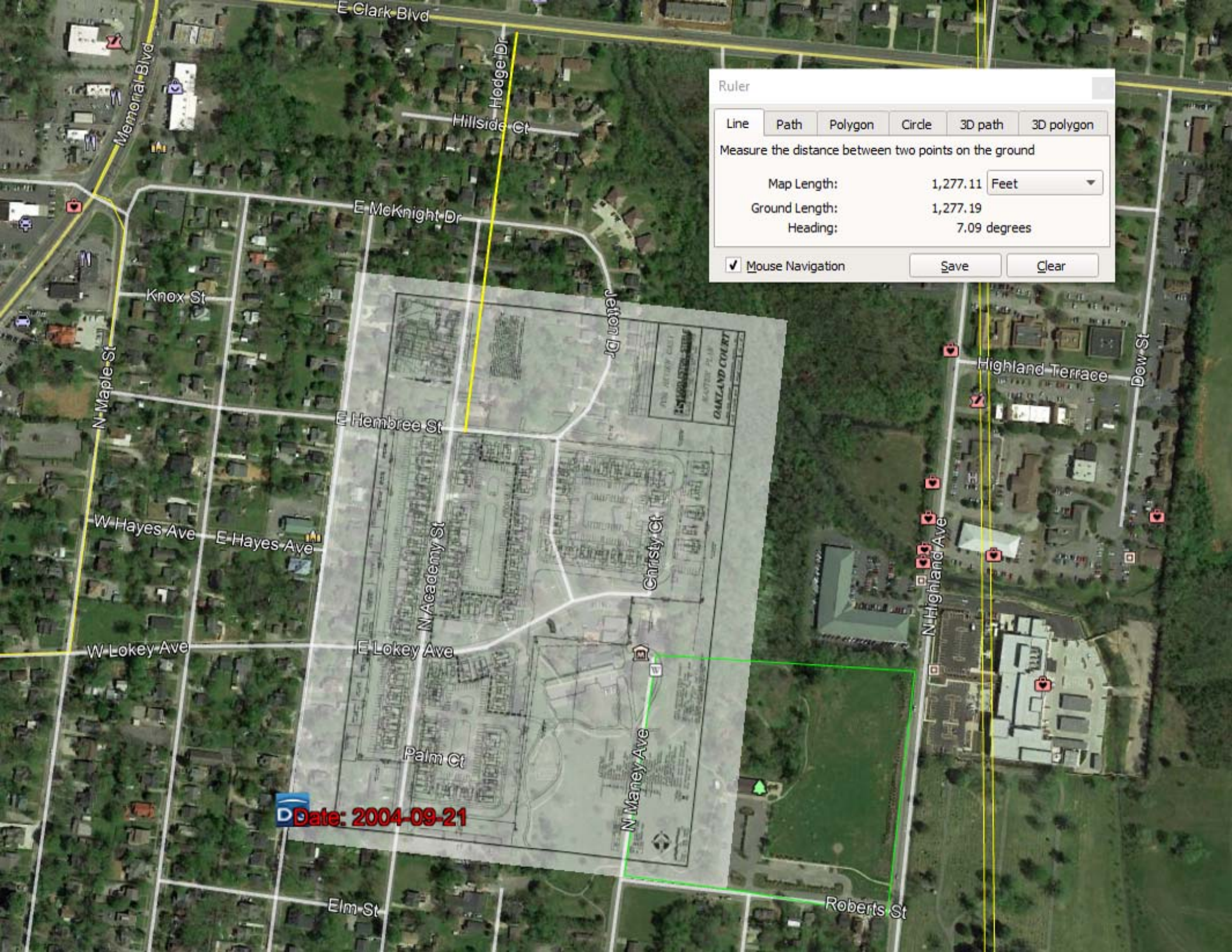
PBS&J

Smyrna Airport
Master Plan Update

Future Noise Contours

Figure
6-2

J:\AVServ\630057.09 Smyrna AMPU\Graphics\Chapter 2\Figure 6-2 Future Noise Contours.dwg Aug 31, 2004 - 3:43pm


E Clark Blvd
Memorial Blvd
Hedge Dr
Hillside Ct
E McKnight Dr
Knox St
N Maple St
Jelton Dr
E Hembree St
W Hayes Ave
E Hayes Ave
N Academy St
Christy Ct
W Lokey Ave
E Lokey Ave
Palm Ct
N Maney Ave
Elm St
Roberts St
Highland Terrace
Dow St
N Highland Ave
OAKLAND COURT
Date: 2004-09-21
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between two points on the ground
Map Length:
1,277.11
Feet
Ground Length:
1,277.19
Heading:
7.09 degrees
Mouse Navigation
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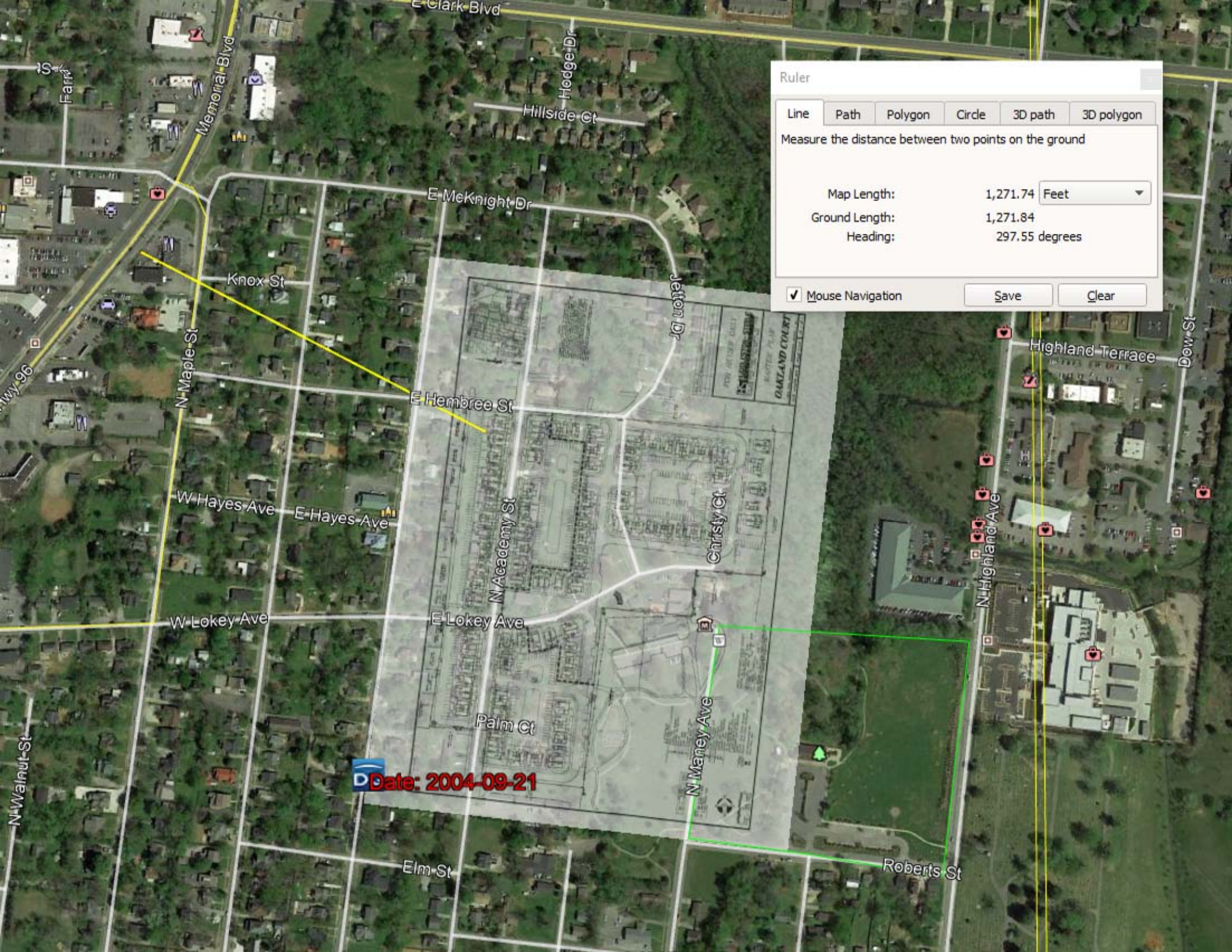
Clear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Memorial Blvd
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Hillside Ct
E McKnight Dr
Knox St
N Maple St
Jetton Dr
E Hembree St
W Hayes Ave
E Hayes Ave
N Academy St
Christy Ct
W Lokey Ave
E Lokey Ave
Palm Ct
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Roberts St
Elm St
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N Highland Ave
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Dow St
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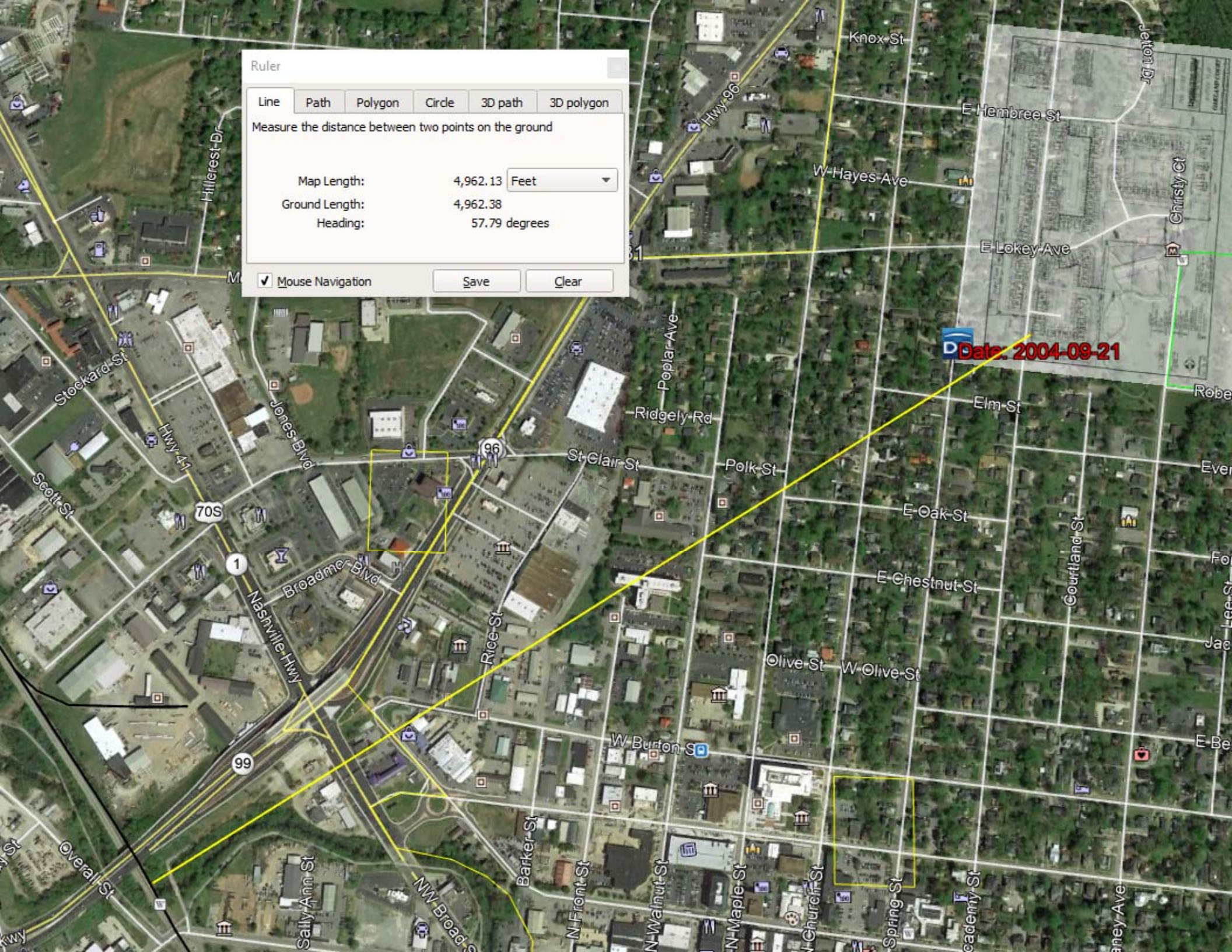
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W Hayes Ave
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Stockard St
Hwy 41
Jones Blvd
Poplar Ave
Ridgely Rd
St Clair St
Polk St
Elm St
Scott St
70S
1
Broadmor Blvd
Nashville Hwy
Rice St
E Oak St
E Chestnut St
Courtland St
Olive St
W Olive St
W Burton St
99
Overall St
Sally Ann St
NW Broad St
Barker St
N Front St
N Walnut St
N Maple St
N Church St
N Spring St
Academy St
96

Appendix O:

Sole Source Aquifers

Sole Source Aquifers (CEST and EA)

General requirements	Legislation	Regulation
The Safe Drinking Water Act of 1974 protects drinking water systems which are the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.	Safe Drinking Water Act of 1974 (42 U.S.C. 201, 300f et seq., and 21 U.S.C. 349)	40 CFR Part 149
Reference		
https://www.hudexchange.info/environmental-review/sole-source-aquifers		

1. Is the project located on a sole source aquifer (SSA)?

☑ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination, such as a map of your project (or jurisdiction, if appropriate) in relation to the nearest SSA and its source area.*

☐ Yes → *Continue to Question 2.*

2. Does your project consist solely of acquisition, leasing, or rehabilitation of an existing building(s)?

☐ Yes → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ No → *Continue to Question 3.*

3. Does your region have a memorandum of understanding (MOU) or other working agreement with EPA for HUD projects impacting a sole source aquifer?

Contact your Field or Regional Environmental Officer or visit the HUD webpage at the link above to determine if an MOU or agreement exists in your area.

☐ Yes → *Provide the MOU or agreement as part of your supporting documentation. Continue to Question 4.*

☐ No → *Continue to Question 5.*

4. Does your MOU or working agreement exclude your project from further review?

☐ Yes → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination and document where your project fits within the MOU or agreement.*

☐ No → *Continue to Question 5.*

5. Will the proposed project contaminate the aquifer and create a significant hazard to public health?

Consult with your Regional EPA Office. Your consultation request should include detailed information about your proposed project and its relationship to the aquifer and associated streamflow source area. EPA will also want to

know about water, storm water and waste water at the proposed project. Follow your MOU or working agreement or contact your Regional EPA office for specific information you may need to provide. EPA may request additional information if impacts to the aquifer are questionable after this information is submitted for review.

☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide your correspondence with the EPA and all documents used to make your determination.*

☐ Yes → *Work with EPA to develop mitigation measures. If mitigation measures are approved, attach correspondence with EPA and include the mitigation measures in your environmental review documents and project contracts. If EPA determines that the project continues to pose a significant risk to the aquifer, federal financial assistance must be denied. Continue to Question 6.*

6. In order to continue with the project, any threat must be mitigated, and all mitigation must be approved by the EPA. Explain in detail the proposed measures that can be implemented to mitigate for the impact or effect, including the timeline for implementation.

Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

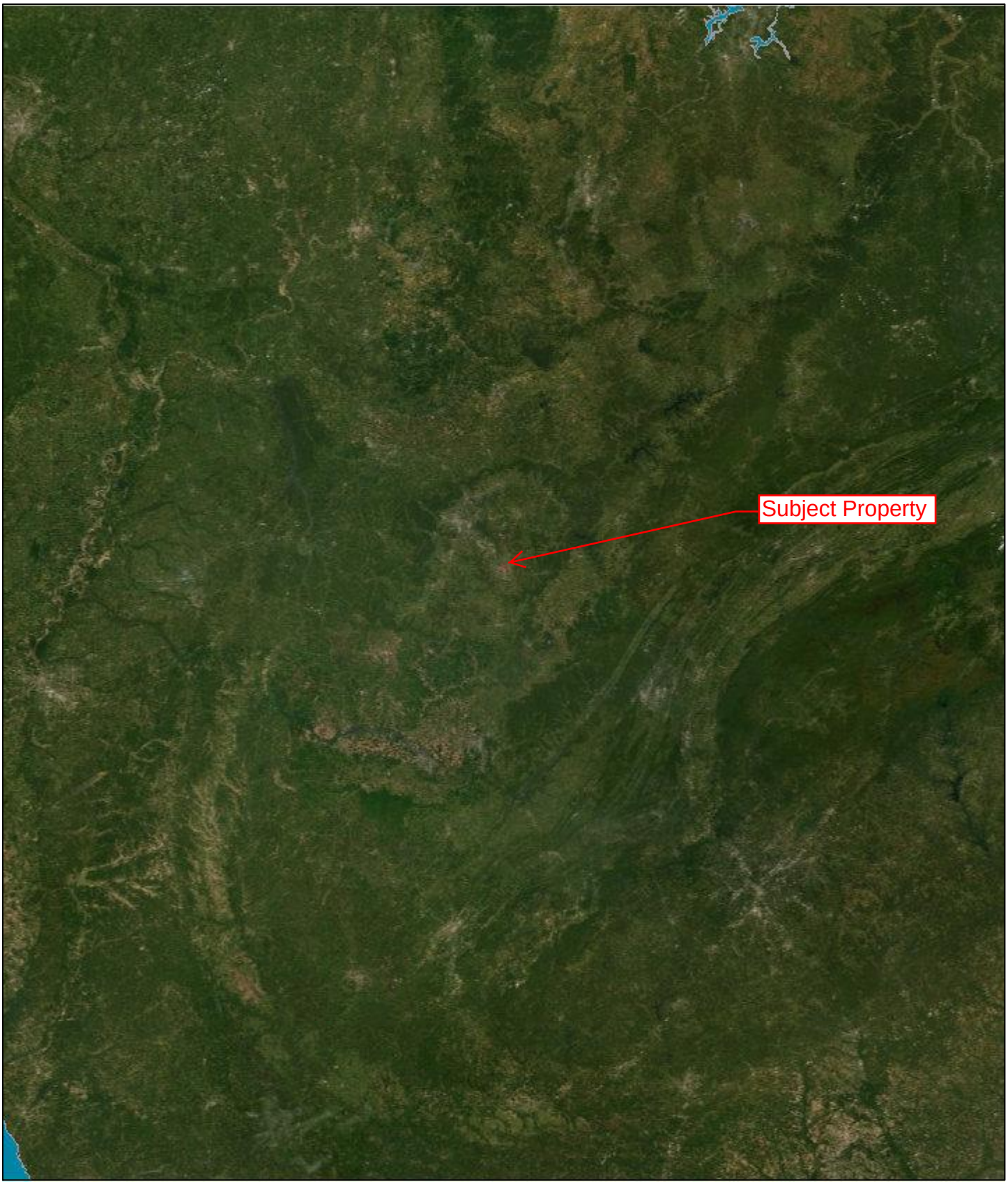
According to the Sole Source Aquifer layer obtained from EPA NEPAssist, accessed at http://nepassisttool.epa.gov/nepassist/entry.aspx, the subject property is not located within the boundaries of a Sole Source Aquifer. Therefore, the proposed undertaking is in conformance with HUD's Sole Source Aquifer requirements and no consultation nor mitigation measures are warranted.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Sole Source Aquifers



November 20, 2019

1:4,622,324

0 37.5 75 150 mi

0 62.5 125 250 km

Sole Source Aquifers

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix P:

Wetlands Protection

Wetlands (CEST and EA)

General requirements	Legislation	Regulation
Executive Order 11990 discourages that direct or indirect support of new construction impacting wetlands wherever there is a practicable alternative. The Fish and Wildlife Service's National Wetlands Inventory can be used as a primary screening tool, but observed or known wetlands not indicated on NWI maps must also be processed. Off-site impacts that result in draining, impounding, or destroying wetlands must also be processed.	Executive Order 11990	24 CFR 55.20 can be used for general guidance regarding the 8 Step Process.
Reference		
https://www.hudexchange.info/environmental-review/wetlands-protection		

1. Does this project involve new construction as defined in Executive Order 11990, expansion of a building's footprint, or ground disturbance?

The term "new construction" shall include draining, dredging, channelizing, filling, diking, impounding, and related activities and any structures or facilities begun or authorized after the effective date of the Order.

☐ No → Based on the response, the review is in compliance with this section.
Continue to the Worksheet Summary below.

☑ Yes → *Continue to Question 2.*

2. Will the new construction or other ground disturbance impact an on- or off-site wetland?

The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. Wetlands under E.O. 11990 include isolated and non-jurisdictional wetlands.

☑ No, a wetland will not be impacted in terms of E.O. 11990's definition of new construction.
→ Based on the response, the review is in compliance with this section. Continue to the Worksheet Sum
Provide a map or any other relevant documentation to explain your determination.

☐ Yes, there is a wetland that be impacted in terms of E.O. 11990's definition of new construction
→ *You must determine that there are no practicable alternatives to wetlands development by completing Process.*
Provide a completed 8-Step Process as well as all documents used to make your determination, inclu sure to include the early public notice and the final notice with your documentation.
Continue to Question 3.

3. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect,

including the timeline for implementation.

Which of the following mitigation actions have been or will be taken? Select all that apply:

- ☐ Permeable surfaces
- ☐ Natural landscape enhancements that maintain or restore natural hydrology through infiltration
- ☐ Native plant species
- ☐ Bioswales
- ☐ Evapotranspiration
- ☐ Stormwater capture and reuse
- ☐ Green or vegetative roofs with drainage provisions
- ☐ Natural Resources Conservation Service conservation easements
- ☐ Compensatory mitigation

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to the USFWS National Wetlands Inventory Layer accessed at http://nepassisttool.epa.gov/nepassist/entry.aspx and visual observations, there are no mapped wetland areas on the subject property, however, a freshwater emergent wetland is located on the eastern adjacent undeveloped wooded land approximately 150 feet from the eastern subject property boundary.

A letter was obtained from the Project Engineer (Huddleston-Steele Engineering, Inc.), dated December 4, 2019, confirming that all applicable erosion and sediment control measures will be observed throughout project activities and that all appropriate provisions will be made for site drainage, in order to prevent impacts to adjacent properties.

Are formal compliance steps or mitigation required?

☑ Yes

☐ No

National Wetlands Inventory



November 20, 2019

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

Wetlands

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

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

HUDDLESTON-STEELE
ENGINEERING, INC.
2115 N.W. Broad Street • Murfreesboro, TN 37129 • Engineering 615-893-4084 • Surveying 615-890-0372 • Fax 615-893-0080

December 4, 2019

Mr. L. Thomas Rowe, Executive Director
Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130
Email: trowe@mha-tn.org

Re: Oakland Court
Murfreesboro, TN

Dear Mr. Rowe:

This letter is written to confirm the following:

1. There will be no direct or indirect impacts to the adjacent 100-yeay flood zone and regulatory floodway per City of Murfreesboro and FEMA regulations.
2. All applicable erosion and sediment control measures are to be observed by the contractor throughout project activities per City of Murfreesboro regulations and a Stormwater Pollution Prevention Plan including a Notice of Intent filed with the Tennessee Department of Environment and Conservation (TDEC).
3. All appropriate provisions are to be made by the contractor for site drainage per City of Murfreesboro and TDEC regulations.
4. All applicable erosion and sediment control regulations are to be observed by the contractor throughout construction, and all appropriate drainage provisions are to be made by the contractor to ensure no negative effects to adjacent properties per City of Murfreesboro and TDEC regulations.

Feel free to contact us if you have any questions or comments.

Sincerely,

HUDDLESTON-STEELE ENGINEERING, INC.

William H. Huddleston IV, P.E., R.L.S.

12/4/19

Appendix Q:

Wild and Scenic Rivers

Wild and Scenic Rivers (CEST and EA)

General requirements	Legislation	Regulation
The Wild and Scenic Rivers Act provides federal protection for certain free-flowing, wild, scenic and recreational rivers designated as components or potential components of the National Wild and Scenic Rivers System (NWSRS) from the effects of construction or development.	The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287), particularly section 7(b) and (c) (16 U.S.C. 1278(b) and (c))	36 CFR Part 297
Reference		
https://www.hudexchange.info/environmental-review/wild-and-scenic-rivers		

1. Is your project within proximity of a NWSRS river as defined below?

Wild & Scenic Rivers:

These rivers or river segments have been designated by Congress or by states (with the concurrence of the Secretary of the Interior) as wild, scenic, or recreational

Study Rivers: These rivers or river segments are being studied as a potential component of the Wild & Scenic River system.

Nationwide Rivers Inventory (NRI): The National Park Service has compiled and maintains the NRI, a register of river segments that potentially qualify as national wild, scenic, or recreational river areas

☑ No

Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination, such as a map identifying the project site and its surrounding area or a list of rivers in your region in the Screen Summary at the conclusion of this screen.

☐ Yes, the project is in proximity of a Nationwide Rivers Inventory (NRI) River.

→*Continue to Question 2.*

2. Could the project do *any* of the following?

- Have a direct and adverse effect within Wild and Scenic River Boundaries,
- Invade the area or unreasonably diminish the river outside Wild and Scenic River Boundaries, or
- Have an adverse effect on the natural, cultural, and/or recreational values of a NRI segment.

Consultation with the appropriate federal/state/local/tribal Managing Agency(s) is required, pursuant to Section 7 of the Act, to determine if the proposed project may have an adverse effect on a Wild & Scenic River or a Study River and, if so, to determine the appropriate avoidance or mitigation measures.

Note: Concurrence may be assumed if the Managing Agency does not respond within 30 days; however, you are still obligated to avoid or mitigate adverse effects on the rivers identified in the NWSRS.

☐ No, the Managing Agency has concurred that the proposed project will not alter, directly, or indirectly, any of the characteristics that qualifies or potentially qualifies the river for inclusion in the NWSRS.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary*

below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.

☐ Yes, the Managing Agency was consulted and the proposed project may alter, directly, or indirectly, any of the characteristics that qualifies or potentially qualifies the river for inclusion in the NWSRS.
→ *Continue to Question 3.*

3. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.
→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

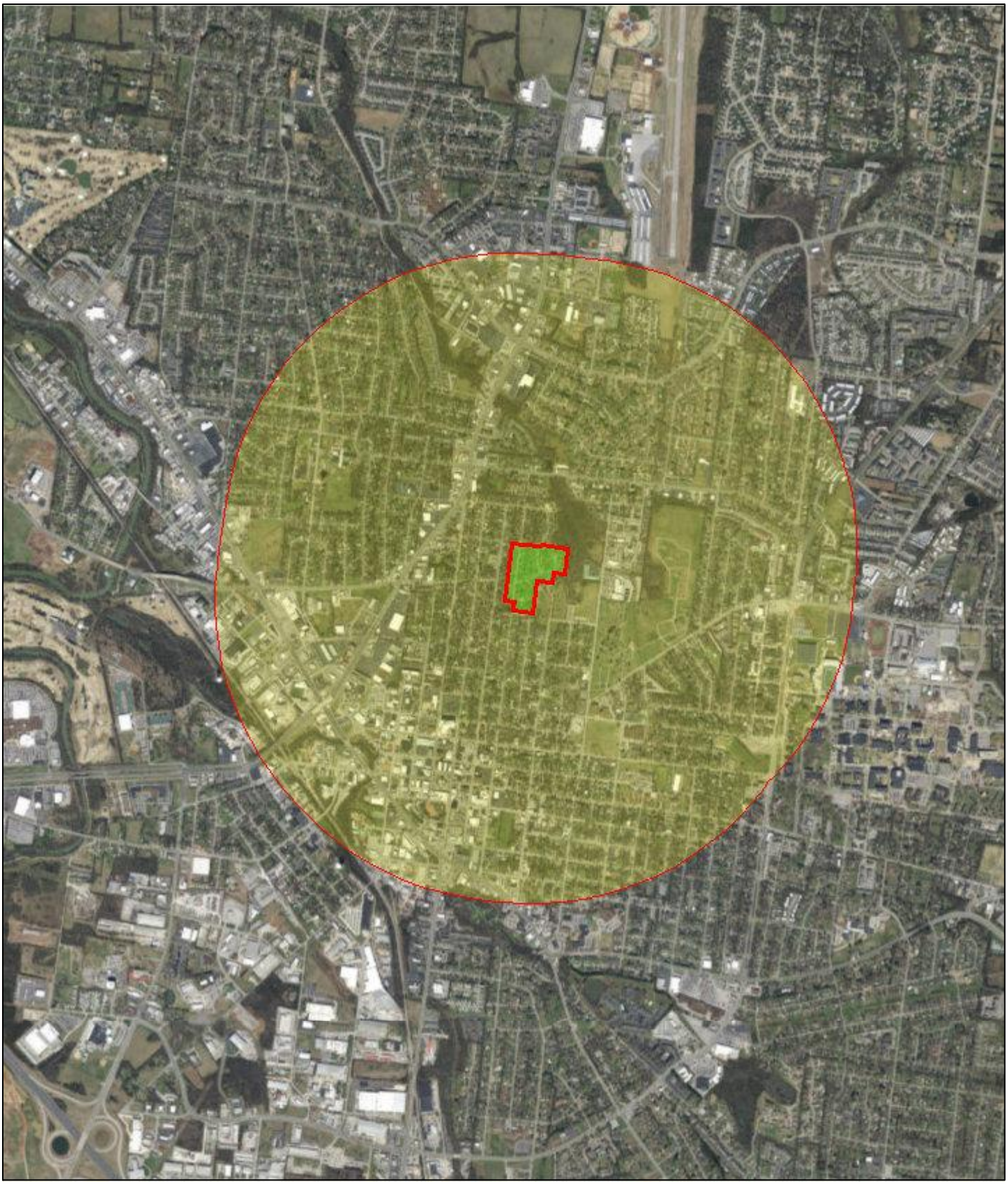
According to the National Wild & Scenic Rivers website accessed at https://www.rivers.gov/map.php, there are no Wild and Scenic Rivers in the vicinity of the subject property. In addition, according to the Nationwide Rivers Inventory list accessed at https://www.nps.gov/ncrc/programs/rtca/nri/index.html, there are no Tennessee Rivers listed that are upstream or downstream of the subject property within one (1) mile. Therefore, the subject property is in conformance with HUD' Wild & Scenic Rivers regulations and no consultation nor mitigation measures are warranted.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Wild and Scenic Rivers within 1 Mile



November 20, 2019

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Wild and Scenic Rivers

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

TENNESSEE

Tennessee has approximately 61,075 miles of river, of which 45.3 miles of one river are designated as wild & scenic—approximately 7/100ths of 1% of the state's river miles.

Obed River

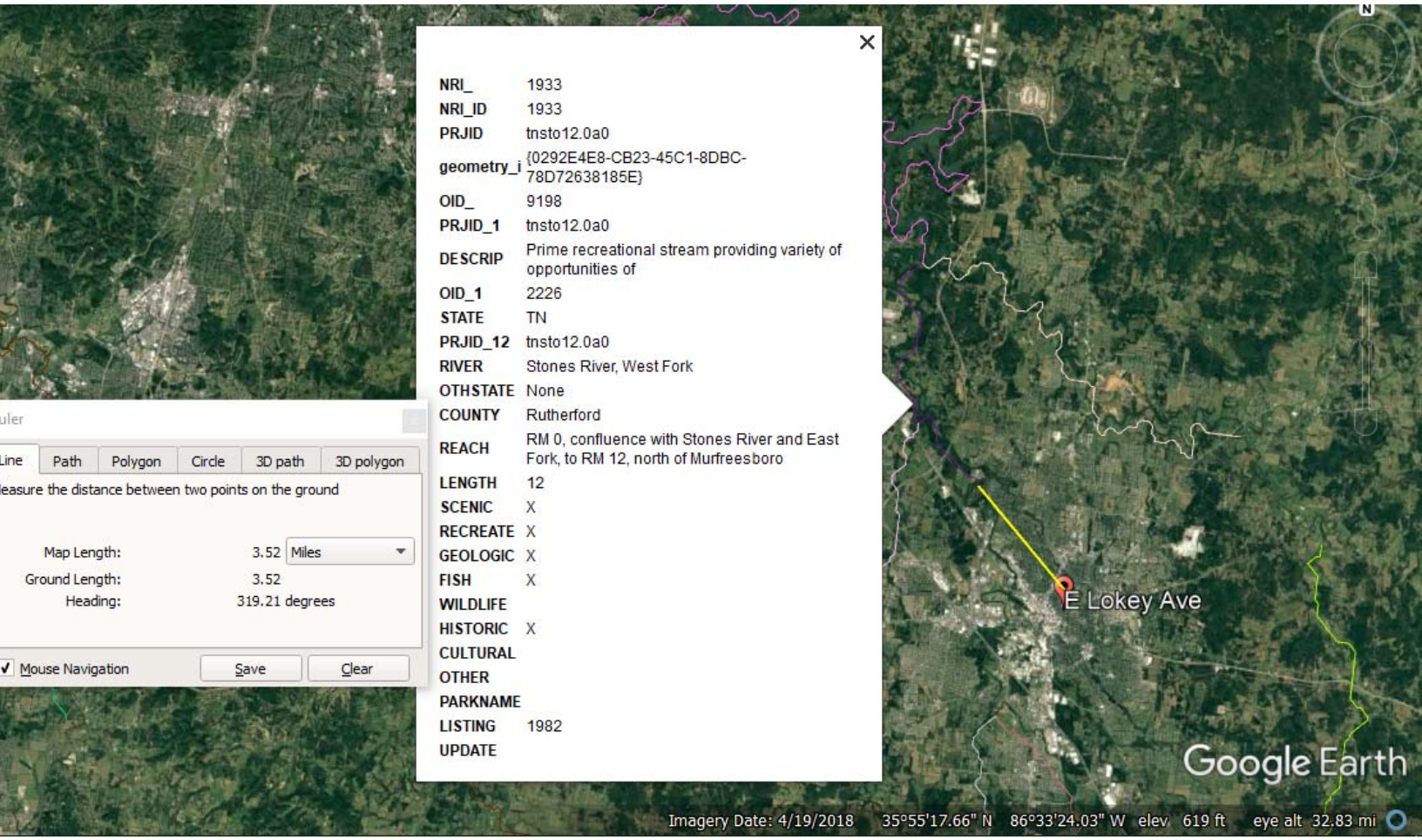


Choose A State Go

Choose A River Go

While progress should never come to a halt, there are many places it should never come to at all. — Paul Newman

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DESCRIP Prime recreational stream providing variety of opportunities of
OID_1 2226
STATE TN
PRJID_12 tnsto12.0a0
RIVER Stones River, West Fork
OTHSTATE None
COUNTY Rutherford
REACH RM 0, confluence with Stones River and East Fork, to RM 12, north of Murfreesboro
LENGTH 12
SCENIC X
RECREATE X
GEOLOGIC X
FISH X
WILDLIFE
HISTORIC X
CULTURAL
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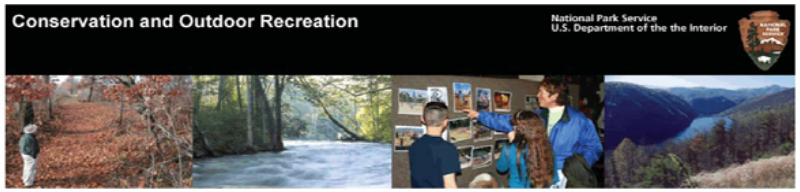

Tennessee Segments

Jeff Duncan
National Park Service
Rivers, Trails & Conservation Assistance
535 Chestnut St. Suite 207 Chattanooga, TN 37402
(423) 987-6127



Authorizations / History / Eligibility Descriptions / Outstandingly Remarkable Values / Potential Classification / Wild and Scenic Rivers System

Return to NRI Page

River	County	Reach	Length (miles)	Year Listed / Updated	Potential Classification	ORVs	Description	Other States
Abrams and Anthony Creeks	Blount	RM 0, confluence with Little Tennessee River, to RM 26, headwaters one mile above NC State line	26	1982		S, R, G, W	Small scenic stream entirely within Great Smoky Mountain National Park; deer and fur-bearers common; near National Park Service campground.	
Bee Creek	White, Van Buren, Bledsoe, Cumberland	RM 0, confluence with Caney Fork River, to RM 24, headwaters northwest of New Era	24	1982		S, R, G, F, W	Small twisting, plunging stream with small to medium drops; penetrates Bledsoe State Forest; boulders, ledges, and bluffs; densely forested corridor that provides for wildlife habitat.	
Big Creek	Grundy	RM 0, confluence with Collins River, to RM 8, near Altamont	8	1982		S, F, W	Scenic pastoral stream.	
Big Firey Gizzard Creek	Marion, Grundy	RM 0, confluence with Battle Creek, to RM 17, headwaters one mile north of Tracy City	17	1982		S, R, G, F	Densely forested stream within TVA Foster Falls Recreation Area.	
Big Turnbull Creek	Cheatham, Dickson	RM 0, confluence with Harpeth River, to RM 16, TN 96/I-40 bridges	16	1982		S, R, G, F, W	Clear, small and very scenic forested stream with 40 foot waterfall and numerous bluffs.	
Blackburn Fork of Roaring	Jackson, Putnam	RM 0, confluence with Blackburn River, to RM 20, headwaters one mile below community of Double Springs	20	1982		S, R, G, W	Small scenic stream; outstanding 75 foot Cummins Mill Falls.	
Bledsoe Creek	Sumner	RM 0, Old Hickory Lake, to RM 14, Bethpage	14	1982		S, R, G, F, W, H, C	Historic, very scenic float stream; General Winchester's home located on creek.	
Calfkiller River	White	RM 5, three miles southeast of Dibrell, to RM 12, below Sparta	7	1982		S, R, G, F, W	Scenic stream in area of very active Karsification with its caves, ground water springs, and numerous bluffs.	
Calfkiller River	White, Putnam	RM 21, one mile south of Yankeetown, to RM 41, headwaters one mile south of I-40	20	1982		S, R, G, F, W	See initial comments.	
Cane Creek of Caney Fork	Van Buren, Bledsoe	RM 0, confluence with Caney Fork of Cumberland River, to RM 31, headwaters two miles south of Dill	31	1982		S, R, G, F, W	Flows through Fall Creek Falls State Forest and Park; narrowly incised with rugged, rocky landscape; dense laurel thickets; good whitewater.	
Charles Creek	Warren	RM 0, confluence with Collins River, to RM 15, headwaters near Cannon County line	15	1982		S, R, F	Popular scenic fishing stream.	
Clear Creek	Morgan, Fentress, Cumberland	RM 14, Morgan County line, to RM 45, headwaters below I-40 bridge	31	1982		S, R, G, F, W	RM 0 through 14, designated component of the National Wild and Scenic Rivers System; remote, rugged stream partially within Catoosa State Wildlife Management Area; mild whitewater; abundance and variety of flora and fauna.	
Clear Fork of S.Fork of Cumberland and N. Prong Clear Fork Creek	Scott, Morgan, Fentress	RM 0, confluence with South Fork of the Cumberland River, to RM 44, headwaters northeast of Clarkrange	44	1982		S, R, G, W	Scenic stream with close, steep valley walls; numerous boulders, precipitous bluffs; heavily wooded valley with laurel thickets; long pools, moderate rapids, and short, quick drops.	
Clinch River	Anderson	RM 47, above Melton Hill Lake, to RM 73, below Norris Lake	26	1982		S, R, G, F, W, H, C	Numerous recorded archaeological sites; steep ridges, long shallow shoal areas, and deep pools; upper reach provides excellent pastoral float and is habitat for most diverse mussel fauna in the world.	
Clinch River	Grainger, Claiborne, Hancock	RM 130, above Norris Lake Reservoir, to RM 156, approximately one mile southeast of Evanston	26	1982		S, R, G, F, W	See initial comments.	
Collins River	Warren, Grundy	RM 0, confluence with Caney Fork, to RM 59, headwaters two miles southeast of Tatesville	59	1982		S, R, G, F, W	Slow moving, clear and cold pastoral stream with long pools and mild riffles; surrounded by high, forested hills and numerous bluffs.	
Conasauga River	Bradley, Polk	River mile 64, Georgia state line to River mile 75, Georgia state line	11	1982/ 1993	W	S, R, H	Scenic gorge within Class III-IV rapids. Civil War sites of state historical significance.	
Conasauga River	Bradley, Polk	RM 64, GA State line, to RM 75, GA State line	11	1982		S, R, G, F, W, H, C	Flows through Cherokee National Forest and Colutta Wilderness Area; scenic gorge with Class III-IV rapids; Civil War Sites of State historical significance.	

Crab Orchard Creek	Morgan, Cumberland	RM 0, confluence with Emory River, to RM 22, headwaters in Crab Orchard Mountain	22	1982		S, R, G, F, W	Remote, scenic stream that flows through Catoosa Wildlife Management Area.	
Cripple Creek	Rutherford	RM 0, confluence with East Fork of Stones River, to RM 18, headwaters two miles below	18	1982		S, R, G, W	Popular rocky, scenic float stream.	
Crooked Creek	Fentress	RM 0, confluence with Clear Fork River, to RM 18, TN 52 bridge east of Allardt	18	1982		S, R, G, W	Flows through scenic Northrup Falls natural area.	
Crooked Fork Creek	Morgan	RM 0, confluence with Emory River, to RM 5, US 27 bridge	5	1982		S, R, G, F, W	Very scenic stream with several beautiful waterfalls and deep gorge area.	
Cumberland River, Caney Fork	White, Cumberland	RM 99, Federal Aid Secondary Highway 4251 bridge west of Dodson, to RM 135, headwaters near community of Maryland	36	1982		S, R, G, F, W	See initial comments.	
Cumberland River, Caney Fork	Smith, Putnam, Dekalb	RM 0, confluence with Cumberland River, to RM 26, below Center Hill Dam	26	1982		S, R, G, F, W	Blue Hole Falls; ledges, numerous drops, huge boulders, sheer cliffs and limestone bluffs; rugged gorge area; excellent water quality; numerous springs; abundance of wildlife.	
Cumberland River, Little South Fork	Pickett	RM 32, KY State line, to RM 34, headwaters west of Pickett State Park and Forest	2	1982		S, R, G	Forested, highly scenic, and sparsely developed stream; characterized by deep channels bordered by large boulders and rock ledges.	
Cumberland River, South Fork	Scott	RM 55, KY State line, to RM 76, confluence with New River and Clear Fork	21	1982		S, R, G, F, W, H, C	Outstanding, popular whitewater; rugged, forested area; high scenic values; numerous archaeological sites.	
Doe River	Carter	RM 9, one mile south of US 19E bridge and Hampton, to RM 14, south of Blevins	5	1982		S, R, G	One of most majestic deep gorge areas in Eastern United States; remote with 1000 foot walls.	
Doe River	Carter	River mile 9, one mile south of US 19E bridge to river mile 14, south of Blevins	5	1982/ 1993	S	S	One of most majestic, deep-gorge areas in eastern US in remote area, with 1000-foot walls.	
Dry Creek of Smith Fork	Dekalb	RM 0, confluence with Smith Fork, to RM 11, headwaters and Cannon County line	11	1982		S, R, F, W	Small scenic stream with recreational values.	
Elk River	Giles, Lincoln, Moore, Franklin	RM 33, AL State line, to RM 130, above TN 50 bridge	97	1982		S, R, F, W, H, C	Significant recorded archaeological sites; fine float and game fish stream.	
Emory River	Morgan	RM 27, confluence with Obed River, to RM 47, headwaters in Frozen Head State Park near Anderson County line	20	1982		S, R, G, F, W	See initial comments.	

Emory River	Morgan	RM 14, Roane County line, to RM 25, one mile below Nemo bridge	11	1982		S, R, G, F, W	Scenic pastoral stream that flows through impressive gorge area; supports game fishery; RM 25 through 27, designated component of National Wild and Scenic Rivers System.	
Falling Water River	White, Putnam	RM 12, above Center Hill Lake, to RM 41, headwaters near town of Monterey	29	1982		S, R, G, F, W	Clear, scenic stream; Burgess Falls.	
Flynn Creek	Jackson	RM 0, confluence with Cumberland River, to RM 10, headwaters approximately five miles southwest of McCoinsville	10	1982		S, R, F, W	Small scenic mountain stream that supports game fishery.	
French Broad River	Cocke	River mile 94.7 to river mile 101, North Carolina state line	6	1982/ 1993	R	S, H, O	Upper section mountainous with scenic gorge area, rock gardens, rapids, ledges, diversity of flora and fauna. Significant archaeological sites. Game fishing.	
French Broad River	Knox, Sevier	RM 0, confluence with Tennessee River, to RM 32, below Douglas Dam	32	1982		S, R, G, F, W, H, C	Significant archaeological sites; supports game fishery; upper segment is mountainous stream with good whitewater and scenic gorge area; numerous rock gardens, boulder beds, rapids, islands, and ledges; diversity of flora and fauna.	
French Broad River	Cocke	RM 96, TN 9 bridge, to RM 101, NC State line	5	1982		S, R, G, F, W, H, C	See initial comments.	
Goose Creek	Trousdale, Macon	RM 0, confluence with Cumberland River, to RM 15, headwaters south of Lafayette	15	1982		S, R, F, W	Small, scenic mountain stream that supports game fishery.	
Green Creek	Wayne	RM 0, confluence with Buffalo River, to RM 14, Waynesboro and US 64 bridge	14	1982		S, R, G, F, W	Scenic, rocky float stream.	
Harpeth River	Cheatham, Dickson, Davidson, Williamson, Rutherford	RM 6, near Jackie Branch on Cheatham/Dickson County line, to RM 121, confluence with Puckett Branch and Concord Creek	115	1982		S, R, G, F, W, H, C	Rich in history and of archaeological significance; evidence of aboriginal towns; extraordinary tunnel at "The Narrows"; impressive carved bluffs, including Paint Rock which is adorned with petroglyphs.	
Hatchie River	Lauderdale, Tipton, Haywood, Madison, Hardeman, McNairy	RM 0, confluence with Mississippi River, to RM 163, MS State line	163	1982		S, R, G, F, W, H, C	Slow, meandering swamp river with many oxbows surrounded by wilderness and inhabited by large diversified wildlife population, including rare species.	
Hiwassee Creek	Polk	RM 34, confluence with Ocoee River, to RM 66, Apalachia Dam	32	1982		S, R, G, F, W, H, C	Popular scenic float stream; supports excellent game fishery; numerous rapids in beautiful mountainous setting.	
Hiwassee River	Polk	River mile 34, confluence with Ocoee River to river mile 65, at North Carolina state line	31	1982/ 1993	R	S, R	Popular for canoeing, kayaking, rafting, and fishing in scenic mountain setting. Excellent game fishing.	

Holston River	Knox, Grainger, Jefferson	RM 0, confluence with Tennessee River, to RM 53, Cherokee Dam	53	1982		S, R, G, F, W, H, C	Scenic stream segment affording excellent duck hunting and fishing.	
Jones Creek	Dickson	RM 0, confluence with Harpeth River, to RM 16, TN 47 bridge	16	1982		S, R, G, F, W	Narrow stream with frequent gravel bars; winds through picturesque valley; high carved limestone bluffs.	
Little Pigeon and Middle Prong	Sevier	RM 10, southeast of Cherokee Hill, to RM 34, Mount Sequoya in Great Smoky Mountains National Park	24	1982		S, R, G, F, W, H, C	Scenic, sparkling, excellent whitewater stream with waterfalls; trout habitat.	
Little Pigeon, West Prong	Sevier	RM 19, south of Gatlinburg, to RM 29, headwaters in Great Smoky Mountains National Park	10	1982		S, R, G	Most scenic, clear mountain stream with considerable recreational potential.	
Little Sequatchie River	Marion, Grundy	RM 0, confluence with Sequatchie River, to RM 25, headwaters west of Palmer	25	1982		S, R, F, W	Scenic stream that supports game fishery.	
Little Tennessee River	Loudon, Monroe, Blount	RM 1, above dam now under construction, to RM 33, Chilhowee Dam and Cherokee National Forest	32	1982		S, R, G, F, W, H, C	Critical habitat for small darter; excellent fishing and float stream; 180 recorded archaeological sites; of historical significance; unique scenery.	
Little Tennessee River	Loudon, Monroe, Blount	River mile 1, above Tellico Dam to river mile 33, at Chilhowee Dam	32	1982/ 1993		R, W	Critical habitat for snail darter. Excellent fishing and float stream.	
Long Creek	Stewart	RM 0, confluence with Cumberland River, to RM 10, headwaters two miles west of Stewart State Forest	10	1982		S, R, F	Scenic stream that supports game fishery.	
Mountain Creek	Warren, Cannon	RM 0, confluence with Collins River, to RM 24, approximately two miles northwest of Osment Chapel	24	1982		S, R, F, W	Scenic stream that supports game fishery.	
New River	Scott	RM 0, confluence with South Fork of Cumberland and Clear Fork Rivers, to RM 9, US 27/TN 29 bridge	9	1982		S, R, G	Placid, winding stream that flows through steep-sided valley with some Class I-III ledges and gorge area.	
Nolichucky River	Union	The mainstem from Poplar, NC downstream to the railroad bridge at Unaka Springs, TN	8	1993	S	S, R, G	Spectacular scenery with steep slopes rising more than 2,000 feet adjacent to the river. The Gorge is a popular attraction for whitewater boaters, including commercial outfitters.	NC

North Chickamauga River	Hamilton, Sequatchie	RM 13, confluence with Falling Water Creek southeast of Falling Water, to RM 31, headwaters north of Lone Oak	18	1982		S, R, G, F, W, H, C	Spring-fed, crystal clear mountain stream; variety of flora and abundance of wildlife.	
North Whiteoak Creek	Scott, Fentress	RM 0, confluence with South Fork of Cumberland River, to RM 25, headwaters near Jamestown	25	1982		S, R, G	Rocky, scenic stream with 400 foot deep gorge area, moderate whitewater and small waterfalls.	
Obey River	Clay	RM 0, confluence with Cumberland River, to RM 7, below Dale Hollow Dam	7	1982		S, R, G, F, W	Winds through scenic valley with alternating pastoral setting and massive, wooded limestone bluffs; supports excellent fishery.	
Obey River, East Fork	Fentress, Overton	RM 12, two miles south of Helena, to RM 38, unnamed bridge approximately one mile west of Cliff Springs	26	1982		S, R, G, F, W	Dangerous, rugged stream with wildly fluctuating gradient; heavily forested gorge area; 8 foot waterfall.	
Obey River, West Fork	Pickett, Overton	RM 0, confluence with East Fork, to RM 28, headwaters two miles west of Obey City	28	1982		S, R, G, F	Flows through scenic, narrow valley flanked by high wooded hills; lively Class I-II run; shallow gorge area.	
Obion River	Lauderdale, Dyer	RM 0, confluence with Mississippi River, to RM 59, Obion County line	59	1982		S, R, F, W	Pastoral stream with variety of flora and fauna.	
Ocoee River	Polk	River mile 19, Parksville Reservoir to river mile 29, Ocoee No. 3 dam	10	1982/ 1993	R	S, R	High quality whitewater recreation river, with spectacular mountain scenery.	
Ocoee River	Polk	RM 14, Parksville Reservoir, to RM 28, below Ocoee No. 3 Dam	14	1982		S, R, G, F, W	High quality whitewater stream with spectacular mountain scenery.	
Overall Creek	Rutherford	RM 0, confluence with West Fork of Stones River, to RM 17, headwaters one mile southeast of Windrow	17	1982		R, F, W	Popular canoe stream in rural setting; supports game fishery.	
Pine Creek of Caney Fork	Dekalb	RM 0, confluence with Caney Fork, to RM 14, headwaters southwest of Smithville	14	1982		R, F, W	Small, scenic fishing stream.	
Piney Creek	Rhea	RM 9, confluence with Little Piney Creek north of Spring City, to RM 32, headwaters near Bledsoe County line	23	1982		S, R, G	One of most wild, scenic, and clear streams in State; adjacent waterfalls; affords exciting river run.	
Piney River	Hickman, Dickson	RM 0, confluence with Duck River, to RM 24, Pinewood and TN 48 bridge	24	1982		S, R, H, C	Small, scenic stream of historical significance; fourteen recorded archaeological sites, including extensive village complex and mound.	

Powell River	Claiborne, Hancock	RM 47, backwaters of Norris Lake, to RM 105, VA State line	58	1982		S, R, G, F, W, H, C	Slow, winding, sparsely populated corridor with wooded banks; highly diverse mussel fauna, including two endangered species.	
Red River	Montgomery, Robertson	RM 9, east of Clarksville City limits, to RM 50, KY State line	41	1982		S, R, G, F, W, H, C	Pastoral float stream with numerous sinkholes and caves; only covered bridge in State at Port Royal; heavily wooded bluffs with limestone outcroppings.	
Red River	Robertson, Sumner	RM 79, KY State line, to RM 98, headwaters one mile west of TN 109	19	1982		S, R, G, F, W, H, C	See initial comments.	
Red River, Elk Fork	Robertson	RM 0, confluence with Red River, to RM 8, KY State line	8	1982		S, R, G, F, W	Karst topography with exceptional geological features, including numerous sinkholes and caves; supports important black bass fishery; unique wildlife.	
Red River, South Fork	Robertson, Sumner	RM 8, KY State line, to RM 29, confluence with Maxwell and Roney Creeks	21	1982		S, R, G, F, W	Pastoral stream with low bluffs, numerous gravel bars and riffles; banks lined with hardwoods.	
Red River, Sulphur Fork	Montgomery, Robertson	RM 0, confluence with Red River, to RM 27, northwest of Springfield	27	1982		S, R, G, F	Natural springs area; wooded banks.	
Red River, West Fork	Montgomery	RM 0, confluence with Red River, to RM 14, KY State line	14	1982		R, F, W	High recreational and aesthetic potential.	
Richland Creek	Giles, Marshall	RM 0, confluence with Elk River, to RM 67, headwaters southeast of Lewisburg	67	1982		S, R	Scenic float stream.	
Roaring River	Jackson, Overton	RM 1, above confluence with Cumberland River, to RM 39, headwaters four miles northeast of Rickman	38	1982		S, R, G, F, W, H, C	Natural, sheer gorge walls, rock ledges, and gardens are characteristic.	
Rock Creek	Scott, Pickett, Fentress	RM 22, KY State line, to RM 31, headwaters in Pickett State Park	9	1982		S, R, G, F, W	Beautiful stream in wild terrain; deep, narrow valleys and wooded hillsides.	
Rock Creek	Morgan	RM 0, confluence with Emory River, to RM 13, US 27 bridge near Pilot Mountain	13	1982		R, F, W	Float stream; habitat for river muskie.	
Rocky River	Van Buren, Sequatchie	RM 10, Center Hill Lake, to RM 28, headwaters above TN 8 highway	18	1982		S, R, G, F, W	Scenic stream; Karst topography; Norton Springs.	
Sequatchie River	Marion, Sequatchie, Bledsoe, Cumberland	RM 0, confluence with Tennessee River, to RM 109, headwaters approximately ten miles south of Homestead	109	1982		S, R, G, F, W	Clean, pastoral float stream that flows through beautiful narrow scenic valley.	
Sink Creek	Dekalb	RM 0, confluence with Caney Fork of Cumberland River, to RM 23, headwaters near Cannon County line	23	1982		S, R, F, W	Scenic floating stream.	

Smith Fork	Smith, Dekalb	RM 0, confluence with Caney Fork, to RM 26, TN 96 bridge and Wilson County line	26	1982		S, R, G, F, W	Scenic stream flowing over limestone bed with riffles and deep pools; high limestone bluffs and beautiful valley of farms and woodlands line corridor.	
South Harpeth River	Cheatham, Davidson, Williamson	RM 0, confluence with Harpeth River, to RM 25, headwaters three miles south of Lake Weona	25	1982		S, R, G, F, W	High bluffs with extensive adjacent forested area.	
Spring Creek	Jackson, Overton, Putnam	RM 0, confluence with Roaring River, to RM 25, headwaters two miles northeast of Brotherton	25	1982		S, R, G	Natural, spectacular gorge area; intricately carved bluffs; 35 foot waterfall; clear sparkling water; small riffles and shallow pools; heavily wooded banks.	
Stinking Creek	Campbell	RM 0, confluence with Clear Fork, to RM 29, headwaters one mile east of I-75	29	1982		S, R, G	Rural, scenic stream that flows through unique Cumberland Black geologic formation.	
Stones River	Davidson, Rutherford	RM 8, above Percy Priest Dam, to RM 38, confluence with East and West Forks one mile below Jefferson Springs	30	1982		S, R, F, W, H, C	Excellent fishing stream in pastoral setting.	
Stones River, East Fork	Rutherford	RM 0, confluence with Stones River, to RM 18, TN 96 bridge	18	1982		S, R, G, F, W, H, C	Excellent scenic canoeing stream, several recorded historic sites; limestone outcroppings.	
Stones River, Middle Fork	Rutherford	RM 0, confluence with West Fork of Stones River, to RM 14, Federal Aid Secondary Road 4289 bridge at Hoovers Gap	14	1982		S, R, F, W, H	Pastoral float and fishing stream with forested banks.	
Stones River, West Fork	Rutherford	RM 17, southwest of Murfreesboro, to RM 27, bridge west of Christiana	10	1982		S, R, G, F, H	See initial comments.	
Stones River, West Fork	Rutherford	RM 0, confluence with Stones River and East Fork, to RM 12, north of Murfreesboro	12	1982		S, R, G, F, H	Prime recreational stream providing variety of opportunities of significant historical interest.	
Sweden Creek	Marion	RM 0, confluence with Battle Creek, to RM 15, headwaters in Franklin State Forest	15	1982		S, R, F, W	Wilderness stream affording recreational opportunities.	
Sycamore Creek	Cheatham	RM 3, above TN 12 bridge, to RM 17, US 41A/TN 112 bridge below I-24 bridge	14	1982		S, R, G, F, W, H, C	Excellent recreational stream with many steep scenic bluffs and forested banks; abundance of wildlife.	
Tellico River	Monroe	RM 0, confluence with Little Tennessee River, to RM 47, NC State line	47	1982		S, R, G, F, W, H, C	Wild whitewater mountain stream with spectacular waterfalls and numerous recreational opportunities.	

Tellico River	Monroe	River mile 0, confluence with Little Tennessee River to river mile 47, North Carolina state line	47	1982/ 1993	R	S, R	Whitewater mountain river with spectacular waterfalls and numerous recreation opportunities.	
Watauga Creek	Johnson	RM 49, backwaters of Lake Watauga Reservoir, to RM 51, NC State line	2	1982		S, R, G, F, W, H, C	Scenic gorge area with several waterfalls and large boulders; recreational opportunities throughout.	
Watauga River	Johnson	River mile 52.6, upper portion of Watauga Lake to river mile 54.9, North Carolina state line	2	1982/ 1993		S	Scenic gorge area with several waterfalls and large boulders.	
West Harpeth River	Williamson	RM 0, confluence with Harpeth River, to RM 21, US 31/TN 6 bridge	21	1982		S, R, F, H	Scenic float stream with frequent riffles; significant historical values; low, tree-lined banks.	
White Creek	Morgan	RM 0, confluence with Clear Creek, to RM 13, headwaters five miles northwest of Deer Lodge	13	1982		S, R, F	Scenic float and fishing stream.	
Whiteoak Creek	Scott, Morgan	RM 0, confluence with Clear Fork, to RM 17, Burrville Road	17	1982		S, R, H, C	Scenic float stream of historical significance.	
Wolf River	Pickett, Fentress	RM 18, backwaters of Dale Hollow Lake, to RM 38, confluence with Pogue and Delk Creeks	20	1982		S, H, C	Scenic stream of historical interest.	
Yellow Creek	Montgomery, Houston	RM 5, Possum Road bridge below TN 149 bridge, to RM 13, Williamson Branch junction	8	1982		S, R, F	Scenic, recreational stream that supports game fishery.	

Appendix R:

Housing Requirements

OMB No. 2506-0177
(exp.4/30/2018)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-1000

This Worksheet is designed to be used by those "Partners" (including Public Housing Authorities, consultants, contractors, and nonprofits) who assist Responsible Entities and HUD in preparing environmental reviews, but legally cannot take full responsibilities for these reviews themselves. Responsible Entities and HUD should use the RE/HUD version of the Worksheet.

Housing Requirements

Many Housing Division programs have additional requirements beyond those listed at 50.4. Some of these relate to compliance with 50.3(i) and others relate to site nuisances and hazards.

Requirements for evaluating additional housing requirements vary by program. Refer to the appropriate guidance for your program area (i.e. the Multifamily Accelerated Processing (MAP) guide, Chapter 7 of the Healthcare Mortgage Insurance Handbook, etc.) for specific requirements.

Lead-based paint

Lead-based paint may be present in buildings built prior to 1978. Guidance materials related to lead-based paint, including a helpful online Lead Rule Compliance Advisor, may found by following on HUD's website. Buildings constructed in 1978 or later do not require lead-based paint testing. Refer to specific program guidance for additional exemptions and requirements.

Was a lead-based paint inspection or survey performed by the appropriate certified lead professional?

☐ Yes. → *Continue to next question.*
☐ No, because the project was previously deemed to be lead free. → *Provide all lead free certificates.*
☐ No, because the project does not involve any buildings constructed prior to 1978. → *Provide documentation of construction date(s).*
☑ No, because program guidance does not require testing for this type of project. (For example: HUD's lead-based paint requirements at 24 CFR Part 35 do not apply to housing designated exclusively for the elderly or persons with disabilities, unless a child of less than 6 years of age resides or is expected to reside in such housing. In addition, the requirements do not apply to 0-bedroom dwelling units.)
→ *Explain determination below.*

Was lead-based paint identified on site?

☐ Yes. → *Refer to program guidance for remediation requirements. Describe the testing procedure and findings in the textbox below and any necessary mitigation measures in the Mitigation textbox at the bottom of this screen. Upload all documentation below.*

☐ No, because the project was previously deemed to be lead free. → *Provide all testing documents demonstrating that no lead-based paint was found.*

Describe how exemption or compliance was met and provide any relevant documents such as reports, surveys, and letters.

The facility was constructed in 1960, prior to the 1978 ban on lead-based paint (LBP). Therefore, LBP is suspected to be present on interior and exterior painted components. At the time of D3G's site inspection on November 19, 2019, the painted components were observed to be in good condition.

Presumed LBP should be managed under a site-specific Operations and Maintenance (O&M) Program until such time as the structures are demolished. Components identified as containing lead in any concentration are required be handled in accordance with 29 CFR 1926.62, the OSHA "Lead Exposure in Construction" Standard (OSHA does not define LBP). All generated debris containing lead-based paint is to be appropriately disposed of in accordance with applicable EPA RCRA requirements.

Radon

Many Housing Programs require radon testing and mitigation. Radon is a colorless, odorless gas that can enter the air inside of buildings. Refer to specific program guidance for testing and mitigation requirements.

Was radon testing performed following the appropriate and latest ANSI-AARST standard?

☐ Yes. → *Continue to next question.*

☑ No, because program guidance does not require testing for this type of project. → *Note that radon testing is encouraged for all HUD projects, even where it is not required. Explain why radon testing was not completed below.*

Did testing identify one or more units with radon levels above the EPA action level for mitigation?

☐ Yes. → *Refer to program guidance for remediation requirements. Describe the testing procedure, findings, and mitigation measures below and provide all documentation.*

☐ No → *Provide all testing documents demonstrating that radon was not found above EPA action levels for mitigation.*

Describe how exemption or compliance was met and provide any relevant documents such as reports, surveys, and letters.

The subject property is located in an EPA Radon Zone 1, designated as an area of high radon gas potential with an average indoor radon level greater than 4 picocuries per liter (pCi/L) of air. As the current site structures are to be demolished, testing for radon gas was not conducted. For the proposed development, radon mitigation measures are required to be implemented in the project design in accordance with HUD guidelines. D3G recommends mitigating potential radon contamination by constructing the proposed structure(s) to meet all of the requirements of the ANSI/AARST CC-1000 2018 Soil Gas Control Systems in New Construction of Buildings (CC-1000 2018) standard or, if appropriate, the ANSI/AARST CCAH 2013 Reducing Radon in New Construction of One & Two Family Dwellings and Townhouses (CCAH 2013) standard, for the installation of passive systems. A Radon Report documenting the post-construction testing by a properly certified Radon Professional is required prior to Final Endorsement.

Asbestos

Asbestos may be present in buildings built prior to 1978. Buildings constructed in 1978 or later do not require an asbestos survey. Refer to specific program guidance for additional exemptions and requirements.

Was a comprehensive asbestos building survey performed pursuant to the relevant requirements of the latest ASTM standard?

☑ Yes

☐ No, because the project does not involve any buildings constructed prior to 1978. → *Provide documentation of construction date(s).*

☐ No, because program guidance does not require testing for this type of project. → *Explain in textbox below.*

Was asbestos identified on site?

☐ Yes, friable or damaged asbestos was identified. → *Refer to program guidance for remediation requirements. Describe the testing procedure, findings, and mitigation measures below and provide all documentation.*

☑ Yes, asbestos was identified, but it was not friable or damaged. → *Refer to program guidance for remediation requirements. Describe the testing procedure, findings, and mitigation measures below and provide all documentation.*

☐ No → *Provide all testing documents demonstrating that no asbestos was found.*

Describe how exemption or compliance was met and provide any relevant documents such as reports, surveys, and letters.

The subject property was constructed in 1960, during a time of asbestos-containing building material usage. D3G was provided with an Asbestos Survey Report prepared by Frost Environmental Services, LLC (FES) dated September 2019. According to the report, FES performed an asbestos survey at the subject property in preparation for demolition activities in accordance with the EPA 40 CFR 61 National Emissions Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 763 Asbestos Hazard Emergency Response Act (AHERA) sampling protocols and State of Tennessee asbestos guidelines on August 29, 2019. The survey was performed by Mr. Seth Frost and Brad Ely, State of Tennessee accredited Asbestos Inspectors with FES, a State of Tennessee accredited Asbestos Firm. A total of one hundred and eleven (111) bulk samples were collected and analyzed via Polarized Light Microscopy (PLM). Sampled materials included drywall, joint compound, textured ceiling materials, white mastic on fiberglass pipes, plaster, roof shingles, vinyl floor tiles and associated mastics, caulking materials, HVAC flex duct connector and transite flue pipes. An asbestos-containing material is defined as containing greater than 1% asbestos. The results of the inspection indicate that the following materials were identified as ACMs:

Community Center:

• Black floor tile and mastic under non-ACM 12” floor tile – Front Right Side Area, 600 SF

• Black mastic under non-ACM 12” floor tile – Front Right Restroom, 30 SF

Housing Units:

• Transite flue pipe – HVAC closets, 10 linear feet (LF) per unit

• HVAC Flex Duct Connector – HVAC Units, 8 LF per unit

• Tan caulking – Exterior windows, 14 windows per building

• Black and yellow mastic under non-ACM floor tiles – All Units, 580-1,300 SF per unit

In addition, joint compound was identified as an ACM (2% chrysotile); however, since it was not utilized as a surfacing material it could be composited with the drywall to be less than one percent asbestos as per State of Tennessee guidelines. However, although a material may contain asbestos at <1%, it DOES NOT relieve contractors from performing exposure assessments (personal air monitoring) on their employees per the OSHA Asbestos Standard (29 CFR 1926.1101) and should not be interpreted as asbestos is not present. Although laboratory analysis may indicate "<1%", airborne asbestos concentrations still may exceed the OSHA Permissible Exposure Limit (PEL) depending on the work activity.

The inspection appears to have been conducted in accordance with the ASTM Standard Practice for Comprehensive Asbestos Building Surveys Designation: E 2356-18 (ASTM E 2356-18) for Baseline Surveys. However, the survey did not include confirmation Transmission Electronic Microscopy (TEM) analysis of non-friable organically bound (NOB) materials (i.e. vinyl flooring materials and mastics, mastics, caulking materials, and roofing materials) which were not identified as ACMs via PLM analysis. This additional sampling methodology is not a requirement of the EPA or the State of Tennessee. Therefore, the result of the PLM analysis of NOB materials is considered to be conclusive as the structures are to be demolished. However, until such time as the structures are demolished, all vinyl flooring materials and mastics (even those not identified as ACMs via PLM analysis), caulking and roofing materials should be regarded as ACMs for ongoing maintenance purposes and be included within an Operations and Maintenance (O&M) Program.

A copy of the provided Asbestos Survey Report is included in Appendix J of the Phase I ESA, which is included under separate cover.

All ACMs and NOB materials should be managed under the existing site-specific Operations and Maintenance (O&M) Program prepared by D3G dated January 17, 2020 until such time as the structures are demolished. If suspect ACMs are encountered during demolition activities which have not been previously sampled, they should be sampled by an appropriately licensed asbestos inspector prior to impaction and treated accordingly or treated as ACMs. ACMs should be removed by a licensed asbestos abatement contractor in accordance with applicable regulations prior to demolition activities.

Additional Nuisances and Hazards

Many Housing Programs have additional requirements with respect to common nuisances and hazards. These include High Pressure Pipelines; Fall Hazards (High Voltage Transmission Lines and Support Structures); Oil or Gas Wells, Sour Gas Wells and Slush Pits; and Development planned on filled ground. There may also be additional regional or local requirements.

Describe how compliance was met for any relevant nuisance, hazard or local requirement and provide any relevant documents such as reports, surveys, and letters.

According to the Murfreesboro 2018 Annual Water Quality Report, sampling conducted in 2017 indicated lead in drinking water was detected at 2.57 parts per billion (ppb) in the 90th percentile, which is below the EPA action level of 15 ppb and meets all EPA Standards. Therefore, lead in drinking water is not suspected to be a concern

at the subject property.

According to visual observations during D3G's site inspection on November 19, 2019, a natural gas pipeline is located along the western subject property boundary, which is owned and maintained by Atmos Energy. However, the pipeline is not depicted in the National Pipeline Mapping System (NPMS) Public Map Viewer accessed at https://pvnpms.phmsa.dot.gov/PublicViewer/, which depicts nationwide transportation pipelines. According to HUD guidelines, "All parts of any structure must be at least 10 feet from the outer boundary of the easement for any high pressure gas or liquid petroleum transportation pipeline." D3G contacted Mr. James Robbins, Operations Supervisor with Atmos Energy, on November 20, 2019. According to Mr. Robbins, the pipeline is a low pressure distribution system with a maximum operating pressure of 25 psi. In addition, Mr, Robbins stated that Atmos Energy is working with the Murfreesboro Housing Authority and Huddlelston-Steele Engineering to replace the existing steel line with a plastic line as the development is rebuilt. Therefore, the pipeline is not subject to the HUD guidelines, and D3G recommends no further investigation.

No additional "nuisances" or "hazards" were observed at the subject property or surrounding properties during the subject property inspection.

Murfreesboro Water Resources Department

2018 Annual Water Quality Report

January 1, 2018 – December 31, 2018



City of
MURFREESBORO
TENNESSEE

Murfreesboro Water Resources Department

2018 Annual Water Quality Report

January 1, 2018 – December 31, 2018

The goal of this water quality report is to provide you with information regarding your drinking water. We want to keep you informed about the water and services that we have delivered to you over the past year and we are pleased to provide you with this year's Annual Water Quality Report. **The most important part is to let you know that your water is safe for drinking.** We also want to take this opportunity to give you a little more background on your water system.

Where does my water come from?

Your water comes from two surface water locations. One water source is the East Fork of the Stones River and the other source is the J. Percy Priest Lake. Our goal is to protect our water from contaminants based on geologic factors and human activities near the water source. The Tennessee Department of Environment and Conservation (TDEC) prepared a Source Water Assessment Program (SWAP) Report is found on the TDEC website https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html and includes water supplies including Murfreesboro Water Resources Department (MWRSD). The SWAP Report assesses the susceptibility of public water supplies to potential contamination. Water sources are rated as "reasonably susceptible", "moderately susceptible" or "slightly susceptible" based on geologic factors and human activities near the water source. MWRD conducted a SWAP update in December 2017 that was approved by the TDEC. Both MWRD sources continue to be rated "moderately susceptible" to potential contamination.[1]

Can I drink water directly from streams or lakes?

No, pure water does not occur naturally. In nature, all water contains some impurities. These impurities are referred to as contaminants. Drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800) 426-4791.



East Fork Stones River

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and in some cases naturally-occurring radioactive material and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- ✓ Microbial contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- ✓ Inorganic contaminants such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, and mining or farming.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

[1] An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings and the overall TDEC report to EPA can be viewed online at www.state.tn.us/environment/dws/dwassess.shtml or you may contact the Water System or TDEC at 1-888-891-TDEC to obtain copies of specific assessments.

- ✓ Pesticides and herbicides which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

- ✓ Organic chemical contaminants, including synthetic and volatile organic chemicals, come from gas stations, urban stormwater runoff, and septic systems.

- ✓ Radioactive contaminants which can be naturally-occurring or which can be the result from oil and gas production and mining activities.

Who regulates drinking water?

In order to ensure that tap water is safe to drink, EPA and the Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Is lead in my drinking water?

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. MWRD is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by running your tap and thus "flushing" the water line for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from www.epa.gov/safewater/lead or at the Safe Drinking Water Hotline (800) 426-4791.

What if I am immune-compromised?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

Cryptosporidium is a microbial parasite which is found in surface water throughout the United States. Symptoms of Cryptosporidium infection include nausea, diarrhea, and abdominal cramps. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Monitoring of the East Fork Stones River and J. Percy Priest Lake, between 2014, 2015 and 2016 as part of the Long Term 2 Enhanced Surface Water Treatment Rule, indicated no presence of Cryptosporidium in forty-seven samples tested. No Cryptosporidium were detected in MWRD finished water samples. MWRD meets the treatment standard for Cryptosporidium therefore no additional treatment is required. Membrane filtration was added as part of the last upgrades at the water treatment plant and will remove 100% of Cryptosporidium. The new membrane filters remove all particles greater than 0.1 microns. The size of Cryptosporidium is between 3.0 and 7.0 microns. The new membrane filters were placed into service during December 2008. For more information regarding cryptosporidium contact the Safe Drinking Water Hotline (800) 426-4791.

How can I help conserve water?

MWRD urges water conservation. The most common and practical ways to conserve water are:

- ✓ Promptly repairing leaks.
- ✓ Installing low flow fixtures.
- ✓ Turning water off while brushing teeth.
- ✓ Only running the dishwasher and clothes washer when fully loaded.
- ✓ Defrosting frozen food in the refrigerator or in the microwave instead of running water over it.

For other water conservation tips please visit www.drinktap.org. Promptly repairing leaks within your plumbing system not only helps us to keep down production costs, it provides savings on your monthly billings. Even as we encourage conservation, we understand the seasonal need to replenish pools and to water landscaped areas. An automatic sewer adjustment is made for residential customers during the months of April through October whenever the usage of water during these months exceeds the average winter usage by twenty percent.

How can I help protect my source water?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. Help protect your source water by properly disposing of:

- ✓ Automotive products.
- ✓ Lawn and garden products.
- ✓ Household cleaners.
- ✓ Pharmaceuticals and personal care products.

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and your environment. Keep medications out of Tennessee's waterways by disposing in the proper method. For proper disposal of medication and other products contact Rutherford County Environmental Education at (615) 542-4633.

How can I help eliminate cross-connections?

MWRD urges customers to be on guard against cross-connections that might contaminate the water supply. A cross-connection is a link between an approved drinking water supply and any system other than an approved drinking water supply. If your irrigation system is supplied by a well or stream, the system must be totally segregated from the public water supply. Our City ordinance provides safeguards against cross-connections. MWRD has full time employees whose sole function is to guard against these types of cross-connections. The risk from residential cross-connections is less than that from industrial and commercial applications but is very real. Cross-connections can occur in private residences when garden hoses are left submerged in pools, when they lay in elevated positions above the hose bib, or when chemical sprayers are attached to hoses to spray pesticides. Hoses should be disconnected promptly after use, and the installation of hose bib vacuum breakers is highly recommended. This is a simple device that is available at most hardware and plumbing supply stores.

How good is MWRD's water?

MWRD routinely monitors contaminants in your drinking water in accordance with Federal and State laws. We have learned through our monitoring that some contaminants have been detected. The Water Quality Data Tables located in this report shows the contaminants that were detected for the period from January 1 to December 31, 2018, or the last time they were required to be monitored based upon regulatory requirements. **We are proud that your drinking water meets or exceeds all Federal and State requirements.**

How does MWRD make my water safe?

MWRD works around the clock to provide top quality water to every tap. An upgrade of Stones River Water Treatment Plant was completed in 2010 with an expansion of its treatment capacity from 15.7 million gallons per day to 20 million gallons per day. The additions of membrane filtration, standby power generation, sodium hypochlorite disinfection system, along with the renovation of the water quality laboratory, were included in the expansion. The water treatment plant now operates granular activated carbon beds for removal of taste, odor, total organic carbon, pharmaceuticals, personal care products and disinfection byproducts. All improvements by MWRD are directed at continually ensuring that you are receiving the highest quality of water.

Stones River Water Treatment Plant



WATER QUALITY DATA TABLE (Regulated Contaminants)

Contaminant	MCL	MCLG	Level Found	Range of Detection	Violation Yes/No	Date of Sample	Typical Source of Contaminant
Microbiological Contaminants							
Total Coliform (%)	Greater than 5% of monthly samples are positive	0	0	0	No	2018	Naturally present in the environment
TOC (ppb) Total Organic Carbon	TT(1)	N/A	42%-64% removal (25% required) (1)	1,560-4,590	No	2018	Naturally present in the environment
Turbidity (NTU)	TT(2)	N/A	0.20	0.01 - 0.20	No	2018	Soil runoff
Radioactive Contaminants							
Gross Alpha (pCi/l)	15	0	2	2	No	2014	Erosion of natural deposits
Combined radium (pCi/l)	5	0	0.84	0.84	No	2014	Erosion of natural deposits
Inorganic Contaminants							
Barium (ppb)	2,000	N/A	14	N/A	No	2012	Discharge of drilling wastes; Discharge from metal refineries; Erosion from natural deposits
Copper (ppb)	AL=1,300	1,300	157(3)	2.5 – 258	No	2017	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Fluoride (ppb)	4,000	4,000	656	627 – 706	No	2018	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead (ppb)	AL=15	0	2.57(3)	0 – 40.1	No	2017	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrate (ppb)	10,000	10,000	456	N/A	No	2018	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	N/A	N/A	7.14	N/A	No	2018	Erosion of natural deposits
Volatile Organic Contaminants							
Chlorine (ppm)	MRDL=4	MRDL=4	3.20	0.50 – 3.20	No	2018	Water additive used to control microbes
HAAs (ppb) Haloacetic Acids	60	N/A	49.7	21.8 – 76.2	No	2018	By-product of drinking water chlorination
TTHMs (ppb) Total trihalomethanes	80	N/A	73.0	28.2 – 130.8(4)	No	2018	By-product of drinking water chlorination

(1) MWRD met the treatment technique requirements for total organic carbon in 2018. The percent (%) removed is determined from the amount of TOC removed from the raw water during the treatment process and the amount of TOC that is remaining in the finished water. The % required is the % removal required by regulation based upon treatment technique. The % removed must be equal to or greater than the % required unless alternative compliance criteria are used.

(2) MWRD met the treatment technique for turbidity with 100% of monthly samples below the turbidity limit of 0.3 NTU. Turbidity is a measure of the cloudiness or clarity of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

(3) Lead and copper values are 90th percentile values. During the most recent round of lead and copper testing, 1 out of 50 households sampled exceeded the action level.

(4) Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

TERMS AND ABBREVIATIONS FOR TABLE

- ✓ **Action Level (AL):** The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.
- ✓ **Below Detection Level (BDL):** The concentration of a contaminant is below the minimum level that the instrument is capable of detecting.
- ✓ **Maximum Contaminant Level (MCL):** The highest level that a contaminant is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- ✓ **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- ✓ **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ✓ **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- ✓ **Method Detection Limit (MDL):** The lowest concentration (greater than zero) of the substance tested that can be measured and reported with 99 percent confidence.
- ✓ **Nephelometric Turbidity Unit (NTU):** The measure of clarity in the water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- ✓ **Parts per billion (ppb) or micrograms per liter (µg/L):** One part per billion or one microgram per liter corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
- ✓ **Parts per million (ppm) or milligram per liter (mg/L):** One part per billion or one milligram per liter corresponds to one minute in two years, or a single penny in $10,000.
- ✓ **N/A:** Not applicable.
- ✓ **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- ✓ **Level 1 Assessment:** A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- ✓ **Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E.coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

WATER QUALITY DATA TABLE (Unregulated Contaminants)

Contaminant	MRL	Average of Values	Range of Detection
Unregulated Contaminant Monitoring			
Manganese (ppb)	0.4	4.9	1.3-8.5
Total Organic Carbon (ppb)	700	3280	3060-3500
Total HAA (ppb)	0.3	33.1	4.4-95.1

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. For additional information call the Safe Drinking Water Hotline at (800) 426-4791.

TERMS AND ABBREVIATIONS FOR TABLE

- ✓ **Minimum Reporting Level (MRL):** The estimate of the lowest concentration of a compound that can be quantitatively measured by members of a group of experienced drinking water laboratories.
- ✓ **Parts per billion (ppb) or micrograms per liter (µg/L):** One part per billion or one microgram per liter corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Who do I call if I have questions or concerns regarding my water?

If you have any questions about this report, please contact Alan Cranford at (615) 848-3222 between 7:00 a.m. and 3:00 p.m. Monday through Friday. For water quality concerns please call (615) 848-3222, 24-hours per day seven days per week. We conduct multiple tests during the day on the quality of the source water, water as it is passing through the treatment process and finished water before it is sent to the distribution system to customers. Monday – Friday we post results for chlorine, hardness, fluoride, turbidity and pH on the Department's Facebook page. In addition, our water quality laboratory conducts tests throughout the week on samples collected at residences, schools and businesses throughout the distribution system. All personnel have MWRD issued identification and at no time do we contract out the collection of samples from residences. Only MWRD personnel will collect samples from residences in the system. Please feel free to ask for identification if anyone asks to collect a water sample from your home or business. If they cannot produce the identification, please contact MWRD at (615) 848-3222.

Plant Awards and Recognition

In 2010, the Stones River Water Treatment Plant was recognized with two prestigious awards. The 2010 Engineering Excellence Grand Award from the American Council of Engineering Companies of Tennessee and the Award of Excellence for Plant Operations in the 10 million gallons per day and above category from the Kentucky-Tennessee Section American Water Works Association.

The Stones River Water Treatment Plant is a volunteer participant in the Partnership for Safe Water program. The Partnership is a voluntary effort between six drinking water organizations and more than 300 water utilities. The goal of the Partnership is to provide a new measure of public health protection to millions by encouraging utilities to voluntarily improve performance beyond current regulatory requirements. The preventative measures are based around optimizing treatment plant performance and operations. The result is the production and delivery of superior quality water to all utility customers.

How is MWRD funded?

MWRD is owned and operated by the City of Murfreesboro. MWRD receives no tax revenue from City, State or Federal governments, but relies solely upon our rates and fees for operational funding.

How large is MWRD?

MWRD serves more than 38,000 water customers with a population of over 100,000 using more than 440 miles of water lines. The water treatment plant operates continuously and has an average production of over 11 million gallons per day (MGD) of potable water. Our goal is to provide you a safe and dependable supply of drinking water.

What if I have a question about my bill or methods of payment?

MWRD Customer Service is open to the public Mon-Fri from 8-4:30 p.m. We offer counter and drive-through service. Should you have any questions or concerns regarding your account, you may contact Customer Service directly at (615) 848-3209 during regular business hours or contact the Customer Service Manager Sharon Seibert at sseibert@murfreesborotn.gov. Payments can

be made in office during regular business hours via cash, check or credit card (fees applicable for credit card payments). Other payment options offered are: night depository, mail, bank draft, phone via IVR (Interactive Voice Recognition), and online via the customer portal Link at https://mwsdlink.murfreesborotn.gov (fees for credit card or e-check payments are applicable). With our customer portal Link, you may set up paperless billing and review your billing, payment and consumption history any time of day or night.

Administration and Customer Service Building



For more information regarding MWRD Customer Service Department, please visit our website at www.murfreesborotn.gov/mwrd. For up to date news and information, like us on Facebook. Our after-hours emergency number is (615) 893-1223.

We are closed on the following holidays:

- New Year's Day
- Martin Luther King Day
- Presidents Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving
- Friday after Thanksgiving
- Christmas Eve
- Christmas Day

Who do I contact for general information or services?

General information and services are available from our administrative offices at (615) 890-0862 from 8:00 a.m. to 4:30 p.m. Monday through Friday. MWRD is on Facebook. Please like us to get the latest updates, news and information.

What about public participation?

The Water Resources Board supervises and controls the water, wastewater and stormwater systems of the City in cooperation with the City Manager. The Mayor appoints the members with the consent of the City Council. There are eight (8) members. Two (2) are Council members and the remaining six (6) serve 4-year terms. The Board members are John Sant Amour, Jr. – Chairman, Dr. Alphonse Carter, Jr., Ron Crabtree, Brian Kidd, Kathy Nobles, Madeline Scales-Harris (Council Member), Sandra Trail, and Kirt Wade (Council Member).

The Water Resources Board meetings are held on the fourth Tuesday of each month at 3:30 p.m. unless otherwise advertised. Meetings will be held at the location advertised in the Murfreesboro Post and on the City's website http://www.murfreesborotn.gov/421/Water-Resources-Board. You are welcome to attend these meetings.

What if I need to rent a fire hydrant meter?

Fire hydrant meters are limited in number and will be made available on a first come, first serve basis. They may be used by contractors or homeowners. Meters are rented Monday - Friday 8:00 am - 3:00 pm.

Operations and Maintenance Facility



Samantha Holcombe

From: Robbins, James R <James.Robbins@atmosenergy.com>
Sent: Monday, November 25, 2019 1:20 PM
To: Samantha Holcombe
Cc: Robbins, James R
Subject: RE: [EXT] Midlothian

Samantha,

I suspected this would be the Murfreesboro Housing Authority but needed confirmation.

This is currently a low pressure Distribution system with a 2" steel line and a maximum operating pressure of 25 psi, we are working with the Housing Authority and Huddleston-Steele Engineering to replace this line with 2" High Density Plastic with a maximum operating pressure of 25 psi as the development is rebuilt.

Let me know if you need anything else.

Thanks, James

From: Samantha Holcombe <s.holcombe@d3g.com>
Sent: Monday, November 25, 2019 11:40 AM
To: Robbins, James R <James.Robbins@atmosenergy.com>
Subject: RE: [EXT] Midlothian

CAUTION: Don't be quick to click. This e-mail originated from outside of Atmos Energy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Sorry about that! I have attached a site plan depicting our property and the location of the pipeline equipment. The address located the closest to the equipment is 839 North Academy Street, Murfreesboro, Tennessee 37130. Please let me know if you need any additional information!

Thanks so much,
Samantha

Samantha Holcombe,
Environmental Project Manager, Dominion Due Diligence Group
O: (804) 586-5644 | **F:** (804) 621-2244
E: s.holcombe@d3g.com
A: 201 Wylderose Drive Midlothian, Va. 23113

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Celebrating 25 years of supporting workforce housing development and affordable housing preservation across the country. Click our logo to learn more about the services we offer.

From: Robbins, James R <James.Robbins@atmosenergy.com>
Sent: Monday, November 25, 2019 12:09 PM
To: Samantha Holcombe <s.holcombe@d3g.com>
Subject: Re: [EXT] Midlothian

I did not get the email from you, please resend
It.

Thanks, James

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: Samantha Holcombe <s.holcombe@d3g.com>
Date: 11/25/19 9:19 AM (GMT-06:00)
To: "Robbins, James R" <James.Robbins@atmosenergy.com>
Subject: [EXT] Midlothian

CAUTION: Don't be quick to click. This e-mail originated from outside of Atmos Energy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning James,

I sent you an email last week with the information that you requested regarding the natural gas pipeline located in Murfreesboro, Tennessee. I wanted to reach out to make sure that you got that email, and if not, let me know and I will forward you the information again!

Thanks so much and have a great day,
Samantha Holcombe

Samantha Holcombe,
Environmental Project Manager, Dominion Due Diligence Group
O: (804) 586-5644 | **F:** (804) 621-2244
E: s.holcombe@d3g.com
A: 201 Wylderose Drive Midlothian, Va. 23113

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Celebrating 25 years of supporting workforce housing development and affordable housing preservation across the country. Click our logo to learn more about the services we offer.

Samantha Holcombe

From: Robbins, James R <James.Robbins@atmosenergy.com>
Sent: Thursday, November 21, 2019 4:32 PM
To: Samantha Holcombe
Cc: Robbins, James R
Subject: FW: Midlothian

Samantha,

I will need to know the address of the property you are referring to and a PDF of the area.

Thanks,
James Robbins
Atmos Energy
Operations Supervisor
334 West Lokey Ave
Murfreesboro, TN.

From: Taylor, Brannon C <Brannon.Taylor@atmosenergy.com>
Sent: Wednesday, November 20, 2019 4:12 PM
To: Robbins, James R <James.Robbins@atmosenergy.com>
Cc: Greer, Bill H <Bill.Greer@atmosenergy.com>
Subject: Fwd: Midlothian

James,

See below

Sent from my iPhone

Begin forwarded message:

> **From:** AtmosEnergy.com Admin <aecomadmin@atmosenergy.com>
> **Date:** November 20, 2019 at 4:06:49 PM CST
> **To:** <Brannon.Taylor@atmosenergy.com>, <Bill.Greer@atmosenergy.com>
> **Subject: Midlothian**
> **Reply-To:** <AETEST@example.com>
>
> Submitted on Wednesday, November 20, 2019 - 5:06pm
>
> Customer Information:
>
> Name: Samantha Holcombe
>
> City:Midlothian
>
> State:Virginia
>
> E-mail:S.holcombe@d3g.com

Comments:Good Afternoon, I am conducting an Environmental Site Assessment (ESA) on behalf of HUD for a property located on East Lokey Avenue in Murfreesboro, TN. While on our site inspection, we saw that there was natural gas pipeline equipment located on the western edge of our property line. In order to make sure our property is not within an explosive hazard zone, we need to determine if the aforementioned pipeline is considered a high-pressure gas transmission line (i.e., at least four inch diameter or 400 psi), the approximate location of the pipeline, and whether or not our proposed structures would be within 10 feet of the outer edge of the pipeline easement. If you could help me obtain this information or point me in the right direction to obtain this information, that would be great! Thank you so much and have a great day, Samantha

Account Number:

Appendix S:

Environmental Justice

Environmental Justice (CEST and EA)

General requirements	Legislation	Regulation
Determine if the project creates adverse environmental impacts upon a low-income or minority community. If it does, engage the community in meaningful participation about mitigating the impacts or move the project.	Executive Order 12898	
Reference		
https://www.hudexchange.info/environmental-review/environmental-justice		

HUD strongly encourages starting the Environmental Justice analysis only after all other laws and authorities, including Environmental Assessment factors if necessary, have been completed.

1. Were any adverse environmental impacts identified in any other compliance review portion of this project's total environmental review?

☐ Yes → *Continue to Question 2.*

☑ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

2. Were these adverse environmental impacts disproportionately high for low-income and/or minority communities?

☐ Yes

Explain:

→ *Continue to Question 3. Provide any supporting documentation.*

☐ No

Explain:

→ *Continue to the Worksheet Summary and provide any supporting documentation.*

3. All adverse impacts should be mitigated. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

☐ Mitigation as follows will be implemented:

→ *Continue to Question 4.*

☐ No mitigation is necessary.

Explain why mitigation will not be made here:

→ *Continue to Question 4.*

4. Describe how the affected low-income or minority community was engaged or meaningfully involved

in the decision on what mitigation actions, if any, will be taken.

→ *Continue to the Worksheet Summary and provide any supporting documentation.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

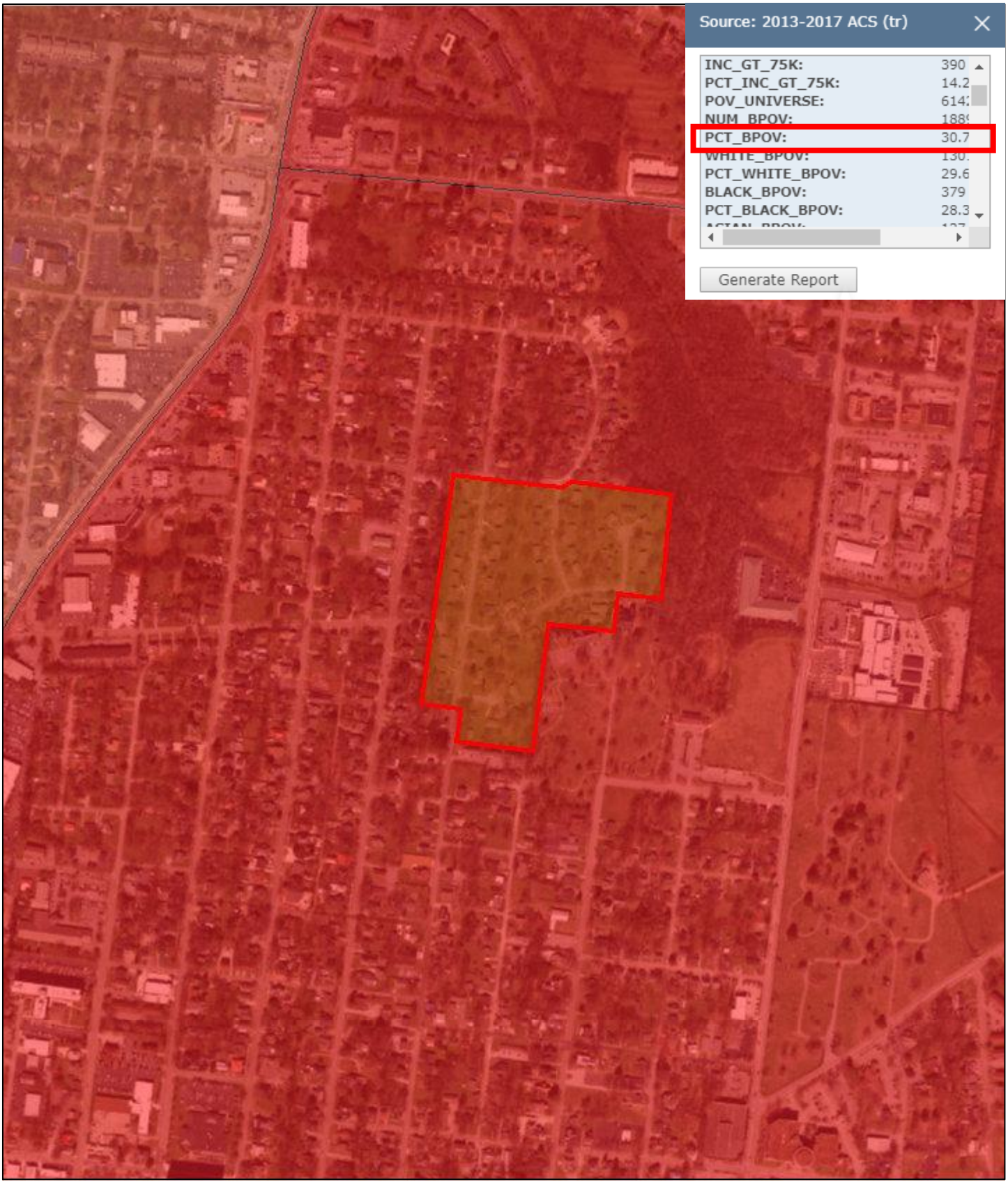
According to the NEPAssist website accessed at https://nepassisttool.epa.gov/nepassist/nepamap.aspx, the subject property is not located in a low-income or predominately minority area within the City of Murfreesboro, as 69.3% of the population in the area surrounding the subject property is above the poverty level, and the percent minority for the subject property and its surrounding area is 30%. Furthermore, no adverse environmental impacts were identified on the subject property nor immediately surrounding areas. Therefore, the proposed undertaking is in compliance with HUD's Environmental Justice regulations and no consultation nor mitigation measures are required.

Are formal compliance steps or mitigation required?

☐ Yes

☑ No

Percent Population Below Poverty Level



November 20, 2019

Source: 2013-2017 ACS (tr)

- 0 – 5.8
- > 5.8 – 10
- > 10 – 15.5
- > 15.5 – 24.7
- > 24.7 – 100

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

EJSCREEN ACS Summary Report

Location: User-specified point center at 35.855982, -86.387396
Ring (buffer): 0.5-miles radius
Description:

Summary of ACS Estimates	2013 - 2017
Population	2,997
Population Density (per sq. mile)	3,424
Minority Population	912
% Minority	30%
Households	1,237
Housing Units	1,338
Housing Units Built Before 1950	463
Per Capita Income	24,074
Land Area (sq. miles) (Source: SF1)	0.88
% Land Area	100%
Water Area (sq. miles) (Source: SF1)	0.00
% Water Area	0%

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	2,997	100%	658
Population Reporting One Race	2,901	97%	1,217
White	2,224	74%	478
Black	533	18%	436
American Indian	0	0%	12
Asian	129	4%	159
Pacific Islander	0	0%	12
Some Other Race	15	0%	120
Population Reporting Two or More Races	96	3%	133
Total Hispanic Population	150	5%	256
Total Non-Hispanic Population	2,846		
White Alone	2,084	70%	464
Black Alone	533	18%	436
American Indian Alone	0	0%	12
Non-Hispanic Asian Alone	129	4%	159
Pacific Islander Alone	0	0%	12
Other Race Alone	4	0%	28
Two or More Races Alone	96	3%	133
Population by Sex			
Male	1,470	49%	430
Female	1,527	51%	406
Population by Age			
Age 0-4	262	9%	126
Age 0-17	665	22%	206
Age 18+	2,332	78%	460
Age 65+	324	11%	123

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017 .

EJSCREEN ACS Summary Report

Location: User-specified point center at 35.855982, -86.387396
Ring (buffer): 0.5-miles radius
Description:

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,825	100%	422
Less than 9th Grade	134	7%	110
9th - 12th Grade, No Diploma	236	13%	116
High School Graduate	357	20%	179
Some College, No Degree	464	25%	264
Associate Degree	104	6%	128
Bachelor's Degree or more	634	35%	211
Population Age 5+ Years by Ability to Speak English			
Total	2,735	100%	605
Speak only English	2,606	95%	511
Non-English at Home[1+2+3+4]	129	5%	278
[1]Speak English "very well"	86	3%	99
[2]Speak English "well"	17	1%	66
[3]Speak English "not well"	18	1%	104
[4]Speak English "not at all"	7	0%	139
[3+4]Speak English "less than well"	25	1%	173
[2+3+4]Speak English "less than very well"	42	2%	179
Linguistically Isolated Households*			
Total	18	100%	82
Speak Spanish	11	59%	77
Speak Other Indo-European Languages	1	7%	25
Speak Asian-Pacific Island Languages	0	0%	12
Speak Other Languages	6	35%	24
Households by Household Income			
Household Income Base	1,237	100%	258
< $15,000	197	16%	130
$15,000 - $25,000	314	25%	129
$25,000 - $50,000	392	32%	199
$50,000 - $75,000	176	14%	105
$75,000 +	159	13%	104
Occupied Housing Units by Tenure			
Total	1,237	100%	258
Owner Occupied	332	27%	89
Renter Occupied	905	73%	257
Employed Population Age 16+ Years			
Total	2,410	100%	576
In Labor Force	1,532	64%	530
Civilian Unemployed in Labor Force	188	8%	397
Not In Labor Force	879	36%	226

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified point center at 35.855982, -86.387396
Ring (buffer): 0.5-miles radius
Description:

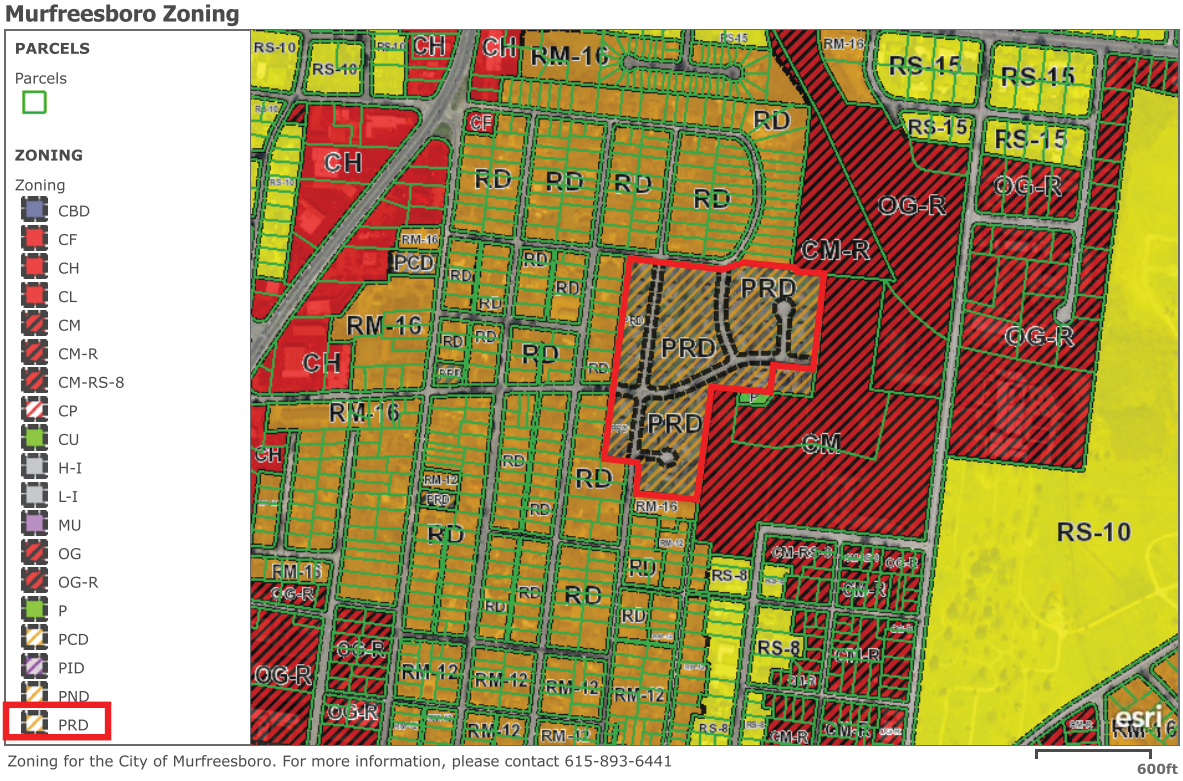
	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,098	100%	684
English	1,022	93%	643
Spanish	43	4%	250
French	0	0%	28
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	0	0%	17
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	9	1%	55
Chinese	0	0%	17
Japanese	N/A	N/A	N/A
Korean	0	0%	17
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	0	0%	17
Other Asian	0	0%	17
Tagalog	0	0%	17
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	3	0%	24
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	21	2%	191
Total Non-English	76	7%	939

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017.
*Population by Language Spoken at Home is available at the census tract summary level and up.

Appendix T:

Environmental Assessment Factors Source Documentation

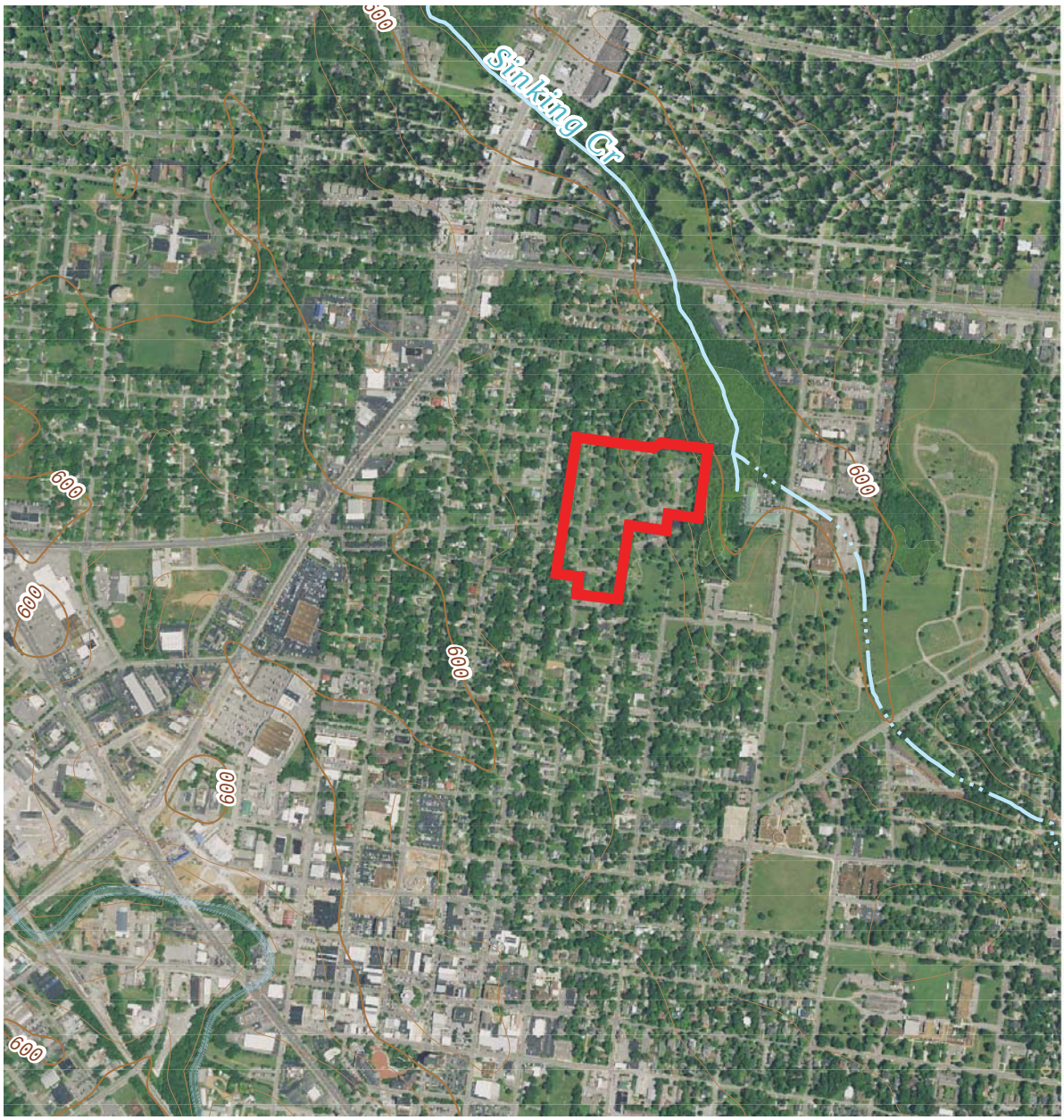
Murfreesboro Zoning



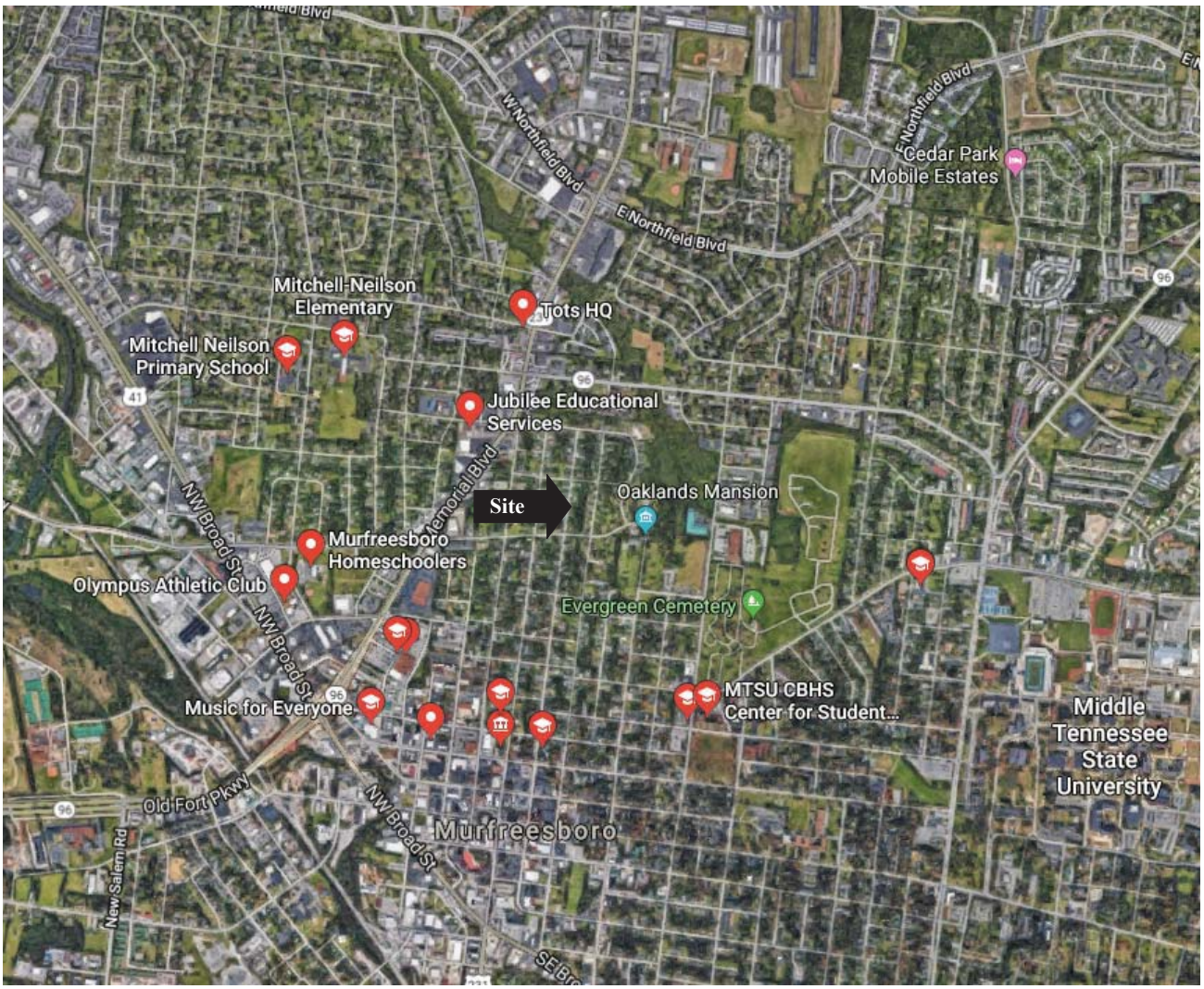
Zoning for the City of Murfreesboro. For more information, please contact 615-893-6441

Rutherford County OIT/GIS, Rutherford County, TN, USDA FSA

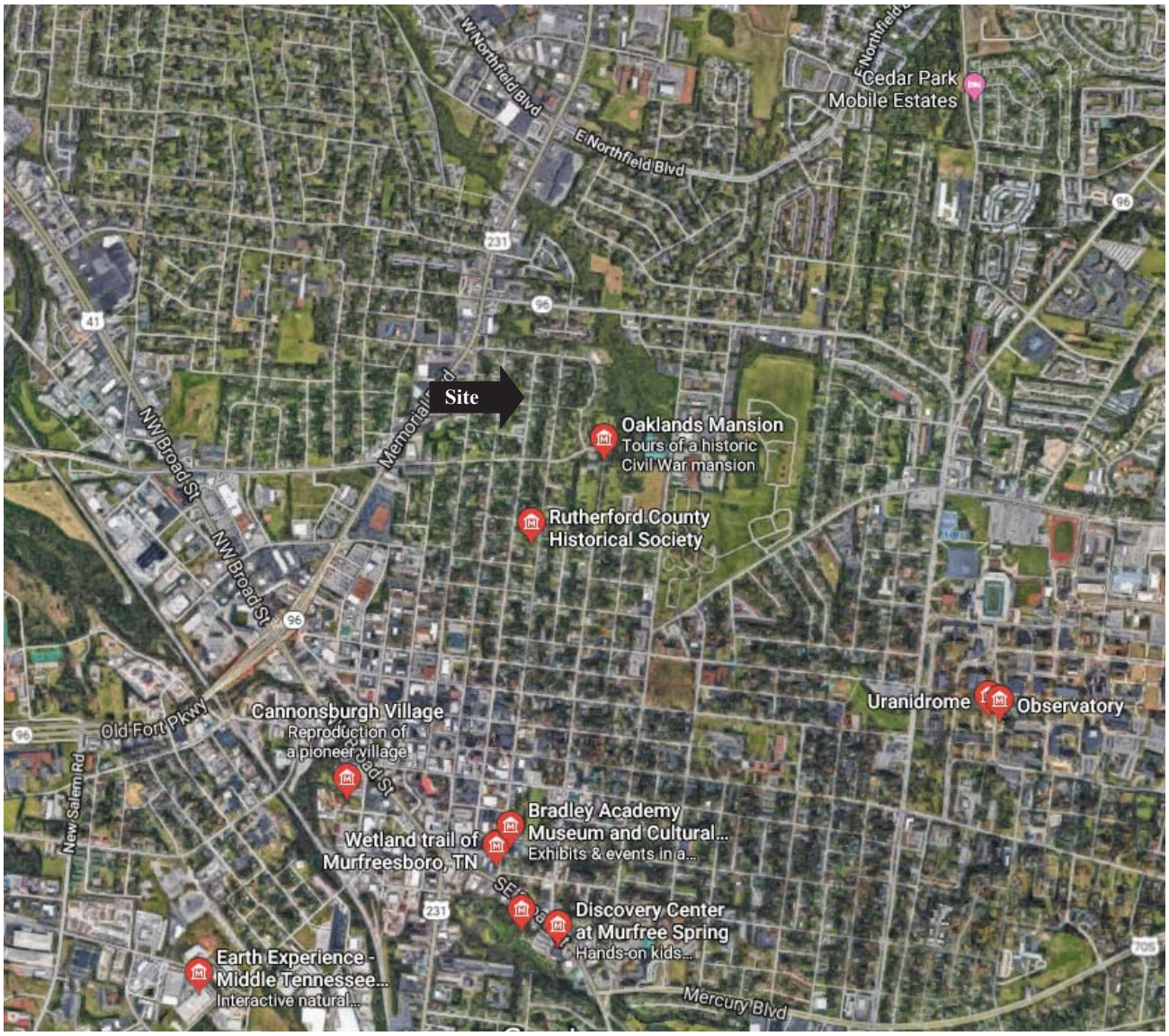
Appendix T Environmental Assessment Factors	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Zoning Map*	**DOMINION DUE DILIGENCE GROUP**



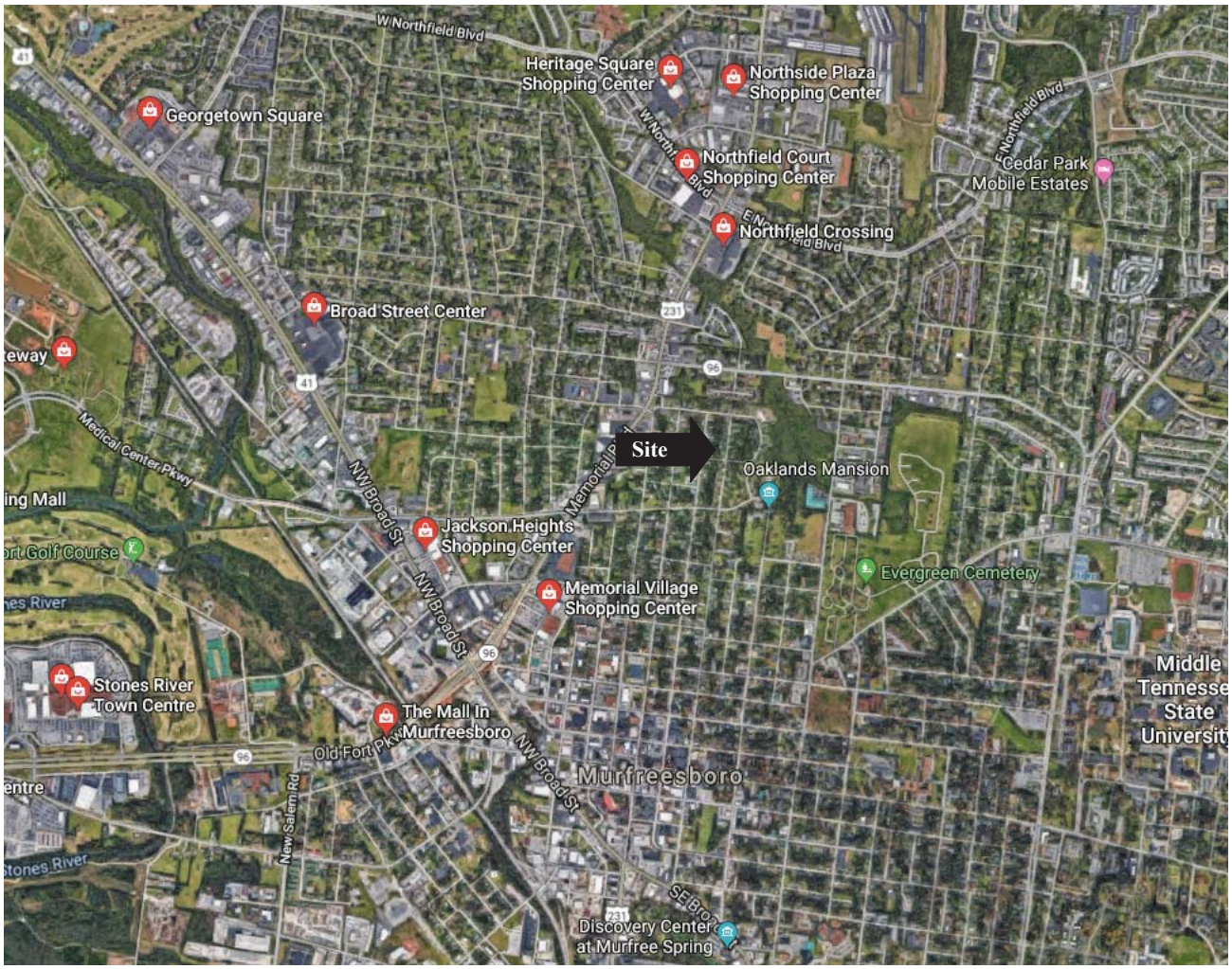
Appendix T Site Topographic Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Topographic Quadrangle: Murfreesboro, Tennessee 2019*	**DOMINION DUE DILIGENCE GROUP**



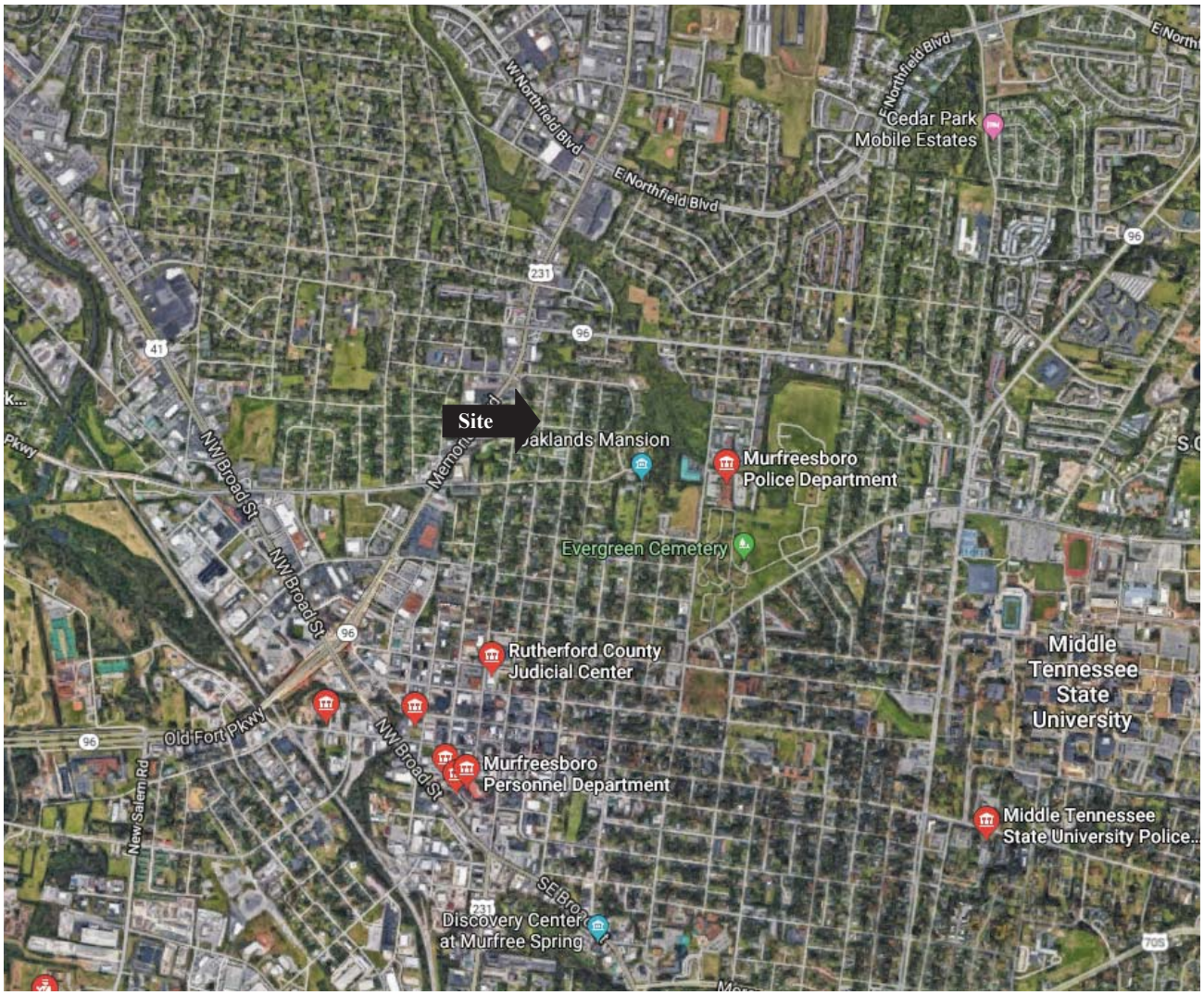
Appendix T Environmental Assessment Factors	↑ **N**	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Educational Facilities*	**DOMINION DUE DILIGENCE GROUP**



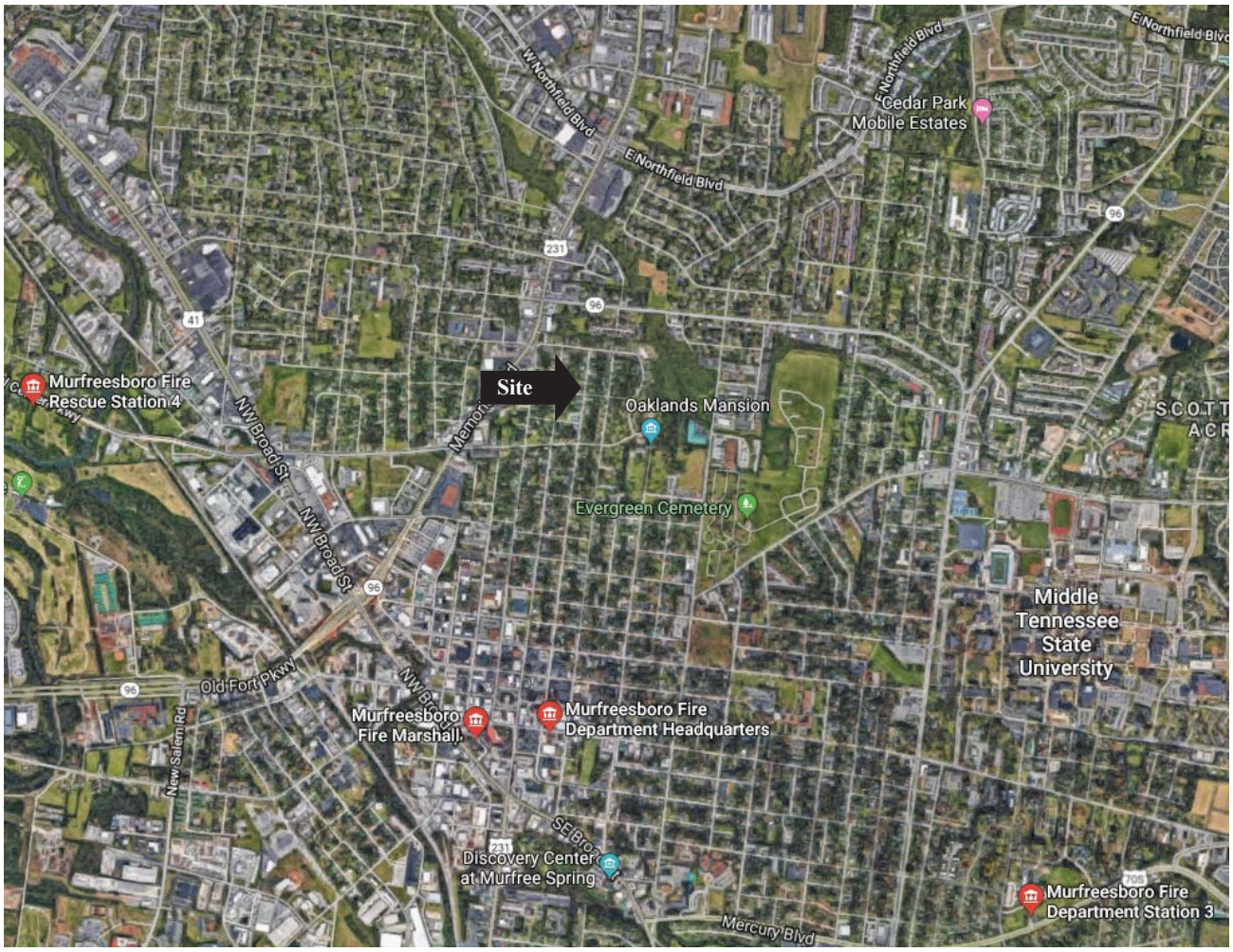
Appendix T Environmental Assessment Factors	↑ **N**	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Cultural Facilities*	**DOMINION DUE DILIGENCE GROUP**



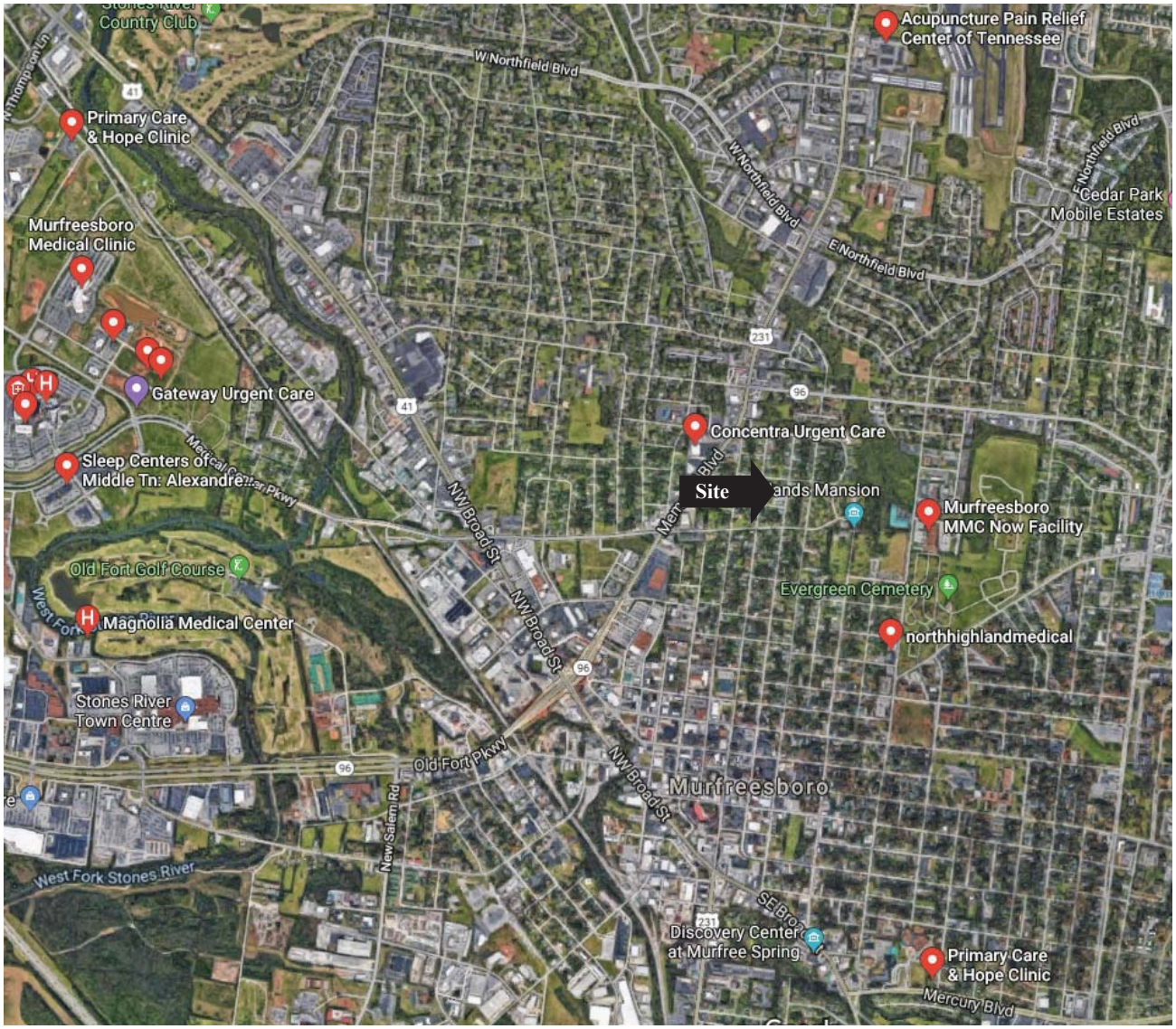
Appendix T Environmental Assessment Factors	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Commercial Facilities*	**DOMINION DUE DILIGENCE GROUP**



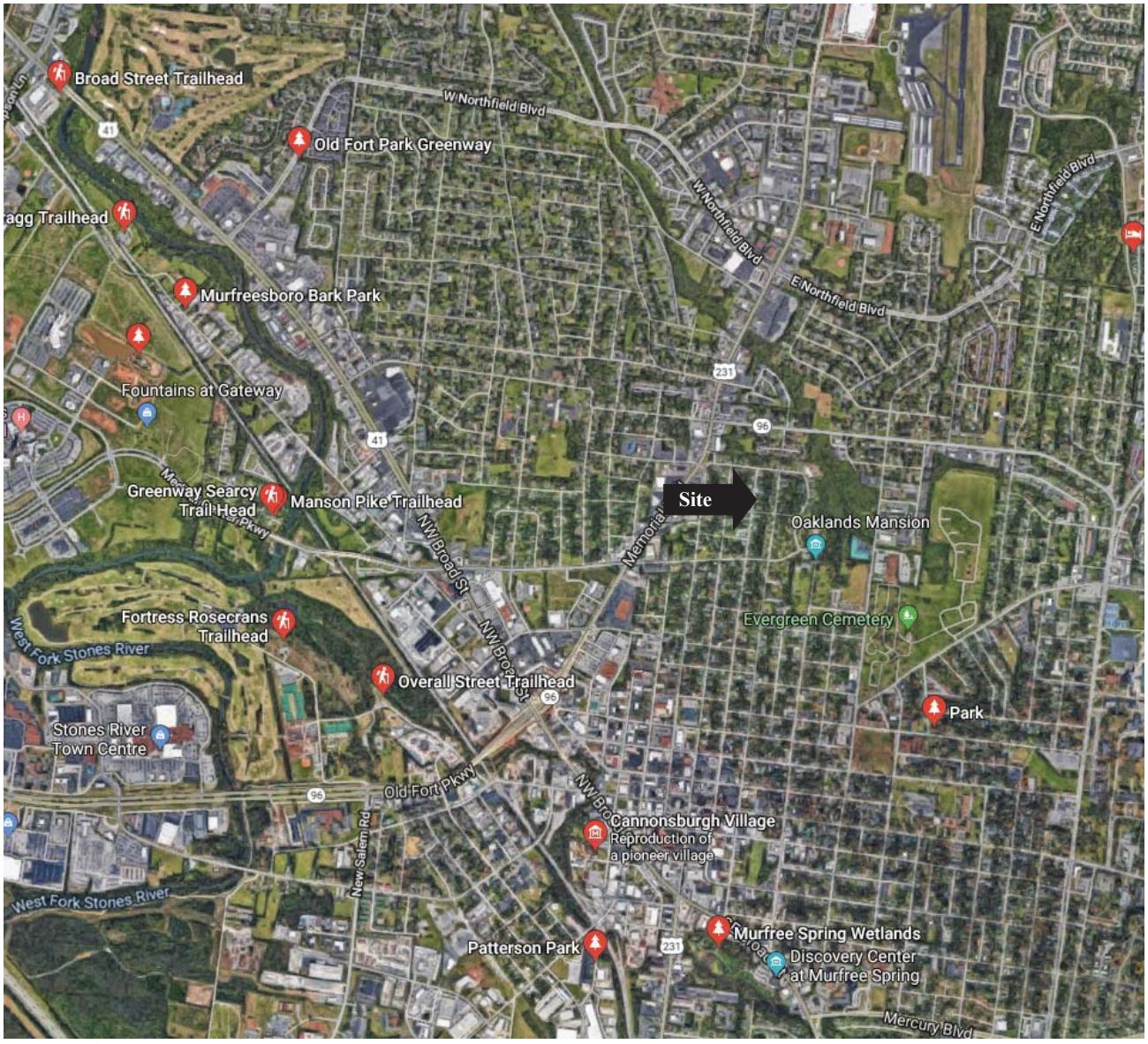
Appendix T Environmental Assessment Factors	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Public Safety Facilities - Police Services*	**DOMINION DUE DILIGENCE GROUP**



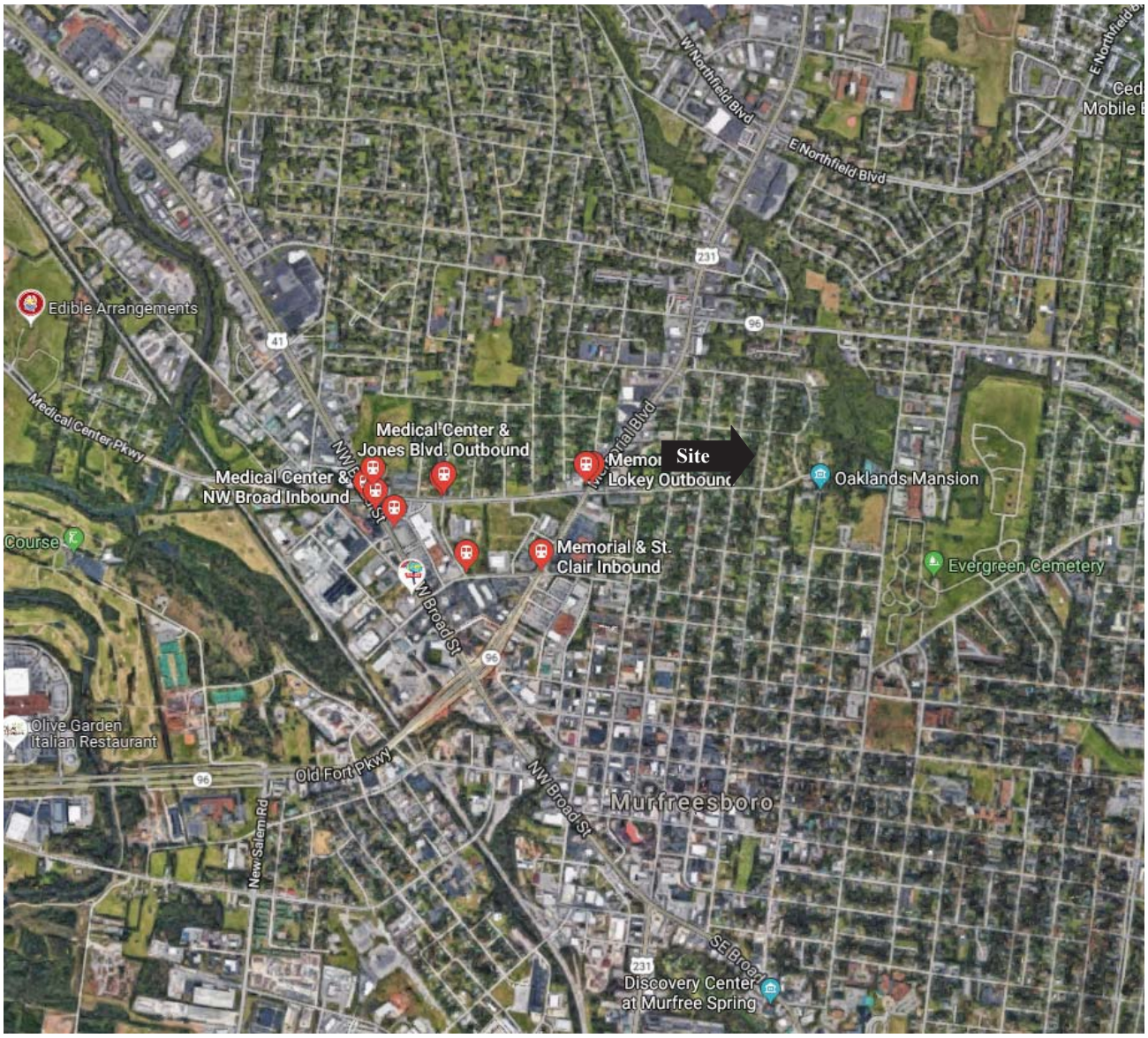
Appendix T Environmental Assessment Factors	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Public Safety Facilities - Fire Services*	**DOMINION DUE DILIGENCE GROUP**



Appendix T Environmental Assessment Factors	↑ **N**	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Public Safety Facilities - Medical Services*	**DOMINION DUE DILIGENCE GROUP**



Appendix T Environmental Assessment Factors	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Parks and Recreation Facilities*	**DOMINION DUE DILIGENCE GROUP**



Appendix T Environmental Assessment Factors	↑ **N**	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Public Transportation Facilities*	**DOMINION DUE DILIGENCE GROUP**

PHASE I ENVIRONMENTAL SITE ASSESSMENT
OAKLAND COURT DEVELOPMENT
EAST LOKEY AVENUE
MURFREESBORO, RUTHERFORD COUNTY, TENNESSEE

D3G PROJECT NUMBER:
2019-1705

REPORT ISSUE DATE:
JANUARY 20, 2020

INSPECTION DATE:
NOVEMBER 19, 2019

PREPARED FOR:
MURFREESBORO HOUSING AUTHORITY
415 N. MAPLE STREET
MURFREESBORO, TENNESSEE 37130

Samantha Holcombe
Site Assessor/Project Manager

Signature

John Exley
Environmental Professional

Signature

EXECUTIVE PROPERTY DESCRIPTION

Property: Oakland Court Development
East Lokey Avenue
Murfreesboro, Rutherford County, Tennessee

Site Description:

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure constructed in 1960. The subject property structures contain a total of seventy-six (76) residential dwelling units and are situated on 20.08 acres of land. Located within the community structure is a daycare. Exterior property improvements include a playground, a basketball court, landscaped regions and asphalt parking areas. The subject property is serviced by electricity, natural gas, and municipally supplied water and sewer. The Sponsor is submitting this project under the HUD's Rental Assistance Demonstration (RAD) program, consisting of the demolition of the current subject property structures and new construction of ninety (90) multi-family, duplex, and triplex structures containing a total of 150 residential dwelling units.



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1.0 EXECUTIVE SUMMARY

The following table summarizes the conclusions and opinions representing Dominion Due Diligence Group's (D3G's) best professional judgment based on information accessed during the course of this investigation. D3G performed a Phase I Environmental Site Assessment that included subject property observations of Oakland Court Development on November 19, 2019 located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee (subject property).

EVALUATED CONDITIONS	SECTION REFERENCE	ACCEPTABLE	RECOMMENDED RESPONSE ACTION
STANDARD ENVIRONMENTAL RECORDS REVIEW	5.1	YES	
UNREGULATED UNDERGROUND STORAGE TANK(S) (UST)	6.3	YES	
PAST INDUSTRIAL/DETRIMENTAL OPERATIONS	5.4 5.5	YES	
VAPOR ENCROACHMENT CONDITION	5.6	YES	
STORED HAZARDOUS MATERIALS	6.3 6.4	YES	
POLYCHLORINATED BIPHENYLS (PCBS)	6.3 6.4	YES	
ABOVEGROUND STORAGE TANK(S) (AST)	6.3 6.4	YES	
DUMPING, LANDFILLS	6.3	YES	
HAZARDOUS RUN-OFF	6.3	YES	
ASBESTOS-CONTAINING MATERIALS	8.1		(1)
LEAD-BASED PAINT	8.2	YES	
RADON GAS	8.3	YES	
OTHER	NA	YES	

(1) All ACMs and NOB materials should be managed under the existing site-specific Operations and Maintenance (O&M) Program prepared by D3G dated January 17, 2020 until such time as the structures are demolished. If suspect ACMs are encountered during demolition activities which have not been previously sampled, they should be sampled by an appropriately licensed asbestos inspector prior to impaction and treated accordingly or treated as ACMs. ACMs should be removed by a licensed asbestos abatement contractor in accordance with applicable regulations prior to demolition activities.

2.0 INTRODUCTION

2.1 Purpose

Murfreesboro Housing Authority contracted Dominion Due Diligence Group (D3G) to perform a Phase I Environmental Site Assessment (ESA) of the Oakland Court Development located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee (subject property). As such, Murfreesboro Housing Authority is considered the "User" of this report as defined under ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process Designation: E 1527-13 (ASTM E 1527 13). HUD is an authorized user of this Phase I ESA.

The purpose of the Phase I ESA is to provide all appropriate inquiry into the previous ownership and uses of the subject property and to identify recognized environmental conditions (RECs), which are the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. In addition, the Phase I ESA includes the identification of controlled recognized environmental conditions (CRECs), historical recognized environmental conditions (HRECs), and de minimis conditions. CRECs are RECs resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). HRECs involve a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. De minimis conditions generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. For the purposes of this reporting, D3G defines "environmental concerns" as de minimis conditions and non-scope considerations for which further action is recommended.

As per the U.S. Housing and Urban Development (HUD) Multifamily Accelerated Processing Guide, as amended, the Phase I ESA provides an initial determination of the overall Department's environmental responsibilities pursuant to 24 CFR 50.3(i). In addition, this report assesses non-scope considerations as directed by the client. Factual information regarding on-site business operations, conditions, and historical data provided to D3G is assumed to be correct and complete.

This investigation was conducted in accordance with ASTM E 1527-13 published guidelines, 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries: Final Rule, U.S. Housing and Urban Development (HUD) Multifamily Accelerated Processing Guide, as amended, and accepted Phase I ESA industry standards.

2.2 Detailed Scope of Services

The ASTM E 1527-13 scope of work for this Phase I ESA consisted of the following:

- site reconnaissance of the subject property and a visual survey of the adjacent properties to evaluate the potential for RECs;
- review of applicable and reasonably ascertainable information about the subject property, including aerial photography, USGS topographic map, state and federal databases, Sanborn maps, property assessment information and other governmental

sources that are publicly available, practically reviewable, and obtainable within reasonable time and cost constraints;
- interviews with selected individuals knowledgeable about the subject property and vicinity properties; and
- if provided, a review of existing environmental reports documenting previous assessment and remediation efforts completed at the subject property.

D3G also evaluated the following ASTM Non-Scope Considerations in accordance with the U.S. HUD Multifamily Accelerated Processing (MAP) Guide, as amended, including, but not limited to, Tier 1 Vapor Encroachment Screening in general compliance with ASTM Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions Designation: E 2600-15, asbestos-containing materials, lead-based paint, and radon gas. In addition, it should be noted that the HUD Environmental Review Record Related Federal Laws and Authorities Worksheets are included under separate cover.

This Phase I ESA did not include the collection or analysis of soil or groundwater samples.

2.3 Significant Assumptions

Factual information regarding on-site business operations, conditions, and historical data provided to D3G is assumed to be correct and complete. D3G assumes no responsibility for hidden or latent conditions or misrepresentation by the property owner, its representatives, public information officials or any authority consulted in connection with the compilation of this report.

D3G assumes that all information provided by Environmental Data Resources, Inc. (EDR) regarding the regulatory status of facilities within the approximate minimum search distance is complete, accurate and current.

2.4 Limitations and Exceptions

D3G encountered the following limitations, exceptions, and/or data gaps during the performance of this Phase I ESA:

- Our on-site observations pertain only to specific locations at specific times on specific dates. This report and conclusions herein are based upon data collection between October 14, 2019 and December 2, 2019. Our observations and conclusions do not reflect variations in conditions that may exist, in unexplored areas of the site, or at times other than those represented by our observations.
- In order for the prospective purchaser to claim protection from CERCLA liability as an innocent landowner, bona fide prospective purchaser, or contiguous property owner, the acquisition of the subject property should be completed within 180 days after the subject property inspection date.
- According to 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries: Final Rule, CERCLA liability rests with the owner or operator of a property and not with an environmental professional hired by the prospective landowner and who is not involved with the ownership or operation of the property.
- This report meets the requirements set forth in 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries: Final Rule. However, in order to qualify for certain landowner liability protections under CERCLA, Bona Fide Prospective Purchasers, Contiguous Property Owners, and/or Innocent Landowners must meet additional requirements in 101(35)(B) of CERCLA (42 U.S.C. 9601(35)) of the Federal Register.
- No significant data gaps in historical information were identified that would impact D3G's ability to identify RECs. Collectively the sources considered and consulted during the course of this assessment allowed D3G to adequately determine the subject property history. Therefore, these data gaps are not considered to be significant.

- Historical information was not reasonably ascertainable to the subject property's first developed use. D3G obtained historical information to 1914 at which time the subject property was developed with F.R. Henry's Brick Yard. Due to the age of any development activities previous to 1914, this limitation is not significant.

2.5 Special Terms and Conditions

This investigation was conducted in accordance with ASTM E 1527-13 published guidelines and 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries: Final Rule. In addition, Non-Scope items are addressed in accordance with the U.S. HUD Multifamily Accelerated Processing (MAP) Guide, as amended.

2.6 User Reliance

This report has been prepared for, and can be relied upon by the Client, Murfreesboro Housing Authority , and the United States Department of Housing and Urban Development (HUD). This report is not to be relied upon or reproduced, either in whole or in part, without written consent from D3G.

3.0 SUBJECT PROPERTY DESCRIPTION

3.1 Location and Legal Description

The subject property is located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee and contains a total of 20.08 acres of land. The subject property is situated at an elevation of approximately 615-625 feet above mean sea level and is located at Latitude, 35.856382 and Longitude, -86.386945.

MUNICIPAL PARCEL IDENTIFIER	MUNICIPAL PARCEL NUMBER
PARCEL NUMBER	091E-B-039.00-000

SOURCE - Rutherford County assessment documents

A copy of the tax card and a map illustrating the legal property boundary is included in Appendix A of this report.

3.2 Site and Vicinity General Characteristics

The subject property is located in an area of residential and light commercial development and undeveloped land.

3.3 Current Use of the Subject Property

The subject property is currently utilized as a multi-family apartment complex.

3.4 Description of Structures, Roads, and Other Improvements

The following section describes general conditions and features as noted during D3G's inspection:

GENERAL SUBJECT PROPERTY DESCRIPTION AND IMPROVEMENTS	
SUBJECT PROPERTY ACREAGE	20.08 acres
BUILDING(S) DESCRIPTION	Fifty-four (54) single-story apartment structures and one (1) single-story community structure
ADJOINING ROADS	East Lokey Avenue, North Academy Street, Christy Court, Jetton Drive, Pal Court, and East Hembree Street
CONSTRUCTION DATE(S)	1960
EXTERIOR IMPROVEMENTS	A playground, a basketball court, landscaped regions and asphalt parking areas
UNIMPROVED AREAS	NA

D3G was provided an Existing Conditions Survey prepared by Huddleston-Steele Engineering, Inc. dated October 17, 2019, which depicts the subject property boundaries, current structures and improvements, easements, legal description, contour line, and general vicinity characteristics. A copy of the Existing Conditions Survey is included in Appendix B.

D3G was provided a Master Plan prepared by Huddleston-Steele Engineering, Inc. dated October 17, 2019, which depicts the subject property boundaries, acreage, proposed structures and improvements, easements, legal description, and general vicinity characteristics. A copy of the Master Plan is included in Appendix B.

D3G was provided a Site Plan prepared by Huddleston-Steele Engineering, Inc. dated October 17, 2019, which depicts the subject property boundaries, acreage, proposed structures and improvements, easements, legal description, zoning, units, and general vicinity characteristics. A copy of the Site Plan is included in Appendix B.

3.4.1 Subject Property Utilities

SUBJECT PROPERTY UTILITIES	
ELECTRICITY	Murfreesboro Electric
NATURAL GAS	Atmos Energy
WATER	City of Murfreesboro
SANITARY SEWER	City of Murfreesboro
INDUSTRIAL WASTEWATER	NA
SOLID WASTE	City of Murfreesboro

HEATING SOURCE	AGE
Natural Gas/Electric	1960 - current

COOLING SOURCE	AGE
Electric	1960 - current

3.5 Current Uses of Adjoining Properties

DIRECTION	LAND USAGE
NORTH	East Hembree Street, Jetton Drive, single-family residential, and undeveloped wooded land
SOUTH	Palm Court, multi-family residential, Oaklands Mansion, and Oakland Park
EAST	Christy Court and undeveloped wooded land
WEST	North Academy Street, East Lokey Street, and single-family residential

See Appendix B for a copy of the Site Plan, which identifies subject property structure(s) and general vicinity characteristics.

4.0 USER PROVIDED INFORMATION

4.1 Title Records

PARCEL IDENTIFICATION	OWNER	PURCHASE DATE	DEED BOOK/PAGE
091E-B-039.00-000	Murfreesboro Housing Authority	9/15/1959	129/463

SOURCE - Rutherford County assessment documents

Due to the nature of the tax assessment documents and deed records, a thorough chain-of-title was not reasonably ascertainable.

4.2 Environmental Liens or Activity and Use Limitations (AULs)

D3G has not been provided information regarding environmental liens and AULs by the User.

D3G reviewed the Commitment for Title Insurance prepared by American Land Title Association on May 30, 2019. No environmental liens or AULs were identified. A copy of the Commitment for Title Insurance is included in Appendix F.

4.3 Specialized Knowledge

According to the completed User Questionnaire, the Current Landowner Representative did not indicate to D3G that they were aware of any specialized knowledge or experience that is material to recognized environmental conditions in connection with the subject property.

4.4 Commonly Known or Reasonably Ascertainable Information

The Current Landowner Representative did not indicate to D3G, in the completed User Questionnaire, that they were aware of commonly known or reasonably ascertainable information within the local community about the property that is material to recognized environmental conditions in connection with the property.

4.5 Valuation Reduction for Environmental Issues

D3G has not been provided any knowledge of valuation reduction for environmental issues pertaining to the subject property by the User or Current Landowner Representative.

4.6 Owner, Property Manager, and Occupant Information

The subject property is currently owned by Murfreesboro Housing Authority and the Current Landowner questionnaire is discussed further in Sections 7.1 and/or 7.2. Mr. Adam L. Lawson with Murfreesboro Housing Authority is the current Key Site Manager and the questionnaire is discussed further in Section 7.4.

4.7 Reason For Performing Phase I ESA

The user informed D3G that the Phase I ESA is being performed because the current subject property structures are being demolished and will consist of the new construction of ninety (90) multi-family, duplex, and triplex structures containing a total of 150 residential dwelling units under HUD's Rental Assistance Demonstration (RAD) Program.

4.8 Previous Environmental Reports

A previous Phase I ESA report produced by ECS Southeast, LLP (ECS) dated May 2, 2019 was provided to D3G for review. ECS concluded that there were no recognized environmental conditions (RECs) associated with the subject property.

5.0 RECORDS REVIEW

5.1 Standard Environmental Records Sources

5.1.1 State Regulatory Records

DATABASE	SEARCH DISTANCE
STATE AND TRIBAL LEAKING STORAGE TANK DATA (LUST/LAST)	0.50 Mile
STATE AND TRIBAL STORAGE TANK DATA (UST/AST)	0.25 Mile
STATE AND TRIBAL VOLUNTARY CLEANUP PROGRAM SITES (VCP)	0.50 Mile
STATE AND TRIBAL BROWNFIELD SITES (BROWNFIELDS)	0.50 Mile
STATE AND TRIBAL HAZARDOUS WASTE SITES (SHWS)	1.00 Mile
STATE AND TRIBAL INSTITUTIONAL/ENGINEERING CONTROLS (IC/EC)	0.125 Mile
STATE AND TRIBAL REGISTERED SOLID WASTE LANDFILLS (SWL)	0.75 Mile

SOURCE - State of Tennessee governmental records accessed by Environmental Data Resources Inc. (EDR)

The LUST incidents and UST facility are not located on-site or adjacent and are not of environmental concern to the subject property. The closest record is located approximately 0.25 miles west-northwest and presumed hydrogeologically cross-gradient from the subject property. Based on the listed distances, presumed hydrogeologic relationships, and/or current regulatory statuses, the vicinity state-regulated facilities are not suspected to present environmental concerns to the subject property.

5.1.2 Federal Regulatory Records

DATABASE	SEARCH DISTANCE
EPA NATIONAL PRIORITIES LISTING (NPL - SUPERFUND)	1.00 Mile
EPA NATIONAL PRIORITIES LISTING (NPL - DELISTED SITES)	0.50 Mile
EPA SUPERFUND ENTERPRISE MANAGEMENT SYSTEM (SEMS)	0.50 Mile
EPA SEMS ARCHIVED SITES (SEMS-ARCHIVE)	0.50 Mile
EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)	0.25 Mile
EPA RCRA TREATMENT, STORAGE, AND DISPOSAL (TSD)	0.50 Mile
FEDERAL INSTITUTIONAL/ENGINEERING CONTROLS (IC/EC)	0.125 Mile
EPA EMERGENCY RESPONSE NOTIFICATION-SITES (ERNS)	0.15 Mile
EPA RCRA CORRECTIVE ACTION REPORT (CORRACTS)	1.00 Mile

SOURCE - Environmental Protection Agency records accessed by Environmental Data Resources (EDR)

No federally-regulated facilities were identified in the EDR Report.

5.1.3 Non-Geocoded Sites

In addition, one (1) non-geocoded site was listed in the EDR Report. After reviewing the non-geocoded site, it was determined that it is not located on-site or adjacent from the subject property and is, therefore, not suspected to present environmental concerns to the subject property.

5.2 Additional Environmental Record Sources

Three (3) additional environmental records were identified in the EDR Report. The additional environmental records were not located on-site or adjacent and are not of environmental concern to the subject property. Based on the listed distances, presumed hydrogeologic relationships, and/or current regulatory statuses, the vicinity additional environmental records are not suspected to present environmental concerns to the subject property.

5.3 Physical Setting Sources

5.3.1 Topography and Regional Surface Water

TOPOGRAPHY AND REGIONAL SURFACE WATER	
ELEVATION (feet above mean sea level)	615-625
SLOPE	Northeast
APPROXIMATE GROUNDWATER FLOW	Northeast
REGIONAL SURFACE WATER	Sinking Creek is located approximately 220 feet to the east of the subject property.

SOURCE - USGS Topographic Quadrangle - Murfreesboro, Tennessee 2019

Located in Appendix A is a topographic map depicting subject property elevations and drainage patterns. Depth to groundwater fluctuates depending on hydrological and weather conditions.

On-site drainage at the subject property is suspected to consist of flow along the asphalt parking areas to strategically located storm drains and surface percolation in the unpaved areas.

5.3.2 Soil Characteristics

According to the NCRS Web Soil Survey, accessed at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, the subject property consists of three (3) soil types: Bradyville silt loam, 5 to 12 percent slopes, Cumberland silt loam, 0 to 2 percent slopes, and Cumberland silt loam, 2 to 5 percent slopes. The soils do not meet hydric criteria. Further detail about the remaining soil types is included in Appendix A.

5.4 Historical Use Information on the Subject Property

5.4.1 Review of Aerial Photographs

D3G reviewed aerial photographs from 1950, 1953, 1975, 1987, 1992, 1997, 2008, 2012, 2016, and 2018. According to the reviewed information, the subject property was originally depicted as agricultural land and agricultural-related structures from at least 1950, prior to conversion to the existing land use as multi-family residential in 1960. No environmental concerns were identified on the subject property based upon a review of the aerial photography.

A copy of the aerial photography is included in Appendix D of this report.

5.4.2 Fire Insurance Maps

D3G reviewed Sanborn Fire Insurance Maps from 1914, 1924, 1931, and 1945. According to the reviewed information, the subject property was developed with F.R. Henry's Brick Yard, which included three (3) dry kilns, from at least 1914 until 1931 when the property was developed with two (2) residential dwelling sheds. No environmental concerns were identified on the subject property based upon a review of the Sanborn Fire Insurance Maps.

A copy of the Certified Sanborn Map Report is included in Appendix D.

5.4.3 Other Historical Sources

No additional historical sources were reasonably ascertainable.

5.4.4 Summary of Subject Property History

According to the reviewed subject property historical information, the subject property was originally developed with F.R. Henry's Brick Yard, which included three (3) dry kilns, from at least 1914 until 1931 when the property was developed with two (2) residential dwelling sheds. The property was then depicted as agricultural land and agricultural-related structures from at least 1950, prior to conversion to the existing land use as multi-family residential in 1960. The use of pesticides and fertilizers are often associated with agricultural activities. The former agricultural land use may also have produced surface run-off of farm wastes high in nitrates and other nutrients. Subject property observations did not indicate that previous agricultural activities have negatively impacted the environmental condition of the subject property.

None of the accessed data depicts underground storage tanks (USTs) at the former structures; however, there exists the possibility that the former structures utilized underground or aboveground storage tanks (USTs/ASTs). No visual evidence of USTs (fill ports/vent pipes) or ASTs was observed during the subject property inspection. If ASTs or USTs were formerly located at the subject property, they should have been removed during the demolition of the structures.

5.5 Historical Use Information on Adjoining Properties

5.5.1 Review of Aerial Photographs

D3G reviewed aerial photographs from 1950, 1953, 1975, 1987, 1992, 1997, 2008, 2012, 2016, and 2018. According to the reviewed information, the adjacent properties have consisted of agricultural land, undeveloped wooded land, residential properties, and commercial properties. No environmental concerns were identified on the adjacent properties based upon a review of the aerial photography.

A copy of the aerial photography is included in Appendix D of this report.

5.5.2 Fire Insurance Maps

D3G reviewed Sanborn Fire Insurance Maps from 1914, 1924, 1931, and 1945. According to the reviewed information, the adjacent properties have consisted of vacant land, residential properties, and commercial properties. No environmental concerns were identified on the adjacent properties based upon a review of the Sanborn Fire Insurance Maps. A copy of the Certified Sanborn Map Report is included in Appendix D.

5.5.3 Other Historical Sources

No additional historical sources were reasonably ascertainable.

5.6 Tier 1 Vapor Encroachment Screening

D3G performed a Tier 1 Vapor Encroachment Screen (VES) in compliance with ASTM E 2600-15 "ASTM Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions" as amended. The purpose of the Tier 1 VES is to conduct an initial screen to determine if a Vapor Encroachment Condition (VEC) exists in connection with the subject property. A VEC is defined as the presence or likely presence of chemical(s) of concern (COC) vapors in the subsurface (vadose zone) of the subject property caused by the release of vapors from contaminated soil and/or groundwater either on or near the subject property, as identified by Tier I and/or Tier II procedures.

The VES process is a two (2)-tiered screening process. The Tier 1 VES is based upon information typically collected during an ASTM Standard E 1527 Phase I ESA and is typically focused on known or suspected contaminated properties that may exist within the area of concern (AOC). D3G reviewed standard environmental record sources including, but not limited to, local, state, tribal and/or federal (LSTF) government records, as reported in the regulatory database report; chemical use and historical records of prior uses on the subject property and within proximity of the subject property; soil characteristics; geological characteristics; contaminant characteristics and plume migration data (if this data is readily available); significant conduits that that might provide preferential pathways for vapor migration; and groundwater depth and groundwater flow data to identify known or suspected sources of contamination within the AOC.

According to ASTM E 2600-15, the AOC is defined by the approximate minimum search distance which is based upon the chemical of concern (i.e. petroleum hydrocarbons vs. non-petroleum hydrocarbons) and the location of a known or suspected source of contamination with respect to the subject property. The Tier 1 screening includes: (1) a search distance test to determine whether there are any known or suspect contaminated properties within the AOC; and (2) COC Test to determine for those known or suspect contaminated properties within the AOC whether COCs are likely to be present in order to evaluate the likelihood that a VEC exists at the subject property. If information related to the boundaries of a contaminant plume from known contaminated properties is available, a critical distance test may be conducted. The critical distance is defined as the lineal distance between the nearest edge of the contaminant plume and the nearest subject property boundary. The critical distance is equal to one hundred (100) feet for COC or thirty (30) feet for dissolved petroleum hydrocarbon COCs. The critical distance for petroleum hydrocarbon COCs as light non-aqueous phase liquid (LNAPL), such as gasoline product(s), is one hundred (100) feet. If groundwater flow direction can be estimated, the AOC in the down-gradient direction may be reduced to the area within the critical distance during the Tier 1 screening. Additionally, the cross-gradient direction may be reduced to the critical distance plus one half of a reasonable estimation of the contaminated plume width or three hundred sixty-five (365) feet. It is not necessary to obtain information regarding the contaminant plume dimensions for down-gradient and cross-gradient contaminated properties, as the critical distance is measured from the nearest subject property boundary directly to the source on the off-site down-gradient property that is the origin of the contamination (with the contamination migrating away from the subject property).

For a contaminated property located up-gradient of the subject property, the critical distance determination requires knowledge of the length and depth of the groundwater contaminant plume. Such information is required to determine the lineal distance from the groundwater contaminant plume edge to the nearest existing or planned structure on the subject property, or the nearest subject property boundary if there are no existing or planned structures on the

subject property. Data related to contaminant plume characteristics and dimensions associated with off-site contaminated properties is not typically available during the Tier 1 screening process and is typically obtained during the Tier 2 screening process. If it is not possible to conservatively estimate contaminant plume dimensions, then the AOC cannot be reduced in up-gradient directions during the Tier 1 screening process. Data regarding site-specific soil characteristics may also be used to adjust the AOC. Low permeability cohesive soils, such as soils high in clay and/or silt percentage content, generally tends to restrict soil gas movement, as may soil with high moisture content. Conversely, high porosity in soil tends to enhance soil gas movement. If known, this data may be utilized as a basis to either expand or reduce the AOC by the environmental professional.

The conclusions from the Tier 1 screening is: (1) a VEC exists or (2) a VEC does not exist. If a VEC does not exist, then the VES process is considered complete in accordance with the guidelines set forth under ASTM Standard E 2600-15. If a VEC exists at the subject property, the environmental professional should determine if the VEC represents a Recognized Environmental Condition (REC). If the VEC represents a REC, then further action or investigation may be recommended, including but not limited to a Tier 2 (invasive and/or non-invasive) screening and/or mitigation. If a VEC exists as determined by the Tier 1 screening process, then a more refined Tier 2 VES (non-invasive) may be completed in order to further evaluate the VEC. Tier 2 (non-invasive) focuses on characteristics of the contaminant plume associated with contaminated properties and the proximity of said contaminant plume to the subject property. This data is not typically available during the Tier 1 screening process and is typically obtained from state regulatory files and may also be obtained from other available documents and/or may be collected via sampling. Tier 2 (invasive) applies numeric screening criteria to existing or newly collected soil, soil gas, and/or groundwater testing results to further evaluate and/or validate the potential VEC.

5.6.1 Subject Property VEC Evaluation

Based on a review of the EDR Report, the subject property is not identified in the State Records Search or in the Federal Records Search. In addition, according to a review of subject property historical use information that is reasonably ascertainable, there are no known or suspect potentially contaminated sources having chemicals of concern (petroleum hydrocarbons or non-petroleum hydrocarbons) associated with the subject property. Therefore, a Vapor Encroachment Condition (VEC) does not exist at the subject property.

5.6.2 Contaminated Properties within the Area of Concern

Based on a review of the EDR Report and a review of adjacent historical use information that is reasonably ascertainable, there are no records identified within the area of concern. Therefore, a Vapor Encroachment Condition (VEC) does not exist at the subject property from an off-site source.

6.0 SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

D3G's site inspection consisted of visual observations along boundaries and various transects throughout the subject property. On the interior, common areas such as lobbies, hallways, utility rooms, recreation areas, maintenance and repair areas, and a representative sample of occupant spaces were observed. The adjacent properties were observed from the subject property and the boundaries of the subject property and public right-of-ways.

6.2 General Site Setting

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure constructed in 1960. The subject property structures contain a total of seventy-six (76) residential dwelling units and are situated on 20.08 acres of land. Located within the community structure is a daycare. Exterior property improvements include a playground, a basketball court, landscaped regions and asphalt parking areas. The subject property is serviced by electricity, natural gas, and municipally supplied water and sewer. The Sponsor is submitting this project under the HUD's Rental Assistance Demonstration (RAD) program, consisting of the demolition of the current subject property structures and new construction of ninety (90) multi-family, duplex, and triplex structures containing a total of 150 residential dwelling units.

6.3 Exterior Observations

6.3.1 Hazardous Materials and Petroleum Products

No bulk storage of hazardous materials or petroleum products were identified at the subject property.

6.3.2 Polychlorinated Biphenyls (PCBs)

Located at exterior locations of the property are fifteen (15) pole-mounted electrical transformers, which are owned and maintained by Murfreesboro Electric. The on-site electrical transformers were not affixed with "Non-PCB" stickers and are therefore assumed to contain regulated levels of PCBs. However, leakage was not visually observed on or around the transformers and in their current physical condition they are not believed to present environmental concerns to the subject property.

6.3.3 Subject Property Dumped Materials/Landfills

No dumped debris was observed on-site during the subject property inspection.

6.3.4 Solid Waste Disposal

The subject property structures utilize trash cans at the individual units. No staining and/or visual signs of spillage were observed in the vicinity of the trash cans during the subject property visit.

6.3.5 Spills/Stained Soils/Stained Pavement/Stressed Vegetation

Spills, stained soil and/or pavement, and stressed vegetation were not observed on-site during the subject property inspection.

6.3.6 Storage Tanks Not Previously Listed

No additional storage tanks were observed on-site or adjacent to the subject property during the subject property inspection.

6.3.7 Wells Not Previously Listed

Wells were not observed on-site during the subject property inspection.

6.3.8 Hazardous Runoff

Hazardous runoff was not observed on-site during the subject property inspection.

6.3.9 Pits, Ponds, or Lagoons

Pits, ponds, and lagoons were not observed on-site during the subject property inspection.

6.3.10 Odors

Evidence of adverse or suspicious odors was not detected during the subject property inspection.

6.4 Interior Observations

6.4.1 Hazardous Materials and Petroleum Products

No bulk storage of hazardous materials or petroleum products were identified at the subject property.

6.4.2 Polychlorinated Biphenyls (PCBs)

No PCB-containing equipment was observed on-site during the subject property inspection.

6.4.3 Storage Tanks Not Previously Listed

No additional storage tanks were observed on-site during the subject property inspection.

6.4.4 Odors

Evidence of adverse or suspicious odors was not detected during the subject property inspection.

6.4.5 Drains and/or Sumps

Drains and/or sumps were not observed during the subject property inspection.

6.4.6 Pools of Liquid

Pools of liquid were not observed during the subject property inspection.

7.0 INTERVIEWS

7.1 Prospective Landowner/User Questionnaire

A Property Questionnaire was completed by Mr. L. Thomas Rowe, Executive Director with the Murfreesboro Housing Authority and the Current Landowner Representative, and returned to D3G. According to Mr, Rowe, the recorded land title records indicated that an Activity and Use Limitation (AUL) is in place at the property; however, Mr. Rowe did not provide further explanation. In addition, Mr. Rowe stated that he is aware of the past uses of the property and that a title search has been preformed. Mr. Rowe indicated that the Murfreesboro Housing Authority has owned the property since 1958 and that he has been associated with the property for six (6) years. A copy of the completed Property Questionnaire is included in Appendix F.

7.2 Current Landowner Questionnaire

A User Property Questionnaire was completed by Mr. L. Thomas Rowe, Executive Director with the Murfreesboro Housing Authority and the Current Landowner Representative; therefore, an additional questionnaire is not warranted.

7.3 Previous Landowner Questionnaire

The current landowner has owned the property for more than two (2) years; therefore, a previous landowner questionnaire is not required.

7.4 Key Site Manager Questionnaire

A Property Questionnaire was completed by Mr. Adam L. Lawson, Director of Maintenance with the Murfreesboro Housing Authority and the Key Site Manager, and returned to D3G. According to Mr. Lawson, he has been associated with the property for five (5) years. A copy of the completed Property Questionnaire is included in Appendix F.

7.5 Occupant Questionnaire

A Property Questionnaire was provided to Mr. Adam Lawson to forward to the on-site daycare, the Occupant. However, according to Mr. Lawson, the daycare has no knowledge of the property and is using the building as a temporary facility; therefore, an Occupant Questionnaire is not necessary for this investigation.

7.6 Local Agencies Contacted

D3G contacted Mr. Carl Peas, Assistant Chief and Fire Marshal for the Murfreesboro Fire and Rescue Department, on October 21, 2019 for a review of their environmental records (i.e. USTs, hazardous materials storage, and spills) for the subject property. According to Mr. Peas, no records were available for former or current underground storage tanks or spills at the subject property. A copy of the correspondence is located in Appendix F of this report.

D3G contacted the Tennessee Department of Environment and Conservation on October 21, 2019 for a review of their environmental records including regional environmental health issues, on-site wells and/or septic system records for the subject property. According to Mr. James Shelley, Administrative Assistant with the Tennessee Department of Environment and Conservation Division of Water Resources, there are no records on file for the subject property or regional environmental health issues. In addition, Mr. Shelley stated that he property might be on public sewage, and to contact the Consolidated utility District of Rutherford County. According to Mrs. Melanie VanderLoop, Executive Administrative Assistant with the Tennessee

Department of Environment and Conservation Office of the Commissioner, there are no known wells listed at the property. A copy of the correspondence is located in Appendix F of this report.

7.7 Additional Persons Interviewed

INTERVIEWED PERSON	POSITION/ RELATION TO PROPERTY	INTERVIEW DATE	CONTENT OF DISCUSSION
Harry McCormic	Field Supervisor	11/19/2019	Provided tour of facility, discussed operations and maintenance

8.0 INVESTIGATION FOR NON-SCOPE CONSIDERATIONS

8.1 Asbestos-Containing Materials

The facility was constructed in 1960, during a time of asbestos-containing building material usage. D3G was provided with an Asbestos Survey Report prepared by Frost Environmental Services, LLC (FES) dated September 2019. According to the report, FES performed an asbestos survey at the subject property in preparation for demolition activities in accordance with the EPA 40 CFR 61 National Emissions Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 763 Asbestos Hazard Emergency Response Act (AHERA) sampling protocols and State of Tennessee asbestos guidelines on August 29, 2019. The survey was performed by Mr. Seth Frost and Brad Ely, State of Tennessee accredited Asbestos Inspectors with FES, a State of Tennessee accredited Asbestos Firm. A total of one hundred and eleven (111) bulk samples were collected and analyzed via Polarized Light Microscopy (PLM). Sampled materials included drywall, joint compound, textured ceiling materials, white mastic on fiberglass pipes, plaster, roof shingles, vinyl floor tiles and associated mastics, caulking materials, HVAC flex duct connector and transite flue pipes. An asbestos-containing material is defined as containing greater than 1% asbestos. The results of the inspection indicate that the following materials were identified as ACMs:

Community Center:
- Black floor tile and mastic under non-ACM 12" floor tile — Front Right Side Area, 600 SF
- Black mastic under non-ACM 12" floor tile — Front Right Restroom, 30 SF

Housing Units:
- Transite flue pipe — HVAC closets, 10 linear feet (LF) per unit
- HVAC Flex Duct Connector — HVAC Units, 8 LF per unit
- Tan caulking — Exterior windows, 14 windows per building
- Black and yellow mastic under non-ACM floor tiles — All Units, 580-1,300 SF per unit

In addition, joint compound was identified as an ACM (2% chrysotile); however, since it was not utilized as a surfacing material it could be composited with the drywall to be less than one percent asbestos as per State of Tennessee guidelines. However, although a material may contain asbestos at <1%, it DOES NOT relieve contractors from performing exposure assessments (personal air monitoring) on their employees per the OSHA Asbestos Standard (29 CFR 1926.1101) and should not be interpreted as asbestos is not present. Although laboratory analysis may indicate "<1%", airborne asbestos concentrations still may exceed the OSHA Permissible Exposure Limit (PEL) depending on the work activity.

The inspection appears to have been conducted in accordance with the ASTM Standard Practice for Comprehensive Asbestos Building Surveys Designation: E 2356-18 (ASTM E 2356-18) for Baseline Surveys. However, the survey did not include confirmation Transmission Electronic Microscopy (TEM) analysis of non-friable organically bound (NOB) materials (i.e. vinyl flooring materials and mastics, mastics, caulking materials, and roofing materials) which were not identified as ACMs via PLM analysis. This additional sampling methodology is not a requirement of the EPA or the State of Tennessee. Therefore, the result of the PLM analysis of NOB materials is considered to be conclusive as the structures are to be demolished. However, until such time as the structures are demolished, all vinyl flooring materials and mastics (even those not identified as ACMs via PLM analysis), caulking and roofing materials should be regarded as ACMs for ongoing maintenance purposes and be included within an Operations and Maintenance (O&M) Program.

A copy of the provided Asbestos Survey Report is included in Appendix J.

Recommendations are listed in Section 11.0.

8.2 Lead-Based Paint

The facility was constructed in 1960, prior to the 1978 ban on lead-based paint (LBP). Therefore, LBP is suspected to be present on interior and exterior painted components. At the time of D3G's site inspection on November 19, 2019, the painted components were observed to be in good condition.

Presumed LBP should be managed under a site-specific Operations and Maintenance (O&M) Program until such time as the structures are demolished. Components identified as containing lead in any concentration are required be handled in accordance with 29 CFR 1926.62, the OSHA "Lead Exposure in Construction" Standard (OSHA does not define LBP). All generated debris containing lead-based paint is to be appropriately disposed of in accordance with applicable EPA RCRA requirements.

8.3 Radon Gas

The subject property is located in an EPA Radon Zone 1, designated as an area of high radon gas potential with an average indoor radon level greater than 4 picocuries per liter (pCi/L) of air. As the current site structures are to be demolished, testing for radon gas was not conducted. For the proposed development, radon mitigation measures are required to be implemented in the project design in accordance with HUD guidelines. D3G recommends mitigating potential radon contamination by constructing the proposed structure(s) to meet all of the requirements of the ANSI/AARST CC-1000 2018 Soil Gas Control Systems in New Construction of Buildings (CC-1000 2018) standard or, if appropriate, the ANSI/AARST CCAH 2013 Reducing Radon in New Construction of One & Two Family Dwellings and Townhouses (CCAH 2013) standard, for the installation of passive systems. A Radon Report documenting the post-construction testing by a properly certified Radon Professional is required prior to Final Endorsement.

9.0 FINDINGS

This Phase I ESA was prepared in accordance with ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process Designation: E 1527-13, 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries: Final Rule, U.S. Housing and Urban Development (HUD) Multifamily Accelerated Processing Guide, as amended, and accepted Phase I ESA industry standards. This assessment has revealed the following findings, consisting of RECs, CRECs, HRECs, and environmental concerns, based on the subject property inspection, interviews, and review of available records:

EVALUATED CONDITIONS	ON-SITE	ADJACENT
STANDARD ENVIRONMENTAL RECORDS REVIEW	NO	NO
UNREGULATED UNDERGROUND STORAGE TANK(S) (UST)	NO	NO
PAST INDUSTRIAL/DETRIMENTAL OPERATIONS	NO	NO
VAPOR ENCROACHMENT CONDITION	NO	NO
STORED HAZARDOUS MATERIALS	NO	NA
POLYCHLORINATED BIPHENYLS (PCBS)	NO	NA
ABOVEGROUND STORAGE TANK(S) (AST)	NO	NO
DUMPING, LANDFILLS	NO	NO
HAZARDOUS RUN-OFF	NO	NO
ASBESTOS-CONTAINING MATERIALS	YES	NA
LEAD-BASED PAINT	YES	NA
RADON GAS	YES	NA
OTHER	NO	NA

NA = Not Applicable

10.0 OPINION

Recognized Environmental Conditions (RECs)
As defined in ASTM E 1527 13, RECs are the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. **Based on the findings of this Phase I ESA, no RECs were identified.**

Controlled Recognized Environmental Conditions (CRECs)
As defined in ASTM E 1527 13, CRECs are RECs resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). **Based on the findings of this Phase I ESA, no CRECs were identified.**

Historical Recognized Environmental Conditions (HRECs)
As defined in ASTM E 1527 13, HRECs involve a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. **Based on the findings of this Phase I ESA, no HRECs were identified.**

Environmental Concerns
D3G defines "environmental concerns" as de minimis conditions and non-scope considerations for which further action is recommended. As defined in ASTM E 1527 13, de minimis conditions generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Non-scope considerations include assessed environmental issues or conditions beyond the scope of ASTM E 1527 13 as stated in Section 2.2 and/or discussed below. **Based on the findings of this Phase I ESA, no environmental concerns were identified, except for the following:**

Asbestos-Containing Materials (ACMs)
The subject property was constructed in 1960, during a time of asbestos-containing building material usage. D3G was provided with an Asbestos Survey Report prepared by Frost Environmental Services, LLC (FES) dated September 2019. According to the report, FES performed an asbestos survey at the subject property in preparation for demolition activities in accordance with the EPA 40 CFR 61 National Emissions Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 763 Asbestos Hazard Emergency Response Act (AHERA) sampling protocols and State of Tennessee asbestos guidelines on August 29, 2019. The survey was performed by Mr. Seth Frost and Brad Ely, State of Tennessee accredited Asbestos Inspectors with FES, a State of Tennessee accredited Asbestos Firm. A total of one hundred and eleven (111) bulk samples were collected and analyzed via Polarized Light Microscopy (PLM). Sampled materials included drywall, joint compound, textured ceiling materials, white mastic on fiberglass pipes, plaster, roof shingles, vinyl floor tiles and associated mastics, caulking materials, HVAC flex duct connector and transite flue pipes. An asbestos-containing material is defined as containing greater than 1% asbestos. The results of the inspection indicate that the following materials were identified as ACMs:

Community Center:
- Black floor tile and mastic under non-ACM 12" floor tile — Front Right Side Area, 600 SF
- Black mastic under non-ACM 12" floor tile — Front Right Restroom, 30 SF

Housing Units:
- Transite flue pipe — HVAC closets, 10 linear feet (LF) per unit
- HVAC Flex Duct Connector — HVAC Units, 8 LF per unit
- Tan caulking — Exterior windows, 14 windows per building
- Black and yellow mastic under non-ACM floor tiles — All Units, 580-1,300 SF per unit

In addition, joint compound was identified as an ACM (2% chrysotile); however, since it was not utilized as a surfacing material it could be composited with the drywall to be less than one percent asbestos as per State of Tennessee guidelines. However, although a material may contain asbestos at <1%, it DOES NOT relieve contractors from performing exposure assessments (personal air monitoring) on their employees per the OSHA Asbestos Standard (29 CFR 1926.1101) and should not be interpreted as asbestos is not present. Although laboratory analysis may indicate "<1%", airborne asbestos concentrations still may exceed the OSHA Permissible Exposure Limit (PEL) depending on the work activity.

The inspection appears to have been conducted in accordance with the ASTM Standard Practice for Comprehensive Asbestos Building Surveys Designation: E 2356-18 (ASTM E 2356-18) for Baseline Surveys. However, the survey did not include confirmation Transmission Electronic Microscopy (TEM) analysis of non-friable organically bound (NOB) materials (i.e. vinyl flooring materials and mastics, mastics, caulking materials, and roofing materials) which were not identified as ACMs via PLM analysis. This additional sampling methodology is not a requirement of the EPA or the State of Tennessee. Therefore, the result of the PLM analysis of NOB materials is considered to be conclusive as the structures are to be demolished. However, until such time as the structures are demolished, all vinyl flooring materials and mastics (even those not identified as ACMs via PLM analysis), caulking and roofing materials should be regarded as ACMs for ongoing maintenance purposes and be included within an Operations and Maintenance (O&M) Program.

11.0 CONCLUSIONS

Dominion Due Diligence Group performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Oakland Court Development located at East Lokey Avenue in Murfreesboro, Rutherford County, Tennessee (subject property). Any exceptions to, or deletions from, this practice are described in Section 2.4 of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) or controlled recognized environmental conditions (CRECs) in connection with the subject property.

D3G has performed a Phase I ESA at the subject property. Based on the identified environmental concerns discussed in Section 10.0, D3G recommends the following:

Asbestos-Containing Materials (ACMs)
All ACMs and NOB materials should be managed under the existing site-specific Operations and Maintenance (O&M) Program prepared by D3G dated January 17, 2020 until such time as the structures are demolished. If suspect ACMs are encountered during demolition activities which have not been previously sampled, they should be sampled by an appropriately licensed asbestos inspector prior to impaction and treated accordingly or treated as ACMs. ACMs should be removed by a licensed asbestos abatement contractor in accordance with applicable regulations prior to demolition activities.

12.0 DEVIATIONS

There are no deviations from the ASTM standard Phase I ESA except for those outlined in Section 2.4 of this report.

13.0 ADDITIONAL SERVICES

No additional services were contracted between the User and D3G.

14.0 REFERENCE MATERIALS

- Murfreesboro Fire and Rescue Department
- Rutherford County Assessor
- Tennessee Department of Environment and Conservation Division of Water Resources and Office of the Commissioner
- Web Soil Survey accessed at http://websoilsurvey.nrcs.usda.gov/app/
- USGS Topographic Quadrangle — Murfreesboro, Tennessee 2019
- Environmental Data Resources Inc. (EDR) Report, dated November 18, 2019
- Delorme Street Atlas USA 2015
- Google Earth and EDR — aerial photographs
- EDR Certified Sanborn Map Report
- EPA Radon Map
- Existing Conditions Survey prepared by Huddleston-Steele Engineering, Inc. dated October 17, 2019
- Master Plan prepared by Huddleston-Steele Engineering, Inc. dated October 17, 2019
- Site Plan prepared by Huddleston-Steele Engineering, Inc. dated October 17, 2019
- Commitment for Title Insurance prepared by American Land Title Association on May 30, 2019

15.0 SIGNATURE OF ENVIRONMENTAL PERSONNEL

Data presented in this report is factual to the best of our knowledge. Available sources of data were comprehensively researched to provide a complete Phase I ESA of the subject property. The Phase I ESA was prepared in accordance with ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E 1527-13), 40 CFR Part 312 Standards and Practices for All Appropriate Inquiry: Final Rule, and portions of the U.S. Department of HUD MAP Guide protocols, as amended. In addition, it should be noted that the HUD Environmental Review Record Related Federal Laws and Authorities Worksheets are included under separate cover.

D3G understands that this Phase I ESA will be used by the User to document to the U.S. Department of HUD that the MAP Lender's application for FHA multifamily mortgage insurance was prepared and reviewed in accordance with HUD MAP requirements. D3G certifies that the review was in accordance with the HUD MAP requirements applicable on the date of the review and that D3G has no financial interest or family relationship with the officers, directors, stockholders or partners of the Borrower, the general contractor, any subcontractors, the buyer or seller of the proposed property or engage in any business that might present a conflict of interest.

D3G is employed under contract for this specific assignment and has no other side deals, agreements, or financial considerations with the MAP Lender or others in connection with this transaction.

Project Manager



Samantha Holcombe
Site Assessor/Project Manager

Environmental Professional



John Exley
Environmental Professional

16.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

John Exley qualifies as an **Environmental Professional** as defined in 40 CFR Part 312.10(b). Mr. Exley has numerous years of extensive training and experience with regards to environmental issues. He received an undergraduate B.S. degree in Geography and Urban Planning as well as a minor in Environmental Studies from Virginia Commonwealth University and has inspected, managed and designed numerous environmental projects throughout the United States. Mr. Exley also has extensive knowledge of the ASTM E 1527 Phase I Environmental Site Assessment regulations as well as the EPA 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries regulations. Mr. Exley qualifies as an Environmental Professional as defined under ASTM E 1527 Section 4.3 and Appendix X2 with over nine (9) years of experience performing investigations of surface and subsurface environmental conditions. Mr. Exley's duties as a Team Manager for Dominion Due Diligence Group include coordinating, conducting, writing, and reviewing Phase I/II Environmental Site Assessments (HUD, Freddie Mac, Fannie Mae, and ASTM E 1527) throughout the United States as well as coordinating, conducting and reviewing comprehensive lead-based paint and asbestos-containing material investigation/remediation projects. Mr. Exley has additionally performed numerous HUD noise assessments and assisting with HUD 8-Step Processes throughout the United States.

Appendix A:

Site (Vicinity) Maps

Tax Map



Appendix A Tax Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Parcel #091E-B-039.00-000*	**DOMINION DUE DILIGENCE GROUP**

Go Back to Search Page

Add Property to Your Notifications Account

Results GIS Maps Pictures Street View

Account #: R0054858
Owner Name: MURFREESBORO HOUSING AUTHORITY
Owner Name 2:
Owner Address: 415 N MAPLE ST
Owner Address 2:
City, State, Zip: MURFREESBORO, TN 37130-2831
Property Address: N ACADEMY ST
Jurisdiction: 515 - Murfreesboro
Parcel #: 091E-B-039.00-000
Subdivision: -
Lot #:
Dimensions:
Land Flag: NODATA
Units/Acres/Sites: 20.20000
Class: 02 - City
Land Mkt Value: $440,000
Improvement Value: $0
Yard Item Value: $0
Total Market Appraisal: $440,000
Assessment %: 0%
Assessment: $0
Greenbelt Value: NODATA

Pay your County Taxes Online
See your estimated County tax bill

Building Information

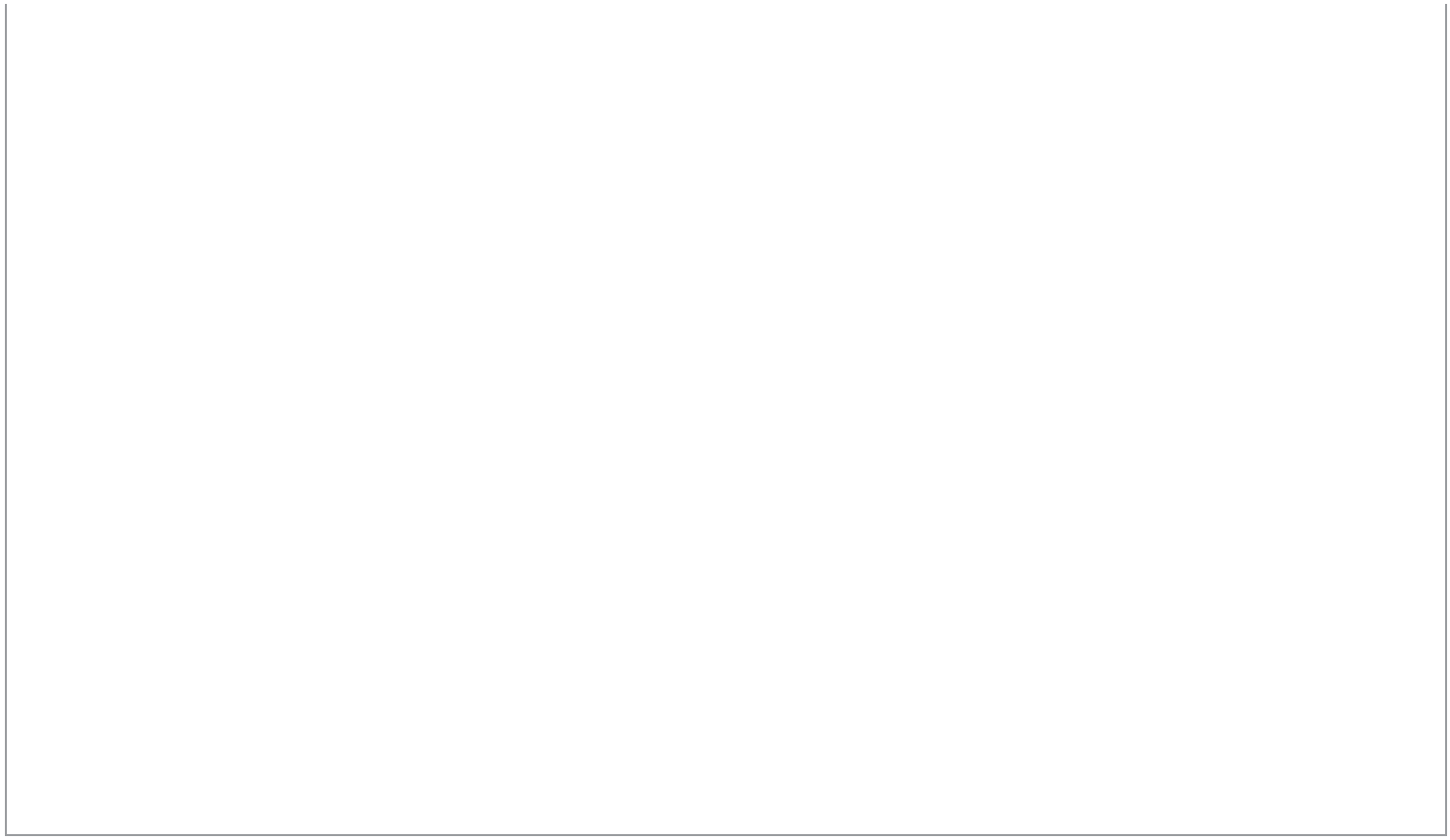
BuildingSequence	Plumbing Fixtures	SQFT
	0	0.00

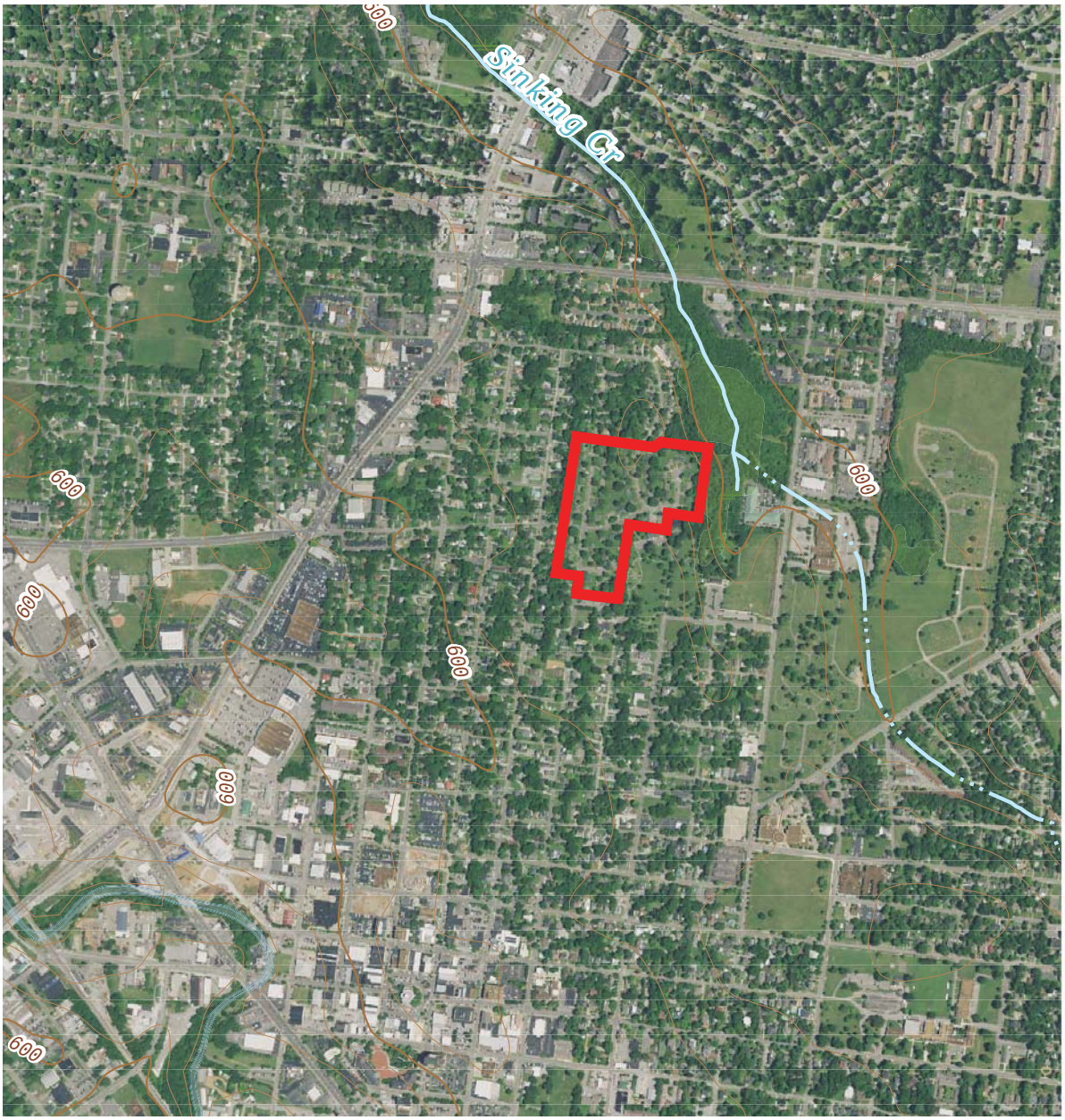
Sale Information

SaleDate	SalePrice	Book	Page	GrantorName	GranteeName
9/23/2019	0.00	1816	3691		

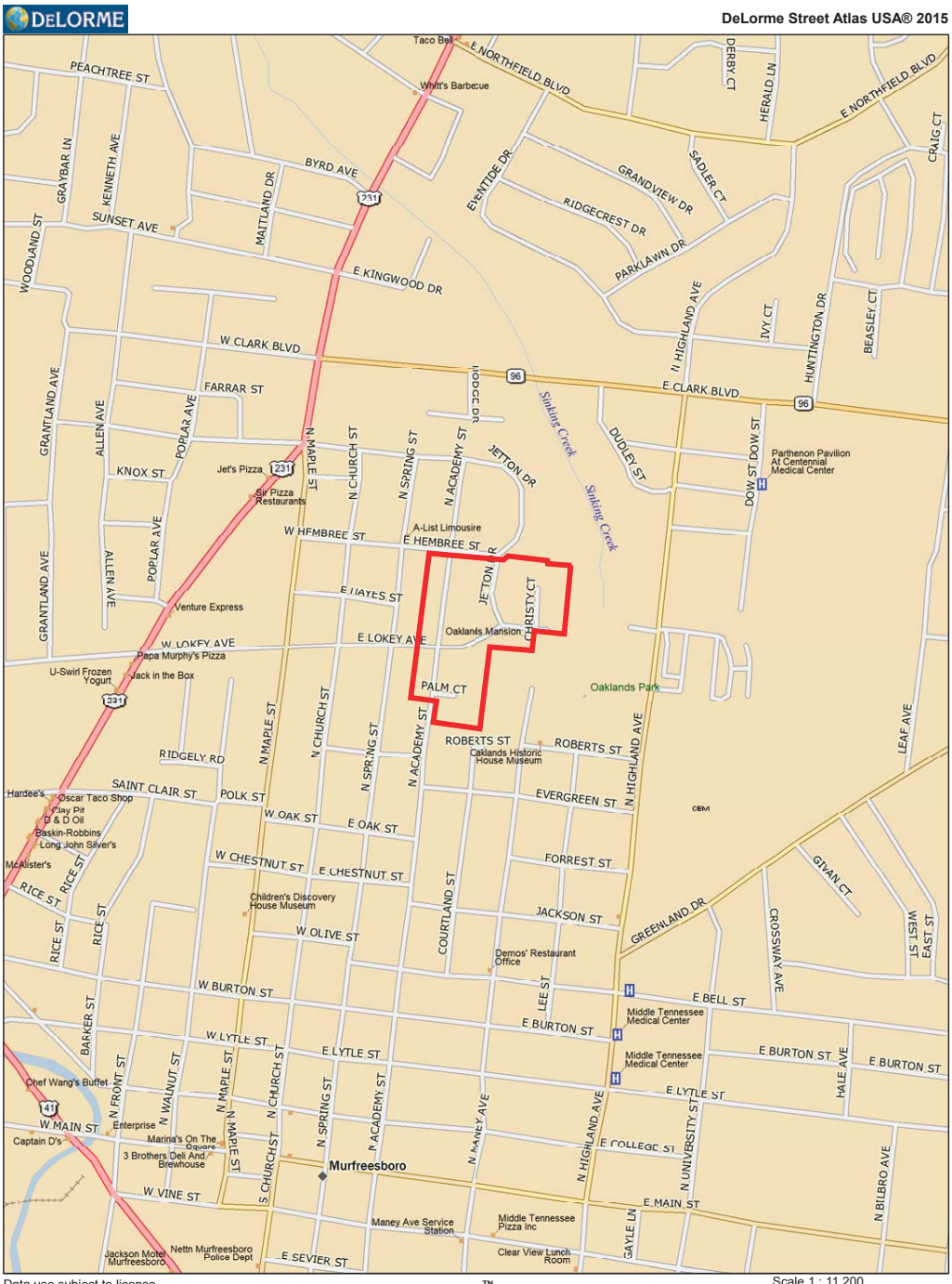
Non-Sale Document Information

SaleDate	SalePrice	Book	Page	GrantorName	GranteeName
9/23/2019		1816	3691		
9/15/1959	0.00	129	463		MURFREESBORO HOUSING AUTHORITY

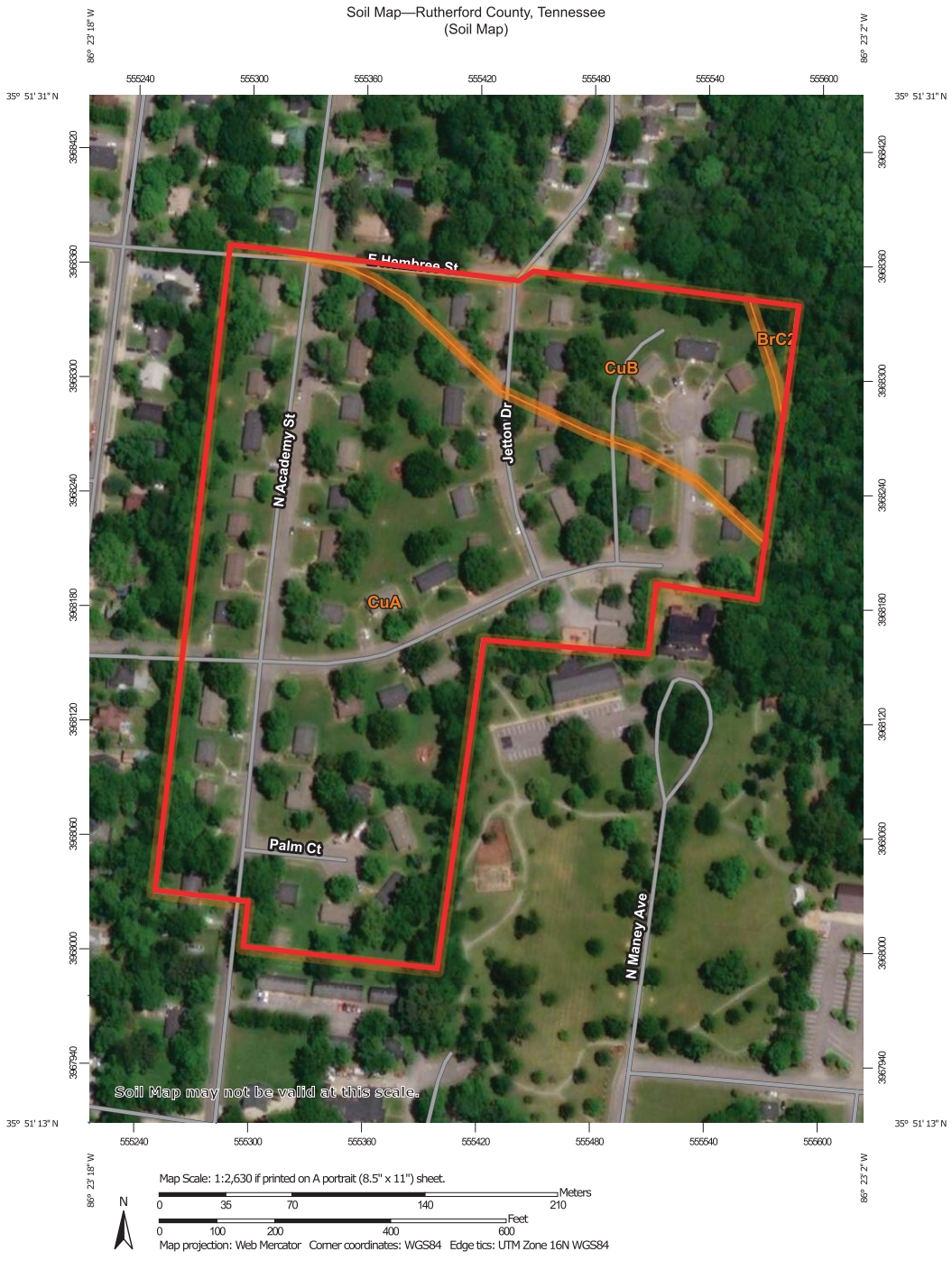




Appendix A Site Topographic Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *Topographic Quadrangle: Murfreesboro, Tennessee 2019*	**DOMINION DUE DILIGENCE GROUP**



Appendix A Site Locator Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee	**DOMINION DUE DILIGENCE GROUP**



Appendix A Site Soils Map	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee *http://websoilsurvey.nrcs.usda.gov/app/*	**DOMINION DUE DILIGENCE GROUP**

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Rutherford County, Tennessee

Map Unit: BrC2—Bradyville silt loam, 5 to 12 percent slopes

Component: Bradyville (91%)

The Bradyville component makes up 91 percent of the map unit. Slopes are 5 to 12 percent. This component is on basins, hillslopes. The parent material consists of clayey residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 39 to 59 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. Irrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Talbott (9%)

Generated brief soil descriptions are created for major soil components. The Talbott soil is a minor component.

Component: Rock outcrop (0%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop soil is a minor component.

Map Unit: CuA—Cumberland silt loam, 0 to 2 percent slopes

Component: Cumberland (100%)

The Cumberland component makes up 100 percent of the map unit. Slopes are 0 to 2 percent. This component is on stream terraces on basins. The parent material consists of clayey alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Map Unit: CuB—Cumberland silt loam, 2 to 5 percent slopes

Component: Cumberland (100%)

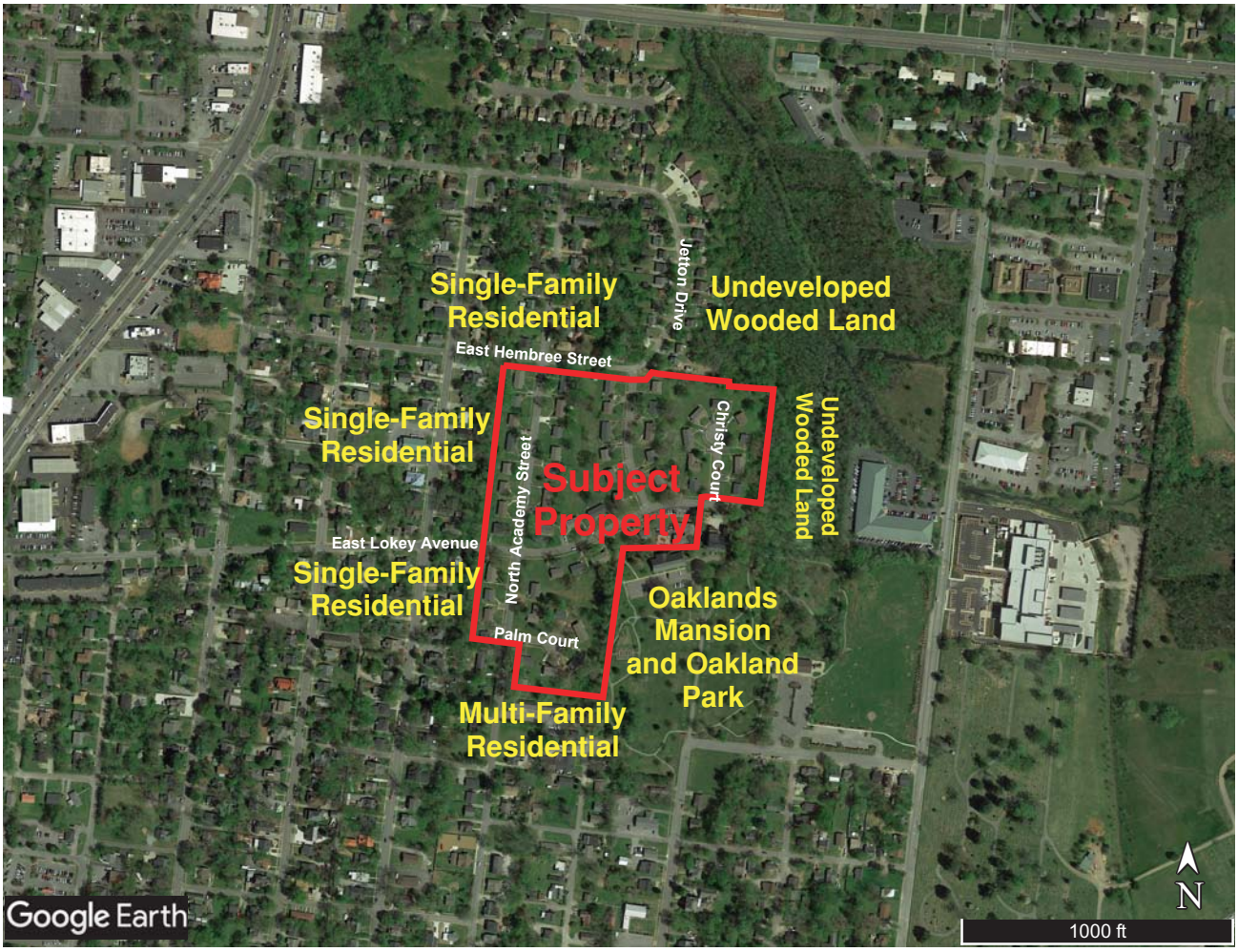
The Cumberland component makes up 100 percent of the map unit. Slopes are 2 to 5 percent. This component is on stream terraces on basins. The parent material consists of clayey alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Data Source Information

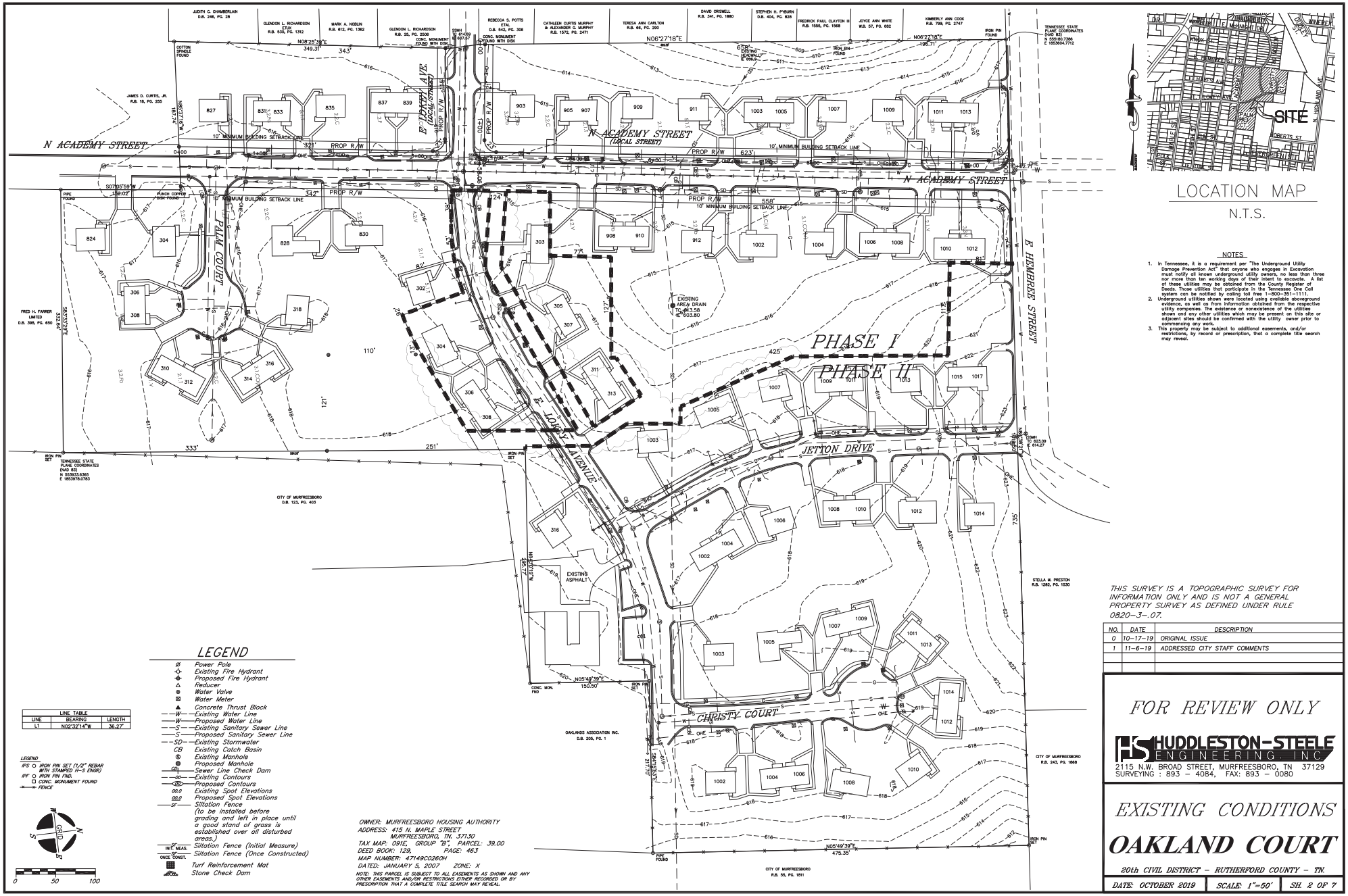
Soil Survey Area: Rutherford County, Tennessee
Survey Area Data: Version 16, Sep 16, 2019

Appendix B:

Site Plan



Appendix B Site Plan	↑ N	Oakland Court Development East Lokey Avenue Murfreesboro, Tennessee	**DOMINION DUE DILIGENCE GROUP**



THIS SURVEY IS A TOPOGRAPHIC SURVEY FOR INFORMATION ONLY AND IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-.07.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

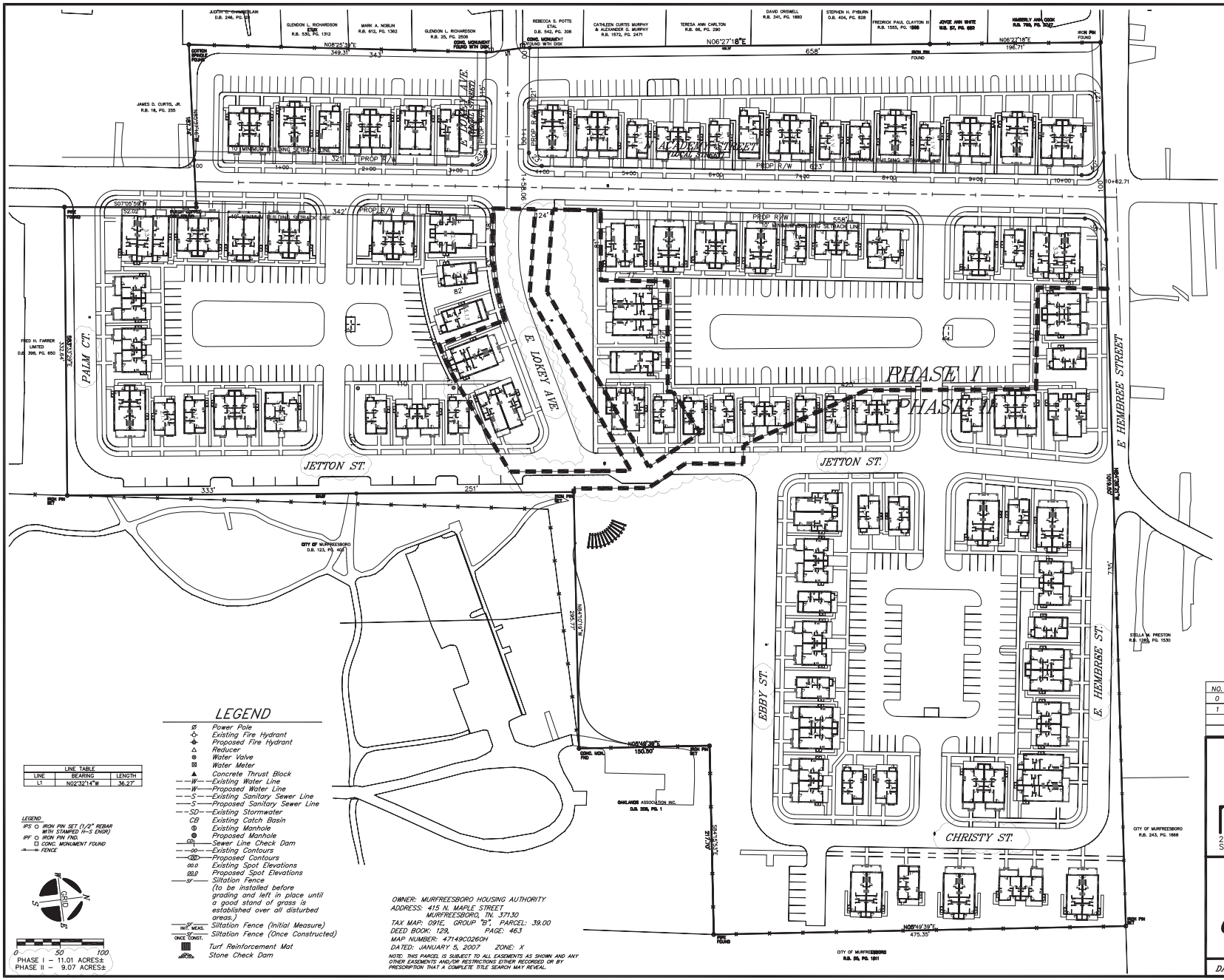
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 - 4084, FAX: 893 - 0080

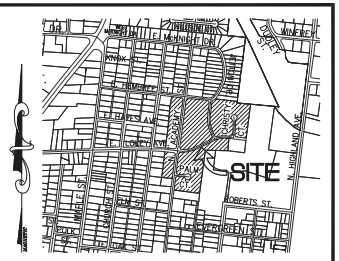
EXISTING CONDITIONS

OAKLAND COURT

20th CIVIL DISTRICT - RUTHERFORD COUNTY - TN.

DATE: OCTOBER 2019 | *SCALE: 1"=50'* | *SH. 2 OF 7*





LOCATION MAP

N.T.S.

NOTES

1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, that a complete title search may reveal.

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
- —W— Proposed Water Line
- —S— Existing Sanitary Sewer Line
- —S— Proposed Sanitary Sewer Line
- —SD— Existing Stormwater
- CB Existing Catch Basin
- Existing Manhole
- Proposed Manhole
- —CD— Sewer Line Check Dam
- —00— Existing Contours
- —000— Proposed Contours
- 000 Existing Spot Elevations
- 000 Proposed Spot Elevations
- —SF— Siltation Fence (to be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INST. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED "H-S ENGR)
IPF ○ IRON PIN FND.
□ CONC. MONUMENT FOUND
-x- FENCE

PHASE I – 11.01 ACRES±
PHASE II – 9.07 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET
MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X

NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

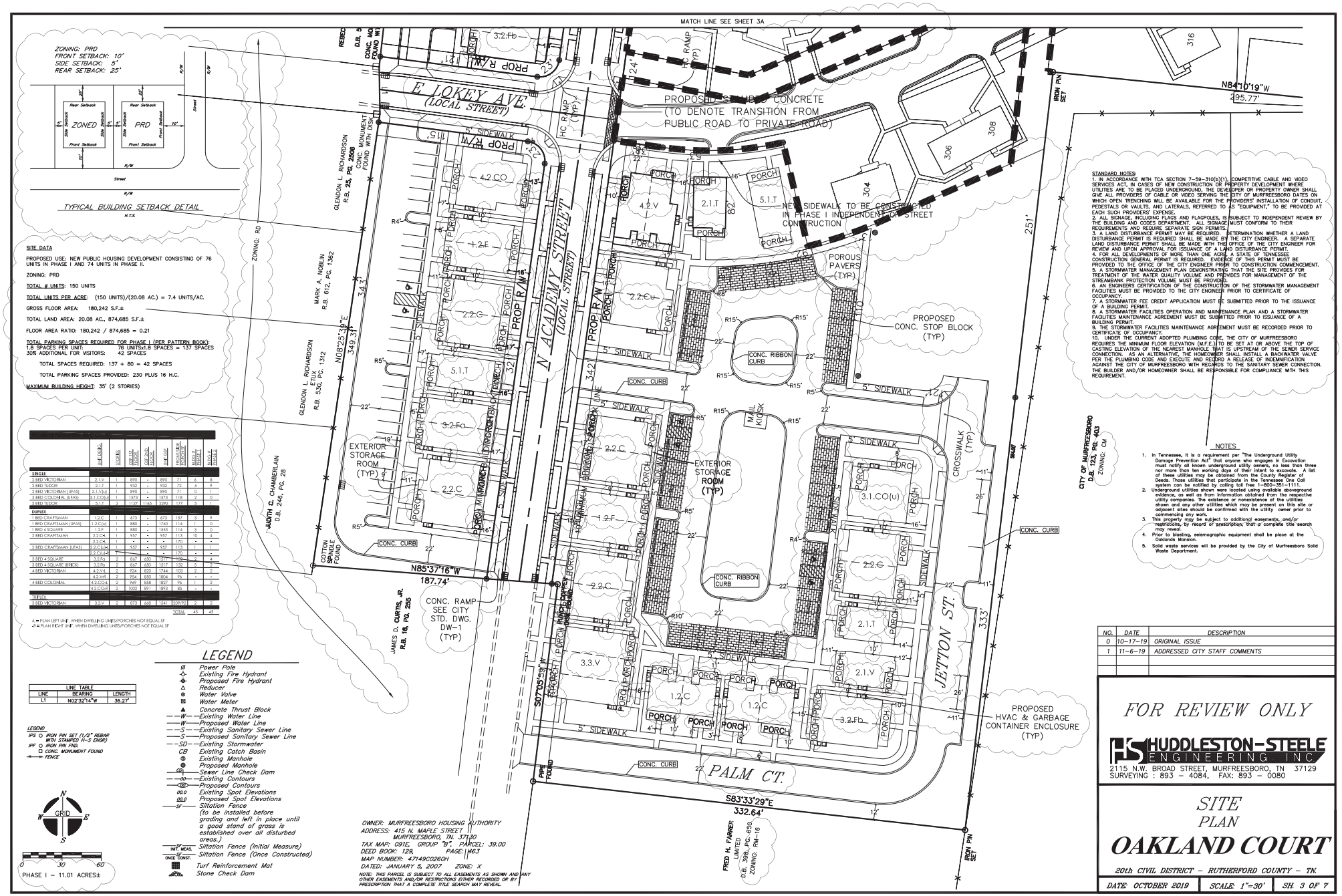
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

MASTER PLAN

OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=50' | SH. 1 OF 7



	1ST FLOOR	LEVELS	2ND FLOOR	GARAGE	1ST FLOOR	HANDICAP PARKING	BEDS	BLDG # (MAX)
SINGLE								
2 BED VICTORIAN	2.1.V	1	890	-	890	71	6	4
2 BED TUDOR	2.1.T	1	932	-	932	72	4	9
2 BED VICTORIAN (LIFAS)	2.1.V(u)	1	890	-	890	71	0	1
2 BED COLONIAL (LIFAS)	3.1.CO(u)	1	1573	-	1573	118	2	0
4 BED TUDOR	5.1.T	2	1172	1165	2290	177	3	1
DUPLEX								
1 BED CRAFTSMAN	1.2.C	1	679	-	679	159	3	4
1 BED CRAFTSMAN (LIFAS)	1.2.C(u)	1	880	-	1760	114	1	6
1 BED 4 SQUARE	1.2.F	1	880	-	1553	114	3	6
2 BED CRAFTSMAN	2.2.C-L	1	957	-	957	113	10	4
	2.2.C-L	1	-	-	-	170	-	-
2 BED CRAFTSMAN (LIFAS)	2.2.C(u)-L	1	957	-	957	113	1	1
	2.2.C(u)-R	1	-	-	-	170	-	-
2 BED 4 SQUARE	3.2.Fa	2	867	650	1517	199	2	1
2 BED 4 SQUARE (BRICK)	3.2.Fb	2	867	650	1517	132	5	2
3 BED VICTORIAN	4.2.V-L	2	924	820	1744	103	2	-
	4.2.V-R	2	954	850	1804	96	-	-
4 BED COLONIAL	4.2.CO-L	2	969	858	1827	96	1	-
	4.2.CO-R	2	1002	891	1893	85	-	-
TRIPLEX								
3 BED VICTORIAN	3.3.V	2	873	668	1541	209/92	2	2
						TOTAL	45	45

-L = PLAN LEFT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF
-R = PLAN RIGHT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED H-S ENGR)
IPF ○ IRON PIN FND.
□ CONC. MONUMENT FOUND
-x-x- FENCE

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
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- 00 Existing Contours
- 00 Proposed Contours
- 00.0 Existing Spot Elevations
- 00.0 Proposed Spot Elevations
- SF Siltation Fence (to be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INIT. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

GRID
0 30 60
PHASE I – 11.01 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 146.3
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X
NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

STANDARD NOTES:
1. IN ACCORDANCE WITH TCA SECTION 7-59-310(b)(1), COMPETITIVE CABLE AND VIDEO SERVICES ACT, IN CASES OF NEW CONSTRUCTION OR PROPERTY DEVELOPMENT WHERE UTILITIES ARE TO BE PLACED UNDERGROUND, THE DEVELOPER OR PROPERTY OWNER SHALL GIVE ALL PROVIDERS OF CABLE OR VIDEO SERVING THE CITY OF MURFREESBORO DATES ON WHICH OPEN TRENCHING WILL BE AVAILABLE FOR THE PROVIDERS' INSTALLATION OF CONDUIT, PEDESTALS OR VAULTS, AND LATERALS, REFERRED TO AS "EQUIPMENT," TO BE PROVIDED AT EACH SUCH PROVIDERS' EXPENSE.
2. ALL SIGNAGE, INCLUDING FLAGS AND FLAGPOLES, IS SUBJECT TO INDEPENDENT REVIEW BY THE BUILDING AND CODES DEPARTMENT. ALL SIGNAGE MUST CONFORM TO THEIR REQUIREMENTS AND REQUIRE SEPARATE SIGN PERMITS.
3. A LAND DISTURBANCE PERMIT MAY BE REQUIRED. DETERMINATION WHETHER A LAND DISTURBANCE PERMIT IS REQUIRED SHALL BE MADE BY THE CITY ENGINEER. A SEPARATE LAND DISTURBANCE PERMIT SHALL BE MADE WITH THE OFFICE OF THE CITY ENGINEER FOR REVIEW AND UPON APPROVAL FOR ISSUANCE OF A LAND DISTURBANCE PERMIT.
4. FOR ALL DEVELOPMENTS OF MORE THAN ONE ACRE, A STATE OF TENNESSEE CONSTRUCTION GENERAL PERMIT IS REQUIRED. EVIDENCE OF THIS PERMIT MUST BE PROVIDED TO THE OFFICE OF THE CITY ENGINEER PRIOR TO CONSTRUCTION COMMENCEMENT.
5. A STORMWATER MANAGEMENT PLAN DEMONSTRATING THAT THE SITE PROVIDES FOR TREATMENT OF THE WATER QUALITY VOLUME AND PROVIDES FOR MANAGEMENT OF THE STREAMBANK PROTECTION VOLUME MUST BE PROVIDED.
6. AN ENGINEERS CERTIFICATION OF THE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES MUST BE PROVIDED TO THE CITY ENGINEER PRIOR TO CERTIFICATE OF OCCUPANCY.
7. A STORMWATER FEE CREDIT APPLICATION MUST BE SUBMITTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
8. A STORMWATER FACILITIES OPERATION AND MAINTENANCE PLAN AND A STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE SUBMITTED PRIOR TO ISSUANCE OF A BUILDING PERMIT.
9. THE STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE RECORDED PRIOR TO CERTIFICATE OF OCCUPANCY.
10. UNDER THE CURRENT ADOPTED PLUMBING CODE, THE CITY OF MURFREESBORO REQUIRES THE MINIMUM FLOOR ELEVATION (M.F.E.) TO BE SET AT OR ABOVE THE TOP OF CASTING ELEVATION OF THE NEAREST MANHOLE THAT IS UPSTREAM OF THE SEWER SERVICE CONNECTION. AS AN ALTERNATIVE, THE HOMEOWNER SHALL INSTALL A BACKWATER VALVE PER THE PLUMBING CODE AND EXECUTE AND RECORD A RELEASE OF INDEMNIFICATION AGAINST THE CITY OF MURFREESBORO WITH REGARDS TO THE SANITARY SEWER CONNECTION. THE BUILDER AND/OR HOMEOWNER SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THIS REQUIREMENT.

NOTES
1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, that a complete title search may reveal.
4. Prior to blasting, seismographic equipment shall be place at the Oaklands Mansion.
5. Solid waste services will be provided by the City of Murfreesboro Solid Waste Department.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

SITE PLAN
OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=30' | SH. 3 OF 7



	UNIT MODEL	STORIES	GARAGE FOOTPRINT	FOOTPRINT	LIVING AREA	FOOTPRINT/ UNIT/DWELLING	BEDS/ UNIT	BEDS/ BUILDING
SINGLE								
2 BED VICTORIAN	2.1.V	1	890	-	890	71	6	8
2 BED T/DOOR	2.1.T	1	930	-	930	72	4	9
2 BED VICTORIAN (UFAS)	2.1.V(u)	1	890	-	890	71	0	1
3 BED COLONIAL (UFAS)	3.1.CO(u)	1	1,573	-	1,573	118	3	0
5 BED T/DOOR	5.1.T	2	1127	1165	2292	173	5	5
DUPLEX								
1 BED CRAFTSMAN	1.2.C	1	673	-	673	157	3	9
1 BED CRAFTSMAN (UFAS)	1.2.C(u)	1	880	-	1760	114	1	0
1 BED 4 SQUARE	1.2.F	1	880	-	1,553	114	3	0
2 BED CRAFTSMAN	2.2.C-L	1	957	-	957	113	10	4
	2.2.C-R	1	-	-	-	170	-	-
2 BED CRAFTSMAN (UFAS)	2.2.C(u)-L	1	957	-	957	113	1	1
	2.2.C(u)-R	1	-	-	-	170	-	-
3 BED 4 SQUARE	3.3.Fd	2	867	650	1517	132	2	4
3 BED 4 SQUARE (BRCD)	3.2.Fb	2	867	650	1517	132	5	2
4 BED VICTORIAN	4.2.V-L	2	924	820	1744	103	2	2
	4.2.V-R	2	954	850	1804	96	-	-
4 BED COLONIAL	4.2.CO-L	2	969	858	1827	96	1	2
	4.2.CO-R	2	1002	891	1893	85	-	-
DUPLEX								
3 BED VICTORIAN	3.3.V	2	873	668	1541	209/72	2	2
						TOTAL	45	45

-L = PLAN LEFT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF
-R = PLAN RIGHT UNIT, WHEN DWELLING UNITS/PORCHES NOT EQUAL SF

LEGEND

- Power Pole
- Existing Fire Hydrant
- Proposed Fire Hydrant
- Reducer
- Water Valve
- Water Meter
- Concrete Thrust Block
- —W— Existing Water Line
- —W— Proposed Water Line
- —S— Existing Sanitary Sewer Line
- —S— Proposed Sanitary Sewer Line
- —SD— Existing Stormwater
- CB Existing Catch Basin
- Existing Manhole
- Proposed Manhole
- Sewer Line Check Dam
- —00— Existing Contours
- —00— Proposed Contours
- 00.0 Existing Spot Elevations
- 00.0 Proposed Spot Elevations
- —sf— Siltation Fence (To be installed before grading and left in place until a good stand of grass is established over all disturbed areas.)
- SF INIT. MEAS. Siltation Fence (Initial Measure)
- SF ONCE CONST. Siltation Fence (Once Constructed)
- Turf Reinforcement Mat
- Stone Check Dam

LINE TABLE		
LINE	BEARING	LENGTH
L1	N02°32'14"W	36.27'

LEGEND
- IPS ○ IRON PIN SET (1/2" REBAR WITH STAMPED "H-S ENGR)
- IPF ○ IRON PIN FND.
- □ CONC. MONUMENT FOUND
- x—x FENCE

GRID N W E S

0 30 60

PHASE I – 11.01 ACRES±

OWNER: MURFREESBORO HOUSING AUTHORITY
ADDRESS: 415 N. MAPLE STREET
MURFREESBORO, TN. 37130
TAX MAP: 091E, GROUP "B", PARCEL: 39.00
DEED BOOK: 129, PAGE: 463
MAP NUMBER: 47149C0260H
DATED: JANUARY 5, 2007 ZONE: X

NOTE: THIS PARCEL IS SUBJECT TO ALL EASEMENTS AS SHOWN AND ANY OTHER EASEMENTS AND/OR RESTRICTIONS EITHER RECORDED OR BY PRESCRIPTION THAT A COMPLETE TITLE SEARCH MAY REVEAL.

STANDARD NOTES:
1. IN ACCORDANCE WITH TCA SECTION 7-59-310(b)(1), COMPETITIVE CABLE AND VIDEO SERVICES ACT, IN CASES OF NEW CONSTRUCTION OR PROPERTY DEVELOPMENT WHERE UTILITIES ARE TO BE PLACED UNDERGROUND, THE DEVELOPER OR PROPERTY OWNER SHALL GIVE ALL PROVIDERS OF CABLE OR VIDEO SERVICE THE CITY OF MURFREESBORO DATES ON WHICH OPEN TRENCHING WILL BE AVAILABLE FOR THE PROVIDERS' INSTALLATION OF CONDUIT, PEDESTALS OR VAULTS, AND LATERALS, REFERRED TO AS "EQUIPMENT," TO BE PROVIDED AT EACH SUCH PROVIDERS' EXPENSE.
2. ALL SIGNAGE, INCLUDING FLAGS AND FLAGPOLES, IS SUBJECT TO INDEPENDENT REVIEW BY THE BUILDING AND CODES DEPARTMENT. ALL SIGNAGE MUST CONFORM TO THEIR REQUIREMENTS AND REQUIRE SEPARATE SIGN PERMITS.
3. A LAND DISTURBANCE PERMIT MAY BE REQUIRED. DETERMINATION WHETHER A LAND DISTURBANCE PERMIT IS REQUIRED SHALL BE MADE BY THE CITY ENGINEER. A SEPARATE LAND DISTURBANCE PERMIT SHALL BE MADE WITH THE OFFICE OF THE CITY ENGINEER FOR REVIEW AND UPON APPROVAL FOR ISSUANCE OF A LAND DISTURBANCE PERMIT.
4. FOR ALL DEVELOPMENTS OF MORE THAN ONE ACRE, A STATE OF TENNESSEE CONSTRUCTION GENERAL PERMIT IS REQUIRED. EVIDENCE OF THIS PERMIT MUST BE PROVIDED TO THE OFFICE OF THE CITY ENGINEER PRIOR TO CONSTRUCTION COMMENCEMENT.
5. A STORMWATER MANAGEMENT PLAN DEMONSTRATING THAT THE SITE PROVIDES FOR TREATMENT OF THE WATER QUALITY VOLUME AND PROVIDES FOR MANAGEMENT OF THE STREAMBANK PROTECTION VOLUME MUST BE PROVIDED.
6. AN ENGINEERS CERTIFICATION OF THE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES MUST BE PROVIDED TO THE CITY ENGINEER PRIOR TO CERTIFICATE OF OCCUPANCY.
7. A STORMWATER FEE CREDIT APPLICATION MUST BE SUBMITTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
8. A STORMWATER FACILITIES OPERATION AND MAINTENANCE PLAN AND A STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE SUBMITTED PRIOR TO ISSUANCE OF A BUILDING PERMIT.
9. THE STORMWATER FACILITIES MAINTENANCE AGREEMENT MUST BE RECORDED PRIOR TO CERTIFICATE OF OCCUPANCY.
10. UNDER THE CURRENT ADOPTED PLUMBING CODE, THE CITY OF MURFREESBORO REQUIRES THE MINIMUM FLOOR ELEVATION (M.F.E.) TO BE SET AT OR ABOVE THE TOP OF CURBING ELEVATION OF THE NEAREST MANHOLE THAT IS UPSTREAM OF THE SEWER SERVICE CONNECTION. AS AN ALTERNATIVE, THE HOMEOWNER SHALL INSTALL A BACKWATER VALVE PER THE PLUMBING CODE AND EXECUTE AND RECORD A RELEASE OF INDEMNIFICATION AGAINST THE CITY OF MURFREESBORO WITH REGARDS TO THE SANITARY SEWER CONNECTION. THE BUILDER AND/OR HOMEOWNER SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THIS REQUIREMENT.

NOTES
1. In Tennessee, it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in Excavation must notify all known underground utility owners, no less than three nor more than ten working days of their intent to excavate. A list of these utilities may be obtained from the County Register of Deeds. Those utilities that participate in the Tennessee One Call system can be notified by calling toll free 1-800-351-1111.
2. Underground utilities shown were located using available aboveground evidence, as well as from information obtained from the respective utility companies. The existence or nonexistence of the utilities shown and any other utilities which may be present on this site or adjacent sites should be confirmed with the utility owner prior to commencing any work.
3. This property may be subject to additional easements, and/or restrictions, by record or prescription, and a complete title search may reveal.
4. Prior to blasting, seismographic equipment shall be place at the Oaklands Mansion.
5. Solid waste services will be provided by the City of Murfreesboro Solid Waste Department.

NO.	DATE	DESCRIPTION
0	10-17-19	ORIGINAL ISSUE
1	11-6-19	ADDRESSED CITY STAFF COMMENTS

FOR REVIEW ONLY

HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 – 4084, FAX: 893 – 0080

SITE PLAN
OAKLAND COURT

20th CIVIL DISTRICT – RUTHERFORD COUNTY – TN.

DATE: OCTOBER 2019 | SCALE: 1"=30' | SH. 3A OF 7

Appendix C:

Site Photographs



View of the subject property



View of the subject property



View of the subject property



View of the subject property



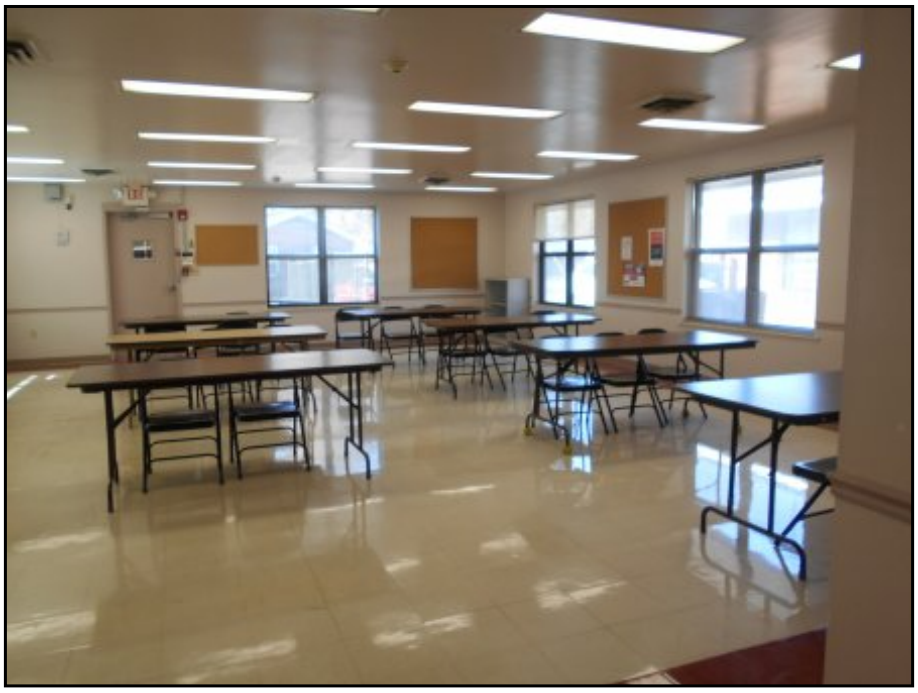
View of the subject property



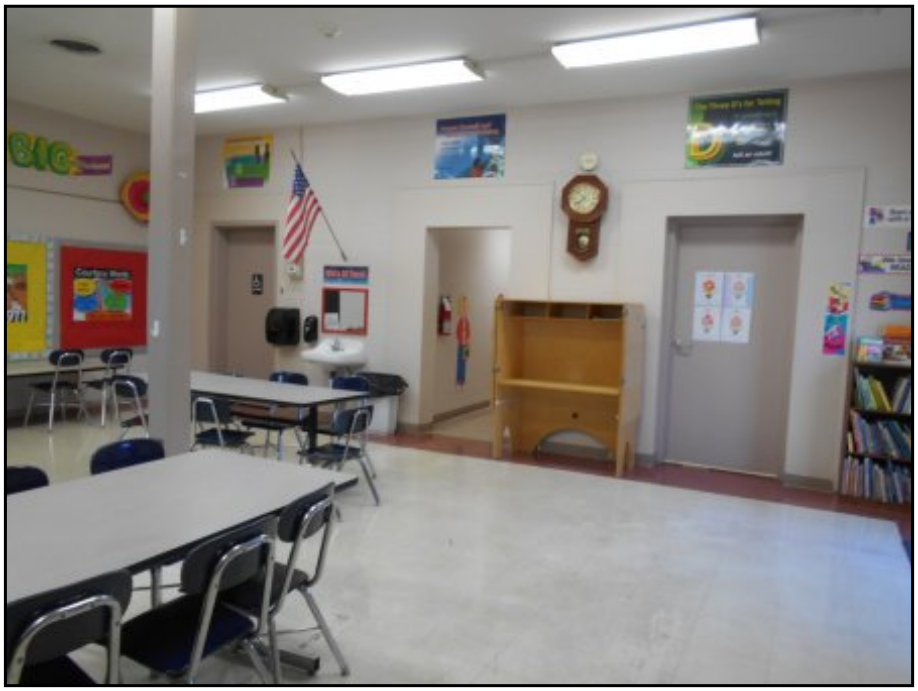
View of the subject property



View of the on-site community center and pre-school



View of a communal area



View of the pre-school area



View of the playground



View of the basketball court



View of a typical resident unit kitchen



View of a typical resident unit living room



View of a typical resident unit bathroom



View of a typical resident unit bedroom



View of a typical resident unit storage area



View of a typical pole-mounted electrical transformer



View of the on-site natural gas pipeline equipment



View of the northern adjacent single-family residential



View of the northern adjacent single-family residential



View of the northern adjacent undeveloped land



View of the eastern adjacent undeveloped wooded land



View of the eastern adjacent Oaklands Mansion



View of the eastern adjacent Oakland Park



View of the southern adjacent multi-family residential



View of the western adjacent single-family residential



View of the western adjacent single-family residential

Appendix D:

Historical Research Documents

Oakland Court Development

East Lokey Avenue

Murfreesboro, TN 37130

Inquiry Number: 5874329.3

November 19, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/19/19

Site Name:

Oakland Court Development
East Lokey Avenue
Murfreesboro, TN 37130
EDR Inquiry # 5874329.3

Client Name:

Dominion Environmental Group, Inc
201 Wylderose Drive
Midlothian, VA 23113
Contact: Samantha Holcombe

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # F382-4C1A-A627

PO # Team 3 Team 3

Project 2019-1705

Maps Provided:

1945
1931
1924
1914

Sanborn® Library search results

Certification #: F382-4C1A-A627

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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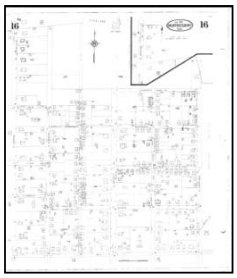
Sanborn Sheet Key

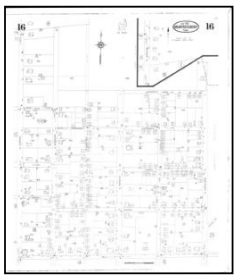
This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1945 Source Sheets



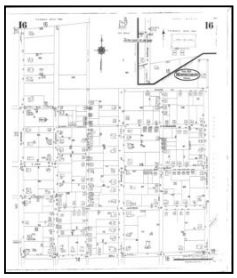
Volume 1, Sheet 16
1945

1931 Source Sheets



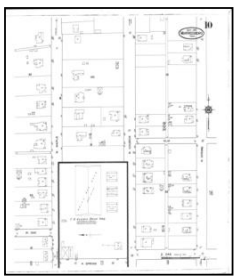
Volume 1, Sheet 16
1931

1924 Source Sheets

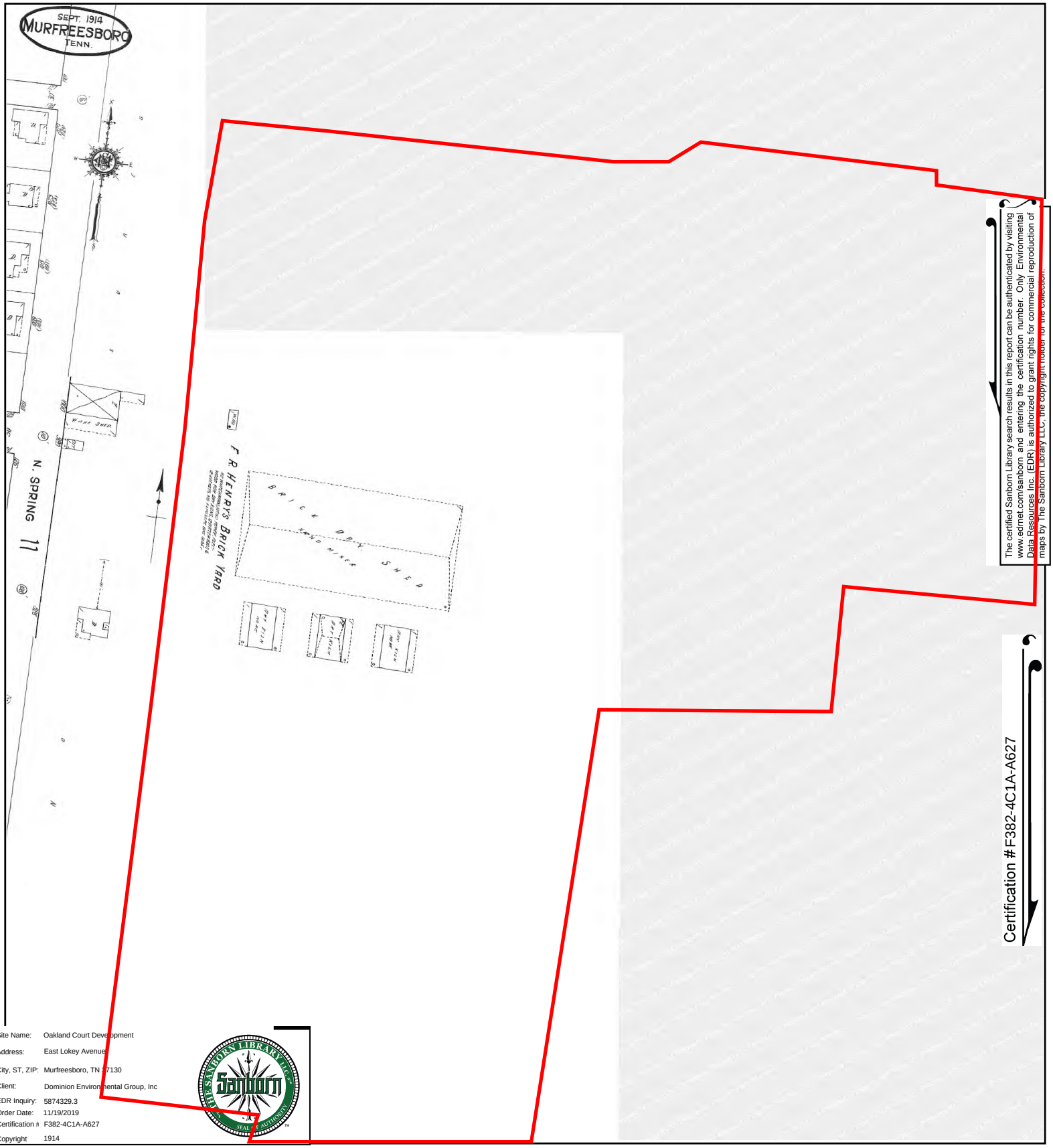


Volume 1, Sheet 16
1924

1914 Source Sheets



Volume 1, Sheet 10
1914



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Certification #F382-4C1A-A627

Site Name: Oakland Court Development
Address: East Lokey Avenue
City, ST, ZIP: Murfreesboro, TN 37130
Client: Dominion Environmental Group, Inc
EDR Inquiry: 5874329.3
Order Date: 11/19/2019
Certification #: F382-4C1A-A627
Copyright: 1914

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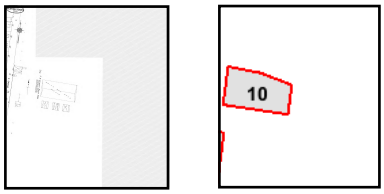

Volume 1, Sheet 10

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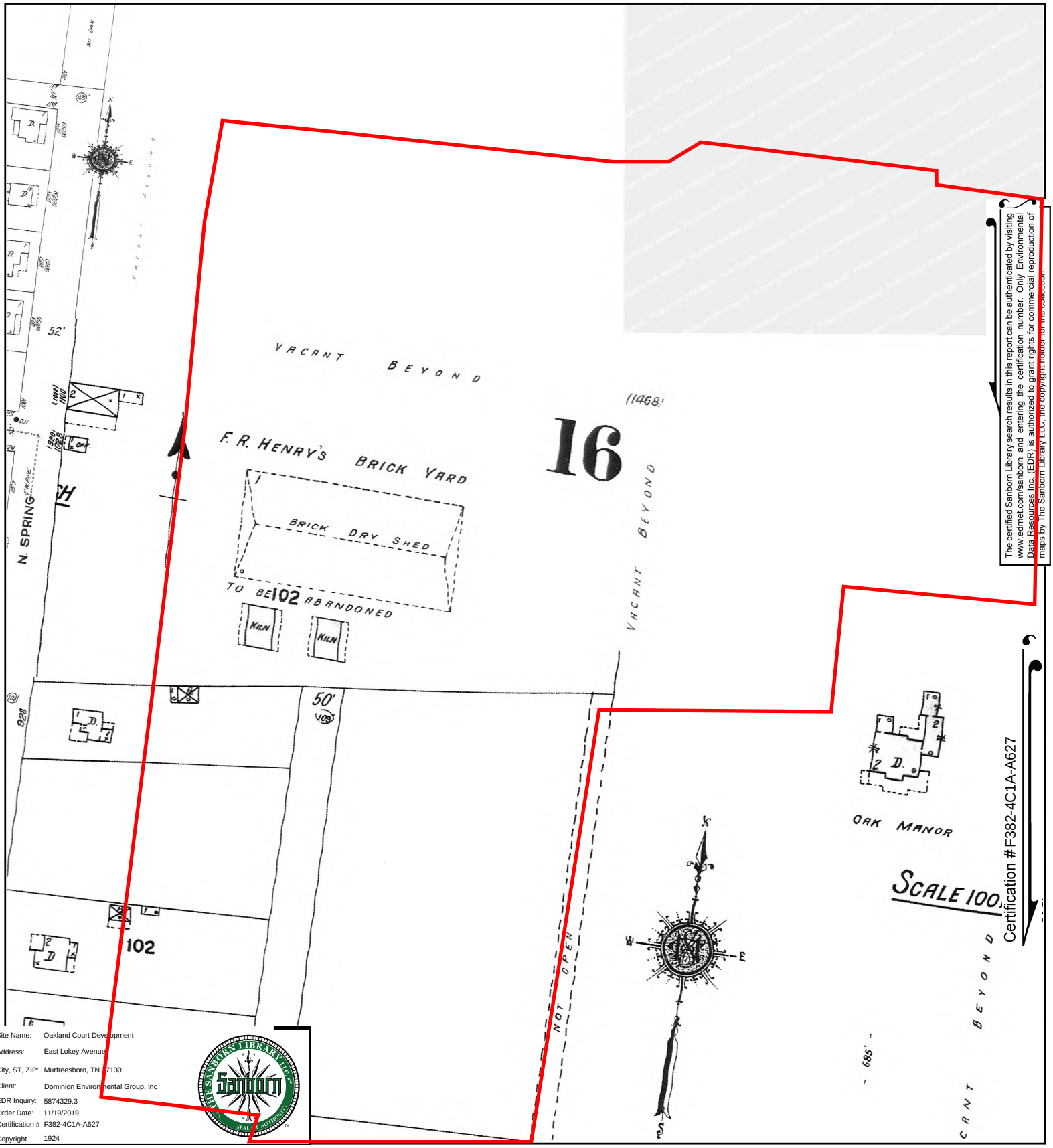

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Site Name:	Oakland Court Development
Address:	East Lokey Avenue
City, ST, ZIP:	Murfreesboro, TN 37130
Client:	Dominion Environmental Group, Inc
EDR Inquiry:	5874329.3
Order Date:	11/19/2019
Certification #:	F382-4C1A-A627
Copyright	1924

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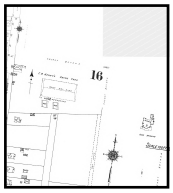

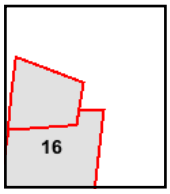

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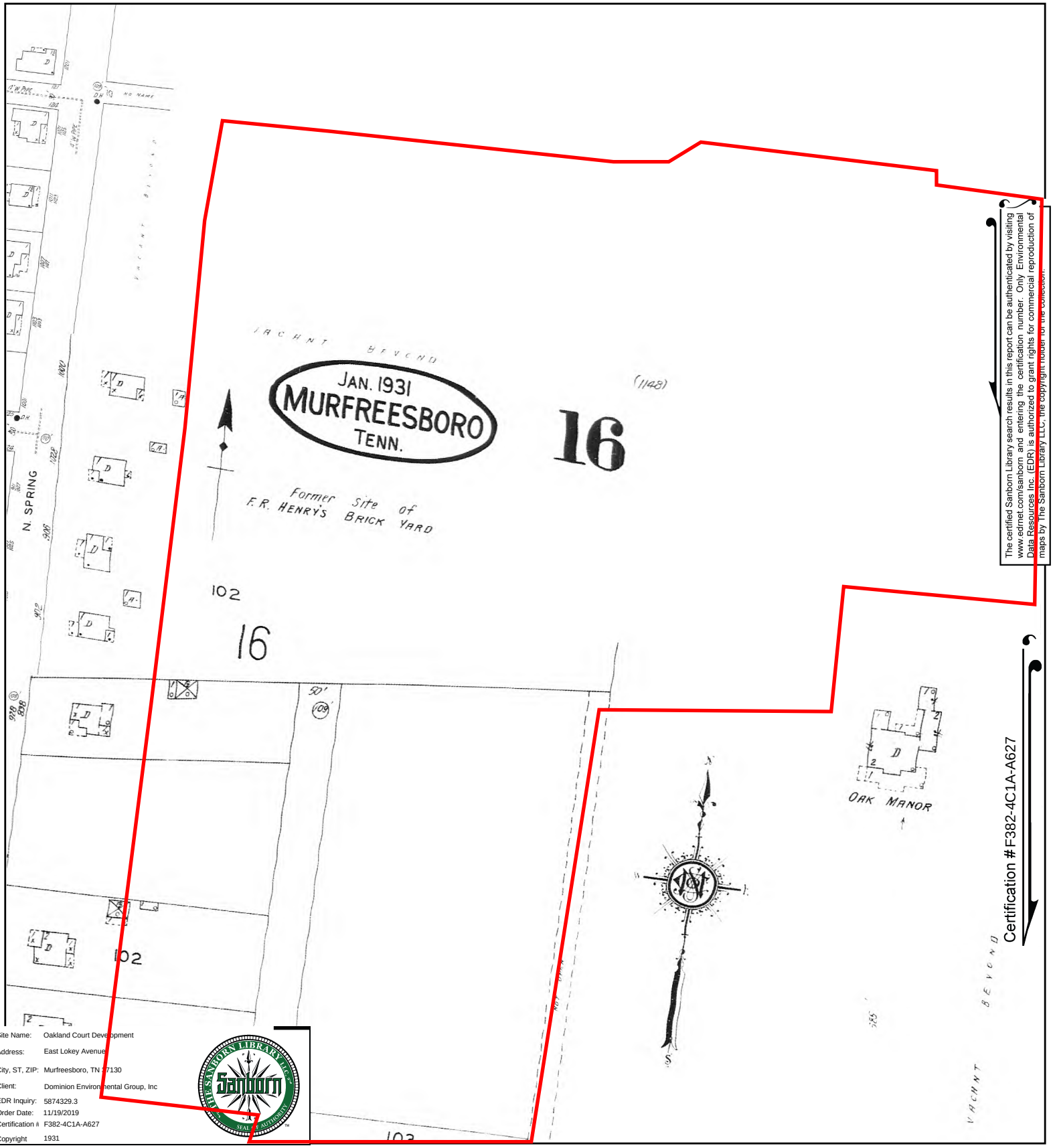

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Site Name:	Oakland Court Development
Address:	East Lokey Avenue
City, ST, ZIP:	Murfreesboro, TN 37130
Client:	Dominion Environmental Group, Inc
EDR Inquiry:	5874329.3
Order Date:	11/19/2019
Certification #:	F382-4C1A-A627
Copyright	1931

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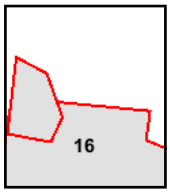

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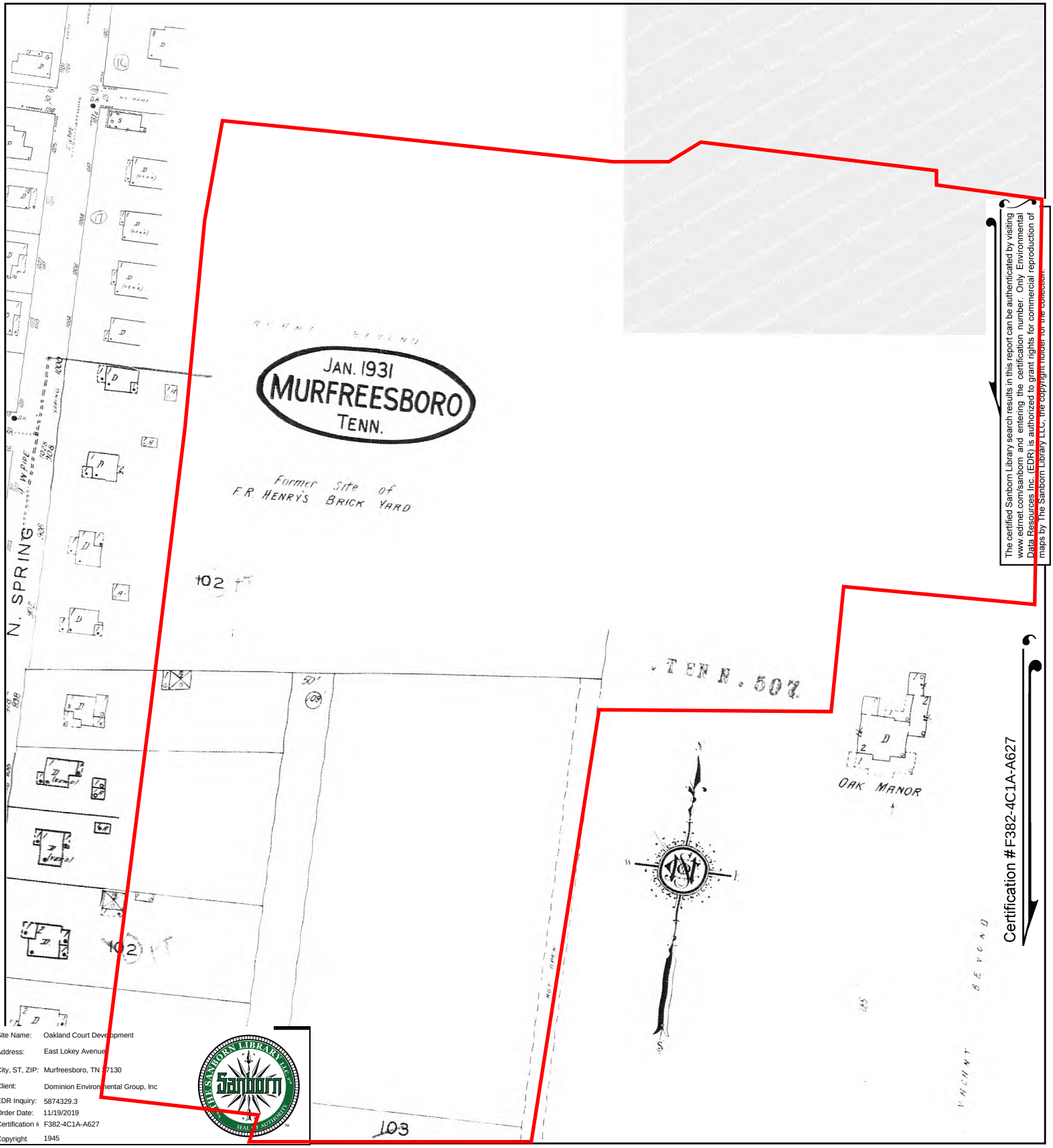

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Site Name: Oakland Court Development
Address: East Lokey Avenue
City, ST, ZIP: Murfreesboro, TN 37130
Client: Dominion Environmental Group, Inc
EDR Inquiry: 5874329.3
Order Date: 11/19/2019
Certification #: F382-4C1A-A627
Copyright: 1945

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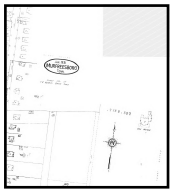

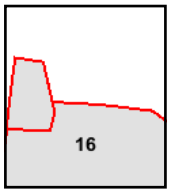

Oakland Court Development

East Lokey Avenue

Murfreesboro, TN 37130

Inquiry Number: 5874329.5

November 18, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

11/18/19

Site Name:

Oakland Court Development
East Lokey Avenue
Murfreesboro, TN 37130
EDR Inquiry # 5874329.5

Client Name:

Dominion Environmental Group, Inc
201 Wylderose Drive
Midlothian, VA 23113
Contact: Samantha Holcombe

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Search Results:

Year	*Scale*	*Details*	*Source*
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2008	1"=500'	Flight Year: 2008	USDA/NAIP
1997	1"=500'	Acquisition Date: March 21, 1997	USGS/DOQQ
1992	1"=500'	Flight Date: February 21, 1992	USGS
1987	1"=500'	Flight Date: June 05, 1987	USDA
1975	1"=500'	Flight Date: March 01, 1975	USGS
1953	1"=500'	Flight Date: October 23, 1953	USGS
1950	1"=500'	Flight Date: February 23, 1950	USGS

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INQUIRY #: 5874329.5

YEAR: 1950

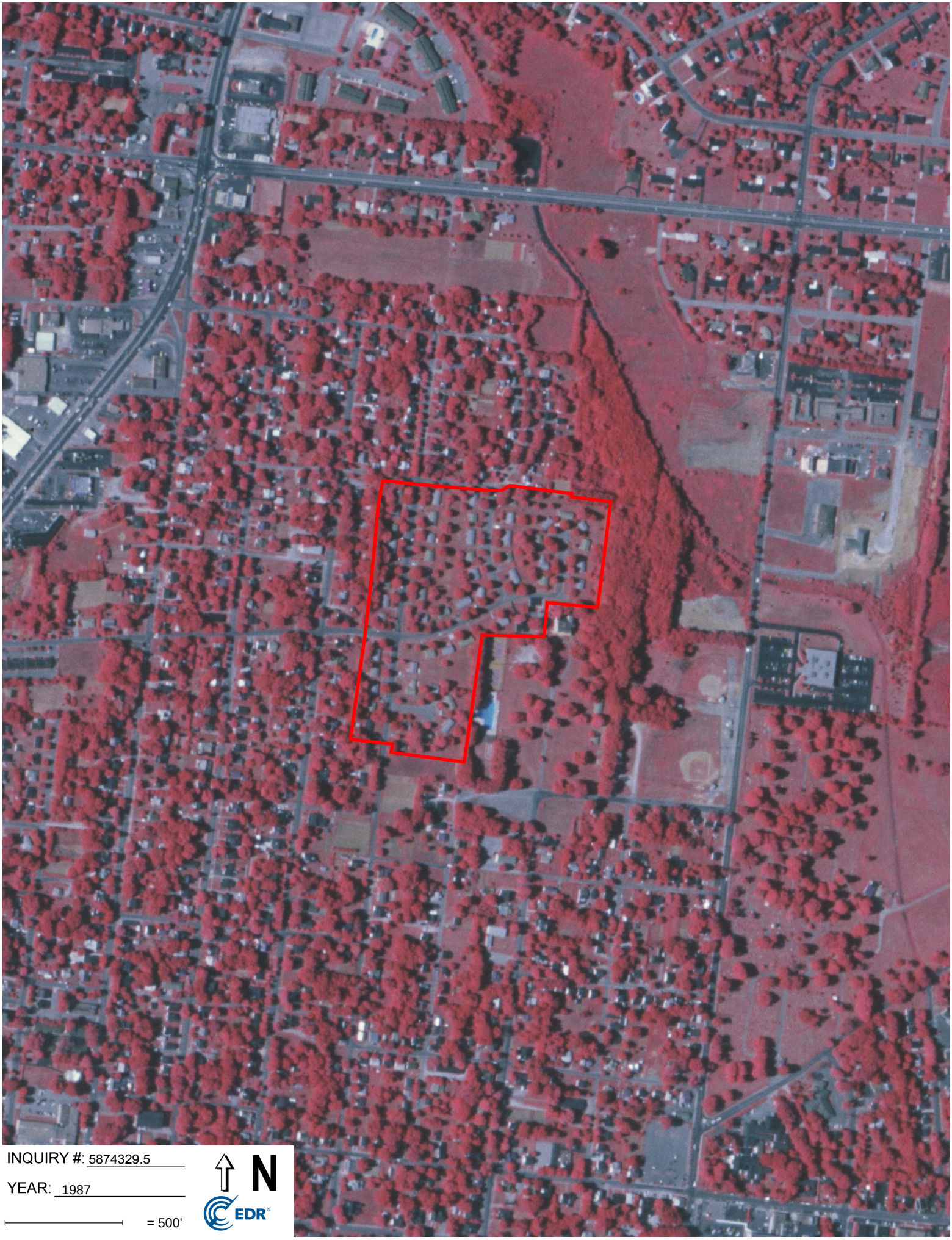
= 500'

N

EDR


INQUIRY #: 5874329.5
YEAR: 1953
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 1975
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 1987
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 1992
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 1997
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 2008
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 5874329.5
YEAR: 2016
= 500'
N
EDR


2018
Google Earth
1000 ft
N

Appendix E:

Regulatory Records Documentation

Oakland Court Development
East Lokey Avenue
Murfreesboro, TN 37130

Inquiry Number: 5874329.2s
November 18, 2019

FirstSearch Report

Search Summary Report

TARGET SITE **EAST LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Sel	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	Y	0	0	0	0	0	0	0
NPL Delisted	Y	0	0	0	0	-	0	0
CERCLIS	Y	0	0	0	0	-	0	0
NFRAP	Y	0	0	0	0	-	0	0
RCRA COR ACT	Y	0	0	0	0	0	0	0
RCRA TSD	Y	0	0	0	0	-	0	0
RCRA GEN	Y	0	0	0	-	-	0	0
Federal IC / EC	Y	0	0	-	-	-	0	0
ERNS	Y	0	0	-	-	-	0	0
State/Tribal NPL	Y	0	0	0	0	0	0	0
State/Tribal SWL	Y	0	0	0	0	0	0	0
State/Tribal LTANKS	Y	0	0	1	6	-	1	8
State/Tribal Tanks	Y	0	0	1	-	-	0	1
State/Tribal IC / EC	Y	0	0	-	-	-	0	0
State/Tribal VCP	Y	0	0	0	0	-	0	0
ST/Tribal Brownfields	Y	0	0	0	0	-	0	0
US Brownfields	Y	0	0	0	0	-	0	0
Other SWF	Y	0	0	0	0	-	0	0
Other Tanks	Y	0	0	-	-	-	0	0
Local Land Records	Y	0	0	-	-	-	0	0
Spills	Y	0	0	-	-	-	0	0
Other	Y	0	0	3	-	-	0	3
	- Totals --	0	0	5	6	0	1	12

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6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Search Summary Report

TARGET SITE: **EAST LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	NPL	07/19/2019	1.000	0	0	0	0	0	0	0
	Proposed NPL	07/19/2019	1.000	0	0	0	0	0	0	0
	NPL LIENS	10/15/1991	TP	0	-	-	-	-	0	0
NPL Delisted	Delisted NPL	07/19/2019	0.500	0	0	0	0	-	0	0
CERCLIS	FEDERAL FACILITY	04/03/2019	0.500	0	0	0	0	-	0	0
	SEMS	07/19/2019	0.500	0	0	0	0	-	0	0
NFRAP	SEMS-ARCHIVE	07/19/2019	0.500	0	0	0	0	-	0	0
RCRA COR ACT	CORRACTS	06/24/2019	1.000	0	0	0	0	0	0	0
RCRA TSD	RCRA-TSDF	06/24/2019	0.500	0	0	0	0	-	0	0
RCRA GEN	RCRA-LQG	06/24/2019	0.250	0	0	0	-	-	0	0
	RCRA-SQG	06/24/2019	0.250	0	0	0	-	-	0	0
	RCRA-VSQG	06/24/2019	0.250	0	0	0	-	-	0	0
Federal IC / EC	LUCIS	08/13/2019	0.125	0	0	-	-	-	0	0
	US ENG CONTROLS	08/19/2019	0.125	0	0	-	-	-	0	0
	US INST CONTROL	08/19/2019	0.125	0	0	-	-	-	0	0
ERNS	ERNS	09/09/2019	0.125	0	0	-	-	-	0	0
State/Tribal NPL	SHWS	07/01/2019	1.000	0	0	0	0	0	0	0
State/Tribal SWL	SWF/LF	09/09/2019	0.750	0	0	0	0	0	0	0
State/Tribal LTANKS	LUST	08/01/2019	0.500	0	0	1	6	-	1	8
	INDIAN LUST	04/11/2019	0.500	0	0	0	0	-	0	0
State/Tribal Tanks	FEMA UST	08/27/2019	0.250	0	0	0	-	-	0	0
	UST	08/01/2019	0.250	0	0	1	-	-	0	1
	AST	10/01/1999	1.000	0	0	0	0	0	0	0
	INDIAN UST	04/11/2019	0.250	0	0	0	-	-	0	0
State/Tribal IC / EC	ENG CONTROLS	08/12/2019	0.125	0	0	-	-	-	0	0
	INST CONTROL	08/12/2019	0.125	0	0	-	-	-	0	0
State/Tribal VCP	VCP	07/01/2019	0.500	0	0	0	0	-	0	0

Search Summary Report

TARGET SITE: **EAST LOKEY AVENUE**
MURFREESBORO, TN 37130

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
	INDIAN VCP	07/27/2015	0.500	0	0	0	0	-	0	0
ST/Tribal Brownfields	BROWNFIELDS	06/27/2016	0.500	0	0	0	0	-	0	0
US Brownfields	US BROWNFIELDS	06/03/2019	0.500	0	0	0	0	-	0	0
Other SWF	INDIAN ODI	12/31/1998	0.500	0	0	0	0	-	0	0
	ODI	06/30/1985	0.500	0	0	0	0	-	0	0
Other Tanks	HIST UST	08/01/2019	0.125	0	0	-	-	-	0	0
Local Land Records	LIENS	03/10/2015	0.125	0	0	-	-	-	0	0
Spills	SPILLS	01/05/2015	0.125	0	0	-	-	-	0	0
Other	RCRA NonGen / NLR	06/24/2019	0.250	0	0	3	-	-	0	3
	RADINFO	07/01/2019	TP	0	-	-	-	-	0	0
	INDIAN RESERV	12/31/2014	1.000	0	0	0	0	0	0	0
	LEAD SMELTERS	07/19/2019	TP	0	-	-	-	-	0	0
	AIRS	07/29/2019	TP	0	-	-	-	-	0	0
	DRYCLEANERS	05/01/2019	0.250	0	0	0	-	-	0	0
	LEAD	02/25/2019	TP	0	-	-	-	-	0	0
	- Totals --			0	0	5	6	0	1	12

Site Information Report

Request Date: NOVEMBER 18, 2019
Search Type: COORD
Request Name: SAMANTHA HOLCOMBE
Job Number: TEAM 3 TEAM 3

Target Site: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	86.386945	86.3869450 - 86˚ 23' 13.00''	Easting:	555354.8
Latitude:	35.856382	35.8563820 - 35˚ 51' 22.97''	Northing:	3967992.8
Elevation:	618 ft. above sea level		Zone:	Zone 16

Demographics

Sites: 11 **Non-Geocoded:** 1 **Population:** N/A

RADON

Federal EPA Radon Zone for RUTHERFORD County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 37130

Number of sites tested: 14

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.829 pCi/L	86%	14%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal Area Radon Information for RUTHERFORD COUNTY, TN

Number of sites tested: 19

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.500 pCi/L	89%	11%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	17.500 pCi/L	0%	100%	0%

Site Information Report

RADON

State Database: TN Radon

Radon Test Results

County	Total Sites	Avg	Max	<4 pCi/L	4-10 pCi/L	10-20 pCi/L	20-50 pCi/L	50-100 pCi/L	>100 pCi/L
RUTHERFORD	55	2.2	23.5	49	5	0	1	0	0

Target Site Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

Sites Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
1	RCRA NonGen / NLR --TND077644755	MURFREESBORO POLICE HEADQUARTE	1004 N HIGHLAND AVE MURFREESBORO, TN 37130	0.14 East	- 20	1
2	RCRA NonGen / NLR --TND987787116	MAPCO #3162	1251 CHURCH MURFREESBORO, TN 37130	0.14 NNW	- 7	2
3	RCRA NonGen / NLR --TND065829749	ELROD H MORTON	626 NORTH MAPLE STREET MURFREESBORO, TN 37130	0.24 SW	- 22	4
A4	UST --Permanently Out of Use --3/27/2015 --6/10/1991 --6/20/1994 --5750137	SWIFTY STATION NO. 259	1110 MEMORIAL BLVD. MURFREESBORO, TN 37129	0.25 WNW	- 11	6
A5	LUST --5750137 --8 Case Closed --1a Completed Tank Closure	SWIFTY SERVICE STATION #259	1110 MEMORIAL BLVD MURFREESBORO, TN 37110	0.25 WNW	- 11	13
6	LUST --5750101 --8 Case Closed	MAPCO EXPRESS #3407	1320 MEMORIAL BLVD. MURFREESBORO, TN 37130	0.27 NNW	- 6	16
7	LUST --5750380 --1a Completed Tank Closure	UNITED CITIES GAS CO	334 LOKEY AVENUE MURFREESBORO, TN 37130	0.30 West	- 18	17
8	LUST --5750133 --1a Completed Tank Closure	JONES CAR WASH	1103 MEMORIAL BLVD. MURFREESBORO, TN 37130	0.31 WNW	- 15	18
9	LUST --5750303 --1a Completed Tank Closure	WT'S MARKET	925 SOUTHWEST MEMORIAL BL MURFREESBORO, TN 37130	0.36 West	- 24	19
10	LUST --5750168 --8 Case Closed	MURFREESBORO HOUSING AUTHORITY	415 NORTH MAPLE ST. MURFREESBORO, TN 37130	0.40 SW	- 7	20

Sites Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
11	LUST --5750333 --8 Case Closed	EZ MART	728 MEMORIAL BLVD. MURFREESBORO, TN 37130	0.47 WSW	- 16	23

Sites Summary Report

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

TOTAL: 12 GEOCODED: 11 NON GEOCODED: 1

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
	LUST --5750110 --8 Case Closed	HOOVER, INC	TWIN OAK DR MURFEESBORO, TN 37130	NON GC	N/A	N/A

Database Descriptions

NPL: NPL National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices. NPL - National Priority List Proposed NPL - Proposed National Priority List Sites. NPL LIENS - Federal Superfund Liens.

NPL Delisted: Delisted NPL The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Delisted NPL - National Priority List Deletions

CERCLIS: FEDERAL FACILITY A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities. FEDERAL FACILITY - Federal Facility Site Information listing SEMS - Superfund Enterprise Management System.

NFRAP: SEMS-ARCHIVE SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site. SEMS-ARCHIVE - Superfund Enterprise Management System Archive

RCRA COR ACT: CORRACTS CORRACTS identifies hazardous waste handlers with RCRA corrective action activity. CORRACTS - Corrective Action Report

RCRA TSD: RCRA-TSDF RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste. RCRA-TSDF - RCRA - Treatment, Storage and Disposal

RCRA GEN: RCRA-LQG RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. RCRA-LQG - RCRA - Large Quantity Generators RCRA-SQG - RCRA - Small Quantity Generators. RCRA-VSQG - RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators).

Federal IC / EC: LUCIS LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties. LUCIS - Land Use Control Information System US ENG CONTROLS - Engineering Controls Sites List. US INST CONTROL - Sites with Institutional Controls.

ERNS: ERNS Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances. ERNS - Emergency Response Notification System

Database Descriptions

State/Tribal NPL: SHWS "Inactive hazardous substance sites that constitute an imminent, substantial danger" is an inactive hazardous substance site where there is a threat of danger to the public health, safety, or environment which is both real and presently existing. Such situations may include, but are not limited to one or more of the following: an immediate action is necessary to minimize an ongoing threat to the public health or pollution of the environment, an inactive hazardous substance site where there is an active release, where direct access to the hazardous substance is not controlled, or where incompatible hazardous substances are found in close proximity. Also known as Promulgated Sites List. SHWS - Promulgated Sites

State/Tribal SWL: SWF/LF Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. SWF/LF - Solid Waste Disposal Facilities SWM COMPLAINTS - Solid Waste Management Complaints.

State/Tribal LTANKS: LUST A listing of leaking underground storage tank site locations. LUST - Fund Eligible Leaking Underground Storage Tank Sites INDIAN LUST R5 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R4 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R9 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R6 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R7 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R8 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R1 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R10 - Leaking Underground Storage Tanks on Indian Land.

State/Tribal Tanks: FEMA UST A listing of all FEMA owned underground storage tanks. FEMA UST - Underground Storage Tank Listing UST - Facility and Tank Report. AST - Aboveground Storage Tanks. INDIAN UST R6 - Underground Storage Tanks on Indian Land. INDIAN UST R5 - Underground Storage Tanks on Indian Land. INDIAN UST R4 - Underground Storage Tanks on Indian Land. INDIAN UST R1 - Underground Storage Tanks on Indian Land. INDIAN UST R10 - Underground Storage Tanks on Indian Land. INDIAN UST R9 - Underground Storage Tanks on Indian Land. INDIAN UST R7 - Underground Storage Tanks on Indian Land. INDIAN UST R8 - Underground Storage Tanks on Indian Land.

State/Tribal IC / EC: ENG CONTROLS Sites that have engineering controls. ENG CONTROLS - Engineering Control Sites INST CONTROL - Institutional Control Sites.

State/Tribal VCP: INDIAN VCP R7 VCP - Voluntary Cleanup, Oversight and Assistance Program Sites. INDIAN VCP R1 - Voluntary Cleanup Priority Listing. A listing of voluntary cleanup priority sites located on Indian Land located in Region 1. INDIAN VCP R1 - Voluntary Cleanup Priority Listing

ST/Tribal Brownfields: BROWNFIELDS Brownfields sites included on the Superfund Voluntary Cleanup, Oversight & Assistance Program listing. BROWNFIELDS - Superfund VOAP Listing

US Brownfields: US BROWNFIELDS Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs. US BROWNFIELDS - A Listing of Brownfields Sites

Other SWF: INDIAN ODI Location of open dumps on Indian land. INDIAN ODI - Report on the Status of Open Dumps on Indian Lands ODI - Open Dump Inventory.

Database Descriptions

Other Haz Sites: PFAS A listing of sites where PFAS has been detected to date. PFAS - PFAS Contamination Site Location Listing

Other Tanks: HIST UST This database is no longer updated by the agency. It contains records and detail fields that the current UST database does not. HIST UST - Underground Storage Tank Database

Local Land Records: LIENS A listing of sites with environmental liens information. LIENS - Liens Information

Spills: SPILLS A listing of spills locations. SPILLS - State Spills

Other: RCRA NonGen / NLR RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste. RCRA NonGen / NLR - RCRA - Non Generators / No Longer Regulated FEDLAND - Federal and Indian Lands. PRP - Potentially Responsible Parties. RADINFO - Radiation Information Database. BRS - Biennial Reporting System. INDIAN RESERV - Indian Reservations. LEAD SMELTER 1 - Lead Smelter Sites. LEAD SMELTER 2 - Lead Smelter Sites. US AIRS (AFS) - Aerometric Information Retrieval System Facility Subsystem (AFS). US AIRS MINOR - Air Facility System Data. AIRS - Listing of Permitted Sources. DRYCLEANERS - Registered Facilities List. LEAD CERT - Lead Safe Housing Registry. MINES MRDS - Mineral Resources Data System.

Database Sources

NPL: EPA

Updated Quarterly

NPL Delisted: EPA

Updated Quarterly

CERCLIS: Environmental Protection Agency

Varies

NFRAP: EPA

Updated Quarterly

RCRA COR ACT: EPA

Updated Quarterly

RCRA TSD: Environmental Protection Agency

Updated Quarterly

RCRA GEN: Environmental Protection Agency

Updated Quarterly

Federal IC / EC: Department of the Navy

Varies

ERNS: National Response Center, United States Coast Guard

Updated Quarterly

State/Tribal NPL: Department of Environment & Conservation

Updated Semi-Annually

State/Tribal SWL: Department of Environment and Conservation

Updated Quarterly

State/Tribal LTANKS: Department of Environment and Conservation

Updated Semi-Annually

State/Tribal Tanks: FEMA

Varies

Database Sources

State/Tribal IC / EC: Department of Environment & Conservation

Updated Semi-Annually

State/Tribal VCP: EPA, Region 7

Varies

ST/Tribal Brownfields: Department of Environment & Conservation

Varies

US Brownfields: Environmental Protection Agency

Updated Semi-Annually

Other SWF: Environmental Protection Agency

Varies

Other Haz Sites: Department of Environment & Conservation

Varies

Other Tanks: Department of Environment & Conservation

No Update Planned

Local Land Records: Department of Environment & Conservation

Varies

Spills: Department of Environment & Conservation

Varies

Other: Environmental Protection Agency

Updated Quarterly

Street Name Report for Streets near the Target Property

Target Property: EAST LOKEY AVENUE
MURFREESBORO, TN 37130

JOB: TEAM 3 TEAM 3

Street Name	Dist/Dir	Street Name	Dist/Dir
Christy Ct	0.11 East		
Courtland St	0.17 South		
E Hayes Ave	0.09 WNW		
E Hembree St	0.10 North		
E Lokey Ave	0.03 SSE		
E McKnight Dr	0.23 North		
Elm St	0.18 SSW		
Evergreen St	0.22 South		
Jetton Dr	0.06 ENE		
Lee St	0.23 SE		
N Academy St	0.02 West		
N Church St	0.16 West		
N Maney Ave	0.18 SSE		
N Maple St	0.23 West		
N Spring St	0.09 West		
Palm Ct	0.09 South		
Roberts St	0.18 SSE		
W Hayes Ave	0.16 WNW		
W Hembree St	0.19 NW		
W Lokey Ave	0.17 West		

Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: NPL, RCRACOR, STATES Sites

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Indian Reservations BIA

National Priority List Sites

EDR Reference Code (EDR Internal use only): 5874329.2s
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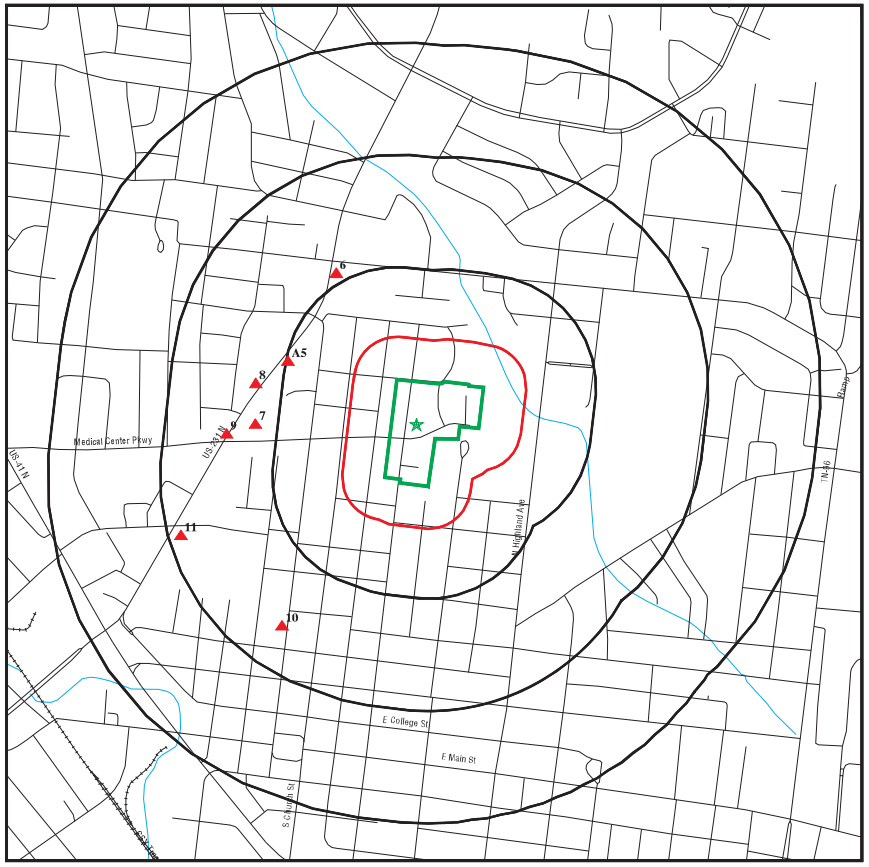
19-11-18.17502s50.Mon

Environmental FirstSearch

0.750 Mile Radius

ASTM MAP: CERCLIS, RCRATSD, LUST, SWL

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Indian Reservations BIA

National Priority List Sites

EDR Reference Code (EDR Internal use only): 5874329.2s
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19-11-18.17502s22.Mon

Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Indian Reservations BIA

National Priority List Sites

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Environmental FirstSearch

0.25 Mile Radius

Non ASTM Map, Spills, FINDS

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 35.856382 Longitude: 86.386945)

▲ Identified Sites

Sensitive Receptors

Indian Reservations BIA

National Priority List Sites

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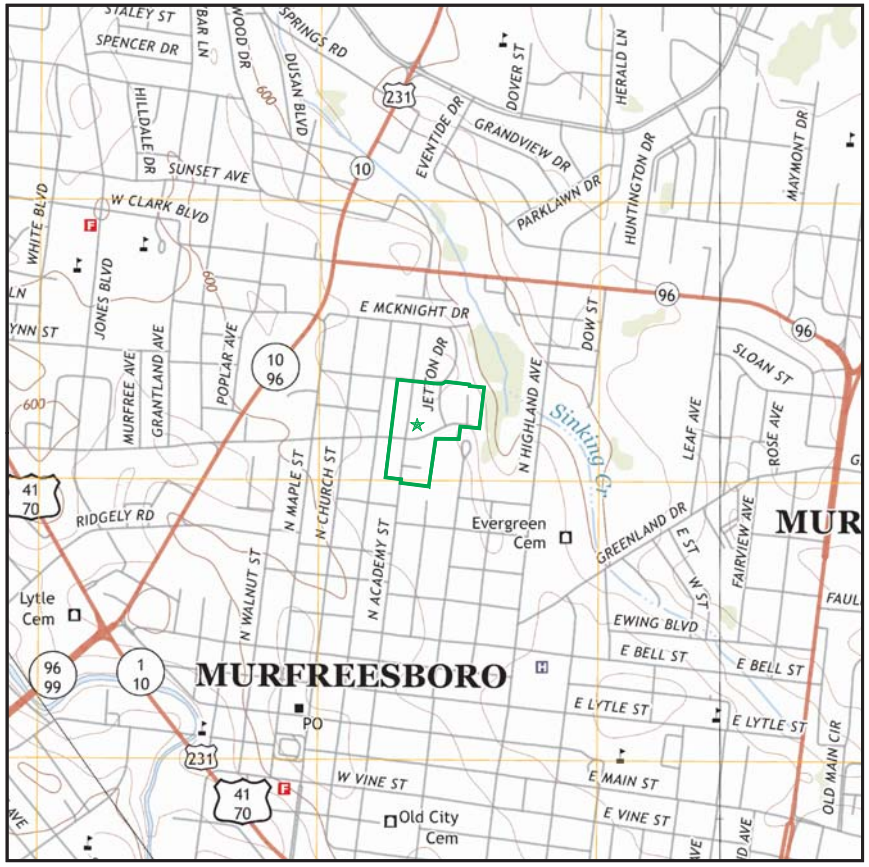
Site location Map

Topo: 0.75 Mile Radius

EAST LOKEY AVENUE MURFREESBORO, TN 37130



Map Image Position: TP
Map Reference Code & Name: 5944176 Murfreesboro
Map State(s): TN
Version Date: 2013
Map Image Position: SE
Map Reference Code & Name: 5944164 Dillton
Map State(s): TN
Version Date: 2013

Non-Invasive Tier 1 Vapor Encroachment Screening - Database Review Worksheet
Oakland Court Development

						Up-gradient		Down-gradient		Cross-gradient		Notes
					Area of Concern	COC : .33 mile	Petroleum: .10 mile	COC : .02 mile	Petroleum: .02 mile	COC: .07 mile	Petroleum: .03 mile	
State Standard Environmental Record Sources												
Database	**Site Name**	**Site Address**	**Distance**	**Direction**	**Gradient**							
LUST	SWIFTY SERVICE STATION #259	1110 MEMORIAL BLVD	0.246	WNW	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
LUST	BP STA 24433-03	1320 MEMORIAL BLVD	0.273	NNW	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
LUST	UNITED CITIES GAS CO	334 LOKEY AVE	0.301	W	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
LUST	JONES CAR WASH	1103 MEMORIAL BLVD.	0.310	WNW	cross-gradient	N	N	N	N	N	N	The record source is associated with petroleum contamination and is outside of the area of concern and is therefore not a VEC.
Federal Standard Environmental Record Sources												
Database	**Site Name**	**Site Address**	**Distance**	**Direction**	**Gradient**							
There are no Federal Environmental Record Sources identified within the Area of Concern.												
Sites outside of the maximum area of concern (1/3 mile) for both State and Federal Environmental Record Sources are not a VEC and are therefore not inlcuded in this worksheet.												
Total Sources of Vapor Encroachment						**0**	**0**	**0**	**0**	**0**	**0**	

Appendix F:

Interview Documentation

USER QUESTIONNAIRE

SUBJECT PROPERTY NAME:	Oakland Court
SUBJECT PROPERTY ADDRESS:	N. Academy St; Fetton; Polar Ct; Christy Court

QUESTION	YES	NO	UNK
1. Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?		✓	
2. Did a search of recorded land title records (or judicial records where appropriate) identify any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?	✓		
3. Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?		✓	
4. Are you aware of any pending, threatened, or past litigation and/or administrative proceedings relevant to hazardous substances or petroleum products, in, on or from the subject property?		✓	
5. Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?		✓	
6. Do you know the past uses of the property?	✓		
7. Do you know specific chemicals that are present or once were present at the property?		✓	
8. Do you know of spills or other chemical releases that have taken place at the property?		✓	
9. Do you know of environmental cleanups that have taken place at the property?		✓	
10. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of releases at the property?		✓	
11. Is the property or has the property been used as a gasoline station, motor repair facility, commercial printing, dry cleaners, photo developing, landfill, industrial use, waste treatment or disposal facility?		✓	
12. Are you aware of fill dirt that has been brought onto the subject property that originated from a contaminated site or that is of an unknown origin?		✓	
13. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the subject property?		✓	
14. Are there existing or proposed stationary tanks containing explosive or fire-prone materials of 100 gallons or larger on the site or nearby the site?		✓	
15. Are there monitoring wells at the subject property?		✓	
16a. Does the purchase price being paid for this property reasonably reflect the fair market value of the property?		N/A	
16b. If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?		N/A.	
17. Has a title search been performed? If yes, please attach.	✓		
18. What type of property transaction is being performed? i.e. sale, purchase, transfer, refinance?			
19. If you are also the current landowner, in what year did you purchase the subject property?		1958	

Please return to D3G: fax 804-358-3003 or mail it to 201 Wyldrose Drive, Midlothian, VA 23113

PRINT NAME	SIGNATURE	DATE
L. Thomas Rowe	L. T. Rowe	11/20/19

TITLE/COMPANY	YEARS WITH PROPERTY
	6

FILE NO. TN936-100-T

American Land Title Association Commitment for Title Insurance

Issued By Old Republic National Title Insurance Company

NOTICE

IMPORTANT—READ CAREFULLY THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANYS OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and the Commitment Conditions, Old Republic National Title Insurance Company, a Florida Corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I—Requirements have not been met within 6 months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

Issued through the Office of:
RENO & CAVANAUGH PLLC
424 CHURCH STREET, SUITE 2910
NASHVILLE, TN 37219
Phone: 615-866-3222

Authorized Signature

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
A Stock Company
400 Second Avenue South, Minneapolis, Minnesota 55401
(612) 371-1111

By _____ President

Attest _____ Secretary

SCHEDULE A

ORDER NO.: **TN936-100-T**
(Oakland Court)

1. Commitment Date: May 30, 2019 at 8:00 a.m.

2. Policy to be issued:

   (a) 2006 ALTA OWNER'S POLICY

   PROPOSED INSURED:

   To Be Determined

   PROPOSED POLICY AMOUNT: **$ To Be Determined**

   (b) 2006 ALTA LOAN POLICY

   PROPOSED INSURED:

   PROPOSED POLICY AMOUNT: **$**

3. The estate or interest in Land described or referred to in this Commitment is FEE SIMPLE.

4. Title to the estate or interest in the Land is, at the Commitment Date, vested in:

   Murfreesboro Housing Authority

5. The land is described as follows:

   Being approximately 9.7 acres out of the following described tract.

   Land in the 13th Civil District of Rutherford County, Tennessee, being more particularly described as follows:

   Beginning at a concrete monument in the south margin of Hembree Street, said point being north 89 degrees 32 minutes E, 150.0' from the east margin of Spring Street; thence north 89 degrees 32 minutes E, 1,019.5' with said south margin of Hembree Street and said margin of Hembree Street if extended to a concrete monument in the north line of H.C. Elrod, ET UX; thence, due south,

475.7' severing the lands of H.C. Elrod, ET UX, to a concrete monument; thence, due west, 217.7' to a concrete monument; thence due south 150.5' to concrete monument; thence, due west, 296.7' to a concrete monument, said point being the northeast corner of John Degeorge, ET UX, and a corner to H.C. Elrod, ET UX; thence, south 0 degrees 47 minutes W, 584.0' to a concrete monument in the west line of H.C. Elrod, ET UX, said point being the southeast corner of John Degeorge and the Northeast corner of Sam Degeorge; thence north 89 degrees 18 minutes W, 329.9' to a concrete monument in the east margin of Academy Street, said point being the southwest corner of John Degeorge, ET UX and the northwest corner of Sam Degeorge; thence, north 1 degree 17 minutes E, 151.3' with said east margin of Academy Street to a concrete monument in the west line of John Degeorge; thence, south 88 degrees 37 minutes W, 187.5' to a concrete monument in the south line of W.L. Clark, et al, trustees; thence, north 2 degrees 36 minutes E, 349.45' to a concrete monument in the land of George W. Mullins, said point being north 2 degrees 36 minutes E, 73.85' from the northwest corner of C.C. Lewis, ET UX, and the northeast corner of Mrs. James P. McLaine; thence, north 89 degrees 17 minutes W, 35.48' severing the lands of George W. Mullins to a concrete monument at the beginning of a curve to the left; thence, westerly with a curve to the left having a radius of 182.00' and a central angle of 8 degrees 18 minutes, 26.36' to a concrete monument; thence, south 82 degrees 25 minutes W, 85.70' to a concrete monument at the beginning of a curve to the left; thence, southwesterly with a curve to the left having a radius of 13.58' and a central angle of 81 degrees 16 minutes, 19.26' to a concrete monument in the east margin of Spring St.; thence, north 1 degree 09 minutes E, 73.8' with said margin of Spring Street to a concrete monument in the west line of H.O. Edmondson, said point being north 1 degree 09 minutes E, 35.6' from the northeast corner of George W. Mullins, ET UX; thence, southeasterly, severing the lands of H.O. Edmondson with a curve to the left having a radius of 22.09' and a central angle of 98 degrees 44 minutes, 38.07' to a concrete monument; thence, north 82 degrees 25 minutes E, 66.16' to a concrete monument at the beginning of a curve to the right; thence, easterly with a curve to the right having a radius of 218.00' and a central angle of 8 degrees 18 minutes, 31.58' to a concrete monument; thence, south 89 degrees 17 minutes east, 30.24' to a concrete monument in the west line of Ellis Peyton, ET UX; thence, north 0 degrees 43 minutes E, 666.1' to the point of beginning, containing 880,998 square feet or 20.22 acres more or less.

Included in the above described tract of land, but specifically excluded therefrom is that portion of the property conveyed to the City of Murfreesboro in Deed Book 150, page 508, in the Register's Office for Rutherford County, Tennessee.

Being part of the same property conveyed to the Murfreesboro Housing Authority by deeds of record in Deed Book 129, page 357, Deed Book 129, page 359, Deed Book 129, page 361, Deed Book 129, page 463, Deed Book 129, page 499, Deed Book 130, page 266, and Deed Book 130, page 269, all as of record in the Register's Office for Rutherford County, Tennessee.

SCHEDULE B - I

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

2. Pay the agreed amount for the estate or interest to be insured.

3. Pay the premiums, fees, and charges for the Policy to the Company.

4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be property authorized, executed, delivered, and recorded in the Public Records.

5. The Company must be provided proof of the existence of the corporation, and proof that the sale or mortgage has been authorized by the board of directors of the corporation.

6. Current Survey to properly describe the subject property.

7. Final Order from a Court of competent jurisdiction vesting title to the property described in Schedule A, herein to Murfreesboro Housing Authority.

SCHEDULE B - II

EXCEPTIONS

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I - Requirements are met.

2. Any discrepancies, conflicts, easements, boundary line disputes, any shortages in area, encroachments or protrusions, or overlapping of improvements which would be disclosed by an inspection and accurate survey of the premises

3. Rights and claims of parties in possession.

4. Mechanics', Contractors', or Materialmen's liens and lien claims, if any, where no notice thereof appears on record.

5. Any facts, rights, interests or claims which are not shown by the public record, but which could be ascertained by an inspection of the land or by making inquiry of person(s) in possession thereof.

6. Liens, encumbrances, or claims thereof, which are not shown by the public record.

7. General or special taxes and assessments required to be paid in the year 2019 and subsequent years for Map-Par. 091E-B-039.00.

   Rutherford County taxes for 2018, Map-Par. 091E-B-039.00, $EXEMPT.

   City of Murfreesboro taxes for 2018, Map-Par. 091E-B-039.00, $EXEMPT.

   Taxes for 2019 for the above referenced parcel, which on January 1st thereof was exempt, but is subject to assessment to a non-exempt taxpayer on the pro-rata basis for such year pursuant to the provisions of Tennessee Code Annotated Sections 67-5-201.

   If improvements are completed after January 1 of any year the law requires supplemental assessments for the year in which improvements are completed, as defined by Statute. The Company assumes no liability for taxes assessed by correction pursuant to the provisions of

Tennessee Code Annotated sections 67-5-603, et seq.

8. Memorandum of Lease Agreement by and between First Security Leasing, Inc., Lessor, and Murfreesboro Housing Authority, Lessee, and filed for record in Record Book 907, page 2204, in said Register's Office.

9. Declaration of Trust filed for record in TD Book A108, page 141, in said Register's Office.

10. Declaration of Trust filed for record in TD Book A723, page 825, in said Register's Office.

11. Declaration of Trust filed for record in TD Book A750, page 499, in said Register's Office.

12. Declaration of Trust filed for record in Record Book 1083, page 1917, in said Register's Office.

13. Rights of parties in possession as tenants only, under unrecorded residential leases.

14. No insurance is afforded as to the acreage or square footage contained in the insured property.

COMMITMENT CONDITIONS

1. **DEFINITIONS**
   (a) "Knowledge " or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
   (b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
   (c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
   (d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
   (e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
   (f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
   (g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
   (h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company 's liability and obligation is limited by and this Commitment is not valid without:
   (a) the Notice;
   (b) the Commitment to Issue Policy;
   (c) the Commitment Conditions;
   (d) Schedule A;
   (e) Schedule B, Part I —Requirements;
   (f) Schedule B, Part II—Exceptions; and
   (g) a counter-signature by the Company or its issuing agent that may be in electronic form.

4. **COMPANY'S RIGHT TO AMEND**
   The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. **LIMITATIONS OF LIABILITY**
   (a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
      (i) comply with the Schedule B, Part I —Requirements;
      (ii) eliminate, with the Company 's written consent, any Schedule B, Part II —Exceptions; or
      (iii) acquire the Title or create the Mortgage covered by this Commitment.
   (b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.

(c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
(d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
(e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I— Requirements have been met to the satisfaction of the Company.
(g) In any event, the Company 's liability is limited by the terms and provisions of the Policy.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

(a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
(b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
(c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
(e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

This Instrument Prepared by
And when filed to be returned to:
Joseph W. Gregory, Esq.
Jack Nelson Jones Fink
Jiles & Gregory, P.A.
425 W. Capitol Ave., Suite 3400
Little Rock, AR 72201

MEMORANDUM OF LEASE AGREEMENT

THIS MEMORANDUM OF LEASE AGREEMENT ("Agreement") is made as of the 25th day of March, 2009, by and between **First Security Leasing, Inc.**, an Arkansas corporation (hereinafter referred to as "Lessor") and **Murfreesboro Housing Authority, Murfreesboro, Tennessee**, a Tennessee housing authority and public instrumentality created under Chapter 20 of Title 13 of the Tennessee Code Annotated (hereinafter referred to as "Lessee") with respect to that certain Lease Purchase Agreement dated as of March 25, 2009 (the "Lease Agreement") between Lessor and Lessee.

WHEREAS, Lessor and Lessee entered into the Lease Agreement.

NOW THEREFORE, Lessor and Lessee make this memorandum of Lease Agreement as follows:

1. Parties. The Lessor in the Lease Agreement is First Security Leasing, Inc, an Arkansas corporation. The Lessee in the Lease Agreement is **Murfreesboro Housing Authority, Murfreesboro, Tennessee**, a Tennessee housing authority and public instrumentality created under Chapter 20 of Title 13 of the Tennessee Code Annotated.

2. Equipment and Premises. Lessor has leased to Lessee certain energy savings equipment ("Equipment") installed in the Lessee's housing facilities known as Franklin Heights, [Highland Heights] Oakland Court and Mercury Court and also at its Administrative Office as part of an Energy Services Agreement dated February 5, 2009 (the "Energy Services Agreement") with respect to the acquisition, installation and construction of energy savings measures and equipment with Honeywell International, Inc., more particularly described in the legal description set forth in Exhibit A, attached hereto and incorporated herein by this reference for all purposes as if set forth herein word. Lessor maintains title to the Equipment until the Lease Agreement has been fully repaid.

3. Term. The term ("Term") of the Lease Agreement shall commence on March 25, 2009 and continue for twenty (20) years, ending on March 25, 2029, unless sooner terminated as herein provided.

4. Pledged Revenues. Lessee has pledged all funds legally available to Lessee from any source for the purpose of paying the Rental Payments and Additional Payments

due under the Lease Agreement, including but not limited to (i) those various payments and subsidies received by Lessee from the United States Department of Housing and Urban Development, its successors and assigns, from time to time, that can be legally applied for such purpose, including but not limited to (a) any additional public housing operating subsidy or add on subsidy each year of the Energy Services Agreement to amortize the cost of this Agreement for the Equipment and other direct costs related to the Energy Services Agreement or (b) in the form of resident paid utility incentives under the consumption reduction incentive or (c) any other applicable incentive or subsidy program offered to the Lessee under 24 CFR 990.185, and (ii) all amounts payable by the Vendor to the Lessee, for any reason, pursuant to the Energy Services Agreement, including specifically but not limited to "Energy Savings Guarantee" as the same term is defined in the Energy Services Agreement and as is set forth in Schedules B and D to the Energy Services Agreement.

[Remainder of Page Left Intentionally Blank]

IN WITNESS WHEREOF, Lessor and Lessee have caused this Memorandum of Lease Agreement to be duly executed and sealed as of the day and year set forth above.

MURFREESBORO HOUSING AUTHORITY
("Lessee")

By: Patsy N. Noland

Its: Executive Director

IN WITNESS WHEREOF, Lessor and Lessee have caused this Memorandum of Lease Agreement to be duly executed and sealed as of the day and year set forth above.

FIRST SECURITY LEASING, INC.
("Lessor")

By:
Its: CEO

ACKNOWLEDGMENT

STATE OF TENNESSEE }
} ss
COUNTY OF RUTHERFORD }

On this day, before me, a Notary Public duly commissioned, qualified and acting, within and for said County and State, personally appeared Patsy Noland, to me personally well known, and stated that she, as such, being authorized so to do, had executed the foregoing instrument for the consideration, uses and purposes therein contained and in the capacities there stated, by signing the name of the corporation by herself as authorized agent.

WITNESS my hand and official seal this 23rd day of March, 2009.

Deborah L. Fox
Notary Public
My Commission expires 8/18/2012

My Commission Expires: 8/18/2012

SEAL

ACKNOWLEDGMENT

STATE OF ARKANSAS }
} ss
COUNTY OF PULASKI }

On this day, before me, a Notary Public duly commissioned, qualified and acting, within and for said County and State, personally appeared Rush F. Harding, III., to me personally well known, who acknowledged that he had executed the foregoing instrument for the consideration, uses and purposes therein contained.

WITNESS my hand and official seal this 25th day of March, 2009.

Elizabeth Ann Waddell
Notary Public

My Commission Expires:
10-05-2018
SEAL

EXHIBIT A

Description of Land (the "Premises") Where the Equipment is Located

EQUIPMENT DESCRIPTION

The "Equipment" as such term is used in the Agreement to which this Exhibit B is attached means: all goods and equipment to be provided by Honeywell International Inc. ("Vendor" or "Honeywell") having its principal offices at 101 Columbia Road, Morristown, New Jersey 07962-1057, to the Murfreesboro Housing Authority with a principal offices at 415 North Maple Street, Murfreesboro, TN 37133-1139 ("MHA" or "Lessee") for the purpose of installing certain energy saving equipment, and providing other services designed to save energy for the Lessee's property and buildings as specifically identified below and generally referred to as the "Premises" or the "Buildings," pursuant to that certain Energy Services Agreement dated February 5, 2009 between Honeywell and Lessee, as the same was approved by the United States Department of Housing and Urban Development ("HUD") by letter dated February 20, 2009.

Without limiting the generality of the foregoing, the Equipment includes the individual goods and items within the following seven (7) categories:

1. Common Area Lighting

A. Equipment will be located at the following of Lessee's Facilities: Franklin Heights, Oakland Court, Mercury Court, and Administration Building, all located in Murfreesboro, Tennessee

B. Equipment includes all goods and equipment necessary to retrofit existing T-12 fluorescent lighting fixtures with T-8 lamps and electronic ballasts. Equipment includes the installation of LED exit signs in place of existing incandescent exit signs. Consumables include the replacement of incandescent bulbs (where indicated in Lighting Inventory) with screw-in compact fluorescent lamps.

C. Specific material items of Equipment comprising the Common Area Lighting includes:

Location	Building #	Quantity	Description

2. Resident Area Lighting

A. Equipment will be located at the following of Lessee's Facilities: Franklin Heights, Oakland Court, and Mercury Court, all located in Murfreesboro, Tennessee

B. Equipment includes all goods and equipment necessary to retrofit existing T-12 fluorescent lighting fixtures with T-8 lamps and electronic ballasts. Equipment includes the installation of LED exit signs in place of existing incandescent exit signs. Consumables include the replacement of incandescent bulbs (where indicated in Lighting Inventory) with screw-in compact fluorescent lamps.

C. Specific material items of Equipment comprising the Resident Area Lighting includes:

Location	Building #	Quantity	Description

3. Faucet Aerators

A. Equipment will be located at the following of Lessee's Facilities: Franklin Heights, Highland Heights, Oakland Court, and Mercury Court, all located in Murfreesboro, Tennessee

B. Equipment includes all goods and equipment necessary to replace all aerators in bathroom lavatories with new 0.5 gpm low-flow aerators and to replace all aerators in kitchen sinks with new 1.5 gpm low-flow type aerators.

C. Specific material items of Equipment comprising the Faucet Aerators includes:

Location	Building #	Quantity	Description
Franklin Heights		280	
Highland Heights		120	
Oakland Court		154	
Mercury Court		150	

4. Showerheads

A. Equipment will be located at the following of Lessee's Facilities: Franklin Heights, Highland Heights, Oakland Court, and Mercury Court, all located in Murfreesboro, Tennessee

B. Equipment includes all goods and equipment necessary to replace all showerheads in all bathrooms that have showerheads with new 2.0 gpm low flow type and to replace all hand held shower wands in ADA units where they now exist.

C. Specific material items of Equipment comprising the Showerheads includes:

Location	Building #	Quantity	Description
Franklin Heights		140	
Highland Heights		60	
Oakland Court		78	
Mercury Court		78	

5. Water Closets

A. Equipment will be located at the following of Lessee's Facilities: Franklin Heights, Oakland Court, and Mercury Court, all located in Murfreesboro, Tennessee

B. Equipment includes all goods and equipment necessary to replace existing 3.5 gpf and 1.6 gpf gravity flush water closets with Niagra 1.28gpf model (or equal gravity flush 1.28 gpf water closet).

C. Specific material items of Equipment comprising the Water Closets includes:

Location	Building #	Quantity	Description
Franklin Heights		140	
Highland Heights		60	
Oakland Court		78	
Mercury Court		78	

6. High Efficiency Furnaces

A. Equipment will be located at the following of Lessee's Facilities: Franklin Heights, Highland Heights, Oakland Court, and Mercury Court, all in Murfreesboro, Tennessee

B. Equipment includes all goods and services necessary to replace existing gas-fired furnaces at selected residences with new Trane 90+ High Efficiency gas fired condensing type furnaces as listed in the following table, or similar:

Location	Building #	Quantity	Description/Model #

C. Each furnace will include manufacturer's standard controls and variable speed blower motor. Blower motors include:

Location	Building #	Quantity	Description/Model #

D. Includes a properly matched DX cooling coil in the unit's discharge ductwork. Cooling units include:

Location	Building #	Quantity	Description/Model #

E. Includes a Honeywell wall mounted non-programmable 1-stage heating and 1-stage cooling thermostat for each unit, including:

Location	Building #	Quantity	Description/Model #

F. Includes all necessary gas piping, refrigerant piping, safety controls, valves, accessories, sheet metal work, electrical work, cutting, patching, supports, etc. as required for a complete and working installation of all furnaces.

G. Includes condensation drainage piping properly extended to nearest floor drain or to the building exterior, if no floor drain is available. Patch any openings made in walls and seal air tight and vermin tight.

H. Includes manufacturer's standard 20 year warranty on heat exchanger and 5 year limited warranty on all other parts (1 year labor). The refrigeration compressor have a 5 year limited warranty.

7. Resident Training

A. Included with the Equipment being financed by this Agreement are six (6) on-site training days over the first two (2) years of the Energy Services Agreement with training sessions to be conducted by an in-house training specialist. Three (3) of these training days will be offered during the fall or winter months and the other three (3) during the spring or summer months;

B. Included with the Equipment being financed by this Agreement is an Energy Awareness Resident Newsletter, printed and distributed by Honeywell on a quarterly basis;

C. Included with the Equipment being financed by this Agreement are four (4) seasonally-specific energy conservation articles for the housing authority's resident newsletter, provided in accordance with the in-house production schedule;

D. Included with the Equipment being financed by this Agreement is an Energy Awareness Audiovisual Presentation for use at orientation sessions for new residents or distribution to existing residents at MHA's discretion; and

E. Included with the Equipment being financed by this Agreement is a Resident Housekeeping Booklet to be developed and printed by Honeywell no later than the second year of the ESPC project and in a quantity no greater than 1,000, after which the booklet will become the sole property of MHA, to be distributed at its discretion.

F. Included with the Equipment being financed by this Agreement is comprehensive administrative support (e.g. creation of all training-related letters and notices) also to include any necessary mailings and distributions to MHA residents along with all associated postage;

Lessee hereby certifies that the description of the Equipment set forth above constitutes an accurate description of the "Equipment," to which the attached Payment Schedule to the Agreement is applicable.

LEGAL DESCRIPTION OF THE PREMISES

See Attached

Franklin Heights: TN020-1

Oakland Court: TN020-3

Mercury Manor: TN020-4

Administrative Office: TN020-3

LEGAL DESCRIPTION (PAGE 1)

PROJECT TENN-20-1

BEGINNING AT A CONCRETE MONUMENT LOCATED IN THE SOUTHERLY MARGIN OF THE FRANKLIN PIKE, SAID MONUMENT BEING APPROXIMATELY 247.3 FEET WEST OF THE TENNESSEE VALLEY AUTHORITY PROPERTY WHEN MEASURED ALONG THE CENTER LINE OF SAID FRANKLIN PIKE, AND RUNNING THENCE THE FOLLOWING COURSES AND DISTANCES: SOUTH 4 DEGREES 3 MINUTES WEST 528.8 FEET TO A POINT; THENCE, SOUTH 85 DEGREES 57 MINUTES EAST 115 FEET TO A POINT IN THE WEST MARGIN OF KENSLO AVENUE; THENCE, NORTH 4 DEGREES THREE MINUTE EAST ALONG THE WEST MARGIN OF SAID AVENUE 23.0 FEET TO A POINT; THENCE, CROSSING SAID AVENUE SOUTH 83 DEGREES 47 MINUTES EAST 60.0 FEET TO THE EASTERLY MARGIN OF SAID AVENUE; THENCE, SOUTH 4 DEGREES THREE MINUTES WEST ALONG THE EASTERLY MARGIN OF SAID AVENUE 64.0 FEET TO A POINT; THENCE, NORTH 85 DEGREES 57 MINUTES WEST 175 FEET TO A POINT; THENCE SOUTH 4 DEGREES THREE MINUTES WEST 84.0 FEET TO A POINT; THENCE, NORTH 85 DEGREES 57 MINUTES WEST 575.0 FEET TO AN IRON PIN LOCATED IN AN EXISTING FENCE LINE; THENCE, NORTH 4 DEGREES THREE MINUTES EAST ALONG SAID EXISTING FENCE 677.5 FEET TO AN IRON PIN LOCATED IN THE SOUTHERLY MARGIN OF THE FRANKLIN PIKE; THENCE, SOUTH 83 DEGREES 47 MINUTES EAST ALONG THE SOUTHERLY MARGIN OF SAID PIKE 575.5 FEET TO A POINT, AND THE POINT OF BEGINNING, LESS THE FOLLOWING DESCRIBED PROPERTY WHICH HAS BEEN DEDICATED TO THE CITY OF MURFREESBORO, TENNESSEE, TO WIT:

LEGAL DESCRIPTION

(PAGE 2)

PROJECT TENN-20-1

BEGINNING AT A CONCRETE MONUMENT LOCATED IN THE SOUTHERLY MARGIN OF FRANKLIN PIKE AND BEING 115.0 FEET WEST OF THE WESTERLY MARGIN OF KENSLO AVENUE, AND RUNNING THENCE THE FOLLOWING COURSES AND DISTANCES: SOUTH 4 DEGREES THREE MINUTES WEST 5.0 FEETS TO A POINT; THENCE, NORTH 83 DEGREES 47 MINUTES WEST ALONG THE BACK OF SIDEWALK 348.0 FEET TO A POINT; THENCE, AROUND A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 13 FEET AND ALONG THE BACK OF SIDEWALK 20.9 FEET TO A POINT; THENCE, SOUTH 4 DEGREES THREE MINUTES WEST ALONG THE BACK OF SIDEWALK 15.0 FEET TO A POINT; THENCE, SOUTH 55 DEGREES 57 MINUTES EAST ALONG THE BACK OF SIDEWALK 20.0 FEET TO A POINT; THENCE, SOUTH 4 DEGREES THREE MINUTES WEST ALONG THE BACK OF SIDWALK 494 FEET TO A POINT; THENCE, AROUND A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 5 FEET AND ALONG THE BACK OF SIDWALK 7.9 FEET TO A POINT; THENCE, SOUTH 85 DEGREES 57 MINUTES EAST ALONG THE BACK OF SIDWALK FOR PART OF THE DISTANCE 453 FEET TO A POINT IN THE WESTERLY MARGIN OF KENSLO AVENUE; THENCE, NORTH 4 DEGREES THREE MINUTES EAST ALONG THE WESTERLY MARGIN OF KENSLO AVENUE 23.0 FEET TO A POINT; THENCE, SOUTH 83 DEGREES 47 MINUTES EAST AND CROSSING KENSLO AVENUE 60.0 FEET TO A POINT IN THE EASTERLY MARGIN OF SAID AVENUE; THENCE, SOUTH 4 DEGREES THREE MINUTES WEST ALONG THE EASTELRY MARGIN OF SAID AVENUE 64.0 FEET TO A POINT; THENCE, NORTH 85 DEGREES 57 MINUTES WEST AND ALONG THE BACK OF CURB FOR PART OF THE DISTANCE 511 FET TO APOINT; THENCE, AROUND A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 48 FEET AND ALONG THE BACK OF CURB 66.0 FEET TO A POINT; THENCE, NORTH 40 DEGREES 57 MINUTES WEST AND ALONG THE BACK OF THE CURB 25.0 FEET TO A POINT; THENCE, NORTH 4 DEGRES THREE MINUTES EAST AND ALONG THE BACK OF CURB 483.0 FEET TO A POINT; THENCE, NORTH 64 DEGREES THREE MINUTES EAST 14.0 FEET TO A POINT; THENCE, NORTH 4 DEGREES THREE MINUTES EAST AND ALONG THE BACK OF SIDEWALK 22.0 FEET TO A POINT; THENCE, AROUND A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 13 FEET AND ALONG THE BACK OF SIDEWALK 19.9 FEET TO A POINT; THENCE, NORTH 83 DEGREES 47 MINUTES WEST ALONG THE BACK OF SIDEWALK 145.0 FEET TO A POINT IN THE EASTERLY MARGIN OF THE SEWAGE LIFT STATION; THENCE, SOUTH 4 DEGREES THREE MINUTES WEST ALONG SAID LIFT STATION 15.0 FEET TO A POINT; THENCE, NORTH 83 DEGREES 47 MINUTES WEST ALONG SAID LIFT STATION 24.0 FEET TO A POINT IN THE PROJECT BOUNDARY; THENCE, NORTH FOUR DEGREES THREE MINUTES EAST ALONG SAID BOUNDARY 20.0 FEET TO A POINT IN THE SOUTHERLY MARGIN OF THE FRANKLIN PIKE; THENCE, SOUTH 83 DEGREES 47 MINUTES EAST ALONG THE SOUTHERLY MARGIN OF SAID PIKE 575.5 FEET TO THE POINT OF BEGINNING.

PROJECT TN 20-3

BEGINNING AT A CONCRETE MONUMENT IN THE SOUTH MARGIN OF HEMBREE STREET, SAID POINT BEING N 89 DEG 32 MIN E, 150.0 FEET FROM THE EAST MARGIN OF SPRING STREET; THENCE N 89 DEG 32 MIN E, 1,019.5 FEET WITH SAID SOUTH MARGIN OF HEMBREE STREET AND SAID MARGIN OF HEMBREE STREET IF EXTENDED TO A CONCRETE MONUMENT IN THE NORTH LINE OF H.C. ELROD, ET UX; THENCE, DUE SOUTH, 475.7 FEET SEVERING THE LANDS OF H.C. ELROD, ET UX, TO A CONCRETE MONUMENT; THENCE, DUE WEST, 217.7 FEET TO A CONCRETE MONUMENT; THENCE, DUE SOUTH, 150.5 FEET TO CONCRETE MONUMENT; THENCE, DUE WEST, 296.7 FEET TO A CONCRETE MONUMENT, SAID POINT BEING THE NORTHEAST CORNER OF JOHN DEGEORGE, ET UX, AND A CORNER TO H.C. ELROD, ET UX; THENCE, S 0 DEG 47 MIN W, 584.0 FEET TO A CONCRETE MONUMENT IN THE WEST LINE OF H.C. ELROD, ET UX, SAID POINT BEING THE SOUTHEAST CORNER OF JOHN DEGEORGE AND THE NORTHEAST CORNER OF SAM DEGEORGE; THENCE, N 89 DEG 18 MIN W, 329.9 FEET TO A CONCRETE MONUMENT IN THE EAST MARGIN OF ACADEMY STREET, SAID POINT BEING THE SOUTHWEST CORNER OF JOHN DEGEORGE, ET UX AND THE NORTHWEST CORNER OF SAM DEGEORGE; THENCE, N 1 DEG 17 MIN E, 151.3 FEET WITH SAID EAST MARGIN OF ACADEMY STREET TO A CONCRETE MONUMENT IN THE WEST LINE OF JOHN DEGEORGE; THENCE, S 88 DEG 37 MIN W, 187.5 FEET TO A CONCRETE MONUMENT IN THE SOUTH LINE OF W. L. CLARK, ET AL, TRUSTEES; THENCE, N 2 DEG 36 MIN E, 349.45 FEET TO A CONCRETE MONUMENT IN THE LAND OF GEORGE W. MULLINS, SAID POINT BEING N 2 DEG 36 MIN E, 73.85 FEET FROM THE NORTHWEST CORNER OF C. C. LEWIS, ET UX, AND THE NORTHEAST CORNER OF MRS. JAMES P. MCLAINE; THENCE N 89 DEG 17 MIN W, 35.48 FEET SEVERING THE LANDS OF GEORGE W. MULLINS TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT; THENCE, WESTERLY WITH A CURVE TO THE LEFT HAVING A RADIUS OF 182.00 FEET AND A CENTRAL ANGLE OF 8 DEG 18 MIN, 26.36 FEET TO A CONCRETE MONUMENT; THENCE, S 82 DEG 25 MIN W, 85.70 FEET TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT; THENCE, SOUTHWESTERLY WITH A CURVE TO THE LEFT HAVING A RADIUS OF 13.58 FEET AND A CENTRAL ANGLE OF 81 DEG 16 MIN, 19.26 FEET TO A CONCRETE MONUMENT IN THE EAST MARGIN OF SPRING ST.; THENCE, N 1 DEG 09 MIN E, 73.8 FEET WITH SAID MARGIN OF SPRING STREET TO A CONCRETE MONUMENT IN THE WEST LINE OF H. O. EDMONDSON, SAID POINT BEING N 1 DEG 09 MIN E, 35.6 FEET FROM THE NORTHEAST CORNER OF GEORGE W. MULLINS, ET UX; THENCE, SOUTHEASTERLY, SEVERING THE LANDS OF H. O. EDMONSDON WITH A CURVE TO THE LEFT HAVING A RADIUS OF 22.09 FEET AND A CENTRAL ANGLE OF 98 DEG 44 MIN, 38.07 FEET TO A CONCRETE MONUMENT; THENCE, N 82 DEG 25 MIN E, 66.16 FEET TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE RIGHT; THENCE, EASTERLY WITH A CURVE TO THE RIGHT HAVING A RADIUS OF 218.00 FEET AND A CENTRAL ANGLE OF 8 DEG 18 MIN, 31.58 FEET TO A CONCRETE MONUMENT; THENCE, S 89 DEG 17 MIN EAST, 30.24 FEET TO A CONCRETE MONUMENT IN THE WEST LINE OF ELLIS PEYTON, ET UX; THENCE, N 0 DEG 43 MIN E, 666.1 FEET TO THE POINT OF BEGINNING, CONTAINING 880,998 SQ. FEET OR 20.22 ACRES MORE OR LESS.

LEGAL DESCRIPTION

(PAGE 1)

PROJECT TENN-20-4

BEGINNING AT A CONCRETE MONUMENT IN THE NORTH MARGIN OF MERCURY BLVD, SAID POINT BEING THE SOUTHEAST CORNER OF PROPERTY OWNED BY THE CITY OF MURFREESBORO KNOWN AS HOLLOWAY PARK, THENCE N 4 DEG 38 MIN W, 337.43' TO A CONCRETE MONUMENT, SAID POINT BEING THE NORTHWEST CORNER OF ALTON HAYNES AND A CORNER TO THE CITY OF MURFREESBORO; THENCE, N 83 DEG 45 MIN E, 145.64' TO A CONCRETE MONUMENT IN THE WEST MARGIN OF HANCOCK ST.,THENCE, S 78 DEG 07 MIN E, 62.62' TO A CONCRETE MONUMENT IN THE SOUTH MARGIN OF BURNS ROAD AND THE EAST MARGIN OF HANCOCK ST., THENCE, N 84 DEG 44 MIN E, 251.0' WITH SAID SOUTH MARGIN OF BURNS ROAD TO A CONCRETE MONUMENT, SAID POINT BEING THE NORTHWEST CORNER OF E.D. WARD AND THE NORTHEAST CORNER OF FORREST YOUNG, THENCE, S 5 DEG 22 MIN E, 344.81' TO A CONCRETE MONUMENT IN THE NORTH MARGIN OF MERCURY BLVD., SAID POINT BEING THE SOUTHEAST CORNER OF FORREST YOUNG,THENCE, DUE WEST , 72.36' WITH SAID NORTH MARGIN OF MERCURY BLVD. TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT, THENCE, 384.22' WITH SAID NORTH MARGIN OF MERCURY BLVD. AND A CURVE TO THE LEFT HAVING A RADIUS OF 3870.0' AND A CENTRAL ANGLE OF 5 DEG 41 MIN 18 SEC TO THE POINT OF BEGINNING, CONTAINING 153,920 SQ. FT. OR 3.53 ACRES MORE OR LESS.

LEGAL DESCRIPTION

(PAGE 2)

PROJECT TENN-20-4

ALSO, BEGINNING AT A POINT IN THE NORTH MARGIN OF MERCURY BLVD. AT THE CENTER LINE INTERSECTION OF STEPHENS STREET, THENCE, N 5 DEG 45 MIN W, 266.48' WITH THE CENTER LINE OF STEPHENS STREET TO A POINT IN SAND; THENCE, N 84 DEG 44 MIN E, 130.00' TO A CONCRETE MONUMENT AT THE COMMON CORNER OF LOT NOS.2 AND 3 IN THE NORTH LINE OF LOT NO.5, GREEN ACRES SUDIVISION OF RECORD IN BOOK 95, PAGE 215, REGISTRAR'S OFFICE, RUTHERFORD COUNTY; THENCE, N5 DEG 45 MIN W, 135.00' TO A CONCRETE MONUMENT IN THE NORTH MARGIN OF BURNS ROAD, SAID POINT BEING IN THE SOUTH LINE OF HENRY W. MCHENRY, THENCE, S 84 DEG 44 MIN W, 334.66' WITH SAID NORTH MARGIN OF BURNS ROAD TO A CONCRETE MONUMENT IN THE EAST LINE OF ROBERT GOODMAN ET AL SUBDIVISION, SAID POINT BEING THE SOUTHWEST CORNER OF HOMER JETTON, THENCE, N 2 DEG 42 MIN W, 288.62' WITH SAID EAST LINE OF ROBERT GOODMAN ET AL SUBDIVISON AND THE WEST LINE OF HOMER JETTON TO A CONCRETE MONUMENT AT THE NORTHWEST CORNER OF SAID HOMER JETTON,,THENCE, N 86 DEG 09 MIN E, 442.77' TO A CONCRETE MONUMENT IN THE WEST MARGIN OF BILBRO ST., SAID POINT BEING THE NORTHEAST CORNER OF JESSIE MILLER, THENCE, S 4 DEG 24 MIN E, 156.81' WITH SAID MARGIN OF BILBRO ST., TO A CONCRETE MONUMENT IN THE EAST LINE OF JESSIE MILLER, THENCE, N 85 DEG 33 MIN E, 181.85' TO A CONCRETE MONUMENT IN THE WEST LINE OF RUBY MAE CHILDRESS, SAID POINT BEING THE NORTHEAST CORNER OF CLARENCE JARRETT, THENCE, N 4 DEG 53 MIN W, 60.47' TO A CONCRETE MONUMENT AT THE NORTHWEST CORNER OF RUBY MAE CHILDRESS, THENCE N86 DEG 33 MIN E, 56.87' TO A CONCRETE MONUMENT AT THE NORTHEAST CORNER OF RUBY MAE CHILDRESS, THENCE, S 3 DEG 43 MIN E, 58.41' TO A CONCRETE MONUMENT IN THE EAST LINE OF RUBY MAE CHILDRESS, SAID POINT BEING THE NORTHWEST CORNER OF WILLIAM RUFUS BRANDON, THENCE, N 84 DEG 07 MIN E, 217.36' TO A CONCRETE MONUMENT AT THE NORTHEAST CORNER OF FLORENCE SCALES, THENCE, S 4 DEG 10 MIN E, 109.84' TO A CONCRETE MONUMENT IN THE NORTH LINE OF F.E. ALLEN, SAID POINT BEING THE SOUTHEAST CORNER OF FLORENCE SCALES, THENCE, N 85 DEG 46 MIN E, 56.28' TO A CONCRETE MONUMENT IN THE WEST MARGIN OF FIRST AVENUE, SAID POINT BEING THE NORTHEAST CORNER OF F.E. ALLEN, THENCE, S 4 DEG 52 MIN E, 448.00' WITH SAID MARGIN OF FIRST AVENUE TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE RIGHT, THENCE, 49.47' WITH A CURVE TO THE RIGHT HAVING A RADIUS OF 30.0'AND A CENTRAL ANGLE OF 94 DEG 52 MIN TO A CONCRETE MONUMENT IN THE NORTH MARGIN OF MERCURY BLVD., THENCE, DUE WEST, 721.31' WITH SAID MARGIN OF,MERCURY BLVD. TO THE POINT OF BEGINNING, CONTAINING 495,895 SQ FT. OR 11.38 ACRES, MORE OR LESS.

Jennifer M Gerhart, Register
Rutherford County Tennessee
Rec #: 586294
Rec'd: 80.00 Instrument #: 1612688
State: 0.00
Clerk: 2.00 Recorded
DSP: 0.00 3/27/2009 at 8:45 AM
Total: 82.00 in
Record Book 907 Pgs 2204-2219

Declaration of Trust
(Public Housing Modernization Grant Projects)

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

OMB No. 2577-0270
exp. 09/30/2013

Whereas, (1, see instructions) Murfreesboro Housing Authority (herein called the Public Housing Agency (PHA)), a public body corporate and politic, duly created and organized pursuant to and in accordance with the provisions of the laws of the (2) State of Tennessee, and the United States of America, Secretary of Housing and Urban Development (herein called HUD) pursuant to the United States Housing Act of 1937 (42 U.S.C. 1437, et seq.) and the Department of Housing and Urban Development Act (5 U.S.C. 624) entered into a certain contract with the effective date as of (mm/dd/yyyy) (3) 11/09/1995, (herein called the Annual Contributions Contract) and a certain Modernization Project Grant Amendment to the Annual Contributions Contract with the effective date as of (mm/dd/yyyy) (4) 07/15/2010, (herein called the Modernization Grant Amendment) providing for a grant to be made by HUD to assist the PHA in modernizing lower income housing project(s); and

Whereas, as of the date of the execution of this Declaration of Trust, the Modernization Grant Amendment and the Annual Contributions Contract cover certain individual lower income housing projects located in: (5) City of Murfreesboro, County of Rutherford, State of Tennessee which will provide approximately (6) 336 dwelling units; and which lower income housing projects are known as Modernization Project No. (7) TN43P020050109 and individual projects as follows:
Project No. (8) TN020-AMP 1 with approximately 336 dwelling units,
Project No. (8) _____ with approximately _____ dwelling units, and
Project No. (8) _____ with approximately _____ dwelling units; and

Whereas, the modernization of each Project will have been financed with grant assistance provided by HUD.

Now Therefore, to assure HUD of the performance by the PHA of the covenants contained in the Modernization Grant Amendment and the Annual Contributions Contract, the PHA does hereby acknowledge and declare that it is possessed of and holds in trust for the benefit of HUD, for the purposes herein stated, the following described real property situated in: (9)

City of Murfreesboro, County of Rutherford, State of Tennessee

Prepared by:
Patsy D. Noland, Executive Director
Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

To Wit: (Insert legal description for each individual project.)(10)

See Exhibit "A"

and all buildings and fixtures erected or to be erected thereon or appurtenant thereto.

The PHA hereby declares and acknowledges that during the existence of the trust hereby created, HUD has been granted and is possessed of an interest in the above described Project property, To Wit:

The right to require the PHA to remain seized of the title to said property and to refrain from transferring, conveying, assigning, leasing, mortgaging, pledging, or otherwise encumbering or permitting or suffering any transfer, conveyance, assignment, lease, mortgage, pledge or other encumbrance of said property or any part thereof, appurtenances thereto, or any rent, revenues, income, or receipts therefrom or in connection therewith, or any of the benefits or contributions granted to it by or pursuant to the Modernization Grant Amendment and the Annual Contributions Contract, or any interest in any of the same except that the PHA may (1) to the extent and in the manner provided in the Annual Contributions Contract, (a) lease dwellings and other spaces and facilities in any Project, or (b) convey or otherwise dispose of any real or personal property which is determined to be excess to the needs of any Project, or (c) convey or dedicate land for use as streets, alleys, or other public right-of-way, and grant easements for the establishment, operation, and maintenance of public utilities; or (d) enter into and perform contracts for the sale of dwelling units to members of tenant families, as authorized by the United States Housing Act of 1937, or (2) with the approval of HUD, release any Project from the trust hereby created; Provided, That nothing herein contained shall be construed as prohibiting the conveyance of title to or the delivery of possession of any Project to HUD pursuant to the Annual Contributions Contract.

The endorsement by a duly authorized officer of HUD (1) upon any conveyance or transfer made by the PHA of any real or personal property which is determined to be excess to the needs of any Project, or (2) upon any instrument of conveyance or dedication of property, or any interest therein, for use as streets, alleys, or other public right-of-way, or for the establishment, operation and maintenance of public utilities, or (3) upon any instrument transferring or conveying a dwelling unit, or an interest therein, to a member of a tenant family, or (4) upon any instrument of release made by the PHA of any Project shall be effective to release such property from the trust hereby created.

The individual projects covered by the Modernization Grant Amendment shall be subject to this Declaration of Trust for a period of twenty years beginning on the date of the Modernization Grant Amendment. Each individual project shall also be subject to this Declaration of Trust for a period of twenty years after the date of the most recent Modernization Grant Amendment applicable to that project. Upon expiration of the period during which the PHA is obligated to operate the individual projects in accordance with the Annual Contributions Contract, the trust hereby created shall terminate and no longer be effective.

In Witness Whereof, the PHA by its officers thereunto duly authorized has caused these presents to be signed in its name and its corporate seal to be hereunto affixed and attested this date (mm/dd/yyyy) 04/12/2011.

(Seal)

(1, see instructions)
Murfreesboro Housing Authority

By _____ Vice-Chairperson
Attest Patsy D. Noland Secretary
Date (mm/dd/yyyy) 04/12/2011

ref. Handbook 7485.1 form HUD-52190-B (3/90)

Record Book
1083 Pg 1917

Record Book
1083 Pg 1918

STATE OF TENNESSEE
COUNTY OF RUTHERFORD

On this 12th day of May, 2011, before me appeared Judy Smith and Patsy D. Noland to me personally known, being by me duly sworn, did say that they are Vice-Chairman and Secretary, respectively, of the Murfreesboro Housing Authority, and that the seal affixed to the foregoing instrument is the seal of the said Housing Authority and that said instrument was signed and sealed on behalf of Murfreesboro Housing Authority by authority of law and a Resolution duly adopted by the Board of Commissioners of said Authority; and they acknowledge said instrument to be the free act and deed of said Authority.

DEBORAH L. FOX
STATE OF TENNESSEE
NOTARY PUBLIC
RUTHERFORD COUNTY

Notary Public
My Commissioner Expires: 8/18/2012

HUD-9011
(11-68)

CERTIFICATE OF RECORDING OFFICER

I, Patsy D. Noland, the duly appointed, qualified and acting Secretary of the Murfreesboro Housing Authority, do hereby certify that the attached extract from the minutes of the Board of Commissioners' Meeting, held on April 12, 2011, is true and correct copy of the original minutes of such meeting on file and of record insofar as they relate to the matters set forth in the attached extract, and I do further certify that each Resolution appearing in such extract is a true and correct copy of a Resolution adopted at such meeting and on file and of record.

IN TESTIMONY WHEREOF, I have hereunto set my hand and the seal of said Murfreesboro Housing Authority, this 12th day of May, 2011.

Patsy D. Noland

Record Book
1083 Pg 1919

ATTORNEY'S CERTIFICATE

Record Book
1083 Pg 1920

The undersigned, a duly licensed Attorney-at-Law in the State of Tennessee, certifies that I have examined the Declaration of Trust executed by Patsy D. Noland dated 04/12/2011, declaring, creating and holding in trust for the benefit of the United States of America (acting through the Department of Housing and Urban Development) and others certain therein described property.

In my opinion, the said Declaration of Trust is a recordable instrument in the State of Tennessee and the recordation thereof would constitute constructive notice of its contents to all persons.

The Declaration of Trust herein referred to has been recorded in the office of the Register of Deeds in ~~Trust~~ Record Book # 1083, Page # 1917.

Dated at Murfreesboro, Tennessee on this the 22nd day of September, 2011.

Attorney for Murfreesboro Housing Authority

HUD-9012
(11-68)

EXTRACT FROM MINUTES

EXTRACT FROM THE MINUTES OF A REGULAR
MEETING OF THE BOARD OF COMMISSIONERS
OF THE MURFREESBORO HOUSING AUTHORITY
HELD ON THE 12th DAY OF APRIL, 2011

The Board of Commissioners of the Murfreesboro Housing Authority met in regular session at 415 N. Maple Street in the City of Murfreesboro, Tennessee at the place, hour and date duly established for the holding of such meeting.

Commissioner Teasley called the meeting to order and on roll call the following answered present:

Commissioner Teasley
Commissioner Jones
Commissioner Rankins

And the following were absent:

Chairman Miller
Vice-Chairman Smith

Record Book
1083 Pg 1921

Commissioner Teasley declared a quorum present.

Ms. Noland informed the Board of HUD's request for a newly executed and attorney certified copy of the Declaration of Trust. The following Resolution was introduced by Commissioner Jones, read in full and considered:

RESOLUTION 11-16

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Murfreesboro Housing Authority that the Executive Director and the Attorney complete the necessary documents to be forwarded to the local HUD office.

Commissioner Jones moved that the foregoing Resolution be adopted as introduced and read, which motion was seconded by Commissioner Rankins, and upon roll call the "Ayes" and "Nays" were as follows:

AYES	NAYS
Commissioner Teasley	
Commissioner Jones	
Commissioner Rankins	

Commissioner Teasley thereupon declared said motion carried and said Resolution adopted.

There being no further business to come before the meeting upon motion duly made and seconded, the meeting was adjourned.

Record Book
1083 Pg 1922

EXHIBIT A

PROJECT TN 20-1

Record Book
1083 Pg 1923

Beginning at a concrete monument located in the southerly margin of the Franklin Pike, said monument being approximately 247.3' west of the Tennessee Valley Authority property when measured along the center line of said Franklin Pike, and running thence the following courses and distances: South 4 degrees 3 minutes west 528.8'to a point; thence, south 85 degrees 57 minutes east 115' to a point in the west margin of Kenslo Avenue; thence, north 4 degrees 3 minutes east along the west margin of said Avenue 23.0' to a point; thence, crossing said Avenue south 83 degrees 47 minutes east 60.0' to the easterly margin of said Avenue; thence, south 4 degrees 3 minutes west along the easterly margin of said avenue 64.0' to a point; thence, north 85 degrees 57 minutes west 175' to a point; thence, south 4 degrees 3 minutes west 84.0' to a point; thence, north 85 degrees 57 minutes west 575.0' to an iron pin located in an existing fence line; thence, north 4 degrees 3 minutes east along said existing fence 677.5' to an iron pin located in the southerly margin of the Franklin Pike; thence, south 83 degrees 47 minutes east along the southerly margin of said Pike 575.5' to a point, and the point of beginning, less the following described property which has been dedicated to the City of Murfreesboro, Tennessee, to wit:

Beginning at a concrete monument located in the southerly margin of Franklin Pike and being 115.0' west of the westerly margin of Kenslo Avenue, and running thence the following courses and distances: South 4 degrees 3 minutes west 5.0' to a point; thence, north 83 degrees 47 minutes west along the back of sidewalk 348.0' to a point; thence, around a curve to the left, said curve having a radius of 13' and along the back of sidewalk 20.9' to a point; thence, south 4 degrees 3 minutes west along the back of sidewalk 15.0' to a point; thence, south 55 degrees 57 minutes east along the back of sidewalk 20.0' to a point; thence, south 4 degrees 3 minutes west along the back of sidewalk 494' to a point; thence, around a curve to the left, said curve having a radius of 5' and along the back of sidewalk 7.9' to a point; thence, south 85 degrees 57 minutes east along the back of sidewalk for part of the distance 453' to a point in the westerly margin of Kenslo Avenue; thence, north 4 degrees 3 minutes east along the westerly margin of Kenslo Avenue 23.0' to a point; thence, south 83 degrees 47 minutes east and crossing Kenslo Avenue 60.0' to a point in the easterly margin of said Avenue; thence, south 4 degrees 3 minutes west along the easterly margin of said Avenue 64.0' to a point; thence, north 85 degrees 57 minutes west and along the back of curb for part of the distance 511' to a point; thence, around a curve to the right, said curve having a radius of 48' and along the back of curb 66.0' to a point; thence, north 40 degrees 57 minutes west and along the back of the curb 25.0' to a point; thence, north 4 degrees 3 minutes east and along the back of curb 483.0' to a point; thence, north 64 degrees 3 minutes east 14.0' to a point; thence, north 4 degrees 3 minutes east and along the back of sidewalk 22.0' to a point; thence, around a curve to the left, said curve having a radius of 13' and along the back of sidewalk 19.9' to a point; thence, north 83 degrees 47 minutes west along the back of sidewalk 145.0' to a point in the easterly margin of the sewage lift station; thence, south 4 degrees 3 minutes west along said lift station 15.0' to a point; thence, north 83 degrees 47 minutes west along said lift station 24.0' to a point in the project boundary; thence, north 4 degrees 3 minutes east along said boundary 20.0' to a point in the southerly margin of the Franklin Pike; thence, south 83 degrees 47 minutes east along the southerly margin of said Pike 575.5' to the point of beginning.

PROJECT TN 20-2

Record Book
1083 Pg 1924

Beginning at an iron pin the northwest corner of the George Womack property, said pin being located in the southerly margin of East Castle Street and located 187.4' from the center line of South Highland Avenue, and running thence the following courses and distances:

South 85 degrees 59 minutes east along the southerly margin of East Castle Street 378.0' to an iron pin located in the northeast corner of the Estella Moore property, and also being the northwest corner of the playground property; thence, south 2 degrees 42 minutes west along the easterly margin of the Estella Moore property 291.0' to an iron pin located in the southeast corner of the Estella Moore property; thence, north 87 degrees 47 minutes west 377.0' along an existing wire fence to an iron pin located in the southwest corner of the Ben Scales property; thence, north 2 degrees 26 minutes east along the west line of Ben Scales property 52.2' to an iron pin located in the southeast corner of the Mary Ellen Vaughn property; thence, north 86 degrees 57 minutes west along the southerly margin of the Vaughn property 170.0' to an iron pin located in the easterly margin of South Highland Avenue; thence, north 3 degrees 3 minutes east along the easterly margin of South Highland Avenue 55.00' to an iron pin located in the northwest corner of the Vaughn property; thence, south 85 degrees 22 minutes east along Vaughn's north line 79.8' to an iron pin and a break in said line; thence, south 87 degrees 25 minutes east along Vaughn's north line 90.0' to an iron pin located in Vaughn's northeast corner; thence, north 2 degrees 26 minutes east 196.8' to an iron pin located in the south margin of East Castle Street, and the point of beginning, less the following described property which has been dedicated to the City of Murfreesboro, Tennessee:

Beginning at a concrete monument in the easterly margin of South Highland Avenue which is located approximately 214' south of the center line of East Castle Street and running thence the following courses and distances:

South 86 degrees 57 minutes east 0.5' to a point; thence, around a curve to the left, said curve having a radius of 17', and along the back of curb, for a distance of 26.8' to a point; thence, north 33 degrees 18 minutes east along the back of curb 16.0' to a point; thence, south 86 degrees 42 minutes east along back of curb 141.0' to a point; thence, south 33 degrees 18 minutes west along back of curb 6.0' to a point; thence, around a curve to the left, said curve having a radius of 2', and along the back of curb, for a distance of 5.0' to a point; thence, south 86 degrees 12 minutes east along back of curb 156.0' to a point; thence, around a curve to the left, said curve having a radius of 20', and along back of curb for a distance of 31.2' to a point; thence, north 4 degrees one minute east along back of curb 103.0' to a point located south of the sewage lift station; thence, leaving the back of concrete curb, north 85 degrees 59 minute west 14.0' to a point; thence, north 4 degrees one minute east 15.0' to a point; thence, south 85 degrees 59 minutes east 14.0' to a point at back of curb; thence, along back of curb north 4 degrees one minute east 58.0' to a point; thence, continuing around back of curb, and a curve to the left, said curve having a radius of 10' a distance of 15.7' to a point; thence, north 4 degrees one minute east 0.5' to a point in the southerly margin of East Castle Street; thence, south 85 degrees 59 minutes east along the southerly margin of East Castle Street 51.0' to a point; thence, south 4 degrees one minute west 5.0' to a point; thence, around a curve to the left, said curve having a radius of 6', and along back of sidewalk for a distance of 9.4' to a point; thence, continuing along back of sidewalk, south 4 degrees one minute west 174.0' to a point; thence, around a curve to the right, said curve having a radius of 48' and along back of sidewalk 74.8' to a point; thence, north 86 degrees 42 minutes west and along the back of sidewalk 165.0' to a point in the easterly edge of a curb; thence, south 26 degrees 42 minutes east and along the back of curb 16.0' to a point; thence north 86 degrees 42 minutes west and along the back of curb 146.0' to a point; thence, north 26 degrees 42 minutes west and along the back of curb 16.0' to a point; thence, around a curve to the left said curve having a radius of 17.0' and along the back of curb 26.8' to a point; thence, north 86 degrees 57 minutes west 0.5' to a point in the easterly margin of South Highland Avenue; thence, north 3 degrees 3 minutes east along the easterly margin of said avenue 55.0' to a concrete monument and the point of beginning.

PROJECT TN 20-3

Beginning at a concrete monument in the south margin of Hembree Street, said point being north 89 degrees 32 minutes E, 150.0' from the east margin of Spring Street; thence north 89 degrees 32 minutes E, 1,019.5' with said south margin of Hembree Street and said margin of Hembree Street if extended to a concrete monument in the north line of H.C. Elrod, ET UX; thence, due south, 475.7' severing the lands of H.C. Elrod, ET UX, to a concrete monument; thence, due west, 217.7' to a concrete monument; thence due south 150.5' to concrete monument; thence, due west, 296.7' to a concrete monument, said point being the northeast corner of John Degeorge, ET UX, and a corner to H.C. Elrod, ET UX; thence, south 0 degrees 47 minutes W, 584.0' to a concrete monument in the west line of H.C. Elrod, ET UX, said point being the southeast corner of John Degeorge and the Northeast corner of Sam Degeorge; thence north 89 degrees 18 minutes W, 329.9' to a concrete monument in the east margin of Academy Street, said point being the southwest corner of John Degeorge, ET UX and the northwest corner of Sam Degeorge; thence, north 1 degree 17 minutes E, 151.3' with said east margin of Academy Street to a concrete monument in the west line of John Degeorge; thence, south 88 degrees 37 minutes W, 187.5' to a concrete monument in the south line of W.L. Clark, et al, trustees; thence, north 2 degrees 36 minutes E, 349.45' to a concrete monument in the land of George W. Mullins, said point being north 2 degrees 36 minutes E, 73.85' from the northwest corner of C.C. Lewis, ET UX, and the northeast corner of Mrs. James P. McLaine; thence, north 89 degrees 17 minutes W, 35.48' severing the lands of George W. Mullins to a concrete monument at the beginning of a curve to the left; thence, westerly with a curve to the left having a radius of 182.00' and a central angle of 8 degrees 18 minutes, 26.36' to a concrete monument; thence, south 82 degrees 25 minutes W, 85.70' to a concrete monument at the beginning of a curve to the left; thence, southwesterly with a curve to the left having a radius of 13.58' and a central angle of 81 degrees 16 minutes, 19.26' to a concrete monument in the east margin of Spring St.; thence, north 1 degree 09 minutes E, 73.8' with said margin of Spring Street to a concrete monument in the west line of H.O. Edmondson, said point being north 1 degree 09 minutes E, 35.6' from the northeast corner of George W. Mullins, ET UX; thence, southeasterly, severing the lands of H.O. Edmondson with a curve to the left having a radius of 22.09' and a central angle of 98 degrees 44 minutes, 38.07' to a concrete monument; thence, north 82 degrees 25 minutes E, 66.16' to a concrete monument at the beginning of a curve to the right; thence, easterly with a curve to the right having a radius of 218.00' and a central angle of 8 degrees 18 minutes, 31.58' to a concrete monument; thence, south 89 degrees 17 minutes east, 30.24' to a concrete monument in the west line of Ellis Peyton, ET UX; thence, north 0 degrees 43 minutes E, 666.1' to the point of beginning, containing 880, 998 square feet or 20.22 acres more or less.

PROJECT 20-4

Beginning at a concrete monument in the north margin of Mercury Boulevard, said point being the southeast corner of property owned by the City of Murfreesboro known as Holloway Park, thence North 4 degrees 38 minutes W, 337.43' to a concrete monument, said point being the northwest corner of Alton Haynes and a corner to the City of Murfreesboro; thence, north 83 degrees 45 minutes E, 145.64' to a concrete monument in the west margin of Hancock Street, thence, South 78 degrees 07 minutes E, 62.62' to a concrete monument in the south margin of Burns Road and the east margin of Hancock Street, thence, North 84 degrees 44 minutes E, 251.0' with said south margin of Burns Road to a concrete monument, said point being the northwest corner of E.D. Ward and the northeast corner of Forrest Young, thence, South 5 degrees 22 minutes E, 344.81' to a concrete monument in the north margin of Mercury Boulevard, said point being the southeast corner of Forrest Young, thence, due west, 77.38' with said north margin of Mercury Boulevard to a concrete monument at the beginning of a curve to the left, thence, 384.22' with said north margin of Mercury Boulevard and a curve to the left having a radius of 3,870.0' and a central angle of 5 degrees 41 minutes 18 seconds to the point of beginning, containing 153,920 square feet or 3.53 acres more or less.

Also, beginning at a point in the north margin of Mercury Boulevard at the center line intersection of Stephens Street, thence, North 5 degrees 45 minutes W, 266.48' with the center line of Stephens Street to a point in same; thence, North 84 degrees 44 minutes E, 130.00' to a concrete monument at the common corner of lot numbers 2 and 3 in the north line of lot number 5, Green Acres subdivision of record in Book 95, page 215, Registrar's Office, Rutherford County; thence, North 5 degrees 45 minutes W, 135.00' to a concrete monument in the north margin of Burns Road, said point being in the south line of Henry W. McHenry, thence, South 84 degrees 44 minutes W, 334.66' with said north margin of Burns Road to a concrete monument in the east line of Robert Goodman et al subdivision, said point being the southwest corner of Homer Jetton, thence, North 2 degrees 42 minutes W, 288.82' with said east line of Robert Goodman et al subdivision and the west line of Homer Jetton to a concrete monument at the northwest corner of said Homer Jetton, thence, North 86 degrees 09 minutes E, 442.77' to a concrete monument in the west margin of Bilbro Street, said point being the northeast corner of Jessie Miller, thence, South 4 degrees 24 minutes E, 156.81' with said margin of Bilbro Street, to a concrete monument in the east line of Jessie Miller, thence, North 85 degrees 33 minutes E, 181.85' to a concrete monument in the west line of Ruby Mae Childress, said point being the northeast corner of Clarence Jarrett, thence, North 4 degrees 53 minutes W, 60.47' to a concrete monument at the northwest corner of Ruby Mae Childress, thence, North 86 degrees 33 minutes E, 56.87' to a concrete monument at the northeast corner of Ruby Mae Childress, thence, South 3 degrees 43 minutes E, 58.41' to a concrete monument in the east line of Ruby Mae Childress, said point being the northwest corner of William Rufus Brandon, thence, North 84 degrees 07 minutes E, 217.36' to a concrete monument at the northeast corner of Florence Scales, thence, South 4 degrees 10 minutes E, 109.84' to a concrete monument in the north line of F.E. Allen, said point being the southeast corner of Florence Scales, thence, North 85 degrees 46 minutes E, 56.28' to a concrete monument in the west margin of First Avenue, said point being the northeast corner of F.E. Allen, thence, South 4 degrees 52 minutes E, 448.00' with said margin of First Avenue to a concrete monument at the beginning of a curve to the right, thence, 49.67' with a curve to the right having a radius of 30.0' and a central angle of 94 degrees 52 minutes to a concrete monument in the north margin of Mercury Boulevard, thence, due west, 721.31' with said margin of Mercury Boulevard to the point of beginning containing 495,895 square feet or 11.38 acres, more or less.

Heather Dawbarn, Register
Rutherford County Tennessee
Rec #: 669158
Rec'd: 50.00 Instrument #: 1744623
State: 0.00
Clerk: 0.00 Recorded
Other: 2.00 9/23/2011 at 3:20 PM
Total: 52.00 in
Record Book 1083 Pgs 1917-1926

TD Book A 108/141

Partial
FOR RELEASE SEE BOOK 159 PAGE 508

[illegible]

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WHEREAS, Murfreesboro Housing Authority (herein called the "Local Authority"), a public body corporate and politic, duly created and organized pursuant to and in accordance with the provisions of the laws of the State of Tennessee, and the Public Housing Administration (herein called the "PHA") which is administering, in accordance with Reorganization Plan No. 3 of 1947, effective July 27, 1947, the functions of the United States Housing Authority, created in pursuance of the provisions of the United States Housing Act of 1937, Public No. 412, Seventy-fifth Congress, entered into a certain contract dated as of September 30, 1950 (herein called the "Annual Contributions Contract") providing for a loan and for annual contributions to be made by the PHA to assist the Local Authority in developing, and in achieving and maintaining the low-rent character of, low-rent housing project/s/; and

WHEREAS, as of the date of the execution of this Declaration of Trust the Annual Contributions Contract provides for the development and operation by the Local Authority of certain low-rent housing in the City of Murfreesboro, County of Rutherford, State of Tennessee which will provide approximately 150 dwellings; and which low-rent housing will be known as [illegible]/
/Project No. Tenn-20-3 with approximately 76 dwellings,
Project No. Tenn-20-4 with approximately 74 dwellings,
[illegible]/;
and

WHEREAS, the Local Authority (1) proposes to issue and deliver its Bonds and Permanent Notes to aid in financing the Projects from time to time provided for under the terms of the Annual Contributions Contract to which Contract reference is hereby made for definitions of the Bonds, Permanent Notes, and Projects, and (2) may from time to time issue and deliver its obligations (herein called "Refunding Bonds") to refund said Bonds and Permanent Notes; and

WHEREAS, each Project and the site or sites thereof will have been constructed or acquired with the proceeds of the Bonds and/or advances by the PHA on account of the loan provided for in the Annual Contributions Contract and the Bonds and Permanent Notes will be secured (1) severally, by pledges of specific amounts of the annual contributions payable to the Local Authority by the PHA pursuant to said Contract; and (2) by a pledge of certain revenues of the Projects financed by an issue or issues of Bonds to the extent and in the manner described in the Annual Contributions Contract and the resolutions of the Local Authority authorizing such Bonds and Permanent Notes:

NOW, THEREFORE, to assure the PHA and the holder or holders of the Bonds, Refunding Bonds, or Permanent Notes, and each of them, of the performance by the Local Authority of the covenants contained in the Annual Contributions Contract and the resolutions of the Local Authority authorizing the issuance of the Bonds, Refunding Bonds, or Permanent Notes, the Local Authority does hereby acknowledge and declare that it is possessed of and holds in trust for the benefit of the PHA and said holders of the Bonds, Refunding Bonds, or Permanent Notes, for the purposes hereinafter stated, the following described real property situated in the 13th Civil District, City of Murfreesboro, County of Rutherford, State of Tennessee, TO WIT:

PROJECT TENN-20-3

Beginning at a concrete monument in the south margin of Hembree Street, said point being N 89° 32' E, 150.0 feet from the east margin of Spring Street; thence N 89° 32' E, 1,019.5 feet with said south margin of Hembree Street and said margin of Hembree Street if extended to a concrete monument in the north line of H. C. Elrod, et ux; thence, due south, 475.7 feet severing the lands of H. C. Elrod, et ux, to a concrete monument; thence, due west, 217.7 feet to a concrete monument; thence, due south, 150.5 feet to a concrete monument; thence, due west, 296.7 feet to a concrete monument, said point being the northeast corner of John DeGeorge, et ux, and a corner to H. C. Elrod, et ux; thence, S 0° 47' W, 584.0 feet to a concrete monument in the west line of H. C. Elrod, et ux, said point being the southeast corner of John DeGeorge and the northeast corner of Sam DeGeorge; thence, N 89° 18' W, 332.9 feet to a concrete monument in the east margin of Academy Street, said point being the southwest corner of John DeGeorge, et ux and the northwest corner of Sam DeGeorge; thence, N 1° 17' E, 151.3 feet with said east margin of Academy Street to a concrete monument in the west line of John DeGeorge; thence, S 88° 37' W, 187.5 feet to a concrete monument in the south line of W. L. Clark, et al, Trustees; thence, N 2° 36' E, 349.45 feet to a concrete monument in the land of George W. Mullins, said point being N 2° 36' E, 73.85 feet from the northwest corner of C. C. Lewis, et ux, and the Northeast corner of Mrs. James P. McClane; thence N 89° 17' W, 35.48 feet severing the lands of George W. Mullins to a concrete monument at the beginning of a curve to the left; thence, westerly with a curve to the left having a radius of 182.00 feet and a central angle of 8° 18', 26.36 feet to a concrete monument; thence, S 82° 25' W, 85.70 feet to a concrete monument at the beginning of a curve to the left; thence, southwesterly with a curve to the left having

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a radius of 13.58 feet and a central angle of 81° 16', 19.26 feet to a concrete monument in the east margin of Spring St.; thence, N 1° 09' E, 73.8 feet with said margin of Spring Street to a concrete monument in the west line of H. O. Edmondson, said point being N 1° 09' E, 35.6 feet from the northwest corner of George W. Mullins, et ux; thence, southeasterly, severing the lands of H. O. Edmondson with a curve to the left having a radius of 22.09 feet and a central angle of 98° 44', 38.07 feet to a concrete monument; thence, N 82° 25' E, 66.16 feet to a concrete monument at the beginning of a curve to the right; thence, easterly with a curve to the right having a radius of 218.00 feet and a central angle of 8° 18', 31.58 feet to a concrete monument; thence, S 89° 17' E, 30.24 feet to a concrete monument in the west line of Ellis Peyton, et ux; thence, N 0° 43' E, 666.1 feet to the point of beginning, containing 880,998 sq. ft. or 20.22 acres more or less.

PROJECT TENN-20-4

Beginning at a concrete monument in the north margin of Mercury Blvd, said point being the southeast corner of property owned by the City of Murfreesboro known as Holloway Park, thence N 4 deg 38 min W, 337.43' to a concrete monument, said point being the northwest corner of Alton Haynes and a corner to the City of Murfreesboro; thence, N 83 deg 45 min E, 145.64' to a concrete monument in the west margin of Hancock St., thence, S 78 deg 07 min E, 62.62' to a concrete monument in the south margin of Burns Road and the east margin of Hancock St., thence, N 84 deg 44 min E, 251.0 with said south margin of Burns Road to a concrete monument, said point being the northwest corner of E. D. Ward and the northeast corner of Forrest Young, thence, S 5 deg 22 min E, 344.81 to a concrete monument in the north margin of Mercury Blvd., said point being the southeast corner of Forrest Young, thence, due west, 77.38' with said north margin of Mercury Blvd. to a concrete monument at the beginning of a curve to the left, thence, 384.22' with said north margin of Mercury Blvd. and a curve to the left having a radius of 3870.0' and a central angle of 5 deg 41 min 18 sec to the point of beginning, containing 153,920 sq. ft. or 3.53 acres more or less.

Also, beginning at a point in the north margin of Mercury Blvd. at the center line intersection of Stephens Street, thence, N 5 deg 45 min W, 266.48' with the center line of Stephens Street to a point in same, thence, N 84 deg 44 min E, 130.00' to a concrete monument at the common corner of Lot Nos. 2 and 3 in the north line of Lot No. 5, Green Acres Subdivision of record in Book 95, Page 215, Register's Office, Rutherford County, thence, N 5 deg 45 min W, 135.00' to a concrete monument in the north margin of Burns Road, said point being in the south line of Henry W. McHenry, thence, S 84 deg 44 min W, 334.66' with said north margin of Burns Road to a concrete monument in the east line of Robert Goodman et al subdivision, said point being the southwest corner of Homer Jetton, thence, N 2 deg 42 min W, 288.82' with said east line of Robert Goodman et al subdivision and the west line of Homer Jetton to a concrete monument at the northwest corner of said Homer Jetton, thence, N 86 deg 09 min E, 442.77' to a concrete monument in the west margin of Bilbro St., said point being the northeast corner of Jessie Miller, thence, S 4 deg 24 min E, 156.81' with said margin of Bilbro St. to a concrete monument in the east line of Jessie Miller, thence, N 85 deg 33 min E, 181.85' to a concrete monument in the west line of Ruby Mae Childress, said point being the northeast corner of Clarence Jarrett, thence, N 4 deg 53 min W, 60.47' to a concrete monument at the northwest corner of Ruby Mae Childress, thence N 86 deg 33 min E, 56.87' to a concrete monument at the northeast corner of Ruby Mae Childress, thence, S 3 deg 43 min E, 58.41' to a concrete monument in the east line of Ruby Mae Childress, said point being the northwest corner of William Rufus Brandon, thence, N 84 deg 07 min E, 217.36' to a concrete monument at the northeast corner of Florence Scales, thence, S 4 deg 10 min E, 109.84' to a concrete monument in the north line of F. E. Allen, said point being the southeast corner of Florence Scales, thence, N 85 deg 46 min E, 56.28' to a concrete monument in the west margin of First Avenue, said point being the northeast corner of F. E. Allen, thence, S 4 deg 52 min E, 448.00' with said margin of First Avenue to a concrete monument at the beginning of a curve to the right, thence, 49.67' with a curve to the right having a radius of 30.0' and a central angle of 94 deg 52 min to a concrete monument in the north margin of Mercury Blvd., thence, due west, 721.31' with said margin of Mercury Blvd. to the point of beginning, containing 495,895 sq. ft. or 11.38 acres, more or less.

and all buildings and fixtures erected or to be erected thereon or appurtenant thereto.

The Local Authority hereby declares and acknowledges that during the existence of the trust hereby created, the PHA and the holders from time to time of the Bonds, Refunding Bonds, or Permanent Notes issued or to be issued pursuant to the provisions of the Annual Contributions Contract, have been granted and are possessed of an interest in the above described Project Property, to wit:

The right to require the Local Authority to remain seized of the title to said property and to refrain from transferring, conveying, assigning, leasing, mortgaging, pledging, or otherwise encumbering or permitting or suffering any transfer, conveyance, assignment, leasing, mortgage, pledge or other encumbrance of said property or any part thereof, appurtenances thereto, or any rent, revenues, income, or receipts therefrom or in connection therewith, or any of the benefits or contributions granted to it by or pursuant to the Annual Contributions Contract, or any interest in any of the same except that the Local Authority (1) may, to the extent and in the manner provided in Sec. 313 of the Annual Contributions Contract, (a) lease dwellings and other spaces and facilities in any Project, or (b) convey or otherwise dispose of any real or personal property which is determined to be excess to the needs of any Project, or (c) convey or dedicate land for use as streets, alleys, or other public rights-of-way, and grant easements for the establishment, operation, and main-

tenance of public utilities, or (2) with the approval of the PHA release any Project which has not then been financed by an issue or issues of Bonds from the trust hereby created; Provided, that nothing herein contained shall be construed as prohibiting the conveyance of title to or the delivery or possession of any Project to the PHA in pursuance of Sec. 501 or Sec. 502 of the Annual Contributions Contract. 143

The endorsement by a duly authorized officer of the PHA (1) upon any conveyance made by the Local Authority of any real or personal property which is determined to be excess to the needs of any Project, or (2) upon any instrument of conveyance or dedication of property, or any interest therein, for use as streets, alleys, or other public rights-of-way, or for the establishment, operation, and maintenance of public utilities, or (3) upon any instrument of release made by the Local Authority of any Project which has not then been financed by an issue or issues of Bonds shall be effective to release such property from the trust hereby created.

When all indebtedness of the Local Authority to the PHA, arising under the Annual Contributions Contract, has been fully paid and when all the Bonds, Refunding Bonds, and Permanent Notes, together with interest thereon, have been fully paid, or monies sufficient for the payment thereof have been deposited in trust for such payment in accordance with the respective resolution of the Local Authority, authorizing the issuance of such Bonds, Refunding Bonds, and Permanent Notes, the trust hereby created shall terminate and shall no longer be effective.

Nothing herein contained shall be construed to bestow upon the holder or holders of any of the Bonds or Refunding Bonds, or of the coupons appertaining thereto, or any holder of the Permanent Notes (other than the PHA) any right or right of action or proceeding by which the Local Authority might be deprived of title to or possession of any Project.

The terms, "Bonds", "Refunding Bonds", and "Permanent Notes", as used herein shall include Temporary Notes, Advance Notes, Preliminary Notes and Promissory Notes, or other evidence of indebtedness issued pursuant to the Authority's Annual Contributions Contract.

IN WITNESS WHEREOF, the Local Authority by its officers thereunto duly authorized has caused these presents to be signed in its name and its corporate seal to be hereunto affixed and attested this 4th day of February, 1960.

(SEAL)

MURFREESBORO HOUSING AUTHORITY
By Carl L. Hickerson
Chairman

ATTEST: Edward Seddon
Secretary

STATE OF TENNESSEE
COUNTY OF RUTHERFORD

On this 5th day of February, 19 60 before me appeared Carl L. Hickerson and Edward Seddon to me personally known, who, being by me duly sworn, did say that they are the Chairman and Secretary of Murfreesboro Housing Authority, and that the seal affixed to the foregoing instrument is the seal of the said Housing Authority and that said instrument was signed and sealed on behalf of the Murfreesboro Housing Authority by authority of law and a resolution duly adopted by the Commissioners of said Authority, and they acknowledged said instrument to be the free act and deed of the said Authority.

STATE OF TENNESSEE
RUTHERFORD COUNTY Feb 5 1960
Office of the Register
I, Everett Waller, Register do certify that the foregoing instrument and certificate are Registered in my said office in Book No. 118
page No. 141 and that they were received Feb 5 1960 at 10:45 o'clock A M. and entered in Note Book page
EVERETT WALLER, Register
By ______ Dep. Reg.

______
Notary Public
My Commission Expires:
August 13, 1961
(SEAL)

TD A723/825

Declaration of Trust
(Public Housing Modernization Grant Projects) 009493

Prepared by:
U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

Whereas, (1, see instructions) MURFREESBORO HOUSING AUTHORITY (herein called the Public Housing Agency (PHA), a public body corporate and politic, duly created and organized pursuant to and in accordance with the provisions of the laws of the (2) State of Tennessee, and the United States of America, Secretary of Housing and Urban Development (herein called HUD) pursuant to the United States Housing Act of 1937 (42 U.S.C. 1437, et seq.) and the Department of Housing and Urban Development Act (5 U.S.C. 624) entered into a certain contract with the effective date as of (3) June 30, 19 73 (herein called the Annual Contributions Contract) and a certain Modernization Project Grant Amendment to the Annual Contributions Contract with the effective date as of (4) October 12, 19 89, (herein called the Modernization Grant Amendment) providing for a grant to be made by HUD to assist the PHA in modernizing lower income housing project(s); and

Whereas, as of the date of the execution of this Declaration of Trust, the Modernization Grant Amendment and the Annual Contributions Contract cover certain individual lower income housing projects located in: (5) City of Murfreesboro, County of Rutherford and State of Tennessee which will provide approximately (6) 76 dwelling units; and which lower income housing projects are known as Modernization Project No. (7) TN43P020904-2 and individual projects as follows:

Project No. (8) TN37P020003 with approximately 76 dwelling units,
Project No. (8) ______ with approximately ______ dwelling units, and
Project No. (8) ______ with approximately ______ dwelling units; and
Project No. (8) ______

Whereas, the modernization of each Project will have been financed with grant assistance provided by HUD.

Now Therefore, to assure HUD of the performance by the PHA of the covenants contained in the Modernization Grant Amendment and the Annual Contributions Contract, the PHA does hereby acknowledge and declare that it is possessed of and holds in trust for the benefit of HUD, for the purposes herein stated, the following described real property situated in: (9) City of Murfreesboro, County of Rutherford and State of Tennessee, To Wit:

(Insert legal description for each individual project.)(10)

SEE EXHIBIT "A"

and all buildings and fixtures erected or to be erected thereon or appurtenant thereto.

The PHA hereby declares and acknowledges that during the existence of the trust hereby created, HUD has been granted and is possessed of an interest in the above described Project property, To Wit:

The right to require the PHA to remain seized of the title to said property and to refrain from transferring, conveying, assigning, leasing, mortgaging, pledging, or otherwise encumbering or permitting or suffering any transfer, conveyance, assignment, lease, mortgage, pledge or other encumbrance of said property or any part thereof, appurtenances thereto, or any rent, revenues, income, or receipts therefrom or in connection therewith, or any of the benefits or contributions granted to it by or pursuant to the Modernization Grant Amendment and the Annual Contributions Contract, or any interest in any of the same except that the PHA may (1) to the extent and in the manner provided in the Annual Contributions Contract, (a) lease dwellings and other spaces and facilities in any Project, or (b) convey or otherwise dispose of any real or personal property which is determined to be excess to the needs of any Project, or (c) convey or dedicate land for use as streets, alleys, or other public right-of-way, and grant easements for the establishment, operation, and maintenance of public utilities; or (d) enter into and perform contracts for the sale of dwelling units to members of tenant families, as authorized by the United States Housing Act of 1937, or (2) with the approval of HUD, release any Project from the trust hereby created; Provided, That nothing herein contained shall be construed as prohibiting the conveyance of title to or the delivery of possession of any Project to HUD pursuant to the Annual Contributions Contract.

The endorsement by a duly authorized officer of HUD (1) upon any conveyance or transfer made by the PHA of any real or personal property which is determined to be excess to the needs of any Project, or (2) upon any instrument of conveyance or dedication of property, or any interest therein, for use as streets, alleys, or other public right-of-way, or for the establishment, operation and maintenance of public utilities, or (3) upon any instrument transferring or conveying a dwelling unit, or an interest therein, to a member of a tenant family, or (4) upon any instrument of release made by the PHA of any Project shall be effective to release such property from the trust hereby created.

The individual projects covered by the Modernization Grant Amendment shall be subject to this Declaration of Trust for a period of twenty years beginning on the date of the Modernization Grant Amendment. Each individual project shall also be subject to this Declaration of Trust for a period of twenty years after the date of the most recent Modernization Grant Amendment applicable to that project. Upon expiration of the period during which the PHA is obligated to operate the individual projects in accordance with the Annual Contributions Contract, the trust hereby created shall terminate and no longer be effective.

In Witness Whereof, the PHA by its officers thereunto duly authorized has caused these presents to be signed in its name and its corporate seal to be hereunto affixed and attested this 14th day of MAY, 19 91.

(1) MURFREESBORO HOUSING AUTHORITY

(Seal)

825 By: Edwin Ayers Chairperson

Attest: ______ Secretary

form HUD-52190-B (3/90)
ref. Handbook 7485.1

EXHIBIT "A"

826

PROJECT TN 20-3

BEGINNING AT A CONCRETE MONUMENT IN THE SOUTH MARGIN OF HEMBREE STREET, SAID POINT BEING N 89 DEG 32 MIN E, 150.0 FEET FROM THE EAST MARGIN OF SPRING STREET; THENCE N 89 DEG 32 MIN E, 1,019.5 FEET WITH SAID SOUTH MARGIN OF HEMBREE STREET AND SAID MARGIN OF HEMBREE STREET IF EXTENDED TO A CONCRETE MONUMENT IN THE NORTH LINE OF H.C. ELROD, ET UX; THENCE, DUE SOUTH, 475.7 FEET SEVERING THE LANDS OF H.C. ELROD, ET UX, TO A CONCRETE MONUMENT; THENCE, DUE WEST, 217.7 FEET TO A CONCRETE MONUMENT; THENCE, DUE SOUTH, 150.5 FEET TO CONCRETE MONUMENT; THENCE, DUE WEST, 296.7 FEET TO A CONCRETE MONUMENT, SAID POINT BEING THE NORTHEAST CORNER OF JOHN DEGEORGE, ET UX, AND A CORNER TO H.C. ELROD, ET UX; THENCE, S 0 DEG 47 MIN W, 584.0 FEET TO A CONCRETE MONUMENT IN THE WEST LINE OF H.C. ELROD, ET UX, SAID POINT BEING THE SOUTHEAST CORNER OF JOHN DEGEORGE AND THE NORTHEAST CORNER OF SAM DEGEORGE; THENCE, N 89 DEG 18 MIN W, 329.9 FEET TO A CONCRETE MONUMENT IN THE EAST MARGIN OF ACADEMY STREET, SAID POINT BEING THE SOUTHWEST CORNER OF JOHN DEGEORGE, ET UX AND THE NORTHWEST CORNER OF SAM DEGEORGE; THENCE, N 1 DEG 17 MIN E, 151.3 FEET WITH SAID EAST MARGIN OF ACADEMY STREET TO A CONCRETE MONUMENT IN THE WEST LINE OF JOHN DEGEORGE; THENCE, S 88 DEG 37 MIN W, 187.5 FEET TO A CONCRETE MONUMENT IN THE SOUTH LINE OF W. L. CLARK, ET AL, TRUSTEES; THENCE, N 2 DEG 36 MIN E, 349.45 FEET TO A CONCRETE MONUMENT IN THE LAND OF GEORGE W. MULLINS, SAID POINT BEING N 2 DEG 36 MIN E, 73.85 FEET FROM THE NORTHWEST CORNER OF C. C. LEWIS, ET UX, AND THE NORTHEAST CORNER OF MRS. JAMES P. MCLAINE; THENCE N 89 DEG 17 MIN W, 35.48 FEET SEVERING THE LANDS OF GEORGE W. MULLINS TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT; THENCE, WESTERLY WITH A CURVE TO THE LEFT HAVING A RADIUS OF 182.00 FEET AND A CENTRAL ANGLE OF 8 DEG 18 MIN, 26.36 FEET TO A CONCRETE MONUMENT; THENCE, S 82 DEG 25 MIN W, 85.70 FEET TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT; THENCE, SOUTHWESTERLY WITH A CURVE TO THE LEFT HAVING A RADIUS OF 13.58 FEET AND A CENTRAL ANGLE OF 81 DEG 16 MIN, 19.26 FEET TO A CONCRETE MONUMENT IN THE EAST MARGIN OF SPRING ST.; THENCE, N 1 DEG 09 MIN E, 73.8 FEET WITH SAID MARGIN OF SPRING STREET TO A CONCRETE MONUMENT IN THE WEST LINE OF H. O. EDMONDSON, SAID POINT BEING N 1 DEG 09 MIN E, 35.6 FEET FROM THE NORTHEAST CORNER OF GEORGE W. MULLINS, ET UX; THENCE, SOUTHEASTERLY, SEVERING THE LANDS OF H. O. EDMONSDON WITH A CURVE TO THE LEFT HAVING A RADIUS OF 22.09 FEET AND A CENTRAL ANGLE OF 98 DEG 44 MIN, 38.07 FEET TO A CONCRETE MONUMENT; THENCE, N 82 DEG 25 MIN E, 66.16 FEET TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE RIGHT; THENCE, EASTERLY WITH A CURVE TO THE RIGHT HAVING A RADIUS OF 218.00 FEET AND A CENTRAL ANGLE OF 8 DEG 18 MIN, 31.58 FEET TO A CONCRETE MONUMENT; THENCE, S 89 DEG 17 MIN EAST, 30.24 FEET TO A CONCRETE MONUMENT IN THE WEST LINE OF ELLIS PEYTON, ET UX; THENCE, N 0 DEG 43 MIN E, 666.1 FEET TO THE POINT OF BEGINNING, CONTAINING 880,998 SQ. FEET OR 20.22 ACRES MORE OR LESS.

HUD-52190
3/67

STATE OF TENNESSEE
COUNTY OF Rutherford

On this 14th day of MAY, 1991, before me appeared Edwin Ayers and Robert T. BATEY to me personally known, being by me duly sworn, did say that they are Chairman and Secretary, respectively, of The Murfreesboro Housing Authority, and that the seal affixed to the foregoing instrument is the seal of the said Housing Authority and that said instrument was signed and sealed on behalf of Murfreesboro Housing Authority by authority of law and a Resolution duly adopted by the Board of Commissioners of said Authority; and they acknowledge said instrument to be the free act and deed of said Authority.

______
Notary Public
My Commission Expires: 3-20-1994

RECORDING FEE 12.00
STATE TAX —
REGISTER'S FEE —
TOTAL PAID 12.00
RECEIPT NO. 18496

BART YEARGAN, REGISTER
RUTHERFORD COUNTY, TENNESSEE
Received May 14 19 91
Time 04:01 P M.
Notebook 39 Page 541
Trust BOOK A723 PAGE 825
Deputy Donna Glenn

827

TD A750-499

Declaration of Trust

(Public Housing Modernization Grant Projects)

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

024078

Whereas, (1, see instructions) MURFREESBORO HOUSING AUTHORITY (herein called the Public Housing Agency (PHA)), a public body corporate and politic, duly created and organized pursuant to and in accordance with the provisions of the laws of the (2) State of Tennessee and the United States of America, Secretary of Housing and Urban Development (herein called HUD) pursuant to the United States Housing Act of 1937 (42 U.S.C. 1437, et seq.) and the Department of Housing and Urban Development Act (5 U.S.C. 624) entered into a certain contract with the effective date as of (3) June 30, 1973, (herein called the Annual Contributions Contract) and a certain Modernization Project Grant Amendment to the Annual Contributions Contract with the effective date as of (4) October 13, 19 91 (herein called the Modernization Grant Amendment) providing for a grant to be made by HUD to assist the PHA in modernizing lower income housing project(s); and

Whereas, as of the date of the execution of this Declaration of Trust, the Modernization Grant Amendment and the Annual Contributions Contract cover certain individual lower income housing projects located in: (5) City of Murfreesboro, County of Rutherford and State of Tennessee which will provide approximately (6) 76 dwelling units; and which lower income housing projects are known as Modernization Project No. (7) TN43P020906-E and individual projects as follows:

Project No. (8) TN37P020003 with approximately 76 dwelling units,
Project No. (8) _____ with approximately _____ dwelling units, and
Project No. (8) _____ with approximately _____ dwelling units; and

Whereas, the modernization of each Project will have been financed with grant assistance provided by HUD.

Now Therefore, to assure HUD of the performance by the PHA of the covenants contained in the Modernization Grant Amendment and the Annual Contributions Contract, the PHA does hereby acknowledge and declare that it is possessed of and holds in trust for the benefit of HUD, for the purposes herein stated, the following described real property situated in: (9) City of Murfreesboro, County of Rutherford and State of Tennessee To Wit:

(Insert legal description for each individual project. X10)

SEE EXHIBIT "A"

Prepared By -
ROBERT T. BATEY, EXECUTIVE DIRECTOR
MURFREESBORO HOUSING AUTHORITY
318 EAST LOKEY AVENUE
MURFREESBORO, TN 37130

and all buildings and fixtures erected or to be erected thereon or appurtenant thereto.

The PHA hereby declares and acknowledges that during the existence of the trust hereby created, HUD has been granted and is possessed of an interest in the above described Project property, To Wit:

The right to require the PHA to remain seized of the title to said property and to refrain from transferring, conveying, assigning, leasing, mortgaging, pledging, or otherwise encumbering or permitting or suffering any transfer, conveyance, assignment, lease, mortgage, pledge or other encumbrance of said property or any part thereof, appurtenances thereto, or any rent, revenues, income, or receipts therefrom or in connection therewith, or any of the benefits or contributions granted to it by or pursuant to the Modernization Grant Amendment and the Annual Contributions Contract, or any interest in any of the same except that the PHA may (1) to the extent and in the manner provided in the Annual Contributions Contract, (a) lease dwellings and other spaces and facilities in any Project, or (b) convey or otherwise dispose of any real or personal property which is determined to be excess to the needs of any Project, or (c) convey or dedicate land for use as streets, alleys, or other public right-of-way, and grant easements for the establishment, operation, and maintenance of public utilities; or (d) enter into and perform contracts for the sale of dwelling units to members of tenant families, as authorized by the United States Housing Act of 1937, or (2) with the approval of HUD, release any Project from the trust hereby created, Provided, That nothing herein contained shall be construed as prohibiting the conveyance of title to or the delivery of possession of any Project to HUD pursuant to the Annual Contributions Contract.

The endorsement by a duly authorized officer of HUD (1) upon any conveyance or transfer made by the PHA of any real or personal property which is determined to be excess to the needs of any Project, or (2) upon any instrument of conveyance or dedication of property, or any interest therein, for use as streets, alleys, or other public right-of-way, or for the establishment, operation and maintenance of public utilities, or (3) upon any instrument transferring or conveying a dwelling unit, or an interest therein, to a member of a tenant family, or (4) upon any instrument of release made by the PHA of any Project shall be effective to release such property from the trust hereby created.

The individual projects covered by the Modernization Grant Amendment shall be subject to this Declaration of Trust for a period of twenty years beginning on the date of the Modernization Grant Amendment. Each individual project shall also be subject to this Declaration of Trust for a period of twenty years beginning on the date of the most recent Modernization Grant Amendment applicable to that project. Upon expiration of the period during which the PHA is obligated to operate the individual projects in accordance with the Annual Contributions Contract, the trust hereby created shall terminate and no longer be effective.

In Witness Whereof, the PHA by its officers thereunto duly authorized has caused these presents to be signed in its name and its corporate seal to be hereunto affixed and attested this 12th day of NOVEMBER, 19 91.

(1) MURFREESBORO HOUSING AUTHORITY

499

By: _____ Chairperson

Attest: _____ Secretary

Form HUD-52190-B (3/90)

EXHIBIT "A"

500

PROJECT TN 20-3

BEGINNING AT A CONCRETE MONUMENT IN THE SOUTH MARGIN OF HEMBREE STREET, SAID POINT BEING N 89 DEG 32 MIN E, 150.0 FEET FROM THE EAST MARGIN OF SPRING STREET; THENCE N 89 DEG 32 MIN E, 1,019.5 FEET WITH SAID SOUTH MARGIN OF HEMBREE STREET AND SAID MARGIN OF HEMBREE STREET IF EXTENDED TO A CONCRETE MONUMENT IN THE NORTH LINE OF H.C. ELROD, ET UX; THENCE, DUE SOUTH, 475.7 FEET SEVERING THE LANDS OF H.C. ELROD, ET UX, TO A CONCRETE MONUMENT; THENCE, DUE WEST, 217.7 FEET TO A CONCRETE MONUMENT; THENCE, DUE SOUTH, 150.5 FEET TO CONCRETE MONUMENT; THENCE, DUE WEST, 296.7 FEET TO A CONCRETE MONUMENT, SAID POINT BEING THE NORTHEAST CORNER OF JOHN DEGEORGE, ET UX, AND A CORNER TO H.C. ELROD, ET UX; THENCE, S 0 DEG 47 MIN W, 584.0 FEET TO A CONCRETE MONUMENT IN THE WEST LINE OF H.C. ELROD, ET UX, SAID POINT BEING THE SOUTHEAST CORNER OF JOHN DEGEORGE AND THE NORTHEAST CORNER OF SAM DEGEORGE; THENCE, N 89 DEG 18 MIN W, 329.9 FEET TO A CONCRETE MONUMENT IN THE EAST MARGIN OF ACADEMY STREET, SAID POINT BEING THE SOUTHWEST CORNER OF JOHN DEGEORGE, ET UX AND THE NORTHWEST CORNER OF SAM DEGEORGE; THENCE, N 1 DEG 17 MIN E, 151.3 FEET WITH SAID EAST MARGIN OF ACADEMY STREET TO A CONCRETE MONUMENT IN THE WEST LINE OF JOHN DEGEORGE; THENCE, S 88 DEG 37 MIN W, 187.5 FEET TO A CONCRETE MONUMENT IN THE SOUTH LINE OF W. L. CLARK, ET AL, TRUSTEES; THENCE, N 2 DEG 36 MIN E, 349.45 FEET TO A CONCRETE MONUMENT IN THE LAND OF GEORGE W. MULLINS, SAID POINT BEING N 2 DEG 36 MIN E, 73.85 FEET FROM THE NORTHWEST CORNER OF C. C. LEWIS, ET UX, AND THE NORTHEAST CORNER OF MRS. JAMES P. MCLAINE; THENCE N 89 DEG 17 MIN W, 35.48 FEET SEVERING THE LANDS OF GEORGE W. MULLINS TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT; THENCE, WESTERLY WITH A CURVE TO THE LEFT HAVING A RADIUS OF 182.00 FEET AND A CENTRAL ANGLE OF 8 DEG 18 MIN, 26.36 FEET TO A CONCRETE MONUMENT; THENCE, S 82 DEG 25 MIN W, 85.70 FEET TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE LEFT; THENCE, SOUTHWESTERLY WITH A CURVE TO THE LEFT HAVING A RADIUS OF 13.50 FEET AND A CENTRAL ANGLE OF 81 DEG 16 MIN, 19.26 FEET TO A CONCRETE MONUMENT IN THE EAST MARGIN OF SPRING ST.; THENCE, N 1 DEG 09 MIN E, 73.8 FEET WITH SAID MARGIN OF SPRING STREET TO A CONCRETE MONUMENT IN THE WEST LINE OF H. O. EDMONDSON, SAID POINT BEING N 1 DEG 09 MIN E, 35.6 FEET FROM THE NORTHEAST CORNER OF GEORGE U. MULLINS, ET UX; THENCE, SOUTHEASTERLY, SEVERING THE LANDS OF H. O. EDMONDSON WITH A CURVE TO THE LEFT HAVING A RADIUS OF 22.09 FEET AND A CENTRAL ANGLE OF 90 DEG 44 MIN, 38.07 FEET TO A CONCRETE MONUMENT; THENCE, N 82 DEG 25 MIN E, 66.16 FEET TO A CONCRETE MONUMENT AT THE BEGINNING OF A CURVE TO THE RIGHT; THENCE, EASTERLY WITH A CURVE TO THE RIGHT HAVING A RADIUS OF 218.00 FEET AND A CENTRAL ANGLE OF 8 DEG 18 MIN, 31.58 FEET TO A CONCRETE MONUMENT; THENCE, S 89 DEG 17 MIN EAST, 30.24 FEET TO A CONCRETE MONUMENT IN THE WEST LINE OF ELLIS PEYTON, ET UX; THENCE, N 0 DEG 43 MIN E, 666.1 FEET TO THE POINT OF BEGINNING, CONTAINING 880,998 SQ. FEET OR 20.22 ACRES MORE OR LESS.

HUD-52190
3/67

STATE OF TENNESSEE

COUNTY OF Rutherford

On this 12th day of November, 1991, before me appeared Edwin Ayers and Robert T. Batey to me personally known, being by me duly sworn, did say that they are Chairman and Secretary, respectively, of Murfreesboro Housing Authority, and that the seal affixed to the foregoing instrument is the seal of the said Housing Authority and that said instrument was signed and sealed on behalf of Murfreesboro Housing Authority by authority of law and a Resolution duly adopted by the Board of Commissioners of said Authority; and they acknowledge said instrument to be the free act and deed of said Authority.

Peggy Armstrong
Notary Public

My Commission Expires: 1-20-92

BART YEARGAN, REGISTER
RUTHERFORD COUNTY, TENNESSEE
Received NOV 13 19 91
Time 9:53 A.M.
Register 40 Page 345
Deed Book A750 Page 499
Deputy Donna Klein

RECORDING FEE 12.00
STATE TAX —
REGISTER'S FEE —
TOTAL PAID 12.00
RECEIPT NO. 33583

501

Page 3

129
257

STATE OF TENNESSEE
RUTHERFORD COUNTY

FOR AND IN CONSIDERATION of the sum of EIGHTEEN HUNDRED AND NO/100 ($1800.00) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, we, C. C. Lewis and wife, Sara K. Lewis, have this day bargained and sold and by these presents do transfer and convey unto Murfreesboro Housing Authority, its successors and assigns, forever, certain real estate located in the 13th Civil District of Rutherford County, Tennessee, more particularly described as follows:



BEGINNING at a point in the west margin of Academy Street, said point being the northeast corner of W. L. Clark, et al, Trustees, thence S 89° 11' W, 144.8 feet to a point in the north line of W. L. Clark, et al, Trustees; thence N 2° 36' E, 162.0 feet to a point in the south line of George W. Mullins, et ux; thence N 87° 37' E, 141.2 feet to a point in the west margin of Academy Street, said point being the southeast corner of George W. Mullins, et ux; thence S 1° 17' W, 165.7 feet with said west margin of Academy Street to the point of beginning. Containing 23,440 square feet more or less. Being a portion of the property conveyed to the undersigned by deed of record in Book 115, page 224, Register's Office of Rutherford County, Tennessee.

Also included in the above description and expressly conveyed herein is all right, title and interest owned by the undersigned, if any, in and to that portion of Academy Street in the City of Murfreesboro lying immediately east of the remaining property herein conveyed.

TO HAVE AND TO HOLD the said real estate, together with the appurtenances, estate, title, and interest thereto belonging, unto the said grantee, its successors and assigns, forever.

We covenant with the said grantee, that we are lawfully seized and possessed of said real estate, have a good right to convey the same, and that it is unencumbered, except for the 1959 taxes, which will be paid by the grantors.

35

We further covenant and bind ourselves, our heirs and representatives, to forever warrant and defend the title to said real estate to the said grantee, its successors and assigns, against the lawful claims of all persons whomsoever.

WITNESS our hands this the 3rd day of September, 1959.

C. C. Lewis

Sara K. Lewis

STATE OF TENNESSEE
RUTHERFORD COUNTY

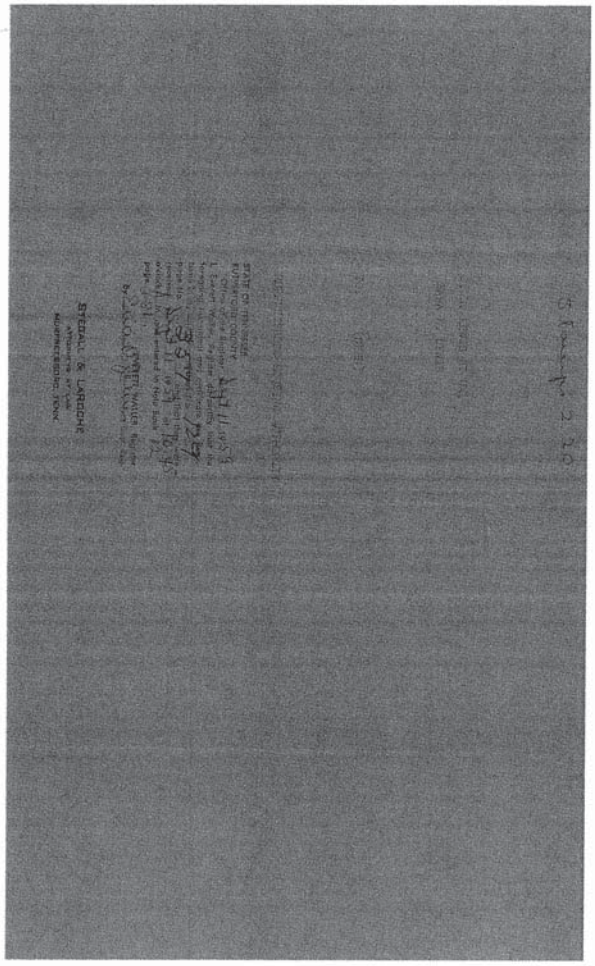
Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named C. C. Lewis and wife, Sara K. Lewis, with whom I am personally acquainted and who acknowledged that they executed the foregoing (DEED) instrument for the purposes therein contained.

Witness my hand and official seal at Murfreesboro, Tennessee, this the 3rd day of September, 1959.

NOTARY PUBLIC — RUTHERFORD COUNTY, TENN.

Notary Public

My commission expires: Sept. 2, 1961



129/359

35

STATE OF TENNESSEE
RUTHERFORD COUNTY

FOR AND IN CONSIDERATION of the sum of FOUR THOUSAND THREE HUNDRED SEVENTY-FIVE AND NO/100 ($4,375.00) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, I, MRS. OLA M. (GEORGE W.) MULLINS, have this day bargained and sold and by these presents do transfer and convey unto the MURFREESBORO HOUSING AUTHORITY, its successors and assigns, forever, certain real estate located in the City of Murfreesboro and in the 13th Civil District of Rutherford County, Tennessee, more particularly described as follows:



BEGINNING at a point in the east margin of Spring Street, said point being the southwest corner of H. O. Edmondson; thence N 82° 23' E, 154.35 feet with said Edmondson's south line to a point, said point being the southeast corner of Edmondson and the southwest corner of Ellis Peyton, et ux; thence N 88° 10' E, 144.9 feet to a point in the south line of Ellis Peyton, et ux, said point being in the west margin of Academy Street; thence S 1° 17' W, 105.7 feet with said margin of Academy Street to a point, said point being the northeast corner of C. C. Lewis, et ux; thence S 87° 37' W, 141.2 feet with the north line of said Lewis to a point, said point being a corner to Lewis and the northeast corner of Mrs. James P. McClane; thence N 2° 36' E, 73.85 feet to a concrete monument; thence N 89° 17' W, 35.48 feet to a concrete monument at the beginning of a curve to the left; thence westerly with a curve to the left having a radius of 162.00 feet and a central angle of 8° 13', 26.36 feet to a concrete monument; thence S 82° 29' W, 85.70 feet to a concrete monument at the beginning of a curve to the left; thence southwesterly with a curve to the left having a radius of 13.58 feet and a central angle of 81° 16', 19.26 feet to a concrete monument in the east margin of Spring Street; thence N 1° 09' E, 38.2 feet with said margin of Spring Street to the point of beginning, containing 19,292 square feet more or less as per engineers certificate by Barge, Waggoner and Sumner, Inc. Being a portion of the property conveyed to the undersigned and husband, George W. Mullins, now deceased, by deeds of record in Deed Books 63 and 74, pages 307 and 422, respectively, Register's Office of Rutherford County, Tennessee.

The above description embodies all right, title, and interest in and to real estate, if any, owned by the undersigned which lies North of the bobwire fence between the property of the undersigned and that of Mrs. Ellis Peyton.

Also included in the above description and expressly conveyed herein is all right, title and interest owned by the undersigned, if any, in and to that portion of Academy Street in the City of Murfreesboro lying immediately East of the [redacted] property herein conveyed.

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TO HAVE AND TO HOLD the said real estate, together with the appurtenances, estate, title, and interest thereto belonging, unto the said grantee, its successors and assigns, forever.

I covenant with the said grantee, that I am lawfully seized and possessed of said real estate, have a good right to convey the same, and that it is unencumbered, except for the 1959 taxes, which will be paid by the grantor.

I further covenant and bind myself, my heirs and representatives, to forever warrant and defend the title to said real estate to the said grantee, its successors and assigns, against the lawful claims of all persons whomsoever.

WITNESS my hand this the 31st day of August, 1959.

Mrs. Ola M. (George W.) Mullins

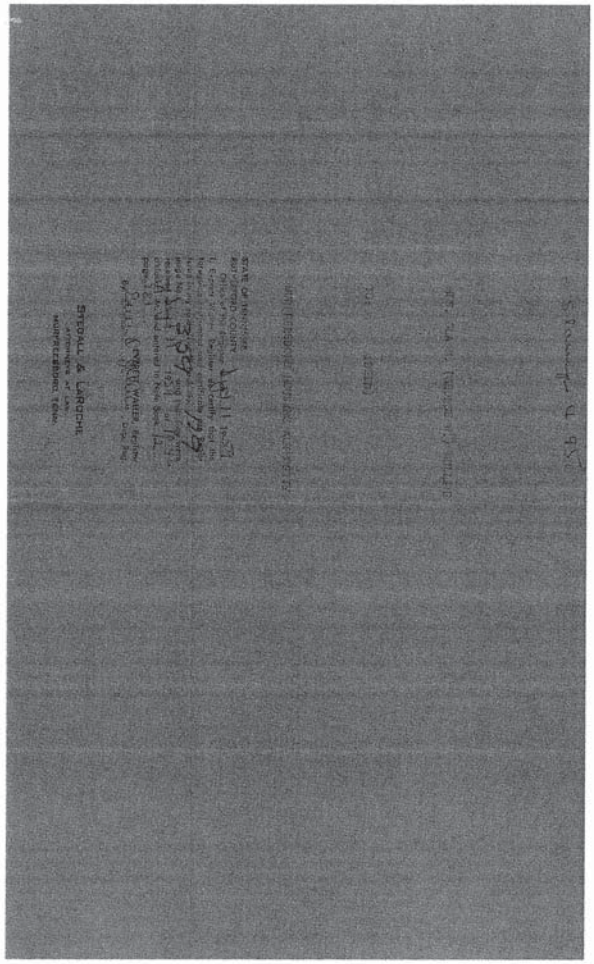
STATE OF TENNESSEE
RUTHERFORD COUNTY

Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named Mrs. Ola M. (George W.) Mullins, with whom I am personally acquainted and who acknowledged that she executed the foregoing (DEED) instrument for the purposes therein contained.

Witness my hand and official seal at Murfreesboro, Tennessee, this the 31st day of August, 1959.

Notary Public

My commission expires: 10/22/62



129
361

STATE OF TENNESSEE
RUTHERFORD COUNTY

FOR AND IN CONSIDERATION of the sum of FOUR THOUSAND AND NO/100 ($4,000.00) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, we, H. O. Edmondson and wife, Inez D. Edmondson, have this day bargained and sold and by these presents do transfer and convey unto Murfreesboro Housing Authority, its successors and assigns, forever, certain real estate located in the City limits of Murfreesboro and in the 13th Civil District of Rutherford County, Tennessee, described as follows:



BEGINNING at a point in the east margin of Spring Street, said point being the northwest corner of George W. Mullins, et ux; thence, N 1° 09' E, 35.6 feet with said margin of Spring Street to a concrete monument; thence, southeasterly with a curve to the left having a radius of 22.09 feet and a central angle of 98° 44', 38.07 feet to a concrete monument; thence N 82° 25' E, 66.16 feet to a concrete monument; thence, easterly with a curve to the right having a radius of 218.00 feet and a central angle of 8° 18', 31.58 feet to a concrete monument; thence, S 89° 17' E, 30.24 feet to a concrete monument in the west line of Ellis Peyton, et ux; thence, S 0° 43' W, 3.0 feet to a point, said point being the southwest corner of Ellis Peyton, et ux, and being in the north line of George W. Mullins, et ux; thence, S 82° 23' W, 154.35 feet with said north line of Mullins to the point of beginning; containing 1,479 square feet more or less. Being a portion of the property conveyed to the undersigned, H. O. Edmondson, by deed of record in Book 83, page 120, Register's Office of Rutherford County, Tennessee, dated May 20, 1937.

TO HAVE AND TO HOLD the said real estate, together with the appurtenances, estate, title, and interest thereto belonging, unto the said grantee, its successors and assigns, forever.

We covenant with the said grantee, that we are lawfully seized and possessed of said real estate, have a good right to convey the same, and that it is unencumbered, except for the 1959 taxes which will be paid by the grantors.

362

We further covenant and bind ourselves, our heirs and representatives, to forever warrant and defend the title to said real estate to the said grantee, its successors and assigns, against the lawful claims of all persons whomsoever.

WITNESS our hands this the 31 day of August, 1959.

H. O. Edmondson

Inez D. Edmondson

STATE OF TENNESSEE
RUTHERFORD COUNTY

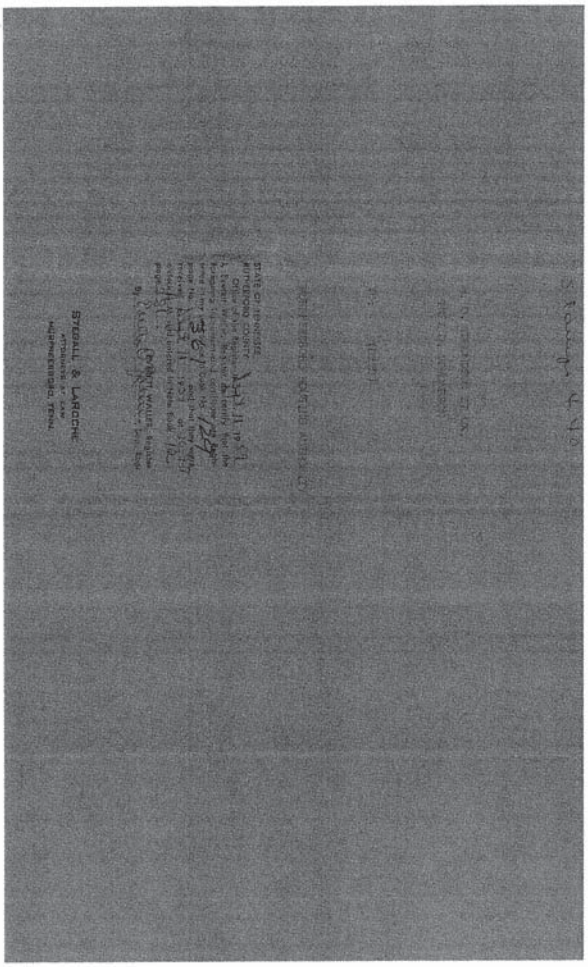
Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named H. O. Edmondson and wife, Inez D. Edmondson, with whom I am personally acquainted and who acknowledged that they executed the foregoing (DEED) instrument for the purposes therein contained.

Witness my hand and official seal at Murfreesboro, Tennessee, this the 3 day of August, 1959.

NOTARY PUBLIC RUTHERFORD COUNTY, TENN.

Whitney Fegal
Notary Public

My commission expires: July 13, 1961



STATE OF TENNESSEE

RUTHERFORD COUNTY

129

463

FOR AND IN CONSIDERATION of the sum of TEN AND NO/100 DOLLARS ($10.00), cash in hand paid, and other good and valuable considerations, the receipt of all of which is hereby acknowledged, the CITY OF MURFREESBORO, a municipal corporation in Rutherford County, Tennessee, has this day bargained and sold and by these presents does hereby transfer and convey in fee simple unto the MURFREESBORO HOUSING AUTHORITY, its successors and assigns forever, certain lands lying within the corporate limits of the City of Murfreesboro, 13th Civil District of Rutherford County, State of Tennessee, more particularly described as follows, to-wit:

PARCEL NO. 1:
Beginning at a point in the south margin of Hembree Street, said point being North 89 degrees 32 minutes East 120.79 feet from the east margin of Academy Street; thence North 89 degrees 32 minutes East 707.5 feet with said margin of Hembree Street and with said margin of Hembree Street if extended to a concrete monument in the north line of this property of the City of Murfreesboro; thence due South 475.7 feet severing the lands of the above mentioned City of Murfreesboro to a concrete monument; thence due West 217.7 feet to a concrete monument; thence due South 150.5 feet to a concrete monument; thence due West 296.7 feet to a concrete monument, said point being the northeast corner of John DeGeorge; thence South 82 degrees 12 minutes West 203.3 feet to a point in the north line of John DeGeorge, said point being the southeast corner of Ellis Peyton, et ux; thence North 0 degrees 44 minutes East 648.1 feet to the point of beginning, containing 412,370 square feet, more or less, according to Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers. Being a portion of the property conveyed to the City of Murfreesboro by deed of record in Book 123, page 403, Register's Office of Rutherford County, Tennessee.

PARCEL NO. 2:
Beginning at a point in the west margin of Hancock Street, said point being the southeast corner of Alton Haynes; thence South 4 degrees 38 minutes East 31.0 feet to a concrete monument at the beginning of a curve to the right; thence with a curve to the right having a radius of 30.0 feet, 47.5 feet to a concrete monument in the north margin of Mercury Boulevard; thence with said margin of Mercury Blvd. and a curve to the left having a radius of 3870.0 feet, 115.3 feet to a concrete monument; thence North 4 degrees 38 minutes west 58.8 feet to a point, said point being the southwest corner of Alton Haynes; thence North 84 degrees 22 minutes East 145.6 feet to the point of beginning, containing 8,460 square feet, more or less, being Parcel No. 23 of Project Tenn. 20-4, shown on and described from Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers. Being a portion of the property conveyed to the City of Murfreesboro by deed of record in Book 113, page 429, Register's Office of Rutherford County, Tennessee.

PARCEL NO. 3:
Beginning at a point in the east margin of Hancock Street, said point being the southwest corner of Bessie (Works) Maxwell; thence North 84 degrees 22 minutes East 5.9 feet to a point, said point being a common corner to Bessie (Works) Maxwell; thence South 64 degrees 10 minutes East 139.1 feet to a point in the north margin of Mercury Boulevard, said point being a common corner to Bessie (Works) Maxwell; thence with a curve to the left having a radius of 3870.0 feet, 104.2 feet to a concrete monument at the end of a return for Hancock Street; thence with a curve to the right having a radius of 30.0 feet, 45.9 feet to a concrete monument in the east margin of Hancock Street; thence North 4 degrees 38 minutes West 35.2 feet with said margin of Hancock Street to the point of beginning, containing 4,254 square feet, more or less, being Parcel No. 21 of Project Tenn. 20-4, shown on and described from Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers, and being a portion of the property conveyed to the City of Murfreesboro by deed of record in Book 113, page 429, Register's Office of Rutherford County, Tennessee.

TO HAVE AND TO HOLD the said parcels of real estate, together with the appurtenances, estate, title, and interest thereto belonging unto the MURFREESBORO HOUSING AUTHORITY, its successors and assigns, forever. 464

The CITY OF MURFREESBORO covenants with the said grantee that it is lawfully seized and possessed of said real estate, has a good right to convey the same, and that it is unencumbered.

The CITY OF MURFREESBORO further covenants and binds itself to forever warrant and defend the title to said real estate to the said MURFREESBORO HOUSING AUTHORITY, its successors and assigns, against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, said City of Murfreesboro has caused this instrument to be executed by its duly authorized officers on this the 15th day of September, 1959.

CITY OF MURFREESBORO

BY: A. L. Todd, Jr., Mayor

ATTEST:

Albert Williams,
City Recorder

STATE OF TENNESSEE

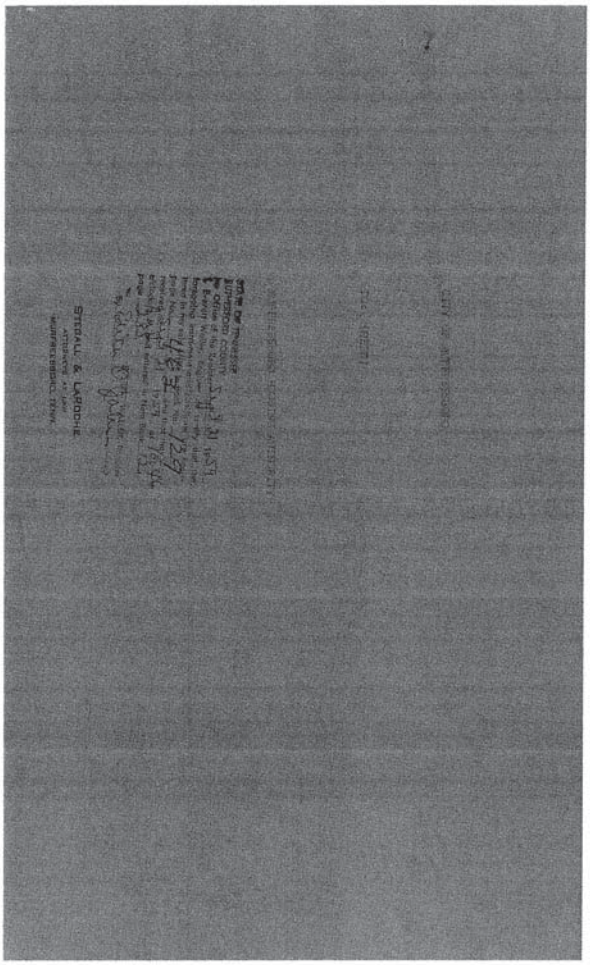
COUNTY OF RUTHERFORD

Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named A. L. Todd, Jr., and Albert Williams, with whom I am personally acquainted, and who, upon oath acknowledged themselves to be the Mayor and City Recorder, respectively, of the City of Murfreesboro, the within named bargainor, a municipal corporation, and that they as such Mayor and City Recorder, being authorized so to do, executed the foregoing instrument for the purposes therein contained and expressed, by subscribing thereto the corporate name of said City and by affixing thereto and attesting the corporate seal of said City by themselves as such Mayor and City Recorder, respectively.

WITNESS my hand and official seal at Murfreesboro, Tennessee, this 15th day of September, 1959.

Notary Public

My Commission expires: June 24, 1962



129/499

49c

STATE OF TENNESSEE
RUTHERFORD COUNTY

FOR AND IN CONSIDERATION of the sum of SEVEN THOUSAND SIX HUNDRED SEVENTY-FIVE ($7,675.00) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, we, JOHN DeGEORGE and wife, CLARA DeGEORGE, have this day bargained and sold and by these presents do transfer and convey unto MURFREESBORO HOUSING AUTHORITY, its successors and assigns, forever, certain real estate located in the 13th Civil District of Rutherford County, Tennessee, more particularly described as follows:



BEGINNING at a point in the east margin of Academy Street, said point being in the south line of Ellis Peyton, et ux; thence North 82 degrees 12 minutes East 331.9 feet to a concrete monument, said point being a corner to H. C. Elrod, et ux; thence South 0 degrees 47 minutes West 584.0 feet to a concrete monument in the west line of H. C. Elrod, et ux, said point being the northeast corner of Sam DeGeorge; thence North 89 degrees 13 minutes West 332.9 feet to a concrete monument in the east margin of Academy Street, said point being the northwest corner of Sam DeGeorge; thence North 1 degree 17 minutes East 535.0 feet with said margin of Academy Street to the point of beginning, containing 185,980 square feet, more or less as shown on and described from Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers. Being the same property conveyed to John DeGeorge by deed of record in Book 96, page 321, Register's Office of Rutherford County, Tennessee.

The grantors herein also hereby and herewith specifically convey unto the grantee all right, title and interest which they own, if any, in and to North Academy Street in the City of Murfreesboro.

TO HAVE AND TO HOLD the said real estate, together with the appurtenances, estate, title, and interest thereto belonging, unto the said grantee, its successors and assigns, forever.

We covenant with the said grantee that we are lawfully seized and possessed of said real estate, have a good right to convey the same, and that it is unencumbered, except for the lien of the 1959 taxes which shall be prorated as of October 1 and except for certain restrictive covenants of record in Book 96, page 321, Register's Office of Rutherford County, Tennessee.

500

Possession of the property herein conveyed shall be given to the grantee on or before forty-five days from the date of this instrument, it being specifically understood and agreed by and between the parties that following the expiration of said forty-five day period the grantors shall have the right and privilege of going upon the premises herein conveyed for the purpose of harvesting any pecans remaining on said property.

We further covenant and bind ourselves, our heirs and representatives, to forever warrant and defend the title to said real estate to the said grantee, its successors and assigns, against the lawful claims of all persons whomsoever.

WITNESS our hands this the 24TH day of SEPTEMBER, 1959.

John DeGeorge
John DeGeorge

Clara DeGeorge
Clara DeGeorge

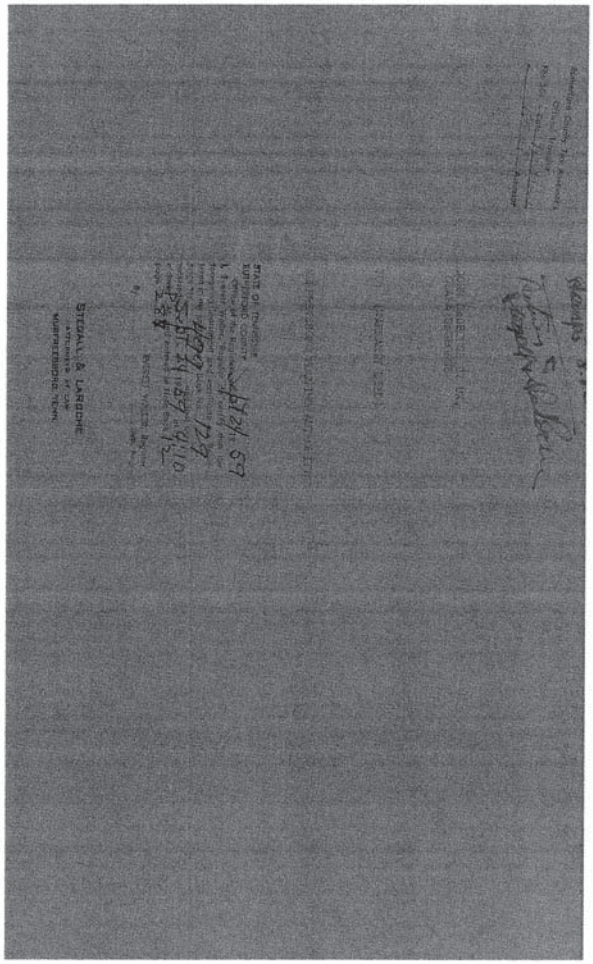
STATE OF TENNESSEE
RUTHERFORD COUNTY

Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named John DeGeorge and wife, Clara DeGeorge, with whom I am personally acquainted and who acknowledged that they executed the foregoing (DEED) instrument for the purposes therein contained.

WITNESS my hand and official seal at Murfreesboro, Tennessee, this the 24TH day of SEPTEMBER, 1959.

Notary Public

My Commission expires: OCT. 20, 1962



STEDMAN & LARGHE
MURFREESBORO, TENN.

DB 130/266

STATE OF TENNESSEE
COUNTY OF RUTHERFORD

WHEREAS, the Murfreesboro Housing Authority is a public body and body corporate and politic created pursuant to the provisions of Chapter 20 of the Public Acts of Tennessee for the year 1935, First Special Session, as amended by Chapter 234 Public Acts of Tennessee 1937, and as further amended by Chapter 114 Public Acts of Tennessee for the year 1945, same being entitled "The Public Housing Authorities Law" and a public corporation of the State of Tennessee; and

WHEREAS, the Murfreesboro Housing Authority is undertaking public housing projects known as Project Tennessee 20-3 and Project Tennessee 20-4; and

WHEREAS, the plan for said Projects contemplates the closing of certain streets within the City Limits of the City of Murfreesboro and said plans specify that streets within the project areas will be paved and guttered; and

WHEREAS, the Murfreesboro Housing Authority has further agreed to dedicate to the City of Murfreesboro unconditionally all streets within the said project areas upon completion of all site improvements relating to the streets in said areas.

NOW, THEREFORE, FOR AND IN CONSIDERATION of the mutual covenants and promises hereinabove set forth, the City of Murfreesboro, a municipal corporation in Rutherford County, Tennessee, does hereby transfer, remise, release, forever quitclaim, and convey all its right, title, and interest in and to the hereinafter described areas to the MURFREESBORO HOUSING AUTHORITY, its successors and assigns, said areas lying within the corporate limits of the City of Murfreesboro, 13th Civil District of Rutherford County, State of Tennessee, more particularly described as follows, to-wit:

PARCEL NO. 1: Being an unimproved portion of Minor Street, fronting 40.0 feet on the west side of First Avenue and running back between parallel lines 150.0 feet as per plat of record in Deed Book 106, page 96, Register's Office of Rutherford County, Tennessee, containing 6,000 square feet, more or less. Being Parcel a Project Tenn. 20-4, shown on and described from Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers. NPP

PARCEL NO. 2: Beginning at a concrete monument in the north margin of Burns Road, said point being in the south line of Henry W. McHenry, et ux; thence North 84 degrees 44 minutes East 116.7 feet with said north margin of Burns Road to a point in the west margin of Bilbro Street; thence North 4 degrees 24 minutes West 120.8 feet with said west margin of Bilbro Street to a concrete monument in the east line of Jesse Miller, et al; thence North 85 degrees 33 minutes East 26.0 feet to a point in the east margin of Bilbro Street, said point being the northwest NPP

corner of Clarence Jarrett; thence South 4 degrees 24 minutes East 140.4 feet with said east margin of Bilbro Street to a point in the south margin of Burns Road; thence South 84 degrees 44 minutes West 142.2 feet with said margin of Burns Road to a point, said point being the northwest corner of Ruth Looper; thence North 5 degrees 45 minutes West 20.0 feet to the point of beginning, containing 6,025 square feet, more or less, being Parcel c Project Tenn. 20-4, shown on and described from Propezty Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers.

PARCEL NO. 3: Beginning at a concrete monument in the north margin of Mercury Blvd., said point being the south line of the City of Murfreesboro property; thence 47.5 feet with a curve to the left having a radius of 30.0 feet and a central angle of 90 degrees 39 minutes 06 seconds to a concrete monument in the west margin of Hancock Street; thence North 4 degrees 38 minutes West 311.2 feet with said west margin of Hancock Street to a concrete monument at the north-east corner of Alton Haynes; thence South 78 degrees 07 minutes East 62.6 feet to a concrete monument in the south margin of Burns Road and the east margin of Hancock Street, said point being the northwest corner of Bessie (Works) Maxwell; thence South 4 degrees 38 minutes East 296.6 feet with said east margin of Hancock Street to a concrete monument at the beginning of a curve to the left, said point being in the west line of property owned by City of Murfreesboro; thence 45.9 feet with a curve to the left having a radius of 30.0 feet and a central angle of 87 degrees 35 minutes 04 seconds to a concrete monument in the north margin of Mercury Boulevard; thence 119.1 feet with the north margin of Mercury Blvd. and a curve to the left having a radius of 3870.0 feet and a central angle of 1 degree 45 minutes 50 seconds to the point of beginning, containing 20,390 square feet, more or less, being Parcel d of Project Tenn. 20-4 shown on and described from Property map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers, It being the intention of the grantor to convey all that tract or parcel of land obtained by the City of Murfreesboro from Annie Hyde by deed of record in Book 117, page 353, Register's Office of Rutherford County, Tennessee.

PARCEL NO. 4: Beginning at a point in the south margin of Membree Street, said point being North 89 degrees 32 minutes East, 341.2 feet from the east margin of Spring Street; thence South 1 degree 17 minutes West, 337.2 feet to a point in the north line of Ellis Peyton, et ux, said point being a corner to Sam S. Cox; thence North 85 degrees 14 minutes West, 40.07 feet to a point in the north line of said Peyton and a corner to Sam S. Cox; thence North 1 degree 17 minutes East, 333.6 feet to a point in the south margin of Membree Street, said point being the northeast corner of Sam S. Cox; thence North 89 degrees 32 minutes East, 40.02 feet with the south margin of Membree Street to the point of beginning, containing 13,416 square feet, more or less, being Parcel a Project Tenn. 20-3 shown on and described from Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers. Said Parcel a being an unimproved section of Academy Street. It is the specific and express intention of the grantor herein to convey unto the grantee herein all right, title and interest, if any, which it owns in and to Academy Street and its turn-outs as shown on plat and survey of the Reed-Cox Addition of record in Deed Book 106, page 526, Register's Office of Rutherford County, Tennessee, regardless of dimensions, width or length, PROVIDED, HOWEVER, that the conveyance herein of this Parcel No. 4 shall not be deemed, treated, construed or held to be an acceptance by, or on behalf of, the City of Murfreesboro of any dedication or offer to dedicate heretofore made or attempted to be made of said unimpoved section of Academy Street as shown on said plat.

PARCEL NO. 5: Beginning at a point in the east margin of Academy Street, said point being in the south line of Ellis Peyton, et ux and being the northwest corner of John DeGeorge, et ux; thence South 1 degree 17 minutes West, 383.7 feet with said east margin of Academy Street to a concrete monument in the west line of John DeGeorge, et ux; thence South 88 degrees 37 minutes West, 40.02 feet to a point in the west margin of Academy Street,

said point being the southeast corner of W. L. Clark, et al, Trustees; thence North 1 degree 17 minutes East, 383.4 feet with said west margin of Academy Street to a point in the south line of Ellis Peyton, et ux, said point being the northeast corner of George W. Mullins, et ux; thence North 88 degrees, 10 minutes East 40.05 feet to the beginning, containing 15,345 square feet, more or less, being Parcel b Project Tenn. 20-3 shown on and described from Property Map dated May 15, 1958, prepared by Barge, Waggoner and Sumner, Inc., Engineers.

IN WITNESS WHEREOF, said City of Murfreesboro has caused this instrument to be executed by its duly authorized officers on this the 30th day of October, 1959.

CITY OF MURFREESBORO

BY: A. L. Todd, Jr., Mayor

ATTEST:

Albert Williams
City Recorder

STATE OF TENNESSEE
COUNTY OF RUTHERFORD

Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named A. L. Todd, Jr., and Albert Williams, with whom I am personally acquainted, and who, upon oath acknowledged themselves to be the Mayor and City Recorder, respectively, of the City of Murfreesboro, the within named bargainor, a municipal corporation, and that they as such Mayor and City Recorder, being authorized so to do, executed the foregoing instrument for the purposes therein contained and expressed, by subscribing thereto the corporate name of said City and by affixing thereto and attesting the corporate seal of said City by themselves as such Mayor and City Recorder, respectively.

WITNESS my hand and official seal at Murfreesboro, Tennessee, this 30th day of October, 1959.

Notary Public

My Commission expires: June 24, 1962

STATE OF TENNESSEE, RUTHERFORD COUNTY, OFFICE OF REGISTER Nov. 5, 1959

I, Everett Waller, Register, do hereby certify that the foregoing instrument and certificate are duly proved in my said office in book No. 130, Page No. 267-68, and that they were received Nov. 5, 1959 at 8:45 o'clock A.M. and entered in book No. 130, Page 267

EVERETT WALLER, Register, By

KEY SITE MANAGER QUESTIONNAIRE

SUBJECT PROPERTY NAME:	
SUBJECT PROPERTY ADDRESS:	

QUESTION	YES	NO	UNK
1. Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?		✓	
2. Did a search of recorded land title records (or judicial records where appropriate) identify any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?		✓	
3. Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?		✓	
4. Are you aware of any pending, threatened, or past litigation and/or administrative proceedings relevant to hazardous substances or petroleum products, in, on or from the subject property?		✓	
5. Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?		✓	
6. Do you know the past uses of the property?		✓	
7. Do you know specific chemicals that are present or once were present at the property?		✓	
8. Do you know of spills or other chemical releases that have taken place at the property?		✓	
9. Do you know of environmental cleanups that have taken place at the property?		✓	
10. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of releases at the property?		✓	
11. Is the property or has the property been used as a gasoline station, motor repair facility, commercial printing, dry cleaners, photo developing, landfill, industrial use, waste treatment or disposal facility?		✓	
12. Are you aware of fill dirt that has been brought onto the subject property that originated from a contaminated site or that is of an unknown origin?		✓	
13. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the subject property?		✓	
14. Are there existing or proposed stationary tanks containing explosive or fire-prone materials of 100 gallons or larger on the site or nearby the site?		✓	
15. Are there monitoring wells at the subject property?		✓	
16. Is the subject property served by a private well and or a private septic system?		✓	

Please return to D3G: fax 804-358-3003 or mail it to 201 Wylderose Drive, Midlothian, Virginia 23113

PRINT NAME	SIGNATURE	DATE
Adam L. Lawson		10-25-19

TITLE/COMPANY	YEARS WITH PROPERTY
Director of Maintenance / Murfreesboro Housing Authority	5

Fire Contact: Fire Official **From: LeYonda Stewart**

Municipality: City of Murfreesboro **Department:** Public Records Request Coordinator

Phone: 615-893-5210 **Fax:** email

Pages: 2 **Date:** October 21, 2019

☒ Urgent ☐ For Review ☐ Please Comment ☒ Please Reply ☐ Please Recycle

To meet the financing requirements of the loan program, Dominion Due Diligence Group is requesting your assistance on behalf of:

Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

This information is **required** for the HUD re-financing report for the following property:

Oakland Court Development (PIN: 091E B 03900)
Lokey Street
Murfreesboro, TN 37130

Please email completed letter to my attention at l.stewart@d3g.com

If unable to send via email, please fax to me at 804-588-5758 before mailing a hard copy to my attention.

Thank you for your time,

LeYonda Stewart

LeYonda Stewart
Compliance Administrator
804-665-2742 (p)

[2019-001705] **Initials:** LS

COMPLIANCE REQUEST:
Fire and Code Enforcement Verifications

Date: October 21, 2019

Completed By: Name & Title: _____
Department: _____
Direct Contact Info: _____

Re: Property: Oakland Court Development
Address: Lokey Street
City, State & Zip: Murfreesboro, TN 37130

Requestor: Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

Dominion Due Diligence Group is requesting your assistance on behalf of the above referenced requestor. Please confirm whether the above noted subject property has any known outstanding fire code violations.

1. To the best of our knowledge, the property is free of any applicable code violations.

☐ Yes ☐ No Reason: _____

2. **Last Inspection Date:** _____

If available, attach the inspection report. Please list the frequency in which inspections are required. If no inspections are required, please list municipality's policy:

_____

3. Are any permits available for former or current underground storage tanks?

☐ Yes If yes, please attach all related information.

☐ No If no, can you provide a department to contact for additional information.

4. Has the fire department responded to any hazmat spills at the property?

☐ Yes If yes, please attach all related information.

☐ No If no, can you provide a department to contact for additional information.

5. Are there any current or recent (within the past year) permits issued for thermal/explosive hazards (aboveground storage tanks >100 gallons) located within a one (1) mile radius of the subject property?

☐ Yes If yes, please attach a copy of all available information. ☐ No

_____ _____

Fire Official Signature Date

[2019-001705] **Initials:** LS

COMPLIANCE REQUEST:
Fire and Code Enforcement Verifications

Date: October 21, 2019

Completed By: Name & Title: Carl Pegs Assistant Chief / Fire Marshal
Department: Murfreesboro Fire Rescue
Direct Contact Info: 615-642-3224

Re: Property: Oakland Court Development
Address: Lokey Street
City, State & Zip: Murfreesboro, TN 37130

Requestor: Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130

Dominion Due Diligence Group is requesting your assistance on behalf of the above referenced requestor. Please confirm whether the above noted subject property has any known outstanding fire code violations.

1. To the best of our knowledge, the property is free of any applicable code violations.

☒ Yes ☐ No Reason: _____

2. **Last Inspection Date:** 10-11-18

If available, attach the inspection report. Please list the frequency in which inspections are required. If no inspections are required, please list municipality's policy:

Annually

3. Are any permits available for former or current underground storage tanks?

☐ Yes If yes, please attach all related information.

☒ No If no, can you provide a department to contact for additional information.

4. Has the fire department responded to any hazmat spills at the property?

☐ Yes If yes, please attach all related information.

☒ No If no, can you provide a department to contact for additional information.

5. Are there any current or recent (within the past year) permits issued for thermal/explosive hazards (aboveground storage tanks >100 gallons) located within a one (1) mile radius of the subject property?

☐ Yes If yes, please attach a copy of all available information. ☒ No

Carl Pegs
Fire Official Signature

10-31-19
Date

MURFREESBORO FIRE & RESCUE DEPARTMENT

220 N. W. BROAD STREET
MURFREESBORO, TN. 37130
FIRE INSPECTION REPORT

FAXED 10-11-18 ET emailed

Inspection Type: [✓] Annual [ ] Follow-up [ ] Complaint [ ] Beer Permit [ ] Other _____

Business Name: Oakland Ct. Prek **Phone:** 615-904-1049

Address: 318 E. Lokey **Occupancy Type:** Daycare

[✓] Pass [ ] Fail [ ] N/A Address Posted / Clearly Visible From the Street / Minimum 8 inch Numbers
[✓] Pass [ ] Fail [ ] N/A Doors - Unlocked & Unobstructed, Fully Operational, Panic Hardware if Required
[✓] Pass [ ] Fail [ ] N/A Exit Signs – Operational / Battery Backup
[✓] Pass [ ] Fail [ ] N/A Emergency Lighting – Operational / Battery Backup / Adequate
[✓] Pass [ ] Fail [ ] N/A Fire Extinguishers / Tagged & Serviced Annually by a Licensed Contractor
[✓] Pass [ ] Fail [ ] N/A Class K Fire Extinguishers in Commercial Kitchens / Tagged & Serviced Annually
[ ] Pass [ ] Fail [✓] N/A Kitchen Hood Suppression Bi-Annually Inspected & Tagged
[✓] Pass [ ] Fail [ ] N/A Smoke / Heat Detectors – Operational
[✓] Pass [ ] Fail [ ] N/A Manual Alarms – Unobstructed, Operational
[✓] Pass [ ] Fail [ ] N/A Alarm Panels – Functional [ ] Monitored [ ] Local Signal Only
[ ] Pass [ ] Fail [✓] N/A Sprinkler System In-Service, Annual Inspection, Tagged
[ ] Pass [ ] Fail [✓] N/A Sprinkler Heads have 18" Clearance (vertical & horizontal)
[ ] Pass [ ] Fail [✓] N/A FDC Accessible, Caps On
[ ] Pass [ ] Fail [✓] N/A Valves Open, Accessible, Free From Leaks
[✓] Pass [ ] Fail [ ] N/A Extension Cords Not Being Used as Permanent Wiring, Outlet Covers Not Missing

** **Special Hazards** **

[ ] Pass [ ] Fail [ ] N/A Paint Booths – Proper Fire Suppression System, Tested Annually & Tagged
[ ] Pass [ ] Fail [ ] N/A Paint Mixing Rooms – Proper Fire Suppression System, Tested Annually & Tagged
[ ] Pass [ ] Fail [ ] N/A Fuel Stored In Safety Cans, Stored Away From Exits
[ ] Pass [ ] Fail [ ] N/A Storage Cabinet Present if Occupant Has More Than 25 Gallons Flammable Liquid
[ ] Pass [ ] Fail [ ] N/A 704 Marking Present if Required (over 55 gallons or over 500 lbs material)

[X] **APPROVED – NO VISIBLE HAZARDS** [ ] **DENIED – CORRECTIONS NEEED**

Copy Received By: Heather Hoskins Position: Teacher

Inspector: Eugene Todd Phone: 615-893-1422 Date: 10-11-18

Remarks: No visible hazards

c:\carol\forms\inspectiondept\inspection report 05 09 07

To: Tennessee Department of Environment and Conservation
Attn: Health Department
Date: October 21, 2019
Re: Oakland Court Development
Lokey Street
Murfreesboro, TN 37130
PIN: 091E B 03900

As part of the real estate screening that we are performing at the above-listed property, I am requesting assistance to locate any environmental-related permits and information associated with the property.

Please answer the following questions:

Is any information for former or current wells or septic tanks available for the property?

☐ Yes If yes, please attach all related information

☐ No

Are there any known Regional Health issues associated with this property?

☐ Yes If yes, please attach all related information

☐ No

Comments:

_____
_____
_____

_____ _____
Signature Printed Name, Title

Thank you for your time and effort in completing the above request for information. If any more information is needed from our company in regards to the screening that we are performing on the above property please contact me at **(804) 665-2742**. I will follow up directly due to the timeliness of need for this information. Please fax this form and any additional information to me at **(804) 588-5758**.

Thanks for your time,

LeYonda Stewart

LeYonda Stewart
Compliance Administrator
l.stewart@d3g.com

LeYonda Stewart

From: James Shelley <James.Shelley@tn.gov>
Sent: Friday, November 1, 2019 9:55 AM
To: LeYonda Stewart
Subject: Rutherford septic record request

Good morning Ms. Stewart and thank you for contacting TDEC. We searched our database and physical files and do not have any septic records for Map 091E Group B Parcel 039.00. It appears that this property may be on public sewage therefore you will need to contact Consolidated Utility District of Rutherford County with your request. Please see below for their contact information. Hope this helps.

Consolidated Utility District
of Rutherford County
709 New Salem Hwy
Murfreesboro, TN 37129
615-893-7225
8:00am - 4:30pm CST Monday – Friday

Thanks again.

James Shelley
Administrative Assistant
Division of Water Resources
Tennessee Tower, 3rd Floor
312 Rosa L. Parks Ave, Nashville, TN 372423
p. 844-369-1276
James.Shelley@tn.gov
We value your feedback! Please complete our customer satisfaction survey.

LeYonda Stewart

From: TDEC Public.Records.Request <TDEC.Public.Records.Request@tn.gov>
Sent: Tuesday, November 5, 2019 4:36 PM
To: LeYonda Stewart
Subject: FW: [EXTERNAL] Public Records Request

Good afternoon LeYonda,

There are no known wells on the property listed in your request. Please let me know if you have any questions.

Thank you,



Melanie VanderLoop | Executive Administrative Assistant
Office of the Commissioner
Tennessee Tower, 2nd Floor
312 Rosa L. Parks Ave., Nashville, TN 37243
p. 615-532-5281
melanie.vanderloop@tn.gov
tn.gov/environment
tnstateparks.com

From: noreply@formstack.com [mailto:noreply@formstack.com]
Sent: Thursday, October 31, 2019 3:55 PM
To: TDEC Public.Records.Request
Subject: [EXTERNAL] Public Records Request

***** This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. *****

Formstack Submission For: Public Records Request

Submitted at 10/31/19 4:55 PM

Requestor's Name:	LeYonda Stewart
Phone:	(804) 665-2742
Requestor's E-mail:	L.stewart@d3g.com
Is the requestor a Tennessee citizen?:	No
Request::	Copy/Duplicate
If costs for copies are assessed, the requestor has a right to receive an estimate. Do you wish to waive your right to an estimate and agree to pay copying and production costs in an amount not to exceed the amount entered by the requestor below?:	Yes
If yes, then initial below:	 Direct Link to Image
Dollar amount to not exceed:	99
Delivery Preference::	Electronic
Provide a detailed description of the record(s) requested, including: (1) type of record; (2) timeframe or dates for the records sought; and (3) subject matter or key words related to the records. Under the TPRA, record requests must be sufficiently detailed to enable a governmental entity to identify the specific records sought. As such, your record request must provide enough detail to enable the records custodian responding to the request to identify the specific records you are seeking.:	Oakland Court Development Lokey Street Murfreesboro, TN 37130 PIN: 091E B 03900 I am requesting any records for former or current wells or septic tanks and are there any know Regional Heath issues associated with this property.
If site specific, choose the county:	Rutherford County

If needed, upload any supporting documents or maps. :	View File
Signature of Requestor:	Direct Link to Image
Date/Time:	Oct 31, 2019 04:53 PM

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Formstack, 11671 Lantern Road, Suite 300, Fishers, IN 46038

Appendix G:

Special Contractual Conditions Between User and Environmental Professional

There are no special contractual conditions between the User and Environmental Professional:

D3G has no financial interest or family relationship with the officers, directors, stockholders or partners of the Borrower, the general contractor, any subcontractors, the buyer or seller of the proposed property or engage in any business that might present a conflict of interest.

D3G is employed under contract for this specific assignment and has no other side deals, agreements, or financial considerations with the Lender or others in connection with this transaction.

Appendix H:

Qualifications of the Environmental Professionals

SAMANTHA HOLCOMBE

ENVIRONMENTAL PROJECT MANAGER

EDUCATION

Virginia Polytechnic Institute and State University, B.S. Environmental Sciences, Minor: Green Engineering, May 2017

CERTIFICATIONS/REGISTRATIONS/TRAINING

HUD Multi-Family Accelerated Processing MAP) Training (D3G Internal Training)
Principles of Environmental Site Assessments - ASTM E 1527-13
HUD Web-based Instructional System for Environmental Reviews (WISER)
OSHA/AHERA Asbestos Awareness Training
OSHA Lead Hazard Communication for Real Estate Professionals Training
40-Hour HAZWOPER Certification
Lead Inspector Initial (24-Hour) Certification
Asbestos Inspector Initial (24-Hour) Certification

SUMMARY OF EXPERIENCE

Samantha Holcombe is an Environmental Project Manager for Dominion Due Diligence Group. Miss Holcombe is directly responsible for coordinating, conducting and preparing Phase I Environmental Site Assessments (HUD, NEPA, tax credit and ASTM E 1527-13) throughout the United States. Additionally, Miss Holcombe is responsible for performance and management of field projects, client contact and comprehensive report writing. The following sites are examples of projects in which Miss Holcombe has participated:

HUD MAP 221(d)(4) NC

- Proposed Palmer's Creek – Fredericksburg, VA
- Proposed 3800 Acqua Lifestyle Apartments – Suffolk, VA
- Proposed Cayuga Orchard (FKA Proposed North Triphammer) – Ithaca, NY
- Proposed NOHO Tampa Apartments – Tampa, FL

HUD MAP 221(d)(4) SR

- Lakewood Apartments – Baltimore, MD
- Murraygate Village Apartments – Alexandria, VA
- Oak View – North Little Rock, AR

HUD MAP 223(f)

- Chatham Village Apartments – Easton, MD
- Trails of Montville III Apartments – Medina, OH
- Fountain Ridge – Fountain, CO
- Greater Bethlehem Plaza – Dallas, TX
- Metro North Court Apartments – New York, NY
- Beaver Terrace – Framingham, MA

HUD SAC

- 3513 Mayo Street, 3529-3533 Mayo Street and 331 Lapier Street – Toledo, OH

HUD LEAN

- Osprey Point Nursing Center – Bushnell, FL
- Century Villa Health Care and Century Fields – Greentown, IN
- Oppidan – Sarasota, FL
- Alliance Healthcare Center at Braintree – Braintree, MA
- Wheatridge Park Care Center – Liberal, KS
- Moultrie Creek Nursing & Rehab Center – St. Augustine, FL

SAMANTHA HOLCOMBE

ENVIRONMENTAL PROJECT MANAGER

HUD RAD

- Neighborhood Housing – AMP 10 (MDHA Scattered Site Portfolio) – Nashville, TN
- Silver City Court Apartments – North Little Rock, AR
- Lakeview Associates – Buffalo, NY
- Lakeview Family Homes – Buffalo, NY
- John J. Barton Tower and Annex – Indianapolis, IN

ASTM/AAI COMPLIANT

- Holly Creek – The Woodlands, TX
- Wood Glen Apartments – Spring, TX
- Palm City Garden Apartments – Fort Myers, FL
- Spotsylvania Town Center– Fredericksburg, VA
- South Pantops Land – Charlottesville, VA
- Park Place Apartments – Indianapolis, IN
- Buena Vida Development – Brownsville, TX

TAX CREDIT

- Proposed Townsquare at Dumfries – Triangle, VA
- Cathedral Square Apartments – Providence, RI
- Highland Village I and II – Upper Sandusky, OH
- Dunbarton Station I (FMKA Dunbaton Apartments Phase I) – Georgetown, DE
- Proposed South Hills Subdivision – Petersburg, VA

JOHN EXLEY, EP

ENVIRONMENTAL TEAM MANAGER

EDUCATION

Virginia Commonwealth University – B.S. in Urban Planning and Geography (Minor, Environmental Science)

CERTIFICATIONS/REGISTRATIONS/TRAINING

ASTM Phase I and II Environmental Site Assessments for Commercial Real Estate
Screening for Potential Vapor Intrusion Problems under the ASTM E 2600 Standard – Presented by Anthony J Buonicore, P.E., BCEE, QEP
HUD Multi-Family Accelerated Processing (MAP) Training
WISER Modules Completion
Virginia Asbestos Inspector License #3303 003628
RMD LPA-1 Lead Paint Inspection System
Virginia Lead Inspector License #3355 000727
DOT Hazmat Training in accordance with 49 CFR Part 172, Subpart H

SUMMARY OF EXPERIENCE

John Exley is an Environmental Team Manager for Dominion Due Diligence Group (D3G). Mr. Exley is directly responsible for coordinating, conducting, preparing, and reviewing Phase I Environmental Site Assessments (ASTM, HUD, and State Housing Tax Credit Programs) and HUD Environmental Reviews throughout the United States. Additionally, Mr. Exley is responsible for performance and management of field projects, client contact and comprehensive report writing. He has also worked as a professional environmental scientist/environmental consultant which included fieldwork and report writing involving wetland delineation, hydric soil identification/classification, wetland mitigation monitoring, monitoring well installation and monitoring, environmental site assessments, delineation submittals, and DEQ permit applications. He has also been employed as a well driller with experience in the drilling of multiple deep hole wells. Mr. Exley qualifies as an Environmental Professional as defined under ASTM E 1527-13 Section 4.3 and Appendix X2 with over nine (9) years of experience performing investigations of surface and subsurface environmental conditions. The following sites are examples of projects in which he has participated:

HUD MAP 223(f)

- Horizon Square Apartments – Cleveland, TN
- Pendleton Place Apartments – Memphis, TN
- Stone Oak Townhome Community – Harlingen, TX
- Carmel City Center I – Carmel, IN
- Westwood Village Apartments – Shreveport, LA

HUD MAP 221 (d)(4) NC

- Proposed Osprey Point Apartments – Bluffton, SC
- Proposed The Point on Fall Creek – Indianapolis, IN
- Proposed Mount Pleasant Apartments – Zachary, LA
- Proposed Ingleside Plantation Phase II – North Charleston, SC
- Proposed Bailes Ridge Apartments – Fort Mill, SC

HUD LEAN 232/223(f)

- Madison Health Care – Madison, OH
- The Bridges at Bent Creek – Mechanicsburg, PA
- Tendercare of Ludington – Ludington, MI
- Heritage Pointe – Cookeville, TN

JOHN EXLEY, EP

ENVIRONMENTAL TEAM MANAGER

HUD LEAN 232

- Discovery Nursing – Vancouver, WA
- Molalla SNF – Molalla, OR
- Harbor Care – Portland, OR

HUD LEAN 232 NC

- Proposed Sunnyside Manor – Manasquan, NJ
- Autumn Leaves of Oswego – Oswego, IL
- Proposed South Hill at Orland Hills – Orland Hills, IL

HUD LEAN 232 SR

- Hillcrest Assisted Living Facility – West Palm Beach, FL
- Hannah Duston Healthcare Center – Haverhill, MA

HUD MAP 220 NC

- The Villages at Odenton Station – Odenton, MD
- Proposed Summerhouse Apartments – Virginia Beach, VA

HUD MAP 202/223(f)

- Harrah Senior Apartments – Harrah, OK
- Hobart Jackson Estates – Reidsville, NC
- Luther Meadows – Topton, PA

HUD MAP 221 (d)(4) SR

- Mayslake Manor – Oak Brook, IL
- Crescent Landing Apartments – Greenville, SC
- C. Bruce Rose & E.B. Jordan – Wilson, NC

ASTM/AAI COMPLIANT

- 1400 Spring Garden – Philadelphia, PA
- Proposed Reynolds Plant 64 – Winston-Salem, NC
- Glenwood Square Shopping Center – Chesapeake, VA
- Jiffy Lube – Forest, VA
- Pitt Plastics – Morrow, GA
- LoneStar Plastics – Pratttville, AL

OTHER

- Twin Canal Village – Virginia Beach, VA (TCAP NEPA)
- Proposed Rich Creek ALF – Rich Creek, VA (HOME)
- Holland Homes – Winston-Salem, NC (HUD MAP 221 (d)(3) SR)
- Proposed Sonata Senior Living – Melbourne, FL (HUD MAP 232 NC)
- Mayslake Center – Oak Brook, IL (HUD MAP 202/231 SR)
- Casa Grande Regional Medical Center – Casa Grande, AZ (HUD LEAN 242 NC)
- Oakmeade Apartments – Highland Springs, VA (Freddie Mac)
- Hillside Apartments – Pearisburg, VA (VHDA/USDA)
- Clayton's Mark – Grand Prairie, TX (Fannie Mae)
- Clary Crossing Senior Villas – Greenwood, IN (Fannie Mae)
- Arbor Place Apartment Homes – Jacksonville, FL (Standard & Poor)

Appendix I:

Certificate of Liability Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/29/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Riggs, Counselman, Michaels & Downes, Inc.
4200 Innslake Drive , Suite 303
Glen Allen VA 23060

CONTACT NAME: Marion Caldwell
PHONE (A/C, No, Ext): 804-237-5921 **FAX (A/C, No):** 804-237-5901
E-MAIL ADDRESS: mcaldwell@rcmd.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Nautilus Insurance Company	17370
INSURER B : American Casualty Company of Reading, PA	20427
INSURER C : The Cincinnati Insurance Company	10677
INSURER D : Continental Casualty Company	20443
INSURER E :	
INSURER F :	

INSURED DOMIENV-01
Dominion Environmental Group, Inc dba Dominion Due
201 Wylderose Drive
Midlothian VA 23113

COVERAGES **CERTIFICATE NUMBER:** 552352627 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:	Y	Y	ECPO152054119	9/1/2019	9/1/2020	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 5,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 5,000,000 $ 5,000,000 $
B	**AUTOMOBILE LIABILITY** [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY	Y	Y	BUA5099549028	9/1/2019	9/1/2020	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) 	$ 1,000,000 $ $ $ $
C	[ ] **UMBRELLA LIAB** [X] OCCUR [X] **EXCESS LIAB** [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 0	Y	Y	EXS0503127	9/1/2019	9/1/2020	EACH OCCURRENCE AGGREGATE 	$ 2,000,000 $ 2,000,000 $
D	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	Y	WC599549045	9/1/2019	9/1/2020	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
A	Professional Liab Contractors Poll Liab			ECPO152054119	9/1/2019	9/1/2020	Each Claim Each Pollution Condit Aggregate Limit	$5,000,000 $5,000,000 $5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
General Proof of Insurance

CERTIFICATE HOLDER

Dominion Environmental Group Inc
201 Wylderose Drive
Midlothian VA 23113

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Appendix J:

Asbestos Survey Report

Asbestos Survey
Oakland Court Housing Development
Murfreesboro Tennessee

Prepared for:

Murfreesboro Housing Authority
415 N Maple Street
Murfreesboro, TN 37130

Prepared by:

Frost Environmental Services, LLC
339 Rockland Road, Suite E
Hendersonville, Tennessee 37075
www.frostenvironmental.com

September 2019

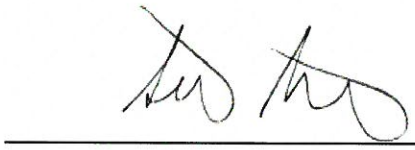
Asbestos Survey
Oakland Court Housing Development
Murfreesboro Tennessee

Prepared for:

Murfreesboro Housing Authority
415 N Maple Street
Murfreesboro, TN 37130

Prepared by:

Frost Environmental Services, LLC
339 Rockland Road, Suite E
Hendersonville, Tennessee 37075
www.frostenvironmental.com



Seth Frost

September 2019

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3.2 Asbestos Survey Protocol
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5.0 LIMITATIONS

APPENDICES

Appendix A Laboratory Analytical Report
Appendix B Certifications

1.0 EXECUTIVE SUMMARY

Frost Environmental Services, LLC (FES) was retained by Murfreesboro Housing Authority to perform a survey for Asbestos Containing Materials (ACM) of Oakland Court Housing Development in Murfreesboro Tennessee. The inspection was performed on August 29th, 2019. The purpose of the survey was to determine asbestos containing materials within the site prior to demolition.

The site consisted of housing units and a community center. Oakland Court has 76 units. There are 2 five bedroom units, 6 four bedroom units, 22 three bedroom units. 32 two bedroom units, and 14 one bedroom units The single family units were wood framed single story brick buildings. They were either duplexes or single unit buildings. The units were on East Lokey, North Academy Street, Palm Court, Jetton Drive, and Christy Court. The Community Center was located at 318 East Lokey Avenue.

1.1 Asbestos-Containing Material Summary

The purpose of the survey was to identify ACM's in the interior and exterior of the buildings. Sampling consisted of building materials within the interior and exterior of complex.

A total of one hundred and eleven (111) samples of suspect ACM were collected from the site. As shown in **Table 1** below, the following materials were determined to be ACM.

Table 1 – Positive ACM's

Community Center

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Black Floor Tile and Mastic Under Non ACM 12x12 Floor Tile	Front Right Side Area	600sqft
Black mastic Under Non ACM 12x12 Floor Tile	Front Right Restroom	30sqft

Housing Units

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Transite Flue Pipe	HVAC Closet	10lnft/Unit
HVAC Flex Duct Connector	HVAC Unit	8lnft/Unit
Tan Caulking	Exterior Windows	14windows / Building
ACM Black and Yellow Mastic Under Non ACM Floor Tiles	Throughout All Units	580sqft (1 BR) 750 (2 BR) 900 – 980 (3 BR) 1100-1300 (4-5 BR)

In addition, joint compound was determined to be ACM, however since it was not used as a surfacing material it could be composited with the drywall to less than one percent asbestos, as per the State of Tennessee and The Environmental Protection Agency (EPA).

2.0 INTRODUCTIONS

Frost Environmental Services, LLC (FES) was retained by Murfreesboro Housing Authority to perform a survey for Asbestos Containing Materials (ACM) of Oakland Court Housing Development in Murfreesboro Tennessee. The inspection was performed on August 29th, 2019. The purpose of the survey was to determine asbestos containing materials within the site prior to demolition.

3.0 ASBESTOS SURVEY FINDINGS

The ACM inspection was performed in accordance with Environmental Protection Agency (EPA) / NESHAPS, Occupational Health and Safety Administration (OSHA), and State of Tennessee Protocols. Seth Frost and Brad Ely performed the inspection, on August 29th, 2019. Appropriate certification documents are located in Appendix C of this report.

3.1 ACM Survey Findings

3.1.1 Asbestos Containing Materials

A total of one hundred and eleven (111) samples of suspect ACM were collected from the site. As shown in **Table 2** below, the following materials were determined to be ACM.

Table 2 – Positive ACM's

Community Center

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Black Floor Tile and Mastic Under Non ACM 12x12 Floor Tile	Front Right Side Area	600sqft
Black mastic Under Non ACM 12x12 Floor Tile	Front Right Restroom	30sqft

Housing Units

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Transite Flue Pipe	HVAC Closet	10lnft/Unit
HVAC Flex Duct Connector	HVAC Unit	8lnft/Unit
Tan Caulking	Exterior Windows	14windows / Building
ACM Black and Yellow Mastic Under Non ACM Floor Tiles	Throughout All Units	580sqft (1 BR) 750 (2 BR) 900 – 980 (3 BR) 1100-1300 (4-5 BR)

In addition, joint compound was determined to be ACM, however since it was not used as a surfacing material it could be composited with the drywall to less than one percent asbestos, as per the State of Tennessee and The Environmental Protection Agency (EPA).

3.1.2 Non Asbestos Containing Materials

As shown in **Table 3** below, the following materials were found **not** to contain asbestos. Fiberglass insulation was visually determined not to be ACM.

Table 3 – Non ACM's

Residential Housing

Textured Ceiling	Plaster	Roof Shingles
White Mastic On Fiberglass Pipes		

Community Center

Textured Ceiling	Drywall and Joint Compound	12x12 Floor Tile`
Window Caulk	Roof Shingles	

3.2 Asbestos Survey Protocol

Samples were given a unique numeric identification. Samples were placed in a sealed container, sample was documented on a chain of custody and sent to a qualified laboratory for analysis.

The technique used for sampling the suspected materials was designed to minimize possible fiber release and in turn possible contamination of surrounding areas. All representative "suspect" materials sampled, were collected in accordance with the EPA's AHERA and "Guidance for Controlling Asbestos Containing Material in Buildings" (EPA 560 / 6-85-024, June 1985).

The sample location was sprayed with an amended water mixture. Then a sample of the material was collected and properly stored in a labeled airtight container. A chain of custody form was completed for all bulk samples collected and subsequently delivered to a qualified laboratory for analysis using Polarized Light Microscopy (PLM).

Suspect ACM was inspected to determine the condition of the material and touched to determine its friability. A friable material is defined as a material that can be crumbled, or reduced to powder by hand pressure. A friable material has a higher potential of becoming airborne during disturbance.

FES personnel utilized PPE as deemed appropriate for each sampling event. Wet methods were employed during the collection of bulk samples. Sampling was performed with as little damage as possible to building materials. Samples were collected in hidden inconspicuous areas. FES performed the inspection to the best of our ability, however it is possible materials may not have been accessible during the time of the inspection.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Following the inspection, several materials were determined to be ACM. Prior to demolition activities, any ACM which may be rendered friable, must be removed by State of Tennessee Certified contractor and workers. Since the drywall and joint compound walls systems was determined to be less than one percent it may remain in-place during demolition. All asbestos waste must be sent to an EPA approved landfill.

5.0 LIMITATIONS

FES performed a complete inspection of the site. However some materials may be hidden and not identified or noted. FES performed the inspection to the best of their ability. If a material is uncovered during demolition that was not identified during the inspection, the material should be treated as asbestos until testing is performed.

Appendix A Asbestos Laboratory Analytical Report

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM)
LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Housing Development
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
1A	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1B	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1C	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	100	None Detected	None Detected
1D	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1E	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

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(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM)
LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Housing Development
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
1F	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1G	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1H	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1I	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
2A	Kitchens and Bathrooms	Plaster White Skim Coat	100	None Detected	None Detected
		Tan Course Plaster	100	<1-Animal Hair	None Detected
2B	Kitchens and Bathrooms	Plaster White Skim Coat	100	None Detected	None Detected
		Tan Course Plaster	100	<1-Animal Hair	None Detected

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Date Received: 8/29/2019
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Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
2C	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	98	<1-Animal Hair	None Detected
2D	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2E	Kitchens and Bathrooms	Plaster White Skim Coat	98	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2F	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	98	<1-Animal Hair	None Detected
2G	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2H	Kitchens and Bathrooms	Plaster White Skim Coat	98	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2I	Kitchens and Bathrooms	Plaster White Skim Coat	100	None Detected	None Detected
		Tan Course Plaster	100	<1-Animal Hair	None Detected
3A	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3B	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected

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LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
3C	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3D	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3E	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3F	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3G	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3H	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3I	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
4A	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4B	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4C	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4D	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4E	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4F	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4G	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4H	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4I	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
5A	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5B	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5C	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5D	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5E	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5F	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5G	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5H	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5I	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
6A	Various Units	Textured Ceiling	100	None Detected	None Detected
6B	Various Units	Textured Ceiling	100	None Detected	None Detected
6C	Various Units	Textured Ceiling	100	None Detected	None Detected
6D	Various Units	Textured Ceiling	100	None Detected	None Detected
6E	Various Units	Textured Ceiling	100	None Detected	None Detected
6F	Various Units	Textured Ceiling	100	None Detected	None Detected
6G	Various Units	Textured Ceiling	100	None Detected	None Detected

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LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
6H	Various Units	Textured Ceiling	100	None Detected	None Detected
6I	Various Units	Textured Ceiling	100	None Detected	None Detected
7A	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7B	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7C	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7D	Exterior Windows	Tan / White Caulking	98	None Detected	2-Chrystoile
7E	Exterior Windows	White Caulking	100	None Detected	None Detected
7F	Exterior Windows	White Caulking	100	None Detected	None Detected
7G	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7H	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7I	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
8A	Throughout	Roof Shingle	90	10-Glass	None Detected
8B	Throughout	Roof Shingle	90	10-Glass	None Detected
8C	Throughout	Roof Shingle	90	10-Glass	None Detected
8D	Throughout	Roof Shingle	90	10-Glass	None Detected
8E	Throughout	Roof Shingle	90	10-Glass	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
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Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
8F	Throughout	Roof Shingle	90	10-Glass	None Detected
8G	Throughout	Roof Shingle	90	10-Glass	None Detected
8H	Throughout	Roof Shingle	90	10-Glass	None Detected
8I	Throughout	Roof Shingle	90	10-Glass	None Detected
9	835	Tan Vinyl Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
10	1009	Tan Vinyl Flooring	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
11	833	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
12	824	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
13	1003	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
14	1013	Brown Vinly Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
15	911	Brown Vinly Flooring	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
16	304	12x12 Tan Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
17	308	12x12 Tan Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
18	314	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
19	318	Brown Vinly Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
20	1011	Brown Vinly Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
21	827	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile

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Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
22	839	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
23	912	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
24	1007	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile

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(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Community Center - 318 East Lokey Avenue
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
1A	Throughout	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	None Detected
1B	Throughout	Drywall	90	10-Cellulose	None Detected
		Joint Compound	90	None Detected	None Detected
1C	Throughout	Drywall	98	10-Cellulose	None Detected
		Joint Compound	90	None Detected	None Detected
2A	Front Right Rooms	Textured Ceiling	1000	None Detected	None Detected
2B	Front Right Rooms	Textured Ceiling	100	None Detected	None Detected
2C	Front Right Rooms	Textured Ceiling	100	None Detected	None Detected
3	Front Right Side Area	12x12 Red Floor Tile	100	None Detected	None Detected
		Black Floor Tile	92	None Detected	8-Chrysotile
		Black Mastic	94	None Detected	6-Chrysotile
4	Front Right Side Area	12x12 White Floor Tile	100	None Detected	None Detected
		Black Floor Tile	92	None Detected	8-Chrysotile
		Black Mastic	94	None Detected	6-Chrysotile

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
5	Front Right Bathroom	12x12 Tan w/ Brown Streaks	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
6A	Hall and kitchen area	12x12 Tan w/ Red Marble	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
6B	Hall and kitchen area	12x12 Tan w/ Red Marble	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
7A	Cafeteria	12x12 Red Floor Tile	1000	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
7B	Cafeteria	12x12 Red Floor Tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
8A	Cafeteria	12x12 White Floor Tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
8B	Cafeteria	12x12 White Floor Tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
9	Center Area	12x12 Red Floor Tile	100	None Detected	None Detected
		White Floor tile	100	None Detected	None Detected
		Brown Mastic	100	None Detected	None Detected
10A	Center Area	12x12 White Floor Tile	100	None Detected	None Detected
		White Floor tile	100	None Detected	None Detected
		Brown Mastic	100	None Detected	None Detected
10B	Center Area	12x12 White Floor Tile	100	None Detected	None Detected
		White Floor tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
11A	Exterior Windows	Window Caulk	100	None Detected	None Detected
11B	Exterior Windows	Window Caulk	100	None Detected	None Detected
11C	Exterior Windows	Window Caulk	100	None Detected	None Detected
12A	Roof	Roof Shingle	90	10-Glass	None Detected
12B	Roof	Roof Shingle	90	10-Glass	None Detected

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Appendix B Certifications

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program



Seth D. Frost

DOB	Sex	HGT	WG
13-Sep-1972	M	5'11"	180

Discipline	Accreditation	Expiratio
Inspector	A-I-47879-76328	Jul-31-20
Project Monitor	A-PM-47879-76327	Jul-31-20

ditation

Asbestos Accreditation

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

DEMOLITION PACKAGE

Murfreesboro Housing Authority Oakland Court
E. Lokey Ave Murfreesboro, TN 37130

THE OWNER:
(Name, legal status and address)

L. Thomas Rowe, Executive Director
Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130
615-225-9477

THE ARCHITECT:
(Name, legal status and address)

McCarty Holsaple McCarty, Inc.
550 W. Main Street
Suite 300
Knoxville, TN 37902

TABLE OF ARTICLES

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2 OWNER

3 CONTRACTOR

4 ARCHITECT

5 SUBCONTRACTORS

6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

7 CHANGES IN THE WORK

8 TIME

9 PAYMENTS AND COMPLETION

10 PROTECTION OF PERSONS AND PROPERTY

11 INSURANCE AND BONDS

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13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent

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consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

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§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,

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assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

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§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

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§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the

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Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

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§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

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§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

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Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations

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and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor,

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prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

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promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

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.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will

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affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and

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unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

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§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

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§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

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§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

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§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;

.2 failure of the Work to comply with the requirements of the Contract Documents;

.3 terms of special warranties required by the Contract Documents; or

.4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

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§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

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ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

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§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

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the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

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§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

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ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

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the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

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§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the

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Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

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PAGE 1

DEMOLITION PACKAGE

Murfreesboro Housing Authority Oakland Court
E. Lokey Ave Murfreesboro, TN 37130

...

L. Thomas Rowe, Executive Director
Murfreesboro Housing Authority
415 N. Maple Street
Murfreesboro, TN 37130
615-225-9477 –

...

McCarty Holsaple McCarty, Inc.

...

550 W. Main Street
Suite 300
Knoxville, TN 37902

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~~**§ 15.4 Arbitration**~~

...

~~**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.~~

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~~§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.~~

...

~~§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.~~

...

~~§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.~~

...

~~§ 15.4.4 Consolidation or Joinder~~

...

~~§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).~~

...

~~§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.~~

...

~~§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.~~

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Doug McCarty, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 16:59:57 ET on 01/12/2020 under Order No. 5012805736 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ - 2017, General Conditions of the Contract for Construction, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

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User Notes:

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: MHA Oakland Court - Demolition Package

B. Owner's Name: Murfreesboro Housing Authority.

C. Architect's Name: McCarty Holspale McCarty Architects, Inc..

D. The Project consists of the hazardous materials removal and demolition of 27 Buildings - single family and duplex units, sidewalks, driveways, trees and all improvements..

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

1.03 OWNER OCCUPANCY

A. Owner intends to continue to occupy the existing buildings around the perimater of the area designated as demolition scope during the entire period of demolition and subsequent construction. .

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy on remaining Housing Authority property.

1.04 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.

B. Provide access to and from site as required by law and by Owner:
   1. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Utility Outages and Shutdown:
   1. Prevent accidental disruption of utility services to other facilities.

END OF SECTION

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Change procedures.

D. Correlation of Contractor submittals based on changes.

E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

1.03 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.

C. Forms filled out by hand will not be accepted.

D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

E. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.

F. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.

C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.

D. Forms filled out by hand will not be accepted.

E. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Percentage of Completion.
   9. Balance to Finish.
   10. Retainage.

F. Execute certification by signature of authorized officer.

G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.

I. Submit one electronic and three hard-copies of each Application for Payment.

J. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to Contract Documents.

B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.

C. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

D. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 10 days.

E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   1. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
   2. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.

F. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

G. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

H. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

I. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 26 20
WEATHER DELAYS

PART 1 - GENERAL

1.01 EXTENSIONS OF CONTRACT TIME

A. If the basis exists for an extension of time in accordance with paragraph 8.3 of the Conditions, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for that month.

1.02 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

A. The Owner has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined a Standard Baseline of average climatic range for the State of Tennessee.

B. Standard Baseline shall be regarded as the normal and anticipatable number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.

1.03 STANDARD BASELINE IS AS FOLLOWS:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A.												
B.	7.4	7.5	8.1	7.3	7.9	7.1	7.8	6.0	4.8	5.2	7.2	7.9

1.04 ADVERSE WEATHER AND WEATHER DELAY DAYS

A. Adverse Weather is defined as the occurrence of one or more of the following conditions which prevents exterior construction activity or access to the site within twenty-four (24) hours:
   1. precipitation (rain, snow, or ice) in excess of one-tenth inch (0.10") liquid measure
   2. temperatures which do not rise above 32 degrees F by 10:00 a.m.
   3. temperatures which do not rise above that specified for the day's construction activity by 10:00 a.m., if any is specified
   4. sustained wind in excess of twenty-five (25) m.p.h.
   5. standing snow in excess of one inch (1.00")

B. Adverse Weather may include, if appropriate, "dry-out" or "mud" days:
   1. for rain days above the standard baseline;
   2. only if there is a hindrance to site access or sitework, such as excavation, backfill, and footings;
   3. at a rate no greater than 1 make-up day for each day or consecutive days of rain beyond the standard baseline that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by Architect.

C. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the contractor's scheduled work day, including a weekend day or holiday if Contractor has scheduled construction activity that day.

1.05 DOCUMENTATION AND SUBMITTALS

A. WEATHER DELAY REPORT:
   1. Use a Weather Delay Report, indicating for each calendar month the days on which construction activity affecting the critical path of the Work was prevented by weather conditions.
   2. In the column for the cause, indicate measurement of precipitation, temperature, wind, or other influencing factors.
   3. Describe the construction activity that was scheduled, on the critical path, and delayed.
   4. At the end of the month, add up the number of days delay, subtract the baseline number given in this Section, and show the resulting claimable days in excess of baseline.

5. Submit a copy of the completed report with the next application for payment. Reports submitted with applications for payment do not constitute a claim or preliminary claim for extension of time.

B. When making a claim for a time extension based on weather delay(s):
   1. Submit a copy of all reports completed since the last month for which a time extension was previously claim, or the commencement of Work if no previous claim, through the last month for which delay is being claimed. Claims for time extension based upon weather delays are unjustified if a submitted report does not corroborate the claim or if no report was submitted when it was required with an application for payment.
   2. Submit daily jobsite work logs showing which and to what extent construction activities have been affected by weather on a monthly basis.
   3. Submit actual weather data to support claim for time extension obtained from nearest NOAA weatherstation or other independently verified source approved by Architect at beginning of project.
   4. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods, andsubmit in accordance with the procedures for Claims established in Article 15 of the Conditions, and the applicable General Requirements.
   5. If an extension of the Contract Time is appropriate, it shall be implemented in accordance with theprovisions of Article 7 of the Conditions, and the applicable General Requirements.

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Electronic document submittal service.

C. Preconstruction meeting.

D. Site mobilization meeting.

E. Progress meetings.

F. Construction progress schedule.

G. Contractor's daily reports.

H. Progress photographs.

I. Submittals for review, information, and project closeout.

J. Number of copies of submittals.

K. Requests for Interpretation (RFI) procedures.

L. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions: Dates for applications for payment.

B. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.

C. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Manufacturer's instructions and field reports.
   7. Applications for payment and change order requests.
   8. Progress schedules.
   9. Coordination drawings.
   10. Correction Punch List and Final Correction Punch List for Substantial Completion.
   11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an

Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.

1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
2. Contractor and Architect are required to use this service.
3. It is Contractor's responsibility to submit documents in allowable format.
4. Subcontractors, suppliers, and Architect's consultants are to be permitted to use the service at no extra charge.
5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the Contract Sum.

C. Submittal Service: Use one of the following:
1. Submittal Exchange (tel: 1-800-714-0024): www.submittalexchange.com/#sle.
2. PlanGrid: www.plangrid.com.
3. Procore: www.procore.com.

D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

A. Schedule meeting after Notice of Award.

B. Attendance Required:
1. Owner.
2. Architect.
3. Contractor.
4. Owner's Representative.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Submission of initial Submittal schedule.
6. Designation of personnel representing the parties to Contract, Owner's Representative and Architect.
7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 SITE MOBILIZATION MEETING

A. Schedule meeting at the Project site prior to Contractor occupancy.

B. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect.
   4. Contractor's superintendent.
   5. Owner's Representative.

C. Agenda:
   1. Use of premises by Owner and Contractor.
   2. Owner's requirements.
   3. Construction facilities and controls provided by Owner.
   4. Temporary utilities provided by Owner.
   5. Survey and building layout.
   6. Security and housekeeping procedures.
   7. Schedules.
   8. Application for payment procedures.
   9. Procedures for testing.
   10. Procedures for maintaining record documents.
   11. Requirements for start-up of equipment.
   12. Inspection and acceptance of equipment put into service during construction period.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect.
   4. Contractor's superintendent.
   5. Owner's Representative.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of RFIs log and status of responses.
   7. Review of off-site fabrication and delivery schedules.
   8. Maintenance of progress schedule.
   9. Corrective measures to regain projected schedules.
   10. Planned progress during succeeding work period.
   11. Coordination of projected progress.
   12. Maintenance of quality and work standards.
   13. Effect of proposed changes on progress schedule and coordination.
   14. Other business relating to work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.05 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.06 DAILY CONSTRUCTION REPORTS

A. In addition to transmitting electronically a copy to Owner and Architect, submit two printed copies at monthly intervals.
   1. Submit in format acceptable to Owner.

B. Prepare a daily construction report recording the following information concerning events at Project site and project progress:
   1. Date.
   2. High and low temperatures, and general weather conditions.
   3. List of subcontractors at Project site.
   4. Major equipment at Project site.
   5. Safety, environmental, or industrial relations incidents.
   6. Meetings and significant decisions.
   7. Unusual events (submit a separate special report).
   8. Stoppages, delays, shortages, and losses. Include comparison between scheduled work activities (in Contractor's most recently updated and published schedule) and actual activities. Explain differences, if any. Note days or periods when no work was in progress and explain the reasons why.
   9. Directives and requests of Authority(s) Having Jurisdiction (AHJ).
   10. Change Orders received and implemented.
   11. Testing and/or inspections performed.
   12. List of verbal instruction given by Owner and/or Architect.
   13. Signature of Contractor's authorized representative.

3.07 PROGRESS PHOTOGRAPHS

A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.

B. Photography Type: Digital; electronic files.

C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Architect.

D. In addition to periodic, recurring views, take photographs of each of the following events:

3.08 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:

B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
   2. Prepare in a format and with content acceptable to Owner.
      a. Use AIA G716 - Request for Information .
   3. Prepare using software provided by the Electronic Document Submittal Service.

C. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.

1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
    a. Approval of submittals (use procedures specified elsewhere in this section).
    b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
    c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
    d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response.
    a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

D. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Architect's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date, and requested reply date.
5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

E. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

F. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Highlight items requiring priority or expedited response.
4. Highlight items for which a timely response has not been received to date.
5. Identify and include improper or frivolous RFIs.

G. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.

1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.09 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
   1. Submit at the same time as the preliminary schedule.
   2. Coordinate with Contractor's construction schedule and schedule of values.
   3. Format schedule to allow tracking of status of submittals throughout duration of construction.
   4. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
      a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.10 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

3.11 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

3.12 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
   3. Transmit using approved form.
      a. Use form generated by Electronic Document Submittal Service software. Identify each submittal item using the six-digit Specification Section number with spaces between the three pairs of numbers followed by a dash and a sequential two-digit number (e.g. 01 33 00-01). Resubmittals of each specific item shall include an additional sequential number after a decimal point (e.g. 01 33 00-01.1).
      b. Separate different item types (e.g. Product Data, Shop Drawings, etc.) into separate submittals with a different sequential two-digit number behind the Specification Section number. For example the first submittal of this Specification Section would be for Product Data and be numbered 01 33 00-01, where the second submittal of this Specification Section would be for Shop Drawings and be numbered 01 33 00-02.
   4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
   5. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.

a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.

6. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
   a. Upload submittals in electronic form to Electronic Document Submittal Service website.
7. Schedule submittals to expedite the Project, and coordinate submission of related items.
   a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
   b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
   c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.
8. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
9. Provide space for Contractor and Architect review stamps.
10. When revised for resubmission, identify all changes made since previous submission.
11. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
12. Incomplete and unorganized submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
13. Submittals not requested will not be recognized or processed.

3.13 SUBMITTAL REVIEW

A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect will not acknowledge receipt, and take no other action.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
   1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

D. Architect's and consultants' actions on items submitted for review:
   1. Authorizing purchasing, fabrication, delivery, and installation:
      a. "Approved", or language with same legal meaning.
      b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
         1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
      c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
         1) Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
   2. Not Authorizing fabrication, delivery, and installation:
      a. "Revise and Resubmit".
         1) Resubmit revised item, with review notations acknowledged and incorporated.
      b. "Rejected".
         1) Submit item complying with requirements of Contract Documents.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. References and standards.

B. Quality assurance submittals.

C. Control of installation.

D. Tolerances.

E. Testing and inspection services.

1.02 RELATED REQUIREMENTS

A. Document 00.72.00 - General Conditions: Inspections and approvals required by public authorities.

B. Section 01.21.00 - Allowances: Allowance for payment of testing services.

C. Section 01.30.00 - Administrative Requirements: Submittal procedures.

D. Section 01.60.00 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

A. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry.

B. ASTM E329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing.

C. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing.

1.04 SUBMITTALS

A. Testing Agency Qualifications:
   1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

B. Design Data: Submit for McCarty Holsaple McCarty Architects, Inc.'s knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.

C. Test Reports: After each test/inspection, promptly submit two copies of report to McCarty Holsaple McCarty Architects, Inc. and to.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Conformance with Contract Documents.
      k. When requested by McCarty Holsaple McCarty Architects, Inc., provide interpretation of results.
   2. Test report submittals are for McCarty Holsaple McCarty Architects, Inc.'s knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.

1.05 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from McCarty Holsaple McCarty Architects, Inc. before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of McCarty Holsaple McCarty Architects, Inc. shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 TESTING AND INSPECTION AGENCIES

A. Owner will employ services of an independent testing agency to perform specified testing; payment for cost of services will be derived from allowance specified in Section 01.21.00; see Section 01.21.00 and applicable sections for description of services included in allowance.

B. Employment of agency in no way relieves of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from McCarty Holsaple McCarty Architects, Inc. before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from McCarty Holsaple McCarty Architects, Inc. before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

A. Testing Agency Duties:

1. Provide qualified personnel at site. Cooperate with McCarty Holsaple McCarty Architects, Inc. and in performance of services.
2. Perform specified sampling and testing of products in accordance with specified standards.
3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
4. Promptly notify McCarty Holsaple McCarty Architects, Inc. and of observed irregularities or non-conformance of Work or products.
5. Perform additional tests and inspections required by McCarty Holsaple McCarty Architects, Inc..
6. Submit reports of all tests/inspections specified.

B. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of.
4. Agency has no authority to stop the Work.

C. Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
   a. To provide access to Work to be tested/inspected.
   b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
   c. To facilitate tests/inspections.
   d. To provide storage and curing of test samples.
4. Notify McCarty Holsaple McCarty Architects, Inc. and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by beyond specified requirements.
6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by beyond specified requirements.

D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by McCarty Holsaple McCarty Architects, Inc..

E. Re-testing required because of non-conformance to specified requirements shall be paid for by.

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary telecommunications services.

C. Temporary sanitary facilities.

D. Temporary Controls: Barriers, enclosures, and fencing.

E. Security requirements.

F. Vehicular access and parking.

G. Waste removal facilities and services.

H. Project identification sign.

I. Field offices.

1.02 TEMPORARY UTILITIES

A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:
   1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
   2. Internet Connections: Minimum of one; DSL modem or faster.
   3. Email: Account/address reserved for project use.

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

D. Traffic Controls: As determined by the City of Murfreesboro.

1.06 FENCING

A. Provide temporary fencing, of Contractors choosing, around construction site necessary to meet the requirements outlined in this section;
   1. Coordinate the location of fencing with the Owner and adjacent properties.
   2. Review and obtain approval of fencing plan with the City of Knoxville.
   3. Equip fencing with vehicular and pedestrian gates with locks.

1.07 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.08 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.09 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Contractor and sub-contractors must make arrangements for construction personnel parking off-site

1.10 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site as necessary.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.11 PROJECT IDENTIFICATION

A. Provide project identification sign of design and construction provided by Architect.

B. Erect on site at location indicated.

C. No other signs are allowed without Owner permission except those required by law.

1.12 FIELD OFFICES

A. Office: Contractor will be able to set up an office within the premises. All temporary lighting, electrical outlets, heating, cooling equipment, and appropriate furniture is to be the responsibility of the Contractor.

B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore remaining site and facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 57 13
TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Prevention of erosion due to construction activities.

B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

C. Restoration of areas eroded due to insufficient preventive measures.

D. Performance bond.

E. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 RELATED REQUIREMENTS

A. Section 32 11 23 - Aggregate Base Courses: Temporary and permanent roadways.

1.03 REFERENCE STANDARDS

A. ASTM D4355/D4355M - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus; 2014 (Reapproved 2018).

B. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity; 1999a (Reapproved 2014).

C. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles; 2015.

D. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles; 2015a.

E. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile; 2016.

F. ASTM D4873/D4873M - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples; 2017.

G. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit; Current Edition.

H. FHWA FLP-94-005 - Best Management Practices for Erosion and Sediment Control; 1995.

I. USDA TR-55 - Urban Hydrology for Small Watersheds; USDA Natural Resources Conservation Service; 2013.

1.04 PERFORMANCE REQUIREMENTS

A. Also comply with all more stringent requirements of State of TN Erosion and Sedimentation Control Manual.

B. Runoff Calculation Standard for Urban Areas: USDA TR-55.

C. Develop and follow an Erosion and Sedimentation Prevention Plan and submit periodic inspection reports.

D. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.

E. Provide to Owner a Performance Bond covering erosion and sedimentation preventive measures only, in an amount equal to 100 percent of the cost of erosion and sedimentation control work.

F. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.

1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.

G. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
1. Control movement of sediment and soil from temporary stockpiles of soil.
2. Prevent development of ruts due to equipment and vehicular traffic.
3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.

H. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
1. Prevent windblown soil from leaving the project site.
2. Prevent tracking of mud onto public roads outside site.
3. Prevent mud and sediment from flowing onto sidewalks and pavements.
4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.

I. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.

J. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.

K. Open Water: Prevent standing water that could become stagnant.

L. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Erosion and Sedimentation Control Plan:
1. Include:
a. Site plan identifying soils and vegetation, existing erosion problems, and areas vulnerable to erosion due to topography, soils, vegetation, or drainage.
b. Site plan showing grading; new improvements; temporary roads, traffic accesses, and other temporary construction; and proposed preventive measures.
c. Where extensive areas of soil will be disturbed, include storm water flow and volume calculations, soil loss predictions, and proposed preventive measures.
d. Schedule of temporary preventive measures, in relation to ground disturbing activities.
e. Other information required by law.
f. Format required by law is acceptable, provided any additional information specified is also included.
2. Obtain the approval of the Plan by authorities having jurisdiction.
3. Obtain the approval of the Plan by Owner.

C. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

D. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

PART 2 PRODUCTS

2.01 MATERIALS

A. Mulch: Use one of the following:
   1. Straw or hay.
   2. Wood waste, chips, or bark.
   3. Erosion control matting or netting.

B. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.

C. Bales: Air dry, rectangular straw bales.
   1. Cross Section: 14 by 18 inches, minimum.
   2. Bindings: Wire or string, around long dimension.

D. Bale Stakes: One of the following, minimum 3 feet long:
   1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot.
   2. Wood, 2 by 2 inches in cross section.

E. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
   1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D4751.
   2. Permittivity: 0.05 sec^-1, minimum, when tested in accordance with ASTM D4491.
   3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.
   4. Tensile Strength: 100 pounds-force, minimum, in cross-machine direction; 124 pounds-force, minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
   5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
   6. Tear Strength: 55 pounds-force, minimum, when tested in accordance with ASTM D4533/D4533M.
   7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.

F. Silt Fence Posts: One of the following, minimum 5 feet long:

G. Gravel: See Section 32 11 23 for aggregate.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.

B. Construction Entrances: Traffic-bearing aggregate surface.
   1. Width: As required; 20 feet, minimum.

2. Length: 50 feet, minimum.
3. Provide at each construction entrance from public right-of-way.
4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.

C. Linear Sediment Barriers: Made of silt fences.
1. Provide linear sediment barriers:
a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
b. Along the top of the slope or top bank of drainage channels and swales that traverse disturbed areas.
c. Along the toe of cut slopes and fill slopes.
d. Perpendicular to flow across the bottom of existing and new drainage channels and swales that traverse disturbed areas or carry runoff from disturbed areas; space at maximum of 200 feet apart.
2. Space sediment barriers with the following maximum slope length upslope from barrier:
a. Slope of Less Than 2 Percent: 100 feet..
b. Slope Between 2 and 5 Percent: 75 feet.
c. Slope Between 5 and 10 Percent: 50 feet.
d. Slope Between 10 and 20 Percent: 25 feet.
e. Slope Over 20 Percent: 15 feet.

D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
2. Straw bale row blocking entire inlet face area; anchor into pavement.

E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.

F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.

G. Soil Stockpiles: Protect using one of the following measures:
1. Cover with polyethylene film, secured by placing soil on outer edges.
2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.

H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.

I. Temporary Seeding: Use where temporary vegetated cover is required.

3.04 INSTALLATION

A. Traffic-Bearing Aggregate Surface:
1. Excavate minimum of 6 inches.
2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.

B. Silt Fences:
1. Store and handle fabric in accordance with ASTM D4873/D4873M.
2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.

5. Install with top of fabric at nominal height and embedment as specified.
6. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
7. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.

C. Straw Bale Rows:
1. Install bales in continuous rows with ends butting tightly, with one bale at each end of row turned uphill.
2. Install bales so that bindings are not in contact with the ground.
3. Embed bales at least 4 inches in the ground.
4. Anchor bales with at least two stakes per bale, driven at least 18 inches into the ground; drive first stake in each bale toward the previously placed bale to force bales together.
5. Fill gaps between ends of bales with loose straw wedged tightly.
6. Place soil excavated for trench against bales on the upslope side of the row, compacted.

D. Temporary Seeding:
1. When hydraulic seeder is used, seedbed preparation is not required.
2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft.
4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft.
5. Incorporate fertilizer into soil before seeding.
6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
8. Repeat irrigation as required until grass is established.

3.05 MAINTENANCE

A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.

B. Repair deficiencies immediately.

C. Silt Fences:
1. Promptly replace fabric that deteriorates unless need for fence has passed.
2. Remove silt deposits that exceed one-third of the height of the fence.
3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

D. Straw Bale Rows:
1. Promptly replace bales that fall apart or otherwise deteriorate unless need has passed.
2. Remove silt deposits that exceed one-half of the height of the bales.
3. Repair bale rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

E. Clean out temporary sediment control structures weekly and relocate soil on site.

F. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect.

B. Clean out temporary sediment control structures that are to remain as permanent measures.

C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.

C. Surveying for laying out the work.

D. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

E. Site logistics Plan

1.02 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

C. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.

D. Section 01 50 00 - Temporary Facilities and Controls: Temporary exterior enclosures.

E. Section 01 74 19 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

F. Section 02 41 00 - Demolition: Selective demolition; site utility demolition.

1.03 REFERENCE STANDARDS

A. All execution and closeout requirements shall be in compliance with **HUD** Multifamily Accelerated Processing (MAP) Guide, 4430.G.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

E. Contractor is required to keep all areas accessible by the public clean and free of debris and or stored materials.

1.05 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required.
   1. Minimum of 10 years of documented experience.

B. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions

insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

C. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.

D. Contractor's onsite supervision is required to have completed a minimum of a 30-hour osha training class with in 12 months of the project start date and have up to date State Erosion Control Certifications

1.06 PROJECT CONDITIONS

A. Use of explosives is not permitted. VIbration meter shall be placed along shared property line at historic Oaklands Mansion to record vibrations from demolition activities.

B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

E. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

F. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

G. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.

H. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Notify affected utility companies and comply with their requirements. Notification and approval by Owner of any utility service interruptions. Owner must have this coordinated with surronding tenants before any interruption occurs.

C. Coordinate completion and clean-up of work.

PART 2 PRODUCTS

2.01 NOT USED

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.02 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.03 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect and Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect and provide written Contractor's Correction Punch List when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

I. Field location notes:
   1. Contractor to provide asbestos records - where asbestos was located and removed illustrated graphically in locations on plans locating extents of removal.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.

E. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.
   5. Incineration, either on- or off-site.

F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: List of items to be salvaged from the existing building for relocation in project or for Owner.

B. Section 01 30 00 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

D. Section 01 70 00 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

A. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

B. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

C. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

D. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

E. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

F. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

G. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

H. Return: To give back reusable items or unused products to vendors for credit.

I. Reuse: To reuse a construction waste material in some manner on the project site.

J. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

K. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

L. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

M. Toxic: Poisonous to humans either immediately or after a long period of exposure.

N. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

O. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.
   3. Landfill Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
      c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   4. Recycled and Salvaged Materials: Include the following information for each:
      a. Identification of material, including those retrieved by installer for use on other projects.
      b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
      c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
      e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
   5. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Prebid meeting.
   2. Preconstruction meeting.
   3. Regular job-site meetings.
   4. Job safety meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Locate enclosures out of the way of construction traffic.
   3. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   4. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Salvage: Set aside, sort, and protect products designated by Owner to be salvaged for reuse off-site.

END OF SECTION

SECTION 02 29 20
LAWNS AND GRASSES

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Seeding.

B. Related Sections include the following:

1. Section 31 10 00 - ”Site Clearing" for topsoil stripping and stockpiling.
2. Section 31 00 00 - "Earthwork" for excavation, filling and backfilling, and rough grading.

1.3 DEFINITIONS

A. Finish Grade: Elevation of the finished surface of planting soil,

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod, identifying source, including name and telephone number of supplier.

C. Product Certificates: For soil amendments and fertilizers, signed by product manufacturer.

D. Qualification Data: For landscape Installer.

E. Material Test Reports: For existing surface soil and imported topsoil.

F. Planting Schedule: Indicating anticipated planting dates for each type of planting.

G. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before the expiration of required maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.

B. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.

1. Report suitability of topsoil for lawn growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil.

C. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

1. Seed: Seed shall be grown and harvested within 500 miles of the project site. Deliver seed in original sealed, labeled, and undamaged containers.

1.7 SCHEDULING

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: March 15 to May 15
2. Fall Planting: September 15 to October 15

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.8 LAWN MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until an acceptable lawn is established, but for not less than the following periods:
1. Seeded Lawns: 60 days from date of Substantial Completion.

a. When full maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.

B. Maintain and establish the lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth lawn.

1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.

C. Watering: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch, Lay out temporary watering system to avoid walking over muddy or newly planted areas.

2. Water lawn at a minimum rate of 1 inch per week.

D. Mow the lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 40 percent of grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1, Mow grass 2 to 3 inches high.

E. Lawn Post fertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 1 pound/1000 square feet to lawn area.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: Seed of grass species as follows, with not less than 90 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed: 33% Five Point Fescue, 33% Shenandoah 2 Fescue, and 33% Fine Lane Fescue.

2.2 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of4 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Amend existing in-place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

a. Surface soil may be supplemented with imported or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2.3 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Class: Class 0, with a minimum 95 percent passing through No. 8 sieve and a minimum 55 percent passing through No. 60 sieve.

2. Provide lime in form of dolomitic limestone.

B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Sand: Clean, washed, natural or manufactured, free of toxic materials.

G. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.

2.4 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of S.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 dec./m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.

2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source- separated or compostable mixed solid waste.

B. Peat: Sphagnum peat moss, partially decomposed, finely divided or granular texture, with a pH range of 3.4 to 4.8.

C. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.

D. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.5 PLANTING ACCESSORIES

A. Selective Pre-emergent Herbicides: EPA registered and approved, of type recommended by manufacturer for application.

2.6 FERTILIZER

A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soit reports from a qualified soit-testing agency.

2.7 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.8 PLANTING SOIL MIX

A. Planting Soil Mix: Mix topsoil with the following soil amendments and fertilizers in the fo(lowing quantities:

1. Ratio of Loose Compost to Topsoil by Volume: 1:3.
2. Ratio of Loose Peat to Topsoil by Volume: 1:3.
3. Weight of Lime per 1000 Sq. Ft.: 25 pounds
4. Weight of Slow-Release Fertilizer per 1000 Sq. Ft.: 1 pound.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from

damage caused by planting operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil- bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 LAWN PREPARATION

A. Limit lawn subgrade preparation to areas to be planted.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply fertilizer directly to subgrade before loosening.

2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.

   a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.

   b. Mix lime with dry soil before mixing fertilizer.

3. Spread planting soil mix to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

   a. Spread approximately one-half the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil mix.

   b. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades, Limit fine grading to areas that can be planted in the immediate future.

D. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

E. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.4 SEEDING (repair work only)

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.

B. *Sow* seed at the rate of 5 to 8 pound/1000 square foot.

C. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.

D. Protect seeded areas by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into topsoil with suitable mechanical equipment.

E. Protect seeded areas from hot, dry weather or drying winds by applying peat mulch within 24 hours after

completing seeding operations. Soak and scatter uniformly to a depth of 3/16 inch and roll to a smooth surface.

3.5 HYDROSEEDING

A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with non-asphaltic, fiber-mulch manufacturer's recommended tackifier

2. Apply slurry uniformly to areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3.6 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 square feet and bare spots not exceeding 5 by 5 inches.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.7 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.

C. Remove erosion-control measures after grass establishment period.

END OF SECTION 02920

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Building demolition excluding removal of hazardous materials and toxic substances.

B. Abandonment and removal of existing utilities and utility structures.

1.02 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01 10 00 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

E. Section 01 74 19 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Site Plan: Showing:
   1. Vegetation to be protected.
   2. Areas for temporary construction and field offices.
   3. Areas for temporary and permanent placement of removed materials.

C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of 10 years of documented experience.

PART 3 EXECUTION

2.01 SCOPE

A. Remove the entire site development, buildings and sidewalks as designated on the demolition site plan.

B. Remove paving and curbs as required to accomplish new work.

C. Remove all other paving and curbs within site boundaries.

D. Within area of new construction, remove foundation walls and footings to a minimum of 3 feet below finished grade.

E. Outside area of new construction, remove foundation walls and footings to a minimum of 2 feet below finished grade.

F. Remove concrete slabs on grade within site boundaries.

G. Remove fences and gates.

H. Remove creosote-treated wood utility poles.

I. Remove other items indicated, for salvage, relocation, and recycling.

J. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31 22 00.

2.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with other requirements specified in Section 01 70 00.

B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.
   3. Use of explosives is not permitted.
   4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   5. Provide, erect, and maintain temporary barriers and security devices.
   6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   8. Do not close or obstruct roadways or sidewalks without permit.
   9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

C. Do not begin removal until receipt of notification to proceed from Owner.

D. Do not begin removal until built elements to be salvaged or relocated by Owner have been removed.

E. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.

F. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

G. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

H. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

I. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

2.03 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

2.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 74 19 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

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ASBESTOS-CONTAINING MATERIAL OPERATIONS & MAINTENANCE PROGRAM OAKLAND COURT DEVELOPMENT EAST LOKEY AVENUE MURFREESBORO, TENNESSEE

D3G PROJECT NUMBER:
2019-1705

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PREPARED FOR:
OAKLAND COURT DEVELOPMENT
EAST LOKEY AVENUE
MURFREESBORO, TENNESSEE

Kimberly L. Dingledine
AHERA Management Planner

Signature

Keith Bayer
Managing Director of Environmental Services

Signature

CORPORATE HEADQUARTERS ◆ 201 WYLDEROSE DRIVE ◆ MIDLOTHIAN, VIRGINIA 23113
804.358.2020 ◆ FAX 804.897.6404 ◆ WWW.D3G.COM
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1.0 INTRODUCTION

The purpose of this Asbestos-Containing Material Operation and Maintenance (O&M) Program is to develop a strategy to manage asbestos-containing materials (ACM) within the Oakland Court Development located at East Lokey Avenue in Murfreesboro, Tennessee. This plan shall provide safety procedures that will prevent the creation of airborne asbestos fibers, protect employees who may accidentally impact or disturb ACM during their job activities, and prevent building contamination from asbestos fiber release. This O&M Program provides practices and procedures that comply with applicable regulatory requirements and guidance regarding operations and maintenance activities that impact ACM.

1.1 SITE SPECIFIC ASBESTOS CONCERNS

The subject property consists of fifty-four (54) single-story apartment structures and one (1) single-story community structure constructed in 1960. The subject property structures contain a total of seventy-six (76) residential dwelling units. According to an asbestos survey conducted by Mr. Seth Frost and Mr. Brad Ely, State of Tennessee accredited Asbestos Inspectors with Frost Environmental Services, LLC, on August 29, 2019, vinyl flooring materials and associated mastics, transite flue pipes (housing units), HVAC flex duct connectors (housing units), joint compound, caulking materials and roofing materials were identified and/or presumed to contain asbestos. The joint compound is typically considered to be a friable material (crushable by hand pressure) if impacted. The remainder of the identified and presumed ACMs are considered to be non-friable and all materials were observed in good condition. Activities which may impact the identified asbestos-containing materials **are not permitted** to be done by untrained maintenance personnel or tenants of the facility.

1.2 O&M PROGRAM OBJECTIVES

This Asbestos Operations and Maintenance Program for the Oakland Court Development, located at East Lokey Avenue in Murfreesboro, Tennessee, is intended to manage known asbestos-containing building materials located within the facility.

The site maintenance personnel and other trades conducting work practices at the subject property will be subjected to the Occupational Safety and Health Administration (OSHA) asbestos regulations. According to the regulations, ownership/management of a building that contains known or presumed asbestos-containing materials presents notification and training responsibilities under the OSHA asbestos standards. The recommendation was made to monitor the presumed asbestos-containing materials under an Operation and Maintenance (O&M) Program. This O&M Program is being established to prevent asbestos fiber release episodes through:

- Establishing safe practices for both routine and emergency maintenance activities involving areas containing ACM.

- Training of property managers and service personnel, including custodial and maintenance workers, to establish the proper awareness and understanding of work practices vital to the success of this program.

- Notification of contractors and trades who may come into contact with identified and/or presumed ACM through the distribution of a "letter of notification" (See Appendix G).

- Site-specific maintenance/repair procedures, which include special cleaning procedures and a permit system for any work which, may disturb ACM in the subject buildings.

- Emergency response procedures in the event of accidental dislodging of ACM managed by the responsible site maintenance supervisor.

- Periodic monitoring/surveillance, which includes the completion of an ongoing inspection of ACM condition and monthly completion of a checklist for ACM condition, semi-annual re-inspection of the ACM area, and air monitoring for fiber levels upon a major release episode.

- This program includes central record-keeping where copies of completed forms, this program, the original asbestos survey, and all periodic monitoring/surveillance reports are kept.

- Provisions for maintaining the ACM in as good a condition as possible.

2.0 OVERVIEW OF THE O & M PROGRAM

2.1 PURPOSE

The facility was constructed in 1960, during a time of asbestos-containing building material usage. D3G was provided with an Asbestos Survey Report prepared by Frost Environmental Services, LLC (FES) dated September 2019. According to the report, FES performed an asbestos survey at the subject property in preparation for demolition activities in accordance with the EPA 40 CFR 61 National Emissions Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 763 Asbestos Hazard Emergency Response Act (AHERA) sampling protocols and State of Tennessee asbestos guidelines on August 29, 2019. The survey was performed by Mr. Seth Frost and Brad Ely, State of Tennessee accredited Asbestos Inspectors with FES, a State of Tennessee accredited Asbestos Firm. A total of one hundred and eleven (111) bulk samples were collected and analyzed via Polarized Light Microscopy (PLM). Sampled materials included drywall, joint compound, textured ceiling materials, white mastic on fiberglass pipes, plaster, roof shingles, vinyl floor tiles and associated mastics, caulking materials, HVAC flex duct connector and transite flue pipes. An asbestos-containing material is defined as containing greater than 1% asbestos. The results of the inspection indicate that the following materials were identified as ACMs:

Community Center:
- Black floor tile and mastic under non-ACM 12" floor tile – Front Right Side Area, 600 SF
- Black mastic under non-ACM 12" floor tile – Front Right Restroom, 30 SF

Housing Units:
- Transite flue pipe – HVAC closets, 10 linear feet (LF) per unit
- HVAC Flex Duct Connector – HVAC Units, 8 LF per unit
- Tan caulking – Exterior windows, 14 windows per building

- Black and yellow mastic under non-ACM floor tiles – All Units, 580-1,300 SF per unit

In addition, joint compound was identified as an ACM (2% chrysotile); however, since it was not utilized as a surfacing material it could be composited with the drywall to be less than one percent asbestos as per State of Tennessee guidelines. However, although a material may contain asbestos at <1%, it DOES NOT relieve contractors from performing exposure assessments (personal air monitoring) on their employees per the OSHA Asbestos Standard (29 CFR 1926.1101) and should not be interpreted as asbestos is not present. Although laboratory analysis may indicate "<1%", airborne asbestos concentrations still may exceed the OSHA Permissible Exposure Limit (PEL) depending on the work activity.

The inspection appears to have been conducted in accordance with the ASTM Standard Practice for Comprehensive Asbestos Building Surveys Designation: E 2356-18 (ASTM E 2356-18) for Baseline Surveys. However, the survey did not include confirmation Transmission Electronic Microscopy (TEM) analysis of non-friable organically bound (NOB) materials (i.e. vinyl flooring materials and mastics, mastics, caulking materials, and roofing materials) which were not identified as ACMs via PLM analysis. This additional sampling methodology is not a requirement of the EPA or the State of Tennessee. Therefore, the result of the PLM analysis of NOB materials is considered to be conclusive as the structures are to be demolished. However, until such time as the structures are demolished, all vinyl flooring materials and mastics (even those not identified as ACMs via PLM analysis), caulking and roofing materials should be regarded as ACMs for ongoing maintenance purposes and are included within this Operations and Maintenance (O&M) Program.

The O&M Program provides practices and procedures that comply with applicable regulatory requirements and guidance regarding operations and maintenance activities that impact ACM. Included in the O&M Program are the basic requirements for implementing an O&M Program, including identification of the locations and types of ACM present, applicable regulations and guidance, personnel responsibilities, and how to select and use safe work practices. The appendices includes: a glossary of terms, O&M work practices, Program Manager decision-making flowchart, permit forms, Program Manager Checklist, and notification forms. The O&M Program assigns and outlines the responsibilities for an O&M Program Manager who oversees and assures the O&M Program implementation, and supervises the maintenance and custodial personnel who are designated to perform O&M activities. The O&M Program also provides work practices and procedures for the Program Manager and maintenance or custodial personnel to follow when managing or handling ACM.

The following regulatory standards and guidance documents were used in the development of the O&M Program.

<u>Occupational Safety and Health Administration (OSHA) Regulations</u>

- 29 CFR §1910 OSHA General Industry Standards
- 29 CFR §1926 OSHA Construction Standards

<u>United States Environmental Protection Agency (USEPA) Regulations</u>

- 40 CFR §763 Asbestos Hazard Emergency Response Act (AHERA)
- 40 CFR §61 National Emission Standards for Hazardous Air Pollutants (NESHAP)

Other Guidance Documents

- The National Institute of Building Sciences (NIBS) *Asbestos Operations and Maintenance Work Practices-Guidance Manual*, September, 1992
- The U.S. Environmental Protection Agency (EPA) *Managing Asbestos in Place; A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials*, May 1990
- The U.S. Environmental Protection Agency (EPA) *Guidance for Controlling Asbestos-Containing Materials in Buildings*, 1985

2.2 ASBESTOS BACKGROUND INFORMATION

Asbestos is the generic term for a group of naturally occurring fibrous minerals with high tensile strength, flexibility and resistance to thermal, chemical, and electrical conditions. Asbestos fibers have been documented to present health risks. Asbestos fibers enter the body through inhalation or ingestion and become embedded in the tissues of the respiratory or digestive systems. Exposure to asbestos can cause numerous diseases, including asbestosis, an emphysema-like condition, lung cancer, mesothelioma, and gastrointestinal cancer. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

Buildings constructed prior to 1981 may contain significant amounts of asbestos building materials. Thermal system insulation (TSI), sprayed or troweled-on surfacing materials, and vinyl or asphalt flooring installed before 1981 are particularly likely to contain asbestos. Asbestos can also be present in pipe and boiler insulation materials and in sprayed-on or troweled-on surfacing materials on walls, ceilings, beams, crawlspaces, and between walls. Suspect materials are typically grouped into two categories: friable (able to be crushed or pulverized by hand pressure) and non-friable. Additionally, those materials that are typically non-friable in their normal usage, such as floor tile, may be considered potentially friable. This means that they may be subjected to mechanical abrasion activities (e.g. floor sanding), which could cause them to become friable. Such suspect materials and their typical application are identified in the U.S. Environmental Protection Agency (EPA) document entitled, "Guidance for Controlling Asbestos-Containing Materials in Buildings, 1985 Edition".

It should be emphasized to all concerned employees and personnel that the presence of asbestos-containing materials within the building does not create an exposure risk to building employees and tenants. Asbestos-containing materials introduce an exposure risk only when the materials have been disturbed and the fibers are released and become airborne. These releases normally do not occur, but may occur if the ACM is accessible and friable (easily crumbled with hand pressure), or when non-friable ACM is incorrectly handled by actions such as drilling, sanding, or cutting the material. Asbestos-containing materials in a building could be impacted or disturbed during the performance of building activities related to maintenance, repair, renovation and alteration projects. This O&M Program is being implemented in order to prevent these situations from occurring.

2.3 SITE SPECIFIC INFORMATION

PROPERTY DESCRIPTION: Oakland Court Development
East Lokey Avenue
Murfreesboro, Tennessee

3.0 REGULATORY REQUIREMENTS

The O&M Program for the subject property requires strict adherence to local, state and federal regulations. This section highlights the key standards applicable to this site-specific O&M program.

3.1 OSHA STANDARDS

The asbestos in construction standard - OSHA 29 CFR §1926.1101 and asbestos in general industry standard - 29 CFR §1910.1001, specify worker protection requirements for employees exposed to ACMs. "Employees" includes any individual, contractor, or sub-contractor engaged to perform work. The more stringent of these regulations (typically 29 CFR §1926.1101) shall be applied to the staff at the Oakland Court Development.

Custodial workers or other employees who perform housekeeping and clean waste, debris and accompanying dust in an area containing visibly deteriorated ACMs or PACMs within any of the units and common areas may be exposed. Many small-scale maintenance activities, repair, installation, or modification projects in buildings constructed prior to 1981 may cause exposure to workers. If these activities disrupt the matrix, crumble, pulverize, or generate visible debris from ACM (not to exceed an amount contained in a 60 inch by 60 inch glovebag), they are examples of Class III work under the construction standard.

3.1.1 ASBESTOS IN CONSTRUCTION (29 CFR §1926.1101)

The OSHA Construction Industry Asbestos Standard (29 CFR §1926.1101), is applicable for the workers who perform activities discussed in the O&M Program. The intent of the standard is to protect the health of employees from significant exposures to asbestos and to educate the employees on health hazards associated with ACMs.

In general, 29 CFR §1926.1101 applies to all construction work where an employee may be occupationally exposed to asbestos. The standard applies to any employee involved in repair, maintenance, alteration, or renovation activities where ACMs are involved. Persons who clean up ACM spills are also covered by this regulation. For purposes of this O&M Program, it shall be assumed that 29 CFR §1926.1101 is applicable for all O&M activities.

3.1.2 ASBESTOS IN GENERAL INDUSTRY (29 CFR§1910.1001)

29 CFR §1910.1001 is the General Industry Asbestos Standard. Compliance with 29 CFR §1926.1101 is generally required for operations and maintenance activities involving asbestos. It is the responsibility of the Program Manager to obtain appropriate clarification from the local OSHA office in situations where the application of either standard appears to be ambiguous.

3.1.3 HAZARD COMMUNICATION IN CONSTRUCTION (29 CFR §1926.59)

This is OSHA's construction industry hazard communication standard. This standard is applicable to all employees with the potential to be exposed to any hazardous chemical, including asbestos. This standard requires the communication of chemical and physical hazards to employees in the construction sector. Aspects of this regulation are included in 29 CFR §1926.1101 and 29 CFR §1910.1001.

3.1.4 HAZARD COMMUNICATION IN GENERAL INDUSTRY (29 CFR §1910.1200)

This is OSHA's general industry hazard communication standard. This standard is similar to the construction industry hazard communication standard (29 CFR §1926.59) and applies to all employees with the potential to be exposed to chemical and physical hazards in the general industry sector. Aspects of this regulation are included in 29 CFR §1926.1101 and 29 CFR §1910.1001.

3.1.5 RESPIRATORY PROTECTION IN CONSTRUCTION (29 CFR §1926.246)

29 CFR §1926.246 is OSHA's construction industry respiratory protection standard. This standard is applicable to all employees who are required or choose to wear respiratory protection devices. The intent of the standard is to control occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. This standard requires the establishment of a written respiratory protection program whenever employees are required or choose to wear respirators. Aspects of this regulation are included in 29 CFR §1926.1101 and 29 CFR §1910.1001.

3.1.6 RESPIRATORY PROTECTION IN GENERAL INDUSTRY (29 CFR §1910.134)

29 CFR §1910.134 is OSHA's general industry respiratory protection standard. This standard is similar to 29 CFR §1926.102 and is applicable to all employees who are required or choose to wear respiratory protection devices. The intent of the standard is to control occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. Aspects of this regulation are included in 29 CFR §1926.1101(h) and 29 CFR §1910.1001(g).

3.2 USEPA STANDARDS

Applicable USEPA standards for asbestos O&M programs are limited to the AHERA standard (40 CFR §763) and the NESHAP standard (40 CFR § 1). The AHERA standard in its entirety is not applicable to residential facilities; however, portions of the standard outline specific guidance and state of the art work practices for performing asbestos emergency response actions, re-inspections, record keeping, training and implementation of an O&M Program. Pertinent aspects of the AHERA standard are included in this O&M Program.

3.2.1 NESHAP (40 CFR §61) STANDARDS

NESHAP provides standards concerning the application, removal, and disposal of ACM associated with renovation projects in all facilities. NESHAP requirements generally do not affect

O&M practices since they are triggered by demolition or renovation activities that typically involve greater than 260 linear feet or 160 square feet of ACM. However, the Project Manager may be required to fulfill NESHAP requirements if an asbestos abatement contractor is employed to remove larger quantities of ACM. NESHAP includes requirements for inspection, notification, work practices, such as handling, packaging and disposal of wastes, air emissions controls, and labeling. NESHAP may require ACM to be removed before beginning renovation activities.

3.3 STATE OF TENNESSEE STANDARDS

The State of Tennessee has adopted the Federal EPA and OSHA regulations regarding asbestos-containing materials. These regulations must be strictly adhered to while performing asbestos activities within the State of Tennessee. Please note that within the State of Tennessee if greater than 160 square feet or 260 linear feet or 35 cubic feet of regulated asbestos-containing material (RACM) is affected, then the persons conducting the work must be licensed by the Tennessee Department of Environment & Conservation. RACM includes all friable asbestos materials, and/or non-friable asbestos materials that have become friable due to sanding, grinding, cutting or abrading. Staff at the Oakland Court Development is not allowed to conduct activities that affect greater than the Tennessee *de minimus* standard.

4.0 RESPONSIBILITIES

4.1 GENERAL MANAGEMENT COMPANY RESPONSIBILITIES

The following sections describe the roles and responsibilities for the personnel involved in implementing the O&M Program for the subject property. There are two essential personnel classifications necessary to effectively implement this site-specific O&M Program:

(1) The Program Manager who administers the program

(2) The Maintenance Workers who perform the O&M work practices

The OSHA asbestos standards require employers to take certain steps to guard against hazardous exposures to asbestos. These steps include making an exposure assessment, notifying employees about asbestos in the workplace, posting signs, establishing regulated areas, providing employee training providing supervision by specially trained personnel, providing protective clothing and equipment, compiling records, and instituting medical surveillance of exposed workers. The particular requirements that apply depend on the nature and extent of the work, the materials involved, and the results of an exposure assessment. The standards additionally require building owners to take steps to identify asbestos-containing materials in their buildings, to keep records about the presence, location, and quantity of known or presumed asbestos-containing materials, to post signs identifying areas of possible exposure to asbestos, and to notify employees, tenants, contractors, and other employers of the presence of known or presumed asbestos-containing materials to which workers may be occupationally exposed.

OSHA compliance requirements, pertaining to known and presumed asbestos-containing materials at the subject property (Oakland Court Development), include the following:

(1) GENERAL OBLIGATIONS OF ALL PRE-1980 BUILDING OWNERS

All owners of buildings constructed prior to 1980 must take the following steps:

- Identify potential asbestos hazards
- Keep records about potential asbestos hazards
- Post signs to warn of potential asbestos hazards
- Communicate information about potential asbestos hazards

(2) IDENTIFY POTENTIAL ASBESTOS HAZARDS

Before work subject to the standards has begun, the owner must identify the presence, location, and quantity of asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM). Thermal system insulation, surfacing materials, and resilient flooring materials must be presumed to contain asbestos, if installed in a building prior to 1981, unless proven otherwise. The presumption of asbestos content in these materials can be rebutted if the building owner/management can obtain proof that the material is not asbestos-containing material, or contains less than 1% asbestos. Such proof may be obtained either by an inspection conforming to the requirements of the EPA AHERA standard or by tests of bulk samples of the material in question. The data relied upon to rebut the presumption of asbestos content must be maintained with permanent building records.

(3) RECORDKEEPING:

The management staff at the Oakland Court Development is required to create and keep (for as long as the building is managed by the current management company) a record that identifies the presence, location, and quantity of known or presumed asbestos-containing materials in the building. This is the basic recordkeeping requirement. Additional recordkeeping requirements apply if the building owner/management has employees who are potentially exposed to an asbestos hazard in the course of construction, renovation, or repair activities.

(4) POST SIGNS:

The building owner/management must post warning signs in or near areas where there is known or presumed asbestos-containing materials which are being or could be impacted where there is the potential for exposure. The signs must be posted at a distance that will allow workers to read them and take protective steps before entering the area marked by the signs. The signs must read:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

Warning labels must be affixed, if feasible, to known or presumed asbestos-containing materials and to all known or presumed asbestos-containing scrap, waste, debris, raw materials, or to their containers. The warning labels must read:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

(5) COMMUNICATE INFORMATION:

The staff at the subject property must inform employees of the presence, location and quantity of asbestos-containing materials if the materials have the potential to be accessed, impacted or disturbed during work activities. In addition, the Oakland Court Development staff must also inform the employers (such as custodial service contractors) of employees who do work in the site buildings and who may reasonably be expected to contact asbestos-containing materials in the course of their work.

Before any construction activity, including maintenance, repair or remodeling, that involves disturbance or removal of asbestos-containing material is undertaken, the Oakland Court Development Staff must provide information identifying the presence, location and quantity of asbestos-containing materials in the site buildings to all employees who will work in or adjacent to the worksite; to any employers of employees who will work in or adjacent to areas containing asbestos; to prospective employers who reasonably can be expected to work in or adjacent to those areas; and, to tenants who occupy work areas. The Oakland Court Development Staff must provide information about the presence, location, and quantity of known or presumed asbestos-containing materials to construction contractors or other employers who apply for, bid for, or do work in or adjacent to areas containing known or presumed asbestos-containing materials.

4.2 PROGRAM MANAGER

The Program Manager is responsible for implementation of the O&M Program and for the review of all work performed under the O&M Program. The specific responsibilities of the Program Manager includes but are not limited to:

- Identify potential asbestos hazards within work areas by having asbestos inspections completed.
- Maintaining records on asbestos location and condition.
- Establish a program for asbestos material surveillance and re-inspections.
- Inform building occupants and workers of asbestos locations and potential hazards.
- Keep records on: 1) potential asbestos hazards including asbestos locations and conditions; 2) worker training and medical monitoring; and 3) periodic re-inspections, exposure assessments, and air monitoring activities.
- Ensure all workers have the proper medical monitoring and maintain the medical records for a period of employment plus 30 years.
- Ensure all personal protective equipment is in good repair and is available for worker use.
- Ensure all maintenance workers who perform work in ACM areas have the proper training for the task and are utilizing the proper personal protective equipment.
- Establishing safe O&M work practices.
- Establish O&M response actions.
- Establishing a hazard communication program.

- Assigning supervisor, worker, and competent person responsibilities regarding O&M work practices.
- Hire asbestos abatement contractors as needed.
- Ensure all work is completed in accordance with all applicable federal, state, and local regulations, ordinances, and laws.

The following sections provide additional information regarding the Program Manager's responsibilities.

4.2.1 EXPOSURE ASSESSMENTS/AIR MONITORING

This O&M program is intended to restrict all employees from performing activities that would potentially expose them to elevated levels of asbestos fibers. Prior to maintenance personnel performing a work activity, which has the potential to create airborne asbestos fibers, or destructive activities on an asbestos-containing material, an exposure assessment is required. An exposure assessment is an accurate determination, using air monitoring, of the airborne concentrations of asbestos to which employees may be exposed. Typically, an industrial hygiene consultant will conduct exposure assessments. Exposure assessments are required by 29 CFR §1926.1101(f) for all construction and O&M activities that impact ACM, unless it can be shown by objective data that in the worst case scenario the ACM or activity are such that there cannot be a release of airborne fibers in excess of the time weighted average (TWA). The purpose of performing exposure assessments is to prevent employees from being exposed to airborne asbestos concentrations in excess of the permissible exposure limit (PEL). The PEL is the OSHA exposure limit for asbestos and is designed to prevent employees from unnecessary risks from with asbestos exposure.

Exposure assessments must be task, material type, and condition (material condition and environmental condition) specific. For example, cleanup of broken floor tiles and clean-up of damaged transite flue materials may both be "clean-up activities", however not of the same material; and therefore, these two tasks would require separate exposure assessments. However, exposure assessment documentation may be reused for individual O&M activities if the tasks, conditions and material type "closely resemble" each other and the exposure assessment data for the activity are less than one year old. Therefore, the exposure assessment information for a floor tile cleanup activity may be used for every floor tile cleanup activity, provided the same work practices are used and the conditions and material type remain consistent. Additionally, the exposure assessment may be applied to all similar activities involving the same material if it can be shown objectively that the exposure potential is less severe than the documented activity.

The Program Manager shall document all exposure assessments and all objective decisions not to perform new exposure assessments. When documenting exposure assessments, the Program Manager shall retain all pertinent documentation including, but not limited to, the specific task, material type and condition, date of the activity, the name of the employee(s), the results of the exposure assessment, and in applicable cases, the objective data and basis for not performing an exposure assessment.

Exposure Limits

Although the OSHA PEL for asbestos is 0.1 fiber per cubic centimeter of air (f/cc), the O&M Program personnel and contractors performing work under this O&M Program shall not be exposed to asbestos concentrations in excess of one tenth of the PEL, or 0.01 f/cc, in the breathing zone. If respiratory protection is utilized, the asbestos concentration behind the mask (i.e., the actual breathed concentration) shall not exceed 0.01 f/cc. The Program Manager shall ensure that asbestos exposures do not exceed the 0.01 f/cc limit.

4.2.2 SELECTION AND USE OF PERSONAL PROTECTIVE EQUIPMENT

Following is a description of personal protective equipment (PPE) and guidance for the Program Manager in the selection and use of PPE for activities performed under this O&M Program. The Program Manager for the site shall select the appropriate PPE for the individual O&M work practice, taking into consideration regulatory requirements and other requirements found in this O&M Program. It should be noted that to utilize respiratory protection, an individual must acquire medical permission, be under a medical surveillance program, and be properly fit tested of his/her personnel respirator. In addition, to address emergency repairs involving asbestos-containing materials, OSHA requires the proper training of personnel involved in such activities.

Respirators

The use of respirators may be necessary to perform O&M activities. For decision-making purposes, the Program Manager shall require respirators for all O&M activities unless the Program Manager determines that there is no potential for disturbance of the ACM, or that the potential ACM disturbance will not result the release of asbestos fibers into the air in excess of 0.01 f/cc. Before the Program Manager allows the use of respirators under this O&M Program, a written respiratory protection program must be established in accordance with 29 CFR §1926.246. The Program Manager shall contract the services of a qualified consultant to develop or assist in the development of the respiratory protection program.

Respirators used for O&M activities shall be selected based on the requirements of 29 CFR §1926-.1101(h). Protection factors shall be taken into account when respirators are selected. Names of employees and their corresponding respirator type and size shall be documented and archived by the Program Manager. The Program Manager shall ensure that workers are wearing respirators properly and maintaining them in a fashion to protect the integrity of the respirator. The Program manager shall also verify that the employees are utilizing respirators in the proper applications and are aware of the purpose and limitations of the respirator.

Protective Clothing

In addition to respiratory protection, the Program Manager must provide employees with protective clothing to prevent employee exposures and to prevent the cross contamination of other areas and persons. Protective clothing may include disposable coveralls, gloves, hats, shoe coverlets, and eye and face protection. Used disposable overalls will be disposed of as asbestos waste. Re-usable overalls shall not be allowed for asbestos O&M activities. The Program Manager is responsible for ensuring that contaminated protective clothing is disposed of and is placed in a closed container in a designated change area.

4.2.3 MEDICAL SURVEILLANCE

The Program Manager shall determine if medical surveillance is required for the persons working under this O&M Program. Medical surveillance is required under 29 CFR §1926.1101 for employees who: are engaged in Class I II, or III work for more than 30 days per year, are exposed above the PEL (at any time), or wear negative pressure respirators.

If medical surveillance is required for any employee, the Program Manager shall establish a medical surveillance program per 29 CFR §1926.1101(m). The medical surveillance program shall be designed to determine the employee's fitness to wear a respirator under the working conditions required for O&M activities and to monitor any changes in the employee's pulmonary or gastrointestinal systems. Components of a typical medical surveillance program include:

- Initial and (annual) examinations that meet the content and frequency requirements of 29 CFR §1926.1101(m)(2)(i) and (ii);
- Information provided to the examining physician including copies of the OSHA standard, job description, expected exposure levels, previous medical results, and PPE that the employee will be required to wear; and,
- Physician's written opinions that verify the employee's ability to perform the intended duties and ability to wear a respirator, as well as any restrictions to the employee's ability to perform the job.

4.2.4 WORK SCHEDULING AND WORKER ASSIGNMENTS

The Program Manager shall coordinate the O&M activities that are performed by maintenance staff as well as coordinating projects that are performed by an asbestos abatement contractor. This includes the specific responsibility of carrying out or assigning supervisor responsibilities related to O&M work practices. The Program Manager shall approve of the selected practice before work begins (Section 5.0). This O&M Program requires that all personnel involved in the O&M Program have the appropriate training and experience to perform their jobs and to carry out their responsibilities. Whenever possible, the Program Manager shall schedule workers to perform O&M activities during times when tenants will be vacated from the premises. If this is not possible, the Program Manager will attempt to reduce potential building occupant exposures to ACM fibers during work procedures to the fullest extent possible.

4.2.5 NOTIFICATION

The Program Manager is responsible for fulfilling all notification requirements mandated by regulatory agencies and this O&M Program. Notification documents such as letters, memorandum, notices, etc. shall be included as a permanent part of the O&M archive. Notification is required by 29 CFR §1926.1101(k)(ii) to be given to all employees and contractors who may be exposed to ACMs. In addition, all persons who have the potential to impact identified asbestos-containing material require written notification. The written notification document shall include a general description of the hazards associated with asbestos exposure, and the locations and quantities of the ACMs on the property. An example of a notification letter is provided in Appendix G. In addition to personnel notification, there is an EPA NESHAP requirement to notify the appropriate agency when abatement activities affect large quantities of ACM.

4.2.5.1 BUILDING OCCUPANTS

The Program Manager is not required to notify building occupants of the presence of ACM, as long as they do not have the means or potential to impact the identified asbestos containing materials. However, notification to building occupants is required if the occupants have the ability and authorization to perform routine maintenance activities within their respective units.

Building occupants shall also be notified of renovation and O&M activities that may impact ACMs, if such work will be conducted in areas potentially accessible to the employees or tenants. In emergency abatement situations, an Emergency Notification Form shall be provided to the building occupants. An example of the Emergency Notification Form is provided in Appendix G.

4.2.5.2 CONTRACTORS - VENDORS

Before authorized contractors begin work in areas in which ACMs are present at the Oakland Court Development, the Program Manager shall notify the following persons, in writing, of the presence, location and quantity of ACM or presumed ACM (PACM) in the buildings.

- Prospective contractors bidding for work whose employees can reasonably be expected to work in or adjacent to areas containing ACM
- Custodial and maintenance employees who will work in or adjacent to areas containing ACM

The Program Manager shall provide copies of, or access to, the O&M Program for all contractors hired to work in building(s) covered by the O&M Program.

4.2.5.3 FEDERAL, STATE AND LOCAL AGENCY NOTIFICATIONS

The Program Manager shall ensure compliance with any state or local notification requirements. There are currently no federal regulatory requirements mandating notifications for maintenance activities as long as they are not regulated under the NESHAP requirements. This O&M Program is limited, so that any activities requiring federal notification must be performed by a licensed abatement contractor. The Program Manager shall comply with all state and local regulatory notification requirements when abatement by contracted abatement firms meets the NESHAP threshold. NESHAP notification is required if greater than 160 square feet or 260 linear feet or 35 cubic feet is disturbed. This notification will be performed by the Program Manager according to 40 CFR §61.145(b).

4.2.6 HAZARD COMMUNICATION

Hazard communication (Hazcom) is an OSHA regulatory requirement (29 CFR §1926.59) that specifies training in the recognition and prevention of chemical hazards, including asbestos. Hazard communication is generally provided only to those employees and contractors who are expected to work with or be exposed to asbestos. The Program Manager shall ensure that all O&M staff receives Hazcom training in accordance with 29 CFR §1926.59 and 29 CFR §1926.1101. It is the responsibility of the Program Manager to inform all contractors who have the

potential to come in contact with asbestos of the potential ACM hazards associated with their work and provide a copy of the O&M program to the contractor as necessary. The Hazcom program shall include a hazard determination, a written hazcom program, use of warning labels, inventorying of Material Safety Data Sheets (MSDS), and proper employee training.

4.2.7 SELECTION OF MATERIALS

The Program Manager shall select the products and materials utilized in performance of activities allowed under this O&M Program. The Project Manager shall disallow any materials or machinery that when used will abrade, damage ACMs or PACMs, or result in a release of asbestos fibers.

4.2.8 TRAINING

Personnel participating in the O&M Program for the Oakland Court Development must be knowledgeable of the appropriate work practices and risks associated with their activities. All workers and the Program Manager shall have appropriate certifications, licenses, and other qualifications relevant to the type of work in which they will be engaged, according to local, state, federal, and other regulatory requirements. The Program Manager must ensure all training is completed in accordance with the new OSHA asbestos standards (29 CFR 1926.1101 and 1910.1001) and the AHERA standards (40 CFR 763.92). The Program Manager shall ensure that all personnel are appropriately trained. Training shall be provided prior to, or at the time of, initial assignment and shall emphasize hands-on methods. The workers shall learn how to use the O&M Program as well as to perform specific tasks. Training is to be conduct by a competent person. Two hour awareness training is required for the maintenance/custodial staff once a year. The Program Manager shall contact the appropriate federal, state or local OSHA offices to obtain a listing of acceptable training providers.

4.2.8.1 WORKER TRAINING

Workers assigned to perform O&M activities shall have training and experience in the techniques required for the type of work to be performed, the O&M program for the facility, and building conditions specific to the Oakland Court Development. The Program Manager shall institute a training program for all employees who are likely to perform OSHA Class III or IV work (29 CFR §1926.1101(g)(10)). All workers are required to have the appropriate training within 60 days of employment. Training for employees performing Class III and IV operations shall be consistent with EPA requirements for training of maintenance and custodial staff as set forth at 40 CFR §763.92(a)(1-2). This course shall include instruction in the recognition of damage, deterioration, and delamination of ACMs. Employees shall also be trained on the locations of ACM at the property. This training course shall be at least 16 hours in duration for Class III work and 2 hours in duration for Class IV work. The training program shall cover the following topics.

- Methods of recognizing asbestos, including how to presume that certain building materials contain asbestos.
- The health effects associated with asbestos exposure. The relationship between smoking and asbestos in producing lung cancer.
- The nature of operations that could result in exposure to asbestos. The importance of necessary protective controls to minimize exposure including, as applicable, work

practices, respirators, housekeeping procedures, protective clothing, emergency procedures, and waste disposal procedures, and any necessary instruction in the use of these controls and procedures.

- The purpose, proper use, fitting instructions, and limitations of respirators.
- The appropriate work practices for performing an approved response action.
- Medical surveillance program requirements.
- The requirements for posting signs and affixing labels, and the meaning of the required legends for such signs and labels.

4.2.8.2 PROGRAM MANAGER TRAINING

The Program Manager shall be trained in: practices for reducing asbestos exposures, use of wet abatement methods, the identification of potential ACM, condition assessment of asbestos-containing materials, potential exposure evaluations, understanding building components, building systems, building usage patterns, conducting O&M activities, cleaning and maintenance tasks, applicable laws and regulations, and the contents of this site-specific O&M Program. At a minimum, this training shall include the 16 hour training required under 40 CFR §763.92(a)(2) and successful completion of the two-day AHERA (40 CFR §763.92) "Management Planner" course. However, it is recommended that the Program Manager also complete the 40 hour AHERA "Supervisor" training and the "Management Planner" training.

4.2.9 MATERIAL RE-INSPECTIONS

The Program Manager shall ensure that all previously identified ACM are re-inspected every six months. In addition, material re-inspections should be completed before and following maintenance or renovation activity. The re-inspection shall include damage assessments of the ACM, taking into account material conditions during previous inspections. The material shall be classified as being in good condition, damaged, or significantly damaged. In the event an ACM is categorized as being significantly damaged, this material must be removed. Designated O&M activities for significantly damaged ACM are required to be completed within sixty days of the discovery. The Program Manager shall determine whether or not material categorized as being "damaged" can be safely repaired to an undamaged condition. Material categorized as being in "good" condition does not require further attention beyond the periodic inspection schedule. The Program Manager shall perform or oversee the performance of all re-inspections. The Program Manager can designate a representative who is capable to perform such inspections. Documentation of re-inspections shall be archived in accordance with the provisions outlined in the Record Keeping section of this program. Results of the re-inspections should be made available to all custodial and maintenance staff within two weeks of the re-inspection. A certification of receipt should be attached to the re-inspection report which requires the worker to return a letter stating they have received and reviewed the re-inspection material.

4.2.10 WASTE MANAGEMENT

The Program Manager shall ensure that all ACM wastes resulting from activities associated with this O&M Program at the Oakland Court Development are handled and disposed of in accordance with applicable regulations and the requirements of this O&M Program. All asbestos-containing wastes shall be maintained in a wet state, and shall be properly containerized for transport and disposal in labeled double bags of 6-mil polyethylene. Asbestos

waste shall be stored in a marked, secured location, until a sufficient volume is obtained to warrant delivery to an approved landfill. Asbestos waste may include (1) removed asbestos-containing materials; (2) contaminated polyethylene sheeting from underneath or around a work area; (3) disposable protective clothing; (4) water used for cleaning tools and respirators; (5) disposable respirator filters; and, (6) mops or rags used to clean the work area or any spills.

Specific waste management methods for O&M work practices are outlined in Appendix C. All waste generated by the maintenance and/or custodial workers while performing O&M activities shall be disposed of in an approved landfill. Bagged waste is allowed to be stored on site in a 55-gallon drum lined with a 6-mil asbestos waste bag for a maximum of 30 days. An asbestos waste hauler with appropriate licenses and certifications shall be contracted to transport the ACM waste off-site to an approved state or local landfill permitted to accept ACM wastes. The waste shall be tracked, utilizing signed waste manifests and disposal certificates that are submitted to the Program Manager and archived. The asbestos abatement contractor shall include pertinent information, such as the names, locations, and proof of permitting for the landfills intended for use, as part of the project submittal package.

4.2.11 EMERGENCY RESPONSE ACTIONS

The Program Manager shall ensure that emergency response actions are carried out in as safe a manner as possible. Generally, emergency response activities involve situations where asbestos materials are disturbed or damaged through the disruption of a plumbing, electrical, mechanical and/or structural systems that affect the condition of ACM or situations where ACM is present on or near these systems and it has been damaged by the system (i.e. leaking pipe).

4.2.12 O&M PROGRAM UPDATES AND MODIFICATIONS

The Program Manager shall review and update the O&M Program, as necessary, every six months after completion of the re-inspection. In addition, the Program Manager shall review and update the O&M Program after each O&M activity or other change in material quantity or condition. All updates shall be made within 30 days of the change in conditions, or within 30 days after receipt of the re-inspection report.

4.2.13 RECORD KEEPING

The Program Manager shall maintain all appropriate records as required by 29 CFR §1926.1101(n) and other applicable regulatory standards and the requirements of this O&M Program. These records shall be maintained on site in a central location of the property. The following is an overview of required records and their content.

4.2.13.1 EXPOSURE MONITORING

If employees perform activities that require the use of air monitoring, then the Program Manager shall keep a record of all measurements taken to monitor employee exposure to asbestos. The employer shall maintain this record for at least 30 years, in accordance with 29 CFR §1910.20. This record shall include at least the following information:

- The date of measurement.

- The work practice involving exposure to asbestos.
- Sampling and analytical methods used.
- Sample numbers, sampling duration, and results of sample analysis.
- Personnel protective equipment utilized, if any.
- Name, social security number, and exposure of the employees.

4.2.13.2 MEDICAL SURVEILLANCE

The Program Manager shall establish and maintain an accurate record for each employee subject to medical surveillance by OSHA 20 CFR §1926.1101(m). The record shall include at least the following information.

- The name and social security number of the worker.
- A copy of the worker's medical examination results, including the medical history, questionnaire responses, results of any tests, and physician's recommendations.
- Physician's written opinions.
- Any employee medical complaints related to exposure to asbestos.

The employer shall ensure that this record is maintained for the duration of employment plus 30 years.

4.2.13.3 TRAINING RECORDS AND AVAILABILITY OF RECORDS

The Program Manager shall maintain all worker-training records for at least one year beyond the last date of employment. The Program Manager, upon request, shall make all records available to regulatory agencies and building occupants, as required by 29 CFR §1910.20 and §1926.1101 for examination and copying. Also, the Program Manager, upon request, shall make any exposure records available for examination and copying to affected workers, former employees, and designated representatives.

4.2.13.4 TRANSFER OF RECORDS

In the event of personnel change, the Program Manager shall take the steps necessary to ensure the transfer of all appropriate records.

4.2.13.5 MISCELLANEOUS RECORDS

The Program Manager shall retain copies of all correspondence and all notices to building occupants, maintenance and custodial workers, and contractors. The Program Manager shall also maintain documentation for each material re-inspection performed. These records shall be archived for purposes of comparison with previous re-inspection results. Material Safety Data Sheets (MSDS) required as part of the O&M Program activities covered by the Hazcom standard are to be archived with this O&M document. These sheets shall be located such that they are available for immediate review and reference. Waste manifests, waste tracking forms, disposal certificates and other documents relating to waste management shall be archived. The Program Manager shall archive all permits obtained for O&M activities as required by federal, state and local regulations.

4.3 WORKERS

Maintenance and custodial personnel who perform O&M activities shall perform their duties in a manner that is consistent with this O&M program and in a manner that promotes the safety of building personnel and occupants. Maintenance and custodial personnel shall be aware of the locations and conditions of the ACMs on the property and shall report changes in these conditions to the Program Manager. The custodial and maintenance personnel should act "as the eyes and ears" of the Program Manager.

4.4 COMPETENT PERSON

OSHA regulations at 29 CFR §1926.1101(b) and (o) require the designation of a Competent Person for all aspects of asbestos work. The Competent Person is an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary or dangerous to O&M workers. The Competent Person has the authority to take prompt corrective action to eliminate hazardous conditions or situations. Generally, the Competent Person will be a consultant. However, the O&M Program Manager may be the Competent Person under this O&M Program, or may designate another member of the building staff to assume this role. The Competent Person shall meet the qualification and training requirements of the OSHA standard. The Competent Person shall ensure compliance with the applicable OSHA Regulations. Also, this individual shall perform frequent inspections of the asbestos work areas and equipment. For OSHA Class III and IV work performed by maintenance or custodial staff, on-site inspections shall be performed at periodic intervals sufficient to assess conditions and work practices, and at any time at requested by an employee or building occupant. The Competent Person will only perform the scope of his/her responsibilities when O&M response actions are performed by *in-house* maintenance or custodial staff.

5.0 SELECTION AND USE OF WORK PRACTICES

When asbestos-containing materials are found in a building, there are typically five options available to the building owner. The degree to which each asbestos abatement option is applicable varies by the use of the building/building area, the type of material, the building's future use, and other issues. They are:

Removal (abatement) - following all federal and state removal guidelines and recommendations.

Enclosure - construction of an air-tight barrier installed between the asbestos and the building environment. If enclosure is the recommended response action, the area of the enclosure should be marked on the site drawing maintained by the Program Manager to show maintenance workers the presence of asbestos-containing materials in area.

Encapsulation - the application of a sprayed-on liquid which surrounds or embeds the asbestos fibers in an adhesive matrix to prevent fiber release. Example: surfacing materials at the property which have been coated with a spray-applied paint or covering asbestos flooring with non-asbestos flooring.

Repair - returning damaged asbestos-containing materials (ACMs) to an undamaged condition under federal and state regulations.

Operations & Maintenance (O&M) Program - an O&M Program details a program of training, cleaning, work practices, and periodic surveillance to maintain ACM in good condition, ensure cleanup of asbestos fibers previously released, or present in the building environment, and prevent further release by minimizing and controlling ACM disturbance.

The following sections provide criteria for determining if and how to proceed with building O&M activities that may impact ACM. The criteria provided below will assist Program Manager in determining whether an O&M practice is appropriate for the building staff to complete, or if the O&M practice needs to be performed by a licensed ACM abatement contractor. A logical method for selecting the proper O&M practice(s) and the required personal protection equipment is provided for activities that can be carried out safely by building custodial and/or maintenance personnel. Example situations are also provided to assist the O&M Program participant in understanding the decision-making logic. Materials known to be ACM have been identified within the property as summarized in Section 1.1. Any work activity, regardless of type, that may impact an ACM is subject to the requirements of the decision-making process described below. Work activities that will occur in areas not previously characterized for ACMs are also subject to the decision-making processes described below. Only personnel meeting the qualifications described above for O&M personnel may make decisions utilizing this process.

5.1 DEFINING THE ACTIVITY

The person initiating a request to perform maintenance or other building work activities that may impact an ACM is required to complete the Activity Summary Form included in Appendix E. The planned work activity needs to be adequately described on this form to allow the Program Manager to have an adequate understanding of the type and magnitude of the work activity and how it may impact ACM. As part of completing the Activity Summary Form, each work activity will be assessed to determine if and how the work activity may impact ACM. The ACM impact assessment and Activity Summary Form completion may be performed by the custodial and/or maintenance staff, but must be approved by the Program Manager.

Potential impacts to ACM during work activities may not be limited to actual handling or disturbance of the ACM, but shall include activities that may impact the accessibility or condition of the ACM. For example, although the ACM itself may not be disturbed by a work activity, the work activity may result in increased ACM accessibility (e.g. by removing a door) or ACM release (e.g. through increased air movement). While these work activities may not have an immediate affect on the nearby ACM, the work activities could affect the ACM condition or the potential for exposure to the ACM, resulting in a need to modify the O&M Program and inspection frequency.

If the Program Manager's assessment determines that no ACM will be impacted, the Activity Summary Form would be approved and the work activity can proceed without the Program Manager specifying ACM O&M practices.

5.2 ALLOWED ACM O&M PRACTICES

The purpose of this O&M Program is to address the activities which may impact known or presumed asbestos-containing materials located within the Oakland Court Development. The following is a summary of ACM and/or PACM concerns at the subject property:

(1) Flooring materials and associated mastics
(2) Transite flue pipe – housing units
(3) HVAC flex duct connectors – housing units
(4) Joint compound
(5) Caulking materials
(6) Roofing materials

Activities which may impact or disturb the identified asbestos-containing materials are not permitted to be performed by any maintenance personnel or tenants of the facility. All asbestos related activities should be performed only by trained and authorized personnel using a work permit system. The work permit program requires the person requesting the work to submit a Job Request Form prior to any maintenance activity. The Job Request Form gives the time and location of the requested work, the type of maintenance needed, and available information about any ACM in the vicinity of the requested work. Upon receiving a pre-work Job Request Form the building owner/management should follow these procedures:

(1) Refer to the ACM inspection report to determine if any ACM is present in the area where the work will occur. If ACM is present, but is not expected to be disturbed, the facility owner/management should note the presence of the ACM on the permit form and provide additional instruction on the importance of not disturbing the ACM.

(2) If ACM is both present and likely to be disturbed, the Program Manager should visit the area where the work is to be performed and determine what work practices should be instituted to minimize the release of asbestos fibers during the maintenance activities.

(3) The determination should be recorded on a Maintenance Work Authorization Form, which is then forwarded to the in-house maintenance supervisor or to the maintenance contractor to authorize the work.

(4) The Program Manager should ensure a copy of both the request and authorization forms are placed in a permanent file.

(5) Where the task is not covered by previously approved standard work practices, workers should contact the appropriate site maintenance supervisor or administrator, for the approval of work methods prior to the commencement of the work. The building owner/management should ensure the appropriate work practices and protective measures are used for the job.

(6) For all jobs where contact with ACM is likely, the Program Manager should visit the work site prior to the commencement of the work to ensure the job is being performed properly. For lengthy jobs where disturbance of ACM or is intended or likely, periodic inspections should be made for the duration of the project.

(7) The Program Manager's observations should be documented on an Evaluation of Work Form. Any deviation from standard and approved work practices should be recorded immediately on the Evaluation of Work Form and the practices should be immediately corrected.

(8) Upon completion of the work, a copy of the Evaluation of Work Form should be placed in the permanent asbestos file.

Copies of sample Job Request Forms, Evaluation of Work Forms, and Maintenance Work Authorization Forms are presented in Appendix E.

It is not possible to identify specifically all employee work activities or situations where asbestos might be impacted or disturbed. Common types of activities or situations are however, listed below, detailing safety procedures. Activities which may impact the identified asbestos-containing materials **are not permitted** to be done by untrained maintenance personnel or tenants of the building. Activities which are allowable (to OSHA asbestos awareness trained maintenance personnel) are the following:

1. GUIDANCE FOR THE CLEANING OF ASBESTOS DUSTS AND DEBRIS:

In areas where the known asbestos-containing materials are noted to be damaged or deteriorating then asbestos dust and debris clean-up is warranted. In addition, areas containing damaged asbestos should be cleaned on a regular basis to minimize the collection of asbestos dusts. Cleaning of asbestos dusts is conducted through typical wet mopping methods and proper disposal of the wastes. If elevated levels of settled asbestos dusts are suspected, cleaning practices can be supported with the use of a HEPA vacuum. The following are asbestos dust cleaning protocols:

(1) Prepare cleaning solution per amended water instructions (See Appendix C).

(2) If settled dusts are present to the naked eye, initially vacuum the affected area with a HEPA style vacuum. **DO NOT** use a conventional vacuum.

(3) Apply a coat of cleaning solution and allow to activate for 10-15 minutes.

(4) Mop affected area with a clean mop. Replace mop head each 500 square feet of surface area to insure that contaminated mop heads are not used. **DO NOT** vacuum excessively wet areas with a HEPA style vacuum.

(5) Dispose of all mop heads in accordance with state and federal regulations.

(6) Perform asbestos in dust clearance testing if necessary (See Section 5.5.2.1).

In areas where the known or presumed asbestos-containing material is damaged, the maintenance staff may need to repair the building components as a maintenance activity (not an asbestos removal activity). Repair activities should employ the following steps:

(1) Conduct work during off-hours and isolate the area to prevent unauthorized personnel access.

(2) Turn off air handling units such as air conditioning and/or heating unit.

(3) Prepare work area by sealing the area (i.e. heating vents, windows and doors) by covering with polyethylene sheeting.

(4) Maintenance staff shall don approved respirators and protective personnel equipment/clothing.

(5) Repair damaged surface area using an approved asbestos abatement methodology and seal with an encapsulant.

(6) Clean-up enclosed area and clean-up potential asbestos dusts per dust cleaning methodologies.

(7) Dispose of all used cleaning supplies, containment barriers, and asbestos debris/dust in accordance with state and federal regulations.

2. GUIDANCE FOR FLOORING MATERIALS:

Flooring materials and associated mastics located at the subject property are identified and/or presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of flooring materials:

- No sanding of these flooring materials;
- Floor stripping must use low abrasion pads at speeds below 300 rpm and wet methods;
- Dry buffing may be performed at any speed as long as the flooring has sufficient finish to prevent the pad from contacting the flooring material.

For removing non-friable vinyl resilient flooring materials which contain ACM or which were installed prior to 1981, and where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Non-friable flooring, its backing, or mastic shall not be sanded;

(2) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors;

(3) All scraping of residual adhesive and/or backing shall be performed using wet methods;

(4) Dry sweeping is prohibited;

(5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(6) Tiles shall be removed intact, unless the employer demonstrates that intact removal is not possible;

(7) Non-friable resilient flooring materials including associated mastics and backings shall be assumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

Removal of asbestos-containing flooring materials is not allowed to be conducted by untrained and unlicensed staff.

3. GUIDANCE FOR NON-FRIABLE TRANSITE FLUE PIPES:

The transite flue pipes located in the housing units at the subject property are documented to contain asbestos. Prohibitions and limitations apply to the care of the non-friable material:

- No sanding of this material;

For removing limited areas of the transite flue pipes, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Non-friable transite flue pipes shall not be sanded;

(2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;

(3) Dry sweeping is prohibited;

(4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(5) Transite flue pipe material shall be removed intact with the least amount of damage as possible, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing transite flue pipe material is not allowed to be conducted by untrained and unlicensed staff.

4. GUIDANCE FOR HVAC FLEX DUCT CONNECTORS:

The HVAC flex duct connectors located in the housing units at the subject property are documented to contain asbestos. Maintenance personnel should contact the property management office to determine asbestos content prior to working with these materials. Prohibitions and limitations apply to the care of the vibration damper:

* No sanding, cutting or impacting of this material is allowed;

In emergency situations, whereas removal or repair of the HVAC flex duct connectors is required, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) The HVAC system must be shut down and locked out prior to any removal activities.

(2) Polyethylene drop cloths shall be placed beneath the work area to prevent contamination

(3) Vacuums equipped with HEPA filter, disposable dust bag, and metal scraper tool (no brush) shall be used to clean the material;

(4) The HVAC flex duct connector materials shall be removed intact, unless the employer demonstrates that intact removal is not possible. If the material has the potential to become friable during the removal process, the material shall be kept wet and removed only within a glovebag containment system, thereby limiting the potential for asbestos fiber release;

(5) Dry sweeping is prohibited.

Removal of asbestos-containing HVAC flex duct connectors is not allowed to be conducted by untrained and unlicensed staff.

5. GUIDANCE FOR DRYWALL JOINT COMPOUND:

The drywall joint compound materials at the subject property are documented to contain asbestos. Maintenance personnel should contact the property management office to determine asbestos content prior to working with these materials. Prohibitions and limitations apply to the care of the drywall joint compound materials:

- Materials shall not be dry sanded;
- All scraping shall be performed using wet methods;

For removing materials which contain asbestos, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Walls and ceilings shall not be sanded;

(2) All scraping shall be performed using wet methods;

(3) The use of conventional vacuums and dry sweeping is prohibited;

In emergency situations, whereas removal or repair of a limited amount of the drywall joint compound materials is required, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) The HVAC system must be shut down and locked out prior to any removal activities.

(2) The material must be wetted prior to removal;

(3) Polyethylene drop cloths shall be placed beneath the work area to prevent contamination of other areas

(4) Vacuums equipped with HEPA filter, disposable dust bag, and metal scraper tool (no brush) shall be used to clean the material;

(5) Dry sweeping is prohibited;

Gross removal of asbestos-containing joint compound is not allowed to be conducted by untrained and unlicensed staff. Routine and minor maintenance tasks involving isolated disturbance of the joint compound should be performed using controlled methods. Industry standard is to use methods involving an encapsulating foam (e.g. shaving cream), through which the disturbance is made; whereby resulting in no visible dust/emissions. As an alternative, minor repairs can be performed using localized HEPA vacuum exhaust to reduce any potential emissions, dusts and debris.

6. GUIDANCE FOR CAULKING MATERIALS:

The subject property contains caulking materials that are presumed to contain asbestos. Prohibitions and limitations apply to the care of these categories of materials:

* No sanding of these materials;

For removing the caulking materials which contain ACM or which were installed prior to 1981, and where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Caulking materials shall not be sanded;

(2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;

(3) Dry sweeping is prohibited;

(4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(5) Caulking materials shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing caulking materials is not allowed to be conducted by untrained and unlicensed staff.

7. GUIDANCE FOR ROOFING MATERIALS:

The roofing materials at the subject property are presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of material:

* No sanding of this material;

* No dry-scraping of this material is allowed.

* No cutting of this material is allowed.

8. ROUTINE HOUSEKEEPING DUTIES:

If employees of the Oakland Court Development perform routine custodial duties that involve working near or cleaning ACM that is not enclosed, sealed or otherwise protected from release of asbestos fibers into the air certain housekeeping procedures must be strictly adhered to. This activity is covered by the General Industry standard as long as no construction activity is involved.

(1) The building owner/management must provide the affected workers with asbestos awareness training each year. The course must be provided at no cost to the employee. The course must also cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, and who to tell and what to do if such materials are dislodged or become non-intact. This training must be provided regardless of the expected exposure levels to housekeepers.

(2) In addition, if the building owner/management should reasonably expect that any of the housekeeping employees may be exposed in excess of a permissible exposure limit (PEL: 0.1 fibers per cubic centimeter as a time-weighted average over an 8 hour period or 1.0 fibers per cubic centimeter over a 30 minute period), then the following procedures must be adhered to:

(a) Monitor according to the OSHA standard's requirements to accurately determine the airborne concentrations.

(b) Provide employees with medical surveillance. A medical surveillance program requires the worker to complete a health questionnaire and may include a physical examination at no cost to the employee. The building owner/management must keep exposure and medical surveillance records for the duration of employment plus 30 years.

(c) Restrict access to areas of expected over-exposure

(d) Provide more extensive training: An annual asbestos awareness course is required. The course must be provided at no cost to the employee. The course must cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, how to respond to asbestos exposure, and required housekeeping work practices.

(e) Provide appropriate respirators and protective clothing at no cost to employees to use while working in areas of potential over-exposure. Respirators must be equipped with HEPA filters.

Housekeeping activities conducted in the immediate area of friable or significantly damaged or loosely bonded ACM may indicate significant airborne exposure potential. Activities which release fibers from ACM such as grinding, cutting, or sanding, also have such potential. Please note that reference here is only to workers who are exposed to accessible asbestos when doing routine housekeeping activities. It does not include maintenance activities, repair, removal, or construction work that may involve disturbance or removal of asbestos-containing materials. Neither does it include clean-up and disposal of dust or debris resulting from construction, renovation, removal, repair, or maintenance activities. Performance of these tasks by the housekeeping employees may trigger additional obligations that are described elsewhere in this Operations and Maintenance Program.

5.2.1 NON-EMERGENCY ACM WORK PRACTICES

Allowed non-emergency ACM O&M work practices under this program are limited to qualified Class III and IV asbestos work practices. All Class I and II asbestos work practices, and those Class III and IV asbestos work practices not meeting the qualification criteria below, shall be carried out by a qualified and properly licensed asbestos abatement contractor overseen by an independent industrial hygiene consultant (see Section 5.5.2). Non-emergency Class III and IV asbestos work practices allowed at the Oakland Court Development must meet the following qualification criteria:

- ACM can be sufficiently wetted and/or contained to prevent migration of fibers to other locations without the aid of negative pressure enclosures or devices;
- ACM O&M work practices are unlikely to result in worker exposure to airborne asbestos concentrations greater than or equal to the PEL (0.1 f/cc), based on previous exposure assessments and monitoring. (Note: previously unmonitored activities may require monitoring as described in Section 4.2.1);
- ACM O&M work practices are unlikely to result in building occupant exposure to airborne asbestos concentrations greater than or equal to the one tenth of the PEL (0.01 f/cc), based on previous exposure assessments and monitoring;
- ACM is not located in an area defined as a confined space;
- No greater than three linear feet or three square feet of ACM will be affected. This criterion may not be circumvented by performing a number of smaller tasks that add up to a total greater than three square or linear feet.

It is assumed that Class I and II ACM work practices cannot meet the above criteria. Also, many Class III ACM work practices and some Class IV ACM work practices may not meet these criteria.

5.2.2 EMERGENCY ACM WORK PRACTICES

Emergency ACM work practices may be required for two basic types of emergencies:

(1) where the immediate threat is **due to ACM**

(2) where the immediate threat is **not due to ACM** but the material may become a threat when the emergency is addressed.

An example of the first type of emergency ACM work practice would be where the ACM is disturbed, or the ACM deteriorates rapidly, resulting in an immediate threat to safety and health due to the ACM. An example of the second type of emergency ACM work practice would be where another condition or problem not directly related to the ACM results in an emergency that requires ACM to be impacted in order to correct the condition or problem. Emergency ACM work practices shall only include those ACM work practices necessary to safely control the situation(s) that poses an immediate threat to the life or health of building personnel or tenants. In emergency situations, the threat shall only be controlled to the extent necessary to prevent a continued threat. A complete abatement of the ACM shall not be performed unless it is necessary to contain the threat. Permanent solutions shall be handled through non-emergency work practices once the immediate threat is controlled.

In general, it shall be determined for immediate threats **not due to ACM** that the emergency constitutes a greater threat than the potential ACM exposure poses before emergency ACM work practices are carried out. Examples of other situations where emergency ACM work practices may be required include impending fires, explosive atmospheres, and other life threatening situations. Leaking water pipes and other mechanical failures that do not immediately affect employee or tenant safety are not considered emergency situations and must be handled using the non-emergency ACM work practices.

In emergency situations, the Program Manager and custodial and/or maintenance workers shall use their best judgment as to whether the situation constitutes an emergency and whether the emergency can be handled without impacting the ACM. If it is determined that the situation cannot be handled without impacting the ACM, the most stringent level of worker protection and the highest possible level of ACM work practices controls shall be applied. All non-emergency requirements regarding documentation and permitting requirements shall be accomplished immediately after the emergency response is complete.

All other requirements of this O&M Program apply to emergency O&M work practices, including regulatory compliance, notification, handling and disposal of ACM wastes, etc. An Emergency Notification Form is provided in Appendix G. The Program Manager should make every effort to become familiar with how to address emergency situations before they occur. In emergency situations, maintenance or custodial workers shall restrict access to affected areas of the building using whatever means necessary before the asbestos abatement contractor arrives on-site. Trained maintenance or custodial workers may shut off mechanical, plumbing or electrical systems without donning PPE if it is determined that there is no potential for exposure to asbestos fibers while doing so.

5.3 PERMITTING SYSTEM

Before any ACM work practices are selected or performed, a permitting system must be initiated to track and document all maintenance and other work activities at the site and to assess the potential for these activities to impact ACMs. All planned work activities must be described on an Activity Summary Form (included in Appendix E) that must be approved by the Program Manager. The Activity Summary Form will be reviewed by the Program Manager to determine if the work activity will impact ACMs and can be performed in accordance with the O&M Program.

If the work requires ACMs to be impacted by building personnel, the Program Manager will determine if the activity meets the qualification criteria established above for allowed O&M practices. The Program Manager will then complete the ACM work practices Authorization Form (Appendix E) describing the allowed ACM work practices, including necessary worker protection requirements, control methods to be used, and exposure monitoring requirements. The Authorization Form will be completed regardless of whether the O&M activities will be performed by building personnel or outside contractors. The Program Manager shall complete and issue a notification form(s) to all applicable persons whenever an Authorization Form is completed. The custodial and/or maintenance personnel performing the ACM work practice will complete the ACM work practices Completion Form (Appendix E), detailing any deviations from the ACM work practices and/or any other problems encountered while performing the ACM work practices. The Completion Form will be provided to the Program Manager for review and approval.

5.4 SELECTION OF ACM WORK PRACTICES

Appropriate ACM work practices will be selected by the maintenance staff (or the Program Manager) and approved by the Program Manager. Work practice descriptions are provided in Appendix C. The Program Manager shall complete a Program Manager Checklist (Appendix F) and evaluate the work to be performed based on the information in the completed Activity Summary Form, available survey and assessment data, and data on past O&M activities (if available). When reviewing data and completing the Program Manager checklist, the following shall be determined.

* If an ACM may be encountered during the work;
* If any ACMs which have been enclosed may be encountered during this work;
* Appropriate work practice(s) to address the situation;
* Appropriate level of work practice(s) to be used;
* Required PPE, if any, for the work.

The Program Manager must determine the appropriate work practice considering: the level of worker and environmental protection necessary, based on the O&M Program objectives; regulatory compliance of the activity, including requirements for worker protection, work practices, exposure monitoring, notifications, and state or local requirements; and whether exposure monitoring data and Authorization Forms from past work indicate that a given work practice or work practice level accomplishes the O&M objectives. In selecting the appropriate work practice for a given situation, the Program Manager shall also consider the following.

* Airborne fiber release potential of material or O&M activity;

- Condition and friability of the ACM;
- Exposure and air monitoring data;
- Training, skill, and experience of workers;
- Quantity of ACM to be disturbed;
- Location, type, and percentage of ACM;
- Exposure potential for occupants and other personnel;
- State and local regulatory requirements;
- Ventilation system configurations;
- On-site supervision.

5.5 CLEARANCE FOR O&M ACM WORK

An asbestos O&M activity or a clean-up of a minor release is successful when the source of the fiber release has been controlled and airborne asbestos is kept to a minimum. All workers must be trained and follow the accepted work practices. Success of the activity is confirmed with a final evaluation at each work area. The evaluation consists of visual inspection, air testing, wipe sampling, and micro-vacuum, if warranted. Visual inspection is used to determine if the work has been performed properly and to check for debris and other signs of poor cleaning. Air and surface dust testing helps confirm that the work site has been adequately cleaned. The Asbestos Program Manager shall decide whether visual, air, or surface dust testing clearance is acceptable on a job-to-job basis. It is required that a combination of two of the three methods (air sampling and wipe sampling or air sampling and micro-vacuuming) be utilized to determine the extent of an asbestos fiber release from friable or non-friable asbestos materials. Air testing with analysis via Phase Contrast Microscopy (PCM), NIOSH 7400 Method, is an acceptable method of air clearance for activities involved in this O&M Program for the Oakland Court Development.

5.5.1 VISUAL INSPECTION

The primary test for completion of the work site is a thorough visual inspection. The inspection should be conducted prior to the occupation of the area and after the area has been cleaned via HEPA vacuum, wet wiping, or other accepted method. The inspector should first ensure job completeness. If ACM has been cleaned or debris removed, the inspector should ensure no debris remains. Special attention should be given to corners and hard-to-reach areas. Next, the inspector should determine that the work site has been adequately cleaned. Any activity that disturbs ACM will release fibers. Therefore, work site clean-up after removal, repair, or cleaning is critical. Examine all surfaces for dust and debris. Use a damp cloth to collect dust from all surfaces and inspect the cloth for evidence of dust. This is a practical way to establish that the "no dust" requirement has been met. If dust is found, the entire work area should be re-cleaned and the tests repeated.

5.5.2 AIR TESTING

Air monitoring should be conducted after all minor and major release episodes by a trained and licensed project monitor. The air monitoring should be conducted only after the work area has passed a visual inspection. Sampling for asbestos consists of collecting fibers by drawing air through a filter at a known rate. But this approach may fail to detect the presence of asbestos fibers. For example, if sampling is conducted for a short time during a quiet period (i.e. when air

movement is limited), many fibers will settle out of the air onto the floor and other surfaces and may not be captured on the filter. Under these conditions, air measurements could show little or no asbestos. Usually, aggressive sampling is recommended as a post work air test provided the aggressive sampling will not contaminate adjacent areas. Aggressive sampling uses forced air equipment such as a leaf blower to dislodge free fibers. Routine air samples are generally analyzed using Phase Contrast Microscopy (PCM) according to the NIOSH 7400 Method. This method is recognized by the U.S. Occupational Health and Safety Administration (OSHA), the U.S. Environmental Protection Agency (EPA), and the State of Tennessee for its ability to characterize airborne fiber levels.

Following all O&M activities performed under this Program, the final airborne fiber concentration(s) in an affected area shall be less than 0.010 f/cc when analyzed by phase contract microscopy (PCM). In the State of Tennessee, air monitoring should be completed by a properly trained and licensed project monitor. In addition, the samples must be submitted to an accredited and/or state licensed Asbestos Analytical Laboratory.

5.5.2.1 PHASE CONTRAST MICROSCOPY (PCM)

Phase Contrast Microscopy (PCM) is the method of asbestos air testing that is most familiar, available, and frequently used. It is also the least expensive and has a well established analytical protocol. However, the protocol for PCM does not distinguish between asbestos and other types of fibers (i.e. fiberglass) and counts only fibers longer than five micrometers; nor is PCM sensitive enough to detect the extremely thin fibers typical of airborne asbestos in buildings. Thus, the interpretation of PCM results assumes that a low concentration of relatively large airborne fibers means that the concentration of asbestos fibers is also low. If a potential source of non-asbestos fibers (i.e. fiberglass insulation, carpet, etc.) is present within the work area, TEM analysis shall be used instead of PCM analysis. The procedures for testing via the PCM Method are as follows:

Sampling:

* Draw at least 1,200 liters of air through each filter at a rate of 1 to 12 liters per minute.
* Collect at least five samples per homogenous work site, or one per room.

Analysis:

* Measure the asbestos on each filter with PCM using the NIOSH 7400 procedures.
* Include at least one field blank and one laboratory blank per abatement project, for quality control purposes. Also, spilt one work site sample for duplicate analysis.

Release Criterion:

* Release the contractor if every sample value is below the limit of reliable quantification (0.01 f/cc).
* If any of the sample values is above the prescribed level, clean the entire work area again, collect new samples, and evaluate the samples as describes above.

6.0 CONTRACTED ACM WORK

If ACM abatement or O&M work is to be performed by contractors, the Program Manager's responsibilities and activities include submittal reviews and verification that O&M work and monitoring is being performed as required. The permitting system described above will be applied to work performed by outside contractors. The Program Manager will track abatement and O&M activities using the ACM work practices Authorization Form and the ACM work practices Completion Form. As necessary, modifications to other forms shall be made to assist the Program Manager in tracking ACM activities that affect the overall O&M program. These permit and tracking forms shall provide the basis for updating and modifying the O&M Program to reflect current material quantities and condition.

7.0 APPENDICES

Appendix A **Asbestos Survey Report**
Appendix B **Glossary of Terms**
Appendix C **O&M Work Practices**
Appendix D **Program Manager Decision-Making Flowchart**
Appendix E **Permit Forms**
Appendix F **Program Manager Checklist and O&M Annual Review Form**
Appendix G **Notification Forms**
Appendix H **"Ready to Use" O&M Activity Sheets**

APPENDIX A

Asbestos Survey Report

Asbestos Survey
Oakland Court Housing Development
Murfreesboro Tennessee

Prepared for:

Murfreesboro Housing Authority
415 N Maple Street
Murfreesboro, TN 37130

Prepared by:

Frost Environmental Services, LLC
339 Rockland Road, Suite E
Hendersonville, Tennessee 37075
www.frostenvironmental.com

September 2019

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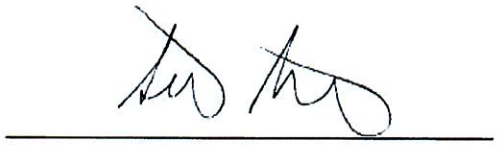

Seth Frost

September 2019

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4.0 CONCLUSIONS AND RECOMMENDATIONS
5.0 LIMITATIONS

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Appendix A Laboratory Analytical Report
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1.0 EXECUTIVE SUMMARY

Frost Environmental Services, LLC (FES) was retained by Murfreesboro Housing Authority to perform a survey for Asbestos Containing Materials (ACM) of Oakland Court Housing Development in Murfreesboro Tennessee. The inspection was performed on August 29th, 2019. The purpose of the survey was to determine asbestos containing materials within the site prior to demolition.

The site consisted of housing units and a community center. Oakland Court has 76 units. There are 2 five bedroom units, 6 four bedroom units, 22 three bedroom units. 32 two bedroom units, and 14 one bedroom units The single family units were wood framed single story brick buildings. They were either duplexes or single unit buildings. The units were on East Lokey, North Academy Street, Palm Court, Jetton Drive, and Christy Court. The Community Center was located at 318 East Lokey Avenue.

1.1 Asbestos-Containing Material Summary

The purpose of the survey was to identify ACM's in the interior and exterior of the buildings. Sampling consisted of building materials within the interior and exterior of complex.

A total of one hundred and eleven (111) samples of suspect ACM were collected from the site. As shown in **Table 1** below, the following materials were determined to be ACM.

Table 1 – Positive ACM's

Community Center

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Black Floor Tile and Mastic Under Non ACM 12x12 Floor Tile	Front Right Side Area	600sqft
Black mastic Under Non ACM 12x12 Floor Tile	Front Right Restroom	30sqft

Housing Units

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Transite Flue Pipe	HVAC Closet	10lnft/Unit
HVAC Flex Duct Connector	HVAC Unit	8lnft/Unit
Tan Caulking	Exterior Windows	14windows / Building
ACM Black and Yellow Mastic Under Non ACM Floor Tiles	Throughout All Units	580sqft (1 BR) 750 (2 BR) 900 – 980 (3 BR) 1100-1300 (4-5 BR)

In addition, joint compound was determined to be ACM, however since it was not used as a surfacing material it could be composited with the drywall to less than one percent asbestos, as per the State of Tennessee and The Environmental Protection Agency (EPA).

2.0 INTRODUCTIONS

Frost Environmental Services, LLC (FES) was retained by Murfreesboro Housing Authority to perform a survey for Asbestos Containing Materials (ACM) of Oakland Court Housing Development in Murfreesboro Tennessee. The inspection was performed on August 29th, 2019. The purpose of the survey was to determine asbestos containing materials within the site prior to demolition.

3.0 ASBESTOS SURVEY FINDINGS

The ACM inspection was performed in accordance with Environmental Protection Agency (EPA) / NESHAPS, Occupational Health and Safety Administration (OSHA), and State of Tennessee Protocols. Seth Frost and Brad Ely performed the inspection, on August 29th, 2019. Appropriate certification documents are located in Appendix C of this report.

3.1 ACM Survey Findings

3.1.1 Asbestos Containing Materials

A total of one hundred and eleven (111) samples of suspect ACM were collected from the site. As shown in **Table 2** below, the following materials were determined to be ACM.

Table 2 – Positive ACM's

Community Center

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Black Floor Tile and Mastic Under Non ACM 12x12 Floor Tile	Front Right Side Area	600sqft
Black mastic Under Non ACM 12x12 Floor Tile	Front Right Restroom	30sqft

Housing Units

MATERIAL (TYPE)	FUNCTIONAL SPACE	QUANTITY
Transite Flue Pipe	HVAC Closet	10lnft/Unit
HVAC Flex Duct Connector	HVAC Unit	8lnft/Unit
Tan Caulking	Exterior Windows	14windows / Building
ACM Black and Yellow Mastic Under Non ACM Floor Tiles	Throughout All Units	580sqft (1 BR) 750 (2 BR) 900 – 980 (3 BR) 1100-1300 (4-5 BR)

In addition, joint compound was determined to be ACM, however since it was not used as a surfacing material it could be composited with the drywall to less than one percent asbestos, as per the State of Tennessee and The Environmental Protection Agency (EPA).

3.1.2 Non Asbestos Containing Materials

As shown in **Table 3** below, the following materials were found **not** to contain asbestos. Fiberglass insulation was visually determined not to be ACM.

Table 3 – Non ACM's

Residential Housing

Textured Ceiling	Plaster	Roof Shingles
White Mastic On Fiberglass Pipes		

Community Center

Textured Ceiling	Drywall and Joint Compound	12x12 Floor Tile`
Window Caulk	Roof Shingles	

3.2 Asbestos Survey Protocol

Samples were given a unique numeric identification. Samples were placed in a sealed container, sample was documented on a chain of custody and sent to a qualified laboratory for analysis.

The technique used for sampling the suspected materials was designed to minimize possible fiber release and in turn possible contamination of surrounding areas. All representative "suspect" materials sampled, were collected in accordance with the EPA's AHERA and "Guidance for Controlling Asbestos Containing Material in Buildings" (EPA 560 / 6-85-024, June 1985).

The sample location was sprayed with an amended water mixture. Then a sample of the material was collected and properly stored in a labeled airtight container. A chain of custody form was completed for all bulk samples collected and subsequently delivered to a qualified laboratory for analysis using Polarized Light Microscopy (PLM).

Suspect ACM was inspected to determine the condition of the material and touched to determine its friability. A friable material is defined as a material that can be crumbled, or reduced to powder by hand pressure. A friable material has a higher potential of becoming airborne during disturbance.

FES personnel utilized PPE as deemed appropriate for each sampling event. Wet methods were employed during the collection of bulk samples. Sampling was performed with as little damage as possible to building materials. Samples were collected in hidden inconspicuous areas. FES performed the inspection to the best of our ability, however it is possible materials may not have been accessible during the time of the inspection.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Following the inspection, several materials were determined to be ACM. Prior to demolition activities, any ACM which may be rendered friable, must be removed by State of Tennessee Certified contractor and workers. Since the drywall and joint compound walls systems was determined to be less than one percent it may remain in-place during demolition. All asbestos waste must be sent to an EPA approved landfill.

5.0 LIMITATIONS

FES performed a complete inspection of the site. However some materials may be hidden and not identified or noted. FES performed the inspection to the best of their ability. If a material is uncovered during demolition that was not identified during the inspection, the material should be treated as asbestos until testing is performed.

Appendix A Asbestos Laboratory Analytical Report

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 362-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM)
LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Housing Development
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
1A	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1B	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1C	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	100	None Detected	None Detected
1D	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1E	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

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Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
1F	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1G	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1H	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
1I	Ceilings	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	2-Chrysotile
		Composite Drywall and Joint Compound	90	10-Cellulose	<1-Chrysotile
2A	Kitchens and Bathrooms	Plaster White Skim Coat	100	None Detected	None Detected
		Tan Course Plaster	100	<1-Animal Hair	None Detected
2B	Kitchens and Bathrooms	Plaster White Skim Coat	100	None Detected	None Detected
		Tan Course Plaster	100	<1-Animal Hair	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
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Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
2C	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	98	<1-Animal Hair	None Detected
2D	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2E	Kitchens and Bathrooms	Plaster White Skim Coat	98	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2F	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	98	<1-Animal Hair	None Detected
2G	Kitchens and Bathrooms	Plaster White Skim Coat	90	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2H	Kitchens and Bathrooms	Plaster White Skim Coat	98	None Detected	None Detected
		Tan Course Plaster	90	<1-Animal Hair	None Detected
2I	Kitchens and Bathrooms	Plaster White Skim Coat	100	None Detected	None Detected
		Tan Course Plaster	100	<1-Animal Hair	None Detected
3A	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3B	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
3C	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3D	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3E	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3F	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3G	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3H	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
3I	Fiberglass Pipe Runs	White Mastic Coating	95	5-Cellulose	None Detected
4A	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4B	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4C	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4D	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4E	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4F	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4G	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4H	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite
4I	HVAC Closet	Transite Flue Pipe	65	None Detected	30-Chrysotile / 5-Crocodilite

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Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 362-2660 office - (615) 478-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM)
LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Housing Development
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
5A	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5B	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5C	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5D	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5E	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5F	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5G	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5H	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
5I	HVAC Unit	White Flex Duct Connector	5	35-Glass	60-Chrysotile
6A	Various Units	Textured Ceiling	100	None Detected	None Detected
6B	Various Units	Textured Ceiling	100	None Detected	None Detected
6C	Various Units	Textured Ceiling	100	None Detected	None Detected
6D	Various Units	Textured Ceiling	100	None Detected	None Detected
6E	Various Units	Textured Ceiling	100	None Detected	None Detected
6F	Various Units	Textured Ceiling	100	None Detected	None Detected
6G	Various Units	Textured Ceiling	100	None Detected	None Detected

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339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2660 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
6H	Various Units	Textured Ceiling	100	None Detected	None Detected
6I	Various Units	Textured Ceiling	100	None Detected	None Detected
7A	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7B	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7C	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7D	Exterior Windows	Tan / White Caulking	98	None Detected	2-Chrystoile
7E	Exterior Windows	White Caulking	100	None Detected	None Detected
7F	Exterior Windows	White Caulking	100	None Detected	None Detected
7G	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7H	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
7I	Exterior Windows	Tan Caulking	96	None Detected	4-Chrysotile
8A	Throughout	Roof Shingle	90	10-Glass	None Detected
8B	Throughout	Roof Shingle	90	10-Glass	None Detected
8C	Throughout	Roof Shingle	90	10-Glass	None Detected
8D	Throughout	Roof Shingle	90	10-Glass	None Detected
8E	Throughout	Roof Shingle	90	10-Glass	None Detected

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(615) 562-2669 office - (615) 478-9047 cell - email: lab@frostenvironmental.com

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
8F	Throughout	Roof Shingle	90	10-Glass	None Detected
8G	Throughout	Roof Shingle	90	10-Glass	None Detected
8H	Throughout	Roof Shingle	90	10-Glass	None Detected
8I	Throughout	Roof Shingle	90	10-Glass	None Detected
9	835	Tan Vinyl Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
10	1009	Tan Vinyl Flooring	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
11	833	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile

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339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2069 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
12	824	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
13	1003	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
14	1013	Brown Vinly Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
15	911	Brown Vinly Flooring	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
16	304	12x12 Tan Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile

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Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9647 cell - email: lab@frostenvironmental.com

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LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Housing Development
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
17	308	12x12 Tan Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
18	314	12x12 Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
19	318	Brown Vinly Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
20	1011	Brown Vinly Flooring	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
21	827	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile

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LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
22	839	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
23	912	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile
24	1007	18" Brown Vinyl Floor Tile	100	None Detected	None Detected
		Beige Floor Tile	100	None Detected	None Detected
		Tan Floor Tile	100	None Detected	None Detected
		Black and Yellow Mastic	95	None Detected	5-Chrysotile

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POLARIZED LIGHT MICROSCOPY (PLM)
LABORATORY ANALYSIS REPORT
(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Murfreesboro Housing Authority
PROJECT: Oakland Court Community Center - 318 East Lokey Avenue
LOCATION: Murfreesboro Tennessee

Date Received: 8/29/2019
Date Analyzed: 9/5/2019
Date Reported: 9/9/2019

ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
1A	Throughout	Drywall	90	10-Cellulose	None Detected
		Joint Compound	98	None Detected	None Detected
1B	Throughout	Drywall	90	10-Cellulose	None Detected
		Joint Compound	90	None Detected	None Detected
1C	Throughout	Drywall	98	10-Cellulose	None Detected
		Joint Compound	90	None Detected	None Detected
2A	Front Right Rooms	Textured Ceiling	1000	None Detected	None Detected
2B	Front Right Rooms	Textured Ceiling	100	None Detected	None Detected
2C	Front Right Rooms	Textured Ceiling	100	None Detected	None Detected
3	Front Right Side Area	12x12 Red Floor Tile	100	None Detected	None Detected
		Black Floor Tile	92	None Detected	8-Chrysotile
		Black Mastic	94	None Detected	6-Chrysotile
4	Front Right Side Area	12x12 White Floor Tile	100	None Detected	None Detected
		Black Floor Tile	92	None Detected	8-Chrysotile
		Black Mastic	94	None Detected	6-Chrysotile

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(615) 562-2660 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

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Date Received: 8/29/2019
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Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
5	Front Right Bathroom	12x12 Tan w/ Brown Streaks	100	None Detected	None Detected
		Black and Yellow Mastic	96	None Detected	4-Chrysotile
6A	Hall and kitchen area	12x12 Tan w/ Red Marble	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
6B	Hall and kitchen area	12x12 Tan w/ Red Marble	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
7A	Cafeteria	12x12 Red Floor Tile	1000	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
7B	Cafeteria	12x12 Red Floor Tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
8A	Cafeteria	12x12 White Floor Tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
8B	Cafeteria	12x12 White Floor Tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
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ANALYST: Seth Frost

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
9	Center Area	12x12 Red Floor Tile	100	None Detected	None Detected
		White Floor tile	100	None Detected	None Detected
		Brown Mastic	100	None Detected	None Detected
10A	Center Area	12x12 White Floor Tile	100	None Detected	None Detected
		White Floor tile	100	None Detected	None Detected
		Brown Mastic	100	None Detected	None Detected
10B	Center Area	12x12 White Floor Tile	100	None Detected	None Detected
		White Floor tile	100	None Detected	None Detected
		Yellow Mastic	100	None Detected	None Detected
11A	Exterior Windows	Window Caulk	100	None Detected	None Detected
11B	Exterior Windows	Window Caulk	100	None Detected	None Detected
11C	Exterior Windows	Window Caulk	100	None Detected	None Detected
12A	Roof	Roof Shingle	90	10-Glass	None Detected
12B	Roof	Roof Shingle	90	10-Glass	None Detected

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Appendix B Certifications

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program



Seth D. Frost

DOB	Sex	HGT	WGT
13-Sep-1972	M	5'11"	180

Discipline	Accreditation	Expiratio
Inspector	A-I-47879-76328	Jul-31-20
Project Monitor	A-PM-47879-76327	Jul-31-20

ditation

Asbestos Accreditation

APPENDIX B

Glossary of Terms

GLOSSARY

Acoustical Plaster: Sound absorbing finishing material mill-formulated for application in areas where a reduction in sound reverberation or noise intensity is desired. These materials usually are applied in a minimum thickness of 1/2" (13 mm). The finish material is applied over gypsum plaster, plaster brown coat or other base plaster. The surface material is usually friable and has a rough surface appearance.

Acoustic Tile: Tile-shaped blocks of sound absorbent material used for ceilings or as wall facing. May be glued to substrate or laid in a rigid grid work.

ACM (ACBM): Asbestos-Containing Material (Asbestos-containing Building Material). Any material containing greater than one percent asbestos by volume.

Adequately Wet: Adequately Wet means sufficiently mix or penetrate with liquid (amended water) to prevent the release of particulate. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not necessarily sufficient evidence of being adequately wet.

Air Monitoring: The process of measuring the airborne fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added for use in wetting ACM to control asbestos fibers.

Asbestos: Chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that has been chemically treated and/or altered.

Asbestos Abatement Contractor: The firm contracted by the O&M Program Manager to perform emergency and non-emergency asbestos removal and/or repair.

Asbestos-Containing Waste Material: Any waste that contains commercial asbestos. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing waste and materials contaminated with asbestos including disposable equipment and clothing.

Asbestos debris: Pieces of ACM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

Asbestos Hazard Emergency Response Act (AHERA): An EPA regulation published in 40 CFR §763 covering asbestos-containing materials in schools. AHERA requires local education agencies to identify ACM in their school buildings, develop an asbestos management plan (O&M) and implement this plan. This O&M Program utilized aspects of this standard.

Asbestos O&M Work: Cleaning, maintenance, repair or renovation work involving asbestos containing materials where the intent of the activity is not to remove asbestos. NESHAP requires that the owner or operator of a demolition or renovation activity conduct a thorough inspection of the affected facility or part of the facility where demolition or renovation will occur.

Asbestos Program Manager: A building owner or designated representative who supervises all aspects of the facility asbestos management and control program.

Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6" to 9" (150-230 mm).

Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

Certified Industrial Hygienist (CIH): This individual is certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

Concealed Suspension or Concealed Spline Ceiling System: Presents a monolithic ceiling surface, unobstructed by the cross-hatching of exposed grid members. Tiles are typically 12" x 12" (305 x 305 mm) or 12" x 24" (305 x 610 mm) with slots cut into the edges of tiles for the purposes of accepting flat or "T" splines to support the tiles.

Confined Space: A space that has limited openings for entry and exit, unfavorable natural ventilation and/or a space not designed for continuous worker occupancy. Examples include boilers, furnaces, pits, septic tanks, manholes and utility vaults.

Critical Barrier: One or more layers of polyethylene taped in place over openings into a work area. Openings to be covered include doors, windows, diffusers, and any other opening that could allow outside air into a work area.

Decorative Acoustic Finish: Finishing material mill-formulated and spray applied up to about 3/8" (10 mm) thick over gypsum wallboard. Material has a rough surface and is similar in appearance to acoustic plaster but is not designed for sound absorption.

Delamination: Separation of one layer from another.

Disposal Bag: Properly labeled 6 mil (0.15 mm) thick (or thicker) leak-tight plastic bags used for transporting asbestos waste from work and to disposal site.

Drop Cloth (Polyethylene): A layer of polyethylene on the floor of a work area to protect the floor below from contamination and to facilitate the clean-up of dust or debris generated during the work.

Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

EPA: U.S. Environmental Protection Agency

Excursion Limit (EL): The OSHA term used to define a maximum airborne concentration of asbestos in fibers per cubic centimeter as averaged over a sampling period of thirty minutes.

Fiber Release: Any uncontrolled or unintentional disturbance of ACBM resulting in visible emission.

Fireproofing: Material applied to structural elements or systems which provides increased fire resistance, usually serving no structural function. This material is typically applied using spray equipment.

Friable Asbestos: (See "Regulated ACM")

Glovebag: A polyethylene or polyvinyl chloride bag-like enclosure affixed around an asbestos-containing source (most often, TSI) so that the material may be removed while minimizing release of airborne fibers to the surrounding atmosphere.

HEPA Filter: High-Efficiency Particulate Air Filter. Such filters are rated to trap at least 99.97% of all particles 0.3 microns (0.3 µm) in diameter or larger.

Independent Project Monitor: This individual is a CIH or one who performs asbestos abatement project monitoring under the direct supervision of a CIH. Responsibilities include: Inspections, Air Monitoring, Exposure Assessments, etc..

Maintenance/Custodial Workers: These individuals are employees of the building management who are responsible for performing limited O&M clean-up and removal activities.

Medical Surveillance: A periodic comprehensive review of a worker's health status. The required elements of an acceptable medical surveillance program are listed in the Occupational Safety and Health Administration standards for asbestos.

Mini-Enclosure: An enclosure constructed of polyethylene sheeting used for small scale, short duration asbestos maintenance or renovation work. Mini-enclosures can be small enough to restrict entry to the asbestos work area to one worker. Appendix G to OSHA regulation 29 CFR 1926.58 discusses mini-enclosures and recommends that a change room be constructed contiguous to the mini-enclosure.

Miscellaneous ACM: Interior asbestos-containing building material on structural components, structural members or fixtures, such as floor and ceiling tiles; does not include surfacing material or thermal system insulation.

Negative Pressure System: A local exhaust system intended to prevent the escape of contaminated air to the surrounding environment. It utilizes HEPA filtration capable of maintaining a pressure differential with a lower pressure inside the Work Area than in any adjacent area. This system recirculates clean air and/or generates a constant flow of air from adjacent areas into the work area.

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

NESHAP: National Emission Standard for Hazardous Air Pollutants - EPA Rules under the Clean Air Act.

NIOSH: The National Institute for Occupational Safety and Health, which was established by the Occupational Safety and Health Act of 1970. Primary functions of NIOSH are to conduct research, issue technical information, and certify respirators.

Operations & Maintenance (O&M) Program: A program of work practices to maintain ACM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling ACM disturbance or damage.

Occupied Area: An area where personnel are present and are performing their normal activities intended for the area (such as in a typical office area from 8:00 to 5:00 p.m., Monday through Friday).

OSHA: Occupational Health & Safety Administration

OSHA Class I Work means activities involving the removal of TSI and surfacing ACM and PACM.

OSHA Class II Work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

OSHA Class III Work means repair and maintenance operations, where "ACM," including TSI and surfacing ACM and PACM, is likely to be disturbed.

OSHA Class IV Work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Penetrating Encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

Personal Air Samples: An air sample taken with a sampling pump directly attached to the worker with the collecting filter and cassette placed in the worker's breathing zone. These samples are required by the OSHA asbestos standards and the EPA Worker Protection Rule.

Phase Contrast Microscopy (PCM): A method of analysis using a light microscope, used to find the concentration of airborne fibers. Does not distinguish among asbestos and other fibers. Used by OSHA to find personal exposures, and by EPA to find area levels for AHERA project clearance.

Plenum: Any space to convey air in a building or structure. The space above a suspended ceiling is often used as an air plenum. This term is also used in the work practices to refer to spaces above a ceiling not used to convey air.

Polarized Light Microscopy (PLM): A method of analysis using a light microscope to find the chemical or mineral types of samples, including the concentration of asbestos in bulk materials. Used by EPA for AHERA and NESHAP, and by OSHA to see if asbestos is involved in a project.

Presumed Asbestos Containing Material (PACM) refers to materials that were presumed to contain asbestos and therefore not sampled by the certified asbestos inspector.

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Regulated ACM (RACM) is categorized as (a) Friable asbestos material (b) Category I nonfriable ACM that has become friable (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.
(***Note:*** *Regulated ACM is an EPA NESHAP concept. OSHA makes no distinction between friable and non-friable asbestos.)*

"Cutting" means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing or punching.
"Grinding" means to reduce to powder or small fragments and includes mechanical clipping or drilling.

Friable asbestos material means any material containing more that 1 percent asbestos as determined using the method specified under AHERA (40 CFR Part 763, Sub-part F, Appendix A, section 1, Polarized Light Microscopy) that, when

dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other that point counting by polarized light microscopy (PLM), verify the as-asbestos content by point counting using PLM.

Category I Nonfriable asbestos-containing material (ACM) means asbestos-containing packing, gaskets, resilient floor covering and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified under AHERA.

Category II Nonfriable ACM means any material, excluding Category I nonfriable ACM containing more that 1 percent asbestos as determined using the methods specified under AHERA, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Remove: For Operations and Maintenance work on ACM, "remove" refers to the removal of ACM as needed to perform a maintenance or repair O&M activity.

Repair: Returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.

Respirator: A device designed to protect the wearer from the inhalation of harmful particulate.

Surfacing ACM: Asbestos- containing material that is sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural member, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Suspended "T" Bar Ceiling System: A false or dropped ceiling composed of acoustic tiles laid into an inverted metal "T" bar grid frame suspended by wires from building framing members.

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Temporary Barriers: One or more layers of 6 mil polyethylene installed to isolate a work area from other portions of a facility.

Thermal System Insulation (TSI): Thermal system insulation - asbestos-containing material applied to pipes, fittings, boilers, breaching, tanks, ducts or other interior structural components to prevent heat loss or gain or water condensation.

Time Weighted Average (TWA): In air sampling, this refers to the average air concentration of contaminants during a particular time period.

Transmission Electron Microscopy (TEM): A method of analysis using an electron microscope, used to find and analyze the concentration of airborne or bulk asbestos fibers and structures. Distinguishes among asbestos and other materials; can detect smaller asbestos fibers than does PCM. Used by EPA to find area concentrations for large AHERA project clearance.

Work Area: The area where asbestos-related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers of debris, and entry by unauthorized personnel.

Work Practices: Procedures designed to be followed to avoid or minimize fiber release during activities affecting ACM.

APPENDIX C

O&M Work Practices

O&M Work Practices

W-1 Tools, Equipment and Materials

The following is a list of tools, equipment and materials that are recommended to perform the work practices.

Tools and Equipment

- Utility knife
- Ground fault circuit interrupters (GFCI's), Extension cords and adapters
- Lockout tags
- Temporary work lights
- Wet wipes or bucket with clean water for wet wiping
- Smoke test bulb and tubes
- Wire cutters
- Tin snips
- Safety glasses
- Disposable coveralls

Abatement Equipment and Materials

- Polyethylene sheeting (6 mil thickness)
- Duct tape
- HEPA-Vacuum
- Disposal bags with labels
- Respirators
- Disposable coveralls (if required)
- Disposable towels or wet wipes
- Garden sprayer with amended water

W-2 Preparing Amended Water

Amended water solutions are prepared by mixing a measured amount of surfactant with clean water in accordance with the manufacturer's instructions. Surfactants might be considered hazardous substances. Review and comply with Material Safety Data Sheet (MSDS) before mixing and using these materials. Amended water shall be mixed in a labeled garden sprayer unit prior to the start of an O&M activity. Some practitioners have reported that liquid dishwashing detergent might be used as a surfactant for O&M work. They have used a mix of eight parts water to one part detergent. Amended water is to be used whenever materials are friable and have the potential to release fibers into the air.

W-3 Shut-off and Lockout of Building Systems

In emergency situations, any mechanical, plumbing or electrical system(s) that might affected by O&M activities shall be shut off, locked and tagged out with lockout tags at the circuit breaker panel or disconnect switch.

Building systems in a work area, systems that serve a work area, or systems that will be worked on during OSHA Class I, II, III activities shall be shut down prior to commencement of work. OSHA Class IV activities do not require building system shut down. Any air-handling systems (supply, return and exhaust) required to be shut down shall be shut off prior to the commencement of work as well as be locked and tagged with lockout tags at the circuit breaker panel or disconnect switch.

Lockout tags shall note when and why power is shut down and the personnel performing the lockout. There is to be only one key for each lock used on lockout tags to prevent accidental reactivation of equipment.

W-4 Securing Work Area

In an emergency situation, maintenance or custodial workers may restrict access to immediately affected areas of the building if there is no potential for an asbestos exposure to those workers. If there is potential for asbestos exposure, workers shall secure the area to the next cleanest room, doorway, entrance, etc.. Maintenance workers may restrict the area by whatever means necessary. Work areas shall be vacated and secured (where feasible) by locking doors (from inside the area if possible) or other means. Access to the work area shall be restricted by asbestos barrier tape and "keep-out" signs around the perimeter of the work area. Install barrier tape and signs by taping or tying to fixed objects.

W-5 Putting on Respirators and Performing Fit Checks

The procedures described below are based on the assumption that workers wearing respirators have been trained in the use of respirators and, for negative pressure respirators, fit tested, and enrolled in a medical surveillance program as part of a Respiratory Protection Program. Respirators used shall be approved by NIOSH and/or MSHA. These procedures are not a substitute for a Respiratory Protection Program in accordance with OSHA standard 29 CFR §1910.1001 and 29 CFR §1926.1101

Putting on Respirator

Wearers shall inspect their respirators before each use of the respirator. Respirators must not be damaged, have missing parts or be deformed in any way. The straps must be intact and well attached. Proper filter cartridges for the hazards to be encountered must be installed. Verify that filters have been replaced in accordance with the Respiratory Protection Program. Batteries for powered respirators shall be fully charged.

The respirator shall also be cleaned if it was not cleaned after the last use. If any problems exist, the respirator shall be repaired or replaced in accordance with the Respiratory Protection Program.

When putting on a respirator, the straps shall be loosened before it is put on. Filter caps (such as those used on some Powered Air Purifying Respirators) shall be taped to the filter body or stored where it will not be lost. The respirator shall be put on and then the straps tightened as recommended in the manufacturer's information provided with the respirator. Fit checks shall then be performed.

Fit Checks

Fit checks shall be performed in accordance with the Respiratory Protection Program by each worker each time they put on a respirator. Both positive and negative pressure fit checks are to be performed. A negative pressure fit check is done by donning the respirator and pulling the respirator straps so the unit fits snugly. Inhale gently while placing hands over filters to block off inhalation side. Respirator shall pull to face and no air shall leak in around face seal. A positive pressure fit check is done by exhaling gently (without breaking respirator seal to face) breathing normally while blocking off the exhalation valve. The face piece shall then expand away from face while exhaling. Adjust respirator straps as needed to obtain a good seal of the facepiece to the face. If a good seal cannot be obtained, obtain a new respirator and perform fit tests again.

W-6 Protective Clothing

Protective clothing for workers typically consists of disposable coveralls, gloves and boots. Coveralls shall have hoods and booties attached. They shall provide complete coverage of the body with the exception of hands and face. Cloth coveralls that are cleaned by a facility equipped to launder asbestos contaminated clothing might also be used. Do not modify coveralls.

If street clothes could become contaminated, two coveralls shall be worn, or the street clothes shall be removed before the start of work. When possible, street clothes shall be removed in a changing area before protective clothing is put on. Protective clothing shall be put on after respirators. The coverall hood shall cover respirator straps.

Workers are encouraged to wear protective gloves that are duct taped at the cuffs to the protective coveralls. Eye, hearing, and head protection shall also be used where needed. Rubber slip-resistant boots are recommended for work areas where slip hazards might occur (protective booties shall cover feet inside the boots). Steel-toed boots shall be used in areas where foot hazards exist. Do not use coveralls with loose foot coverings for activities that involve climbing ladders or working on scaffold.

W-7 Precleaning Work Areas and Wet Wiping

Precleaning of work areas prior to the start of work is performed to remove historical dust that could be disturbed during the work. Precleaning includes picking up dust and debris with a HEPA vacuum, wet wiping non-porous surfaces, HEPA vacuuming surfaces that cannot be wet wiped, and cleaning any carpeted surfaces using steam extraction equipment.

Wet Wiping

The procedures to be used for wet wiping are as follows:

- Immerse disposable towel in bucket containing amended water.
- Wring out towel and fold into quarters.
- Wipe surface and refold to have a clean face exposed. Do not place towel back into bucket or water will become contaminated and will need to be replaced.
- Repeat step 3 until all faces of towel have been used. Obtain a clean towel if more wiping is needed.
- Dispose of used towels in asbestos disposal bags.
- Dispose of contaminated water as required by applicable regulations. **See contaminated water disposal procedure in the following text.**

HEPA Vacuuming

The procedures to be used for HEPA vacuuming are as follows:

- For floors, use a floor attachment with rubber floor seals and adjustable floor-to-attachment height. For furniture, fabrics or other surfaces use an upholstery attachment or brush attachment.
- Vacuum hard or smooth surfaces with attachment about 1/16" (2 mm) above the surface.
- Vacuum carpet or fabrics with attachment just touching the surface.
- Vacuum all surfaces in parallel passes with each pass overlapping the previous one by one-half the width of the attachment.
- Once surfaces are cleaned in one direction, clean a second time at right angles to the first cleaning.
- Use crevice brush or other tools to clean irregularly shaped surfaces.

Steam Cleaning Carpet

The procedures to be used for steam cleaning carpet are as follows:

- Steam clean carpet using carpet tool.
- Steam clean all surfaces in parallel passes with each pass overlapping the previous one by one-half the width of the attachment.
- Once surfaces are cleaned in one direction, clean a second time at right angles to the first cleaning.
- Water from cleaning process shall be treated in accordance with applicable

regulations - **See contaminated water disposal procedure in the following text.**

W-8 Setting up Work Areas

Maintenance workers performing O&M activities shall isolate the work area by installing critical barriers. A critical barrier is a six millimeter polyethylene sheet that covers an opening thus isolating air movement into or out of a work area. Work area isolation is not to be used in place of good work practices. Work practices such as wetting ACM, careful handling and local collection by HEPA vacuum shall be the primary means of fiber control during O&M work. Polyethylene protection is intended as a secondary means of protection during the work. State or local codes might require that fire retardant polyethylene be used for asbestos related work.

W-9 Packaging and Labeling Waste

If the applicable disposal site requires non-friable materials to be treated the same as friable materials then the following NESHAPS, DOT and other requirements apply. Although the following may apply even if the landfill does recognize non-friable asbestos containing waste, the Program Manager will be ultimately responsible for communications with the landfill for specific requirements of packaged asbestos containing waste. The Program Manager will notify the O&M workers of disposition of asbestos waste transport and disposal.

Asbestos-containing waste material from O&M activities shall be adequately wet in accordance with the NESHAP requirements (40 CFR §61.150). Verify waste packaging and other waste disposal requirements with the landfill that will receive the asbestos waste. Pre-labeled asbestos disposal bags shall be used for asbestos waste disposal where possible, appropriate and permissible. Disposal bags shall be collapsed by evacuating the air from the bag with a HEPA vacuum in the work area or enclosure. Once collapsed, twist the bag to form a neck and wrap it tight with duct tape. Fold neck of bag over to form a loop, then again wrap duct tape around neck and loop.

Asbestos waste is required to be placed into a disposal bag and sealed as described above then placed into a 55 gallon drum disposal. Label the disposal drum as required by applicable NESHAP, OSHA and DOT regulations.

All waste shall be labeled as required by federal, state and local regulations. Federal regulations requiring labeling of waste include OSHA regulations 29 CFR §1910.1200, §1910.1001 and §1926.1101, EPA's NESHAP regulation 40 CFR §61.150, and the Department of Transportation's Hazardous Materials Regulations 49 CFR §171 and 180. ACM packaging must meet general DOT and EPA requirements and be protective, marked and labeled. The OSHA requirements apply regardless of the amount of waste or measured exposure levels (see 29 CFR §1926.1101(l)).

Labels Requirements

OSHA 29 CFR 1926.1101(k)(2) requirement:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

Department of Transportation (DOT) requirement
DOT's shipping paper and marking format, is:

- RQ, (Reportable Quantity, if over 1 lb (.4 kg) friable asbestos)
- WASTE (For transportation of waste material, if applicable)
- ASBESTOS (Shipping name; asbestos descriptions; see below)
- MIXTURE (For asbestos mixed with a binder or filler, etc.)
- Class 9 (Miscellaneous Hazardous Materials, includes asbestos)
- LTD QTY, (Limited quantity, if applicable)
- 20 OZ (.6 kg) (Total quantity of material described; may abbreviate unit)

NESHAP requirement
NESHAP requires that readily visible and legible warning labels as specified by OSHA under 29 CFR §1910.1001 or §1926.1101 be used on waste containers or wrapped materials. Waste material to be transported off the facility site must also be labeled with the name of the waste generator and the location at which the waste was generated. The labels shall have the appropriate information preprinted on the label. No hand written labels are allowed.

W-10 Cleaning Tools, Equipment, and Work Area

Clean tools and equipment using HEPA vacuuming and/or wet wiping procedures. Special attention shall be given to cleaning extension cords, equipment wheels, vacuum hoses and other items that could pick up debris during the work. Tools and equipment shall be placed outside of the work area as soon as cleaning is completed. All polyethylene that is used shall be disposed of as ACM. Any items that cannot be fully cleaned (such as boots or tools) that might be used in another O&M activity shall be placed into disposal bags, sealed and labeled as ACM. These exterior of the bags shall be wet wiped and then placed away from the work area with the other tools and equipment. HEPA vacuum hoses can be sealed with tape over both ends if the outside of the hose is clean.

Cleaning of the work area where an O&M activity is conducted consists of HEPA vacuuming and/or wet wiping (as appropriate) all surfaces in the area.

The HEPA vacuum shall not be opened by maintenance personnel on the property site.

An abatement contractor shall be employed to empty and clean the vacuum in a contained area off site once a month, or as needed.

W-11 Decontaminating Waste

The exterior of packaged waste shall be HEPA vacuumed and wet wiped before it is moved out of the area/building. Packaged waste (barrel) shall be stored on a sheet of polyethylene when it is moved outside of the work area to the storage area.

W-12 Worker Decontamination and Removal of Protective Clothing

Decontamination and removal of protective clothing following O&M activities shall use the applicable procedure(s) described below:

Removal of Protective Clothing
When drop cloth work area protection, or no work area protection, is required, HEPA vacuum all parts of protective clothing while standing at perimeter of drop cloth. Leaving respirator in place, remove protective clothing and fold inside out as it is removed. Place clothing, if contaminated, into a disposal bag and label as ACM waste.

Street Clothes
If street clothes are worn under protective clothing and are contaminated during the work, the street clothes shall be HEPA vacuumed, removed during decontamination and placed into a labeled disposal bag. These street clothes shall then be disposed of as ACM or taken to a facility that has equipment designed for cleaning asbestos-contaminated clothing.

Removal of Respirator
The procedures described below are based on the assumption that workers wearing respirators have been trained in the use of respirators and, for negative pressure respirators, fit tested, and enrolled in a medical surveillance program as part of a Respiratory Protection Program.

Remove respirator after removing protective clothing (if used). Before removing respirator, wash hands, face and surface of respirator with clean water and disposable towels. Use caution to avoid breaking seal between respirator facepiece and face. Avoid getting water into filter cartridges of respirator. Place disposable towels into a disposal bag. Remove respirator and follow procedures specified in Respiratory Protection Program for cleaning and storing respirator.

W-13 Visual Inspections

The Program Manager shall develop a protocol for performing visual inspections

following O&M work. A visual inspection shall be conducted prior to the completion of air sampling (if performed) to verify that all visible dust or debris has been cleaned up. The person performing the inspection is allowed to be a worker that reports directly to the Program Manager. When the APM or another person makes this inspection, they shall wear the same type of personal protective equipment worn by the workers. If visible dust or debris remains, it must be cleaned up using wet wiping and/or HEPA vacuuming before clearance sampling is performed (if necessary).

W-14 Waste Transportation, Storage and Disposal

An abatement contractor shall be hired to transport asbestos waste from O&M activities to an approved landfill after the work is completed. Workers transporting waste shall follow Respiratory Protection Program recommendations concerning respirator requirements for transporting asbestos waste. Do not drag packaged waste. All waste shall be lifted and carried, or transported in wheeled carts, when moved from one area to another. Packaged waste shall be placed, not thrown or dropped, into vehicles, storage areas and the landfill.

Asbestos waste that is pending transport to a landfill shall be stored in a secure, lockable area. Signage in accordance with OSHA and NESHAP shall be posted at the storage area and on vehicles used to transport asbestos-containing waste material during loading and unloading. When asbestos waste in the storage area is taken to a landfill, it shall be transported in accordance with all applicable federal, state and local regulations. Asbestos waste shipment records shall be completed in accordance with the requirements in NESHAP Section 61.150.

The workers conducting O&M activities shall document waste in a manner established or approved by the Program Manager. Once the documentation is completed and the waste is stored or taken to a landfill, the documentation shall be turned over to the Program Manager to file with O&M records. The NESHAP waste shipment records must also be completed (where applicable) and filed with waste disposal records.

W-15 Disposal of Contaminated Water

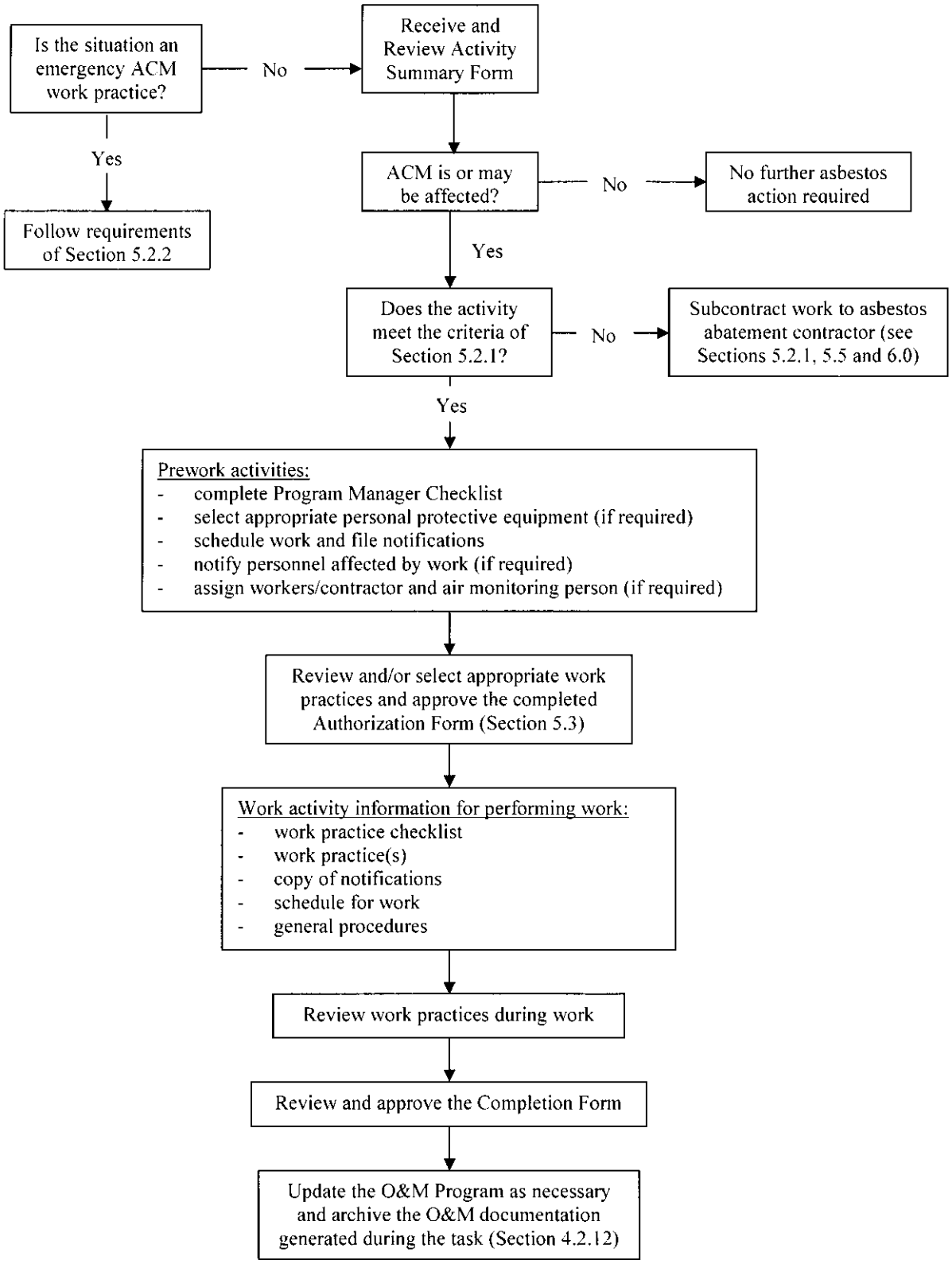
Contaminated water from O&M activities shall be stored in a leak-proof plastic waste drum. The drum shall be stored on site until it can be transported by the abatement contractor to a location with filtering equipment. A drum containing waste water can be stored on site for a minimum of 30 days.

APPENDIX D

Program Manager Decision-Making Flowchart

Program Manager Decision-Making Flowchart

Work Practice Selection and Use
For Non-Emergency ACM Work Practices



APPENDIX E

Permit Forms

ACTIVITY SUMMARY FORM

Name: _____ Date:_____

Telephone No. _____ Job Request No._____
Requested starting date: _____
Anticipated finish date: _____

Address, building, and room number(s) (or description of area) where work is to be performed:

Description of work:

Description of any asbestos-containing material that might be affected. if known (include location and type):

Name and telephone number of requestor:

Name and telephone number of supervisor:

Submit this application to:

Program Manager

NOTE: An Activity Summary form must be submitted for all maintenance work whether or not asbestos-containing material might be affected. An authorization must then be received before any work can proceed.

_____ Granted (Job Request No.) _____
_____ With conditions*
_____ Denied

*Conditions:

AUTHORIZATION FORM

Authorization No. _____

Authorization is given to proceed with the following maintenance work:

PRESENCE OF ASBESTOS-CONTAINING MATERIALS

_____Asbestos-containing materials are not present in the vicinity of the maintenance work.

_____ACM is present, but its disturbance is not anticipated: however, if conditions change, the Asbestos Program Manager will re-evaluate the work request prior to proceeding.

_____ACM is present, and may be disturbed.

Work Practice if Asbestos-Containing Materials Are Present

The following work practices shall be employed to avoid or minimize disturbing asbestos:

Personal Protection if Asbestos-Containing Materials Are Present

The following equipment/clothes shall be used/worn during the work to protect workers:

Special Practices and/or Equipment Required

Signed:_____Date:_____
Asbestos Program Manager

COMPLETION FORM

Evaluation of Work Affecting Asbestos-Containing Materials

This evaluation covers the following maintenance work:

Location of work (address, building, room number(s), or general description):

Date(s) of work:_____

Description of work: .....

Work approval form number: _____

Evaluation of work practices employed to minimize disturbance of asbestos:

Evaluation of work practices to contain released fibers and clean up:

Evaluation of equipment and procedures used to protect workers:

Personal air monitoring results: (in-house worker or contract?)

Worker name _____ Results: _____

Worker name _____ Results:_____

Handling or storage of ACM Waste:_____

Signed: _____ Date:_____
Asbestos Program Manager

APPENDIX F

Program Manager Checklist and O&M Annual Review Form

ASBESTOS PROGRAM MANAGER CHECKLIST

Work to be performed:

- ___ Review or request survey data to determine whether ACM is affected.
- ___ Review historical air monitoring data for work practices to be used.
- ___ Work Practice(s) selected for all ACM to be encountered.
- ___ Select personnel protective equipment and decontamination requirements to be used (if needed).
- ___ Select appropriate materials and review potential hazards (confined spaces, scaffold use, etc.).
- ___ Schedule work when area is not in use or plan developed to isolate area (if necessary).
- ___ Federal, state and local notifications filed (if applicable).
- ___ Notify Occupants/personnel affected by work .
- ___ Assign workers (or contractor) with appropriate level of training. Verify currency of training, fit tests, and medical surveillance.
- ___ Assign air monitoring person/Independent Project Monitor and determine air monitoring to be performed (if needed). Record and archive air monitoring results.
- ___ General Procedure(s) Reviewed
- ___ Schedule of work
- ___ Review work practices during work for compliance with requirements.
- ___ Complete Evaluation of Work Affecting ACM.
- ___ Retain and archive all required records in proper location..

Signature: _____ **Date:** _____

Asbestos Program Manager

ANNUAL O&M PROGRAM REVIEW

It is the policy of the Management to review this Asbestos O&M Program on an annual basis (at a minimum) and ensure that the program is being adhered to. This O&M Program cannot be modified without prior approval from the Property Owner or their representative.

This O&M Program was last reviewed by:

Signed:_____ Date:_____

Printed Name:_____

Modifications were made to the following section(s):

_____

_____

This O&M Program was last reviewed by:

Signed:_____ Date:_____

Printed Name:_____

Modifications were made to the following section(s):

_____

_____

This O&M Program was last reviewed by:

Signed:_____ Date:_____

Printed Name:_____

Modifications were made to the following section(s):

_____

_____

APPENDIX G

Notification Forms

EMERGENCY NOTIFICATION FORM

Building:

Material Location(s):

Material Type:

Describe Damage:

Response Priority: High Medium Low

Immediate Response Taken (if any):

Potential for Immediate Exposure to Occupants/Workers:

High Medium Low

Print Name

Signature.....

Date .....

ASBESTOS NOTIFICATION

FACILITY: **Oakland Court Development**
East Lokey Avenue
Murfreesboro, Tennessee

To: Building Occupants ******Include others as necessary******
From: Asbestos Program Manager
Date: ******Date******

An asbestos survey was performed on this property for asbestos-containing materials (ACM) on August 29, 2019. The materials that were identified as ACMs and/or presumed asbestos-containing materials (PACMs) are included in an Operations and Maintenance (O&M) Program. The O&M Program outlines safe practices and procedures for maintenance and custodial workers to follow when performing normal duties that may impact ACM. Also included in the Program are practices and procedures for the control of asbestos when damage occurs.

Adverse health effects related to asbestos exposures are known to occur as a result of exposure to excessive asbestos concentrations. However, exposures to low concentrations of asbestos fibers may also result in adverse health effects. Inhalation and ingestion of asbestos fibers have been implicated in a number of respiratory and digestive system diseases. The O&M Program is designed to prevent asbestos exposures and protect human health and the environment from the hazards associated with exposure to airborne asbestos fibers.

The O&M Program requires a re-inspection of ACMs to be performed every six months. Building occupants shall be informed of the results of the inspection by means of this notification. Included in the following is a list of ACMs and/or PACMs that are present in the facility.

- Flooring materials and associated mastics
- Transite flue pipes – housing units
- HVAC flex duct connectors – housing units
- Joint compound
- Caulking materials
- Roofing materials

If there are any materials that you have identified from the information in this notification, that are not in good condition, please contact the Asbestos Program Manager immediately.

General procedures which should be followed to ensure the health and safety of all tenants, employees, and outside contractors from asbestos exposure include:

- Avoid damaging, disturbing and/or crushing the asbestos-containing materials within the facility.
- If damaged and/or dislodged asbestos-containing materials are observed, evacuate the general area and notify the asbestos program manager. **Please do not attempt to clean or repair the materials. Avoid walking on or through the area(s) where damaged ACM is present.**

APPENDIX H

"Ready to Use" O&M Activity Sheets

OVERVIEW OF GENERAL OPERATION AND MAINTENANCE ACTIVITY

Activities which may impact or disturb any asbestos-containing materials or any suspect ACM are not permitted to be performed by any maintenance personnel or tenants of the building. Activities which may be performed under the O&M program using a work permit program include general maintenance. The maintenance staff should follow these procedures:

(1) Refer to the ACM inspection report to determine if any ACM is present in the area where the work will occur. If ACM is present, but is not expected to be disturbed, the building owner/management should note the presence of the ACM on the permit form.

(2) If ACM is both present and likely to be disturbed, the building owner/management should visit the area where the work is to be performed and determine what work practices should be instituted to minimize the release of asbestos fibers during the maintenance activities.

(3) The determination should be recorded on a Maintenance Work Authorization Form, which is then forwarded to the in-house maintenance supervisor or to the maintenance contractor to authorize the work. The building owner/management should ensure a copy of both the request and authorization forms are placed in a permanent file.

(4) **Where the task is not covered by previously approved standard work practices, the two-hour trained and six-hour trained maintenance workers should contact the Asbestos Program Manager for the approval of work methods prior to the commencement of the work.** The building owner/management should ensure the appropriate work practices and protective measures are used for the job.

(5) For all jobs where contact with ACM or PACM is likely, the building owner/management should visit the work site prior to the commencement of the work to ensure the job is being performed properly.

(6) The building owner/management's observations should be documented on an Evaluation of Work Form. Any deviation from standard and approved work practices should be recorded immediately on the Evaluation of Work Form and the practices should be immediately corrected.

(7) Upon completion of the work, a copy of the Evaluation of Work Form should be placed in the permanent asbestos file.

GUIDANCE FOR THE CLEANING OF ASBESTOS DUSTS AND DEBRIS

In areas where the known asbestos-containing materials are noted to be damaged or deteriorating then asbestos dust and debris clean-up is warranted. In addition, areas containing damaged asbestos should be cleaned on a regular basis to minimize the collection of asbestos dusts. Cleaning of asbestos dusts is conducted through typical wet mopping methods and proper disposal of the wastes. If elevated levels of settled asbestos dusts are suspected, cleaning practices can be supported with the use of a HEPA vacuum. The following are asbestos dust cleaning protocols:

(1) Prepare cleaning solution per amended water instructions (See Appendix C).

(2) If settled dusts are present to the naked eye, initially vacuum the affected area with a HEPA style vacuum. **DO NOT** use a conventional vacuum.

(3) Apply a coat of cleaning solution and allow to activate for 10-15 minutes.

(4) Mop affected area with a clean mop. Replace mop head each 500 square feet of surface area to insure that contaminated mop heads are not used. **DO NOT** vacuum excessively wet areas with a HEPA style vacuum.

(5) Dispose of all mop heads in accordance with state and federal regulations.

(6) Perform asbestos in dust clearance testing if necessary (See Section 5.5.2.1).

In areas where the known or presumed asbestos-containing material is damaged, the maintenance staff may need to repair the building components as a maintenance activity (not an asbestos removal activity). Repair activities should employ the following steps:

(1) Conduct work during off-hours and isolate the area to prevent unauthorized personnel access.

(2) Turn off air handling units such as air conditioning and/or heating unit.

(3) Prepare work area by sealing the area (i.e. heating vents, windows and doors) by covering with polyethylene sheeting.

(4) Maintenance staff shall don approved respirators and protective personnel equipment/clothing.

(5) Repair damaged surface area using an approved asbestos abatement methodology and seal with an encapsulant.

(6) Clean-up enclosed area and clean-up potential asbestos dusts per dust cleaning methodologies.

(7) Dispose of all used cleaning supplies, containment barriers, and asbestos debris/dust in accordance with state and federal regulations.

GUIDANCE FOR FLOORING MATERIALS

Flooring materials and associated mastics located at the subject property are identified and/or presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of flooring materials:

- No sanding of these flooring materials;
- Floor stripping must use low abrasion pads at speeds below 300 rpm and wet methods;
- Dry buffing may be performed at any speed as long as the flooring has sufficient finish to prevent the pad from contacting the flooring material.

For removing non-friable vinyl resilient flooring materials which contain ACM or which were installed prior to 1981, and where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Non-friable flooring, its backing, or mastic shall not be sanded;

(2) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors;

(3) All scraping of residual adhesive and/or backing shall be performed using wet methods;

(4) Dry sweeping is prohibited;

(5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(6) Tiles shall be removed intact, unless the employer demonstrates that intact removal is not possible;

(7) Non-friable resilient flooring materials including associated mastics and backings shall be assumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

Removal of asbestos-containing flooring materials is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR NON-FRIABLE TRANSITE FLUE PIPES

The transite flue pipes located in the housing units at the subject property are documented to contain asbestos. Prohibitions and limitations apply to the care of the non-friable material:

- No sanding of this material;

For removing limited areas of the transite flue pipes, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Non-friable transite flue pipes shall not be sanded;

(2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;

(3) Dry sweeping is prohibited;

(4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(5) Transite flue pipe material shall be removed intact with the least amount of damage as possible, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing transite flue pipe material is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR HVAC FLEX DUCT CONNECTORS

The HVAC flex duct connectors located in the housing units at the subject property are documented to contain asbestos. Maintenance personnel should contact the property management office to determine asbestos content prior to working with these materials. Prohibitions and limitations apply to the care of the vibration damper:

* No sanding, cutting or impacting of this material is allowed;

In emergency situations, whereas removal or repair of the HVAC flex duct connectors is required, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) The HVAC system must be shut down and locked out prior to any removal activities.

(2) Polyethylene drop cloths shall be placed beneath the work area to prevent contamination

(3) Vacuums equipped with HEPA filter, disposable dust bag, and metal scraper tool (no brush) shall be used to clean the material;

(4) The HVAC flex duct connector materials shall be removed intact, unless the employer demonstrates that intact removal is not possible. If the material has the potential to become friable during the removal process, the material shall be kept wet and removed only within a glovebag containment system, thereby limiting the potential for asbestos fiber release;

(5) Dry sweeping is prohibited.

Removal of asbestos-containing HVAC flex duct connectors is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR DRYWALL JOINT COMPOUND

The drywall joint compound materials at the subject property are documented to contain asbestos. Maintenance personnel should contact the property management office to determine asbestos content prior to working with these materials. Prohibitions and limitations apply to the care of the drywall joint compound materials:

- Materials shall not be dry sanded;
- All scraping shall be performed using wet methods;

For removing materials which contain asbestos, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Walls and ceilings shall not be sanded;

(2) All scraping shall be performed using wet methods;

(3) The use of conventional vacuums and dry sweeping is prohibited;

In emergency situations, whereas removal or repair of a limited amount of the drywall joint compound materials is required, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) The HVAC system must be shut down and locked out prior to any removal activities.

(2) The material must be wetted prior to removal;

(3) Polyethylene drop cloths shall be placed beneath the work area to prevent contamination of other areas

(4) Vacuums equipped with HEPA filter, disposable dust bag, and metal scraper tool (no brush) shall be used to clean the material;

(5) Dry sweeping is prohibited;

Gross removal of asbestos-containing joint compound is not allowed to be conducted by untrained and unlicensed staff. Routine and minor maintenance tasks involving isolated disturbance of the joint compound should be performed using controlled methods. Industry standard is to use methods involving an encapsulating foam (e.g. shaving cream), through which the disturbance is made; whereby resulting in no visible dust/emissions. As an alternative, minor repairs can be performed using localized HEPA vacuum exhaust to reduce any potential emissions, dusts and debris.

GUIDANCE FOR CAULKING MATERIALS

The subject property contains caulking materials that are presumed to contain asbestos. Prohibitions and limitations apply to the care of these categories of materials:

* No sanding of these materials;

For removing the caulking materials which contain ACM or which were installed prior to 1981, and where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Caulking materials shall not be sanded;

(2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;

(3) Dry sweeping is prohibited;

(4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(5) Caulking materials shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing caulking materials is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR ROOFING MATERIALS

The roofing materials at the subject property are presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of material:

* No sanding of this material;

* No dry-scraping of this material is allowed.

* No cutting of this material is allowed.

ROUTINE HOUSEKEEPING DUTIES

If employees of the Oakland Court Development perform routine custodial duties that involve working near or cleaning ACM that is not enclosed, sealed or otherwise protected from release of asbestos fibers into the air certain housekeeping procedures must be strictly adhered to. This activity is covered by the General Industry standard as long as no construction activity is involved.

(1) The building owner/management must provide the affected workers with asbestos awareness training each year. The course must be provided at no cost to the employee. The course must also cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, and who to tell and what to do if such materials are dislodged or become non-intact. This training must be provided regardless of the expected exposure levels to housekeepers.

(2) In addition, if the building owner/management should reasonably expect that any of the housekeeping employees may be exposed in excess of a permissible exposure limit (PEL: 0.1 fibers per cubic centimeter as a time-weighted average over an 8 hour period or 1.0 fibers per cubic centimeter over a 30 minute period), then the following procedures must be adhered to:

(a) Monitor according to the OSHA standard's requirements to accurately determine the airborne concentrations.

(d) Provide employees with medical surveillance. A medical surveillance program requires the worker to complete a health questionnaire and may include a physical examination at no cost to the employee. The building owner/management must keep exposure and medical surveillance records for the duration of employment plus 30 years.

(e) Restrict access to areas of expected over-exposure

(d) Provide more extensive training: An annual asbestos awareness course is required. The course must be provided at no cost to the employee. The course must cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, how to respond to asbestos exposure, and required housekeeping work practices.

(e) Provide appropriate respirators and protective clothing at no cost to employees to use while working in areas of potential over-exposure. Respirators must be equipped with HEPA filters.

Housekeeping activities conducted in the immediate area of friable or significantly damaged or loosely bonded ACM may indicate significant airborne exposure potential. Activities which release fibers from ACM such as grinding, cutting, or sanding, also have such potential. Please note that reference here is only to workers who are exposed to accessible asbestos when doing routine housekeeping activities. It does not include maintenance activities, repair, removal, or construction work that may involve disturbance or removal of asbestos-containing materials. Neither does it include clean-up and disposal of dust or debris resulting from construction, renovation, removal, repair, or maintenance activities. Performance of these tasks by the housekeeping employees may trigger additional obligations that are described elsewhere in this Operations and Maintenance Program.

SECTION 31 00 00
EARTHWORK

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns, and plantings.

2. Excavating and backfilling for buildings and structures.

3. Drainage course for slabs-on-grade.

4. Base course for concrete walks and pavements.

S. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.

6. Excavating, trenching, and backfilling of storm water piping system.

B. Related Sections include the following:

1. Section 01 50 00 "Temporary Facilities and Controls."

2. Section 31 10 00 "Site Clearing."

1.3 DEFINITIONS

A. Backfill: Soil materials used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.

2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Layer placed between the subgrade course and asphalt paving, concrete pavement or walk.

C. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
E. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

J. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Quality control test and inspection reports from qualified independent geotechnical engineering testing agency indicating conformance with this specification,

QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 54a.

1.5 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Owner's Representative and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner's Representative not less than *two* days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without the Owner's Representative's written permission.

3. Contact utility-locator service for area where the Project is located before excavating.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations,

B. Satisfactory Soils: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM, or a combination of these group symbols; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

c. Unsatisfactory Soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Backfill and Fill: Satisfactory soil materials.

E. Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2- inch sieve and 0 to 5 percent passing a No. 8 sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.

J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by the settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Provide erosion-control measures in accordance with the Construction Storm Water Pollution Plan to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

A. Classified Excavation: Excavation shall be unclassified.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

3.6 APPROVAL OF SUBGRADE

A. Notify Owner's Representative when excavations are believed to have reached required subgrade.

B. Proof roll subgrade with heavy pneumatic-tired equipment to identify soft pockets and areas of excessive yielding. Do not proof roll wet or saturated subgrades.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Owner's Representative.

3.7 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windbiown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 BACKFILL
A. Place and compact backfill in excavations promptly, but not before completing the

following:

1. Removing concrete formwork.
2. Removing trash and debris.
3. Removing temporary shoring and bracing, and sheeting.
4. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.9 FILL

A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.

B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

c. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.

3.10 MOISTURECONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

c. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 698 (Standard Proctor):

1. Under walkways, scarify and re-compact top 6 inches below subgrade and compact each layer of backfill or fill material at 95 percent.
2. Under lawn or unpaved areas, scarify and re-compact top 6 inches below subgrade and compact each layer of backfill or fill material at 85 percent.

3.12 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.

3.13 BASE COURSES

A. Under walks, place base course on prepared subgrade and as follows:

1. Place base course material over subbase.

2. Compact base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3. Shape base to required crown elevations and cross-slope grades.

4. When thickness of compacted base course is 6 inches or less, place materials in a single layer.

5. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage and pay for a qualified independent geotechniEal engineering testing agency to perform field quality-control testing on each area of the work.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after the test results for previously completed work comply with requirements.

c. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by

Owner's Representative.

D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.

2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet or less of trench length, but no fewer than two tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; re-compact and retest until specified compaction is obtained.

3.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of

trash and debris.

B. Repair and reestablish grades to specified tolerances where comp(eted or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Owner's Representative; reshape and re-compact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing,

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION

SECTION 31 10 00
SITE CLEARING

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Protecting existing trees and vegetation to remain.
2. Removing trees and other vegetation.
3. Clearing and grubbing.
4. Topsoil stripping.
5. Removing above-grade site improvements.

B. Related Sections include the following:

1. Section 01 50 00 - "Facilities and Controls".
2. Section 02 22 10 - "Building Demolition"

1.3 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of weeds, roots, and other deleterious materials.

1.4 MATERIALS OWNERSHIP

A. Except for materials indicated to be stockpiled or to remain Owner's property, cleared materials shall become the Contractor’s property and shall be removed from the site.

1.5 SUBMITTALS

A. Record drawings according to Division 1 Section “Contract Closeout."

1. Identify and accurately locate capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

3. Maintain designated site access for vehicular and pedestrian traffic.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on the Owner’s premises

where indicated.

C. Notify the utility locator service for the area where the Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in DIvision 02300 Section "Earth Work."

1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available onsite.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Provide erosion-control measures to prevent soil erosion and discharge of soiJ-bearing water runoff or airborne dust to adjacent properties and walkways.

c. Locate and clearly flag trees and vegetation, utilities, and features designated to remain or to be relocated.

D. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TREE PROTECTION

A. Erect and maintain a temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.

1. Do not store construction materials, debris, or excavated material within drip line of remaining trees.

2. Do not permit vehicles, equipment, or foot traffic within drip line of remaining trees.

B. Do not excavate within drip line of trees, unless otherwise indicated.

c. Where excavation is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

3.3 UTILITIES

A. Existing water, sewer, and electrical service to buildings shall be cut off and capped arranged by Owner under separate contract.

B. Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner's Representative not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Owner's Representative's written permission.

3.4 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, grass, and other vegetation, unless noted otherwise on Drawings. Removal includes digging out stumps and obstructions and grubbing roots.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.

2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct work.

3. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.

4. Use only hand methods for grubbing within drip line of remaining trees.

B. Burning of debris on site shall not be permitted.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding 8-inch loose depth, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil,

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Strip surface soil of unsuitable topsoil, including trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil, Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within drip line of remaining trees.
3. Dispose of excess topsoil as specified for waste material disposal.
4. Stockpile surplus topsoil and allow for re-spreading deeper topsoil,

3.6 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION